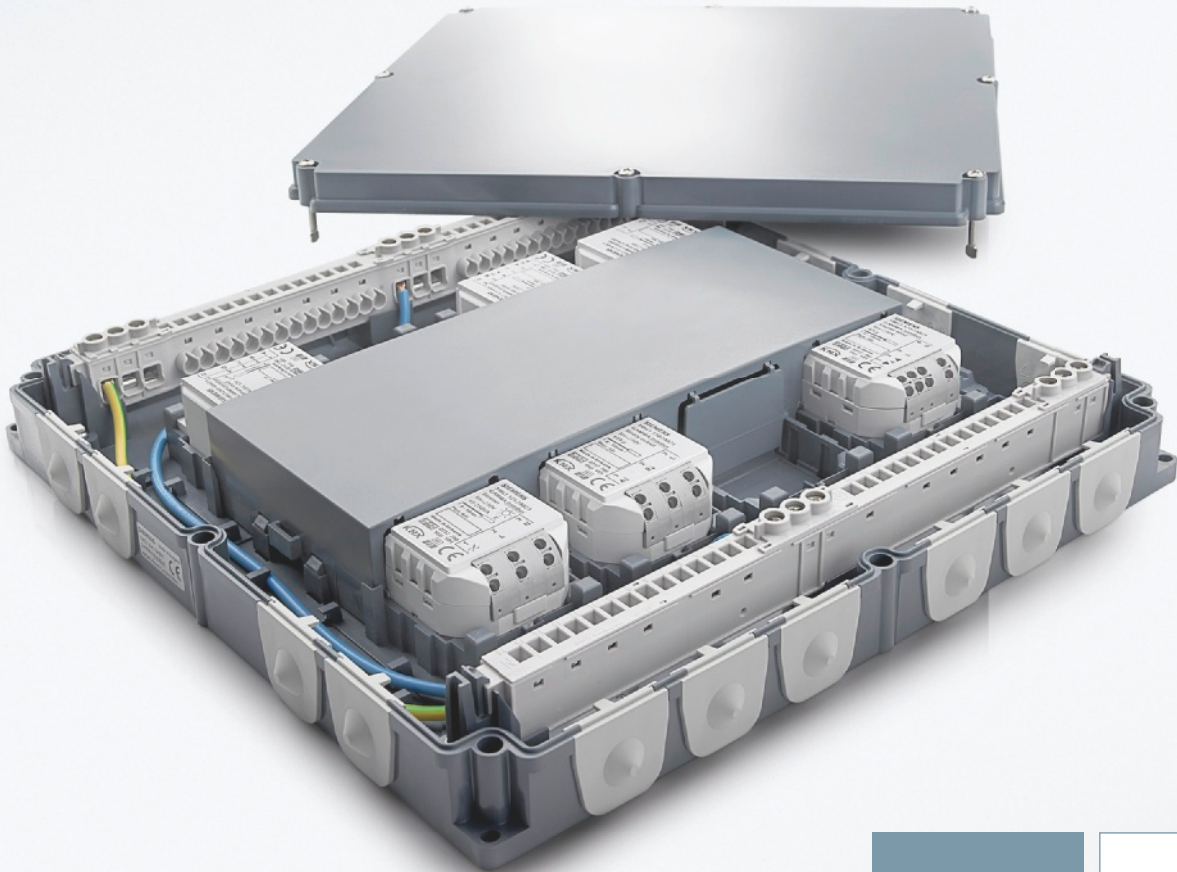


SIEMENS



The worldwide
standard for
home and
building control



GAMMA Building Control

Product Catalog ET G1 · 2013

Related catalogs

Low-Voltage Power Distribution and Electrical Installation Technology

LV 10.1
SENTRON Protection, Switching, Measuring and Monitoring Devices

E86060-K8250-A101-A2-7600



Low-Voltage Power Distribution and Electrical Installation Technology

LV 10.2
SIVACON Switchboards and Distribution Systems

E86060-K8260-A101-A2-7600



GAMMA

Building Control

ET G1

E86060-K8230-A101-B7-7600



DELTA

Switches and Socket Outlets

ET D1

PDF only
(E86060-K8240-A101-B4-7600)



Products for Automation and Drives

Interactive Catalog

CA 01

DVD: E86060-D4001-A510-D2-7600



Mall

Information and Ordering Platform in the Internet:

www.siemens.com/industrymall



Contents

Air circuit breakers • Molded case circuit breakers • Miniature circuit breakers • Residual current protective devices • Fuse systems • Overvoltage protection devices • Switch disconnectors • Switching devices • Transformers, bells and socket outlets • Busbar systems • Measuring devices and power management • Monitoring devices • Software

Switchboards • Busbar trunking systems • System cubicles and cubicle lighting • Cubicle air-conditioning • Distribution boards • Terminal blocks

Display and operation units • Output, Input and Combination devices • Lighting • Sun and anti-glare protection, utilization of daylight • Heating, cooling, ventilation, air-conditioning • Load management • Safety • Quick-assembly systems • Gateways, interface converters • Physical sensors • Control and automation devices • System products and accessories • Counters • Radio systems - GAMMA wave KNX-Radio and EnOcean • Flexcon

i-system • DELTA line • DELTA vita • DELTA miro • DELTA profil • DELTA style • DELTA natur • m-system • Surface-mounting product range • Switching/Pushbutton control/Dimming • Motion detectors • Automatic lighting controls • Shutter/blind controls • Room temperature controllers • Data and communication systems • Remote control systems • Smoke detectors • GAMMA bus coupling units

All products of automation, drives and installation technology, including those in the catalogs listed above.

All products of automation, drives and installation technology, including those in the catalogs listed above.

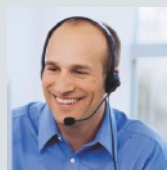
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Further information about low-voltage power distribution and electrical installation is available on the Internet at:

www.siemens.com/industrymall

Technical Support



Expert advice on technical questions with a wide range of demand-optimized services for all our products and systems.

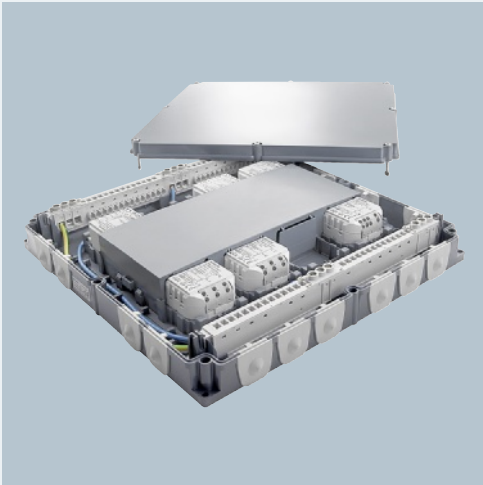
www.siemens.com/lowvoltage/technical-support

GAMMA

Building Control

Future-proof electrical installations
based on KNX

Catalog ET G1 · 2013



VDE

VERBAND DER ELEKTROTECHNIK
ELEKTRONIK INFORMATIONSTECHNIK

The products and systems listed in this catalog are developed and manufactured using a quality management system certified by VDE and according to EN ISO 9001:2000.

Supersedes:
Catalog ET G1 · 2012

Refer to the Industry Mall for current updates
of this catalog:
www.siemens.com/industrymall

The products in this catalog can also be found
in the interactive catalog CA 01.

Order No.:
E86060-D4001-A510-D2-7600

Contact your local Siemens sales office
for further information.

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www.pefc.org

GAMMA instabus KNX

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Combination Devices	4
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GAMMA Building Control – for greater energy efficiency and maximum convenience in buildings

Dear customers and partners

These days, whether in the economy, politics or society, the subject of energy efficiency is never far from our lips and is a constant topic of debate. The first countries in Europe have already made the decision to phase out nuclear energy, while others still have a change in energy policy firmly on their political agenda. But switching to renewable energies alone will not protect our climate, it is also vital we begin using existing resources more responsibly and energy more efficiently. Only then can we slow down climate change and preserve the planet for future generations. At the same time it is crucial to ensure continued productivity and quality of life.

With innovative and environmentally friendly technologies, Siemens AG has been promoting environment protection and the responsible use of energies in buildings and rooms for many years now. All products and systems are designed to ensure maximum convenience and minimum energy consumption.

All GAMMA Building Control components enable the optimum and energy-efficient control of resources, so that pleasant room temperatures, glare-free lighting with maximum utilization of daylight and demand-oriented ventilation are totally consistent with our concept of energy-efficient room control.

You too can benefit from our comprehensive range of innovative products, systems and tried and tested applications designed to enhance energy efficiency in buildings and protect the environment.



Stephan Bauer
CEO Building Technologies Control Products & Systems

Quality and the environment

Quality in the context of the environment

Increasing urbanization and a growing global population have meant that it has become one of our key challenges to look after and preserve our natural resources – one we are happy to meet head on.

Acting responsibly

As part of the ecologically responsible and globally active Siemens Group, we are setting the bar high. Our environmental protection objectives are an integral part of our rigorous quality management.

Even during the development of our products and systems, we take a critical look at their possible effects on the environment. So, without exception, they all comply with the EC Directive RoHS (Restriction of Hazardous Substances). During this development phase, we also lay the foundations for the highest quality: from the very outset, we define reliability requirements and the related quality assurance measures, and these are incorporated into all drafts.

All products and systems are also subject to strict quality specifications during production and testing. We take great care to ensure compliance with these specifications in order to guarantee our customers nothing but the very best quality. Our many certificates bear witness to our success.

Pioneers in recycling

As a founder member of a non-profit association for the active promotion of the environment-friendly recycling of disabled LV HRC fuse links, Siemens takes a pro-active approach to recycling. The aim of the association is to create a voluntary system for the environment-friendly recycling of LV HRC fuse links, which is simple and free for participating collectors. All proceeds are used to support a range of projects in the training and research sector.

Saving energy with GAMMA *instabus*

The functions of the GAMMA Building Control make a huge contribution to environmental protection. As a result, GAMMA *instabus* combined, for example, the sections Lighting, Sun protection and Room climate.

The automatic shutter/blind control controls the blind slats so that maximum daylight is allowed to penetrate without dazzling. A constant light level control ensures that the level of light is always just right. This saves electricity – which is good for the environment – and also reduces energy costs. The optimum shading for a building also significantly reduces the energy required for air-conditioning and ventilation systems, thereby improving the building's energy efficiency.

These are just a few examples of the wide range of options offered by GAMMA *instabus* that help save energy and make building management more cost-efficient. Thus the convenience of modern technology pro-actively supports environmental protection.

Pro-active environmental protection

It goes without saying that we are certified to ISO 14001 – as are all Siemens premises. Furthermore, as an active member of ZVEI (German Electrical and Electronic Manufacturers' Association), we pro-actively support the protection of the environment with a wide range of measures, such as the development of binding environmental management systems.

Software at your service

GAMMA Planner and Installer Tool

www.din-bauportal.de/siemens

This tool lets you call up the "Siemens. GAMMA Catalog" for building control, compile product descriptions and specifications and download them in a range of formats – online, STL-Bau-compliant – and all this free of charge.

The "Siemens. GAMMA Planner Tool" enables simple creation of STL-Bau-compliant and test-safe master specifications on the basis of the GAMMA catalog. The fact that prices for material and labor are also taken into account means that cost estimates can be drawn up in no time at all.

The free calculation software for installers "Siemens. GAMMA Installation Engineer Tool" enables the simple creation of offers for building control on the basis of GAMMA Catalog in a minimum of time.

Technical product data and descriptions

www.siemens.com/knx-td

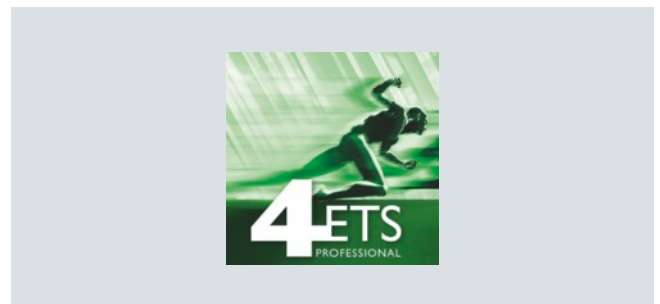
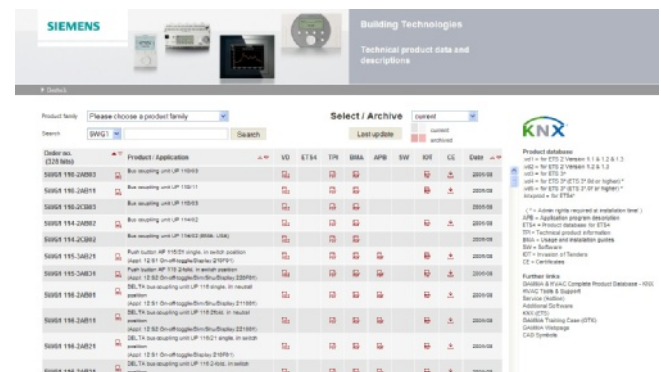
The aforementioned Internet pages contain all the technical information you need on all aspects of KNX products from Siemens.

Ranging from product databases for ETS 2 through to ETS4, descriptions on individual application programs, technical product information, operating and mounting instructions, specification texts and CE certificates. An Internet page specially for all your KNX product queries.

ETS

ETS is the software for the planning and configuration of intelligent KNX building control. This commissioning tool is based on the KNX standard and is maintained by the KNX Association. It is used for the manufacturer-independent commissioning of all KNX products. You only need ETS for Siemens products – no other tools are necessary. This allows users to create up-to-the-minute and complete project documentation at the touch of a button.

www.knx.org



Practice-oriented learning made easy

Certified further training

Our wide range of practice-oriented training courses covering every aspect of KNX will help you stay ahead of the competition. We offer a wide range of courses to help you obtain the necessary qualifications and sustainable specialized skills:

- KNX - Basic Course
- KNX Advanced Course
- KNX-/DALI - Diagnostics/Maintenance
- IP BASICS & KNXnet/IP
- KNX - Trainer Course
- Switching from ETS2/3 to ETS4

A hands-on learning experience from the very outset

Offering an excellent balance of theory and practice, our training courses will contribute directly to your success. The level of practical training is a mark of the quality of our training courses, which is why they are so highly regarded by participants.

KNX Building Control Engineer Certificate

On successful completion of all courses, you will be awarded the certificate: "KNX Building Control Engineer", see image below. This certificate will take into account all KNX basic and advanced courses already successfully completed.

GAMMA training case

Now you can put all the theory into practice, with our GAMMA training case: The GAMMA training case is ideal for training and demonstrating the key functions of GAMMA Building Control.

These include the following: Lighting and shutter/blind controls, simulation of heating/cooling and control of safety technology – such as alarm indications via window contacts. There are three versions of the case:

- Full version
- DALI version
- School version

Furthermore, a main line module for setting up an additional line is also available separately for all three versions.

Use in colleges and schools

The GAMMA training case is particularly suited for use in vocational training colleges, guilds and other training centers. The case enables targeted training of all building control applications. And it goes without saying that it is an integral part of our training courses.

An overview of the training courses we offer for KNX building control engineers:

KNX Advanced Course	KNX Diagnostic / Maintenance	IP Basics & KNXnet/IP
ET-KNXA1 5 days	ET-KNXD 2 days	ET-IPB 2 days
KNX - Basic Course		
ET-KNXBK		5 days
Further courses:		
KNX - Trainer Course*	Switching from ETS2/3 to ETS4	* Advanced course, only available on successful completion of the KNX Advanced course
LV-KNXT 3 days	LV-ETS4UP 1.5 days	

Further information is available at: www.siemens.com/gamma

GAMMA training case



Basic equipment

The GAMMA training case is equipped with the following components:

- N 125/22 power supply unit
- N 148/11 USB interface
- N 148/22 IP interface
- N 146/02 IP router
- 8-gang network switch
- 3x KNX connector socket
- 6x switching/dimming with N 526E/02
- 4x shutter/blind with N 501
- 8x N 501 binary input
- UP 220/31 pushbutton interface
- Rocker button with LED feedback (via UP 220/31)
- UP 587/12 text display with time-controlled switching
- UP 254 heating controller
- 2 x triple UP 223/13 pushbutton with status
- 1 x triple UP 223/15 pushbutton with IR decoder
- Window simulation (via UP 220/31)
- Simulation of heating/cooling
- Wind simulation (via UP 220/31)
- UP 255 motion detector
- S 425 hand-held transmitter

Full version (GTK4_V)

All GAMMA training cases are suitable for training and presenting:

- Switching, dimming, sun protection, setting values
- Central functions
- Motion detectors
- Heating, cooling, window contact, displays
- Communication via IP with 3 integrated IP devices and network switch
- IR S 425 hand-held transmitter for IR remote control
- "Wind" alarm function
- Weekly time switching with UP 587 display
- Yearly time switching and logic/event functions with N 350E

DALI version (GTK4_D)

In addition to the functions of the full version, the DALI version is suitable for training and presenting:

- DALI Interface with 6 LEDs
- Fault simulation: Power failure DALI interface
- DALI short circuit: ECG failure

In addition to the equipment of the full version, the DALI version contains the following:

- N 141/02 DALI interface
- 6 LEDs controlled via DALI ECG
- Fault simulation switch

The second BTM triple pushbutton is fitted with a temperature sensor.

School version (GTK4_S)

In addition to the functions of the full version, the school version is suitable for training and presenting:

- local visualization (touch panel) with many additional functions (time programs, logic, 64 scenes, analog value trending, etc.)
- Remote visualization via N 151 IP viewer (Internet connection required)

In addition to the equipment of the full version, the School version contains the following:

- N 305 event module
- N 151 IP viewer
- UP 588/13 touch panel

Order Nos.

- Full version (GTK4_V)
E10003-E38-1W-W0010
- DALI version (GTK4_D)
E10003-E38-1W-W0020
- School version (GTK4_S)
E10003-E38-1W-W0030
- Main line module (HLM)
E20001-Y5980-P430













Note:

Details of the GTK equipment is for information purposes only and is subject to change without notice.

GAMMA Building Control – Future-proof electrical installations based on KNX

With our proven GAMMA Building Control, buildings can be easily modified to meet users' requirements – quickly, cost-effectively and in an energy-efficient manner. Lighting, shading, sun protection and the indoor environment of buildings can

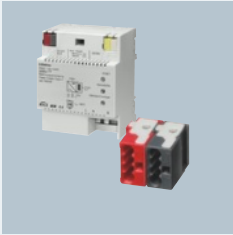
be installed in an energy-saving and user-friendly manner on the basis of KNX, an innovative electrical installation that also ensures persons and property are protected against hazards and damage.

GAMMA instabus KNX		Operation and Display	GAMMA instabus KNX		Heating, Cooling, Ventilation, Air-Conditioning
		Output Devices			Load Management
		Input Devices			Safety
		Combination Devices			Quick-Assembly System, Room Control Box
		Lighting			Gateways, Interface Converters
		Sun Protection, Anti-Glare Protection, Utilization of Daylight			Physical Sensors

GAMMA instabus KNX



Control and Automation Devices



System Products and Accessories



Counters



Radio System – GAMMA wave – KNX-RF



Synco living

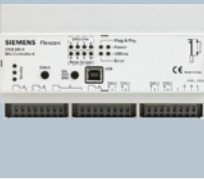
GAMMA wave / Synco living KNX-RF

EnOcean



Radio System – EnOcean

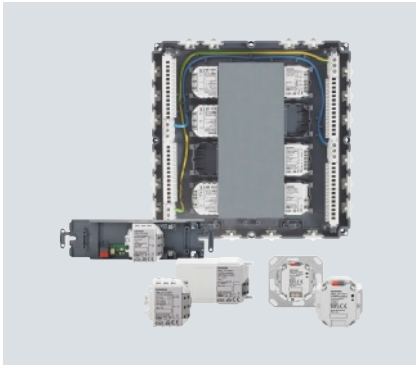
Flexcon



Flexcon

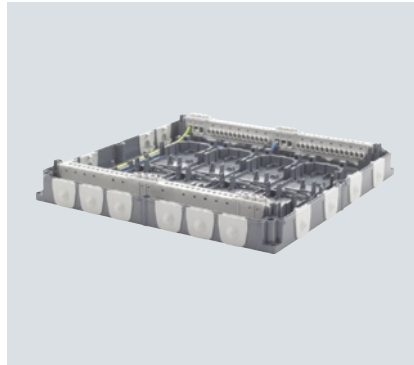
New developments

For all the latest developments, please visit: www.siemens.com/gamma



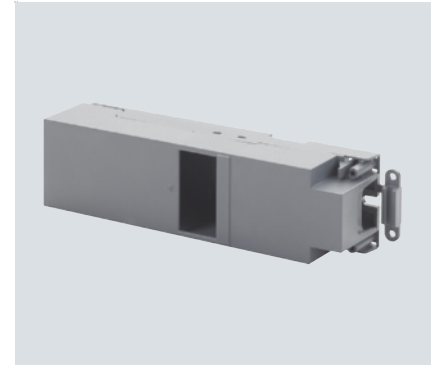
Modular room control

A new chapter in the history of GAMMA *instabus* – modular components for flexible implementation in the room control sector. Based on one platform → Page 10/1



Room control box

The room control box can accommodate up to eight sensor / actuator modules. → Page 10/5



Automation module box

The automation module box enables accommodation of a stand-alone sensor/actuator module. → Page 10/5



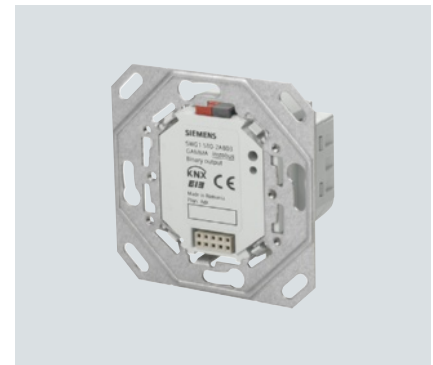
RS actuator modules

For use with the room control box and the automation module box. Available as binary output device, as well as shutter/blind actuator and universal dimmer. → Page 10/5



RL sensor/actuator modules

For use with the room control box and the automation module box. Available as binary input device, as well as switch actuator and shutter/blind actuator. → Page 10/5



Flush-mounting actuator module with mounting bracket

With integrated bus coupling unit. Available as binary output device, as well as switch actuator, shutter/blind actuator and universal dimmer. → Pages 2/9, 5/9, 6/7



Flush-mounting actuator module without mounting bracket

With integrated bus coupling unit. Available as binary output device, as well as switch actuator, shutter/blind actuator and universal dimmer. → Pages 2/9, 5/9, 6/7



UP 204 Contouch room controller

Convenient and efficient control of all management functions in a room with our multifunctional display/operating device. → Page 1/25



Presence detector

Convenient and energy saving – for applications in the areas of heating, ventilation, air-conditioning, lighting and sun protection → Page 5/21



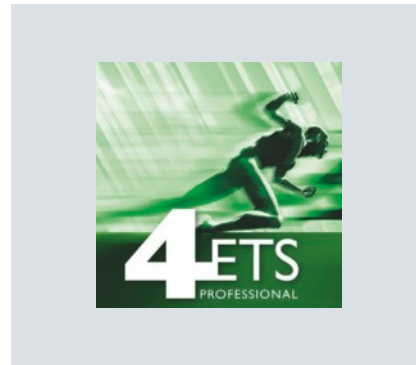
Power supply

Assured bus voltage via emergency power supply in compact design. → Page 14/9



Room temperature controllers

Flexible and convenient heating and cooling → Page 1/17



Technical product information

Tech. product database and description www.siemens.com/gamma-td

GAMMA *instabus* – available in all DELTA product ranges

Increased safety and comfort with maximum efficiency – enabled by the GAMMA *instabus* Building Control on the basis of the global KNX standard – and compatible with all DELTA programs.

The worldwide standard for home and building control



DELTA line

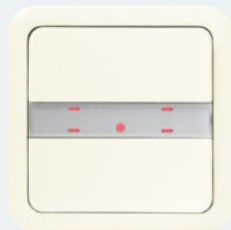


Titanium white



Aluminum metallic

DELTA profil

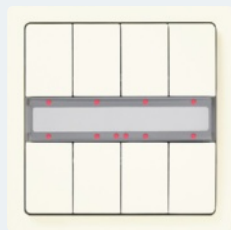


Titanium white



Silver

DELTA style



Titanium white



Platinum metallic

DELTA miro Artist, Design Tom's Drag



Titanium white



Aluminum metallic

DELTA miro glass



Crystal green/aluminum metallic



White/titanium white



Black/aluminum metallic



Orient/titanium white



Arena/titanium white

DELTA miro aluminum



Natural/aluminum metallic



Titanium/titanium white



Graphite/titanium white



Yellow oxide/titanium white

DELTA miro wood



Maple red/aluminum metallic



Maple/aluminum metallic



Beech/aluminum metallic



Cherry/aluminum metallic



Wenge/aluminum metallic

DELTA miro color




Titanium white











Aluminum metallic







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1/4	Pushbuttons
1/10	Pushbuttons (bus transceiver module BTM)
1/13	Pushbuttons for DELTA bus coupling units
1/13	Surface-mounting pushbuttons, IP44
1/15	Display and operation units for HCVA
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1/42	Visualization, server

Introduction

Overview

Devices	Application	Page
<p>Pushbuttons (bus transceiver module BTM)</p> 	<p>The new GAMMA Building Control <i>instabus</i> pushbutton generation is distinguished by a uniform bus transceiver module and a unique application program.</p>	<p>1/4</p>
<p>Display/operation units for HCVA</p> 	<p>Display and operation of room temperature control implemented via a REG 540 fan-coil unit controller. The complete i-system and DELTA profil and DELTA style product ranges are available.</p>	<p>1/15</p>
<p>Room temperature controllers</p> 	<p>Display, operation, control and temperature sensor in a single flush-mounting device. This offers optimum control of heating, cooling, ventilation and air-conditioning.</p>	<p>1/17</p>
<p>Pushbuttons with IR receiver decoder</p> 	<p>Pushbuttons with IR receiver pass on commands from the IR remote control.</p>	<p>1/21</p>
<p>Multifunction devices </p> 	<p>The UP 204 Contouch room controller allows the convenient operation, display and monitoring of lighting, shading, heating, cooling and air-conditioning.</p>	<p>1/25</p>
<p>Displays</p> 	<p>A space-saving combination that offers optimum display and operator friendliness.</p>	<p>1/26</p>
<p>Pushbutton accessories</p> 	<p>More information about rockers, frames and intermediate frames.</p>	<p>1/27</p>

Devices	Application	Page
<p>Touch panels</p> 	<p>Touch panels are visually attractive and easy to use.</p>	<p>1/37</p>
<p>Remote controls</p> 	<p>A range of room functions, such as lighting, can be wirelessly operated over either infrared or radio control.</p>	<p>1/40</p>
<p>Visualization, software</p> 	<p>Use a PC for display, operation and archiving – from one or more operator terminals.</p>	<p>1/41</p>
<p>Visualization, server</p> 	<p>Display and operation on the PC - quick and easy to install.</p>	<p>1/42</p>

1 Display and Operation Units

Pushbuttons

Pushbuttons (bus transceiver module BTM)

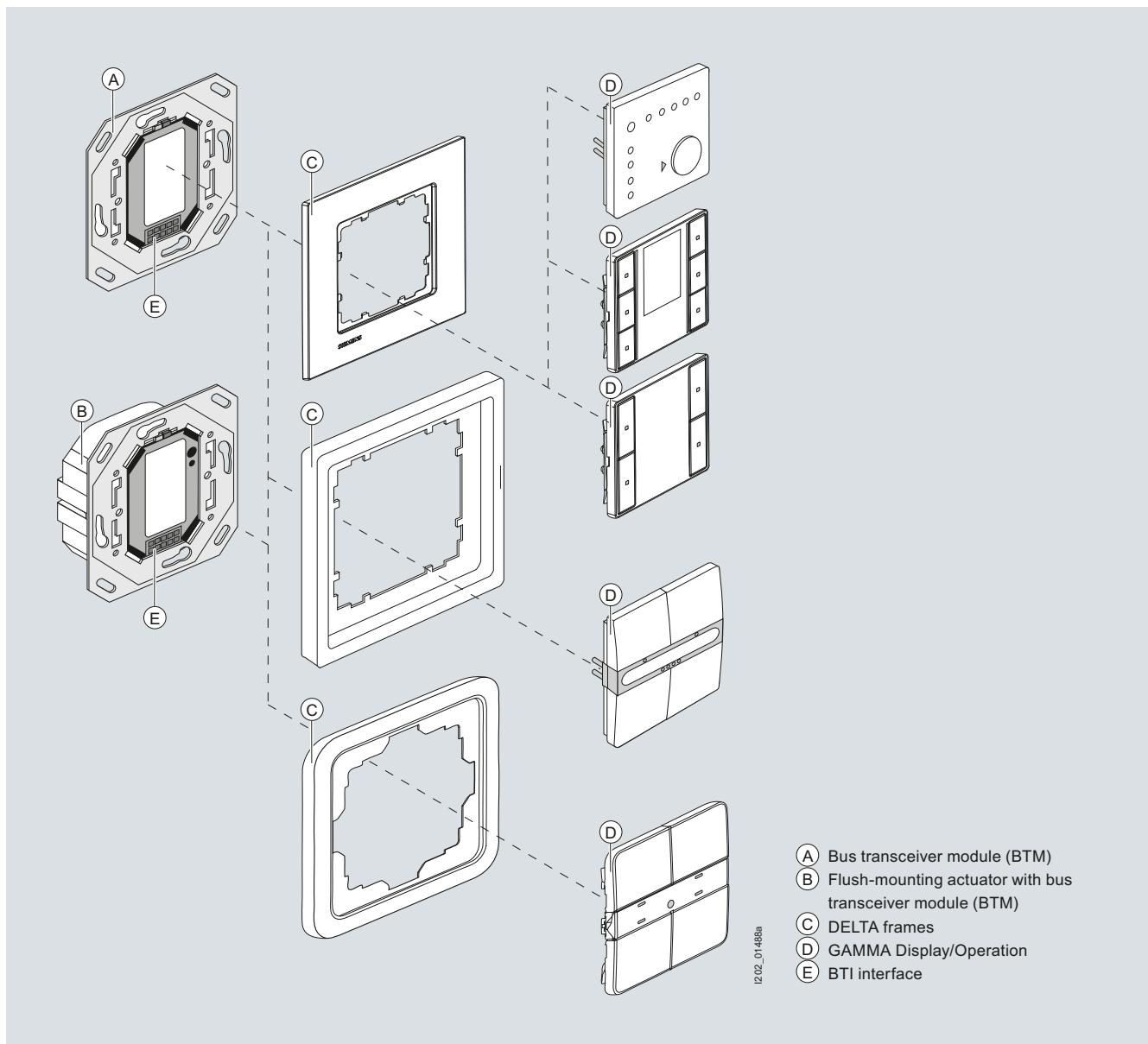
Overview

Modular bus transceiver module and flush-mounting actuator

A key feature of the GAMMA *instabus* is its uniform bus transceiver module. The bus transceiver module (BTM) can be used as a stand-alone unit, as well as a combined version in various devices of the flush-mounting actuator range.




Implementation of the BTI interface (Bus Transceiver Interface) with the bus transceiver module (BTM) ensures maximum flexibility and an impressive range of functions. Bus coupling units (BTM) and flush-mounting actuators with integrated bus transceiver modules (BTM) enable the use of GAMMA display/operator interfaces, such as pushbuttons, text displays, room temperature controllers and operation units in a wide range of designs. Thus, all GAMMA *instabus* operator interfaces with BTI interface in the design lines i-system and DELTA style/profil can be combined with either a bus transceiver module (BTM) or a flush-mounting actuator with bus transceiver module (BTM).

This reduces planning work and facilitates installation and commissioning. The application programs of the flush-mounting actuators are identical to those of the functionally equivalent devices from the modular room control range. This means that all devices have the same standard application program - regardless of mounting type - whether flush-mounting, with or without mounting frame - or whether designed for installation in the room control box and automation module box.



Pushbuttons (bus transceiver module BTM)

Technical specifications







Design	i-system								DELTA profil								DELTA style								
Type																									
Application program	909301																								
Enclosure data																									
Dimensions																									
• Height	mm	55								65										68					
• Width	mm	55								65										68					
• Depth	mm	11								14										14					
Display/control elements																									
Individual pushbuttons	2	2	4	4	6	6	6	6	2	2	4	4	8	8	8	8	2	2	4	4	8	8	8	8	8
Pushbutton pairs	1	1	2	2	3	3	3	3	1	1	2	2	4	4	4	4	1	1	2	2	4	4	4	4	4
Operation (v: vertical, h: horizontal)	h	h	h	h	h	h	h	h	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
LED per pushbutton pair for status indication	--	2	--	2	--	2	2	2	--	2	--	2	--	2	2	2	--	2	--	2	--	2	2	2	2
LED for orientation light (ON/OFF configurable/dimmable)	✓	✓	✓	✓	✓	✓	✓	✓	--	✓	--	✓	--	✓	✓	--	✓	✓	✓	✓	✓	✓	✓	✓	--
IR activity display configurable via LED	--	--	--	--	--	--	--	✓	--	--	--	--	--	--	--	✓	--	--	--	--	--	--	--	--	✓
LED brightness configurable and controllable via object	✓	✓	✓	✓	✓	✓	✓	✓	--	✓	--	✓	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bus connection																									
For plugging onto a bus transceiver module (BTM) or a flush-mounting actuator with bus transceiver module (BTM)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Inputs																									
IR receiver decoder	--	--	--	--	--	--	--	✓	--	--	--	--	--	--	--	✓	--	--	--	--	--	--	--	--	✓
IR channels in blocks of 64	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	--	16
Integrated room temperature sensor	--	--	--	--	--	--	✓	--	--	--	--	--	--	--	✓	--	--	--	--	--	--	--	--	✓	--
Input functions																									
Switching																									
Switching ON/OFF/OVER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pushbutton function (bell function)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dimming																									
Dimming with stop telegram (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
One-pushbutton dimming	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Value transmission																									
8 bit/percent/16 bit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Brightness value	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Temperature value	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Positively driven operation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Time-delayed transmission of a second telegram, depending on main function	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Button deactivation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shutter/blind																									
Shutter/blind control short button press, slat OPEN/CLOSED or STOP, long button press, UP/DOWN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
One-pushbutton sun protection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Scene																									
Integrated 8-bit scene control (channels)	--	--	--	--	--	--	8	8	--	--	--	--	--	--	--	8	8	--	--	--	--	--	--	8	8
Assignments per channel	--	--	--	--	--	--	8	8	--	--	--	--	--	--	--	8	8	--	--	--	--	--	--	8	8
Store and call up scene, 8-bit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Store and call up scene, 1-bit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Short or long button press (store/call up scene), configurable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Status																									
LED on/off/flashing depending on the value (1 bit/8 bit/16 bit)	--	✓	--	✓	--	✓	✓	✓	--	✓	--	✓	--	✓	✓	✓	--	✓	--	✓	--	✓	✓	✓	✓
Pushbutton operation display configurable via LED	--	✓	--	✓	--	✓	✓	✓	--	✓	--	✓	--	✓	✓	✓	--	✓	--	✓	--	✓	✓	✓	✓

Display and Operation Units

Pushbuttons

Pushbuttons (bus transceiver module BTM)






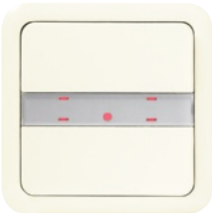

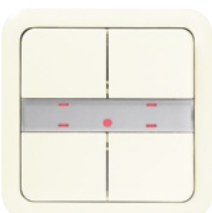
Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
kg									
i-system									
	UP 221/2 UP 221/2 pushbuttons ¹⁾²⁾ ® Single, neutral Versions								
		• Titanium white	A	5WG1 221-2DB12		1	1 unit	138	0.060
		• Aluminum metallic	A	5WG1 221-2DB32		1	1 unit	138	0.060
5WG1 221-2DB12									
	UP 221/3 UP 221/3 pushbuttons ¹⁾²⁾ ® Single, with status LED, neutral Versions								
		• Titanium white	A	5WG1 221-2DB13		1	1 unit	138	0.060
		• Aluminum metallic	A	5WG1 221-2DB33		1	1 unit	138	0.060
5WG1 221-2DB13									
	UP 222/2 UP 222/2 pushbuttons ¹⁾²⁾ ® Double, neutral Versions								
		• Titanium white	A	5WG1 222-2DB12		1	1 unit	138	0.060
		• Aluminum metallic	A	5WG1 222-2DB32		1	1 unit	138	0.060
5WG1 222-2DB12									
	UP 222/3 UP 222/3 pushbuttons ¹⁾²⁾ ® Double, with status LED, neutral Versions								
		• Titanium white	A	5WG1 222-2DB13		1	1 unit	138	0.060
		• Aluminum metallic	A	5WG1 222-2DB33		1	1 unit	138	0.060
5WG1 222-2DB13									
	UP 223/2 UP 223/2 pushbuttons ¹⁾²⁾ ® Triple, neutral Versions								
		• Titanium white	A	5WG1 223-2DB12		1	1 unit	138	0.060
		• Aluminum metallic	A	5WG1 223-2DB32		1	1 unit	138	0.060
5WG1 223-2DB12									
	UP 223/3 UP 223/3 pushbuttons ¹⁾²⁾ ® Triple, with status LED, neutral Versions								
		• Titanium white	A	5WG1 223-2DB13		1	1 unit	138	0.060
		• Aluminum metallic	A	5WG1 223-2DB33		1	1 unit	138	0.060
5WG1 223-2DB13									

1) The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.

2) The matching design frame must be ordered separately.

Pushbuttons (bus transceiver module BTM)

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
kg									
	UP 223/4 pushbuttons¹⁾²⁾  Triple, with status LED, scene module and room temperature sensor, neutral Versions								
			B	5WG1 223-2AB14		1	1 unit	138	0.060
			B	5WG1 223-2AB34		1	1 unit	138	0.060
5WG1 223-2AB14									
	UP 223/5 pushbuttons¹⁾²⁾  Triple, with status LED, scene module and IR receiver decoder, neutral Versions								
			A	5WG1 223-2DB15		1	1 unit	138	0.060
			A	5WG1 223-2DB35		1	1 unit	138	0.060
5WG1 223-2DB15									
DELTA profil									
	UP 241/2 pushbuttons¹⁾²⁾ (to be discontinued) Single, neutral Versions								
			A	5WG1 241-2AB12		1	1 unit	138	0.085
			B	5WG1 241-2AB72		1	1 unit	138	0.085
5WG1 241-2AB12									
	UP 241/3 pushbuttons¹⁾²⁾ (to be discontinued) Single, with status LED, neutral Versions								
			B	5WG1 241-2AB13		1	1 unit	138	0.085
			B	5WG1 241-2AB73		1	1 unit	138	0.055
5WG1 241-2AB13									
	UP 243/2 pushbuttons¹⁾²⁾ (to be discontinued) Double, neutral Versions								
			B	5WG1 243-2AB12		1	1 unit	138	0.085
			B	5WG1 243-2AB72		1	1 unit	138	0.085
5WG1 243-2AB12									
	UP 243/3 pushbuttons¹⁾²⁾ (to be discontinued) Double, with status LED, neutral Versions								
			B	5WG1 243-2AB13		1	1 unit	138	0.055
			B	5WG1 243-2AB73		1	1 unit	138	0.085
5WG1 243-2AB13									




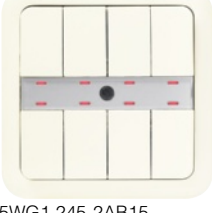

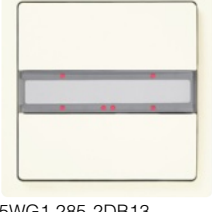
¹⁾ The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.

²⁾ The matching design frame must be ordered separately.

Display and Operation Units

Pushbuttons

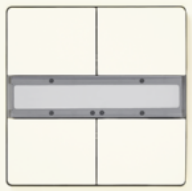
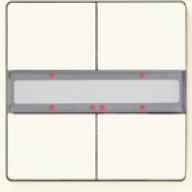
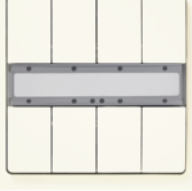
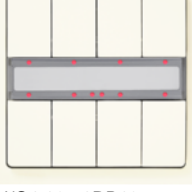
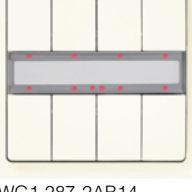
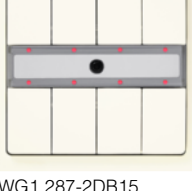
Pushbuttons (bus transceiver module BTM)

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	UP 245/2 pushbuttons ¹⁾²⁾ (to be discontinued) Quadruple, neutral Versions • Titanium white • Silver	B	5WG1 245-2AB12		1	1 unit	138	0.085
		B	5WG1 245-2AB72		1	1 unit	138	0.085
5WG1 245-2AB12		UP 245/3 pushbuttons ¹⁾²⁾ (to be discontinued) Quadruple, with status LED, neutral Versions • Titanium white • Silver	B	5WG1 245-2AB13		1	1 unit	0.085
5WG1 245-2AB13			B	5WG1 245-2AB73		1	1 unit	138
	UP 245/4 pushbuttons ¹⁾²⁾ (to be discontinued) Quadruple, with status LED, scene module and room temperature sensor, neutral Versions • Titanium white • Silver	B	5WG1 245-2AB14		1	1 unit	138	0.085
		B	5WG1 245-2AB74		1	1 unit	138	0.085
5WG1 245-2AB14		UP 245/5 pushbuttons ¹⁾²⁾ (to be discontinued) Quadruple, with status LED, scene module and IR receiver decoder, neutral Versions • Titanium white • Silver	A	5WG1 245-2AB15		1	1 unit	0.085
5WG1 245-2AB15			B	5WG1 245-2AB75		1	1 unit	138
DELTA style								
	UP 285/2 pushbuttons ¹⁾²⁾ Single, neutral Versions • Titanium white • Platinum metallic	A	5WG1 285-2DB12		1	1 unit	138	0.085
		A	5WG1 285-2DB42		1	1 unit	138	0.085
5WG1 285-2DB12		UP 285/3 pushbuttons ¹⁾²⁾ Single, with status LED, neutral Versions • Titanium white • Platinum metallic	A	5WG1 285-2DB13		1	1 unit	0.085
5WG1 285-2DB13			A	5WG1 285-2DB43		1	1 unit	138

¹⁾ The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.

²⁾ The matching design frame must be ordered separately.

Pushbuttons (bus transceiver module BTM)

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	UP 286/2 pushbuttons ¹⁾²⁾ Double, neutral Versions							
	• Titanium white	A	5WG1 286-2DB12		1	1 unit	138	0.085
	• Platinum metallic	A	5WG1 286-2DB42		1	1 unit	138	0.085
5WG1 286-2DB12								
	UP 286/3 pushbuttons ¹⁾²⁾ Double, with status LED, neutral Versions							
	• Titanium white	A	5WG1 286-2DB13		1	1 unit	138	0.085
	• Platinum metallic	A	5WG1 286-2DB43		1	1 unit	138	0.085
5WG1 286-2DB13								
	UP 287/2 pushbuttons ¹⁾²⁾ Quadruple, neutral Versions							
	• Titanium white	A	5WG1 287-2DB12		1	1 unit	138	0.085
	• Platinum metallic	A	5WG1 287-2DB42		1	1 unit	138	0.085
5WG1 287-2DB12								
	UP 287/3 pushbuttons ¹⁾²⁾ Quadruple, with status LED, neutral Versions							
	• Titanium white	A	5WG1 287-2DB13		1	1 unit	138	0.085
	• Platinum metallic	A	5WG1 287-2DB43		1	1 unit	138	0.085
5WG1 287-2DB13								
	UP 287/4 pushbuttons ¹⁾²⁾ Quadruple, with status LED, scene module and room temperature sensor, neutral Versions							
	• Titanium white	A	5WG1 287-2AB14		1	1 unit	138	0.085
	• Platinum metallic	B	5WG1 287-2AB44		1	1 unit	138	0.085
5WG1 287-2AB14								
	UP 287/5 pushbuttons ¹⁾²⁾ Quadruple, with status LED, scene module and IR receiver decoder, neutral Versions							
	• Titanium white	A	5WG1 287-2DB15		1	1 unit	138	0.085
	• Platinum metallic	A	5WG1 287-2DB45		1	1 unit	138	0.085
5WG1 287-2DB15								

¹⁾ The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.

²⁾ The matching design frame must be ordered separately.

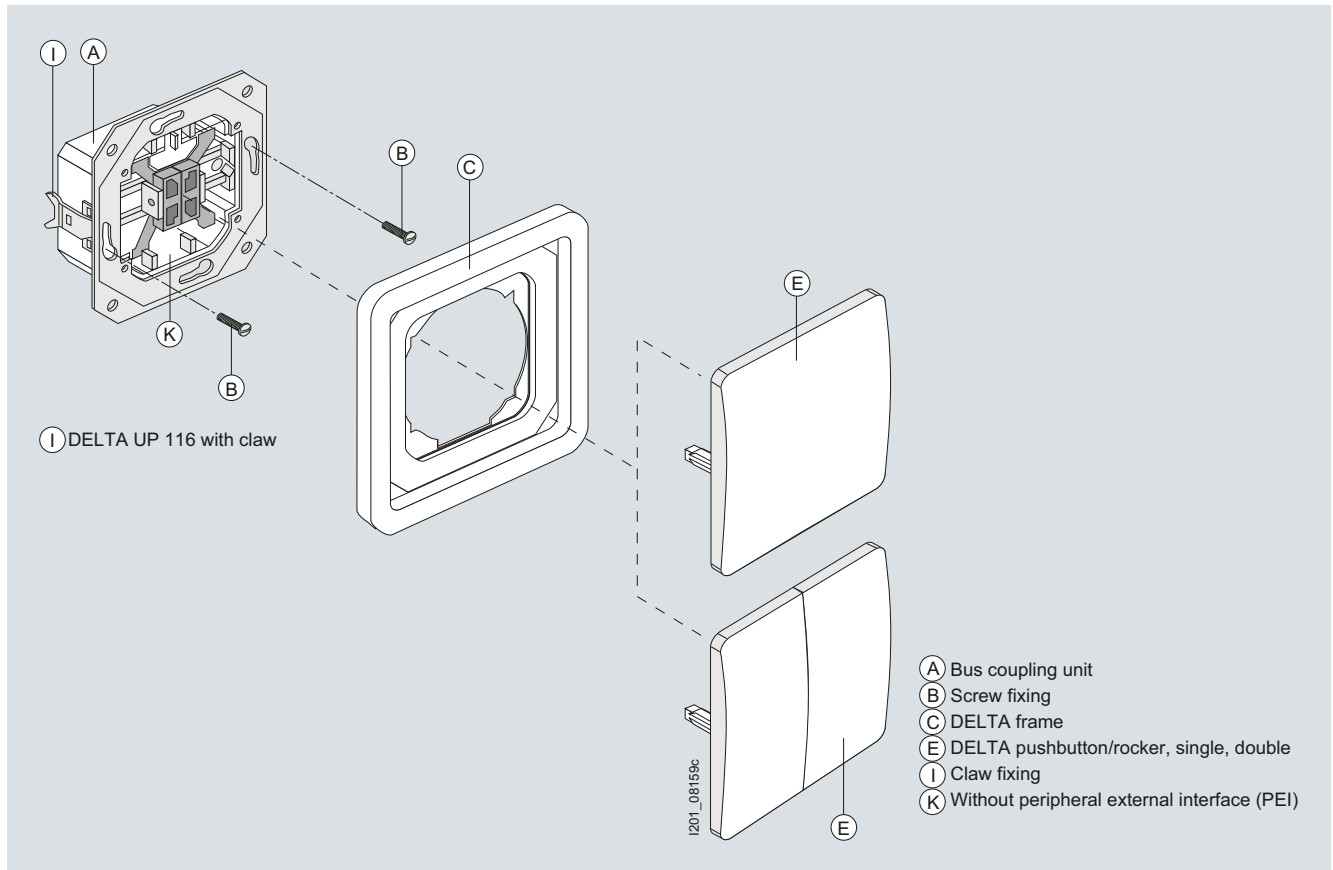
Display and Operation Units

Pushbuttons

Pushbuttons for DELTA bus coupling units





Overview

Operator interfaces with DELTA bus coupling unit



Pushbuttons for DELTA bus coupling units

Technical specifications

				
Type	UP 116	UP 116/11	UP 116/21	UP 116/31
Application program	211001	221001	210F01	220F01
Enclosure data				
For installation in flush-mounting switch and socket boxes with Ø = 60 mm	✓	✓	✓	✓
Dimensions				
• Height	mm 71	71	71	71
• Width	mm 71	71	71	71
• Depth	mm 32	32	32	32
Mounting type				
Claw fixing	✓	✓	✓	✓
Screw fixing	✓	✓	✓	✓
Display/control elements				
LED per pushbutton pair for status indication or configurable as orientation light	1	1	1	1
Mounting of rockers from the DELTA product ranges	✓	✓	✓	✓
Rocker button, intermediate position (pushbutton with 2 operating points)	1	2	--	--
Rocker button, pushbutton position (pushbutton with 1 operating point)	--	--	1	2
Bus connection				
Integrated bus coupling units	✓	✓	✓	✓
General functions				
Max. number of group addresses	4	8	3	4
Max. number of assignments	4	8	3	5
Input functions				
Switching				
Switching ON/OFF	✓	✓	✓	✓
Switching OVER	✓	✓	✓	✓
Dimming				
Dimming with stop telegram (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	✓	✓	--	✓
Dimming with cyclic transmission (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	✓	✓	--	✓
Shutter/blind				
Shutter/blind control Short button press, slat OPEN/CLOSED or STOP Long button press, UP/DOWN	✓	✓	--	✓
Scene				
Store and call up scene, 1-bit in conjunction with scene module	1	2	--	--
Short or long button press (store/call up scene), configurable	✓	✓	--	--
Status				
Display of any status objects (1-bit)	✓	--	--	--
Display of pushbutton objects	✓	--	✓	✓

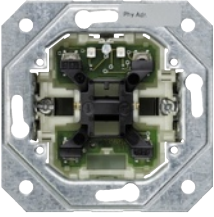
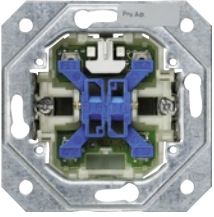
For selection and ordering data, see page 1/12.

Display and Operation Units

Pushbuttons



Pushbuttons for DELTA bus coupling units

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 5WG1 116-2AB01	UP 116 DELTA UP 116 bus coupling units¹⁾							
	UP 116/21 Single							
	Versions							
	<ul style="list-style-type: none"> • Intermediate position • Pushbutton position 		A	5WG1 116-2AB01		1	1 unit	139
Accessories								
IP44 sealing sets for rockers		A	5TG4 324		1	1/10 sets	135	0.016
<ul style="list-style-type: none"> • For single or double rockers • One set contains four insert seals 								
 5WG1 116-2AB11	UP 116/11 DELTA UP 116 bus coupling units¹⁾							
	UP 116/31 Double							
	Versions							
	<ul style="list-style-type: none"> • Intermediate position • Pushbutton position 		A	5WG1 116-2AB11		1	1 unit	139
Accessories								
IP44 sealing sets for rockers		A	5TG4 324		1	1/10 sets	135	0.016
<ul style="list-style-type: none"> • For single or double rockers • One set contains four insert seals 								

¹⁾ The required single or multiple rocker (with or without window) and the frame in matching DELTA design must be ordered separately (see [Catalog ET D1](#)).

Technical specifications

		
Type	AP 115/21	AP 115/31
Application program	210F01	220F01
Enclosure data		
Surface-mounting enclosures	✓	✓
Degree of protection	IP44	IP44
Dimensions		
• Height	mm 75	75
• Width	mm 66	66
• Depth	mm 52	52
Display/control elements		
LED per pushbutton pair for status indication or configurable as orientation light	1	--
Rocker button, pushbutton position (pushbutton with 1 operating point)	1	2
Bus connection		
Integrated bus coupling units	✓	✓
General functions		
Max. number of group addresses	3	4
Max. number of assignments	3	5
Input functions		
Switching		
Switching ON/OFF	✓	✓
Switching OVER	✓	✓
Dimming		
Dimming with stop telegram (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	--	✓
Dimming with cyclic transmission (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	--	✓
Shutter/blind		
Shutter/blind control Short button press, slat OPEN/CLOSED or STOP Long button press, UP/DOWN	--	✓
Status		
Display of pushbutton objects	✓	✓


For selection and ordering data, [see page 1/14](#).

Display and Operation Units

Pushbuttons

Surface-mounting pushbuttons, IP44



Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
								kg
	AP 115/21 AP 115 pushbuttons Single, pushbutton position, IP44	A	5WG1 115-3AB21		1	1 unit	139	0.143
5WG1 115-3AB21								
	AP 115/31 AP 115 pushbuttons Double, pushbutton position, IP44	A	5WG1 115-3AB31		1	1 unit	139	0.144
5WG1 115-3AB31								

Display and operation units for HCVA



Technical specifications

	i-system	DELTA profil	DELTA style
Dimensions			
• Height	mm 55	65	68
• Width	mm 55	65	68
• Depth	mm 16	16	16

Type	Description
	<p>Fan-coil unit controllers for office and hotel</p> <ul style="list-style-type: none"> For the display and operation of the room temperature control using a REG 540 fan-coil unit controller 5 yellow LEDs for the display of manually set fan speed step or automatic speed input
 <p>UP 237E UP 252E UP 254E</p>	<p>Fan-coil unit controllers for offices</p> <ul style="list-style-type: none"> Pushbutton for switching the room operating mode between comfort and energy-saving mode and for setting the required fan speed step or the automatic input of the speed step by the fan-coil unit controller
 <p>UP 237F UP 252F UP 254F</p>	<p>Fan-coil unit controllers for hotels</p> <ul style="list-style-type: none"> Pushbutton for setting the required fan speed step or for automatic entry of the speed step by the fan-coil unit controller

- 10-pole BTI plug (BTI - Bus Transceiver Interface) for plugging onto a bus transceiver module (BTM) or UP actuator with bus transceiver module (BTM)
- Rotary button for setting the room temperature setpoint value within a user-defined range
- 3 green LEDs for the display of the current room operating mode (comfort, energy-saving or protection mode)
- Rotary button for setting the room temperature setpoint value within the range of 16 ... 26 °C
- 2 green LEDs for indicating whether the room is being heated or cooled

Selection and ordering data





Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
i-system								
	<p>UP 237E UP 237E fan-coil unit controllers for offices¹⁾²⁾</p> <p>Versions</p> <ul style="list-style-type: none"> Titanium white Aluminum metallic 	A	5WG1 237-2EB11		1	1 unit	138	0.050
		A	5WG1 237-2EB31		1	1 unit	138	0.030
		5WG1 237-2EB11						
	<p>UP 237F UP 237F fan-coil unit controllers for hotels¹⁾²⁾</p> <p>Versions</p> <ul style="list-style-type: none"> Titanium white Aluminum metallic 	A	5WG1 237-2FB11		1	1 unit	138	0.049
		A	5WG1 237-2FB31		1	1 unit	138	0.050
		5WG1 237-2FB11						

¹⁾ The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.

²⁾ The matching design frame must be ordered separately.

Display and Operation Units

Display and operation units for HCVA




Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
DELTA profil								
	UP 252E	UP 252E fan-coil unit controllers for offices¹⁾²⁾ (to be discontinued)						
		Versions						
		• Titanium white • Silver	A A	5WG1 252-2EB11 5WG1 252-2EB71		1 1	1 unit 1 unit	138 138
5WG1 252-2EB11								
	UP 252F	UP 252F fan-coil unit controllers for hotels¹⁾²⁾ (to be discontinued)						
		Versions						
		• Titanium white • Silver	A A	5WG1 252-2FB11 5WG1 252-2FB71		1 1	1 unit 1 unit	138 138
5WG1 252-2FB11								
DELTA style								
	UP 254E	UP 254E fan-coil unit controllers for offices¹⁾²⁾						
		Versions						
		• Titanium white/metallic silver • Platinum metallic	A B	5WG1 254-2EB11 5WG1 254-2EB41		1 1	1 unit 1 unit	138 138
5WG1 254-2EB11								
	UP 254F	UP 254F fan-coil unit controllers for hotels¹⁾²⁾						
		Versions						
		• Titanium white/metallic silver • Platinum metallic	A B	5WG1 254-2FB11 5WG1 254-2FB41		1 1	1 unit 1 unit	138 138
5WG1 254-2FB11								

¹⁾ The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.




²⁾ The matching design frame must be ordered separately.

Technical specifications

	i-system	DELTA style	RDF301, RDF301.50	RDG100KN, RDG400KN	RDU341
Dimensions					
• Height	mm 55	68	86	128	86
• Width	mm 55	68	86	93	86
• Depth	mm 16	16	57	30.8	57









Type	Description
 UP 237K UP 254K	UP 237K, UP 254K room temperature controllers <ul style="list-style-type: none"> • Integrated room temperature sensors • Control can be set as a two-point control and/or continuous-action control (P or PI algorithm), for heating only, for cooling only, or for heating and cooling mode • Operating modes that can be switched via KNX: comfort mode, pre-comfort mode, energy-saving mode and frost or heat protection mode • Presence pushbutton to locally switch between comfort and pre-comfort mode or comfort and energy-saving mode and to extend comfort mode after operating energy-saving or protection mode • Pushbutton for switching over between manual and automatic mode • The room temperature setpoint value for comfort mode can be set via an interchangeable rotary button (+/-) on the controller and via the KNX • Basic setpoint of the room temperature for comfort mode which can be set via the KNX • Setpoint value for comfort mode in °C which can be set via an interchangeable rotary button on the controller • Adjustable dead zone between the heating setpoint and the cooling setpoint for comfort mode • Two-level heating or cooling • Output of the control variable(s) either as an ON/OFF switch command or as a positioning command in the range of 0 ... 100 % • 5 LEDs to display manual mode and the current operating modes • 4 LEDs to display heating/cooling valve open, dew point alarm and open window • For plugging onto a bus transceiver module (BTM) or a flush-mounting actuator with bus transceiver module (BTM)
 UP 252H	UP 252H multifunction controllers <ul style="list-style-type: none"> • For direct control of the valves and the fan of the fan coil or a split unit • Preselection of the required control function of directly connected heaters/refrigerators using the ETS • Integrated room temperature sensors • P or PI control of the room temperature for heating, cooling or heating and cooling mode • Adjustment of comfort, pre-comfort, night and protection modes via the bus • Adjustment of temperature setpoint for comfort mode via the bus • Adjustment of temperature setpoints for all other operating modes via the ETS • Fixed dead zone (1K) between heating and cooling in comfort mode • Presence pushbutton to locally switch over between comfort and pre-comfort and for extending comfort mode through activation of the night mode • Pulse-width modulated control signal output • Eight operator buttons for the manual adjustment of the comfort temperature setpoint, for the selection of the operating mode and ventilator speed step and the ON/OFF switching of a load (e. g. room lighting) • One red status LED per operator button • One LCD with three digits for the representation of the current setpoint or room temperature • One binary input for the direct connection of a floating window contact • One binary input for 12 V DC for the direct connection of a presence detector • One analog input for the optional connection of a temperature sensor mounted in the intake air flow of a ventilator convector (NTC sensor, 10 kOhm at 25°C) • Five binary outputs 24 V AC (relay contacts for 2A, p.f. = 1) for the control of electrothermal valve actuators, for the switching of ventilator speed steps, etc. depending on the configured application. • Integrated bus coupling units • Bus connection via bus terminal • Integrated power supply for 24 V AC • Double hanging bracket for mounting on two combined hollow-wall or flush-mounting boxes with at least Ø 58 mm and at least 40 mm depth or an equivalent double flush-mounting box
 RDF301 RDF301.50	RDF301, RDF301.50 room thermostats with KNX communication <ul style="list-style-type: none"> • Room thermostat with LCD for flush mounting for 2-tube ventilator convectors and compressors of direct evaporators <ul style="list-style-type: none"> - For heating and/or cooling applications - KNX communication - Outputs for 2 or 3-step actuating signals - Outputs for 1 or 3-stage ventilators - 2 multifunctional inputs for keycard contact, external room/return flow sensors, heating/cooling switchover, switchover mode, window contact ON/OFF, dew point monitoring, electrical heater activated, fault contact - Operating modes: Comfort, energy-saving and protection function - Automatic or manual heating/cooling mode switchover - Adjustable commissioning and control parameters - Minimum and maximum setpoint limiting - Backlit display - Enclosure color: Signal white (RAL 9003) • Selectable application: <ul style="list-style-type: none"> - 2-tube systems - 2-tube systems with electrical heating - 4-tube systems • Operating voltage: 230 V AC, 50/60 Hz • Power consumption: 4 VA • Actuating signal: 2-step, 3-step • Control algorithm Two-step/PI • Ambient temperature for operation: 0 ... 50 °C • Setpoint setting range: 5 ... 40 °C • Temperature measuring range: 0 ... 49 °C • Differential gap: 0.5 ... 6 K • Communication: KNX (S-mode and LTE mode with Synco 700) • Integrated bus coupling units • Analog inputs: NTC 3k, switch • Relay outputs: Ventilator: NO contacts, not voltage-free, valve: NO contacts, not voltage-free • Relay outputs: 5 x 230 V AC, 5 (2) A • For mounting on square ARG71 flush-mounting box (BS4662), distance of fixing holes 60.3 mm • Degree of protection: IP30 <p>RDF301.50 room thermostat in addition:</p> <ul style="list-style-type: none"> • Pushbutton for light and shutter/blinds

Room temperature controllers

Type	Description
 RDU341	RDU341 room thermostats with KNX communication for variable volume flow application VVS <ul style="list-style-type: none"> Room thermostat for variable volume flow application <ul style="list-style-type: none"> Modulating PI control Room or return air temperature control Outputs for a 0 ... 10 V DC drive and 230 V AC electrical heating (ON-OFF) Automatic or manual heating/cooling mode switchover Operating modes: Comfort, energy-saving and protection function 2 multifunctional inputs for keycard contact, external room/return flow sensors, heating/cooling switchover, switchover mode, window contact ON/OFF, dew point monitoring, electrical heater activated, fault contact Adjustable commissioning and control parameters Minimum and maximum setpoint limiting Adjustable setpoint limiting for min. and max. air volume flow signal 0 ... 10 V DC Optional output signal reversal KNX communication Selectable application: <ul style="list-style-type: none"> Single-channel systems Single-channel systems with electrical heating <ul style="list-style-type: none"> Operating voltage: 24 V AC, 50/60 Hz Power consumption: 4 VA Actuating signal: 0 ... 10 V DC Control algorithm P/PI Ambient temperature for operation: 0 ... 50 °C Setpoint setting range: 5 ... 40 °C Temperature measuring range: 0 ... 49 °C Differential gap: 0.5 ... 6 K Communication: KNX (S-mode and LTE mode with Synco 700) Integrated bus coupling units Analog input signals: NTC 3k, switch Analog output: 1 x 0 ... 10 V DC, max. 1 mA Relay output: NO contact, floating Relay output: 1 x 230 V AC, max. 5 (2) A For mounting on square ARG71 flush-mounting box (BS4662), distance of fixing holes 60.3 mm Degree of protection: IP30
 RDG100KN	RDG100KN room thermostats with KNX communication Ventilator convectors and universal applications <ul style="list-style-type: none"> Operating modes: Comfort, energy-saving and protection mode 2-step, 3-step or PWM control outputs Ventilator speed automatic or manual for 1 or 3-stage ventilators 3 multifunctional inputs for keycard contact, external room/return flow sensors, heating/cooling switchover, switchover mode, window contact ON/OFF, dew point monitoring, electrical heater activated, fault contact Automatic or manual heating/cooling mode switchover Adjustable commissioning and control parameters Minimum and maximum limiting of setpoint Backlit display Selectable application: <ul style="list-style-type: none"> 2-tube systems 2-tube systems with electrical heating 2-tube systems with radiator/floor heating 4-tube systems 4-tube systems with electrical heating 2-stage heating/cooling systems <ul style="list-style-type: none"> Operating voltage: 230 V AC, 50/60 Hz Power consumption: 18 VA Control algorithm Two-step/PI Ambient temperature for operation: 0 ... 50 °C Setpoint setting range: 5 ... 40 °C Temperature measuring range: 0 ... 49 °C Differential gap: Heating: 0.5 ... 6 K, cooling: 0.5 ... 6 K Communication: KNX (S-mode and LTE mode with Synco 700) Integrated bus coupling units Analog input signals: NTC 3k, switch Digital input: 1 Relay outputs: Ventilator: 1 or 3-stage Relay outputs: 3 x 230 V AC, 5 (4) A Triac outputs: Valve, el. radiator, 2-step, PWM, 3-step Number of Triac outputs: 3 x 230 V AC, max. 1 A Mounting: directly on the wall, using screws Degree of protection: IP30
 RDG400KN	RDG400KN room thermostats with KNX communication Variable volume flow for heating and cooling <ul style="list-style-type: none"> Constant PI control Control depending on the room or return air temperature Power supply 0 ... 10 V DC for a variable volume flow drive and additional output for 2-step, PWM or 3-step or output for 3-step variable volume flow drive and additional output 0 ... 10 V DC Automatic or manual heating/cooling mode switchover Operating modes: Comfort, energy-saving and protection mode 2 multifunctional inputs for keycard contact, external room/return flow sensor (1x), heating/cooling switchover, switchover mode, window contact ON/OFF, dew point monitoring, electrical heater activated, fault contact 1 input 0 ... 10 V DC for position feedback - air flap Adjustable commissioning and control parameters Minimum and maximum limiting of setpoint Minimum and maximum limiting of air flow signal Reversal of output signal (0 ... 10 V DC) as option Backlit display Selectable application: <ul style="list-style-type: none"> Single-channel systems Single-channel systems with electrical heating Single-channel systems and radiator/floor heating Single-channel systems with air heater/cooler <ul style="list-style-type: none"> Operating voltage: 24 V AC, 50/60 Hz Power consumption: 2 VA Control algorithm P/PI Ambient temperature for operation: 0 ... 50 °C Setpoint setting range: 5 ... 40 °C Temperature measuring range: 0 ... 49 °C Differential gap: Heating: 0.5 ... 6 K, cooling: 0.5 ... 6 K Communication: KNX (S-mode and LTE mode with Synco 700) Integrated bus coupling units Analog inputs: NTC 3k, 0 ... 10 V DC Analog output: variable volume flow drive, electrical heater Analog output: 1 x 0 ... 10 V DC, max. ±1 mA Digital input: 1 Triac output: variable volume flow drive, valve, el. heater, 2-step, PWM, 3-step Triac output: 1 x 24 V AC, max. 1 A Mounting: directly on the wall, using screws Degree of protection: IP30

Room temperature controllers

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg						
i-system														
	UP 237K UP 237 room temperature controllers ¹⁾²⁾  Versions													
			• Titanium white						A	5WG1 237-2KB11	1	1 unit	139	0.062
			• Aluminum metallic						A	5WG1 237-2KB31	1	1 unit	139	0.062
5WG1 237-2KB11														
DELTA style														
	UP 254K UP 254K room temperature controllers ¹⁾²⁾  Versions													
			• Titanium white/metallic silver						A	5WG1 254-2KB13	1	1 unit	139	0.072
			• Platinum metallic						A	5WG1 254-2KB43	1	1 unit	139	0.072
5WG1 254-2KB13														
Design-independent														
	UP 252H UP 252H multifunction controllers ³⁾ (to be discontinued)													
			C						5WG1 252-2HV11	1	1 unit	139	0.339	
5WG1 252-2HV11														
	RDF301 RDF301 room thermostats with KNX communication ⁴⁾ For 2 or 4-tube ventilator convectors or direct evaporators													
			B						S55770-T 104	1	1 unit	A08	0.320	
S55770-T 104														
	RDF301.504 RDF301.504 room thermostats with KNX communication ⁴⁾ 2 or 4-tube ventilator convectors or direct evaporators, four pushbuttons for switching lights and shutters/blinds													
			B						S55770-T 105	1	1 unit	A08	0.320	
S55770-T 105														
	RDU341 RDU341 room thermostats with KNX communication ⁴⁾ for variable volume flow application VVS													
			B						S55770-T 106	1	1 unit	A08	0.243	
S55770-T 106														

1) The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.




2) The matching design frame must be ordered separately.

3) The frame is included in delivery.

4) The matching ARG71 flush-mounting box must be ordered separately, see page 1/20.

Display and Operation Units

Room temperature controllers

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	ARG71 ARG71 flush-mounting boxes For all RDU/RDF acc. to BS4662 Dimensions (H x W x D): 75 x 75 x 51 mm	B	S55770-T 137		1	1 unit	A08	0.081
S55770-T 137								
	RDG100KN RDG100KN room thermostats with KNX communication Ventilator convectors and universal applications	B	S55770-T 163		1	1 unit	A08	0.380
S55770-T 163								
	RDG400KN RDG400KN room thermostats with KNX communication Variable volume flow for heating and cooling	B	S55770-T 165		1	1 unit	A08	0.337
S55770-T 165								

Pushbuttons with IR receiver decoder

Overview

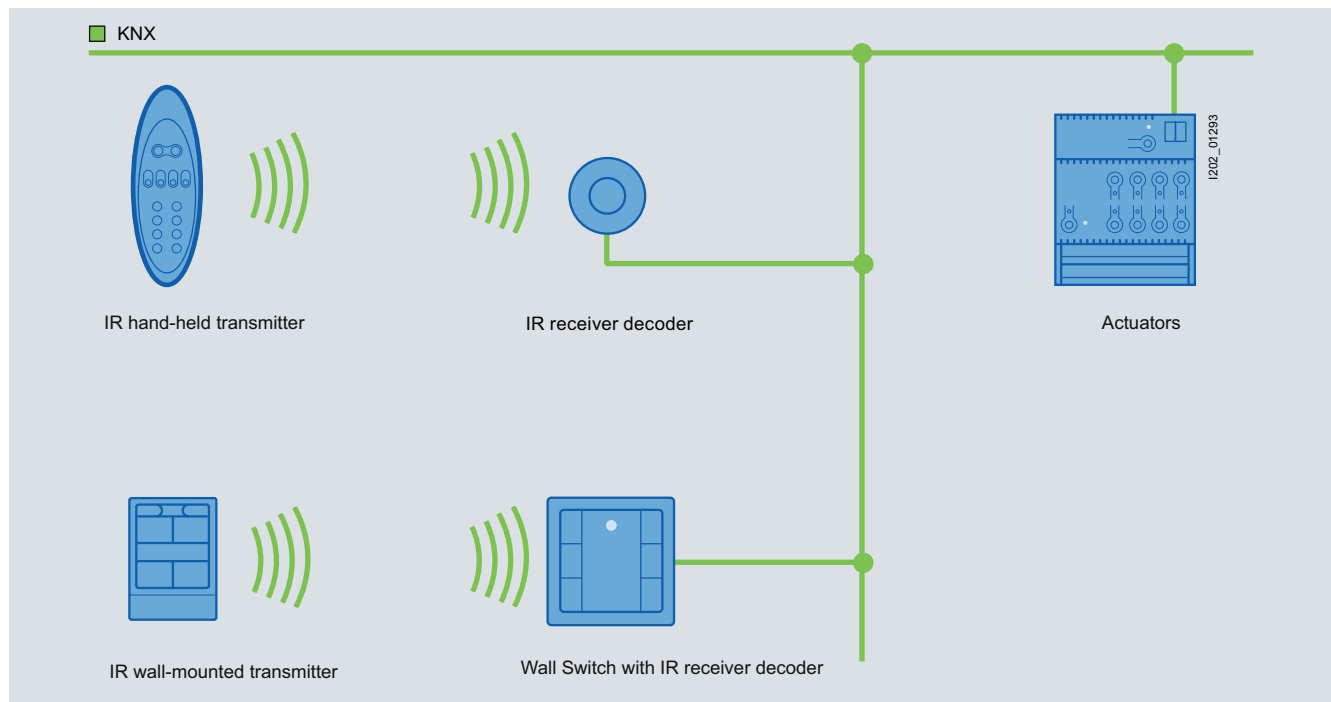
IR products

IR products are available for the remote control of room functions. Compared to radio solutions, IR is particularly interesting because

- there are applications in which radio-based remote control is not permitted (e. g. hospitals)
- the frequencies used are not allowed in all countries

Application

- Remote control of room functions: Lighting, sun protection, room climate, scenes, etc.
- Mounting on "movable" walls
- Use in hospitals where radio solutions are often prohibited
- Additional room functions which can be operated only by remote control (e. g. by service personnel, doctors, teachers, etc.)



System overview of IR products


Display and Operation Units

Pushbuttons with IR receiver decoder



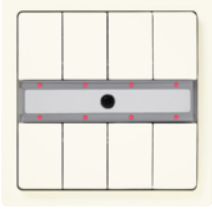
Technical specifications

Design	i-system	DELTA profil	DELTA style
Type	UP 223/5	UP 245/5	UP 287/5
Application program	909301		
Enclosure data			
Dimensions			
• Height	mm 55	65	68
• Width	mm 55	65	68
• Depth	mm 11	14	14
Display/control elements			
Individual pushbuttons	6	8	8
Pushbutton pairs	3	4	4
Operation (v: vertical, h: horizontal)	h	v	v
LED per pushbutton pair for status indication	2	2	2
LED for orientation light (ON/OFF configurable/dimmable)	✓	--	--
IR activity display configurable via orientation LED	✓	✓	✓
LED brightness configurable and controllable via object	✓	✓	✓
Bus connection			
For plugging onto a bus transceiver module (BTM) or a flush-mounting actuator with bus transceiver module (BTM)	✓	✓	✓
Inputs			
IR receiver decoder	✓	✓	✓
IR channels in blocks of 64	16	16	16
Input functions			
Switching			
Switching ON/OFF/OVER	✓	✓	✓
Pushbutton function (bell function)	✓	✓	✓
Dimming			
Dimming with stop telegram (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	✓	✓	✓
One-pushbutton dimming	✓	✓	✓
Value transmission			
8 bit/percent/16 bit	✓	✓	✓
Brightness value	✓	✓	✓
Temperature value	✓	✓	✓
Positively driven operation	✓	✓	✓
Time-delayed transmission of a second telegram, depending on main function	✓	✓	✓
Button deactivation	✓	✓	✓
Shutter/blind			
Shutter/blind control short button press, slat OPEN/CLOSED or STOP, long button press, UP/DOWN	✓	✓	✓
One-pushbutton sun protection	✓	✓	✓
Scene			
Integrated 8-bit scene control (channels)	8	✓	8
Assignments per channel	8	8	8
Store and call up scene, 8-bit	✓	✓	✓
Store and call up scene, 1-bit	✓	✓	✓
Short or long button press (store/call up scene), configurable	✓	✓	✓
Status			
LED on/off/flashing depending on the value (1 bit/8 bit/16 bit)	✓	✓	✓
Pushbutton operation display configurable via LED	✓	✓	✓

Pushbuttons with IR receiver decoder

Type	Description
 S 450	<p>S 450 IR receiver decoders</p> <ul style="list-style-type: none"> For receiving IR signals transmitted from IR wall-mounted transmitters or IR hand-held transmitters Conversion of IR signals received from up to 32 IR channels into bus telegrams Configurable evaluation of the IR signals per IR channel as single button or as button pair Per IR button selectable functions switching over, switching ON, switching OFF, switching ON or OFF at either rising or falling edge, single button dimming, single button sun protection control, 1-bit scene control, 8-bit scene control, 8-bit value, percentage value, 16-bit value, temperature value, brightness value, positively driven operation Depending on the selected main function: per IR button selectable additional function executed either after a time delay (time delay configurable from 100 ms to 6550 s) or alternatively on a long button press Per IR button pair selectable functions 2-button dimming with stop telegram, 2-button sun protection control, transmission variable 8-bit value, transmission variable percentage value, 1-bit scene control, 8-bit scene control, positively driven operation Depending on the selected main function: per IR button selectable additional function executed after a time delay (time delay configurable from 100 ms to 6550 s) Depending on the selected main function: per IR button selectable additional functions switching on, switching off, 8-bit value, percentage value, 16-bit value, temperature value, brightness value, recall/save 1-bit scene 1, recall/save 1-bit scene 2, recall 8-bit scene, positively driven on, positively driven off, deactivate positively driven operation Blocking can selected for each IR button and configured individually Bus connection via bus terminal Bus-powered electronics Including clamping spring and rosette for installation in ceilings, walls or lights for commissioning when mounted, a magnet is required, such as a 5WG1 590-8AH01 programming magnet Dimensions (H x W x L): 26 x 25 x 75 mm

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
								kg
i-system								
	UP 223/5 UP 223/5 pushbuttons ¹⁾²⁾ ® Triple, with status LED, scene module and IR receiver decoder, neutral	Versions						
		• Titanium white	A	5WG1 223-2DB15	1	1 unit	138	0.060
		• Aluminum metallic	A	5WG1 223-2DB35	1	1 unit	138	0.060
5WG1 223-2DB15								
DELTA profil								
	UP 245/5 UP 245/5 pushbuttons ¹⁾²⁾ (to be discontinued) Quadruple, with status LED, scene module and IR receiver decoder, neutral	Versions						
		• Titanium white	A	5WG1 245-2AB15	1	1 unit	138	0.085
		• Silver	B	5WG1 245-2AB75	1	1 unit	138	0.085
5WG1 245-2AB15								
DELTA style								
	UP 287/5 UP 287/5 pushbuttons ¹⁾²⁾ Quadruple, with status LED, scene module and IR receiver decoder, neutral	Versions						
		• Titanium white	A	5WG1 287-2DB15	1	1 unit	138	0.085
		• Platinum metallic	A	5WG1 287-2DB45	1	1 unit	138	0.085
5WG1 287-2DB15								






1) The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.

2) The matching design frame must be ordered separately.

Display and Operation Units

Pushbuttons with IR receiver decoder

Accessories

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
	S 425/72	S 425/72 IR hand-held transmitters¹⁾	B	5WG1 425-7AB72		1	1 unit	139	0.098
5WG1 425-7AB72									
	AP 420/3	AP 420/3 IR wall-mounted transmitters¹⁾ Single, with 2 facing pushbutton rockers	B	5WG1 420-3AB13		1	1 unit	139	0.130
	AP 421/3	AP 421/3 IR wall-mounted transmitters¹⁾ Double, with 4 facing pushbutton rockers	B	5WG1 421-3AB13		1	1 unit	139	0.131
	AP 422/3	AP 422/3 IR wall-mounted transmitters¹⁾ Quadruple, with 8 facing pushbutton rockers	B	5WG1 422-3AB13		1	1 unit	139	0.131
5WG1 420-3AB13									
	S 450	S 450 IR receiver decoders²⁾³⁾	B	5WG1 450-7AB03		1	1 unit	139	0.056
5WG1 450-7AB03									
Accessories									
		Programming magnet for S 450 IR receiver decoders	C	5WG1 590-8AH01		1	1 unit	139	0.012

¹⁾ The 2 batteries of type LR03/AAA (1.5 V) required for operation are not included in delivery.


²⁾ For technical specifications, see [Chapter "Gateways, interface converters"](#).

³⁾ The programming magnet must be ordered separately.






Multifunction devices

Technical specifications

Type	Description
 UP 204	<p>UP 204 Contouch room controller</p> <ul style="list-style-type: none"> Multifunctional display/operating device for KNX, with 320 x 240 pixel, 2.8" LCD color display For the display and operation of at least 18 configurable room operator functions: <ul style="list-style-type: none"> Switching ON/OFF/OVER Pushbutton function (bell function) Switching ON/OFF and dimming Shutter/blind/roller control Value transmission: 1 byte in %, 1 byte integer without prefix, 1 byte integer with prefix, 2 byte integer without prefix, 2 byte integer with prefix Positively driven operation Scene control: Store and call up scene 8 bit, store and call up scene 1 bit Text display Warning and alarm indications Operation using touch screen and/or by turning/pushing rotary/push button RGB LED as orientation light or for signaling alarm indications Buzzer for acoustic alarm indication or as feedback when operating touch screen Integrated room temperature sensors Analysis and weighting of an external inside temperature sensor Room temperature control can be set as a two-point control and/or continuous-action control for heating only, for cooling only, or for heating and cooling mode Operating modes that can be switched via KNX: comfort mode, pre-comfort mode, energy-saving mode and frost or heat protection mode Local displaying of active operating modes or automatic or manual modes Local displaying of heating/cooling valve open, dew point alarm and open window Local switchover between automatic or manual mode, and between comfort, pre-comfort, energy-saving and protection modes <ul style="list-style-type: none"> Local, time-adjustable extension of comfort mode The room temperature setpoint value for comfort mode can be set via a rotary button on the room controller Basic room temperature setpoint value for comfort mode which can be set via the KNX Outdoor temperature-based tracking of temperature setpoint value in cooling mode Adjustable dead zone between the heating setpoint and the cooling setpoint for comfort mode Two-level heating or cooling Output of the control variable(s) either as an ON/OFF switch command or as a positioning command in the range of 0 ... 100% Local displaying of manually set fan speed step or automatic speed input Fan speed step can be set via the rotary button or entered automatically by the controller Weekly scheduling program for controller operating modes and for 18 room operator functions At least 16 time switching points per function per weekday Display of date and time Selection of at least 4 different design templates as operator and display interface Local activation of a cleaning function to lock the touch screen and the rotary/push button Slot for a micro SD card for transferring firmware and configuration data incl. bus coupling unit (included in delivery) Bus connection via bus terminal Connection of the separate 24 V DC boost voltage, power consumption approx. 50 mA Flush-mounting device for mounting in a Ø 60 mm installation box, with screw fixing Dimensions (H x W x L): 116 x 86 x 30 mm (with rotary/push button and contact strip channel) <p>Accessories</p> <p>Contouch flash kit¹⁾ with microSDHC card and 2 adapters For transferring firmware and configuration data</p>

Selection and ordering data

Type	Version	DT	Order-No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 5WG1 204-2AB11	<p>UP 204 UP 204 Contouch room controller¹⁾ </p> <p>incl. bus coupling unit²⁾ Titanium white</p>		5WG1 204-2AB11		1	1 unit	139	0.252
	<p>Accessories</p> <p>Contouch flash kit  with micro SDHC card and adapters for USB and SD</p>		5WG1 204 8AB01		1	1 unit	139	0.252


¹⁾ The Contouch flash kit with microSDHC card and adapters for USB and SD must be ordered separately.

²⁾ The bus coupling unit is included in delivery.


Display and Operation Units

Displays

Technical specifications

Type	Description
 UP 587/1 UP 587/2	UP 587/1 text displays UP 587/2 text displays with time-controlled switching <ul style="list-style-type: none"> • Horizontal operation of three pushbutton pairs • Up to nine freely configurable operator functions • Switching ON/OFF, switching OVER • Switching ON/OFF and dimming • Value transmission • Sun protection control • Store and call up 1-bit scenes with the respective scene modules • Store and call up 8-bit scenes • Text display • Warning and alarm indication • With distinction between short and long button press for dimming, scenes and the control of sun protection equipment • An LCD with two lines, each with 11 characters, which are assigned as a block to the upper two pushbutton pairs <ul style="list-style-type: none"> • LCD contrast and brightness can be user adjusted • LCD backlighting as orientation light • Four LEDs for switching status indication • Buzzer for acoustic alarm indication • Display and input of date and time • 10-pole BTI plug (BTI - Bus Transceiver Interface) for plugging onto a bus transceiver module (BTM) or UP actuator with bus transceiver module (BTM) • Dimensions (H x W x D): 55 x 55 x 11 mm <p>UP 587/2 also offers:</p> <ul style="list-style-type: none"> • Time-controlled switching (weekly switching schedule) for up to 40 time switching commands: Switching ON/OFF, switching ON/OFF and dimming, value transmission, sun protection control, call up of 1-bit and 8-bit scenes • Adjustable time switching commands on the text display

Selection and ordering data



Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
i-system									
	UP 587/1	UP 587/1 text displays¹⁾²⁾							
		Versions							
		• Titanium white	A	5WG1 587-2AB11		1	1 unit	139	0.059
		• Aluminum metallic	A	5WG1 587-2AB31		1	1 unit	139	0.059
	UP 587/2	UP 587/2 text displays with time-controlled switching¹⁾²⁾							
		Versions							
	• Titanium white	A	5WG1 587-2AB12		1	1 unit	139	0.061	
	• Aluminum metallic	A	5WG1 587-2AB32		1	1 unit	139	0.058	

5WG1 587-2AB11
5WG1 587-2AB12

¹⁾ The bus transceiver module (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus transceiver module (BTM) must be ordered separately.

²⁾ The matching design frame must be ordered separately.

Overview

Devices	Application	Page
 <p>Frames, DELTA design</p>	No matter which frame you require – we have models available in single to quintuple versions.	1/28
 <p>Surface-mounting enclosures</p>	Available in the DELTA line, DELTA profil and DELTA style designs.	1/36

Display and Operation Units

Pushbutton Accessories

DELTA line frames

Technical specifications

- For horizontal and vertical mounting
- Degree of protection: IP20.

	DELTA line				
	Single	Double	Triple	Quadruple	Quintuple
Dimensions					
• Length	mm 80	151	222	293	364
• Width	mm 80	80	80	80	80

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
DELTA line frames							
80 mm							
Versions							
• Titanium white (similar to RAL 9010)							
- Single	A	5TG2 551-0		1	1/10 units	135	0.010
- Double	A	5TG2 552-0		1	1/10 units	135	0.018
- Triple	A	5TG2 553-0		1	1/10 units	135	0.030
- Quadruple	A	5TG2 554-0		1	1/10 units	135	0.035
- Quintuple	A	5TG2 555-0		1	1/5 units	135	0.043
• Electrical white (RAL 1013)							
- Single	A	5TG2 581-0		1	1/10 units	135	0.008
- Double	A	5TG2 582-0		1	1/10 units	135	0.046
- Triple	A	5TG2 583-0		1	1/10 units	135	0.033
- Quadruple	A	5TG2 584-0		1	1/10 units	135	0.035
- Quintuple	A	5TG2 585-0		1	1/5 units	135	0.040
• Aluminum metallic (similar to RAL 9006)							
- Single	A	5TG2 551-3		1	1/10 units	135	0.011
- Double	A	5TG2 552-3		1	1/10 units	135	0.018
- Triple	A	5TG2 553-3		1	1/10 units	135	0.025
- Quadruple	A	5TG2 554-3		1	1/10 units	135	0.036
- Quintuple	A	5TG2 555-3		1	1/5 units	135	0.041
• Carbon metallic (similar to RAL 7016)							
- Single	A	5TG2 551-6		1	1/10 units	135	0.013
- Double	A	5TG2 552-6		1	1/10 units	135	0.017
- Triple	A	5TG2 553-6		1	1/10 units	135	0.022
- Quadruple	A	5TG2 554-6		1	1/10 units	135	0.032
- Quintuple	A	5TG2 555-6		1	1/5 units	135	0.063
DELTA line frames							
80 mm, with labeling field ¹⁾							
Versions							
• Titanium white (similar to RAL 9010)							
- Single	A	5TG2 551-1		1	1/10 units	135	0.016
- Double, horizontal	A	5TG2 552-1		1	1/10 units	135	0.026
- Double, vertical	A	5TG2 552-2		1	1/10 units	135	0.025
- Triple, horizontal	A	5TG2 553-1		1	1/10 units	135	0.039
- Triple, vertical	A	5TG2 553-2		1	1/10 units	135	0.040
- Quadruple, horizontal	A	5TG2 554-1		1	1/10 units	135	0.055
- Quadruple, vertical	A	5TG2 554-2		1	1/10 units	135	0.051
• Electrical white (RAL 1013)							
- Single	A	5TG2 581-1		1	1/10 units	135	0.018
- Double, horizontal	A	5TG2 582-1		1	1/10 units	135	0.029
- Double, vertical	A	5TG2 582-2		1	1/10 units	135	0.029
- Triple, horizontal	A	5TG2 583-1		1	1/10 units	135	0.038
- Triple, vertical	A	5TG2 583-2		1	1/10 units	135	0.032
- Quadruple, horizontal	A	5TG2 584-1		1	1/10 units	135	0.050
- Quadruple, vertical	A	5TG2 584-2		1	1/10 units	135	0.050
• Aluminum metallic (similar to RAL 9006)							
- Single	A	5TG2 551-4		1	1/10 units	135	0.018
- Double, horizontal	A	5TG2 552-4		1	1/10 units	135	0.027
- Double, vertical	A	5TG2 552-5		1	1/10 units	135	0.027
• Carbon metallic (similar to RAL 7016)							
- Single	A	5TG2 551-7		1	1/10 units	135	0.018
- Double, horizontal	A	5TG2 552-7		1	1/10 units	135	0.028
- Double, vertical	A	5TG2 552-8		1	1/10 units	135	0.027


¹⁾ You can create individual labels with our free labeling tool. Download at: www.siemens.com/labeling-tool

Technical specifications

- For horizontal and vertical mounting
- Degree of protection: IP20.

		DELTA miro			
		Single	Double	Triple	Quadruple
Dimensions					
• Length	mm	90	161	232	303
• Width	mm	90	90	90	90

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
kg								
Frames, Artist								
90 mm								
Versions								
	• Tom's Drag							
	- Single	C	5TG1 131-0		1	1 unit	135	0.030
	- Double	C	5TG1 132-0		1	1 unit	135	0.045
	- Triple	C	5TG1 133-0		1	1 unit	135	0.064
	- Quadruple	C	5TG1 134-0		1	1 unit	135	0.082

5TG1 131-0

Display and Operation Units

Pushbutton Accessories





DELTA miro color frames

Technical specifications

- For horizontal and vertical mounting
- Degree of protection: IP20.

		DELTA miro				
		Single	Double	Triple	Quadruple	Quintuple
Dimensions	• Length	mm 90	161	232	303	374
	• Width	mm 90	90	90	90	90

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
DELTA miro color frames 90 mm, plastic							
Versions							
 5TG1 111-0	• Titanium white (similar to RAL 9010)						
	- Single	A	5TG1 111-0		1 1/10 units	135	0.020
	- Double	A	5TG1 112-0		1 1/10 units	135	0.033
	- Triple	A	5TG1 113-0		1 1/10 units	135	0.039
	- Quadruple	A	5TG1 114-0		1 1/10 units	135	0.046
	- Quintuple	A	5TG1 115-0		1 1/3 units	135	0.100
 5TG1 111-3	• Electrical white (similar to RAL 1013)						
	- Single	A	5TG1 111-3		1 1/10 units	135	0.022
	- Double	A	5TG1 112-3		1 1/10 units	135	0.035
	- Triple	A	5TG1 113-3		1 1/10 units	135	0.046
	- Quadruple	A	5TG1 114-3		1 1/10 units	135	0.060
	- Quintuple	A	5TG1 115-3		1 1/3 units	135	0.100
 5TG1 111-1	• Aluminum metallic (similar to RAL 9006)						
	- Single	A	5TG1 111-1		1 1/10 units	135	0.024
	- Double	A	5TG1 112-1		1 1/10 units	135	0.028
	- Triple	A	5TG1 113-1		1 1/10 units	135	0.039
	- Quadruple	A	5TG1 114-1		1 1/10 units	135	0.049
	- Quintuple	A	5TG1 115-1		1 1/3 units	135	0.059
 5TG1 111-2	• Carbon metallic (similar to RAL 7016)						
	- Single	A	5TG1 111-2		1 1/10 units	135	0.017
	- Double	A	5TG1 112-2		1 1/10 units	135	0.026
	- Triple	A	5TG1 113-2		1 1/10 units	135	0.039
	- Quadruple	A	5TG1 114-2		1 1/10 units	135	0.048
	- Quintuple	A	5TG1 115-2		1 1/3 units	135	0.057

Technical specifications

- For horizontal and vertical mounting
- Degree of protection: IP20.

		DELTA miro				
		Single	Double	Triple	Quadruple	Quintuple
Dimensions	• Length	mm 90	161	232	303	374
	• Width	mm 90	90	90	90	90

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg	
DELTA miro glass frames 90 mm, real glass								
Versions								
 5TG1 201	• Crystal green							
	- Single	A	5TG1 201		1	1 unit	135	0.163
	- Double	A	5TG1 202		1	1 unit	135	0.234
	- Triple	A	5TG1 203		1	1 unit	135	0.284
	- Quadruple	A	5TG1 204		1	1 unit	135	0.473
	- Quintuple	A	5TG1 205		1	1 unit	135	0.521
 5TG1 201-1	• White							
	- Single	A	5TG1 201-1		1	1 unit	135	0.097
	- Double	A	5TG1 202-1		1	1 unit	135	0.157
	- Triple	A	5TG1 203-1		1	1 unit	135	0.220
	- Quadruple	A	5TG1 204-1		1	1 unit	135	0.282
	- Quintuple	A	5TG1 205-1		1	1 unit	135	0.345
 5TG1 201-2	• Black							
	- Single	A	5TG1 201-2		1	1 unit	135	0.097
	- Double	A	5TG1 202-2		1	1 unit	135	0.157
	- Triple	A	5TG1 203-2		1	1 unit	135	0.220
	- Quadruple	A	5TG1 204-2		1	1 unit	135	0.282
	- Quintuple	A	5TG1 205-2		1	1 unit	135	0.345
 5TG1 201-3	• Orient							
	- Single	A	5TG1 201-3		1	1 unit	135	0.163
	- Double	A	5TG1 202-3		1	1 unit	135	0.157
	- Triple	A	5TG1 203-3		1	1 unit	135	0.220
	- Quadruple	A	5TG1 204-3		1	1 unit	135	0.282
	- Quintuple	A	5TG1 205-3		1	1 unit	135	0.345
 5TG1 201-4	• Arena							
	- Single	A	5TG1 201-4		1	1 unit	135	0.197
	- Double	A	5TG1 202-4		1	1 unit	135	0.157
	- Triple	A	5TG1 203-4		1	1 unit	135	0.220
	- Quadruple	A	5TG1 204-4		1	1 unit	135	0.370
	- Quintuple	A	5TG1 205-4		1	1 unit	135	0.345

Display and Operation Units

Pushbutton Accessories

DELTA miro real wood frames

Technical specifications

- For horizontal and vertical mounting
- Degree of protection: IP20.

Note:

Variations in the color of the wood are typical of natural products.

		DELTA miro			
		Single	Double	Triple	Quadruple
Dimensions	• Length	mm 90	161	232	303
	• Width	mm 90	90	90	90

Selection and ordering data

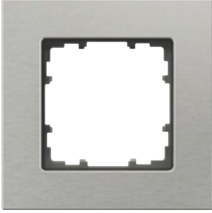


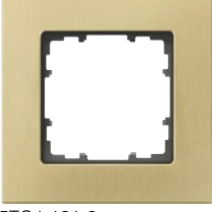
Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
							kg
DELTA miro real wood frames (to be discontinued) 90 mm, real wood							
Versions							
 5TG1 101-2	• Maple						
	- Single	A	5TG1 101-2		1	1 unit	135 0.035
	- Double	A	5TG1 102-2		1	1 unit	135 0.059
	- Triple	A	5TG1 103-2		1	1 unit	135 0.080
	- Quadruple	A	5TG1 104-2		1	1 unit	135 0.105
 5TG1 101-3	• Maple						
	- Single	A	5TG1 101-3		1	1 unit	135 0.037
	- Double	A	5TG1 102-3		1	1 unit	135 0.061
	- Triple	A	5TG1 103-3		1	1 unit	135 0.080
	- Quadruple	A	5TG1 104-3		1	1 unit	135 0.103
 5TG1 101-4	• Beech (color achieved through staining)						
	- Single	A	5TG1 101-4		1	1 unit	135 0.035
	- Double	A	5TG1 102-4		1	1 unit	135 0.058
	- Triple	A	5TG1 103-4		1	1 unit	135 0.079
	- Quadruple	A	5TG1 104-4		1	1 unit	135 0.104
 5TG1 101-1	• Cherry (color achieved through staining)						
	- Single	A	5TG1 101-1		1	1 unit	135 0.039
	- Double	A	5TG1 102-1		1	1 unit	135 0.058
	- Triple	A	5TG1 103-1		1	1 unit	135 0.080
	- Quadruple	A	5TG1 104-1		1	1 unit	135 0.102
 5TG1 101-0	• Wenge						
	- Single	A	5TG1 101-0		1	1 unit	135 0.042
	- Double	A	5TG1 102-0		1	1 unit	135 0.069
	- Triple	A	5TG1 103-0		1	1 unit	135 0.093
	- Quadruple	A	5TG1 104-0		1	1 unit	135 0.118

Technical specifications

- For horizontal and vertical mounting
- Degree of protection: IP20.

		DELTA miro				
		Single	Double	Triple	Quadruple	Quintuple
Dimensions						
• Length	mm	90	161	232	303	374
• Width	mm	90	90	90	90	90

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg	
DELTA miro aluminum frames 90 mm, real aluminum								
Versions								
 5TG1 121-0	• Natural							
	- Single	A	5TG1 121-0		1	1 unit	135	0.082
	- Double	A	5TG1 122-0		1	1 unit	135	0.140
	- Triple	A	5TG1 123-0		1	1 unit	135	0.190
	- Quadruple	A	5TG1 124-0		1	1 unit	135	0.243
	- Quintuple	A	5TG1 125-0		1	1 unit	135	0.290
 5TG1 121-1	• Titanium							
	- Single	A	5TG1 121-1		1	1 unit	135	0.082
	- Double	A	5TG1 122-1		1	1 unit	135	0.140
	- Triple	A	5TG1 123-1		1	1 unit	135	0.190
	- Quadruple	A	5TG1 124-1		1	1 unit	135	0.243
	- Quintuple	A	5TG1 125-1		1	1 unit	135	0.290
 5TG1 121-2	• Graphite							
	- Single	A	5TG1 121-2		1	1 unit	135	0.082
	- Double	A	5TG1 122-2		1	1 unit	135	0.140
	- Triple	A	5TG1 123-2		1	1 unit	135	0.190
	- Quadruple	A	5TG1 124-2		1	1 unit	135	0.243
	- Quintuple	A	5TG1 125-2		1	1 unit	135	0.290
 5TG1 121-3	• Yellow oxide							
	- Single	A	5TG1 121-3		1	1 unit	135	0.082
	- Double	A	5TG1 122-3		1	1 unit	135	0.140
	- Triple	A	5TG1 123-3		1	1 unit	135	0.190
	- Quadruple	A	5TG1 124-3		1	1 unit	135	0.243
	- Quintuple	A	5TG1 125-3		1	1 unit	135	0.290

Display and Operation Units

Pushbutton Accessories





DELTA profil frames

Technical specifications

- For horizontal and vertical mounting
- Degree of protection: IP20.

	DELTA profil			DELTA contour
	Single	Double	Triple	Single
Dimensions				
• Length	mm 80	151	222	122
• Width	mm 80	80	80	80

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
DELTA profil frames (to be discontinued) 80 mm, cut out								
Versions								
 5TG1 801	• Titanium white (similar to RAL 9010)							
	- Single	A	5TG1 801		1 1/10 units	135	0.016	
	- Double	A	5TG1 802		1 1/10 units	135	0.028	
	- Double, with one cut-out	A	5TG1 803		1 1/10 units	135	0.022	
 5TG1 803 (one frame part cut out)	- Triple, with one cut-out		A	5TG1 804	1 1/10 units	135	0.032	
	• Silver (similar to RAL 9006)							
	- Single	A	5TG1 761		1 1/10 units	135	0.016	
	- Double, with one cut-out	A	5TG1 763		1 1/10 units	135	0.025	
 5TG1 804 (one frame part cut out)	- Triple, with one cut-out		A	5TG1 764	1 1/10 units	135	0.030	
	• Anthracite (similar to RAL 7016)							
	- Single	C	5TG1 831		1 1/10 units	135	0.016	
	- Double	C	5TG1 832		1 1/10 units	135	0.022	
	- Double, with one cut-out		C	5TG1 833	1 1/10 units	135	0.025	
	- Triple, with one cut-out		C	5TG1 834	1 1/10 units	135	0.032	
	Frames, DELTA contour¹⁾ (to be discontinued) 80 mm, cut out							
	Versions							
 5WG1 240-8CB11	• Titanium white (similar to RAL 9010)							
	- Single	D	5WG1 240-8CB11		1 10 units	139	0.028	

¹⁾ Frames for NEMA box. For matching BCUs for DELTA profil operator interfaces, see Chapter "System Products and Accessories", DELTA profil operator interfaces see Chapter "Radio system – GAMMA wave / Synco living KNX-RF".

Technical specifications

Frames

- For horizontal and vertical mounting
- Degree of protection: IP20

Intermediate frames

For inserting devices with cover plate 65 mm x 65 mm and GAMMA *instabus* sensors.

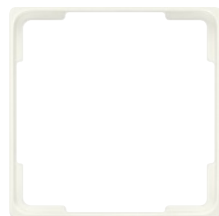
	DELTA style				
	Single	Double	Triple	Quadruple	Quintuple
Dimensions					
• Length	mm 82	153	224	295	366
• Width	mm 82	82	82	82	82

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
							kg
DELTA style frames							
82 mm							
Versions							
• Titanium white (similar to RAL 9010)							
- Single	A	5TG1 321		1 1/10 units	135	0.022	
- Double	A	5TG1 322		1 1/10 units	135	0.027	
- Triple	A	5TG1 323		1 1/10 units	135	0.038	
- Quadruple	A	5TG1 324		1 1/10 units	135	0.048	
- Quintuple	A	5TG1 325		1 1/5 units	135	0.066	
• Basalt black (similar to RAL 7016)							
- Single	A	5TG1 361		1 1/10 units	135	0.015	
- Double	A	5TG1 362		1 1/10 units	135	0.027	
- Triple	A	5TG1 363		1 1/10 units	135	0.044	
- Quadruple	A	5TG1 364		1 1/10 units	135	0.059	
- Quintuple	A	5TG1 365		1 1/5 units	135	0.080	
• Platinum metallic							
- Single	A	5TG1 321-1		1 1/10 units	135	0.022	
- Double	A	5TG1 322-1		1 1/10 units	135	0.032	
- Triple	A	5TG1 323-1		1 1/10 units	135	0.045	
- Quadruple	A	5TG1 324-1		1 1/10 units	135	0.058	
- Quintuple	A	5TG1 325-1		1 1/5 units	135	0.074	
Intermediate frames							
68 mm							
Versions							
• Titanium white (similar to RAL 9010)							
	A	5TG1 328		1 1/10 units	135	0.007	
• Basalt black (similar to RAL 7016)							
	A	5TG1 368		1 1/10 units	135	0.008	
• Platinum metallic							
	A	5TG1 328-1		1 1/10 units	135	0.012	



5TG1 321



5TG1 328

Display and Operation Units




Pushbutton Accessories

Surface-mounting enclosures

Technical specifications

	DELTA line			DELTA profil		DELTA style		
	Single	Double	Triple	Single	Double	Single	Double	Triple
Dimensions								
• Length	mm 84	155	226	80	125	84	155	266
• Width	mm 84	84	84	80	80	84	84	84
• Depth	mm 42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5
Flame-retardant base plate	✓	✓	✓	✓	✓	✓	✓	✓
For horizontal and vertical mounting	✓	✓	✓	✓	✓	✓	✓	✓

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
							kg
DELTA line							
Surface-mounting enclosures For flush-mounting devices, 84 mm							
Versions							
 5TG2 901	• Titanium white						
	- Single	A	5TG2 901	1	1/5 units	135	0.090
	- Double	A	5TG2 902	1	1/3 units	135	0.132
	- Triple	A	5TG2 903	1	1/2 units	135	0.176
	• Electrical white						
	- Single	A	5TG2 861	1	1/5 units	135	0.090
- Double	A	5TG2 862	1	1/3 units	135	0.129	
- Triple	A	5TG2 863	1	1/2 units	135	0.171	
DELTA profil							
Surface-mounting enclosures (to be discontinued) • For flush-mounting devices, 80 mm • Titanium white							
Versions							
 5TG1 825	• Single	A	5TG1 825	1	1/5 units	135	0.065
	• Double	A	5TG1 826	1	1/5 units	135	0.103
DELTA style							
Surface-mounting enclosures • For flush-mounting devices, 84 mm • Titanium white							
Versions							
 5TG2 901	• Single	A	5TG2 901	1	1/5 units	135	0.090
	• Double	A	5TG2 902	1	1/3 units	135	0.132
	• Triple	A	5TG2 903	1	1/2 units	135	0.176

Overview

The color touch panel serves as a multifunctional display/operating device for GAMMA *instabus* based on the KNX bus system. A key feature is its versatile design:

- TFT color display
- Analog touch screen in 4-wire technology
- Size: 5.7"
- 320 x 240 pixels, ¼ VGA
- Color intensity, 263 K (RGB, 6 bit)
- Brightness of display, typically 280 cd/m²
- LED background lighting, wear-resistant
- 4 menu designs: magic, modern, classic, elegant



Design frame, black glass, menu design "magic"



Design frame, stainless steel, menu design "modern"



Design frame, white glass, menu design "classic"




Design frame, aluminum, menu design "elegant"

Display and Operation Units

Touch panels

Technical specifications

Type	Description
 UP 588/13 UP 588/23	<p>UP 588/13, UP 588/23 touch panels</p> <ul style="list-style-type: none"> • Multifunctional display/operating device for the KNX, with 320 x 240 pixels, 5.7" TFT color display and touch screen • Dimming of LED background lighting over the operator interface • For the display and operation of at least 210 communication objects on at least 20 display pages • An additional page for the display and acknowledgement of at least 16 alarms • Time program as weekly program for at least 110 communication objects and at least 10 switching tasks per weekday • Presence simulation for at least 50 communication objects • A trend module for storing and displaying graphics of the status values • 1-bit or 8-bit scene control for at least 64 scenes • At least 32 AND/OR operations, each comprising up to at least 4 communication objects <ul style="list-style-type: none"> • At least 16 reference conditions for tripping one switching task respectively • Individual password protection for each display page • Buffered real-time clock and display of time and date • Selection of at least 4 different design templates as operator and display interface • Display of a loadable image as a start screen page or with display of a slide show containing at least 100 loadable images instead of a start screen page • USB interface for loading images and symbols • USB cable, 1 m long and a transfer rate of 480 MBit/sec. • Pushbutton for device reset • Integrated bus coupling units • Bus connection via bus terminal • Flush-mounting device in flush-mounting/hollow-wall box with the dimensions (W x H x D): 161.5 x 135 x 64 mm <p>Versions</p>
UP 588/13	<ul style="list-style-type: none"> • Rated operational voltage 230 V AC, 50 Hz
UP 588/23	<ul style="list-style-type: none"> • Rated operational voltage 24 V AC/DC, power consumption approx. 40 mA

Touch panels

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
	UP 588/13	UP 588/13, touch panels¹⁾²⁾ Rated operational voltage 230 V AC, 50 Hz	B	5WG1 588-2AB13		1	1 unit	139	0.610
	UP 588/23	UP 588/23, touch panels¹⁾²⁾ Rated operational voltage 24 V AC/DC	B	5WG1 588-2AB23		1	1 unit	139	0.675
Accessories									
Design frames For UP 588/13, UP 588/23 touch panels									
	• Aluminum (W x H x D): 194 x 156 x 5 mm		B	5WG1 588-8AB12		1	1 unit	139	0.310
	• Stainless steel design (W x H x D): 194 x 156 x 5 mm		B	5WG1 588-8AB13		1	1 unit	139	0.310
	• Black glass (W x H x D): 194 x 156 x 5 mm		B	5WG1 588-8AB14		1	1 unit	139	0.295
	• White glass (W x H x D): 194 x 156 x 5 mm		B	5WG1 588-8AB15		1	1 unit	139	0.295
	Flush-mounting/hollow-wall boxes For UP 588 touch panels • Dimensions (W x H x D): 161.5 x 135 x 64 mm		B	5WG1 588-8EB01		1	1 unit	139	0.133

5WG1 588-2AB13,
5WG1 588-2AB23,
with black glass frame

5WG1 588-8AB12

5WG1 588-8AB13

5WG1 588-8AB14

5WG1 588-8AB15

5WG1 588-8EB01






¹⁾ The required design frame must be ordered separately.

²⁾ The flush-mounting/hollow-wall box must be ordered separately.

Display and Operation Units

Remote controls

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	S 425 S 425 wave hand-held radio transmitters¹⁾²⁾⁵⁾ (to be discontinued) 17 channels Versions							
		B	5WG3 425-7AB21		1	1 unit	139	0.131
		B	5WG3 425-7AB71		1	1 unit	139	0.132
5WG3 425-7AB21								
	S 425/72 S 425/72 IR hand-held transmitters³⁾⁴⁾⁵⁾	B	5WG1 425-7AB72		1	1 unit	139	0.098
5WG1 425-7AB72								
	AP 420/3 AP 420/3 IR wall-mounted transmitters³⁾⁴⁾⁵⁾ Single, with 2 facing pushbutton rockers	B	5WG1 420-3AB13		1	1 unit	139	0.130
5WG1 420-3AB13								
	AP 421/3 AP 421/3 IR wall-mounted transmitters³⁾⁴⁾⁵⁾ Double, with 4 facing pushbutton rockers	B	5WG1 421-3AB13		1	1 unit	139	0.131
5WG1 421-3AB13								
	AP 422/3 AP 422/3 IR wall-mounted transmitters³⁾⁴⁾⁵⁾ Quadruple, with 8 facing pushbutton rockers	B	5WG1 422-3AB13		1	1 unit	139	0.131
5WG1 422-3AB13								

1) The batteries required for operation are included in delivery.

2) For radio systems see Chapter, "Radio system – GAMMA wave / KNX-RF".

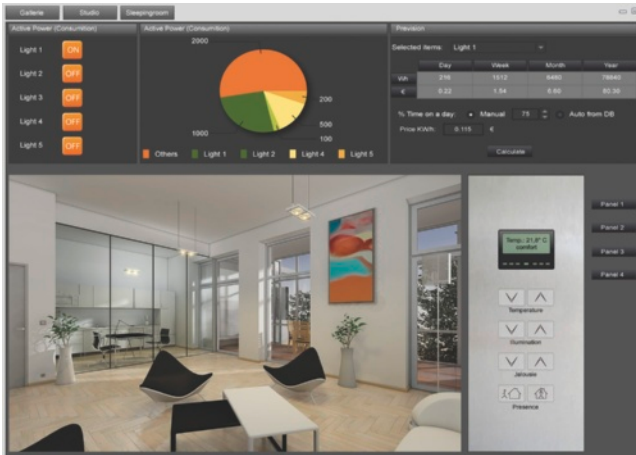
3) The 2 batteries of type LR03/AAA (1.5 V) required for operation are not included in delivery.

4) For IR receiver decoders see Chapter "Gateways, Interface Converters - KNX/Infrared".

5) For Technical specifications, see Chapter "Gateways, Interface Converters - KNX/Infrared".

Overview

ComBridge Studio Evolution



IPAS is one of the leading providers of web-based visualization. With ComBridge Studio Suite, the HTML-based visualization software, IPAS was already able to offer solutions for individual large-scale projects, such as airports, shopping centers, administration buildings and distributed locations.

All this experience flowed into the latest development of ComBridge Studio Evolution, which now permits extremely high quantities of data, or hundreds of KNXnet/IP interfaces in a project with several hundred users to be realized. As well as the representation of statuses and the operation of functions, ComBridge Studio Evolution offers optimum support for the configuration of complex functions, such as scenes, yearly programs, graphical logics and much, much more. Based on Adobe Flash, it now couldn't be easier to insert design-oriented elements and functions in visualizations, so that mapping the actual situation is child's play.

ComBridge Studio Evolution also now enables the representation of even complex database analyses in an individual and attractive design. A particular highlight of ComBridge Studio Evolution is the Smart Metering module. This module analyses consumption data that are stored in the database. Based on current consumption data, the Smart Metering module calculates the probable weekly, monthly and yearly consumption, so that

users are always informed as to what costs are generated by their energy consumption in a given period. It is also possible to graphically compare different periods and evaluate them. The consumption data can be evaluated directly from KNX counters, such as Siemens energy counters (see Chapter "Counters").

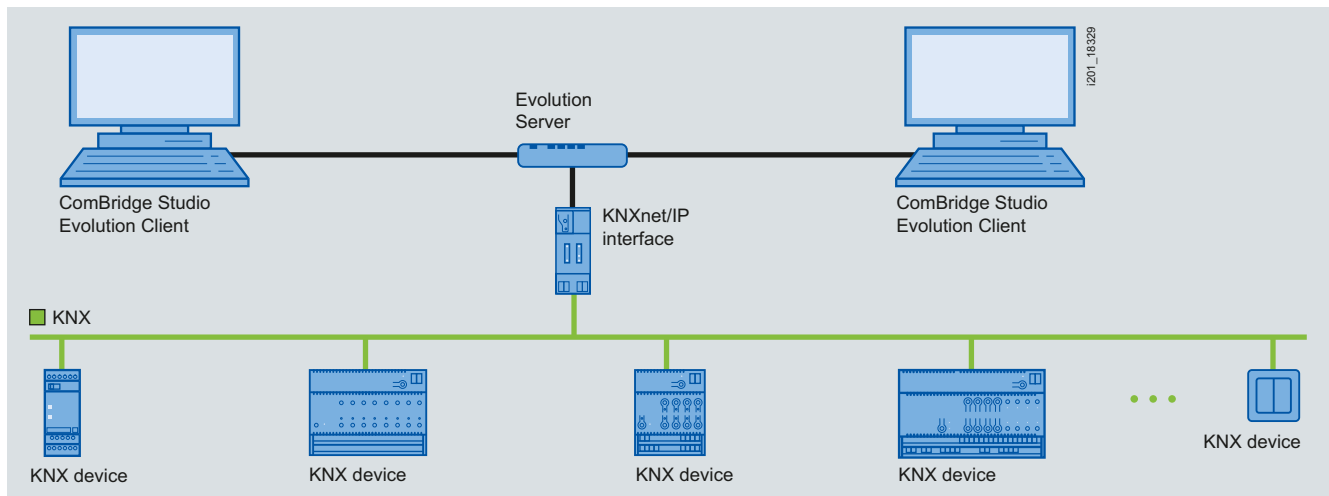
Another huge advantage is that it is operating system-independent. ComBridge Studio Evolution is configured directly on the ComBridge Studio Evolution server. The application tool is a standard browser in connection with Adobe Flash Player. Adobe Flash Player can be downloaded free from the Internet.

For further information:
www.ipas-products.com

Order address:

IPAS GmbH
Hölscherstrasse 27
47167 Duisburg, Germany

Telephone: +49 203 37867-0
Fax: +49 203 37867-10



Display and Operation Units

Visualization, server

Overview


IP viewers




The Gamma IP Viewer N 151 is ideal for viewing and operating smaller KNX systems by PC, laptop, PDA or smartphone. It is fitted with a webserver for this. It can display up to 40 switching functions with the corresponding status objects in various web browsers on up to five standard-design operator sides. Cheap, flexible applications for lighting, sun protection, air-conditioning and media technology are possible through the mini viewer.

In conjunction with a modem, the IP Viewer can also be used for the remote maintenance and remote control of a KNX system. Apart from the function as webserver, the IP Viewer can also be used as a programming interface for the ETS. In addition, connection to a "large" web viewer is possible.

Technical specifications

Type	Description
 N 151	N 151 IP viewers <ul style="list-style-type: none"> Interface converter between a KNX and an IP network, with the following simultaneously executable functions: <ul style="list-style-type: none"> - As a WebServer for monitoring and control of up to 40 states and values transmitted via the KNX network, which can be displayed on up to 5 image pages of a PC connected to the IP network using Internet Explorer 6.0, 7.0, 8.0 or Firefox 3.0 (for other browsers, see documentation at www.siemens.com/gamma-td) - For the parameterization of a KNX system using ETS3.0f/ETS4 - For communication between the KNX network and a ComBridge Studio visualization software Special WEB page for the multilanguage adaptation of the presentation of an image page and a special WEB page for firmware upgrades Ethernet interface for connection to the IP network using the Internet Protocol RJ45 socket for connection to Ethernet 10 Mbits/s 2 LED displays for indication of ready-to-run state and for IP communication Integrated bus coupling units KNX bus connection via bus terminal Electronics powered via an external 24 V AC/DC power supply unit Connection of external power supply unit via an extra-low-voltage terminal Modular installation devices for mounting on TH35 EN 60715 mounting rail Width: 4 MW (1 MW = 18 mm).

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
 5WG1 151-1AB01	N 151	N 151 IP viewers	A	5WG1 151-1AB01	1	1 unit	139	0.150 kg





2/2	Introduction
2/3	Binary output devices
2/11	Analog output devices

Output Devices

2

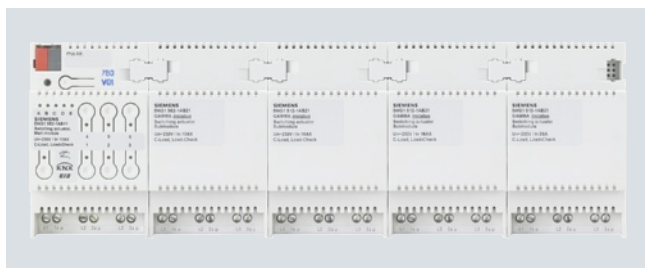
Introduction

Overview

Devices	Application	Page
 <p>Binary output devices</p>	Binary outputs and load switches in several versions.	2/3
 <p>Analog output devices</p>	Flexible application: the universal I/O module provides flexible inputs and outputs.	2/11

Overview

Modular switch actuators



The modular design of the GAMMA switch actuators guarantees the flexible design for each use and requirement page. The integrated load current detection enables a wide range of new application options.

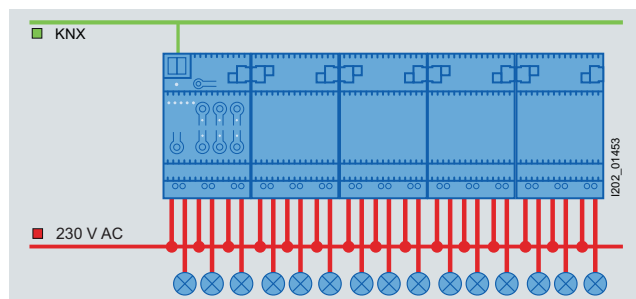
A switch actuator main unit can be simply expanded, if necessary, from a triple to a 6/9/12 or 15-times switch actuator and can be adjusted flexibly to the number and size of the loads to be switched. Using the coding bridge, up to four switch actuator expansions can be connected to the 6-pole interface on a main unit.

There is a broad spectrum of functions of the application software: It ranges from a multi-stage fan control, operating hours and switching operations counter, through scene control and thermal drive control to load detection and monitoring of the load current for each channel.

The extensive application program controls both the outputs of the main units and the outputs of all connected expansions. This includes:

- Recording and monitoring of load current per output for load failure or overload
- Simultaneous switching of all three outputs
- Implementation of a rotational speed stated as a percentage, in 1 to 3-stage switching commands (fan speed control)
- Implementation of a valve position stated as a percentage in a pulse width modulated switching command (thermal drive control)
- Switching operation and operating hours counter with limit monitoring per output
- Integrated 8-bit scene control, for which each output can be integrated in up to eight scenes

Block diagram: Switch actuator 15-times¹⁾²⁾



¹⁾ The block diagrams shown here are just an example of how modules can be interconnected and interfaced. For more detailed information, please refer to the technical documentation available at: www.siemens.com/gamma-td

²⁾ All modules with the label 10 AX, 16 AX and 20 AX are compatible and therefore can be used with each other.

Application

Switch actuators for rail-mounting are the KNX devices most used, both in non-residential and residential construction

- Switching of loads up to 20 AX per channel
- Three-phase switching of drives/loads
- Control of 1 to 3-stage supply air / ventilation systems
- Load current detection
- Detection of a significant equipment failure
- Preventive detection of failures through continuous current monitoring
- Recording of operating hours and switching operations
- Report of maintenance or service work
- Detection of circuit interruptions

Details AC1, AX, AC3, C load

The industrial and building control sector have seen the establishment of a range of different switching capacities and outputs. These tend to be specific to the respective applications and are specified in the corresponding national and international standards. The tests are defined such that they reproduce typical applications, such as motor loads (industry) or fluorescent lamps (buildings).

The AC1 and AC3 details are switching capacity specifications which have become established in the industrial sector:

- AC1: refers to the switching of overwhelmingly resistive loads (p.f. = 0.8)
- AC3: refers to an (inductive) motor load (p.f. = 0.45)

These switching capacities are defined in the standard EN 60947-4-1. "Contactors and motor starters – Electromechanical contactors and motor starters". The standard describes starters and/or contactors, which are originally used in industrial applications.

The designation AX has become established in building controls:

- AX: refers to a (capacitive) fluorescent lamp load

Switchable capacitive loads (200 μ F, 140 μ F, 70 μ F or 35 μ F) are mentioned in conjunction with fluorescent lamp loads. This switching capacity refers to the standard EN 60669 "Switches for household and similar fixed electrical installations – Particular requirements", which is primarily implemented for applications in building control.

A test with 70 μ F is required for 6 A devices and with 140 μ F for devices larger than 6 A. The switching capacity specifications AC and AX cannot be directly compared with each other.

In short, it is generally true that

users who

- are primarily involved with industrial applications tend to refer to an AC3 switching capacity, whereas
- come from the building control and lighting sector generally refer to an AX switching capacity or C Load (200 μ F Loads)

Switching capacity differences must be taken into account when selecting a switching actuator.

Output Devices

2

Binary output devices







Technical specifications

Modular switch actuators

Type	Main modules			Expansions		
	N 562/11	N 512/11	N 513/11	N 562/21	N 512/21	N 513/21
Enclosure data						
Design	N	N	N	N	N	N
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓	✓	✓	✓
Interface for connection of a switch actuator expansion	✓	✓	✓	✓	✓	✓
Dimensions						
• Width (1 MW = 18 mm)	3 MW	3 MW	3 MW	3 MW	3 MW	3 MW
Display/control elements						
Direct operation (local operation)	✓	✓	✓	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
LED for indicating direct operation	✓	✓	✓	--	--	--
LED for indicating the selected device	✓	✓	✓	--	--	--
LED for status indication per output	✓	✓	✓	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
Power supply						
Bus-powered electronics	✓	✓	✓	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
Bus connection						
Integrated bus coupling units	✓	✓	✓	--	--	--
Bus connection via bus terminal	✓	✓	✓	--	--	--
Outputs						
Load output						
Floating relay contacts	3	3	3	3	3	3
Rated contact voltage, AC	V 230	230	230	230	230	230
Rated contact current						
• AX (200 µF) acc. to EN 60669-1	AX 10 (140 µF)	16	20	10 (140 µF)	16	20
• AC1 (p.f. = 0.8)	A 16	16	20	16	16	20
• AC3 (p.f. = 0.45)	A 10	16	16	10	16	16
acc. to DIN EN 60497-4-1						
• 24 V DC	A 10	16	20	10	16	20
Three-phase switching (3 outputs simultaneously)	✓	✓	✓	✓	✓	✓
Last check	✓	✓	✓	✓	✓	✓
Load data	see Chapter "Appendix -> Technical information"					

¹⁾ Executed via main module.

For selection and ordering data, see page 2/8.

Type	Main modules			Expansions		
	 N 562/11	 N 512/11	 N 513/11	 N 562/21	 N 512/21	 N 513/21
Application program	982002	982002	982002	1) 982002	1) 982002	1) 982002
Output functions						
Max. number of group addresses	511	511	511	--	--	--
Max. number of assignments	511	511	511	--	--	--
Max. number of expansion modules that can be butt-mounted	4	4	4	--	--	--
Configurable behavior in the event of a bus voltage failure	✓	✓	✓	✓	✓	✓
Configurable behavior in the event of a bus voltage recovery	✓	✓	✓	✓	✓	✓
Behavior in the event of system voltage failure						
• Unchanged switching state of outputs	✓	✓	✓	✓	✓	✓
Ventilator control						
Speed control 1 ... 3-step	✓	✓	✓	✓	✓	✓
Heating control						
Controlling electrothermal actuators	✓	✓	✓	✓	✓	✓
Scene control						
Integrated 8-bit scene control	✓	✓	✓	✓	✓	✓
Scenes to be integrated per channel	8	8	8	8	8	8
Time functions						
OFF delay	✓	✓	✓	✓	✓	✓
ON delay	✓	✓	✓	✓	✓	✓
Timer mode (automatic stairwell switch)	✓	✓	✓	✓	✓	✓
Night mode (lighting for cleaning)	✓	✓	✓	✓	✓	✓
Warning of impending OFF	✓	✓	✓	✓	✓	✓
Logical functions						
Positively driven operation	✓	✓	✓	✓	✓	✓
Logic function (2 objects)	✓	✓	✓	✓	✓	✓
Can be inverted per output (NO contact/NC contact)	✓	✓	✓	✓	✓	✓
Status						
Transmitting status per channel	✓	✓	✓	✓	✓	✓
Operating hours counter with limit monitoring per channel	✓	✓	✓	✓	✓	✓
Switching cycle counter with limit monitoring per channel	✓	✓	✓	✓	✓	✓
Load current recording per channel	✓	✓	✓	✓	✓	✓
Load current monitoring per channel	✓	✓	✓	✓	✓	✓

1) Via main module.

Binary output devices

Type		N 567	N 567/12	N 567/11	N 567/22	N 510/03	N 510/04	N 512	N 511/02	N 502/02	UP 510/03	UP 510/13	UP 562/31	UP 511/10	RS 510/23	RL 512/23
Enclosure data																
Design		N	N	N	N	N	N	N	N	N	UP	UP	UP	UP	RS	RL
Modular installation devices for mounting on TH35 EN 60715 mounting rail		✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--
For installation in flush-mounting switch and socket boxes with Ø 60 mm		--	--	--	--	--	--	--	--	--	✓	✓	✓	✓	--	--
Modular installation device for mounting in AP 118 automation module box or AP 641 room control box ³⁾		--	--	--	--	--	--	--	--	--	--	--	--	--	✓	✓
10-pole BTI socket (BTI - Bus Transceiver Interface) for plugging of bus terminal devices with BTI connector		--	--	--	--	--	--	--	--	--	✓	--	--	--	--	--
Dimensions																
• Height	mm										42	41.3			35.5	36.2
• Width/Ø (1 MW = 18 mm)	mm	4 MW	4 MW	4 MW	8 MW	4 MW	4 MW	8 MW	8 MW	8 MW	71	50	Ø 53	Ø 53	50.2	47.8
• Depth	mm										71	50.9	28	28	48.8	86.5
Mounting type																
Screw fixing		--	--	--	--	--	--	--	--	--	✓	--	--	--	--	--
Display/control elements																
Direct operation (local operation)		✓	✓	✓	✓	--	--	--	✓	✓	--	--	--	--	--	--
Mechanical local operation		--	--	--	--	✓	✓	✓	--	--	--	--	--	--	--	--
Mechanical switching position indication		--	--	--	--	✓	✓	✓	--	--	--	--	--	--	--	--
LED for status indication per output		✓	✓	✓	✓	--	--	--	✓	✓	--	--	--	--	--	--
LED for indicating direct operation		✓	✓	✓	✓	--	--	--	✓	✓	--	--	--	--	--	--
Power supply																
Bus-powered electronics		--	--	--	--	✓	✓	✓	--	--	✓	✓	✓	✓	✓	✓
Electronics powered via an integrated power supply unit for supply voltage 230 V AC		✓	✓	✓	✓	--	--	--	✓	✓	--	--	--	--	--	--
Bus connection																
Integrated bus coupling units		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bus connection via bus terminal		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bus connection via contact system to data rail		✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--
Outputs																
Load output																
Floating relay contacts		4 ¹⁾	8 ¹⁾	8 ¹⁾	16 ¹⁾	4	4	8	8	8 ¹⁾	2	2	2	1	2	1
Rated contact voltage, AC	V	230	230	230	230	230	230	230 ²⁾	230	230	230	230	230	230	230	230
Rated contact current	A	8	2	8	10	16	16	16	16	16	10	10	6	16	10	16
Load data		see Chapter "Appendix -> Technical information"														
Inputs																
Max. cable length, unshielded, twisted	m	--	--	--	--	--	--	--	--	100	--	--	5	5	--	--
Pushbutton inputs																
For signal input (floating contacts)		--	--	--	--	--	--	--	--	8	--	--	2	2	--	--
Determination of switching state by means of the voltage generated in the device		--	--	--	--	--	--	--	--	--	--	--	✓	✓	--	--
For voltage input 12 ... 230 V AC/DC		--	--	--	--	--	--	--	--	8	--	--	--	--	--	--

1) Except channel A.

2) Also available as UL version: 120 V AC, 20 A, Order No.: 5WG1 512-1CB01.

3) The AP 641 room control box and AP 118 automation module box must be ordered separately, see Chapter "Quick-assembly system - Room control box".

For selection and ordering data, see page 2/8.






Type	980303	N 567	980304	N 567/12	980302	N 567/11	981C01	N 567/22	906401	N 510/03	906401	N 510/04	900701	N 512	908301	981D01	N 511/02	981601	N 502/02	520401	N 562	520501	520901	520B01	520802	982E01	UP 510/03	982E01	UP 510/13	207101	UP 562/31	207101	UP 511/10	982E01	RS 510/23	982D01	RL 512/23			
Application program	980303	N 567	980304	N 567/12	980302	N 567/11	981C01	N 567/22	906401	N 510/03	906401	N 510/04	900701	N 512	908301	981D01	N 511/02	981601	N 502/02	520401	N 562	520501	520901	520B01	520802	982E01	UP 510/03	982E01	UP 510/13	207101	UP 562/31	207101	UP 511/10	982E01	RS 510/23	982D01	RL 512/23			
Output functions																																								
Max. number of group addresses	100	100	100	106	106	106	106	106	55	55	55	55	52	49	49	106	120	120	11	11	19	11	17	17	10	10	120	120	26	26	26	26	120	120	120	120	120			
Max. number of assignments	100	100	100	106	106	106	106	106	56	56	56	56	52	49	49	74	120	120	11	11	20	12	17	17	10	10	120	120	27	27	27	27	120	120	120	120	120			
Blocking function	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Configurable behavior in the event of a bus voltage failure	--	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Configurable behavior in the event of a bus voltage recovery	--	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Configurable behavior in the event of a system voltage recovery	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Behavior in the event of system voltage failure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
• Positive OFF switching of the outputs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
• Unchanged switching state of outputs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Heating control																																								
Controlling electrothermal actuators	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	✓	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Scene control																																								
Integrated 8-bit scene control	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Scenes to be integrated per channel	8	8	8	8	8	8	8	8	--	--	--	--	--	--	--	8	8	8	8	--	--	--	--	--	--	--	8	8	--	--	--	--	--	--	8	8	8	8	8	
Time functions																																								
OFF delay	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
ON delay	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Timer mode (automatic stairwell switch)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Night mode (lighting for cleaning)	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Warning of impending OFF	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Logical functions																																								
Positively driven operation	--	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Logic function (1 object)	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Logic function (2 objects)	--	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Can be inverted per output (NO contact/NC contact)	--	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Status																																								
Transmitting status per channel	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Output Devices

2

Binary output devices

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
Modular switch actuators								
	N 562/11	N 562/11 switch actuators, main modules 3 x 230/400 V AC, 10 AX, C Load, Load Check	B	5WG1 562-1AB11		1	1 unit	139 0.240
	N 512/11	N 512/11 switch actuators, main modules 3 x 230/400 V AC, 16 AX, C Load, Load Check	B	5WG1 512-1AB11		1	1 unit	139 0.250
	N 513/11	N 513/11 switch actuators, main modules 3 x 230/400 V AC, 20 AX, C Load, Load Check	B	5WG1 513-1AB11		1	1 unit	139 0.240
	Accessories							
	N 562/21	N 562/21 switch actuators, expansion 3 x 230/400 V AC, 10 AX, C Load, Load Check	B	5WG1 562-1AB21		1	1 unit	139 0.225
	N 512/21	N 512/21 switch actuators, expansion 3 x 230/400 V AC, 16 AX, C Load, Load Check	B	5WG1 512-1AB21		1	1 unit	139 0.250
	N 513/21	N 513/21 switch actuators, expansion 3 x 230/400 V AC, 20 AX, C Load, Load Check	B	5WG1 513-1AB21		1	1 unit	139 0.225
Switch actuators								
	N 567	N 567 switch actuators 4 x 230 V AC, 8 A	A	5WG1 567-1AB01		1	1 unit	139 0.348
	N 567/11	N 567/11 switch actuators 8 x 230 V AC, 8 A	A	5WG1 567-1AB11		1	1 unit	139 0.312
	N 567/12	N 567/12 switch actuators 8 x 230 V AC, 2 A	A	5WG1 567-1AB12		1	1 unit	139 0.360
	N 567/22	N 567/22 switch actuators 16 x 230 V AC, 10 A	B	5WG1 567-1AB22		1	1 unit	139 0.600
	N 510/03	N 510/03 load switches 4 x 230 V AC, 16 A	A	5WG1 510-1AB03		1	1 unit	139 0.279
	N 510/04	N 510/04 load switches 4 x 230 V AC, C load, 16 A	A	5WG1 510-1AB04		1	1 unit	139 0.335

5WG1 562-1AB11
5WG1 512-1AB11
5WG1 513-1AB11

5WG1 562-1AB21
5WG1 512-1AB21
5WG1 513-1AB21

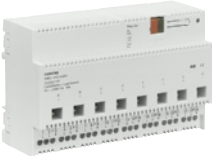






5WG1 567-1AB01

5WG1 567-1AB11
5WG1 567-1AB12

5WG1 567-1AB22

5WG1 510-1AB03
5WG1 510-1AB04

Binary output devices





Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 512 N 512 load switches 8 x 230 V AC, C load, 16 A	A	5WG1 512-1AB01		1	1 unit	139	0.613
	N 512 N 512 load switches [®] 8 x 120 V AC, C load, 20 A	B	5WG1 512-1CB01		1	1 unit	139	0.619
5WG1 512-1AB01 5WG1 512-1CB01								
	N 511/02 N 511/02 switch actuators 8 x 230 V AC, 16 A	B	5WG1 511-1AB02		1	1 unit	139	0.045
5WG1 511-1AB02								
	N 502/02 N 502/02 combination switch actuators 8 x 230 V AC, 16 A, 8 x binary inputs	B	5WG1 502-1AB02		1	1 unit	139	0.565
5WG1 502-1AB02								
	N 562 N 562 binary outputs 2 x 230 V AC, 10 A	A	5WG1 562-1AB01		1	1 unit	139	0.145
5WG1 562-1AB01								
	UP 510/03 UP 510/03 binary output devices ^{NEW} 2 x 230 V AC, 10 A (resistive load) • 10-pole BTI socket for plugging of bus terminal devices with BTI connector	A	5WG1 510-2AB03		1	1 unit	139	0.090
5WG1 510-2AB03								
	UP 510/13 UP 510/13 binary output devices ^{NEW} 2 x 230 V AC, 10 A (resistive load)	A	5WG1 510-2AB13		1	1 unit	139	0.070
5WG1 510-2AB13								
	RS 510/23 RS 510/23 binary output devices ^{NEW} 2 x 230 V AC, 10 A (resistive load) • incl. bus connection module • for mounting in AP 118 automation module box or AP 641 room control box ¹⁾	A	5WG1 510-2AB23		1	1 unit	139	0.045
5WG1 510-2AB23								

¹⁾ The AP 641 room control box and AP 118 automation module box must be ordered separately, see Chapter "Quick-assembly system - Room control box".

Output Devices


2

Binary output devices


Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	RL 512/23 RL 512/23 switch actuators  1 x 230 V AC, 16 AX 20 A <ul style="list-style-type: none"> Switching operation and operating hours counter for mounting in AP 118 automation module box or AP 641 room control box¹⁾ 	A	5WG1 512-4AB23		1	1 unit	139	0.070
5WG1 512-4AB23								
	UP 562/31 UP 562/31 switch actuators 2 x 230 V AC, 6 A, 2 x binary inputs	A	5WG1 562-2AB31		1	1 unit	139	0.089
5WG1 562-2AB31								
	UP 511/10 UP 511/10 switch actuators 1 x 230 V AC, 16 A, 2 x binary inputs	A	5WG1 511-2AB10		1	1 unit	139	0.095
5WG1 511-2AB10								

¹⁾ The AP 641 room control box and AP 118 automation module box must be ordered separately, see Chapter "Quick-assembly system - Room control box".

Technical specifications

Type	Description
 N 670	N 670 Universal I/O modules <ul style="list-style-type: none"> • 2 universal inputs/outputs, each adjustable as <ul style="list-style-type: none"> - Analog input 0 V ... 10 V DC - Analog output 0 V ... 10 V DC - Binary input for 10 V DC - Binary output for 10 V DC • Analog input with limit value monitoring and signaling, with adjustable limit values and hysteresis • Analog output with adjustable lower and upper limit of the output voltage with adjustable voltage value in the event of bus voltage failure and recovery • Binary input with pulse edge evaluation • Binary output with adjustable switching position in the event of bus voltage failure and recovery • 2 inputs for the connection of temperature sensors²⁾ with Pt1000 measured element for temperature measurement in the range -25 °C ... +45 °C, with limit value monitoring and signaling, with adjustable limit values and hysteresis • 2 binary outputs, relay contacts rated for 230 V AC, 10 A at p.f. = 1, with <ul style="list-style-type: none"> - Configurable actuated position (NO contact/NC contact) - Positively driven operation - Configurable switching position in the event of bus voltage failure and recovery • Electronics powered via an external 24 V AC/DC power supply unit, power consumption approx. 100 mA • Integrated bus coupling units • Bus connection via bus terminal and contact system to data rail • Modular installation devices for mounting on TH35 EN 60715 mounting rail • Width: 4 MW (1 MW = 18 mm).

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	N 670 N 670 Universal I/O modules ¹⁾²⁾ 2 x Universal I/O, 2 inputs Pt1000, 2 outputs 230 V AC, 10 A	A	5WG1 670-1AB03		1	1 unit	139	0.213 kg

5WG1 670-1AB03

¹⁾ The external 24 V AC/DC power supply unit must be ordered separately (e. g. 4AC2 402).

²⁾ For physical sensors, see Chapter, "Physical sensors -> without KNX connection".

Output Devices

2

Notes



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Introduction

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Binary input devices

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Analog input devices

3

Introduction

3

Overview

	Devices	Application	Page
	Binary input devices	Binary inputs monitor switching states and signal them on the GAMMA <i>instabus</i> .	3/3
	Analog input devices	Flexible application: the universal I/O module provides flexible inputs and outputs.	3/7

Technical specifications

Type		N 262E	N 263E	N 262E11	N 263E11	N 264E11	N 260	N 261	RL 260/23	UP 220/02	UP 220/21	UP 220/31	N 501	N 502/02	UP 511/10	UP 520/31	UP 525/31	UP 562/31	
Enclosure data																			
Design		N	N	N	N	N	N	N	RL	UP	UP	UP	N	N	UP	UP	UP	UP	
Modular installation devices for mounting on TH35 EN 60715 mounting rail		✓	✓	✓	✓	✓	✓	✓	--	--	--	--	✓	✓	--	--	--	--	
For inserting into flush-mounting switch and socket boxes with Ø = 60 mm		--	--	--	--	--	--	--	--	✓	✓	✓	--	--	✓	✓	✓	✓	
Modular installation device for mounting in AP 118 automation module box or AP 641 room control box ⁵⁾		--	--	--	--	--	--	--	✓	--	--	--	--	--	--	--	--	--	
Dimensions																			
• Height	mm								36.2	38	42	42							
• Width (1 MW = 18 mm)	mm	6 MW	6 MW	6 MW	6 MW	6 MW	2 MW	2 MW	47.8	43	42	42	8 MW	8 MW	Ø 53	Ø 53	Ø 53	Ø 53	
• Depth	mm								86.5	17.6	8.5	8.5			28	28	28	28	
Display/control elements																			
LED for status indication per input		✓	✓	✓	✓	✓	--	--	--	--	--	--	✓	✓	--	--	--	--	
Power supply																			
Bus-powered electronics		--	--	--	--	--	✓	✓	✓	✓	✓	✓	--	--	✓	✓	✓	✓	
Electronics powered via an integrated power supply unit for supply voltage 230 V AC		✓	✓	✓	✓	✓	--	--	--	--	--	--	✓	✓	--	--	--	--	
Bus connection																			
Integrated bus coupling units		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Bus connection via contact system to data rail		✓	✓	✓	✓	✓	✓	✓	--	--	--	--	✓	✓	--	--	--	--	
Bus connection via bus terminal		✓	✓	✓	✓	✓	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Inputs																			
Max. cable length, unshielded, twisted	m	100	100	100	100	100	100	100	100	10	10	10	100	100	5	5	5	5	
Pushbutton inputs																			
For signal input (floating contacts)		8	--	16	--	8	--	--	--	4	2 ¹⁾	4 ¹⁾	--	--	2	2	2	2	
Determination of switching state by means of the voltage generated in the device		✓	--	✓	--	✓	--	--	--	✓	✓	✓	--	--	✓	✓	✓	✓	
For voltage input		--	✓	--	✓	✓	✓	✓	✓	--	--	--	✓	✓	--	--	--	--	
• 230 V AC		--	--	--	--	--	4 ²⁾	✓	✓	--	--	--	--	--	--	--	--	--	
• 24 V AC/DC		--	--	--	--	--	--	4 ³⁾	✓	--	--	--	--	--	--	--	--	--	
• 12 ... 230 V AC/DC		--	8 ⁴⁾	--	--	8 ⁴⁾	--	--	4	--	--	--	8	8	--	--	--	--	
• 12 ... 230 V AC/12 ... 115 V DC		--	--	--	16 ⁴⁾	--	--	--	--	--	--	--	--	--	--	--	--	--	

1) Inputs, alternatively can be used as outputs for controlling LEDs up to a maximum of 2 mA.

2) Pushbutton inputs with shared ground (N).

3) Pushbutton inputs with shared ground (COM-).

4) The pushbutton inputs are mutually insulated from the base.

5) The AP 641 room control box and AP 118 automation module box must be ordered separately, see Chapter "Quick-assembly system - Room control box".

For selection and ordering data, see page 3/5.








Binary input devices

3

Type	980902 N 262E	980902 N 263E	980D02 N 262E11	980D02 N 263E11	980D02 N 264E11	240505 N 260	240A01	220703	240505 N 261	240A01	220703	983101 RL 260/23	900902 UP 220/02	982301 UP 220/21	982201 UP 220/31	981701 N 501	981601 N 502/02	207201 UP 511/10	207301 UP 520/31	301901 UP 525/31	207101 UP 562/31
Application program	980902	980902	980D02	980D02	980D02	240505	240A01	220703	240505	240A01	220703	983101	900902	982301	982201	981701	981601	207201	207301	301901	207101
Input functions																					
Max. number of group addresses	97	97	97	97	97	14	8	27	14	8	27	120	20	120	120	220	120	26	26	26	26
Max. number of assignments	97	97	97	97	97	16	9	27	16	9	27	120	20	120	120	220	120	27	27	27	27
Telegram rate limitations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Configurable debounce time	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Locking of inputs using blocking objects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Adjustable duration of long button press	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Configurable contact type (NO contact/NC contact)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transmission parameters																					
Adjustable cyclic transmission	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Configurable transmission in the event of changes to the input	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Configurable transmission in the event of bus voltage recovery	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transmission delay with adjustable delay time	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Configurable event-controlled transmission	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Switching																					
Switching ON/OFF																					
• Rising edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Falling edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Rising and falling edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Short/long button press can be evaluated	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Switching OVER																					
• Rising edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Falling edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Rising and falling edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Value transmission																					
8 bit																					
• Rising edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Falling edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Rising and falling edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Short/long button press can be evaluated	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16 bit																					
• Rising edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Falling edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Rising and falling edge	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Configurable short/long button press	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dimming																					
1-pushbutton dimming																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2-pushbutton dimming with stop telegram (4 bit)																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2-pushbutton dimming with cyclic transmission (4 bit)																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2-pushbutton dimming with value setting (8 bit)																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Short/long button press can be evaluated																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shutter/blind																					
1-pushbutton shutter/blind control																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2-pushbutton shutter/blind control																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Short/long button press can be evaluated																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Scene																					
Store and call up scene, 8-bit																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Store and call up scene, 1-bit in conjunction with scene module																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pulse counting																					
Pulse counting with/without limit value monitoring (8 bit, 16 bit, 32 bit)																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Group control																					
1-pushbutton group control																					
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For selection and ordering data, see page 3/5.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 262E N 262E binary input devices 8 inputs for floating contacts	A	5WG1 262-1EB01		1	1 unit	139	0.387
	N 263E N 263E binary input devices 8 inputs for 12 ... 230 V AC/DC	A	5WG1 263-1EB01		1	1 unit	139	0.377
	N 262E11 N 262E11 binary input devices 16 inputs for floating contacts	A	5WG1 262-1EB11		1	1 unit	139	0.440
	N 263E11 N 263E11 binary input devices 16 inputs for 12 ... 230 V AC, 12 ... 115 V DC	A	5WG1 263-1EB11		1	1 unit	139	0.417
	N 264E11 N 264E11 binary input devices 8 inputs for 12 ... 230 V AC/DC, 8 inputs for floating contacts	A	5WG1 264-1EB11		1	1 unit	139	0.426
	N 260 N 260 binary inputs 4 inputs for 230 V AC	C	5WG1 260-1AB01		1	1 unit	139	0.134
	N 261 N 261 binary inputs 4 inputs for 24 V AC/DC	D	5WG1 261-1AB01		1	1 unit	139	0.133
	N 261 N 261 binary inputs ® 4 inputs for 24 V AC/DC	D	5WG1 261-1CB01		1	1 unit	139	0.136
	RL 260/23 RL 260/23 binary inputs ^{NEW} 4 inputs for 12 ... 230 V, • for mounting in AP 118 automation module box or AP 641 room control box ²⁾	A	5WG1 260-4AB23		1	1 unit	139	0.060
	UP 220/02 UP 220/02 pushbutton interfaces (to be discontinued) ® 4 inputs for floating contacts	X	5WG1 220-2AB02		1	1 unit	139	0.060
	UP 220/21 UP 220/21 I/O pushbutton interfaces ¹⁾ 2 inputs/outputs	A	5WG1 220-2AB21		1	1 unit	139	0.036
	UP 220/31 UP 220/31 I/O pushbutton interfaces ¹⁾ 4 inputs/outputs	A	5WG1 220-2DB31		1	1 unit	139	0.041








¹⁾ Recommendation: LED light insert, for switches and pushbutton inserts, red, 1.5 V DC, 1 mA (order no.: 5TG7 318).

²⁾ The AP 641 room control box and AP 118 automation module box must be ordered separately, see Chapter "Quick-assembly system - Room control box".


Input Devices

Binary input devices


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Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 501 N 501 combination shutter/blind actuators 4 x 230 V AC, 6 A, 8 x binary inputs	B	5WG1 501-1AB01		1	1 unit	139	0.500
5WG1 501-1AB01								
	N 502/02 N 502/02 combination switch actuators 8 x 230 V AC, 16 A, 8 x binary inputs	B	5WG1 502-1AB02		1	1 unit	139	0.565
5WG1 502-1AB02								
	UP 511/10 UP 511/10 switch actuators 1 x 230 V AC, 16 A, 2 x binary inputs	A	5WG1 511-2AB10		1	1 unit	139	0.095
5WG1 511-2AB10								
	UP 520/31 UP 520/31 shutter/blind actuators 1 x 230 V AC, 6 A, 2 x binary inputs	D	5WG1 520-2AB31		1	1 unit	139	0.092
5WG1 520-2AB31								
	UP 525/31 UP 525/31 universal dimmers 210 VA, 230 V AC, 50 Hz 	A	5WG1 525-2AB31		1	1 unit	139	0.087
5WG1 525-2AB31								
	UP 562/31 UP 562/31 switch actuators 2 x 230 V AC, 6 A, 2 x binary inputs	A	5WG1 562-2AB31		1	1 unit	139	0.089
5WG1 562-2AB31								

Technical specifications

Type	Description
 N 670	N 670 Universal I/O modules <ul style="list-style-type: none"> • 2 universal inputs/outputs, each adjustable as <ul style="list-style-type: none"> - Analog input 0 V ... 10 V DC - Analog output 0 V ... 10 V DC - Binary input for 10 V DC - Binary output for 10 V DC • Analog input with limit value monitoring and signaling, with adjustable limit values and hysteresis • Analog output with adjustable lower and upper limit of the output voltage with adjustable voltage value in the event of bus voltage failure and recovery • Binary input with pulse edge evaluation • Binary output with adjustable switching position in the event of bus voltage failure and recovery • 2 inputs for connection of temperature sensors²⁾ with Pt1000 measuring element for measuring temperatures in the range of -25 °C ... +45 °C, with limit value monitoring and signaling, with adjustable limits and hysteresis • 2 binary outputs, relay contacts rated for 230 V AC, 10 A at p.f. = 1, with <ul style="list-style-type: none"> - Configurable actuated position (NO contact/NC contact) - Positively driven operation - Configurable switching position in the event of bus voltage failure and recovery • Electronics powered via an external 24 V AC/DC power supply unit, power consumption approx. 100 mA • Integrated bus coupling units • Bus connection via bus terminal and contact system to data rail • Modular installation devices for mounting on TH35 EN 60715 mounting rail • Width 4 MW (1 MW = 18 mm)

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS* / P. unit	PG	Weight per PU approx.	
	N 670	N 670 Universal I/O modules¹⁾²⁾ 2 x Universal I/O, 2 inputs Pt1000, 2 outputs 230 V AC, 10 A	A	5WG1 670-1AB03		1	1 unit	139	0.213

5WG1 670-1AB03

¹⁾ The external 24 V AC/DC power supply unit must be ordered separately (e. g. 4AC2 402).

²⁾ For physical sensors, see Chapter, "Physical sensors -> without KNX connection".

Input Devices

Notes

3



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Introduction

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Input/output devices

4

Combination Devices

Introduction

Overview

4

**Devices****Input/output devices****Application**

Combine inputs and outputs to devices for flexible application.

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Technical specifications

Type		981701 N 501	981601 N 502/02	900501 N 670	906101 N 605	906202 N 605/11	905303 N 526/02	207201 UP 511/10	207101 UP 562/31	207301 UP 520/31	301901 UP 525/31	982301 UP 220/21	982201 UP 220/31
Application program													
Enclosure data													
Design		N	N	N	N	N	N	UP	UP	UP	UP	UP	UP
Modular installation device for mounting on TH35 EN 60715 mounting rail.		✓	✓	✓	✓	✓	✓	--	--	--	--	--	--
For installation in flush-mounting switch and socket boxes with Ø = 60 mm		--	--	--	--	--	--	✓	✓	✓	✓	✓	✓
Dimensions													
• Width/Ø (1 MW = 18 mm)	mm	8 MW	8 MW	4 MW	6 MW	6 MW	6 MW	Ø 53	Ø 53	Ø 53	Ø 53	Ø 42	Ø 42
• Depth	mm							28	28	28	28	8.5	8.5
Display/control elements													
LED for status indication per input		✓	✓	--	--	--	✓	--	--	--	--	--	--
LED for status indication per output		✓	✓	--	✓	✓	✓	--	--	--	--	--	--
LED for operation/status display		✓	✓	--	✓	✓	✓	--	--	--	--	--	--
Pushbuttons for local operation on the device		✓	✓	--	✓	✓	✓	--	--	--	--	--	--
Power supply													
Electronics powered via an integrated power supply unit for supply voltage 230 V AC		✓	✓	--	✓	✓	✓	--	--	--	--	--	--
Bus-powered electronics		--	--	--	--	--	--	✓	✓	✓	✓	✓	✓
Electronics powered via an external power supply unit		--	--	24 V AC/DC ⁵⁾	--	--	--	--	--	--	--	--	--
Bus-dependent operation possible		✓	✓ ¹⁾	--	✓	✓	--	--	--	--	--	--	--
Bus connection													
Integrated bus coupling units		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bus connection via bus terminal		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bus connection via contact system to data rail		✓	✓	✓	--	--	--	--	--	--	--	--	--
Outputs													
Control output													
1 ... 10 V DC		--	--	--	--	--	3	--	--	--	--	--	--
Max. ECG per output (Osram Dynamik 58 W)		--	--	--	--	--	50	--	--	--	--	--	--
Load output													
Floating relay contact		--	8 ²⁾	2	--	--	3	1	2	1	1	--	--
Silent semiconductor switch		--	--	--	6	6	--	--	--	--	--	--	--
Electrically interlocked relays (for reversing direction of rotation)		4	--	--	--	--	--	--	--	--	--	--	--
Load types													
Rated contact voltage, AC	V	230	230	230	230	230	230	230	230	230	230	--	--
Rated contact current	A	6	16	10	--	--	6	16	6	6	--	--	--
Max. short-time current	A	--	--	--	1.5	0.5	--	--	--	--	--	--	--
Switching capacity for permanent loading	W	--	--	--	12	6	--	--	--	--	--	--	--
Protection													
Electronic protection of outputs against overload and short circuit		--	--	--	✓	✓	--	--	--	✓	✓	--	--
Universal inputs/outputs													
Adjustable universal inputs/outputs		--	--	2	--	--	--	--	--	--	--	--	--
Inputs													
Max. cable length, unshielded, twisted	m	100	100	--	50	50	100	5	5	5	5	10	10
For signal input (floating contact)		--	--	--	2 x 3	2 x 3	--	2	2	2	2	2 ³⁾	4 ³⁾
Determination of switching state by means of the voltage generated in the device		--	--	--	✓	✓	--	✓	✓	✓	✓	✓	✓
For voltage input		✓	✓	--	--	--	--	--	--	--	--	--	--
12 ... 230 V AC/DC		8	8	--	--	--	--	--	--	--	--	--	--
PT1000 temperature sensor input		4)	4)	2	--	--	--	--	--	--	--	--	--
Brightness sensor input for UP 255/AP 255		--	--	--	--	--	3	--	--	--	--	--	--

1) Each input affects the output of the same name, adjustable as timer or impulse relay.

2) Except channel A.




3) The inputs are mutually insulated from the base.








4) Inputs, alternatively can be used as outputs for controlling LEDs up to a maximum of 2 mA.

5) Power consumption approx. 100 mA

Input/output devices

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Type	Description
 N 501	N 501 combination shutter/blind actuators <ul style="list-style-type: none"> • 8 inputs for DC or AC voltage in the range of 12 ... 230 V • 8 relay contact outputs electrically interlocked in pairs for the control of 4 sun protection drives for 230 V AC, contact rated operational voltage 230 V AC, contact rated operational current 6 A, p.f. = 1 • Preset in its delivery state for the direct control of the outputs per shutter/blind pushbutton function via the pushbuttons connected to the inputs • Yellow LED for indicating activated direct operation • Pushbutton for switching over between bus and direct operation • One pushbutton per relay contact output for the ON switching of the output in direct operation for as long as the pushbutton is pressed • 1 red LED per input for indication of the respective signal state, if bus-connected, with optional shared or individual parameterization of the inputs and with configurable function per input using ETS • Optional blocking of each input by means of the respective blocking object • Transmission of input objects after changes • Optional cyclic transmission of input objects • Communication objects per shutter/blind channel for moving the sun protection into its end position, for stopping movement or for stepwise adjustment of blind slats • Communication objects for directly moving the sun protection and the blind slats to a specific position using position data as a percentage value • Automatic opening of the blind slats up to a preset position after the shutter/blind has lowered without interruption from the top to the bottom position, with integrated 1-bit scene control for storing and calling up (restoring) 2 intermediate positions of shutter/blinds and slats • Integrated 8-bit scene control and integration of each output in up to 8 scenes • Optional object "Sun" for the activation/deactivation of the sun-light tracking control of the blind slats for shading with maximum daylight • Differentiation between automatic and manual mode and automatic switchover from automatic to manual mode of the relevant channel by pressing a bus pushbutton for the manual control of the respective sun protection • Priority of manual mode over automatic position commands • Alarm object per device or per channel for moving the sun protection into the configured safety position (e. g. in the case of wind alarm) and with the blocking of movement into a different position for as long as the alarm is pending • Movement-blocking object per device or per channel for locking the sun protection in its current position (e. g. for cleaning the outer slats) • Status object per channel for scanning or automatically transmitting the sun protection and blind slat position as a percentage value • Optional status object for signaling that the bottom or top position has been reached, with integrated bus coupling unit with only half the standard bus load.
 N 502/02	N 502/02 combination switch actuators <ul style="list-style-type: none"> • Each with one pushbutton per output, for switching the output in direct operation via an OVER function with a short press and for changing over the operating mode of the output between the current impulse relay and time-controlled relay with a long press • Preset in its delivery state for direct switching of an output using a changeover function via the input of the same name • Adjustable function per input using the ETS: <ul style="list-style-type: none"> - Switching state, send binary value/switch edge/short/long switch - 1 pushbutton dimming/1 pushbutton control of sun protection/1 pushbutton group control - 1-bit scene control - 8-bit scene control/8-bit value edge/8-bit value short/long - 16-bit value edge/16-bit value short/long/16-bit floating-point value edge/16-bit floating-point value short/long • or with adjustable function per input pair: <ul style="list-style-type: none"> - 2-pushbutton dimming with stop telegram - 2-pushbutton sun protection control • Optional blocking of each input via the respective blocking object • Transmission of the input objects after change • Optional cyclic transmission of input objects • Setting via ETS as to whether all outputs are identical or can be parameterized individually • Operating mode can be adjusted for each output (normal mode, timer mode) • Adjustable ON/OFF delay • Selectable logic operation (AND/OR) of an input with another communication object and adjustable start value of operation in the event of bus voltage recovery • Object can be added per output, night mode for limited ON switching of lighting during the night • Adjustable ON period during night or timer mode • Selectable warning of impending OFF by turning the device briefly on and off three times (flashing) during night or timer mode • Status object for signaling direct operation • Object for status indication can be added for each output • Transmission of status objects on demand and/or automatically after modification • Integrated 8-bit scene control and integration of each channel in up to 8 scenes • Switching state with mains or bus/mains voltage system voltage recovery can be adjusted for each output
 N 670	N 670 Universal I/O modules 2 x Universal I/O, 2 inputs for Pt1000, 2 outputs 230 V AC, 10 A <ul style="list-style-type: none"> • 2 universal inputs/outputs, each adjustable as <ul style="list-style-type: none"> - Analog input 0 V ... 10 V DC - Analog output 0 V ... 10 V DC - Binary input for 10 V DC - Binary output for 10 V DC • Analog output with adjustable lower and upper limit of the output voltage with adjustable voltage value in the event of bus voltage failure and recovery • Binary input with pulse edge evaluation • Configurable actuated position (NO contact/NC contact) • Positively driven operation • Configurable behavior in the event of a bus voltage failure/recovery • Analog input and PT1000 input with <ul style="list-style-type: none"> - limit value monitoring - Limit value signal - Adjustable limit values - Adjustable hysteresis

Type	Description
 N 605	<p>N 605 thermal drive actuators With 6 inputs and outputs</p> <ul style="list-style-type: none"> For control of electrothermal actuators for small valves for heaters and cooling ceilings Configurable contact type (NO contact/NC contact) Configurable transmission of the input status objects on demand, in case of change, cyclically and/or in case of bus or system voltage recovery Signaling of a short-circuited or overloaded output and de-energizing of this output Configurable valve open and close time Configurable valve state (open or closed) in case of de-energized output Adjustment to a non-linear valve characteristic curve <ul style="list-style-type: none"> With configurable control per output either by positioning commands as a percentage value or by ON/OFF switching commands Conversion of percentage positioning commands into pulse width modulated switching commands With position configurable per output in the case of an open window With transmission of an output status object on request or if the switching state changes Configurable behavior in the event of a bus voltage failure With optional calcification protection Configurable transmission
 N 605/11	<p>N 605/11 thermal drive actuators 6 inputs, 2 x 3 outputs for control of 2 heating/cooling mats</p> <ul style="list-style-type: none"> For control of electrothermal actuators for small valves for heaters and cooling ceilings Configurable contact type (NO contact/NC contact) 6 outputs, each with one silent semiconductor switch, divided into 2 groups, each with 3 outputs and fixed assignment of outputs to the forward flow and return valves Configurable valve open and close time Signaling of a short-circuited or overloaded output and de-energizing of all outputs of the respective group <ul style="list-style-type: none"> Control of all outputs by means of ON/OFF switching command Transmission of the output status object on request or if the switching state changes, optionally with automatic switchover of the return valve between heating and cooling mode or with switchover of the return valve by means of an object De-energizing of return valve output if the forward flow valves are closed Configurable behavior in the event of a bus voltage failure Configurable transmission
 N 526/02	<p>N 526/02 switch/dimming actuators Triple, 230 V AC, 6 A, with constant light level control</p> <ul style="list-style-type: none"> Integrated constant light level control per output (outputs are master/slave-capable) Configurable starting value Adjustable dimming time Switching ON/OFF BRIGHTER/DARKER dimming <p>Accessories</p> <ul style="list-style-type: none"> Switching ON/OFF possible via BRIGHTER/DARKER dimming Set 8-bit value Night mode (lighting for cleaning) Transmitting switching and dimming status Configurable behavior in the event of a bus voltage failure/recovery
 AP 255  UP 255	<p>AP 255/UP 255 indoor brightness sensors For N 526/02 switch/dimming actuators</p> <ul style="list-style-type: none"> For direct connection to N 526/02 switch/dimming actuators via a 3-wire cable up to 100 m in length, which also serves to power the sensor electronics Plug-in low-voltage terminal for connection of the cable to N 526/02 Including two rigid optical fiber rods: <ul style="list-style-type: none"> Parallel light-sensitive surface for mounting surface Inclined (45°) light-sensitive surface for mounting surface <p><u>UP 255 indoor brightness sensors</u></p> <ul style="list-style-type: none"> For mounting in a hollow-wall or flush-mounting box with \varnothing 58 mm and min. 40 mm mounting depth Cover made of white plastic (polystyrene) Dimensions (H x W x D): 30 x 52 x 33 mm. <p><u>AP 255 indoor brightness sensors</u></p> <ul style="list-style-type: none"> For mounting on a ceiling or wall Includes surface-mounting enclosure made of white plastic (polypropylene) with \varnothing 70 mm and 24 mm in height Dimensions (H x W x D): 30 x 72 x 33 mm.
 UP 511/10	<p>UP 511/10 switch actuators 16 A, 1 x 230 V AC, 2 x binary inputs</p> <ul style="list-style-type: none"> Construction site function, inputs directly affect the output Blocking function Logic operation function Transmitting status Time functions: <ul style="list-style-type: none"> OFF delay ON delay Timer mode (automatic stairwell switch) <ul style="list-style-type: none"> Configurable behavior in the event of a bus voltage failure/recovery Positively driven operation Output can be inverted (NO contact/NC contact) Adjustable mode of operation for inputs: switching ON/OFF/OVER, value setting, dimming, shutter/blind control, scene control Blocking function for inputs Configurable behavior in the event of a bus voltage recovery.
 UP 562/31	<p>UP 562/31 switch actuators 2 x 230 V AC, 6 A, 2 x binary inputs</p> <ul style="list-style-type: none"> Construction site function, inputs directly affect the output Blocking function Logic operation function Transmitting status Time functions: <ul style="list-style-type: none"> OFF delay ON delay Timer mode (automatic stairwell switch) <ul style="list-style-type: none"> Configurable behavior in the event of a bus voltage failure/recovery Positively driven operation Output can be inverted (NO contact/NC contact) Adjustable mode of operation for inputs: switching ON/OFF/OVER, value setting, dimming, shutter/blind control, scene control Blocking function for inputs Configurable behavior in the event of a bus voltage recovery.


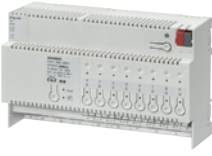





Combination Devices

Input/output devices

4

Type	Description
 UP 520/31	UP 520/31 shutter/blind actuators 1 x 230 V AC, 6 A, 2 x binary inputs <ul style="list-style-type: none"> • 2 electrically interlocked relay contacts as switching elements • Selectable type of sun protection (shutter/blind/roller) • Configurable stop time at change of movement direction • Object for activation/deactivation of the sun protection function • Configurable sunblind position after activation/deactivation of the sun protection function • 2 safety objects • Selectable cyclic monitoring of safety objects • Moving into a configurable end position on activation or deactivation of the safety function • Adjustable behavior in the event of a bus voltage failure/recovery <ul style="list-style-type: none"> • Adjustable mode of operation for inputs <ul style="list-style-type: none"> - As secondary input, only directly affects the switching output - Acts independently as general binary inputs with bus communication • Free allocation of the functions switching, dimming, shutter/blind, value transmission and scene control to the 2 inputs • 2 independent switching objects per input • Blocking objects for blocking inputs • Individually configurable behavior per input in the event of a bus voltage recovery • Adjustable telegram rate limitation for both inputs • Approx. 20 cm long leads for connecting phase conductors, outputs, inputs and bus
 UP 525/31	UP 525/31 universal dimmers 50 ... 210 VA, 230 V AC, 50/60 Hz, 2 x binary inputs <ul style="list-style-type: none"> • Settable switching and dimming behavior • Selectable operating mode (normal mode, timer mode) • Soft ON and Soft OFF • Dimming or jumping to a new dimming value • Time-delayed switch-OFF when dimming below a settable dimming value • Feedback on switching state and dimming value • Short-circuit signal • Load failure message • Integrated 8-bit scene control • Blocking object for blocking output • Configurable dimming value at start and end of a blocking phase • Configurable behavior of the output after a bus voltage recovery <ul style="list-style-type: none"> • Adjustable mode of operation for inputs <ul style="list-style-type: none"> - As secondary input, only directly affects the switching output - Acts independently as general binary inputs with bus communication • Free assignment of the switching, dimming and shutter/blind functions • Value transmission and scene control to the 2 inputs • 2 independent switching objects per input • Blocking objects for blocking inputs • Individually configurable behavior per input in the event of a bus voltage recovery • Adjustable telegram rate limitation for both inputs • Approx. 20 cm long leads for connecting phase conductors, outputs, inputs and bus
 UP 220/21 UP 220/31	UP 220/21 and UP 220/31 I/O pushbutton interfaces <ul style="list-style-type: none"> • Input functions: <ul style="list-style-type: none"> - Max. number of group addresses 120 - Max. number of assignments: 120 - Locking of inputs using blocking objects - Adjustable duration of long button press - Configurable contact type (NO contact/NC contact) • Input functions: <ul style="list-style-type: none"> - Max. number of group addresses 120 - Max. number of assignments: 120 - Locking of inputs using blocking objects - Adjustable duration of long button press - Configurable contact type (NO contact/NC contact) • Transmission parameters: <ul style="list-style-type: none"> - Adjustable cyclic transmission - Configurable transmission in the event of bus voltage recovery • Switching ON/OFF: <ul style="list-style-type: none"> - Rising edge - Falling edge - Rising and falling edge - Short/long button press can be evaluated • Switching OVER: <ul style="list-style-type: none"> - Rising edge - Falling edge - Rising and falling edge • Value transmission: <ul style="list-style-type: none"> - 8 bit: evaluation of rising edge, falling edge, rising and falling edge, short/long button press - 16 bit: parameterization of rising edge, falling edge, rising and falling edge, short/long button press <ul style="list-style-type: none"> • Dimming: <ul style="list-style-type: none"> - 1-pushbutton dimming - 2-pushbutton dimming with stop telegram (4 bit) - 2-pushbutton dimming with cyclic transmission (4 bit) - 2-pushbutton dimming with value setting (8 bit) - Short/long button press can be evaluated • Shutter/blind: <ul style="list-style-type: none"> - 1-pushbutton shutter/blind control - 2-pushbutton shutter/blind control - Short/long button press can be evaluated • Scene: <ul style="list-style-type: none"> - Store and call up scene, 8-bit - Store and call up scene, 1-bit in conjunction with scene module • Pulse counting with/without limit value monitoring (8 bit, 16 bit, 32 bit) • 1-pushbutton group control

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 501 N 501 combination shutter/blind actuators 4 x 230 V AC, 6 A, 8 x binary inputs	B	5WG1 501-1AB01		1	1 unit	139	0.500
5WG1 501-1AB01								
	N 502/02 N 502/02 combination switch actuators 8 x 230 V AC, 16 A, 8 x binary inputs	B	5WG1 502-1AB02		1	1 unit	139	0.565
5WG1 502-1AB02								
	N 670 N 670 Universal I/O modules ¹⁾²⁾ 2 x Universal I/O, 2 inputs for Pt1000, 2 outputs 230 V AC, 10 A	A	5WG1 670-1AB03		1	1 unit	139	0.213
5WG1 670-1AB03								
	N 605 N 605 thermal drive actuators (to be discontinued) Each with 6 inputs and outputs	A	5WG1 605-1AB01		1	1 unit	139	0.436
5WG1 605-1AB01								
	N 605/11 N 605/11 thermal drive actuators (to be discontinued) 6 inputs, 2 x 3 outputs for control of 2 heating/cooling mats	A	5WG1 605-1AB11		1	1 unit	139	0.432
5WG1 605-1AB11								
	N 526/02 N 526/02 switch/dimming actuators (to be discontinued) 3 x 230 V AC, 6 A, with constant light level control	A	5WG1 526-1AB02		1	1 unit	139	0.459
5WG1 526-1AB02								
	Accessories							
	UP 255 UP 255 indoor brightness sensors (to be discontinued) N 526/02 switch/dimming actuators	A	5WG1 255-4AB01		1	1 unit	139	0.092
5WG1 255-4AB01								
	AP 255 AP 255 indoor brightness sensors (to be discontinued) N 526/02 switch/dimming actuators	C	5WG1 255-4AB02		1	1 unit	139	0.096
5WG1 255-4AB02								








1) The external 24 V AC/DC power supply unit must be ordered separately (e. g. 4AC2 402).

2) For physical sensors, see Chapter, "Physical sensors -> without KNX connection".

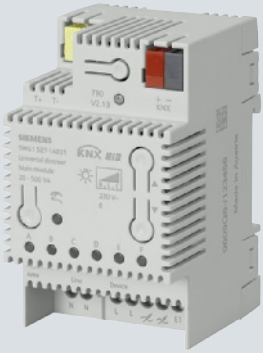
Combination Devices

Input/output devices

4

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	UP 511/10 UP 511/10 switch actuators 1 x 230 V AC, 16 A, 2 x binary inputs	A	5WG1 511-2AB10		1	1 unit	139	0.095 kg
5WG1 511-2AB10								
	UP 562/31 UP 562/31 switch actuators 2 x 230 V AC, 6 A, 2 x binary inputs	A	5WG1 562-2AB31		1	1 unit	139	0.089
5WG1 562-2AB31								
	UP 520/31 UP 520/31 shutter/blind actuators 1 x 230 V AC, 6 A, 2 x binary inputs	D	5WG1 520-2AB31		1	1 unit	139	0.092
5WG1 520-2AB31								
	UP 525/31 UP 525/31 universal dimmers 50 ... 210 VA, 230 V AC, 50/60 Hz, 2 x binary inputs	A	5WG1 525-2AB31		1	1 unit	139	0.087
5WG1 525-2AB31								
	UP 220/21 UP 220/21 I/O pushbutton interfaces ¹⁾ 2 inputs/outputs	A	5WG1 220-2AB21		1	1 unit	139	0.036
5WG1 220-2AB21								
	UP 220/31 UP 220/31 I/O pushbutton interfaces ¹⁾ 4 inputs/outputs	A	5WG1 220-2DB31		1	1 unit	139	0.041
5WG1 220-2DB31								




¹⁾ Recommendation: LED light insert, for switches and pushbutton inserts, red, 1.5 V DC, 1 mA (order no.: 5TG7 318).



5/2	Introduction
5/5	Dimmers
5/10	Switch/dimming actuators
5/18	Light level controls

Introduction

Overview

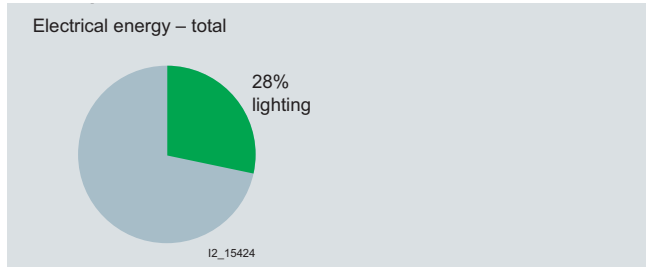
Devices	Application	Page
 <p>Dimmers</p>	Universal dimmers automatically detect the connected load type and adapt accordingly. Trailing-edge phase dimmers for dimming incandescent lamps, HV halogen lamps and LV halogen lamps with electronic transformer.	5/5
 <p>Switch/dimming actuators</p>	For the switching and dimming of fluorescent lamps with dimmable electronic controlgear.	5/10
 <p>Light level controls</p>	Convenience and energy saving in one – these components let you optimize your lighting.	5/18

Function		Application	Section
Switching	Load	Luminous rows	2/3
Dimming	Conventional	Incandescent lamp dimming	5/5
	1 ... 10 V	Dimming electronic controlgear	5/10
	DALI	Dimming electronic controlgear	5/10, 18/2
Controls	Outdoor brightness sensors	Indoor lighting of industrial halls	5/18
Control	Two-step control	Hall/stairway lighting	5/18, 18/2
	Constant light level control	Office workplace lighting	5/18, 18/2
Presence control	Motion detector	Hall/stairway lighting	5/18, 18/2
	Presence detector	Office workplace lighting	5/18, 18/2
Time control	Day, week, year schedule	Shopping center after opening times	13/5
	Timer mode	Hall/stairway lighting	13/5
	Astro function	Car park lighting	13/5
Scene control	Scenes	Ambient lighting in hotels/restaurants	2/3, 18/2
	Effects	Changing color LEDs for outer facade	5/10

Energy efficient lighting

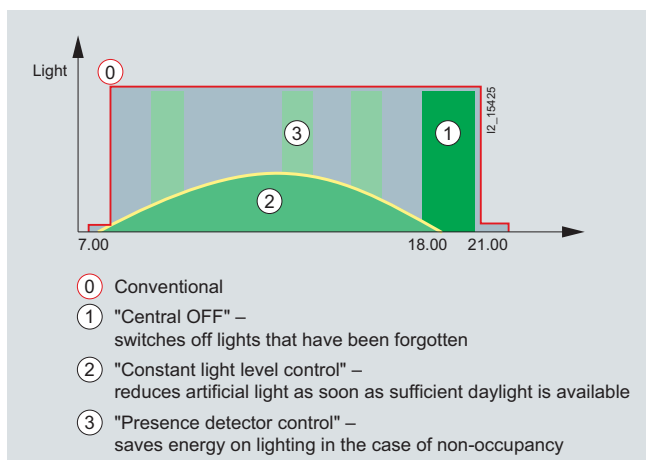
Approx. 28 % of all the electrical energy in a building is used for lighting. Increased demands made on the energy efficiency of buildings require enhanced optimization of energy supply, distribution and use. This goal can only be achieved through automation. Useful automation takes into account the comfort requirements of room users so that room temperature and the level of lighting can be optimally adjusted to the current usage situation. Room users need to be able to adjust their work environment to suit individual requirements.

Savings potential demonstrated using an office building



To reduce energy costs, the artificial lighting of a room can be controlled dependent on time, occupancy and daylight. A range of solutions are available for this purpose, which we shall describe in the following sections and consider their effectiveness with regard to reducing energy costs.

By way of an example, we will demonstrate potential energy savings in an office. In the case of lighting that is not automated, a user profile can be assumed, which is demonstrated in the diagram "Options for potential savings". It is assumed that minimum lighting is switched on at 7 am. From 8 am onwards, the lighting is switched on fully by room users. The lighting is then left on all day until the last person leaves the room and switches off the light. Minimum lighting is typically left running for cleaning purposes. This lighting is then switched off, either by the cleaners or by security.



Potential savings - the gray areas of the diagram represent the energy used in the case of manual light control.

Time-dependent light control

When lighting is switched on by persons entering a room due to the level of lighting, in many cases they forget to switch it off again on leaving. A time-dependent light control would take this into account. Time-dependent light control is either relative in relation to an event or absolute in relation to a time or date. If the time-dependent light control is relative to an event, the lighting is switched off on expiry of a set time or dimmed to a minimum value. The best known example of this type of light control is stairwell lighting control.

In the case of time-dependent light control, the lighting is automatically switched off at a preset time. In order to warn users of an impending off, the lighting can be set to flash prior to the action or, depending on the equipment, dimmed to a preset value. This gives users the opportunity to delay the switch off by a set time, e. g. 60 minutes, by overriding it manually.

The diagram "Potential savings quantified" shows the effect of time-dependent light control on energy consumption.

By switching off lighting centrally, energy consumption can be reduced by 18 %.

Daylight-dependent light control

There are generally two methods for the daylight-dependent control of the brightness in a room: light control by means of a brightness sensor in the room (constant light level control) or light control by means of an outdoor brightness sensor in combination with control devices, which take into account the direction of the window, the geometry of the window and the possible presence of objects that may cast shadows (buildings, trees).

There are arguments in favor of both methods. While the daylight-dependent light control requires fewer sensors than other light controls, commissioning involves considerably higher engineering costs. The level of lighting can be kept at a preset or user-defined value by a constant light level control in a way that optimally utilizes the available daylight and reduces energy costs. In order to utilize the daylight and offer anti-glare protection, the slats of the relevant shutter/blinds can be controlled so that these permit the penetration of available daylight while preventing the glare of direct sunlight. Preventing direct sunlight from penetrating the room also prevents the room from becoming too hot.

Presence-dependent light control

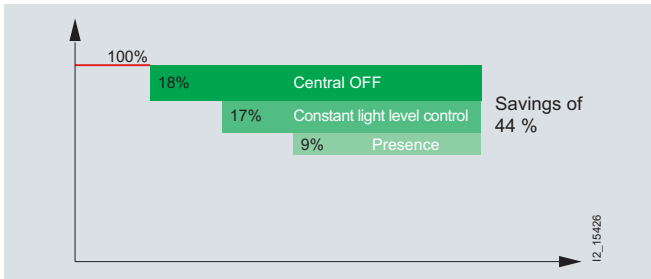
Many rooms are only used for part of the day, so that a presence-dependent daylight control system could be usefully implemented to reduce energy costs.

Using presence detectors, room functions can be automatically switched from comfort mode to ready-to-run or energy-saving mode. They can also be used in combination with an access control or controlled manually or by means of a preset time. In corridors, the lighting can be switched off outside the main periods of use and only switched back on when the presence of persons is detected. Within the main periods of use, the lighting can also be dimmed to a minimum brightness level if there are no persons present. This achieves optimum energy savings and extends the service life of lighting.

If operation of the corridor lighting is presence-dependent, the right level of lighting is always delivered as and when required. And energy consumption is in keeping with actual requirements. This also applies to outdoor and path lighting that switches on depending on brightness, movement and time - and is therefore always on when required.

Introduction

The image "Potential savings quantified" shows the effect of presence-dependent light control on energy consumption during the day.

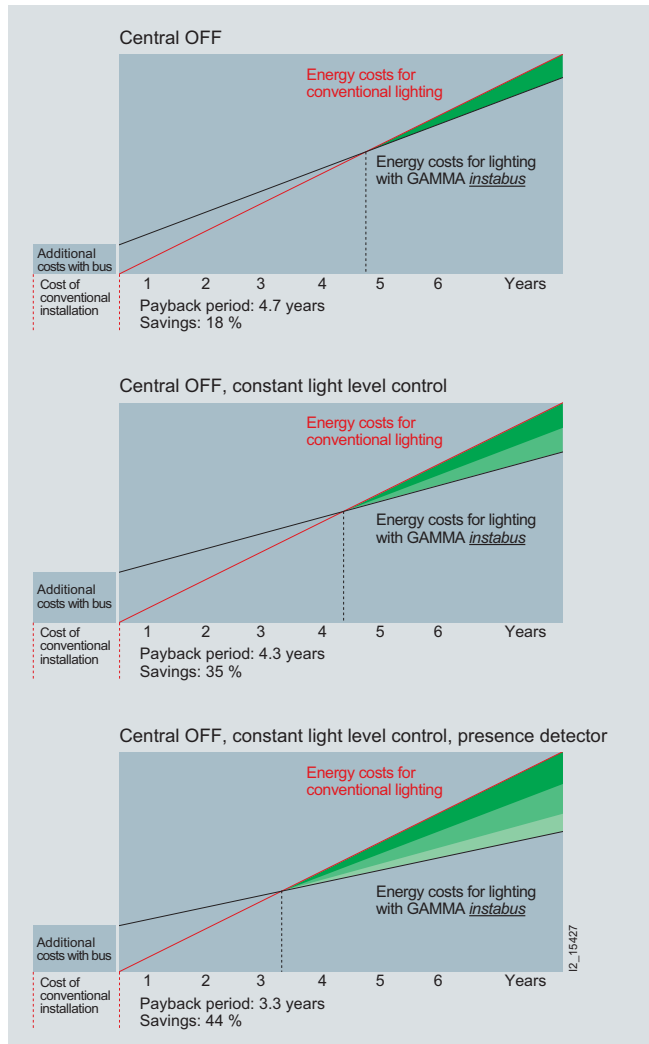


Potential savings quantified

The reduction in energy costs achieved by using light controls that are time, daylight and occupancy-dependent is approx. 44 %.

Cost efficiency

Cost-effectiveness can also be expressed in terms of the time it takes to recoup the investment made in the cost-saving method used. Our example allows the calculation of a payback period of 3.3 years if using a light control system with KNX components.



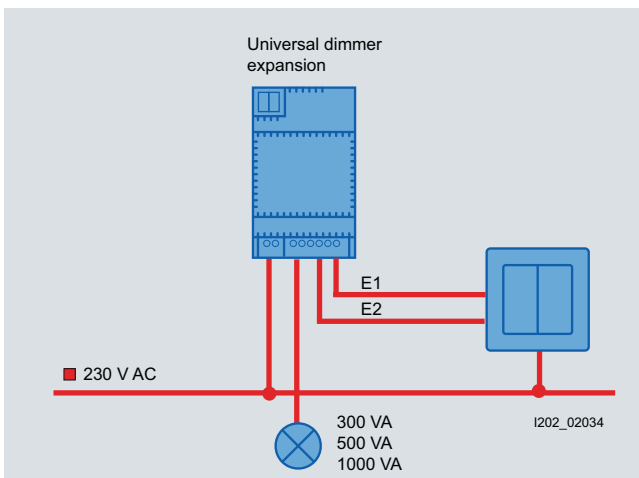
Overview

Universal dimmers

Universal dimmers are dimmers which automatically determine the load type connected to their outputs (resistive, inductive or capacitive) and switch over accordingly to leading-edge phase mode (for a resistive or inductive load such as incandescent lamps or LV halogen lamps with an upstream conventional transformer) or trailing-edge phase mode (for a capacitive load such as LV halogen lamps with an upstream electronic transformer).

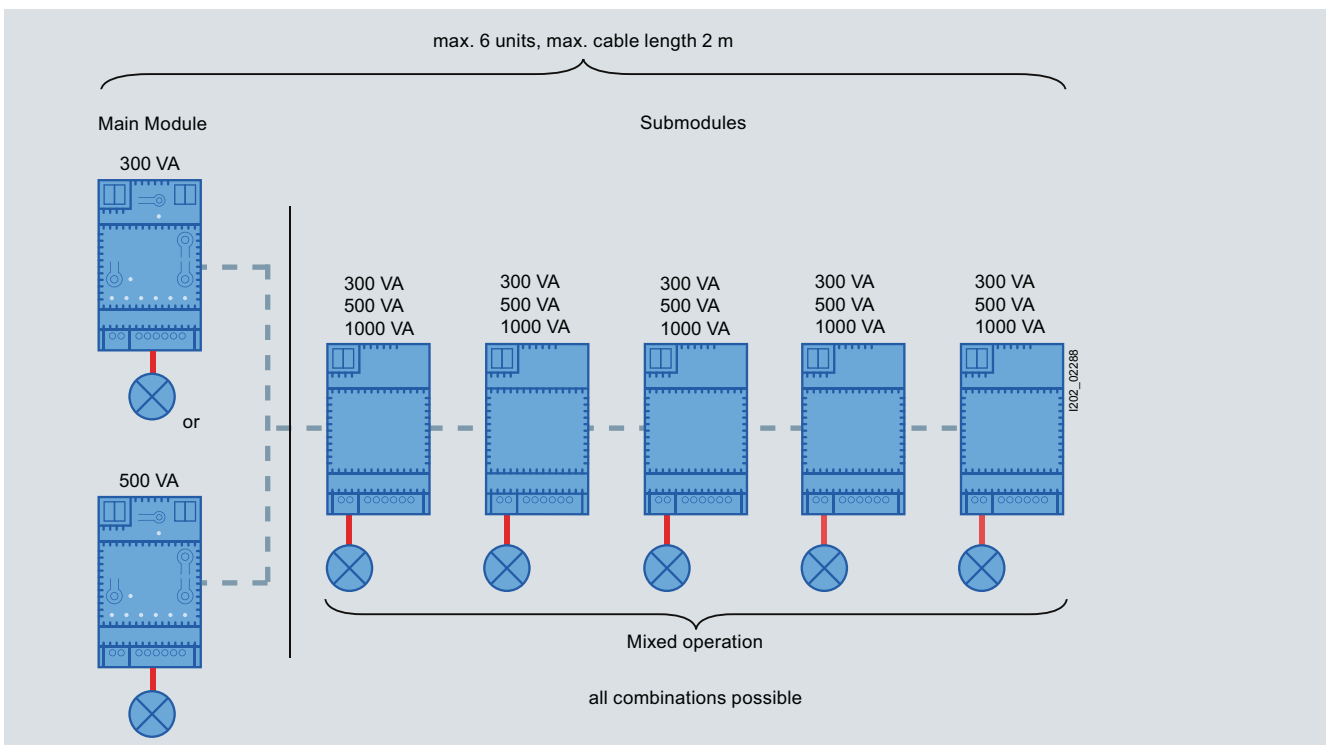
Block diagram 1:

1-channel operation without KNX, control via conventional push-buttons at the two inputs (E1, E2)¹⁾



Block diagram 2:

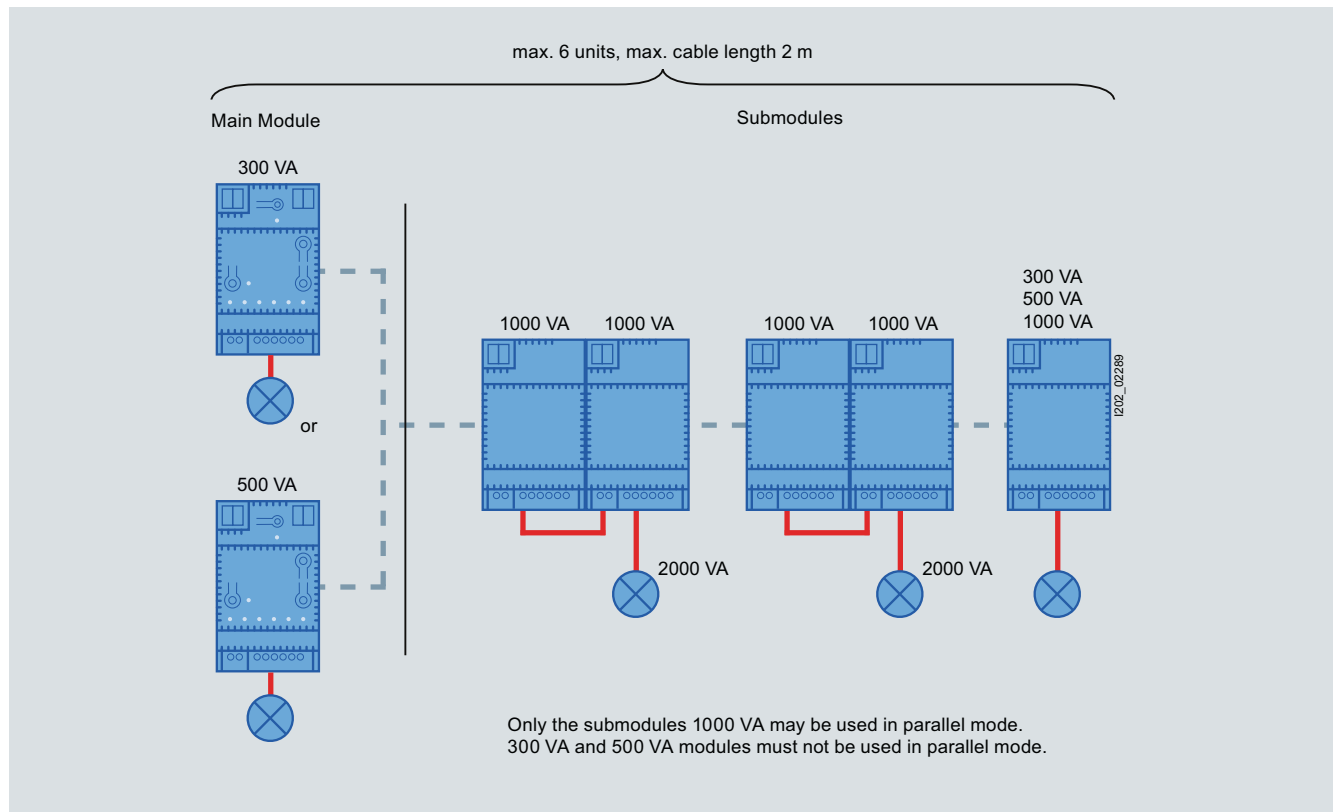
Combination options for universal dimmers, main modules and expansions.¹⁾



¹⁾ The block diagrams shown here are just an example of how modules can be interconnected and interfaced. For more detailed information, see www.siemens.com/gamma-td.










Dimmers

Block diagram 3:
Combination options for universal dimmers, main modules and expansions, as well as for increased performance.¹⁾



¹⁾ The block diagrams shown here are just an example of how modules can be interconnected and interfaced. For more detailed information, see www.siemens.com/gamma-td.

Technical specifications

Type		N 527/31	N 528/31	N 528/41 ¹⁾	N 527/41 ¹⁾	N 527/51 ¹⁾	UP 525/03	UP 525/13	UP 525/31	RS 525/23
Enclosure data										
Design		N	N	N	N	N	UP	UP	UP	RS
Modular installation devices for mounting on TH35 EN 60715 mounting rail		✓	✓	✓	✓	✓	--	--	--	--
For installation in flush-mounting switch and socket boxes with Ø = 60 mm		--	--	--	--	--	✓	✓	✓	--
10-pole BTI socket (BTI - Bus Transceiver Interface) for plugging of bus terminal devices with BTI connector		--	--	--	--	--	✓	--	--	--
Modular installation device for mounting in AP 118 automation module box or AP 641 room control box ⁴⁾		--	--	--	--	--	--	--	--	✓
Interface for connection of a universal dimmer expansion		✓	✓	✓	✓	✓	--	--	--	--
Dimensions										
• Height	mm						41.3	41.3		35.5
• Width (1 MW = 18 mm)	mm	3 MW	3 MW	3 MW	3 MW	3 MW	50	50	Ø 53	50.2
• Depth	mm						50.9	50.9	28	48.8
Mounting type										
Screw fixing		--	--	--	--	--	✓	--	--	--
Power supply										
Bus-powered electronics		--	--	--	--	--	✓	✓	✓	✓
Electronics powered via an integrated power supply unit, for supply voltage 230 V AC		✓	✓	✓	✓	✓	--	--	--	--
Bus connection										
Integrated bus coupling units		✓	✓	✓	✓	✓	✓	✓	✓	✓
Bus connection via bus terminal		✓	✓	✓	✓	✓	✓	✓	✓	✓
Outputs										
Load output										
Number of channels		1	1	1	1	1	1	1	1	1
Load type										
Load										
Contact rated voltage, AC	V	230	230	230	230	230	230	230	230	230
Dimmer output	VA	20 ... 500 ₃₎	20 ... 300 ₃₎	20 ... 300 ³⁾	20 ... 500 ³⁾	20 ... 1000 ₂₎₃₎	10 ... 250	10 ... 250	50 ... 210	10 ... 250
Protection										
Electronic protection of outputs against overload and short circuit		✓	✓	✓	✓	✓	✓	✓	✓	✓
Inputs										
Max. cable length, unshielded, twisted	m	100	100	100	100	100	--	--	5	--
For signal inputs (floating contact)		--	--	--	--	--	--	--	2	--
Determination of switching state by means of the voltage generated in the device		✓	✓	✓	✓	✓	--	--	✓	--
For conventional pushbuttons 230 V AC		2	2	2	2	2	--	--	--	--

¹⁾ Bus operation only when used together with N 527/31 or N 528/31.

²⁾ Increased performance through parallel switching of the outputs of two N 527/51 to 40 ... 2000 VA, (for electronic transformers 80 ... 2000 VA) only in conjunction with main module N 527/31 or N 528/31 and ETS parameterization.

³⁾ Low-voltage halogen lamps with electronic transformers require a minimum load of 40 VA.

⁴⁾ The AP 641 room control box and AP 118 automation module box must be ordered separately, see Chapter "Quick-assembly system - Room control box".













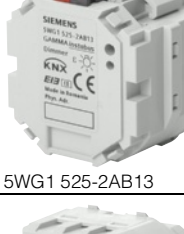



Dimmers

Type	N 527/31	N 528/31	UP 525/03	UP 525/13	UP 525/31	RS 525/23
Application program	982101	982101	982C01	982C01	301901	982C01
Output functions						
Max. number of group addresses	255	255	120	120	26	120
Max. number of assignments	383	383	120	120	27	120
Blocking function	✓	✓	✓	✓	--	✓
Configurable behavior in the event of a bus voltage failure	✓	✓	✓	✓	✓	✓
Configurable behavior in the event of a bus voltage recovery	✓	✓	✓	✓	✓	✓
Switching						
Switching ON/OFF	✓	✓	✓	✓	✓	✓
Configurable starting value	✓	✓	✓	✓	✓	✓
Blocking object per channel	✓	✓	✓	✓	✓	✓
Dimming						
BRIGHTER/DARKER dimming	✓	✓	✓	✓	✓	✓
Adjustable dimming range	✓	✓	✓	✓	✓	✓
Minimum dimming value (basic brightness)						
Maximum dimming value						
Operation of 2 dimming modules (using two different dimming time curves)	✓	✓	✓	✓	--	✓
Dim or startup 8-bit value	✓	✓	✓	✓	✓	✓
Scenes						
1-bit scene	✓	✓			--	
8-bit scene	✓	✓	✓	✓	✓	✓
Scenes to be integrated per channel	8 ¹⁾	8 ¹⁾	8	8	8 ¹⁾	8
Status						
Transmitting switch and dimming status	✓	✓	✓	✓	✓	✓
Fault indications overload/short circuit/ overtemperature on bus	✓	✓	✓	✓	✓	✓

¹⁾ Only assignment of scene number 1 ... 8 possible.

For selection and ordering data, see page 5/9.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 528/31 N 528/31 universal dimmer main modules 20 ... 300 VA ¹⁾ , 230 V AC, 50/60 Hz 	B	5WG1 528-1AB31		1	1 unit	139	0.190
	N 527/31 N 527/31 universal dimmer main modules 20 ... 500 VA ¹⁾ , 230 V AC, 50/60 Hz 	B	5WG1 527-1AB31		1	1 unit	139	0.170
	N 528/41 N 528/41 universal dimmer expansions 20 ... 300 VA ¹⁾ , 230 V AC, 50/60 Hz 	B	5WG1 528-1AB41		1	1 unit	139	0.140
	N 527/41 N 527/41 universal dimmer expansions 20 ... 500 VA ¹⁾ , 230 V AC, 50/60 Hz 	B	5WG1 527-1AB41		1	1 unit	139	0.140
	N 527/51 N 527/51 universal dimmer expansions 20 ... 1000 VA ¹⁾ , 230 V AC, 50/60 Hz 	B	5WG1 527-1AB51		1	1 unit	139	0.165
	UP 525/03 UP 525/03 universal dimmers  1 x 230 V AC, 10 ... 250 VA • 10-pole BTI socket for plugging of bus terminal devices with BTI connector 	A	5WG1 525-2AB03		1	1 unit	139	0.080
	UP 525/13 UP 525/13 universal dimmers  1 x 230 V AC, 10 ... 250 VA 	A	5WG1 525-2AB13		1	1 unit	139	0.055
	RS 525/23 RS 525/23 universal dimmers  1 x 230 V AC, 10 ... 250 VA • incl. bus connection module • for mounting in AP 118 automation module box or AP 641 room control box ²⁾ 	A	5WG1 525-2AB23		1	1 unit	139	0.045
	UP 525/31 UP 525/31 universal dimmers 50 ... 210 VA, 1 x 230 V AC 	A	5WG1 525-2AB31		1	1 unit	139	0.087

¹⁾ Low-voltage halogen lamps with electronic transformers require a minimum load of 40 VA.

²⁾ The AP 641 room control box and AP 118 automation module box must be ordered separately.

Switch/dimming actuators

Overview

DALI – simple and easy to manage

Digital Addressable Lighting Interface (DALI) was launched on the market in 2004 as a substitute for the classic 1 ... 10 V interface and is an interface definition for the control of up to 64 DALI devices, primarily ECGs, over a control device that acts as a master.

DALI communication enables the simultaneous control of all DALI devices using the same command (broadcast). In the event of control via broadcast, all DALI devices behave as if they are being mutually controlled over a 1 ... 10 V interface. As a second control option, DALI supports the assignment of a DALI device to one of up to 16 groups (group addressing).

DALI also allows the control of each DALI device individually (individual addressing). Individual addressing means that the control device can be interrogated for the failure of a lamp or ECG, as well as the switching status and current dimming value. This means that the operating state of each lamp group and even each lamp is constantly available to higher-level systems.

DALI supports assignment of DALI devices to a maximum of 16 scenes. The specific settings for each scene are stored in the individual DALI devices and can be called up by a single command. This allows even complex scenes or very fast command sequences to be called up. The cost of dimming with KNX and DALI is no higher than 1 ... 10 V.

Comparing the degree of cabling required for DALI and for 1 ... 10 V, and the difference in cost for material and labor, the cost of implementing a project with DALI is approx. a third cheaper than when using 1 ... 10 V.

In the simplest of cases, a control device for light control with DALI can comprise a brightness sensor, a presence detector or a combined brightness sensor/presence detector, which can control a group of lamps - depending on occupancy and daylight. With these simple local applications, where DALI is used by sensors as an interface to one or more DALI devices, the broadcast method is used instead of the classic control method over 1 ... 10 V. As such, these applications are not to be regarded as a networked system.

More high-performance control devices, such as the N 141/02 KNX/DALI gateway from Siemens, tap into all the options offered by DALI.

A further option for the control of DALI devices is Flexcon. For further information, see Chapter "Flexcon".

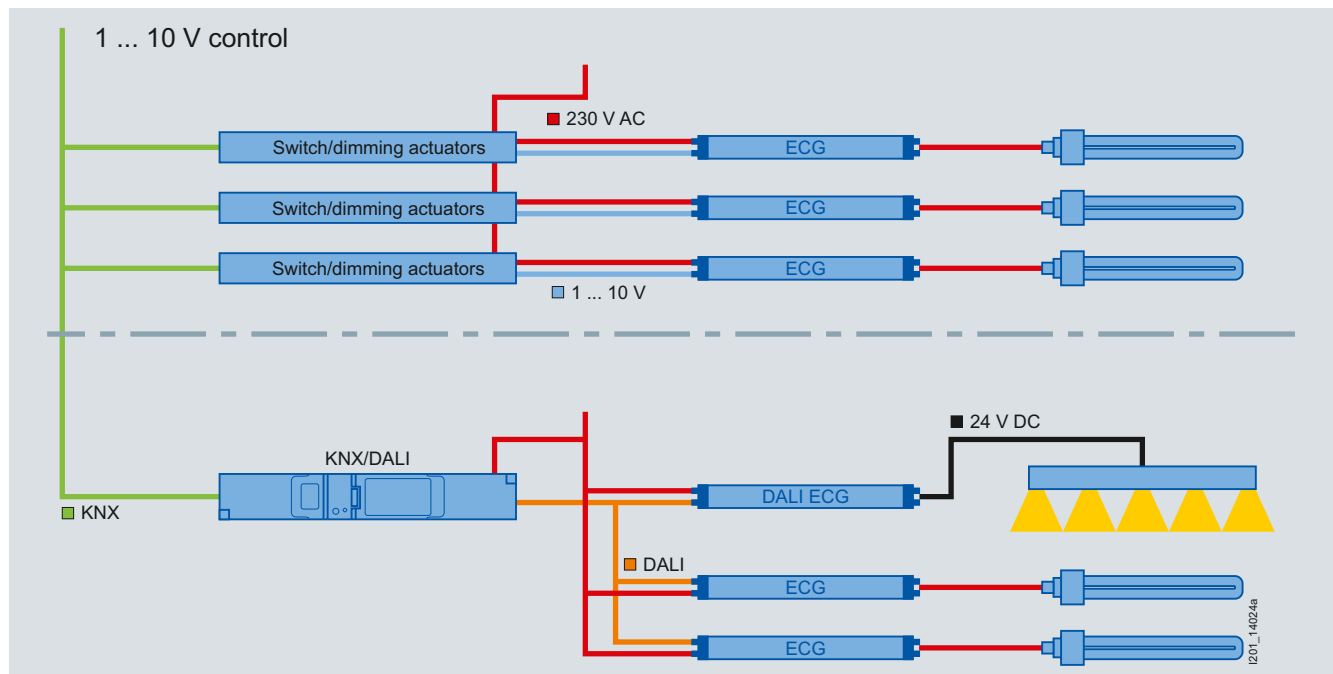
OSRAM DALI-ECG corresponds to the DALI standard. This ensures a functionally equivalent exchange of the DALI-ECG for many years to come (investment security).

www.osram.de

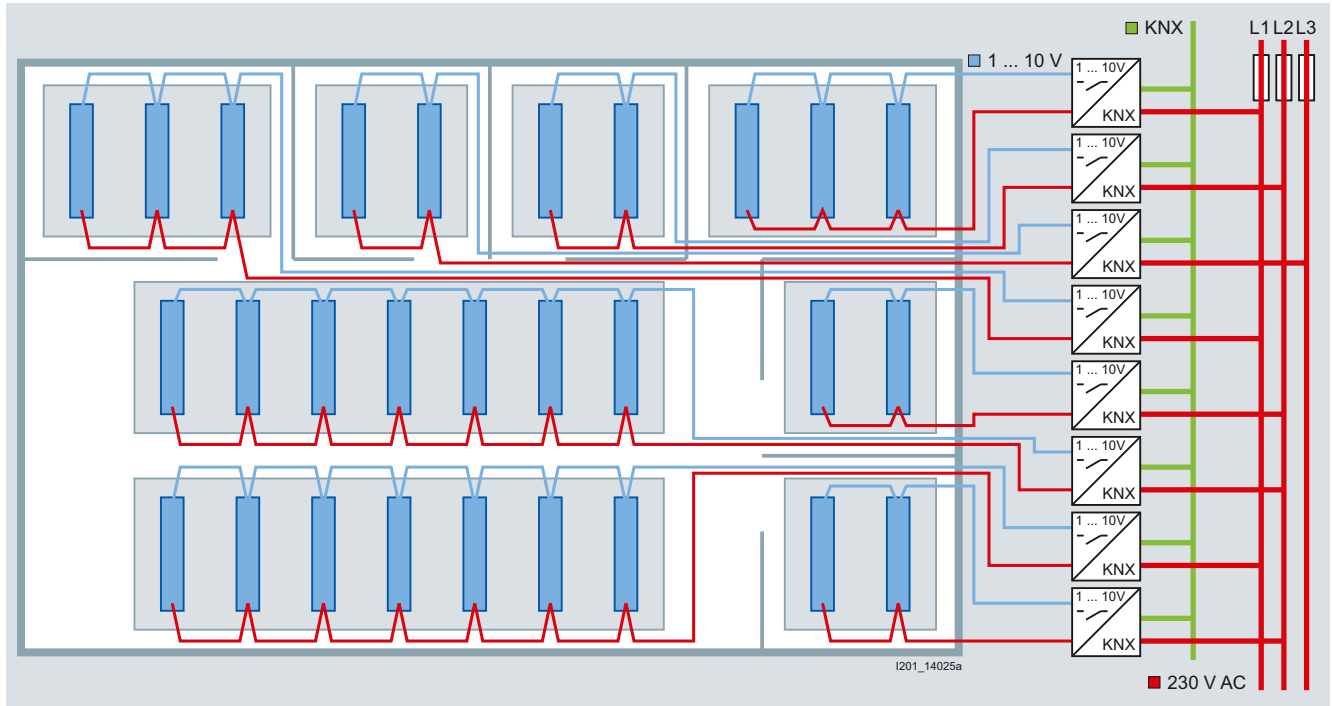
For further information on DALI:

www.siemens.com/dali

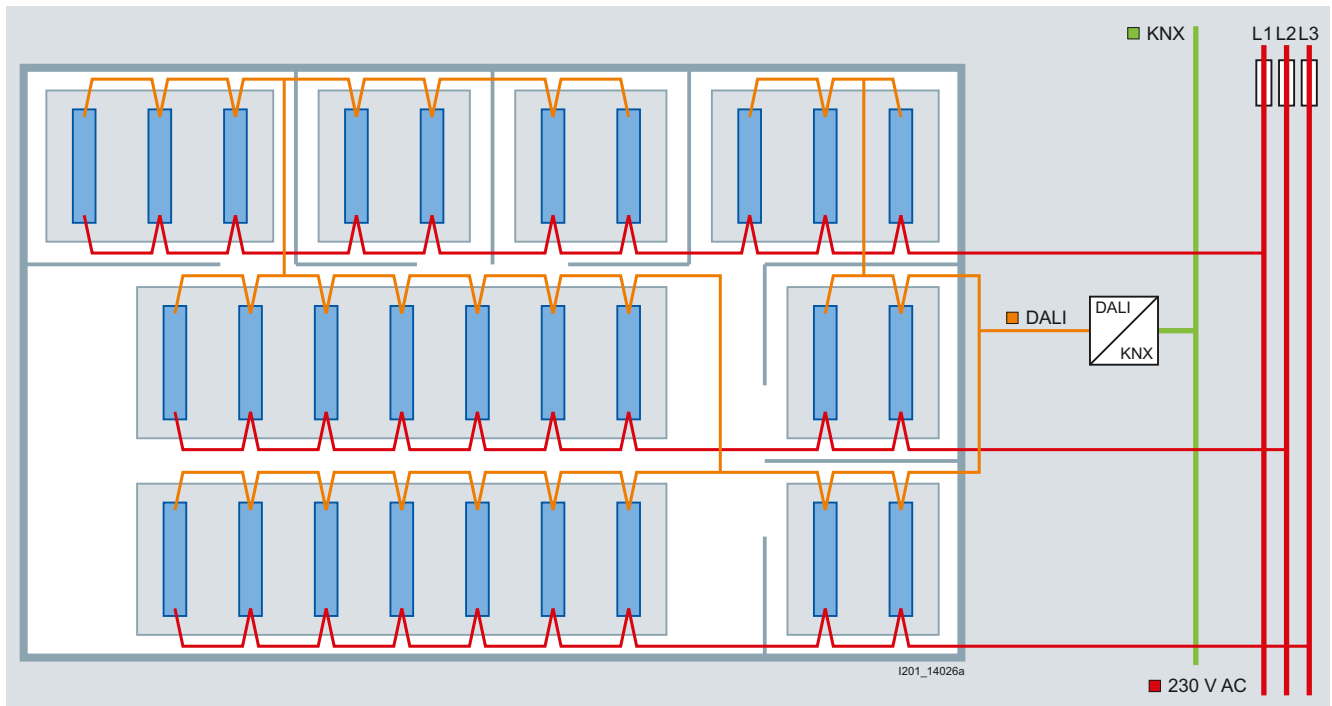
Compare 1 ... 10 V control system to DALI with KNX



Wiring of lighting groups 1 ... 10 V control with KNX



Wiring of lighting groups with DALI with KNX



Advantages:

- Light groups are not hard-wired
- Separate planning of control cables and power supply
- Even load distribution in the power supply
- Lower fire load due to fewer cables
- Planning is easier and faster
- New: Integration of emergency lighting in general lighting

Switch/dimming actuators

Intelligent solution via safety supply and KNX-DALI gateway with status indication in emergency mode

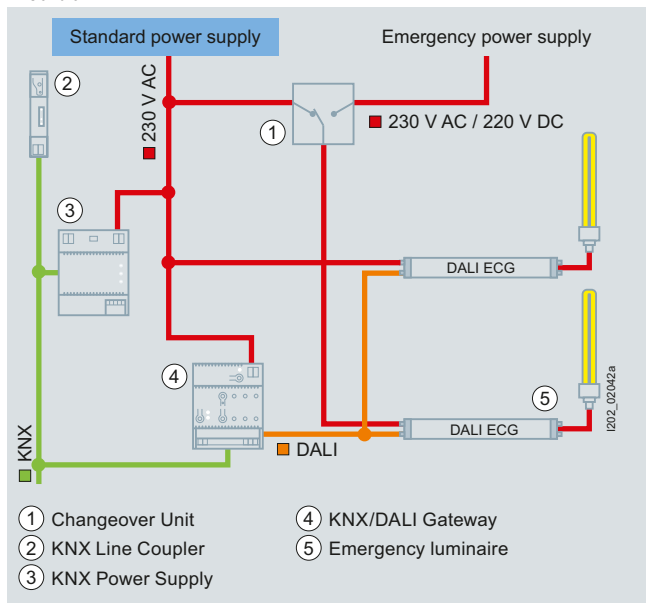
In emergency mode, communication is maintained via the safety supply from KNX and DALI.

The failure detection of the general supply is executed via a KNX binary input, which the KNX/DALI gateway switches to emergency mode. It is not possible to manually operate the emergency lights in emergency mode.

Simple solution with KNX-DALI gateway

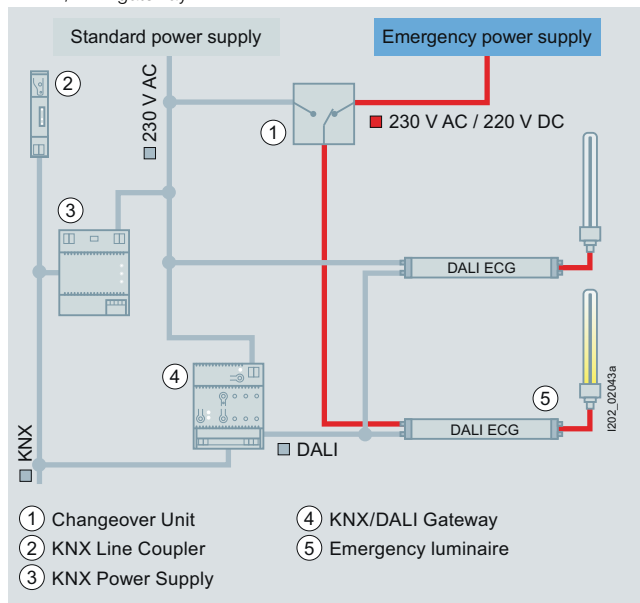
Normal mode

- Lighting control with DALI
- Feedback of fault indications and failure of lighting and ECGs to building control



Emergency operation

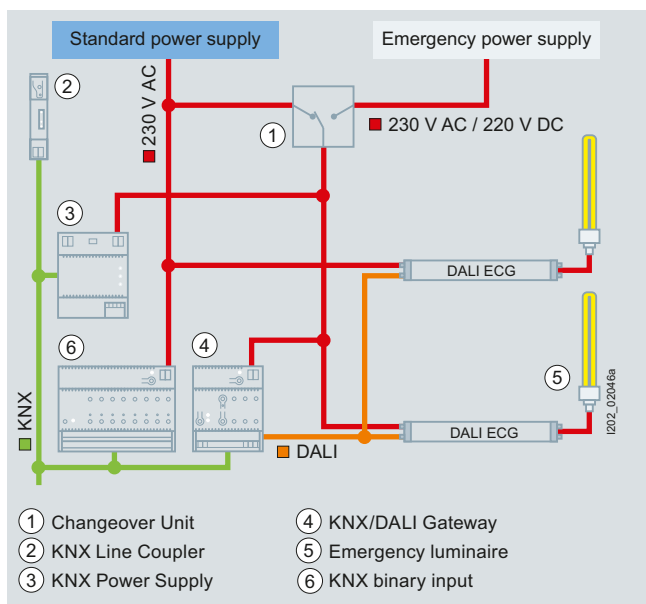
- Automatic emergency lighting in the event of DALI voltage failure
- Parameterization of dimming value of DALI-ECG for emergency lighting via KNX/DALI gateway



Intelligent solution via safety supply and KNX-DALI gateway with status indication in emergency mode

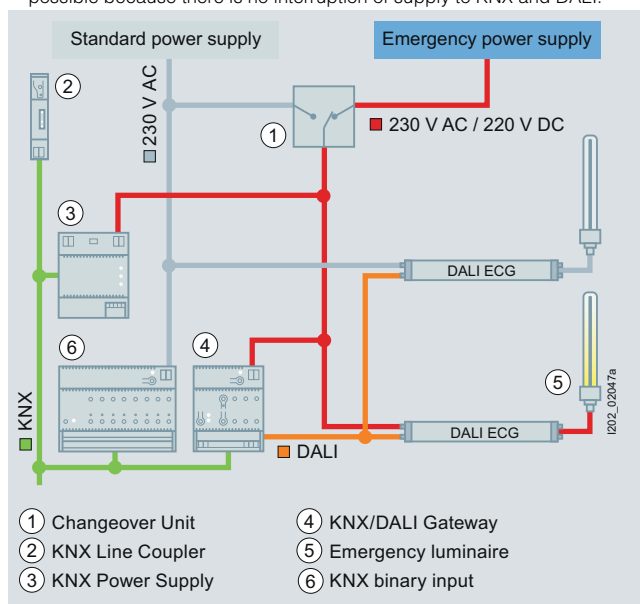
Normal mode

- Lighting control with DALI
- Feedback of fault indications and failure of lighting and ECGs to building control
- Monitoring of operating hours for lamp replacement



Emergency operation

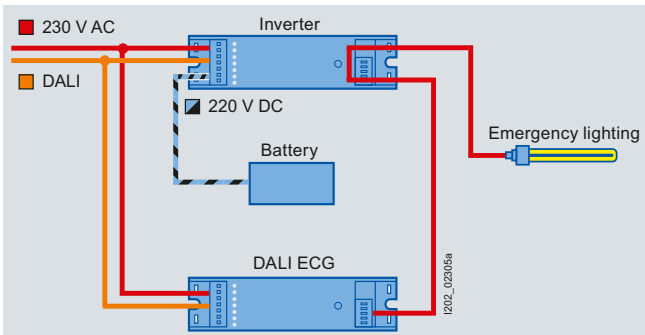
- Parameterization of dimming value of DALI-ECG in emergency operation via KNX/DALI gateway
- The integrated buffer of the KNX power supply ensures an interruption-free switchover (< 200 ms) to emergency operation
- The continued transmission of status indications in emergency operation is possible because there is no interruption of supply to KNX and DALI.



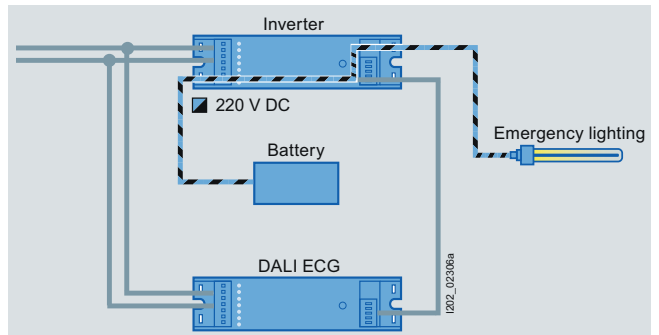
Switch/dimming actuators

Emergency lighting with single battery KNX/DALI gateway**Normal mode**

- Lighting control with DALI
- Initiate/record tests





**Emergency operation**

- Automatic emergency lighting acc. to parameterization via KNX/DALI gateway



Switch/dimming actuators

Technical specifications

	DALI control outputs		Control outputs 1 ... 10 V		
					
Type	N 141/02	N 525E	N 526/02	N 526E02	
Application program	981CXX ¹⁾	9808XX ¹⁾	905303	981301	
Enclosure data					
Design	N	N	N	N	
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓	✓	
Dimensions					
• Width (1 MW = 18 mm)	mm	4 MW	4 MW	6 MW	8 MW
Display/control elements					
Mechanical switching position indication for status indication per output	--	--	--	✓	
LED for status indication per output	✓	✓	✓	--	
LEDs for fault indication (lighting failure) per output	--	✓	--	--	
Pushbuttons for local operation on the device	✓	✓	✓	--	
Direct operation (local operation)	✓	✓	--	--	
Mechanical local operation with switching position indication	--	--	--	✓	
Power supply					
Bus-powered electronics	--	--	--	✓	
Electronics powered via an integrated power supply unit	✓	✓	✓	--	
DALI outputs powered via an integrated power supply unit	✓	✓	--	--	
Bus connection					
Integrated bus coupling units	✓	✓	✓	✓	
Bus connection via contact system to data rail	✓	✓	--	✓	
Bus connection via bus terminal	✓	✓	✓	✓	
Outputs					
Control output					
1 ... 10 V DC	--	--	3	8	
DALI outputs (lines)	1	8	--	--	
Max. ECG per output (Osram Dynamik 58 W)	64 units	8 units	50 units	60 units	
Load output²⁾					
Floating relay contacts	--	--	3 ³⁾	8	
Contact rated voltage, AC	V	--	230	230	
Contact rated current	A	--	6	16	
Inputs					
Sensor inputs					
Input for AP 255/UP 255 brightness sensor	--	--	3	--	
Max. cable length, unshielded, twisted	m	--	100	--	





¹⁾ For current application programs, see www.siemens.com/gamma-td

²⁾ For load data, see Chapter "Appendix -> Technical information"

³⁾ Except channel C.

For selection and ordering data, see page 5/17.

Switch/dimming actuators

	DALI control outputs		Control outputs 1 ... 10 V	
				
Type	N 141/02	N 525E	N 526/02	N 526E02
Application program	981CXX ¹⁾	9808XX ¹⁾	905303	981301
Functions				
Max. number of group addresses	1023	108	35	250
Max. number of assignments	1023	107	47	250
Integrated constant light level control	-- ²⁾	--	✓	--
Configurable behavior in the event of a bus voltage failure	✓	✓	✓	✓
Configurable behavior in the event of a bus voltage recovery	✓	✓	✓	✓
Configurable behavior in the event of a system voltage failure	✓	✓	--	--
Configurable behavior in the event of a system voltage recovery	✓	✓	✓	--
Switching				
Switching ON/OFF	✓	✓	✓	✓
Configurable starting value	✓	✓	✓	✓
Switching ON/OFF possible via BRIGHTER/DARKER dimming	✓	✓	✓	✓
Dimming				
BRIGHTER/DARKER dimming	✓	✓	✓	✓
Adjustable dimming time	✓	✓	✓	✓
Brightness limitation, adjustable min. dimming value/max. dimming value	✓	✓	--	✓
Value transmission				
Set 8-bit value	✓	✓	✓	✓
Scene control				
Integrated 8-bit scene control	✓	✓	--	✓
Scenes to be integrated per DALI output	16	16	--	--
Scenes to be integrated per channel	--	--	--	8
Effect control				
Integrated effect control (one-off or cyclic chaselight operation, color control)	✓	--	--	--
Emergency lighting				
Support for prescribed test sequences for emergency lights	✓	--	--	--
Controlling single battery lights	✓	--	--	--
Status				
DALI short circuit	✓	✓ ³⁾	--	--
DALI power supply	✓	✓	--	--
Status output (ON/OFF, value, lamp fault, ECG fault)	--	✓	✓ ⁴⁾	✓ ⁴⁾
Status group (ON/OFF, value, lamp fault, ECG fault)	✓	--	--	--
Status ECG (ON/OFF, value, lamp fault, ECG fault)	✓	--	--	--
Time functions				
ON/OFF delay	✓	✓	✓	✓
Timer mode, 1-step (stairwell circuits)	✓	✓	--	✓
Timer mode, 2-step	✓	✓	--	✓
Night mode (lighting for cleaning)	✓	✓	✓	✓
Warning of impending OFF	✓	✓	--	✓

¹⁾ For current application programs, see www.siemens.com/gamma-td


²⁾ Supports ECGs with integrated constant light level control on the ECG-connected brightness sensor.

³⁾ Per channel.

⁴⁾ Status ON/OFF, value.

For selection and ordering data, see page 5/17.




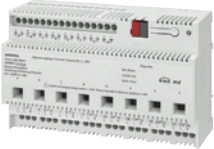



Switch/dimming actuators

Type	Description
 <p>AP 255 UP 255</p>	<p>AP 255/UP 255 indoor brightness sensors For N 526/02 switch/dimming actuators</p> <ul style="list-style-type: none"> • For measuring the brightness on an illuminated area through measurement of the reflected light • Measuring range: 0 ... 1500 lux (with a reflectance of the illuminated area of approx. 30%) • For direct connection to N 526/02 switch/dimming actuators via a 3-wire cable up to 100 m in length, which also serves to power the sensor electronics • Plug-in low-voltage terminal for connection of the cable to N 526/02 • Including two rigid optical fiber rods: <ul style="list-style-type: none"> - Parallel light-sensitive surface for mounting surface - Inclined (45°) light-sensitive surface for mounting surface <p>UP 255 indoor brightness sensors</p> <ul style="list-style-type: none"> • For mounting in a hollow-wall or flush-mounting box with Ø 58 mm and min. 40 mm mounting depth • Cover made of white plastic (polystyrene) • Dimensions (H x W x D): 30 x 52 x 33 mm <p>AP 255 indoor brightness sensors</p> <ul style="list-style-type: none"> • For mounting on a ceiling or wall • Includes surface-mounting enclosure made of white plastic (polypropylene) with Ø 70 mm and 24 mm in height • Dimensions (H x W x D): 30 x 72 x 33 mm

For selection and ordering data, [see page 5/17](#).













Switch/dimming actuators

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
DALI control outputs								
	N 141/02	N 141/02 KNX/DALI gateways  64 ECG per output scene/effect control for emergency lighting application	A	5WG1 141-1AB02		1	1 unit	139 0.200
5WG1 141-1AB02								
	N 525E	N 525E switch/dimming actuators 8 x DALI, 8 ECGs per output	A	5WG1 525-1EB01		1	1 unit	139 0.314
5WG1 525-1EB01								
Control outputs 1 ... 10 V DC								
	N 526E02	N 526E02 switch/dimming actuators  8 x 230 V AC, 16 A, 1 ... 10 V	A	5WG1 526-1EB02		1	1 unit	139 0.527
5WG1 526-1EB02								
	N 526/02	N 526/02 switch/dimming actuators (to be discontinued) 3 x 230 V AC, 6 A, with constant light level control	A	5WG1 526-1AB02		1	1 unit	139 0.459
5WG1 526-1AB02								
Accessories								
	UP 255	UP 255 indoor brightness sensors (to be discontinued) N 526/02 switch/dimming actuators	A	5WG1 255-4AB01		1	1 unit	139 0.092
5WG1 255-4AB01 5WG1 255-4AB02	AP 255	AP 255 indoor brightness sensors (to be discontinued) N 526/02 switch/dimming actuators	C	5WG1 255-4AB02		1	1 unit	139 0.096

Light level controls

Overview









Type	 UP 258E21	 UP 285D11	 UP 255/11 AP 255/12 GE 255/13	 N 526/02	 UP 255	 AP 255	 UP 258/11	 N 342	 AP 254/02	 GE 252	 GE 253	 GE 254
Control												
Integrated constant light level control	1-channel	--	1-channel	3-channel	--	--	--	--	--	1-channel	--	1-channel
Integrated two-step control	1-channel	1-channel	1-channel	--	--	--	--	--	--	1-channel	--	1-channel
Light level controls dependent on surrounding light	--	--	--	--	--	--	--	✓	✓	--	--	--
Offset groups	4 channels	--	4 channels	2 channels	--	--	--	--	--	--	--	--
Light sensor												
External light	--	--	--	--	--	--	--	✓	--	✓	--	--
Indoor brightness	✓	✓	✓	--	✓	✓	✓	--	--	✓	--	--
Indoor brightness (indirect lighting)	--	--	✓	--	--	--	--	--	--	--	--	✓
Transmission of brightness values over KNX	✓	✓	✓	--	--	--	✓	--	✓	✓	✓	✓

Technical specifications

Type	UP 258E21	UP 258D11	UP 255/11	AP 255/12	GE 255/13	N 526/02	UP 258/11	N 342	AP 254/02	GE 252 GE 253 GE 254
Enclosure data										
Design	UP/AP	UP/AP	UP	AP	GE	N	UP	N	AP	GE
For installation in lights	--	--	--	--	✓	--	--	--	--	✓
Modular installation devices for mounting on TH35 EN 60715 mounting rail	--	--	--	--	--	✓	--	✓	--	--
Dimensions										
• Height	mm	63 ¹⁾	63 ¹⁾	20	27	20	87	87	110	42
• Width (1 MW = 18 mm)/∅	mm	88	88	75	75	50	87	87	72	274.5
• Depth	mm	--	--	--	--	35	60	60	54	28
Power supply										
Bus-powered electronics	✓	✓	✓	✓	✓	--	✓	✓	✓	✓
Electronics powered via an integrated power supply unit for supply voltage 230 V AC	--	--	--	--	--	✓	--	--	--	--
Bus connection										
Integrated bus coupling units	✓	✓	✓	✓	✓	✓	--	✓	✓	✓
Plug onto UP 110 bus coupling unit	--	--	--	--	--	--	✓	--	--	--
Plug onto UP 114 bus coupling unit	--	--	--	--	--	--	✓	--	--	--
Bus connection via bus terminal	✓	✓	✓	✓	✓	✓	--	--	✓	✓
Bus connection via contact system to data rail	--	--	--	--	--	--	--	✓	--	--






¹⁾ For flush mounting, mounting height approx. 31 mm, for surface mounting with AP 258E surface-mounting enclosure, approx. 73 mm.




For selection and ordering data, see page 5/21.

Type	Description
	<p>UP 258E21, UP 258D11 presence detector</p> <ul style="list-style-type: none"> Used as passive infrared detector for indoor ceiling installation Sensing range, horizontal 360°, vertical approx. 100°, rotating/swiveling sensor head, optionally for shading off parts of the sensing range For monitoring an area for presence up to approx. 6 x 3.5 m, for a mounting height of 2.8 m (presence detection), motion detection up to 5 x 3.5 m. (for details, see Chapter "Physical sensors -> with KNX connection -> General data") Mixed light measurement, measuring range 20 ... 1000 lux Presence detection for three function blocks (presence detector, motion detector and HVAC detector) Functions: Switching ON/OFF, 8-bit value, 16-bit value, temperature value, brightness value, 8-bit scene control Blocking object per function module Adjustable delay time per function module, which can be optionally set to a fixed time, or two times that can be switched between via bus, or set to one value via bus <ul style="list-style-type: none"> Parallel operation of several presence detectors (master-slave, master-master) without logic modules Integrated IR receiver for S 255/11 IR remote control with six pushbutton pairs (see accessories) In the case of individual pushbuttons, selectable function per pushbutton: Switching Over, Switching On, Switching Off, call up 8-bit scene, 8-bit value, 16-bit value, temperature value, brightness value In the case of pushbutton pairs, selectable function Switching ON/OFF, switching over/over, 2-pushbutton dimming with stop telegram, 2-pushbutton sun protection control, transmit variable 8-bit value, 8-bit scene control Blocking object for IR receiver decoder LED for display of detected motions in test mode Mounting on the ceiling in a flush-mounting device box with 60 mm diameter and at least 40 mm mounting depth, or in an AP 258E surface-mounting enclosure, which must be ordered separately (see accessories). <p>Versions</p>
	<p>UP 258E21 UP 258E21 presence detectors with constant light level control</p> <ul style="list-style-type: none"> Integrated constant light level control and 2-step light control, optionally available in fully automatic or semi-automatic version <ul style="list-style-type: none"> 4 channels for offset groups
	<p>UP 258D11 UP 258D11 presence detectors with brightness sensor</p> <ul style="list-style-type: none"> Integrated 2-step light control, optionally available in fully automatic or semi-automatic version <p>Accessories</p>
	<p>S 255/11 S 255/11 remote calibration device</p> <ul style="list-style-type: none"> 6 pushbutton pairs for the remote control of lighting, shutter/blinds and scenes via UP 258E21 or UP 258D11 presence detector Parameterization is via ETS in the UP 258E21 or UP 258D11 presence detector Range: Approx. 4.5 m <ul style="list-style-type: none"> Power supply: CR2025 lithium button cell Degree of protection (acc. to EN 60529): IP40 Dimensions (H x W x D): Approx. 87 x 40 x 6 mm.
	<p>AP 258E Surface-mounting enclosures</p> <p>For UP 258E21 or UP 258D11 presence detector</p> <ul style="list-style-type: none"> For fixing the presence detector as a surface mounting device <ul style="list-style-type: none"> Dimensions (H x Ø): 44 x 88 mm
UP 255/11 AP 255/12 GE 255/13	<p>Brightness controllers UP 255/11, AP 255/12 and GE 255/13</p> <ul style="list-style-type: none"> For measuring the brightness on an illuminated work area through measurement of the reflected light Measuring range 0 ... 2000 lux (with a reflectance of the illuminated area of approx. 30%) Including two rigid optical fiber rods: <ul style="list-style-type: none"> Parallel light-sensitive surface for mounting surface Inclined (30°) light-sensitive surface for mounting surface Integrated infrared receiver for calibration of the brightness measurement via the S 255 infrared remote calibration tool Transmission of the brightness measured value, either in the event of change and/or cyclically Discretionary set-point as a parameter or a communication object <ul style="list-style-type: none"> Optional two-step dimmer control for lights that can only be switched or constant light level control for lights that can be switched and dimmed Selectable starting value of the lighting at the start of constant light level control Optionally with dimming of up to 4 further lighting groups to the dimming value of the constant light level control or a dimming value that differs from the dimming value of the constant light level controller by an offset value, which can be set per group The constant light level control is automatically deactivated by manually dimming, or by dimming to a preset value Configurable behavior in the event of a bus voltage recovery. <p>Versions</p>
	<p>UP 255/11</p> <ul style="list-style-type: none"> For mounting in a hollow-wall or flush-mounting box with Ø 58 mm and min. 40 mm mounting depth <ul style="list-style-type: none"> Cover made of white plastic (polystyrene)
	<p>AP 255/12</p> <ul style="list-style-type: none"> Includes surface-mounting enclosure made of white plastic (polypropylene) with Ø 75 mm and 27 mm in height <ul style="list-style-type: none"> For mounting on a ceiling or wall
	<p>GE 255/13</p> <ul style="list-style-type: none"> For direct lighting installation <p>Accessories</p>
	<p>S 255 S 255 IR remote calibration devices</p> <ul style="list-style-type: none"> Range: up to approx. 4.5 m Power supply: CR2025 lithium button cell <ul style="list-style-type: none"> Degree of protection (acc. to EN 60529): IP40 Dimensions (H x W x D): 87 x 40 x 6 mm.




Light level controls

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Type	Description
 N 526/02	N 526/02 switch/dimming actuators, triple 3 x 230 V, 50/60 Hz, 6 A, with integrated constant light level control <ul style="list-style-type: none"> • LED for status indication per input • LED for status indication per output • LED for operation/status display • Pushbuttons for local operation on the device • 3 control outputs 1 ... 10 V DC • Max. 50 ECG per output (Osram Dynamik 58 W) • 3 floating relay contacts • Rated contact voltage, 230 V AC • Rated contact current 6 A • 3 inputs for AP 255/UP 255 brightness sensors, max. 100 m cable length, unshielded, twisted <ul style="list-style-type: none"> • Switching ON/OFF • Configurable starting value • ON/OFF switching possible via BRIGHTER/DARKER dimming • BRIGHTER/DARKER dimming • Adjustable dimming time • Set 8-bit value • Integrated constant light level control per output (outputs are master/slave-capable) • Configurable behavior in the event of a bus voltage failure/recovery • Transmitting switching and dimming status • Night mode (lighting for cleaning) Accessories
 AP 255 UP 255	AP 255/UP 255 indoor brightness sensors For N 526/02 switch/dimming actuators <ul style="list-style-type: none"> • For measuring the brightness on an illuminated area through measurement of the reflected light • Measuring range: 0 ... 1500 lux (with a reflectance of the illuminated area of approx. 30%) • For direct connection to N 526/02 switch/dimming actuators via a 3-wire cable up to 100 m in length, which also serves to power the sensor electronics • Plug-in low-voltage terminal for connection of the cable to N 526/02 • Including two rigid optical fiber rods: <ul style="list-style-type: none"> - Parallel light-sensitive surface for mounting surface - Inclined (45°) light-sensitive surface for mounting surface <p><u>AP 255 indoor brightness sensors</u></p> <ul style="list-style-type: none"> • For mounting on a ceiling or wall • Includes surface-mounting enclosure made of white plastic (polypropylene) with Ø 75 mm and 26 mm in height <p><u>UP 255 indoor brightness sensors</u></p> <ul style="list-style-type: none"> • For mounting in a hollow-wall or flush-mounting box with Ø 68 mm and min. 40 mm mounting depth • Cover made of white plastic (polystyrene)
 UP 258/11	UP 258/11 presence detectors With brightness sensor <ul style="list-style-type: none"> • Degree of protection: IP20 • Motion • Presence • Range for moving persons at a mounting height of 3 m approx. 4.5 m on either side • Horizontal sensing angle: 360° • Vertical sensing angle: 120° <ul style="list-style-type: none"> • Measuring range: <ul style="list-style-type: none"> 100 ... 1600 lux (standard) 25 ... 200 lux (expanded) • For measuring indoor brightness • Transmission of sensor values via bus
 AP 254/02	AP 254/02 dual sensors Brightness measurement, temperature measurement, sun protection control, lighting control <ul style="list-style-type: none"> • For the detection and transmission of brightness and temperature, temperature measuring range -25 °C ... +55 °C, brightness measuring range 1 lux ... 100 kLux, horizontal sensing angle -60° ... +60°, vertical -35° ... +66.5° • For the control of switch, dimming and shutter/blind actuators, depending on the ambient luminosity and/or ambient temperature • One sun protection channel for the automatic control of sun protection equipment, with <ul style="list-style-type: none"> - Starting and stopping of automation by means of an object or a dusk threshold - Up to three brightness thresholds for determining the height and position of the shutters/blinds or roller shutters - Optional teach-in of dusk thresholds and brightness thresholds by means of a teach-in facility - Blocking object for the temporary deactivation of the sun protection channel function <ul style="list-style-type: none"> • Up to four universal channels for the control of switch, dimming and shutter/blind actuators, depending on ambient luminosity and/or temperature. Optionally available with: <ul style="list-style-type: none"> - Threshold switches for brightness - Threshold switches for temperature - Threshold switches with logical combination of brightness and temperature - Optional teach-in of brightness threshold for each universal channel by means of an associated teach-in facility - Deactivation option for each universal channel by means of an associated blocking object (1 bit) - Optional second object for transmission of a second telegram on fulfillment of threshold conditions • Bus-powered electronics • Integrated bus coupling units • Bus connection via bus terminal • Surface mounting • Degree of protection: IP54
 N 342	N 342 light level control modules <ul style="list-style-type: none"> • Ten mutually independent light control functions that control the indoor lighting depending on the outdoor brightness • Shared current outdoor light intensity value for all 10 light control functions, with light intensity measured by an outdoor brightness sensor and sent to an N 342 • Separate brightness curve per light control function • With configuration option per light control function as continuous dimming control for the detection and transmission of dimming commands to dimming or switch/dimming actuators or as 2-step control with hysteresis for detection and transmission of ON/OFF switching commands to switch actuators <ul style="list-style-type: none"> • Automatic adaptation (shifting) of the respective brightness curve to the desired new indoor brightness when the dimming value is manually changed (e. g. using a bus pushbutton) and restoration of the original curve when the lighting is switched off. • Control range up to 32000 lux

Type	Description
 GE 253	GE 253 outdoor brightness sensors For indoor mounting <ul style="list-style-type: none"> • For measuring outdoor brightness • 2 m connecting lead of sensor element (cannot be extended) • For surface mounting • For mounting in intermediate ceilings <ul style="list-style-type: none"> • Degree of protection: IP20 • Brightness measuring range 0 ... 16000 Lux • Dimensions (H x W x D): Converter: 42 x 274.5 x 28 mm Receiver: 25 x 65.7 x 28.5 mm.
 GE 252	GE 252 indoor brightness sensors <ul style="list-style-type: none"> • For measuring indoor brightness • 2 m connecting lead of sensor element (cannot be extended) • For surface mounting • For mounting in intermediate ceilings <ul style="list-style-type: none"> • Degree of protection: IP20 • Brightness measuring range 200 ... 1900 Lux • Dimensions (H x W x D): Converter: 42 x 274.5 x 28 mm Receiver: 25 x 65.7 x 28.5 mm.
 GE 254	GE 254 indoor brightness sensors <ul style="list-style-type: none"> • With constant light level control • For measuring indoor brightness, taking into account indirect lighting • 2 m connecting lead of sensor element (cannot be extended) • For surface mounting <ul style="list-style-type: none"> • For mounting in intermediate ceilings • Degree of protection: IP20 • Brightness measuring range 0 ... 2000 Lux • Dimensions (H x W x D): Converter: 42 x 274.5 x 28 mm Receiver: 25 x 65.7 x 28.5 mm.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 5WG1 258-2EB21	UP 258E21 UP 258E21 presence detectors with constant light level control	B	5WG1 258-2EB21		1	1 unit	139	0.116
 5WG1 258-2DB11	UP 258D11 UP 258D11 presence detectors with brightness sensor	A	5WG1 258-2DB11		1	1 unit	139	0.116
Accessories								
 5WG1 255-7AB11	S 255/11 S 255/11 IR remote calibration devices For UP 258E21 or UP 258D11	A	5WG1 255-7AB11		1	1 unit	139	0.079
 5WG1 258-7EB01	AP 258E01 AP 258E01 surface-mounting enclosures For UP 258E21 or UP 258D11	A	5WG1 258-7EB01		1	1 unit	139	0.065






Light level controls

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Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	UP 255/11 UP 255/11 brightness controllers	B	5WG1 255-4AB11		1	1 unit	139	0.030
5WG1 255-4AB11								
	AP 255/12 AP 255/12 brightness controllers	B	5WG1 255-4AB12		1	1 unit	139	0.050
5WG1 255-4AB12								
	GE 255/13 GE 255/13 brightness controllers	B	5WG1 255-4AB13		1	1 unit	139	0.052
5WG1 255-4AB13								
	Accessories							
	S 255 S 255 IR remote calibration devices For UP 255/11, AP 255/12 and GE 255/13	A	5WG1 255-7AB01		1	1 unit	139	0.079
5WG1 255-7AB01								
	N 526/02 N 526/02 switch/dimming actuators (to be discontinued) 3 x 230 V AC, 6 A, with constant light level control	A	5WG1 526-1AB02		1	1 unit	139	0.459
5WG1 526-1AB02								
	Accessories							
	UP 255 UP 255 indoor brightness sensors (to be discontinued) N 526/02 switch/dimming actuators	A	5WG1 255-4AB01		1	1 unit	139	0.092
5WG1 255-4AB01								
	AP 255 AP 255 indoor brightness sensors (to be discontinued) N 526/02 switch/dimming actuators	C	5WG1 255-4AB02		1	1 unit	139	0.096
5WG1 255-4AB02								
	UP 258/11 UP 258/11 presence detectors ¹⁾ (to be discontinued) With brightness sensor	A	5WG1 258-2AB11		1	1 unit	139	0.217
5WG1 258-2AB11								

¹⁾ The bus coupling unit (BCU1/2) must be ordered separately.

Light level controls

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	AP 254/02 AP 254/02 dual sensors Brightness measurement, temperature measurement, sun protection control, lighting control	A	5WG1 254-3EY02		1	1 unit	139	0.153
5WG1 254-3EY02								
	N 342 N 342 light level control modules¹⁾ ® Control range up to 32000 lux	B	5WG1 342-1AB01		1	1 unit	139	0.116
5WG1 342-1AB01								
	GE 253 GE 253 outdoor brightness sensors (to be discontinued) For indoor mounting	A	5WG1 253-4AB01		1	1 unit	139	0.300
5WG1 253-4AB01								
	GE 252 GE 252 indoor brightness sensors (to be discontinued)	A	5WG1 252-4AB02		1	1 unit	139	0.412
5WG1 252-4AB02 5WG1 254-4AB01								
	GE 254 GE 254 indoor brightness sensors (to be discontinued) For indirect lighting	A	5WG1 254-4AB01		1	1 unit	139	0.313

¹⁾ For physical sensors, see Chapter, "Physical sensors".





6/2	Introduction
6/4	Anti-glare/sun protection actuators
6/8	Central weather/sun protection systems

Sun Protection, Anti-Glare Protection, Utilization of Daylight

Introduction

Overview

	Devices	Application	Page
	Anti-glare/sun protection actuators	Control of shutters/blinds and rollers.	6/4
	Central weather/sun protection systems	The weather system sends the sensor information via the GAMMA <u>instabus</u> .	6/8

Sunlight tracking control

When using the sunlight tracking control, the blind slats are not completely closed but track the current sun position so that the sun cannot shine directly into the room. However, the spaces between the slats allow as much diffuse daylight into the room as possible and ensure maximum daylight with minimum glare, while at the same time reducing energy costs.

The sunlight tracking function continually adjusts the blind slats so that they are constantly placed vertical to the sun. This optimizes the utilization of daylight.

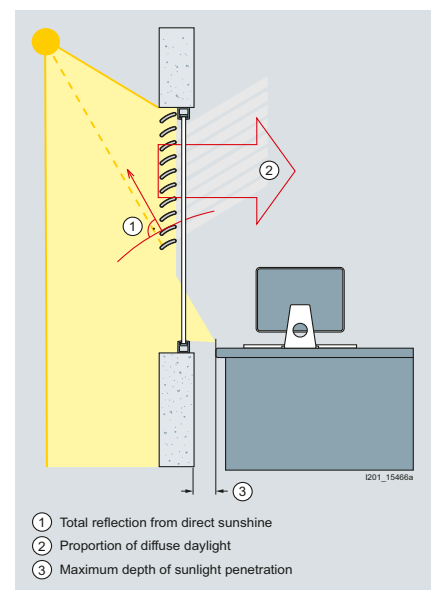
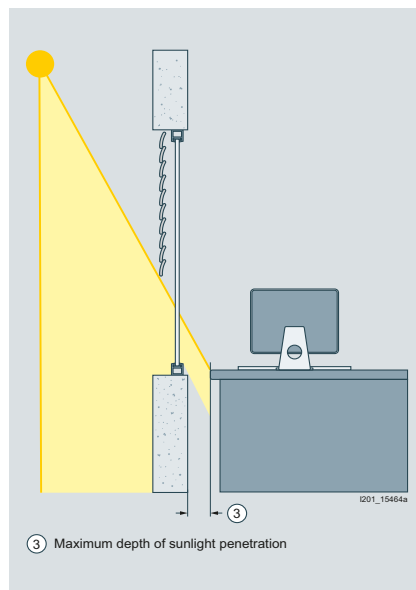
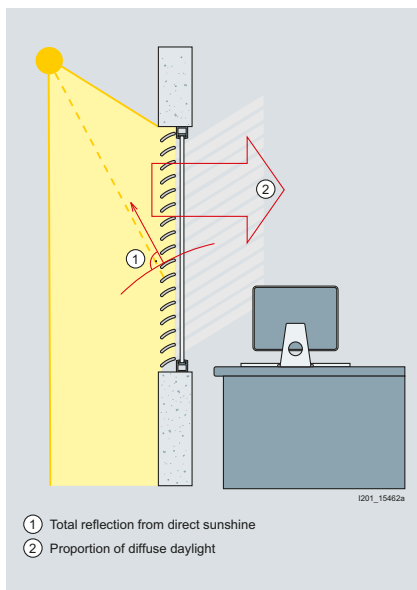
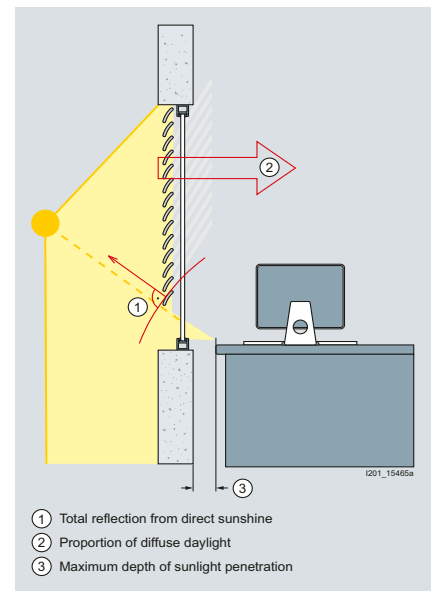
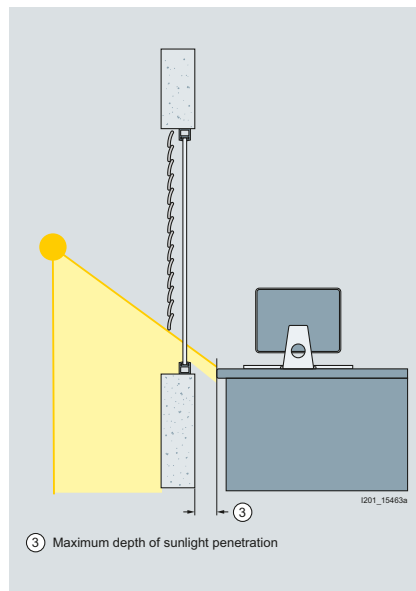
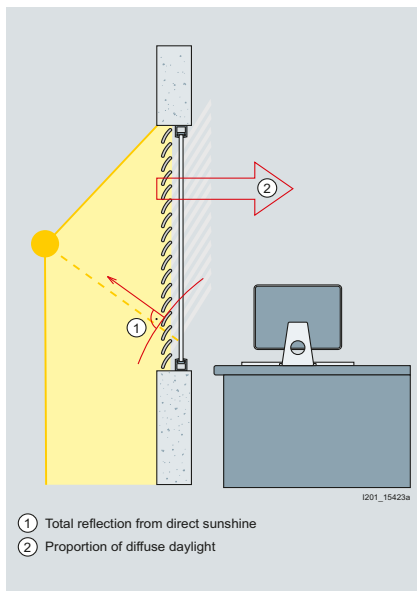
Shadow outline tracking

With activated shadow outline tracking, the sun protection is not fully extended, rather it is extended for a configurable distance (e. g. 50 cm) to allow a specified amount of sunshine to penetrate the room.

Advantages: it is still possible to look out of the lower part of the window, any plants on the window sill still benefit from the sunshine, while occupants of the room are protected from its glare.

Sunlight tracking control and shadow outline tracking combined

It goes without saying that the two principles can be combined, thus offering optimum sun protection.



Sun Protection, Anti-Glare Protection, Utilization of Daylight

Anti-glare/sun protection actuators

Technical specifications

Type	N 522/03	N 523/02	N 523/03	N 523/04 ¹⁾	N 523/11	N 501	N 524	N 521	UP 520/03	UP 520/13	UP 520/31	RS 520/23	RL521/23
Enclosure data													
Design	N	N	N	N	N	N	N	N	UP	UP	UP	RS	RL
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
For installation in flush-mounting switch and socket boxes with Ø = 60 mm	--	--	--	--	--	--	--	--	✓	✓	✓	--	--
Modular installation device for mounting in AP 118 automation module box or AP 641 room control box ⁴⁾	--	--	--	--	--	--	--	--	--	--	--	✓	✓
10-pole BTI socket (BTI - Bus Transceiver Interface) for plugging of bus terminal devices with BTI connector	--	--	--	--	--	--	--	--	✓	--	--	--	--
Dimensions													
• Height	mm								71	50.9		35.5	36.2
• Width (1 MW = 18 mm)/Ø	mm	6 MW	4 MW	4 MW	4 MW	8 MW	8 MW	6 MW	71	50	53	50.2	47.8
• Depth	mm								42	41.3	28	48.8	86.5
Mounting type													
Screw fixing	--	--	--	--	--	--	--	--	✓	--	--	--	--
Display/control elements													
LED for status indication per output	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--
Direct operation (local operation)	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--
Power supply													
Bus-powered electronics	--	--	--	--	--	--	--	✓	✓	✓	✓	✓	✓
Electronics powered via an integrated power supply unit. Supply voltage 230 V AC	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--
Bus connection													
Integrated bus coupling units	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bus connection via bus terminal	✓	✓	✓	✓	✓	✓	✓	--	✓	✓	✓	✓	✓
Bus connection via contact system to data rail	✓	✓	✓	✓	✓	✓	--	✓	--	--	--	--	--
Outputs													
Load output													
Number of channels (one UP and one DOWN each)	4	4 ²⁾	4 ²⁾	4 ²⁾	8 ³⁾	4 ²⁾	4	2	1	1	1	1	2
Integrated isolating relay function for connection of 2 drives per channel	--	--	--	--	--	--	--	✓	--	--	--	--	--
Electrically interlocked relays (for reversing direction of rotation)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Contact rated voltage													
• 230 V AC/50 Hz	✓	✓	✓	✓	✓	✓	--	✓	✓	✓	✓	✓	✓
• 24 V DC	--	--	--	--	--	--	✓	✓	--	--	--	--	✓
Contact rated current	A	8	6	6	6	6	1 DC	6	6	6	6	6	6
Inputs													
Max. cable length, unshielded, twisted	m	--	--	--	--	--	100	--	--	--	--	5	--
For signal inputs (floating contact)	--	--	--	--	--	--	--	--	--	--	2	--	--
Determination of switching state by means of the voltage generated in the device	--	--	--	--	--	--	--	--	--	--	✓	--	--

1) Also available as UL version (5WG1 523-1CB04), see page 6/6

2) 2 floating.

3) 6 floating.

4) The AP 641 room control box and AP 118 automation module box must be ordered separately, see Chapter "Quick-assembly system - Room control box".

For selection and ordering data, see page 6/6.

Anti-glare/sun protection actuators

Type	981101 N 522/03	980103 N 523/02	980181 N 523/03	981201 N 523/04 ¹⁾	980601 N 523/11	981701 N 501	980201 N 524	520206 N 521	982A01 UP 520/03	982A01 UP 520/13	207301 UP 520/31	982A01 RS 520/23	982B01 RL521/23
Application program	981101	980103	980181	981201	980601	981701	980201	520206	982A01	982A01	207301	982A01	982B01
Output functions													
Max. number of group addresses	114	100	100	110	200	220	40	11	120	120	26	120	120
Max. number of assignments	156	100	100	125	200	220	65	12	120	120	27	120	120
Configurable behavior in the event of a bus voltage failure	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓
Configurable behavior in the event of a bus voltage recovery	✓	--	--	--	--	✓	--	--	✓	✓	✓	✓	✓
Configurable behavior in the event of a system voltage recovery	✓	--	--	--	✓	✓	✓	--	--	--	--	--	--
Operating mode													
Automatic mode for sunlight tracking control	✓	--	--	✓	✓	✓	✓	--	✓	✓	--	✓	✓
Manual mode	✓	--	--	✓	✓	✓	✓	--	✓	✓	--	✓	✓
Standard mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Status													
Transmitting status per channel	✓	✓	✓	✓	✓	✓	✓	--	✓	✓	✓	✓	✓
Indication of direct operation with status object	✓	--	--	✓	✓	✓	--	--	--	--	--	--	--
Status position of sun protection, 8-bit	✓	✓	✓	✓	✓	✓	✓	--	✓	✓	--	✓	✓
Status position of slats, 8-bit	✓	✓	--	✓	✓	✓	✓	--	✓	✓	--	✓	✓
Scene control													
Integrated 1-bit scene control	✓	✓	✓	--	✓	✓	--	--	✓	✓	--	✓	✓
Integrated 8-bit scene control	✓	--	--	--	✓	✓	--	--	✓	✓	--	✓	✓
Scenes to be integrated per channel	8	2	2	--	8	8	--	--	8	8	--	8	8
Shutter/blind control													
Travel lock (e. g. for cleaning the outer shutter/blinds)	✓	✓	✓	✓	✓	✓	--	--	✓	✓	✓	✓	✓
Separate raising/lowering protection	--	✓	✓	--	--	✓	--	--	✓	✓	--	✓	✓
Alarm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
• Move to safety position													
• Locking in this position for as long as alarm is active													
Individual configuration of actuator channels	✓	✓	✓	✓	✓	✓	✓	--	✓	✓	✓	✓	✓
Shared configuration of actuator channels	✓	✓	✓	✓	✓	✓	--	✓	--	--	--	--	--
Adaptation of objects and functions to drive type	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	✓	✓
Suitable for integration in a sunlight tracking control system	✓	--	--	✓	✓	✓	✓	--	✓	✓	--	✓	✓
End position detection	✓	--	--	--	--	✓	--	--	✓	✓	--	✓	✓
Adaptation of objects and functions to electronic limit switch	✓	--	--	--	--	--	--	--	--	--	--	--	--
Sun protection control (UP/DOWN)													
Using position data (8-bit value)	✓	--	--	✓	✓	✓	✓	--	✓	✓	--	✓	✓
Travel to end position, stopping, stepwise adjustment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Slat control (OPEN/CLOSE)													
Using position data (8-bit value)	✓	--	--	✓	✓	✓	✓	--	✓	✓	--	✓	✓
Travel to end position, stopping, stepwise adjustment	✓	✓	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

¹⁾ Also available as UL version (5WG1 523-1CB04), see page 6/6

For selection and ordering data, see page 6/6.












Anti-glare/sun protection actuators

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 522/03 N 522/03 shutter/blind actuators 4 x 230 V AC, 8 A, with end position detection, for sunlight tracking control	B	5WG1 522-1AB03		1	1 unit	139	0.388
5WG1 522-1AB03								
	N 523/02 N 523/02 shutter/blind actuators 4 x 230 V AC, 6 A	B	5WG1 523-1AB02		1	1 unit	139	0.322
5WG1 523-1AB02								
	N 523/03 N 523/03 roller shutter actuators 4 x 230 V AC, 6 A	A	5WG1 523-1AB03		1	1 unit	139	0.322
5WG1 523-1AB03								
	N 523/04 N 523/04 shutter/blind actuators 4 x 230 V AC, 6 A, for sunlight tracking control	B	5WG1 523-1AB04		1	1 unit	139	0.323
5WG1 523-1AB04								
	N 523/CB04 N 523/CB04 shutter/blind actuators ® 4 x 120 V AC, 6 A, for sunlight tracking control	A	5WG1 523-1CB04		1	1 unit	139	0.322
5WG1 523-1CB04								
	N 523/11 N 523/11 shutter/blind actuators 8 x 230 V AC, 6 A, for sunlight tracking control	B	5WG1 523-1AB11		1	1 unit	139	0.500
5WG1 523-1AB11								
	N 501 N 501 combination shutter/blind actuators 4 x 230 V AC, 6 A, 8 x binary inputs for sunlight tracking control	B	5WG1 501-1AB01		1	1 unit	139	0.500
5WG1 501-1AB01								

Sun Protection, Anti-Glare Protection, Utilization of Daylight


Anti-glare/sun protection actuators

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 524 N 524 shutter/blind actuators ® 4 x 6 ... 24 V DC, 1 A	A	5WG1 524-1AB01		1	1 unit	139	0.421
5WG1 524-1AB01								
	N 521 N 521 shutter/blind actuators 4 x 230 V AC, 6 A, (2 x parallel)	A	5WG1 521-1AB01		1	1 unit	139	0.212
5WG1 521-1AB01								
	UP 520/03 UP 520/03 shutter/blind actuators  1 x 230 V AC, 6 A (resistive load) • 10-pole BTI socket for plugging of bus terminal devices with BTI connector	A	5WG1 520-2AB03		1	1 unit	139	0.090
5WG1 520-2AB03								
	UP 520/13 UP 520/13 shutter/blind actuators  1 x 230 V AC, 6 A (resistive load)	A	5WG1 520-2AB13		1	1 unit	139	0.070
5WG1 520-2AB13								
	UP 520/31 UP 520/31 shutter/blind actuators 1 x 230 V AC, 6 A, 2 x binary inputs	D	5WG1 520-2AB31		1	1 unit	139	0.092
5WG1 520-2AB31								
	RS 520/23 RS 520/23 shutter/blind actuators  1 x 230 V AC, 6 A (resistive load) • incl. bus connection module • for mounting in AP 118 automation module box or AP 641 room control box ¹⁾	A	5WG1 520-2AB23		1	1 unit	139	0.055
5WG1 520-2AB23								
	RL 521/23 RL 521/23 shutter/blind actuators  2 x 230 V AC, 6 A (resistive load) • for mounting in AP 118 automation module box or AP 641 room control box ¹⁾	A	5WG1 521-4AB23		1	1 unit	139	0.070
5WG1 521-4AB23								

¹⁾ The AP 641 room control box and AP 118 automation module box must be ordered separately, see Chapter "Quick-assembly system - Room control box".



Central weather/sun protection systems

Technical specifications

Type	AP 257/22	AP 257/32
		
	Integrated sensors <ul style="list-style-type: none"> • Heated sensor for measuring wind speed without mechanically moved parts, measuring range at least 0 ... 35 m/s • Brightness sensor, measuring range min. 0 ... 150 klx • Dusk detection, measuring range min. 0 ... 1000 lx • Outdoor temperature sensor, measuring range min. -35 ... +80 °C • Heated precipitation monitors 	
Receiver for GPS time signal	✓	✓
Input the assembly location by selecting country and city or by stating the GPS longitude/latitude coordinates	✓	✓
Transmission and receipt of date and time over bus	✓	✓
Transmission of all measured values via bus	✓	✓
Recording and transmitting max. wind speed and min./max. outdoor temperature each day	✓	--
Calculation and transmission of angle data (azimuth and elevation) for current sun position	✓	--
Functions		
Monitoring of all measured values up to 3 limit values each	✓	✓
Sensor monitoring	✓	✓
Sunlight tracking control	✓	--
Shadow outline tracking	✓	--
Integrated shutter/blind control modules	✓	✓
• Controllable facades	8	4
Central command for activation/deactivation of sun protection at the start and end of sunshine	✓	✓
AND operations	4	4
OR operations	4	4
OR operations for alarm/fault indications	8	8
Blocking function for window cleaning tasks	✓	✓
Safety/alarm objects	✓	✓
Enclosure data		
Design	Compact device for mast or wall mounting, including mast/wall mount	
Degree of protection	IP44	IP44
Dimensions		
• Height	mm 77	77
• Width	mm 96	96
• Depth	mm 118	118
Display/control elements		
LED for the display of GPS reception	✓	✓
Power supply		
Electronics powered via an external power supply unit	20 V AC or 24 V DC, max. 185 mA ¹⁾	
Bus connection		
Integrated bus coupling units	✓	✓
Bus connection via bus terminal	✓	✓

¹⁾ The 4AC2 402 electronic power supply unit is recommended.

For selection and ordering data, see page 6/10.




Type	Description
 AP 257/42	AP 257/42 wind sensors <ul style="list-style-type: none"> • Measuring range 0 ... 35 m/s • Recording, querying and resetting the maximum wind speed • Mast mountings • Limit value monitoring (3 limit values) • Transmission of sensor values via bus • Logic operations (8 AND, 8 OR) • Electronics powered via an external power supply unit¹⁾ • Integrated bus coupling units • Bus connection via bus terminal • Surface mounting • Dimensions (H x W x D): 77 x 96 x 118 mm
	Accessories for AP 257/22 and AP 257/32 weather systems and AP 257/42 wind sensors Electronic power supply units <ul style="list-style-type: none"> • For powering the AP 257/22 and AP 257/32 weather system and AP 257/42 wind sensor with 24 V DC via the white/yellow core pair of the bus cable • Max. cable length between power supply unit and weather system: 100 m • Rated operational voltage 85 ... 265 V AC (50/60 Hz), 85 ... 300 V DC • Rated secondary voltage 24 V DC, + 5 % • Residual ripple < 100 mV • Rated secondary current 0.35 A • Electronic overload protection • Permissible ambient operating temperature: - 20 ... +60 °C • Degree of protection: IP20 • For mounting on EN 60715-TH35-7.5 mounting rail • Width 2 MW (1 MW = 18 mm)

¹⁾ The 4AC2 402 electronic power pack is recommended for the power supply.

Sun Protection, Anti-Glare Protection, Utilization of Daylight

Central weather/sun protection systems

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg	
 5WG1 257-3AB22 5WG1 257-3AB32	AP 257/22	AP 257/22 (GPS) weather systems¹⁾	B	5WG1 257-3AB22	1	1 unit	139	0.416	
	AP 257/32	WS1 AP 257/32 (GPS) weather stations¹⁾	B	5WG1 257-3AB32	1	1 unit	139	0.430	
 5WG1 257-3AB42	AP 257/42	AP 257/42 wind sensors¹⁾²⁾	B	5WG1 257-3AB42	1	1 unit	139	0.145	
	Accessories								
 4AC2 402	Electronic power supply units			B	4AC2 402	1	1 unit	12H	0.081

4AC2 402

¹⁾ The 4AC2 402 electronic power pack is recommended for the power supply.




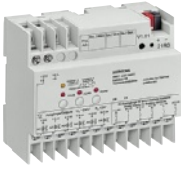

²⁾ For technical specifications, see [Chapter "Physical Sensors"](#).



7/2	Introduction
7/4	Sensors for HCVA
7/6	Display and operation units for HCVA
7/8	Room temperature controllers
7/12	Actuators for HCVA
7/17	Electromotive valve actuators for HCVA
7/18	Electrothermal valve actuators for HCVA

Introduction

Overview

	Devices	Application	Page
	Sensors for HCVA	The sensors detect the temperature and deliver the basic values for optimum control.	7/4
	Display and operation units for HCVA	Display and operation of room temperature control implemented via a REG 540 fan-coil unit controller. The complete i-system and DELTA profil and DELTA style product ranges are available.	7/6
	Room temperature controllers	Display, operation, control and temperature sensor in a single flush-mounting device. This offers optimum control of heating, cooling, ventilation and air-conditioning.	7/8
	Actuators for HCVA	These control the drives for the heating, cooling, ventilation and air-conditioning.	7/12
	Valve actuators for HCVA	For the opening and closing of small valves.	7/17

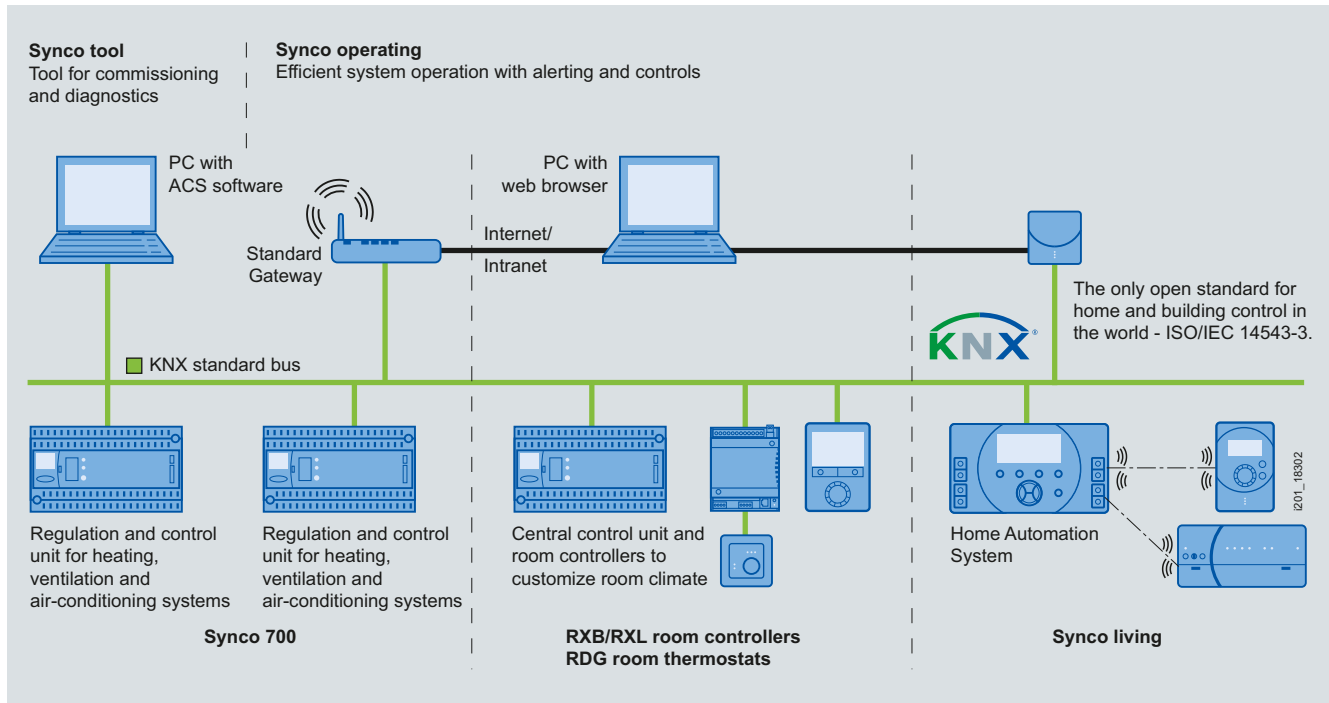
HCVA products - low energy consumption thanks to efficient products

A wide range of HCVA products - optimally coordinated

The Siemens HCVA product range offers a comprehensive assortment of products for every kind of application. The components are optimally coordinated with each other. You benefit not only from minimal installation and running costs, but also from the fact that all our products are extremely failsafe.

Intelligent convenience - for both indoor environment and operation

Easy-to-use components that offer maximum convenience. Adjust your living environment intuitively, quickly and accurately to your needs - no tedious learning curve.



Commissioning software tools

Synco products are commissioned using the software tool ACS. Synco devices use LTE, a protocol specifically for Synco devices. Communication is also implemented via the KNX bus cable. Synco devices can be operated together with GAMMA *instabus* devices using the same KNX bus cable. If you also want to send data between the GAMMA *instabus* (KNX S-mode) and the Synco devices, the data exchange for both product groups is configured using ETS.




For further information on ACS: www.siemens.com/synco
ETS: www.knx.org

A wealth of experience, high quality standards and simple handling

Siemens has now been promoting HCVA control technology for more than 60 years. In this time, it has acquired broad application expertise and skills in this specialist field. As a result, and thanks to a rigorous quality management system, Siemens HCVA products offer the highest quality, efficiency and reliability. They also reflect an in-depth knowledge of the HCVA market, building automation and their processes: furthermore, the components are particularly simple to install, commission and maintain.

Sensors for HCVA

Technical specifications




Type	Description
 N 258/02	N 258/02 temperature sensors²⁾ For four Pt1000 sensors <ul style="list-style-type: none"> • For the measurement and transmission of 4 temperatures in the range -40 ... +150 °C • For connection of four Pt1000 temperature sensors²⁾, each via a 2-wire cable up to 50 m in length • Configurable smoothing of a measured value through mean value generation • Monitoring of a lower and upper limit value for each measured value, with configurable hysteresis for limit value signals • Electronics powered via an integrated power supply unit for 230 V AC <ul style="list-style-type: none"> • Green LED for displaying ready-to-run status • Integrated bus coupling units • Bus connection via bus terminal and contact system to data rail • Modular installation devices for mounting on TH35 EN 60715 mounting rail • Width: 4 MW (1 MW = 18 mm).
 N 670	N 670 Universal I/O modules¹⁾²⁾ 2 x Universal I/O, 2 inputs Pt1000, 2 relay outputs 230 V AC, 10 A <ul style="list-style-type: none"> • 2 universal inputs/outputs, each adjustable as <ul style="list-style-type: none"> - Analog input 0 V ... 10 V DC - Analog output 0 V ... 10 V DC - Binary input for 10 V DC - Binary output for 10 V DC • Analog input with limit value monitoring and signaling, with adjustable limit values and hysteresis • Analog output with adjustable lower and upper limit of the output voltage with adjustable voltage value in the event of bus voltage failure and recovery • Binary input with pulse edge evaluation • Binary output with adjustable switching position in the event of bus voltage failure and recovery • 2 inputs for connection of temperature sensors with Pt1000 measuring element for measuring temperatures in the range of -25 °C ... +45 °C, with limit value monitoring and signaling, with adjustable limits and hysteresis <ul style="list-style-type: none"> • 2 binary outputs, relay contacts rated for 230 V AC, 10 A at p.f. = 1, with <ul style="list-style-type: none"> - Configurable actuated position (NO contact/NC contact) - Positively driven operation - Configurable switching position in the event of bus voltage failure and recovery • Electronics powered via an external 24 V AC/DC power supply unit, power consumption approx. 100 mA • Integrated bus coupling units • Bus connection via bus terminal and contact system to data rail • Modular installation devices for mounting on TH35 EN 60715 mounting rail • Width: 4 MW (1 MW = 18 mm).
 AP 254/02	AP 254/02 dual sensors Brightness measurement, temperature measurement, sun protection control, lighting control <ul style="list-style-type: none"> • For the detection and transmission of brightness and temperature, temperature measuring range -25 °C ... +55 °C, brightness measuring range 1 lux ... 100 kLux, horizontal sensing angle -60° ... +60°, vertical -35° ... +66.5° • For the control of switch, dimming and shutter/blind actuators, depending on the ambient luminosity and/or ambient temperature • One sun protection channel for the automatic control of sun protection equipment, with <ul style="list-style-type: none"> - Starting and stopping of automation by means of an object or a dusk threshold - Up to three brightness thresholds for determining the height and position of the shutters/blinds or roller shutters - Optional teach-in of dusk thresholds and brightness thresholds by means of a teach-in facility - Blocking object for the temporary deactivation of the sun protection channel function <ul style="list-style-type: none"> • Up to four universal channels for the control of switch, dimming and shutter/blind actuators, depending on ambient luminosity and/or temperature. Optionally available with: <ul style="list-style-type: none"> - Threshold switches for brightness - Threshold switches for temperature - Threshold switches with logical combination of brightness and temperature - Optional teach-in of brightness threshold for each universal channel by means of an associated teach-in facility - Deactivation option for each universal channel by means of an associated blocking object (1 bit) - Optional second object for transmission of a second telegram on fulfillment of threshold conditions • Bus-powered electronics • Integrated bus coupling units • Bus connection via bus terminal • Surface mounting • Degree of protection: IP54

¹⁾ The external 24 V AC/DC power supply unit must be ordered separately (e. g. 4AC2 402, see page 6/10).

²⁾ For physical sensors, see Chapter, "Physical sensors".

For selection and ordering data, see page 7/5.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
								kg
	N 258/02 N 258/02 temperature sensors²⁾ For four Pt1000 sensors	B	5WG1 258-1AB02		1	1 unit	139	0.242
5WG1 258-1AB02								
	N 670 N 670 Universal I/O modules¹⁾²⁾ 2 x Universal I/O, 2 inputs for Pt1000, 2 outputs 230 V AC, 10 A	A	5WG1 670-1AB03		1	1 unit	139	0.213
5WG1 670-1AB03								
	AP 254/02 AP 254/02 dual sensors Brightness measurement, temperature measurement, sun protection control, lighting control	A	5WG1 254-3EY02		1	1 unit	139	0.153
5WG1 254-3EY02								



¹⁾ The external 24 V AC/DC power supply unit must be ordered separately (e. g. 4AC2 402, [see page 6/10](#)).

²⁾ For physical sensors, [see Chapter, "Physical sensors"](#).



Display/operation units for HCVA

Technical specifications

	i-system	DELTA profil	DELTA style
Dimensions			
• Height	mm 55	65	68
• Width	mm 55	65	68
• Depth	mm 16	16	16

Type	Description
	<p>Fan-coil unit controllers for office and hotel</p> <ul style="list-style-type: none"> For the display and operation of the room temperature control using a REG 540 fan-coil unit controller 5 yellow LEDs for the display of manually set fan speed step or automatic speed input
 <p>UP 237E UP 252E UP 254E</p>	<p>Fan-coil unit controllers for offices</p> <ul style="list-style-type: none"> Pushbutton for switching the room operating mode between comfort and energy-saving mode and for setting the required fan speed step or the automatic input of the speed step by the fan-coil unit controller
 <p>UP 237F UP 252F UP 254F</p>	<p>Fan-coil unit controllers for hotels</p> <ul style="list-style-type: none"> Pushbutton for setting the required fan speed step or for automatic entry of the speed step by the fan-coil unit controller





Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
i-system								
	<p>UP 237E UP 237E fan-coil unit controllers for offices¹⁾²⁾</p> <p>Versions</p> <ul style="list-style-type: none"> Titanium white Aluminum metallic 	A	5WG1 237-2EB11		1	1 unit	138	0.050
		A	5WG1 237-2EB31		1	1 unit	138	0.030
		5WG1 237-2EB11						
	<p>UP 237F UP 237F fan-coil unit controllers for hotels¹⁾²⁾</p> <p>Versions</p> <ul style="list-style-type: none"> Titanium white Aluminum metallic 	A	5WG1 237-2FB11		1	1 unit	138	0.049
		A	5WG1 237-2FB31		1	1 unit	138	0.050
		5WG1 237-2FB11						

¹⁾ The bus coupling unit (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus coupling unit (BTM) must be ordered separately.

²⁾ The matching design frame must be ordered separately.

Display/operation units for HCVA

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
DELTA profil								
	UP 252E UP 252E fan-coil unit controllers for offices¹⁾²⁾ (to be discontinued)							
	Versions							
	• Titanium white • Silver	A A	5WG1 252-2EB11 5WG1 252-2EB71		1 1	1 unit 1 unit	138 138	0.052 0.030
5WG1 252-2EB11								
	UP 252F UP 252F fan-coil unit controllers for hotels¹⁾²⁾ (to be discontinued)							
	Versions							
	• Titanium white • Silver	A A	5WG1 252-2FB11 5WG1 252-2FB71		1 1	1 unit 1 unit	138 138	0.057 0.030
5WG1 252-2FB11								
DELTA style								
	UP 254E UP 254E fan-coil unit controllers for offices¹⁾²⁾							
	Versions							
	• Titanium white/metallic silver • Platinum metallic	A B	5WG1 254-2EB11 5WG1 254-2EB41		1 1	1 unit 1 unit	138 138	0.062 0.062
5WG1 254-2EB11								
	UP 254F UP 254F fan-coil unit controllers for hotels¹⁾²⁾							
	Versions							
	• Titanium white/metallic silver • Platinum metallic	A B	5WG1 254-2FB11 5WG1 254-2FB41		1 1	1 unit 1 unit	138 138	0.062 0.062
5WG1 254-2FB11								

5WG1 254-2FB11




¹⁾ The bus coupling unit (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus coupling unit (BTM) must be ordered separately.



²⁾ The matching design frame must be ordered separately.

Room temperature controllers

Technical specifications









	i-system	DELTA style	RDF301, RDF301.50	RDG100KN, RDG400KN	RDU341
Dimensions					
• Height	mm 55	68	86	128	86
• Width	mm 55	68	86	93	86
• Depth	mm 16	16	57	30.8	57

Type	Description
 UP 237K UP 254K	UP 237K, UP 254K room temperature controllers <ul style="list-style-type: none"> • Integrated room temperature sensors • Control can be set as a two-point control and/or continuous-action control (P or PI algorithm), for heating only, for cooling only, or for heating and cooling mode • Operating modes that can be switched via KNX: comfort mode, pre-comfort mode, energy-saving mode and frost or heat protection mode • Presence pushbutton to locally switch between comfort and pre-comfort mode or comfort and energy-saving mode and to extend comfort mode after operating energy-saving or protection mode • Pushbutton for switching over between manual and automatic mode • The room temperature setpoint value for comfort mode can be set via an interchangeable rotary button (+/-) on the controller and via the KNX • Basic setpoint of the room temperature for comfort mode which can be set via the KNX • Setpoint value for comfort mode in °C which can be set via an interchangeable rotary button on the controller • Adjustable dead zone between the heating setpoint and the cooling setpoint for comfort mode • Two-level heating or cooling • Output of the control variable(s) either as an ON/OFF switch command or as a positioning command in the range of 0 ... 100 % • 5 LEDs to display manual mode and the current operating modes • 4 LEDs to display heating/cooling valve open, dew point alarm and open window • For plugging onto a bus coupling unit (BTM) or a flush-mounting actuator with bus coupling unit (BTM).
 RDF301 RDF301.50	RDF301, RDF301.50 room thermostats with KNX communication <ul style="list-style-type: none"> • Room thermostat with LCD for flush mounting for 2-tube ventilator convectors and compressors of direct evaporators <ul style="list-style-type: none"> - For heating and/or cooling applications - KNX communication - Outputs for 2 or 3-step actuating signals - Outputs for 1 or 3-stage ventilators - 2 multifunctional inputs for keycard contact, external room/return flow sensors, heating/cooling switchover, switchover mode, window contact ON/OFF, dew point monitoring, electrical heater activated, fault contact - Operating modes: Comfort, energy-saving and protection function - Automatic or manual heating/cooling mode switchover - Adjustable commissioning and control parameters - Minimum and maximum setpoint limiting - Backlit display - Enclosure color: Signal white (RAL 9003) • Selectable application: <ul style="list-style-type: none"> - 2-tube systems - 2-tube systems with electrical heating - 4-tube systems • Operating voltage: 230 V AC, 50/60 Hz • Power consumption: 4 VA • Actuating signal: 2-step, 3-step • Control algorithm Two-step/PI • Ambient temperature for operation: 0 ... 50 °C • Setpoint setting range: 5 ... 40 °C • Temperature measuring range: 0 ... 49 °C • Differential gap: 0.5 ... 6 K • Communication: KNX (S-mode and LTE mode with Synco 700) • Integrated bus coupling units • Analog inputs: NTC 3k, switch • Relay outputs: Ventilator: NO contacts, not voltage-free, valve: NO contacts, not voltage-free • Relay outputs: 5 x 230 V AC, 5 (2) A • For mounting on square ARG71 flush-mounting box (BS4662), distance of fixing holes 60.3 mm • Degree of protection: IP30 <p>RDF301.50 room thermostat in addition:</p> <ul style="list-style-type: none"> • Pushbutton for light and shutter/blinds
 RDU341	RDU341 room thermostats with KNX communication for variable volume flow application VVS <ul style="list-style-type: none"> • Room thermostat for variable volume flow application <ul style="list-style-type: none"> - Modulating PI control - Room or return air temperature control - Outputs for a 0 ... 10 V DC drive and 230 V AC electrical heating (ON-OFF) - Automatic or manual heating/cooling mode switchover - Operating modes: Comfort, energy-saving and protection function - 2 multifunctional inputs for keycard contact, external room/return flow sensors, heating/cooling switchover, switchover mode, window contact ON/OFF, dew point monitoring, electrical heater activated, fault contact - Adjustable commissioning and control parameters - Minimum and maximum setpoint limiting - Adjustable setpoint limiting for min. and max. air volume flow signal 0 ... 10 V DC - Optional output signal reversal - KNX communication • Selectable application: <ul style="list-style-type: none"> - Single-channel systems - Single-channel systems with electrical heating • Operating voltage: 24 V AC, 50/60 Hz • Power consumption: 4 VA • Actuating signal: 0 ... 10 V DC • Control algorithm P/PI • Ambient temperature for operation: 0 ... 50 °C • Setpoint setting range: 5 ... 40 °C • Temperature measuring range: 0 ... 49 °C • Differential gap: 0.5 ... 6 K • Communication: KNX (S-mode and LTE mode with Synco 700) • Integrated bus coupling units • Analog input signals: NTC 3k, switch • Analog output: 1 x 0 ... 10 V DC, max. 1 mA • Relay output: NO contact, floating • Relay output: 1 x 230 V AC, max. 5 (2) A • For mounting on square ARG71 flush-mounting box (BS4662), distance of fixing holes 60.3 mm • Degree of protection: IP30

Type	Description
	<p>RDG100KN room thermostats with KNX communication</p> <p>Ventilator convectors and universal applications</p> <ul style="list-style-type: none"> • Operating modes: Comfort, energy-saving and protection mode • 2-step, 3-step or PWM control outputs • Ventilator speed automatic or manual for 1 or 3-stage ventilators • 3 multifunctional inputs for keycard contact, external room/return flow sensors, heating/cooling switchover, switchover mode, window contact ON/OFF, dew point monitoring, electrical heater activated, fault contact • Automatic or manual heating/cooling mode switchover • Adjustable commissioning and control parameters • Minimum and maximum limiting of setpoint • Backlit display • Selectable application: <ul style="list-style-type: none"> - 2-tube systems - 2-tube systems with electrical heating - 2-tube systems with radiator/floor heating - 4-tube systems - 4-tube systems with electrical heating - 2-stage heating/cooling systems <ul style="list-style-type: none"> • Operating voltage: 230 V AC, 50/60 Hz • Power consumption: 18 VA • Control algorithm Two-step/PI • Ambient temperature for operation: 0 ... 50 °C • Setpoint setting range: 5 ... 40 °C • Temperature measuring range: 0 ... 49 °C • Differential gap: Heating: 0.5 ... 6 K, cooling: 0.5 ... 6 K • Communication: KNX (S-mode and LTE mode with Synco 700) • Integrated bus coupling units • Analog input signals: NTC 3k, switch • Digital input: 1 • Relay outputs: Ventilator: 1 or 3-stage • Relay outputs: 3 x 230 V AC, 5 (4) A • Triac outputs: Valve, electric radiator, 2-step, PWM, 3-step • Number of Triac outputs: 3 x 230 V AC, max. 1 A • Mounting: directly on the wall, using screws • Degree of protection: IP30
	<p>RDG400KN room thermostats with KNX communication</p> <p>Variable volume flow for heating and cooling</p> <ul style="list-style-type: none"> • Constant PI control • Control depending on the room or return air temperature • Power supply 0 ... 10 V DC for a variable volume flow drive and additional output for 2-step, PWM or 3-step or output for 3-step variable volume flow drive and additional output 0 ... 10 V DC • Automatic or manual heating/cooling mode switchover • Operating modes: Comfort, energy-saving and protection mode • 2 multifunctional inputs for keycard contact, external room/return flow sensor (1x), heating/cooling switchover, switchover mode, window contact ON/OFF, dew point monitoring, electrical heater activated, fault contact • 1 input 0 ... 10 V DC for position feedback - air flap • Adjustable commissioning and control parameters • Minimum and maximum limiting of setpoint • Minimum and maximum limiting of air flow signal • Reversal of output signal (0 ... 10 V DC) as option • Backlit display • Selectable application: <ul style="list-style-type: none"> - Single-channel systems - Single-channel systems with electrical heating - Single-channel systems and radiator/floor heating - Single-channel systems with air heater/cooler <ul style="list-style-type: none"> • Operating voltage: 24 V AC, 50/60 Hz • Power consumption: 2 VA • Control algorithm P/PI • Ambient temperature for operation: 0 ... 50 °C • Setpoint setting range: 5 ... 40 °C • Temperature measuring range: 0 ... 49 °C • Differential gap: Heating: 0.5 ... 6 K, cooling: 0.5 ... 6 K • Communication: KNX (S-mode and LTE mode with Synco 700) • Integrated bus coupling units • Analog inputs: NTC 3k, 0 ... 10 V DC • Analog output: variable volume flow drive, electrical heater • Analog output: 1 x 0 ... 10 V DC, max. ±1 mA • Digital input: 1 • Triac output: variable volume flow drive, valve, electric heater, 2-step, PWM, 3-step • Triac output: 1 x 24 V AC, max. 1 A • Mounting: directly on the wall, using screws • Degree of protection: IP30

Room temperature controllers

Selection and ordering data



Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
i-system								
	UP 237K UP 237 room temperature controllers ¹⁾²⁾  Versions • Titanium white • Aluminum metallic	A	5WG1 237-2KB11 5WG1 237-2KB31		1	1 unit	139	0.062
		A						0.062
5WG1 237-2KB11								
DELTA style								
	UP 254K UP 254K room temperature controllers ¹⁾²⁾  Versions • Titanium white/metallic silver • Platinum metallic	A	5WG1 254-2KB13 5WG1 254-2KB43		1	1 unit	139	0.072
		A						0.072
5WG1 254-2KB13								
Design-independent								
	RDF301 RDF301 room thermostats with KNX communication ³⁾ For 2 or 4-tube ventilator convectors or direct evaporators	B	S55770-T 104		1	1 unit	A08	0.320
S55770-T 104								
	RDF301.50 RDF301.504 room thermostats with KNX communication ³⁾ 2 or 4-tube ventilator convectors or direct evaporators, four pushbuttons for switching lights and shutters/blinds	B	S55770-T 105		1	1 unit	A08	0.320
S55770-T 105								
	RDU341 RDU341 room thermostats with KNX communication ³⁾ for variable volume flow application VVS	B	S55770-T 106		1	1 unit	A08	0.243
S55770-T 106								
	ARG71 ARG71 flush-mounting boxes For all RDU/RDF acc. to BS4662 Dimensions (H x W x D): 75 x 75 x 51 mm	B	S55770-T 137		1	1 unit	A08	0.081
S55770-T 137								

¹⁾ The bus coupling unit (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus coupling unit (BTM) must be ordered separately.

²⁾ The matching design frame must be ordered separately.






³⁾ The matching ARG71 flush-mounting box must be ordered separately.

Room temperature controllers

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	RDG100KN RDG100KN room thermostats with KNX communication Ventilator convectors and universal applications	B	S55770-T 163		1	1 unit	A08	0.380
S55770-T 163								
	RDG400KN RDG400KN room thermostats with KNX communication Variable volume flow for heating and cooling	B	S55770-T 165		1	1 unit	A08	0.337
S55770-T 165								

Actuators for HCVA

Technical specifications






					
Type	N 605	N 605/11	N 670	REG 540	REG 540/11
Application program	906101	906202	900501	49550	49551
Enclosure data					
Design	N	N	N	REG	REG
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓	✓	✓
Dimensions					
• Length	mm 90	90	90	90	90
• Width (1 MW = 18 mm)	mm 6 MW	6 MW	4 MW	6 MW	4 MW
• Height	mm 55	55	55	55	55
Display/control elements					
LED for operation/status display	✓	✓	--	✓	✓
Can be operated with	1)	1)	1)	UP 237E, UP 237F UP 252E, UP 252F UP 254E, UP 254F	UP 237E, UP 237F UP 252E, UP 252F UP 254E, UP 254F
Direct operation (local operation)	✓ (manual)	✓ (manual)	--	✓ (test mode)	✓ (test mode)
Power supply					
Electronics powered via an external 24 V AC/DC power supply unit	--	--	✓	--	✓ (AC only)
Electronics powered via an integrated power supply unit. Supply voltage 230 V AC	✓	✓	--	✓	--
Bus connection					
Integrated bus coupling units	✓	✓	✓	✓	✓
Bus connection via contact system to data rail	--	--	✓	--	--
Bus connection via bus terminal	✓	✓	✓	--	--
Bus connection via screw terminals	--	--	--	✓	✓
Outputs					
Load output					
Floating relay contact	--	--	2	3	3
• Rated contact voltage, AC	V --	--	230	230	230
• Rated contact current (p.f. = 1)	A --	--	10	6	6
Silent semiconductor switch	6	6	--	2	2
• Rated voltage, AC	V 230	230	--	24	24
• Max. permanent loading (p.f. = 1)	W 12	6	--	5	15
Protection					
Electronic protection of outputs against over-load and short circuit	✓	✓	--	--	--
Universal inputs/outputs					
Adjustable inputs/outputs as	--	--	2	--	--
• Analog input (0 ... 10 V DC) with limit value monitoring and indication					
• Analog output (0 ... 10 V DC) with adjustable lower and upper limits					
• Binary input for 10 V DC with pulse edge evaluation					
• Binary output (10 V DC)					
Inputs					
Pushbutton inputs					
For signal input (floating contacts)	6	6	--	2	1
Determination of switching state by means of the voltage generated in the device	✓	✓	--	✓	✓
Sensor inputs					
PT1000 temperature sensor input	--	--	2	--	--
Temperature sensor input	--	--	--	1 ²⁾	1 ²⁾
Potentiometer input (setpoint adjustment)	--	--	--	1	--
Max. cable length, unshielded, twisted	m 50	50	³⁾	30	30

1) *instabus* room temperature controllers.

2) M 540 temperature sensors.

3) On request.





For selection and ordering data, see page 7/15.

					
Type	N 605	N 605/11	N 670	REG 540	REG 540/11
Application program	906101	906202	900501	49550	49551
Output functions					
Switching (ON/OFF per channel)	✓	✓	✓	✓	✓
Value setting per channel, 8-bit	✓	--	✓	✓	✓
Positively driven operation	✓	--	✓	--	--
Configurable transmission of output status	✓	✓	--	--	--
Transmitting status	✓	✓	--	--	--
Input functions					
Configurable debounce time	--	--	✓	--	--
Configurable pulse edge evaluation	--	--	✓	--	--
Configurable transmission of input status objects	✓	✓	✓	--	--
General functions					
Max. number of group addresses	35	40	40	1)	1)
Max. number of assignments	55	65	40	1)	1)
Integrated controllers with PI algorithms	--	--	--	✓	✓
Comfort mode	--	--	--	✓	✓
Standby mode	--	--	--	✓	✓
Night mode	--	--	--	✓	✓
Frost protection mode	--	--	--	✓	✓
Heat protection mode	--	--	--	✓	✓
Energy-saving function	--	✓	--	--	--
Calcification protection	✓	--	--	--	--
Configurable behavior in the event of a bus voltage failure	✓	✓	✓	--	--
Configurable behavior in the event of a bus voltage recovery	✓	✓	✓	--	--









1) On request.

For selection and ordering data, see page 7/15.

Actuators for HCVA

Type	Description
	<p>S 290 door/window contacts</p> <ul style="list-style-type: none"> Opening alarm for the monitoring of windows and doors, comprising: <ul style="list-style-type: none"> 1 magnet (Ø 8 x 30 mm) 1 magnetically operated contact in a fully cast plastic enclosure (Ø 8 x 30 mm) Switching voltage: max. 110 V DC Switching current: 10 µA ... 100 mA Contact current carrying capacity: max. 5 W Contact resistance: max. 150 mΩ VdS class B 5 m long connection cable LiYY 4 x 0.14 mm² <ul style="list-style-type: none"> Suitable for flush and surface mounting 2 surface-mounting enclosure tops (43 x 12 x 12 mm) 2 surface-mounting enclosure bottoms 4 spacer plates (thickness: 2 x 4 mm or 2 x 2 mm) 2 flush-mounting flanges 4 antimagnetic countersunk self-tapping screws DIN 7982-ST2, 9 x 16-A2
	<p>Versions</p>
 S 290 white	<ul style="list-style-type: none"> Enclosure color: White
 S 290 brown	<ul style="list-style-type: none"> Enclosure color: Brown
 RXB21.1/FC-10	<p>Room controllers for 3-stage ventilator</p> <ul style="list-style-type: none"> Operating voltage: 230 V AC, 50/60 Hz Power consumption: 12 VA Control algorithm PI Communication: KNX (S mode and LTE mode), room device: PPS2 Service plug: RXT20.1 Digital inputs: 2 Relay outputs: For 3-stage ventilator control Relay outputs: 3 x 250 V AC, 5 (4) A Triac outputs: ON/OFF, PWM, 3-step Triac outputs: 4 x 24 V AC, 0.5 A <ul style="list-style-type: none"> Interface type: KNX-Bus Mounting on DIN rail or using screws Mounting location: Fan coil, with cover in intermediate ceiling, control cabinet Dimensions (W x H x D): 113 x 167 x 62 mm Degree of protection: IP30 Product conformity: eu.bac-certified Application group (type) fan coil applications: <ul style="list-style-type: none"> FNC02: 2-tube system with changeover FNC04: 4-tube systems FNC08: 4-tube system with room supply air cascade FNC20: 4-tube system with air flap control
RXB21.1/FC-11	<p>Room controllers for 3-stage ventilator</p> <ul style="list-style-type: none"> Application group (type) fan coil applications: <ul style="list-style-type: none"> FNC10: 2-tube system with changeover and outdoor air flap FNC12: 4-tube system with outdoor air flap FNC18: 2-tube system with changeover and radiator
RXB22.1/FC-12	<p>Room controllers for 3-stage ventilator and RXB22.1/FC-12 electrical air heater</p> <ul style="list-style-type: none"> Relay outputs: 4 x 250 V AC, 5 (4) A Relay outputs: 1 for electrical air heater, 3 for 3-stage ventilator control Triac outputs: 2 <ul style="list-style-type: none"> Application group (type) fan coil applications: <ul style="list-style-type: none"> FNC03: 2-tube system with changeover and electrical reheater FNC05: 4-tube system with electrical reheater
RXB24.1/CC-02	<p>Room controllers for cooling mats and RXB24.1/CC-02 radiators</p> <ul style="list-style-type: none"> Triac outputs: 4 x 24 V AC, 0.5 A <ul style="list-style-type: none"> Application group (type) fan coil applications: <ul style="list-style-type: none"> CLC01: Cooling mat with dew point monitoring CLC02: cooling mat with dew point monitoring, radiator with downdraft compensation RAD01 radiator with downdraft compensation
	<p>Accessories</p>
RXZ20.1	<p>RXZ20.1 terminal covers</p> <ul style="list-style-type: none"> for RXB2x
 QAX84.1/PPS2	<p>Flush-mounting QAX84.1/PPS2 room devices</p> <ul style="list-style-type: none"> The QAX84.1/PPS2 room device for flush mounting comprises: <ul style="list-style-type: none"> QAZ84.1 as control element, RXZ80.1/PPS2 as PPS2 bus coupling unit DELTA line frame, single, titanium white The functionality corresponds to QAX34.1: <ul style="list-style-type: none"> Recording of room temperature Rocker for adjustment of the room temperature setpoint value Rocker for selection of operating state (ready/automatic) and for manual ventilator control of fan coil system (up to 3 stages) LCD with room temperature and operating state indication <ul style="list-style-type: none"> Power supply: PPS2 Temperature measuring range: 0 ... 40 °C Measuring element temperature: NTC Mounting: surface or flush-mounting box Degree of protection: IP30 Dimensions (W x H x D): 80 x 80 x 30.5 mm Color: White NCS-S 0502-G

Selection and ordering data



Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 605 N 605 thermal drive actuators 6 inputs, 6 outputs	A	5WG1 605-1AB01		1	1 unit	139	0.436
5WG1 605-1AB01								
	N 605/11 N 605/11 thermal drive actuators • 6 inputs, • 2 x 3 outputs, • For the control of 2 heating/cooling mats	A	5WG1 605-1AB11		1	1 unit	139	0.432
5WG1 605-1AB11								
	N 670 N 670 Universal I/O modules ¹⁾²⁾ 2 x Universal I/O, 2 inputs for Pt1000, 2 outputs 230 V AC, 10 A	A	5WG1 670-1AB03		1	1 unit	139	0.213
5WG1 670-1AB03								
	REG 540 REG 540 fan-coil unit controllers 230 V AC	B	5WG1 540-5AS01		1	1 unit	139	0.532
5WG1 540-5AS01								
	REG 540/11 REG 540/11 fan-coil unit controllers 24 V AC	A	5WG1 540-5AS11		1	1 unit	139	0.228
5WG1 540-5AS11								
	Accessories							
	M 540 M 540 temperature sensors • For REG 540 and REG 540/11 fan-coil controllers • Including a 2 m long connecting lead with terminal plug	A	5WG1 540-8AS01		1	1 unit	139	0.103
5WG1 540-8AS01								
	S 290 S 290 door/window contacts							
	Versions							
	• Enclosure color white	B	5WG1 290-7AB11		1	1 unit	139	0.119
5WG1 290-7AB11								
	• Enclosure color brown	B	5WG1 290-7AB81		1	1 unit	139	0.119
5WG1 290-7AB81								

1) The external 24 V AC/DC power supply unit must be ordered separately (e. g. 4AC2 402, [see page 6/10](#)).

2) For physical sensors, [see Chapter, "Physical sensors"](#).

Heating, Cooling, Ventilation, Air-Conditioning


Actuators for HCVA

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
								kg
 BPZ:RXB21.1/FC-10	RXB21.1/FC-10	Room controllers for 3-stage ventilators For fan coils with 3-stage ventilator	A	BPZ:RXB211-FC-10	1	1 unit	A11	0.675
	RXB21.1/FC-11	Room controllers for 3-stage ventilators For fan coils with 3-stage ventilator	A	BPZ:RXB211-FC-11	1	1 unit	A11	0.675
	RXB22.1/FC-12	Room controllers for 3-stage ventilator and electrical air heater For fan coils with 3-stage ventilator and electrical air heater	A	BPZ:RXB221-FC-12	1	1 unit	A11	0.692
	RXB24.1/CC-02	Room controllers for cooling mats and radiators For cooling mats and radiator applications CC-02 Accessories for RXB2x	A	BPZ:RXB241-CC-02	1	1 unit	A11	0.633
	RXZ20.1	Terminal covers	A	BPZ:RXZ201	1	1 unit	A11	0.049
 BPZ:QAX84.1/PPS2	QAX84.1/PPS2	Flush-mounting room devices With PPS2 interface for direct connection to RXB2x, (without KNX interface), incl. DELTA line frame, single, titanium white	A	BPZ:QAX841-PPS2	1	1 unit	A08	0.127


7

Electromotive valve actuators for HCVA

Technical specifications

Type	Description
 AP 562/02	AP 562/02 valve actuators <ul style="list-style-type: none"> Electromotive, proportional (constant) valve actuator with LED valve position indication and with integrated bus coupling unit for direct connection to KNX For latching to valve adapter Delivery with valve adapter rings suitable for Siemens (VDN../VEN.., VPD../VPE.., VD...CLC, V..I46.., V..P47..) Danfoss RA, Heimeier, MNG, Schlösser from 3/93, Honeywell, Braukmann, Dumser (distribution board), Reich (distribution board), Oventrop, Herb, Onda Max. positioning force: 120 N Cable permanently connected to the enclosure for bus connection and two additional signaling contacts (e. g. window contacts), which can be connected as binary inputs For operation solely with the bus voltage, i. e. without external auxiliary power Maintenance-free, silent drive Automatic valve stroke detection, through which the actuator travel is adjusted to the valve used Dimensions (H x W x D): 50 x 82 x 65 mm

Selection and ordering data









Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
	AP 562/02		AP 562/02 valve actuators Electromotive, with LED valve position indication	A	5WG1 562-7AB02	1	1 unit	139	0.265

5WG1 562-7AB02

Heating, Cooling, Ventilation, Air-Conditioning

Electrothermal valve actuators for HCVA



Technical specifications

Type									
Enclosure data									
Dimensions									
• Height	mm	58	58	58	58	74	74	74	74
• Width/Ø	mm	44.5	44.5	44.5	44.5	44	44	44	44
Output									
Electrothermal actuators (silent)	230 V AC	✓	✓	--	--	✓	--	--	✓
	24 V AC/DC	--	--	✓	✓	--	✓	✓	--
Valve position in de-energized state ¹⁾		NC	NO	NC	NO	NC	NC	NC	NO
Valve position indication		✓	--	✓	--	✓	✓	✓	✓
Max. lift / max.positioning force	mm/N	3.5/105	2.6/105	3.5/105	2.6/105	4.5/100	4.5/100	4.5/90	4.5/100
Max. open/close time	Min.	3	Approx. 3	Approx. 3	Approx. 3	3.5	4.5	4.5	3.5
Actuating signal		Two-step	Two-step	Two-step	Two-step	Two-step	Two-step	Two-step	Two-step
Length of connecting lead	m	1	1	1	1	1	1	0.8	1
Ambient temperature for operation	°C	0 ... +50	0 ... +50	0 ... +50	0 ... +50	+5 ... +50	+5 ... +50	+5 ... +50	+5 ... +50
Power inputs	W	3	3	3	3	2.5	2.5	2.5	2.5
Mounting		Horizontal, horizontal/standing				360°, also headfirst			
Degree of protection		IP43	IP43	IP43	IP43	IP54	IP54	IP54	IP54

¹⁾ Closed (NC), open (NO).

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Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
 SWG1 561-7AH01	AP 561/01	AP 561 valve actuators¹⁾ 230 V AC, deenergized closed	B	SWG1 561-7AH01		1	1 unit	139	0.136
	AP 561/02	AP 561/02 valve actuators¹⁾ 230 V AC, deenergized open	B	SWG1 561-7AH02		1	1 unit	139	0.134
	AP 561/03	AP 561/03 valve actuators 24 V AC/DC, deenergized closed	B	SWG1 561-7AH03		1	1 unit	139	0.133
	AP 561/04	AP 561/04 valve actuators 24 V AC/DC, deenergized open	B	SWG1 561-7AH04		1	1 unit	139	0.132
		Accessories							
		• Herz adapter	B	SWG1 561-8AH01		1	1 unit	139	0.040
		• Vaillant adapter	B	SWG1 561-8AH02		1	1 unit	139	0.065
		• Danfoss RA2000 adapter	B	SWG1 561-8AH03		1	1 unit	139	0.027
		• TA adapter	B	SWG1 561-8AH04		1	1 unit	139	0.038
		• Danfoss adapter clamps	B	SWG1 561-8AH05		1	1 unit	139	0.024
		• MNG adapter sleeves	B	SWG1 561-8AH06		1	1 unit	139	0.001
STA..., STP... electrothermal actuators									
Position indication and plug-in connecting cable. Suitable for Siemens radiator valves VDN../VEN../VUN../VPD../VPE..., Siemens small valves VD1...CLC, V..I46.. and radiator valves with M30 x 1.5 connection and 2.5 mm lift (Heimeier, Cazzaniga, Oventrop, Honeywell-Braukmann, MNG, Junkers).									
Versions									
 BPZ:STA.. BPZ:STP..	STA23	STA23NC electrothermal actuators¹⁾ For radiator valves and small valves, 100 N, 1 m, 230 V AC, 2P		S55174-A 101					On request
	STA73	STA73NC electrothermal actuators For radiator valves and small valves, 100 N, 1 m, 24 V AC/DC, 2P		S55174-A 100					On request
	STA73HD	STA73HD electrothermal actuators For FB heating distributors, NC 90 N, 0.8m, 24 V AC, 24 V DC		S55174-A 106					On request
	STP23	STP23 (NO) electrothermal actuators¹⁾ For radiator valves and small valves, 100 N, 1 m, 230 V AC		S55174-A 103					On request
		Accessories							
		• Beulco AV51 valve adapter	A	BPZ:AV51		1	1 unit	A02	0.063
		• Comap AV52 valve adapter	A	BPZ:AV52		1	1 unit	A02	0.062
		• Danfoss RAVL AV54 adapter	A	BPZ:AV54		1	1 unit	A02	0.060
		• Danfoss RAV AV55 adapter	A	BPZ:AV55		1	1 unit	A02	0.073
		• Herz AV57 valve adapter	A	BPZ:AV57		1	1 unit	A02	0.041
		• Oventrop M30 x 1 AV58 adapter	A	BPZ:AV58		1	1 unit	A02	0.063
		• Vaillant AV59 adapter	A	BPZ:AV59		1	1 unit	A02	0.064
		• TA adapter up to 2002 AV60	C	BPZ:AV60		1	1 unit	A02	0.039
		• MMA Markaryd AV61 adapter	A	BPZ:AV61		1	1 unit	A02	0.049

¹⁾ Suitable for N 605 and N 650/11 thermal drive actuators, see "Actuators for HCVA".

Heating, Cooling, Ventilation, Air-Conditioning

Notes

7




8/2

Load management


Load management

Technical specifications

Type	Description
 N 360	N 360 peak load limiters¹⁾ <ul style="list-style-type: none"> • For peak load limitation in plants with tariff-based power measurement • Value of an energy pulse configurable in watt hours • Configurable peak load limit of 30 ... 1000 kW, with configurable warning limit of 25 ... 1000 kW • Configurable measuring period of 15, 30 or 60 minutes for the calculation of the power mean value • Configurable cycle time of 15, 30, 60, 120 or 240 seconds for the load extrapolation interval • Value of pulse 10 ... 20000 W/h • Up to 120 loads assignable to peak load limitation • State monitoring and switching of loads via KNX • With parameters assignable per load • Power consumption of the load • Turn-off priority (1 ... 10) • Release/locking of load • Minimum make time • Minimum break time • Maximum break time • Number of permissible switching cycles in 24 h • Transmission of extrapolation data via KNX after each extrapolation • Transmission of statistics data via KNX at the end of each measuring period • 3 LEDs for display of availability (operating voltage), of an impending exceeding of the maximum value and of a missing synchronization pulse • 5 LEDs for display of the current time interval within the measuring interval • 8 LEDs for displaying the status of the first 8 loads • Inputs for connection of energy pulses generated by utility company counters and for connection of synchronous pulses and high/low-tariff contacts • Electronics powered via an integrated power supply unit for 230 V AC • Date and time required via bus • Integrated bus coupling units • Bus connection via bus terminal and contact system to data rail • Modular installation devices for mounting on TH35 EN 60715 mounting rail • Width 4 MW (1 MW = 18 mm)

¹⁾ Like the documentation, the statistics software for the peak load limiter can be downloaded free of charge from the Internet at: www.siemens.com/gamma-td

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
								kg
	N 360	N 360 peak load limiters © (to be discontinued)	B	5WG1 360-1AB01	1	1 unit	139	0.308

5WG1 360-1AB01





9/2 Introduction

9/3 Intrusion


9/4 Leakage

Introduction

Overview


Devices	Application	Page
<p>Intrusion</p> 	<p>Presence-simulation modules reduce the risk of intrusion.</p>	<p>9/3</p>
<p>Leakage</p> 	<p>Water sensors indicate unexpected water. In DELTA profil or DELTA style design.</p>	<p>9/4</p>

Technical specifications

Type	Description
 N 345	<p>N 345 presence-simulation modules¹⁾</p> <ul style="list-style-type: none"> For recording switching, dimming and shutter/blind activities of up to 32 channels and up to a total of 5000 actions over a maximum period of 4 weeks (corresponds to 5 to 6 actions per channel and day) Continuous recording or one-off recording of sample weeks Detection of public holidays during recording, which is taken into account during simulation, with replay of the recorded telegrams in the same order, but with time-definable random deviation from the recording Return to the start of the simulation after 1 to 4 weeks Module-internal clock, which requires regular synchronization by a master clock Bus-powered electronics Integrated bus coupling units Bus connection via contact system to data rail Modular installation devices for mounting on TH35 EN 60715 mounting rail Width 1 MW (1 MW = 18 mm)

¹⁾ The following devices can be used as a master clock or time source for synchronizing the module-internal real-time clock: a time switch (e. g. 5WG1 372-5EY01) or an N 350E IP controller.


Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	N 345 N 345 presence-simulation modules © Storage for 5000 actions	A	5WG1 345-1AB01		1	1 unit	139	0.115 kg



5WG1 345-1AB01

Leakage

Technical specifications

Type	Description
 UP 272	<p>UP 272 water sensors</p> <ul style="list-style-type: none"> • For detecting water in rooms with risk of leakages • With water sensor for mounting near the ground with a 2 m long connecting lead (extendable to max. 20 m) with jack plug and a flush-mounting device • For plugging onto a UP 110 or UP 114 bus coupling unit • Indication of water/no water • Alarm indication with adjustable cyclic transmission time • Indication of defective device / cable • Alarm indication for resetting the alarm • Bus-powered electronics • Dimensions (H x W x D): 65 x 65 x 42 mm.

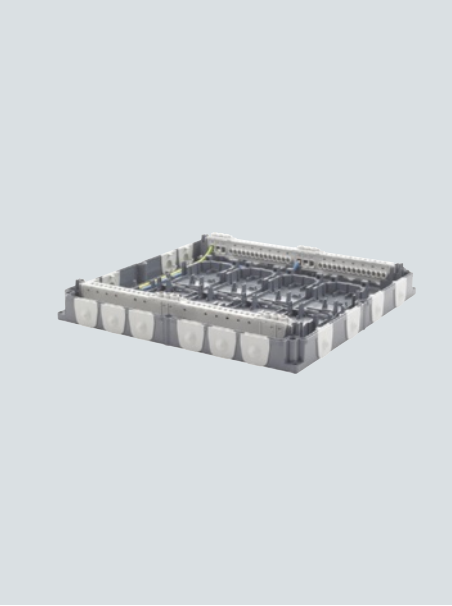
Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
kg								
DELTA profil								
	UP 272	UP 272 water sensors ¹⁾²⁾ (to be discontinued) Titanium white	A	5WG1 272-2AB11	1	1 unit	139	0.106
5WG1 272-2AB11								
DELTA style								
	UP 272	UP 272 water sensors ¹⁾²⁾³⁾ (to be discontinued) Titanium white	A	5WG1 272-2AB11	1	1 unit	139	0.106
5WG1 272-2AB11								

- 1) The bus coupling unit (BCU1/2) must be ordered separately.
 2) The matching design frame must be ordered separately.
 3) The required intermediate frame must be ordered separately.

Quick-Assembly System, Room Control Box

10



10/2

Room control box 

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Room control box



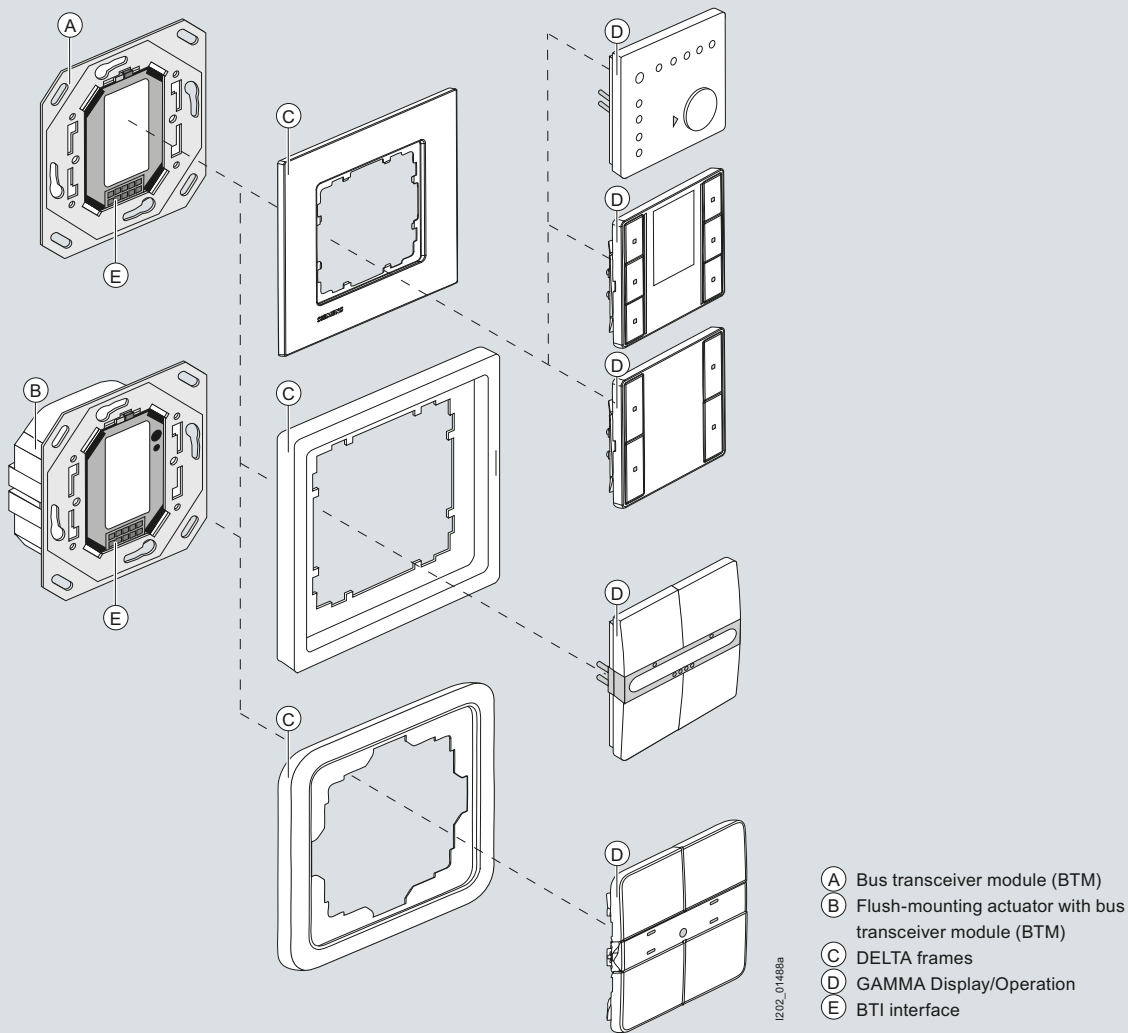
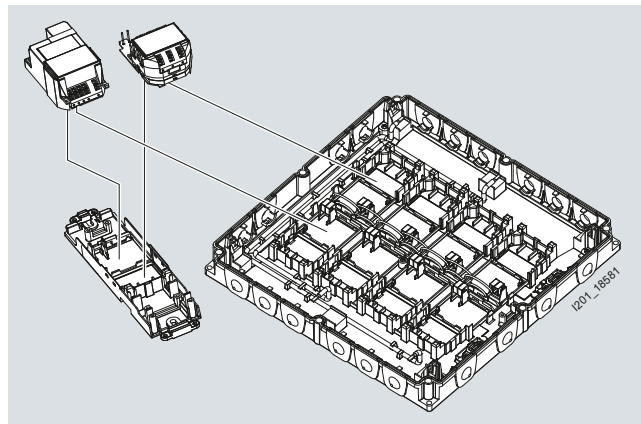
Overview

Modular room automation

A new chapter for GAMMA *instabus* – decentralized and yet modular room automation with its own KNX components for flexible use in the room, based on one platform – regardless of installation location and type.

For surface mounting, for example, in a room or hallway, we recommend the new room automation box, providing space for eight KNX sensor/actuator modules. Moreover, the automation module box further permits the addition of an independent KNX sensor/actuator module close to the actual application, for example, in wall ducts, blind boxes or light housings.





Both automation boxes are assembled with RS or RL sensor/actuator modules in a special quick-mount design. The available modules are full KNX bus participants functioning as binary inputs and outputs, as well as blind actuators, universal dimmer, and switch actuators. The RS and RL modules have the same functionality for flush-mounting actuators as well. Identical functionality is available for different installation types or locations featuring the same configuration possibilities. As a result, the devices use a common application program regardless of mounting variant – i.e. devices for installation in the room automation box and automation module box as well as flush-mount with or without mounting frame.









Technical specifications

Type	RL 260/23	RS 510/23	RL 512/23	RS 520/23	RL 521/23	RS 525/23
Enclosure data						
Design	RL	RS	RL	RS	RL	RS
Degree of protection	IP20	IP20	IP20	IP20	IP20	IP20
Modular installation device for mounting in AP 118 automation module box or AP 641 room control box	✓	✓	✓	✓	✓	✓
Dimensions						
• Height	mm	36.2	35.5	36.2	35.5	36.2
• Width/∅ (1 MW = 18 mm)	mm	47.8	50.2	47.8	50.2	50.2
• Depth	mm	86.5	48.8	86.5	48.8	86.5
Screwless terminals for the connection and looping through of untreated solid, finely stranded and stranded conductors	mm ²	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5
Power supply						
Electronics powered over bus voltage	✓	✓	✓	✓	✓	✓
Bus connection						
Integrated bus coupling units	✓	✓	✓	✓	✓	✓
Bus connection via bus terminal	✓	✓	✓	✓	✓	✓









Type	Description
 AP 118	AP 118 automation module boxes <ul style="list-style-type: none"> • 1 slot for a sensor/actuator module, type RS or RL • Separate connection compartment and strain relief for bus cable and functional lines • Modular installation device with screw fixing for installation in linking ducts, under raised floors or for surface mounting on the ceiling <ul style="list-style-type: none"> • Enclosure: Plastic • Degree of protection: IP20 • Dimensions (L x W x H): 180 x 50 x 41.1 mm
 AP 641	AP 641 room control boxes <ul style="list-style-type: none"> • 8 slots for a sensor/actuator module, type RS or RL • Internal bus cable for connection of the sensor/actuator module to the bus • Separate connection compartment and strain relief for functional lines • Two PE/N bars for accommodation of the PE and neutral conductor of the functional lines <ul style="list-style-type: none"> • Bus connection via bus terminal • Modular installation device with screw fixing for installation under raised floors, on the wall or ceiling or in wet rooms • Enclosure: Plastic • Degree of protection: IP54 • Dimensions (L x W x H): 300 x 300 x 50 mm
 RL 260/23	RL 260/23 binary inputs <p>4 inputs for 12 V ... 230 V AC/DC</p> <ul style="list-style-type: none"> • Max. length of unshielded leads per input: 100 m • The following functions can be selected per input: <ul style="list-style-type: none"> - Switching state/send binary value - Switch edge/short/long switch - 1-button dimming, shading control or group control - 1-bit scene control - 8-bit scene control - 8-bit value edge - 8-bit value short/long - 16-bit floating-point value edge, short/long - 8/16/32-bit pulse counting without/with limit value monitoring <ul style="list-style-type: none"> • The following functions can be selected per input pair: <ul style="list-style-type: none"> - 2-pushbutton dimming with stop telegram - 2-pushbutton shading control • Optional blocking of each input by means of the respective blocking object • Transmission of the input objects after change • Optional cyclic transmission of input objects
 RS 510/23	RS 510/23 binary output devices <p>2 x 230 V AC, 10 A, (resistive load)</p> <ul style="list-style-type: none"> • Operating mode can be adjusted for each output (normal mode, timer mode) • Relay operating mode can be adjusted for each output (NO contact/NC contact) • Status object can be added for each output • Adjustable ON/OFF delay for each output • Logic operation (AND/OR) of two communication objects for each output • Adjustable switching state in the event of bus voltage failure and recovery for each output • Object for night mode can be added for each output for the time-delayed ON switching of the output (and thus the lighting) at night • Adjustable ON period during night or timer mode • Selectable retripping of ON period (ON-time extension) during timer mode <ul style="list-style-type: none"> • Selectable warning of impending OFF by turning the device briefly on and off three times (flashing) during night or timer mode • Selectable function: manual override of an output, including additional communication object • Selectable function: forced control output for positive ON/OFF switching of an output, including additional communication object • Selectable function: operating hours counting with limit value monitoring of operating hours • Selectable function: switching cycle counting with limit value monitoring of switching operations • Integrated 8-bit scene control and integration of each channel in up to 8 scenes



Type	Description
 RL 512/23	<p>RL 512/23 switch actuators</p> <p>1 x 230 V AC, 16 AX</p> <ul style="list-style-type: none"> • One relay contact as switching element • Fluorescent lamp load acc. to EN 60669-1: 16 AX (200 µF) at 230 V AC • Switching current during AC1 operation (p.f. = 0.8) acc. to EN 60947-4-1: 20 A at 230 V AC • Switching current during AC3 operation (p.f. = 0.45) acc. to EN 60947-4-1: 16 A at 230 V AC • Operating mode can be adjusted for each output (normal mode, timer mode) • Relay operating mode can be adjusted for each output (NO contact/NC contact) • Status object can be added for each output • Adjustable ON/OFF delay for each output • Logic operation (AND/OR) of two communication objects for each output • Adjustable switching state in the event of bus voltage failure and recovery for each output • Object for night mode can be added for each output for the time-delayed ON switching of the output (and thus the lighting) at night <ul style="list-style-type: none"> • Adjustable ON period during night or timer mode • Selectable retripping of ON period (ON-time extension) during timer mode • Selectable warning of impending OFF by turning the device briefly on and off three times (flashing) during night or timer mode • Selectable function: manual override of an output, including additional communication object • Selectable function: forced control output for positive ON/OFF switching of an output, including additional communication object • Selectable function: operating hours counting with limit value monitoring of operating hours • Selectable function: switching cycle counting with limit value monitoring of switching operations • Integrated 8-bit scene control and integration of each channel in up to 8 scenes
  RL 521/23 RS 520/23	<p>RL 521/23 shutter/blind actuators, RS 520/23 shutter/blind actuators</p> <ul style="list-style-type: none"> • For the control shading, door/window drives with AC motor for 230 V AC and electromechanical or electronic limit switches • Electrically interlocked relays for reversing direction of rotation • Integrated electronics for detecting the response of electromechanical limit switches and for autocalibration of travel times from one end position to the other • Communication objects per actuator channel for moving the shading into its end position, for stopping movement or for step-wise adjustment of blind slats • Communication objects for direct movement to a position for shading and blind slats via position specifications as percentage value (level of precision depends on drive mechanics) • Automatic opening of the blind slats up to a preset position after the shutter/blind has lowered without interruption from the top to the bottom position • Integrated 1-bit scene control to store and retrieve (restore) 2 intermediate positions of shutter/blinds and slats • Integrated 8-bit scene control and integration of each output in up to 8 scenes • Optional object "Sun" for the activation/deactivation of the sun-light tracking control of the blind slats for shading with maximum daylight <ul style="list-style-type: none"> • Differentiation between automatic and manual mode and automatic switchover from manual to manual mode of the relevant actuator channel by pressing a bus pushbutton for the manual control of the respective shading • Priority of manual mode over automatic position commands • Optional central command for switching all channels over to automatic mode and for moving the shading into the top or bottom end position • Alarm object "Wind", "Rain" and "Frost" per channel for moving the shading into the configured safety position and with the blocking of movement into a different position for as long as the alarm is pending • Movement-blocking object per device or per channel for locking the shading in its current position (e. g. for cleaning the outer slats) • Status object per actuator channel for scanning or automatically sending the shading and blind slat position as a percentage value • Optional status object for signaling that the bottom or top position has been reached <p>RS 520/23 shutter/blind actuators</p> <ul style="list-style-type: none"> • 1 x 230 V AC, 6 A (resistive load) <p>RL 521/23 shutter/blind actuators</p> <ul style="list-style-type: none"> • 2 x 230 V AC, 6 A (resistive load)
 RS 525/23	<p>RS 525/23 universal dimmers</p> <p>1 x 230 V AC, 250 VA</p> <ul style="list-style-type: none"> • One output for the switching and dimming of resistive, inductive or capacitive loads • Automatic adjustment to leading-edge or trailing-edge phase control, depending on the connected load type • Electronic protection of output against overload, short circuit and overtemperature • Signaling of overloads, short circuits and overtemperature over the bus • Selection of operating mode (normal mode, one or two-stage timer mode, flashing) • Adjustable ON/OFF-delay • Individually adjustable dimming time from 0 % to 100 % for ON/OFF switching and brighter/darker dimming • Two dimming value objects, each with adjustable dimming time of 0 ... 100 % • ON and/or OFF switching of an output via dimming • Adjustable dimming value when switching ON • Start up or dimming of a new dimming value • Status object for switching and/or status object for dimming value can be added <ul style="list-style-type: none"> • Object for disabling/enabling of output can be added • Optional transmission of status objects on demand and/or automatically after modification • Adjustable blocking time for transmission of the status objects after a restart and bus power recovery • Adjustable dimming value after bus voltage failure and recovery and after system recovery • Object for night mode can be added for the time-delayed ON switching of the output (and thus the lighting) at night • Adjustable ON period during night and timer mode • Optional warning of impending OFF by dimming to 50 % of the previous dimming value during night or timer mode • Integrated 8-bit scene control and integration of output in up to 8 scenes • Adjustable dimming time during scene control • Selectable function: operating hours counting with limit value monitoring of operating hours • Selectable function: switching cycle counting with limit value monitoring of switching operations



Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU
	AP 118 AP 118 automation module boxes 1 slot for a sensor/actuator module, type RS or RL	A	5WG1 118-4AB01		1	1 unit	139	0.100 kg
5WG1 118-4AB01								
	AP 641 AP 641 room control boxes 8 slots for a sensor/actuator module, type RS or RL	A	5WG1 641-3AB01		1	1 unit	139	1.200
5WG1 641-3AB01								
Binary input								
	RL 260/23 RL 260/23 binary inputs¹⁾ 4 inputs for 12 ... 230 V incl. bus connection module	A	5WG1 260-4AB23		1	1 unit	139	0.060
5WG1 260-4AB23								
Binary output devices								
	RS 510/23 RS 510/23 binary output devices¹⁾ 2 x 230 V AC, 10 A incl. bus connection module	A	5WG1 510-2AB23		1	1 unit	139	0.045
5WG1 510-2AB23								
Switch actuators								
	RL 512/23 RL 512/23 switch actuators¹⁾ 1 x 230 V AC, 16 A incl. bus connection module	A	5WG1 512-4AB23		1	1 unit	139	0.070
5WG1 512-4AB23								
Shutter/blind actuators								
	RS 520/23 RS 520/23 shutter/blind actuators¹⁾ 1 x 230 V AC, 6 A (resistive load) incl. bus connection module	A	5WG1 520-2AB23		1	1 unit	139	0.055
5WG1 520-2AB23								
	RL 521/23 RL 521/23 shutter/blind actuators¹⁾ 2 x 230 V AC, 6 A (resistive load) incl. bus connection module	A	5WG1 521-4AB23		1	1 unit	139	0.070
5WG1 521-4AB23								
Universal dimmers								
	RS 525/23 RS 525/23 universal dimmers¹⁾ 1 x 230 V AC, 250 VA incl. bus connection module	A	5WG1 525-2AB23		1	1 unit	139	0.045
5WG1 525-2AB23								

¹⁾ The AP 641 room control box and AP 118 automation module box must be ordered separately.

Quick-Assembly System, Room Control Box

Notes

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Gateways, Interface Converters

11





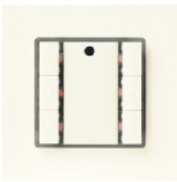







11/2	Introduction
11/5	KNX/Ethernet
11/7	KNX/DALI
11/9	KNX/USB
11/11	KNX/RS232
11/13	KNX/Infrared
11/16	KNX/KNX-RF
11/17	EnOcean/KNX
11/18	KNX/LOGO!
11/19	KNX/SIMATIC S7
11/21	KNX/Telephone

Gateways, Interface Converters

Introduction

Overview

	Devices	Application	Page
	KNX/Ethernet	Communication via fast Ethernet data network, whether internally or for remote control.	11/5
	KNX/DALI	For the control of ECGs over DALI interface.	11/7
	KNX/USB	PC interface via the integrated USB socket in different DELTA designs or as N device.	11/9
	KNX/RS232	PC interface via installed plug-and-socket device in different DELTA designs or as N device.	11/11
	KNX/infrared	Remote control via hand-held and wall-mounted transmitters. In various DELTA designs or independent of design.	11/13
	KNX/KNX-RF	Wireless remote control and expansion made easy. For i-system, DELTA profil and DELTA style.	11/16

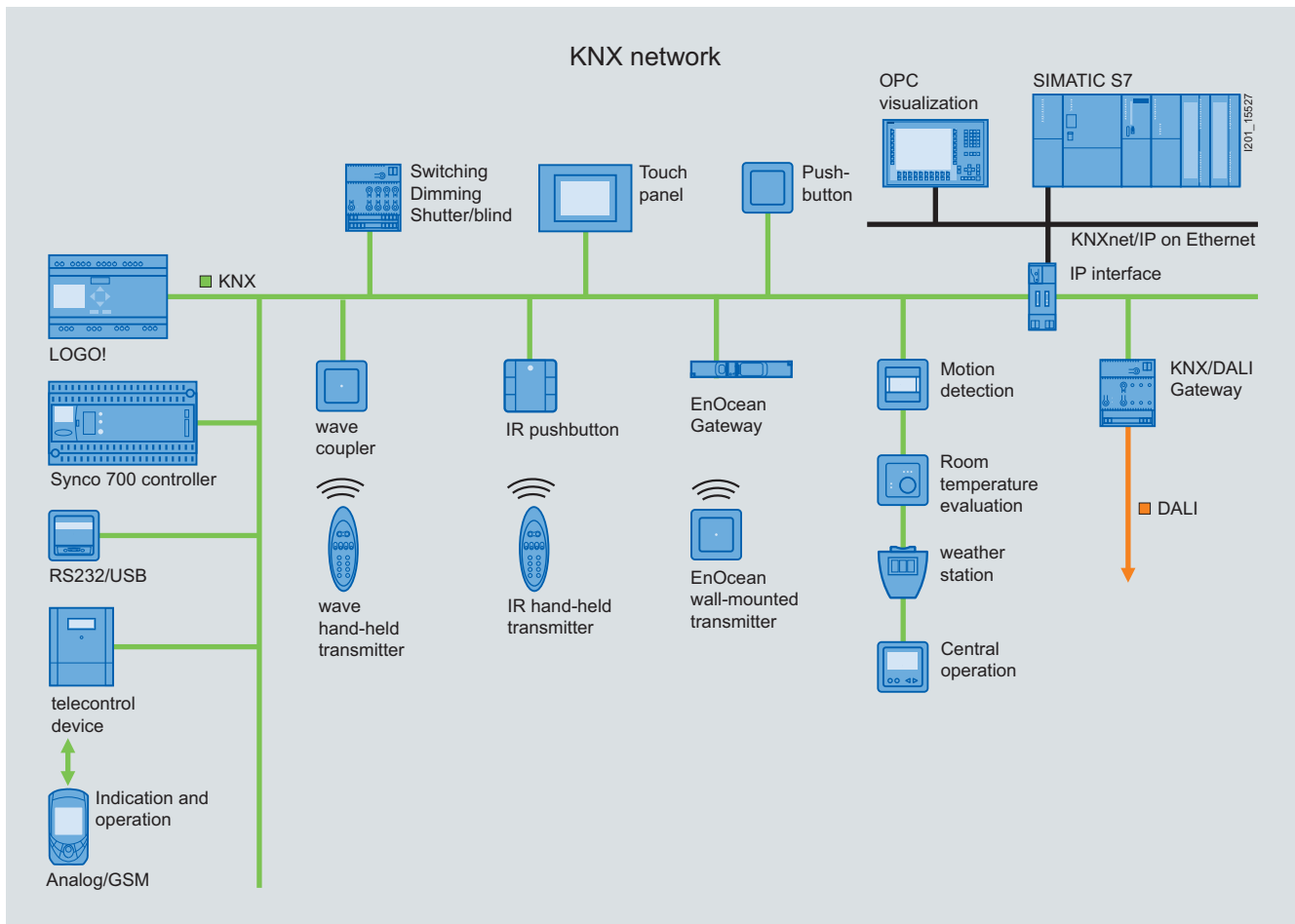
Devices	Application	Page
 <p>EnOcean/KNX</p>	<p>Integration of battery-less EnOcean pushbuttons in GAMMA <i>instabus</i> systems</p>	<p>11/17</p>
 <p>KNX/LOGO!</p>	<p>More functions with modern small control systems.</p>	<p>11/18</p>
 <p>KNX/SIMATIC S7</p>	<p>The key to the world of automation.</p>	<p>11/19</p>
 <p>KNX/telephone</p>	<p>Connection to telephone.</p>	<p>11/21</p>

Gateways, Interface Converters

Introduction

The KNX network

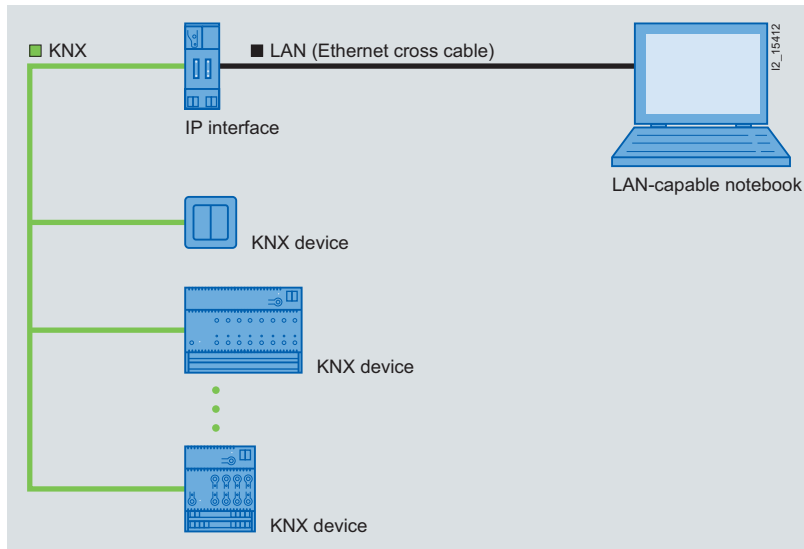
GAMMA *instabus* offers interfaces to many other technologies, such as Ethernet (LAN) and lighting controls with DALI, making it easy to exchange information and data via the KNX network. In particular, the KNXnet/IP supports connection to building control (OPC, PROFINET, SIMATIC S7, etc.).



11

Overview

Faster downloads save time



With the new KNXnet/IP standard, KNX telegrams can be transmitted via Ethernet (LAN). This enables new applications and solutions.

Existing network infrastructures and technologies are used to transmit KNX data over greater distances.

Links between buildings and/or building levels can be clearly and easily implemented using KNXnet/IP, see Chapter "Appendix -> Application examples".





Technical specifications

Type				
	N 148/22	N 146/02	N 350E	N 151
Enclosure data				
Design	N	N	N	N
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓	✓
Width (1 MW = 18 mm)	2 MW	2 MW	4 MW	4 MW
Display/control elements				
LEDs for indicating that the device is ready-to-run, KNX communication, IP communication	✓	✓	✓	✓
LCD	--	--	✓	--
Power supply				
Electronics powered via an external nominal AC/DC power supply unit	V	24	24	24
Power consumption at 24 V DC	mA	57	57	60
Power supply for the electronics via "Power over Ethernet" according to IEEE 802.3af	✓	✓ (0.8 W)	--	--
Bus connection				
Integrated bus coupling units	✓	✓	✓	✓
Bus connection via bus terminal	✓	✓	✓	✓
Mains connection				
Ethernet connection via RJ45 socket	✓	✓	✓	✓
Plug-in terminal block for the connection of an external power supply unit	✓	✓	✓	--
Gateway				
Supports KNXnet/IP	✓	✓	✓	✓
line coupler function (Routing)	--	✓	--	--
Interface functions (Tunneling)	4	4	1	1
Interface functions (object server)	1	1	1	1
Integrated real-time clock weekly scheduling program for 100 scheduled entries/Astro function	--	--	✓	--
Yearly time switching functions	--	--	✓	--
Event entries	--	--	200	--
Logic gates	--	--	30	--
Web servers	--	--	--	✓



Gateways, Interface Converters

KNX/Ethernet

Selection and ordering data



Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 148/22 N 148/22 IP interfaces	A	5WG1 148-1AB22		1	1 unit	139	0.120
5WG1 148-1AB22								
	N 146/02 N 146/02 IP routers	A	5WG1 146-1AB02		1	1 unit	139	0.120
5WG1 146-1AB02								
	N 350E N 350E IP controllers 30 logic gates, 200 event entries, weekly scheduling program, integrated IP interface	A	5WG1 350-1EB01		1	1 unit	139	0.182
5WG1 350-1EB01								
	N 151 N 151 IP viewers	A	5WG1 151-1AB01		1	1 unit	139	0.150
5WG1 151-1AB01								

Technical specifications

		
Type	N 141/02	N 525E
Enclosure data		
Design	N	N
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓
Dimensions		
Width (1 MW = 18 mm)	mm	4 MW
Display/control elements		
LED for status indication per output ON/OFF)	✓	✓
Power supply		
Electronics powered via an integrated power supply unit	✓	✓
DALI outputs powered via an integrated power supply unit	✓	✓
Bus connection		
Integrated bus coupling units	✓	✓
Bus connection via contact system to data rail	✓	✓
Bus connection via bus terminal	✓	✓
Outputs		
Control outputs		
DALI outputs (lines)	1	8
DALI output acc. to IEC 60929 for DALI ECG (16 V, floating, short-circuit resistant)	✓	✓
Max. ECG per output (Osram Dynamik 58 W)	64	8
Functions		
Direct operation	✓	✓
Configurable behavior in the event of a bus voltage failure/recovery	✓	✓
Support of CIN	✓	--
Scene control		
Integrated 8-bit scene control	✓	✓
Scenes to be integrated per DALI output	16	16
Effect control		
Integrated effect control (one-off or cyclic chaselight operation, color control)	✓	--
Test function via ETS		
Testing individual ECGs	✓	--
Testing group assignment	✓	--
Testing scenes	✓	--
Testing effects	✓	--
Group control		
Up to 16 groups per DALI output	✓	--
• Switching ON/OFF		
• BRIGHTER/DARKER dimming		
• Set value		
Individual ECG control		
Operation of individual ECG with	✓	--
• Switching ON/OFF		
• Set value		

Gateways, Interface Converters




KNX/DALI

		
Type	N 141/02	N 525E
Application program	981CXX ¹⁾	980801
Time functions		
Timer mode, 1-step (automatic stairwell switch)	✓	✓
Timer mode, 2-step	✓	✓
Night mode (lighting for cleaning)	✓	✓
Warning of impending OFF	✓	✓
Dimming		
BRIGHTER/DARKER dimming	✓	✓
Adjustable dimming time	✓	✓
Brightness limitation, adjustable min. dimming value/max. dimming value	✓	✓
Switching		
Switching ON/OFF	✓	✓
Configurable starting value	✓	✓
Switching ON/OFF possible via BRIGHTER/DARKER dimming	✓	✓
Emergency lighting		
Support for prescribed test sequences for emergency lights	✓	--
Controlling single battery lights	✓	--
Status		
DALI short circuit	✓	✓ ²⁾
DALI power supply	✓	✓
Status output (ON/OFF, value, lamp fault, ECG fault)	--	✓
Status group (ON/OFF, value, lamp fault, ECG fault)	✓	--
Status ECG (ON/OFF, value, lamp fault, ECG fault)	✓	--

¹⁾ For current application programs, see www.siemens.com/gamma-td

²⁾ Per channel (line).



Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 141/02 KNX/DALI gateways 	A	5WG1 141-1AB02		1	1 unit	139	0.200
5WG1 141-1AB02								
	N 525E N 525E switch/dimming actuators 8 x DALI outputs, 8 DALI ECG per output	A	5WG1 525-1EB01		1	1 unit	139	0.314
5WG1 525-1EB01								

Overview

For connection of a PC over USB interface for parameter assignment, visualization, logging and diagnosis of bus devices.




Technical specifications

Design		
Type	N 148/11	UP 146E
DELTA profil/style		
Enclosure data		
Design	N	UP
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	--
Dimensions		
• Height	mm	65
• Width (1 MW = 18 mm)	mm	65
• Depth	mm	42
Power supply		
Electronics powered via bus voltage or via USB by a connected PC	✓	✓
Bus connection		
Integrated bus coupling units	✓	--
Plug onto UP 110 bus coupling unit	--	✓
Plug onto UP 114 bus coupling unit	--	✓
Bus connection via contact system to data rail	✓	--
Bus connection via bus terminal	✓	✓
Gateway		
Transmission PC – USB	USB 1.1 or higher	USB 1.1 or higher
Electrically isolated access to the bus line via integrated socket	USB (type B)	USB (type B)
Access to all bus devices in the system	✓	✓

Gateways, Interface Converters

KNX/USB

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
Design-independent								
 5WG1 148-1AB11	N 148/11	N 148/11 USB interfaces	A	5WG1 148-1AB11	1	1 unit	139	0.090
	DELTA profil							
 5WG1 146-2EB11	UP 146E	UP 146E USB interfaces¹⁾²⁾ (to be discontinued)						
		Versions						
		<ul style="list-style-type: none"> • Titanium white • Silver 	A	5WG1 146-2EB11	1	1 unit	139	0.089
			C	5WG1 146-2EB71	1	1 unit	139	0.096
DELTA style								
 5WG1 146-2EB11	UP 146E	UP 146E USB interfaces¹⁾²⁾ (to be discontinued) Titanium white	A	5WG1 146-2EB11	1	1 unit	139	0.089

5WG1 146-2EB11



1) The bus coupling unit BCU1/2 must be ordered separately.

2) The matching design frame must be ordered separately.

Overview

For connection of a PC via RS232 interface for parameter assignment, visualization, logging and diagnosis of bus devices.

Technical specifications

Design	DELTA profil/style	
		
Type	N 148/02	UP 146
Enclosure data		
Design	N	UP
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	--
Dimensions		
• Height	mm	65
• Width (1 MW = 18 mm)	mm	65
• Depth	mm	42
Power supply		
Electronics powered via bus voltage or via RS232 through a connected PC	✓	✓
Bus connection		
Integrated bus coupling units	✓	--
Plug onto UP 110 bus coupling unit	--	✓
Plug onto UP 114 bus coupling unit	--	✓
Bus connection via contact system to data rail	✓	--
Gateway		
Transmission rate PC – RS232	bit/s 9600	9600
Electrically isolated access to the bus line via integrated socket	SUB-D, 9-pole	SUB-D, 9-pole
Access to all bus devices in the system	✓	✓

Gateways, Interface Converters

KNX/RS232

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
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kg

Design-independent



5WG1 148-1AB02

N 148/02	N 148/02 RS232 interfaces (to be discontinued)	A	5WG1 148-1AB02		1	1 unit	139	0.177
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DELTA profil



5WG1 146-2AB11

UP 146	UP 146 RS232 interfaces ¹⁾²⁾ (to be discontinued)	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	Versions • Titanium white • Silver	A	5WG1 146-2AB11		1	1 unit	139	0.090
		D	5WG1 146-2AB71		1	1 unit	139	0.083

DELTA style



5WG1 146-2AB11

UP 146	UP 146 RS232 interfaces¹⁾²⁾ (to be discontinued) Titanium white	A	5WG1 146-2AB11		1	1 unit	139	0.090
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¹⁾ The bus coupling unit BCU1/2 must be ordered separately.

²⁾ The matching design frame must be ordered separately.

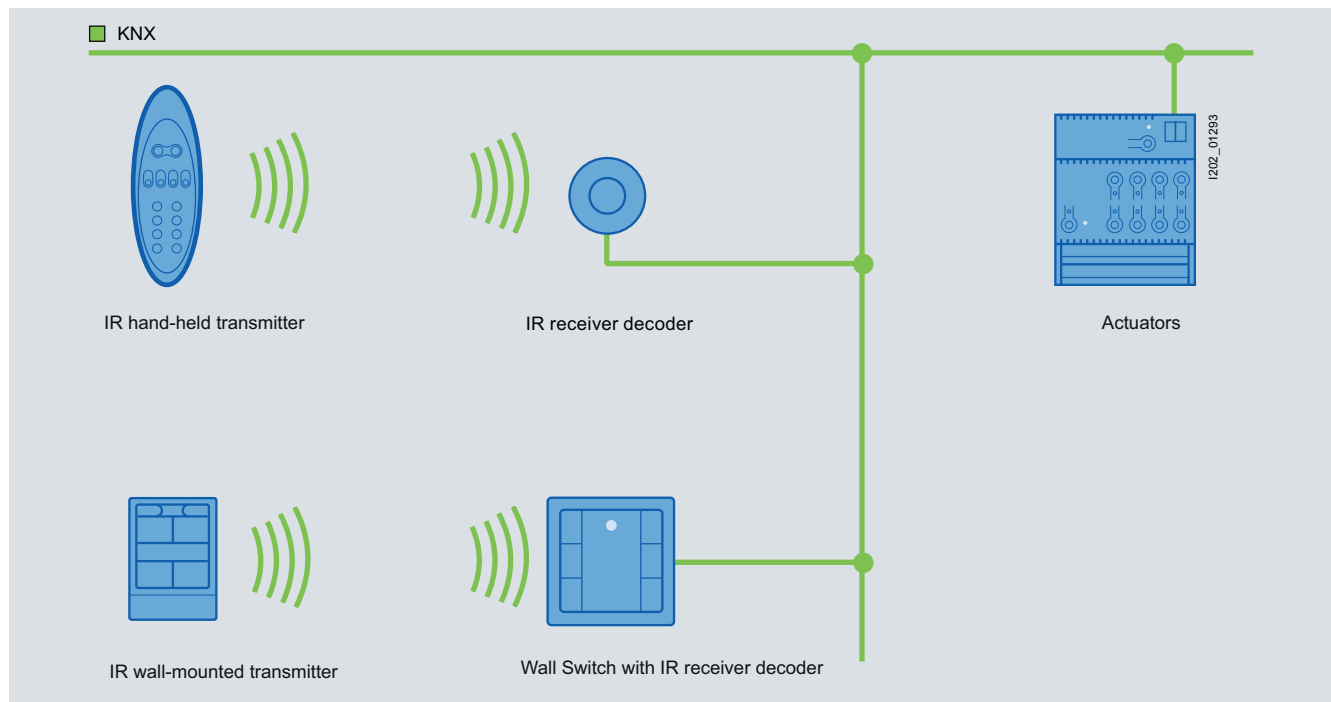
Overview**IR products**

IR products are available for the remote control of room functions. Compared to radio solutions, IR is particularly interesting because

- there are applications in which radio-based remote control is not permitted (e. g. hospitals)
- the frequencies used are not allowed in all countries

Application

- Remote control of room functions: Lighting, shading, room climate, scenes, etc.
- Mounting on "movable" walls
- Use in hospitals where radio solutions are often prohibited
- Additional room functions which can be operated only by remote control (e. g. by service personnel, doctors, teachers, etc.)



System overview of IR products


For IR remote controls and IR wall-mounted transmitters
(see chapter "Display and Operation Units")

Gateways, Interface Converters




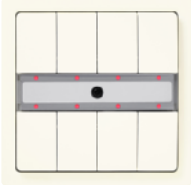

KNX/infrared

Technical specifications

Design	i-system	DELTA profil	DELTA style
Type	UP 223/5	UP 245/5	UP 287/5
Application program	909301		
Enclosure data			
Dimensions			
• Height	mm 55	65	68
• Width	mm 55	65	68
• Depth	mm 11	14	14
Display/control elements			
Individual pushbuttons	6	8	8
Pushbutton pairs	3	4	4
Operation (v: vertical, h: horizontal)	h	v	v
LED per pushbutton pair for status indication	2	2	2
LED for orientation light (ON/OFF configurable/dimmable)	✓	--	--
IR activity display configurable via orientation LED	✓	✓	✓
LED brightness configurable and controllable via object	✓	✓	✓
Bus connection			
For plugging onto a bus coupling unit (BTM) or a flush-mounting actuator with bus coupling unit (BTM)	✓	✓	✓
Inputs			
IR receiver decoder	✓	✓	✓
IR channels in blocks of 64	16	16	16
Input functions			
Switching			
Switching ON/OFF/OVER	✓	✓	✓
Pushbutton function (bell function)	✓	✓	✓
Dimming			
Dimming with stop telegram (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	✓	✓	✓
One-pushbutton dimming	✓	✓	✓
Value transmission			
8 bit/percent/16 bit	✓	✓	✓
Brightness value	✓	✓	✓
Temperature value	✓	✓	✓
Positively driven operation	✓	✓	✓
Time-delayed transmission of a second telegram, depending on main function	✓	✓	✓
Button deactivation	✓	✓	✓
Shutter/blind			
Shutter/blind control short button press, slat OPEN/CLOSED or STOP, long button press, UP/DOWN	✓	✓	✓
One-pushbutton sun protection	✓	✓	✓
Scene			
Integrated 8-bit scene control (channels)	✓	✓	✓
Assignments per channel	8	8	8
Store and call up scene, 8-bit	✓	✓	✓
Store and call up scene, 1-bit	✓	✓	✓
Short or long button press (store/call up scene), configurable	✓	✓	✓
Status			
LED on/off/flashing depending on the value (1 bit/8 bit/16 bit)	✓	✓	✓
Pushbutton operation display configurable via LED	✓	✓	✓

Type	Description
 S 450	<p>S 450 IR receiver decoders</p> <ul style="list-style-type: none"> For receiving IR signals transmitted from IR wall-mounted transmitters or IR hand-held transmitters Conversion of IR signals received from up to 32 IR channels into bus telegrams Configurable evaluation of the IR signals per IR channel as single button or as button pair Per IR button selectable functions switching over, switching ON, switching OFF, switching ON or OFF at either rising or falling edge, single button dimming, single button sun protection control, 1-bit scene control, 8-bit scene control, 8-bit value, percentage value, 16-bit value, temperature value, brightness value, positively driven operation Depending on the selected main function: per IR button selectable additional function executed either after a time delay (time delay configurable from 100 ms to 6550 s) or alternatively on a long button press Per IR button pair selectable functions 2-button dimming with stop telegram, 2-button sun protection control, transmission variable 8-bit value, transmission variable percentage value, 1-bit scene control, 8-bit scene control, positively driven operation <ul style="list-style-type: none"> Depending on the selected main function: per IR button selectable additional function executed after a time delay (time delay configurable from 100 ms to 6550 s) Depending on the selected main function: per IR button selectable additional functions switching on, switching off, 8-bit value, percentage value, 16-bit value, temperature value, brightness value, recall/save 1-bit scene 1, recall/save 1-bit scene 2, recall 8-bit scene, positively driven on, positively driven off, deactivate positively driven operation Blocking selectable for each IR button and configurable for each IR button depending on the value of the blocking object Bus connection via bus terminal Bus-powered electronics Including clamping spring and rosette for installation in ceilings, walls or lights For commissioning when mounted, a magnet is required, such as a 5WG1 590-8AH01 programming magnet Dimensions (H x W x L): 26 x 25 x 75 mm

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
i-system								
	UP 223/5	UP 223/5 pushbuttons ¹⁾²⁾  Triple, with status LED, scene module and IR receiver decoder, neutral						
	Versions							
	• Titanium white	A	5WG1 223-2DB15		1	1 unit	138	0.060
	• Aluminum metallic	A	5WG1 223-2DB35		1	1 unit	138	0.060
DELTA profil								
	UP 245/5	UP 245/5 pushbuttons ¹⁾²⁾ (to be discontinued) Quadruple, with status LED, scene module and IR receiver decoder, neutral						
	Versions							
	• Titanium white	A	5WG1 245-2AB15		1	1 unit	138	0.085
	• Silver	B	5WG1 245-2AB75		1	1 unit	138	0.085
DELTA style								
	UP 287/5	UP 287/5 pushbuttons ¹⁾²⁾ Quadruple, with status LED, scene module and IR receiver decoder, neutral						
	Versions							
	• Titanium white	A	5WG1 287-2DB15		1	1 unit	138	0.085
	• Platinum metallic	A	5WG1 287-2DB45		1	1 unit	138	0.085
Design-independent								
	S 450	S 450 IR receiver decoders ³⁾	B	5WG1 450-7AB03	1	1 unit	139	0.056
	Accessories							
	Programming magnet for S 450 IR receiver decoders	C	5WG1 590-8AH01		1	1 unit	139	0.012

5WG1 450-7AB03

¹⁾ The bus coupling unit (BTM) (see Chapter "System Products and Accessories") or flush-mounting actuator with bus coupling unit (BTM) must be ordered separately.

²⁾ The matching design frame must be ordered separately.

³⁾ The programming magnet must be ordered separately.


For IR remote controls and IR wall-mounted transmitters (see chapter "Display and Operation Units")

* You can order this quantity or a multiple thereof.

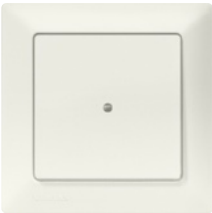
Gateways, Interface Converters

KNX/KNX-RF

Technical specifications

Type	Description
 UP 140	UP 140 wave/instabus couplers <ul style="list-style-type: none"> For coupling GAMMA wave with GAMMA <i>instabus</i> Coupling of a total of up to 50 GAMMA wave sensor channels with GAMMA <i>instabus</i> actuator channels or GAMMA <i>instabus</i> sensor channels with GAMMA wave actuator channels Pushbutton rocker, single with intermediate position Vertical operation ETS3 and higher supports configuration of the functions: switching, switching and dimming, shutter/blind control and scene control Short and long button press for ON/OFF, BRIGHTER/DARKER for dimming or UP/DOWN and adjustment of slats for shutter/blind control Storage and call up of up to two scenes 1 LED for the indication of telegram transmissions KNX-RF transmitter/receiver for 868.3 MHz 10-pole plug for plugging onto a UP 114 bus coupling unit, version BCU 2.1. or higher Dimensions (H x W x D): 55 x 55 x 13 mm.

Selection and ordering data


Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
i-system								
	UP 140							
	UP 140 wave coupler/instabus¹⁾²⁾							
	Versions <ul style="list-style-type: none"> Titanium white Aluminum metallic 	A	5WG3 140-2HB11		1	1 unit	138	0.048
		B	5WG3 140-2HB31		1	1 unit	138	0.048

5WG3 140-2HB11


1) The UP 114 bus coupling unit must be ordered separately.

2) The matching design frame must be ordered separately.

Technical specifications

Type	Description
 RXZ97.1	EnOcean/KNX RXZ97.1 gateways <ul style="list-style-type: none"> • Evaluation of up to 32 EnOcean room devices • per channel up to 4 pushbuttons, rockers or 1 controller • Functions per sensor channel: <ul style="list-style-type: none"> - Tactile sensors of a switching module: <ul style="list-style-type: none"> Switching (On/Off/Over/encoder/scenes/automatic stairwell switch), dimming, shutter/blinds UP/DOWN • Temperature sensors/room operating devices: <ul style="list-style-type: none"> - Presence pushbutton/switch - Setpoint adjuster - Step switch - Humidity sensor • Window contact • Light sensor • Presence detector • Power supply via bus • Bus-powered electronics • Integrated bus coupling units • EnOcean radio receiver • Degree of protection: IP20 • Dimensions (H x W x D): 71 x 71 x 27 mm.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 RXZ97.1	EnOcean/KNX RXZ97.1 gateways ¹⁾	C	S55842-Z 101		1	1 unit	A08	0.096


S55842-Z 101

¹⁾ For more products, see Chapter "Radio system – EnOcean".


Gateways, Interface Converters

KNX/LOGO!

Technical specifications

Type	Description
	<p>LOGO! KNX/LOGO! communication modules</p> <ul style="list-style-type: none"> For connection of LOGO! to KNX, as communication module for the LOGO! logic module (12 V/24 V or 115 V/240 V) and as bus device on KNX For linking transmitted KNX data points and LOGO! inputs and outputs via logic and control functions through LOGO! For the linking and transmitting via KNX of up to 8 binary inputs and 4 binary outputs of LOGO! and up to 16 virtual KNX binary inputs, 12 virtual KNX binary outputs, 8 virtual KNX analog inputs and 8 virtual KNX analog outputs Transmission of date and time of the LOGO! real-time clock via KNX, time synchronization as master or slave <ul style="list-style-type: none"> Two LEDs for the display of the communication status of LOGO! and KNX Electronics powered via an external 24 V AC/DC power supply unit, 25 mA Integrated bus coupling units Bus connection via screw terminals Modular installation devices for mounting on TH35 EN 60715 mounting rail Width: 2 MW (1 MW = 18 mm).

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
							kg
	C	6BK1700-0BA00-0AA2		1	1 unit	470	0.107

6BK1700-0BA00-0AA2

Overview

The level of automated applications is also increasing in the area of building automation. Customers are interested in using components from the field of industrial automation for the automation of infrastructure facilities. This is now possible using SIEMENS IP/Ethernet components.

Benefits

Use of tried and tested industrial components in the field of building automation, i. e. utilization of building automation data for the automation of factories. Simple transfer of configuration data from ETS3.

Application

Automation and monitoring of buildings using KNX devices with components from the SIMATIC product range.

Function

Modules for communication of a SIMATIC S7 with KNX bus via IP/Ethernet using a KNXnet/IP interface:

- N 146/02 IP routers
- N 148/22 IP interfaces
- N 350E IP controllers
- N 151 IP viewers

The KNX/EIB2S7 program package comprises modules for communication to the IP router/interface/controller/viewer and an editor for user-friendly parameterization of the modules.

Addressing is implemented by means of group addresses in the case of KNX and with DB and DW in the case of SIMATIC. Assignment of the various address terms to one another is implemented largely automatically in the KNX/EIB2S7 Editor.

One SIMATIC S7 can be connected to up to 5 KNXnet/IP interfaces, which permits the monitoring, operation and reading of a total of up to 7000 group addresses (depending on control type and the number of KNXnet/IP interfaces connected).

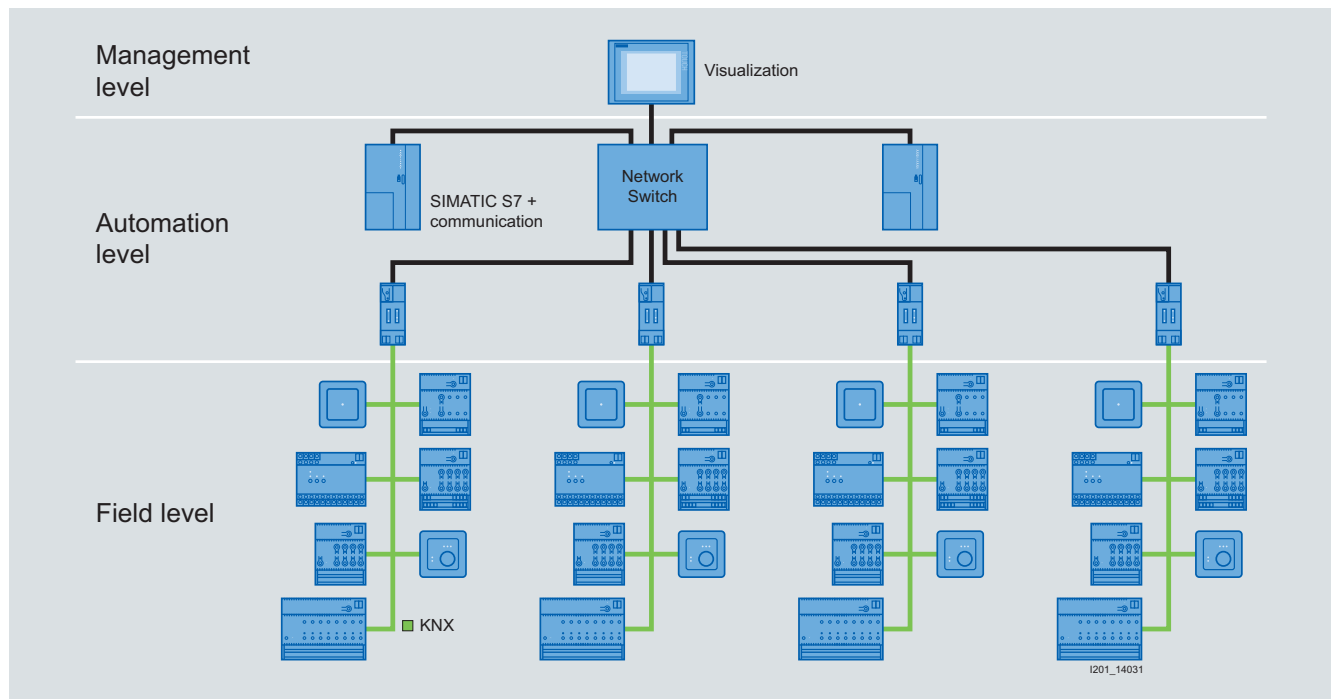
The modules also support the cyclic reading of values in 5 different, freely configurable cycles (10 min. - 1 x daily).

The following data point types are supported:

Data point type	Application	Length	Receive	Write	Read
EIS 1	Switching	1 bit	X	X	X
EIS 2	Dimming	4 bit	X	X	X
EIS 3	Time	3 byte	--	X	--
EIS 4	Date	3 byte	--	X	--
EIS 5	Floating-point	2 byte	X	X	X
EIS 6	Scaling	8 bit	X	X	X
EIS 7	Motor control	1 bit	X	X	X
EIS 8	Priority	2 bit	X	X	--
EIS 9	Floating-point	4 byte	X	X	X
EIS 11	32-bit counter	4 byte	X	X	X
EIS 14	8-bit counter	1 byte	X	X	X
EIS 15	String	14 byte	--	X	--

KNX/EIB2S7 supports the following SIMATIC S7 CPUs:


- ET 200
 - IM 151-8 PN/DP CPU
- S7 300/400
 - CPU 315-2 PN/DP
 - CPU 317-2 PN/DP
 - CPU 319-3 PN/DP
 - CPU 414-3 PN/DP
 - CPU 416-3 PN/DP
- Soft PLC
 - SIMATIC WinAC RTX 2008 SP 1
- SIMATIC S7 300 with CP 343 - 1
 - CPU 315-2 DP
 - CPU 317-2 DP
 - CPU 319-3 PN/DP
- SIMATIC S7 400 with CP 443 - 1 Advanced
 - CPU 412-2 MPI/DP
 - CPU 414-2 MPI/DP
 - CPU 416-2 MPI




Gateways, Interface Converters

KNX/SIMATIC S7


Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 6AV6 643-7AC10-0AA1	B	6AV6 643-7AC10-0AA1		1	1 unit	2CP	0.228

Technical specifications

Type	Description
 AP 140/02 AP 140/22	Telecontrol devices TC Plus EIB <ul style="list-style-type: none"> • For connection of KNX to the telephone network • 6 signal inputs for floating contacts • 6 switching outputs 12 V DC, 100 mA for the control of relays • Additional 12 V DC switching output, 100 mA for the control of a local acoustic alarm signal generator if a transmitted alarm indication is not acknowledged • Additional 10 KNX switching functions and 10 KNX alarm functions • 4-line LCD for the indication of device states • Monitoring of telephone cable • Adjustable 4-digit code number for protection against unauthorized switching <ul style="list-style-type: none"> • Operation with MFV-capable telephone or MFV hand-held transmitter • Recordable announcement and voice-supported user prompting • 6 x 4 freely programmable destination numbers in the event of alarm • 4 dial attempts per destination number • Connection to the telephone network via an N-coded TAE connecting cable • Electronics powered by a plug-in power supply unit for connection to 230 V AC, with alternative power supply via an external power supply unit for 12 V DC • Surface-mounting enclosure, RAL 9010, degree of protection: IP30 • Dimensions (H x W x D): 251 x 204 x 49 mm.
Accessories	
S 190	S 190 headphone/speaker sets for AP 140/02 and AP 140/22 TC Plus Headphone/speaker set for recording announcements.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
kg								
 5WG1 140-7AU22	AP 140/22	AP 140/22 telecontrol devices TC Plus EIB GSM	C	5WG1 140-7AU22	1	1 unit	139	1.331
		KNX connection to GSM telephone network ¹⁾ (to be discontinued)						
	AP 140/02	AP 140/02 telecontrol devices TC Plus EIB analog	C	5WG1 140-7AU02	1	1 unit	139	1.378
	KNX connection to analog telephone network ¹⁾ (to be discontinued)							
	Accessories							
	S 190	S 190 headphone/speaker sets	X	5WG1 190-7AU01	1	1 unit	139	0.211
		(to be discontinued) for TC Plus AP 140						

¹⁾ The headphone/speaker set for recording announcements must be ordered separately.

Gateways, Interface Converters

Notes

11



12/2

Introduction

With KNX connection

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- 12/6 Motion/presence
- 12/8 Brightness
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- 12/9 Temperature
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Without KNX connection

- 12/11 General data
- 12/12 Temperature
- 12/14 Humidity
- 12/16 Air quality
- 12/18 Sunlight intensity

Introduction

Overview

	Application	Page
<p>With KNX Connection</p> <p>Motion/presence</p> 	Recording of motion and presence in a range of different designs.	12/6
<p>Brightness</p> 	Brightness sensors measure the brightness value – both indoors and outdoors.	12/8
<p>Wind</p> 	Wind measurement with no mechanical components.	12/9
<p>Temperature</p> 	Temperature sensors measure the current temperature.	12/9
<p>Leakage</p> 	Water sensors indicate unexpected water. In DELTA profil or DELTA style design.	12/10

	Application	Page
<p>Without KNX Connection</p> <p>Temperature</p> 	For measuring the current room temperature.	12/12
<p>Humidity</p> 	For measuring the current room humidity.	12/14
<p>Air quality</p> 	For measuring the current indoor air quality.	12/16
<p>Sunlight intensity</p> 	For measuring other measured quantities	12/18

Physical Sensors

With KNX Connection

General data

Technical specifications

Type	UP 258E21 UP 258D11	UP 255 UP 257 UP 258H	UP 258/11	AP 251	GE 252	GE 254	GE 253	AP 254/02	N 258/02	UP 272	AP 255/12 UP 255/11 GE 255/13	AP 257/42
Enclosure data												
Modular installation devices for mounting on TH35 EN 60715 mounting rail	--	--	--	--	--	--	--	--	✓	--	--	--
For installation in lights	--	--	--	--	✓	✓	✓	--	--	--	✓	--
Surface mounting	✓ ³⁾	--	--	✓	✓	✓	✓	✓	--	--	✓	✓
Flush mounting	✓	✓	✓	--	--	--	--	--	--	✓	✓	--
Mounting in intermediate ceilings	--	--	--	--	✓	✓	✓	--	--	--	✓	--
Degree of protection	IP20	IP20	IP20	IP55	IP20	IP20	IP20	IP54	IP20	IP20	IP20	IP44
Mast mountings	--	--	--	--	--	--	--	--	--	--	--	✓
Dimensions												
• Height	mm	63 ⁵⁾	1)	87	80	42	42	110		65	4)	77
• Width (1 MW = 18 mm)/∅	mm	88	1)	87	82	274.5	274.5	72	4 MW	65	4)	96
• Depth	mm	--	23	60	182	28	28	54		42	4)	118
Power supply												
Bus-powered electronics	✓	✓	✓	✓	✓	✓	✓	✓	--	✓	✓	--
Electronics powered via an integrated power supply unit for supply voltage 230 V AC	--	--	--	--	--	--	--	--	✓	--	--	--
Voltage supply through external power supply unit	--	--	--	--	--	--	--	--	--	--	--	✓ ²⁾
Bus connection												
Integrated bus coupling units	✓	--	--	✓	✓	✓	✓	✓	✓	--	✓	✓
Plug onto UP 110 bus coupling unit	--	✓	✓	--	--	--	--	--	--	✓	--	--
Plug onto UP 114 bus coupling unit	--	✓	✓	--	--	--	--	--	--	✓	--	--
Bus connection via bus terminal	✓	--	--	✓	✓	✓	✓	✓	✓	--	✓	✓
Bus connection via contact system to data rail	--	--	--	--	--	--	--	--	✓	--	--	--
Transmission of sensor values via bus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

1) Design-dependent.

2) The 4AC2 402 electronic power supply unit is recommended.

3) In conjunction with AP 258E surface-mounting enclosure.

4) Dimensions, see Chapter "Lighting → Light level controls".

5) For flush mounting, mounting height approx. 31 mm, for surface mounting with AP 258E surface-mounting enclosure, approx. 73 mm.

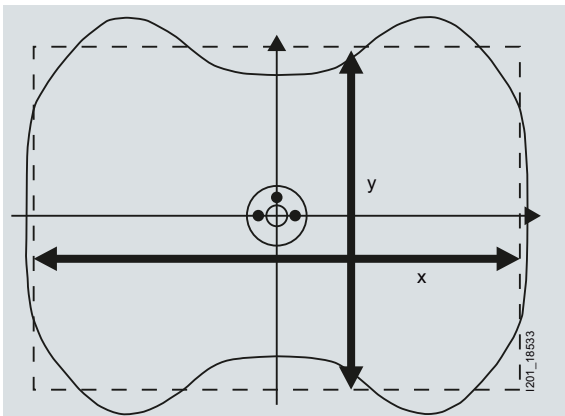
Type		UP 258E21 UP 258D11	UP 255 UP 257 UP 258H	UP 258E/11	AP 251	GE 252	GE 254	GE 253	AP 254/02	N 258/02	UP 272	AP 255/12 UP 255/11 GE 255/13	AP 257/42
Motion/presence													
Motion		✓	✓	✓	✓	--	--	--	--	--	--	--	--
Presence		✓	--	✓	--	--	--	--	--	--	--	--	--
HVCA message output		✓	--	✓	--	--	--	--	--	--	--	--	--
Horizontal sensing angle		360°	180°	360°	290°	--	--	--	--	--	--	--	--
Vertical sensing angle		100°	--	120°	--	--	--	--	--	--	--	--	--
Range to the front	m	--	10	--	8	--	--	--	--	--	--	--	--
Range on each side, up to	m	4	6	4.5 ¹⁾	8	--	--	--	--	--	--	--	--
Adjustable range		✓ ²⁾	✓	--	--	--	--	--	--	--	--	--	--
Brightness													
Measuring range	Lux	20 ... 1000	1 ... 1000	100 ... 1600 (Standard) 25 ... 200 (expanded)	--	200 ... 1900	0 ... 2000	0 ... 16000	1 ... 100000	--	--	0 ... 2000	--
For measuring outdoor brightness		--	--	--	--	--	--	✓	✓	--	--	--	--
For measuring indoor brightness		✓	✓	✓	--	✓	--	--	--	--	--	✓	--
For measuring indoor brightness, taking into account indirect lighting		--	--	--	--	--	✓	--	--	--	--	✓	--
2 m connecting lead of sensor element (cannot be extended)		--	--	--	--	✓	✓	✓	--	--	--	--	--
Temperature													
Measuring range	°C	--	--	--	--	--	--	--	-25 ... +55	-40 ... +150	--	--	--
PT1000 temperature sensor input		--	--	--	--	--	--	--	--	4	--	--	--
Max. cable length, unshielded, twisted	m	--	--	--	--	--	--	--	--	50	--	--	--
Leakage													
Water indication		--	--	--	--	--	--	--	--	--	✓	--	--
Automatic indication in the event of a defective sensor		--	--	--	--	--	--	--	--	--	✓	--	✓
Wind speed													
Measuring range	m/s	--	--	--	--	--	--	--	--	--	--	--	0 ... 35
Limit value monitoring (3 limit values)		--	--	--	--	--	--	--	--	--	--	--	✓
Logic operations (8 AND, 8 OR)		--	--	--	--	--	--	--	--	--	--	--	✓
Recording, querying and resetting the maximum wind speed		--	--	--	--	--	--	--	--	--	--	--	✓

¹⁾ At mounting height 3 m (moving persons). For details, see graphic of the UP 258Ex1 / UP 258D11 sensing range.

²⁾ Rotating/swiveling sensor head

For selection and ordering data see page 12/6ff.

UP 258Ex1 / UP 258D11 sensing range



Measurement range

Mounting height m	x m	y
2.50	4.5	3
2.75	5	3.5
3.00	6.5	3.7
3.25	7	4
3.50	7.5	4.2
3.75	8	4.5

Motion sensing range for moving/seated persons in meters +/- 0.5 m




Care must be taken to ensure the motion detector is pointing in the right direction. With design cover, without shading, vertical direction

Physical Sensors

With KNX Connection



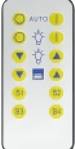



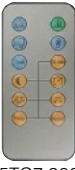

Motion/presence

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg	
i-system									
	UP 258H	UP 258H motion detectors¹⁾²⁾							
		Versions							
		• Mounting height 1.10 m							
		- Titanium white	A	5WG1 258-2HB11		1	1 unit	138	0.060
		- Aluminum metallic	B	5WG1 258-2HB31		1	1 unit	138	0.066
		• Mounting height 2.20 m							
	- Titanium white	B	5WG1 258-2HB12		1	1 unit	138	0.063	
	- Aluminum metallic	B	5WG1 258-2HB32		1	1 unit	138	0.060	
5WG1 258-2HB11									
DELTA profil									
	UP 255	UP 255 motion detectors¹⁾²⁾ (to be discontinued)							
		Versions							
		• Mounting height 1.10 m							
		- Titanium white	A	5WG1 255-2AB11		1	1 unit	138	0.061
		- Silver	A	5WG1 255-2AB71		1	1 unit	138	0.060
		• Mounting height 2.20 m							
	- Titanium white	A	5WG1 255-2AB12		1	1 unit	138	0.061	
	- Silver	A	5WG1 255-2AB72		1	1 unit	138	0.065	
5WG1 255-2AB11									
DELTA style									
	UP 257	UP 257 motion detectors¹⁾²⁾							
		Versions							
		• Mounting height 1.10 m							
		- Titanium white	B	5WG1 257-2AB13		1	1 unit	139	0.062
		- Platinum metallic	B	5WG1 257-2AB41		1	1 unit	139	0.062
		• Mounting height 2.20 m							
	- Titanium white	B	5WG1 257-2AB14		1	1 unit	139	0.062	
	- Platinum metallic	B	5WG1 257-2AB42		1	1 unit	139	0.062	
5WG1 257-2AB13									

¹⁾ The bus coupling unit BCU1/2 must be ordered separately.

²⁾ The matching design frame must be ordered separately.

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
kg								
Design-independent								
	UP 258E21	UP 258E21 presence detectors with constant light level control	B	5WG1 258-2EB21		1	1 unit	139 0.116
5WG1 258-2EB21								
	UP 258D11	UP 258D11 presence detectors with brightness sensor	A	5WG1 258-2DB11		1	1 unit	139 0.116
5WG1 258-2DB11								
Accessories								
	S 255/11	S 255/11 IR remote calibration devices For UP 258E21 or UP 258D11	A	5WG1 255-7AB11		1	1 unit	139 0.079
5WG1 255-7AB11								
	AP 258E01	AP 258E01 surface-mounting enclosures For UP 258E21 or UP 258D11	A	5WG1 258-7EB01		1	1 unit	139 0.065
5WG1 258-7EB01								
	AP 251	AP 251, IP55 surface-mounting motion detectors						
Versions								
		• Titanium white (similar to RAL 9010)	A	5WG1 251-3AB11		1	1 unit	138 0.308
5WG1 251-3AB11		• Anthracite	A	5WG1 251-3AB21		1	1 unit	138 0.308
Accessories								
		Special bases For AP 251 motion detectors, IP55						
5TC7 900		• Titanium white (similar to RAL 9010)	A	5TC7 900		1	1 unit	146 0.107
		• Anthracite	A	5TC7 901		1	1 unit	146 0.106
		Remote Controls For AP 251 motion detectors, IP55	A	5TC7 902		1	1 unit	146 0.107
5TC7 902								
	UP 258/11	UP 258/11 presence detectors¹⁾ With brightness sensor (to be discontinued)	A	5WG1 258-2AB11		1	1 unit	139 0.217
5WG1 258-2AB11								

¹⁾ The bus coupling unit BCU1/2 must be ordered separately.

Physical Sensors

With KNX Connection



Brightness

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	AP 255/12 AP 255/12 brightness controllers	B	5WG1 255-4AB12		1	1 unit	139	0.050
5WG1 255-4AB12								
	UP 255/11 UP 255/11 brightness controllers	B	5WG1 255-4AB11		1	1 unit	139	0.030
5WG1 255-4AB11								
	GE 255/13 GE 255/13 brightness controllers	B	5WG1 255-4AB13		1	1 unit	139	0.052
5WG1 255-4AB13								
	Accessories							
	S 255 S 255 IR remote calibration devices For UP 255/11, AP 255/12 and GE 255/13	A	5WG1 255-7AB01		1	1 unit	139	0.079
5WG1 255-7AB01								
	AP 254/02 AP 254/02 dual sensors Brightness measurement, temperature measurement, sun protection control, lighting control	A	5WG1 254-3EY02		1	1 unit	139	0.153
5WG1 254-3EY02								
	GE 253 GE 253 outdoor brightness sensors (to be discontinued) For indoor mounting	A	5WG1 253-4AB01		1	1 unit	139	0.300
5WG1 253-4AB01								
	GE 252 GE 252 indoor brightness sensors (to be discontinued)	A	5WG1 252-4AB02		1	1 unit	139	0.412
5WG1 252-4AB02								
	GE 254 GE 254 indoor brightness sensors (to be discontinued) For indirect lighting	A	5WG1 254-4AB01		1	1 unit	139	0.313
5WG1 254-4AB01								



N 342 light level control modules, see Chapter "Lighting".

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
	AP 257/42	AP 257/42 wind sensors¹⁾	B	5WG1 257-3AB42		1	1 unit	139	0.145
5WG1 257-3AB42									
Accessories									
	4AC2 402	Electronic power supply units	B	4AC2 402		1	1 unit	12H	0.081
4AC2 402									
1) The 4AC2 402 electronic power pack is recommended for the power supply.									

Temperature

Selection and ordering data



Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
	N 258/02	N 258/02 temperature sensors¹⁾ For four Pt1000 sensors	B	5WG1 258-1AB02		1	1 unit	139	0.242
5WG1 258-1AB02									
	AP 254/02	AP 254/02 dual sensors Brightness measurement, temperature measurement, sun protection control, lighting control	A	5WG1 254-3EY02		1	1 unit	139	0.153
5WG1 254-3EY02									
1) For physical sensors, see Chapter, "Physical sensors -> without KNX connection".									

Physical Sensors

With KNX Connection

Leakage

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
DELTA profil								
	UP 272	UP 272 water sensors¹⁾²⁾ (to be discontinued) Titanium white	A	5WG1 272-2AB11	1	1 unit	139	0.106
5WG1 272-2AB11								
DELTA style								
	UP 272	UP 272 water sensors¹⁾²⁾³⁾ (to be discontinued) Titanium white	A	5WG1 272-2AB11	1	1 unit	139	0.106
5WG1 272-2AB11								

1) The bus coupling unit BCU1/2 must be ordered separately.

2) The matching design frame must be ordered separately.

3) The required intermediate frame must be ordered separately.

Overview

Flush-mounting range

Symaro™ sensors require very little self-energy and are characterized by a highly precise measuring process and fast value transmission. This lets you create the basis for an energy and cost-efficient control system for your entire heating, cooling, ventilation and air-conditioning plant (HCVA).

The flush-mounting sensors are particularly compact and available in the designs of the DELTA switching program. This lets you meet the highest demands in terms of variety of colors and designs.

Wide range of flush-mounting devices for all applications

Symaro offers a range for sensors especially for flush mounting. In addition to temperature, humidity and air quality sensors, the Symaro flush-mounting range also offers convenient multisensors for the measurement of several measured quantities at once. Thanks to their wide range of configuration options, the sensors can also be fine-tuned to their specific applications, such as active and passive output signals.

All-round harmony – with a uniform room design

Symaro flush-mounting sensors can be installed worldwide in all standard flush-mounting boxes and meet all installation requirements. Used in combination with the versatile frames of the DELTA switching program, they blend perfectly with any room. The Symaro sensors offer maximum flexibility for integration in both existing systems and new systems and applications

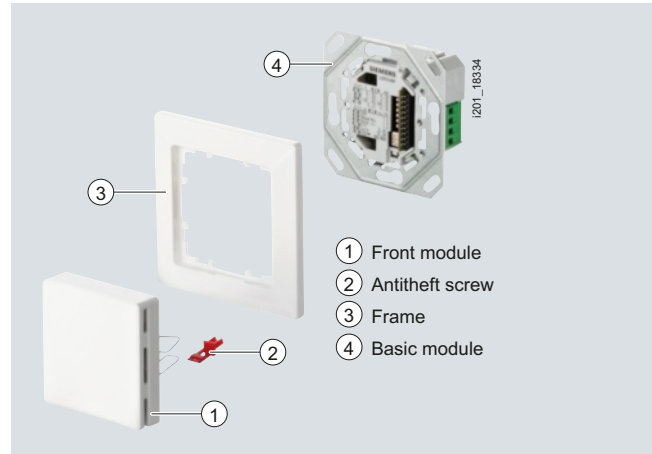
Sense the perfection, enjoy the convenience – and save energy

Only accurate and useful measured values ensure energy-efficient room control combined with maximum comfort. The optimized design of the sensor ensures the fast and precise measurement of the respective measured quantities.

They also compensate for negative influences, such as wall temperature. Symaro sensors are therefore the ideal basis for saving energy and costs.

Accurate measuring values are needed for energy-efficient ventilation - in order to ensure that the amount of outside air supplied to the room does not exceed the amount actually required.

Air quality sensors are therefore an integral part of demand-controlled ventilation. They determine the exact CO₂ content of the room air or the level of mixed gases produced, for example, by paints or vapors given off by materials. The ventilator output is energy efficiently controlled based on these measured values.



The basic module can be installed in standard flush-mounting boxes. Active and passive versions are available. The active sensors can be configured in the output ranges 0 ... 5 V DC, 0 ... 10 V DC, 0 ... 20 mA, 4 ... 20 mA and 0/4 ... 20 mA and also offer a freely selectable switching contact for each measured quantity. This means that Symaro can be perfectly adjusted to suit your individual requirements.

The flush-mounting range includes sensors for the measurement of one measured quantity and convenient multisensors that can handle several measured quantities simultaneously. The Symaro flush-mounting sensors measure carbon dioxide (CO₂), volatile organic gases (VOC: Volatile Organic Compound, mixed gas), temperature and humidity measuring ranges, individually or in combination – depending on your requirements.

The front modules of the Symaro sensors are equipped with snap-on catches. The snap-on catches ensure easy and correct mounting of the front modules onto the base modules or in the case of passive sensors; onto the mounting plates. The stud for anti-theft protection prevents unauthorized removal of the front module.

Basic module	+ Front module	Measurement variables			
		CO ₂	VOC	Relative humidity	Temperature active
AQR2540NF	+ AQR2532NNW	--	--	--	✓
	+ AQR2533NNW	--	--	✓	--
	+ AQR2535NNW	--	--	✓	✓
AQR2546NF	+ AQR2530NNW	✓	--	--	--
	+ AQR2532NNW	✓	--	--	✓
	+ AQR2533NNW	✓	--	✓	--
	+ AQR2535NNW	✓	--	✓	✓ ¹⁾
AQR2547NF	+ AQR2530NNW	--	✓	--	--
	+ AQR2532NNW	--	✓	--	✓
	+ AQR2533NNW	--	✓	✓	--
	+ AQR2535NNW	--	✓	✓	✓ ¹⁾
AQR2548NF	+ AQR2530NNW	✓	✓ ²⁾	--	--
	+ AQR2532NNW	✓	✓ ²⁾	--	✓
	+ AQR2533NNW	✓	✓ ²⁾	✓	--
	+ AQR2535NNW	✓	✓ ²⁾	✓	✓ ¹⁾
AQR2500NF	+ AQR2531BNW	--	--	--	Pt1000 (passive)

¹⁾ Only available as switching output.

²⁾ Here, the indoor air quality is calculated as a result of the maximum selection between the CO₂ and VOC measured quantities. VOC is not available as direct measured quantity.

Physical Sensors

Without KNX Connection

Temperature

Technical specifications

		Output signal		Power supply		Degree of protection	Dimensions (W x H x D)
		Pt1000 (passive) ¹⁾	0 ... 10 V DC (active) ³⁾	V AC	V DC		
		°C	°C				mm
Room sensor	AQR2531BNW	0 ... +50	--	--	--	IP30	55 x 55 ⁴⁾
	AQR2532NNW	--	0 ... +50	--	--	IP30	55 x 55 ⁴⁾
	AQR2540NF	--	Yes	24	15 ... 36	IP30	70.8 x 70.8
	QAA2012	0 ... +50	--			IP30	90 x 100 x 32
	QAA2061	--	0 ... +50	24	13.5 ... 35	IP30	90 x 100 x 36
	QAA2061D	--	0 ... +50	24	13.5 ... 35	IP30	90 x 100 x 36
Contact sensor	QAD2012 ²⁾	-30 ... +130	--			IP42	60 x 67 x 43
External sensor	QAC2012	-50 ... +70	--			IP54	80 x 92 x 50
	QAC3161	--	-50 ... +50	24	13.5 ... 35	IP65	80 x 88 x 39


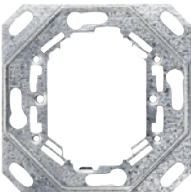


¹⁾ Can be connected to the N 258/02 temperature sensor (5WG1 258-1AB02) and the Universal N 670 I/O module (5WG1 670-1AB03), see "Sensors for HCVA".

³⁾ Universal N 670 I/O module (5WG1 670-1AB03), see "Sensors for HCVA".




⁴⁾ Suitable for the frame program DELTA line and DELTA miro, see chapter "Display and Operation Units".

²⁾ Including mounting accessories

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
Symaro™ flush-mounting range – passive room sensor								
	AQR2531BNW	AQR2531BNW front modules¹⁾ Passive temperature measurement, Pt1000 titanium white	A	S55720-S 134		1	1 unit	A04 0.070
S55720-S 134								
Accessories								
	AQR2500NF	Mounting plate for AQR2531BNW front modules Dimensions (W x H) 70.8 x 70.8 mm	A	S55720-S 161		1	1 unit	A04 0.025
S55720-S 161								
Symaro™ flush-mounting range – active room sensor								
	AQR2532NNW	AQR2532 NNW front modules for AQR basic module¹⁾ Active temperature measurement titanium white	A	S55720-S 136		1	1 unit	A04 0.072
S55720-S 136								
Accessories								
	AQR2540NF	AQR2540NF basic modules Output signal 0 ... 10 V DC 2 ... 10 V DC 0 ... 5 V DC 0 ... 20 mA DC 4 ... 20 mA DC 0 ... 10 mA DC	A	S55720-S 142		1	1 unit	A04 0.110
S55720-S 142								

¹⁾ Suitable for the frame program DELTA line and DELTA miro, see chapter "Display and Operation Units".

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
Symaro™ room sensor								
	QAA2012	QAA2012 room temperature sensors passive, Pt1000	A	BPZ:QAA2012	1	1 unit	A04	0.100
BPZ:QAA2012								
	QAA2061	QAA2061 room temperature sensors active, 0 ... 10 V	A	BPZ:QAA2061	1	1 unit	A04	0.130
BPZ:QAA2061								
	QAA2061D	QAA2061D room temperature sensors active, 0 ... 10 V, with LCD	A	BPZ:QAA2061D	1	1 unit	A04	0.150
BPZ:QAA2061D								
Symaro™ temperature sensor								
	QAD2012	QAD2012 contact temperature sensors passive, Pt1000	A	BPZ:QAD2012	1	1 unit	A04	0.720
BPZ:QAD2012								
	QAC2012	QAC2012 outdoor temperature sensors with solar radiation passive, Pt1000	A	BPZ:QAC2012	1	1 unit	A04	0.093
BPZ:QAC2012								
	QAC3161	QAC3161 outdoor temperature sensors active, 0 ... 10 V DC	A	BPZ:QAC3161	1	1 unit	A04	0.140
BPZ:QAC3161								

Physical Sensors

Without KNX Connection

Humidity

Technical specifications





	Output signal	Temperature		Output voltage	Relay contact	Display	Power supply		Degree of protection	Dimensions (W x H x D)
		Humidity	¹⁾				V DC	V AC		
	% r. F.	°C		V DC			V AC	V DC		mm
Room sensor	AQR2533NNW	0 ... 100	--	³⁾	--	--	--	--	IP30	55 x 55 ²⁾
	AQR2535NNW	0 ... 100	0 ... +50	³⁾	--	--	--	--	IP30	55 x 55 ²⁾
	QFA2000	0 ... 95	--	0 ... 10	--	--	¹⁾	--	IP30	90 x 100 x 36
	QFA2060	0 ... 95	-12 ... +50	0 ... 10	--	--	24	13.5 ... 35	IP30	90 x 100 x 36
	QFA2060D	0 ... 95	-12 ... +50	0 ... 10	--	✓	24	13.5 ... 35	IP30	90 x 100 x 36
Hygrostats	QFA1000	30 ... 90 ¹⁾	--	--	✓	--	--	--	IP20	76 x 76 x 34
	QFA1001	30 ... 90 ¹⁾	--	--	✓	--	--	--	IP20	76 x 76 x 34

¹⁾ Measuring range adjustable.

²⁾ Suitable for the frame program DELTA line and DELTA miro, see chapter "Display and Operation Units".

³⁾ Output signal via AQR basic module

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
Symaro™ flush-mounting range – room sensor									
	AQR253. front modules¹⁾ Front module for AQR basic module, titanium white								
	AQR2533 NNW	Humidity	A	S55720-S 140		1	1 unit	A04	0.072
	AQR2535 NNW	Temperature and humidity	A	S55720-S 141		1	1 unit	A04	0.072
Accessories									
	AQR2540NF	AQR2540NF basic modules Analog output signals: 0 ... 10 V DC 2 ... 10 V DC 0 ... 5 V DC 0 ... 20 mA DC 4 ... 20 mA DC 0 ... 10 mA DC	A	S55720-S 142		1	1 unit	A04	0.110
Symaro™ room sensor									
	QFA2000	QFA2000 room sensors for humidity active	A	BPZ:QFA2000		1	1 unit	A04	0.130
	QFA2060	QFA2060 room sensors for humidity/temperature active	A	BPZ:QFA2060		1	1 unit	A04	0.130




S55720-S 140

S55720-S 142

BPZ:QFA2000

BPZ:QFA2060

¹⁾ Suitable for the frame program DELTA line and DELTA miro, see chapter "Display and Operation Units".

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
								kg
	QFA2060D	QFA2060D room sensors for humidity/temperature active, with LCD	A	BPZ:QFA2060D		1	1 unit A04	0.150
BPZ:QFA2060D								
Symaro™ room hygrostat								
	QFA1000	QFA1000 room hygrometers 2-step controller with humidity sensor Setpoint adjuster underneath the enclosure cover Setpoint setting range 30 ... 90 % R.H.	A	BPZ:QFA1000		1	1 unit A04	0.090
BPZ:QFA1000								
	QFA1001	QFA1001 room hygrometers 2-step controller with humidity sensor Setpoint adjuster, external Setpoint setting range 30 ... 90 % R.H.	A	BPZ:QFA1001		1	1 unit A04	0.090
BPZ:QFA1001								

Physical Sensors

Without KNX Connection

Air quality

Technical specifications

	Measuring range		Temperature	Humidity	Output voltage	Display	Power supply		Degree of protection	Dimensions (W x H x D)
	CO ₂	VOC					V AC	V DC		
	ppm	%	°C	% r. F.	V DC		V AC	V DC		mm
Room sensor										
AQR2530NNW	--	--	--	--	--	--	--	--	IP30	55 x 55 ¹⁾
AQR2532NNW	--	--	0 ... +50	--	2)	--	--	--	IP30	55 x 55 ¹⁾
AQR2533NNW	--	--	--	0 ... 100	2)	--	--	--	IP30	55 x 55 ¹⁾
AQR2535NNW	--	--	0 ... +50	0 ... 100	2)	--	--	--	IP30	55 x 55 ¹⁾
AQR2546NF	0 ... 2000	--	--	--	✓	--	24	15 ... 36	IP30	70.8 x 70.8
AQR2547NF	--	0 ... 100	--	--	✓	--	24	15 ... 36	IP30	70.8 x 70.8
AQR2548NF	0 ... 2000	0 ... 100	--	--	✓	--	24	15 ... 36	IP30	70.8 x 70.8
QPA2000	0 ... 2000	0 ... 100	--	--	0 ... 5, 0 ... 10	--	24	15 ... 36	IP30	90 x 100 x 36
QPA2002	0 ... 2000	0 ... 100	--	--	0 ... 5, 0 ... 10	--	24	15 ... 35	IP30	90 x 100 x 36
QPA2060	0 ... 2000	--	-0 ... +50/ -35 ... +35	--	0 ... 5, 0 ... 10	--	24	15 ... 35	IP30	90 x 100 x 36
QPA2062	0 ... 2000	--	-0 ... +50/ -35 ... +35	0 ... 95	0 ... 5, 0 ... 10	--	24	--	IP30	90 x 100 x 36
QPA2062D	0 ... 2000	--	-0 ... +50/ -35 ... +35	0 ... 95	0 ... 5, 0 ... 10	✓	24	--	IP30	90 x 100 x 36

¹⁾ Suitable for the frame program DELTA line and DELTA miro, see chapter "Display and Operation Units".

²⁾ Output signal via AQR basic module

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
kg								

Symaro™ flush-mounting range – room sensor



S55720-S 137
S55720-S 136
S55720-S 140
S55720-S 141

AQR253. front modules¹⁾

Front modules for AQR basic module, titanium white

AQR2530 NNW	Blanking cover without measuring function	A	S55720-S 137		1	1 unit	A04	0.070
AQR2532 NNW	Active temperature measurement	A	S55720-S 136		1	1 unit	A04	0.072
AQR2533 NNW	Humidity	A	S55720-S 140		1	1 unit	A04	0.072
AQR2535 NNW	Temperature and humidity	A	S55720-S 141		1	1 unit	A04	0.072

Accessories



S55720-S 147
S55720-S 146
S55720-S 148

Basic modules



Analog output signals:
0 ... 10 V DC
2 ... 10 V DC
0 ... 5 V DC
0 ... 20 mA DC
4 ... 20 mA DC
0 ... 10 mA DC

Versions

AQR2546NF	• With integrated CO ₂ measurement	A	S55720-S 147		1	1 unit	A04	0.116
AQR2547NF	• With integrated VOC measurement	A	S55720-S 146		1	1 unit	A04	0.112
AQR2548NF	• With integrated VOC and CO ₂ measurement A measuring range CO ₂ + VOC: 0 ... 100 % ²⁾	A	S55720-S 148		1	1 unit	A04	0.116

¹⁾ Suitable for the frame program DELTA line and DELTA miro, see chapter "Display and Operation Units".

²⁾ The indoor air quality is calculated as a result of the maximum selection between the CO₂ and VOC measured quantities. VOC is not available as direct measured quantity. If using the AQR2535NNW front module, the temperature is only available as switching output.

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
Symaro™ room sensor								
Indoor air quality sensors								
Versions								
	QPA2000	• CO ₂	A	BPZ:QPA2000	1	1 unit	A04	0.140
	QPA2002	• CO ₂ + VOC	A	BPZ:QPA2002	1	1 unit	A04	0.140
	QPA2060	• CO ₂ + temperature	A	BPZ:QPA2060	1	1 unit	A04	0.140
	QPA2062	• CO ₂ + temperature + rel. humidity	A	BPZ:QPA2062	1	1 unit	A04	0.140
	QPA2062D	• CO ₂ + temperature + rel. humidity LCD	A	BPZ:QPA2062D	1	1 unit	A04	0.158

BPZ:QPA2000
BPZ:QPA2002
BPZ:QPA2060
BPZ:QPA2062

BPZ:QPA2062D

Physical Sensors

Without KNX Connection

Sunlight intensity

Technical specifications

	Output DC	Range	Power supply		Application/ comment	Degree of protection	Dimensions (W x H x D)
	V	W/m ²	V AC	V DC			mm
Solar sensor QLS60	0 ... 10 ¹⁾	0 ... 1000	24	18 ... 30	Solar cells	IP65	51 x 92 x 46

¹⁾ Universal N 670 I/O module (5WG1 670-1AB03), see "Sensors for HCVA".

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
								kg

Symaro™ sensor



BPZ:QLS60




QLS60	QLS60 solar sensors For measuring the radiation intensity	A	BPZ:QLS60		1	1 unit	A04	0.102
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13/2	Introduction
13/3	Logic modules, scene modules, time/event modules
13/5	Time switches and accessories
13/8	Programmable logic controllers

Introduction

Overview

	Devices	Application	Page
	Logic modules, scene modules, time/event modules	Linking received binary signals and transmission of result via GAMMA <i>instabus</i> . Place a room into a predefined state at the touch of a button – it's easy with the scene module. For the timed control of sequences or the control of devices dependent on specific events in GAMMA <i>instabus</i> .	13/3
	Time switches and accessories	Everything you need for time-controlled switching – for maximum safety, convenience and energy saving.	13/5
	Programmable logic controllers	LOGO! the compact programmable controller.	13/8

Technical specifications

Type	N 305	N 347/02	N 350	N 350E ¹⁾	N 302	N 341	N 301					
	750005	800C04 (ETS2) 800C10 (ETS3)	801701	908701	740202	800A01 (ETS2) 800A06 (ETS3)	720101	740301	740A01	740B01	740C01	740D01
Enclosure data												
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓	✓	✓	✓	✓	✓				
Ethernet connection via RJ45 socket	--	--	--	✓	--	--	--	--				
Dimensions												
• Width (1 MW = 18 mm)	1 MW	1 MW	1 MW	4 MW	1 MW	1 MW	1 MW	1 MW				
Power supply												
Bus-powered electronics	✓	✓	✓	--	✓	✓	✓	✓				
Electronics powered via an external AC/DC power supply unit V	--	--	--	12 ... 30	--	--	--	--				
Bus connection												
Integrated bus coupling units	✓	✓	✓	✓	✓	✓	✓	✓				
Bus connection via bus terminal	✓	--	--	✓	--	--	--	--				
Bus connection via contact system to data rail	✓	✓	✓	--	✓	✓	✓	✓				
Functions												
Logic functions												
Inputs (virtual)	--	255	60	80	4	--	8	4	--	--	--	--
Configurable inverting of inputs	--	✓	--	✓	✓	--	✓	✓	--	--	--	--
Outputs	--	255	10 ²⁾	30	4 ²⁾	--	2 ²⁾	4 ²⁾	--	--	--	--
Configurable inverting of outputs	--	✓	✓	--	✓	--	✓	✓	--	--	--	--
User-definable logic gate	--	127	10	30	--	--	2	--	--	--	--	--
Configurable transmission conditions	--	✓	✓	✓	✓	--	--	--	--	--	--	--
Up to 30 internal flags	--	--	--	✓	--	--	--	--	--	--	--	--
Positively driven ON/OFF switching of loads (4 channels)	--	--	--	--	--	--	--	--	--	--	--	✓
Partition control												
Partition inputs	--	--	--	--	--	--	--	--	4	4	4	--
Controllable rooms	--	--	--	--	--	--	--	--	4	4	4	--
Switching commands (2 x 1 bit)	--	--	--	--	--	--	--	✓	--	--	--	--
Brightness values (1 byte)	--	--	--	--	--	--	--	--	✓	--	--	--
Switch/dimming commands (1 bit, 4 bit)	--	--	--	--	--	--	--	--	--	--	✓	--
Time functions												
OFF delay	--	✓	--	✓ ³⁾	✓	✓ ³⁾	--	--	--	--	--	--
ON delay	--	✓	--	✓ ³⁾	✓	✓ ³⁾	--	--	--	--	--	--
Timer mode	--	✓	--	✓ ³⁾	✓	✓ ³⁾	--	--	--	--	--	--
Scheduled entries	--	--	100	100	--	400	--	--	--	--	--	--
Weekly program	--	--	✓	✓	--	✓	--	--	--	--	--	--
Day, week, month, year program	--	--	--	✓	--	✓	--	--	--	--	--	--
Master clock (time source)	--	--	--	✓	--	--	--	--	--	--	--	--
Slave clock	--	--	✓ ⁴⁾	--	--	✓	--	--	--	--	--	--
Astro function	--	--	--	✓	--	✓	--	--	--	--	--	--
Internal clock, can be synchronized via master clock	--	--	✓(KNX)	✓(LAN) ⁵⁾	--	✓	--	--	--	--	--	--
Event functions												
Event entries	80 ⁶⁾	--	100	200	--	200	--	--	--	--	--	--
Event trigger	8	--	10	30	--	7)	--	--	--	--	--	--
Sequence control	✓	--	✓	✓	--	✓	--	--	--	--	--	--
Scene control												
Integrated 1-bit scene control	✓	--	--	✓ ⁸⁾	--	--	--	--	--	--	--	--
Integrated 8-bit scene control	✓	--	--	✓ ⁸⁾	--	--	--	--	--	--	--	--
Scenes to be integrated	8	--	--	--	--	--	--	--	--	--	--	--

For selection and ordering data, see page 13/4.

1) The software required for parameter assignment via the Ethernet interface is available on CD-ROM and is included in delivery, or can be downloaded at www.siemens.com/gamma-td.

2) Transmission filter.

3) Via event entries.

4) The following devices can be used as a master clock or time source for synchronizing the module-internal real-time clock: a time switch (e. g. 5WG1 372-5EY01) or an N 350E IP controller (5WG1 350-1EB01).

5) Time synchronization via time server in the data network (NTP).

6) 10 entries per trip unit.








7) On request.

8) Via event trigger.




Control and Automation Devices

Logic modules, scene modules, time/event modules

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 305 N 305 scene/event modules	A	5WG1 305-1AB01		1	1 unit	139	0.065
	N 347/02 N 347/02 logic operation modules [®] 127 Logic gate	A	5WG1 347-1AB02		1	1 unit	139	0.115
	N 350 N 350 event, time and logic modules [®] 10 logic gates, 10 event entries, weekly scheduling program	B	5WG1 350-1AB01		1	1 unit	139	0.120
	N 350E N 350E IP controllers 30 logic gates, 200 event entries, weekly scheduling program, integrated IP interface	A	5WG1 350-1EB01		1	1 unit	139	0.182
	N 302 N 302 time modules [®]	B	5WG1 302-1AB01		1	1 unit	139	0.087
	N 341 N 341 event and time modules [®]	A	5WG1 341-1AB01		1	1 unit	139	0.119
	N 301 N 301 logic modules [®] 1 x AND, 1 x OR, linking of 8 inputs, partition control, positively driven operation	A	5WG1 301-1AB01		1	1 unit	139	0.086

Technical specifications

Type	 N 350E 908701	 REG 371 221D01	 REG 372 7F0401	7F0501	7F0601	REG 372/02 7F0401	7F0501	7F0601
Enclosure data								
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓			✓		
Dimensions								
• Width (1 MW = 18 mm)	MW 4	2	6			6		
Display/control elements								
LCD for time, day of the week, daylight saving times, switching state of channels	✓ ¹⁾	✓	✓			✓		
Jog pushbuttons for setting the time, day and program entries	✓	✓	✓			✓		
Programming via PC	✓ (N 350E configurator) ²⁾	--	✓ (Obelisk)			✓ (Obelisk)		
Power supply								
Bus-powered electronics	--	✓	✓			✓		
Additional 230 V power supply for integrated DCF77 power supply unit	--	--	--			✓		
Electronics powered via an external AC/DC power supply V unit	12 ... 30	--	--			--		
Bus connection								
Integrated bus coupling units	✓	✓	✓			✓		
Bus connection via bus terminal	✓	✓	✓			✓		
Connection for DCF77 receiver	✓	--	--			✓		
Software								
Timer functions								
Channels	80 ³⁾	2	4			4		
Memory locations	4)	36	324			324		
Standard day/weekly program	✓	✓	✓			✓		
No. of weekly programs that can be prioritized	8	--	9			9		
Holiday switching (duration 1 ... 99 days, batch 0 ... 99 days)	4)	✓	✓			✓		
Random program	--	--	✓			✓		
Astro program with sunrise and sunset times	✓	--	✓			--		
Supported telegrams								
Switching (1 bit)	✓	✓	✓	✓	✓	✓	✓	✓
Set value (1 byte)	✓	✓	✓	✓	✓	✓	✓	✓
Floating decimal point (2 byte), for temperature, etc.	✓	--	--	✓	--	--	✓	--
Positively driven operation (2 bit)	--	✓	✓	✓	✓	✓	✓	✓
Scenes	--	2	--	--	4	--	--	4
Adjustable cyclic transmission	--	✓	✓	✓	✓	✓	✓	✓
Internal clock, can be synchronized via master clock by KNX	--	--	--	✓	--	--	✓	--
Transmission of date and time via KNX bus	✓	--	✓	--	--	✓	--	--
Synchronization with DCF77 signal	--	--	--	--	--	--	✓	--
Time synchronization via time server in the data network	✓	--	--	--	--	--	--	--

1) No daylight saving times, no switching state of the channels.



2) The software required for parameter assignment via the Ethernet interface is available on CD-ROM and is included in delivery, or can be downloaded at www.siemens.com/gamma-td.

3) Communication objects.





4) On request.

For selection and ordering data, see page 13/6.

Time switches and accessories

Type	Description
	Accessories
	<p>PC programming sets with OBELISK memory cards</p> <ul style="list-style-type: none"> For fast and easy creation of switching programs for the REG 372 4-channel time switch and the DCF-77REG 372/02 4-channel time switch Comprising software CD, OBELISK memory module, programming adapter and software manual Readout and description of the memory module via the programming adapter of the PC programming set, which is connected to the serial interface of the PC For filtering switching programs acc. to specific search criteria, with display and printout of filtered switching programs. <ul style="list-style-type: none"> Transmission of the scheduling program from PC to time switch using an OBELISK memory module programmed by the PC and then inserted in the time switch, and vice versa for transmitting a program from one time switch to another time switch using the memory module or to the PC software for fast copying of a switching program or parts of a switching program for insertion in a new or existing program, for archiving switching programs on the hard disk of a PC, or for printing out switching programs in table form.
	<p>AP 390 DCF-77 aerials</p> <ul style="list-style-type: none"> For connection to up to 10 4-channel REG 372/02 year time switches Red LED blinks in 1-second intervals to indicate receipt of signal <ul style="list-style-type: none"> Electronics powered by 29 V DC via 4-channel or 16-channel time switch.

Selection and ordering data



Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
								kg
 5WG1 350-1EB01	N 350E N 350E IP controllers ¹⁾ 30 logic gates, 200 event entries, weekly scheduling program, integrated IP interface	A	5WG1 350-1EB01		1	1 unit	139	0.182
 5WG1 371-5EY01	REG 371 REG 371 weekly time switches ²⁾ 2-channel	A	5WG1 371-5EY01		1	1 unit	139	0.148
 5WG1 372-5EY01	REG 372 REG 372 year time switches ²⁾ 4-channel	A	5WG1 372-5EY01		1	1 unit	139	0.354
 5WG1 372-5EY02	REG 372/2 REG 372/02 year time switches ²⁾³⁾ 4-channel, DCF77 connection	A	5WG1 372-5EY02		1	1 unit	139	0.463

¹⁾ The software required for parameter assignment via the Ethernet interface is available on CD-ROM and is included in delivery, or can be downloaded at www.siemens.com/gamma-td.

²⁾ During configuration, the installer needs to carry out all the necessary settings.

³⁾ The AP 390 DCF-77 aerial must be ordered separately.

Time switches and accessories








Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	PC programming sets (to be discontinued) With OBELISK memory card	B	5WG1 810-0EY01		1	1 unit	139	0.444
	AP 390 DCF-77 aerials (to be discontinued)	A	5WG1 390-3EY01		1	1 unit	139	0.170

5WG1 810-0EY01





5WG1 390-3EY01

Programmable logic controllers

Technical specifications

Type	Basic modules		Expansion modules				
							
	LOGO! 230RC	LOGO! 12/24RC	LOGO! DM8 230R	LOGO! DM8 12/24R	LOGO! AM2	LOGO! AM2 RTD	LOGO! AM2 AQ
Enclosure data							
Can be used for LOGO! 230RC	--	--	✓	--	✓	✓	✓
Can be used for LOGO! 12/24RC	--	--	--	✓	✓	✓	✓
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓	✓	✓	✓	✓
Dimensions							
• Height	mm					36	36
• Width	mm	4 MW	4 MW	2 MW	2 MW	2 MW	2 MW
• Depth	mm					55	55
Power supply							
Power supply 115 ... 230 V AC/DC	✓	--	✓	--	--	--	--
Power supply 12 ... 24 V DC	--	✓	--	✓	✓	✓	✓
Inputs							
Pushbutton inputs							
For voltage input							
• 230 V	8	--	4	--	--	--	--
• 12/24 V	--	8 (4) ¹⁾	--	4	--	--	--
Control inputs							
Analog input (0 ... 10 V or 4 ... 20 mA)	4 x 0 ... 10 V	--	--	--	2	--	--
Sensor inputs							
Temperature sensor input PT100 and/or PT1000 automatic detection	--	--	--	--	--	2	--
Measuring range	°C	--	--	--	--	-50 ... +200	--
Outputs							
Control outputs							
Analog output 0 ... 10 V and/or 0/4 ... 20 mA	--	--	--	--	--	--	2
Load output							
Floating relay contact	4	4	4	4	--	--	--
Rated contact voltage, AC	V	230	230	230	230	--	--
Rated contact current	A	10	10	5	5	--	--

¹⁾ 8 digital inputs, of which 4 can be used as analog inputs 0 ... 10 V.

Type	Description
	<p>LOGO!/KNX communication modules</p> <ul style="list-style-type: none"> For connection of LOGO! to KNX, as communication module for the LOGO! logic module (12 V/24 V or 115 V/240 V) and as bus device on KNX For linking transmitted KNX data points and LOGO! inputs and outputs via logic and control functions through LOGO! For the linking and transmitting via KNX of up to <ul style="list-style-type: none"> 8 LOGO! binary inputs and 4 LOGO! binary outputs 16 virtual KNX binary inputs 12 virtual KNX binary outputs 8 virtual KNX analog inputs 8 virtual KNX analog outputs <ul style="list-style-type: none"> Transmission of date and time of the LOGO! real-time clock via KNX Two LEDs for the display of the communication status of LOGO! and KNX Electronics powered via an external 24 V AC/DC power supply unit, 25 mA Integrated bus coupling units Bus connection via screw terminals Modular installation devices for mounting on TH35 EN 60715 mounting rail Width 2 MW (1 MW = 18 mm)
	<p>LOGO! 230RC, LOGO! 230RCE, LOGO! 12/24RC, LOGO! 12/24RCE, LOGO! DM8 230R, LOGO! DM8 12/24R, LOGO! AM2, LOGO! AM2 RTD, LOGO! AM2 AQ</p> <ul style="list-style-type: none"> Degree of protection: IP20 Interference suppression to limit class B Certified to UL, CSA, FM, C-Tick Standards: VDE 0631, IEC1131 Approvals: CE, ABS, BV, DNV, GL, LRS, PRS Ambient temperature 0 ... +55 °C AC/DC
	<p>LOGO! Power</p> <ul style="list-style-type: none"> Designed for use on single-phase AC systems Nominal input voltage 100 ... 240 V AC, long-range Input voltage range 85 ... 264 V AC High degree of efficiency over the entire load range Ambient temperature -20 ... 70 °C AC/DC Safety class II, degree of protection: IP20, Electrical isolation SELV acc. to EN 60950 and EN 50178 Interference suppression class B acc. to EN 55022 Certified to CE, UL/cUL, FM Ship building approval GL, ABS <p>Versions</p> <p>LOGO! Power 12 V/1.9 A</p> <ul style="list-style-type: none"> Controlled power supply 12 V DC/1.9 A Nominal output voltage 12 V DC, setting range 10.5 ... 16.1 V Nominal output current 1.9 A Efficiency during operation at rated value typ. 80 % Width 3 MW (1 MW = 18 mm) <p>LOGO! Power 12 V/4.5 A</p> <ul style="list-style-type: none"> Controlled power supply 12 V DC/4.5 A Nominal output voltage 12 V DC, setting range 10.5 ... 16.1 V AC/DC Nominal output current 4.5 A Efficiency during operation at rated value typ. 85 % Width 4 MW (1 MW = 18 mm) <p>LOGO! Power 24 V/1.3 A</p> <ul style="list-style-type: none"> Controlled power supply 24 V DC/1.3 A Nominal output voltage 24 V DC Nominal output current 1.3 A Efficiency during operation at rated value typ. 82 % Width 3 MW (1 MW = 18 mm) <p>LOGO! Power 24 V/2.5 A</p> <ul style="list-style-type: none"> Controlled power supply 24 V DC/2.5 A Nominal output voltage 24 V DC Nominal output current 2.5 A Efficiency during operation at rated value typ. 87 % Width 4 MW (1 MW = 18 mm) <p>LOGO! Power 24 V/4 A</p> <ul style="list-style-type: none"> Controlled power supply 24 V DC/4 A Nominal output voltage 24 V DC Nominal output current 4 A Efficiency during operation at rated value typ. 89 % Width 5 MW (1 MW = 18 mm)
	<p>LOGO! PC cables</p> <p>For program transmission between LOGO! and PC, PC connection via serial interface (RS232 socket).</p> <p>For LOGO! up to ...0BA6</p>
	<p>LOGO! USB PC cable</p> <p>For program transmission between LOGO! and PC, PC connection via USB interface incl. driver on CD-ROM</p> <p>For LOGO! up to ...0BA6</p>
	<p>LOGO! Soft Comfort V7</p> <p>Convenient programming available in several languages, drag & drop program creation, simulation, comprehensive program documentation, Windows 98SE or higher, Linux, MAC OSX, Windows7 (32 and 64-bit)</p>
	<p>LOGO! memory cards</p> <p>For archiving, duplication, sending of switching programs and transfer of a new or modified program to LOGO!, with copy and password protection.</p>
	<p>LOGO! English manual</p> <p>Detailed information on operation and application.</p> <p>LOGO! German manual</p> <p>Detailed information on operation and application.</p>

Control and Automation Devices

Programmable logic controllers

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	230RC LOGO! 230RC Programming cable: LOGO! PC cable (RS232 or USB)	A	6ED1 052-1FB00-0BA6		1	1 unit	200	0.249
	230RCE LOGO! 230RCE Programming cable: Ethernet	A	6ED1 052-1FB00-0BA7		1	1 unit	200	0.325
	12/24RC LOGO! 12/24RC Programming cable: LOGO! PC cable (RS232 or USB)	A	6ED1 052-1MD00-0BA6		1	1 unit	200	0.242
	12/24RCE LOGO! 12/24RCE Programming cable: Ethernet	A	6ED1 052-1MD00-0BA7		1	1 unit	200	0.319
	DM8 230R LOGO! DM8 230R	A	6ED1 055-1FB00-0BA1		1	1 unit	200	0.170
	DM8 12/24R LOGO! DM8 12/24R	A	6ED1 055-1MB00-0BA1		1	1 unit	200	0.169
	AM2 LOGO! AM2	A	6ED1 055-1MA00-0BA0		1	1 unit	200	0.130
	AM2 RTD LOGO! AM2 RTD	A	6ED1 055-1MD00-0BA1		1	1 unit	200	0.134

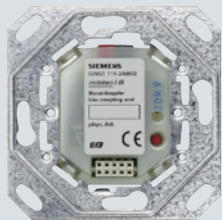
Programmable logic controllers

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	AM2 AQ	LOGO! AM2 AQ	A	6ED1 055-1MM00-0BA1	1	1 unit	200	0.132
6ED1 055-1MM00-0BA1								
		LOGO! Power 12 V/1.9 A	A	6EP1 321-1SH03	1	1 unit	583	0.170
		LOGO! Power 12 V/4.5 A	A	6EP1 322-1SH03	1	1 unit	583	0.250
		LOGO! Power 24 V/1.3 A	A	6EP1 331-1SH03	1	1 unit	583	0.170
		LOGO! Power 24 V/2.5 A	A	6EP1 332-1SH43	1	1 unit	583	0.250
		LOGO! Power 24 V/4 A	A	6EP1 332-1SH52	1	1 unit	583	0.340
6EP1 321-1SH03								
		LOGO!/KNX communication modules	C	6BK1700-0BA00-0AA2	1	1 unit	470	0.107
6BK1700-0BA00-0AA2								
		LOGO! PC cables For LOGO! up to ...0BA6	A	6ED1 057-1AA00-0BA0	1	1 unit	200	0.169
		LOGO! USB PC cables For LOGO! up to ...0BA6	A	6ED1 057-1AA01-0BA0	1	1 unit	200	0.133
		LOGO! Ethernet cables for LOGO! ...0BA7	A	6XV1 850-2GH20	1	1 unit	5K1	0.084
6ED1 057-1AA00-0BA0								
		LOGO! German manual	B	6ED1 050-1AA00-0AE8	1	1 unit	200	0.921
		LOGO! English manual	X	6ED1 050-1AA00-0BE8	1	1 unit	200	0.892
6ED1 050-1AA00-0AE8								
		LOGO! Soft Comfort V7	A	6ED1 058-0BA02-0YA1	1	1 unit	200	0.098
		LOGO! memory cards	A	6ED1 056-1DA00-0BA0	1	1 unit	200	0.003
		LOGO! battery cards	A	6ED1 056-6XA00-0BA0	1	1 unit	200	0.006
		LOGO! Combo memory & battery cards	A	6ED1 056-7DA00-0BA0	1	1 unit	200	0.006

Control and Automation Devices


Notes

13



14/2 Introduction

System products

- 14/4 Bus coupling units and accessories
- 14/9 Power supply units 
- 14/11 Chokes
- 14/12 Line couplers
- 14/15 Network gateways






System accessories

- 14/17 Cover strips
- 14/17 Bus terminals
- 14/18 Connectors
- 14/19 Data rails
- 14/20 Overvoltage protection

Introduction









Overview

Devices	Application	Page
<p>System products</p> <p>Bus coupling units and accessories</p> 	<p>The bus coupling unit connects the operator interfaces to the GAMMA <i>instabus</i>.</p>	<p>14/4</p>
<p>Power supply units</p> 	<p>The extra-low voltage required for the GAMMA <i>instabus</i> is provided via an integrated choke.</p>	<p>14/9</p>
<p>Chokes</p> 	<p>For using the unchoked voltage of a KNX power supply unit for a further bus line.</p>	<p>14/11</p>
<p>Line couplers</p> 	<p>Ensuring fault-free communication between two bus lines.</p>	<p>14/12</p>
<p>Network gateways</p> 	<p>For connecting bus lines to other devices and PCs via fast data networks.</p>	<p>14/15</p>

Devices	Application	Page
<p>System accessories</p> <p>Cover strips</p> 	<p>For snapping onto free data rail segments – for enhanced safety.</p>	<p>14/17</p>
<p>Bus terminals</p> 	<p>The bus terminal connects bus devices to the bus cable and enables the looping through of cables.</p>	<p>14/17</p>
<p>Connectors</p> 	<p>For connection of data rail and bus cable.</p>	<p>14/18</p>
<p>Data rails</p> 	<p>For connecting modular installation devices via their contact system.</p>	<p>14/19</p>
<p>Overvoltage protection</p> 	<p>For the overvoltage fine protection of bus devices.</p>	<p>14/20</p>




Bus coupling units and accessories

Technical specifications

								
	UP 117/11	UP 117/12	UP 114/02	UP 110/03	UP 110/11	UP 116 UP 116/11	UP 116/21 UP 116/31	UP 110C03 ¹⁾
Enclosure data								
For installation in flush-mounting switch and socket boxes with $\varnothing = 60$ mm	✓	✓	✓	✓	✓	✓	✓	✓
For mounting rockers from the DELTA product ranges	--	--	--	--	--	✓	✓	--
10-pole user interface (UI) for plugging onto a bus terminal	--	--	✓	✓	✓	--	--	✓
10-pole BTI socket connector (BTI: Bus-Transceiver-Interface) for plugging onto a bus terminal	✓	✓	--	--	--	--	--	--
Dimensions								
• Height	mm	71	71	71	71	71	71	115
• Width	mm	71	71	71	71	71	71	69
• Depth	mm	16	18	16	27	19/32	32	26
Mounting type								
Claw fixing	--	--	--	--	✓	✓	✓	--
Screw fixing	✓	✓	✓	✓	✓	✓	✓	✓
Display/control elements								
LED for status indication	--	--	--	--	--	✓	✓	--
LED for orientation light	--	--	--	--	--	✓	✓	--
Bus connection								
Integrated bus coupling units	✓	✓	✓	✓	✓	✓	✓	✓
Bus connection via bus terminal	✓	✓	✓	✓	✓	✓	✓	✓

¹⁾ Suitable for NEMA wall box, for matching DELTA contour frame, see page 1/34.

For selection and ordering data, see page 14/7.

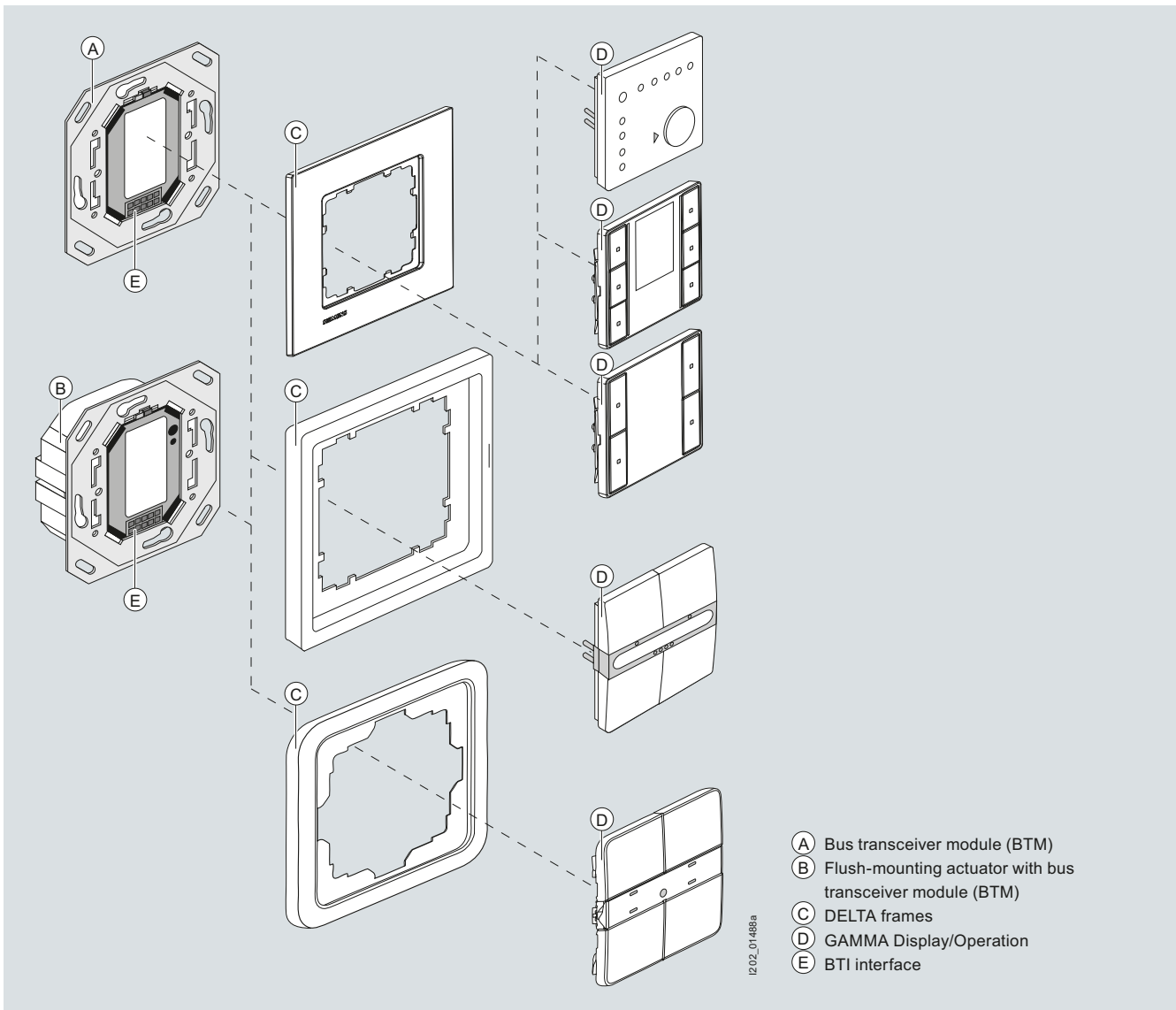
Type	Description
	Accessories
	Mounting brackets for UP 110/11 <ul style="list-style-type: none"> In order to use antitheft screws with bus terminals, such as pushbuttons, room temperature controllers etc., on UP 110/11 bus coupling units, 2 mounting brackets per bus coupling unit are required.
	UP 196 paint covers <ul style="list-style-type: none"> For the protection of already installed flush-mounting bus coupling units, DELTA bus coupling units or flush-mounting actuators with user interface (UI) through to the mounting of bus terminals.
	IP44 sealing sets for rockers <ul style="list-style-type: none"> For single or double rockers One set contains four insert seals.

Modular bus coupling unit and flush-mounting actuator

A key feature of the GAMMA *instabus* is its uniform bus coupling unit. The bus transceiver module (BTM) can be used as a stand-alone unit, as well as a combined version in various devices of the flush-mounting actuator range.

Implementation of the BTI interface (Bus Transceiver Interface) with the bus transceiver module (BTM) ensures maximum flexibility and an impressive range of functions. Bus coupling units (BTM) and flush-mounting actuators with integrated bus transceiver modules (BTM) enable the use of GAMMA display/operator interfaces, such as pushbuttons, text displays, room temperature controllers and operation units in a wide range of designs. Thus, all GAMMA *instabus* operator interfaces with BTI interface in the design lines i-system and DELTA style/profil can be combined with either a bus transceiver module (BTM) or a flush-mounting actuator with bus transceiver module (BTM).

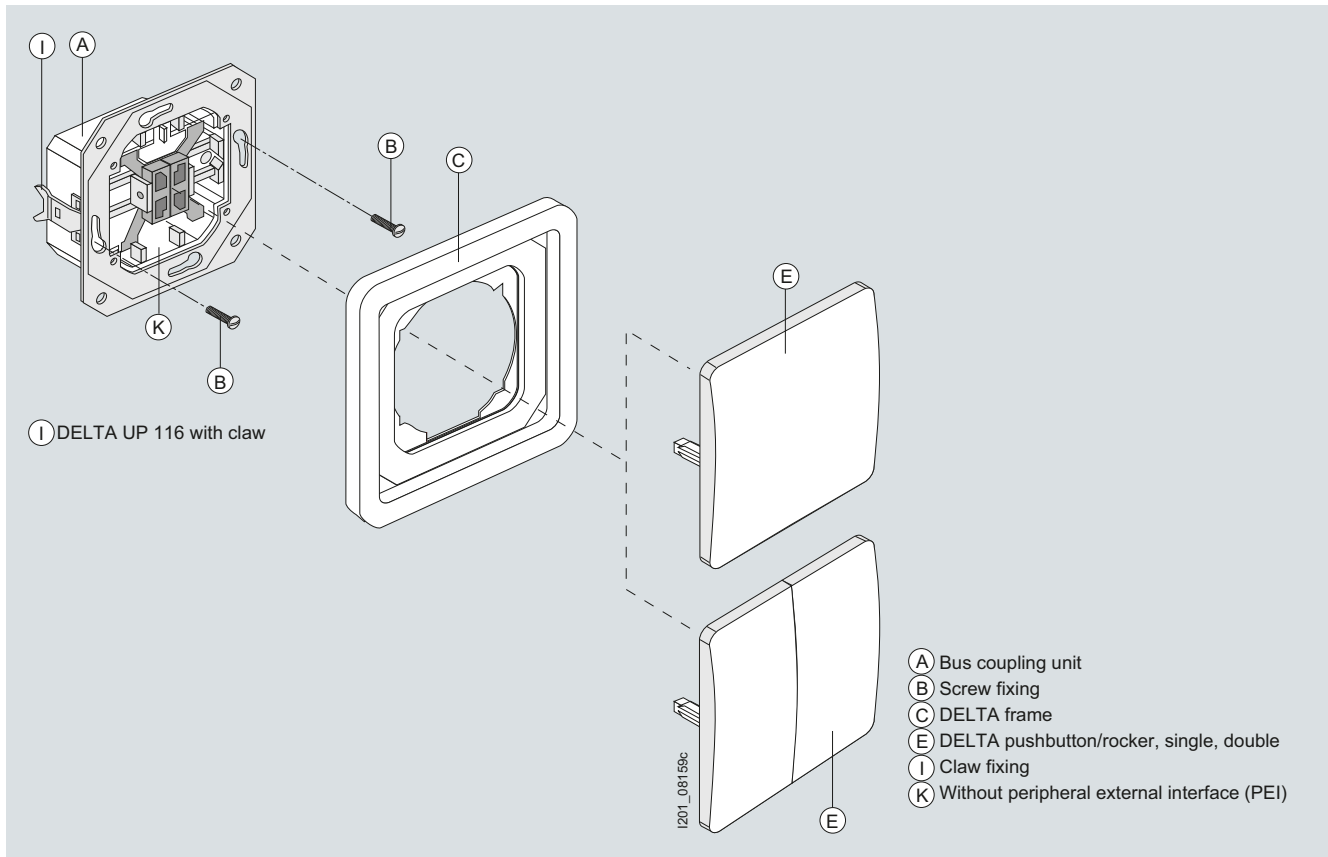
This reduces planning work and facilitates installation and commissioning. The application programs of the flush-mounting actuators are identical to those of the functionally equivalent devices from the modular room control range. This means that all devices have the same standard application program – regardless of mounting type – whether flush-mounting, with or without mounting frame – or whether designed for installation in the room control box and automation module box.



System Products and Accessories

Bus coupling units and accessories

Operator interfaces with DELTA bus coupling unit





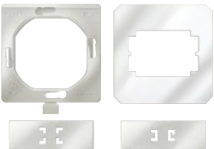
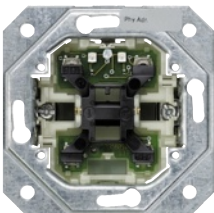
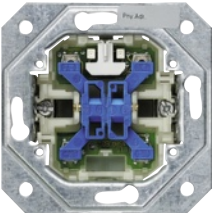
Bus coupling units and accessories

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	UP 117/11 UP 117/11 bus transceiver modules Plus (to be discontinued) Bus transceiver module (BTM) Mounting depth 16 mm	A	5WG1 117-2AB11		1	1 unit	139	0.055
5WG1 117-2AB11								
	UP 117/12 UP 117/12 bus transceiver modules  Bus transceiver module (BTM) Mounting depth 18 mm	A	5WG1 117-2AB12		1	1 unit	139	0.045
5WG1 117-2AB12								
	UP 114/02 UP 114/02 bus coupling units Mounting depth 16 mm, with BCU2	A	5WG1 114-2AB02		1	1 unit	139	0.060
5WG1 114-2AB02								
	UP 110/03 UP 110/03 bus coupling units Mounting depth 27 mm, with BCU1	A	5WG1 110-2AB03		1	1 unit	139	0.068
5WG1 110-2AB03								
	UP 110/11 UP 110/11 bus coupling units Mounting depth 19 mm, with BCU1	A	5WG1 110-2AB11		1	1 unit	139	0.088
5WG1 110-2AB11								
	UP 110C03 UP 110C03 bus coupling units Mounting depth 27 mm, with BCU1	B	5WG1 110-2CB03		1	1 unit	139	0.111
5WG1 110-2CB03								

System Products and Accessories

Bus coupling units and accessories

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
Accessories								
			5WG1 294-8AB01		1	10 units	139	0.001
5WG1 294-8AB01								
	UP 196		5WG1 196-2AB01		1	10 units	139	0.006
5WG1 196-2AB01								
			5TG4 324		1	1/10 sets	135	0.016
5TG4 324								
DELTA bus coupling units								
	UP 116		DELTA UP 116 bus coupling units¹⁾ Single					
			Versions					
			• Intermediate position	A	1	1 unit	139	0.091
			• Pushbutton position	A	1	1 unit	139	0.090
			Accessories					
			IP44 sealing sets for rockers	A	1	1/10 sets	135	0.016
			• For single or double rockers					
			• One set contains four insert seals					
5WG1 116-2AB01								
	UP 116		DELTA UP 116 bus coupling units¹⁾ Double					
			Versions					
			• Intermediate position	A	1	1 unit	139	0.092
			• Pushbutton position	A	1	1 unit	139	0.092
			Accessories					
			IP44 sealing sets for rockers	A	1	1/10 sets	135	0.016
			• For single or double rockers					
			• One set contains four insert seals					
5WG1 116-2AB11								

¹⁾ The required single or multiple rocker (with or without window) and the frame in matching DELTA design (see Catalog ET D1) must be ordered separately.



Power supply units

Overview

Intelligent solution via safety supply and KNX-DALI gateway with status indication in emergency mode

In emergency mode, communication is maintained via the safety supply from KNX and DALI.

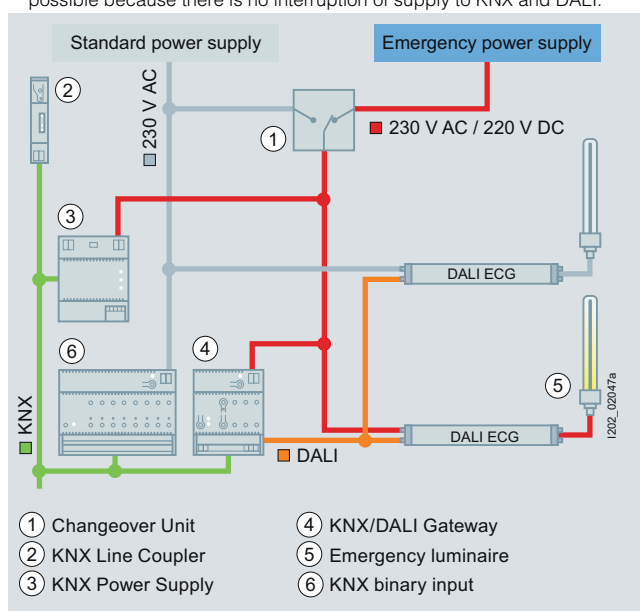
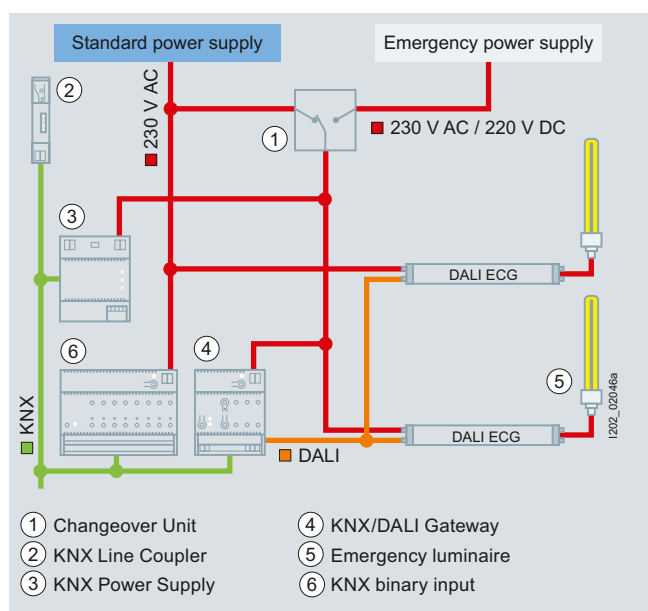
The failure detection of the general supply is executed via a KNX binary input, which the KNX/DALI gateway switches to emergency mode. It is not possible to manually operate the emergency lights in emergency mode.

Normal mode

- Lighting control with DALI
- Feedback of fault indications and failure of lighting and ECGs to building control
- Monitoring of operating hours for lamp replacement

Emergency operation

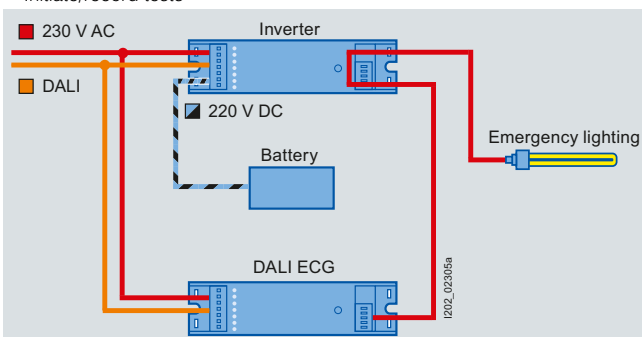
- Parameterization of dimming value of DALI-ECG in emergency operation via KNX/DALI gateway
- The integrated buffer of the KNX power supply ensures an interruption-free switchover to emergency operation
- The continued transmission of status indications in emergency operation is possible because there is no interruption of supply to KNX and DALI.



Emergency lighting with single battery KNX/DALI gateway

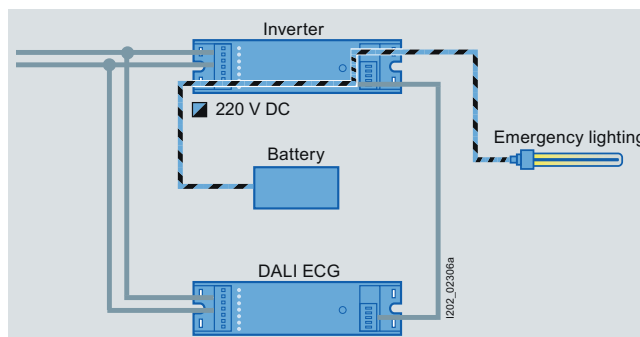
Normal mode

- Lighting control with DALI
- Initiate/record tests



Emergency operation




- Automatic emergency lighting acc. to parameterization via KNX/DALI gateway






Power supply units




Technical specifications

			
	N 125/02	N 125/12	N 125/22
Enclosure data			
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓
Dimensions			
• Width (1 MW = 18 mm)	4 MW	4 MW	4 MW
Bus connection			
Integrated chokes	✓	✓	✓
Bus connection via contact system to data rail	✓	✓	✓
Bus connection via bus terminal	✓	✓	✓
Outputs			
Rated operational voltage	V AC 120 ... 230	120 ... 230	120 ... 230
	V DC 220	220	220
50 ... 60 Hz	✓	✓	✓
Output voltage, DC	V 29	29	29
Output current	mA 160	320	640
Additional unchoked output for 29 V DC, for powering a second bus line via an external choke (e. g. N 120/02)	✓	✓	✓


Selection and ordering data

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
									kg
	N 125/02	N 125/02 power supply units Integrated choke, 160 mA, additional unchoked output, 29 V DC	A	5WG1 125-1AB02		1	1 unit	139	0.298
5WG1 125-1AB02									
	N 125/12	N 125/12 power supply units Integrated choke, 320 mA, additional unchoked output, 29 V DC	A	5WG1 125-1AB12		1	1 unit	139	0.298
5WG1 125-1AB12									
	N 125/22	N 125/22 power supply units Integrated choke, 640 mA, additional unchoked output, 29 V DC	A	5WG1 125-1AB22		1	1 unit	139	0.298
5WG1 125-1AB22									

Technical specifications

Type	Description
 N 120/02	N 120/02 chokes <ul style="list-style-type: none"> For operation with a KNX power supply without integrated choke or for connection to the unchoked output of the KNX N 125/x2 power supplies Contact system for data rail Low-voltage terminal for unchoked voltage and bus Modular installation devices for mounting on TH35 EN 60715 mounting rail Width: 2 MW (1 MW = 18 mm).

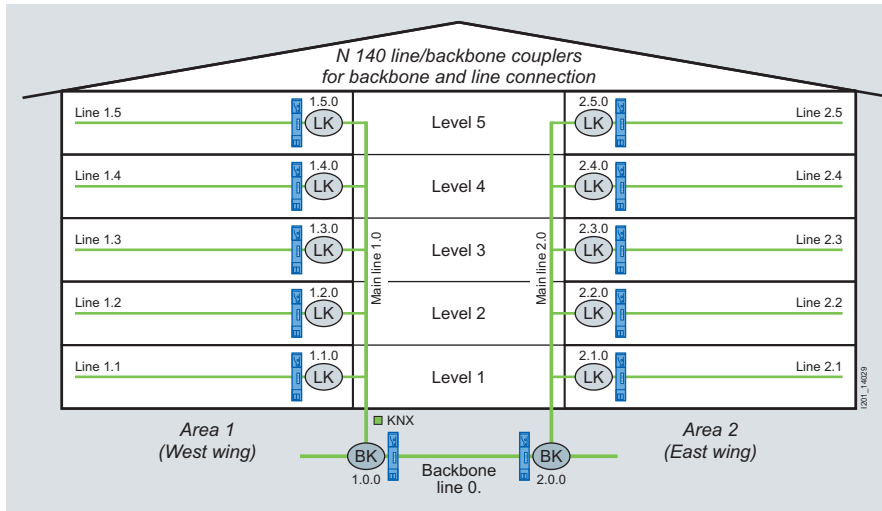
Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
 5WG1 120-1AB02	N 120/02 N 120/02 chokes 640 mA	A	5WG1 120-1AB02		1	1 unit	139	0.129 kg

Line couplers

Overview

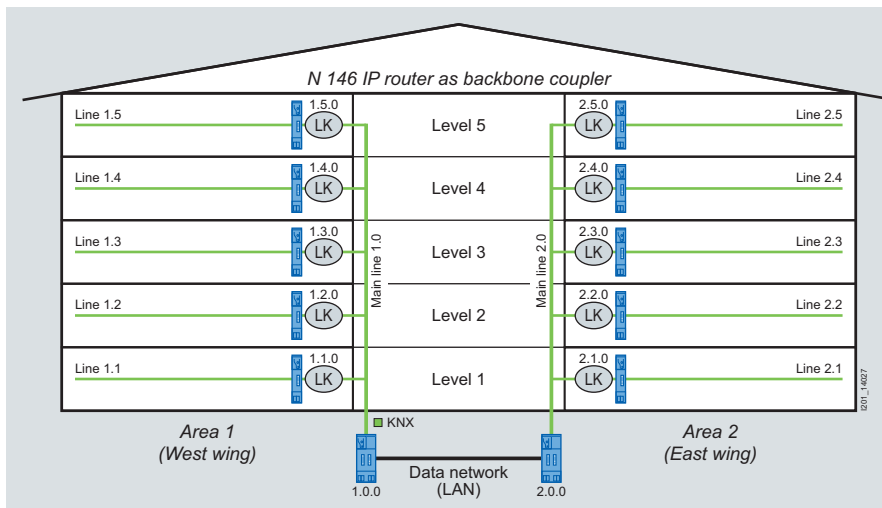
Classic topology



In the classic topology, all the line and backbone couplers are traditionally KNX couplers.

Tried and tested, this topology is widely deployed. The bus cable lengths are generally limited to a single building.

Modern topology

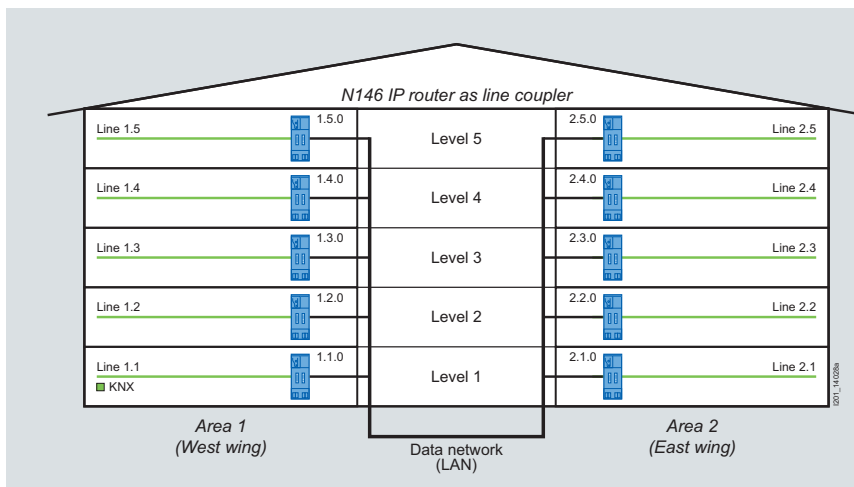


In this modern topology, the backbone couplers are replaced by N146 IP routers.

In this case (for example), due to the use of standard network components, the linking of 2 building sections is no longer restricted by the lengths of the bus cable.

Other media, such as optical fiber cables or W-LAN, can also be used to couple separate buildings and for the exchange of group address telegrams.

Innovative topology





In this innovative topology all line couplers are replaced by N 146/02 IP routers.

Backbone couplers are no longer required. This configuration enables the linking of each individual building level via Ethernet (LAN) and by using existing LAN networks.

Furthermore, the correct configuration of the N 146/02 IP router makes the commissioning of both large projects and smaller individual projects quicker and easier to manage.

An exchange of group address telegrams is still possible even if projects are broken down into individual projects, see Chapter "Appendix -> Application Examples".

Technical specifications

Type	Description
 N 140/03 N 140/13	<p>N 140/03, N140/13 line/backbone couplers¹⁾</p> <ul style="list-style-type: none"> For data exchange between two KNX bus lines with telegrams of up to 64 byte For use as line coupler for connecting a line to the main line or as backbone coupler for connecting a main line to the backbone line or as repeater for connecting two segments of the same line, with electrical isolation of the two bus lines Loadable filter table for control of the data exchange between the two bus lines Additional loadable filter table for telegrams with LTE addressing Detection of a communication fault on the lower-level line and signaling to the higher-level line 3 LEDs for display of availability and receipt of a telegram per line Power supply from the main line Modular installation device for mounting on TH35 EN 60715 mounting rail. <p><u>N 140/03 line/backbone couplers</u></p> <ul style="list-style-type: none"> With bus connection to the line via contact system for data rail and to the main line via bus terminal Width: 1 MW (1 MW = 18 mm). <p><u>N 140/13 line/backbone couplers</u></p> <ul style="list-style-type: none"> Bus connection to the line and to the main line via bus terminal Width: 2 MW (1 MW = 18 mm).
 N 146/02	<p>N 146/02 IP routers²⁾³⁾</p> <ul style="list-style-type: none"> For data exchange between two KNX bus lines with telegrams of up to 64 byte For interconnection of bus lines or bus areas via a fast multi-cast-capable data network (Ethernet 10BaseT) with Internet protocol (IP) Can be used as line, backbone or network coupler (worlds gateway) Loadable filter table for control of the data exchange between the two bus lines Additional loadable filter table for telegrams with LTE addressing Detection of a communication fault on the lower-level line and signaling to the higher-level line For communication between KNX devices and PCs and in conjunction with a LAN modem for remote access to a KNX installation Uses the KNXnet/IP protocol Assignment of the network parameters by the installer using ETS or automatically by a DHCP service in the network 5 LEDs for indicating that the device is ready-to-run, KNX communication and IP communication Electronics powered over an external power supply unit for 12... 30 V, unchoked voltage (57 mA at 24 V DC) or Power over Ethernet (PoE) (max. 0.8 W) Plug-in terminal block for the connection of an external power supply unit Integrated bus coupling units Bus connection via bus terminal Ethernet connection via RJ45 socket Modular installation devices for mounting on TH35 EN 60715 mounting rail Width: 2 MW (1 MW = 18 mm).

¹⁾ As far as the hardware is concerned, there is no difference between line coupler, backbone coupler or repeater. They therefore have the same order number. The function of the device is set during commissioning with the ETS.

²⁾ During configuration of the IP interface, the installer should carry out all the necessary settings; the network parameters can be assigned either by the installer via the ETS or automatically by a DHCP service in the network.




³⁾ The N 146/02 IP router can only function smoothly as a line coupler (KNXnet/IP routing) if it is equipped with network components that support IP multicasting. In particular, network/LAN routers must support or be configured so that they can relay IP multicast datagrams. The IP multicast address 224.0.23.12 is reserved internationally for KNXnet/IP routing.

For selection and ordering data, see page 14/14.





System Products and Accessories

Line couplers

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS* / P. unit	PG	Weight per PU approx. kg
	N 140/03 N 140/03 line/backbone couplers For data rail	A	5WG1 140-1AB03		1	1 unit	139	0.088
	N 140/13 N 140/13 line/backbone couplers	A	5WG1 140-1AB13		1	1 unit	139	0.107
	N 146/02 N 146/02 IP routers	A	5WG1 146-1AB02		1	1 unit	139	0.120





Technical specifications

					
Type	N 148/22	N 146/02	N 350E	N 151	
Enclosure data					
Design	N	N	N	N	
Modular installation devices for mounting on TH35 EN 60715 mounting rail	✓	✓	✓	✓	
Width (1 MW = 18 mm)	2 MW	2 MW	4 MW	4 MW	
Display/control elements					
LEDs for indicating that the device is ready-to-run, KNX communication, IP communication	✓	✓	✓	✓	
LCD	--	--	✓	--	
Power supply					
Electronics powered via an external nominal AC/DC power supply unit	V	24	24	24	24
Power consumption at 24 V DC	mA	57	57	60	60
Power supply for the electronics via "Power over Ethernet" according to IEEE 802.3af		✓ (0.8 W)	✓ (0.8 W)	--	--
Bus connection					
Integrated bus coupling units	✓	✓	✓	✓	
Bus connection via bus terminal	✓	✓	✓	✓	
Mains connection					
Ethernet connection via RJ45 socket	✓	✓	✓	✓	
Plug-in terminal block for the connection of an external power supply unit	✓	✓	✓	--	
Gateway					
Supports KNXnet/IP	✓	✓	✓	✓	
line coupler function (Routing)	--	✓	--	--	
Interface functions (Tunneling)	4	4	1	1	
Interface functions (object server)	1	1	1	1	
Integrated real-time clock weekly scheduling program for 100 scheduled entries/ Astro function	--	--	✓	--	
Yearly time switching functions	--	--	✓	--	
Event entries	--	--	200	--	
Logic gates	--	--	30	--	
Web servers	--	--	--	✓	

System Products and Accessories

Network gateways


Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 148/22 N 148/22 IP interfaces	A	5WG1 148-1AB22		1	1 unit	139	0.120
5WG1 148-1AB22								
	N 146/02 N 146/02 IP routers	A	5WG1 146-1AB02		1	1 unit	139	0.120
5WG1 146-1AB02								
	N 350E N 350E IP controllers ¹⁾ 30 logic gates, 200 event entries, weekly scheduling program, integrated IP interface	A	5WG1 350-1EB01		1	1 unit	139	0.182
5WG1 350-1EB01								
	N 151 N 151 IP viewers	A	5WG1 151-1AB01		1	1 unit	139	0.150
5WG1 151-1AB01								


¹⁾ The software required for parameter assignment via the Ethernet interface is available on CD-ROM and is included in delivery, or can be downloaded at www.siemens.com/gamma-td.

Cover strips

Technical specifications

Type	Description
 192	<p>192 cover strips</p> <p>For standard mounting rails</p> <ul style="list-style-type: none"> For covering free data rail segments (in accordance with the SELV regulations for safety extra-low voltage) For snapping onto standard mounting rails, separable, RAL 7035 Length: 13.5 MW (1 MW = 18 mm).


Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
 192	192 cover strips For standard mounting rails, length 242 mm	X	5WG1 192-8AA01		1	5 units	139	0.001


5WG1 192-8AA01

Bus terminals

Technical specifications

Type	Description
 193	<p>193 bus terminals</p> <ul style="list-style-type: none"> For connection of bus devices to the bus cable For connection of up to 4 bus cables Comprising two engaged clamp parts + (red) and - (dark gray), each with 4 screwless plug-in terminals per clamp part for solid conductors, \varnothing 0.6 mm ... 0.8 mm Dimensions (H x W x D): 12.4 x 10 x 10 mm.

Selection and ordering data



Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
 193	193 bus terminals 2-pole, 4 plug-in connections, red/dark gray	A	5WG1 193-8AB01		1	25 units	139	0.002

5WG1 193-8AB01


System Products and Accessories

Connectors

Technical specifications





Type	Description
 REG 191/01	REG 191/01 connectors Double <ul style="list-style-type: none"> • Flat connectors for fitting beneath distribution board covers. For connection of data rail and bus cable. Up to eight bus cables can be connected via two 193 bus terminals (must be ordered separately). • Width: 1 MW (1 MW = 18 mm).
 REG 191/11	REG 191/11 connectors 2 × double <ul style="list-style-type: none"> • Same as REG 191/01 connector, but with two additional connections for two low-voltage terminals (must be ordered separately). This allows the unchoked voltage to be taken from the data rail. • Width: 1 MW (1 MW = 18 mm).

Selection and ordering data





Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS* / P. unit	PG	Weight per PU approx. kg	
	REG 191/01	REG 191/01 connectors ® (to be discontinued) Double	A	5WG1 191-5AB01		1	1 unit	139	0.055
	REG 191/11	REG 191/11 connectors ® (to be discontinued) 2 × double	A	5WG1 191-5AB11		1	1 unit	139	0.057

5WG1 191-5AB01

Technical specifications

Type	Description
 190/1	190/1 data rails Without connector for TH35-7.5 standard mounting rail, flat <ul style="list-style-type: none"> For sticking (self-adhesive) in an EN 60715, TH35-7.5 flat standard mounting rail For interconnecting modular installation devices via their contact system
 190/2	190/2 data rails With connector for TH35-7.5 standard mounting rail, flat <ul style="list-style-type: none"> For sticking (self-adhesive) in an EN 60715, TH35-7.5 flat standard mounting rail 2 bus terminals (red/dark gray) for bus voltage 2 low-voltage terminals (white/yellow) for unchoked voltage For interconnecting modular installation devices via their contact system For connecting data rails to each other and to a bus cable.
 190/3	190/3 data rails Without connector for TH35-15 standard mounting rail, deep <ul style="list-style-type: none"> For sticking (self-adhesive) in an EN 60715, TH35-15 standard mounting rail, deep, mounting rail size 24 mm For interconnecting modular installation devices via their contact system
 190/4	190/4 data rails With connector for TH35-15 standard mounting rail, deep <ul style="list-style-type: none"> For sticking (self-adhesive) in an EN 60715, TH35-15 standard mounting rail, deep, mounting rail size 24 mm 2 bus terminals (red/dark gray) for bus voltage 2 low-voltage terminals (white/yellow) for unchoked voltage For interconnecting modular installation devices via their contact system For connecting data rails to each other and to a bus cable.

Selection and ordering data


Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
Data rails for TH35-7.5 standard mounting rails								
 190/1 SWG1 190-8AB01	190/1 data rails Without connector for TH35-7.5 standard mounting rail, flat							
	Versions							
	• Length: 214 mm (for max. 12 MW)	A	SWG1 190-8AB01		1	5 units	139	0.017
	• Length: 243 mm (for max. 13 MW)	B	SWG1 190-8AB11		1	5 units	139	0.021
	• Length: 277 mm (for max. 15 MW)	B	SWG1 190-8AB21		1	5 units	139	0.024
	• Length: 324 mm (for max. 18 MW)	B	SWG1 190-8AB31		1	5 units	139	0.033
• Length: 428 mm (for max. 24 MW)	B	SWG1 190-8AB41		1	5 units	139	0.039	
• Length: 464 mm (for max. 26 MW)	B	SWG1 190-8AB51		1	5 units	139	0.038	
 190/2 SWG1 190-8AB02	190/2 data rails With connector for TH35-7.5 standard mounting rail, flat							
	Versions							
	• Length: 214 mm (for max. 11 MW)	A	SWG1 190-8AB02		1	5 units	139	0.040
	• Length: 243 mm (for max. 12 MW)	B	SWG1 190-8AB12		1	5 units	139	0.040
	• Length: 277 mm (for max. 13 MW)	B	SWG1 190-8AB22		1	5 units	139	0.049
	• Length: 324 mm (for max. 17 MW)	B	SWG1 190-8AB32		1	5 units	139	0.043
• Length: 428 mm (for max. 23 MW)	B	SWG1 190-8AB42		1	5 units	139	0.047	
• Length: 464 mm (for max. 25 MW)	B	SWG1 190-8AB52		1	5 units	139	0.049	
Data rails for TH35-15 standard mounting rails, mounting rail size 24 mm								
 190/3 SWG1 190-8AB03	190/3 data rails Without connector for TH35-15 standard mounting rail, deep							
	Versions							
	• Length: 214 mm (for max. 12 MW)	A	SWG1 190-8AB03		1	5 units	139	0.044
	• Length: 243 mm (for max. 13 MW)	B	SWG1 190-8AB13		1	5 units	139	0.054
	• Length: 277 mm (for max. 15 MW)	B	SWG1 190-8AB23		1	5 units	139	0.064
	• Length: 324 mm (for max. 18 MW)	B	SWG1 190-8AB33		1	5 units	139	0.075
• Length: 428 mm (for max. 24 MW)	B	SWG1 190-8AB43		1	5 units	139	0.095	
• Length: 464 mm (for max. 26 MW)	B	SWG1 190-8AB53		1	5 units	139	0.110	
 190/4 SWG1 190-8AB04	190/4 data rails With connector for TH35-15 standard mounting rail, deep							
	Versions							
	• Length: 214 mm (for max. 11 MW)	A	SWG1 190-8AB04		1	5 units	139	0.067
	• Length: 243 mm (for max. 12 MW)	B	SWG1 190-8AB14		1	5 units	139	0.061
	• Length: 277 mm (for max. 13 MW)	B	SWG1 190-8AB24		1	5 units	139	0.070
	• Length: 324 mm (for max. 17 MW)	B	SWG1 190-8AB34		1	5 units	139	0.098
• Length: 428 mm (for max. 23 MW)	B	SWG1 190-8AB44		1	5 units	139	0.117	
• Length: 464 mm (for max. 25 MW)	B	SWG1 190-8AB54		1	5 units	139	0.107	

* You can order this quantity or a multiple thereof.

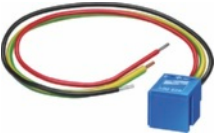
System Products and Accessories

Overvoltage protection

Technical specifications

Type	Description
 190	190 overvoltage protection, fine protection for bus devices <ul style="list-style-type: none"> • For the overvoltage fine protection of bus devices • For inserting in a bus device instead of a 193 bus terminal or for direct connection to a bus terminal • For surge protection through connection of the yellow/green ground conductor to the next grounding point • 2 socket contacts (1 mm Ø) for insertion in bus devices • 2 solid wires (0.8 mm Ø) for connection to the bus terminal <ul style="list-style-type: none"> • A solid wire (0.75 mm²) for surge protection • Rated voltage 24 V DC • Rated current 6 A • Rated discharge surge current 5 kA • Protection level 350 V • Dimensions (H x W x D): 10.5 x 11.6 x 11.1 mm.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
 5WG1 190-8AD01	190		190 overvoltage protection Fine protection for bus devices	B	5WG1 190-8AD01	1	1 unit	139	0.010 kg



15/2

Counters for electrical energy

Counters for electrical energy

Technical specifications

Description

**7KT PAC KNX expansion modules**

For connecting PAC1500 counters to KNX

The 7KT1 900 KNX communication module can be parameterized upwards of ETS 3.0 and provides the following values via communication objects:

- Active energy, input, Tariff 1 (phase 1, 2, 3 and sum)
- Active energy, input, Tariff 2 (phase 1, 2, 3 and sum)
- Active energy, output, Tariff 1 (phase 1, 2, 3 and sum)
- Active energy, output, Tariff 2 (phase 1, 2, 3 and sum)
- Reactive energy, input, Tariff 1 (phase 1, 2, 3 and sum)
- Reactive energy, input, Tariff 2 (phase 1, 2, 3 and sum)
- Reactive energy, output, Tariff 1 (phase 1, 2, 3 and sum)
- Reactive energy, output, Tariff 2 (phase 1, 2, 3 and sum)
- Active power (phase 1, 2, 3 and sum)
- Reactive power (phase 1, 2, 3 and sum)
- Can be retrofitted to already installed E-counters
- Data transmission between the counters and the expansion modules is implemented via the IrDA infrared interface
- Status indication by LED on the module
- Bus-powered electronics
- Integrated bus coupling units
- Bus connection via bus terminal
- Width 1 MW (1 MW = 18 mm)

**7KT PAC1500 single-phase counters**

- Compliant with the new counter standard EN 50470 (Part 1 and 3)
- Easy-to-read LCD display
- Versions calibrated in accordance with the new Measuring Instruments Directive 2004/22/EC (MID) can be used for invoicing purposes
- Exact recording thanks to accuracy class 1 (for active energy).
- Rated control supply voltage $U_n = 230$ V AC
- Voltage range 184 ... 276 V
- Rated frequency f_n 50 Hz
- Width 2 MW (1 MW = 18 mm)
- Modular installation devices for mounting on TH35 EN 60715 mounting rail

Versions

- For direct connection, double rate
- For direct connection, double rate, calibrated version

**7KT PAC1500 three-phase counters**




- Compliant with the new counter standard EN 50470 (Part 1 and 3)
- Easy-to-read LCD display
- Versions calibrated in accordance with the new Measuring Instruments Directive 2004/22/EC (MID) can be used for invoicing purposes
- Exact recording thanks to accuracy class 1 (for active energy).
- Rated control supply voltage $U_n = 230$ V AC
- Voltage range 184 ... 276 V
- Rated frequency f_n 50 Hz
- Width 4 MW (1 MW = 18 mm)
- Modular installation devices for mounting on TH35 EN 60715 mounting rail

Versions

- For direct connection, double rate
- For direct connection, double rate, calibrated version
- For transformer connection, double rate
- For transformer connection, double rate, calibrated version

Counters for electrical energy

Selection and ordering data

	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 7KT1 900		7KT1 900		1	1 unit	15C	0.064
		For connecting PAC1500 counters to KNX					
 7KT1 531		7KT1 531		1	1 unit	15C	0.164
		For direct connection, 80 A, double rate		1	1 unit	15C	0.190
		For direct connection, 80 A, double rate, calibrated version					
 7KT1 543		7KT1 543		1	1 unit	15C	0.419
		For direct connection, 80 A, double rate		1	1 unit	15C	0.419
		For direct connection, 80 A, double rate, calibrated version					
		For transformer connection, 5 A, double rate		1	1 unit	15C	0.289
		For transformer connection, 5 A, double rate, calibrated version		1	1 unit	15C	0.293
		For direct connection, 125 A, double rate		1	1 unit	15C	0.678
		For direct connection, 125 A, double rate, calibrated version		1	1 unit	15C	0.690

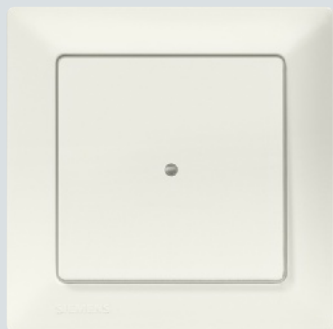
Counters

Notes

15

Radio System – GAMMA wave / Synco living KNX-RF


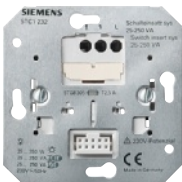





16



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	Display and operation units
16/6	Introduction
16/7	Pushbuttons
16/11	Pushbutton accessories
16/12	Remote controls
	Output devices
16/13	Introduction
16/14	Binary output devices
16/16	Socket outlet switches
	Input devices
16/17	Binary input devices
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16/18	Introduction
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16/20	Sun protection, anti-glare protection, utilization of daylight
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	Gateways, interface converters
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16/25	KNX/KNX-RF
16/26	EnOcean/KNX-RF
	System products
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16/28	Transmitters, receivers
16/30	Repeaters
16/31	Synco living – saving energy with attractive home automation

Introduction

Overview

Devices	Application	Page
<p>Display and operation units</p> 	Here you can find all you need to know about the display and operation units of GAMMA wave.	16/6
<p>Output devices</p> 	Whether binary output devices or socket outlet switches, this section covers every aspect of output devices.	16/13
<p>Input devices</p> 	Electrical operating states are recorded and any changes transmitted via bus.	16/17
<p>Devices for special applications</p> 	Whether for lighting, safety or sun/anti-glare protection, you will find everything you need here.	16/18
<p>Gateways, interface converters</p> 	Gateways ensure communication within the system, as well as with other systems.	16/24
<p>System products</p> 	Transmitters, receivers and repeaters round off the GAMMA wave system.	16/27
<p>Synco living – saving energy with attractive home automation</p> 	The home automation system Synco™ living enables ultra-convenient and demand-oriented adjustment and control of heating, ventilation and air-conditioning systems, as well as lighting, shutter/blinds and much, much more. This can save up to 30 % in heating energy, as well as reduce the CO ₂ emissions of your home. With Synco living, you can achieve energy efficiency class A acc. to EN 15232.	16/31

GAMMA wave and Synco living in combination**1 Central apartment unit**

The heart and mind of the system. This unit offers simple control and monitoring of all the functions in up to 12 rooms on a display.

**2 Room unit / room temperature sensor**

The room unit detects the room temperature and allows settings entered in the central apartment unit, such as temperatures and operating modes, to be adjusted for individual rooms. The comfort mode can be extended by simply pushing a button.



The room temperature sensor measures the room temperature and transmits it wirelessly to the central apartment unit.

3 Radiator control actuator

Detects the room temperature, receives the specified preferred temperature for the room wirelessly from the central apartment unit and controls the room temperature by adjusting the radiator valve settings. It can control up to five additional radiator actuators per room and therefore regulate the distribution of heat between the radiators.

**4 Heating circuit controller / multi-controller / consumption data interface**

The heating circuit controller compares the actual and set values transmitted wirelessly by the central apartment unit for each room and regulates the desired room temperature by adjusting the radiator valve settings.



The multi-controller can be used for presetting up to two independent hydraulic room groups (e. g. radiators, underfloor heating) or for controlling a ventilation system with up to three stages.

The consumption data interface gathers consumption data for heating/cooling, electricity, water and gas.

5 Web server

Connects the home automation system to the Internet, thus enabling remote control and operation and remote readouts of consumption data via the web.

**6 Socket outlet switches**

For the remote control of electrical devices connected to socket outlets and the wireless switching of lights. Can be operated using the central apartment unit, a hand-held transmitter or an external pushbutton, all via KNX radio.

**7 Weather sensor**

Detects the outdoor temperature and air pressure and transmits this information wirelessly to the central apartment unit.

**8 Smoke detector**

Detects smoke emitted by fires and activates an alarm. It transmits the alarm wirelessly to the Synco™ living central apartment unit. The central apartment unit can then transmit the alarm to one or more recipients via SMS, pager or e-mail.

**9 Radio integration systems for lights and shutters/blinds**

Enables convenient wireless control of lights and shutters/blinds - centrally, locally in individual rooms or as a preset scene. It goes without saying that the components can also be automated, e. g. using switching programs or presence simulation.

**10 Door/window contact**

Monitors the status of windows, doors and gates and transmits this information to the central apartment unit. In the event of any deviation from the preset values, you can program the system to alert you in a variety of ways. Saves energy, but never compromises on convenience.



You will find more information on Synco living at: www.siemens.com/syncoliving

Radio System – GAMMA wave / Synco living KNX-RF

Introduction

GAMMA wave – the multifunctional system

Enjoy all the advantages of a modern building management system without the need for additional cable installation – the GAMMA wave radio system makes it possible.

Sensors, actuators, etc. do not require any additional cable installation. This means that this type of radio transmission is particularly suitable for renovation work, the expansion of existing systems and all types of new installations. And all complete with absolutely failsafe and problem-free transmission.

Furthermore:

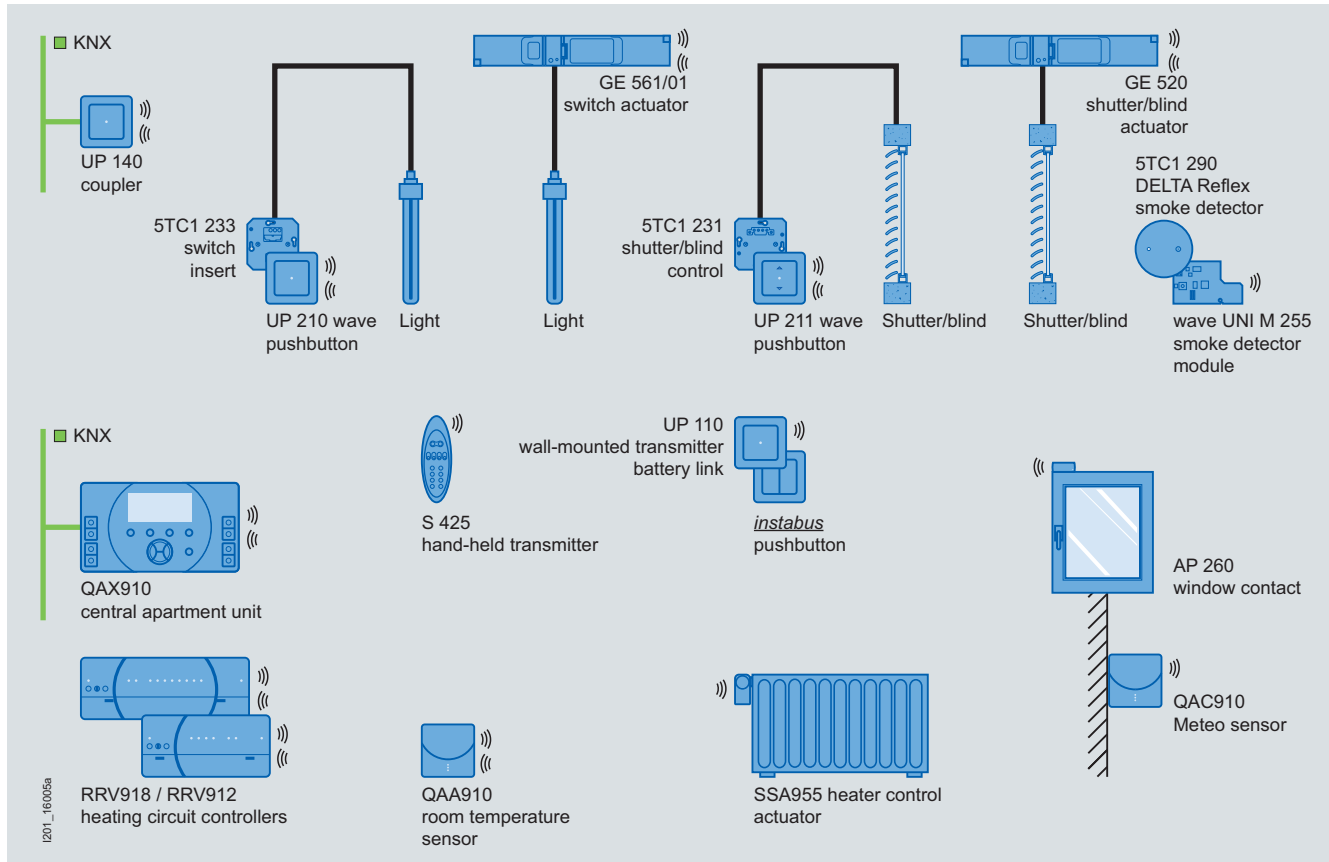
GAMMA wave is a unique bi-directional radio system – this means that the products and components can be both transmitter and receiver.

And:

GAMMA wave is based on the uniform standard for building management systems KNX in the 868.3 MHz range.

Synco living – Saving energy with attractive home automation

The home automation system Synco™ living enables ultra-convenient and demand-oriented adjustment and control of heating, ventilation and air-conditioning systems, as well as lighting, shutter/blinds and much, much more. This can save up to 30 % in heating energy, as well as reduce the CO₂ emissions of your home. With Synco living, you can achieve energy efficiency class A acc. to EN 15232.



The equipment range's pioneering technology makes it ideal for the renovation or conversion of room control functions in existing buildings.

These products offer simple installation and commissioning, thus enabling the wireless remote control of switching, dimming and shutter/blind/scene functions.

The system operates in the 868.3 MHz fail-safe frequency band that is reserved for safety and system applications. A sensor can control an unlimited number of actuators within its range (e. g. closed residential unit).

As well as wave pushbuttons for lighting control and wave shutter/blind pushbuttons for shutter/blind control, the range includes numerous wall-mounted transmitters, hand-held transmitters, door/window contacts and smoke detectors.

The wave pushbuttons and wave shutter/blind pushbuttons must be used in combination with universal dimmer sys inserts, switch sys inserts or shutter/blind control sys inserts. This enables the local operation and remote control of the inserts contained in these product lines, as well as the remote control of additional KNX-RF universal dimmers or switching or sys shutter/blind control inserts.

The *instabus* pushbuttons (single or double) must be plugged into the wave wall-mounted transmitters as an operator interface. In accordance with their intended purpose, pushbutton rockers enable the remote control of universal dimmer sys inserts, switch sys inserts or shutter/blind control sys inserts, which are equipped with wave pushbuttons or wave shutter/blind pushbuttons.

The device contact units are fitted with fixing claws and have a maximum mounting depth of 32 mm. This greatly facilitates mounting standard flush-mounting switch boxes.

GAMMA wave flush-mounting combinations

Operator interfaces	sys pushbuttons ¹⁾	UP 210 wave pushbutton	sys shutter/blind pushbuttons ¹⁾	UP 211 wave shutter/blind pushbutton	<i>instabus</i> pushbuttons, single, double
Device inserts					
Universal dimmer sys inserts	✓	✓	--	--	--
sys switching inserts	✓	✓	--	--	--
Shutter/blind control sys inserts	--	--	✓	✓	--
UP 110 wall-mounted transmitters "Batterie" wave	--	--	--	--	✓
UP 110 wall-mounted transmitters 230 V wave	--	--	--	--	✓
UP 560 wall-mounted transmitters "Aktor" 230 V wave	--	--	--	--	✓

¹⁾ See Chapter "DELTA Control and Regulation Devices".

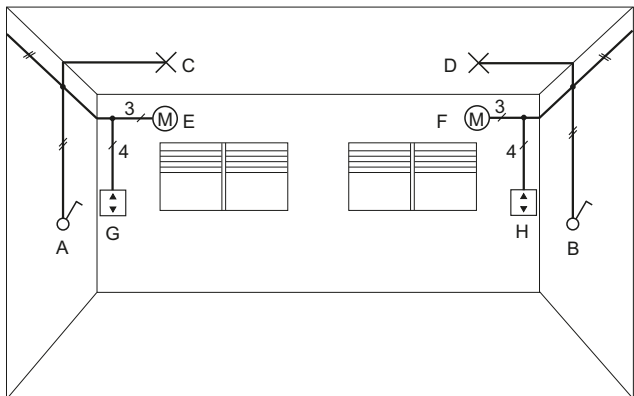
Previously**Lighting and shutter/blind control of a conventional installation**

Example of a conventional installation with lighting and electrically operated shutters/blinds.

- Light (C) can only be switched with switch (A)
- Light (D) can only be switched with switch (B)
- Shutter/blind (E) can only be moved with switch (G)
- Shutter/blind (F) can only be moved with switch (H)

Disadvantages

- Inflexible
- No convenience (each light must be switched individually)

**Now****Lighting and shutter/blind control with GAMMA wave ("bi-directional" radio system)**

Modification of the installation for shared operation of lighting and shutters/blinds from various operating points.

Replacement of conventional switch inserts (A, B) with

- Universal dimmer sys inserts
- DELTA UP 210 wave pushbuttons

Replacement of conventional shutter/blind switches (G, H) with

- Shutter/blind control sys inserts
- DELTA UP 211 wave shutter/blind pushbuttons

With this switch you can:

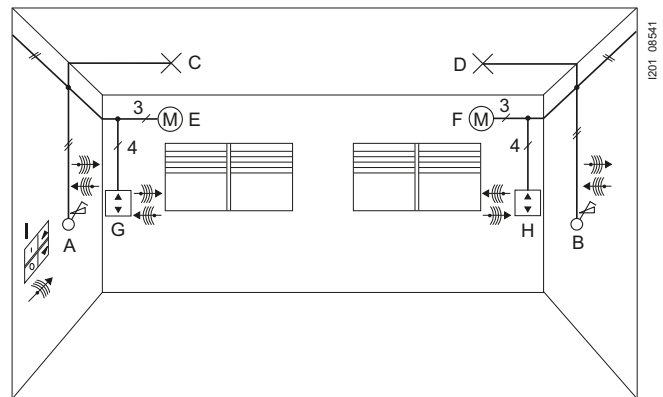
- Dim lights C and D from A and/or B
- Operate shutters/blinds E and F from G and/or H

For additional operation of the lights and shutters/blinds

- A UP 110 wall-mounted transmitter "Batterie" wave (I) with mounted double *instabus* pushbutton must be installed

Advantages

- Flexible
- Greater operational ease
- Supports group formation
- Few devices required/lower costs
- Simple and clean retrofitting – no structural alterations required






Radio System – GAMMA wave / Synco living KNX-RF

Display and Operation Units

Introduction

Overview







Devices	Application	Page
<p>Pushbuttons</p> 	<p>Radio control of lighting and shutters/blinds using the radio pushbuttons from the DELTA product ranges.</p>	<p>16/7</p>
<p>Pushbutton accessories</p> 	<p>Surface-mounting enclosure or blanking cover plate – you choose.</p>	<p>16/11</p>
<p>Remote controls</p> 	<p>The wave hand-held transmitter supports wireless operation of up to 17 different room functions.</p>	<p>16/12</p>

Radio System – GAMMA wave / Synco living KNX-RF

Display and Operation Units

Pushbuttons



Technical specifications

Design	i-system		DELTA profil/style			
						
Type	UP 221	UP 222	UP 241	UP 285	UP 243	UP 286
Application program	211501	221501	211301	907402	221301	907502
Enclosure data						
Dimensions						
• Height	mm	55	65 (DELTA profil), 68 (DELTA style)			
• Width	mm	55	65 (DELTA profil), 68 (DELTA style)			
• Depth	mm	11	14			
Display/control elements						
Individual pushbuttons	2	4	2	2	4	4
Pushbutton pairs	1	2	1	1	2	2
Operation (v: vertical, h: horizontal)	h	h	v	v	v	v
LED per pushbutton pair for status indication or configurable as orientation light	--	--	✓	✓	✓	✓
Separate LED for orientation light (ON/OFF configurable)	✓	✓	✓	✓	✓	✓
Labeling field	✓	✓	✓	✓	✓	✓
Bus connection						
Plug onto UP 110 bus coupling unit	✓	✓	✓	--	✓	--
Plug onto UP 114 bus coupling unit	✓	✓	✓	✓	✓	✓
General functions						
Max. number of group addresses	9	9	13	38	13	38
Max. number of assignments	9	9	13	38	13	38
Input functions						
Switching						
Switching ON/OFF	✓	✓	✓	✓	✓	✓
Switching OVER	✓	✓	✓	✓	✓	✓
Pushbutton function (bell function)	--	--	--	✓	--	✓
Dimming						
Dimming with stop telegram (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	✓	✓	✓	✓	✓	✓
Dimming with cyclic transmission (4-bit) Short button press, ON/OFF Long button press, BRIGHTER/DARKER	--	--	✓	✓	✓	✓
Value transmission						
Value transmission (8-bit)	✓	✓	--	✓	--	✓
Shutter/blind						
Shutter/blind control Short button press, slat OPEN/CLOSED or STOP Long button press, UP/DOWN	✓	✓	✓	✓	✓	✓
Scene						
Store and call up scene, 8-bit	2	4	--	--	--	--
Store and call up scene, 1-bit in conjunction with scene module	2	4	--	2	--	4
Short or long button press (store/call up scene), configurable	✓	✓	✓	✓	✓	✓
Status						
Display of any status objects (1-bit)	--	--	✓	✓	--	✓
Display of pushbutton objects	--	--	✓	✓	✓	✓

Radio System – GAMMA wave / Synco living KNX-RF

Display and Operation Units

Pushbuttons

Type	Description
 UP 210	UP 210 wave pushbuttons <ul style="list-style-type: none"> For local and remote operation of a sys switching insert or universal dimmer sys insert via KNX-RF Pushbutton rocker, single with intermediate position Vertical operation With switchover, switchover and dimming, with short and long button press for switching over and BRIGHTER/DARKER when dimming, with adjustable timer function with an overrun time of 1 ... 60 min <ul style="list-style-type: none"> 1 LED for indication of different operating states KNX-RF transmitter/receiver for 868.3 MHz Commissioning by pressing the pushbutton surface 10-pole plug for clipping onto a sys switching insert or universal dimmer sys insert
 UP 211	UP 211 wave shutter/blind pushbuttons <ul style="list-style-type: none"> For local and remote operation of a shutter/blind control sys insert via KNX-RF Pushbutton rocker, single with intermediate position Vertical operation With short and long button press for shutter/blind control functions for UP/DOWN and the adjustment of slats <ul style="list-style-type: none"> 24-hour automatic operation for raising and lowering of shutters/blinds 1 LED for indication of different operating states KNX-RF transmitter/receiver for 868.3 MHz Commissioning by pressing the pushbutton surface 10-pole plug for clipping onto a shutter/blind control sys insert

	i-system	DELTA profil	DELTA style
Dimensions			
• Height	mm 55	65	68
• Width	mm 55	65	68
• Depth	mm 13	14	16.5

GAMMA wave flush-mounting combinations

Operator interfaces	sys pushbuttons ¹⁾	UP 210 wave pushbutton	sys shutter/blind pushbuttons ¹⁾	UP 211 wave shutter/blind pushbutton	<i>instabus</i> pushbuttons, single, double
Device inserts					
Universal dimmer sys inserts	✓	✓	--	--	--
sys switching inserts	✓	✓	--	--	--
Shutter/blind control sys inserts	--	--	✓	✓	--
UP 110 wall-mounted transmitters "Batterie" wave	--	--	--	--	✓
UP 110 wall-mounted transmitters 230 V wave	--	--	--	--	✓
UP 560 wall-mounted transmitters "Aktor" 230 V wave	--	--	--	--	✓


¹⁾ See Chapter "DELTA Control and Regulation Devices".

Radio System – GAMMA wave / Synco living KNX-RF

Display and Operation Units

Pushbuttons

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
i-system									
	UP 210 UP 210 wave pushbuttons¹⁾³⁾ (to be discontinued) Versions								
		• Titanium white	A	5WG3 210-2HB11		1	1 unit	138	0.056
		• Aluminum metallic	B	5WG3 210-2HB31		1	1 unit	138	0.058
5WG3 210-2HB11									
	UP 211 UP 211 wave shutter/blind pushbuttons²⁾³⁾ (to be discontinued) Versions								
		• Titanium white	A	5WG3 211-2HB11		1	1 unit	138	0.055
		• Aluminum metallic	B	5WG3 211-2HB31		1	1 unit	138	0.058
5WG3 211-2HB11									
	UP 221/2 UP 221/2 pushbuttons³⁾⁴⁾ (to be discontinued) Versions								
		• Titanium white	A	5WG1 221-2AB11		1	1 unit	138	0.045
		• Aluminum metallic	A	5WG1 221-2AB31		1	1 unit	138	0.045
5WG1 221-2AB11									
	UP 222/2 UP 222/2 pushbuttons³⁾⁴⁾ (to be discontinued) Versions								
		• Titanium white	A	5WG1 222-2AB11		1	1 unit	138	0.057
		• Aluminum metallic	A	5WG1 222-2AB31		1	1 unit	138	0.046
5WG1 222-2AB11									
DELTA profil									
	UP 210 UP 210 wave pushbuttons¹⁾³⁾ (to be discontinued) Versions								
		• Titanium white	A	5WG3 210-2AB11		1	1 unit	138	0.058
		• Silver	B	5WG3 210-2AB71		1	1 unit	138	0.062
5WG3 210-2AB11									
	UP 211 UP 211 wave shutter/blind pushbuttons²⁾³⁾ (to be discontinued) Versions								
		• Titanium white	A	5WG3 211-2AB11		1	1 unit	138	0.062
		• Silver	B	5WG3 211-2AB71		1	1 unit	138	0.060
5WG3 211-2AB11									

1) The sys switching insert and universal dimmer sys inserts must be ordered separately.

2) The shutter/blind control sys inserts must be ordered separately.







3) The matching design frame must be ordered separately.

4) The matching flush-mounting device (e. g. wall-mounted transmitter or flush-mounting actuator) must be ordered separately.

Radio System – GAMMA wave / Synco living KNX-RF

Display and Operation Units

Pushbuttons

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	UP 241 UP 241 pushbuttons¹⁾ (to be discontinued) Titanium white	A	5WG1 241-2AB11		1	1 unit	138	0.059
5WG1 241-2AB11								
	UP 243 UP 243 pushbuttons¹⁾ (to be discontinued) Titanium white	A	5WG1 243-2AB11		1	1 unit	138	0.058
5WG1 243-2AB11								
DELTA style								
	UP 210 UP 210 wave pushbuttons¹⁾²⁾ (to be discontinued) Versions							
	• Titanium white	A	5WG3 210-2GB11		1	1 unit	138	0.063
	• Platinum metallic	B	5WG3 210-2GB41		1	1 unit	138	0.035
5WG3 210-2GB11								
	UP 211 UP 211 wave shutter/blind pushbuttons¹⁾³⁾ (to be discontinued) Versions							
	• Titanium white	A	5WG3 211-2GB11		1	1 unit	138	0.061
	• Platinum metallic	B	5WG3 211-2GB41		1	1 unit	138	0.035
5WG3 211-2GB11								
	UP 285 UP 285 pushbuttons¹⁾ (to be discontinued) Versions							
	• Titanium white	A	5WG1 285-2AB11		1	1 unit	138	0.065
	• Platinum metallic	B	5WG1 285-2AB41		1	1 unit	138	0.036
5WG1 285-2AB11								
	UP 286 UP 286 pushbuttons¹⁾ (to be discontinued) Versions							
	• Titanium white	A	5WG1 286-2AB11		1	1 unit	138	0.064
	• Platinum metallic	B	5WG1 286-2AB41		1	1 unit	138	0.036
5WG1 286-2AB11								

5WG1 286-2AB11

¹⁾ The matching design frame and flush-mounting device (e. g. wall-mounted transmitter or flush-mounting actuator) must be ordered separately.

²⁾ The sys switching insert and universal dimmer sys inserts must be ordered separately.

³⁾ The shutter/blind control sys inserts must be ordered separately.

Radio System – GAMMA wave / Synco living KNX-RF




Display and Operation Units

Pushbutton accessories

Technical specifications

		Blanking cover plates			Surface-mounting enclosures
		i-system	DELTA profil	DELTA style	DELTA profil
Dimensions					
• Height	mm	55	65	68	80
• Width	mm	55	65	68	80
• Depth	mm	--	--	--	30

Selection and ordering data


Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
i-system								
Blanking cover plates								
Versions								
• Titanium white		A	5TG2 558		1	1/10 units	135	0.057
• Aluminum metallic		A	5TG1 250		1	1/10 units	135	0.053
								
5TG2 558								
DELTA profil								
Blanking cover plates								
Versions								
• Titanium white		A	5TG1 810		1	1/10 units	135	0.058
• Silver		A	5TG1 770		1	1/10 units	135	0.057
								
5TG1 810								
DELTA style								
Blanking cover plates								
Titanium white		A	5TG1 330		1	1/10 units	135	0.060
								
5TG1 330								

Radio System – GAMMA wave / Synco living KNX-RF


Display and Operation Units

Remote controls

Technical specifications

Type	Description
 S 425	<p>S 425 wave hand-held radio transmitters</p> <ul style="list-style-type: none"> • 4 preselection pushbuttons and 4 pushbutton pairs for wireless operation of 16 different room functions • Separate pushbutton pair for a central function (e. g. central ON/OFF) • Configurable function per pushbutton pair: switch, switch and dim, shutter/blind control, store and call up scenes • Radio transmitter: 868.3 MHz • Dimensions (H x W x D): 154 x 55 x 24 mm.



Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	S 425							kg
	S 425 wave hand-held radio transmitters¹⁾ (to be discontinued) 17 channels							
	<p>Versions</p> <ul style="list-style-type: none"> • Black • Silver 	B	5WG3 425-7AB21		1	1 unit	139	0.131
		B	5WG3 425-7AB71		1	1 unit	139	0.132

5WG3 425-7AB21

¹⁾ The 2 batteries of type LR03/AAA (1.5 V) required for operation are included in delivery.

Overview





Devices	Application	Page
<p>Binary output devices</p>  <p>The image shows a Siemens 5TC1 231 binary output device. It is a rectangular metal component with a terminal block on top for wiring. The terminal block has terminals labeled N, A, T, G, L. Below the terminal block, there are two small switches labeled 'ON' and 'OFF'. The device has a CE mark and 'Siemens' branding.</p>	<p>For ON/OFF switching of actuators via GAMMA wave.</p>	<p>16/14</p>
<p>Socket outlet switches</p>  <p>The image shows a Siemens socket outlet switch. It is a white, rectangular wall-mounted device. It features a red 'ON' button and a white 'OFF' button at the top. Below the buttons is a standard two-hole socket outlet. The device has a CE mark and 'Siemens' branding.</p>	<p>For the wireless switching of devices that are plugged into a socket outlet.</p>	<p>16/16</p>

Radio System – GAMMA wave / Synco living KNX-RF

Output Devices

Binary output devices

Technical specifications

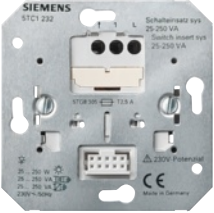



Type	Description
	<p>sys switching inserts</p> <p>Flush mounting</p> <ul style="list-style-type: none"> For the switching of incandescent lamps, HV and LV halogen lamps with electronic or conventional transformers, rated operational voltage 230 V AC 2-wire connection method Short-circuit protection through miniature fuse with spare fuse Secondary input for additional operation using conventional pushbuttons 10-pole socket for plugging in a UP 210 wave pushbutton for local and remote control via KNX-RF For mounting in an installation box (∅ 60 mm, depth: 40 mm) with screw or claw fixing Dimensions (H x W x D): 71 x 71 x 32 mm.
	<p>UP 560 wall-mounted transmitters "Aktor" 230 V wave</p> <p>Flush mounting</p> <ul style="list-style-type: none"> For the wireless operation of up to 2 different room functions and for the control of actuators via KNX-RF 10-pole plug-in connector for plugging in an <i>instabus</i> pushbutton, single or double, as operator interface Adjustable function; switching, switching and dimming, shutter/blind control and scene control Short and long button press for ON/OFF, BRIGHTER/DARKER for dimming or UP/DOWN and adjustment of slats for shutter/blind control Storage and call up of up to four scenes With integrated switch actuator with relay contact, rated for 230 V AC, 6 A (resistive load), with option for setting whether load should be permanently switched on or off (normal mode) or whether actuator should operate in timer mode with an adjustable ON period of 1, 5 or 15 minutes KNX-RF transmitter/receiver for 868.3 MHz Electronics powered via 230 V AC Commissioning using six DIL switches located on the front panel – no additional aids required For mounting in an installation box (∅ 60 mm, depth: 40 mm) with screw or claw fixing Dimensions (H x W x D): 71 x 71 x 32 mm.
	<p>GE 561/01 wave switch actuators</p> <p>2 x 230 V AC, 16 A</p> <ul style="list-style-type: none"> KNX-RF transmitter/receiver for 868.3 MHz One relay contact per output Contact rated operational voltage, 230 V AC Rated current 16 A at p.f. = 1 With option for setting whether load should be permanently switched ON or OFF (normal mode) or whether actuator should operate in timer mode with an adjustable ON period of 1 ... 60 minutes Electronics powered via 230 V AC Commissioning using a pushbutton located on the top – no additional aids required Modular installation device Dimensions (W x H x L): 42 x 32 x 274.5 mm.
	<p>GE 561/11 wave switch actuators</p> <p>2 x 230 V AC, 16 A, with EnOcean receiver</p> <ul style="list-style-type: none"> KNX-RF transmitter/receiver for 868.3 MHz EnOcean radio receiver for 868.3 MHz Converter of EnOcean radio to KNX-RF for the control of KNX radio actuators over EnOcean radio pushbuttons Control of internal actuator channels via KNX and/or EnOcean radio pushbuttons One relay contact per output Contact rated operational voltage, 230 V AC Rated current 16 A at p.f. = 1 With option for setting whether load should be permanently switched ON or OFF (normal mode) or whether actuator should operate in timer mode with an adjustable ON period of 1 ... 60 minutes Electronics powered via 230 V AC Commissioning using a pushbutton located on the top – no additional aids required Modular installation device Dimensions (W x H x L): 42 x 32 x 274.5 mm.

GAMMA wave flush-mounting combinations

Operator interfaces	sys pushbuttons ¹⁾	UP 210 wave pushbutton	sys shutter/blind pushbuttons ¹⁾	UP 211 wave shutter/blind pushbutton	<i>instabus</i> pushbuttons, single, double
Device inserts					
Universal dimmer sys inserts	✓	✓	--	--	--
sys switching inserts	✓	✓	--	--	--
Shutter/blind control sys inserts	--	--	✓	✓	--
UP 110 wall-mounted transmitters "Batterie" wave	--	--	--	--	✓
UP 110 wall-mounted transmitters 230 V wave	--	--	--	--	✓
UP 560 wall-mounted transmitters "Aktor" 230 V wave	--	--	--	--	✓

¹⁾ See Chapter "DELTA Control and Regulation Devices".

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg	
	sys switching inserts¹⁾²⁾ Flush mounting								
	Versions								
	<ul style="list-style-type: none"> Rated operational power 25 ... 250 VA Rated operational power 15 ... 500 VA (for toroidal core transformers 15 ... 250 VA) 	A	5TC1 232		1	1 unit	146	0.100	
		A	5TC1 233		1	1 unit	146	0.101	
5TC1 232									
	UP 560	UP 560 wall-mounted transmitters "Aktor" 230 V wave¹⁾³⁾ (to be discontinued) Flush mounting	A	5WG3 560-2AB01		1	1 unit	139	0.106
	5WG3 560-2AB01								
	GE 561/01	GE 561/01 wave switch actuators (to be discontinued) 2 x 230 V AC, 16 A	A	5WG3 561-4AB01		1	1 unit	139	0.229
	5WG3 561-4AB01								
	GE 561/11	GE 561/11 wave switch actuators⁴⁾ 2 x 230 V AC, 16 A, with EnOcean receiver	A	5WG3 561-4AB11		1	1 unit	139	0.249
	5WG3 561-4AB11								

1) The matching design frame must be ordered separately.

2) The UP 210 wave pushbutton with KNX-RF communication must be ordered separately.

3) The *instabus* pushbuttons must be ordered separately, see page 16/9.


4) For more products, see Chapter "Radio system – EnOcean".

Radio System – GAMMA wave / Synco living KNX-RF


Output Devices

Socket outlet switches

Technical specifications

Type	Description
 S 564	S 564 wave socket outlet switches <ul style="list-style-type: none"> • For plugging into a grounding contact socket outlet • Switchable SCHUKO socket outlet integrated in the intermediate connector • Integrated actuator for ON/OFF switching of SCHUKO socket outlet, relay contact rated for 230 V AC, 16 A (resistive load) • Can also be controlled via up to 10 KNX sensors and be integrated into up to 16 KNX scenes • Pushbutton for local operation and commissioning – no additional aids required • LED to indicate the operation/switching state • KNX-RF transmitter/receiver 868.3 MHz • Powered over socket outlet • Titanium white • Dimensions (H x W x D): 128 x 72 x 74 mm.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
	S 564	S 564 wave socket outlet switches (to be discontinued) Intermediate connectors	A	5WG3 564-7AB11		1	1 unit	139	0.239


5WG3 564-7AB11

Radio System – GAMMA wave / Synco living KNX-RF


Input Devices

Binary input devices

Technical specifications

Type	Description
 AP 261	AP 261 wave binary inputs With battery, surface mounting <ul style="list-style-type: none"> For detecting the state of an external contact connected to the sensor and transmission of the state as ON/OFF information to an actuator with KNX radio communication Additional reed contact integrated in the device, activated through the solenoid included in delivery, and electrically connected in series to the external contact 4 plug-in terminals for wire cross-sections of 0.14 ... 0.5 mm² (solid or finely stranded) for connection of the external contact and to allow a wire jumper to be used to set, whether monitoring is to cover internal contact only, external contact only, or both contacts KNX-RF transmitter for 868.3 MHz Electronics powered by a lithium battery (1/2 AA 3.6 V), with a battery service life of approx. 5 years, with signaling of battery status every 24 hours, and with an LED that flashes every 10 seconds to indicate that the battery needs replacing Commissioning using a pushbutton located on the front of the sensor – no additional aids required Comprising one mounting plate for screw or adhesive fastening, clip-on radio sensor with integrated reed contact and trigger solenoid Titanium white Dimensions (H x W x D): sensor 87 x 36 x 27 mm, magnet 40 x 10 x 10 mm.

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 AP 261	AP 261 wave binary inputs¹⁾ (to be discontinued) With battery	A	5WG3 261-3AB11		1	1 unit	139	0.100

5WG3 261-3AB11




¹⁾ Battery included in delivery.

Radio System – GAMMA wave / Synco living KNX-RF

Devices for Special Applications

Introduction

Overview


Devices	Application	Page
<p>Lighting</p> 	<p>The universal dimmer sys insert is a flush-mounting device for switching and dimming.</p>	<p>16/19</p>
<p>Sun protection, anti-glare protection, utilization of daylight</p> 	<p>Sun and anti-glare protection is provided by the appropriate actuators and sensors.</p>	<p>16/20</p>
<p>Safety</p> 	<p>These components for GAMMA wave offer protection against intrusion and fire.</p>	<p>16/22</p>

Radio System – GAMMA wave / Synco living KNX-RF

Devices for Special Applications

Lighting

Technical specifications


Type	Description
	<p>Universal dimmer sys inserts</p> <p>Flush mounting</p> <ul style="list-style-type: none"> For the switching and dimming of incandescent lamps, HV and LV halogen lamps with electronic or conventional transformers, rated operational voltage 230 V AC, rated operational power 50 ... 420 VA for incandescent lamp load and for LV halogen lamps with conventional transformers and 70 ... 420 VA for LV halogen lamps with electronic transformer 2-wire connection method Automatic load detection Lamp friendly soft start <ul style="list-style-type: none"> Storing and switching on at one brightness value Electronic short-circuit and over temperature protection 10-pole socket for plugging in a UP 210 wave pushbutton for local and remote control via KNX-RF Secondary input for additional operation using conventional pushbuttons For mounting in an installation box (Ø 60 mm, depth: 40 mm) with screw or claw fixing Dimensions (H x W x D): 71 x 71 x 32 mm

GAMMA wave flush-mounting combinations

Operator interfaces	sys pushbuttons ¹⁾	UP 210 wave pushbutton	sys shutter/blind pushbuttons ¹⁾	UP 211 wave shutter/blind pushbutton	instabus pushbuttons, single, double
Device inserts					
Universal dimmer sys inserts	✓	✓	--	--	--
sys switching inserts	✓	✓	--	--	--
Shutter/blind control sys inserts	--	--	✓	✓	--
UP 110 wall-mounted transmitters "Batterie" wave	--	--	--	--	✓
UP 110 wall-mounted transmitters 230 V wave	--	--	--	--	✓
UP 560 wall-mounted transmitters "Aktor" 230 V wave	--	--	--	--	✓

¹⁾ See Chapter "DELTA Control and Regulation Devices".

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 <p>Universal dimmer sys inserts¹⁾ Flush mounting</p>	A	5TC1 230		1	1 unit	146	0.099

5TC1 230




¹⁾ The UP 210 wave pushbutton and matching frame must be ordered separately. Battery included in delivery.

Radio System – GAMMA wave / Synco living KNX-RF

Devices for Special Applications

Sun protection, anti-glare protection,
utilization of daylight

Technical specifications

Type	Description
 GE 520	<p>GE 520 wave shutter/blind actuators 1 x 230 V AC, 6 A</p> <ul style="list-style-type: none"> • KNX-RF transmitter/receiver for 868.3 MHz • For control of a sun protection drive with AC motor for 230 V AC and electromechanical limit switches • Electrically interlocked relays for reversing direction of rotation <ul style="list-style-type: none"> • Relay contacts designed for rated voltage 230 V AC, 6 A • Electronics powered via 230 V AC • Commissioning using a pushbutton located on the top – no additional aids required • Dimensions (H x W x L): 42 x 32 x 274.5 mm
	<p>Shutter/blind control sys inserts Flush mounting</p> <ul style="list-style-type: none"> • For control of sun/anti-glare protection drive for 230 V AC with mechanical or electronic limit switches, rated operational voltage 230 V AC, rated operational power 1 motor with max. 1000 VA, with 2 electrically interlocked relays with a minimum switchover time of approx. 1 s • Secondary input for additional operation using conventional UP/DOWN pushbuttons, with "wind alarm" safety function, which can be implemented through the secondary input "UP" <ul style="list-style-type: none"> • 10-pole socket for plugging in a UP 211 wave shutter/blind pushbutton for local and remote control via KNX radio • For mounting in an installation box (Ø 60 mm, depth: 40 mm) with screw or claw fixing • Dimensions (H x W x D): 71 x 71 x 32 mm
 AP 260	<p>AP 260 wave door/window contacts With battery, surface mounting</p> <ul style="list-style-type: none"> • For detecting the state (closed/open) of a door or window via the reed contact integrated in the device, with actuation of the reed contact through the supplied magnet for attachment to the moving part of the door or window • Connection for an external floating contact • Transmission of the switching state to a shutter/blind sys insert with clipped on wave shutter/blind pushbutton • 4 plug-in terminals for wire cross-sections (solid or finely stranded) of 0.14 ... 0.5 mm² for connection of the external contact and to allow setting via a wire jumper, whether monitoring is to cover internal contact only, external contact only, or both contacts <ul style="list-style-type: none"> • KNX-RF transmitter for 868.3 MHz • Electronics powered by a lithium battery (1/2 AA 3.6 V), with a battery service life of approx. 5 years, with signaling of battery status every 24 hours, and with an LED that flashes every 10 seconds to indicate that the battery needs replacing • Commissioning using a pushbutton located on the front of the sensor – no additional aids required • Surface mounting • Comprising one mounting plate for screw or adhesive fastening, clip-on radio sensor with integrated reed contact and trigger solenoid • Dimensions (H x W x D): Sensor 87 x 36 x 27 mm, magnet 40 x 10 x 10 mm

GAMMA wave flush-mounting combinations

Operator interfaces	sys pushbuttons ¹⁾	UP 210 wave pushbutton	sys shutter/blind pushbuttons ¹⁾	UP 211 wave shutter/blind pushbutton	instabus pushbuttons, single, double
Device inserts					
Universal dimmer sys inserts	✓	✓	--	--	--
sys switching inserts	✓	✓	--	--	--
Shutter/blind control sys inserts	--	--	✓	✓	--
UP 110 wall-mounted transmitters "Batterie" wave	--	--	--	--	✓
UP 110 wall-mounted transmitters 230 V wave	--	--	--	--	✓
UP 560 wall-mounted transmitters "Aktor" 230 V wave	--	--	--	--	✓




¹⁾ See Catalog ET D1.

Radio System – GAMMA wave / Synco living KNX-RF

Devices for Special Applications

Sun protection, anti-glare protection,
utilization of daylight

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
	GE 520	GE 520 wave shutter/blind actuators (to be discontinued) 1 x 230 V AC, 6 A	A	5WG3 520-4AB01		1	1 unit	139	0.220
5WG3 520-4AB01									
		Shutter/blind control sys inserts ¹⁾²⁾ Flush mounting	A	5TC1 231		1	1 unit	146	0.111
5TC1 231									
	AP 260	AP 260 wave door/window contacts ³⁾ For surface mounting, titanium white, with battery	A	5WG3 260-3AB11		1	1 unit	139	0.100
5WG3 260-3AB11									

¹⁾ Matching frames must be ordered separately.

²⁾ UP 211 wave shutter/blind pushbuttons must be ordered separately.





³⁾ Battery included in delivery.

Radio System – GAMMA wave / Synco living KNX-RF

Devices for Special Applications

Safety

Technical specifications





Type	Description
	<p>DELTA reflex smoke detectors "Batterie"</p> <p>Surface mounting</p> <ul style="list-style-type: none"> • For early detection of fires in buildings, with optical measuring method for smoke detection • VdS approval • Integrated acoustic alarm signal generator • Alarm/acknowledge pushbutton and integrated LED for display of normal mode, smoke alarm and weak battery • Base for surface mounting and a screw-on sensor head <p>Accessories</p> <ul style="list-style-type: none"> • Interface and plug-in terminals for networking up to 40 detectors via a 2-wire cable with an overall length of up to 400 m • Module slot for insertion of a smoke detector module "Relais" or a wave smoke detector module • Electronics powered by three Mignon batteries (AA 1.5 V), with a battery service life of 5 years • Dimensions in mm: Ø 120, height 44
	<p>Smoke detector modules "Relais"</p> <ul style="list-style-type: none"> • For insertion in the DELTA reflex smoke detector "Batterie" • For connection of external alarm sensors, such as horns, sirens and signal generators • Floating changeover contact, switching voltage up to 30 V DC/42 V AC, switching current up to DC 1 A/AC 0.5 A <ul style="list-style-type: none"> • Terminals for cables with Ø 0.4 ... 0.8 mm • Powered via smoke detector • Dimensions (H x W): 43 x 38 mm
 M 255	<p>DELTA reflex UNI M 255 wave smoke detector modules</p> <ul style="list-style-type: none"> • Radio modules with KNX-RF transmitter for 868.3 MHz • For insertion in the DELTA reflex smoke detector "Batterie" • Alarm transmission via KNX-RF when a smoke alarm is triggered at the smoke detector • Transmission of the battery status of the smoke detector via KNX-RF <ul style="list-style-type: none"> • Commissioning using a pushbutton – no additional aids required • Powered via smoke detector • Dimensions (H x W x D): 63 x 38 x 15 mm
 AP 260	<p>AP 260 wave door/window contacts</p> <p>With battery, surface mounting</p> <ul style="list-style-type: none"> • For detecting the state (closed/open) of a door or window via the reed contact integrated in the device, with actuation of the reed contact through the supplied magnet for attachment to the moving part of the door or window • Connection for an external floating contact • Transmission of the switching state to a shutter/blind sys insert with clipped on wave shutter/blind pushbutton • 4 plug-in terminals for wire cross-sections (solid or finely stranded) of 0.14 ... 0.5 mm² for connection of the external contact and to allow setting via a wire jumper, whether monitoring is to cover internal contact only, external contact only, or both contacts <ul style="list-style-type: none"> • KNX-RF transmitter for 868.3 MHz • Electronics powered by a lithium battery (1/2 AA 3.6 V), with a battery service life of approx. 5 years, with signaling of battery status every 24 hours, and with an LED that flashes every 10 seconds to indicate that the battery needs replacing • Commissioning using a pushbutton located on the front of the sensor – no additional aids required • Comprising one mounting plate for screw or adhesive fastening, clip-on radio sensor with integrated reed contact and trigger solenoid • Dimensions (H x W x D): Sensor 87 x 36 x 27 mm, magnet 40 x 10 x 10 mm

Radio System – GAMMA wave / Synco living KNX-RF

Devices for Special Applications

Safety

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	DELTA reflex smoke detectors "Batterie"¹⁾ Surface mounting, Titanium white (to be discontinued)	A	5TC1 290		1	1 unit	146	0.373
5TC1 290	Accessories							
	Smoke detector modules "Relais"²⁾ (to be discontinued)	A	5TC1 291		1	1 unit	146	0.043
5TC1 291								
	M 255 DELTA reflex UNI M 255 wave smoke detector modules²⁾ (to be discontinued)	A	5WG3 255-8AB01		1	1 unit	139	0.044
5WG3 255-8AB01								
	AP 260 AP 260 wave door/window contacts¹⁾ For surface mounting, titanium white, with battery	A	5WG3 260-3AB11		1	1 unit	139	0.100
5WG3 260-3AB11								

5WG3 260-3AB11

1) Battery included in delivery.



2) For insertion in the DELTA Reflex smoke detector, titanium white (5TC1 290).

Radio System – GAMMA wave / Synco living KNX-RF

Gateways, Interface Converters

Introduction

Overview


Devices	Application	Page
<p>KNX/KNX-RF</p> 	<p>wave/<i>instabus</i> couplers make wireless operation easy.</p>	<p>16/25</p>
<p>EnOcean/KNX-RF</p> 	<p>EnOcean/KNX-RF gateways allow integration of battery-less pushbuttons in the GAMMA wave system.</p>	<p>16/26</p>

Radio System – GAMMA wave / Synco living KNX-RF


Gateways, Interface Converters

KNX/KNX-RF

Technical specifications

Type	Description
 UP 140	<p>UP 140 wave/instabus couplers</p> <ul style="list-style-type: none"> For coupling GAMMA wave with GAMMA <i>instabus</i> Coupling of a total of up to 50 GAMMA wave sensor channels with GAMMA <i>instabus</i> actuator channels or GAMMA <i>instabus</i> sensor channels with GAMMA wave actuator channels Pushbutton rocker, single with intermediate position Vertical operation ETS3 and higher supports configuration of the functions: switching, switching and dimming, shutter/blind control and scene control Short and long button press for ON/OFF, BRIGHTER/DARKER for dimming or UP/DOWN and adjustment of slats for shutter/blind control Storage and call up of up to two scenes 1 LED for the indication of telegram transmissions KNX-RF transmitter/receiver for 868.3 MHz 10-pole plug for plugging onto a UP 114 bus coupling unit, version BCU 2.1. or higher Dimensions (W x H x L): 55 x 55 x 13 mm

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
kg								
i-system								
	UP 140		UP 140 wave coupler/instabus¹⁾²⁾ (to be discontinued)					
			Versions					
			• Titanium white	A	5WG3 140-2HB11	1	1 unit	138 0,048
			• Aluminum metallic	B	5WG3 140-2HB31	1	1 unit	138 0,048

5WG3 140-2HB11

1) The bus coupling unit must be ordered separately.


2) The matching design frame must be ordered separately.

Radio System – GAMMA wave / Synco living KNX-RF


Gateways, Interface Converters

EnOcean/KNX-RF

Technical specifications

Type	Description
 GE 561/11	<p>GE 561/11 wave switch actuators</p> <p>With EnOcean/KNX-RF interface converters</p> <ul style="list-style-type: none"> • KNX-RF transmitter/receiver for 868.3 MHz • EnOcean radio receiver for 868.3 MHz • Converter of EnOcean radio to KNX-RF for the control of KNX-RF actuators via EnOcean radio pushbuttons • Control of internal actuator channels via KNX and/or EnOcean radio pushbuttons • One relay contact per output • Contact rated operational voltage, 230 V AC • Rated current 16 A at p.f. = 1 <ul style="list-style-type: none"> • With option for setting whether load should be permanently switched ON or OFF (normal mode) or whether actuator should operate in timer mode with an adjustable ON period of 1 ... 60 minutes • Electronics powered via 230 V AC • Commissioning using a pushbutton located on the top – no additional aids required • Modular installation device • Dimensions (W x H x L): 42 x 32 x 274.5 mm



Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
	GE 561/11	GE 561/11 wave switch actuators¹⁾ 2 x 230 V AC, 16 A, with EnOcean/KNX-RF interface converter	A	5WG3 561-4AB11		1	1 unit	139	0.249

5WG3 561-4AB11

¹⁾ For more products, see Chapter "Radio system – EnOcean".

Overview




Devices	Application	Page
<p>Transmitters, receivers</p>  <p>The image shows a Siemens 5WG3 110-2AB01 transmitter. It is a wall-mounted device with a green battery cover. The text on the device includes 'SIEMENS 5WG3 110-2AB01 Transmitter', 'Wandmontierter Batterie-4x4-LiP 110 Transmitter Battery 4x4 LiP 110', and 'Batteriebatterie 4x4 LiP 110 AA 3.6V'. It also features a CE mark and the number 0125.</p>	<p>This includes a selection of wall-mounted transmitters for wireless operation.</p>	<p>16/28</p>
<p>Repeaters</p>  <p>The image shows a Siemens 5WG3 110-2AB01 repeater. It is a wall-mounted device with a green battery cover. The text on the device includes 'SIEMENS 5WG3 110-2AB01 Repeater', 'Wandmontierter Akku-220V-wave LP 560 Transmitter-Aktuator 220V-wave LP 560', and 'QP 150'. It also features a CE mark and the number 0125.</p>	<p>Improves KNX radio communication when greater distances are required.</p>	<p>16/30</p>

Radio System – GAMMA wave / Synco living KNX-RF

System Products

Transmitters, receivers

Technical specifications




Type	Description
  UP 110 UP 110/11	UP 110 wall-mounted transmitters wave <ul style="list-style-type: none"> For the wireless operation of up to 2 different room functions and for the control of actuators via KNX-RF 10-pole plug-in connector for plugging in an <i>instabus</i> pushbutton, single or double, as operator interface Adjustable function; switching, switching and dimming, shutter/blind control and scene control Short and long button press for ON/OFF, BRIGHTER/DARKER for dimming or UP/DOWN and adjustment of slats for shutter/blind control Storage and call up of up to four scenes KNX-RF transmitter/receiver for 868.3 MHz UP 110 wall-mounted transmitters "Batterie" wave <ul style="list-style-type: none"> Commissioning over four DIL switches located on the front panel – no additional aids required For mounting in an installation box (Ø 60 mm, depth: 40 mm) with screw or claw fixing Electronics powered by a lithium battery (½ AA 3.6 V) Dimensions (H x W x D): 71 x 71 x 24 mm UP 110/11 wall-mounted transmitters 230 V wave <ul style="list-style-type: none"> Electronics powered via 230 V AC Dimensions (H x W x D): 71 x 71 x 32 mm
 UP 560	UP 560 wall-mounted transmitters "Aktor" 230 V wave <ul style="list-style-type: none"> For the wireless operation of up to 2 different room functions and for the control of actuators via KNX-RF 10-pole plug-in connector for plugging in an <i>instabus</i> pushbutton, single or double, as operator interface Adjustable function; switching, switching and dimming, shutter/blind control and scene control Short and long button press for ON/OFF, BRIGHTER/DARKER for dimming or UP/DOWN and adjustment of slats for shutter/blind control Storage and call up of up to four scenes With integrated switch actuator with relay contact, rated for 230 V AC, 6 A (resistive load), with option for setting whether load should be permanently switched on or off (normal mode) or whether actuator should operate in timer mode with an adjustable ON period of 1, 5 or 15 minutes <ul style="list-style-type: none"> KNX-RF transmitter/receiver for 868.3 MHz Electronics powered via 230 V AC Commissioning using six DIL switches located on the front panel – no additional aids required For mounting in an installation box (Ø 60 mm, depth: 40 mm) with screw or claw fixing Dimensions (H x W x D): 71 x 71 x 32 mm

GAMMA wave flush-mounting combinations

Operator interfaces	sys pushbuttons ¹⁾	UP 210 wave pushbutton	sys shutter/blind pushbuttons ¹⁾	UP 211 wave shutter/blind pushbutton	<i>instabus</i> pushbuttons, single, double
Device inserts					
Universal dimmer sys inserts	✓	✓	--	--	--
sys switching inserts	✓	✓	--	--	--
Shutter/blind control sys inserts	--	--	✓	✓	--
UP 110 wall-mounted transmitters "Batterie" wave	--	--	--	--	✓
UP 110 wall-mounted transmitters 230 V wave	--	--	--	--	✓
UP 560 wall-mounted transmitters "Aktor" 230 V wave	--	--	--	--	✓

¹⁾ See Chapter "DELTA Control and Regulation Devices".

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	UP 110 UP 110 wall-mounted transmitters "Batterie" wave ¹⁾²⁾³⁾⁴⁾ (to be discontinued)	A	5WG3 110-2AB01		1	1 unit	139	0.088
5WG3 110-2AB01								
	UP 110/11 UP 110/11 wall-mounted transmitters 230 V wave ¹⁾²⁾³⁾ (to be discontinued)	B	5WG3 110-2AB11		1	1 unit	139	0.097
5WG3 110-2AB11								
	UP 560 UP 560 wall-mounted transmitters "Aktor" 230 V wave ¹⁾²⁾ (to be discontinued)	A	5WG3 560-2AB01		1	1 unit	139	0.106
5WG3 560-2AB01								

5WG3 560-2AB01

1) The *instabus* pushbuttons must be ordered separately, [see page 16/9](#).

2) Matching frames and surface-mounting enclosures (where applicable) must be ordered separately.

3) Surface-mounting enclosures (where applicable) must be ordered separately.


4) Battery included in delivery.

Radio System – GAMMA wave / Synco living KNX-RF


System Products

Repeaters

Technical specifications

Type	Description
 UP 141	UP 141 wave repeaters <ul style="list-style-type: none"> For improving the KNX-RF communication through the single repetition of each correctly received KNX-RF telegram if KNX-RF telegrams are so dampened by several walls, ceilings or fixtures that an assigned receiver can no longer properly receive the KNX radio telegrams No teach-in to other KNX-RF devices required KNX-RF transmitter/receiver for 868.3 MHz Electronics powered via 230 V AC For mounting in an installation box (Ø 60 mm, depth: 40 mm) with screw or claw fixing Central threaded hole for screwing onto a blanking cover plate Dimensions (H x W x D): 71 x 71 x 32 mm

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS* / P. unit	PG	Weight per PU approx.
 UP 141	UP 141 wave repeaters ¹⁾²⁾ (to be discontinued)	A	5WG3 141-2AB01		1	1 unit	138	0.102 kg

5WG3 141-2AB01

1) Blanking cover plates must be ordered separately.

2) Matching frames must be ordered separately.

Overview

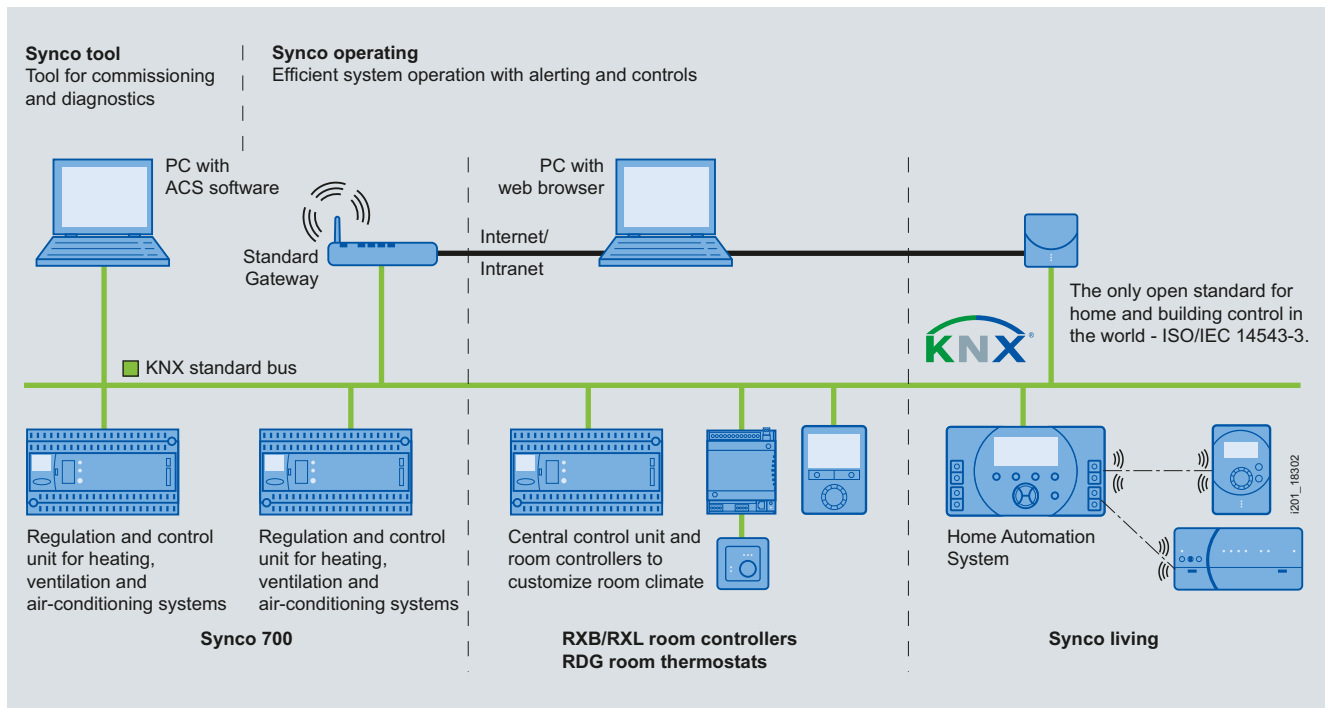
HCVA products - low energy consumption thanks to efficient products

A wide range of HCVA products - optimally coordinated

The Siemens HCVA product range offers a comprehensive assortment of products for every kind of application. The components are optimally coordinated with each other. You benefit not only from minimal installation and running costs, but also from the fact that all our products are extremely failsafe.

Intelligent convenience - for both indoor environment and operation

Easy-to-use components that offer maximum convenience. Adjust your living environment intuitively, quickly and accurately to your needs - no tedious learning curve.



Synco living KNX-RF

Commissioning software tools




Synco products are commissioned using the software tool ACS. Synco devices use LTE, a protocol specifically for Synco devices. Communication is also implemented via the KNX bus cable. Synco devices can be operated together with GAMMA *instabus* devices using the same KNX bus cable. If you also want to send data between the GAMMA *instabus* (KNX S-mode) and the Synco devices, the data exchange for both product groups is configured using ETS.

For further information on
ACS: www.siemens.com/synco
ETS: www.knx.org





A wealth of experience, high quality standards and simple handling




Siemens has now been promoting HCVA control technology for more than 60 years. In this time, it has acquired broad application expertise and skills in this specialist field. As a result, and thanks to a rigorous quality management system, Siemens HCVA products offer the highest quality, efficiency and reliability. They also reflect an in-depth knowledge of the HCVA market, building automation and their processes: furthermore, the components are particularly simple to install, commission and maintain.

Technical specifications







Type	Description
	<p>QAX9xx central apartment units</p> <ul style="list-style-type: none"> • Instructions in de; Plain text outputs in de, en, fr, it, es, nl, pt • User language German; further languages can be configured • All key information is available on the info pages • Selection of operating mode, timer and vacation/special day function for the home • Independent time switches and operating modes for 12 rooms • Control the flow temperature of 2 independent room groups with limiting function (min./max.) and maintain return temperature high/low • Increase the Economy room setpoint and minimum flow temperature setpoint dependent on composite outdoor temperature • Air conditioning unit control (split units) via universal outputs (local and RRV91x) or via S-mode (KNX TP1) • Visualization of Meteo data • Remote access via Synco OZW772.xx Web server • Operating voltage: 230 V AC • Frequency: 50 Hz <p>Versions</p> <ul style="list-style-type: none"> • Power consumption: 7 VA • Temperature measuring range: 0 ... 120 °C • Display: Fully graphic, white backlit LCD display • Communication: KNX-RF compatible, 868.3 MHz, bidirectional (radio) and KNX TP1 (KNX bus) • Radio range in building: 30 m • Number of universal inputs: 1 • Universal input signals: Digital 0/1, LG-Ni1000 • Number of relay outputs: 1 • Relay outputs switching voltage: 24 ... 230 V, NO contact • Relay outputs switching current: 0.02 ... 2 (2) A • Mounting: with screws • Degree of protection: IP20D • Dimensions (W x H x D): 230 x 130 x 29.7 mm
	<p>QAX903-DE HCVA central apartment units</p> <p>With power data acquisition</p> <ul style="list-style-type: none"> • Heating and cooling control management for one apartment • Suitable for heating and cooling plants with central distribution (e. g. underfloor heating) and radiators with distributed connections • Collection of heating/cooling requests from individual rooms and their transmission to the heating and cooling generation system via KNX bus, via heat/cooling demand relay, or via 0... 10 V DC output to the RRV912 or RRV934 <ul style="list-style-type: none"> • Absence function (heating, cooling, ventilation) • Control of 3-stage ventilation system via RRV934 multicontroller, incl. night cooling function • Acquisition of consumption data for heating/cooling, electricity, water and gas
	<p>QAX913-DE central apartment units</p> <p>With power data acquisition</p> <ul style="list-style-type: none"> • Heating and cooling control management for one apartment • Suitable for heating and cooling plants with central distribution (e. g. underfloor heating) and radiators with distributed connections • Collection of heating/cooling requests from individual rooms and their transmission to the heating and cooling generation system via KNX bus, via heat/cooling demand relay, or via 0... 10 V DC output to the RRV912 or RRV934 • Absence function (heating, cooling, ventilation, service water, lighting) with presence simulation (light) • Service water heating with time switch and operating mode selection <ul style="list-style-type: none"> • Control of 3-stage ventilation system via RRV934 multicontroller, incl. night cooling function • Operation and control of lighting and shutters/blinds via the 4 universal pushbutton pairs, time switch and events • Monitoring with door and window contacts, smoke detectors • Radio communication with devices from the GAMMA wave and Hager tebis TX radio product range • Acquisition of consumption data for heating/cooling, electricity, water and gas
	<p>WRI982 consumption data interfaces</p> <ul style="list-style-type: none"> • M-Bus MiniMaster for connection of up to 3 M-bus-capable counters (slaves) • 2 pulse inputs for counters with pulse output • Transmits all relevant data to the QAX913 or QAX903 central apartment unit via KNX radio • Operating voltage: 230 V AC • Power supply: Lithium button cell (1 x CR2032) <ul style="list-style-type: none"> • Frequency: 50 Hz • Power consumption: 7 VA • Communication: KNX-RF-compatible, 868.3 MHz, bidirectional • Radio range in building: 30 m • Mounting: on DIN rail or using screws • Dimensions (W x H x D): 120 x 90 x 50 mm • Degree of protection: IP30

Synco living KNX-RF







Type	Description
	<p>QAW910 room devices</p> <ul style="list-style-type: none"> • Operation and display of room heating functions • Selection of room operating mode, timer function and room temperature setpoint correction • Display of room heating function and status indications • Recording of room temperature • Battery operation with standard 1.5 V alkaline batteries (included in delivery) • Particularly suitable for: <ul style="list-style-type: none"> - the renovation market (old buildings, museums, churches, historical buildings, etc.) - in situations where wall mounting is difficult (sandstone, glass, etc.) - for flexible room partitions (changing decor, changing furnishings) • In new buildings • Radio communication based on KNX standard (868.3 MHz, bidirectional) <ul style="list-style-type: none"> • Power supply: Mignon (2 x AA) LR6 • Battery capacity: 2.50 Ah • Battery service life: 3 years • Temperature measuring range: 0 ... 50 °C • Display: LCD segment • Display size: Resolution 0.1 °C • Communication: KNX-RF-compatible, 868.3 MHz, bidirectional (radio) • Radio range in building: 30 m • Mounting: with screws • Degree of protection: IP40 • Dimensions (W x H x D): 84 x 130 x 23.6 mm
	<p>OZW772.01 web servers for 1 Synco device</p> <ul style="list-style-type: none"> • Operation via web browser with PC/laptop and smartphone • ACS operation (PC/laptop with ACS system operator software) • Types of connection: USB and Ethernet • Display of fault indications in web browser • Transmission of fault indications to up to 4 e-mail recipients • Periodic transmission of system reports to e-mail recipients • Plant visualization in web browser with standard plant diagrams and user-defined plant web pages • Consumption data acquisition and display • Transmission of consumption data file to up to 2 e-mail recipients • Encoding with https and e-mail with TLS • Commissioning directly with web browser or ACS service tool <ul style="list-style-type: none"> • C5701 commissioning instructions stored on web server • Package components: <ul style="list-style-type: none"> - G5701 installation instructions - 230 V AC/24 V DC plug-in power supply unit - Ethernet cable - USB cable - 2 cable binders • Operating voltage: Plug-in power supply unit: 230 V AC, web server: 24 V DC • Communication: KNX TP1 (KNX bus), Ethernet, RJ45 socket contacts (shielded), USB V2.0 (Universal Serial Bus) • Degree of protection: IP30 • Mounting: on DIN rail or using screws • Dimensions (W x H x D): 87.5 x 90 x 40 mm
	<p>QAA910 room temperature sensors</p> <ul style="list-style-type: none"> • Battery operation with standard 1.5 V alkaline batteries (included in delivery) • Particularly suitable for: <ul style="list-style-type: none"> - the renovation market (old buildings, museums, churches, historical buildings, etc.) - in situations where wall mounting is difficult (sandstone, glass, etc.) - for flexible room partitions (changing decor, changing furnishings) - In new buildings • Radio communication based on KNX standard (868.3 MHz unidirectional) <ul style="list-style-type: none"> • Power supply: Mignon (2 x AA) LR6 • Battery capacity: 2.50 Ah • Battery service life: 3 years • Temperature measuring range: 0 ... 50 °C • Communication: KNX-RF-compatible, 868.3 MHz, unidirectional (radio) • Radio range in building: 30 m • Degree of protection: IP40 • Dimensions (W x H x D): 84 x 84 x 23 mm
	<p>QAC910 Meteo sensors</p> <ul style="list-style-type: none"> • Battery operation with standard 1.5 V alkaline batteries (included in delivery) • Particularly suitable for: <ul style="list-style-type: none"> - the renovation market (old buildings, museums, churches, historical buildings, etc.) - in situations where wall mounting is difficult (sandstone, glass, etc.) - for flexible room partitions (changing decor, changing furnishings) - In new buildings • Radio communication based on KNX standard (868.3 MHz unidirectional) • Cable connection (2-wire) required between weather sensors and radio transmitter <ul style="list-style-type: none"> • Dimensions (W x H x D): <ul style="list-style-type: none"> Weather sensor: 80 x 92 x 50 mm Radio transmitter: 84 x 84 x 23 mm • Power supply: Mignon (2 x AA) LR6 • Battery capacity: 2.50 Ah • Battery service life: 3 years • Temperature measuring range: -50 ... 50 °C • Communication: KNX-RF-compatible, 868.3 MHz, unidirectional (radio) • Radio range in building: 30 m • Degree of protection: IP40

Type	Description
 RRV912	RRV912 heating circuit controllers, 2 heating circuits <ul style="list-style-type: none"> • Suitable for heating and cooling plants with central distribution (e.g. underfloor heating or soft steel pipe systems) and for radiator valves with electric drives (e. g. for parapet cladding) • Connection for 3 or 2-step drives • 2 universal relay outputs, e. g. can be used for the control of the room group pump, control of service water treatment • 1 universal input, can be used e. g. for connection of a service water sensor or the activation of an alarm • 1 universal outputs 0 ... 10 V DC for the forwarding of heating/cooling request signals • Radio communication based on KNX standard (868.3 MHz, bidirectional) • Operating voltage: 230 V AC • Frequency: 50 Hz • Power consumption: 7 VA • Temperature measuring range: 0 ... 120 °C • Control algorithm <ul style="list-style-type: none"> - 2-step: PID - 3-step: PID • Communication: KNX-RF-compatible, 868.3 MHz, bidirectional (radio) • Radio range in building: 30 m • Number of universal inputs: 1 • Universal input signals: Digital 0/1, LG-Ni1000 • Number of universal outputs: 1 • Universal outputs signal: 0 ... 10 V DC • Universal outputs current: max. 1 mA DC • Number of relay outputs: 2 • Relay outputs switching voltage: 24 ... 230 V, NO contact • Relay outputs switching current: 0.02 ... 2 (2) A • Number of Triac outputs: 2 • Triac outputs switching voltage: 230 V AC • Triac outputs switching current: 30 mA • Mounting: on DIN rail or using screws • Dimensions (W x H x D): 180 x 98 x 50 mm • Degree of protection: IP30
 RRV918	RRV918 heating circuit controllers, 8 heating circuits <ul style="list-style-type: none"> • Suitable for heating and cooling plants with central distribution (e.g. underfloor heating or soft steel pipe systems) and for radiator valves with electric drives (e. g. for parapet cladding) • Connection for up to eight 2-step drives • 1 universal relay output, e. g. can be used for the control of the room group pump, control of service water treatment • 1 universal input, can be used e. g. for connection of a service water sensor or the activation of an alarm • Radio communication based on KNX standard (868.3 MHz, bidirectional) • Operating voltage: 230 V AC • Frequency: 50 Hz • Power consumption: 7 VA • Temperature measuring range: 0 ... 120 °C • Control algorithm <ul style="list-style-type: none"> - 2-step: PID • Communication: KNX-RF-compatible, 868.3 MHz, bidirectional (radio) • Radio range in building: 30 m • Number of universal inputs: 1 • Universal input signals: Digital 0/1, LG-Ni1000 • Number of universal outputs: 1 • Number of relay outputs: 1 • Relay outputs switching voltage: 24 ... 230 V, NO contact • Relay outputs switching current: 0.02 ... 2 (2) A • Number of Triac outputs: 8 • Triac outputs switching voltage: 230 V AC • Triac outputs switching current: 30 mA • Mounting: on DIN rail or using screws • Dimensions (W x H x D): 245 x 98 x 50 mm • Degree of protection: IP30
 RRV934	RRV934 multicontrollers <ul style="list-style-type: none"> • For use in heating and cooling plants for presetting of up to 2 room groups • 2 primary controllers, each with one 0 ... 10 V DC drive • 1 primary controller with one 0 ... 10 V DC drive • 1 primary controller with one 3-step drive • With forward and return flow limitation, control option for room group pumps and service water treatment • For control of a 3-stage ventilation plant incl. HR bypass, with humidity, air quality or CO₂ • influence and fault monitoring • Forwarding of heat demand signal to primary energy plant • Radio communication based on KNX standard (868.3 MHz, bidirectional) • Operating voltage: 230 V AC • Frequency: 50 Hz • Power consumption: 7 VA • Temperature measuring range: 0 ... 120 °C • Control algorithm Primary controller: PI • Communication: KNX-RF-compatible, 868.3 MHz, bidirectional (radio) • Radio range in building: 30 m • Number of universal inputs: 4 • Universal input signals: Digital 0/1, LG-Ni1000, 0 ... 10 V DC • Number of universal outputs: 2 • Universal outputs signal: 0 ... 10 V DC • Universal outputs current: max. 1 mA DC • Number of relay outputs: 4 • Relay outputs switching voltage: 24 ... 230 V, NO contact • Relay outputs switching current: 0.02 ... 2 (2) A • Mounting: on DIN rail or using screws • Dimensions (W x H x D): 245 x 98 x 50 mm • Degree of protection: IP30

Synco living KNX-RF









Type	Description
 ERF910	<p>ERF910 radio repeaters</p> <ul style="list-style-type: none"> For expanding and ensuring radio distances in the Siemens Synco living system Particularly suitable for: <ul style="list-style-type: none"> the renovation market (old buildings, museums, churches, historical buildings, etc.) in situations where wall mounting is difficult (sandstone, glass, etc.) for flexible room partitions (changing decor, changing furnishings) In new buildings External plug-in power supply unit Radio communication based on KNX standard (868.3 MHz, bidirectional)
 QFP910	<p>QFP910 water indication</p> <ul style="list-style-type: none"> Battery operation with standard 1.5 V alkaline batteries (included in delivery) External water sensor Radio communication based on KNX standard (868.3 MHz unidirectional)
 AFK914/C01	<p>AFK914/C01 hand-held transmitters</p> <ul style="list-style-type: none"> Up to 4 different functions can be triggered at the central apartment unit The function of each pushbutton can be configured at the central apartment unit for each hand-held transmitter separately. Battery operation with standard lithium button cell, type CR2032 Radio communication based on KNX standard (868.3 MHz, bidirectional) Status and verification feedback from the central apartment unit via multicolor LEDs
 SSA955	<p>SSA955 radiator control actuators</p> <ul style="list-style-type: none"> Battery operation with standard 1.5 V alkaline batteries (included in delivery) Whisper mode (e. g. for use in the bedroom) Automatic detection of the valve lift Use of several radiator control actuators in a single room Integrated temperature sensor Direct mounting without the need for tools using union nuts Manual adjustment Radio communication based on KNX standard (868.3 MHz, bidirectional) Additional information For suitable adapters for third-party valves, types AV5.. and AV6.., see Chapter "Heating, cooling, ventilation, air-conditioning" Positioning force: 110 N DC Lift: 2.5 mm DC
 KIT911	<p>KIT911 starter kits with room device and 1 radiator control actuator</p> <ul style="list-style-type: none"> Wireless radio beginner's pack for radiator application, comprising: <ul style="list-style-type: none"> 1 QAW912 room device - 2 heating zones 1 SSA955 radiator control actuator The package can include a maximum of 6 SSA955s. Additional information Further details acc. to individual product data
 KIT914	<p>KIT914 starter kits with room device and 4 radiator control actuators</p> <ul style="list-style-type: none"> Wireless radio beginner's pack for radiator application, comprising: <ul style="list-style-type: none"> 1 x QAW912 room device - 2 heating zones 4 x SSA955 radiator control actuators The package can include a maximum of 6 x SSA955s. Additional information Further details acc. to individual product data

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 S55621-H 110	QAX903-DE QAX903-DE HCVA central apartment units With power data acquisition User language German; further languages can be configured The central apartment unit serves as operator and display device for one apartment. It manages the individual room control (heating & cooling) of up to 12 rooms, the comfort ventilation, the presetting and the air conditioning control, and gathers consumption data for heat, water, electricity and gas.	C	S55621-H 110		1	1 unit	A05	0.517
 S55621-H 111	QAX913-DE QAX913-DE central apartment units With power data acquisition User language German; further languages can be configured The central apartment unit serves as operator and display device for one apartment. It manages the individual room control (heating & cooling) of up to 12 rooms, the comfort ventilation, the presetting, the service water control and the air conditioning control, and gathers consumption data for heat, water, electricity and gas. and can also be used to control the lighting and shutter/blinds. Door and window contacts and smoke detectors can also be integrated for monitoring tasks.	A	S55621-H 111		1	1 unit	A05	0.520
 S55621-H 112	WRI982 WRI982 consumption data interfaces The WRI982 interface serves to collect consumption data. Counters can be connected to its 2 pulse inputs or via M-bus. The WRI982 communicates with the QAX913 or QAX903 central apartment unit via KNX radio. The WRI982 interface also has a SYNERGYR building bus connection for communication with the OZW30 central building unit and can be used for the migration of individual usage units of a SYNERGYR plant.	A	S55621-H 112		1	1 unit	A05	0.330
 BPZ:QAW910	QAW910 QAW910 room devices Wireless radio room device. The QAW910 can be used to operate and display simple room heating functions. At the same time, either periodically or in the event of a change, the QAW910 transmits the measured room temperature to the QAX9.. central apartment unit and indicates this on the display.	A	BPZ:QAW910		1	1 unit	A05	0.200
 BPZ:OZW772.01	OZW772.01 OZW772.01 web servers for 1 Synco device The OZW772 web server enables the remote control and remote monitoring of Synco plants on the web.	A	BPZ:OZW772-01		1	1 unit	A06	0.596
 BPZ:QAA910	QAA910 QAA910 room temperature sensors Wireless radio room temperature sensor for recording the room temperature During operation, either periodically or in the event of a change, the QAA910 transmits the measured room temperature to the QAX9.. central apartment unit	A	BPZ:QAA910		1	1 unit	A05	0.130



Radio System – GAMMA wave / Synco living KNX-RF

Synco living KNX-RF

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	QAC910	QAC910 Meteo sensors	A	BPZ:QAC910	1	1 unit	A05	0.229
		Wireless radio sensor for recording the outdoor temperature and the air pressure. During operation, either periodically or in the event of a change, the QAC910 transmits the measured outdoor temperature and the air pressure to the QAX9.. central apartment unit						
BPZ:QAC910								
	RRV912	RRV912 heating circuit controllers, 2 heating circuits	A	BPZ:RRV912	1	1 unit	A05	0.431
		Radio-controlled heating circuit controller for up to 2 heating circuits and service water treatment. During operation, the RRV912 controls the required room temperature of the individual heating circuits. The relevant data are made available by the QAX9.. central apartment unit via radio.						
BPZ:RRV912								
	RRV918	RRV918 heating circuit controllers, 8 heating circuits	A	BPZ:RRV918	1	1 unit	A05	0.518
		Radio-controlled heating circuit controller for up to 8 heating circuits. During operation, the RRV918 controls the required room temperature of the individual heating circuits. The relevant data are made available by the QAX9.. central apartment unit via radio.						
BPZ:RRV918								
	RRV934	RRV934 multicontrollers	A	BPZ:RRV934	1	1 unit	A05	0.543
		Radio-controlled multicontroller for the presetting of up to 2 room groups or a ventilation plant control with up to 3 stages. Furthermore, all inputs and outputs are also suitable for universal use. The relevant data are made available by the QAX9.. central apartment unit via radio.						
BPZ:RRV934								
	ERF910	ERF910 radio repeaters	A	BPZ:ERF910	1	1 unit	A05	0.280
		Wireless radio repeater for plant expansion. During operation, the ERF910 repeats the radio telegrams of the devices with which it has been programmed.						
BPZ:ERF910								
	QFP910	QFP910 water indication	A	S55371-C 100	1	1 unit	A05	0.185
		Wireless radio sensor for the detection of water leaks. During operation, either periodically or in the event of a change of status (dry/water leak), the QFP910 transmits its status to the QAX913 central apartment unit.						
S55371-C 100								
	AFK914/C01	AFK914/C01 hand-held transmitters	A	S55621-H 105-C901	1	1 unit	A05	0.022
		Hand-held transmitter for the remote control of different functions of the QAX913 central apartment unit						
S55621-H 105-C901								
	SSA955	SSA955 radiator control actuators	A	BPZ:SSA955	1	1 unit	A02	0.187
		Radio-controlled control actuator for radiator valves. During operation, the SSA955 controls the required room temperature using the data provided by the QAX9.. central apartment unit.						
BPZ:SSA955								

Radio System – GAMMA wave / Synco living KNX-RF

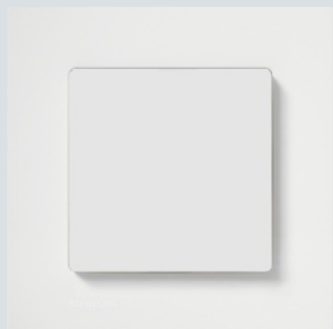
Synco living KNX-RF

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 S55621-H 103	KIT911 KIT911 starter kits with room device and 1 radiator control actuator Cannot be expanded with the Synco living central apartment unit or KNX-TP	A	S55621-H 103		1	1 unit	A05	0.582
 S55621-H 104	KIT914 KIT914 starter kits with room device and 4 radiator control actuators Cannot be expanded with the Synco living central apartment unit or KNX-TP	A	S55621-H 104		1	1 unit	A05	0.956

Radio System – GAMMA wave / Synco living KNX-RF

Notes

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17/2	Introduction
17/3	Display and operation units
	Gateways, interface converters
17/6	EnOcean/KNX
17/7	EnOcean/KNX-RF

Radio System – EnOcean

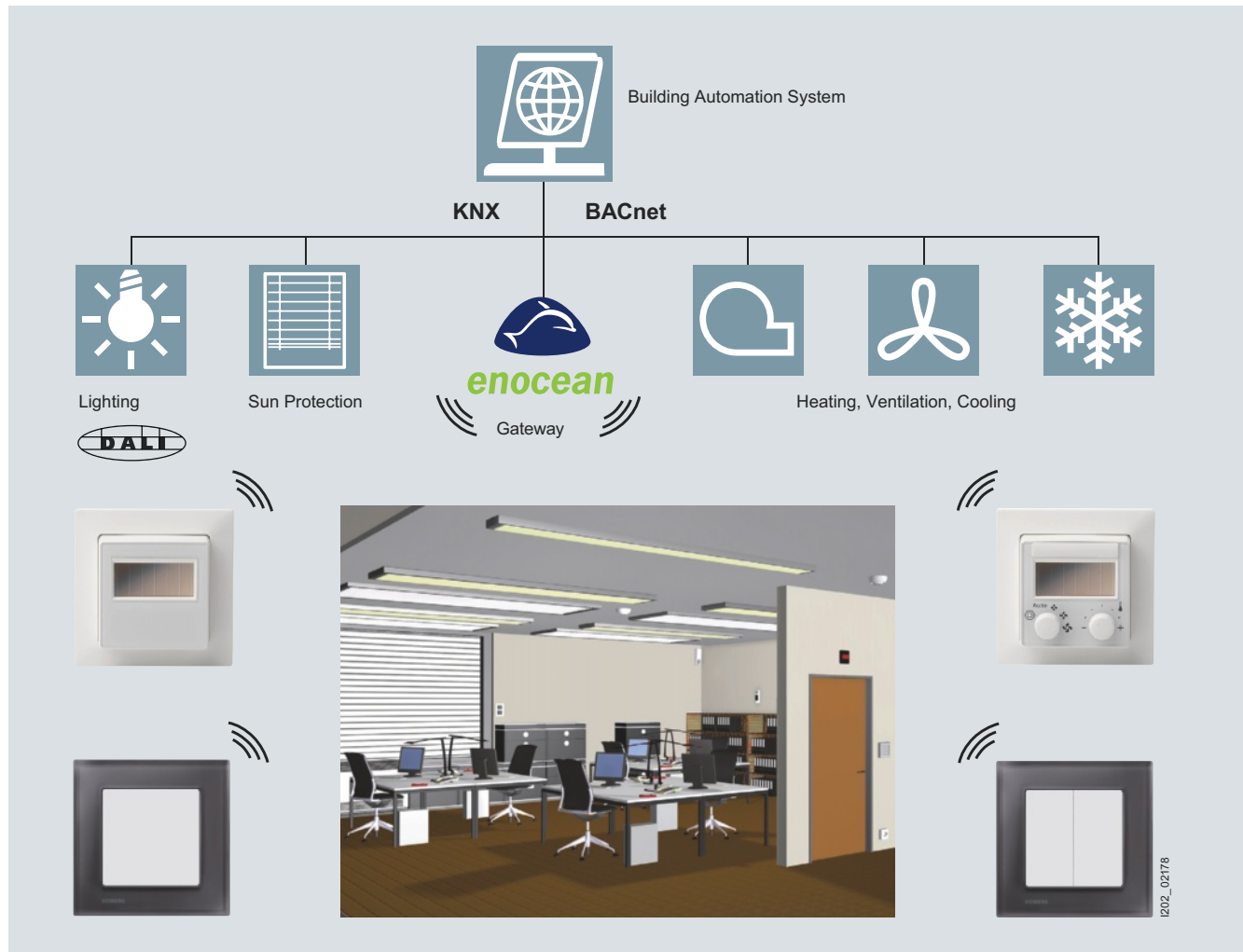
Introduction

Overview

EnOcean

EnOcean has become established as the interoperable radio standard almost worldwide. Battery-less sensors are independent of energy sources and therefore are completely maintenance-free and enormously flexible. The use of battery-less sensors therefore opens up new possibilities.

As a result of the flexible installation of maintenance-free products from Siemens with EnOcean technology, universal and individual solutions can be offered from a single room to an entire building complex without extra cables. With an EnOcean gateway, the integration of sensors for lighting, sun protection and air-conditioning applications into building automation systems is possible.



What are the benefits of EnOcean technology?

- Ecological, because no battery to dispose of and minimum radiant energy (less than with wired pushbuttons)
- Extensive energy savings
- Maintenance-free
- Short installation times
- Reduction in fire load
- Flexibility of the applications

Further information on EnOcean technology is available on the Internet at: www.siemens.com/enOcean

Overview

As a result of their flexible installation, the maintenance-free operating devices with EnOcean technology can be fitted anywhere without extra cables.

An EnOcean gateway enables the integration of the operating devices for light, sun protection and HCVA applications in building automation systems.




Completely flexible

EnOcean operating devices can be mounted on any surface without cables. Simply screw or stick – done. The EnOcean operating devices can be combined with all DELTA miro and DELTA line frames.

Completely maintenance-free

The EnOcean operating devices are battery-free: It is not necessary to change batteries. The operating devices are therefore maintenance-free and environmentally friendly.

Technical specifications







Type	Description
 <p>AP 221 AP 222</p>	<p>EnOcean AP 221 / AP 222 wall-mounted transmitters</p> <ul style="list-style-type: none"> • One or two centered rockers • Vertical operation • Energy generation at the button press by means of induction, without batteries, maintenance-free • Up to 2 pushbutton functions per rocker • Selectable function per pushbutton: Switching Over, Switching On, Switching Off, 8-bit value, 1 pushbutton dimming, 1 pushbutton sun protection control <ul style="list-style-type: none"> • For the pushbutton pair selectable function Switching ON/OFF, 2-button dimming with stop telegram, 2-button sun protection control • Radio telegram according to EnOcean standard at 868.3 MHz • Transmitting power of max. 10 mW • As surface-mounting unit for screwing or sticking • Rocker dimensions (H x W x D): 55 x 55 x 7.3 mm
 <p>QAX95.4 QAX96.4</p>	<p>QAX95.4, QAX96.4 solar room device</p> <ul style="list-style-type: none"> • Recording of room temperature • Operation with solar cells • Battery operation possible if there is insufficient light • A single DELTA line frame titanium white is included in delivery, however, can also be combined with all DELTA miro and DELTA line frames • Temperature measuring range 0 ... 50 °C • Measuring accuracy ± 0.4 K <ul style="list-style-type: none"> • Radio telegram according to EnOcean standard at 868.3 MHz • Transmitting power of max. 10 mW • As surface-mounting unit for screwing or sticking • Dimensions (W x H x D): 55 x 55 x 19 mm • Color: Titanium white <p>QAX96.4 solar room device in addition</p> <ul style="list-style-type: none"> • Setpoint adjuster for room temperature • Dimensions (W x H x D): 55 x 55 x 28 mm
 <p>QAX97.4 QAX98.4</p>	<p>QAX97.4, QAX98.4 solar room devices</p> <ul style="list-style-type: none"> • With setpoint correction and 2-step switch for changing the room operating mode • Recording of room temperature • Setpoint adjuster for room temperature • Freely programmable pushbutton • Switch (2-step) • Operation with solar cells • Battery operation possible if there is insufficient light • A single DELTA line frame titanium white is included in delivery, however, can also be combined with all DELTA miro and DELTA line frames <ul style="list-style-type: none"> • Temperature measuring range 0 ... 50 °C • Measuring accuracy ± 0.4 K • Radio telegram according to EnOcean standard at 868.3 MHz • Transmitting power of max. 10 mW • As surface-mounting unit for screwing or sticking • Dimensions (W x H x D): 55 x 55 x 28 mm • Color: Titanium white <p>QAX98.4 solar room device in addition</p> <ul style="list-style-type: none"> • With setpoint correction and 5-step switch for changing the room operating mode and ventilator • Switch (5-step)

For the complete technical specifications, see www.siemens.com/gamma-td.

Radio System – EnOcean





Display and operation units

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
kg								
i-system								
	AP 221	EnOcean AP 221 wall-mounted transmitters¹⁾ Single, neutral						
	Versions							
	• Titanium white	A	5WG4 221-3AB10	1	1 unit	138	0.072	
• Aluminum metallic	A	5WG4 221-3AB30	1	1 unit	138	0.073		
5WG4 221-3AB10								
	AP 221	EnOcean AP 221 wall-mounted transmitters¹⁾ Single, with I/O symbols						
	Versions							
	• Titanium white	A	5WG4 221-3AB11	1	1 unit	138	0.090	
• Aluminum metallic	A	5WG4 221-3AB31	1	1 unit	138	0.090		
5WG4 222-3AB11								
	AP 221	EnOcean AP 221 wall-mounted transmitters¹⁾ Single, with Up/Down symbols						
	Versions							
	• Titanium white	A	5WG4 221-3AB12	1	1 unit	138	0.090	
• Aluminum metallic	A	5WG4 221-3AB32	1	1 unit	138	0.090		
5WG4 221-3AB12								
	AP 222	EnOcean AP 222 wall-mounted transmitters¹⁾ Double, neutral						
	Versions							
	• Titanium white	A	5WG4 222-3AB10	1	1 unit	138	0.072	
• Aluminum metallic	A	5WG4 222-3AB30	1	1 unit	138	0.074		
5WG4 222-3AB10								
	AP 222	EnOcean AP 222 wall-mounted transmitters¹⁾ Double, with I/O symbols						
	Versions							
	• Titanium white	A	5WG4 222-3AB11	1	1 unit	138	0.090	
• Aluminum metallic	A	5WG4 222-3AB31	1	1 unit	138	0.090		
5WG4 222-3AB11								
	AP 222	EnOcean AP 222 wall-mounted transmitters¹⁾ Double, with Up/Down symbols						
	Versions							
	• Titanium white	A	5WG4 222-3AB12	1	1 unit	138	0.073	
• Aluminum metallic	A	5WG4 222-3AB32	1	1 unit	138	0.090		
5WG4 222-3AB12								

¹⁾ The accompanying design frame, from DELTA line or DELTA miro range, must be ordered separately, see Chapter "Display and operation units"

Display and operation units

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	QAX95.4 QAX95.4 solar room devices¹⁾ Titanium white	C	S55623-H 104		1	1 unit	A08	0.097
S55623-H 104								
	QAX96.4 QAX96.4 solar room devices¹⁾ With setpoint adjustment Titanium white	C	S55623-H 105		1	1 unit	A08	0.097
S55623-H 105								
	QAX97.4 QAX97.4 solar room devices¹⁾ With setpoint correction and 2-step switch for changing the room operating mode, pushbutton titanium white	C	S55623-H 106		1	1 unit	A08	0.097
S55623-H 106								
	QAX98.4 QAX98.4 solar room devices¹⁾ With setpoint correction and 5-step switch for changing the room operating mode and ventilator, pushbutton titanium white	C	S55623-H 107		1	1 unit	A08	0.097
S55623-H 107								


¹⁾ The matching single DELTA line frame is included in delivery. DELTA miro frame must be ordered separately.

Radio System – EnOcean

Gateways, Interface Converters


EnOcean/KNX

Technical specifications

Type	Description
 RXZ97.1	EnOcean/KNX RXZ97.1 gateway <ul style="list-style-type: none"> Evaluation of up to 32 channels, per channel up to 4 pushbuttons, 2 rockers or 1 room operating device Functions per sensor channel: <ul style="list-style-type: none"> Tactile sensors of a switching module: <ul style="list-style-type: none"> Switching (On/Off/Over/encoder/scenes/automatic stairwell switch) Dimming Shutter/blind Up/Down Temperature sensors/room operating devices: <ul style="list-style-type: none"> Presence pushbutton/switch Setpoint adjuster Step switch Humidity sensor Window contact Light sensor Presence detector Power supply via bus Bus-powered electronics Integrated bus coupling units EnOcean radio receiver Degree of protection: IP20 Dimensions (H x W x D): 71 x 71 x 27 mm


For the complete technical specifications, see www.siemens.com/gamma-td

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.
	RXZ97.1	EnOcean/KNX RXZ97.1 gateway	C	S55842-Z 101	1	1 unit	A08	0.096 kg


S55842-Z 101

Technical specifications

Type	Description
 GE 561/11	<p>GE 561/11 wave switch actuators</p> <p>With EnOcean/KNX-RF interface converters</p> <ul style="list-style-type: none"> • KNX-RF transmitter/receiver for 868.3 MHz • EnOcean radio receiver for 868.3 MHz • Converter of EnOcean radio to KNX-RF for the control of KNX radio actuators over EnOcean radio pushbuttons • Control of internal actuator channels via KNX and/or EnOcean radio pushbuttons • One relay contact per output • Rated contact operational voltage, 230 V AC • Rated current 16 A at p.f. = 1 <ul style="list-style-type: none"> • With option for setting whether load should be permanently switched ON or OFF (normal mode) or whether actuator should operate in timer mode with an adjustable ON period of 1 ... 60 minutes • Electronics powered via 230 V AC • Commissioning using a pushbutton located on the top – no additional aids required • Modular installation device • Dimensions (W x H x L): 42 x 32 x 274.5 mm

For complete technical specifications, see: www.siemens.com/gamma-td

Selection and ordering data

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx.	
								kg	
	GE 561/11	GE 561/11 wave switch actuators 2 x 230 V AC, 16 A, with EnOcean receiver	A	5WG3 561-4AB11		1	1 unit	139	0.249

5WG3 561-4AB11

Radio System – EnOcean

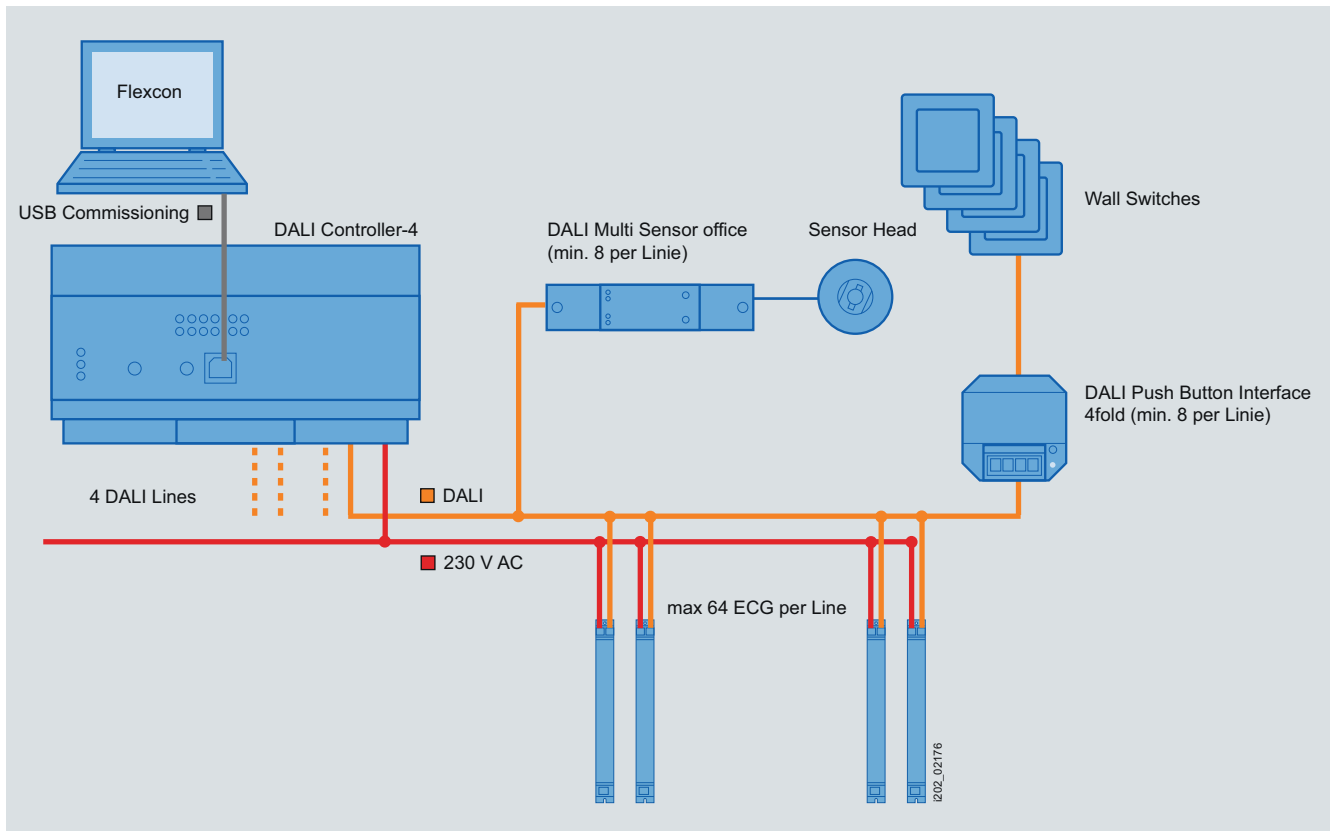
Notes

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18/2

Flexcon



A DALI Controller-4 is a central element in any system. The DALI Controller-4 communicates with the DALI multi sensor and DALI quadruple pushbutton interface through the DALI line.

The new Flexcon software is used to start the system. Download the software Flexcon at: www.siemens.com/flexcon

Supported by the room layout plan, the system is largely configured using drag&drop.

Functions



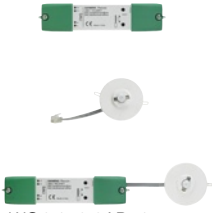

- Scene control
- Sequence control
- Constant light level control through light sensors
- Switching/dimming using operator buttons
- Switching through presence detectors
- Central OFF function
- Timer functions (stairwells, corridors, ...)

More information can be found on the Internet at: www.siemens.com/flexcon

System description

- Controls four DALI lines with a single central controller (up to 256 electronic controlgears)
- Communicates with DALI sensors and DALI actuators
- DALI power supply integrated in the controller
- System is started with easy to use start-up software

Selection and ordering data

Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
 <p>5TC8 300-0</p> <p>DALI Controller-4</p> <ul style="list-style-type: none"> • Light controller • Start-up option using software via USB • For communicating with electronic controlgears with DALI protocol according to IEC 62386 • Supported by 4 DALI lines according to IEC 62386 • Support 64 electronic controlgears per line • For communicating with DALI quadruple pushbutton interface and DALI multi sensor for offices • Supports a maximum of 64 input channels • Switching and dimming of electronic controlgears according to IEC 62386 • Scene control • Sequence control for scenes • Timer mode • Constant light level control • Groups can be combined over all lines • Integrated 230 V supply unit powers the electronics and 4 DALI lines • LEDs for status display • LED for displaying lamp faults on device • Pushbuttons for local operation • Plug-in terminals for connecting the DALI line, power supply and relay contacts • Modular installation device for mounting on TH35 EN 60715 mounting rail • Width 9 MW (1 MW = 18 mm) 	A	5TC8 300-0		1	1 unit	139	0.460
 <p>5WG1 141-2AB71</p> <p>DALI quadruple pushbutton interfaces</p> <ul style="list-style-type: none"> • Binary input device • 4 inputs to connect installation buttons • Supported actions per input <ul style="list-style-type: none"> - Short button press - Long button press • Integrated DALI bus coupling unit for communicating with a central DALI controller • Power supply through DALI line with 6 mA DALI bus load • For flush-mounting wall or ceiling outlet installations with a 60 mm diameter and depth of 60 mm • Plug-in terminals for connecting the DALI line • Cable set for connecting pushbuttons 	B	5WG1 141-2AB71		1	1 unit	139	0.999
 <p>5WG1 141-2AB51</p> <p>DALI multi sensors for offices</p> <ul style="list-style-type: none"> • Used as passive infrared detector for indoor ceiling installation <ul style="list-style-type: none"> - Sensing range, horizontal 360 °, vertical approx. 80 ° - For monitoring an area with a diameter of approx. 4 m to approx. 7 m (depending on mounting and room height) - LED on sensor head for display • Used as brightness sensor <ul style="list-style-type: none"> - cone-shaped detection area, opening angle 90 ° - measuring range 20 lx to 1000 lx • Integrated DALI bus coupling unit for communicating with a central DALI controller • Power supply through DALI line with 5 mA DALI bus load • Plug-in terminals for connecting the DALI line • For installation in suspended ceilings 	A	5WG1 141-2AB51		1	1 unit	139	0.110
 <p>Flexcon commissioning software</p> <p>Minimum system requirements:</p> <ul style="list-style-type: none"> • Processor: 1.5 GHz, display resolution 1024 x 768, 1 GB RAM • Free space on hard disk: 100 MB DC • Windows XP SP3 or higher, Windows Vista SP1 or higher, or Windows 7 incl. NET Framework 3.5 SP1 • USB interfaces <p>Note</p> <p>Free software download from: www.siemens.com/flexcon</p>							

Notes



19/2	Switching/Pushbutton control/ Dimming / Shutter/blind controls
19/7	Motion detectors
19/8	DELTA reflex motion detectors, IP55
19/9	Remote control systems
19/11	Room temperature controllers

DELTA Control and Regulation Devices

Switching/Pushbutton control/Dimming / Shutter/blind controls

Technical specifications

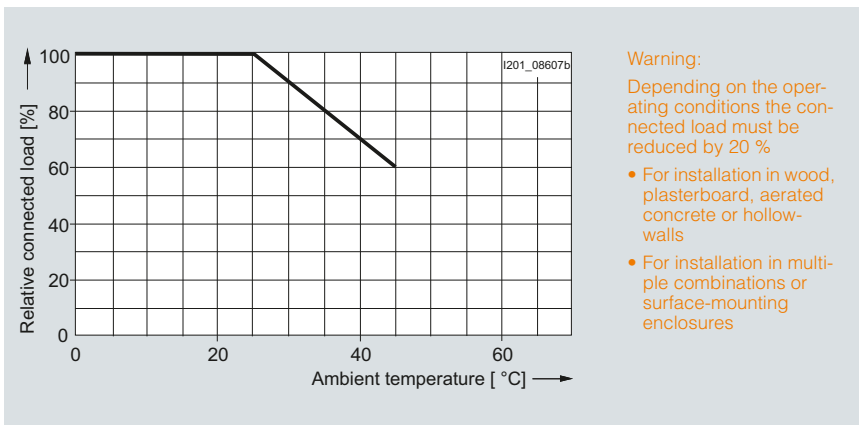
sys pushbutton

Power supply	Through the 230 V user interface (230 V AST) of the sys inserts		
Connections	10-pole contact strip (230 V AST) for connection to the system insert		
Mechanical data			
• Housing		Plastic	
• Dimensions (L x W x D)	mm	i-system	55 x 55 x 24 (incl. spring)
		DELTA profil	65 x 65 x 25 (incl. spring)
		DELTA style	68 x 68 x 27 (incl. spring)
• Installation	Is plugged onto the system insert		
Electrical safety			
• Degree of protection (acc. to EN 60529)	IP20		

Universal dimmer sys inserts, shutter/blind control sys inserts, switch sys inserts

Mechanical data			
• Housing		Plastic	
• Dimensions (L x W x D)	mm	71 x 71 x 32	
• Installation	Installation in switch and socket boxes with 60 mm Ø, 40 mm deep according to DIN 49073-1		
Extension units	Unlimited		
Mounting type	Claw fixing, screw fixing		
Electrical safety			
• Degree of protection (acc. to EN 60529)	IP20		

Maximum connected load at ambient temperature





Warning:

Depending on the operating conditions the connected load must be reduced by 20 %

- For installation in wood, plasterboard, aerated concrete or hollow-walls
- For installation in multiple combinations or surface-mounting enclosures

Selection and ordering data



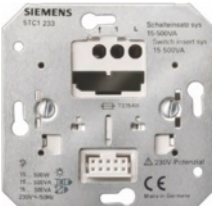
Version	DT	Order No.	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg	
sys pushbutton							
 5TC1 301	sys pushbutton						
	Versions						
	i-system						
	• Titanium white (similar to RAL 9010)	A	5TC1 301	1	1 unit	146	0.052
	• Electrical white (RAL 1013) (to be discontinued)	A	5TC1 300	1	1 unit	146	0.053
	• Aluminum metallic (similar to RAL 9006)	A	5TC1 303	1	1 unit	146	0.052
	• Carbon metallic (similar to RAL 7016) (to be discontinued)	A	5TC1 302	1	1 unit	146	0.053
	• Amber (similar to RAL 1036) (to be discontinued)	A	5TC1 302-0	1	1 unit	146	0.043
	• Piano black (similar to RAL 9005) (to be discontinued)	A	5TC1 302-1	1	1 unit	146	0.043
	• Chilly (similar to RAL 3020) (to be discontinued)	A	5TC1 302-2	1	1 unit	146	0.043
	DELTA profil						
	• Titanium white (similar to RAL 9010) (to be discontinued)	A	5TC1 310	1	1 unit	146	0.057
	• Silver (similar to RAL 9006) (to be discontinued)	A	5TC1 313	1	1 unit	146	0.048
DELTA style							
• Titanium white (similar to RAL 9010) (to be discontinued)	A	5TC1 317	1	1 unit	146	0.060	
• Platinum metallic (similar to RAL 9007) (to be discontinued)	B	5TC1 317-1	1	1 unit	146	0.036	
sys shutter/blind pushbutton							
 5TC1 321	Versions						
	i-system						
	• Titanium white (similar to RAL 9010)	A	5TC1 321	1	1 unit	146	0.054
	• Electrical white (RAL 1013) (to be discontinued)	A	5TC1 320	1	1 unit	146	0.054
	• Aluminum metallic (similar to RAL 9006)	B	5TC1 323	1	1 unit	146	0.054
	• Carbon metallic (similar to RAL 7016) (to be discontinued)	A	5TC1 322	1	1 unit	146	0.054
	DELTA profil						
	• Titanium white (similar to RAL 9010) ¹⁾ (to be discontinued)	A	5TC1 330	1	1 unit	146	0.058
	• Silver (similar to RAL 9006) ¹⁾ (to be discontinued)	A	5TC1 333	1	1 unit	146	0.056
	DELTA style						
	• Titanium white (similar to RAL 9010) (to be discontinued)	A	5TC1 337	1	1 unit	146	0.060
	• Platinum metallic (similar to RAL 9007) (to be discontinued)	B	5TC1 337-1	1	1 unit	146	0.035

¹⁾ Cutout frames must be ordered separately, see page 1/34.

Download the operating and mounting instructions from:

<http://support.automation.siemens.com/ww/view/en/5tc1330/all>

Switching/Pushbutton control/Dimming / Shutter/blind controls

Version	DT	Order No.	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
Inserts for dimmers						
 <p>SIEMENS 5TC1 230 Universal dimmer insert sys</p>	A	5TC1 230	1	1 unit	146	0.099
<p>Universal dimmer sys inserts</p> <ul style="list-style-type: none"> • For switching and dimming different electronic loads • Operation by UP 210 wave button (radio) • Automatic load detection • Lamp friendly soft start • Storing and switching on at one brightness value • Memory value retained even after power failure • Electronic short-circuit protection and overtemperature protection • On elimination of the short circuit/cooling, automatic return to normal mode • Extension unit operation by conventional pushbuttons • Rated voltage: ~230 V, 50 Hz (2-wire system) • Only mixed loads between incandescent lamp ratings and electric transformers are permissible <p>Connected load</p> <ul style="list-style-type: none"> • Incandescent lamp rating: 50 ... 420 W • Magnetic transformers: 50 ... 420 VA • Electronic transformers: 70 ... 420 VA 						
Inserts for shutter/blind control						
 <p>SIEMENS 5TC1 231 Shutter/blind control insert sys</p>	A	5TC1 231	1	1 unit	146	0.111
<p>Shutter/blind control sys inserts</p> <ul style="list-style-type: none"> • For controlling a blind or shutter motor with mechanical or electronic limit switches • Operation by <i>sys shutter/blind</i> pushbuttons and <i>UP 211 wave shutter/blind</i> pushbuttons (radio) • Two electrically interlocked relays, minimum switchover time of 1 s • Group and central controls through a combination of several <i>sys shutter/blind control</i> inserts • "Wind alarm" safety function can be implemented through the secondary input "UP" • Multiphase operation (i.e. different phases at the main and extension unit) is possible • Bridging of voltage interruptions 0.2 sec • Relay ON period at STEP command: 100 ms • Max. relay ON period: 120 s • Conventional shutter/blind pushbuttons (5TA2 114) or switches (5TA2 154) can be connected through secondary inputs • Rated voltage: 230V~, 50 Hz (N conductor required) • Connected load: max. 1 motor 1000 VA (8 A resistive load) 						
Inserts for switching						
 <p>SIEMENS 5TC1 233 Switching insert sys</p>	A	5TC1 233	1	1 unit	146	0.101
<p>sys switching inserts, 15 ... 500 VA</p> <ul style="list-style-type: none"> • For switching different electronic loads: <ul style="list-style-type: none"> - Incandescent lamps - HV halogen lamps - LV halogen lamps with magnetic transformer - LV halogen lamps with electronic transformer • Operation by UP 210 wave button (radio) • 2-wire connection method • Spare fuse at the fuse holder • Overload protection (thermal cutout) • Extension unit operation by conventional pushbuttons without glow lamps • Short-circuit protection through T3 miniature fuse, 15 A H 250 V • Extension unit cable (overall) max. 100 m • Rated voltage: 230 V AC/50 Hz <p>Connected load</p> <ul style="list-style-type: none"> • Incandescent lamp load 15 W ... 500 W • Conventional transformers (except toroidal-core transformers) 15 ... 500 VA • Toroidal-core transformers 15 ... 250 VA • Electronic transformers 15 ... 500 VA 						

1) Tops see page 19/2

2) Download the operating and mounting instructions :
5TC1 500: <http://support.automation.siemens.com/ww/view/en/5tc1230/all>
5TC1 501: <http://support.automation.siemens.com/ww/view/en/5tc1231/all>
5TC1 502: <http://support.automation.siemens.com/ww/view/en/5tc1233/all>

Overview

Motion detector tops

- Responds to heat motions and initiates a switching operation
- The lighting remains ON as long as motions are detected, otherwise it is switched off after the overrun time has elapsed
- The lighting is only switched on again after a locking time of 3 sec
- Only in combination with a motion detector insert
- Two different versions are available, depending on the required assembly height (1.10 or 2.20 m)
- Thanks to their modular design, tops and inserts can be freely combined
- The sensing range of a main unit can be extended by connecting a maximum of 10 motion detector extension units
- The number of connectable passive extension units is unlimited (e.g. pushbutton, 1 NO contact, 5TD2 120)
- Sensitivity is infinitely adjustable between 20 and 100 %

The comfort motion detector top also offers:

- Short-time duty setting, e.g. to control acoustic signal transducers (bells) for monitoring of an entry door
- The operating mode (continuous OFF/automatic/continuous ON) can be selected by means of a slide switch which can be secured in the automatic position

Motion detectors

Technical specifications






Device tops

Type		
Sensing angle		Approx. 180°
Mounting height	m	1.10 m / 2.20 m (depending on the version)
Sensing range		
• 1.10 m lens / 2.20 m lens	m	approx. 12 x 12
Number of lenses/ lens levels		
• 1.10 m lens		18 / 2
• 2.20 m lens		26 / 3
Rated voltage flush-mounting inserts		230 V AC, 50 Hz
Operating temperature	°C	Approx. -20 ... +45
Overrun time		
• Motion detector tops		Approx. 2 min, non-adjustable
• Comfort motion detector top		Approx. 10 s ... 30 min
Locking time after switch-off	s	Approx. 3 s
Brightness threshold value	Lux	Approx. 0 ... 80 / daytime operation
Sensitivity		Approx. 20 ... 100 %
Dimensions (W x L):	mm	i-system: 55 x 55, DELTA style: 68 x 68
Type of protection		IP20

Inserts

Type		5TC1 500	5TC1 501	5TC1 502
Mechanical data				
• Housing		Plastic		
• Dimensions (L x W x D)	mm	71 x 71 x 32		
• Installation		Installation in switch and socket boxes with 60 mm Ø, 40 mm deep according to DIN 49073-1		
Rated voltage		~230 V, 50/60 Hz	~230 V, 50/60 Hz	~230 V, 50/60 Hz N conductor required
Connected loads				
• Filament-lamp load	W	40 ... 400	2300	--
• HV halogen lamps	W	40 ... 400	2300	--
• Conventional transformers	VA	Max. 400	1000	--
• Electronic transformers	W		1500	--
• Fluorescent lamps, uncorrected	VA		1200	--
• Fluorescent lamps, parallel corrected	VA		920	--
• Fluorescent lamps in duo connection	VA		2300	--
Short-circuit protection				
• Miniature fuse		T 1.6 H 250 V	--	
Extension units				
• Number of motion detector extension unit inserts		10		
• Number of mechanical pushbuttons		Unlimited		--
Maximum cable length (in total)	m	100		
Mounting type		Claw fixing, screw fixing		
Electrical safety				
• Degree of protection (acc. to EN 60529)		IP20		

Selection and ordering data

Version	DT	Order No.	PU (UNIT, SET, M)	PS* P. unit	PG	Weight per PU approx. kg
Device tops						
Motion detector top²⁾						
	Versions	Mounting height				
	i-system/DELTA profil					
	• Titanium white (similar to RAL 9010) ³⁾	1.10 m	A	5TC1 503	1	1 unit 146 0.058
		2.20 m	A	5TC1 504	1	1 unit 146 0.056
	• Silver or aluminum metallic (similar to RAL 9006) ³⁾	1.10 m	A	5TC1 507	1	1 unit 146 0.061
		2.20 m	A	5TC1 508	1	1 unit 146 0.061
	DELTA style					
	• Titanium white (similar to RAL 9010)	1.10 m	A	5TC1 537	1	1 unit 146 0.065
		2.20 m	A	5TC1 542	1	1 unit 146 0.065
	• Platinum metallic (similar to RAL 9007)	1.10 m	A	5TC1 537-1	1	1 unit 146 0.065
		2.20 m	A	5TC1 542-1	1	1 unit 146 0.065
5TC1 503						
Comfort motion detector top²⁾						
	Versions	Mounting height				
	i-system/DELTA profil					
	• Titanium white (similar to RAL 9010) ³⁾	1.10 m	A	5TC1 505	1	1 unit 146 0.107
		2.20 m	A	5TC1 506	1	1 unit 146 0.107
	• Silver or aluminum metallic (similar to RAL 9006) ³⁾	1.10 m	A	5TC1 510	1	1 unit 146 0.106
		2.20 m	A	5TC1 511	1	1 unit 146 0.106
	DELTA style					
	• Titanium white (similar to RAL 9010)	1.10 m	A	5TC1 546	1	1 unit 146 0.112
		2.20 m	A	5TC1 551	1	1 unit 146 0.112
	• Platinum metallic (similar to RAL 9007)	1.10 m	A	5TC1 546-1	1	1 unit 146 0.112
		2.20 m	A	5TC1 551-1	1	1 unit 146 0.112
5TC1 505						
Inserts						
	Motion detector relay inserts¹⁾⁴⁾		A	5TC1 500	1	1 unit 146 0.080
	Flush-mounting insert for motion detector tops for switching extensive light sources and electric loads up to max. 10 A / 230 V					
5TC1 500						
	Motion detector triac inserts¹⁾⁴⁾		A	5TC1 501	1	1 unit 146 0.123
	<ul style="list-style-type: none"> • Flush-mounting insert for motion detector tops for switching <ul style="list-style-type: none"> - 230 V incandescent lamps - 230 V halogen lamps - LV halogen lamps with magnetic transformers • The lamps are switch on by means of a soft start 					
5TC1 501						
	Motion detector extension unit inserts¹⁾⁴⁾		A	5TC1 502	1	1 unit 146 0.050
	<ul style="list-style-type: none"> • Flush-mounting insert for motion detector tops • 3-wire extension unit, only in combination with a motion detector relay insert or a motion detector triac insert • When motion is detected, a brightness-independent switching signal is sent to the main unit • Minimum time between two switching signals is approx. 5 s • Evaluation takes place in the top of the main unit • Cannot be assigned to several main units • Not suitable for the direct switching of loads 					
5TC1 502						

1) Switching commands are issued by the release of the plug-on motion detector top or by an extension unit.

2) The matching design frame must be ordered separately.

3) The cutout frame and the required intermediate frame must be used for DELTA profil, see the chapter "Display and Operation Units -> Pushbutton Accessories".

4) Download the operating and mounting instructions :

5TC1 500: <http://support.automation.siemens.com/ww/view/en/5tc1500/all>

5TC1 501: <http://support.automation.siemens.com/ww/view/en/5tc1501/all>

5TC1 502: <http://support.automation.siemens.com/ww/view/en/5tc1502/all>



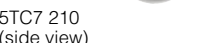

Device tops: <http://support.automation.siemens.com/WW/view/en/17738210/133300>

DELTA reflex motion detectors, IP55

Technical specifications













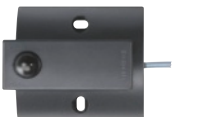
Rated voltage	230 V AC +/-10 %, 50/60 Hz
Electrical data	
• Power loss	Approx. 1 W
• Dusk sensor	From approx. 0.5 Lux brightness-independent operation
• Pulse mode	1 s ON / 9 s OFF
• Test mode	2 s brightness-independent operation
Switching capacity max.	
• Version 120°	
- Incandescent lamps	1000 CO
- Fluorescent lamps (inductive ballast)	8 x 58 W (uncorrected)
- Energy-saving lamps	4 unit
- Backup fuse	Max. 10 A
• Version 290° and 290° IR	
- Incandescent lamps	2500 CO
- Fluorescent lamps (inductive ballast)	20 x 58 W (uncorrected)
- Energy-saving lamps	8 unit
- Backup fuse	Max. 10 A
Mechanical data	
• Adjustment range of swivel arm	Max. 120°
• Dimensions (L x W x D)	Motion detector: 180 x 86 x 74 mm Special base: 64 x 88 x 105 mm
• Type of protection	IP55
• Mounting height	2 ... 4 m, ideal 2.50 m

Selection and ordering data

Version	DT	Order No.	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 <p>DELTA reflex motion detectors, IP55</p> <ul style="list-style-type: none"> • For surface-mounting on the wall or ceiling; the detector is plugged on when the wiring has been completed • Range: 120° approx. 10 m / 290° approx. 16 m • Comfortable two-button operation: <ul style="list-style-type: none"> - Any brightness value can be saved - Any overrun time between 5 s and 30 min can be saved - Test mode for commissioning - Switchover to brightness-independent mode and pulse mode - Resetting of detector to 7 lux and 2 min delay time • Rear view monitoring (only 290° types) • Automatic range stabilization (290° types only) • Automatic maloperation suppression • Vacation function on 290° IR type • Artificial light suppression (glare shield) • Control via NC pushbutton • Output: one NO contact, non-isolated 						
 <p>5TC7 210 (view from below)</p>						
 <p>5TC7 210 (side view)</p>						
<p>Versions</p>						
• 120°						
- Titanium white (similar to RAL 9010)	A	5TC7 210	1	1 unit	146	0.369
- Anthracite	A	5TC7 211	1	1 unit	146	0.359
• 290°						
- Titanium white (similar to RAL 9010)	A	5TC7 212	1	1 unit	146	0.375
- Anthracite	A	5TC7 213	1	1 unit	146	0.364
• 290° IR (incl. 5TC7 902 IR remote control)						
- Titanium white (similar to RAL 9010)	A	5TC7 214	1	1 unit	146	0.429
- Anthracite	A	5TC7 215	1	1 unit	146	0.424
<p>Special bases for "DELTA reflex motion detectors, IP55"</p> <ul style="list-style-type: none"> • For outside or inside-angle mounting • Cable entry surface or flush-mounted 						
<p>Versions</p>						
• Titanium white (similar to RAL 9010)	A	5TC7 900	1	1 unit	146	0.107
• Anthracite	A	5TC7 901	1	1 unit	146	0.106
<p>Spare remote control for "DELTA reflex motion detectors, IP55, 290° IR"</p> <ul style="list-style-type: none"> • Infrared remote control • Range: Approx. 5 m • Functions <ul style="list-style-type: none"> - Vacation function / Presence - Continuous ON (4h) / Normal mode - Test mode - Programming of the currently measured brightness value and the overrun time of 5s to 30 min - Direct selection of an overrun time of 10 min - Switchover to brightness-independent mode and pulse mode - Resetting of detector to 7 lux and 2 min delay time • Power supply through CR2025 lithium button cell, included in delivery • Dimensions (H x W x D): 87 x 40 x 6 mm 						
 <p>5TC7 902</p>						

¹⁾ Download the operating and mounting instructions from: <http://support.automation.siemens.com/ww/view/en/5tc7210/all>

Selection and ordering data

Version	DT	Order No.	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 <p>Mini hand-held transmitter, 4-channel</p> <ul style="list-style-type: none"> • IP30 • 256 commands can be coded for each button • Dimensions (L x W x D): 73 x 43 x 18.5 mm 	C	5TC6 107	1	1 unit	146	0.040
5TC6 107						
Hand-held transmitters						
 <ul style="list-style-type: none"> • IP30 • 256 commands can be coded for each button • Dimensions (L x W x D): 155 x 40 x 22.5 mm 	C	5TC6 117	1	1 unit	146	0.070
5TC6 117						
 <p>Replacement for 5TC6 100</p>	C	5TC6 118	1	1 unit	146	0.140
5TC6 118						
 <ul style="list-style-type: none"> • 8-channels • Can be coded for use as replacement transmitter for Infrafern 	C	5TC6 120	1	1 unit	146	0.070
5TC6 120						
Hand-held transmitter for industry						
 <ul style="list-style-type: none"> • IP54 • 256 commands can be coded for each button • Dimensions (L x W x D): 157 x 63 x 23 mm 	C	5TC6 114	1	1 unit	146	0.165
5TC6 114						
 <p>Replacement for 5TC6 110</p>	C	5TC6 115	1	1 unit	146	0.165
5TC6 115						
 <p>Replacement for 5TC6 112</p>	C	5TC6 116	1	1 unit	146	0.165
5TC6 116						
Receiver preamplifiers						
 <p>Front-end reception lens, metal enclosure</p> <p>IP20</p>	C	5TC6 200	1	1 unit	146	0.080
5TC6 200						
 <p>Side-end reception lens, metal enclosure</p> <p>IP20</p>	C	5TC6 201	1	1 unit	146	0.080
5TC6 201						
 <p>Front-end focusing lens, metal enclosure</p> <p>IP30</p>	C	5TC6 202	1	1 unit	146	0.080
5TC6 202						
 <p>Side-end reception lens, metal enclosure (to be discontinued)</p> <p>IP 30</p>	C	5TC6 203	1	1 unit	146	0.080
5TC6 203						
 <p>Front-end focusing lens, sealed</p> <p>IP65</p>	C	5TC6 204	1	1 unit	146	0.160
5TC6 204						
 <p>Side-end focusing lens, sealed</p> <p>IP65</p>	C	5TC6 205	1	1 unit	146	0.160
5TC6 205						

DELTA Control and Regulation Devices

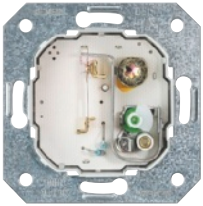
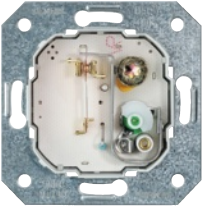
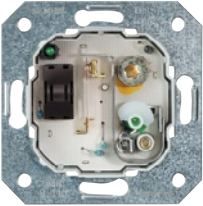
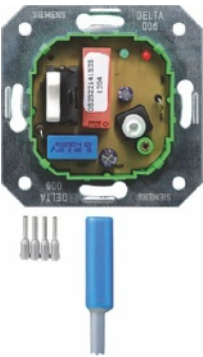
Remote control systems

Version	DT	Order No.	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
Decoders						
 Decoders, 8-channel 12 V DC	C	5TC6 250	1	1 unit	146	0.060
5TC6 250						
 Decoders, 8-channel 12 V DC / 24 V DC	C	5TC6 251	1	1 unit	146	0.065
5TC6 251						
Circuit breakers						
 Circuit breakers, four inputs/outputs, 12 V DC (to be discontinued) 16 A	C	5TC6 300	1	1 unit	146	0.175
5TC6 300						
 Circuit breakers, four inputs/outputs, 24 V DC 16 A	C	5TC6 301	1	1 unit	146	0.175
5TC6 301						
Compact systems						
 Compact systems, 8-channel (to be discontinued) <ul style="list-style-type: none"> • 230 V AC, 50 Hz, IP65 • With power supply unit • Without receiver preamplifiers • 4 preamplifier inputs, 8 power relay outputs • Expansion to more than 8 channels through parallel switching of 5TC6 380 • Dimensions: 115 x 325 x 250 mm 	C	5TC6 380	1	1 unit	146	1.650
5TC6 380						
 Compact systems, 2-channel <ul style="list-style-type: none"> • 230 V AC, 50 Hz, IP65 • With power supply unit • Without receiver preamplifiers • 2 preamplifier inputs, 2 power relay outputs • Expansion to 4 channels through parallel switching of 5TC6 383 • Dimensions: 62 x 168 x 123 mm 	C	5TC6 383	1	1 unit	146	0.520
5TC6 383						
Accessories						
 Power supply units (to be discontinued) <ul style="list-style-type: none"> • 230 V AC / 12 V DC, 1 A • For wall mounting • Dimensions: 79 x 149 x 63 mm 	C	5TC6 331	1	1 unit	146	0.790
5TC6 331						
 Wall-mounted bracket, for "hand-held transmitters" and "replacement hand-held transmitters" (to be discontinued) Wall-mounted bracket can be used for the following hand-held transmitters: <ul style="list-style-type: none"> • 5TC6 100 • 5TC6 101 • 5TC6 102 • 5TC6 103 • 5TC6 117 • 5TC6 118 • 5TC6 120 • 5TC6 121 • 5TC6 190 • 5TC6 191 	C	5TC6 900	1	1 unit	146	0.100
5TC6 900						

Technical specifications

Type	5TC9 200	5TC9 201	5TC9 202	5TC9 203
Mechanical data				
• Housing	Plastic			
• Dimensions (L x W x D)	mm 71 x 71 x 32			
• Installation	Installation in switch and socket boxes with 60 mm Ø, 40 mm deep according to DIN 49073-1			
Connecting terminals	Screwless			
Rated voltage	1/N ~230 V/240 V, 50 Hz, 10 A (4 A)			
Temperature range	°C 5 ... 30			5 ... 50
Switching temperature difference	K Approx. 0.5			Approx. 1
Temperature reduction	K Approx. 5	Approx. 4	Approx. 5	
Mounting type	Claw fixing, screw fixing			
Electrical safety				
• Degree of protection (acc. to EN 60529)	IP 30, with total insulation			




Selection and ordering data

Version	DT	Order No.	PU (UNIT, SET, M)	PS* / P. unit	PG	Weight per PU approx. kg
Inserts						
 5TC9 200 Room temperature controllers, 1 NC contact¹⁾ <ul style="list-style-type: none"> Standard version with nighttime reduction For electric and warm water convectors, pumps and tank control Operates as two-position controller with thermal feedback If the temperature at the bimetal increases and the setpoint value is reached, the NC contact (heating contact) will switch off If the temperature at the bimetal drops below the selected setpoint value minus the hysteresis, the NC contact will switch on again The temperature range is shifted downward by approx. 5 K during temperature reduction control 	A	5TC9 200	1	1 unit	146	0.072
 5TC9 201 Room temperature controllers, 1 CO contact¹⁾ <ul style="list-style-type: none"> Temperature reduction approx. 4 K Standard version For electric and warm water convectors, pumps and tank control Operates as two-position controller with thermal feedback If the temperature at the bimetal increases and the setpoint value is reached, the NC contact (heating contact) will switch off and the NO contact (cooling contact) will close If the temperature at the bimetal drops below the selected setpoint value minus the hysteresis, the NC contact will switch on again 	A	5TC9 201	1	1/100 units	146	0.073
 5TC9 202 Room temperature controllers, 3-position switch¹⁾ <ul style="list-style-type: none"> 3-position switch: automatic timing, constant day temperature, constant nighttime reduction For electric and warm water convectors, pumps and tank control The switch S1 can be used to preselect the temperature reduction between clock/day and night Operates as two-position controller with thermal feedback If the temperature at the bimetal increases and the setpoint value is reached, the NC contact (heating contact) will switch off If the temperature at the bimetal drops below the selected setpoint value minus the hysteresis, the NC contact will switch on again The temperature range is shifted downward by approx. 5 K during temperature reduction control 	A	5TC9 202	1	1 unit	146	0.075
 5TC9 203 Room temperature controllers, direct floor heating¹⁾ <ul style="list-style-type: none"> With remote sensor 2.3 kW switching capacity NO switching contact Sensor element: NTC according to DIN 44 574 Sensor cable: PVC, 2 x 0.50 mm², length 4 m Ambient temperature: -25°C to +70°C Switch for network "ON/OFF" For regulating floor storage heating systems and electric floor heating systems with heating mats Comprising two parts: Controller (for setting the desired floor temperature) and remote sensor (in the floor for monitoring the set temperature) Rotary knob for setting the floor temperature If the temperature drops below this value, the controller will request heat; this is indicated optically by a red LED A nighttime reduction can be activated via the connection (time switch); this is indicated by a green LED 	A	5TC9 203	1	1 unit	146	0.247

¹⁾ Tops see page 19/12

* You can order this quantity or a multiple thereof.

Room temperature controllers

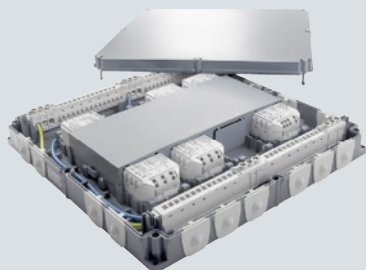
Version	DT	Order No.	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg		
Device tops								
General information <ul style="list-style-type: none"> For single devices and combinations For screw fixing Degree of protection: IP20 								
Cover plates for room temperature controllers, NC/CO contacts¹⁾								
Versions								
i-system								
Size of cover plates: 55 x 55 mm								
		• Titanium white (similar to RAL 9010) ³⁾	A	5TC9 221	1	1/25 units	146	0.013
		• Electrical white (RAL 1013) ³⁾ (to be discontinued)	A	5TC9 220	1	1 unit	146	0.013
		• Aluminum metallic (similar to RAL 9006) ³⁾	A	5TC9 250	1	1 unit	146	0.013
		• Carbon metallic (similar to RAL 7016) ³⁾ (to be discontinued)	A	5TC9 251	1	1 unit	146	0.013
DELTA profil								
Size of cover plates: 65 x 65 mm								
		• Titanium white (similar to RAL 9010) ²⁾³⁾⁴⁾ (to be discontinued)	A	5TC9 226	1	1/25 units	146	0.016
		• Silver (similar to RAL 9006) ²⁾³⁾⁴⁾ (to be discontinued)	A	5TC9 228	1	1 unit	146	0.017
DELTA style								
Size of cover plates: 65 x 65 mm, with intermediate frame included: 68 x 68 mm								
		• Titanium white (similar to RAL 9010)	A	5TC9 256	1	1 unit	146	0.020
		• Platinum metallic (similar to RAL 9007)	A	5TC9 256-1	1	1 unit	146	0.020
		• Basalt black (similar to RAL 7016) (to be discontinued)	A	5TC9 257	1	1 unit	146	0.022
Cover plates for room temperature controllers, 3-position switch¹⁾								
Possible positions: <ul style="list-style-type: none"> Automatic timing Always day temperature Always nighttime reduction 								
Versions								
i-system								
Size of cover plates: 55 x 55 mm								
		• Titanium white (similar to RAL 9010) ³⁾	A	5TC9 223	1	1 unit	146	0.013
		• Electrical white (RAL 1013) ³⁾ (to be discontinued)	A	5TC9 222	1	1 unit	146	0.017
		• Aluminum metallic (similar to RAL 9006) ³⁾	A	5TC9 252	1	1 unit	146	0.013
		• Carbon metallic (similar to RAL 7016) ³⁾ (to be discontinued)	A	5TC9 253	1	1 unit	146	0.018
DELTA profil								
Size of cover plates: 65 x 65 mm								
		• Titanium white (similar to RAL 9010) ²⁾³⁾⁴⁾ (to be discontinued)	A	5TC9 234	1	1 unit	146	0.008
		• Silver (similar to RAL 9006) ²⁾³⁾⁴⁾ (to be discontinued)	A	5TC9 236	1	1 unit	146	0.021
DELTA style								
Size of cover plates: 65 x 65 mm, with intermediate frame included: 68 x 68 mm								
		• Titanium white (similar to RAL 9010)	A	5TC9 258	1	1 unit	146	0.026
		• Platinum metallic (similar to RAL 9007) (to be discontinued)	A	5TC9 258-1	1	1 unit	146	0.026
		• Basalt black (similar to RAL 7016) (to be discontinued)	A	5TC9 260	1	1 unit	146	0.017
Cover plates for room temperature controllers, direct floor heating¹⁾								
Versions								
i-system								
Size of cover plates: 55 x 55 mm								
		• Titanium white (similar to RAL 9010) ³⁾	A	5TC9 225	1	1 unit	146	0.014
		• Electrical white (RAL 1013) ³⁾ (to be discontinued)	A	5TC9 224	1	1 unit	146	0.012
		• Aluminum metallic (similar to RAL 9006) ³⁾	A	5TC9 254	1	1 unit	146	0.013
		• Carbon metallic (similar to RAL 7016) ³⁾ (to be discontinued)	A	5TC9 255	1	1 unit	146	0.013
DELTA profil								
Size of cover plates: 65 x 65 mm								
		• Titanium white (similar to RAL 9010) ²⁾³⁾⁴⁾ (to be discontinued)	A	5TC9 242	1	1 unit	146	0.015
		• Silver (similar to RAL 9006) ²⁾³⁾⁴⁾ (to be discontinued)	A	5TC9 244	1	1 unit	146	0.017
DELTA style								
Size of cover plates: 65 x 65 mm, with intermediate frame included: 68 x 68 mm								
		• Titanium white (similar to RAL 9010)	A	5TC9 261	1	1 unit	146	0.021
		• Platinum metallic (similar to RAL 9007) (to be discontinued)	A	5TC9 261-1	1	1 unit	146	0.021
		• Basalt black (similar to RAL 7016) (to be discontinued)	A	5TC9 262	1	1 unit	146	0.019

¹⁾ Inserts see page 19/11

²⁾ Use of cutout frames required, see chapter "Display and Operation Units -> Pushbutton Accessories".

³⁾ Download the operating and mounting instructions at: <http://support.automation.siemens.com/WW/view/en/17738210/133300>

⁴⁾ The color silver is identical to aluminum metallic (i-system)



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Appendix

Technical Information

Switch actuators

Technical specifications

Load data for switch actuators per channel

		N 562/11 switch actuators, main module	N 562/21 switch actuators, expansion	N 512/11 switch actuators, main module	N 512/21 switch actuators, expansion	N 513/11 switch actuators, main module	N 513/21 switch actuators, expansion	N 562 binary outputs	N 510/03 load switches	N 510/04 load switches	N 512 load switches	N 511/02 switch actuators	N 567 switch actuators	N 567/11 switch actuators
Contact current														
Rated current, AC	A	10 AX ²⁾	16 AX	20 AX	10	16	16	16	16	16	16	16	8	8
AC3 operation (p.f. = 0.45)	VA	2300	3680	3680	500	2500	3680	3680	3680	3680	1)	1)	500	500
Maximum switch-on peak current A/ms (if more than one, specification of the highest current value)		1)	1)	1)	1)	400/0.15	600/0.15	600/0.15	600/0.15	600/0.15	1)	1)	1)	110/50
Contact voltage														
Rated voltage, AC	V	230	230	230	230	230	230	230	230	230	230	230	230	230
Service life														
Mechanical service life Switching operations in millions		1	1	1	50	1	1	1	30	2	10	10	10	10
Electrical service life Switching operations in millions		0.1	0.1	0.1	0.1	1)	1)	1)	0.1	0.1	0.1	0.1	0.1	0.1
Power loss														
Maximum power loss per device at rated power	W	3	3	3	1	5	5	9	10	5	4	4	4	4
Switching capacities/load types, loads														
Resistive load	W	3680	3680	4600	2300	3680	3680	3680	3680	3680	1840	1840	1840	1840
Minimum switching capacity	V/mA	12/100	12/100	12/100	24/10	12/100	12/100	12/100	12/100	1)	5/100	24/10	24/10	24/10
DC switching capacity	V/A	24/10	24/16	24/20	30/10	24/10	24/10	24/10	24/10	24/16	24/8	30/10	30/10	30/10
Maximum capacitive load	µF	200	200	200	35	140	200	200	35	35	35	35	35	35
Incandescent lamps														
Incandescent lamps	W	2300	3680	3680	1000	2500	3680	3680	1000	1000	1000	1000	1000	1000
Halogen lamp 230 V	W	2300	3680	3680	1000	2500	3680	3680	1000	1000	1000	1000	1000	1000
LV halogen lamp with conventional transformer (inductive)	VA	1200	2000	2000	500	500	2000	2000	500	200 ... 500	200 ... 500	200 ... 500	200 ... 500	200 ... 500
T5/T8 fluorescent lamps														
Uncorrected	VA	2300	3680	3680	500	2500	3680	3680	500	500	500	500	500	500
Parallel corrected (at max. possible C)	W	1500	2500	2500	2 x 58	1300	2500	2500	2 x 58	2 x 58	2 x 58	2 x 58	2 x 58	2 x 58
DUO circuit	VA	1500	3680	3680	1000	2500	3680	3680	1000	1000	1000	1000	1000	1000
ECG Osram QT1 1 x 28/54 W ³⁾	Unit(s)	37	59	59	37	59	59	59	59	37	37	37	37	37
ECG Osram QTP8 1 x 36 W	Unit(s)	16	31	31	14	31	31	31	14	14	14	14	14	14
ECG Osram QT1 1 x 35/49/80 W QTM 1 x 26-42 ³⁾	Unit(s)	11	21	21	10	21	21	21	10	10	10	10	10	10
ECG Osram QTP8 2 x 58 W; QTI 2 x 35/49/80 ³⁾	Unit(s)	5	9	9	5	9	9	9	5	5	5	5	5	5
Compact lamps														
Uncorrected	VA	1600	3680	3680	500	1600	3680	3680	500	500	500	500	500	500
Parallel corrected (at max. possible C)	W	1100	2500	2500	300	1100	3000	3000	300	300	300	300	300	300
ECG Osram Duluxtronics DT ³⁾	Unit(s)	15	25	25	15	25	25	25	25	15	15	15	15	15
Mercury-vapor lamps														
ECG Osram PTI 35/220-240S ³⁾	Unit(s)	7	14	14	7	14	14	14	7	7	7	7	7	7
ECG Osram PTI 70/220-240S ³⁾	Unit(s)	4	8	8	4	8	8	8	4	4	4	4	4	4

¹⁾ On request.

²⁾ Further information on page 2/3.

³⁾ The number of ECG types takes into account the use of miniature circuit breakers with characteristic B.

For complete technical specifications, see: www.siemens.com/gamma-td.

N 567/12 switch actuators	N 567/22 switch actuators	N 502/02 combination switch actuators	N 670 Universal I/O modules	GE 561/01 wave switch actuators GE 561/11 wave switch actuators	UP 510/03 binary outputs UP 510/13 binary outputs	UP 511/10 switch actuators	UP 562/31 switch actuators	RL 512/23 switch actuators
2	10	16	10	16	10	16	6	16 AX
1)	500	500	500	500	500	500	500	3680
1)	80/20	80/20	110/50	80/20	110/50	400/20	400/20	1)
230	230	230	230	230	230	230	230	230
20	30	30	10	30	10	5	5	1
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
5	9	13	9	4	3	2	1	3
460	2300	3680	2300	3680	2300	3680	1380	3680
5/10	24/100	24/100	24/100	24/10	24/10	1)	1)	12/100
24/8	24/10	24/16	30/10	24/16	30/10	1)	1)	24/16
12	35	35	35	35	35	105	105	200
500	1000	1000	1000	1000	1000	2500	1380	3680
500	1000	1000	1000	1000	1000	2200	1000	3680
200	500	500	200 ... 500	500	200 ... 500	1000	1000	2000
200	500	500	500	500	500	28 x 58	1380	3680
200	2 x 58	2 x 58	2 x 58	2 x 58	2 x 58	15 x 58	15 x 58	2500
200	1000	1000	1000	1000	1000	28 x 58	1380	3680
22	37	59	37	59	37	59	26	59
7	14	14	14	14	14	28	28	31
5	10	10	10	10	10	21	21	21
2	5	5	5	5	5	9	9	9
200	500	500	500	500	500	1)	1)	3680
200	300	300	300	300	300	1)	1)	2500
7	15	15	15	15	15	25	25	25
3	7	7	7	7	7	14	14	14
2	4	4	4	4	4	8	8	8

Appendix

Technical Information

Switch/dimming actuators

Technical specifications

Load data for switch/dimming actuators per channel

		N 526/02 switch/dimming actuators	N 526E02 switch/dimming actuators
Contact current			
Rated current, AC	A	6	16
Maximum switch-on peak current (if more than one, specification of the highest current value)	A/ms	120/20	400/0.15
Contact voltage			
Rated voltage, AC	V	230	230
Service life			
Mechanical service life Switching operations in millions		10	1
Electrical service life Switching operations in millions		0.4	1 ¹⁾
Power loss			
Maximum power loss per device at rated power	W	6	9
Switching capacities/load types, loads			
Resistive load	W	1380	3680
Minimum switching capacity	V/mA ¹⁾		12/100
DC switching capacity	V/A	30/8	24/10
Maximum capacitive load	µF	163	140
Incandescent lamps			
Incandescent lamps	W	1380	2500
Halogen lamp 230 V	W	1380	2500
LV halogen lamp with conventional transformer (inductive)	VA	500	500
T5/T8 fluorescent lamps			
Uncorrected	VA	1380	2500
Parallel corrected (at max. possible C)	W	1380	1300
DUO circuit	VA	1380	2500
ECG Osram QTI 1 x 28/54W	Unit(s)	22	59
ECG Osram QTP 1 x 18/24/36 W	Unit(s)	9	31
ECG Osram QTP 1 x 58 W	Unit(s)	6	21
ECG Osram QTP 2 x 18/24/58 W; 3 x 18 W; 4 x 18 W	Unit(s)	2	9
Compact lamps			
Uncorrected	VA	1380	1600
Parallel corrected (at max. possible C)	W	1380	1100
ECG Osram Duluxtronics DT	Unit(s)	9	25
Mercury-vapor lamps			
ECG Osram PTI 35/220-240S	Unit(s)	4	14
ECG Osram PTI 70/220-240S	Unit(s)	2	8

¹⁾ On request.

For complete technical specifications, see: www.siemens.com/gamma-td.

Technical specifications

Load data for shutter/blind actuators per channel

		N 501 combination shutter/blind actuators	N 521 shutter/blind actuators	N 523/02 shutter/blind actuators N 523/03 roller shutter actuators N 523/04 shutter/blind actuators	N 523/11 shutter/blind actuators	N 522/03 shutter/blind actuators	N 524 shutter/blind actuators	UP 520/31 shutter/blind actuators	RL 521/23 shutter/blind actuators
Contact current									
Rated current	A	6 (AC)	6 (AC)	6 (AC)	6 (AC)	8 (AC)	1 (DC)	6 (AC)	6 (AC)
AC3 operation (p.f. = 0.45)	VA	200	500	200	200	200	200	1000	500
Contact voltage									
Rated voltage	V	230 AC	230 AC	230 AC	230 AC	230 AC	24 DC	230 AC	230 AC
Service life									
Mechanical service life Switching operations in millions		20	50	20	20	20	20	¹⁾	50
Electrical service life Switching operations in millions		0.1	0.1	0.1	0.1	0.1	0.1	¹⁾	10
Power loss									
Maximum power loss per device at rated power	W	7	2	3	5	8	6	¹⁾	3
Switching capacities/load types, loads									
Resistive load	W	1380	1380	1380	1380	1840	24	¹⁾	1380
Minimum switching capacity	V/mA	5/10	24/10	5/10	5/10	5/10	5/10	¹⁾	24/10
DC switching capacity	V/A	24/8	30/10	24/8	24/8	24/8	24/8	¹⁾	30/10

¹⁾ On request.

For complete technical specifications, see: www.siemens.com/gamma-td.

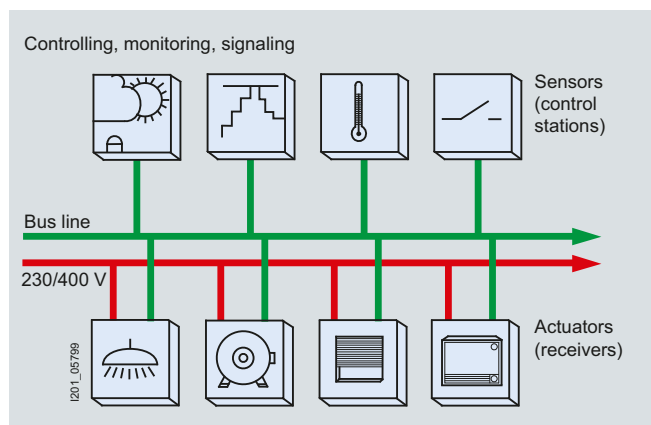
Appendix

Technical Information

System overview

Overview

General information



Ever increasing demands made on the flexibility and convenience of electrical installations, combined with the requirement to minimize energy requirements, have led to the development of building management systems. The bus technology used in these systems is based on manufacture-independent and internationally standardized technology: KNX. More than 100 manufacturers support this standard and have joined forces to form the KNX Association.

The member companies ensure the availability of bus-compatible products. This has made it possible for devices from various manufacturers to be used in a single KNX system.

Demand for more convenience and the fact that more and more is technically possible means that an increasing amount of time and effort is being devoted to electrical installations. While conventional electrical installation technology has reached the limits of its capabilities, GAMMA *instabus*, the intelligent building management systems from Siemens based on KNX has made it possible to satisfy these comprehensive demands with solutions that are both easy to manage and affordable.

System advantages

In conventional electrical installations, each function needs its own cable and each control system a separate network. By contrast, GAMMA *instabus* allows all operational functions and processes to be controlled, monitored and signaled via a single common cable. This means that the energy feeder can be routed directly to consumers without any detours.

Not only does this reduce the amount of cables required, it also has other huge advantages: electrical installations in buildings are far simpler to install, and it is also easy to add any subsequent extensions and make modifications. If the purpose or configuration of a building is changed, the GAMMA *instabus* system is easy to adapt by simply reassigning the various bus devices (changing their parameters), without the need to lay any new cables. These parameters can be reassigned using a PC connected to GAMMA *instabus* and the configuration and commissioning software ETS (Engineering Tool Software).

With the right interfaces, GAMMA *instabus* can also be connected to the control centers of other building management and automation systems (e.g. SICLIMAT X) or to a public telephone network (e. g. ISDN) or using a LAN/Internet connection. It is therefore just as cost-effective to use the GAMMA *instabus* in the family home as in hotels, schools, banks, office buildings or complex non-residential buildings.

Transmission technology

The KNX-based GAMMA *instabus* is a distributed, event-controlled bus system with serial data transmission for the controlling, monitoring and signaling of operational functions.

All the connected bus devices can exchange data over a common transmission path, the bus. Data is transmitted in serial mode and in compliance with precisely defined rules (the bus protocol). The data to be transmitted is packed into a telegram and sent over the bus from a sensor (the command output) to one or more actuators (the command receiver).

Each receiver acknowledges receipt of the telegram when the transmission is successful. If no acknowledgement is issued, transmission is repeated up to three times. If the telegram is still not acknowledged, the send operation is aborted and the error noted in the memory of the transmitter.

Transmission of data using KNX is not electrically isolated as the power supply for the bus devices (24 V DC) is transmitted at the same time. The telegrams are modulated on this direct voltage, whereby a logic zero is transmitted as a pulse. The omission of a pulse is interpreted as a logic One.

The individual data of the telegrams are transmitted in asynchronous mode. However, transmission is synchronized by start and stop bits.

Access to the bus as the shared physical medium of communication for asynchronous transmission must be controlled unambiguously. In the case of KNX, the CSMA/CA procedure is used for this purpose. The CSMA/CA procedure guarantees collision-free access to the bus without any reduction of bus data throughput.

All stations listen in but only those actuators actually addressed respond. If a station wants to transmit, it first has to listen in and wait until no other station is transmitting (Carrier Sense). When the bus is unoccupied, any station can begin a transmission operation (Multiple Access).

If two stations begin to transmit simultaneously, the higher-priority instantly asserts itself on the bus (Collision Avoidance), while the other station pulls back and restarts the transmission operation some time later.

If the two stations have an identical level of priority, the one with the smaller physical address asserts itself.

Addressing

Every letter needs an address in order for it to be correctly delivered by the postal service. The addressing of bus devices is similar, but the form used for postal purposes is unsuitable in this case.

During configuration with the ETS, each bus device is assigned its own physical address with which it can be uniquely identified, just as a postal address is a unique ID for the recipient of a letter. However, the physical address has to be expressed in the language of the bus, and is based on the topological structure of the KNX system.

Physical addressing is used by the ETS only for commissioning the individual bus devices or for servicing and diagnostics activities. In this case the addressing is performed along the same lines as for the postal delivery service.

By contrast, the KNX system uses a different address for telegram traffic: the logical or so-called group address. This address is not based on the bus topology but on the operational functions (applications) of the building.

Unlike the postal service, which delivers a letter to the recipient's address, the configured group address is written into each telegram sent by the transmitter. Every bus device listens to this telegram, reads the group address contained in it, and checks whether the telegram is addressed to it or not.

The group address to which a bus device should respond is assigned during configuration of the KNX system using ETS. Unlike the postal delivery service, several group addresses can be assigned to one bus device.

When a bus device is listening to a telegram on the bus, it will always receive the telegram if it responds to the group address entered in the telegram. If not, it will discard the telegram as not being intended for it.

Topology

Up to 64 bus-compatible devices (stations) can be connected to and operated on the smallest unit of the KNX system, i. e. on a single line. Using line couplers connected to the so-called main line it is possible to bundle up to 15 lines in an area.

Fifteen areas can be joined together by means of backbone couplers, which are connected to the so-called backbone lines, in order to form a larger unit.

Interfaces (gateways) to third-party systems (SICLIMAT X, LAN, etc.), or additional KNX systems are connected to the backbone line.

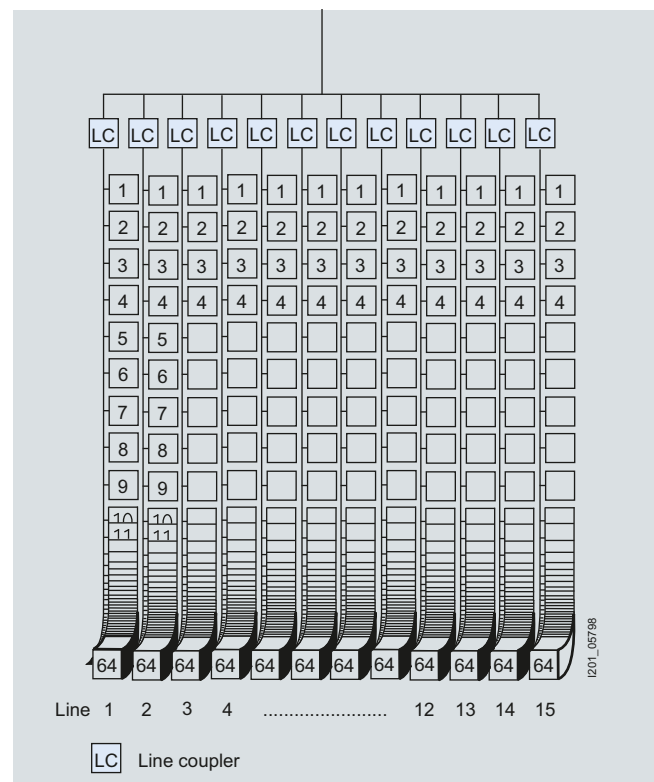
Although more than 14,000 devices can be interconnected in a single unit, the clear-cut logic of the system is preserved. Telegrams only ever overstep the interfaces to other lines and function areas if they are needed in those areas. This minimizes the telegram load on the main line. Line/backbone couplers carry out the necessary filter function.

The physical address is based on this topological structure: every device can be uniquely identified through the specification of its area, line and device number. For assignment of the devices to the operational functions the group addresses are divided into main groups and subgroups.

During configuration it is possible to divide the group addresses for different management functions into as many as 14 main groups, e. g. for

- Lighting control
- Shutter/blind control
- Room control for heating, ventilation, air conditioning.

Each main group can include as many as 2048 subgroups, to suit the user's requirements. This means that each device is able to communicate with all the other ones.



Technology

Each line requires its own power supply unit for the devices, and is therefore self-sufficient.

The Siemens power supply unit supplies the individual devices on the line with SELV (safety extra-low voltage) of 24 V DC and, depending on the version, can be loaded with 160 mA, 320 mA or 640 mA. It features both voltage and current limiting and is therefore short-circuit resistant. Short system interruptions are jumpered with a buffer period of 200 ms.

The bus load depends on the type of devices connected. The devices are ready for operation at a minimum of 21 V DC and typically draw 150 mW from the bus. If there is a concentration of a large number of bus devices in a single location, the power supply unit must be located in the near vicinity.

A maximum of two power supply units are permissible on one line. A minimum distance of 200 m of cable length must be observed between the two power supply units.

The length of a cable plus all junctions must not exceed 1000 m. The distance between a power supply unit and a device must not exceed 350 m. In order to ensure that there are no telegram collisions, the distance between two devices should be limited to a maximum of 700 m.

The bus cable can be laid parallel to the mains cable. It can be looped and branched. A cable terminating resistor is not required. The devices are connected to the bus by means of either pressure contact or bus terminals. Connection by means of pressure contact is achieved by simply snapping the devices (designed for installation in distribution boards) on to the TH35 EN 60715 standard mounting rail with integrated data rail. Transition from the data rail to the bus cable is effected by a connector. The bus cable is connected to surface-mounting, flush-mounting, wall-mounting, ceiling-mounting and built-in devices by plugging on the bus terminal.

Appendix Technical Information

System overview

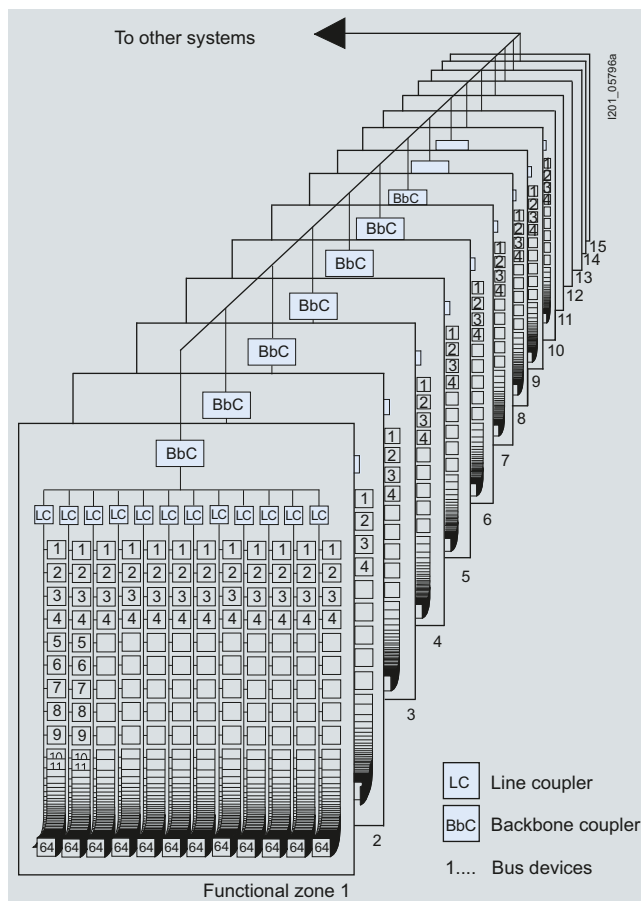
Devices

Each device generally comprises a universal *Bus Coupling Unit* (BCU) and a task-specific *Bus Terminal* (BT, e. g. pushbutton or display), which exchanges information with the BCU via the *User Interface* (UI). The BCU receives telegrams from the bus, decodes them and actuates the BT. Conversely, the BT sends information to the BCU, which encodes it and sends it as a telegram onto the bus.

During configuration and commissioning with the ETS, the BCU receives the parameterization data for the function that is to be performed. For this purpose, the BCU contains a *Microprocessor* (MP) with a non-volatile ROM (*Read Only Memory*), a volatile RAM (*Random Access Memory*) and a non-volatile EEPROM (*Electrically Erasable Programmable ROM*).

The ROM contains the system-specific software that cannot be changed by the user. The parameterization data for the function of the BCU to be performed are saved by the ETS in the EEPROM. The current data are saved by the MP in the RAM.

The assignment of the UI pins differs on the various BTs. This ensures that a BT connected through the UI is able to communicate error-free with the BCU when the relevant application program has been loaded by ETS in the EEPROM of the BCU.



System data		
Bus cable		
• Cable type	mm ²	YCYM 2 x 2 x 0.8 One core pair (red, black) for signal transmission and power supply, one core pair (yellow, white) for additional applications (SELV or voice)
Cable length		
• Cable lengths of one line in total (core diameter: 0.8 mm)	m	max. 1 000 (including all junctions)
• Length between two bus devices	m	Max. 700
• Length between bus device and power supply unit (320 mA)/choke	m	Max. 350
• Length between power supply unit (320 mA) and choke		Side-by-side mounting necessary (on standard mounting rail with integrated data rail)
Bus devices		
• Number of areas		Max. 15
• Number of lines per area		Max. 15
• Number of bus devices per line		Max. 64
Topology		Line, star or tree structure
Power supply		
• Power supply	V DC	24 (SELV safety extra-low voltage)
• Power supply units per line		One power supply unit (160, 320 or 640 mA)
Transmission		
• Transmission technology		Distributed, event-controlled, serial, symmetric
• Baud rate	bit/s	9600
Device features (unless otherwise specified)		
Degree of protection according to EN 60529		IP20
Protective measure		Bus: safety extra-low voltage SELV 24 V DC
Overvoltage category		III
Rated insulation voltage U_i	V	250
Degree of pollution		2
EMC requirements		complies with EN 50081-1 and prEN 50082-2 (severity 3), prEN 50090-2-2, KNX/ <i>EIB</i> manual
Resistance to climate		prEN 50090-2-2, KNX/ <i>EIB</i> manual
Operating conditions		
• Application		For fixed installation indoors, for dry rooms and installation in heavy-current distribution boards
• Ambient operating temperature	°C	-5 to +45
• Humidity in operation	%	Max. 93
• Storage temperature	°C	-40 to +55
• Humidity in storage	%	Max. 93
Certification		KNX/ <i>EIB</i> certified
CE marking		Compliant with EMC Directive (residential and non-residential buildings), Low Voltage Directive

Appendix

Technical Information

UL standard

Overview

GAMMA *instabus* Devices comply with UL standard

Broad spectrum

UL standards are used in North America, but also in several other countries. This is of particular importance to European exporters of electrical switchgear equipment for machines who export to the USA, as their products will only be accepted if they meet the relevant UL standards. UL 508A describes the design of control cabinets and implementation of integral components with reference to other pertinent UL standards where applicable. It therefore represents the basic standard for all electrical systems used in North America. A wide range of GAMMA *instabus* devices comply with UL standards and are therefore suitable for implementation worldwide in both IEC/EN and UL applications within the framework of their specified use.

Further links

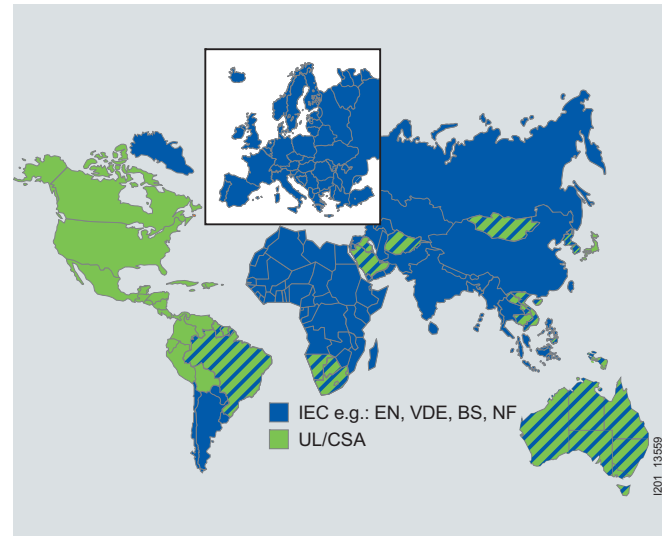
www.ul.com for general UL information

www.ul.com/database for UL-listed devices

www.ul-europe.com for UL information concerning Europe

www.siemens.com/gamma for information on GAMMA products

Overview of IEC – UL standards

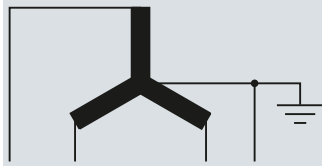


Worldwide application of EN/IEC or UL standards

Low-voltage systems in the USA

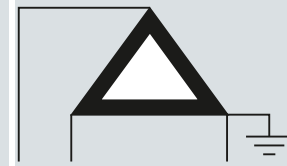
While a variety of different systems are used in the USA, three-phase systems with 240 V and 480 V and 3- and 4-wire systems are the most common, with 208 V and 600 V playing a considerably smaller role. Residential buildings are primarily fitted with 120 to 240 V single-phase systems. A frequency of 60 Hz is standard in North America.

Industry and commercial



Three-phase, 4 wires

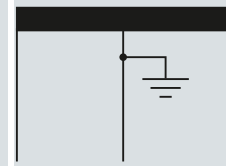
Three-phase wye, 4 wires



Three-phase, 3 wires

Three-phase delta, 3 wires, grounded corner

Residential



Single-phase, 3 wires

Single phase, 120 V/240 V, grounded midpoint

Caution:

The PE must not be used for electricity. There is no PEN conductor => N = "Grounded Conductor" (white or gray), separate wires must be used for PE and N.

480 V Y/277 V¹⁾

240 V

240 V, phase conductor

600 V Y/347 V¹⁾

480 V

120 V to ground

240 V Y/131 V¹⁾

600 V







208 V Y/120 V¹⁾


¹⁾ Y describes the "Solidly grounded circuit". The "Y" value specifies the voltage between the phases (e. g. 480 V), the value after the slash specifies the voltage between the phase and the grounding (e. g. 277 V at 480 V voltage between the phases).


Explanation of UL symbols

All symbols and descriptions of UL symbols can be found on the Internet: www.ul.com/mark/art.htm

General information about UL can be found at: www.ul.com

Symbol	Application
	<p>UL symbol</p> <p>This is the most used UL symbol. If a product has this mark, it means that the device samples tested by UL have met the UL safety requirements. These requirements are largely based on the UL standards published by UL. This mark can be found on all types of devices, such as household appliances, computers, fuses, electrical switchgear, fire extinguishers, life belts and thousands of other devices.</p>
	<p>c-UL symbol</p> <p>This mark applies to the Canadian market. Products with this mark have been examined by UL in accordance with Canadian safety directives, which differ in some points from the US directives.</p>
	<p>c-UL US symbol</p> <p>This symbol was introduced at the beginning of 1998. It means that the device bearing this mark complies with both UL and Canadian regulations.</p>
	<p>UR, c-UR and c-UR US symbol</p> <p>Recognized component mark and Canadian recognized component mark</p> <p>These symbols are seldom seen by consumers as they are affixed to special components that are part of a larger system or product. These components may have technical or design restrictions.</p>
	<p>The Component Recognition symbol can be on a large number of products, such as switches, power supplies, printed boards, switching devices and many other products. Products for Canada have an additional "c".</p>
	<p>The c UR US symbol was introduced in 1998 and means that the marked components meet both the UL and CSA regulations.</p>

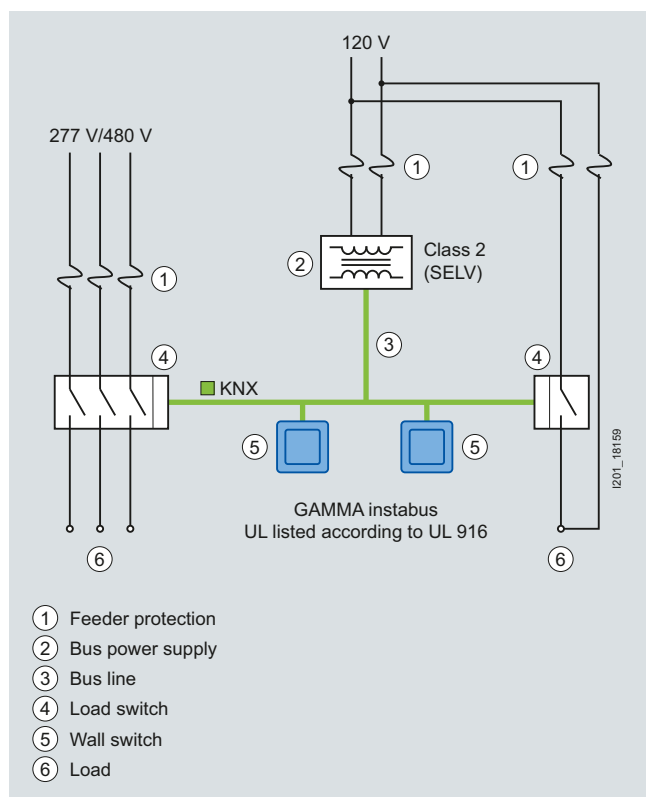
The "UL listed" symbol  is applied to devices that can be installed universally and without further instructions or any restriction of their respective applicability, e. g. contactors to UL 508, miniature circuit breakers to UL 489, energy management devices according to UL 916 ...

The "UL Recognized" symbol  is intended for devices that may only be installed by experts as components, e. g. miniature circuit breakers to UL 1077, time switches to UL 917, SITOR fuses, ...

Appendix

Technical Information

UL standard



5TE6 804 socket outlets for distribution board mounting to UL 498

The socket outlets for mounting in distribution boards to DIN 43880 and on standard mounting rails to DIN 50022 have since become standard in modern switchgear/distribution boards. They are used for tasks such as the connection of plug-in communication devices in communication distribution boards, in switchgear assemblies for maintenance purposes or in private plants for the occasional use of devices with heavy starting and separate fusing.

To make installation easier, the touch-protected terminals L, N and PE are located on the side of the socket outlet.

The 5TE6 804 socket outlet is approved to UL 498 as a "receptacle for plugs and attachment plugs - component".

5SJ4 ...-HG... miniature circuit breakers to UL 489

Within the sphere of influence of the ANSI (American National Standards Institute), miniature circuit breakers can be used as an all-round solution for protection tasks in distribution boards, control cabinets and control systems to UL 508A as "branch protectors". In particular, they are also approved for the protection of electrical circuits in heating, ventilating and cooling systems (HVAC).

The terminals are suitable for "field wiring". This means that the devices can be installed not only in factory-finished distribution boards and control cabinets, but also on-site in a customer system.

The rated voltage is 240 V AC and 60 or 125 V DC, whereby the 5SJ4 ...-HG40 series is designed for 240/120 V AC systems, single-phase with "same polarity" connection (same potential at the input terminals) and the 5SJ4 ...-HG41 series is also designed for 240 V AC systems, three-phase with "opposite polarity" connection (different potential at the input terminals).

The 5SJ4 ...-HG42 range is suitable for use in 480Y/277 V AC systems and is available in 1, 2 and 3-pole versions. Single-, two- and three-phase busbars in 3 lengths with 6, 12 or 18 pins are available as accessories for all device series. The infeed is over connection terminals, which are available in two versions, for direct infeed at either the busbar or the miniature circuit breakers. Pins that are not required can be covered with shock protection covers.

A handle locking device according to UL is also available as a further accessory.

This covers a wide range of protection tasks, both in residential and non-residential buildings, as well as in industry in electrical circuits to NEC (National Electric Code).

The tripping characteristics B, C and D to EN/IEC 60898 have been adapted so that they fall in the permissible tripping range according to UL 489, as well as for applications at 25 °C and 40 °C. This means that the devices are approved for use according to both standards. The enclosure dimensions of the devices correspond to DIN format.







This means that both device series are suitable for universal use worldwide to IEC or UL standards.

5WG1 energy management devices . . . according to UL 916

The UL 916 requirements cover energy management equipment rated 600 V or less intended for installation in accordance with the National Electrical Code NFPA 70. This primarily applies to devices for the control of electrical loads to achieve the desired use of electrical power. Such equipment controls electrical loads by responding to sensors and actuators.

All devices that are powered by the bus voltage or by an external < 30 V DC and < 1.5 A power supply, and that are not connected to voltages greater than 30 V AC/DC, meet the conditions of Class 2 equipment. These devices can be used as energy management equipment according to UL 916 (energy management equipment accessories).

List of available products that require a UL mark.

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/P. unit	PG	Weight per PU approx. kg
	N 125 N 125 power supply units ® Integrated choke, 160 mA	A	5WG1 125-1AB01		1	1 unit	139	0.290
	N 125/11 N 125/11 power supply units ® Integrated choke, 320 mA	A	5WG1 125-1AB11		1	1 unit	139	0.292
	N 125/21 N 125/21 power supply units ® Integrated choke, 640 mA, additional unchoked output, 29 V DC	A	5WG1 125-1AB21		1	1 unit	139	0.298
	N 141/02 N 141/02 KNX/DALI gateways ®	A	5WG1 141-1AB02		1	1 unit	139	0.200
	N 261 N 261 binary inputs ® 4 inputs for 24 V AC/DC	D	5WG1 261-1CB01		1	1 unit	139	0.136
	N 512 N 512 load switches ® 8 x 120 V/277 V AC, 20 A; 347 V AC, 15 A	B	5WG1 512-1CB01		1	1 unit	139	0.619
	N 526E02 N 526E02 switch/dimming actuators ® 8 x 120 V/277 V AC, 20 A; 347 V AC, 15 A	A	5WG1 526-1EB02		1	1 unit	139	0.527
	N 523/CB04 N 523/CB04 shutter/blind actuators ® 4 x 120 V AC, 6 A	A	5WG1 523-1CB04		1	1 unit	139	0.322

Appendix

Application Examples

Commissioning via Ethernet (LAN)

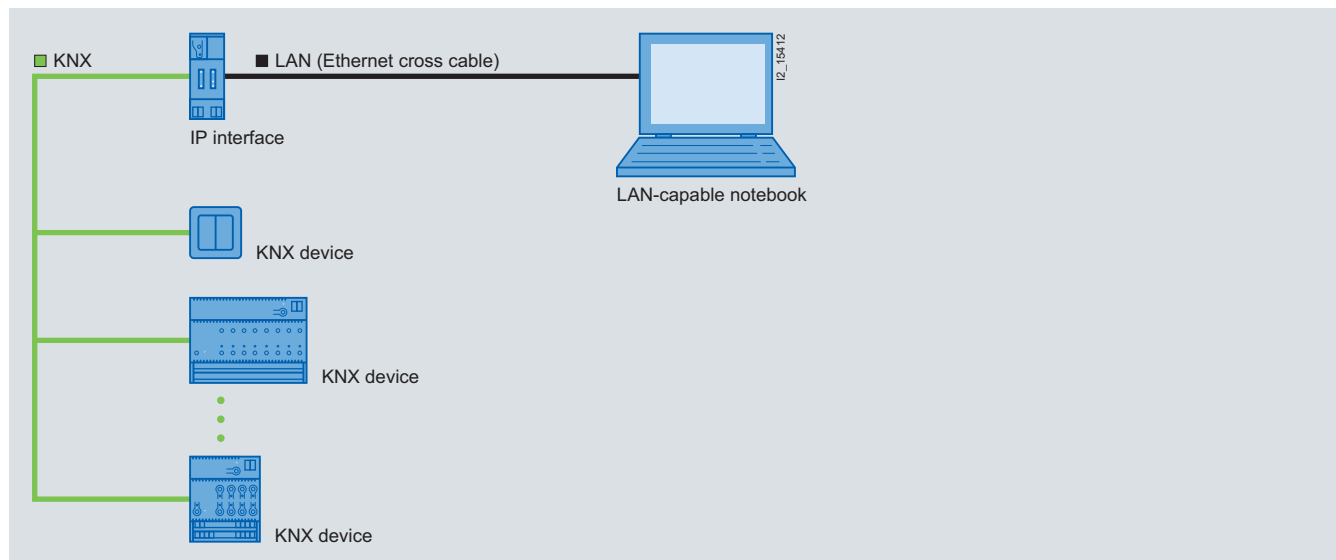
Overview

Faster downloads save time

In every GAMMA *instabus* project, the devices are commissioned once they have been installed. Once the physical addresses have been assigned, application programs, parameters and addresses are loaded to the devices. Particularly in the case of larger projects with a large number of devices, this can be a time-consuming process. However, with the Siemens LAN connection, this can now all be carried out much faster. This saves you time and money.

Simply connect your notebook to the GAMMA *instabus* over the N 148/21 IP interface and start the download. By comparison: using LAN, the download now only takes about half the time required using RS232 or USB.

The solution



The benefits

- Planning, configuring, commissioning and diagnosis with ETS3 (KNX commissioning software)
- Simply connect your notebook and start the download
- Downloading twice as fast, thus saving you considerable time during commissioning

Proceed as follows

- Connect the IP interface to the KNX
- Connect the notebook to the IP interface via the Ethernet cross cable – and start downloading.

You require the following

- N 148/22 IP interface (5WG1 148-1AB22)
- 24 V power supply for N 148/22 IP interface (e. g. 4AC2 402, Power over Ethernet, unchoked bus voltage)
- Ethernet cross cable
- LAN-capable notebook
- ETS3 (current version [see www.knx.org](http://www.knx.org))

Note:

LAN stands for Local Area Network. In LANs, data transport is organized using the IP (Internet Protocol) – the standard network protocol on the Internet.

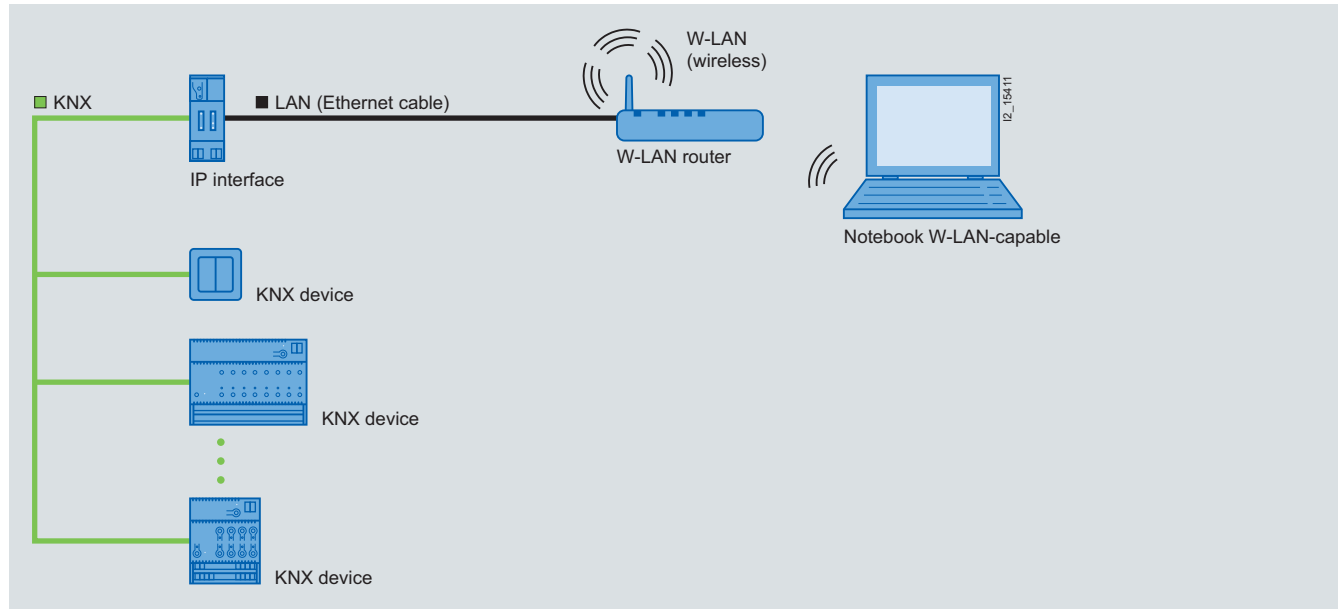
Overview

Commissioning – Now you can do it yourself

In every GAMMA *instabus* project, the devices are commissioned once they have been installed. First you need to assign the physical addresses. To do this, select the device in the ETS3 (KNX commissioning software) on your notebook and press the programming pushbutton on the device. In the case of distributed devices, such as flush mounting bus coupling units, this means a lot of running around! This is one reason why these commissioning tasks are usually carried out in pairs.

But now you no longer have to go to all this trouble. Simply wirelessly connect your notebook to the KNX via W-LAN. Now you are free to roam during the commissioning process – simply take your notebook with you, wherever it's needed. It really couldn't be any quicker or easier. And there is no risk of errors, such as mixing up the devices due to ambiguous calling.

The solution



The benefits

- Wireless GAMMA *instabus* commissioning via W-LAN
- Freedom of movement within the building
- Single-person commissioning

Note:

W-LAN stands for Wireless Local Area Network and describes a "wireless" local radio network for data transmission. W-LANs are quick and easy to install, cover large areas and operate cost-effectively.

Proceed as follows

Connect the IP interface to the KNX, connect the W-LAN router to the IP interface using the Ethernet cable – and you're off - free to roam the entire building with your notebook and the ETS.

You require the following

- N 148/22 IP interface (5WG1 148-1AB22)
- 24 V power supply for N 148/22 IP interface (e. g. 4AC2 402, Power over Ethernet, unchoked bus voltage)
- Ethernet
- W-LAN router
- W-LAN-capable notebook
- ETS3 (current version see www.knx.org)

Appendix

Application Examples

Coupling lines via Ethernet (LAN)

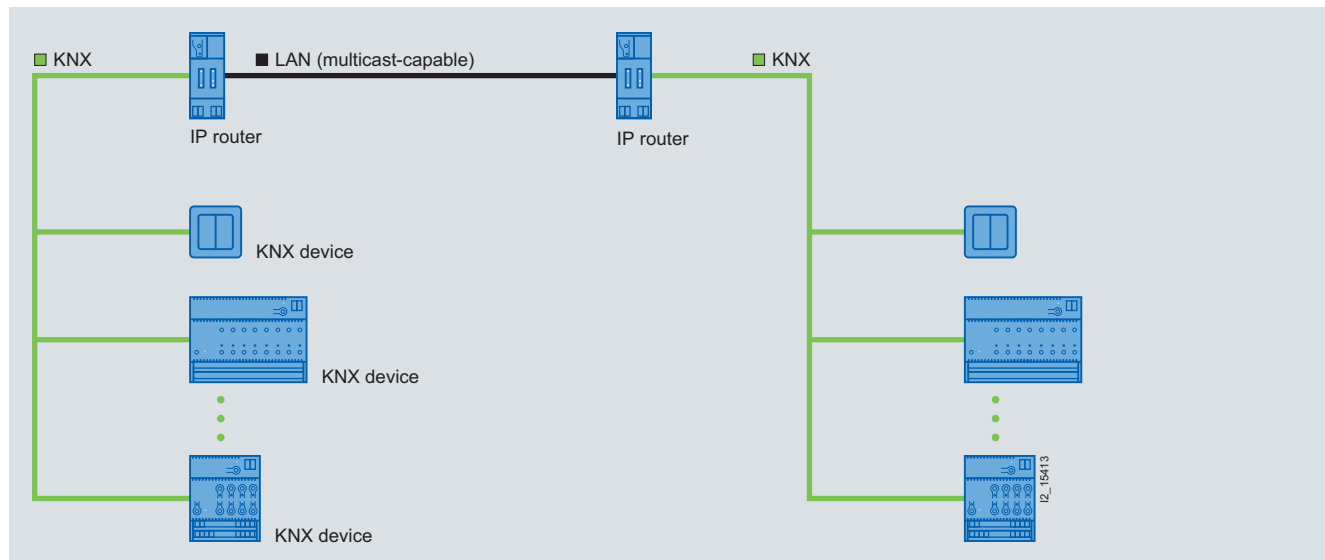
Overview

Connect main and backbone lines via KNXnet/IP

With the new KNXnet/IP standard, KNX telegrams can be transmitted via Ethernet (LAN). This enables new applications and solutions. Existing network infrastructures and technologies are used to transmit KNX data over greater distances.

Links between buildings and/or building levels can be clearly and easily implemented using KNXnet/IP.

The solution



The benefits

- LAN as main and backbone line
- Supports data transmission over greater distances
- Utilization of existing data networks and components (LAN)

Proceed as follows

- Connect an N 146/02 IP router to each KNX line (instead of an N 140/03 line coupler)
- Connect the N 146/02 IP router over a multicast-capable LAN
- Commission each N 146/02 IP router like a "conventional" line/backbone coupler using the ETS3.

You require the following

- N 146/02 IP router (5WG1 146-1AB02), 1 x per line
- 24 V power supply for N 146/02 IP Router (e. g. 4AC2 402, Power over Ethernet, unchoked bus voltage)
- Ethernet patch cable or LAN, depending on size
- ETS3 (current version see www.knx.org)

Note:

LAN stands for Local Area Network. In LANs, data transport is organized using the IP (Internet Protocol) – the standard network protocol on the Internet.

Multicast-capable: multicast telegrams can simultaneously operate several IP devices in the LAN. In the case of network components (network switches, routers) this requires the appropriate configuration.

Overview

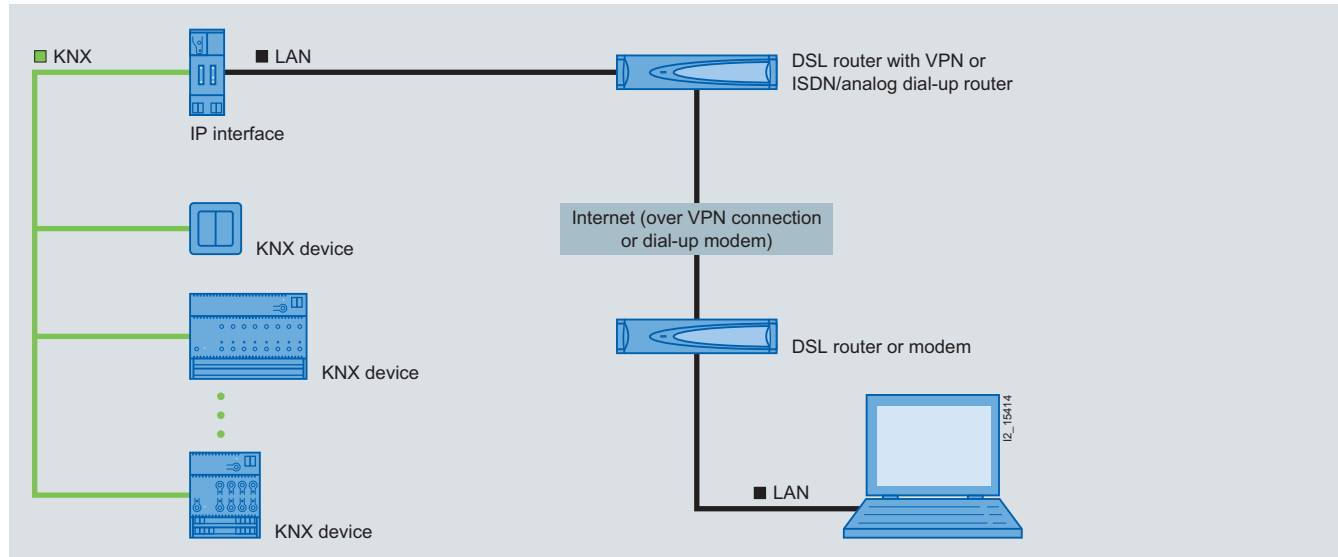
Simple modification using remote access

In virtually any project, during completion of a building, or prior to the building being used, you will be faced with the need for modifications, e. g. lighting times are too long or too short. Until now this generally involved making an appointment with the customer, driving to the site, changing the parameterization, driving back to the office. Now you can carry out these modifications from the comfort of your office: With LAN/Internet, you can now carry out parameterization tasks simply, practically – and re-

motely. These days, virtually all buildings have LAN and Internet connections - so you always have global access. Because buildings are not always manned, it is essential to ensure data security using VPN, DSL or dial-up routers.

This saves time and money and demonstrates to your customers the degree of flexibility they can enjoy using a GAMMA *instabus* system.

The solution



The benefits

- Parameters can be changed quickly and easily via remote access
- Remote access saves travel time and costs
- Data security is ensured

Proceed as follows

- Connect the N 148/22 IP interface to the KNX
- Connect the N 148/22 IP interface to the LAN
- Configure the VPN/DSL or dial-up router

You require the following

- N 148/22 IP interface (5WG1 148-1AB22)
- 24 V power supply for N 148/22 IP interface (e. g. 4AC2 402, Power over Ethernet, unchoked bus voltage)
- ETS3 (current version [see www.knx.org](http://www.knx.org))
- VPN/DSL or ISDN/analog dial-up router

Note:

LAN stands for Local Area Network. In LANs, data transport is organized using the IP (Internet Protocol) – the standard network protocol on the Internet.

VPN (Virtual Private Network) lets you set up a secure subnetwork via an open, unsecured network (Internet, wireless network) by protecting all communication against access or being tapped into by unauthorized third parties. This is achieved by means of "tunneling" the data traffic via a VPN server, which means that any connections must be authenticated and that all data is also encoded.

Appendix

Application Examples

Visualization via Ethernet (LAN)

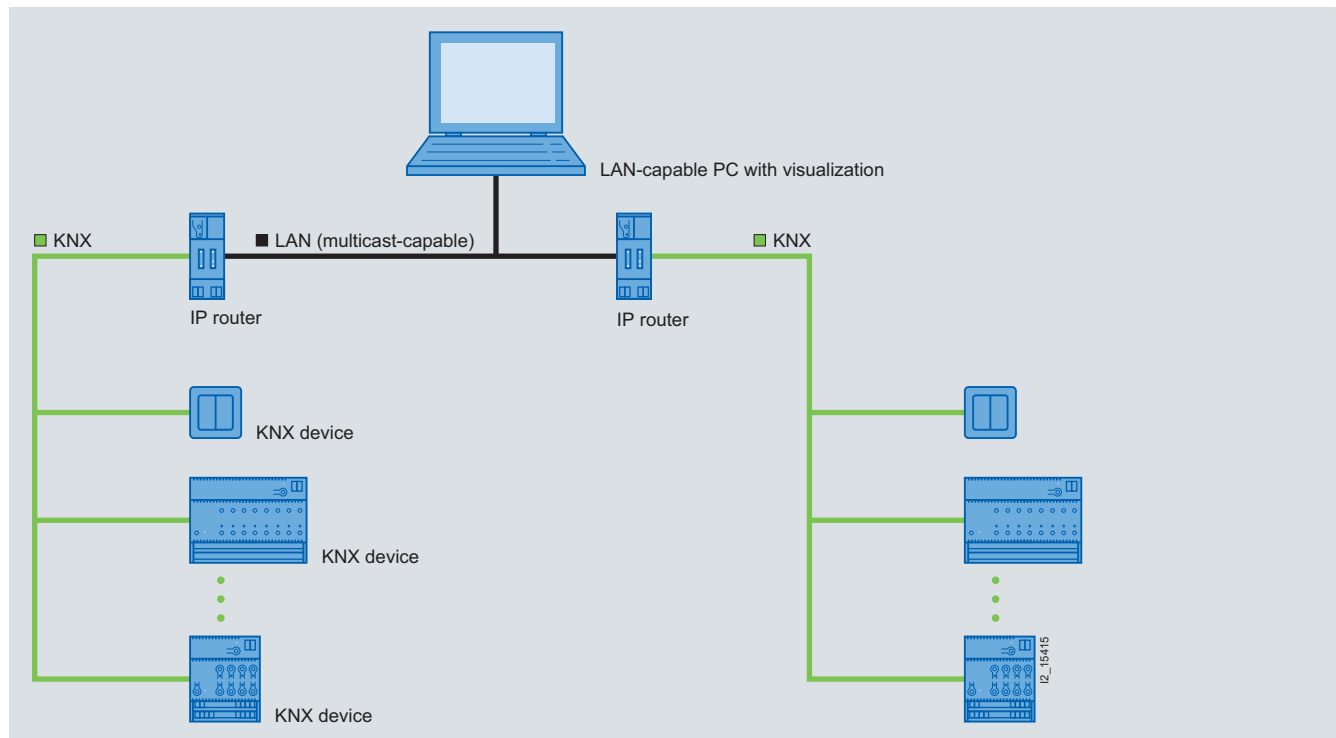
Overview

Visualization – up to 200 times faster with KNXnet/IP

When larger projects require the cyclic polling of large volumes of data points for the purposes of visualization, this can often lead to prolonged periods of waiting until the values are updated. Use the LAN as the main and backbone line and link your visualization PC to the LAN.

Visualization is then up to 200 times faster - and you can monitor larger volumes of data points. No further need for data concentrators. The data volume is irrelevant and the LAN can easily cope with that "little bit of KNX" on the side.

The solution



The benefits

- LAN as main and backbone line
- Visualization now up to 200 times faster
- High data volumes possible
- No data concentrators required

Proceed as follows

- Commission the KNX devices, including the N 146/02 IP router
- Install visualization software
- Search for the N 146/02 IP router as visualization software and connect
- Configure the visualization

You require the following

- N 146/02 IP router (5WG1 146-1AB02), 1 x per line
- 24 V power supply for N 146/02 IP Interface (e. g. 4AC2 402, Power over Ethernet, unchoked bus voltage)
- Ethernet network (LAN)
- LAN-capable PC
- IPAS ComBridge Studio visualization software (see chapter "Display and Operation Units")
- ETS3 (current version see www.knx.org)

Note:

LAN stands for Local Area Network. In LANs, data transport is organized using the IP (Internet Protocol) – the standard network protocol on the Internet.

Multicast-capable: multicast telegrams can simultaneously operate several IP devices in the LAN. In the case of network components (network switches, routers) this requires the appropriate configuration.

Overview

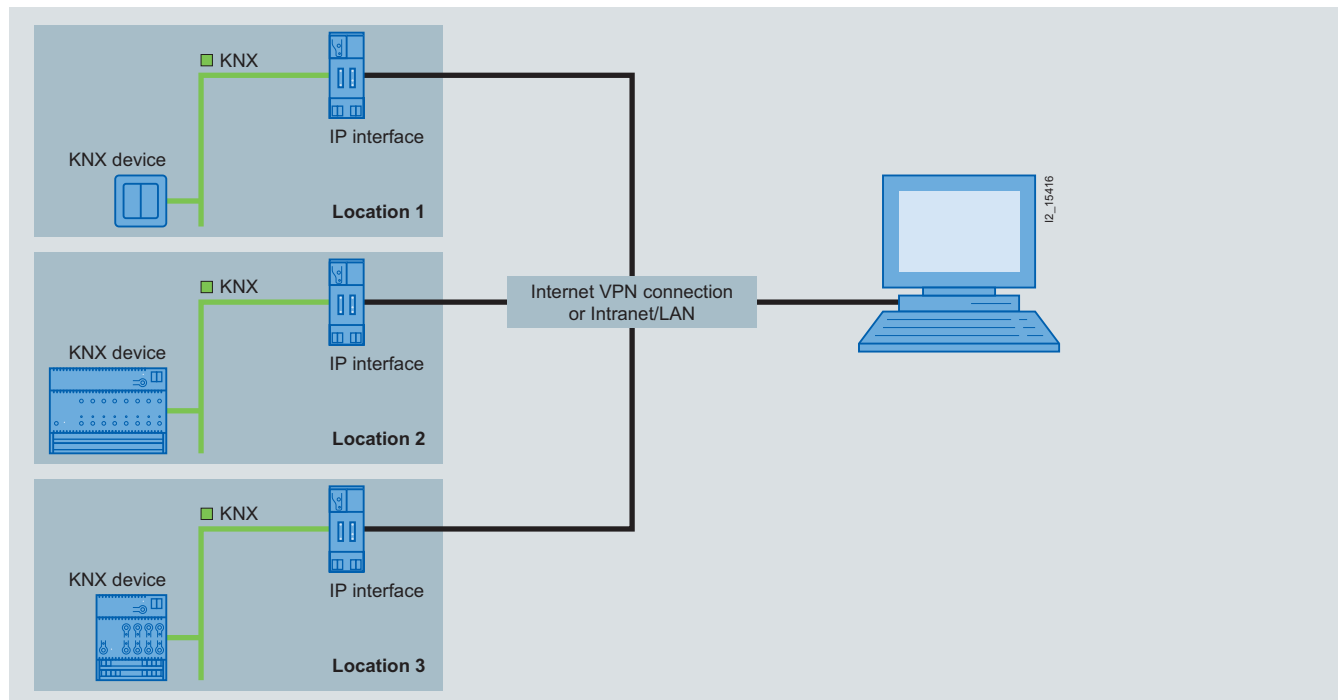
Remote operation and remote visualization

In many cases, several locations need to be managed simultaneously. There are many such examples:

- Monitoring of cooling temperatures in several supermarkets or warehouses
- Monitoring of fans for failure
- Monitoring of temperature and humidity in several greenhouses.

It is now possible to carry out these monitoring tasks centrally via the Internet/Intranet from absolutely anywhere. This saves you human resources, time and money. And the Internet/Intranet is available everywhere. Commissioning is further facilitated by the fact that distributed locations can be configured identically.

The solution



The benefits

- Plants and locations can be remotely visualized, controlled and monitored via existing networks
- Simple commissioning thanks to options for identical configuration of different locations

Proceed as follows

- Connect one N 148/22 IP interface per location to the KNX
- Connect the N 148/22 IP interface to the LAN
- Configure the N 148/22 IP interface via the Intranet/Internet
- Define the N 148/22 IP interface in your visualization program/ETS3

You require the following

- N 148/22 IP interface (5WG1 148-1AB22), 1 per location
- 24 V power supply for N 148/22 IP interface (e. g. 4AC2 402, Power over Ethernet, unchoked bus voltage)
- IPAS ComBridge Studio visualization software (see chapter "Display and Operation Units")
- ETS3 (current version see www.knx.org)

Note:

LAN stands for Local Area Network. In LANs, data transport is organized using the IP (Internet Protocol) – the standard network protocol on the Internet.

VPN (Virtual Private Network) lets you set up a secure subnetwork via an open, unsecured network (Internet, wireless network) by protecting all communication against access or being tapped into by unauthorized third parties. This is achieved by means of "tunneling" the data traffic via a VPN server, which means that any connections must be authenticated and that all data is also encoded.

Appendix

Application Examples

Monitoring locations via Ethernet (LAN)

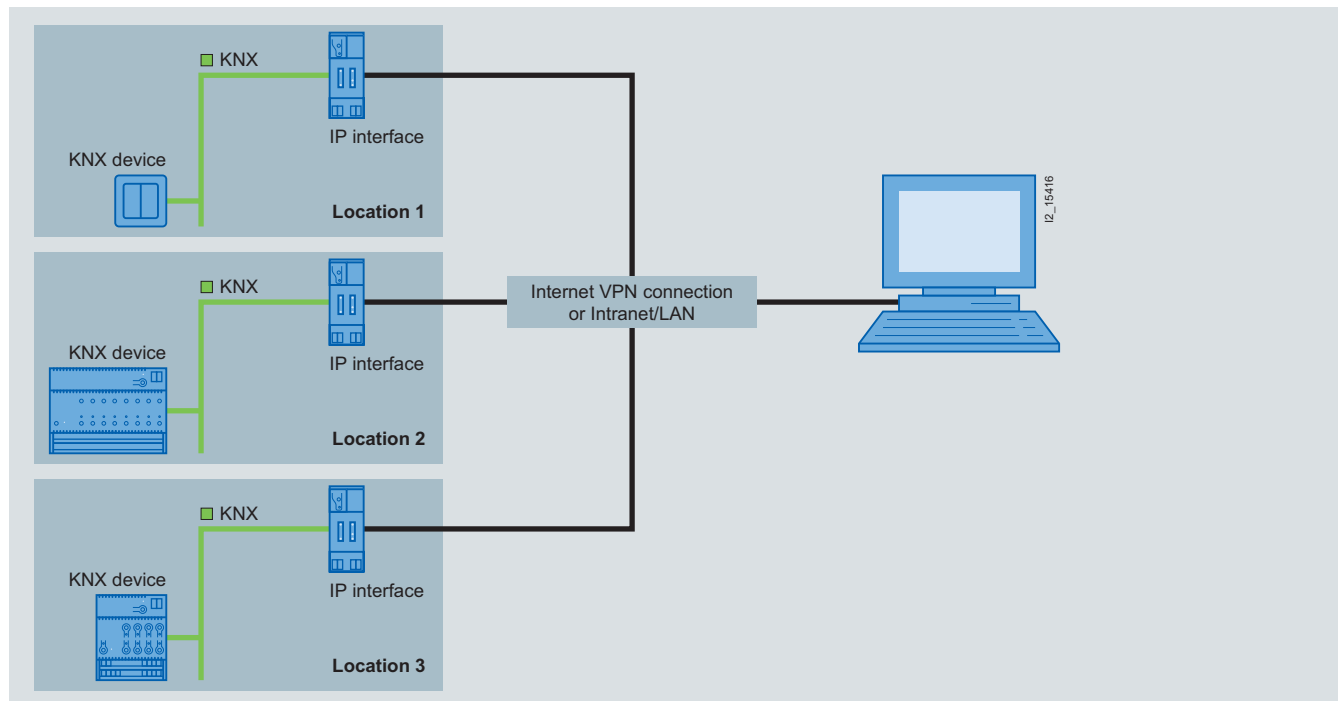
Overview

Demand-oriented maintenance through remote signaling

Some distributed locations need to be regularly checked for specific states and maintained accordingly. For example, the states of oil tanks in distributed apartment houses, or the operating hours of consumers. These states can now be signaled centrally at any location of your choice.

This dispenses with the need for inspections and maintenance at regular intervals. For example, oil tanks in distributed apartment houses only need to be topped up when necessary. And the fact that this method of operation even allows consumers to wait for favorable oil prices is just one further advantage.

The solution



The benefits

- Central status signaling of distributed locations
- Lower maintenance costs
- Optimization of maintenance costs

Proceed as follows

- Connect one N 148/22 IP interface per location to the KNX
- Connect the N 148/22 IP interface to the LAN
- Configure the N 148/22 IP interface via the Intranet/Internet
- Define the N 148/22 IP interface in your visualization program/ETS3

You require the following

- N 148/22 IP interface (5WG1 148-1AB22), 1 per location
- 24 V power supply for N 148/22 IP interface (e. g. 4AC2 402, Power over Ethernet, unchoked bus voltage)
- IPAS ComBridge Studio visualization software (see chapter "Display and Operation Units")
- ETS3 (current version see www.knx.org)

Note:

LAN stands for Local Area Network. In LANs, data transport is organized using the IP (Internet Protocol) – the standard network protocol on the Internet.

VPN (Virtual Private Network) lets you set up a secure subnetwork via an open, unsecured network (Internet, wireless network) by protecting all communication against access or being tapped into by unauthorized third parties. This is achieved by means of "tunneling" the data traffic via a VPN server, which means that any connections must be authenticated and that all data is also encoded.

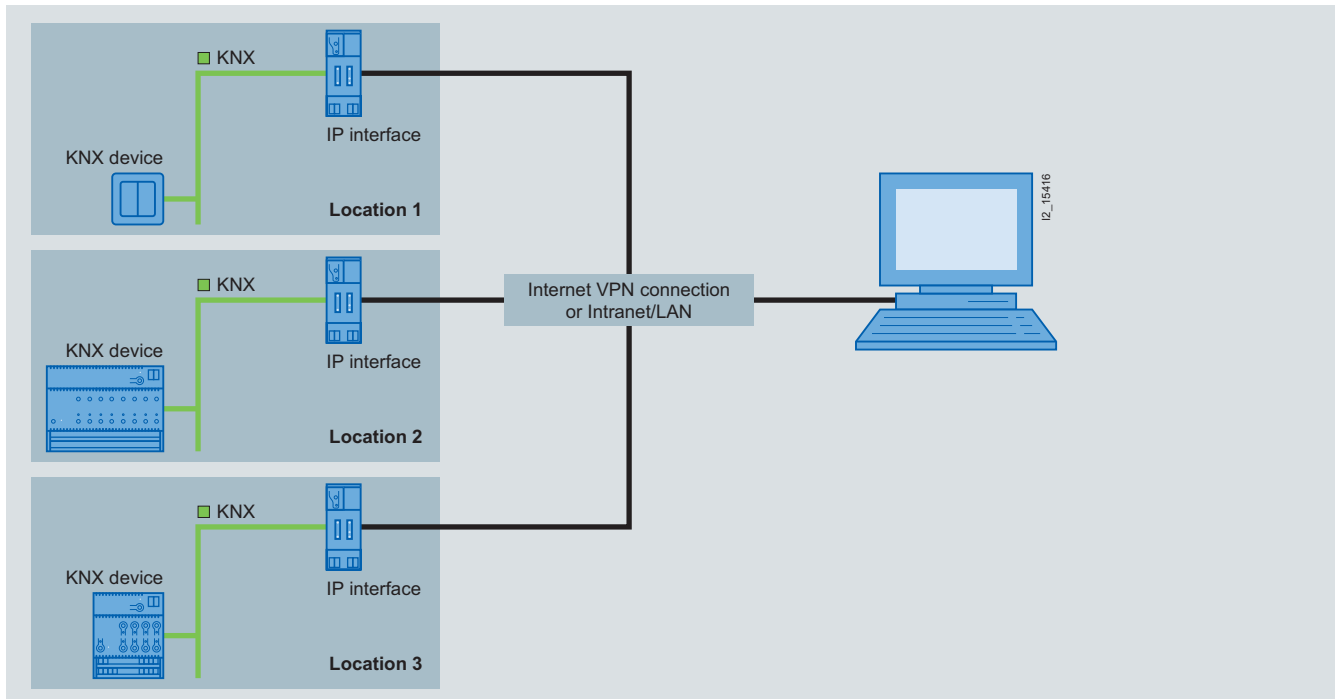
Overview

Enhanced plant availability due to early fault detection

Whether dealing with a lamp failure in depots or offices, a drop in pressure in filters, or pump failure - automated plants in distributed locations are constantly subject to possible faults/malfunctions. The earlier such faults are detected, the less costly they are to remedy. If such plants are being controlled with GAMMA *instabus* and are connected over LAN/IP, these types

of fault indications can be forwarded over the Internet. A fast response means that the functionality of the plant is quickly restored and costs are kept to a minimum.

The solution



The benefits

- Central solution for distributed locations
- Fast forwarding of fault indications
- Fast responses mean less damage

Proceed as follows

- Connect one N 148/22 IP interface per location to the KNX
- Connect the N 148/22 IP interface to the LAN
- Configure the N 148/22 IP interface over the Intranet/Internet
- Define the N 148/22 IP interface in your visualization program/ETS3

You require the following

- N 148/22 IP interface (5WG1 148-1AB22), 1 per location
- 24 V power supply for N 148/22 IP interface (e. g. 4AC2 402, Power over Ethernet, unchoked bus voltage)
- IPAS ComBridge Studio visualization software (see Chapter "Display and Operation Units")
- ETS3 (current version see www.knx.org)

Note:

LAN stands for Local Area Network. In LANs, data transport is organized using the IP (Internet Protocol) – the standard network protocol on the Internet.

VPN (Virtual Private Network) lets you set up a secure subnetwork via an open, unsecured network (Internet, wireless network) by protecting all communication against access or being tapped into by unauthorized third parties. This is achieved by means of "tunneling" the data traffic via a VPN server, which means that any connections must be authenticated and that all data is also encoded.

Appendix

Application Examples

Switch/dimming actuators for controlling DALI lighting

Overview

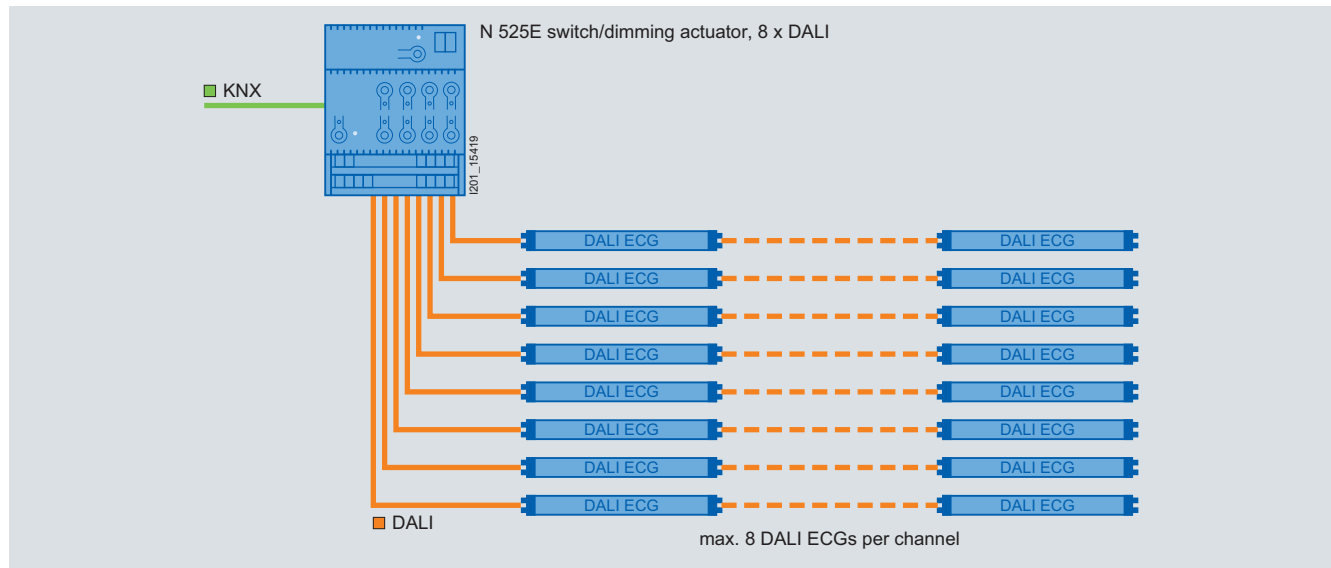
Using DALI lighting without complicated DALI commissioning

The lighting control system uses ECGs with DALI interfaces, for example, in order to be able to signal lamp failures.

Using the N 525E switch/dimming actuators, it is now possible to use DALI devices in GAMMA *instabus* without any prior knowledge of the DALI system and DALI commissioning.

The N 525E switch/dimming actuator switches and dims eight mutually independent groups of fluorescent lamps with dimmable ECG with DALI interface. Up to eight DALI ECGs can be connected to each of the eight channels.

The solution



The benefits

- Real 0 to 100 % luminosity control
- High operating safety due to selective disconnection in the event of a fault
- Fault indications for light groups
- For individual room light control

Note:

DALI stands for Digital Addressable Lighting Interface. DALI is a digital interface that is integrated in the controlgear of lights and enables flexible wiring and commissioning. As well as switching and dimming functions, they are also able to detect and signal lighting failures.

Proceed as follows

- Connect the N 525E switch/dimming actuator to the KNX
- Connect each group of DALI ECGs that are to be jointly controlled to an output of the N 525E switch/dimming actuator
- Configure each channel as a conventional actuator in the ETS and program the device

You require the following

- N 525E switch/dimming actuators (5WG1 525-1EB01)
- Dimmable ECGs with DALI interface
- ETS3 (current version see www.knx.org)

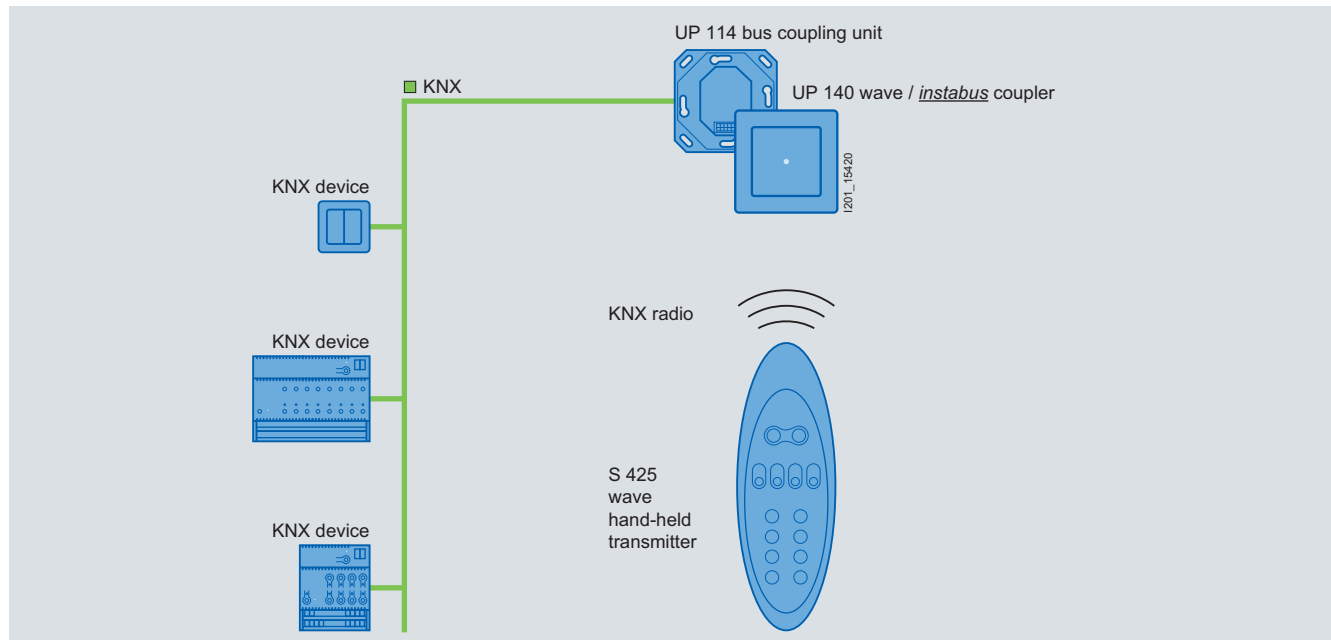
Overview

GAMMA wave – making life simple

Occasionally, wires are not wanted for some applications in buildings, or cables are expensive to install, e. g. cables to the window for the window contact. Or no cables are possible, as is the case with remote control applications.

In such cases, the GAMMA wave wireless system is the ideal solution. The simplest way to integrate GAMMA wave in a GAMMA *instabus* system is to use the UP 140 wave coupler/*instabus*.

The solution



The benefits

- The ability to enjoy all the advantages of wireless applications in GAMMA *instabus* projects, e. g. wave hand-held transmitter, battery-operated wave door/window contacts, pushbuttons (battery-operated)
- Group telegrams from GAMMA *instabus* to GAMMA wave and vice versa
- Retrofitting without the need for new cables
- No separate device required as a gateway

Proceed as follows

- Connect the UP 114 bus coupling units to the KNX
- Plug in the UP 140 wave/*instabus* coupler
- Configure the UP 140 wave coupler/*instabus* in the ETS3 (KNX commissioning software)
- Program the UP 140 wave/*instabus* coupler
- Teach GAMMA wave devices (e. g. wave hand-held transmitters)

You require the following

- UP 140 wave coupler/*instabus* (e. g. in the design DELTA style, titanium white: 5WG3 140-2AB11)
- UP 114 bus coupling unit (5WG1 114-2AB02)
- Additional wave devices, depending on the application, e. g. S 425 wave hand-held transmitters (5WG3 425-7AB71)
- ETS3 (current version see www.knx.org)

Appendix

Application Examples

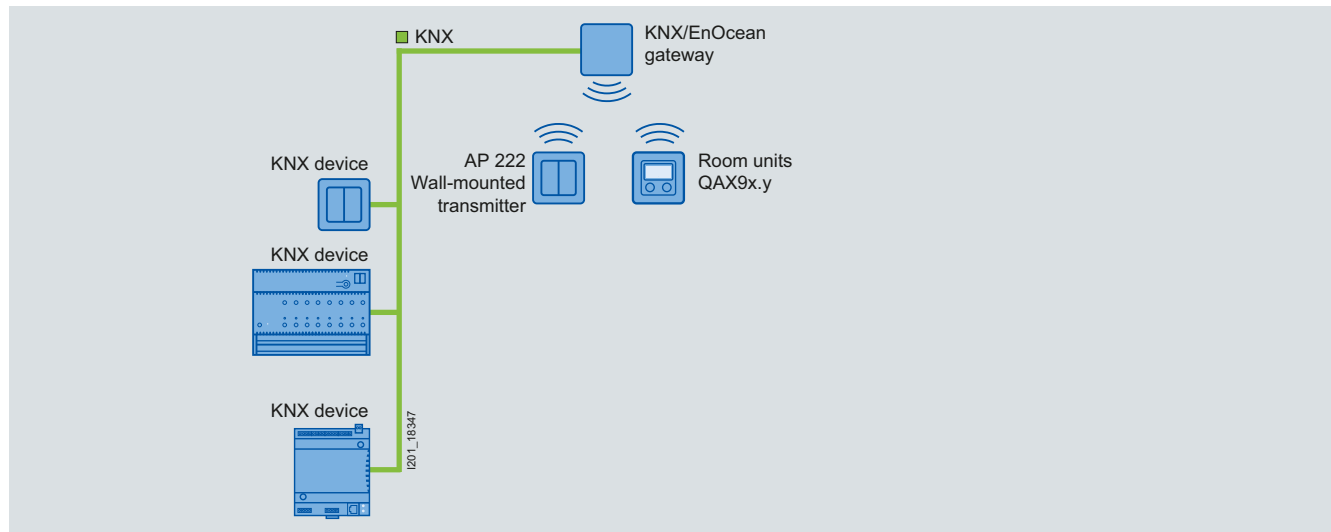
Control via Radio System – EnOcean

Overview

EnOcean – flexible, battery-free, maintenance-free

Occasionally, wires are not wanted for some applications in buildings, or cables are expensive to install, or it is quite simply not possible. In such cases, the maintenance-free switches and room devices based on the open communication standard EnOcean are the ideal solution.

The solution



The benefits

- Battery-free, thus environmentally-friendly and maintenance-free
- Communication via open standard
- Can be mounted on any surface – simply stick or screw into place – done.
- Retrofitting without the need for new cables
- Connection to GAMMA *instabus* – KNX via KNX/EnOcean Gateway

Proceed as follows

- Connect the KNX/EnOcean Gateway RXZ97.1 to KNX
- Configure and program the RXZ97.1 KNX/EnOcean Gateway in ETS (KNX commissioning software)
- Program EnOcean devices

You require the following

- RXZ97.1 KNX/EnOcean gateway
- Additional EnOcean devices, depending on the application,
 - Lighting/sun protection applications: EnOcean AP 22x wall-mounted transmitter
 - HCVA applications: QAX9x.y room controllers
- ETS (current version see www.knx.org)

Overview**Trademarks**

All product designations may be registered trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes may violate the rights of the owner.

Amendments

All technical data, dimensions and weights are subject to change without notice unless otherwise specified on the pages of this catalog.

Dimensions

All dimensions are in mm.

Images

The illustrations are not binding.

Technical data

The technical data are for general information purposes.

Further technical information is available at www.siemens.com/lowvoltage/support

- under Product List:
 - Technical specifications
- under Entry List:
 - Updates
 - Download
 - FAQ
 - Manuals
 - Characteristic curves
 - Certificates

Assembly, operation and maintenance

The instruction manuals and the operating instructions on the products must be observed during assembly, operation and maintenance.

Ordering information

Overview

Ordering very small quantities

When very small quantities are ordered, the cost of order processing often exceeds the order value. We therefore recommend that you combine several small orders. Where this is not possible, we regret that we are obliged to make a small processing charge: for orders with a net goods value of less than € 100 we charge a € 15 supplement to cover our order processing and invoicing costs.

Explanations on the selection and ordering data**Delivery time class (DT)**

DT	Meaning	
▶	Preferred type	Preferred types are device types that can be delivered immediately ex works, i. e. they are dispatched within 24 hours.
A	two workdays	If ordered in normal quantities, the products are usually delivered within the specified delivery times, calculated from the date we receive your order.
B	one week	In exceptional cases, delivery times may vary from those specified.
C	three weeks	The delivery times are valid ex works from Siemens AG (products ready for dispatch).
D	six weeks	Shipping times depend on the destination and the method of shipping. The standard shipping time for Germany is one day.
X	on request	The specified delivery time classes are correct at the time of going to print and are subject to constant optimization. Up-to-date information can be found at www.siemens.com/industrymall .

Price units (PU)

The price unit defines the number of units, sets or meters to which the specified price and weight apply.

PS/P. unit (packaging size/packaging unit)

The packaging size / packaging unit defines the number, e. g. of units, sets or meters, for outer packaging.

- The **first digit** in the PS/P. unit column (packaging size/packaging unit) indicates the minimum order quantity. You can only order this specified quantity or a multiple thereof.
- The **second digit** in the PS/P. unit column (packaging size/packaging unit) specifies the number of units contained in larger packaging (e. g. in a carton). You must order this quantity or a multiple thereof if you want the item to be delivered in a larger packaging quantity.

Examples:

PS/P. unit	Meaning
1 unit	You can order one item or a multiple thereof.
5 units	Five units are packed in a bag. Because the bags cannot be opened, you can only order a multiple of the quantity contained in the bag: 5, 10, 15, 20 etc.
5/100 units	One carton contains 20 bags, each containing 5 units, i. e. a total of 100 units. If only cartons are available for delivery, you need to order a multiple of the carton quantity: 100, 200, 300, etc. Ordering a quantity of 220 units would result in the following delivery: two cartons, each containing 100 units (= 200 units) and 4 bags, each containing 5 units (= 20 units).
1 set	A set comprises a defined number of different parts.

Price groups (PG)

Each product is allocated to a price group.

Weight

The defined weight is the net weight in kg and refers to the price unit (PU).

Examples

DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS/P. unit	PG	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS/P. unit	PG
▶	5SW3 300		1	1/10 units	008	A	5TG8 068		1	1 set*	027
DT:	Preferred type					DT:	A = two workdays				
PU:	One unit (on which price is based)					PU:	One set* (on which price is based)				
PS/P. unit:	1 = minimum order quantity / 10 = quantity per carton					PS/P. unit:	The minimum order quantity is one set*				
PG:	008					PG:	027				
							* The selection and ordering data specify the parts that make up a set				

Overview

The quality management system of our IC BT CPS Business Unit complies with the international standard EN ISO 9001.

Certificates

Information on the certificates available (CE, UL, CSA, FM, shipping authorizations) for low-voltage power distribution and electrical installation products can be found on the Internet at:

www.siemens.com/lowvoltage/support

In the Entry List you can use the certificate type (general product approval, explosion protection, test certificates, ship building,...) as a filter criterion.

The screenshot shows the Siemens website interface for 'Low-Voltage Power Distribution and Electrical Installation Technology'. The page includes a search bar, filter settings, and a list of certificates.

Filter settings:

- Entry type: Certificates
- Certificate Type: all
- Approval office: all
- Quantity: all

Search Results:

Title	Date
Certificates Test Certificates, Special Test Certificates, Manufacturer 2010	2010-10-22 IC: 4050268
For products: 3P42 more>>	
Certificates Declaration of Conformity, Manufacturer 2042	2010-10-19 IC: 4050117
For products: 7H49200-0400-04A0 more>>	
Certificates General Product Approval, CB-Testcert, CB-Members CEI-04879A1	2010-10-08 IC: 4048014
For products: 3HJ3RM more>>	
Certificates Test Certificates, Type-Test Certificates/Test Report, Manufacturer 2019	2010-10-08 IC: 4048006
For products: 3P1V2 more>>	
Certificates Test Certificates, Type-Test Certificates/Test Report, Manufacturer 3020	2010-10-08 IC: 4048006
For products: 3P1V2 more>>	

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All Siemens Industry Automation and Drive Technologies, more than 85,000 people are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries – worldwide.

Automation Technology | Contact | Language | Search

> Contacts Database

Contacts Database

- > Drive Technology
- > Automation Technology
- > Low Voltage Controls and Distributions
- > Safety Systems – Safety Integrated
- > Electrical Installation Technology
- > Solutions for Industries
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Please select a product group:

More Information

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- > Investor Relations
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At Siemens Industry Automation and Drive Technologies, more than 85 000 people are resolutely pursuing the same goal: long-term improvement of your competitive ability. We are committed to this goal. Thanks to our commitment, we continue to set new standards in automation and drive technology. In all industries – worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Industry Automation and Drive Technologies range.

Your personal contact can be found in our Contacts Database at: www.siemens.com/automation/partner

You start by selecting a

- Product group,
- Country,
- City,
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> Contacts Database > Drive Technology

Drive Technology

Another product group?

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Please select City:

Dresden

Please select Service:

[Please select...]

More Information

- > Press
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Drive Technology

Another product group?

Local Partner for this Product is:

Siemens AG, Dresden
RD 1188DT OST FV 14

Company:
Vertrieb IASDT OST

rhohling@ost-15.de
01139 Dresden, Germany

Tel: +49 351 984 4420
Fax: +49 351 984 4410
E-Mail: vertrieb.iasdt.ost@siemens.com
Internet: <http://www.siemens.de/automation/automation-partner.aspx>

Please select Country:

Germany

Please select City:

Dresden

Please select Service:

Drive

Feedback | Print

More Information

- > Press
- > Investor Relations
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Online Services: Information and ordering on the internet and on DVD

Product selection using the interactive catalog CA 01 of Industry



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The interactive catalog CA 01 covers more than 80 000 products and thus provides a full summary of the Siemens Industry Automation and Drive Technologies product base.

Here you will find everything that you need to solve tasks in the fields of automation, switchgear, installation and drives. All information is linked into a user interface which is easy to work with and intuitive.

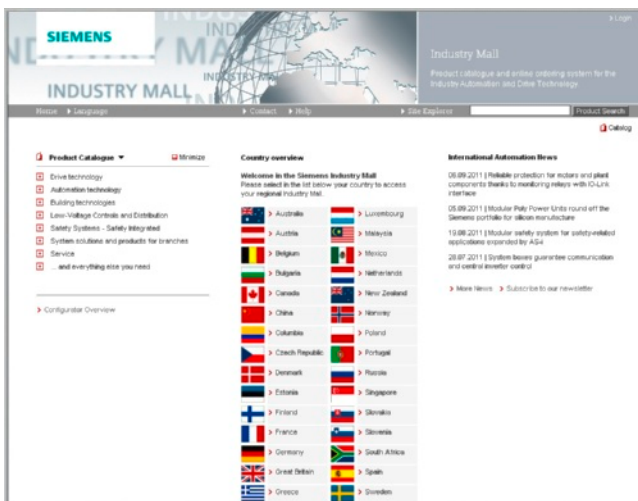
After selecting the product of your choice you can order at the press of a button, by fax or by online link.

Information on the interactive catalog CA 01 can be found on the Internet under

www.siemens.com/automation/ca01

or on DVD.

Easy Shopping with the Industry Mall



The Industry Mall is the virtual department store of Siemens AG on the Internet. Here you have access to a huge range of products presented in electronic catalogs in an informative and attractive way.

Data transfer via EDIFACT allows the whole procedure from selection through ordering to tracking of the order to be carried out online via the Internet.

Numerous functions are available to support you.

For example, powerful search functions make it easy to find the required products, which can be immediately checked for availability. Customer-specific discounts and preparation of quotes can be carried out online as well as order tracking and tracing.

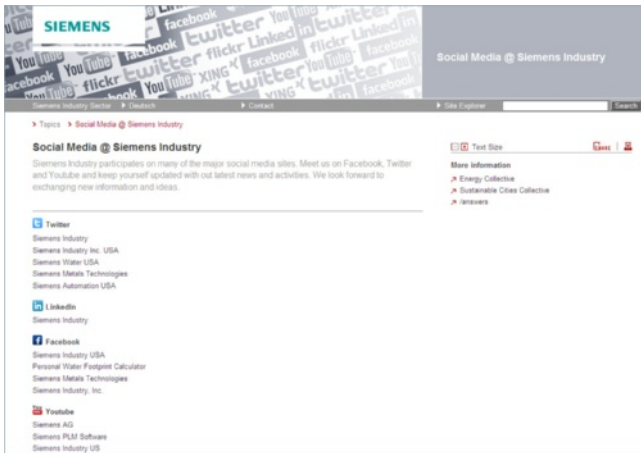
Please visit the Industry Mall on the Internet under:

www.siemens.com/industrymall

Appendix

Online Services: Social Media and Mobile Media

Social Media



Connect with Siemens through social media: visit our social networking sites for a wealth of useful information, demos on products and services, the opportunity to provide feedback, to exchange information and ideas with customers and other Siemens employees, and much, much more. Stay in the know and follow us on the ever-expanding global network of social media.

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Or via our product pages at:

www.siemens.com/automation

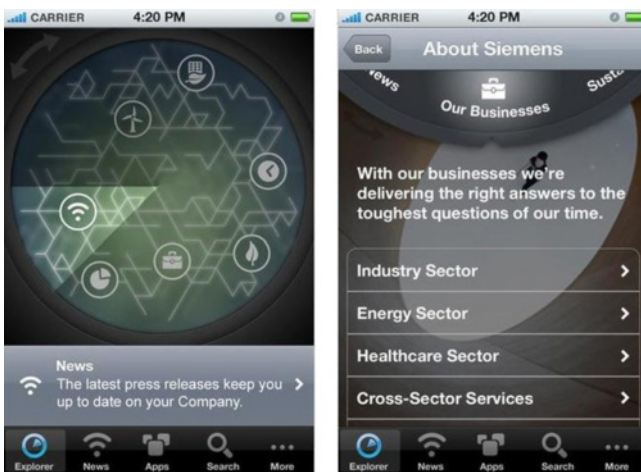
or

www.siemens.com/drives

To find out more about Siemens' current social media activities visit us at:

www.siemens.com/socialmedia

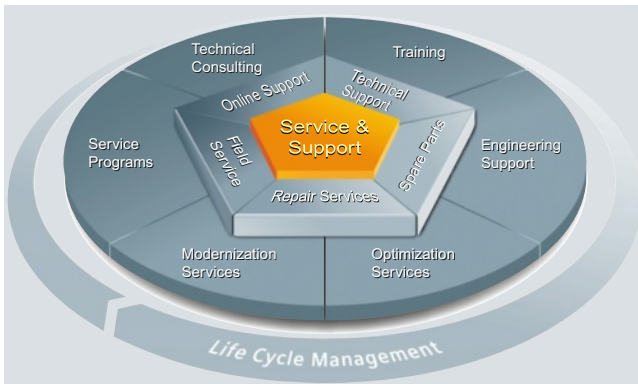
Mobile Media



We are also constantly expanding our offering of cross-platform apps for smartphones and tablets. You will find the current Siemens apps at your app store.

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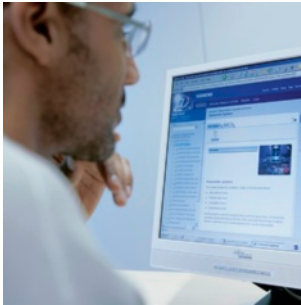
Overview



Our Service & Support are available worldwide to help you with every aspect of Siemens Building and Automation Technologies. We offer on-site support for every phase of the life cycle of your buildings and plants in more than 100 countries.

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You can obtain qualified, free support to help you produce specifications for technically equipping non-residential and industrial buildings at

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4AC2					
4AC2 402	6/10, 12/9	B	1	1 unit	12H
5TC1					
5TC1 230	16/19, 19/6	A	1	1 unit	146
5TC1 231	16/21, 19/6	A	1	1 unit	146
5TC1 232	16/15	A	1	1 unit	146
5TC1 233	16/15, 19/6	A	1	1 unit	146
5TC1 290	16/23	A	1	1 unit	146
5TC1 291	16/23	A	1	1 unit	146
5TC1 300	19/5	A	1	1 unit	146
5TC1 301	19/5	A	1	1 unit	146
5TC1 302	19/5	A	1	1 unit	146
5TC1 302-0	19/5	A	1	1 unit	146
5TC1 302-1	19/5	A	1	1 unit	146
5TC1 302-2	19/5	A	1	1 unit	146
5TC1 303	19/5	A	1	1 unit	146
5TC1 310	19/5	A	1	1 unit	146
5TC1 313	19/5	A	1	1 unit	146
5TC1 317	19/5	A	1	1 unit	146
5TC1 317-1	19/5	B	1	1 unit	146
5TC1 320	19/5	A	1	1 unit	146
5TC1 321	19/5	A	1	1 unit	146
5TC1 322	19/5	A	1	1 unit	146
5TC1 323	19/5	B	1	1 unit	146
5TC1 330	19/5	A	1	1 unit	146
5TC1 333	19/5	A	1	1 unit	146
5TC1 337	19/5	A	1	1 unit	146
5TC1 337-1	19/5	B	1	1 unit	146
5TC1 500	19/9	A	1	1 unit	146
5TC1 501	19/9	A	1	1 unit	146
5TC1 502	19/9	A	1	1 unit	146
5TC1 503	19/9	A	1	1 unit	146
5TC1 504	19/9	A	1	1 unit	146
5TC1 505	19/9	A	1	1 unit	146
5TC1 506	19/9	A	1	1 unit	146
5TC1 507	19/9	A	1	1 unit	146
5TC1 508	19/9	A	1	1 unit	146
5TC1 510	19/9	A	1	1 unit	146
5TC1 511	19/9	A	1	1 unit	146
5TC1 537	19/9	A	1	1 unit	146
5TC1 537-1	19/9	A	1	1 unit	146
5TC1 542	19/9	A	1	1 unit	146
5TC1 542-1	19/9	A	1	1 unit	146
5TC1 546	19/9	A	1	1 unit	146
5TC1 546-1	19/9	A	1	1 unit	146
5TC1 551	19/9	A	1	1 unit	146
5TC1 551-1	19/9	A	1	1 unit	146
5TC6					
5TC6 107	19/11	C	1	1 unit	146

Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5TC6 114	19/11	C	1	1 unit	146
5TC6 115	19/11	C	1	1 unit	146
5TC6 116	19/11	C	1	1 unit	146
5TC6 117	19/11	C	1	1 unit	146
5TC6 118	19/11	C	1	1 unit	146
5TC6 120	19/11	C	1	1 unit	146
5TC6 200	19/11	C	1	1 unit	146
5TC6 201	19/11	C	1	1 unit	146
5TC6 202	19/11	C	1	1 unit	146
5TC6 203	19/11	C	1	1 unit	146
5TC6 204	19/11	C	1	1 unit	146
5TC6 205	19/11	C	1	1 unit	146
5TC6 250	19/12	C	1	1 unit	146
5TC6 251	19/12	C	1	1 unit	146
5TC6 300	19/12	C	1	1 unit	146
5TC6 301	19/12	C	1	1 unit	146
5TC6 331	19/12	C	1	1 unit	146
5TC6 380	19/12	C	1	1 unit	146
5TC6 383	19/12	C	1	1 unit	146
5TC6 900	19/12	C	1	1 unit	146
5TC7					
5TC7 210	19/10	A	1	1 unit	146
5TC7 211	19/10	A	1	1 unit	146
5TC7 212	19/10	A	1	1 unit	146
5TC7 213	19/10	A	1	1 unit	146
5TC7 214	19/10	A	1	1 unit	146
5TC7 215	19/10	A	1	1 unit	146
5TC7 900	12/7, 19/10	A	1	1 unit	146
5TC7 901	12/7, 19/10	A	1	1 unit	146
5TC7 902	12/7, 19/10	A	1	1 unit	146
5TC8					
5TC8 300-0	18/3	A	1	1 unit	139
5TC9					
5TC9 200	19/13	A	1	1 unit	146
5TC9 201	19/13	A	1	1/100 units	146
5TC9 202	19/13	A	1	1 unit	146
5TC9 203	19/13	A	1	1 unit	146
5TC9 220	19/14	A	1	1 unit	146
5TC9 221	19/14	A	1	1/25 units	146
5TC9 222	19/14	A	1	1 unit	146
5TC9 223	19/14	A	1	1 unit	146
5TC9 224	19/14	A	1	1 unit	146
5TC9 225	19/14	A	1	1 unit	146
5TC9 226	19/14	A	1	1/25 units	146
5TC9 228	19/14	A	1	1 unit	146
5TC9 234	19/14	A	1	1 unit	146
5TC9 236	19/14	A	1	1 unit	146
5TC9 242	19/14	A	1	1 unit	146
5TC9 244	19/14	A	1	1 unit	146

* You can order this quantity or a multiple thereof.

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5TC9 250	19/14	A	1	1 unit	146
5TC9 251	19/14	A	1	1 unit	146
5TC9 252	19/14	A	1	1 unit	146
5TC9 253	19/14	A	1	1 unit	146
5TC9 254	19/14	A	1	1 unit	146
5TC9 255	19/14	A	1	1 unit	146
5TC9 256	19/14	A	1	1 unit	146
5TC9 256-1	19/14	A	1	1 unit	146
5TC9 257	19/14	A	1	1 unit	146
5TC9 258	19/14	A	1	1 unit	146
5TC9 258-1	19/14	A	1	1 unit	146
5TC9 260	19/14	A	1	1 unit	146
5TC9 261	19/14	A	1	1 unit	146
5TC9 261-1	19/14	A	1	1 unit	146
5TC9 262	19/14	A	1	1 unit	146
5TG1 1					
5TG1 101-0	1/32	A	1	1 unit	135
5TG1 101-1	1/32	A	1	1 unit	135
5TG1 101-2	1/32	A	1	1 unit	135
5TG1 101-3	1/32	A	1	1 unit	135
5TG1 101-4	1/32	A	1	1 unit	135
5TG1 102-0	1/32	A	1	1 unit	135
5TG1 102-1	1/32	A	1	1 unit	135
5TG1 102-2	1/32	A	1	1 unit	135
5TG1 102-3	1/32	A	1	1 unit	135
5TG1 102-4	1/32	A	1	1 unit	135
5TG1 103-0	1/32	A	1	1 unit	135
5TG1 103-1	1/32	A	1	1 unit	135
5TG1 103-2	1/32	A	1	1 unit	135
5TG1 103-3	1/32	A	1	1 unit	135
5TG1 103-4	1/32	A	1	1 unit	135
5TG1 104-0	1/32	A	1	1 unit	135
5TG1 104-1	1/32	A	1	1 unit	135
5TG1 104-2	1/32	A	1	1 unit	135
5TG1 104-3	1/32	A	1	1 unit	135
5TG1 104-4	1/32	A	1	1 unit	135
5TG1 111-0	1/30	A	1	1/10 units	135
5TG1 111-1	1/30	A	1	1/10 units	135
5TG1 111-2	1/30	A	1	1/10 units	135
5TG1 111-3	1/30	A	1	1/10 units	135
5TG1 112-0	1/30	A	1	1/10 units	135
5TG1 112-1	1/30	A	1	1/10 units	135
5TG1 112-2	1/30	A	1	1/10 units	135
5TG1 112-3	1/30	A	1	1/10 units	135
5TG1 113-0	1/30	A	1	1/10 units	135
5TG1 113-1	1/30	A	1	1/10 units	135
5TG1 113-2	1/30	A	1	1/10 units	135
5TG1 113-3	1/30	A	1	1/10 units	135
5TG1 114-0	1/30	A	1	1/10 units	135

Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5TG1 114-1	1/30	A	1	1/10 units	135
5TG1 114-2	1/30	A	1	1/10 units	135
5TG1 114-3	1/30	A	1	1/10 units	135
5TG1 115-0	1/30	A	1	1/3 units	135
5TG1 115-1	1/30	A	1	1/3 units	135
5TG1 115-2	1/30	A	1	1/3 units	135
5TG1 115-3	1/30	A	1	1/3 units	135
5TG1 121-0	1/33	A	1	1 unit	135
5TG1 121-1	1/33	A	1	1 unit	135
5TG1 121-2	1/33	A	1	1 unit	135
5TG1 121-3	1/33	A	1	1 unit	135
5TG1 122-0	1/33	A	1	1 unit	135
5TG1 122-1	1/33	A	1	1 unit	135
5TG1 122-2	1/33	A	1	1 unit	135
5TG1 122-3	1/33	A	1	1 unit	135
5TG1 123-0	1/33	A	1	1 unit	135
5TG1 123-1	1/33	A	1	1 unit	135
5TG1 123-2	1/33	A	1	1 unit	135
5TG1 123-3	1/33	A	1	1 unit	135
5TG1 124-0	1/33	A	1	1 unit	135
5TG1 124-1	1/33	A	1	1 unit	135
5TG1 124-2	1/33	A	1	1 unit	135
5TG1 124-3	1/33	A	1	1 unit	135
5TG1 125-0	1/33	A	1	1 unit	135
5TG1 125-1	1/33	A	1	1 unit	135
5TG1 125-2	1/33	A	1	1 unit	135
5TG1 125-3	1/33	A	1	1 unit	135
5TG1 131-0	1/29	C	1	1 unit	135
5TG1 132-0	1/29	C	1	1 unit	135
5TG1 133-0	1/29	C	1	1 unit	135
5TG1 134-0	1/29	C	1	1 unit	135
5TG1 2					
5TG1 201	1/31	A	1	1 unit	135
5TG1 201-1	1/31	A	1	1 unit	135
5TG1 201-2	1/31	A	1	1 unit	135
5TG1 201-3	1/31	A	1	1 unit	135
5TG1 201-4	1/31	A	1	1 unit	135
5TG1 202	1/31	A	1	1 unit	135
5TG1 202-1	1/31	A	1	1 unit	135
5TG1 202-2	1/31	A	1	1 unit	135
5TG1 202-3	1/31	A	1	1 unit	135
5TG1 202-4	1/31	A	1	1 unit	135
5TG1 203	1/31	A	1	1 unit	135
5TG1 203-1	1/31	A	1	1 unit	135
5TG1 203-2	1/31	A	1	1 unit	135
5TG1 203-3	1/31	A	1	1 unit	135
5TG1 203-4	1/31	A	1	1 unit	135
5TG1 204	1/31	A	1	1 unit	135
5TG1 204-1	1/31	A	1	1 unit	135

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Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5TG1 204-2	1/31	A	1	1 unit	135
5TG1 204-3	1/31	A	1	1 unit	135
5TG1 204-4	1/31	A	1	1 unit	135
5TG1 205	1/31	A	1	1 unit	135
5TG1 205-1	1/31	A	1	1 unit	135
5TG1 205-2	1/31	A	1	1 unit	135
5TG1 205-3	1/31	A	1	1 unit	135
5TG1 205-4	1/31	A	1	1 unit	135
5TG1 250	16/11	A	1	1/10 units	135
5TG1 3					
5TG1 321	1/35	A	1	1/10 units	135
5TG1 321-1	1/35	A	1	1/10 units	135
5TG1 322	1/35	A	1	1/10 units	135
5TG1 322-1	1/35	A	1	1/10 units	135
5TG1 323	1/35	A	1	1/10 units	135
5TG1 323-1	1/35	A	1	1/10 units	135
5TG1 324	1/35	A	1	1/10 units	135
5TG1 324-1	1/35	A	1	1/10 units	135
5TG1 325	1/35	A	1	1/5 units	135
5TG1 325-1	1/35	A	1	1/5 units	135
5TG1 328	1/35	A	1	1/10 units	135
5TG1 328-1	1/35	A	1	1/10 units	135
5TG1 330	16/11	A	1	1/10 units	135
5TG1 361	1/35	A	1	1/10 units	135
5TG1 362	1/35	A	1	1/10 units	135
5TG1 363	1/35	A	1	1/10 units	135
5TG1 364	1/35	A	1	1/10 units	135
5TG1 365	1/35	A	1	1/5 units	135
5TG1 368	1/35	A	1	1/10 units	135
5TG1 7					
5TG1 761	1/34	A	1	1/10 units	135
5TG1 763	1/34	A	1	1/10 units	135
5TG1 764	1/34	A	1	1/10 units	135
5TG1 770	16/11	A	1	1/10 units	135
5TG1 8					
5TG1 801	1/34	A	1	1/10 units	135
5TG1 802	1/34	A	1	1/10 units	135
5TG1 803	1/34	A	1	1/10 units	135
5TG1 804	1/34	A	1	1/10 units	135
5TG1 810	16/11	A	1	1/10 units	135
5TG1 825	1/36	A	1	1/5 units	135
5TG1 826	1/36	A	1	1/5 units	135
5TG1 831	1/34	C	1	1/10 units	135
5TG1 832	1/34	C	1	1/10 units	135
5TG1 833	1/34	C	1	1/10 units	135
5TG1 834	1/34	C	1	1/10 units	135
5TG2					
5TG2 551-0	1/28	A	1	1/10 units	135

Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5TG2 551-1	1/28	A	1	1/10 units	135
5TG2 551-3	1/28	A	1	1/10 units	135
5TG2 551-4	1/28	A	1	1/10 units	135
5TG2 551-6	1/28	A	1	1/10 units	135
5TG2 551-7	1/28	A	1	1/10 units	135
5TG2 552-0	1/28	A	1	1/10 units	135
5TG2 552-1	1/28	A	1	1/10 units	135
5TG2 552-2	1/28	A	1	1/10 units	135
5TG2 552-3	1/28	A	1	1/10 units	135
5TG2 552-4	1/28	A	1	1/10 units	135
5TG2 552-5	1/28	A	1	1/10 units	135
5TG2 552-6	1/28	A	1	1/10 units	135
5TG2 552-7	1/28	A	1	1/10 units	135
5TG2 552-8	1/28	A	1	1/10 units	135
5TG2 553-0	1/28	A	1	1/10 units	135
5TG2 553-1	1/28	A	1	1/10 units	135
5TG2 553-2	1/28	A	1	1/10 units	135
5TG2 553-3	1/28	A	1	1/10 units	135
5TG2 553-6	1/28	A	1	1/10 units	135
5TG2 554-0	1/28	A	1	1/10 units	135
5TG2 554-1	1/28	A	1	1/10 units	135
5TG2 554-2	1/28	A	1	1/10 units	135
5TG2 554-3	1/28	A	1	1/10 units	135
5TG2 554-6	1/28	A	1	1/10 units	135
5TG2 555-0	1/28	A	1	1/5 units	135
5TG2 555-3	1/28	A	1	1/5 units	135
5TG2 555-6	1/28	A	1	1/5 units	135
5TG2 558	16/11	A	1	1/10 units	135
5TG2 581-0	1/28	A	1	1/10 units	135
5TG2 581-1	1/28	A	1	1/10 units	135
5TG2 582-0	1/28	A	1	1/10 units	135
5TG2 582-1	1/28	A	1	1/10 units	135
5TG2 582-2	1/28	A	1	1/10 units	135
5TG2 583-0	1/28	A	1	1/10 units	135
5TG2 583-1	1/28	A	1	1/10 units	135
5TG2 583-2	1/28	A	1	1/10 units	135
5TG2 584-0	1/28	A	1	1/10 units	135
5TG2 584-1	1/28	A	1	1/10 units	135
5TG2 584-2	1/28	A	1	1/10 units	135
5TG2 585-0	1/28	A	1	1/5 units	135
5TG2 861	1/36	A	1	1/5 units	135
5TG2 862	1/36	A	1	1/3 units	135
5TG2 863	1/36	A	1	1/2 units	135
5TG2 901	1/36	A	1	1/5 units	135
5TG2 902	1/36	A	1	1/3 units	135
5TG2 903	1/36	A	1	1/2 units	135
5TG4					
5TG4 324	1/12, 14/8	A	1	1/10 sets	135

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Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5WG1 1					
5WG1 110-2AB03	14/7	A	1	1 unit	139
5WG1 110-2AB11	14/7	A	1	1 unit	139
5WG1 110-2CB03	14/7	B	1	1 unit	139
5WG1 114-2AB02	14/7	A	1	1 unit	139
5WG1 115-3AB21	1/14	A	1	1 unit	139
5WG1 115-3AB31	1/14	A	1	1 unit	139
5WG1 116-2AB01	1/12, 14/8	A	1	1 unit	139
5WG1 116-2AB11	1/12, 14/8	A	1	1 unit	139
5WG1 116-2AB21	1/12, 14/8	A	1	1 unit	139
5WG1 116-2AB31	1/12, 14/8	A	1	1 unit	139
5WG1 117-2AB11	14/7	A	1	1 unit	139
5WG1 117-2AB12	14/7	A	1	1 unit	139
5WG1 118-4AB01	10/5	A	1	1 unit	139
5WG1 120-1AB02	14/11	A	1	1 unit	139
5WG1 125-1AB01	20/13	A	1	1 unit	139
5WG1 125-1AB02	14/10	A	1	1 unit	139
5WG1 125-1AB11	20/13	A	1	1 unit	139
5WG1 125-1AB12	14/10	A	1	1 unit	139
5WG1 125-1AB21	20/13	A	1	1 unit	139
5WG1 125-1AB22	14/10	A	1	1 unit	139
5WG1 140-1AB03	14/14	A	1	1 unit	139
5WG1 140-1AB13	14/14	A	1	1 unit	139
5WG1 140-7AU02	11/21	C	1	1 unit	139
5WG1 140-7AU22	11/21	C	1	1 unit	139
5WG1 141-1AB02	5/17, 11/8, 20/13	A	1	1 unit	139
5WG1 141-2AB51	18/3	A	1	1 unit	139
5WG1 141-2AB71	18/3	B	1	1 unit	139
5WG1 146-1AB02	11/6, 14/14, 14/16	A	1	1 unit	139
5WG1 146-2AB11	11/12	A	1	1 unit	139
5WG1 146-2AB71	11/12	D	1	1 unit	139
5WG1 146-2EB11	11/10	A	1	1 unit	139
5WG1 146-2EB71	11/10	C	1	1 unit	139
5WG1 148-1AB02	11/12	A	1	1 unit	139
5WG1 148-1AB11	11/10	A	1	1 unit	139
5WG1 148-1AB22	11/6, 14/16	A	1	1 unit	139
5WG1 151-1AB01	1/42, 11/6, 14/16	A	1	1 unit	139
5WG1 190-7AU01	11/21	X	1	1 unit	139
5WG1 190-8AB01	14/19	A	1	5 units	139
5WG1 190-8AB02	14/19	A	1	5 units	139
5WG1 190-8AB03	14/19	A	1	5 units	139
5WG1 190-8AB04	14/19	A	1	5 units	139
5WG1 190-8AB11	14/19	B	1	5 units	139
5WG1 190-8AB12	14/19	B	1	5 units	139
5WG1 190-8AB13	14/19	B	1	5 units	139
5WG1 190-8AB14	14/19	B	1	5 units	139
5WG1 190-8AB21	14/19	B	1	5 units	139
5WG1 190-8AB22	14/19	B	1	5 units	139

Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5WG1 190-8AB23	14/19	B	1	5 units	139
5WG1 190-8AB24	14/19	B	1	5 units	139
5WG1 190-8AB31	14/19	B	1	5 units	139
5WG1 190-8AB32	14/19	B	1	5 units	139
5WG1 190-8AB33	14/19	B	1	5 units	139
5WG1 190-8AB34	14/19	B	1	5 units	139
5WG1 190-8AB41	14/19	B	1	5 units	139
5WG1 190-8AB42	14/19	B	1	5 units	139
5WG1 190-8AB43	14/19	B	1	5 units	139
5WG1 190-8AB44	14/19	B	1	5 units	139
5WG1 190-8AB51	14/19	B	1	5 units	139
5WG1 190-8AB52	14/19	B	1	5 units	139
5WG1 190-8AB53	14/19	B	1	5 units	139
5WG1 190-8AB54	14/19	B	1	5 units	139
5WG1 190-8AD01	14/20	B	1	1 unit	139
5WG1 191-5AB01	14/18	A	1	1 unit	139
5WG1 191-5AB11	14/18	A	1	1 unit	139
5WG1 192-8AA01	14/17	X	1	5 units	139
5WG1 193-8AB01	14/17	A	1	25 units	139
5WG1 196-2AB01	14/8	B	1	10 units	139
5WG1 2					
5WG1 204 8AB01	1/25	A	1	1 unit	139
5WG1 204-2AB11	1/25	A	1	1 unit	139
5WG1 220-2AB02	3/5	X	1	1 unit	139
5WG1 220-2AB21	3/5, 4/8	A	1	1 unit	139
5WG1 220-2DB31	3/5, 4/8	A	1	1 unit	139
5WG1 221-2AB11	16/9	A	1	1 unit	138
5WG1 221-2AB31	16/9	A	1	1 unit	138
5WG1 221-2DB12	1/6	A	1	1 unit	138
5WG1 221-2DB13	1/6	A	1	1 unit	138
5WG1 221-2DB32	1/6	A	1	1 unit	138
5WG1 221-2DB33	1/6	A	1	1 unit	138
5WG1 222-2AB11	16/9	A	1	1 unit	138
5WG1 222-2AB31	16/9	A	1	1 unit	138
5WG1 222-2DB12	1/6	A	1	1 unit	138
5WG1 222-2DB13	1/6	A	1	1 unit	138
5WG1 222-2DB32	1/6	A	1	1 unit	138
5WG1 222-2DB33	1/6	A	1	1 unit	138
5WG1 223-2AB14	1/7	B	1	1 unit	138
5WG1 223-2AB34	1/7	B	1	1 unit	138
5WG1 223-2DB12	1/6	A	1	1 unit	138
5WG1 223-2DB13	1/6	A	1	1 unit	138
5WG1 223-2DB15	1/7, 1/23, 11/15	A	1	1 unit	138
5WG1 223-2DB32	1/6	A	1	1 unit	138
5WG1 223-2DB33	1/6	A	1	1 unit	138
5WG1 223-2DB35	1/7, 1/23, 11/15	A	1	1 unit	138
5WG1 237-2EB11	1/15, 7/6	A	1	1 unit	138
5WG1 237-2EB31	1/15, 7/6	A	1	1 unit	138

* You can order this quantity or a multiple thereof.

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5WG1 237-2FB11	1/15, 7/6	A	1	1 unit	138
5WG1 237-2FB31	1/15, 7/6	A	1	1 unit	138
5WG1 237-2KB11	1/19, 7/10	A	1	1 unit	139
5WG1 237-2KB31	1/19, 7/10	A	1	1 unit	139
5WG1 240-8CB11	1/34	D	1	10 units	139
5WG1 241-2AB11	16/10	A	1	1 unit	138
5WG1 241-2AB12	1/7	A	1	1 unit	138
5WG1 241-2AB13	1/7	B	1	1 unit	138
5WG1 241-2AB72	1/7	B	1	1 unit	138
5WG1 241-2AB73	1/7	B	1	1 unit	138
5WG1 243-2AB11	16/10	A	1	1 unit	138
5WG1 243-2AB12	1/7	B	1	1 unit	138
5WG1 243-2AB13	1/7	B	1	1 unit	138
5WG1 243-2AB72	1/7	B	1	1 unit	138
5WG1 243-2AB73	1/7	B	1	1 unit	138
5WG1 245-2AB12	1/8	B	1	1 unit	138
5WG1 245-2AB13	1/8	B	1	1 unit	138
5WG1 245-2AB14	1/8	B	1	1 unit	138
5WG1 245-2AB15	1/8, 1/23, 11/15	A	1	1 unit	138
5WG1 245-2AB72	1/8	B	1	1 unit	138
5WG1 245-2AB73	1/8	B	1	1 unit	138
5WG1 245-2AB74	1/8	B	1	1 unit	138
5WG1 245-2AB75	1/8, 1/23, 11/15	B	1	1 unit	138
5WG1 251-3AB11	12/7	A	1	1 unit	138
5WG1 251-3AB21	12/7	A	1	1 unit	138
5WG1 252-2EB11	1/16, 7/7	A	1	1 unit	138
5WG1 252-2EB71	1/16, 7/7	A	1	1 unit	138
5WG1 252-2FB11	1/16, 7/7	A	1	1 unit	138
5WG1 252-2FB71	1/16, 7/7	A	1	1 unit	138
5WG1 252-2HV11	1/19	C	1	1 unit	139
5WG1 252-4AB02	5/23, 12/8	A	1	1 unit	139
5WG1 253-4AB01	5/23, 12/8	A	1	1 unit	139
5WG1 254-2EB11	1/16, 7/7	A	1	1 unit	138
5WG1 254-2EB41	1/16, 7/7	B	1	1 unit	138
5WG1 254-2FB11	1/16, 7/7	A	1	1 unit	138
5WG1 254-2FB41	1/16, 7/7	B	1	1 unit	138
5WG1 254-2KB13	1/19, 7/7	A	1	1 unit	139
5WG1 254-2KB43	1/19, 7/7	A	1	1 unit	139
5WG1 254-3EY02	5/23, 7/5, 12/8, 12/9	A	1	1 unit	139
5WG1 254-4AB01	5/23, 12/8	A	1	1 unit	139
5WG1 255-2AB11	12/6	A	1	1 unit	138
5WG1 255-2AB12	12/6	A	1	1 unit	138
5WG1 255-2AB71	12/6	A	1	1 unit	138
5WG1 255-2AB72	12/6	A	1	1 unit	138
5WG1 255-4AB01	4/7, 5/17, 5/22	A	1	1 unit	139
5WG1 255-4AB02	4/7, 5/17, 5/22	C	1	1 unit	139
5WG1 255-4AB11	5/22, 12/8	B	1	1 unit	139

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5WG1 255-4AB12	5/22, 12/8	B	1	1 unit	139
5WG1 255-4AB13	5/22, 12/8	B	1	1 unit	139
5WG1 255-7AB01	5/22, 12/8	A	1	1 unit	139
5WG1 255-7AB11	5/21, 12/7	A	1	1 unit	139
5WG1 257-2AB13	12/6	B	1	1 unit	139
5WG1 257-2AB14	12/6	B	1	1 unit	139
5WG1 257-2AB41	12/6	B	1	1 unit	139
5WG1 257-2AB42	12/6	B	1	1 unit	139
5WG1 257-3AB22	6/10	B	1	1 unit	139
5WG1 257-3AB32	6/10	B	1	1 unit	139
5WG1 257-3AB42	6/10, 12/9	B	1	1 unit	139
5WG1 258-1AB02	7/5, 12/9	B	1	1 unit	139
5WG1 258-2AB11	5/22, 12/7	A	1	1 unit	139
5WG1 258-2DB11	5/21, 12/7	A	1	1 unit	139
5WG1 258-2EB21	5/21, 12/7	B	1	1 unit	139
5WG1 258-2HB11	12/6	A	1	1 unit	138
5WG1 258-2HB12	12/6	B	1	1 unit	138
5WG1 258-2HB31	12/6	B	1	1 unit	138
5WG1 258-2HB32	12/6	B	1	1 unit	138
5WG1 258-7EB01	5/21, 12/7	A	1	1 unit	139
5WG1 260-1AB01	3/5	C	1	1 unit	139
5WG1 260-4AB23	3/5, 10/5	A	1	1 unit	139
5WG1 261-1AB01	3/5	D	1	1 unit	139
5WG1 261-1CB01	3/5, 20/13	D	1	1 unit	139
5WG1 262-1EB01	3/5	A	1	1 unit	139
5WG1 262-1EB11	3/5	A	1	1 unit	139
5WG1 263-1EB01	3/5	A	1	1 unit	139
5WG1 263-1EB11	3/5	A	1	1 unit	139
5WG1 264-1EB11	3/5	A	1	1 unit	139
5WG1 272-2AB11	9/4, 12/10	A	1	1 unit	139
5WG1 285-2AB11	16/10	A	1	1 unit	138
5WG1 285-2AB41	16/10	B	1	1 unit	138
5WG1 285-2DB12	1/8	A	1	1 unit	138
5WG1 285-2DB13	1/8	A	1	1 unit	138
5WG1 285-2DB42	1/8	A	1	1 unit	138
5WG1 285-2DB43	1/8	A	1	1 unit	138
5WG1 286-2AB11	16/10	A	1	1 unit	138
5WG1 286-2AB41	16/10	B	1	1 unit	138
5WG1 286-2DB12	1/9	A	1	1 unit	138
5WG1 286-2DB13	1/9	A	1	1 unit	138
5WG1 286-2DB42	1/9	A	1	1 unit	138
5WG1 286-2DB43	1/9	A	1	1 unit	138
5WG1 287-2AB14	1/9	A	1	1 unit	138
5WG1 287-2AB44	1/9	B	1	1 unit	138
5WG1 287-2DB12	1/9	A	1	1 unit	138
5WG1 287-2DB13	1/9	A	1	1 unit	138
5WG1 287-2DB15	1/9, 1/23, 11/15	A	1	1 unit	138
5WG1 287-2DB42	1/9	A	1	1 unit	138
5WG1 287-2DB43	1/9	A	1	1 unit	138

* You can order this quantity or a multiple thereof.

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Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5WG1 287-2DB45	1/9, 1/23, 11/15	A	1	1 unit	138
5WG1 290-7AB11	7/15	B	1	1 unit	139
5WG1 290-7AB81	7/15	B	1	1 unit	139
5WG1 294-8AB01	14/8	B	1	10 units	139
5WG1 3					
5WG1 301-1AB01	13/4	A	1	1 unit	139
5WG1 302-1AB01	13/4	B	1	1 unit	139
5WG1 305-1AB01	13/4	A	1	1 unit	139
5WG1 341-1AB01	13/4	A	1	1 unit	139
5WG1 342-1AB01	5/23	B	1	1 unit	139
5WG1 345-1AB01	9/3	A	1	1 unit	139
5WG1 347-1AB02	13/4	A	1	1 unit	139
5WG1 350-1AB01	13/4	B	1	1 unit	139
5WG1 350-1EB01	11/6, 13/4, 13/6, 14/16	A	1	1 unit	139
5WG1 360-1AB01	8/2	B	1	1 unit	139
5WG1 371-5EY01	13/6	A	1	1 unit	139
5WG1 372-5EY01	13/6	A	1	1 unit	139
5WG1 372-5EY02	13/6	A	1	1 unit	139
5WG1 390-3EY01	13/7	A	1	1 unit	139
5WG1 4					
5WG1 420-3AB13	1/24, 1/40	B	1	1 unit	139
5WG1 421-3AB13	1/24, 1/40	B	1	1 unit	139
5WG1 422-3AB13	1/24, 1/40	B	1	1 unit	139
5WG1 425-7AB72	1/24, 1/40	B	1	1 unit	139
5WG1 450-7AB03	1/24, 11/15	B	1	1 unit	139
5WG1 5					
5WG1 501-1AB01	3/6, 4/7, 6/6	B	1	1 unit	139
5WG1 502-1AB02	2/9, 3/6, 4/7	B	1	1 unit	139
5WG1 510-1AB03	2/8	A	1	1 unit	139
5WG1 510-1AB04	2/8	A	1	1 unit	139
5WG1 510-2AB03	2/9	A	1	1 unit	139
5WG1 510-2AB13	2/9	A	1	1 unit	139
5WG1 510-2AB23	2/9, 10/5	A	1	1 unit	139
5WG1 511-1AB02	2/9	B	1	1 unit	139
5WG1 511-2AB10	2/10, 3/6, 4/8	A	1	1 unit	139
5WG1 512-1AB01	2/9	A	1	1 unit	139
5WG1 512-1AB11	2/8	B	1	1 unit	139
5WG1 512-1AB21	2/8	B	1	1 unit	139
5WG1 512-1CB01	2/9, 20/13	B	1	1 unit	139
5WG1 512-4AB23	2/10, 10/5	A	1	1 unit	139
5WG1 513-1AB11	2/8	B	1	1 unit	139
5WG1 513-1AB21	2/8	B	1	1 unit	139
5WG1 520-2AB03	6/7	A	1	1 unit	139
5WG1 520-2AB13	6/7	A	1	1 unit	139
5WG1 520-2AB23	6/7, 10/5	A	1	1 unit	139
5WG1 520-2AB31	3/6, 4/8, 6/7	D	1	1 unit	139
5WG1 521-1AB01	6/7	A	1	1 unit	139
5WG1 521-4AB23	6/7, 10/5	A	1	1 unit	139

Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5WG1 522-1AB03	6/6	B	1	1 unit	139
5WG1 523-1AB02	6/6	B	1	1 unit	139
5WG1 523-1AB03	6/6	A	1	1 unit	139
5WG1 523-1AB04	6/6	B	1	1 unit	139
5WG1 523-1AB11	6/6	B	1	1 unit	139
5WG1 523-1CB04	6/6, 20/13	A	1	1 unit	139
5WG1 524-1AB01	6/7	A	1	1 unit	139
5WG1 525-1EB01	5/17, 11/8	A	1	1 unit	139
5WG1 525-2AB03	5/9	A	1	1 unit	139
5WG1 525-2AB13	5/9	A	1	1 unit	139
5WG1 525-2AB23	5/9, 10/5	A	1	1 unit	139
5WG1 525-2AB31	3/6, 4/8, 5/9	A	1	1 unit	139
5WG1 526-1AB02	4/7, 5/17, 5/22	A	1	1 unit	139
5WG1 526-1EB02	5/17, 20/13	A	1	1 unit	139
5WG1 527-1AB31	5/9	B	1	1 unit	139
5WG1 527-1AB41	5/9	B	1	1 unit	139
5WG1 527-1AB51	5/9	B	1	1 unit	139
5WG1 528-1AB31	5/9	B	1	1 unit	139
5WG1 528-1AB41	5/9	B	1	1 unit	139
5WG1 540-5AS01	7/15	B	1	1 unit	139
5WG1 540-5AS11	7/15	A	1	1 unit	139
5WG1 540-8AS01	7/15	A	1	1 unit	139
5WG1 561-7AH01	7/19	B	1	1 unit	139
5WG1 561-7AH02	7/19	B	1	1 unit	139
5WG1 561-7AH03	7/19	B	1	1 unit	139
5WG1 561-7AH04	7/19	B	1	1 unit	139
5WG1 561-8AH01	7/19	B	1	1 unit	139
5WG1 561-8AH02	7/19	B	1	1 unit	139
5WG1 561-8AH03	7/19	B	1	1 unit	139
5WG1 561-8AH04	7/19	B	1	1 unit	139
5WG1 561-8AH05	7/19	B	1	1 unit	139
5WG1 561-8AH06	7/19	B	1	1 unit	139
5WG1 562-1AB01	2/9	A	1	1 unit	139
5WG1 562-1AB11	2/8	B	1	1 unit	139
5WG1 562-1AB21	2/8	B	1	1 unit	139
5WG1 562-2AB31	2/10, 3/6, 4/8	A	1	1 unit	139
5WG1 562-7AB02	7/17	A	1	1 unit	139
5WG1 567-1AB01	2/8	A	1	1 unit	139
5WG1 567-1AB11	2/8	A	1	1 unit	139
5WG1 567-1AB12	2/8	A	1	1 unit	139
5WG1 567-1AB22	2/8	B	1	1 unit	139
5WG1 587-2AB11	1/26	A	1	1 unit	139
5WG1 587-2AB12	1/26	A	1	1 unit	139
5WG1 587-2AB31	1/26	A	1	1 unit	139
5WG1 587-2AB32	1/26	A	1	1 unit	139
5WG1 588-2AB13	1/39	B	1	1 unit	139
5WG1 588-2AB23	1/39	B	1	1 unit	139
5WG1 588-8AB12	1/39	B	1	1 unit	139
5WG1 588-8AB13	1/39	B	1	1 unit	139

* You can order this quantity or a multiple thereof.

Appendix

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Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5WG1 588-8AB14	1/39	B	1	1 unit	139
5WG1 588-8AB15	1/39	B	1	1 unit	139
5WG1 588-8EB01	1/39	B	1	1 unit	139
5WG1 590-8AH01	1/24, 11/15	C	1	1 unit	139
5WG1 6					
5WG1 605-1AB01	4/7, 7/15	A	1	1 unit	139
5WG1 605-1AB11	4/7, 7/15	A	1	1 unit	139
5WG1 641-3AB01	10/5	A	1	1 unit	139
5WG1 670-1AB03	2/11, 3/7, 4/7, 7/5, 7/15	A	1	1 unit	139
5WG1 8					
5WG1 810-0EY01	13/7	B	1	1 unit	139
5WG3					
5WG3 110-2AB01	16/29	A	1	1 unit	139
5WG3 110-2AB11	16/29	B	1	1 unit	139
5WG3 140-2HB11	11/16, 16/25	A	1	1 unit	138
5WG3 140-2HB31	11/16, 16/25	B	1	1 unit	138
5WG3 141-2AB01	16/30	A	1	1 unit	138
5WG3 210-2AB11	16/9	A	1	1 unit	138
5WG3 210-2AB71	16/9	B	1	1 unit	138
5WG3 210-2GB11	16/10	A	1	1 unit	138
5WG3 210-2GB41	16/10	B	1	1 unit	138
5WG3 210-2HB11	16/9	A	1	1 unit	138
5WG3 210-2HB31	16/9	B	1	1 unit	138
5WG3 211-2AB11	16/9	A	1	1 unit	138
5WG3 211-2AB71	16/9	B	1	1 unit	138
5WG3 211-2GB11	16/10	A	1	1 unit	138
5WG3 211-2GB41	16/10	B	1	1 unit	138
5WG3 211-2HB11	16/9	A	1	1 unit	138
5WG3 211-2HB31	16/9	B	1	1 unit	138
5WG3 255-8AB01	16/23	A	1	1 unit	139
5WG3 260-3AB11	16/21, 16/23	A	1	1 unit	139
5WG3 261-3AB11	16/17	A	1	1 unit	139
5WG3 425-7AB21	1/40, 16/12	B	1	1 unit	139
5WG3 425-7AB71	1/40, 16/12	B	1	1 unit	139
5WG3 520-4AB01	16/21	A	1	1 unit	139
5WG3 560-2AB01	16/15, 16/29	A	1	1 unit	139
5WG3 561-4AB01	16/15	A	1	1 unit	139
5WG3 561-4AB11	16/15, 16/26, 17/7	A	1	1 unit	139
5WG3 564-7AB11	16/16	A	1	1 unit	139
5WG4					
5WG4 221-3AB10	17/4	A	1	1 unit	138
5WG4 221-3AB11	17/4	A	1	1 unit	138
5WG4 221-3AB12	17/4	A	1	1 unit	138
5WG4 221-3AB30	17/4	A	1	1 unit	138
5WG4 221-3AB31	17/4	A	1	1 unit	138
5WG4 221-3AB32	17/4	A	1	1 unit	138
5WG4 222-3AB10	17/4	A	1	1 unit	138

Order No.	Page	DT	PU (UNIT, SET, M)	PS/ P. unit	PG
5WG4 222-3AB11	17/4	A	1	1 unit	138
5WG4 222-3AB12	17/4	A	1	1 unit	138
5WG4 222-3AB30	17/4	A	1	1 unit	138
5WG4 222-3AB31	17/4	A	1	1 unit	138
5WG4 222-3AB32	17/4	A	1	1 unit	138
6AV6					
6AV6 643-7AC10-0AA1	11/20	B	1	1 unit	2CP
6BK1					
6BK1700-0BA00-0AA2	11/18, 13/11	C	1	1 unit	470
6ED1					
6ED1 050-1AA00-0AE8	13/11	B	1	1 unit	200
6ED1 050-1AA00-0BE8	13/11	X	1	1 unit	200
6ED1 052-1FB00-0BA6	13/10	A	1	1 unit	200
6ED1 052-1FB00-0BA7	13/10	A	1	1 unit	200
6ED1 052-1MD00-0BA6	13/10	A	1	1 unit	200
6ED1 052-1MD00-0BA7	13/10	A	1	1 unit	200
6ED1 055-1FB00-0BA1	13/10	A	1	1 unit	200
6ED1 055-1MA00-0BA0	13/10	A	1	1 unit	200
6ED1 055-1MB00-0BA1	13/10	A	1	1 unit	200
6ED1 055-1MD00-0BA1	13/10	A	1	1 unit	200
6ED1 055-1MM00-0BA1	13/11	A	1	1 unit	200
6ED1 056-1DA00-0BA0	13/11	A	1	1 unit	200
6ED1 056-6XA00-0BA0	13/11	A	1	1 unit	200
6ED1 056-7DA00-0BA0	13/11	A	1	1 unit	200
6ED1 057-1AA00-0BA0	13/11	A	1	1 unit	200
6ED1 057-1AA01-0BA0	13/11	A	1	1 unit	200
6ED1 058-0BA02-0YA1	13/11	A	1	1 unit	200
6EP1					
6EP1 321-1SH03	13/11	A	1	1 unit	583
6EP1 322-1SH03	13/11	A	1	1 unit	583
6EP1 331-1SH03	13/11	A	1	1 unit	583
6EP1 332-1SH43	13/11	A	1	1 unit	583
6EP1 332-1SH52	13/11	A	1	1 unit	583
6XV1					
6XV1 850-2GH20	13/11	A	1	1 unit	5K1
7KT1					
7KT1 531	15/3	B	1	1 unit	15C
7KT1 533	15/3	B	1	1 unit	15C
7KT1 540	15/3	B	1	1 unit	15C
7KT1 542	15/3	B	1	1 unit	15C
7KT1 543	15/3	B	1	1 unit	15C
7KT1 545	15/3	B	1	1 unit	15C
7KT1 546	15/3	B	1	1 unit	15C
7KT1 548	15/3	B	1	1 unit	15C
7KT1 900	15/3	B	1	1 unit	15C
BPZ					
BPZ-AV51	7/19	A	1	1 unit	A02
BPZ-AV52	7/19	A	1	1 unit	A02

* You can order this quantity or a multiple thereof.

Order number index

Order No.	Page	DT	PU (UNIT, SET, M)	PS*/ P. unit	PG
BPZ:AV54	7/19	A	1	1 unit	A02
BPZ:AV55	7/19	A	1	1 unit	A02
BPZ:AV57	7/19	A	1	1 unit	A02
BPZ:AV58	7/19	A	1	1 unit	A02
BPZ:AV59	7/19	A	1	1 unit	A02
BPZ:AV60	7/19	C	1	1 unit	A02
BPZ:AV61	7/19	A	1	1 unit	A02
BPZ:ERF910	16/38	A	1	1 unit	A05
BPZ:OZW772-01	16/37	A	1	1 unit	A06
BPZ:QAA2012	12/13	A	1	1 unit	A04
BPZ:QAA2061	12/13	A	1	1 unit	A04
BPZ:QAA2061D	12/13	A	1	1 unit	A04
BPZ:QAA910	16/37	A	1	1 unit	A05
BPZ:QAC2012	12/13	A	1	1 unit	A04
BPZ:QAC3161	12/13	A	1	1 unit	A04
BPZ:QAC910	16/38	A	1	1 unit	A05
BPZ:QAD2012	12/13	A	1	1 unit	A04
BPZ:QAW910	16/37	A	1	1 unit	A05
BPZ:QAX841-PPS2	7/16	A	1	1 unit	A08
BPZ:QFA1000	12/15	A	1	1 unit	A04
BPZ:QFA1001	12/15	A	1	1 unit	A04
BPZ:QFA2000	12/14	A	1	1 unit	A04
BPZ:QFA2060	12/14	A	1	1 unit	A04
BPZ:QFA2060D	12/15	A	1	1 unit	A04
BPZ:QLS60	12/18	A	1	1 unit	A04
BPZ:QPA2000	12/17	A	1	1 unit	A04
BPZ:QPA2002	12/17	A	1	1 unit	A04
BPZ:QPA2060	12/17	A	1	1 unit	A04
BPZ:QPA2062	12/17	A	1	1 unit	A04
BPZ:QPA2062D	12/17	A	1	1 unit	A04
BPZ:RRV912	16/38	A	1	1 unit	A05
BPZ:RRV918	16/38	A	1	1 unit	A05
BPZ:RRV934	16/38	A	1	1 unit	A05
BPZ:RXB211-FC-10	7/16	A	1	1 unit	A11
BPZ:RXB211-FC-11	7/16	A	1	1 unit	A11
BPZ:RXB221-FC-12	7/16	A	1	1 unit	A11
BPZ:RXB241-CC-02	7/16	A	1	1 unit	A11
BPZ:RXZ201	7/16	A	1	1 unit	A11
BPZ:SSA955	16/38	A	1	1 unit	A02
S55					
S55174-A 100	7/19	On request			
S55174-A 101	7/19	On request			
S55174-A 103	7/19	On request			
S55174-A 106	7/19	On request			
S55371-C 100	16/38	A	1	1 unit	A05
S55621-H 103	16/39	A	1	1 unit	A05
S55621-H 104	16/39	A	1	1 unit	A05
S55621-H 105-C901	16/38	A	1	1 unit	A05
S55621-H 110	16/37	C	1	1 unit	A05

Order No.	Page	DT	PU (UNIT, SET, M)	PS*/ P. unit	PG
S55621-H 111	16/37	A	1	1 unit	A05
S55621-H 112	16/37	A	1	1 unit	A05
S55623-H 104	17/5	C	1	1 unit	A08
S55623-H 105	17/5	C	1	1 unit	A08
S55623-H 106	17/5	C	1	1 unit	A08
S55623-H 107	17/5	C	1	1 unit	A08
S55720-S 134	12/12	A	1	1 unit	A04
S55720-S 136	12/12, 12/16	A	1	1 unit	A04
S55720-S 137	12/16	A	1	1 unit	A04
S55720-S 140	12/14, 12/16	A	1	1 unit	A04
S55720-S 141	12/14, 12/16	A	1	1 unit	A04
S55720-S 142	12/12, 12/14	A	1	1 unit	A04
S55720-S 146	12/16	A	1	1 unit	A04
S55720-S 147	12/16	A	1	1 unit	A04
S55720-S 148	12/16	A	1	1 unit	A04
S55720-S 161	12/12	A	1	1 unit	A04
S55770-T 104	1/19, 7/10	B	1	1 unit	A08
S55770-T 105	1/19, 7/10	B	1	1 unit	A08
S55770-T 106	1/19, 7/10	B	1	1 unit	A08
S55770-T 137	1/20, 7/10	B	1	1 unit	A08
S55770-T 163	1/20, 7/11	B	1	1 unit	A08
S55770-T 165	1/20, 7/11	B	1	1 unit	A08
S55842-Z 101	11/17, 17/6	C	1	1 unit	A08

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Appendix

Notes

Industry Automation, Drive Technologies and Low-Voltage Power Distribution

Further information can be obtained from our branch offices listed at www.siemens.com/automation/partner

Interactive Catalog on DVD	<i>Catalog</i>	Building Control	<i>Catalog</i>
for Industry Automation, Drive Technologies and Low Voltage Distribution	CA 01	GAMMA Building Control	ET G1
Drive Systems		Motion Control	
<u>Variable-Speed Drives</u>		SINUMERIK & SIMODRIVE Automation Systems for Machine Tools	NC 60
SINAMICS G130 Drive Converter Chassis Units	D 11	SINUMERIK & SINAMICS Equipment for Machine Tools	NC 61
SINAMICS G150 Drive Converter Cabinet Units		SINUMERIK 840D sl Type 1B Equipment for Machine Tools	NC 62
SINAMICS GM150, SINAMICS SM150 Medium-Voltage Converters	D 12	SINUMERIK 808D, SINAMICS V60 and G120 and SIMOTICS 1FL5 and 1LE1 motors	NC 81.1
ROBICON Perfect Harmony Medium-Voltage Air-Cooled Drives Germany Edition	D 15.1	SINUMERIK 828D BASIC T/BASIC M, SINAMICS S120 Combi and 1FK7/1PH8 motors	NC 82
SINAMICS S120 Chassis Format Units and Cabinet Modules	D 21.3	SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21
SINAMICS S150 Converter Cabinet Units	D 23.1	Drive and Control Components for Cranes	CR 1
SINAMICS DCM Converter Units	D 31		
SINAMICS and Motors for Single-Axis Drives	D 84.1	Power Supply and System Cabling	
<u>Three-phase Induction Motors</u>		Power supply SITOP	KT 10.1
• H-compact		System cabling SIMATIC TOP connect	KT 10.2
• H-compact PLUS			
Asynchronous Motors Standardline	D 86.1	Process Instrumentation and Analytics	
Synchronous Motors with Permanent-Magnet Technology, HT-direct	D 86.2	Field Instruments for Process Automation	FI 01
DC Motors	DA 12	SIREC Recorders and Accessories	MP 20
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1	SIPART Controllers and Software	MP 31
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2	Products for Weighing Technology	WT 10
<i>PDF: SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units</i>	DA 22	<i>PDF: Process Analytical Instruments</i>	PA 01
SIMOVERT PM Modular Converter Systems	DA 45	<i>PDF: Process Analytics, Components for the System Integration</i>	PA 11
SIEMOSYN Motors	DA 48		
MICROMASTER 420/430/440 Inverters	DA 51.2	Safety Integrated	
MICROMASTER 411/COMBIMASTER 411	DA 51.3	Safety Technology for Factory Automation	SI 10
SIMOVERT MASTERDRIVES Vector Control	DA 65.10		
SIMOVERT MASTERDRIVES Motion Control	DA 65.11	SIMATIC HMI/PC-based Automation	
Synchronous and asynchronous servomotors for SIMOVERT MASTERDRIVES	DA 65.3	Human Machine Interface Systems/ PC-based Automation	ST 80/ ST PC
SIMODRIVE 611 universal and POSMO	DA 65.4		
<i>Note: Additional catalogs on SIMODRIVE or SINAMICS drive systems and SIMOTICS motors with SINUMERIK and SIMOTION can be found under Motion Control</i>		SIMATIC Ident	
<u>Low-Voltage Three-Phase-Motors</u>		Industrial Identification Systems	ID 10
SIMOTICS Low-Voltage Motors	D 81.1		
MOTOX Geared Motors	D 87.1	SIMATIC Industrial Automation Systems	
SIMOGEAR Geared Motors	MD 50.1	Products for Totally Integrated Automation and Micro Automation	ST 70
<u>Mechanical Driving Machines</u>		SIMATIC PCS 7 Process Control System	ST PCS 7
FLENDER Standard Couplings	MD 10.1	Add-ons for the SIMATIC PCS 7 Process Control System	ST PCS 7.1
FLENDER SIG Standard industrial gear unit	MD 30.1	<i>PDF: Migration solutions with the SIMATIC PCS 7 Process Control System</i>	ST PCS 7.2
FLENDER SIP Standard industrial planetary gear units	MD 31.1		
Low-Voltage Power Distribution and Electrical Installation Technology		SIMATIC NET	
SENTRON Protection, Switching, Measuring and Monitoring Devices	LV 10.1	Industrial Communication	IK PI
SIVACON · ALPHA Switchboards and Distribution Systems	LV 10.2	SINVERT Photovoltaics	
Standards-Compliant Components for Photovoltaic Plants	LV 11	Inverters and Components for Photovoltaic Installations	RE 10
3WT Air Circuit Breakers up to 4000 A	LV 35	SIRIUS Industrial Controls	
3VT Molded Case Circuit Breakers up to 1600 A	LV 36	SIRIUS Industrial Controls	IC 10
<i>PDF: System Cubicles, System Lighting and System Air-Conditioning</i>	LV 50		
<i>PDF: ALPHA Distribution Systems</i>	LV 51	System Solutions	
SIVACON Power Distribution Boards SIVACON S4	LV 56	Applications and Products for Industry are part of the interactive catalog CA 01	
SIVACON 8PS Busbar Trunking Systems	LV 70		
<i>PDF: DELTA Switches and Socket Outlets</i>	ET D1		

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