GAMMA
Building Management Systems

Catalog ET G1 • 2011

The world-wide standard for home and building control

Answers for infrastructure.

SIEMENS

Related catalogs

Contents

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Protection, Switching, Measuring and Monitoring Devices — LV 10.1
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SIVACON S4
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Busbar Trunking Systems, Overview • CD-L System (25 A ... 40 A) • BD 01 System (40 A ... 160 A) • BD2 System (160 A ... 1250 A)

Interactive Catalog — CA 01
Order No.:
E86060-D4001-A510-C9-7600

All products of automation technology, drive technology, low-voltage power distribution and electrical installation technology, including those in the catalogs listed above

Industry Mall
Internet:
www.siemens.com/industrymall

All products of automation technology, drive technology, low-voltage power distribution and electrical installation technology, including those in the catalogs listed above

Catalog PDF
Internet:
www.siemens.com/lowvoltage/infomaterial

All catalogs for low-voltage power distribution and electrical installation technology can be downloaded as PDF files.

Trademarks

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

www.siemens.com/lowvoltage

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 Management Systems

Catalog ET G1 · 2011

VDE
VERBAND DER ELEKTROTECHNIK
ELEKTRONIK INFORMATIONSTECHNIK e.V.

The products and systems listed in this catalog are developed and manufactured in accordance with a VDE-certified quality management system complying with EN ISO 9001:2000.

Supersedes:
Catalog ET G1 · 2010

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-C9-7600

Contact your local Siemens sales office for further information.

Innovation is the key to success

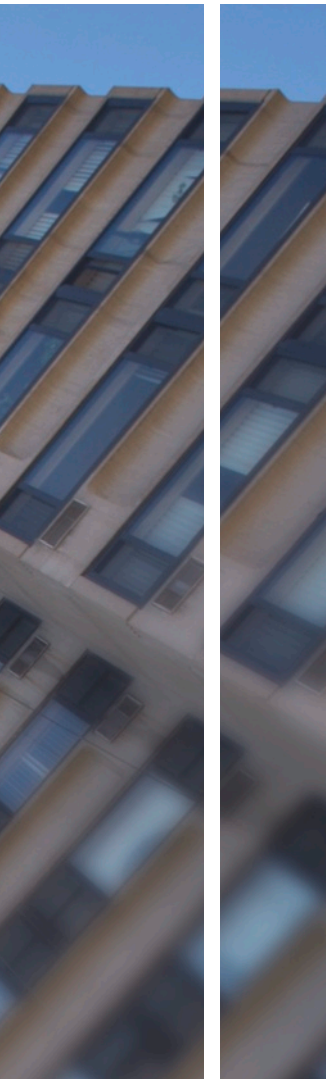
We continue to invest heavily in the research and development of new technologies. We have our own experimental and test laboratories where we carry out intensive basic research on the climate in buildings and on fire, gas and explosion protection. This gives us the experience and the opportunity to create solutions that continuously flow into our new products and systems. At special test premises, such as airport buildings and hospital premises, we test the interoperability of the individual systems. This empirical data is incorporated into industry-specific solutions that continually set new standards and underscore our claim to technological leadership.

Energy-efficiency and environmental protection is our business principle

And this business principle applies cross-company and to each and every employee: We are committed to environmental protection and the careful use of resources. Since 1994, we have been involved in more than 1300 energy efficiency projects, which have jointly contributed to the saving of around 1.5 billion euro in energy costs and reduced the annual CO_2 burden on the environment by approx. 700 000 t. So, as you can see, intelligent solutions in technical infrastructures benefit not only the owners and operators of buildings, but also those who have nothing to do with them.

Customer focus as USP

This is not just a soundbite, we make every effort to ensure close customer relations. We have in-depth knowledge of their business and involve them in the development of our innovations. Our skills make us an expert provider of industry-specific solutions and services, a preferred partner during the life cycle of a building - and allow us to enjoy mutual growth with our customers.



Answers for infrastructure

Siemens Industry meets the great challenges of our time head on. With solutions for technical infrastructure in industrial and non-residential buildings, residential buildings and public facilities, Siemens ensures enhanced comfort and energy efficiency in buildings, as well as the protection and safety of persons, property and business processes. As a longstanding and professional partner with all-round expertise in the industry sector, we offer tailored solutions that generate sustainable added value for our customers.

Gain a competitive edge - with integrated building solutions

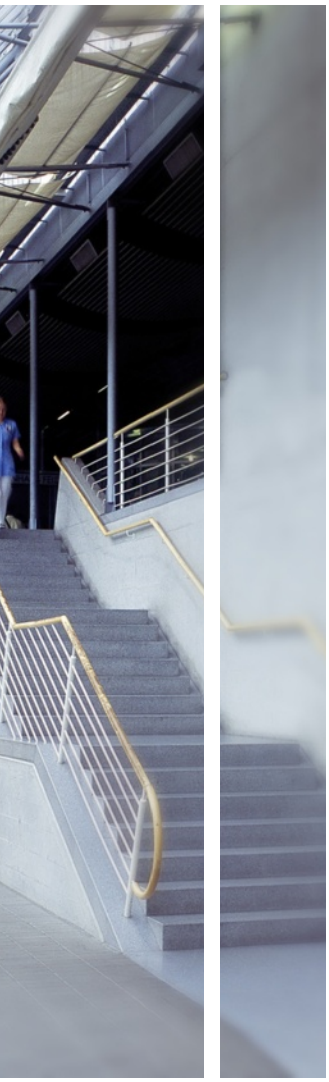
Total Building Solutions means more innovation from a single source for enhanced functionality under one roof. When it comes to delivering turnkey buildings equipped with cutting edge power distribution, building automation and safety and fire-protection equipment from a single source, Siemens is in a league of its own. And just to show that we are more than just the sum of our parts, our portfolio includes:

- *Low-voltage power distribution*
  Switchboards, busbar trunking systems, distribution boards, circuit breakers, switch disconnectors, low-voltage circuit protection, building management systems, switches and socket outlets
- *Building automation*
  Heating, ventilation and air-conditioning controls, overall energy solutions offering guaranteed savings
- *Safety solutions*
  Access control, video monitoring, burglar protection, alarm control centers, operation of alarm control centers
- *Fire protection*
  Fire alarms, alerting, evacuation, extinction and complete fire protection solutions

Take a closer look at all the options available from Siemens. Check out the opportunities our products provide and discover how we can help you sustainably enhance your competitive edge.

The right product for every need

Our portfolio comprises switchboards, busbar trunking systems, distribution boards, measuring devices, circuit breakers and switch disconnectors, circuit protection devices, building management systems, switches and socket outlets. The consistency, modularity and intelligence of our components and systems offer you numerous advantages – throughout their service life and wherever you are in the world. We deliver trendsetting designs and innovative functions in unique quality, developed in accordance with the applicable international standards.



Consistent, safe and intelligent power distribution

Whether in industrial plants or in buildings: Every technical system depends on a reliable supply of electric power. Even a short power failure may have serious consequences. For this reason, you need products and systems which cope with every eventuality and always keep you on the safe side. Our portfolio is the broadest world-wide, covering everything from switchboards to socket outlets.

We will be glad to provide you with extensive support from the initial information to the operation. Convince yourself of the possibilities we offer you.

Making efficient use of energy

The consistent concept behind the communication-capable components of our low-voltage power distribution range forms a sound basis for the measurement, indication, evaluation and optimization of power flows, thus enabling professional energy management for more cost-effectiveness. At the same time our intelligent building management systems, e.g. for lighting and heating, help to remarkably reduce power consumption.

Excellent support

As a competent and reliable partner we offer you comprehensive support – from initial information, planning, configuration and ordering through to commissioning, operation and technical support. We know the requirements to be met in your area of work and day-to-day business. On this basis we provide you with the type of flexible and efficient help that allows you to concentrate fully on your customers and their needs.

Top quality standards world-wide

Opting for us puts you on the safe side: Whether it is our workmanship, the materials we use or the operability and functionality of our products – we guarantee top standards of quality world-wide.

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 Management Systems 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.

Our added extra

Build on a sound basis

With our basic and advanced courses, you can lay the foundations for your business success. Expert lecturers provide you with the necessary theoretical and practical knowledge in our modern training center in Regensburg. Dynamic and easy-to-understand training with multimedia teaching equipment and many practical examples. Available in German and English. If required, we also provide training in-house or in one of our local Siemens branches.

The range of courses extends through low-voltage power distribution to electrical installation technology. You will get to know our entire portfolio of products and their application. Step-by-step we will familiarize you with the entire spectrum of modern installation options, thus opening up a whole new world of business opportunities.

And by the way: in 1991, the training center in Regensburg became the first certified training center in the world to offer KNX courses, and it is the only manufacturer training center to teach the entire range of KNX-certified courses in both German and English.

For details of our current range of courses, please visit our website at:
www.siemens.com/lowvoltage/training

Comprehensive support

We can help you with all your requirements: contact us if you have any queries regarding our products, the planning of your electrical installation or how to obtain technical documentation.

Just give us a call:
- Tel.: +49 (911) 895 7222
- Fax: +49 (911) 895 7223

www.siemens.com/lowvoltage/technical-support

Tender specification texts

For your support, we offer you a comprehensive range of specification texts:
www.siemens.com/specifications

Low-voltage power distribution on the Web

Visit us on the Internet. You will find comprehensive information on our products – SIVACON switchboards, busbar trunking systems, ALPHA distribution boards, SENTRON circuit breakers and switch disconnectors, BETA low-voltage circuit protection, GAMMA building management systems and DELTA switches and socket outlets – at:
www.siemens.com/lowvoltage

Software at your service

Labeling software for complete electrical installations

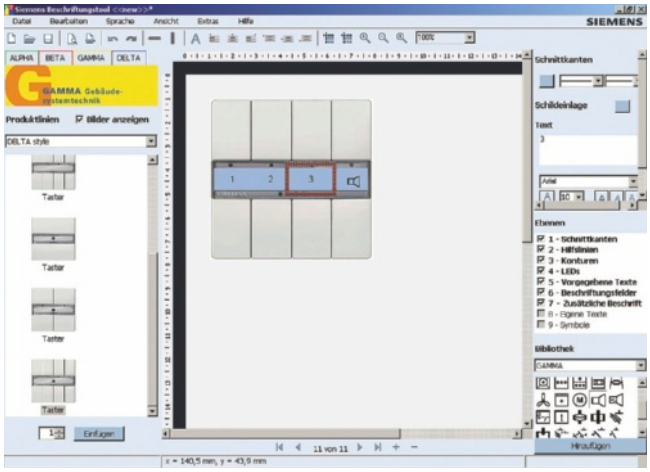
The Siemens labeling software means it has never been easier to label your switches and socket outlets, distribution boards and low-voltage controls.

Each product is labeled using a standard printer on pre-punched adhesive film or simply on DIN A4 paper. Generally any device used in electrical installation can be labeled using this labeling system. This allows you to create a neat and tidy distribution board and clearly labeled switches and socket outlets - long after installation.

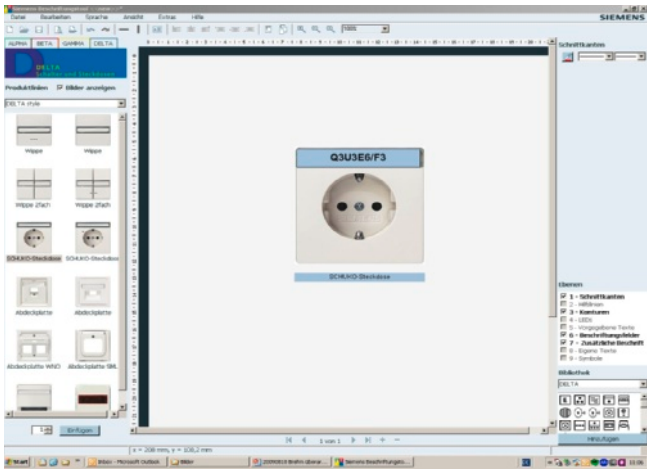
The benefits:

- Your work is made easier and your installation has a uniform appearance, thanks to a single and consistent labeling system
- Adhesive labels are durable, simple to apply and can be used for all devices.

The program is simple to use and available free of charge on the Internet at:
www.siemens.com/labeling-tool



Labeling tool, example GAMMA

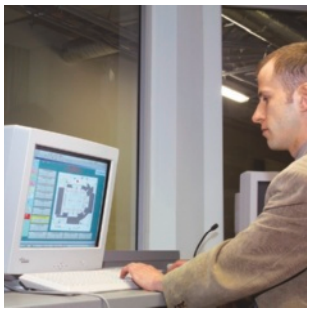


Labeling tool, example DELTA

GAMMA Planner and Installation Engineer Tool

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

The "Siemens. GAMMA Planner Tool" enables the simple creation of STLB-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 installation engineers "Siemens. GAMMA Installation Engineer Tool" enables the simple creation of offers for building management systems on the basis of GAMMA Catalog in a minimum of time.

www.din-bauportal.de/siemens

Visualization

The visualization function provides an overview of all the relevant building states and allows the appropriate action to be taken where required. It is also suitable for remote control. This forms the basis of an efficient building management system. The visualization is scalable for all applications and the functions are of modular design (see Chapter *Display and Operation Units*).

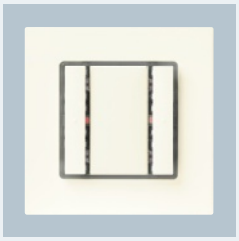
ETS

ETS is the software for the planning and configuration of intelligent KNX building management systems. 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

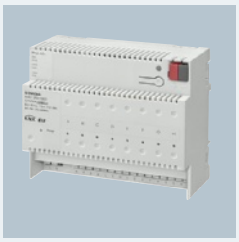
GAMMA Building Management Systems

GAMMA *instabus*



Display and Operation

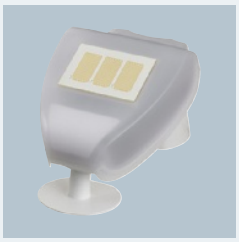
Output Devices



Input Devices

Combination Devices

Lighting



Sun Protection, Anti-Glare Protection, Utilization of Daylight

GAMMA *instabus*

Heating, Cooling, Ventilation, Air-Conditioning

Load Management

Safety

Quick-Assembly Systems

Gateways, Interface Converters

Physical Sensors

GAMMA *instabus*

Control and Automation Devices

System Products

GAMMA wave

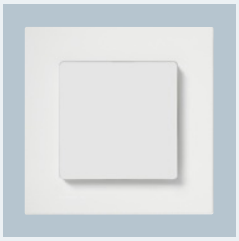
Radio System –
GAMMA wave – KNX-RF

GAMMA *instabus*

System Accessories

Counters

EnOcean



Radio System – EnOcean

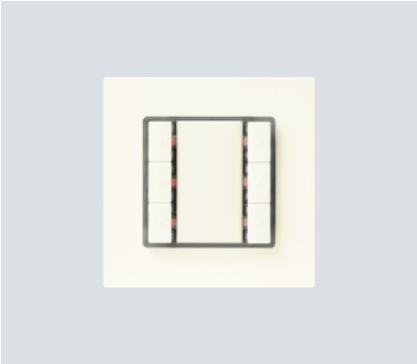
Buildings should be energy-efficient and easy to adapt quickly and cost-effectively to user requirements.

Lighting, sun protection and the indoor environment should be achieved in an energy-saving and user-friendly manner, while persons and property are protected against hazards and damage.

The tried and tested GAMMA *instabus* building management systems support the flexible networking of electrical devices and functions in buildings via two wires of the bus cable, as well as connection to building management systems via KNXnet/IP – thus providing greater efficiency, safety, flexibility and comfort.

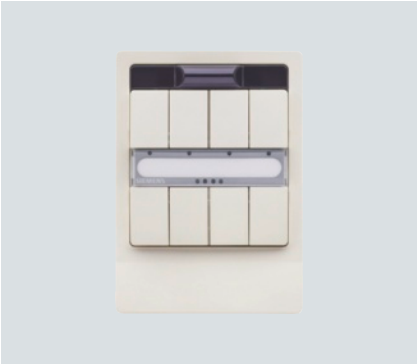
New developments

Current product developments, see: www.siemens.com/gamma



GAMMA *instabus* pushbuttons

The new GAMMA Building Management Systems *instabus* pushbutton generation is distinguished by a uniform bus coupling unit and a unique application program → page 1/4



IR wall-mounted transmitters

IR Products – User-Friendly and Safe Remote Control → page 1/46

I/O pushbutton interfaces

Pushbutton interfaces are mainly used to connect conventional switches or pushbuttons to their inputs and to control status LEDs - small, universal and independent → page 3/5

Touch panels

All a device's functions can be observed centrally and operated intuitively → page 1/41

IP viewers

Easy-to-use mini viewer → page 1/52

Modular switch actuators

The modular design of the GAMMA switch actuators guarantees the flexible design for each use and requirement → page 2/3

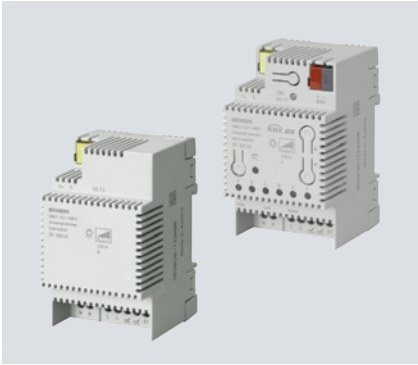
enocean®

EnOcean

Products with EnOcean technology – flexible, batteryless, maintenance-free → page 18/2

Visualization

Combridge Studio for individual visualization → page 1/47



Universal dimmers

Universal Dimmers for Every Application – Modular, Flexible, Efficient → page 5/5

Brightness controllers

Brightness measurement and dimmer control for energy-saving room and workplace lighting
→ page 5/19

IP-Router/Interfaces

GAMMA *instabus* – multiple times faster. Communication using the KNXnet/IP standard opens completely new areas of application
→ page 11/6

UL standard

GAMMA *instabus* devices complying with the UL standard
→ page 19/16

Weather systems

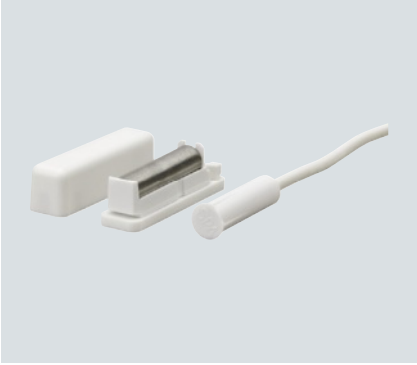
Energy-efficient sun protection control – reliable, compact and intelligent
→ page 6/8

KNX/SIMATIC S7 connection

KNX and Simatic S7 – used together for building automation
→ page 11/18

KNX/DALI Gateways

For all lighting applications, including emergency lighting
→ page 11/7



Door/window contacts

Save energy with security
→ page 7/11

GAMMA *instabus* – available in all DELTA product ranges

Increased safety and comfort with maximum efficiency – this is facilitated with the GAMMA *instabus* building management systems on the basis of the global KNX standard – realizable with all DELTA programs.

KNX

The world-wide standard for home and building control

I201_18199

DELTA line

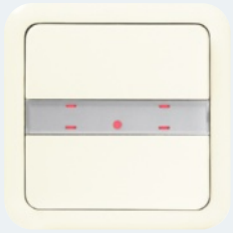

Titanium white


Electrical white


Aluminum metallic


Carbon metallic

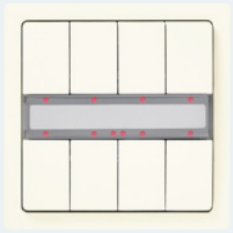
DELTA profil


Titanium white


Silver


Anthracite

DELTA style


Titanium white


Platinum metallic


Basalt black

DELTA miro Artist, Design Tom's Drag


Titanium white


Aluminum metallic


Carbon metallic

DELTA miro glass


Crystal green/aluminum metallic


White/titanium white


Black/aluminum metallic


Orient/carbon metallic

Arena/titanium white

DELTA miro aluminum


Natural/aluminum metallic


Titanium/carbon metallic


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


Carbon metallic


Electrical white

Much more than a catalog. The Industry Mall.

You have a catalog in your hands that will serve you well for selecting and ordering your products. But have you heard of the electronic online catalog (the Industry Mall) and all its benefits? Take a look around it sometime:

www.siemens.com/industrymall

Selecting

Find your products in the structure tree, in the new "Bread-crumb" navigation or with the integral search machine with expert functions. Electronic configurators are also integrated into the Mall. Enter the various characteristic values and the appropriate product will be displayed with the relevant order numbers. You can save configurations, load them and reset them to their initial status.

Ordering

You can load the products that you have selected in this way into the shopping basket at a click of the mouse. You can create your own templates and you will be informed about the availability of the products in your shopping cart. You can load the completed parts lists directly into Excel or Word.

Delivery status

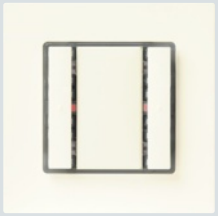
When you have sent the order, you will receive a short e-mail confirmation which you can print out or save. With a click on "Carrier", you will be directly connected to the website of the carrier where you can easily track the delivery status.

Added value due to additional information

So you have found your product and want more information about it? In just a few clicks of the mouse, you will arrive at the image data base, manuals and operating instructions. Create your own user documentation with My Documentation Manager.
Also available are FAQs, software downloads, certificates and technical data sheets as well as our training programs. In the image database you will find, depending on the product, 2D/3D graphics, dimension drawings and exploded drawings, characteristic curves or circuit diagrams which you can download.

Convinced? We look forward to your visit!

Display and Operation Units



Display and Operation Units

Introduction

Overview

	Devices	Application	Page
	**Pushbuttons (bus coupling unit BTM)**	The new GAMMA Building Management Systems *instabus* pushbutton generation is distinguished by a uniform bus coupling unit and a unique application program.	1/4
	**Pushbuttons (bus coupling unit BCU 1/2)**	No matter which style you prefer, DELTA has the right switch and socket outlet product range.	1/10
	**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 product ranges are available.	1/20
	**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.	1/22
	**Pushbuttons with IR receiver decoder**	Pushbuttons with IR receiver pass on commands from the IR remote control.	1/24
	**Displays**	A space-saving combination that offers optimum display and operator friendliness.	1/26
	**Pushbutton accessories**	More information on rockers, color elements, frames, intermediate frames and accessories for trunking systems.	1/28

	Devices	Application	Page
	**Touch panels**	Touch panels are visually attractive and easy to use.	1/41
	**Remote controls**	A range of room functions, such as lighting, can be wirelessly operated over either infrared or radio control.	1/45
	**Visualization, software**	Use a PC for display, operation and archiving – from one or more operator terminals.	1/47
	**Visualization, server**	Display and operation on the PC - quick and easy to install.	1/52

Display and Operation Units

Pushbuttons

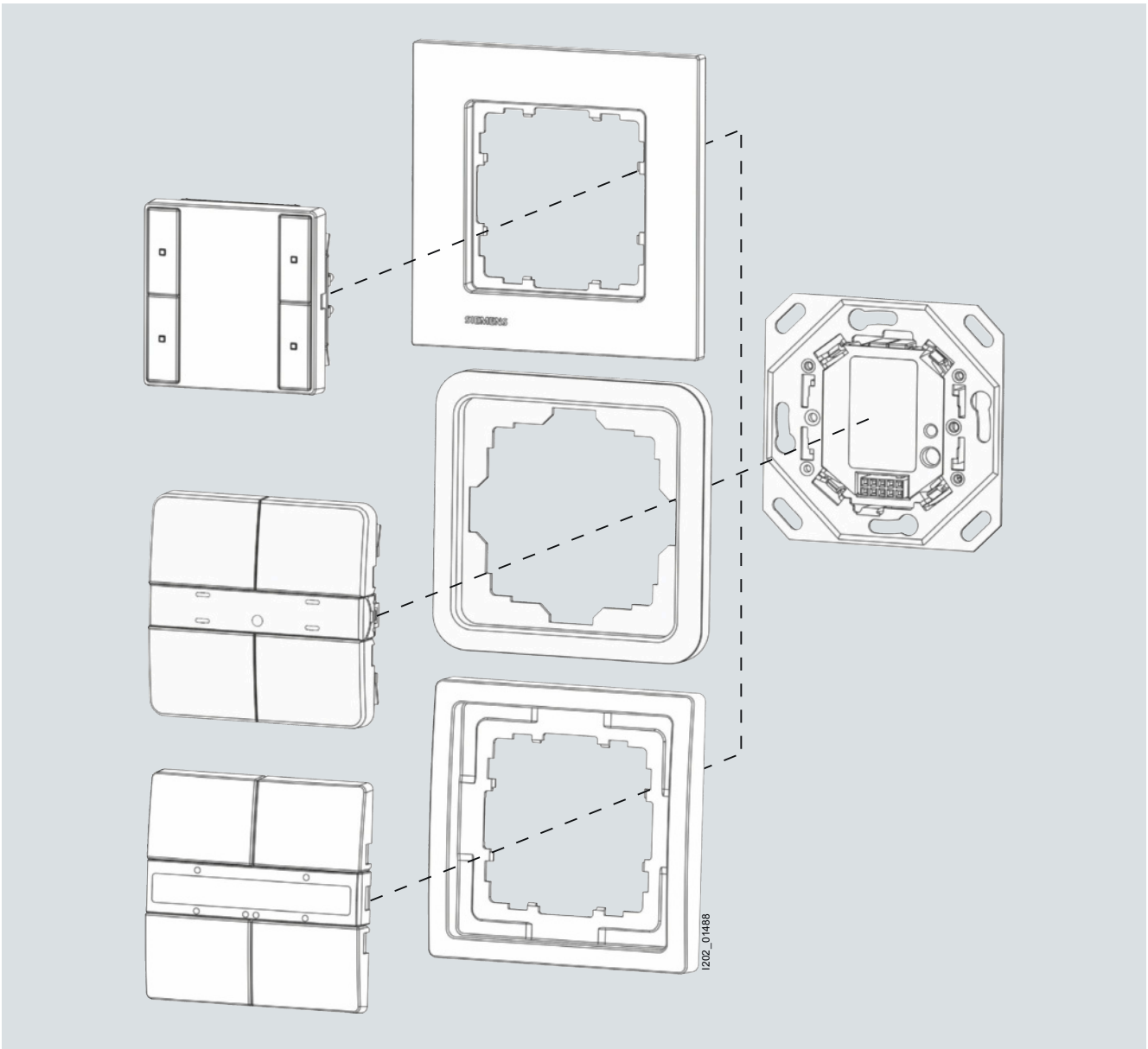
Pushbuttons (bus coupling unit BTM)

Overview

The new GAMMA Building Management Systems *instabus* pushbutton generation is distinguished by a uniform bus coupling unit and a unique application program. The operator interfaces provide maximum functionality based on KNX technology and are available in a wide range of designs.

The new pushbutton generation has only one bus coupling unit (BTM) for all bus pushbuttons. Each new GAMMA *instabus* pushbutton from DELTA line, DELTA miro, DELTA style and DELTA profil design lines can be plugged onto a bus coupling unit (BTM). The planning work is less as a result, the installation and commissioning easier.

A unique application program is available for all versions. The parameter settings range from typical switching functions to value transmissions to the value-controlled lighting of up to nine status LEDs. The pushbuttons have special features including scene module, an integrated room temperature sensor and IR receiver decoder.



The GAMMA *instabus* pushbuttons with BTM, along with the corresponding DELTA line, DELTA miro, DELTA profil or DELTA style frames are plugged onto a bus coupling unit (BTM).

Technical specifications

Design		i-system								DELTA profil								DELTA style							
																									
Type		UP 221/2	UP 221/3	UP 222/2	UP 222/3	UP 223/2	UP 223/3	UP 223/4	UP 223/5	UP 241/2	UP 241/3	UP 243/2	UP 243/3	UP 245/2	UP 245/3	UP 245/4	UP 245/5	UP 285/2	UP 285/3	UP 286/2	UP 286/3	UP 287/2	UP 287/3	UP 287/4	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		2	2	4	4	6	6	6	6	2	2	4	4	8	8	8	8	2	2	4	4	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
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
LED per pushbutton pair for status indication		--	✔	--	✔	--	✔	✔	✔	--	✔	--	✔	--	✔	✔	✔	--	✔	--	✔	--	✔	✔	✔
LED for orientation light (ON/OFF configurable/dimmable)		--	✔	--	✔	--	✔	✔	✔	--	✔	--	✔	--	✔	✔	--	✔	✔	--	✔	--	✔	✔	--
IR activity display configurable via LED		--	--	--	--	--	--	--	✔	--	--	--	--	--	--	--	✔	--	--	--	--	--	--	--	✔
LED brightness configurable and controllable via object		--	✔	--	✔	--	✔	✔	✔	--	✔	--	✔	--	✔	✔	✔	✔	✔	--	✔	--	✔	✔	✔
Bus connection																									
Plug onto a bus coupling unit (BTM) UP 117/11		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
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		--	--	--	--	--	--	✔	✔	--	--	--	--	--	--	✔	✔	--	--	--	--	--	--	✔	✔
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 coupling unit BTM)

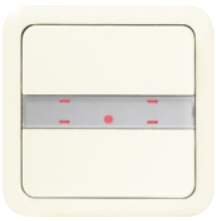
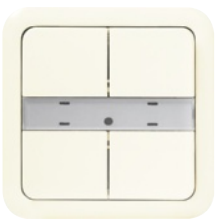
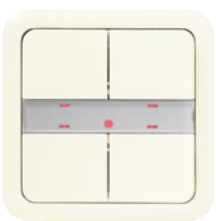
Selection and ordering data

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
i-system									
 5WG1 221-2AB12	**UP 221/2**	**UP 221/2 pushbuttons**[1)2)] Single, neutral							
		Versions							
		• Electrical white	B	**5WG1 221-2AB02**		1	1 unit	022	0.060
		• Titanium white	A	**5WG1 221-2AB12**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 221-2AB22**		1	1 unit	022	0.060
		• Aluminum metallic	A	**5WG1 221-2AB32**		1	1 unit	022	0.060
 5WG1 221-2AB13	**UP 221/3**	**UP 221/3 pushbuttons**[1)2)] Single, with status LED, neutral							
		Versions							
		• Electrical white	B	**5WG1 221-2AB03**		1	1 unit	022	0.060
		• Titanium white	A	**5WG1 221-2AB13**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 221-2AB23**		1	1 unit	022	0.060
		• Aluminum metallic	B	**5WG1 221-2AB33**		1	1 unit	022	0.060
 5WG1 222-2AB12	**UP 222/2**	**UP 222/2 pushbuttons**[1)2)] Double, neutral							
		Versions							
		• Electrical white	B	**5WG1 222-2AB02**		1	1 unit	022	0.060
		• Titanium white	A	**5WG1 222-2AB12**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 222-2AB22**		1	1 unit	022	0.060
		• Aluminum metallic	A	**5WG1 222-2AB32**		1	1 unit	022	0.060
 5WG1 222-2AB13	**UP 222/3**	**UP 222/3 pushbuttons**[1)2)] Double, with status LED, neutral							
		Versions							
		• Electrical white	B	**5WG1 222-2AB03**		1	1 unit	022	0.060
		• Titanium white	A	**5WG1 222-2AB13**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 222-2AB23**		1	1 unit	022	0.060
		• Aluminum metallic	B	**5WG1 222-2AB33**		1	1 unit	022	0.060
 5WG1 223-2AB12	**UP 223/2**	**UP 223/2 pushbuttons**[1)2)] Triple, neutral							
		Versions							
		• Electrical white	B	**5WG1 223-2AB02**		1	1 unit	022	0.060
		• Titanium white	A	**5WG1 223-2AB12**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 223-2AB22**		1	1 unit	022	0.060
		• Aluminum metallic	A	**5WG1 223-2AB32**		1	1 unit	022	0.060
 5WG1 223-2AB13	**UP 223/3**	**UP 223/3 pushbuttons**[1)2)] Triple, with status LED, neutral							
		Versions							
		• Electrical white	B	**5WG1 223-2AB03**		1	1 unit	022	0.060
		• Titanium white	A	**5WG1 223-2AB13**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 223-2AB23**		1	1 unit	022	0.060
		• Aluminum metallic	A	**5WG1 223-2AB33**		1	1 unit	022	0.060

1) The bus coupling unit (BTM) must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Pushbuttons (bus coupling unit BTM)

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 223-2AB14	**UP 223/4**	**UP 223/4 pushbuttons**[1)2)] NEW UL Triple, with status LED, scene module and room temperature sensor, neutral							
		Versions							
		• Electrical white	B	**5WG1 223-2AB04**		1	1 unit	022	0.030
		• Titanium white	B	**5WG1 223-2AB14**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 223-2AB24**		1	1 unit	022	0.060
		• Aluminum metallic	B	**5WG1 223-2AB34**		1	1 unit	022	0.060
 5WG1 223-2AB15	**UP 223/5**	**UP 223/5 pushbuttons**[1)2)] NEW UL Triple, with status LED, scene module and IR receiver decoder, neutral							
		Versions							
		• Electrical white	B	**5WG1 223-2AB05**		1	1 unit	022	0.060
		• Titanium white	B	**5WG1 223-2AB15**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 223-2AB25**		1	1 unit	022	0.060
		• Aluminum metallic	B	**5WG1 223-2AB35**		1	1 unit	022	0.060
DELTA profil									
 5WG1 241-2AB12	**UP 241/2**	**UP 241/2 pushbuttons**[1)2)] NEW Single, neutral							
		Versions							
		• Titanium white	A	**5WG1 241-2AB12**		1	1 unit	022	0.085
		• Anthracite	C	**5WG1 241-2AB22**		1	1 unit	022	0.085
		• Silver	B	**5WG1 241-2AB72**		1	1 unit	022	0.085
 5WG1 241-2AB13	**UP 241/3**	**UP 241/3 pushbuttons**[1)2)] NEW Single, with status LED, neutral							
		Versions							
		• Titanium white	B	**5WG1 241-2AB13**		1	1 unit	022	0.085
		• Anthracite	B	**5WG1 241-2AB23**		1	1 unit	022	0.085
		• Silver	B	**5WG1 241-2AB73**		1	1 unit	022	0.055
 5WG1 243-2AB12	**UP 243/2**	**UP 243/2 pushbuttons**[1)2)] NEW Double, neutral							
		Versions							
		• Titanium white	B	**5WG1 243-2AB12**		1	1 unit	022	0.085
		• Anthracite	B	**5WG1 243-2AB22**		1	1 unit	022	0.085
		• Silver	B	**5WG1 243-2AB72**		1	1 unit	022	0.085
 5WG1 243-2AB13	**UP 243/3**	**UP 243/3 pushbuttons**[1)2)] NEW Double, with status LED, neutral							
		Versions							
		• Titanium white	B	**5WG1 243-2AB13**		1	1 unit	022	0.055
		• Anthracite	B	**5WG1 243-2AB23**		1	1 unit	022	0.085
		• Silver	B	**5WG1 243-2AB73**		1	1 unit	022	0.085

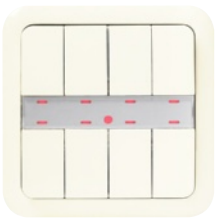
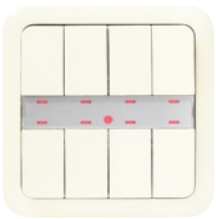
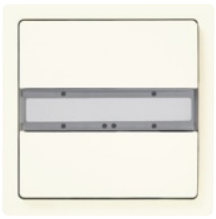
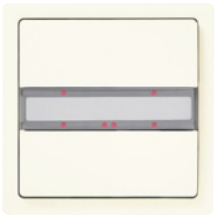
1) The bus coupling unit (BTM) must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Display and Operation Units

Pushbuttons

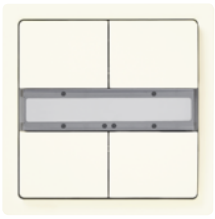
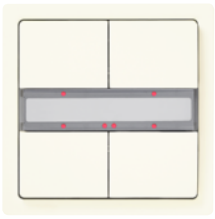
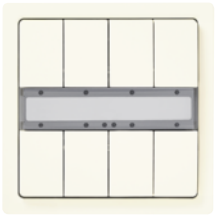
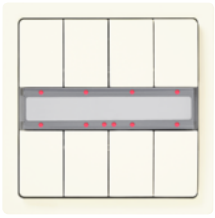
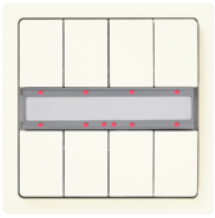
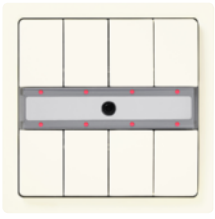
Pushbuttons (bus coupling unit BTM)

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 245-2AB12	**UP 245/2**	**UP 245/2 pushbuttons**[1)2)] NEW Quadruple, neutral							
		Versions							
		• Titanium white	B	**5WG1 245-2AB12**		1	1 unit	022	0.085
		• Anthracite	B	**5WG1 245-2AB22**		1	1 unit	022	0.085
		• Silver	B	**5WG1 245-2AB72**		1	1 unit	022	0.085
 5WG1 245-2AB13	**UP 245/3**	**UP 245/3 pushbuttons**[1)2)] NEW Quadruple, with status LED, neutral							
		Versions							
		• Titanium white	B	**5WG1 245-2AB13**		1	1 unit	022	0.085
		• Anthracite	B	**5WG1 245-2AB23**		1	1 unit	022	0.085
		• Silver	B	**5WG1 245-2AB73**		1	1 unit	022	0.085
 5WG1 245-2AB14	**UP 245/4**	**UP 245/4 pushbuttons**[1)2)] NEW Quadruple, with status LED, scene module and room temperature sensor, neutral							
		Versions							
		• Titanium white	B	**5WG1 245-2AB14**		1	1 unit	022	0.085
		• Anthracite	B	**5WG1 245-2AB24**		1	1 unit	022	0.085
		• Silver	B	**5WG1 245-2AB74**		1	1 unit	022	0.085
 5WG1 245-2AB15	**UP 245/5**	**UP 245/5 pushbuttons**[1)2)] NEW Quadruple, with status LED, scene module and IR receiver decoder, neutral							
		Versions							
		• Titanium white	A	**5WG1 245-2AB15**		1	1 unit	022	0.085
		• Anthracite	C	**5WG1 245-2AB25**		1	1 unit	022	0.055
		• Silver	B	**5WG1 245-2AB75**		1	1 unit	022	0.085
DELTA style									
 5WG1 285-2AB12	**UP 285/2**	**UP 285/2 pushbuttons**[1)2)] NEW Single, neutral							
		Versions							
		• Titanium white	A	**5WG1 285-2AB12**		1	1 unit	022	0.085
		• Basalt black	C	**5WG1 285-2AB22**		1	1 unit	022	0.085
		• Platinum metallic	B	**5WG1 285-2AB42**		1	1 unit	022	0.085
 5WG1 285-2AB13	**UP 285/3**	**UP 285/3 pushbuttons**[1)2)] NEW Single, with status LED, neutral							
		Versions							
		• Titanium white	A	**5WG1 285-2AB13**		1	1 unit	022	0.085
		• Basalt black	C	**5WG1 285-2AB23**		1	1 unit	022	0.085
		• Platinum metallic	B	**5WG1 285-2AB43**		1	1 unit	022	0.085

1) The bus coupling unit (BTM) must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Pushbuttons (bus coupling unit BTM)

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 286-2AB12	**UP 286/2**	**UP 286/2 pushbuttons**[1)2)] NEW Double, neutral							
		Versions							
		• Titanium white	A	**5WG1 286-2AB12**		1	1 unit	022	0.085
		• Basalt black	C	**5WG1 286-2AB22**		1	1 unit	022	0.085
		• Platinum metallic	B	**5WG1 286-2AB42**		1	1 unit	022	0.085
 5WG1 286-2AB13	**UP 286/3**	**UP 286/3 pushbuttons**[1)2)] NEW Double, with status LED, neutral							
		Versions							
		• Titanium white	A	**5WG1 286-2AB13**		1	1 unit	022	0.085
		• Basalt black	C	**5WG1 286-2AB23**		1	1 unit	022	0.085
		• Platinum metallic	B	**5WG1 286-2AB43**		1	1 unit	022	0.085
 5WG1 287-2AB12	**UP 287/2**	**UP 287/2 pushbuttons**[1)2)] NEW Quadruple, neutral							
		Versions							
		• Titanium white	A	**5WG1 287-2AB12**		1	1 unit	022	0.085
		• Basalt black	C	**5WG1 287-2AB22**		1	1 unit	022	0.085
		• Platinum metallic	B	**5WG1 287-2AB42**		1	1 unit	022	0.085
 5WG1 287-2AB13	**UP 287/3**	**UP 287/3 pushbuttons**[1)2)] NEW Quadruple, with status LED, neutral							
		Versions							
		• Titanium white	A	**5WG1 287-2AB13**		1	1 unit	022	0.085
		• Basalt black	C	**5WG1 287-2AB23**		1	1 unit	022	0.085
		• Platinum metallic	B	**5WG1 287-2AB43**		1	1 unit	022	0.085
 5WG1 287-2AB14	**UP 287/4**	**UP 287/4 pushbuttons**[1)2)] NEW Quadruple, with status LED, scene module and room temperature sensor, neutral							
		Versions							
		• Titanium white	A	**5WG1 287-2AB14**		1	1 unit	022	0.085
		• Basalt black	C	**5WG1 287-2AB24**		1	1 unit	022	0.085
		• Platinum metallic	B	**5WG1 287-2AB44**		1	1 unit	022	0.085
 5WG1 287-2AB15	**UP 287/5**	**UP 287/5 pushbuttons**[1)2)] NEW Quadruple, with status LED, scene module and IR receiver decoder, neutral							
		Versions							
		• Titanium white	A	**5WG1 287-2AB15**		1	1 unit	022	0.085
		• Basalt black	C	**5WG1 287-2AB25**		1	1 unit	022	0.085
		• Platinum metallic	B	**5WG1 287-2AB45**		1	1 unit	022	0.085

1) The bus coupling unit (BTM) must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

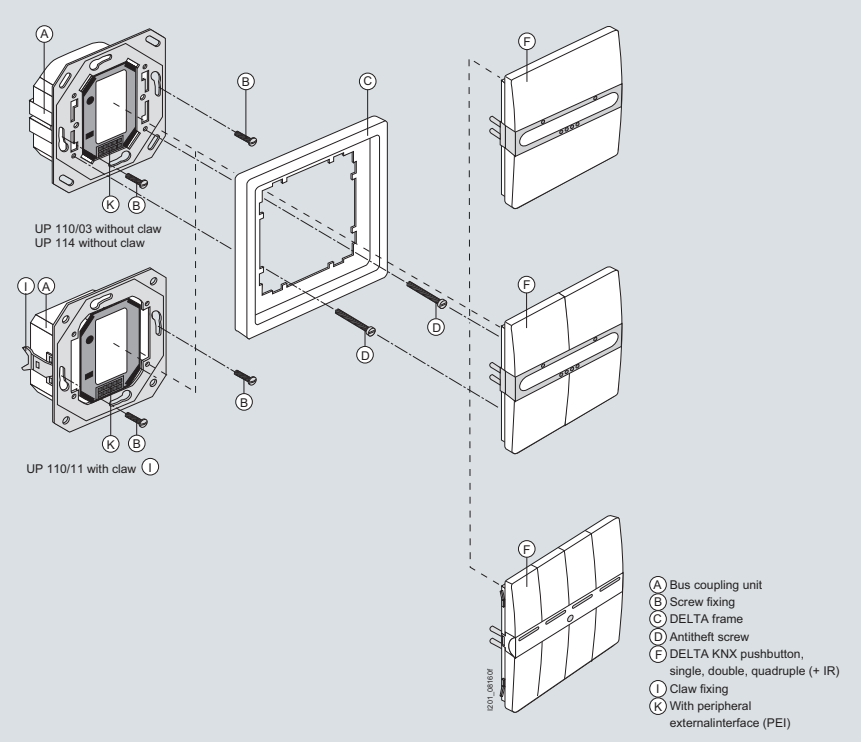
Display and Operation Units

Pushbuttons

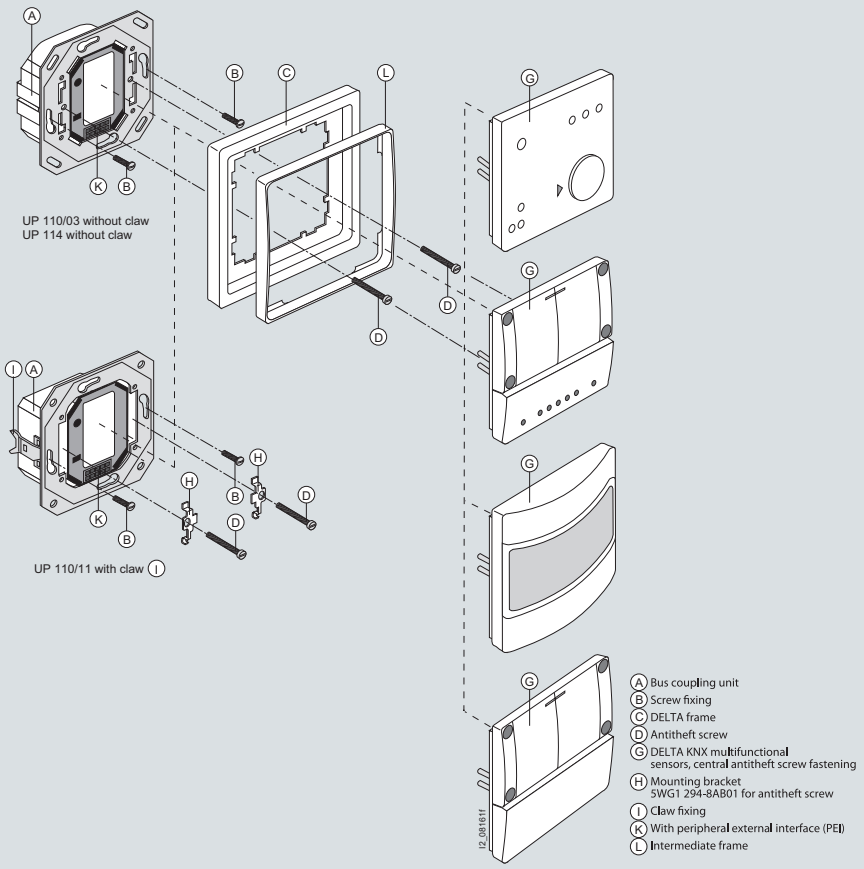
Pushbuttons (bus coupling unit BCU 1/2)

Overview

Operator interfaces without intermediate frame



Operator interfaces with intermediate frame



Technical specifications

Design	i-system							DELTA profil/style							DELTA millennium		
																	
Type	UP 221	UP 222	UP 223	UP 221E		UP 222E		UP 241	UP 242	UP 285	UP 243	UP 244	UP 286	UP 245	UP 246	UP 287	IKE 281	IKE 282	IKE 283
Application program	211501	221501	230201	212001	908402	222001	908502	211301	907402		221301	907502		241301	241901	907602	904101	904201	904301
Enclosure data																			
Module for channel installation	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	✔	✔	✔
Dimensions																			
• Height mm	55							65 (DELTA profil), 68 (DELTA style)									80		
• Width mm	55							65 (DELTA profil), 68 (DELTA style)									166		
• Depth mm	11							14									41		
Display/control elements																			
Individual pushbuttons	2	4	6	2	2	4	4	2	2		4	4		8	8	8	**1**	**2**	**4**
Pushbutton pairs	**1**	**2**	**3**	**1**	**1**	**2**	**2**	**1**	**1**		**2**	**2**		**4**	**4**	**4**	--	--	--
Operation (v: vertical, h: horizontal)	h	h	h	h	h	h	h	v	v		v	v		v	v	v	--	--	--
LED per pushbutton pair for status indication or configurable as orientation light	--	--	--	✔	✔	✔	✔	✔	✔		✔	✔		✔	✔	✔	--	--	--
Red luminous bar for status indication or configurable as orientation light	--	--	--	--	--	--	--	--	--		--	--		--	--	--	✔	✔	✔
Separate LED for orientation light (ON/OFF configurable)	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔		✔	✔	✔	--	--	--
Labeling field	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔		✔	✔	✔	✔	✔	✔
Individually engravable pushbutton	--	--	--	--	--	--	--	--	--		--	--		--	--	--	✔	✔	✔
Bus connection																			
Integrated bus coupling units	--	--	--	--	--	--	--	--	--		--	--		--	--	--	✔	✔	✔
Plug onto UP 110 bus coupling unit	✔	✔	✔	✔	--	✔	--	✔	--		✔	--		✔	✔	--	--	--	--
Plug onto UP 114 bus coupling unit	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔		✔	✔	✔	--	--	--
General functions																			
Max. number of group addresses	9	9	9	13	38	13	38	13	38		13	38		9	27	38	28	28	28
Max. number of assignments	9	9	9	13	38	13	38	13	38		13	38		9	27	38	28	28	28
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	--	--	--	✔	✔	✔	✔	✔	✔		✔	✔		✔	--	✔	✔	✔	✔
One-pushbutton dimming	--	--	--	--	--	--	--	--	--		--	--		--	--	--	✔	✔	✔
Value transmission																			
Value transmission (8-bit)	✔	✔	✔	✔	✔	✔	✔	--	✔		--	✔		--	✔	✔	✔	✔	✔
Shutter/blind																			
Shutter/blind control Short button press, slat OPEN/CLOSED or STOP Long button press, UP/DOWN	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔		✔	--	✔	✔	✔	✔
One-pushbutton operation	--	--	--	--	--	--	--	--	--		--	--		--	--	--	✔	✔	✔
Scene																			
Store and call up scene, 8-bit	2	4	6	2	2	4	4	--	--		--	--		--	--	--	--	--	--
Store and call up scene, 1-bit in conjunction with scene module	2	4	6	2	2	4	4	--	2		--	4		--	--	8	1	2	4
Short or long button press (store/call up scene), configurable	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔		✔	--	✔	✔	✔	✔
Status																			
Display of any status objects (1-bit)	--	--	--	✔	✔	--	✔	✔	✔		--	✔		--	--	✔	✔	✔	✔
Display of pushbutton objects	--	--	--	✔	✔	✔	✔	✔	✔		✔	✔		✔	--	✔	✔	✔	✔

Display and Operation Units

Pushbuttons

Pushbuttons (bus coupling unit BCU 1/2)

Selection and ordering data

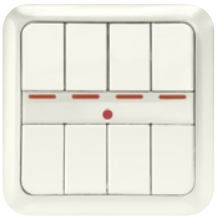
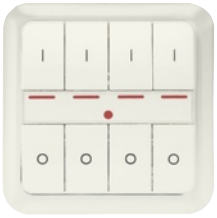
	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
i-system									
 5WG1 221-2AB11	**UP 221**	**UP 221 pushbuttons**[1)2)] Single, neutral							
		Versions							
		• Electrical white	B	**5WG1 221-2AB01**		1	1 unit	022	0.046
		• Titanium white	A	**5WG1 221-2AB11**		1	1 unit	022	0.045
		• Carbon metallic	B	**5WG1 221-2AB21**		1	1 unit	022	0.046
		• Aluminum metallic	A	**5WG1 221-2AB31**		1	1 unit	022	0.045
 5WG1 222-2AB11	**UP 222**	**UP 222 pushbuttons**[1)2)] Double, neutral							
		Versions							
		• Electrical white	B	**5WG1 222-2AB01**		1	1 unit	022	0.047
		• Titanium white	A	**5WG1 222-2AB11**		1	1 unit	022	0.057
		• Carbon metallic	B	**5WG1 222-2AB21**		1	1 unit	022	0.046
		• Aluminum metallic	A	**5WG1 222-2AB31**		1	1 unit	022	0.046
 5WG1 223-2AB11	**UP 223**	**UP 223 pushbuttons**[1)2)] Triple, neutral							
		Versions							
		• Electrical white	B	**5WG1 223-2AB01**		1	1 unit	022	0.047
		• Titanium white	A	**5WG1 223-2AB11**		1	1 unit	022	0.046
		• Carbon metallic	B	**5WG1 223-2AB21**		1	1 unit	022	0.047
		• Aluminum metallic	A	**5WG1 223-2AB31**		1	1 unit	022	0.046
 5WG1 221-2EB11	**UP 221E**	**UP 221E pushbuttons**[1)2)] Single, with status LED, neutral							
		Versions							
		• Electrical white	B	**5WG1 221-2EB01**		1	1 unit	022	0.045
		• Titanium white	A	**5WG1 221-2EB11**		1	1 unit	022	0.045
		• Carbon metallic	B	**5WG1 221-2EB21**		1	1 unit	022	0.046
		• Aluminum metallic	A	**5WG1 221-2EB31**		1	1 unit	022	0.043
 5WG1 222-2EB11	**UP 222E**	**UP 222E pushbuttons**[1)2)] Double, with status LED, neutral							
		Versions							
		• Electrical white	B	**5WG1 222-2EB01**		1	1 unit	022	0.045
		• Titanium white	A	**5WG1 222-2EB11**		1	1 unit	022	0.049
		• Carbon metallic	B	**5WG1 222-2EB21**		1	1 unit	022	0.046
		• Aluminum metallic	A	**5WG1 222-2EB31**		1	1 unit	022	0.045

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Pushbuttons (bus coupling unit BCU 1/2)

DELTA profil

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 241-2AB11	**UP 241**	**UP 241 pushbuttons**[1)2)] Single, neutral							
		Versions							
		• Titanium white	A	**5WG1 241-2AB11**		1	1 unit	022	0.059
		• Anthracite	C	**5WG1 241-2AB21**		1	1 unit	022	0.055
		• Silver	B	**5WG1 241-2AB71**		1	1 unit	022	0.057
 5WG1 242-2AB11	**UP 242**	**UP 242 pushbuttons**[1)2)] Single, with I/O symbols							
		Versions							
		• Titanium white	B	**5WG1 242-2AB11**		1	1 unit	022	0.059
		• Anthracite	C	**5WG1 242-2AB21**		1	1 unit	022	0.053
		• Silver	B	**5WG1 242-2AB71**		1	1 unit	022	0.059
 5WG1 243-2AB11	**UP 243**	**UP 243 pushbuttons**[1)2)] Double, neutral							
		Versions							
		• Titanium white	A	**5WG1 243-2AB11**		1	1 unit	022	0.058
		• Anthracite	C	**5WG1 243-2AB21**		1	1 unit	022	0.057
		• Silver	B	**5WG1 243-2AB71**		1	1 unit	022	0.055
 5WG1 244-2AB11	**UP 244**	**UP 244 pushbuttons**[1)2)] Double, with I/O symbols							
		Versions							
		• Titanium white	A	**5WG1 244-2AB11**		1	1 unit	022	0.059
		• Anthracite	C	**5WG1 244-2AB21**		1	1 unit	022	0.055
		• Silver	B	**5WG1 244-2AB71**		1	1 unit	022	0.056
 5WG1 245-2AB11	**UP 245**	**UP 245 pushbuttons**[1)2)] Quadruple, neutral							
		Versions							
		• Titanium white	A	**5WG1 245-2AB11**		1	1 unit	022	0.062
		• Anthracite	C	**5WG1 245-2AB21**		1	1 unit	022	0.059
		• Silver	B	**5WG1 245-2AB71**		1	1 unit	022	0.062
 5WG1 246-2AB11	**UP 246**	**UP 246 pushbuttons**[1)2)] Quadruple, with I/O symbols							
		Versions							
		• Titanium white	A	**5WG1 246-2AB11**		1	1 unit	022	0.061
		• Anthracite	C	**5WG1 246-2AB21**		1	1 unit	022	0.063
		• Silver	B	**5WG1 246-2AB71**		1	1 unit	022	0.064

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Display and Operation Units

Pushbuttons

Pushbuttons (bus coupling unit BCU 1/2)

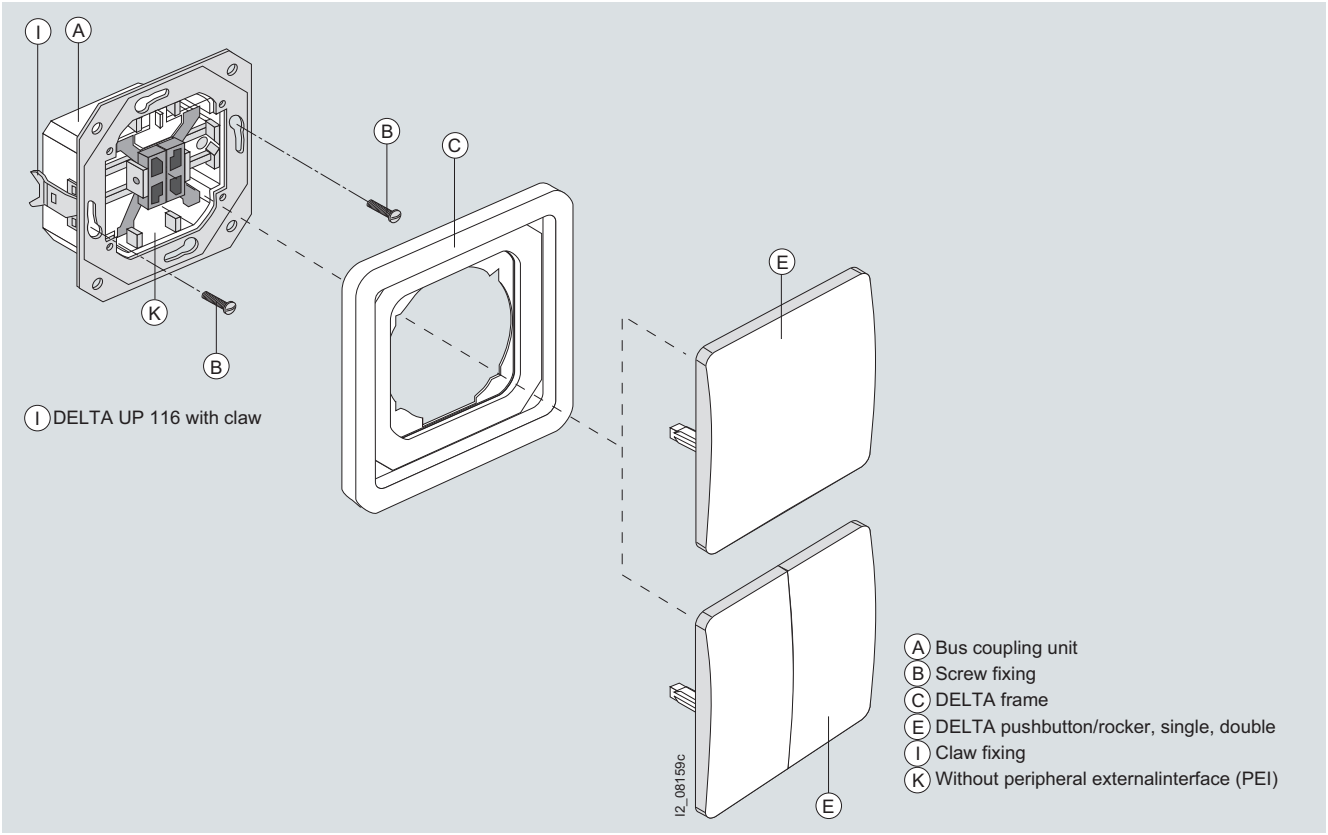
	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
DELTA style									
 5WG1 285-2AB11	**UP 285**	**UP 285 pushbuttons**[1)2)] Single, neutral							
		Versions							
		• Titanium white	A	**5WG1 285-2AB11**		1	1 unit	022	0.065
		• Basalt black	C	**5WG1 285-2AB21**		1	1 unit	022	0.062
		• Platinum metallic	B	**5WG1 285-2AB41**		1	1 unit	022	0.036
 5WG1 286-2AB11	**UP 286**	**UP 286 pushbuttons**[1)2)] Double, neutral							
		Versions							
		• Titanium white	A	**5WG1 286-2AB11**		1	1 unit	022	0.064
		• Basalt black	B	**5WG1 286-2AB21**		1	1 unit	022	0.064
		• Platinum metallic	B	**5WG1 286-2AB41**		1	1 unit	022	0.036
 5WG1 287-2AB11	**UP 287**	**UP 287 pushbuttons**[1)2)] Quadruple, neutral							
		Versions							
		• Titanium white	A	**5WG1 287-2AB11**		1	1 unit	022	0.067
		• Basalt black	B	**5WG1 287-2AB21**		1	1 unit	022	0.066
		• Platinum metallic	B	**5WG1 287-2AB41**		1	1 unit	022	0.036
DELTA millennium									
 5WG1 283-8AB01	**IKE 281**	**IKE 281 pushbuttons,** single, for channel installation	D	**5WG1 281-8AB01**		1	1 unit	030	0.356
	IKE 282	**IKE 282 pushbuttons,** double, for channel installation	D	**5WG1 282-8AB01**		1	1 unit	030	0.362
	IKE 283	**IKE 283 pushbuttons,** quadruple, for channel installation	D	**5WG1 283-8AB01**		1	1 unit	030	0.360
		Note							
		The text for the labeling field and the symbol for the pushbutton are engraved. Please specify the text and symbols you require when placing your order (see page 1/38 "Ordering data").							

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Overview

Operator interfaces with DELTA bus coupling unit



Display and Operation Units

Pushbuttons

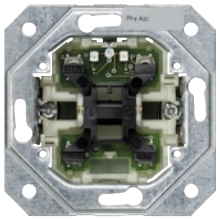
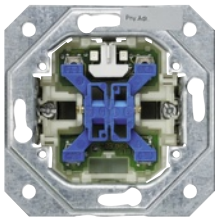
Pushbuttons for DELTA bus coupling units

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 ∅ = 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 1/17.

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** **UP 116/21**	**DELTA UP 116 bus coupling units**[1] Single							
		Versions							
		• Intermediate position	A	**5WG1 116-2AB01**		1	1 unit	030	0.091
		• Pushbutton position	A	**5WG1 116-2AB21**		1	1 unit	030	0.090
		Accessories							
		IP44 sealing sets for rockers • For single or double rockers • One set contains four insert seals	A	**5TG4 324**		1	1/10 sets	021	0.016
 5WG1 116-2AB11	**UP 116/11** **UP 116/31**	**DELTA UP 116 bus coupling units**[1] Double							
		Versions							
		• Intermediate position	A	**5WG1 116-2AB11**		1	1 unit	030	0.092
		• Pushbutton position	A	**5WG1 116-2AB31**		1	1 unit	030	0.092
		Accessories							
		IP44 sealing sets for rockers • For single or double rockers • One set contains four insert seals	A	**5TG4 324**		1	1/10 sets	021	0.016

[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.

* You can order this quantity or a multiple thereof.

Display and Operation Units

Pushbuttons

Surface-mounting pushbuttons, IP44

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 1/19.

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 115-3AB21	**AP 115/21**	**AP 115 pushbuttons** Single, IP44 • Pushbutton position	A	**5WG1 115-3AB21**		1	1 unit	022	0.143
 5WG1 115-3AB31	**AP 115/31**	**AP 115 pushbuttons** Double, IP44 • Pushbutton position	A	**5WG1 115-3AB31**		1	1 unit	022	0.144

* You can order this quantity or a multiple thereof.

Display and Operation Units

Display and operation units for HCVA

Technical specifications

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

	Type	Description
		Fan-coil unit controllers for office and hotel • 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 • 10-pole BTI plug (BTI - Bus Transceiver Interface) for mounting on a UP 117/11 bus transceiver module Plus
	**UP 237E** **UP 252E** **UP 254E**	Fan-coil unit controllers for offices • 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 • 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)
	**UP 237F** **UP 252F** **UP 254F**	Fan-coil unit controllers for hotels • Pushbutton for setting the required fan speed step or for automatic entry of the speed step by the fan-coil unit controller • 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. kg
i-system									
	**UP 237E**	**UP 237E fan-coil unit controllers for offices**[1]							
		Versions							
		• Titanium white	A	**5WG1 237-2EB11**		1	1 unit	022	0.050
		• Carbon metallic	B	**5WG1 237-2EB21**		1	1 unit	022	0.050
		• Aluminum metallic	A	**5WG1 237-2EB31**		1	1 unit	022	0.030
5WG1 237-2EB11									
	**UP 237F**	**UP 237F fan-coil unit controllers for hotels**[1]							
		Versions							
		• Titanium white	A	**5WG1 237-2FB11**		1	1 unit	022	0.049
		• Carbon metallic	B	**5WG1 237-2FB21**		1	1 unit	022	0.030
		• Aluminum metallic	A	**5WG1 237-2FB31**		1	1 unit	022	0.050
5WG1 237-2FB11									

[1] The bus transceiver module must be ordered separately, see page 14/4.

* You can order this quantity or a multiple thereof.

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
DELTA profil									
 5WG1 252-2EB11	**UP 252E**	**UP 252E fan-coil unit controllers for offices**[1]							
		Versions							
		• Titanium white	A	**5WG1 252-2EB11**		1	1 unit	022	0.052
		• Anthracite	B	**5WG1 252-2EB21**		1	1 unit	022	0.030
		• Silver	A	**5WG1 252-2EB71**		1	1 unit	022	0.030
 5WG1 252-2FB11	**UP 252F**	**UP 252F fan-coil unit controllers for hotels**[1]							
		Versions							
		• Titanium white	A	**5WG1 252-2FB11**		1	1 unit	022	0.057
		• Anthracite	B	**5WG1 252-2FB21**		1	1 unit	022	0.030
		• Silver	A	**5WG1 252-2FB71**		1	1 unit	022	0.030
DELTA style									
 5WG1 254-2EB11	**UP 254E**	**UP 254E fan-coil unit controllers for offices**[1]							
		Versions							
		• Titanium white/metallic silver	A	**5WG1 254-2EB11**		1	1 unit	022	0.062
		• Basalt black/metallic silver	B	**5WG1 254-2EB21**		1	1 unit	022	0.062
		• Platinum metallic	B	**5WG1 254-2EB41**		1	1 unit	022	0.062
 5WG1 254-2FB11	**UP 254F**	**UP 254F fan-coil unit controllers for hotels**[1]							
		Versions							
		• Titanium white/metallic silver	A	**5WG1 254-2FB11**		1	1 unit	022	0.062
		• Basalt black/metallic silver	B	**5WG1 254-2FB21**		1	1 unit	022	0.062
		• Platinum metallic	B	**5WG1 254-2FB41**		1	1 unit	022	0.062

[1] The bus transceiver module must be ordered separately, see page 14/4.

* You can order this quantity or a multiple thereof.

Display and Operation Units

Room temperature controllers

Technical specifications

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

	Type	Description
	**UP 237 UP 252 UP 254**	**UP 237, UP 252, UP 254 room temperature controllers** • 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: comfort mode, standby mode, night mode and frost or heat protection mode which can be switched via KNX • Presence pushbutton to locally switch between comfort and standby mode and to extend comfort mode after operating night mode • The room temperature setpoint value for comfort mode can be set via a 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 • 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 switching command or as a positioning command in the range of 0 ... 100 % • 5 LEDs to display the current operating mode and, if necessary, the dew point alarm • Mounting on a UP 110 or UP 114 bus coupling unit
	**IKE 250**	**IKE 250 room temperature controllers** • 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: comfort mode, standby mode, night mode and frost or heat protection mode which can be switched via KNX • Two pushbuttons for local switching between comfort and standby mode • Two pushbuttons for adjusting the basic setpoint • Basic setpoint of the room temperature for comfort mode which can be set via the KNX • Adjustable dead zone between the heating setpoint and the cooling setpoint for comfort mode • Output of the control variable(s) either as an ON/OFF switching command or as a positioning command in the range of 0 ... 100 % • Red luminous bar for indicating the current setpoint offsetting and the set operating mode • Integrated bus coupling units • 1 ground conductor and 1 ground terminal for the base • Dimensions (H x W x D): 80 x 166 x 41 mm.
	**UP 252H**	**UP 252H multifunction controllers** • 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 only, for cooling only or for heating and cooling mode • For adjustment of comfort, pre-comfort, night and protection modes via the bus • Adjustment of temperature setpoint for comfort mode • Adjustment of temperature setpoints via the ETS for all other operating modes • 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) • A red status LED per operator button • An LCD with three digits for the representation of the current setpoint or room temperature • A binary input for the direct connection of a floating window contact • A binary input for 12 V DC for the direct connection of a presence detector • An 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 2 A, 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 ∅ 58 mm and at least 40 mm depth or an equivalent double flush mounting box

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									
 5WG1 237-2AB11	**UP 237**	**UP 237 room temperature controllers**[1)2)]							
		Versions							
		• Titanium white	A	**5WG1 237-2AB11**		1	1 unit	022	0.050
		• Carbon metallic	B	**5WG1 237-2AB21**		1	1 unit	022	0.050
		• Aluminum metallic	A	**5WG1 237-2AB31**		1	1 unit	022	0.045
DELTA profil									
 5WG1 252-2AB13	**UP 252**	**UP 252 room temperature controllers**[1)2)]							
		Versions							
		• Titanium white	A	**5WG1 252-2AB13**		1	1 unit	022	0.053
		• Anthracite	C	**5WG1 252-2AB23**		1	1 unit	022	0.053
		• Silver	A	**5WG1 252-2AB73**		1	1 unit	022	0.053
DELTA style									
 5WG1 254-2AB13	**UP 254**	**UP 254 room temperature controllers**[1)2)3)]							
		Versions							
		• Titanium white/metallic silver	A	**5WG1 254-2AB13**		1	1 unit	022	0.059
		• Basalt black/metallic silver	B	**5WG1 254-2AB23**		1	1 unit	022	0.065
		• Platinum metallic	B	**5WG1 254-2AB43**		1	1 unit	022	0.068
DELTA millennium									
 5WG1 250-8AB01	**IKE 250**	**IKE 250 room temperature controllers**[4)]	D	**5WG1 250-8AB01**		1	1 unit	030	0.341
Design-independent									
 5WG1 252-2HV11	**UP 252H**	**multifunction controllers UP 252H**[5)]	C	**5WG1 252-2HV11**		1	1 unit	030	0.339

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.
3) No intermediate frame necessary.
4) The text for the labeling field is engraved and must be specified at the time of ordering (see page 1/39, DELTA millennium order form).
5) The frame is included in the scope of delivery.

* You can order this quantity or a multiple thereof.

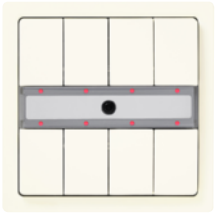
Display and Operation Units

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				
Plug onto a bus coupling unit (BTM) UP 117/11		✔	✔	✔
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		✔	✔	✔
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		✔	✔	✔

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							
		• Electrical white	B	**5WG1 223-2AB05**		1	1 unit	022	0.060
		• Titanium white	B	**5WG1 223-2AB15**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 223-2AB25**		1	1 unit	022	0.060
		• Aluminum metallic	B	**5WG1 223-2AB35**		1	1 unit	022	0.060
5WG1 223-2AB15									
DELTA profil									
	**UP 245/5**	**UP 245/5 pushbuttons**[1)2)] Quadruple, with status LED, scene module and IR receiver decoder, neutral							
		Versions							
		• Titanium white	A	**5WG1 245-2AB15**		1	1 unit	022	0.085
		• Anthracite	C	**5WG1 245-2AB25**		1	1 unit	022	0.055
		• Silver	B	**5WG1 245-2AB75**		1	1 unit	022	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 287-2AB15**		1	1 unit	022	0.085
		• Anthracite	C	**5WG1 287-2AB25**		1	1 unit	022	0.085
		• Silver	B	**5WG1 287-2AB45**		1	1 unit	022	0.085
5WG1 287-2AB15									

1) The bus coupling unit (BTM) must be ordered separately.
2) The matching design frame must be ordered separately.

Accessories

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
	**S 42572**	**S 425/72 IR hand-held transmitters**[1)2)]	B	**5WG1 425-7AB72**		1	1 unit	030	0.098
5WG1 425-7AB72									
	**AP 420/3**	**IR wall-mounted transmitters AP 420/3**[1)2)] Single, with 2 facing pushbutton rockers	B	**5WG1 420-3AB13**		1	1 unit	030	0.130
	AP 421/3	**IR wall-mounted transmitters AP 421/3**[1)2)] Double, with 4 facing pushbutton rockers	B	**5WG1 421-3AB13**		1	1 unit	030	0.131
	AP 422/3	**IR wall-mounted transmitters AP 422/3**[1)2)] Quadruple, with 8 facing pushbutton rockers	B	**5WG1 422-3AB13**		1	1 unit	030	0.131
5WG1 420-3AB13									

1) The 2 batteries of type LR03/AAA (1.5V) required for operation are not included in delivery.
2) For technical specifications see page 1/45.

*** You can order this quantity or a multiple thereof.**

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** • 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 • 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 • For mounting on UP 117 bus transceiver modules • Dimensions (H x W x D): 55 x 55 x 11 mm. **UP 587/2 also offers:** • 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
	**UP 584** **UP 585**	**UP 584, UP 585 display/operation units** • Graphical LCD with a resolution of 132 x 65 pixels • Display of up to 30 characters per line and up to 5 lines (font Arial 12 pt) • Text and special characters uploaded from any Windows fonts and/or freely defined characters and symbols • Display of up to 16 freely configurable indications • Indication text lengths of maximum 3 lines, comprising fixed and variable text parts • Selection of data type for switching for each indication, floating-point value 2/4 byte, percentage value 1 byte, count value 1/2/4 byte, static text, variable text (max. 14 ASCII characters), time or date, with scaling, conversion and text display of values (1/2/4 byte) • Selection of alarm sound output and/or flashing at each alarm indication, with individual acknowledgement of each alarm indication • Operation of up to 16 bus functions, such as switching, changing dimming values, changing position of shutters/blinds and/or slats or changing a temperature setpoint value by changing the displayed status or value • Limit setting and specification of step sizes for the possible transmission values • Set green/yellow display backlighting as permanent, time-controlled or to be switched ON/OFF via the bus • Two pushbuttons for selection of indication to be displayed • Two additional pushbuttons for operation of configurable bus functions • Powered via the bus line (double bus load) • Includes special bus coupling unit • Dimensions (H x W x D): 65 x 65 x 20 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									
 5WG1 587-2AB11 5WG1 587-2AB12	**UP 587/1**	**UP 587/1 text displays**[1)2)]							
		Versions							
		• Electrical white	B	**5WG1 587-2AB01**		1	1 unit	022	0.064
		• Titanium white	A	**5WG1 587-2AB11**		1	1 unit	022	0.059
		• Carbon metallic	B	**5WG1 587-2AB21**		1	1 unit	022	0.059
		• Aluminum metallic	A	**5WG1 587-2AB31**		1	1 unit	022	0.059
	UP 587/2	**UP 587/2 text displays with time-controlled switching**[1)2)]							
		Versions							
		• Electrical white	B	**5WG1 587-2AB02**		1	1 unit	022	0.055
		• Titanium white	A	**5WG1 587-2AB12**		1	1 unit	022	0.061
		• Carbon metallic	B	**5WG1 587-2AB22**		1	1 unit	022	0.058
		• Aluminum metallic	A	**5WG1 587-2AB32**		1	1 unit	022	0.058
DELTA profil									
 5WG1 585-2AB11	**UP 585**	**UP 585 display/operation units**[1)]							
		Versions							
		• Pearl gray (to be discontinued)	X	**5WG1 585-2AB01**		1	1 unit	022	0.121
		• Titanium white (to be discontinued)	A	**5WG1 585-2AB11**		1	1 unit	022	0.119
		• anthracite (to be discontinued)	C	**5WG1 585-2AB21**		1	1 unit	022	0.117
		• silver (to be discontinued)	B	**5WG1 585-2AB71**		1	1 unit	022	0.118
DELTA style									
 5WG1 585-2AB11	**UP 585**	**UP 585 display/operation units**[1)] (to be discontinued) Titanium white	A	**5WG1 585-2AB11**		1	1 unit	022	0.119
	UP 584	**UP 584 display/operation units**[1)] (to be discontinued)							
		Versions							
		• Basalt black	B	**5WG1 584-2AB21**		1	1 unit	022	0.118
		• Platinum metallic	B	**5WG1 584-2AB41**		1	1 unit	022	0.113

1) The matching design frame must be ordered separately.

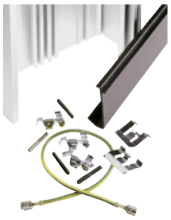
2) The bus transceiver module must be ordered separately, see page 14/4.

* You can order this quantity or a multiple thereof.

Display and Operation Units
Pushbutton Accessories

Introduction

Overview

	Devices	Application	Page
	**Frames, DELTA design**	No matter which frame you require – we have models available in single to quintuple versions.	1/29
	**Surface-mounting enclosures**	Available in the DELTA line, DELTA profil and DELTA style designs.	1/37
	**Accessories for trunking systems**	It's easy to select modules and accessories for the flexibly designed DELTA millennium.	1/38

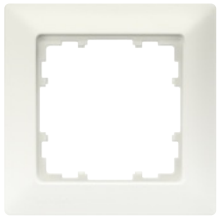
Technical specifications

- 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	021	0.010
- Double	A	**5TG2 552-0**		1	1/10 units	021	0.018
- Triple	A	**5TG2 553-0**		1	1/10 units	021	0.030
- Quadruple	A	**5TG2 554-0**		1	1/10 units	021	0.035
- Quintuple	A	**5TG2 555-0**		1	1/5 units	021	0.043
• Electrical white (RAL 1013)							
- Single	A	**5TG2 581-0**		1	1/10 units	021	0.008
- Double	A	**5TG2 582-0**		1	1/10 units	021	0.046
- Triple	A	**5TG2 583-0**		1	1/10 units	021	0.033
- Quadruple	A	**5TG2 584-0**		1	1/10 units	021	0.035
- Quintuple	A	**5TG2 585-0**		1	1/5 units	021	0.040
• Aluminum metallic (similar to RAL 9006)							
- Single	A	**5TG2 551-3**		1	1/10 units	021	0.011
- Double	A	**5TG2 552-3**		1	1/10 units	021	0.018
- Triple	A	**5TG2 553-3**		1	1/10 units	021	0.025
- Quadruple	A	**5TG2 554-3**		1	1/10 units	021	0.036
- Quintuple	A	**5TG2 555-3**		1	1/5 units	021	0.041
• Carbon metallic (similar to RAL 7016)							
- Single	A	**5TG2 551-6**		1	1/10 units	021	0.013
- Double	A	**5TG2 552-6**		1	1/10 units	021	0.017
- Triple	A	**5TG2 553-6**		1	1/10 units	021	0.022
- Quadruple	A	**5TG2 554-6**		1	1/10 units	021	0.032
- Quintuple	A	**5TG2 555-6**		1	1/5 units	021	0.063



5TG2 551-0

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, with labeling field[1)]							
Versions							
• Titanium white (similar to RAL 9010)							
- Single	A	**5TG2 551-1**		1	1/10 units	021	0.016
- Double, horizontal	A	**5TG2 552-1**		1	1/10 units	021	0.026
- Double, vertical	A	**5TG2 552-2**		1	1/10 units	021	0.025
- Triple, horizontal	A	**5TG2 553-1**		1	1/10 units	021	0.039
- Triple, vertical	A	**5TG2 553-2**		1	1/10 units	021	0.040
- Quadruple, horizontal	A	**5TG2 554-1**		1	1/10 units	021	0.055
- Quadruple, vertical	A	**5TG2 554-2**		1	1/10 units	021	0.051
• Electrical white (RAL 1013)							
- Single	A	**5TG2 581-1**		1	1/10 units	021	0.018
- Double, horizontal	A	**5TG2 582-1**		1	1/10 units	021	0.029
- Double, vertical	A	**5TG2 582-2**		1	1/10 units	021	0.029
- Triple, horizontal	A	**5TG2 583-1**		1	1/10 units	021	0.038
- Triple, vertical	A	**5TG2 583-2**		1	1/10 units	021	0.032
- Quadruple, horizontal	A	**5TG2 584-1**		1	1/10 units	021	0.050
- Quadruple, vertical	A	**5TG2 584-2**		1	1/10 units	021	0.050
• Aluminum metallic (similar to RAL 9006)							
- Single	A	**5TG2 551-4**		1	1/10 units	021	0.018
- Double, horizontal	A	**5TG2 552-4**		1	1/10 units	021	0.027
- Double, vertical	A	**5TG2 552-5**		1	1/10 units	021	0.027
• Carbon metallic (similar to RAL 7016)							
- Single	A	**5TG2 551-7**		1	1/10 units	021	0.018
- Double, horizontal	A	**5TG2 552-7**		1	1/10 units	021	0.028
- Double, vertical	A	**5TG2 552-8**		1	1/10 units	021	0.027

5TG2 551-1

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

* You can order this quantity or a multiple thereof.

Display and Operation Units
Pushbutton Accessories

DELTA miro Artist frames

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
	Frame, Artist 90 mm							
	Versions							
 5TG1 131-0	• Tom´s Drag							
	- Single	C	**5TG1 131-0**		1	1 unit	021	0.030
	- Double	C	**5TG1 132-0**		1	1 unit	021	0.045
	- Triple	C	**5TG1 133-0**		1	1 unit	021	0.064
	- Quadruple	C	**5TG1 134-0**		1	1 unit	021	0.082

* You can order this quantity or a multiple thereof.

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	021	0.020
	- Double	A	**5TG1 112-0**		1	1/10 units	021	0.033
	- Triple	A	**5TG1 113-0**		1	1/10 units	021	0.039
	- Quadruple	A	**5TG1 114-0**		1	1/10 units	021	0.046
	- Quintuple	A	**5TG1 115-0**		1	1/3 units	021	0.100
 5TG1 111-3	• Electrical white (similar to RAL 1013) NEW							
	- Single	A	**5TG1 111-3**		1	1/10 units	021	0.022
	- Double	A	**5TG1 112-3**		1	1/10 units	021	0.035
	- Triple	A	**5TG1 113-3**		1	1/10 units	021	0.046
	- Quadruple	A	**5TG1 114-3**		1	1/10 units	021	0.060
	- Quintuple	A	**5TG1 115-3**		1	1/3 units	021	0.100
 5TG1 111-1	• Aluminum metallic (similar to RAL 9006)							
	- Single	A	**5TG1 111-1**		1	1/10 units	021	0.024
	- Double	A	**5TG1 112-1**		1	1/10 units	021	0.028
	- Triple	A	**5TG1 113-1**		1	1/10 units	021	0.039
	- Quadruple	A	**5TG1 114-1**		1	1/10 units	021	0.049
	- Quintuple	A	**5TG1 115-1**		1	1/3 units	021	0.059
 5TG1 111-2	• Carbon metallic (similar to RAL 7016)							
	- Single	A	**5TG1 111-2**		1	1/10 units	021	0.017
	- Double	A	**5TG1 112-2**		1	1/10 units	021	0.026
	- Triple	A	**5TG1 113-2**		1	1/10 units	021	0.039
	- Quadruple	A	**5TG1 114-2**		1	1/10 units	021	0.048
	- Quintuple	A	**5TG1 115-2**		1	1/3 units	021	0.057

* You can order this quantity or a multiple thereof.

Display and Operation Units
Pushbutton Accessories

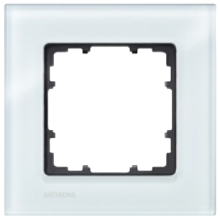
DELTA miro glass frames

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 glass frames 90 mm, real glass							
	Versions							
 5TG1 201	• Crystal green							
	- Single	A	**5TG1 201**		1	1 unit	021	0.163
	- Double	A	**5TG1 202**		1	1 unit	021	0.234
	- Triple	A	**5TG1 203**		1	1 unit	021	0.284
	- Quadruple	A	**5TG1 204**		1	1 unit	021	0.473
	- Quintuple	A	**5TG1 205**		1	1 unit	021	0.521
 5TG1 201-1	• White							
	- Single	A	**5TG1 201-1**		1	1 unit	021	0.097
	- Double	A	**5TG1 202-1**		1	1 unit	021	0.157
	- Triple	A	**5TG1 203-1**		1	1 unit	021	0.220
	- Quadruple	A	**5TG1 204-1**		1	1 unit	021	0.282
	- Quintuple	A	**5TG1 205-1**		1	1 unit	021	0.345
 5TG1 201-2	• Black							
	- Single	A	**5TG1 201-2**		1	1 unit	021	0.097
	- Double	A	**5TG1 202-2**		1	1 unit	021	0.157
	- Triple	A	**5TG1 203-2**		1	1 unit	021	0.220
	- Quadruple	A	**5TG1 204-2**		1	1 unit	021	0.282
	- Quintuple	A	**5TG1 205-2**		1	1 unit	021	0.345
 5TG1 201-3	• Orient							
	- Single	A	**5TG1 201-3**		1	1 unit	021	0.163
	- Double	A	**5TG1 202-3**		1	1 unit	021	0.157
	- Triple	A	**5TG1 203-3**		1	1 unit	021	0.220
	- Quadruple	A	**5TG1 204-3**		1	1 unit	021	0.282
	- Quintuple	A	**5TG1 205-3**		1	1 unit	021	0.345
 5TG1 201-4	• Arena							
	- Single	A	**5TG1 201-4**		1	1 unit	021	0.197
	- Double	A	**5TG1 202-4**		1	1 unit	021	0.157
	- Triple	A	**5TG1 203-4**		1	1 unit	021	0.220
	- Quadruple	A	**5TG1 204-4**		1	1 unit	021	0.370
	- Quintuple	A	**5TG1 205-4**		1	1 unit	021	0.345

*** You can order this quantity or a multiple thereof.**

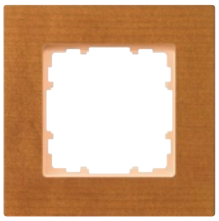
Technical specifications

- 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 wood frames 90 mm, real wood							
	Versions							
 5TG1 101-2	• Maple red							
	- Single	A	**5TG1 101-2**		1	1 unit	021	0.035
	- Double	A	**5TG1 102-2**		1	1 unit	021	0.059
	- Triple	A	**5TG1 103-2**		1	1 unit	021	0.080
	- Quadruple	A	**5TG1 104-2**		1	1 unit	021	0.105
 5TG1 101-3	• Maple							
	- Single	A	**5TG1 101-3**		1	1 unit	021	0.037
	- Double	A	**5TG1 102-3**		1	1 unit	021	0.061
	- Triple	A	**5TG1 103-3**		1	1 unit	021	0.080
	- Quadruple	A	**5TG1 104-3**		1	1 unit	021	0.103
 5TG1 101-4	• Beech (color achieved through staining)							
	- Single	A	**5TG1 101-4**		1	1 unit	021	0.035
	- Double	A	**5TG1 102-4**		1	1 unit	021	0.058
	- Triple	A	**5TG1 103-4**		1	1 unit	021	0.079
	- Quadruple	A	**5TG1 104-4**		1	1 unit	021	0.104
 5TG1 101-1	• Cherry (color achieved through staining)							
	- Single	A	**5TG1 101-1**		1	1 unit	021	0.039
	- Double	A	**5TG1 102-1**		1	1 unit	021	0.058
	- Triple	A	**5TG1 103-1**		1	1 unit	021	0.080
	- Quadruple	A	**5TG1 104-1**		1	1 unit	021	0.102
 5TG1 101-0	• Wenge							
	- Single	A	**5TG1 101-0**		1	1 unit	021	0.042
	- Double	A	**5TG1 102-0**		1	1 unit	021	0.069
	- Triple	A	**5TG1 103-0**		1	1 unit	021	0.093
	- Quadruple	A	**5TG1 104-0**		1	1 unit	021	0.118

*** You can order this quantity or a multiple thereof.**

Display and Operation Units
Pushbutton Accessories

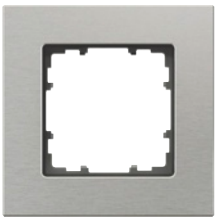
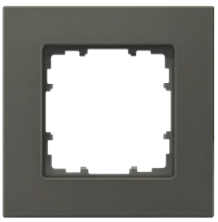
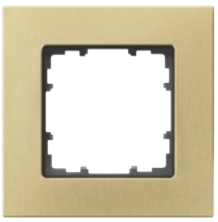
DELTA miro aluminum frames

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 aluminum frames 90 mm, real aluminum							
	Versions							
 5TG1 121-0	• Natural							
	- Single	A	**5TG1 121-0**		1	1 unit	021	0.082
	- Double	A	**5TG1 122-0**		1	1 unit	021	0.140
	- Triple	A	**5TG1 123-0**		1	1 unit	021	0.190
	- Quadruple	A	**5TG1 124-0**		1	1 unit	021	0.243
	- Quintuple	A	**5TG1 125-0**		1	1 unit	021	0.290
 5TG1 121-1	• Titanium							
	- Single	A	**5TG1 121-1**		1	1 unit	021	0.082
	- Double	A	**5TG1 122-1**		1	1 unit	021	0.140
	- Triple	A	**5TG1 123-1**		1	1 unit	021	0.190
	- Quadruple	A	**5TG1 124-1**		1	1 unit	021	0.243
	- Quintuple	A	**5TG1 125-1**		1	1 unit	021	0.290
 5TG1 121-2	• Graphite							
	- Single	A	**5TG1 121-2**		1	1 unit	021	0.082
	- Double	A	**5TG1 122-2**		1	1 unit	021	0.140
	- Triple	A	**5TG1 123-2**		1	1 unit	021	0.190
	- Quadruple	A	**5TG1 124-2**		1	1 unit	021	0.243
	- Quintuple	A	**5TG1 125-2**		1	1 unit	021	0.290
 5TG1 121-3	• Yellow oxide							
	- Single	A	**5TG1 121-3**		1	1 unit	021	0.082
	- Double	A	**5TG1 122-3**		1	1 unit	021	0.140
	- Triple	A	**5TG1 123-3**		1	1 unit	021	0.190
	- Quadruple	A	**5TG1 124-3**		1	1 unit	021	0.243
	- Quintuple	A	**5TG1 125-3**		1	1 unit	021	0.290

* You can order this quantity or a multiple thereof.

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. kg
5TG1 801	**DELTA profil frames** 80 mm, cut out							
	Versions							
	• Titanium white (similar to RAL 9010)							
	- Single	A	**5TG1 801**		1	1/10 units	021	0.016
	- Double	A	**5TG1 802**		1	1/10 units	021	0.028
	- Double, with one cut-out	A	**5TG1 803**		1	1/10 units	021	0.022
	- Triple, with one cut-out	A	**5TG1 804**		1	1/10 units	021	0.032
	• Silver (similar to RAL 9006)							
	- Single	A	**5TG1 761**		1	1/10 units	021	0.016
	- Double, with one cut-out	A	**5TG1 763**		1	1/10 units	021	0.025
	- Triple, with one cut-out	A	**5TG1 764**		1	1/10 units	021	0.030
5TG1 803 (frame part cut out)	• Anthracite (similar to RAL 7016)							
	- Single	A	**5TG1 831**		1	1/10 units	021	0.016
	- Double	A	**5TG1 832**		1	1/10 units	021	0.022
	- Double, with one cut-out	A	**5TG1 833**		1	1/10 units	021	0.025
	- Triple, with one cut-out	A	**5TG1 834**		1	1/10 units	021	0.032
5TG1 804 (frame part cut out)	• Champagne (similar to RAL 7048), single	A	**5TG1 701-1**		1	1/10 units	021	0.012
5WG1 240-8CB11	**Frames, DELTA contour**[1] 80 mm, cut out							
	Versions							
	• Titanium white (similar to RAL 9010)							
	- Single	D	**5WG1 240-8CB11**		1	10 units	022	0.028

[1] Frames for NEMA box, BCU matches DELTA profil operator interfaces see page 14/3.

* You can order this quantity or a multiple thereof.

Display and Operation Units
Pushbutton Accessories

DELTA style frames

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
5TG1 321	**DELTA style frames** 82 mm							
	Versions							
	• Titanium white (similar to RAL 9010)							
	- Single	A	**5TG1 321**		1	1/10 units	021	0.022
	- Double	A	**5TG1 322**		1	1/10 units	021	0.027
	- Triple	A	**5TG1 323**		1	1/10 units	021	0.038
	- Quadruple	A	**5TG1 324**		1	1/10 units	021	0.048
	- Quintuple	A	**5TG1 325**		1	1/5 units	021	0.066
	• Basalt black (similar to RAL 7016)							
	- Single	A	**5TG1 361**		1	1/10 units	021	0.015
	- Double	A	**5TG1 362**		1	1/10 units	021	0.027
	- Triple	A	**5TG1 363**		1	1/10 units	021	0.044
	- Quadruple	A	**5TG1 364**		1	1/10 units	021	0.059
	- Quintuple	A	**5TG1 365**		1	1/5 units	021	0.080
	• Platinum metallic							
	- Single	A	**5TG1 321-1**		1	1/10 units	021	0.022
	- Double	A	**5TG1 322-1**		1	1/10 units	021	0.032
	- Triple	A	**5TG1 323-1**		1	1/10 units	021	0.045
	- Quadruple	A	**5TG1 324-1**		1	1/10 units	021	0.058
	- Quintuple	A	**5TG1 325-1**		1	1/5 units	021	0.074
5TG1 328	**Intermediate frames** 68 mm							
	Versions							
	• Titanium white (similar to RAL 9010)	A	**5TG1 328**		1	1/10 units	021	0.007
	• Basalt black (similar to RAL 7016)	A	**5TG1 368**		1	1/10 units	021	0.008
	• Platinum metallic	A	**5TG1 328-1**		1	1/10 units	021	0.012

* You can order this quantity or a multiple thereof.

Technical specifications

		DELTA line			DELTA profil			DELTA style		
										
		Single	Double	Triple	Single	Double	M 110	Single	Double	Triple
Dimensions										
• Length	mm	84	155	155	80	125	80	84	155	155
• Width	mm	84	84	84	80	80	80	84	84	84
• Depth	mm	42.5	42.5	42.5	42.5	42.5	30	42.5	42.5	42.5
Flame-retardant floor 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							
 5TG2 901							
Surface-mounting enclosures For flush-mounting devices, 84 mm							
Versions							
• Titanium white							
- Single	A	**5TG2 901**		1	1/5 units	021	0.090
- Double	A	**5TG2 902**		1	1/3 units	021	0.132
- Triple	A	**5TG2 903**		1	1/2 units	021	0.176
• Electrical white							
- Single	A	**5TG2 861**		1	1/5 units	021	0.090
- Double	A	**5TG2 862**		1	1/3 units	021	0.129
- Triple	A	**5TG2 863**		1	1/2 units	021	0.171
DELTA profil							
 5TG1 825							
Surface-mounting enclosures • For flush-mounting devices, 80 mm • Titanium white							
Versions							
• Single	A	**5TG1 825**		1	1/5 units	021	0.065
• Double	A	**5TG1 826**		1	1/5 units	021	0.103
 5WG3 110-8AB11							
M 110 surface-mounting enclosures Single							
Versions							
• Pearl gray	D	**5WG3 110-8AB01**		1	1 unit	022	0.051
• Titanium white	A	**5WG3 110-8AB11**		1	1 unit	022	0.048
• Anthracite	D	**5WG3 110-8AB21**		1	1 unit	022	0.049
• Silver	D	**5WG3 110-8AB71**		1	1 unit	022	0.049
DELTA style							
 5TG2 901							
Surface-mounting enclosures • For flush-mounting devices, 84 mm • Titanium white							
Versions							
• Single	A	**5TG2 901**		1	1/5 units	021	0.090
• Double	A	**5TG2 902**		1	1/3 units	021	0.132
• Triple	A	**5TG2 903**		1	1/2 units	021	0.176

* You can order this quantity or a multiple thereof.

Display and Operation Units
Pushbutton Accessories

Accessories for trunking systems

Overview

The DELTA millennium trunking system has an impressive homogeneous, smooth and clearly structured operator interface made of anodized aluminum.

It hides a wealth of innovative technology, exclusively for use with the *instabus*:

- Independent of country-specific switch and socket boxes
- Linking element between ceilings and floors
- Installation of N devices

The trunking comprises a trunking base and a trunking lid. The trunking lid is easily and quickly snap-fitted in the trunking base in the same way as the modules.

Any number of individual modules can be arranged side by side and in any order.

Design

The modular design provides great flexibility during the planning phase:

- Trunking
  - Surface-mounting version
  - Flush-mounting version (available soon)
- Modules
  - *instabus* modules (pushbuttons, room temperature controllers)
  - Socket outlet modules
  - Masking modules (with Siemens logo)
- Accessories
  - Sets of end plates
  - Wall junction covers
  - Cable holders
  - Grounding sets
  - Disassembly tools

Design

DELTA millennium is also unique in terms of design and operator friendliness:

- Customized labeling with text in the user's national language and symbols
- Uniform, homogeneous and self-explanatory conventional keys.
- Homogeneously illuminated, high-intensity status and orientation lighting.

Disassembly

One masking module per trunking section is required to open a closed trunking line.

Other modules or trunking lids cannot be disassembled until the masking module has been removed with the disassembly tool.

Ordering data

The following data are required for all orders:

- Trunking
  - The length of the trunking base depends on the room height
  - The number and lengths of the trunking lids depends on the number of modules
- Modules
  - Labeling text
  - Symbols

Please complete an order form for each module (see page 1/39) and enclose it with your order.

Please send DP orders by fax.

Orders for trunking bases and trunking lids should be made out for the length required in meters, not for a certain number of units:

Example:
If you want to order a trunking base with a length of 173 cm.

- Incorrect: 1 x 5WG1 195-3AB01, 173 cm long
- Correct: 1.73 m 5WG1 195-3AB01

Accessories for trunking systems

To Siemens AG
Industry Sector
I BT LV
Regensburg
Germany
Fax: +49 (0) 941 790 2751

Date | Customer´s reference
order reference I

Ⓘ Order item | Ⓘⓘ Quantity | Ⓘⓘⓘ Order no.

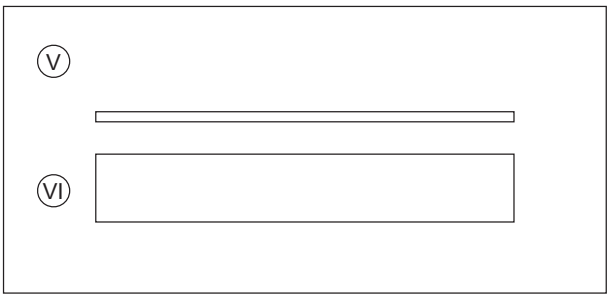
5WG1 . . . - . . . . .

Project | Installation site | Local partner

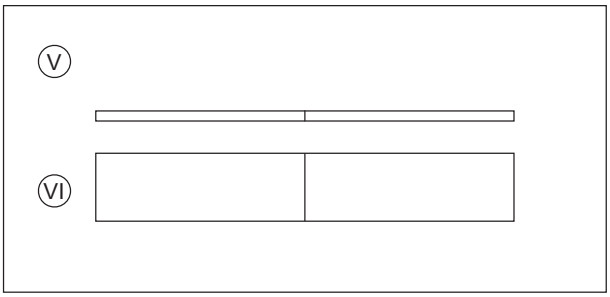
Notes

Ⓘⓥ

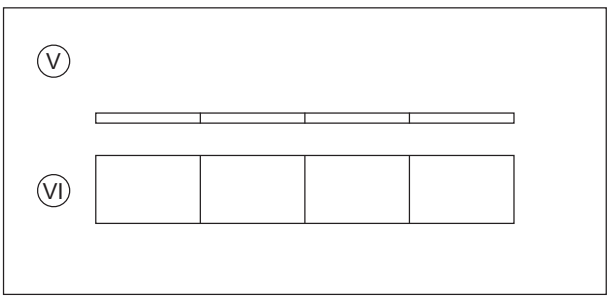
☐ IKE 281 Pushbutton, single



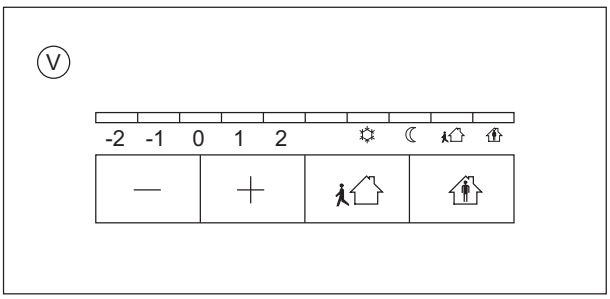
☐ IKE 282 Pushbutton, double



☐ IKE 283 Pushbutton, quadruple



☐ IKE 250 Temperature controller

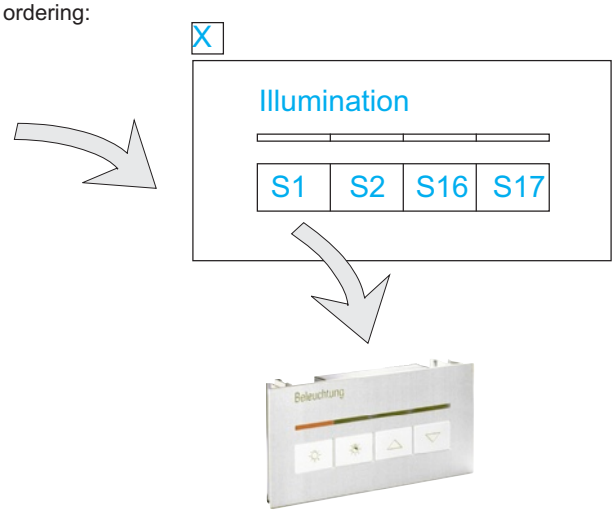


How to fill in the order form:

Ⓘ State order item
Ⓘⓘ State quantity
Ⓘⓘⓘ Fill in desired order no.
Ⓘⓥ Mark desired module according to order no.
Ⓥ State inscription text
(font: UniversS 47 Condensed Light 24 point)
Ⓥⓘ Select and state symbols

Special inscriptions on demand.

Example for ordering:



Symbols:

S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
☼	☼	🕐	🕐	○	🔔	⊸	⏚	1	2	3	4

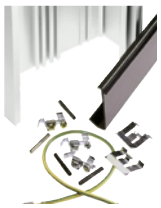
S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24
≡	≡	≡	△	▽	✣	—	+	☼	☾	🚶	🚶

I2_07689f

Display and Operation Units
Pushbutton Accessories

Accessories for trunking 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
DELTA millennium									
 5WG1 195-3AB01	**AP 195**	**AP 195 trunking bases**[1)] • For surface mounting • Aluminum • Comprises: 1 ground conductor, 3 ground terminals, 1 partition, 4 partition holders, 5 coupling pins • Dimensions (W x D): 170 x 68 mm, maximum length 2 m	D	**5WG1 195-3AB01**		1	1 M	030	2.200
 5WG1 197-8AB01	**IKE 197**	**IKE 197 trunking lids** • Aluminum • Comprises ground conductor and ground terminal for the trunking base	D	**5WG1 197-8AB01**		1	1 M	030	1.300
 5WG1 198-8AB01	**IKE 198**	**IKE 198 socket outlet covers** • Aluminum • Modules for installation in trunking systems, with large hinged lid and engraved plug symbol • Trunking mounting boxes for AP 195 trunking base, for installation of SCHUKO socket outlets in DELTA design • Comprises ground conductor and ground terminal for the trunking base	D	**5WG1 198-8AB01**		1	1 unit	030	0.015
 5WG1 195-8AB41	**IKE 195**	**IKE 195 masking modules** • Aluminum • For simple opening of all installed trunking lines • Comprises ground conductor and ground terminal for the trunking base	D	**5WG1 195-8AB41**		1	1 unit	030	0.199
 5WG1 195-8AB51		**Disassembly tools** With suckers and hooks for simple disassembly of modules, masking modules and trunking lids	D	**5WG1 195-8AB51**		1	1 unit	030	0.159
 5WG1 195-8AB21		**Sets of end plates** • Aluminum • For front connection of the trunking • Comprises 2 end plates, 2 ground conductors and 2 ground terminals for the trunking base	D	**5WG1 195-8AB21**		1	1 unit	030	0.663
 5WG1 195-8AB31		**Wall junction covers** As covers for wall and ceiling openings, for the clean connection of trunking to the wall or the ceiling	D	**5WG1 195-8AB31**		1	1 unit	030	0.198
 5WG1 195-8AB01		**Cable holders** For fixing non-metallic-sheathed cables in the trunking base, comprises 1 mounting rail with 2 slide nuts, 5 cable clips, 2 screws with toothed disks	D	**5WG1 195-8AB01**		1	1 unit	030	0.112
 5WG1 195-8AB11		**Grounding sets** Comprises 3 ground conductors, 3 ground terminals for the trunking base, 3 ground connections for the trunking lid	D	**5WG1 195-8AB11**		1	1 unit	030	0.127

1) Please specify length when ordering - maximum length: 2 m (see page 1/38 "Ordering data").

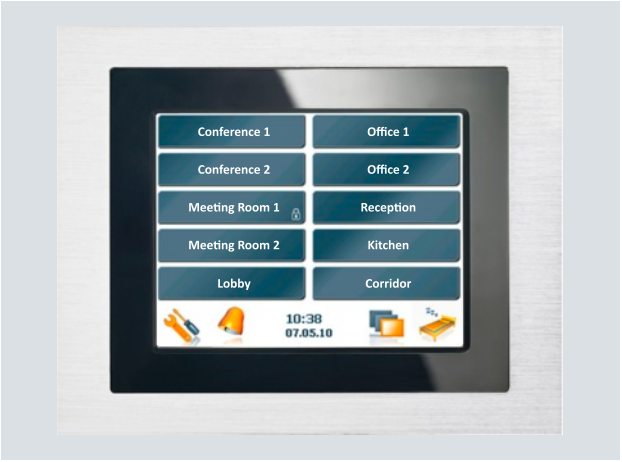
* You can order this quantity or a multiple thereof.

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**	**UP 588/13, UP 588/23 touch panels** • 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 • 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
		Versions
	UP 588/13	• Rated operational voltage 230 V AC, 50 Hz
	UP 588/23	• Rated operational voltage 24 V AC/DC

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 588-2AB13, 5WG1 588-2AB23, with black glass frame	**UP 588/13**	**UP 588/13 touch panels**[1)2)] NEW Rated operational voltage 230 V AC, 50 Hz	B	**5WG1 588-2AB13**		1	1 unit	030	0.610
	UP 588/23	**UP 588/23 touch panels**[1)2)] NEW Rated operational voltage 24 V AC/DC	B	**5WG1 588-2AB23**		1	1 unit	030	0.675
		Accessories							
 5WG1 588-8AB12		**Design frames** NEW 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	030	0.260
 5WG1 588-8AB13		• Stainless steel design (W x H x D): 194 x 156 x 5 mm	B	**5WG1 588-8AB13**		1	1 unit	030	0.560
 5WG1 588-8AB14		• Black glass (W x H x D): 194 x 156 x 5 mm	B	**5WG1 588-8AB14**		1	1 unit	030	0.406
 5WG1 588-8AB15		• White glass (W x H x D): 194 x 156 x 5 mm	B	**5WG1 588-8AB15**		1	1 unit	030	0.406
 5WG1 588-8EB01		**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	030	0.133

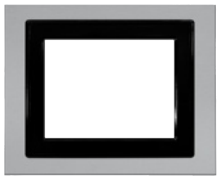
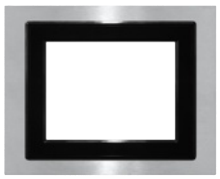
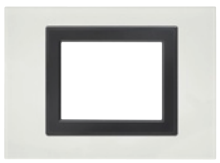
1) The required design frame must be ordered separately.
2) The flush-mounting/hollow-wall box must be ordered separately.

* You can order this quantity or a multiple thereof.

Display and Operation Units

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
 5WG1 588-2AB12, 5WG1 588-2AB22, with black glass frame	**UP 588/12**	**UP 588/12 touch panels**[1)2)3)] (to be discontinued) • Rated operational voltage 230 V AC, 50 Hz	B	**5WG1 588-2AB12**		1	1 unit	030	0.610
	UP 588/22	**UP 588/22 touch panels**[1)2)3)] (to be discontinued) • Rated operational voltage 24 V AC/DC	B	**5WG1 588-2AB22**		1	1 unit	030	0.655
		Accessories							
		Design frames[4)] (to be discontinued) For UP 588/12, UP 588/22 touch panels							
 5WG1 588-8AB02		• Aluminum (W x H x D): 194 x 156 x 4 mm	B	**5WG1 588-8AB02**		1	1 unit	030	0.260
 5WG1 588-8AB03		• Stainless steel (W x H x D): 194 x 156 x 4 mm	B	**5WG1 588-8AB03**		1	1 unit	030	0.560
 5WG1 588-8AB04		• Black glass (W x H x D): 250 x 180 x 4 mm	B	**5WG1 588-8AB04**		1	1 unit	030	0.406
 5WG1 588-8AB05		• White glass (W x H x D): 250 x 180 x 4 mm	B	**5WG1 588-8AB05**		1	1 unit	030	0.406
 5WG1 588-8EB01		**Flush-mounting/hollow-wall boxes** For UP 588 touch panels	B	**5WG1 588-8EB01**		1	1 unit	030	0.133

1) The required design frame must be ordered separately.
2) The flush-mounting/hollow-wall box must be ordered separately.
3) After a firmware update, the UP 588/12 and UP 588/22 touch panels differ from each other only in terms of the form of the design frame. Firmware update available at: www.siemens.com/gamma-td
4) Only for UP 588/12 and UP 588/22.

* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**S 425**	**S 425 wave hand-held radio transmitters** • 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: switching, switching and dimming, shutter/blind control, store and call up scenes • Radio transmitter: 868 MHz • Black or silver • Dimensions (H x W x D): 154 x 55 x 24 mm.
	**S 425/72**	**S 425/72 IR hand-held transmitters** • For wireless control of actuators via infrared signals, e.g. switching ON/OFF/OVER, dimming, value transmission, shutter/blind control or call up/store scenes • Slide switches for selection of 16 out of 64 available channels • 4 groups selectable via preselection pushbuttons (A-D), with 4 channels each • 1 LED per group for control of transmission and battery • Infrared wave length: 890 nm • Infrared frequency: 455 kHz • Transmitter range: 20 m, non-directional • Power supply by two commercially available 1.5 V batteries type Alkaline LR03/AAA • Silver • Dimensions (H x W x D): 154 x 55 x 24 mm
		**AP 420/3, AP 421/3 and AP 422/3 IR wall-mounted transmitters** • Signals, e.g. for switching ON/OFF/over, dimming, value transmission, shutter/blind control or call up/store scenes • 1 LED for control of transmission and battery • Red LED cover • Slide switches for selection of the channel numbers (1-64) • Infrared wave length: 890 nm • Infrared frequency: 455 kHz • Transmitter range: 8 m, non-directional • Power supply by two commercially available 1.5 V batteries type Alkaline LR03/AAA • Mounting frame for mounting on a flush-mounting wall box, on a wall surface or with adhesive tape on an even surface • Titanium white • Dimensions (H x W x D): 115 x 82 x 21 mm.
		Versions
	AP 420/3	• Single, with 2 facing pushbutton rockers
	AP 421/3	• Double, with 4 facing pushbutton rockers
	AP 422/3	• Quadruple, with 8 facing pushbutton rockers

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
 5WG3 425-7AB21	**S 425**	**S 425 wave hand-held radio transmitters**[1)2)] 17 channels							
		Versions							
		• Black	B	**5WG3 425-7AB21**		1	1 unit	030	0.131
		• Silver	B	**5WG3 425-7AB71**		1	1 unit	030	0.132
 5WG1 425-7AB72	**S 425/72**	**S 425/72 IR hand-held transmitters**[3)4)]	B	**5WG1 425-7AB72**		1	1 unit	030	0.098
 5WG1 420-3AB13	**AP 420/3**	**IR wall-mounted transmitters AP 420/3**[3)4)] NEW Single, with 2 facing pushbutton rockers	B	**5WG1 420-3AB13**		1	1 unit	030	0.130
 5WG1 421-3AB13	**AP 421/3**	**IR wall-mounted transmitters AP 421/3**[3)4)] NEW Double, with 4 facing pushbutton rockers	B	**5WG1 421-3AB13**		1	1 unit	030	0.131
 5WG1 422-3AB13	**AP 422/3**	**IR wall-mounted transmitters AP 422/3**[3)4)] NEW Quadruple, with 8 facing pushbutton rockers	B	**5WG1 422-3AB13**		1	1 unit	030	0.131

1) The batteries required for operation are included in delivery.
2) For radio system 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) Decoder see chapter "Gateways, Interface Converters - KNX/Infrared".

* You can order this quantity or a multiple thereof.

Overview

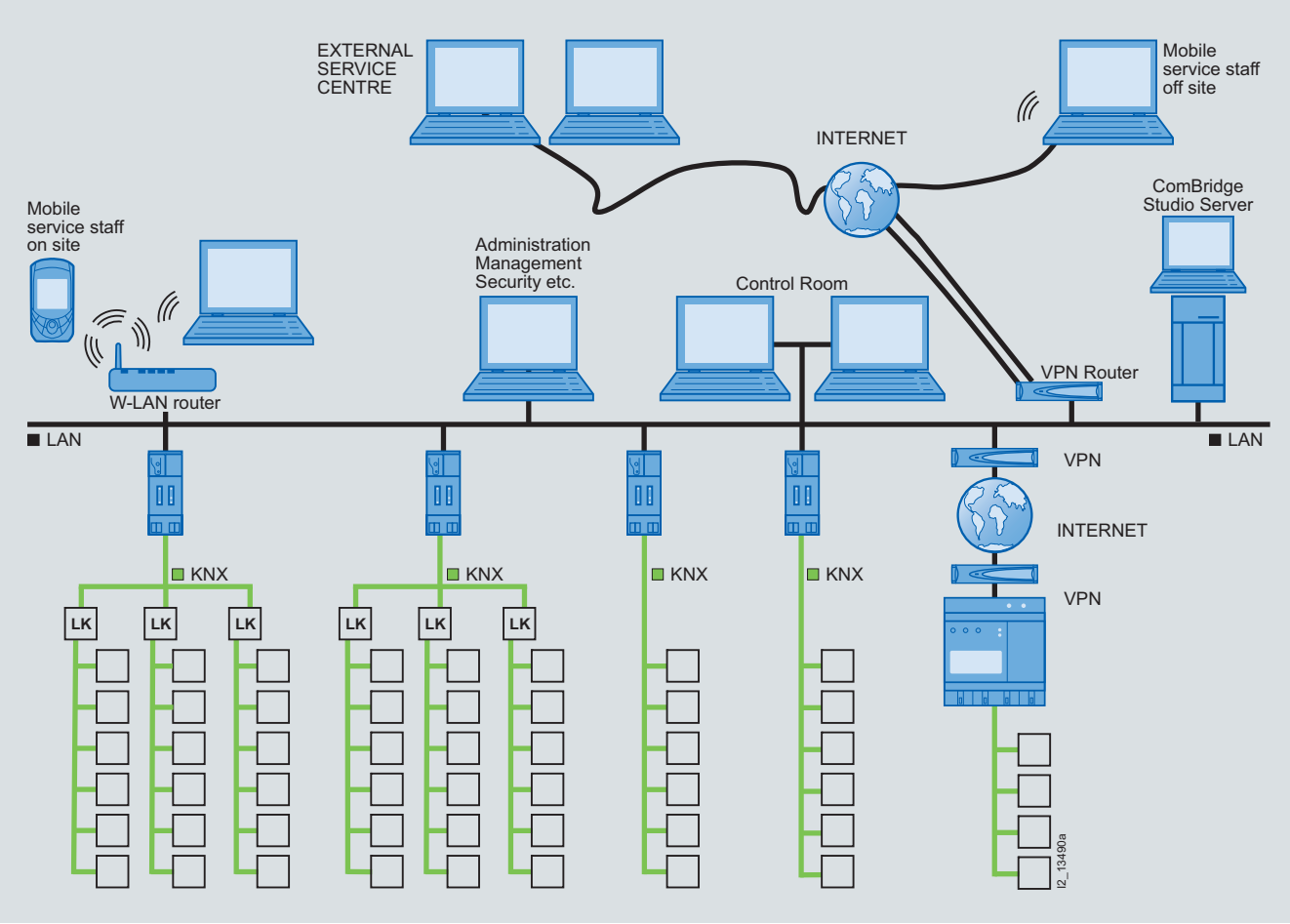
Web-Visualization with ComBridge Studio

Due to their distributed structure, KNX systems support a high degree of automation in building management systems, as well as the detailed and effective management of building-relevant information. The IPAS ComBridge Studio Suite allows you to make optimum use of the options provided by the KNX system. The software enables KNX to operate, control and visualize systems via the Internet. It also allows users an overview of key information and enables an immediate response if required.

You can use the ComBridge Studio software to manage the KNX system and its components from any computer, whether PC, notebook, tablet PC or PDA/smart phone, as long as the user has the appropriate access rights.

The use of wireless network connections supports the management of the KNX system without being tied to a fixed workstation (e.g. central control room). Mobile access to the management system of a building is an invaluable advantage during the local commissioning, maintaining and troubleshooting of plants.

Used together with ComBridge Studio Software, KNXnet/IP devices, such as an N 146/02 IP router, offer a modular, high-capacity and effective building management system that is unrivaled in flexibility.



Overview of the ComBridge Studio system concept

Using standard communication networks based on Internet protocols, the building management systems of distant premises can be managed via a central service control room. Satellite connections are also supported: the software has been designed so that even prolonged transmission times for the relevant information do not influence the functionality or stability of the system.

The use of standard browser technologies has considerably simplified access to management systems. All applications run exclusively on the server, which is where they are also installed and modified. A client-side installation is therefore not necessary; access to building information, such as room control, building monitoring, etc. is via a standard HTML browser, an extremely cost-effective solution.

Companies that have a multitude of premises, such as store groups, banks, gas stations, etc., can normally use their existing IT networks to link the building management systems of their premises with the IPAS building management system. This results in lower installation costs and improves management of the building infrastructures.

The ComBridge Studio software has already been implemented in a multitude of applications, including in:

- Store chains
- Industrial plants
- Apartments
- Vacation sites with individual bungalows
- Distributed premises
- Hotels
- Office buildings
- Sports arenas
- Exclusive villas

Display and Operation Units

Visualization, software

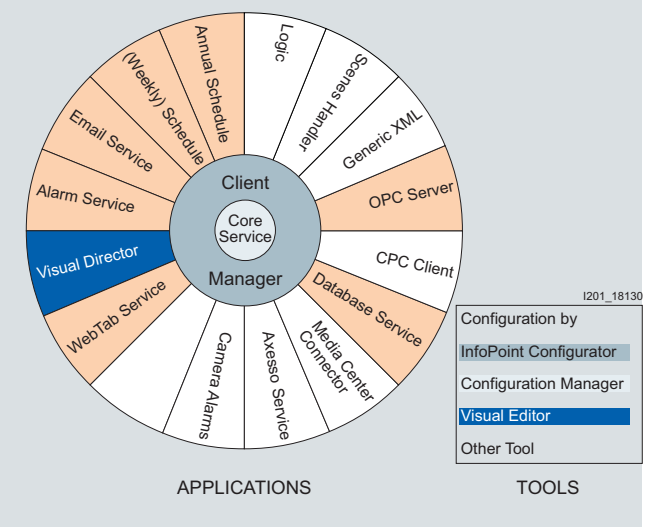
ComBridge Studio software structure

Core and application services

The ComBridge Studio Suite comprises core services that are automatically started with the operating system (Windows) of the server or PC so that no manual intervention is required on the part of the user, i.e. no need to log in.

The ComBridge Studio Suite services include:

- Core Service
  Communicates with all defined KNXnet/IP devices and automatically monitors all configured KNXnet/IP devices. This service is designed to check all configured devices and ensure that the connection is active. If the connection is lost, the device server automatically attempts to reconnect. If the physical connection permits, the device server maintains all connections to the KNXnet/IP devices.
- KNXnet/IP Service
  Ensures communication with the devices using the KNXnet/IP protocol.
- Client Manager
  Acts as communication hub between the Core Service and the Application Services.
- Automation Service
  Executes the application services, e.g. for alarms, e-mail or scheduling programs.
- MCG Service
  Provides the configuration service for a N 350E IP Controller.



ComBridge Studio software structure

The Core Service communicates with the KNXnet/IP devices. Use Configuration Manager to add or remove devices or to monitor communication with them.

The Client Manager acts as communication distributor between the Core Service and the application services, as well as between the application services (e.g. from the OPC server or Generic XML to the Visual Director). The Client Manager interacts with the control room in order to provide current system information and application service configurations.

ComBridge Studio Suite application services:

- **WebTab Service:**
  Webtabs operating images in tabular form, each with one line per data point. Each line contains a description text, the group address or object name, the current state of the data point and buttons for operation. Using the InfoPoint Configurator, you can create your own WebTabs in just a few minutes.
- **Visual Director:**
  IPAS ComBridge Studio Visual Director is supplementary to Webtab and offers a wide range of free design options. Users can configure the navigation and the layout of the graphical display and control elements to suit individual requirements.
- **Web standards:**
  Visual Director is HTML-based so that company Web assets, such as logo, navigation, graphics, dynamic HTML, layouts, scripts and dynamic contents in visualization projects can be used again. Furthermore, HTML know-how is very prevalent on the market and easily available.
- **User login:**
  Visual Director provides complete user management. Users can be assigned their own start page and navigation. User levels let you control user access to data points.
- **Configuration:**
  The supplied Visual Editor is a menu-assisted, pixel-graphic HTML editor with a multitude of functions for creating your own Web operator interface.
- **E-Mail Service:**
  Critical states or events can be monitored so that in the event of their occurrence, e-mails are sent automatically. The overshooting or undershooting of limit values, 0 or 1 states, or the receipt of specific group addresses can be tested. The contents of e-mails can be designed to have great impact, and even sent with an attachment, e.g. with photos or circuit diagrams.
- **Database Service:**
  You can use the DS to write selected KNX group addresses (indications, measured values, count values, switch and positioning commands) to a database for subsequent evaluation and reporting.
- **(Weekly) Scheduling Service:**
  Weekly scheduling programs can be stored and managed centrally using the Scheduling Service. Simply checkmark week days to activate. Switch and positioning commands can be executed.
- **Annual Scheduling Service:**
  With the Annual Scheduling Service, scheduling programs can be centrally created and managed for selected days or periods. Switch and positioning commands can be executed.
- **Alarm Service:**
  Critical states or events can be monitored so that in the event of their occurrence, an alarm indication is automatically displayed in an alarm window. The overshooting or undershooting of limit values, 0 or 1 states, or the receipt of specific group addresses can be tested. Even after they have been acknowledged, alarms are stored in a database for subsequent evaluation.
- **OPC Service:**
  ComBridge Studio offers full OPC server functionality, as well as OPC client functionality, to enable the flexible integration of KNX systems into other control systems.
  Double advantage: ComBridge Studio OPC Services can be used at the same time as other ComBridge Studio applications. For example, the plant can be controlled by OPC at the same time as the workplace is controlled using Webtab or a Visual Director application is implemented. It is also possible to ensure mobile access to KNX installations for service personnel, or set up an e-mail message service, etc.
- **Scenes:**
  Supports the creation of centrally executed scenes.

The ComBridge Studio InfoPoint Configurator is a configuration tool with an intuitive interface for application services:

- WebTab Service
- E-Mail Service
- Database Service
- (Weekly) Scheduling Service
- Annual Scheduling Service
- Alarm Service
- OPC server.

Licensing

The IPAS ComBridge Studio software license is based on the selected application functions, the number of connected KNXnet/IP devices and the number of simultaneous users.

The IPAS ComBridge Studio software is available in 4 application function packages: micro, mini, midi, maxi. The OPC server and OPC client packages are also available.

All function packages include connection to one KNXnet/IP device and are for one user.

The micro, mini, midi and maxi application packages can be combined with all of the following expansion packages:

- 5 user expansion package
- 5 gateway expansion package
- OPC server expansion package
- OPC client expansion package
- Weekly switching schedule
- Database and alarm history
- Annual switching schedule
- Scenes
- Logic
- E-mail

Technical specifications

	Application packages						
Package functions	micro-V2	mini-V2	midi-V2	maxi-V2	OPC-S	OPC-C	BACnet
Core	✔	✔	✔	✔	✔	✔	✔
Visual Director	✔	✔	✔	✔	--	--	--
Database + Alarm history	❑	✔	✔	✔	--	--	--
Scenes	❑	✔	✔	✔	--	--	--
Weekly schedule	❑	❑	✔	✔	--	--	--
Logic	❑	❑	✔	✔	--	--	--
Annual Schedule	❑	❑	❑	✔	--	--	--
E-mail	❑	❑	❑	✔	--	--	--
OPC server	❑	❑	❑	❑	✔	--	--
OPC client	❑	❑	❑	❑	--	✔	--
BACnet Device	❑	❑	❑	❑	--	--	✔
1 x gateway	✔	✔	✔	✔	✔	✔	✔
1 x user	✔	✔	✔	✔	✔	✔	✔
1 x gateway	❑	❑	❑	❑	❑	❑	❑
1 x user	❑	❑	❑	❑	❑	❑	❑

❑ Optional / expansion packages

Visualization software IPAS ComBridge Studio, application packages

micro-V2

- Core functions for the signaling, logging and display of alarms and operating states or operating values, as well as current images on PC (operator terminals)
- Acquisition of all KNX group addresses from ETS2 and ETS3
- Assignment option of data point type, unit and a name of up to 32 characters in length for each operator entry to be displayed
- Editor for the fast creation of tabular images that can be operated via browser
- Dynamic image elements for the display of updated data point states
- Configuration of time scheduling programs, event programs, ODBC database interface, e-mail server interface, OPC server interface
- Visual Director of graphical display and operation
- Read-in of background images as pixel and vector graphics, including the graphic editor IPAS ComBridge Studio, Visual Editor for creation of images that can be operated via browser
- Operation enable in at least 4 authorization steps, with time-dependent operation enable, with user-dependent operation enable per operator entry
- Operator-dependent start image and operating image structure
- The following dynamic image elements are available for the display of updated plant images:
  - Output variables
  - Follow-up image variables
  - Switching variables
  - Status variables
  - Text variables
  - Counter variables
- Insertion of video camera images
- Output of colored screenshots to printers
- Configuration and playback version, for one KNXnet/IP router or controller
- Storage of event information on the hard disk and display on a screen page
- Failure monitoring of the KNXnet/IP gateways
- Configuration and playback version
- For one user/operator terminal simultaneously
- Driver software for the KNX connection via Ethernet interface with KNXnet/IP, including manual.

mini-V2

- Function and scope of delivery as for the IPAS ComBridge Studio micro V2 visualization software
- Database server interface for the storage of bus events in any database with ODBC interface, as the basis for, e.g. consumption statistics for count values or output statistics for a peak load limiter, with configuration of the database server interface via the visualization software
- Storage of event information on the hard disk and display on a screen page
- Database-supported logging of an unlimited number of alarms, with display and tracking of alarms in a separate alarm window, with configuration from the visualization software
- Scene control with an unlimited number of channels and entries with configuration of the scenes of the visualization software.

Display and Operation Units

Visualization, software

midi-V2

- Function and scope of delivery as for the IPAS ComBridge Studio micro V2 visualization software
- Scheduling program as weekly program with an unlimited number of channels and entries with configuration of the scheduling program of the visualization software
- Logic control with an unlimited number of channels and entries with configuration of the logic of the visualization software.

maxi-V2

- Function and scope of delivery as for the IPAS ComBridge Studio midi V2 visualization software
- Scheduling program as weekly program and annual program, with an unlimited number of channels and entries with configuration of the scheduling program of the visualization software
- E-mail server interface for the event-controlled transmission of electronic messages, with configuration of indications over the visualization software, with an unlimited number of channels and entries, with event-dependent message transmission, with event-dependent receiver lists, and with event-dependent attachment of images and/or files.

OPC-S

- Same as micro-V2, without Visual Director
- Configuration of OPC server interface
- OPC server interface for data exchange with an OPC client
- Configuration of OPC data points over the visualization software as configuration and playback version.

OPC-C

- Same as micro-V2, without Visual Director
- Configuration of OPC client interface
- OPC client interface for data exchange with an OPC server
- Configurator for configuration of OPC data points, as configuration and playback version.

BACnet Device

- Same as micro-V2, without Visual Director
- BACnet interface for data exchange between KNX and BACnet.

IPAS ComBridge Studio expansion packages

5 users

- Expansion of IPAS ComBridge Studio visualization software (micro, mini, midi, maxi, OPC-S and OPC-C) by the addition of 5 further user stations.

5 gateways

- Expansion of IPAS ComBridge Studio visualization software (micro, mini, midi, maxi, OPC-S and OPC-C) to allow the communication with 5 further KNXnet/IP routers or IP controllers.

OPC server

- Expansion of IPAS ComBridge Studio visualization software (micro, mini, midi or maxi) the addition of an OPC server interface for data exchange with an OPC client
- Configuration of OPC data points via the visualization software

OPC client

- Expansion of IPAS ComBridge Studio visualization software (micro, mini, midi or maxi) by the addition of an OPC client interface for data exchange with an OPC server
- Configurator for configuration of OPC data points.

Weekly switching schedule

- Expansion of IPAS ComBridge Studio visualization software by the addition of a scheduling program as a weekly program
- Unlimited number of channels and entries
- Configuration of the scheduling program via the visualization software.

Database and alarm history

- Expansion of IPAS ComBridge Studio visualization software by the addition of a database server interface for the storage of bus events in any database with ODBC interface, as the basis for, e.g. consumption statistics for count values or output statistics for a peak load limiter, with configuration of the database server interface via the visualization software
- Storage of event information on the hard disk and display on a screen page
- Database-supported logging of an unlimited number of alarms, with display and tracking of alarms in a separate alarm window, with configuration of the alarms via the visualization software.

Annual switching schedule

- Expansion of IPAS ComBridge Studio visualization software by the addition of a scheduling program as an annual program
- Unlimited number of channels and entries
- Configuration of the scheduling program via the visualization software.

Scenes

- Expansion of IPAS ComBridge Studio visualization software by the addition of a scene control
- Unlimited number of channels and entries
- Configuration of scenes via the visualization software.

Logic

- Expansion of IPAS ComBridge Studio visualization software by the addition of a logic control
- Unlimited number of channels and entries
- Configuration of logic via the visualization software.

e-mail

- Expansion of IPAS ComBridge Studio visualization software by the addition of an e-mail server interface for the event-controlled transmission of electronic information
- Configuration of messages via the visualization software
- Unlimited number of channels and entries
- Event-dependent message texts
- Event-dependent receiver lists
- Event-dependent attachment of images and/or files.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
	With optional expansion packages for • Number of users • Number of KNXnet/IP gateways • Scheduling programs • Database interface • OPC interface • E-mail service • BACnet Device							
	IPAS ComBridge Studio visualization software, application packages							
	Versions							
	• micro-V2 • mini-V2 • midi-V2		**GWR:63101-32-70** **GWR:63101-32-71** **GWR:63101-32-72**					
	• maxi-V2 • OPC-S • OPC-C • BACnet Device		**GWR:63101-32-73** **GWR:63101-32-74** **GWR:63101-32-75** **GWR:63101-32-88**					
	IPAS ComBridge Studio, expansion packages							
	Versions							
	• 5 users • 5 gateways • OPC server • OPC client		**GWR:63101-32-76** **GWR:63101-32-77** **GWR:63101-32-78** **GWR:63101-32-79**					
	• Weekly switching schedule • Database + alarm history • Annual switching schedule		**GWR:63101-32-80** **GWR:63101-32-81** **GWR:63101-32-82**					
	• Scenes • Logic • e-mail • BACnet Device		**GWR:63101-32-83** **GWR:63101-32-84** **GWR:63101-32-85** **GWR:63101-32-87**					

* You can order this quantity or a multiple thereof.

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 use a KNX system's remote maintenance and remote control. Apart from the function as webserver, the IP Viewer can also be used as a programming interface for the ETS3. In addition, connection to a "large" web viewer is possible.

Technical specifications

	Type	Description
	**N 151**	**N 151 IP viewers** • Interface converter between a KNX and an IP network, with the following simultaneously executable functions: - As 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 - 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.
									kg
 5WG1 151-1AB01	**N 151**	**IP Viewer N 151** NEW	A	**5WG1 151-1AB01**		1	1 unit	030	0.150

* You can order this quantity or a multiple thereof.

Output Devices

Introduction

Overview

	Devices	Application	Page
	**Binary output devices**	Binary outputs and load switches in several versions.	2/3
	**Analog output devices**	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 power requirement. The integrated load current detection enables a wide range of new application options.

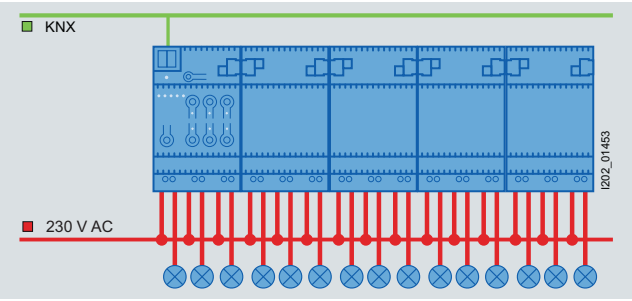
A switch actuator main unit can be simply expanded, if necessary, from a triple to a 6/9/12 or 15-times switch actuator and can be adjusted flexibly to the number and size of the loads to be switched. Using the coding bridge, up to four switch actuator expansions can be connected to the 6-pole interface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

- 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-times[1)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 sector and building management systems 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 management systems:

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

Switchable capacitive loads (200 µF, 140 µF, 70 µF or 35 µF) 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 management systems.
A test with 70 µF is required for 6 A devices and with 140 µF 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
- users who come from the building management systems and lighting sector generally refer to an AX switching capacity or C Load (200 µF loads)

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

Technical specifications

Modular switch actuators

		Main modules			Expansions		
							
Type		**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 TH 35 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	A	10 AX	16 AX	20 AX	10 AX	16 AX	20 AX
Three-phase switching (3 outputs simultaneously)		✔	✔	✔	✔	✔	✔
Load check		✔	✔	✔	✔	✔	✔
Load data (see chapter "Application examples, Technical Information")							

[1)] Executed via main module.

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

	Main modules			Expansions		
						
Type	**N 562/11**	**N 512/11**	**N 513/11**	**N 562/21** [1]	**N 512/21** [1]	**N 513/21** [1]
Application program	982002	982002	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-stage	✔	✔	✔	✔	✔	✔
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	N 562	GE 561/02	UP 562	UP 562/11	UP 562/31	UP 511/10
Enclosure data																
Design		N	N	N	N	N	N	N	N	N	N	GE	UP	UP	UP	UP
Modular installation devices for mounting on TH 35 EN 60715 mounting rail		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	--	--	--	--	--
For installation in flush-mounting switch and socket boxes with ∅ 60 mm		--	--	--	--	--	--	--	--	--	--	--	✔	✔	✔	✔
Modular installation devices in oblong design, for installation in luminaires for fluorescent lamps		--	--	--	--	--	--	--	--	--	--	✔	--	--	--	--
Integrated user interface for plugging in a single to quadruple bus pushbutton		--	--	--	--	--	--	--	--	--	--	--	✔	--	--	--
Dimensions																
• Height	mm											28	71	51		
• Width/∅ (1 MW = 18 mm)	mm	4 MW	4 MW	4 MW	8 MW	4 MW	4 MW	8 MW	8 MW	8 MW	2 MW	274.5	71	∅ 44	∅ 53	∅ 53
• Depth	mm											42	40	40	28	28
Mounting type																
Claw fixing		--	--	--	--	--	--	--	--	--	--	--	✔	--	--	--
Screw fixing		--	--	--	--	--	--	--	--	--	--	--	✔	--	--	--
Display/control elements																
Direct operation (local operation)		✔	✔	✔	✔	--	--	--	✔	✔	--	--	--	--	--	--
Mechanical local operation		--	--	--	--	✔	✔	✔	--	✔	--	--	--	--	--	--
Mechanical switching position display		--	--	--	--	✔	✔	✔	--	--	--	--	--	--	--	--
LED for status indication per output		✔	✔	✔	✔	--	--	--	✔	✔	--	--	--	--	--	--
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**	**3**	**2**	**2**	**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	10	10	6	16
Load data (see chapter "Application examples, Technical Information")																
Inputs																
Max. cable length, unshielded, twisted	m	--	--	--	--	--	--	--	--	--	--	--	--	--	5	5
Pushbutton inputs																
For signal input (floating contacts)		--	--	--	--	--	--	--	--	--	--	--	--	--	2	2
Determination of switching state by means of the voltage generated in the device		--	--	--	--	--	--	--	--	--	--	--	--	--	✔	✔

[1] Except channel A.

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

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

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	N 562					GE 561/02		UP 562	UP 562/11	UP 562/31	UP 511/10
Application program	980303	980304	980302	980401	906401	906401	900701	908301	901D01	981502	520401	520501	520901	520B01	520802	530501	530B01	1)	901002	207101	207101
Output functions																					
Max. number of group addresses	100	100	100	106	55	55	52	49	106	120	11	19	11	17	10	19	17	38	38	26	26
Max. number of assignments	100	100	100	106	56	56	52	49	74	120	11	20	12	17	10	20	17	38	38	27	27
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	--	--	--	--	--	--	--	--	--	--	--
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	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	--	--	--	--	--	✔	✔	✔	✔	✔	✔

1) See table "Application programs and pushbuttons for use with UP 562" and the application program description 913001 for motion detectors.

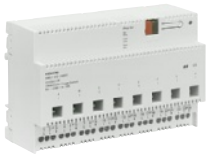
Application programs, pushbuttons and motion detectors for use with UP 562

For DELTA design	i-system				profil/style			Motion detector
Application program	901902	901A02	901C02	901D02	901402	901502	901602	913001
Can be used with pushbuttons/motion detectors	UP 221	UP 222	UP 221E	UP 222E	UP 241 UP 242 UP 285	UP 243 UP 244 UP 286	UP 245 UP 246 UP 287	UP 255 UP 257 UP 258H
Number of pushbutton pairs	**1**	**2**	**1**	**2**	**1**	**2**	**4**	--

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									
 5WG1 562-1AB11 5WG1 512-1AB11 5WG1 513-1AB11	**N 562/11**	**N 562/11 switch actuators, main modules** NEW 3 x 230/400 V AC, 10 AX, C Load, load check	B	**5WG1 562-1AB11**		1	1 unit	030	0.240
	N 512/11	**N 512/11 switch actuators, main modules** NEW 3 x 230/400 V AC, 16 AX, C Load, load check	B	**5WG1 512-1AB11**		1	1 unit	030	0.250
	N 513/11	**N 513/11 switch actuators, main modules** NEW 3 x 230/400 V AC, 20 AX, C Load, load check	B	**5WG1 513-1AB11**		1	1 unit	030	0.240
		Accessories							
 5WG1 562-1AB21 5WG1 512-1AB21 5WG1 513-1AB21	**N 562/21**	**N 562/21 switch actuators, expansion** NEW 3 x 230/400 V AC, 10 AX, C Load, load check	B	**5WG1 562-1AB21**		1	1 unit	030	0.225
	N 512/21	**N 512/21 switch actuators, expansion** NEW 3 x 230/400 V AC, 16 AX, C Load, load check	B	**5WG1 512-1AB21**		1	1 unit	030	0.250
	N 513/21	**N 513/21 switch actuators, expansion** NEW 3 x 230/400 V AC, 20 AX, C Load, load check	B	**5WG1 513-1AB21**		1	1 unit	030	0.225
Switch actuators									
 5WG1 567-1AB01	**N 567**	**N 567 switch actuators** 4 x 230 V AC, 8 A	A	**5WG1 567-1AB01**		1	1 unit	030	0.348
 5WG1 567-1AB11 5WG1 567-1AB12	**N 567/12**	**N 567/12 switch actuators** 8 x 230 V AC, 2 A	A	**5WG1 567-1AB12**		1	1 unit	030	0.360
	N 567/11	**N 567/11 switch actuators** 8 x 230 V AC, 8 A	A	**5WG1 567-1AB11**		1	1 unit	030	0.312
 5WG1 567-1AB22	**N 567/22**	**N 567/22 switch actuators** 16 x 230 V AC, 10 A	B	**5WG1 567-1AB22**		1	1 unit	030	0.600
 5WG1 510-1AB03 5WG1 510-1AB04	**N 510/03**	**N 510/03 load switches** 4 x 230 V AC, 16 A	A	**5WG1 510-1AB03**		1	1 unit	030	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	030	0.335

* You can order this quantity or a multiple thereof.

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 512-1AB01 5WG1 512-1CB01	**N 512**	**N 512 load switches** 8 x 230 V AC, C Load, 16 A	A	**5WG1 512-1AB01**		1	1 unit	030	0.613
	N 512	**N 512 load switches** (UL) 8 x 120 V AC, C Load, 20 A	B	**5WG1 512-1CB01**		1	1 unit	030	0.619
 5WG1 511-1AB02	**N 511/02**	**N 511/02 switch actuators** 8 x 230 V AC, 16 A	B	**5WG1 511-1AB02**		1	1 unit	030	0.045
 5WG1 502-1AB01	**N 502**	**N 502 combination switch actuators** 8 x 230 V AC, 16 A, 8 x binary inputs	B	**5WG1 502-1AB01**		1	1 unit	030	0.721
 5WG1 562-1AB01	**N 562**	**N 562 binary outputs** 2 x 230 V AC, 10 A	A	**5WG1 562-1AB01**		1	1 unit	030	0.145
 5WG1 561-4AB02	**GE 561/02**	**GE 561/02 binary outputs** 3 x 230 V AC, 10 A	A	**5WG1 561-4AB02**		1	1 unit	030	0.222
 5WG1 562-2AB01	**UP 562**	**UP 562 binary outputs** 2 x 230 V, 10 A, with UI	A	**5WG1 562-2AB01**		1	1 unit	030	0.100
 5WG1 562-2AB11	**UP 562/11**	**UP 562/11 binary outputs** 2 x 230 V AC, 10 A, without UI	A	**5WG1 562-2AB11**		1	1 unit	030	0.078
 5WG1 562-2AB31	**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	030	0.089

* You can order this quantity or a multiple thereof.

Binary output devices

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 511-2AB10	**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	030	0.095

* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**N 670**	**Universal N 670 I/O modules** • 2 universal inputs/outputs, each adjustable as - 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 • 2 binary outputs, relay contacts rated for 230 V AC, 10 A at p.f. = 1, with - 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 • 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

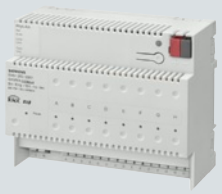
	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 670-1AB03	**N 670**	**Universal N 670 I/O modules**[1)] 2 x Universal I/O, 2 inputs Pt1000, 2 outputs 230 V AC, 10 A	A	**5WG1 670-1AB03**		1	1 unit	030	0.213

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

* You can order this quantity or a multiple thereof.

Notes

Input Devices



Input Devices

Introduction

3

Overview

	Devices	Application	Page
	**Binary input devices**	Binary inputs monitor switching states and signal them on the GAMMA *instabus*.	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	GE 262/02	UP 220/02	UP 220/21	UP 220/31	N 501	N 502	UP 511/10	UP 520/31	UP 525/31	UP 562/31
Enclosure data																		
Modular installation devices for mounting on TH35 EN 60715 mounting rail		✔	✔	✔	✔	✔	✔	✔	--	--	--	--	✔	✔	--	--	--	--
For inserting into flush-mounting switch and socket boxes with ∅ = 60 mm		--	--	--	--	--	--	--	--	✔	✔	✔	--	--	✔	✔	✔	✔
Enclosures for device installation		--	--	--	--	--	--	--	✔	--	--	--	--	--	--	--	--	--
Dimensions																		
• Height	mm								42	38	42	42						
• Width (1 MW = 18 mm)	mm	6 MW	6 MW	6 MW	6 MW	6 MW	2 MW	2 MW	274.5	43	42	42	8 MW	8 MW	∅ 53	∅ 53	∅ 53	∅ 53
• Depth	mm								28	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**	**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]	--	--	--	--	--	--	**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.

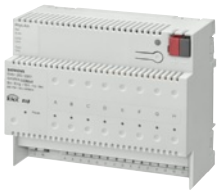
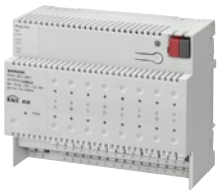
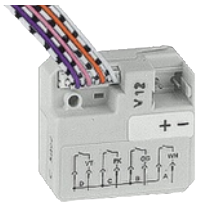
For selection and ordering data, see page 3/5.

Binary input devices

Type	N 262E	N 263E	N 262E11	N 263E11	N 264E11	N 260			N 261			GE 262/02			UP 220/02	UP 220/21	UP 220/31	N 501	N 502	UP 511/10	UP 520/31	UP 525/31	UP 562/31
Application program	980901	980901	980D01	980D01	980D01	240505	240A01	220703	240505	240A01	220703	240505	240A01	220703	900901	982301	982201	981701	981501	207201	207301	301901	207101
Input functions																							
Max. number of group addresses	97	97	97	97	97	14	8	27	14	8	27	14	8	27	20	120	120	220	120	26	26	26	26
Max. number of assignments	97	97	97	97	97	16	9	27	16	9	27	16	9	27	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.

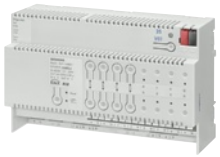
Selection and ordering data

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 262-1EB01 5WG1 263-1EB01	**N 262E**	**N 262E binary input devices** 8 inputs for floating contacts	A	**5WG1 262-1EB01**		1	1 unit	030	0.387
	N 263E	**N 263E binary input devices** 8 inputs for 12 ... 230 V AC/DC	A	**5WG1 263-1EB01**		1	1 unit	030	0.377
 5WG1 262-1EB11 5WG1 263-1EB11 5WG1 264-1EB11	**N 262E11**	**N 262E11 binary input devices** 16 inputs for floating contacts	A	**5WG1 262-1EB11**		1	1 unit	030	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	030	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	030	0.426
 5WG1 260-1AB01 5WG1 261-1AB01 5WG1 261-1CB01	**N 260**	**N 260 binary inputs** 4 inputs for 230 V AC	C	**5WG1 260-1AB01**		1	1 unit	030	0.134
	N 261	**N 261 binary inputs** 4 inputs for 24 V AC/DC	D	**5WG1 261-1AB01**		1	1 unit	030	0.133
	N 261	**N 261 binary inputs** Ⓤ 4 inputs for 24 V AC/DC	D	**5WG1 261-1CB01**		1	1 unit	030	0.136
 5WG1 262-4AB02	**GE 262/02**	**GE 262/02 binary inputs** 4 inputs for floating contacts	A	**5WG1 262-4AB02**		1	1 unit	030	0.216
 5WG1 220-2AB02	**UP 220/02**	**UP 220/02 pushbutton interfaces** Ⓤ (to be discontinued) 4 inputs for floating contacts	X	**5WG1 220-2AB02**		1	1 unit	030	0.060
 5WG1 220-2AB21	**UP 220/21**	**UP 220/21 I/O pushbutton interfaces**[1] NEW 2 inputs/outputs	A	**5WG1 220-2AB21**		1	1 unit	030	0.022
 5WG1 220-2AB31	**UP 220/31**	**UP 220/31 I/O pushbutton interfaces**[1] NEW 4 inputs/outputs	A	**5WG1 220-2AB31**		1	1 unit	030	0.022

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

* You can order this quantity or a multiple thereof.

Binary input devices

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 501-1AB01	**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	030	0.500
 5WG1 502-1AB01	**N 502**	**N 502 combination switch actuators** 8 x 230 V AC, 16 A, 8 x binary inputs	B	**5WG1 502-1AB01**		1	1 unit	030	0.721
 5WG1 511-2AB10	**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	030	0.095
 5WG1 520-2AB31	**UP 520/31**	**UP 520/31 shutter/blind actuators** 1 x 230 V AC, 6 A, 2 x binary inputs	A	**5WG1 520-2AB31**		1	1 unit	030	0.092
 5WG1 525-2AB31	**UP 525/31**	**UP 525/31 universal dimmers** 210 VA, 230 V AC, 50 Hz 	A	**5WG1 525-2AB31**		1	1 unit	030	0.087
 5WG1 562-2AB31	**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	030	0.089

* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**N 670**	**Universal N 670 I/O modules** • 2 universal inputs/outputs, each adjustable as - 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 • 2 binary outputs, relay contacts rated for 230 V AC, 10 A at p.f. = 1, with - 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 • 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. kg
	**N 670**	**Universal N 670 I/O modules**[1)] 2 x Universal I/O, 2 inputs Pt1000, 2 outputs 230 V AC, 10 A	A	**5WG1 670-1AB03**		1	1 unit	030	0.213

5WG1 670-1AB03

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

* You can order this quantity or a multiple thereof.

Notes

Combination Devices

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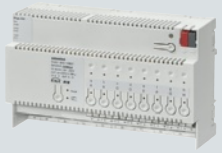


Introduction

Overview

	Devices	Application	Page
	**Input/output devices**	Combine inputs and outputs to devices for flexible application.	4/3

Technical specifications

Type		N 501	N 502	N 670	N 605	N 605/11	N 526/02	N 266	UP 511/10	UP 562/31	UP 520/31	UP 525/31
Application program		981701	981501	900501	906101	906202	905303	241C01	207201	207101	207301	301901
Enclosure data												
Design		N	N	N	N	N	N	N	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 ∅ = 60 mm		--	--	--	--	--	--	--	✔	✔	✔	✔
Dimensions												
• Width/∅ (1 MW = 18 mm)	mm	8 MW	8 MW	4 MW	6 MW	6 MW	6 MW	4 MW	∅ 53	∅ 53	∅ 53	∅ 53
• Depth	mm								28	28	28	28
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	--	--	--	12 V DC max. 50 mA	--	--	--	--
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	--	--	--	--	--
Two 12 V outputs "walk test" and "setting/unsetting" for the control of passive infrared and motion detectors		--	--	--	--	--	--	✔	--	--	--	--
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	[3]	5	5	5	5
For signal input (floating contact)		--	--	--	**2 x 3**	**2 x 3**	--	**4**	**2**	**2**	**2**	**2**
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] On request.
[4] The pushbutton inputs are mutually insulated from the base.

Input/output devices

	Type	Description
	**N 501**	**N 501 combination shutter/blind actuators** • 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 specifications 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 channel in up to 8 scenes • Optional object "Sun" for the activation/deactivation of the sunlight 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**	**N 502 combination switch actuators** • Outputs identical or can be individually configured • Operating mode can be adjusted for each output (normal mode, timer mode) • Switching behavior can be adjusted for each output (NO contact/NC contact) • Adjustable ON/OFF delay • Selectable logic operation (AND/OR) of two communication objects 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 • 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 • Unchanged switching state of all outputs during power failure • Switching state can be adjusted for each output after system recovery
	**N 670**	**Universal N 670 I/O modules** 2 x Universal I/O, 2 inputs for Pt1000, 2 outputs 230 V AC, 10 A • 2 universal inputs/outputs, each adjustable as - 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 - Limit value monitoring - Limit value signal - Adjustable limit values - Adjustable hysteresis
	**N 605**	**N 605 thermal drive actuators** With 6 inputs and outputs • 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 • 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

	Type	Description
	**N 605/11**	**N 605/11 thermal drive actuators** 6 inputs, 2 x 3 outputs for control of 2 heating/cooling mats • 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 • 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**	**N 526/02 switch/dimming actuators** Triple, 230 V AC, 6 A, with constant light level control • Integrated constant light level control per output (outputs are master/slave-capable) • Configurable starting value • Adjustable dimming time • Switching ON/OFF • BRIGHTER/DARKER dimming • 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
		Accessories
 	**AP 255** **UP 255**	**AP 255/UP 255 indoor brightness sensors** For N 526/02 switch/dimming actuators • 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: - Parallel light-sensitive surface for mounting surface - Inclined (45°) light-sensitive surface for mounting surface UP 255 indoor brightness sensors • For mounting in a hollow-wall or flush-mounting box with ∅ 58 mm and an overall depth of at least 40 mm • Cover made of white plastic (polystyrene) • Dimensions (H x W x D): 30 x 52 x 33 mm. AP 255 indoor brightness sensors • For mounting on a ceiling or wall • Includes surface-mounting enclosure made of white plastic (polypropylene) with ∅ 70 mm and 24 mm in height • Dimensions (H x W x D): 30 x 72 x 33 mm.
	**N 266**	**N 266 detector group terminals** With 4 monitored inputs for passive detectors • For the monitored connection of passive detectors (e.g. magnetic contacts) and for the connection of floating contacts in applications with increased safety demands • Setting/unsetting of the detector group terminal by means of a communication object • With failure message in the event of a short circuit or interruption of a signal line • Monitoring of the external power supply.
	**UP 511/10**	**UP 511/10 switch actuators** 16 A, 1 x 230 V AC, 2 x binary inputs • Construction site function, inputs directly affect the output • Blocking function • Logic operation function • Transmitting status • Time functions: - OFF delay - ON delay - Timer mode (automatic stairwell switch) • 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**	**UP 562/31 switch actuators** 2 x 230 V AC, 6 A, 2 x binary inputs • Construction site function, inputs directly affect the output • Blocking function • Logic operation function • Transmitting status • Time functions: - OFF delay - ON delay - Timer mode (automatic stairwell switch) • 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.

Input/output devices

	Type	Description
	**UP 520/31**	**UP 520/31 shutter/blind actuators** 1 x 230 V AC, 6 A, 2 x binary inputs • 2 electrically interlocked relay contacts as switching elements • Selectable type of sun protection (Venetian blind/roller shutter) • 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 • Adjustable mode of operation for inputs - 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 wires 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 • 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 • Adjustable mode of operation for inputs - 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 bus voltage recovery • Adjustable telegram rate limitation for both inputs • Approx. 20 cm long wires for connecting phase conductors, outputs, inputs and bus

For selection and ordering data, see page 4/7.

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 501-1AB01	**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	030	0.500
 5WG1 502-1AB01	**N 502**	**N 502 combination switch actuators** 8 x 230 V AC, 16 A, 8 x binary inputs	B	**5WG1 502-1AB01**		1	1 unit	030	0.721
 5WG1 670-1AB03	**N 670**	**Universal N 670 I/O modules**[1] 2 x Universal I/O, 2 inputs for Pt1000, 2 outputs 230 V AC, 10 A	A	**5WG1 670-1AB03**		1	1 unit	030	0.213
 5WG1 605-1AB01	**N 605**	**N 605 thermal drive actuators** Each with 6 inputs and outputs	A	**5WG1 605-1AB01**		1	1 unit	030	0.436
 5WG1 605-1AB11	**N 605/11**	**N 605/11 thermal drive actuators** 6 inputs, 2 x 3 outputs for control of 2 heating/cooling mats	A	**5WG1 605-1AB11**		1	1 unit	030	0.432
 5WG1 526-1AB02	**N 526/02**	**N 526/02 switch/dimming actuators** 3 x 230 V AC, 6 A, with constant light level control	A	**5WG1 526-1AB02**		1	1 unit	030	0.459
		Accessories							
	**UP 255**	**UP 255 indoor brightness sensors** N 526/02 switch/dimming actuators	A	**5WG1 255-4AB01**		1	1 unit	030	0.092
	AP 255	**AP 255 indoor brightness sensors** N 526/02 switch/dimming actuators	C	**5WG1 255-4AB02**		1	1 unit	030	0.096

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

* You can order this quantity or a multiple thereof.

Input/output devices

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 266-1AB01	**N 266**	**N 266 detector group terminals** With 4 monitored inputs for passive detectors	B	**5WG1 266-1AB01**		1	1 unit	030	0.204
 5WG1 511-2AB10	**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	030	0.095
 5WG1 562-2AB31	**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	030	0.089
 5WG1 520-2AB31	**UP 520/31**	**UP 520/31 shutter/blind actuators** 1 x 230 V AC, 6 A, 2 x binary inputs	A	**5WG1 520-2AB31**		1	1 unit	030	0.092
 5WG1 525-2AB31	**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	030	0.087

* You can order this quantity or a multiple thereof.

Devices for Special Applications
Lighting

5

Introduction

Overview

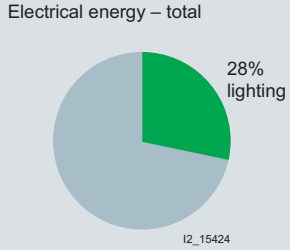
	Devices	Application	Page
	**Dimmers**	Universal dimmers automatically detect the connected load type and adapt accordingly. Trailing-edge phase dimmers for dimming incandescent lamps, HV halogen lamps and LV halogen lamps with electronic transformer.	5/5
	**Switch/dimming actuators**	For the switching and dimming of fluorescent lamps with dimmable electronic controlgear.	5/9
	**Light level controls**	Convenience and energy saving in one – these components let you optimize your lighting.	5/16

Function		Application	Section
Switching	Load	Luminous rows	2/3
Dimming	Conventional	Incandescent lamp dimming	5/5
	1 ... 10 V	Dimming electronic controlgear	5/9
	DALI	Dimming electronic controlgear	5/9
Controls	Outdoor brightness sensors	Indoor lighting of industrial halls	5/16
Control	Two-step control	Hall/stairway lighting	5/16
	Constant light level control	Office workplace lighting	5/16
Presence control	Motion detector	Hall/stairway lighting	5/16
	Presence detector	Office workplace lighting	5/16
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
	Effects	Changing color LEDs for outer facade	5/9

Energy efficient lighting

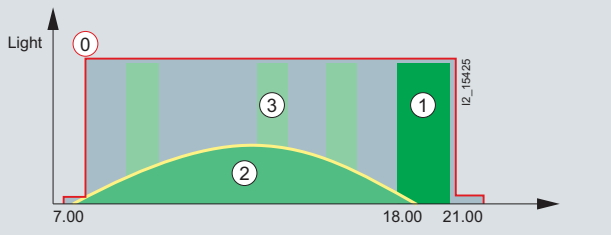
Approx. 28% of all the electrical energy in a building is used for lighting. Increased demands made on the energy efficiency of buildings require enhanced optimization of energy supply, distribution and use. This goal can only be achieved through automation. Useful automation takes into account the comfort 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

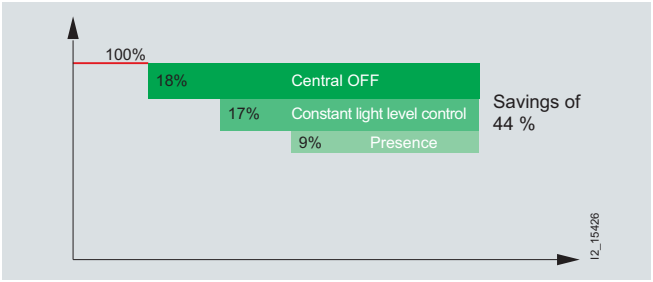
Many rooms are only used for part of the day, so that a presence-dependent daylight control system could be usefully implemented to reduce energy costs.

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.

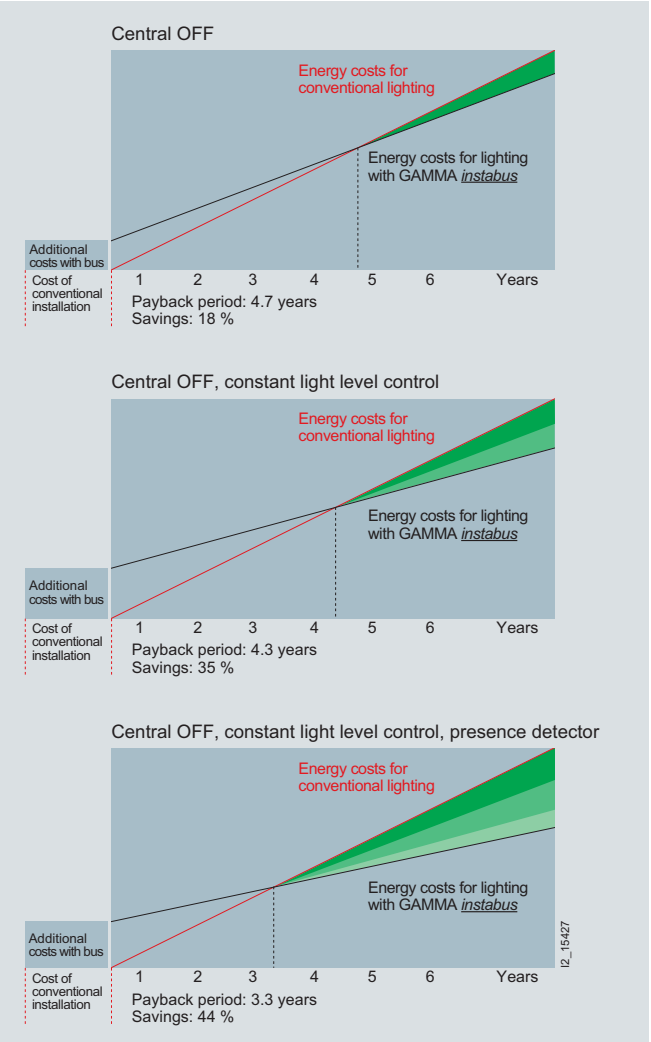


Potential savings quantified

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

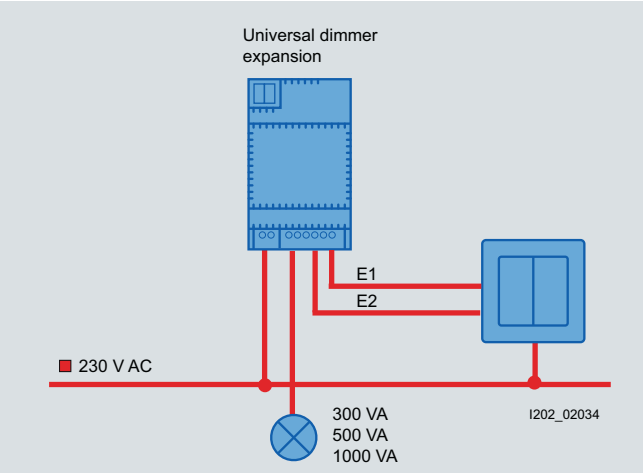
Universal dimmers

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).

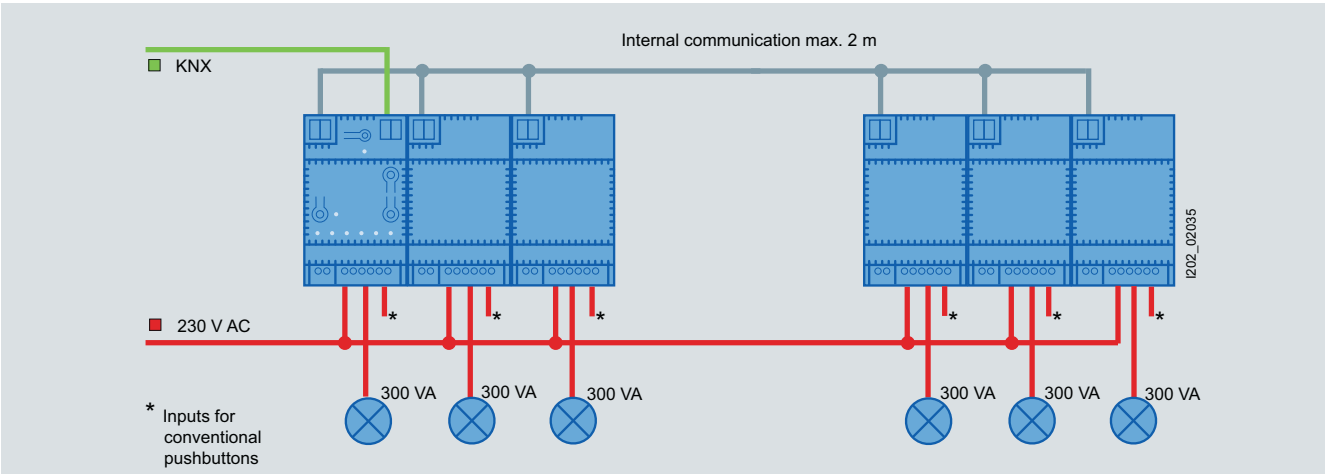
Sample combinations

- Conventional dimming of loads
  1 x 300 VA to 1000 VA over two pushbuttons at the binary inputs
- Dimming of loads with GAMMA *instabus* based on KNX
  6 x 300 VA, 500 VA
  1 x 300 VA, 500 VA and 5 x 300 VA, 500 VA, 1000 VA
  1 x 300 VA, 500 VA and 3 x 300 VA, 500 VA, 1000 VA and 1 x 2000 VA with parallel operation of 2 x 1000 VA
  1 x 300 VA, 500 VA and 1 x 300 VA, 500 VA, 1000 VA and 2 x 2000 VA in parallel operation

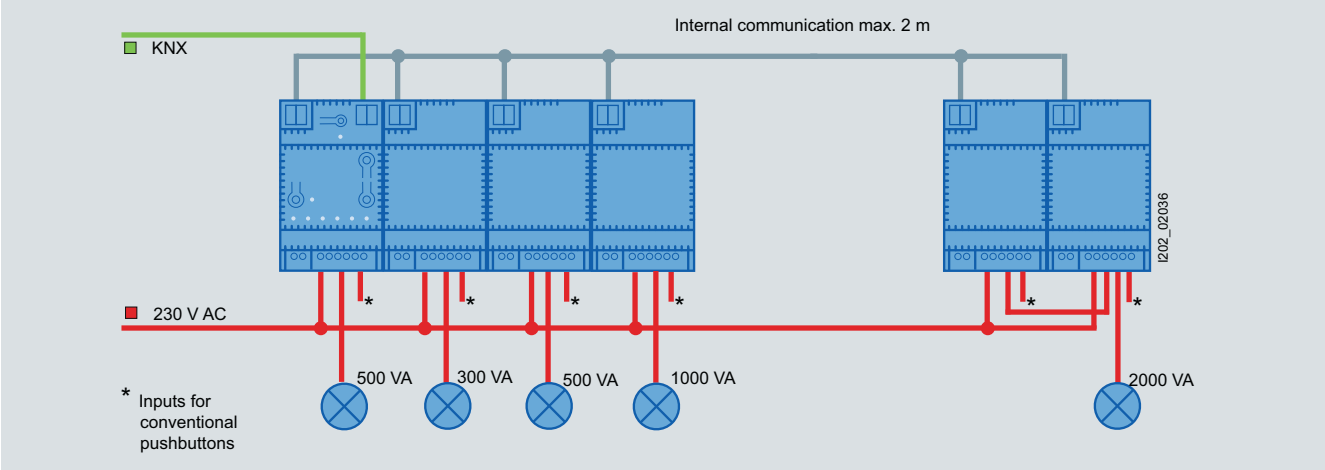
Block diagram 1:
1-channel operation without KNX, control over conventional pushbuttons at the two inputs (E1, E2)[1)]



Block diagram 2:
6-channel operation with KNX, main module 300 VA, five expansions 300 VA[1)]



Block diagram 3:
6-channel operation with KNX, main module 500 VA, three expansions 300 VA, 500 VA, 1000 VA and two expansions 1000 VA in parallel operation[1)]



[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.

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Technical specifications

Type		 N 527/31	N 528/31	 N 528/41[1]	N 527/41[1]	N 527/51[1]	 UP 525	 UP 525/11	 UP 525/31
Enclosure data									
Design		N	N	N	N	N	UP	UP	UP
Modular installation devices for mounting on TH35 EN 60715 mounting rail		✔	✔	✔	✔	✔	--		--
For installation in flush-mounting switch and socket boxes with ∅ = 60 mm		--	--	--	--	--	✔	✔	✔
Integrated user interface for plugging in a single to quadruple bus pushbutton		--	--	--	--	--	✔	--	--
Interface for connection of a universal dimmer expansion		✔	✔	✔	✔	✔	--	--	--
Dimensions									
• Height	mm						71	51	
• Width (1 MW = 18 mm)	mm	3 MW	3 MW	3 MW	3 MW	3 MW	71	44	∅ 53
• Depth	mm						40	40	28
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		✔	✔	✔	✔	✔	✔	✔	--
Bus connection via contact system to data rail		--	--	--	--	--	--	--	✔
Outputs									
Load output									
Number of channels		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Load type		R, L, C	R, L, C	R, L, C	R, L, C	R, L, C	R, C	R, C	R, L, C
Load									
Contact rated voltage, AC	V	230	230	230	230	230	230	230	230
Dimmer output	VA	**20 ... 500**	**20 ... 300**	**20 ... 300**	**20 ... 500**	**20 ... 1000[2]**	**20 ... 250**	**20 ... 250**	**50 ... 210**
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, only together with the main module N527/31 or N528/31 and ETS parameterization.

[3] With parallel switching of the outputs 10 ... 1140 VA.

Type	N 527/31	N 528/31	UP 525	UP 525/11	UP 525/31
Application program	982101	982101	[1]	903002	301901
Output functions					
Max. number of group addresses	255	255	38	38	26
Max. number of assignments	383	383	38	38	27
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	8[2]	--	--	8
Status					
Transmitting switch and dimming status	✔	✔	✔	✔	✔
Fault indications overload/short circuit/overtemperature on bus	✔	✔	--	--	✔

[1] See table "Application programs and pushbuttons for use with UP 525" and the application program description 913001 for motion detectors.

[2] Only assignment of scene number 1 ... 8 possible.

For selection and ordering data, see page 5/8.

Application programs, pushbuttons and motion detectors for use with UP 525

For design	i-system				DELTA profil/style			Motion detector
Application program	903902	903A02	903C02	903D02	903402	903502	903602	913001
Can be used with pushbuttons/motion detectors	UP 221	UP 222	UP 221E	UP 222E	UP 241 UP 242 UP 285	UP 243 UP 244 UP 286	UP 245 UP 246 UP 287	UP 255 UP 256 UP 257 UP 258H
Number of pushbutton pairs	**1**	**2**	**1**	**2**	**1**	**2**	**4**	--

Dimmers

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 528-1AB31 5WG1 527-1AB31	**N 528/31**	**N 528/31 universal dimmer main modules** NEW 20 ... 300 VA, 230 V AC, 50/60 Hz R, L, C	B	**5WG1 528-1AB31**		1	1 unit	030	0.190
	N 527/31	**N 527/31 universal dimmer main modules** NEW 20 ... 500 VA, 230 V AC, 50/60 Hz R, L, C	B	**5WG1 527-1AB31**		1	1 unit	030	0.170
 5WG1 528-1AB41 5WG1 527-1AB41 5WG1 527-1AB51	**N 528/41**	**N 528/41 universal dimmer expansions** NEW 20 ... 300 VA, 230 V AC, 50/60 Hz R, L, C	B	**5WG1 528-1AB41**		1	1 unit	030	0.140
	N 527/41	**N 527/41 universal dimmer expansions** NEW 20 ... 500 VA, 230 V AC, 50/60 Hz R, L, C	B	**5WG1 527-1AB41**		1	1 unit	030	0.140
	N 527/51	**N 527/51 universal dimmer expansions** NEW 20 ... 1000 VA, 230 V AC, 50/60 Hz R, L, C	B	**5WG1 527-1AB51**		1	1 unit	030	0.165
 5WG1 525-2AB01	**UP 525**	**UP 525 trailing-edge phase dimmers** 250 VA, 230 V AC, 50 Hz, with UI R, C	A	**5WG1 525-2AB01**		1	1 unit	030	0.105
 5WG1 525-2AB11	**UP 525/11**	**UP 525/11 trailing-edge phase dimmers** 250 VA, 230 V AC, 50 Hz, without UI R, C	A	**5WG1 525-2AB11**		1	1 unit	030	0.084
 5WG1 525-2AB31	**UP 525/31**	**UP 525/31 universal dimmers** 50 ... 210 VA, 230 V AC, 50/60 Hz, 2 x binary inputs R, L, C	A	**5WG1 525-2AB31**		1	1 unit	030	0.087

* You can order this quantity or a multiple thereof.

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.

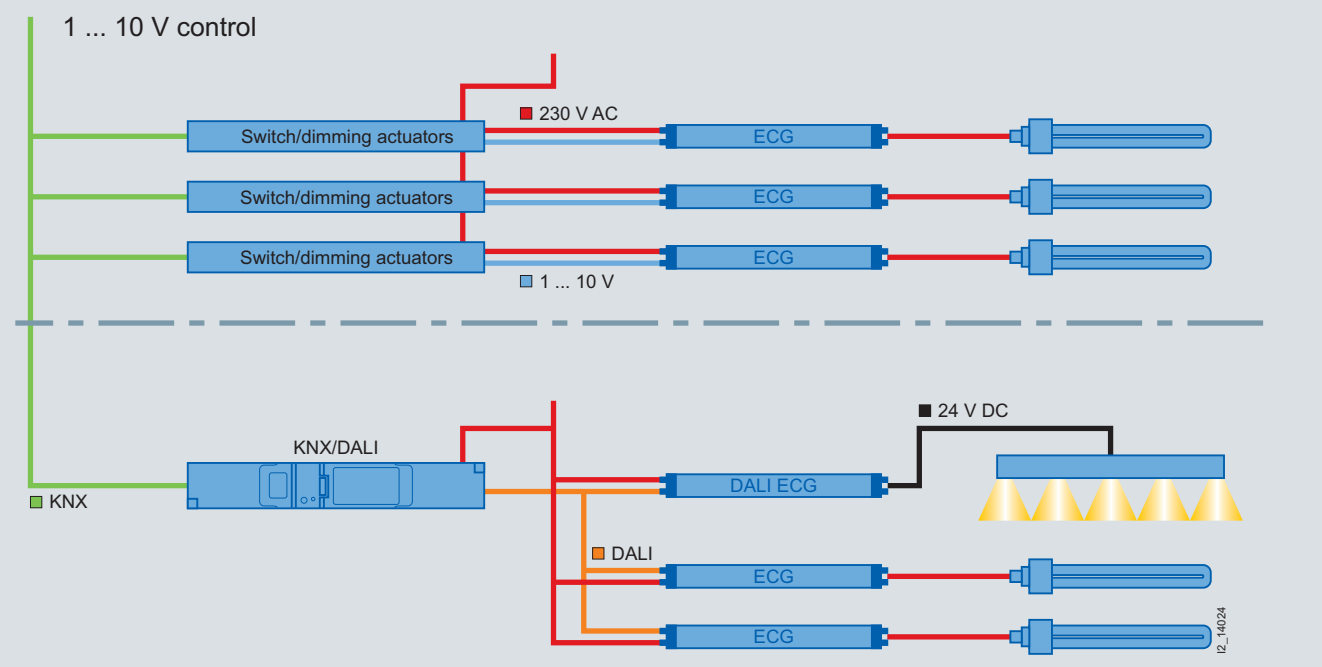
DALI supports assignment of DALI devices to a maximum of 16 scenes. The specific settings for each scene are stored in the individual DALI devices and can be called up by a single command. This allows even complex scenes or very fast command sequences to be called up. The cost of dimming with KNX and 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.

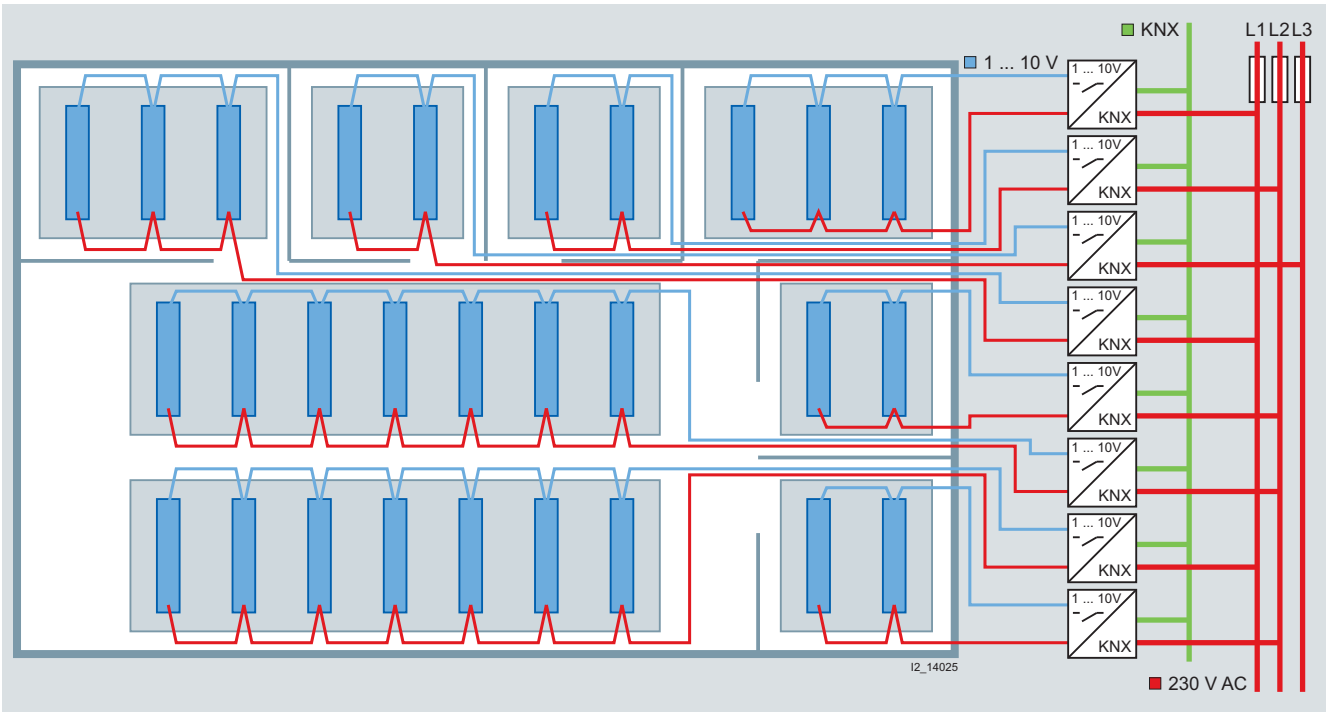
More high-performance control devices, such as the N 141/02 KNX/DALI-Gateway from Siemens, tap into all the options offered by DALI.

Compare 1 ... 10 V controls to DALI

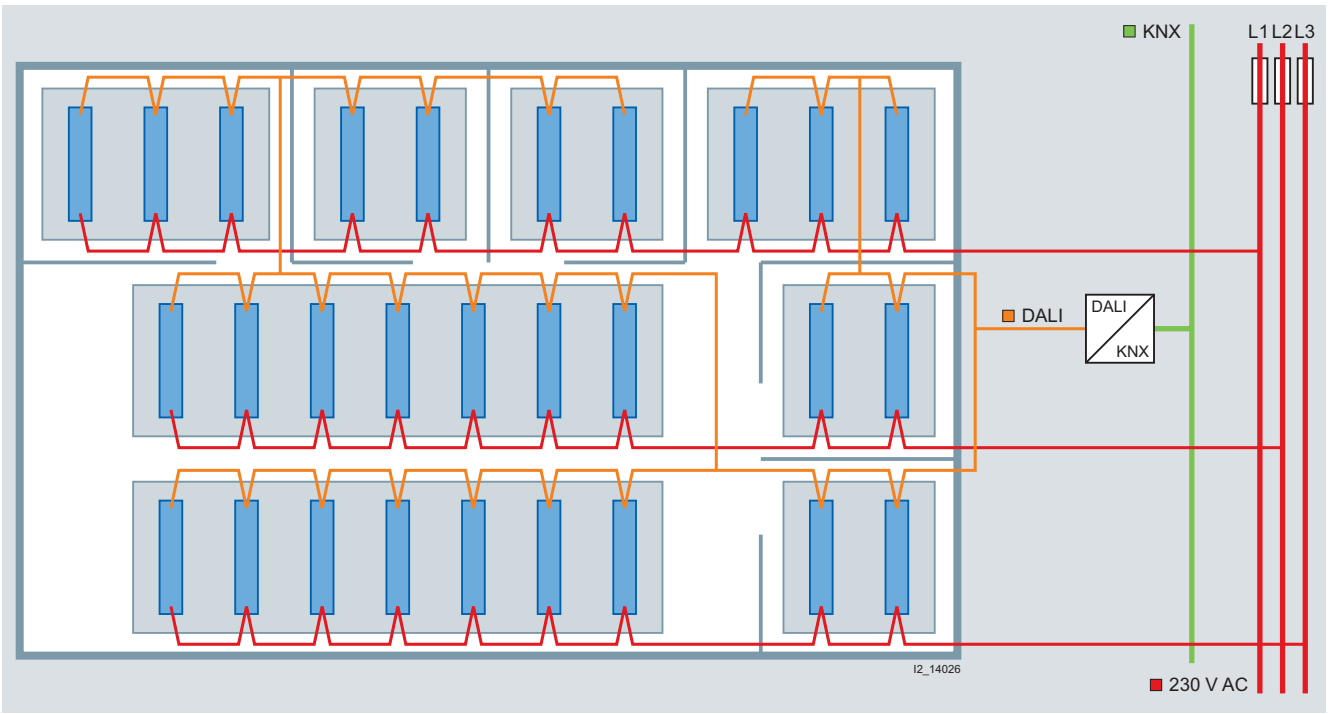


Switch/dimming actuators

Wiring of lighting groups with 1 ... 10 V controls



Wiring of lighting groups with DALI



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

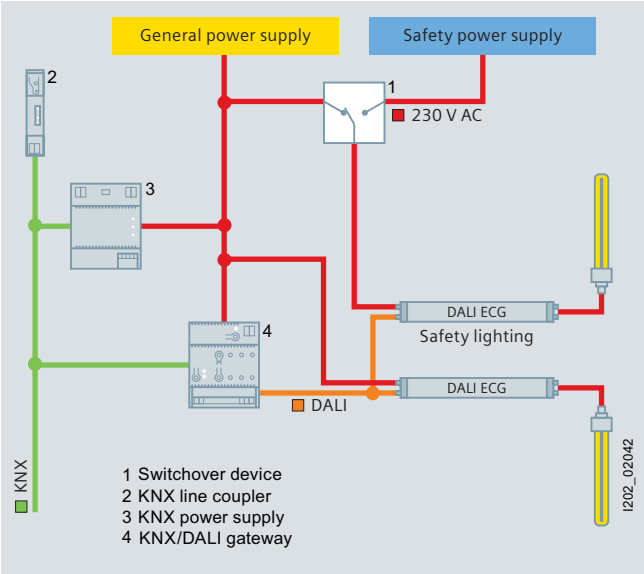
Emergency lighting with KNX/DALI

Fault tolerant and simple to integrate:

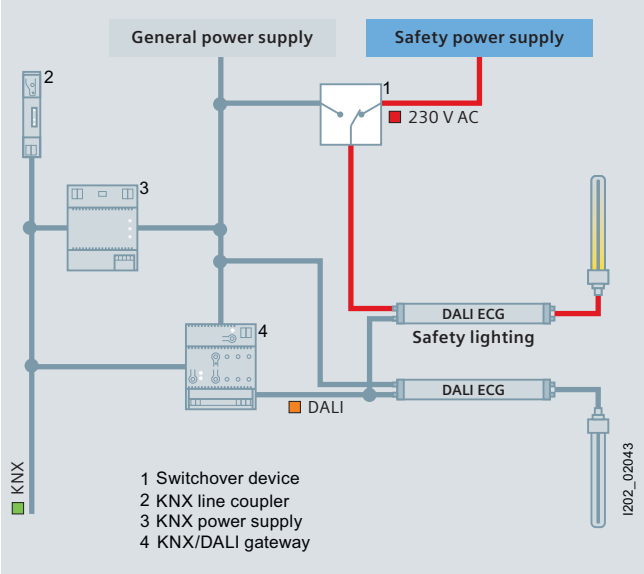
- Fast switchover to safety lighting intensity inside of 100 ms
- Freedom from feedback is ensured during emergency operation
- Automatic check for lamp operating readiness via a central program during normal mode

Simple solution

Normal mode

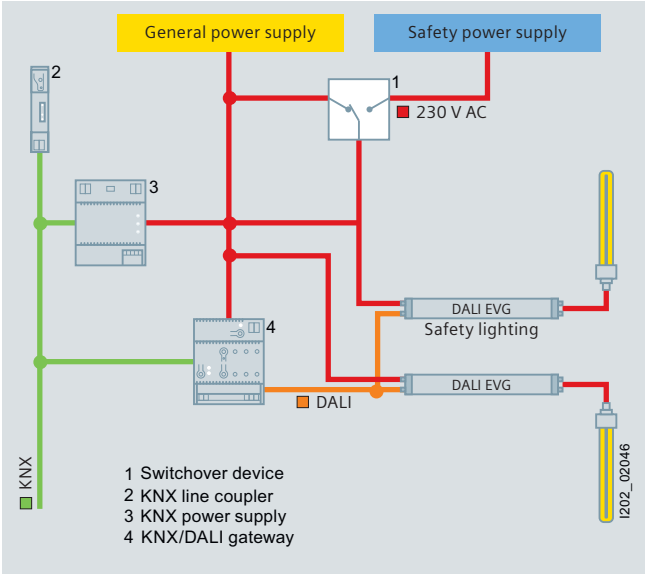


Emergency operation

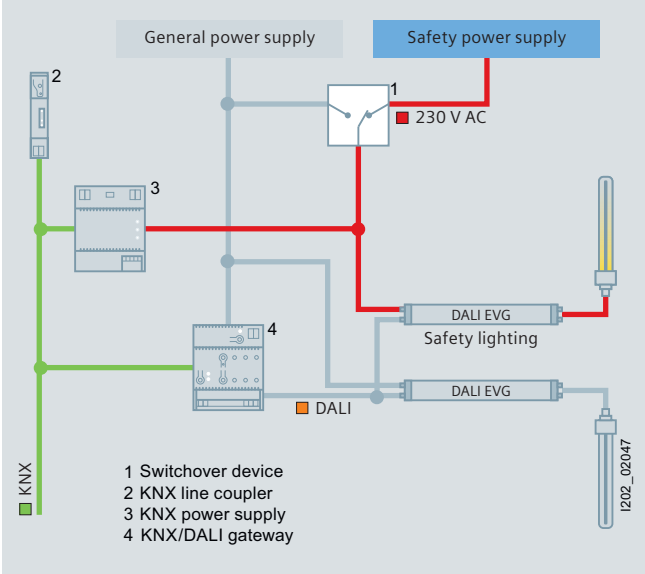


Intelligent solution

Normal mode



Emergency operation



Technical specifications

		DALI control outputs		Control output 1 ... 10 V		
						
Type		**N 141/02**	**N 525E**	**N 526/02**	**N 526E02**	**N 525/02**
Application program		981CXX[1]	9808XX[1]	905303	981301	905001
Enclosure data						
Design		N	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	4 MW
Display/control elements						
Mechanical switching position display 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		--	--	--	✔	✔
Mechanical switching position display		--	--	--	✔	✔
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**	**1**
DALI outputs (lines)		**1**	**8**	--	--	--
Max. ECG per output (Osram Dynamik 58 W)		64 units	8 units	50 units	60 units	50 units
Load output[2]						
Floating relay contacts		--	--	**3**[3]	**8**	**1**
Contact rated voltage, AC	V	--	--	230	230	230
Contact rated current	A	--	--	6	16	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 "Technical Information".

[3] Except channel A.

For selection and ordering data, see page 5/15.

	DALI control outputs		Control output 1 ... 10 V		
					
Type	**N 141/02**	**N 525E**	**N 526/02**	**N 526E02**	**N 525/02**
Application program	981CXX[1]	9808XX[1]	905303	981301	905001
Functions					
Max. number of group addresses	1023	108	35	250	38
Max. number of assignments	1023	107	47	250	38
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]	✔[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 5/15.

Switch/dimming actuators

	Type	Description
	**AP 255** **UP 255**	**AP 255/UP 255 indoor brightness sensors** For N 526/02 switch/dimming actuators • For measuring the brightness on an illuminated area through measurement of the reflected light • Measuring range: 0 ... 1500 lux (with a reflection degree of the illuminated area of approx. 30%) • For direct connection to N 526/02 switch/dimming actuators via a 3-wire cable up to 100m 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: - Parallel light-sensitive surface for mounting surface - Inclined (45°) light-sensitive surface for mounting surface **UP 255 indoor brightness sensors** • For mounting in a hollow-wall or flush-mounting box with ∅ 58 mm and an overall depth of at least 40 mm • Cover made of white plastic (polystyrene) • Dimensions (H x W x D): 30 x 52 x 33 mm. **AP 255 indoor brightness sensors** • For mounting on a ceiling or wall • Includes surface-mounting enclosure made of white plastic (polypropylene) with ∅ 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 5/15.

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									
 5WG1 141-1AB02	**N 141/02**	**N 141/02 KNX/DALI gateways**	A	**5WG1 141-1AB02**		1	1 unit	030	0.200
 5WG1 525-1EB01	**N 525E**	**N 525E switch/dimming actuators** 8 x DALI, 8 ECGs per output	A	**5WG1 525-1EB01**		1	1 unit	030	0.314
Control outputs 1 ... 10 V DC									
 5WG1 526-1AB02	**N 526/02**	**N 526/02 switch/dimming actuators** 3 x 230 V AC, 6 A, with constant light level control	A	**5WG1 526-1AB02**		1	1 unit	030	0.459
		Accessories							
	**UP 255**	**UP 255 indoor brightness sensors** N 526/02 switch/dimming actuators	A	**5WG1 255-4AB01**		1	1 unit	030	0.092
	AP 255	**AP 255 indoor brightness sensors** N 526/02 switch/dimming actuators	C	**5WG1 255-4AB02**		1	1 unit	030	0.096
 5WG1 526-1EB02	**N 526E02**	**N 526E02 switch/dimming actuators** 8 x 230 V AC, 16 A	A	**5WG1 526-1EB02**		1	1 unit	030	0.527
 5WG1 525-1AB02	**N 525/02**	**N 525/02 switch/dimming actuators** 1 x 230 V AC, 16 A	D	**5WG1 525-1AB02**		1	1 unit	030	0.207

* You can order this quantity or a multiple thereof.

Light level controls

Overview

Type	 UP 255/11 AP 255/12 GE 255/13	 N 526/02	UP 255	AP 255	 UP 258/11	 UP 258/21	 N 342	 AP 254/02	 GE 252	GE 253	GE 254
Control											
Integrated constant light level control	1-channel	3-channel	--	--	--	1-channel	--	--	1-channel	--	1-channel
Integrated two-step control	1-channel	--	--	--	--	1-channel	--	--	1-channel	--	1-channel
Light level controls dependent on surrounding light	--	--	--	--	--	--	✔	✔	--	--	--
Light sensor											
External light	--	--	--	--	--	--	--	✔	--	✔	--
Indoor brightness	✔	--	✔	✔	✔	✔	--	--	✔	--	--
Indoor brightness (indirect lighting)	✔	--	--	--	--	--	--	--	--	--	✔
Transmission of brightness values over KNX	✔	--	--	--	✔	✔	--	✔	✔	✔	✔

Technical specifications

Type		UP 255/11	AP 255/12	GE 255/13	N 526/02	UP 258/11	UP 258/21	N 342	AP 254/02	GE 252 GE 253 GE 254
Enclosure data										
Design		UP	AP	GE	N	UP	UP	N	AP	GE
Modular installation devices in oblong design, for installation in luminaires for fluorescent lamps		--	--	--	--	--	--	--	--	✔
Modular installation devices for mounting on TH35 EN 60715 mounting rail		--	--	--	✔	--	--	✔	--	--
Dimensions										
• Height	mm	30	30	20		87	102		110	42
• Width (1 MW = 18 mm)	mm	52	72	50	6 MW	87	102	1 MW	72	274.5
• Depth	mm	33	33	35		60	33		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		--	--	--	--	--	--	✔	--	--

For selection and ordering data, see page 5/19.

	Type	Description	
	UP 255/11 **AP 255/12** **GE 255/13**	**Brightness controllers UP 255/11, AP 255/12 and GE 255/13** • For measuring the brightness on an illuminated work area through measurement of the reflected light • Measuring range 0 ... 2000 lux (with a reflection degree of the illuminated area of approx. 30%) • Including two rigid optical fiber rods: - Parallel light-sensitive surface for mounting surface - Inclined (30°) light-sensitive surface for mounting surface • Integrated infrared receiver for calibrating the brightness measurement via an infrared remote control • 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	• 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 increasing the brightness or dimming or dimming to a preset dimming value • Configurable behavior in the event of a bus voltage recovery
		Versions	
	**UP 255/11**	• For mounting in a hollow-wall or flush-mounting box with ∅ 58 mm and an overall depth of at least 40 mm	• Cover made of white plastic (polystyrene) • Dimensions (H x W x D): 30 x 52 x 33 mm
	**AP 255/12**	• Includes surface-mounting enclosure made of white plastic (polypropylene) with ∅ 70 mm and 24 mm in height	• For mounting on a ceiling or wall • Dimensions (H x W x D): 30 x 72 x 33 mm
	**GE 255/13**	• For direct lighting installation • Dimensions (H x W x D): 20 x 50 x 35 mm	
		Accessories	
	**S 255**	**S 255 IR remote calibration** • Range: up to approx. 6 m • Power supply: CR2025 lithium button cell	• Degree of protection (acc. to EN 60529): IP40 • Dimensions (H x W x D): 87 x 40 x 6 mm
	**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 • 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	• 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, GE 255/13 indoor brightness sensors** For N 526/02 switch/dimming actuators • For measuring the brightness on an illuminated area through measurement of the reflected light • Measuring range: 0 ... 1500 lux (with a reflection degree of the illuminated area of approx. 30%) • For direct connection to N 526/02 switch/dimming actuators via a 3-wire cable up to 100m 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: • Parallel light-sensitive surface for mounting surface - Inclined (45°) light-sensitive surface for mounting surface	AP 255 indoor brightness sensors • For mounting on a ceiling or wall • Includes surface-mounting enclosure made of white plastic (polypropylene) with ∅ 75 mm and 26 mm in height UP 255 indoor brightness sensors • For mounting in a hollow-wall or flush-mounting box with ∅ 68 mm and an overall depth of at least 40 mm • Cover made of white plastic (polystyrene)
	**N 342**	**N 342 light level control modules** • 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 a 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	• 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

Light level controls

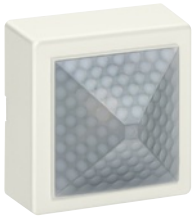
	Type	Description
	**UP 258/11**	**UP 258/11 presence detectors** With brightness sensor • Degree of protection IP20 • Motion • Presence • Range on either side: 5.5 m • Horizontal sensing angle: 360° • Vertical sensing angle: 120° • Measuring range: 100 ... 1600 lux (standard) 25 ... 200 lux (expanded) • For measuring indoor brightness • Transmission of sensor values via bus
	**UP 258/21**	**UP 258/21 presence detectors** With constant light level control • For surface mounting • Degree of protection IP20 • Motion • Presence • Horizontal sensing angle: 360° • Vertical sensing angle: 120° • Range on either side: 4 m • Brightness measuring range 10 ... 1500 Lux • For measuring indoor brightness • Transmission of sensor values via bus
		Accessories
	**AP 258E**	**AP 258E surface-mounting enclosures** UP 258/21 presence detectors • For fixing the presence detector as a surface mounting device • Dimensions (H x W x D): 102 x 102 x 46 mm.
	**AP 254/02**	**AP 254/02 dual sensors** Brightness measurement, temperature measurement, sun protection control, lighting control • For recording and transferring 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 - 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 • 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: - 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
	**GE 252**	**GE 252 indoor brightness sensors** • For measuring indoor brightness • 2 m connecting lead of sensor element (cannot be extended) • For surface mounting • For mounting in intermediate ceilings • 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** • 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 • 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
	**GE 253**	**GE 253 outdoor brightness sensors** For indoor mounting • For measuring outdoor brightness • 2 m connecting lead of sensor element (cannot be extended) • For surface mounting • For mounting in intermediate ceilings • 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

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 255-4AB11	**UP 255/11**	**UP 255/11 brightness controllers**	B	**5WG1 255-4AB11**		1	1 unit	030	0.030
5WG1 255-4AB12	**AP 255/12**	**AP 255/12 brightness controllers**	B	**5WG1 255-4AB12**		1	1 unit	030	0.050
 5WG1 255-4AB13	**GE 255/13**	**GE 255/13 brightness controllers** NEW	B	**5WG1 255-4AB13**		1	1 unit	030	0.052
		Accessories							
 5WG1 255-7AB01	**S 255**	**S 255 IR remote calibration** For UP 255/11, AP 255/12 and GE 255/13	A	**5WG1 255-7AB01**		1	1 unit	030	0.079
 5WG1 526-1AB02	**N 526/02**	**N 526/02 switch/dimming actuators** 3 x 230 V AC, 6 A, with constant light level control	A	**5WG1 526-1AB02**		1	1 unit	030	0.459
		Accessories							
	**UP 255**	**UP 255 indoor brightness sensors** N 526/02 switch/dimming actuators	A	**5WG1 255-4AB01**		1	1 unit	030	0.092
	AP 255	**AP 255 indoor brightness sensors** N 526/02 switch/dimming actuators	C	**5WG1 255-4AB02**		1	1 unit	030	0.096
 5WG1 342-1AB01	**N 342**	**N 342 light level control modules** UL	B	**5WG1 342-1AB01**		1	1 unit	030	0.116

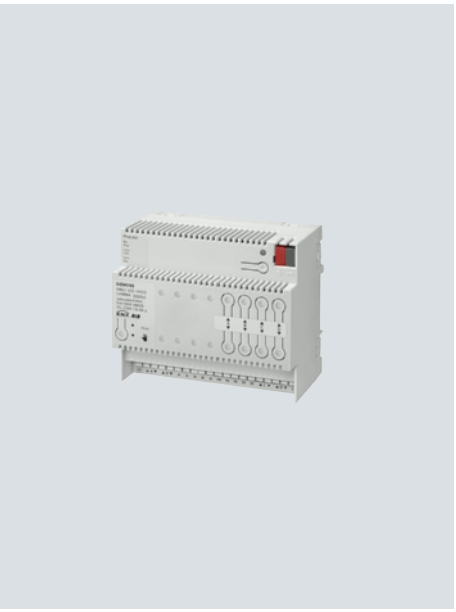
* You can order this quantity or a multiple thereof.

Light level controls

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 258-2AB11	**UP 258/11**	**UP 258/11 presence detectors**[1] With brightness sensor	A	**5WG1 258-2AB11**		1	1 unit	030	0.217
 5WG1 258-2AB21	**UP 258/21**	**UP 258/21 presence detectors** (to be discontinued) With brightness sensors, constant light level control	A	**5WG1 258-2AB21**		1	1 unit	030	0.176
		Accessories							
 5WG1 258-3EB21	**AP 258E**	**AP 258E surface-mounting enclosures** (to be discontinued) UP 258/21 presence detectors	A	**5WG1 258-3EB21**		1	5 units	030	0.076
 5WG1 254-3EY02	**AP 254/02**	**AP 254/02 dual sensors** Brightness measurement, temperature measurement, sun protection control, lighting control	A	**5WG1 254-3EY02**		1	1 unit	030	0.153
 5WG1 253-4AB01	**GE 253**	**GE 253 outdoor brightness sensors** For indoor mounting	A	**5WG1 253-4AB01**		1	1 unit	030	0.300
 5WG1 252-4AB02 5WG1 254-4AB01	**GE 252**	**GE 252 indoor brightness sensors**	A	**5WG1 252-4AB02**		1	1 unit	030	0.412
	GE 254	**GE 254 indoor brightness sensors** For indirect lighting	A	**5WG1 254-4AB01**		1	1 unit	030	0.313

[1] The bus coupling unit must be ordered separately.

* You can order this quantity or a multiple thereof.



Introduction

Overview

	Devices	Application	Page
	**Anti-glare/sun protection actuators**	Control of shutters and blinds.	6/4
	**Central weather/sun protection systems**	The weather system sends the sensor information via the GAMMA *instabus*.	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 at right angles to the sun. This optimizes the utilization of daylight.

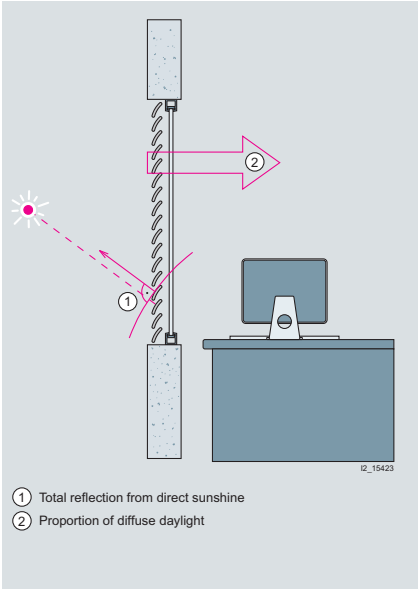
Shadow edge tracking

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

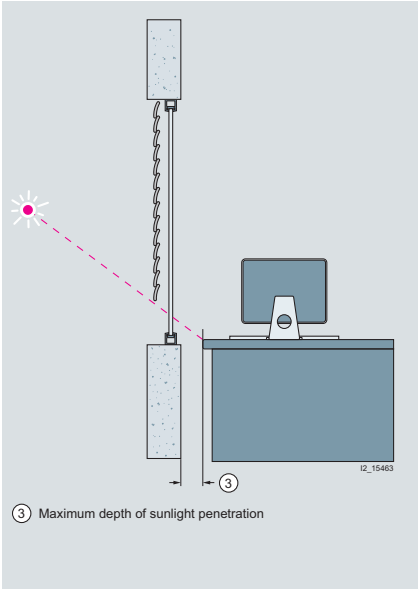
Advantages: it is still possible to look out of the lower part of the window, any plants on the window sill still benefit from the sunshine, while occupants of the room are protected from its glare.

Sunlight tracking control and shadow edge tracking combined

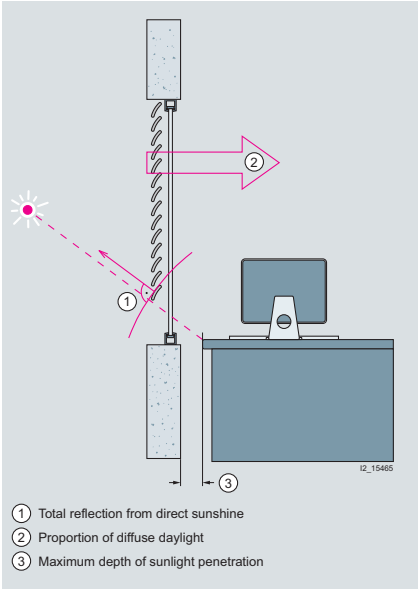
It goes without saying that the two principles can be combined, thus offering optimum sun protection.



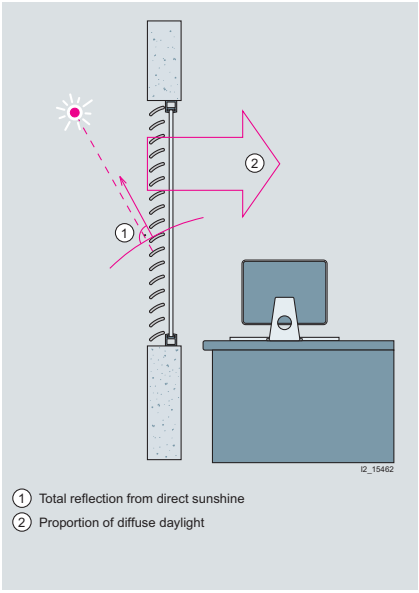
① Total reflection from direct sunshine
② Proportion of diffuse daylight



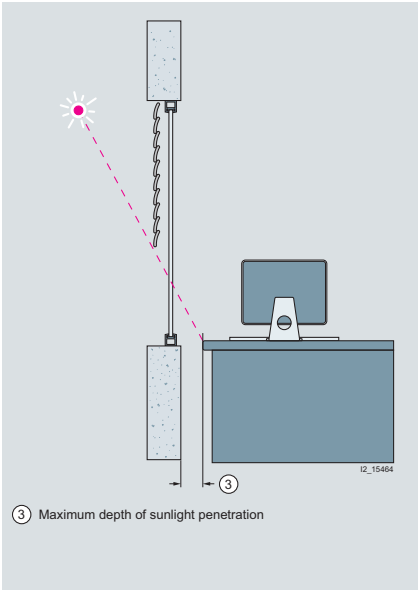
③ Maximum depth of sunlight penetration



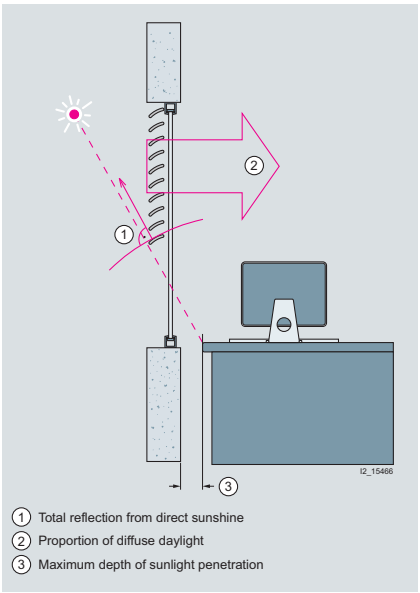
① Total reflection from direct sunshine
② Proportion of diffuse daylight
③ Maximum depth of sunlight penetration



① Total reflection from direct sunshine
② Proportion of diffuse daylight



③ Maximum depth of sunlight penetration



① Total reflection from direct sunshine
② Proportion of diffuse daylight
③ Maximum depth of sunlight penetration

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	GE 521/02	UP 520	UP 520/11	UP 520/31
Enclosure data													
Design		N	N	N	N	N	N	N	N	GE	UP	UP	UP
Modular installation devices for mounting on TH35 EN 60715 mounting rail		✔	✔	✔	✔	✔	✔	✔	✔	--	--	--	--
For installation in flush-mounting switch and socket boxes with ∅ = 60 mm		--	--	--	--	--	--	--	--	--	✔	✔	✔
Modular installation devices in oblong design, for installation in luminaires for fluorescent lamps		--	--	--	--	--	--	--	--	✔	--	--	--
Integrated user interface for plugging in a single to quadruple bus pushbutton		--	--	--	--	--	--	--	--	--	✔	--	--
Dimensions													
• Height	mm									42	71	51	
• Width (1 MW = 18 mm)/∅	mm	6 MW	4 MW	4 MW	4 MW	8 MW	8 MW	6 MW	3 MW	274.5	71	44	53
• Depth	mm									28	40	40	28
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**
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	6	1 DC	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.

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

Type	981101 **N 522/03**	980101 **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**	510205 **GE 521/02**	**UP 520**[1]	902002 **UP 520/11**	207301 **UP 520/31**
Application program												
Output functions												
Max. number of group addresses	114	100	100	110	200	220	40	11	12	38	38	26
Max. number of assignments	156	100	100	125	200	220	65	12	12	38	38	27
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	✔	--	--	✔	✔	✔	✔	--	--	--	--	--
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	--	--	--	--	--	--
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] See table "Application programs and pushbuttons for use with UP 520".

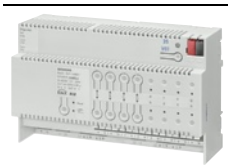
For selection and ordering data, see page 6/6.

Application programs and pushbuttons for use with UP 520

For design	i-system				DELTA profil/style		
Application program	902902	902A02	902C02	902D02	902402	902502	902602
Can be used with pushbuttons	UP 221	UP 222	UP 221E	UP 222E	UP 241 UP 242 UP 285	UP 243 UP 244 UP 286	UP 245 UP 246 UP 287
Number of pushbutton pairs	**1**	**2**	**1**	**2**	**1**	**2**	**4**

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
 5WG1 522-1AB03	**N 522/03**	**N 522/03 shutter/blind actuators** 4 x 230 V AC, 8 A, with end position detection, for sunlight tracking control	A	**5WG1 522-1AB03**		1	1 unit	030	0.388
 5WG1 523-1AB02	**N 523/02**	**N 523/02 shutter/blind actuators** 4 x 230 V AC, 6 A	A	**5WG1 523-1AB02**		1	1 unit	030	0.322
 5WG1 523-1AB03	**N 523/03**	**N 523/03 roller shutter actuators** 4 x 230 V AC, 6 A	A	**5WG1 523-1AB03**		1	1 unit	030	0.322
 5WG1 523-1AB04	**N 523/04**	**N 523/04 shutter/blind actuators** 4 x 230 V AC, 6 A, for sunlight tracking control	A	**5WG1 523-1AB04**		1	1 unit	030	0.323
 5WG1 523-1CB04	**N 523/CB04**	**Shutter/blind actuator N 523/CB04** Ⓤ 4 x 120 V AC, 6 A	A	**5WG1 523-1CB04**		1	1 unit	030	0.322
 5WG1 523-1AB11	**N 523/11**	**N 523/11 shutter/blind actuators** 8 x 230 V AC, 6 A, for sunlight tracking control	A	**5WG1 523-1AB11**		1	1 unit	030	0.500
 5WG1 501-1AB01	**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	030	0.500

* You can order this quantity or a multiple thereof.

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
 5WG1 524-1AB01	**N 524**	**N 524 shutter/blind actuators** 4 x 6 ... 24 V DC, 1 A	A	**5WG1 524-1AB01**		1	1 unit	030	0.421
 5WG1 521-1AB01	**N 521**	**N 521 shutter/blind actuators** 4 x 230 V AC, 6 A, (2 x parallel)	A	**5WG1 521-1AB01**		1	1 unit	030	0.212
 5WG1 521-4AB02	**GE 521/02**	**GE 521/02 shutter/blind actuators** 2 x 230 V AC, 6 A (parallel)	A	**5WG1 521-4AB02**		1	1 unit	030	0.216
 5WG1 520-2AB01	**UP 520**	**UP 520 shutter/blind actuators** 1 x 230 V AC, 6 A, with UI	A	**5WG1 520-2AB01**		1	1 unit	030	0.104
 5WG1 520-2AB11	**UP 520/11**	**UP 520/11 shutter/blind actuators** 1 x 230 V AC, 6 A, without UI	A	**5WG1 520-2AB11**		1	1 unit	030	0.077
 5WG1 520-2AB31	**UP 520/31**	**UP 520/31 shutter/blind actuators** 1 x 230 V AC, 6 A, 2 x binary inputs	A	**5WG1 520-2AB31**		1	1 unit	030	0.092

* You can order this quantity or a multiple thereof.

Central weather/sun protection systems

Technical specifications

Type	AP 257/22	AP 257/32
		
	Integrated sensors • 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 sensor, 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 edge 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 electronic power pack 4AC2 402 is recommended for the power supply.

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

	Type	Description
		Accessories for AP 257/22 and AP 257/32 weather systems and AP 257/42 wind sensors **Electronic power supply units** • 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).

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 systems**[1]	B	**5WG1 257-3AB22**		1	1 unit	030	0.416
	AP 257/32	**WS1 AP 257/32 (GPS) weather stations**[1]	B	**5WG1 257-3AB32**		1	1 unit	030	0.430
 5WG1 257-3AB42	**AP 257/42**	**AP 257/42 wind sensors**[2]	B	**5WG1 257-3AB42**		1	1 unit	030	0.145
		Accessories							
 4AC2 402		**Electronic power supply units**	B	**4AC2 402**		1	1 unit	027	0.081

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

2) For technical specifications, see chapter "Physical Sensors".

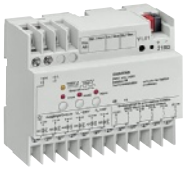
* You can order this quantity or a multiple thereof.

Devices for Special Applications

Heating, Cooling, Ventilation, Air-Conditioning

Introduction

Overview

	Devices	Application	Page
	**Sensors for HCVA**	The sensors detect the temperature and deliver the basic values for optimum control.	7/3
	**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.	7/5
	**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.	7/7
	**Actuators for HCVA**	These control the drives for the heating, cooling, ventilation and air-conditioning.	7/9
	**Valve actuators for HCVA**	For the opening and closing of small valves.	7/12

Technical specifications

	Type	Description
	**N 258/02**	**N 258/02 temperature sensors** For four Pt1000 sensors • For the measurement and transmission of 4 temperatures in the range -40 ... +150 °C • For connection of four Pt1000 temperature sensors, 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 • 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**	**Universal N 670 I/O modules**[1)] 2 x Universal I/O, 2 inputs Pt1000, 2 relay outputs 230 V AC, 10 A • 2 universal inputs/outputs, each adjustable as - 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 • 2 binary outputs, relay contacts rated for 230 V AC, 10 A at p.f. = 1, with - 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 • 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 • For recording and transferring 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 - 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 • 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: - 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. LOGO!Power 6EP1 331-1SH01).

For selection and ordering data, see page 7/4.

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
 5WG1 258-1AB02	**N 258/02**	**N 258/02 temperature sensors** For four Pt1000 sensors	B	**5WG1 258-1AB02**		1	1 unit	030	0.242
 5WG1 670-1AB03	**N 670**	**Universal N 670 I/O modules**[1] 2 x Universal I/O, 2 inputs for Pt1000, 2 outputs 230 V AC, 10 A	A	**5WG1 670-1AB03**		1	1 unit	030	0.213
 5WG1 254-3EY02	**AP 254/02**	**AP 254/02 dual sensors** Brightness measurement, temperature measurement, sun protection control, lighting control	A	**5WG1 254-3EY02**		1	1 unit	030	0.153

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

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* You can order this quantity or a multiple thereof.

Technical specifications

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

	Type	Description
		Fan-coil unit controllers for office and hotel • 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 • 10-pole BTI plug (BTI - Bus Transceiver Interface) for mounting on a UP 117/11 bus transceiver module Plus
	**UP 237E** **UP 252E** **UP 254E**	Fan-coil unit controllers for offices • 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 • 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)
	**UP 237F** **UP 252F** **UP 254F**	Fan-coil unit controllers for hotels • Pushbutton for setting the required fan speed step or for automatic entry of the speed step by the fan-coil unit controller • 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. kg
i-system									
	**UP 237E**	**UP 237E fan-coil unit controllers for offices**[1]							
		Versions							
		• Titanium white	A	**5WG1 237-2EB11**		1	1 unit	022	0.050
		• Carbon metallic	B	**5WG1 237-2EB21**		1	1 unit	022	0.050
		• Aluminum metallic	A	**5WG1 237-2EB31**		1	1 unit	022	0.030
5WG1 237-2EB11									
	**UP 237F**	**UP 237F fan-coil unit controllers for hotels**[1]							
		Versions							
		• Titanium white	A	**5WG1 237-2FB11**		1	1 unit	022	0.049
		• Carbon metallic	B	**5WG1 237-2FB21**		1	1 unit	022	0.030
		• Aluminum metallic	A	**5WG1 237-2FB31**		1	1 unit	022	0.050
5WG1 237-2FB11									

[1] The bus transceiver module must be ordered separately, see page 14/4.

* You can order this quantity or a multiple thereof.

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									
 5WG1 252-2EB11	**UP 252E**	**UP 252E fan-coil unit controllers for offices**[1]							
		Versions							
		• Titanium white	A	**5WG1 252-2EB11**		1	1 unit	022	0.052
		• Anthracite	B	**5WG1 252-2EB21**		1	1 unit	022	0.030
		• Silver	A	**5WG1 252-2EB71**		1	1 unit	022	0.030
 5WG1 252-2FB11	**UP 252F**	**UP 252F fan-coil unit controllers for hotels**[1]							
		Versions							
		• Titanium white	A	**5WG1 252-2FB11**		1	1 unit	022	0.057
		• Anthracite	B	**5WG1 252-2FB21**		1	1 unit	022	0.030
		• Silver	A	**5WG1 252-2FB71**		1	1 unit	022	0.030
DELTA style									
 5WG1 254-2EB11	**UP 254E**	**UP 254E fan-coil unit controllers for offices**[1]							
		Versions							
		• Titanium white/metallic silver	A	**5WG1 254-2EB11**		1	1 unit	022	0.062
		• Basalt black/metallic silver	B	**5WG1 254-2EB21**		1	1 unit	022	0.062
		• Platinum metallic	B	**5WG1 254-2EB41**		1	1 unit	022	0.062
 5WG1 254-2FB11	**UP 254F**	**UP 254F fan-coil unit controllers for hotels**[1]							
		Versions							
		• Titanium white/metallic silver	A	**5WG1 254-2FB11**		1	1 unit	022	0.062
		• Basalt black/metallic silver	B	**5WG1 254-2FB21**		1	1 unit	022	0.062
		• Platinum metallic	B	**5WG1 254-2FB41**		1	1 unit	022	0.062

[1] The bus transceiver module must be ordered separately, see page 14/4.

* You can order this quantity or a multiple thereof.

Technical specifications

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

	Type	Description
	**UP 237** **UP 252** **UP 254**	**UP 237, UP 252, UP 254 room temperature controllers** • 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: comfort mode, standby mode, night mode and frost or heat protection mode which can be switched via KNX • Presence pushbutton to locally switch between comfort and standby mode and to extend comfort mode after operating night mode • The room temperature setpoint value for comfort mode can be set via a 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 • 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 switching command or as a positioning command in the range of 0 ... 100 % • 5 LEDs to display the current operating mode and, if necessary, the dew point alarm • Mounting on a UP 110 or UP 114 bus coupling unit
	**IKE 250**	**IKE 250 room temperature controllers** • 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: comfort mode, standby mode, night mode and frost or heat protection mode which can be switched via KNX • Two pushbuttons for local switching between comfort and standby mode • Two pushbuttons for adjusting the basic setpoint • Basic setpoint of the room temperature for comfort mode which can be set via the KNX • Adjustable dead zone between the heating setpoint and the cooling setpoint for comfort mode • Output of the control variable(s) either as an ON/OFF switching command or as a positioning command in the range of 0 ... 100 % • Red luminous bar for indicating the current setpoint offsetting and the set operating mode • Integrated bus coupling units • 1 ground conductor and 1 ground terminal for the base • Dimensions (H x W x D): 80 x 166 x 41 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 237**	**UP 237 room temperature controllers**[1)2)]							
		Versions							
		• Titanium white	A	**5WG1 237-2AB11**		1	1 unit	022	0.050
		• Carbon metallic	B	**5WG1 237-2AB21**		1	1 unit	022	0.050
		• Aluminum metallic	A	**5WG1 237-2AB31**		1	1 unit	022	0.045
5WG1 237-2AB11									
DELTA profil									
	**UP 252**	**UP 252 room temperature controllers**[1)2)]							
		Versions							
		• Titanium white	A	**5WG1 252-2AB13**		1	1 unit	022	0.053
		• Anthracite	C	**5WG1 252-2AB23**		1	1 unit	022	0.053
		• Silver	A	**5WG1 252-2AB73**		1	1 unit	022	0.053
5WG1 252-2AB13									

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Room temperature controllers

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
DELTA style									
 5WG1 254-2AB13	**UP 254**	**UP 254 room temperature controllers**[1)2)3)]							
		Versions							
		• Titanium white/metallic silver	A	**5WG1 254-2AB13**		1	1 unit	022	0.059
		• Basalt black/metallic silver	B	**5WG1 254-2AB23**		1	1 unit	022	0.065
		• Platinum metallic	B	**5WG1 254-2AB43**		1	1 unit	022	0.068
DELTA millennium									
 5WG1 250-8AB01	**IKE 250**	**IKE 250 room temperature controllers**[4)]	D	**5WG1 250-8AB01**		1	1 unit	030	0.341

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.
3) No intermediate frame necessary.
4) The text for the labeling field is engraved and must be specified at the time of ordering (see page 1/39, DELTA millennium order form).

* You can order this quantity or a multiple thereof.

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**
• Contact rated voltage, AC	V	--	--	230	230	230
• Contact rated 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 overload and short circuit		✔	✔	--	--	--
Universal inputs/outputs						
Adjustable inputs/outputs as • 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)		--	--	**2**	--	--
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 7/11.

Actuators for HCVA

					
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 7/11.

	Type	Description
		S 290 door/window contacts • Opening alarm for the monitoring of windows and doors, comprising: - 1 Magnet (∅ 8 x 30 mm) - 1 magnetically operated contact in a fully cast plastic enclosure (∅ 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 mW - VdS class B - 5 m long connection cable LiYY 4 x 0.14 mm^2 • 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
		Versions
	S 290 white	• Enclosure color: White
	S 290 brown	• Enclosure color: Brown

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 605-1AB01	**N 605**	**N 605 thermal drive actuators** 6 inputs, 6 outputs	A	**5WG1 605-1AB01**		1	1 unit	030	0.436
 5WG1 605-1AB11	**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	030	0.432
 5WG1 670-1AB03	**N 670**	**Universal N 670 I/O modules**[1] 2 x Universal I/O, 2 inputs for Pt1000, 2 outputs 230 V AC, 10 A	A	**5WG1 670-1AB03**		1	1 unit	030	0.213
 5WG1 540-5AS01	**REG 540**	**REG 540 fan-coil unit controllers**	B	**5WG1 540-5AS01**		1	1 unit	030	0.532
 5WG1 540-5AS11	**REG 540/11**	**REG 540/11 fan-coil unit controllers**	A	**5WG1 540-5AS11**		1	1 unit	030	0.228
		Accessories							
 5WG1 540-8AS01	**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	030	0.103
	S 290	**S 290 door/window contacts** NEW							
		Versions							
 5WG1 290-7AB11		• Enclosure color white	B	**5WG1 290-7AB11**		1	1 unit	030	0.119
 5WG1 290-7AB81		• Enclosure color brown	B	**5WG1 290-7AB81**		1	1 unit	030	0.119

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

* You can order this quantity or a multiple thereof.

Electromotive valve actuators for HCVA

Technical specifications

	Type	Description
	**AP 562/02**	**AP 562/02 valve actuators** • 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 Danfoss RA, Heimeier, MNG, Schlösser from 3/93, Honeywell, Braukmann, Dumser (Distributor), Reich (Distributor), Landis + Gyr, Oventrop, Herb, Onda • 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

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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
 5WG1 562-7AB02	**AP 562/02**	**AP 562/02 valve actuators** NEW Electromotive, with LED valve position indication	A	**5WG1 562-7AB02**		1	1 unit	030	0.295

* You can order this quantity or a multiple thereof.

Technical specifications

Type		 AP 561/01	AP 561/02	AP 561/03	AP 561/04
Enclosure data					
Dimensions					
• Height	mm	58	58	58	58
• Width/∅	mm	44.5	44.5	44.5	44.5
Output					
Electrothermal actuators (silent) 230 V/50 Hz	V	230	230	24	24
Valve position in de-energized state[1)]		Closed (NC)	Open (NO)	Closed (NC)	Open (NO)
Valve position indication		✔	--	✔	--
Stroke max.	mm	3.5	2.6	3.5	2.6
Open/close time	min	Approx. 3	Approx. 3	Approx. 3	Approx. 3
Length of connecting lead	m	1	1	1	1
Mounting on company valves		Heimeier	Heimeier	Heimeier	Heimeier

Selection and ordering data


5WG1 561-7AH01

Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
AP 561/01	**AP 561 valve actuators** 230 V AC, NC[1)]	B	**5WG1 561-7AH01**		1	1 unit	030	0.136
AP 561/02	**AP 561/02 valve actuators** 230 V AC, NO[1)]	B	**5WG1 561-7AH02**		1	1 unit	030	0.134
AP 561/03	**AP 561/03 valve actuators** 24 V, NC[1)]	B	**5WG1 561-7AH03**		1	1 unit	030	0.133
AP 561/04	**AP 561/04 valve actuators** 24 V, NO[1)]	B	**5WG1 561-7AH04**		1	1 unit	030	0.132
	Herz adapters for AP 561	B	**5WG1 561-8AH01**		1	1 unit	030	0.040
	Vaillant adapters for AP 561	B	**5WG1 561-8AH02**		1	1 unit	030	0.065
	Danfoss RA2000 adapters for AP 561	B	**5WG1 561-8AH03**		1	1 unit	030	0.027
	TA adapters for AP 561	B	**5WG1 561-8AH04**		1	1 unit	030	0.038
	Danfoss adapter clamps for AP 561	B	**5WG1 561-8AH05**		1	1 unit	030	0.024
	MNG adapter sleeves for AP 561	B	**5WG1 561-8AH06**		1	1 unit	030	0.001

[1)] NC: deenergized closed; NO: deenergized open

* You can order this quantity or a multiple thereof.

Notes

Load management

Technical specifications

	Type	Description
	**N 360**	**N 360 peak load limiters**[1)] • 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 (operational 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 • 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
 5WG1 360-1AB01	**N 360**	**N 360 peak load limiters** Ⓤ	B	**5WG1 360-1AB01**		1	1 unit	030	0.308

* You can order this quantity or a multiple thereof.

Introduction

Overview

	Devices	Application	Page
	**Intrusion**	Presence-simulation modules and detector group terminals reduce the risk of intrusion.	9/3
	**Leakage**	Water sensors indicate unexpected water. In DELTA profil or DELTA style design.	9/4

Technical specifications

	Type	Description
	**N 345**	**N 345 presence-simulation modules**[1)] • 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)
	**N 266**	**N 266 detector group terminals**[2)] • For the monitored connection of passive detectors (e.g. magnetic contacts) and for the connection of floating contacts in applications with increased safety demands • 4 detector group inputs, each with one LED for status display • Two 12 V outputs "walk test" and "setting/unsetting" for the control of passive infrared and motion detectors • Setting/unsetting of the detector group terminal by means of a communication object • With failure message in the event of a short circuit or interruption of a signal line • Electronics powered via an external 12 V DC power supply unit, max. 50 mA • Monitoring of the external power supply • Integrated bus coupling units • Bus connection via bus terminal • Modular installation devices for mounting on TH35 EN 60715 mounting rail • Width 4 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.
2) The following (e.g.) is suitable as external power supply unit: LOGO!Power 6EP1 321-1SH01.

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 345-1AB01	**N 345**	**N 345 presence-simulation modules** Ⓤ Storage for 5000 actions	A	**5WG1 345-1AB01**		1	1 unit	030	0.115
 5WG1 266-1AB01	**N 266**	**N 266 detector group terminals** With 4 monitored inputs for passive detectors	B	**5WG1 266-1AB01**		1	1 unit	030	0.204

* You can order this quantity or a multiple thereof.

Leakage

Technical specifications

	Type	Description
	UP 272	**UP 272 water sensors** • 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 acknowledgement 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									
 5WG1 272-2AB11	**UP 272**	**UP 272 water sensors**[1)2)] Versions							
		• Titanium white	A	**5WG1 272-2AB11**		1	1 unit	022	0.106
		• Anthracite	C	**5WG1 272-2AB21**		1	1 unit	022	0.114
		• Silver	B	**5WG1 272-2AB71**		1	1 unit	022	0.108
DELTA style									
 5WG1 272-2AB11	**UP 272**	**UP 272 water sensors**[1)2)] Titanium white	A	**5WG1 272-2AB11**		1	1 unit	022	0.106

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Devices for Special Applications
Quick-Assembly Systems

10

Introduction

Overview

	Devices	Application	Page
	**Modular quick-assembly systems**	Flexible modules control shutter/blinds, lighting groups or other loads.	10/3
	**SMS controls, flat**	Quick-assembly systems in flat design.	10/5

Note:

The electrical connections to the devices are fitted exclusively with plug-in connectors. The required plug-in connectors and cable assemblies can be obtained directly from Wieland.

Order address:

Wieland Electric GmbH
Vertriebs- und Marketing Center
Abteilung VSI
Benzstraße 9
D-96052 Bamberg

Telephone: +49 (951) 9324-390
Fax: +49 (951) 9324-390

www.gesis.com

Technical specifications

The "Modular quick-assembly system" comprises a basic module (for up to 6 expansion devices) and the respective series-connected expansion modules. The devices are designed for distributed mounting on a TH 35-7.5 mounting rail in false floors or suspended ceilings.

Type		Basic module	Expansion modules				
		AP 611	Input module AP 611/11	Input module AP 611/21	Load switches AP 611/31	Shutter/blind actuators AP 611/51	Switch/dimming actuators AP 611/61
Enclosure data							
Plug-in connectors		gesis EST 2i5 Green/black	gesis GST 18i4 Pebble gray	gesis GST 18i5 Light blue	gesis GST 18i3 Black	gesis GST 18i4 Black	gesis GST 18i5 Pastel blue
Dimensions							
• Height incl. TH 35-7.5 mounting rail	mm	120	120	120	120	120	120
• Width (connected in series)	mm	80	80	80	80	80	80
• Depth	mm	62	41 (31)	41 (31)	41 (31)	41 (31)	41 (31)
Bus connection							
Integrated bus coupling units		✔	--	--	--	--	--
Bus connection via plug system		✔	--	--	--	--	--
Max. possible expansion modules		6	--	--	--	--	--
Inputs							
Max. cable length, unshielded, twisted	m	--	100	100	--	--	--
Pushbutton inputs							
For voltage input		--	✔	✔	--	--	--
• 230 V AC		--	4	--	--	--	--
• 24 V DC		--	--	4	--	--	--
Outputs							
Control output							
1 ... 10 V DC		--	--	--	--	--	✔
Control current	mA	--	--	--	--	--	50
Load output							
Floating relay contact		--	--	--	**2**	--	**1**
Number of channels (one UP and one DOWN each)		--	--	--	--	**1**	--
Integrated isolating relay function for connection of 2 drives per channel		--	--	--	--	✔	--
Load types							
Rated contact voltage, AC	V	--	--	--	230	230	230
Rated contact current	A	--	--	--	16	8	16

For selection and ordering data, see page 10/4.

Modular quick-assembly 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 611-3AL01	**AP 611**	**AP 611 basic modules** gesis EIB M2-BAS	B	**5WG1 611-3AL01**		1	1 unit	030	0.320
 5WG1 611-3AL11	**AP 611/11**	**AP 611/11 input modules** gesis EIB M2, 4 inputs for 230 V AC	B	**5WG1 611-3AL11**		1	1 unit	030	0.238
 5WG1 611-3AL21	**AP 611/21**	**AP 611/21 input modules** gesis EIB M2, 4 inputs for 24 V DC	B	**5WG1 611-3AL21**		1	1 unit	030	0.255
 5WG1 611-3AL31	**AP 611/31**	**AP 611/31 load switches** gesis EIB M2-0/2, 2 x 230 V AC, 16 A	B	**5WG1 611-3AL31**		1	1 unit	030	0.258
 5WG1 611-3AL51	**AP 611/51**	**AP 611/51 shutter/blind actuators** gesis EIB M, 2 x 230 V, 8 A, running parallel	B	**5WG1 611-3AL51**		1	1 unit	030	0.234
 5WG1 611-3AL61	**AP 611/61**	**N 611/61 switch/dimming actuators** gesis EIB M2, 1 x 230 V AC, 16 A	B	**5WG1 611-3AL61**		1	1 unit	030	0.276

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* You can order this quantity or a multiple thereof.

Technical specifications

The "flat quick-assembly system" are actuators for distributed mounting in false floors or suspended ceilings.

Mains connection is over plug-in connector "gesis GST 18i5 black".
Bus connection is via the plug-in connector "gesis BST 14i2 green".
Mains and bus connection can also be implemented using the combination connector "gesis EST 2i5 green/black".
For plug types for outputs, see "Technical specifications".

Type		Shutter/blind actuators AP 631	Shutter/blind actuators AP 631/02	Shutter/blind actuators AP 631/51	Shutter/blind actuators AP 631/52	Combination actuators AP 631/11	Combination actuators AP 631/12	Switch/dimming actuators AP 631/21	Switch/dimming actuators AP 631/22	Switch actuators AP 631/43	Switch actuators AP 631/44	Switch actuators AP 631/32	Switch actuators, Gateway EnOcean AP 631/62
Enclosure data													
Plug-in connectors for outputs													
• gesis GST 18i3 black		--	--	--	--	Switch-ing	Switch-ing	--	--	✔	✔	--	✔
• gesis GST 18i4 black		✔	✔	✔	✔	Shutter/ blind	Shutter/ blind	--	--	--	--	--	--
• gesis GST 18i5 pastel blue		--	--	--	--	--	--	✔	✔	--	--	--	--
• gesis GST 18i5 black		--	--	--	--	--	--	--	--	--	--	✔	--
Dimensions													
• Height (incl. combination distributor block)	mm	32 (71)	32 (71)	32 (71)	32 (71)	32 (71)	32 (71)	32 (71)	32 (71)	32 (71)	32 (71)	32 (71)	32 (71)
• Width	mm	112	112	112	112	112	112	112	112	112	112	112	112
• Length	mm	254	254	254	254	254	254	254	254	254	254	254	254
Power supply													
Mains voltage connection													
• Single-phase		✔	--	✔	--	✔	--	✔	--	✔	--	--	--
• Three-phase		--	✔	--	✔	--	✔	--	✔	--	✔	✔	✔
Bus connection													
Integrated bus coupling units		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Bus connection via plug system		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Outputs													
Control output													
1 ... 10 V DC		--	--	--	--	--	--	2	2	--	--	--	--
Control current	mA	--	--	--	--	--	--	50	50	--	--	--	--
Load output													
Floating relay contact		--	--	--	--	**2**	**2**	**2**	**2**	**4**	**4**	**6**	**4**
Number of channels (one UP and one DOWN each)		**2**	**2**	**2**	**2**	**1**	**1**	--	--	--	--	--	--
Load types													
Rated contact voltage, AC	V	230	230/400	230	230/400	230	230/400	230	230/400	230	230/400	230/400	230/400
Rated contact current	A	8	8	8	8	8/16	8/16	16	16	16	16	16	16
Inputs													
EnOcean radio receiver		--	--	--	--	--	--	--	--	--	--	--	✔

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

SMS controls, flat

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 631-3AL01 5WG1 631-3AL02	**AP 631**	**AP 631 shutter/blind actuators** Single-phase, gesis EIB V-0/2W SI 1PH	B	**5WG1 631-3AL01**		1	1 unit	030	0.320
	AP 631/02	**AP 631/02 shutter/blind actuators** Three-phase, gesis EIB V-0/2W SI	B	**5WG1 631-3AL02**		1	1 unit	030	0.320
 5WG1 631-3AL51 5WG1 631-3AL52	**AP 631/51**	**AP 631/51 shutter/blind actuators** Single-phase, gesis EIB V-0/2W 1PH	B	**5WG1 631-3AL51**		1	1 unit	030	0.408
	AP 631/52	**AP 631/52 shutter/blind actuators** Three-phase, gesis EIB V-0/2W	B	**5WG1 631-3AL52**		1	1 unit	030	0.408
 5WG1 631-3AL11 5WG1 631-3AL12	**AP 631/11**	**AP 631/11 combination actuators** Single-phase, gesis EIB, V-0/2+1W 1PH	B	**5WG1 631-3AL11**		1	1 unit	030	0.408
	AP 631/12	**AP 631/12 combination actuators** Three-phase, gesis EIB, V-0/2+1W	B	**5WG1 631-3AL12**		1	1 unit	030	0.408
 5WG1 631-3AL21 5WG1 631-3AL22	**AP 631/21**	**N 631/21 switch/dimming actuators** Single-phase, gesis EIB V-0/2SD 1PH	B	**5WG1 631-3AL21**		1	1 unit	030	0.408
	AP 631/22	**N 631/22 switch/dimming actuators** Three-phase, gesis EIB V-0/2SD	B	**5WG1 631-3AL22**		1	1 unit	030	0.408
 5WG1 631-3AL43 5WG1 631-3AL44	**AP 631/43**	**AP 631/43 switch actuators** Single-phase, gesis EIB V-0/4b 1PH	B	**5WG1 631-3AL43**		1	1 unit	030	0.420
	AP 631/44	**AP 631/44 switch actuators** Three-phase, gesis EIB V-0/4b	B	**5WG1 631-3AL44**		1	1 unit	030	0.420
 5WG1 631-3AL32	**AP 631/32**	**AP 631/32 switch actuators** Three-phase, gesis EIB V-0/6	B	**5WG1 631-3AL32**		1	1 unit	030	0.408
 5WG1 631-3AL62	**AP 631/62**	**AP 631/62 switch actuators, Gateway EnOcean/KNX** Three-phase, gesis EIB V-56/4[1)]	B	**5WG1 631-3AL62**		1	1 unit	030	0.400

[1)] For more products, see chapter "Radio system EnOcean".

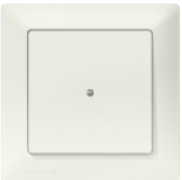
* You can order this quantity or a multiple thereof.

Gateways, Interface Converters

11

Introduction

Overview

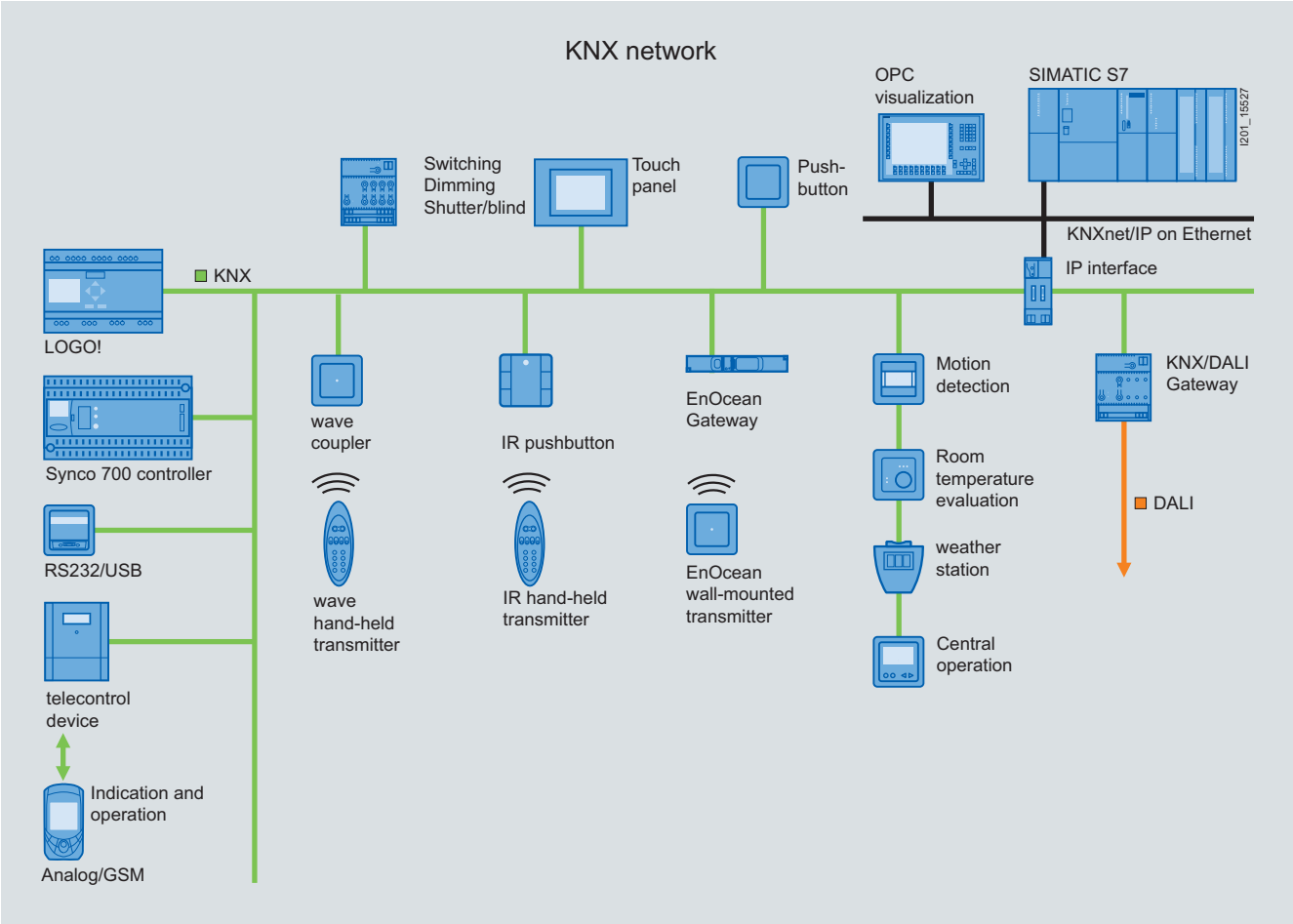
	Devices	Application	Page
	**KNX/Ethernet**	Communication via fast Ethernet data network, whether internally or for remote control.	11/5
	**KNX/DALI**	For the control of ECGs over DALI interface.	11/7
	**KNX/USB**	PC interface via the integrated USB socket in different DELTA designs or as N device.	11/9
	**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 Radio**	Wireless remote control and expansion made easy. For i-system, DELTA profil and DELTA style.	11/15

	Devices	Application	Page
	**KNX/EnOcean**	Integration of battery-less EnOcean pushbuttons in GAMMA *instabus* systems	11/16
	**KNX/LOGO!**	More functions with modern small control systems.	11/17
	**KNX/SIMATIC S7**	The key to the world of automation.	11/18
	**KNX/telephone**	Connection to telephone.	11/20

Introduction

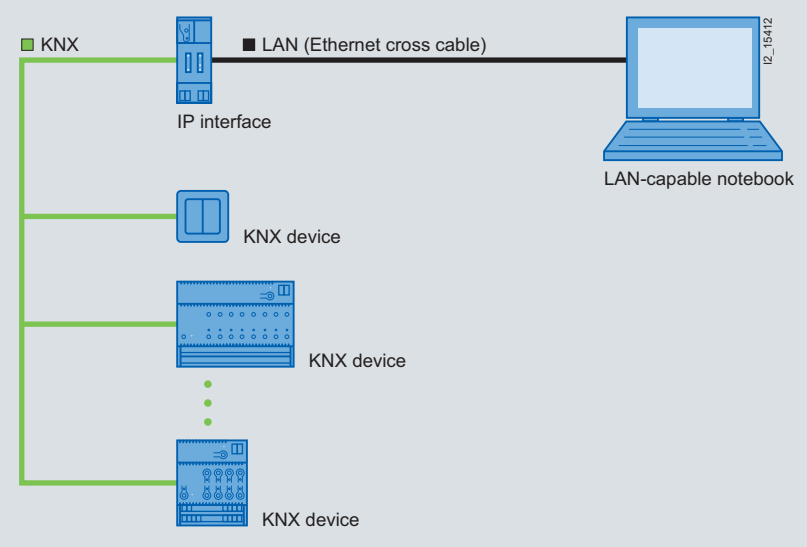
The KNX network

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 management systems (OPC, PROFINET, SIMATIC S7, etc.).



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 "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 V AC/DC power supply unit	24	24	24	24
Power supply for the electronics via "Power over Ethernet" according to IEEE 802.3af	✔	✔	--	--
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	--	--	--	✔

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
 5WG1 148-1AB22	**N 148/22**	**N 148/22 IP interfaces**	A	**5WG1 148-1AB22**		1	1 unit	030	0.120
 5WG1 146-1AB02	**N 146/02**	**N 146/02 IP routers**	A	**5WG1 146-1AB02**		1	1 unit	030	0.120
 5WG1 350-1EB01	**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	030	0.182
 5WG1 151-1EB01	**N 151**	**N 151 IP viewers**	A	**5WG1 151-1AB01**		1	1 unit	030	0.150

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* You can order this quantity or a multiple thereof.

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			
• Height	mm		
• Width (1 MW = 18 mm)	mm	4 MW	4 MW
• Depth	mm		
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		✔	--

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
 5WG1 141-1AB02	**N 141/02**	**N 141/02 KNX/DALI gateways**	A	**5WG1 141-1AB02**		1	1 unit	030	0.200
 5WG1 525-1EB01	**N 525E**	**N 525E switch/dimming actuators** 8 x DALI outputs, 8 DALI ECG per output	A	**5WG1 525-1EB01**		1	1 unit	030	0.314

* You can order this quantity or a multiple thereof.

Overview

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

Technical specifications

Design			DELTA profil/style 
Type		N 148/11	UP 146E
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	1 MW	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		✔	✔

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	030	0.090
DELTA profil									
 5WG1 146-2EB11	**UP 146E**	**UP 146E USB interfaces**[1)2)]							
		Versions							
		• Titanium white	A	**5WG1 146-2EB11**		1	1 unit	022	0.089
		• Anthracite	B	**5WG1 146-2EB21**		1	1 unit	022	0.090
		• Silver	C	**5WG1 146-2EB71**		1	1 unit	022	0.096
DELTA style									
 5WG1 146-2EB11	**UP 146E**	**UP 146E USB interfaces**[1)2)] Titanium white	A	**5WG1 146-2EB11**		1	1 unit	022	0.089

[1)] The bus coupling unit must be ordered separately.
[2)] The matching design frame must be ordered separately.

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* You can order this quantity or a multiple thereof.

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**	**N 148/04**	**UP 146**
Enclosure data				
Design		**N**	**N**	**UP**
Modular installation devices for mounting on TH35 EN 60715 mounting rail		✔	✔	--
Dimensions				
• Height	mm			65
• Width (1 MW = 18 mm)	mm	3 MW	3 MW	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, 19200 (for FT1.2)	9600
Can be switched between standard protocol and FT1.2		--	On the device	--
Electrically isolated access to the bus line via integrated socket		SUB-D, 9-pole	SUB-D, 9-pole	SUB-D, 9-pole
Access to all bus devices in the system		✔	✔	✔

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. kg
Design-independent									
 5WG1 148-1AB02	**N 148/02**	**N 148/02 RS232 interfaces** Ⓤ	A	**5WG1 148-1AB02**		1	1 unit	030	0.177
 5WG1 148-1AB04	**N 148/04**	**N 148/04 RS232 interfaces** Ⓤ Can be switched to FT 1.2 protocol	B	**5WG1 148-1AB04**		1	1 unit	030	0.180
DELTA profil									
 5WG1 146-2AB11	**UP 146**	**UP 146 RS232 interfaces**[1)2)] Versions							
		• Titanium white	A	**5WG1 146-2AB11**		1	1 unit	022	0.090
		• Anthracite	D	**5WG1 146-2AB21**		1	1 unit	022	0.088
		• Silver	D	**5WG1 146-2AB71**		1	1 unit	022	0.083
DELTA style									
 5WG1 146-2AB11	**UP 146**	**UP 146 RS232 interfaces**[1)2)] Titanium white	A	**5WG1 146-2AB11**		1	1 unit	022	0.090

[1)] The bus coupling unit must be ordered separately.
[2)] The matching design frame must be ordered separately.

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* You can order this quantity or a multiple thereof.

Technical specifications

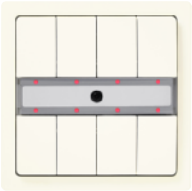
Design	i-system	DELTA profil	DELTA style	
				
Type	**UP 223/5**	**UP 245/5**	**UP 287/5**	**N 450/02**
Application program	909301			7F0301
Display/control elements				
Individual pushbuttons	6	8	8	--
Pushbutton pairs	3	4	4	--
Operation (v: vertical, h: horizontal)	h	v	v	--
LED per pushbutton pair for 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				
Plug onto a bus coupling unit (BTM) UP 117/11	✔	✔	✔	--
Integrated bus coupling units	--	--	--	✔
Inputs				
IR receiver decoder	✔	✔	✔	✔ (with S 440)
IR channels in blocks of 64	16	16	16	14
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	✔	✔	✔	--
Assignments per channel	8	8	8	4
Store and call up scene, 8-bit	✔	✔	✔	--
Store and call up scene, 1-bit	✔	✔	✔	✔[1)]
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	✔	✔	✔	--

[1)] In conjunction with scene module.

KNX/infrared

	Type	Description
	**N 450**	**N 450 IR decoders** • Parallel connection of up to four S 440 IR receivers • Conversion of IR telegrams incoming from an IR receiver into bus telegrams • Control of up to 22 functions (switching ON/OFF/OVER, dimming, value transmission, shutter/blind control or call up/store scenes) • Bus-powered electronics • Bus connection via contact system to data rail • Modular installation devices for mounting on TH35 EN 60715 mounting rail • Width: 2 MW (1 MW = 18 mm).
		Accessories
	**S 440**	**S 440 IR receivers for N 450 IR decoders** • For reception and amplification of IR signals transmitted from IR wall-mounted transmitters or IR hand-held transmitters, for conversion into electrical signals • Powered via the IR decoder • For connection to an N 450 IR decoder via a 1 m cable (extendable up to 50 m), including clamping springs and rosette for installation in ceilings, walls or luminaires • Dimensions (H x W x D): 25 x 26 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
i-system									
	**UP 223/5**	**UP 223/5 pushbuttons**[1)2)] Ⓤ Triple, with status LED, scene module and IR receiver decoder, neutral							
		Versions							
		• Electrical white	B	**5WG1 223-2AB05**		1	1 unit	022	0.060
		• Titanium white	B	**5WG1 223-2AB15**		1	1 unit	022	0.060
		• Carbon metallic	B	**5WG1 223-2AB25**		1	1 unit	022	0.060
		• Aluminum metallic	B	**5WG1 223-2AB35**		1	1 unit	022	0.060
5WG1 223-2AB15									
DELTA profil									
	**UP 245/5**	**UP 245/5 pushbuttons**[1)2)] Quadruple, with status LED, scene module and IR receiver decoder, neutral							
		Versions							
		• Titanium white	A	**5WG1 245-2AB15**		1	1 unit	022	0.085
		• Anthracite	C	**5WG1 245-2AB25**		1	1 unit	022	0.055
		• Silver	B	**5WG1 245-2AB75**		1	1 unit	022	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 287-2AB15**		1	1 unit	022	0.085
		• Anthracite	C	**5WG1 287-2AB25**		1	1 unit	022	0.085
		• Silver	B	**5WG1 287-2AB45**		1	1 unit	022	0.085
5WG1 287-2AB15									
Design-independent									
	**N 450/02**	**N 450/02 IR decoders** Ⓤ (to be discontinued)	A	**5WG1 450-1AB02**		1	1	030	0.105
5WG1 450-1AB02									
		Accessories							
	**S 440**	**S 440 IR receiver** Ⓤ for N 450/02 IR decoders (to be discontinued)	A	**5WG1 440-7AB01**		1	1	030	0.072
5WG1 440-7AB01									

1) The bus coupling unit (BTM) must be ordered separately.
2) The matching design frame must be ordered separately.

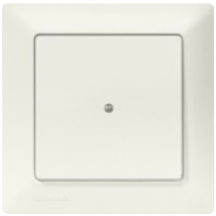
* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**UP 140**	**UP 140 wave/*instabus* couplers** • For coupling GAMMA wave with GAMMA *instabus* • Coupling of a total of up to 50 GAMMA wave sensor channels with GAMMA *instabus* actuator channels or GAMMA *instabus* 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 or 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 Radio transmitter/receiver for 868 MHz • 10-pole plug for plugging onto a UP 114 bus coupling unit, version BCU 2.1.

Design		**i-system** Single	**DELTA profil** Single	**DELTA style** Single
Dimensions				
• Length	mm	55	65	68
• Width	mm	55	65	68
• Depth	mm	13	14	16.5

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
i-system									
 5WG3 140-2HB11	**UP 140**	**UP 140 wave coupler/*instabus*[1)2)]**							
		Versions							
		• Titanium white	A	**5WG3 140-2HB11**		1	1 unit	022	0.048
		• Carbon metallic	C	**5WG3 140-2HB21**		1	1 unit	022	0.048
		• Aluminum metallic	B	**5WG3 140-2HB31**		1	1 unit	022	0.048
DELTA profil									
 5WG3 140-2AB11	**UP 140**	**UP 140 wave coupler/*instabus*[1)2)]**							
		Versions							
		• pearl gray (to be discontinued)	X	**5WG3 140-2AB01**		1	1 unit	022	0.052
		• Titanium white	A	**5WG3 140-2AB11**		1	1 unit	022	0.052
		• Anthracite	C	**5WG3 140-2AB21**		1	1 unit	022	0.052
		• Silver	B	**5WG3 140-2AB71**		1	1 unit	022	0.052
DELTA style									
 5WG3 140-2GB11	**UP 140**	**UP 140 wave coupler/*instabus*[1)2)]**							
		Versions							
		• Titanium white	A	**5WG3 140-2GB11**		1	1 unit	022	0.055
		• Basalt black	C	**5WG3 140-2GB21**		1	1 unit	022	0.054

[1)] The bus coupling unit must be ordered separately.
[2)] The matching design frame must be ordered separately.

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* You can order this quantity or a multiple thereof.

KNX/EnOcean

Technical specifications

	Type	Description
	**AP 631/62**	**EnOcean Gateway/KNX, AP 631/62 switch actuators, three-phase** • Plug-in connector outputs, gesis GST 18i3 black • Mains voltage connection, three-phase • Integrated bus coupling units • Bus connection via plug system • 4 channels • Rated contact voltage, 230/400 V AC • Rated contact current 16 A • EnOcean radio receiver • Dimensions (H x W x D): 32 x 254 x 112 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 631/62**	**AP 631/62 switch actuators, Gateway EnOcean/KNX** Three-phase, gesis EIB V-56/4[1)]	B	**5WG1 631-3AL62**		1	1 unit	030	0.400

5WG1 631-3AL62

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

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* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
		**LOGO KNX/LOGO! communication modules** • For connection of LOGO! to KNX, as slave 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 timer 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 2 virtual KNX analog outputs • 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).

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 6BK1700-0BA00-0AA2	**LOGO KNX/LOGO! communication modules**	C	**6BK1700-0BA00-0AA2**		1	1 unit	475	0.107

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* You can order this quantity or a multiple thereof.

KNX/SIMATIC S7

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).

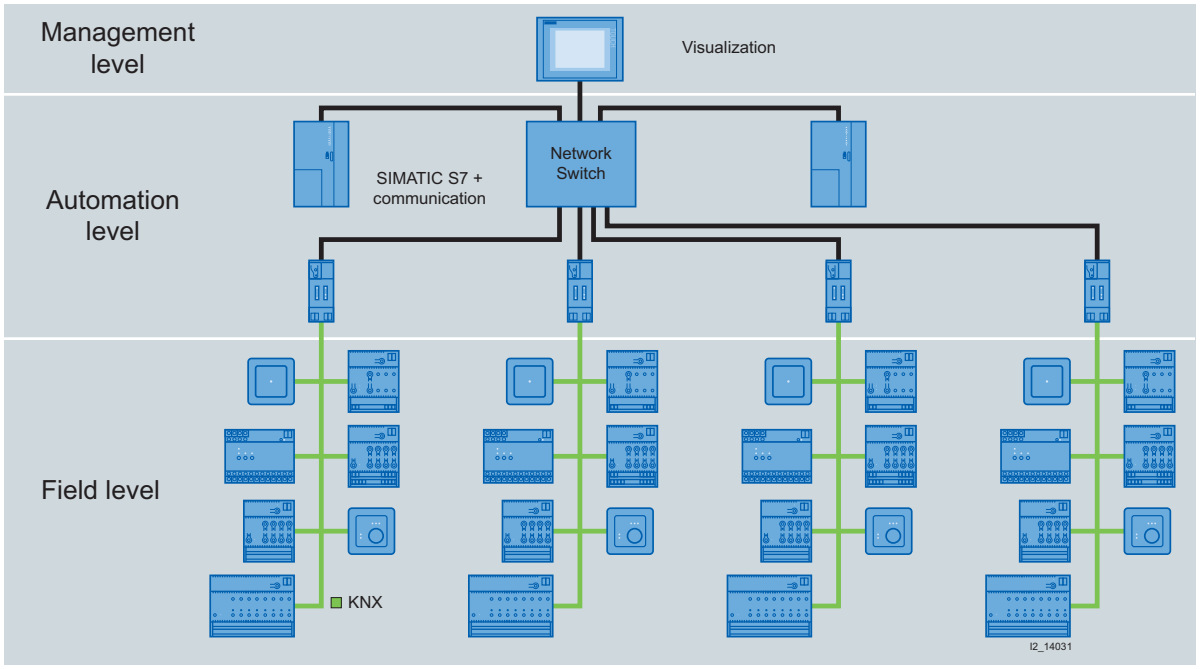
The modules also support the cyclic reading of values in 5 different, freely configurable cycles (10 min. - 1 x daily).

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



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	**KNX/EIB2S7** NEW	C	**6AV6 643-7AC10-0AA1**		1	1 unit	2Z7	0.200

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* You can order this quantity or a multiple thereof.

KNX/telephone

Technical specifications

	Type	Description
	**AP 140/02** **AP 140/22**	**Telecontrol devices TC Plus EIB** • For connection of KNX to the telephone system • 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 • 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
	**AP 140/22**	**AP 140/22 telecontrol devices TC Plus EIB GSM** KNX connection to GSM telephone network[1)]	C	**5WG1 140-7AU22**		1	1 unit	030	1.331
	AP 140/02	**AP 140/02 telecontrol devices TC Plus EIB analog** KNX connection to analog telephone network[1)]	C	**5WG1 140-7AU02**		1	1 unit	030	1.378
		Accessories							
	S 190	**S 190 headphone/speaker sets** for TC Plus AP 140	X	**5WG1 190-7AU01**		1	1 unit	030	0.211

5WG1 140-7AU22

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

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* You can order this quantity or a multiple thereof.

Physical Sensors

12

Introduction

Overview

		Application	Page
With KNX Connection			
	**Motion/presence**	Recording of motion and presence in a range of different designs.	12/5
	**Brightness**	Brightness sensors measure the brightness value – both indoors and outdoors.	12/7
	**Wind**	Wind measurement with no mechanical components.	12/7
	**Temperature**	Temperature sensors measure the current temperature.	12/8
	**Leakage**	Water sensors indicate unexpected water. In DELTA profil or DELTA style design.	12/8

Technical specifications

Type		UP 255 UP 257 UP 258H	UP 258/11	AP 251	UP 258/21	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		--	--	--	--	--	--	--	--	✔	--	--	--
Modular installation devices in oblong design, for installation in luminaires for fluorescent lamps		--	--	--	--	✔	✔	✔	--	--	--	--	--
Surface mounting		--	--	✔	✔	✔	✔	✔	✔	--	--	✔	✔
Mounting on a flush-mounting box using a mounting plate		--	✔	--	✔	--	--	--	--	--	--	--	--
Mounting in intermediate ceilings		--	--	--	--	✔	✔	✔	--	--	--	--	--
Degree of protection		IP20	IP20	IP55	IP20	IP20	IP20	IP20	IP54	IP20	IP20	--	--
Mast mountings		--	--	--	--	--	--	--	--	--	--	--	✔
Dimensions													
• Height	mm	[1]	87	80	102	42	42	42	110		65	30	77
• Width (1 MW = 18 mm)/∅	mm	[1]	87	82	102	274.5	274.5	274.5	72	4 MW	65	52	96
• Depth	mm	23	60	182	33	28	28	28	54		42	33	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 electronic power pack 4AC2 402 is recommended for the power supply.

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General data

Type		UP 255 UP 257 UP 258H	UP 258/11	AP 251	UP 258/21	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		--	✔	--	✔	--	--	--	--	--	--	--	--
Horizontal sensing angle		180°	360°	290°	360°	--	--	--	--	--	--	--	--
Vertical sensing angle		--	120°	--	120°	--	--	--	--	--	--	--	--
Range to the front	m	10	--	8	--	--	--	--	--	--	--	--	--
Range on each side, up to	m	6	4.5[1)]	8	3.5[1)]	--	--	--	--	--	--	--	--
Adjustable range		✔	--	--	--	--	--	--	--	--	--	--	--
Brightness													
Measuring range	Lux	1 ... 1000	100 ... 1600 (Standard) 25 ... 200 (expanded)	--	10 ... 1500	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 selection and ordering data, see page 12/5 ff.

Selection and ordering data

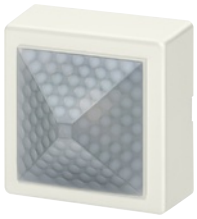
	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
i-system									
 5WG1 258-2HB11	**UP 258H**	**UP 258H motion detectors**[1)2)]							
		Versions							
		• Mounting height 1.10 m							
		- Titanium white	A	**5WG1 258-2HB11**		1	1 unit	022	0.060
		- Carbon metallic	C	**5WG1 258-2HB21**		1	1 unit	022	0.059
		- Aluminum metallic	B	**5WG1 258-2HB31**		1	1 unit	022	0.066
		• Mounting height 2.20 m							
		- Titanium white	B	**5WG1 258-2HB12**		1	1 unit	022	0.063
		- Carbon metallic	C	**5WG1 258-2HB22**		1	1 unit	022	0.062
		- Aluminum metallic	B	**5WG1 258-2HB32**		1	1 unit	022	0.060
DELTA profil									
 5WG1 255-2AB11	**UP 255**	**UP 255 motion detectors**[1)2)]							
		Versions							
		• Mounting height 1.10 m							
		- Titanium white	A	**5WG1 255-2AB11**		1	1 unit	022	0.061
		- Anthracite	B	**5WG1 255-2AB21**		1	1 unit	022	0.066
		- Silver	A	**5WG1 255-2AB71**		1	1 unit	022	0.060
		• Mounting height 2.20 m							
		- Titanium white	A	**5WG1 255-2AB12**		1	1 unit	022	0.061
		- Anthracite	B	**5WG1 255-2AB22**		1	1 unit	022	0.063
		- Silver	A	**5WG1 255-2AB72**		1	1 unit	022	0.065
DELTA style									
 5WG1 257-2AB13	**UP 257**	**UP 257 motion detectors**[1)2)]							
		Versions							
		• Mounting height 1.10 m							
		- Titanium white	B	**5WG1 257-2AB13**		1	1 unit	022	0.062
		- Basalt black	B	**5WG1 257-2AB21**		1	1 unit	022	0.061
		- Platinum metallic	B	**5WG1 257-2AB41**		1	1 unit	022	0.062
		• Mounting height 2.20 m							
		- Titanium white	B	**5WG1 257-2AB14**		1	1 unit	022	0.062
		- Basalt black	B	**5WG1 257-2AB22**		1	1 unit	022	0.065
		- Platinum metallic	B	**5WG1 257-2AB42**		1	1 unit	022	0.062

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.

12

* You can order this quantity or a multiple thereof.

Motion/presence

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
Design-independent									
 5WG1 251-3AB11	**AP 251**	**AP 251 surface-mounting motion detectors, IP55**							
		Versions							
		• Titanium white (similar to RAL 9010)	A	**5WG1 251-3AB11**		1	1 unit	030	0.308
		• Anthracite	A	**5WG1 251-3AB21**		1	1 unit	030	0.308
		Accessories							
5TC7 900		**Special base** For AP 251 motion detectors, IP55							
		• Titanium white (similar to RAL 9010)	A	**5TC7 900**		1	1 unit	024	0.107
		• Anthracite	A	**5TC7 901**		1	1 unit	024	0.106
 5TC7 902		**Remote Controls** For AP 251 motion detectors, IP55	A	**5TC7 902**		1	1 unit	024	0.107
 5WG1 258-2AB11	**UP 258/11**	**UP 258/11 presence detectors**[1] With brightness sensor	A	**5WG1 258-2AB11**		1	1 unit	030	0.217
 5WG1 258-2AB21	**UP 258/21**	**UP 258/21 presence detectors** (to be discontinued) With brightness sensor and constant light level control	A	**5WG1 258-2AB21**		1	1 unit	030	0.176
		Accessories							
 5WG1 258-3EB21	**AP 258E**	**AP 258E surface-mounting enclosures** (to be discontinued) UP 258/21 presence detectors • For fixing the presence detector as a surface mounting device. • Dimensions (H x W x D): 102 x 102 x 46 mm	A	**5WG1 258-3EB21**		1	5 units	030	0.076

[1] The bus coupling unit must be ordered separately.

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* You can order this quantity or a multiple thereof.

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
 5WG1 255-4AB12 5WG1 255-4AB11	**AP 255/12**	**AP 255/12 brightness controllers**	B	**5WG1 255-4AB12**		1	1 unit	030	0.050
	UP 255/11	**UP 255/11 brightness controllers**	B	**5WG1 255-4AB11**		1	1 unit	030	0.030
	GE 255/13	**UP 255/13 brightness controllers** NEW	B	**5WG1 255-4AB13**		1	1 unit	030	0.052
 5WG1 254-3EY02	**AP 254/02**	**AP 254/02 dual sensors** Brightness measurement, temperature measurement, sun protection control, lighting control	A	**5WG1 254-3EY02**		1	1 unit	030	0.153
 5WG1 253-4AB01	**GE 253**	**GE 253 outdoor brightness sensors** For indoor mounting	A	**5WG1 253-4AB01**		1	1 unit	030	0.300
 5WG1 252-4AB02 5WG1 254-4AB01	**GE 252**	**GE 252 indoor brightness sensors**	A	**5WG1 252-4AB02**		1	1 unit	030	0.412
	GE 254	**GE 254 indoor brightness sensors** For indirect lighting	A	**5WG1 254-4AB01**		1	1 unit	030	0.313

Wind

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 257-3AB42	**AP 257/42**	**AP 257/42 wind sensors** NEW	B	**5WG1 257-3AB42**		1	1 unit	030	0.145
		Accessories							
 4AC2 402		**Electronic power supply units**	B	**4AC2 402**		1	1 unit	027	0.081

* You can order this quantity or a multiple thereof.

Physical Sensors
With KNX Connection

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
 5WG1 258-1AB02	**N 258/02**	**N 258/02 temperature sensors** For four Pt1000 sensors	B	**5WG1 258-1AB02**		1	1 unit	030	0.242
 5WG1 254-3EY02	**AP 254/02**	**AP 254/02 dual sensors** Brightness measurement, temperature measurement, sun protection control, lighting control	A	**5WG1 254-3EY02**		1	1 unit	030	0.153

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									
 5WG1 272-2AB11	**UP 272**	**UP 272 water sensors**[1)2)]							
		Versions							
		• Titanium white	A	**5WG1 272-2AB11**		1	1 unit	022	0.106
		• Anthracite	C	**5WG1 272-2AB21**		1	1 unit	022	0.114
		• Silver	B	**5WG1 272-2AB71**		1	1 unit	022	0.108
DELTA style									
 5WG1 272-2AB11	**UP 272**	**UP 272 water sensors**[1)2)] Titanium white	A	**5WG1 272-2AB11**		1	1 unit	022	0.106

[1)] The bus coupling unit must be ordered separately.
[2)] The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Control and Automation Devices

13

Introduction

Overview

	Devices	Application	Page
	**Logic modules, scene modules, time/event modules**	Linking received binary signals and transmission of result via GAMMA *instabus*. 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 *instabus*.	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					
	750003	800C04 (ETS2)	800C09 (ETS3)	801701	908701	740202	800A01 (ETS2)	800A06 (ETS3)	720101	740301	740A01	740B01	740C01	740D01
Enclosure data														
Modular installation devices for mounting on TH 35 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					
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	--	✔		✔[1]	✔	✔	--		--	--	--	--	--	--
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]	--	--	--[4]		--					
Astro function	--	--		--	✔	--	--		--					
Internal clock, can be synchronized via master clock	--	--		✔(KNX)	✔(LAN)[5]	--	✔(KNX)		--					
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.

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.

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
 5WG1 305-1AB01	**N 305**	**N 305 scene/event modules** NEW	A	**5WG1 305-1AB01**		1	1 unit	030	0.065
 5WG1 347-1AB02	**N 347/02**	**N 347/02 logic operation modules** UL 127 Logic gate	A	**5WG1 347-1AB02**		1	1 unit	030	0.115
 5WG1 350-1AB01	**N 350**	**N 350 event, time and logic modules** UL 10 logic gates, 10 event entries, weekly scheduling program	B	**5WG1 350-1AB01**		1	1 unit	030	0.120
 5WG1 350-1EB01	**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	030	0.182
 5WG1 302-1AB01	**N 302**	**N 302 time modules** UL	B	**5WG1 302-1AB01**		1	1 unit	030	0.087
 5WG1 341-1AB01	**N 341**	**N 341 event and time modules** UL	A	**5WG1 341-1AB01**		1	1 unit	030	0.119
 5WG1 301-1AB01	**N 301**	**N 301 logic modules** UL 1 x AND, 1 x OR, linking of 8 inputs, partition control, positively driven operation	A	**5WG1 301-1AB01**		1	1 unit	030	0.086

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* You can order this quantity or a multiple thereof.

Technical specifications

Type		N 350E	REG 371	REG 372			REG 372/02			REG 373
		908701	221D01	7F0401	7F0501	7F0601	7F0401	7F0501	7F0601	7F0803
Enclosure data										
Modular installation devices for mounting on TH 35 EN 60715 mounting rail		✔	✔	✔			✔			✔
Dimensions										
• Width (1 MW = 18 mm)	MW	4	2	6			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)	--	✔(Obelisk)			✔(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 unit	V	12 ... 30	--	--			--			--
Bus connection										
Integrated bus coupling units		✔	✔	✔			✔			✔
Bus connection via bus terminal		✔	✔	✔			✔			✔
Connection for DCF77 receiver		✔	--	--			✔			✔
Software										
Timer functions										
Channels		**80**[2]	**2**	**4**			**4**			**16**
Memory locations		[3]	**36**	**324**			**324**			**500**
Standard day/weekly program		✔	✔	✔			✔			✔
No. of weekly programs that can be prioritized		8	--	9			9			9
Holiday switching (duration 1 ... 99 days, batch 0 ... 99 days)		[3]	✔	✔			✔			✔
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	8
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] Communication objects.
[3] On request.

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

Time switches and accessories

	Type	Description
		Accessories
		**PC programming sets with OBELISK memory card** • For fast and easy creation of switching programs for the REG 372 4-channel time switch, the DCF-77 REG 372/02 4-channel time switch and the DCF-77 REG 373 16-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 • 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.
		**OBELISK 4K, EEPROM memory modules** EEPROM memory module with 4KB memory for programming the REG 372 4-channel time switch and the DCF-77 REG 372/02 4-channel time switch.
		**OBELISK 64K, EEPROM memory modules** EEPROM memory module with 64 KB memory for programming the REG 373 16-channel time switch.
	**AP 390**	**AP 390 DCF-77 aerials** • For connection to up to 10 REG 372/02 year time switches, 4-channel, or REG 373 year time switches, 16-channel • Red LED blinks in 1-second intervals to indicate receipt of signal • 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	030	0.182
 5WG1 371-5EY01	**REG 371**	**REG 371 weekly time switches**[2] 2-channel	A	**5WG1 371-5EY01**		1	1 unit	030	0.148
 5WG1 372-5EY01	**REG 372**	**REG 372 year time switches**[2] 4-channel	A	**5WG1 372-5EY01**		1	1 unit	030	0.354
	REG 372/2	**REG 372/02 year time switches**[2][3] 4-channel, DCF77 connection	A	**5WG1 372-5EY02**		1	1 unit	030	0.463

[1] The software required for parameter assignment via the Ethernet interface is available on CD-ROM and is included in delivery.
[2] During configuration, the installation engineer needs to carry out all the necessary settings.
[3] The AP 390 DCF-77 aerial must be ordered separately.

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* You can order this quantity or a multiple thereof.

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 373-5EY01	**REG 373**	**REG 373 year time switches** (to be discontinued) 16-channel, DCF77 connection[1)]	B	**5WG1 373-5EY01**		1	1 unit	030	0.480
		Accessories							
 5WG1 810-0EY01		**PC programming sets** (to be discontinued) With OBELISK memory card	B	**5WG1 810-0EY01**		1	1 unit	030	0.444
 5WG1 810-8EY01		**OBELISK 4K** (to be discontinued) EEPROM memory modules	B	**5WG1 810-8EY01**		1	1 unit	030	0.023
		OBELISK 64K (to be discontinued) EEPROM memory modules	B	**5WG1 810-8EY02**		1	1 unit	030	0.020
 5WG1 390-3EY01	**AP 390**	**AP 390 DCF-77 aerials** (to be discontinued)	A	**5WG1 390-3EY01**		1	1 unit	030	0.170

[1)] During configuration, the installation engineer needs to carry out all the necessary settings.

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* You can order this quantity or a multiple thereof.

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 TH 35 EN 60715 mounting rail		✔	✔	✔	✔	✔	✔	✔
Dimensions								
• Height	mm						36	36
• Width	mm	4 MW	4 MW	2 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	--	--	--
Control inputs								
Analog input (0 ... 10 V or 0 ... 20 mA)		--	--	--	--	**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	--	--	--

	Type	Description
		**LOGO!/KNX communication modules** • For connection of LOGO! to KNX, as slave 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 timer functions through LOGO! • For the linking and transmitting via KNX of up to - 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 • 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).
		LOGO! 230RC, LOGO! 12/24RC, LOGO! DM8 230R, LOGO! DM8 12/24R, LOGO! AM2, LOGO! AM2 Pt100, LOGO! AM2 AQ • 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.
		**LOGO! Power** • Designed for use on single-phase AC systems • Nominal input voltage 100 ... 240 V AC, long-range • Input voltage range 85 ... 264 V AC • Tolerance +/- 3 %, residual ripple < 200 mV_{pp} • Ambient temperature -20 ... 55 °C • 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 • Shipbuilding approval GL, ABS
		Versions
		LOGO! Power 12 V/1.9 A • 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).
		LOGO! Power 12 V/4.5 A • Controlled power supply 12 V DC/4.5 A • Nominal output voltage 12 V DC, setting range 10.5 ... 16.1 V • Nominal output current 4.5 A • Efficiency during operation at rated value typ. 85 % • Width: 4 MW (1 MW = 18 mm).
		LOGO! Power 24 V/1.3 A • 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).
		LOGO! Power 24 V/2.5 A • 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).
		LOGO! Power 24 V/4 A • 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).
		**LOGO! PC cables** For program transmission between LOGO! and PC, PC connection via serial interface (RS232 socket).
		LOGO! USB PC cables For program transmission between LOGO! and PC, PC connection via USB interface incl. driver on CD-ROM
		LOGO! Soft Comfort V6 Convenient programming software available in several languages, drag & drop program creation, simulation, comprehensive program documentation, Windows 98SE or higher, Linux, MAC OSX.
		LOGO! memory cards For archiving, duplication, sending of switching programs and transfer of a new or modified program to LOGO!, with copy and password protection.
		**LOGO! English manual** Detailed information on operation and application.
		LOGO! German manual Detailed information on operation and application.

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
 6ED1 052-1FB00-0BA6	**230RC**	**LOGO! 230RC**	A	**6ED1 052-1FB00-0BA6**		1	1 unit	200	0.232
 6ED1 052-1MD00-0BA6	**12/24RC**	**LOGO! 12/24RC**	A	**6ED1 052-1MD00-0BA6**		1	1 unit	200	0.228
 6ED1 055-1FB00-0BA1	**DM8 230R**	**LOGO! DM8 230R**	A	**6ED1 055-1FB00-0BA1**		1	1 unit	200	0.159
 6ED1 055-1MB00-0BA1	**DM8 12/24R**	**LOGO! DM8 12/24R**	A	**6ED1 055-1MB00-0BA1**		1	1 unit	200	0.157
 6ED1 055-1MA00-0BA0	**AM2**	**LOGO! AM2**	A	**6ED1 055-1MA00-0BA0**		1	1 unit	200	0.119
 6ED1 055-1MD00-0BA1	**AM2 RTD**	**LOGO! AM2 RTD**	A	**6ED1 055-1MD00-0BA1**		1	1 unit	200	0.120

* You can order this quantity or a multiple thereof.

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 6ED1 055-1MM00-0BA1	**AM2 AQ**	**LOGO! AM2 AQ**	A	**6ED1 055-1MM00-0BA1**		1	1 unit	200	0.120
 6EP1 321-1SH02		**LOGO! Power 12 V/1.9 A** ▶		**6EP1 321-1SH02**		1	1 unit	583	0.170
		LOGO! Power 12 V/4.5 A ▶		**6EP1 322-1SH02**		1	1 unit	583	0.250
		LOGO! Power 24 V/1.3 A ▶		**6EP1 331-1SH02**		1	1 unit	583	0.170
		LOGO! Power 24 V/2.5 A ▶		**6EP1 332-1SH42**		1	1 unit	583	0.250
		LOGO! Power 24 V/4 A ▶		**6EP1 332-1SH51**		1	1 unit	583	0.340
 6BK1700-0BA00-0AA2		**LOGO!/KNX communication modules** NEW	C	**6BK1700-0BA00-0AA2**		1	1 unit	475	0.107
 6ED1 057-1AA00-0BA0		**LOGO! PC cables**	A	**6ED1 057-1AA00-0BA0**		1	1 unit	200	0.174
		LOGO! USB PC cables	A	**6ED1 057-1AA01-0BA0**		1	1 unit	200	0.160
 6ED1 050-1AA00-0BE7		**LOGO! German manual**	A	**6ED1 050-1AA00-0BE7**		1	1 unit	200	0.750
		LOGO! English manual	A	**6ED1 050-1AA00-0AE7**		1	1 unit	200	0.750
		LOGO! Soft Comfort V6	A	**6ED1 058-0BA02-0YA0**		1	1 unit	200	0.099
		LOGO! memory cards NEW	A	**6ED1 056-1DA00-0BA0**		1	1 unit	200	0.004
		LOGO! Battery cards NEW	A	**6ED1 056-6XA00-0BA0**		1	1 unit	200	0.004
		LOGO! Combo Memory & Battery Card NEW	A	**6ED1 056-7DA00-0BA0**		1	1 unit	200	0.004

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* You can order this quantity or a multiple thereof.

Notes

Introduction

Overview

Devices		Application	Page
	**Bus coupling units and accessories**	The bus coupling unit connects the operator interfaces to the GAMMA *instabus*.	14/3
	**Power supply units**	The extra-low voltage required for the GAMMA *instabus* is provided via an integrated reactor.	14/9
	**Reactors**	For using the unchoked voltage of a KNX power supply unit for a further bus line.	14/10
	**Line couplers**	Ensuring fault-free communication between two bus lines.	14/11
	**Network gateways**	For connecting bus lines to other devices and PCs via fast data networks.	14/14

Technical specifications

	UP 117/11	UP 114/02	UP 110/03	UP 110/11	UP 116 UP 116/11	UP 116/21 UP 116/31	UP 110C03[1]	UP 114C02[1]
Enclosure data								
For installation in flush-mounting switch and socket boxes with ∅ = 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	115
• Width mm	71	71	71	71	71	71	69	69
• Depth mm	16	16	27	19/32	32	32	26	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 1/35.

For selection and ordering data, see page 14/4.

	Type	Description
		Accessories
		**Mounting brackets for UP 110/11** • 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**	**UP 196 paint covers** • 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** • For single or double rockers • One set contains four insert seals

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
 5WG1 117-2AB11	**UP 117/11**	**UP 117/11 bus transceiver modules Plus** Mounting depth 16 mm	A	**5WG1 117-2AB11**		1	1 unit	030	0.055
 5WG1 114-2AB02	**UP 114/02**	**UP 114/02 bus coupling units** Mounting depth 16 mm, with BCU2	A	**5WG1 114-2AB02**		1	1 unit	030	0.060
 5WG1 110-2AB03	**UP 110/03**	**UP 110/03 bus coupling units** Mounting depth 27 mm, with BCU1	A	**5WG1 110-2AB03**		1	1 unit	030	0.068
 5WG1 110-2AB11	**UP 110/11**	**UP 110/11 bus coupling units**[1] Mounting depth 19 mm, with BCU1	A	**5WG1 110-2AB11**		1	1 unit	030	0.088
 5WG1 110-2CB03	**UP 110C03**	**UP 110C03 bus coupling units** (UL) Mounting depth 27 mm, with BCU1	B	**5WG1 110-2CB03**		1	1 unit	030	0.111
 5WG1 114-2CB02	**UP 114C02**	**UP 114C02 bus coupling units** (UL) Mounting depth 16 mm, with BCU2	B	**5WG1 114-2CB02**		1	1 unit	030	0.103

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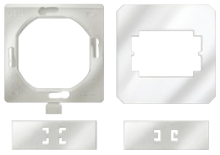
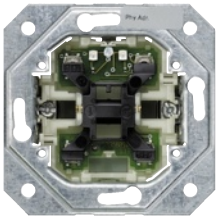
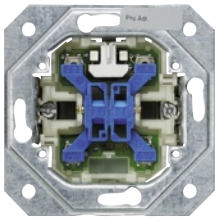
* You can order this quantity or a multiple thereof.

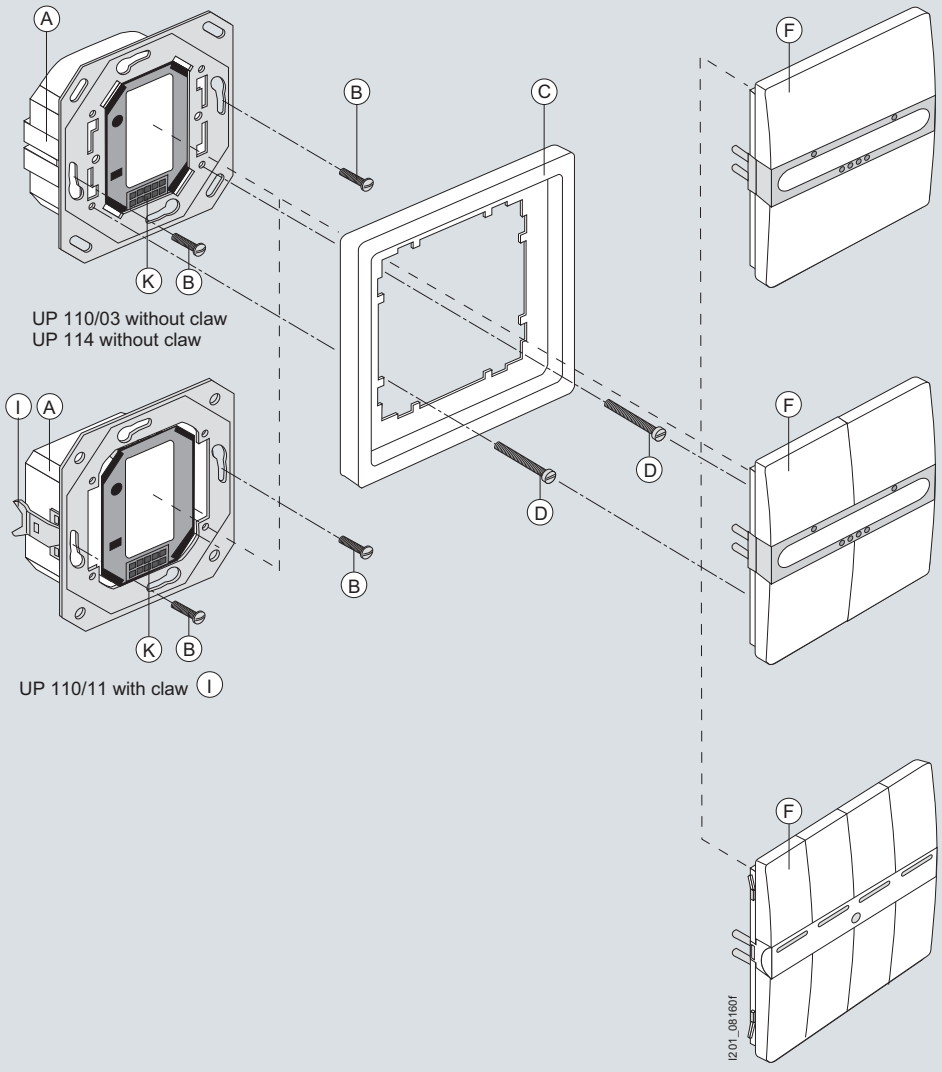
	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
		Accessories							
 5WG1 294-8AB01		**Mounting brackets for UP 110/11**	B	**5WG1 294-8AB01**		1	10 units	030	0.001
 5WG1 196-2AB01	**UP 196**	**UP 196 paint covers**	B	**5WG1 196-2AB01**		1	10 units	030	0.006
 5TG4 324		**IP44 sealing sets for rockers** • For single or double rockers • One set contains four insert seals	A	**5TG4 324**		1	1/10 sets	021	0.016
DELTA bus coupling units									
 5WG1 116-2AB01	**UP 116**	**DELTA UP 116 bus coupling units**[1] Single							
		Versions							
		• Intermediate position	A	**5WG1 116-2AB01**		1	1 unit	030	0.091
		• Pushbutton position	A	**5WG1 116-2AB21**		1	1 unit	030	0.090
		Accessories							
		IP44 sealing sets for rockers • For single or double rockers • One set contains four insert seals	A	**5TG4 324**		1	1/10 sets	021	0.016
 5WG1 116-2AB11	**UP 116**	**DELTA UP 116 bus coupling units**[1] Double							
		Versions							
		• Intermediate position	A	**5WG1 116-2AB11**		1	1 unit	030	0.092
		• Pushbutton position	A	**5WG1 116-2AB31**		1	1 unit	030	0.092
		Accessories							
		IP44 sealing sets for rockers • For single or double rockers • One set contains four insert seals	A	**5TG4 324**		1	1/10 sets	021	0.016

[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.

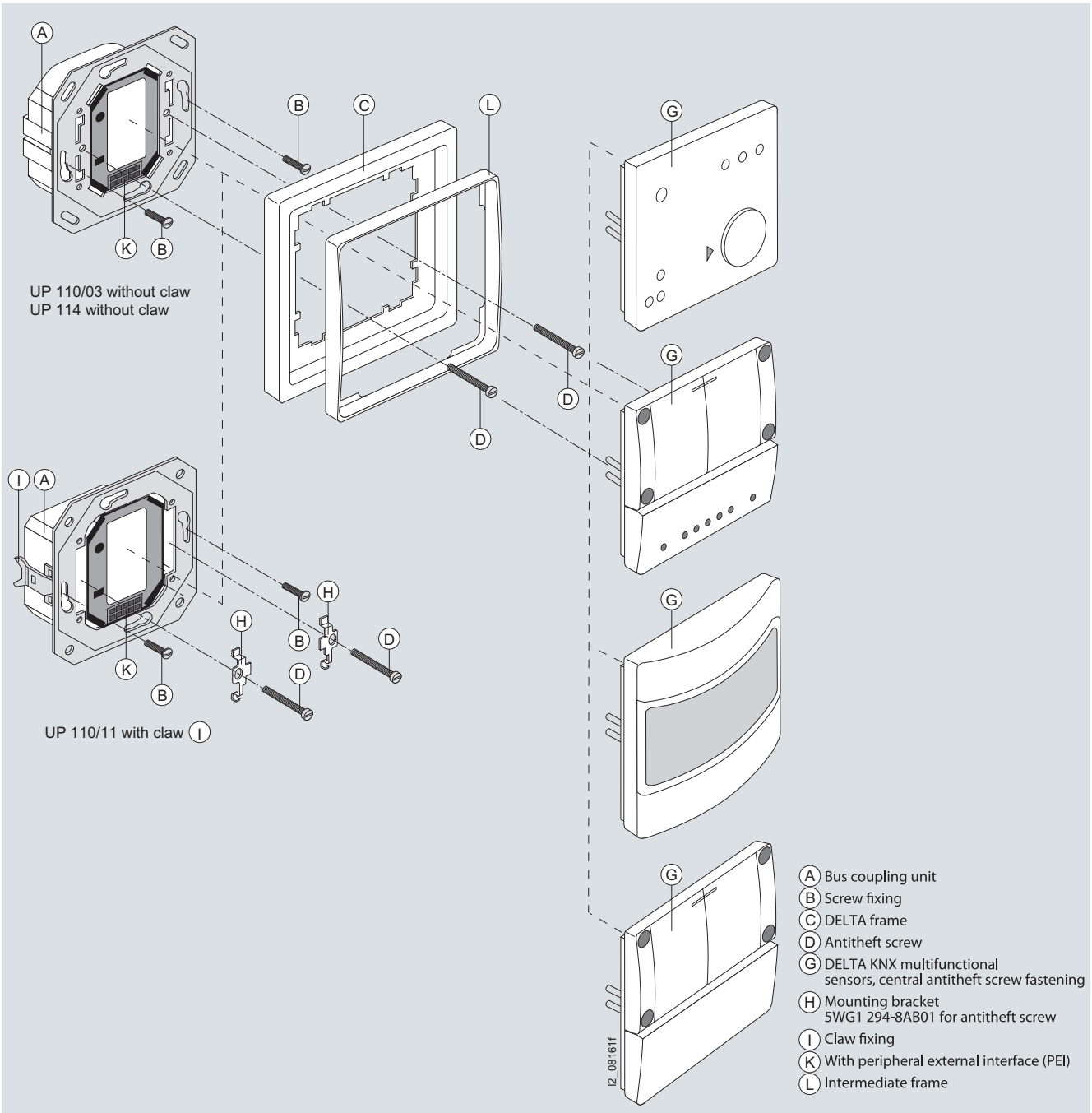
* You can order this quantity or a multiple thereof.

Bus coupling units and accessories

Operator interfaces without intermediate frame

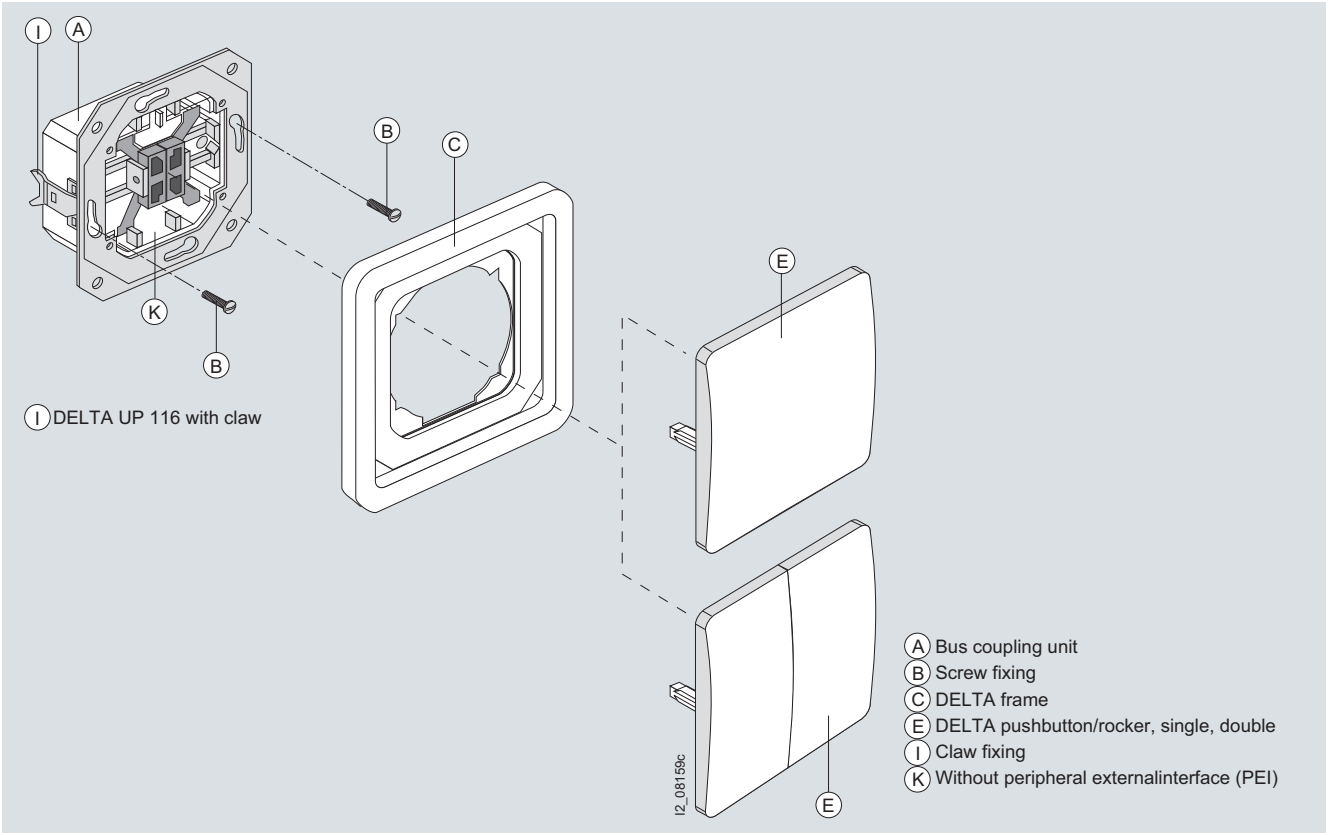


Operator interfaces with intermediate frame



Bus coupling units and accessories

Operator interfaces with DELTA bus coupling unit



Technical specifications

		 N 125	 N 125/11	 N 125/21
Enclosure data				
Modular installation devices for mounting on TH35 EN 60715 mounting rail		✔	✔	✔
Dimensions • Width (1 MW = 18 mm)	mm	4 MW	4 MW	4 MW
Bus connection				
Integrated reactors		✔	✔	✔
Bus connection via contact system to data rail		✔	✔	✔
Bus connection via bus terminal		✔	✔	✔
Outputs				
Rated operational voltage, AC	V	120 ... 230	120 ... 230	120 ... 230
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 reactor		--	--	✔

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 125-1AB01	**N 125**	**N 125 power supply units** Ⓤ Integrated reactors, 160 mA	A	**5WG1 125-1AB01**		1	1 unit	030	0.290
 5WG1 125-1AB11	**N 125/11**	**N 125/11 power supply units** Ⓤ Integrated reactors, 320 mA	A	**5WG1 125-1AB11**		1	1 unit	030	0.292
 5WG1 125-1AB21	**N 125/21**	**N 125/21 power supply units** Ⓤ Integrated reactors, 640 mA, additional unchoked output, 29 V DC	A	**5WG1 125-1AB21**		1	1 unit	030	0.298

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* You can order this quantity or a multiple thereof.

Reactors

Technical specifications

	Type	Description
	**N 120/02**	**N 120/02 reactors**[1)] • For operation with a KNX power supply unit without integrated reactor (e.g. N 123) or for connection to the unchoked output of the KNX N 125/21 power supply unit, 640 mA • 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).

1) The reactor prevents the data telegrams from short-circuiting through a bus power supply without integrated reactor.

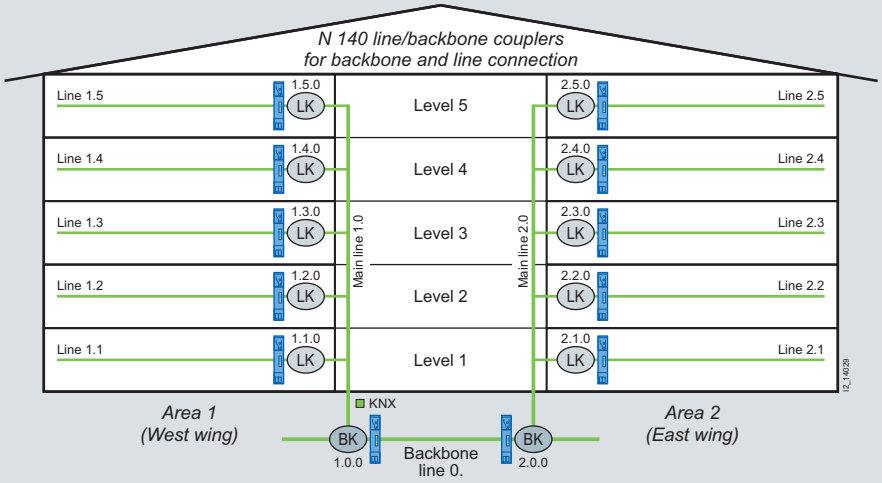
Selection and ordering data

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG1 120-1AB02	**N 120/02**	**N 120/02 reactors** Ⓤ 640 mA	A	**5WG1 120-1AB02**		1	1 unit	030	0.129

* You can order this quantity or a multiple thereof.

Overview

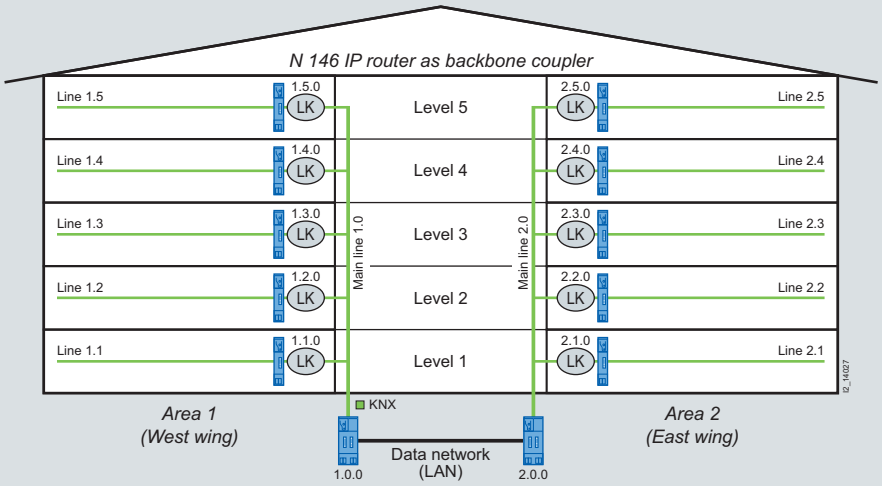
Classic topology



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

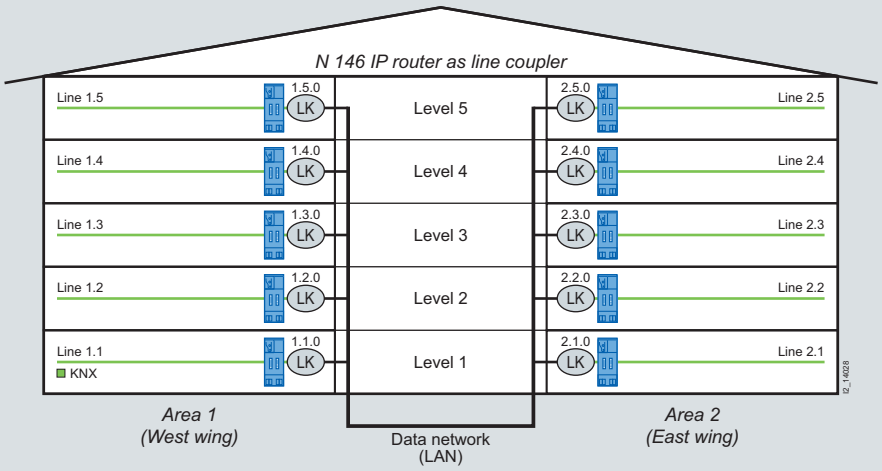


In this modern topology, the backbone couplers are replaced by N 146 IP routers.

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 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 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 "Application Examples".

Line couplers

Technical specifications

	Type	Description
 	**N 140/03** **N 140/13**	**N 140/03, N 140/13 line/backbone couplers**[1] • 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. N 140/03 line/backbone couplers • 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). N 140/13 line/backbone couplers • Bus connection to the line and to the main line via bus terminal • Width: 2 MW (1 MW = 18 mm).
	**N 146/02**	**N 146/02 IP routers**[2)3)] • 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 multicast-capable data network (Ethernet 10BaseT) with Internet protocol (IP) • Can be used as line, area or network gateway (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 installation engineer 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 via an external 12 ... 30 V AC/DC power supply unit • 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 installation engineer should carry out all the necessary settings; the network parameters can be assigned either by the installation engineer 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 14/13.

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 140-1AB03	**N 140/03**	**N 140/03 line/backbone couplers**	A	**5WG1 140-1AB03**		1	1 unit	030	0.088
 5WG1 140-1AB13	**N 140/13**	**N 140/13 line/backbone couplers**	A	**5WG1 140-1AB13**		1	1 unit	030	0.107
 5WG1 146-1AB02	**N 146/02**	**N 146/02 IP routers**	A	**5WG1 146-1AB02**		1	1 unit	030	0.120

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* You can order this quantity or a multiple thereof.

Network gateways

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 supply for the electronics via "Power over Ethernet" according to IEEE 802.3af		✔	✔	--	--
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		--	--	--	✔

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 148-1AB22	**N 148/22**	**N 148/22 IP interfaces**	A	**5WG1 148-1AB22**		1	1 unit	030	0.120
 5WG1 146-1AB02	**N 146/02**	**N 146/02 IP routers**	A	**5WG1 146-1AB02**		1	1 unit	030	0.120
 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	030	0.182
 5WG1 151-1AB01	**N 151**	**N 151 IP viewers**	A	**5WG1 151-1AB01**		1	1 unit	030	0.150

[1)] The software required for parameter assignment via the Ethernet interface is available on CD-ROM and is included in delivery.

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* You can order this quantity or a multiple thereof.

Notes

Introduction

Overview

	Devices	Application	Page
	**Cover strips**	For snapping onto free data rail segments - for enhanced safety.	15/3
	**Bus terminals**	The bus terminal connects bus devices to the bus cable and enables the looping through of cables.	15/3
	**Connectors**	For connection of data rail and bus cable.	15/4
	**Data rails**	For connecting modular installation devices via their contact system.	15/5
	**Overvoltage protection**	For the overvoltage fine protection of bus devices.	15/6

Cover strips

Technical specifications

	Type	Description
	**192**	**192 cover strips** For standard mounting rails • 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. kg
 5WG1 192-8AA01	**192**	**192 cover strips** For standard mounting rails, length 242 mm	X	**5WG1 192-8AA01**		1	5 units	030	0.001

Bus terminals

Technical specifications

	Type	Description
	**193**	**193 bus terminals** • 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, ∅ 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. kg
 5WG1 193-8AB01	**193**	**193 bus terminals** 2-pole, 4 plug-in connections, red/dark gray	A	**5WG1 193-8AB01**		1	25 units	030	0.002

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* You can order this quantity or a multiple thereof.

Connectors

Technical specifications

	Type	Description
	**REG 191/01**	**REG 191/01 connectors** Double • 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 • 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
 5WG1 191-5AB01	**REG 191/01**	**REG 191/01 connectors** (UL) (to be discontinued) Double	A	**5WG1 191-5AB01**		1	1 unit	030	0.055
	REG 191/11	**REG 191/11 connectors** (UL) (to be discontinued) 2 × double	A	**5WG1 191-5AB11**		1	1 unit	030	0.057

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* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**190/_1**	**190/_1 data rails** Without connector for TH 35-7.5 standard mounting rail, flat • For sticking (self-adhesive) in an TH35-7.5 flat standard mounting rail acc. to EN 60715 • For interconnecting modular installation devices via their contact system.
	**190/_2**	**190/_2 data rails** With connector for TH 35-7.5 standard mounting rail, flat • For sticking (self-adhesive) in an TH35-7.5 flat standard mounting rail rail acc. to EN 60715 • For interconnecting modular installation devices via their contact system • 2 bus terminals (red/dark gray) for bus voltage • For connecting data rails to each other and to a bus cable • 2 low-voltage terminals (white/yellow) for unchoked voltage
	**190/_3**	**190/_3 data rails** Without connector for TH 35-15 standard mounting rail, deep • For sticking (self-adhesive) in an TH35-15 standard mounting rail acc. to EN 60715, deep, mounting rail size 24 mm • For interconnecting modular installation devices via their contact system.
	**190/_4**	**190/_4 data rails** With connector for TH 35-15 standard mounting rail, deep • For sticking (self-adhesive) in an TH35-15 standard mounting rail acc. to EN 60715, deep, mounting rail size 24 mm • For interconnecting modular installation devices via their contact system • 2 bus terminals (red/dark gray) for bus voltage • For connecting data rails to each other and to a bus cable • 2 low-voltage terminals (white/yellow) for unchoked voltage

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									
 5WG1 190-8AB01	**190/_1**	**190/_1 data rails** Without connector for TH 35-7.5 standard mounting rail, flat							
		Versions							
		• Length: 214 mm (for max. 12 MW)	A	**5WG1 190-8AB01**		1	5 units	030	0.017
		• Length: 243 mm (for max. 14 MW)	B	**5WG1 190-8AB11**		1	5 units	030	0.021
		• Length: 277 mm (for max. 16 MW)	B	**5WG1 190-8AB21**		1	5 units	030	0.024
		• Length: 324 mm (for max. 18 MW)	B	**5WG1 190-8AB31**		1	5 units	030	0.033
		• Length: 428 mm (for max. 24 MW)	B	**5WG1 190-8AB41**		1	5 units	030	0.039
		• Length: 464 mm (for max. 26 MW)	B	**5WG1 190-8AB51**		1	5 units	030	0.038
 5WG1 190-8AB02	**190/_2**	**190/_2 data rails** With connector for TH 35-7.5 standard mounting rail, flat							
		Versions							
		• Length: 214 mm (for max. 12 MW)	A	**5WG1 190-8AB02**		1	5 units	030	0.040
		• Length: 243 mm (for max. 14 MW)	B	**5WG1 190-8AB12**		1	5 units	030	0.040
		• Length: 277 mm (for max. 16 MW)	B	**5WG1 190-8AB22**		1	5 units	030	0.049
		• Length: 324 mm (for max. 18 MW)	B	**5WG1 190-8AB32**		1	5 units	030	0.043
		• Length: 428 mm (for max. 24 MW)	B	**5WG1 190-8AB42**		1	5 units	030	0.047
		• Length: 464 mm (for max. 26 MW)	B	**5WG1 190-8AB52**		1	5 units	030	0.049
Data rails for TH35-15 standard mounting rails, mounting rail size 24 mm									
 5WG1 190-8AB03	**190/_3**	**190/_3 data rails** Without connector for TH 35-15 standard mounting rail, deep							
		Versions							
		• Length: 214 mm (for max. 12 MW)	A	**5WG1 190-8AB03**		1	5 units	030	0.044
		• Length: 243 mm (for max. 14 MW)	B	**5WG1 190-8AB13**		1	5 units	030	0.054
		• Length: 277 mm (for max. 16 MW)	B	**5WG1 190-8AB23**		1	5 units	030	0.064
		• Length: 324 mm (for max. 18 MW)	B	**5WG1 190-8AB33**		1	5 units	030	0.075
		• Length: 428 mm (for max. 24 MW)	B	**5WG1 190-8AB43**		1	5 units	030	0.095
		• Length: 464 mm (for max. 26 MW)	B	**5WG1 190-8AB53**		1	5 units	030	0.110
 5WG1 190-8AB04	**190/_4**	**190/_4 data rails** With connector for TH 35-15 standard mounting rail, deep							
		Versions							
		• Length: 214 mm (for max. 12 MW)	A	**5WG1 190-8AB04**		1	5 units	030	0.067
		• Length: 243 mm (for max. 14 MW)	B	**5WG1 190-8AB14**		1	5 units	030	0.061
		• Length: 277 mm (for max. 16 MW)	B	**5WG1 190-8AB24**		1	5 units	030	0.070
		• Length: 324 mm (for max. 18 MW)	B	**5WG1 190-8AB34**		1	5 units	030	0.098
		• Length: 428 mm (for max. 24 MW)	B	**5WG1 190-8AB44**		1	5 units	030	0.117
		• Length: 464 mm (for max. 26 MW)	B	**5WG1 190-8AB54**		1	5 units	030	0.107

* You can order this quantity or a multiple thereof.

Overvoltage protection

Technical specifications

	Type	Description
	**190**	**190 overvoltage protection, fine protection for bus devices** • 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 ∅) for insertion in bus devices • 2 solid wires (0.8 mm ∅) for connection to the bus terminal • for an solid wire (0.75 mm^2) 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. kg
 5WG1 190-8AD01	**190**	**190 overvoltage protection** Fine protection for bus devices	B	**5WG1 190-8AD01**		1	1 unit	030	0.010

* You can order this quantity or a multiple thereof.

Counters

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Introduction

Overview

	Devices	Application	Page
	**Operating hours/pulse counters**	This counter can be used to measure binary switching information and monitor limit values.	16/3
	**Counters for electrical energy**	Overview of electrical energy consumption at a glance.	16/4

Technical specifications

	Type	Description
	**N 343**	**N 343 operating hours and switching operations counters** • Recording of operating hours and counting of switching cycles for up to 36 sensor/actuator channels with 1- bit switching objects • Limit values for all count values • Indication output via the bus if the current value exceeds or falls below these limits, with option for monitoring the switching telegrams for all configured channels or cyclic interrogation of the states • To the second precision recording of operating hours of a channel through evaluation of the ON period • Incrementation of the switching operations counter when switching from OFF to ON • Option for querying all counting and limit values during runtime and setting each to a new user-definable value • Recording of operating hours with a maximum runtime of approx. 136 years • Counts a maximum of 4.3 billion switching operations per channel • Bus-powered electronics • Integrated bus coupling units • Bus connection via contact system to data rail • Modular installation devices for mounting on TH35 mounting rail acc. to EN 60715 • 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
 5WG1 343-1AB01	**N 343**	**N 343 operating hours and switching operations counters** 36 channels	B	**5WG1 343-1AB01**		1	1 unit	030	0.092

* You can order this quantity or a multiple thereof.

Counters for electrical energy

Technical specifications

	Type	Description
	**N 162** **N 165**	**N 162, N 165 E-counters** • For measuring the import of electrical energy in kWh in single and three-phase systems • PTB calibratable • Accuracy class 2 • Short-circuit resistant S0 pulse output • 3-/4 conductor connection • LCD for display of active energy, price per kWh, total costs, reactive energy, current active power (total per phase), device number • Manual readout via the built-in LCD • Readout of data via IR data interface • Reading/transmission of data via the bus • Screw terminals for connection of L1, L2, L3, N and S0 pulse output • Electronics powered via an integrated power supply unit for 230/400 V AC • Integrated bus coupling units • Bus connection via bus terminal • Modular installation devices for mounting on TH35 mounting rail acc. to EN 60715 • Width: 6 MW (1 MW = 18 mm).

Selection and ordering data

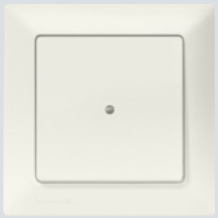
	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 7KT1 162	**N 162**	**N 162 E-counters** (to be discontinued) with direct connection for 230 V AC up to 63 A	B	**7KT1 162**		1	1 unit	027	0.314
	N 165	**N 165 E-counters** (to be discontinued) With transformer connection 5(6) A	B	**7KT1 165**		1	1 unit	027	0.387

16

* You can order this quantity or a multiple thereof.

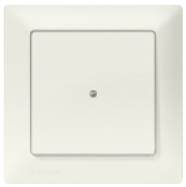
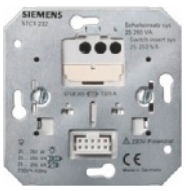
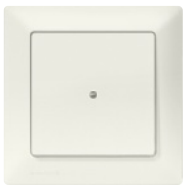
Radio System – GAMMA wave – KNX-RF

17



Introduction

Overview

Devices		Application	Page
	**Display and operation units**	Here you can find all you need to know about the display and operator devices of GAMMA wave.	17/6
	**Output devices**	Whether binary output devices or socket outlet switches, this section covers every aspect of output devices.	17/11
	**Input devices**	Electrical operating states are recorded and any changes transmitted via bus.	17/15
	**Devices for special applications**	Whether for lighting, safety or sun/anti-glare protection, you will find everything you need here.	17/16
	**Gateways, interface converters**	Gateways ensure communication within the system, as well as with other systems.	17/22
	**System products**	Transmitters, receivers and repeaters round off the GAMMA wave system.	17/25

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 **Radiofrequency adapter plugs, switch / dimming**
For the remote control of electrical devices connected to socket outlets and for dimming lights.
Can be operated using the central apartment unit, a hand-held transmitter or an external pushbutton, all via KNX radio. The adapters are available in four different, country-specific plug versions.

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

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.

Introduction

GAMMA wave – the multifunctional system

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

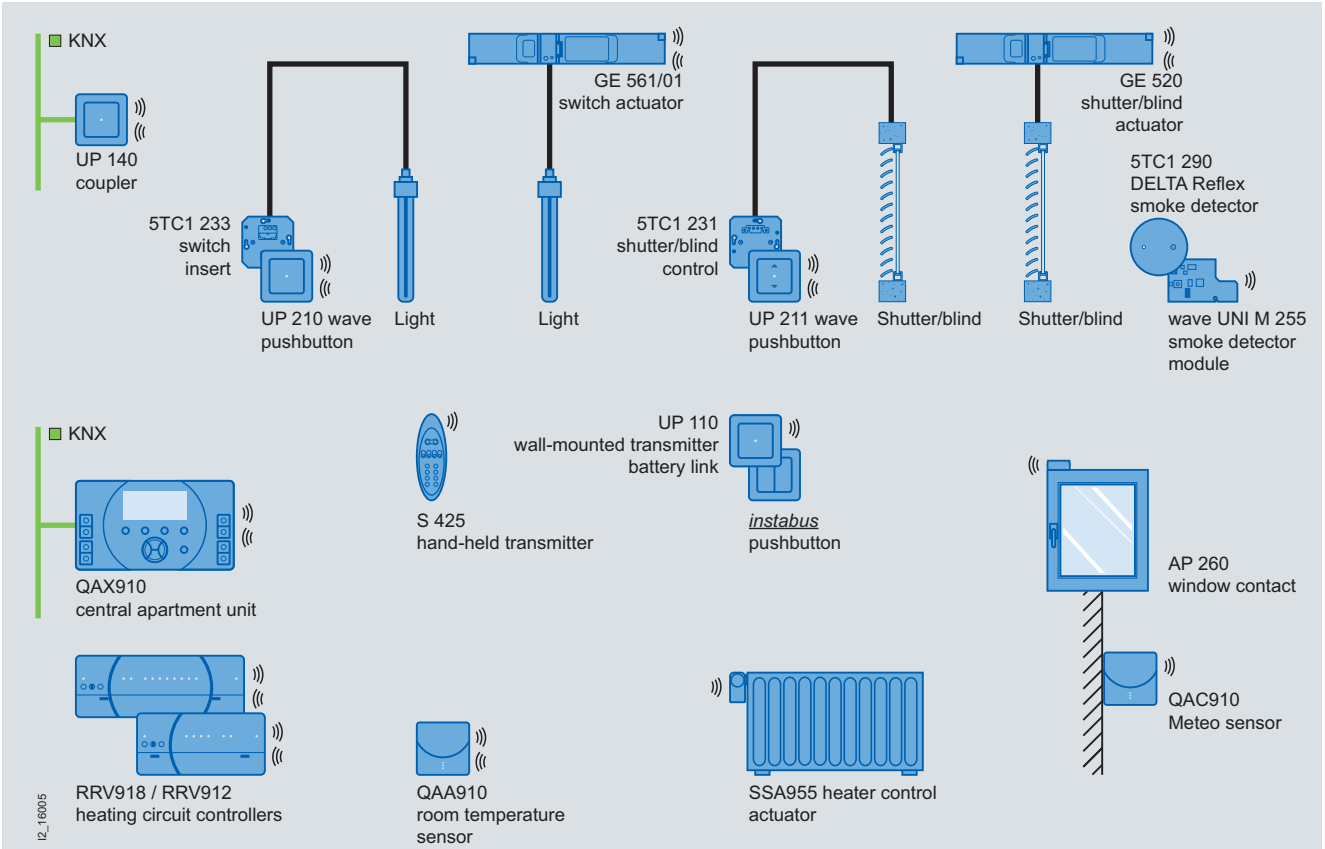
Sensors, actuators, etc, do not require any additional cable installation. This means that this type of radio transmission is particularly suitable for renovation work, the expansion of existing systems and all types of new installations. And all complete with absolutely failsafe and problem-free transmission.

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 new, uniform standard for building management systems KNX in the 868 MHz range.

Services
Services offered through third parties.

Consumption data acquisition and emergency call systems
Products of other Siemens ranges or other manufacturers on the basis of KNX standards.



Thanks to its use of state-of-the-art technology, the "wave" device range is ideally suited for the retrofitting and modification 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 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 pushbuttons	sys shutter/blind pushbuttons[1)]	UP 211 wave shutter/blind pushbuttons	*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.

Previously

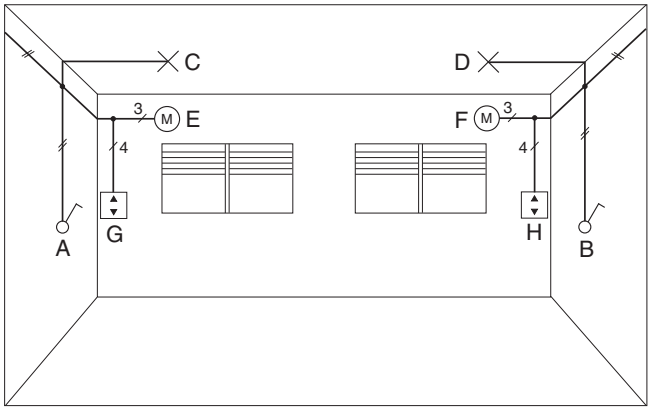
Lighting and shutter/blind control of a conventional installation

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)



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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:

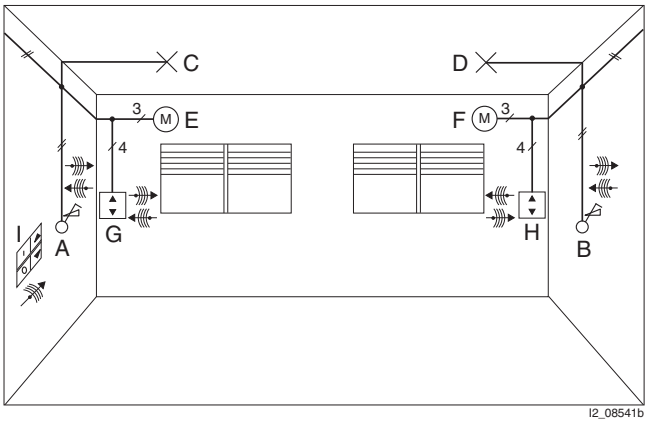
- Dim lights C and D from A and/or B
- Operate shutters/blinds E and F from G and/or H

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



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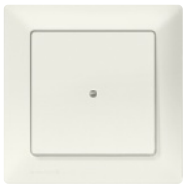
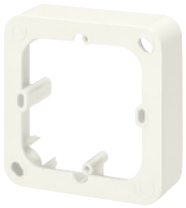
Introduction

Overview

	Devices	Application	Page
	**Pushbuttons**	Radio control of lighting and shutters/blinds using the radio pushbuttons from the DELTA product ranges.	17/7
	**Pushbutton accessories**	Surface-mounting enclosure or blanking cover plate - you choose.	17/9
	**Remote controls**	The wave hand-held transmitter supports wireless operation of up to 17 different room functions.	17/10

Technical specifications

	Type	Description
	**UP 210**	**UP 210 wave pushbuttons** • 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 ... 60min • 1 LED for indication of different operating states • KNX-RF transmitter/receiver for 868 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** • 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 • 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 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

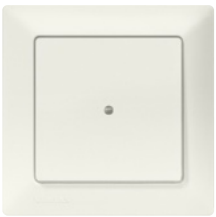
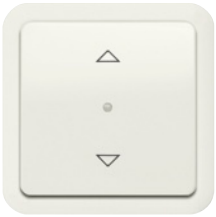
GAMMA wave flush-mounting combinations

Operator interfaces	sys pushbuttons[1)]	UP 210 wave pushbuttons	sys shutter/blind pushbuttons[1)]	UP 211 wave shutter/blind pushbuttons	*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.

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									
 5WG3 210-2HB11	**UP 210**	**UP 210 wave pushbuttons**[1)3)]							
		Versions							
		• Titanium white	A	**5WG3 210-2HB11**		1	1 unit	022	0.056
		• Carbon metallic	C	**5WG3 210-2HB21**		1	1 unit	022	0.057
		• Aluminum metallic	B	**5WG3 210-2HB31**		1	1 unit	022	0.058
 5WG3 211-2HB11	**UP 211**	**UP 211 wave shutter/blind pushbuttons**[2)3)]							
		Versions							
		• Titanium white	A	**5WG3 211-2HB11**		1	1 unit	022	0.055
		• Carbon metallic	C	**5WG3 211-2HB21**		1	1 unit	022	0.060
		• Aluminum metallic	B	**5WG3 211-2HB31**		1	1 unit	022	0.058
DELTA profil									
 5WG3 210-2AB11	**UP 210**	**UP 210 wave pushbuttons**[1)3)]							
		Versions							
		• Titanium white	A	**5WG3 210-2AB11**		1	1 unit	022	0.058
		• Anthracite	C	**5WG3 210-2AB21**		1	1 unit	022	0.061
		• Silver	B	**5WG3 210-2AB71**		1	1 unit	022	0.062
 5WG3 211-2AB11	**UP 211**	**UP 211 wave shutter/blind pushbuttons**[2)3)]							
		Versions							
		• Titanium white	A	**5WG3 211-2AB11**		1	1 unit	022	0.062
		• Anthracite	C	**5WG3 211-2AB21**		1	1 unit	022	0.065
		• Silver	B	**5WG3 211-2AB71**		1	1 unit	022	0.060
DELTA style									
 5WG3 210-2GB11	**UP 210**	**UP 210 wave pushbuttons**[1)3)]							
		Versions							
		• Titanium white	A	**5WG3 210-2GB11**		1	1 unit	022	0.063
		• Basalt black	C	**5WG3 210-2GB21**		1	1 unit	022	0.042
		• Platinum metallic	B	**5WG3 210-2GB41**		1	1 unit	022	0.035
 5WG3 211-2GB11	**UP 211**	**UP 211 wave shutter/blind pushbuttons**[2)3)]							
		Versions							
		• Titanium white	A	**5WG3 211-2GB11**		1	1 unit	022	0.061
		• Basalt black	C	**5WG3 211-2GB21**		1	1 unit	022	0.059
		• Platinum metallic	B	**5WG3 211-2GB41**		1	1 unit	022	0.035

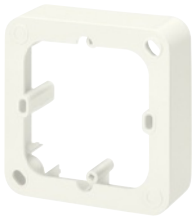
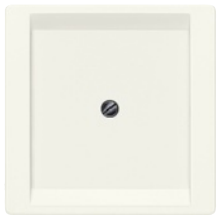
1) The sys switching insert and universal dimmer sys inserts must be ordered separately.
2) The shutter/blind control sys inserts must be ordered separately.
3) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

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. kg
i-system									
 5TG2 558		**Blanking cover plates**							
		Versions							
		• Titanium white	A	**5TG2 558**		1	1/10 units	021	0.057
		• Carbon metallic	A	**5TG1 220**		1	1/10 units	021	0.055
		• Aluminum metallic	A	**5TG1 250**		1	1/10 units	021	0.053
DELTA profil									
 5WG3 110-8AB11	**M 110**	**M 110 surface-mounting enclosures**[1] Single, for surface mounting of UP 110 wall-mounted transmitters "Batterie" wave.							
		Versions							
		• Pearl gray	D	**5WG3 110-8AB01**		1	1 unit	022	0.051
		• Titanium white	A	**5WG3 110-8AB11**		1	1 unit	022	0.048
		• Anthracite	D	**5WG3 110-8AB21**		1	1 unit	022	0.049
		• Silver	D	**5WG3 110-8AB71**		1	1 unit	022	0.049
 5TG1 810		**Blanking cover plates**							
		Versions							
		• Titanium white	A	**5TG1 810**		1	1/10 units	021	0.058
		• Anthracite	A	**5TG1 840**		1	1/10 units	021	0.047
		• Silver	A	**5TG1 770**		1	1/10 units	021	0.057
DELTA style									
 5TG1 330		**Blanking cover plates**							
		Versions							
		• Titanium white	A	**5TG1 330**		1	1/10 units	021	0.060
		• Basalt black	A	**5TG1 370**		1	1/10 units	021	0.059

[1] The matching cut-out frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Remote controls

Technical specifications

	Type	Description
	**S 425**	**S 425 wave hand-held radio transmitters** • 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: switching, switching and dimming, shutter/blind control, store and call up scenes • Radio transmitter: 868 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. kg
	**S 425**	**S 425 wave hand-held radio transmitters**[1)] 17 channels							
		Versions							
		• Black	B	**5WG3 425-7AB21**		1	1 unit	030	0.131
		• Silver	B	**5WG3 425-7AB71**		1	1 unit	030	0.132

5WG3 425-7AB21

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

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* You can order this quantity or a multiple thereof.

Overview

	Devices	Application	Page
	**Binary output devices**	For ON/OFF switching of actuators via GAMMA wave.	17/12
	**Socket outlet switches**	For the wireless switching of devices that are plugged into a socket outlet.	17/14

Binary output devices

Technical specifications

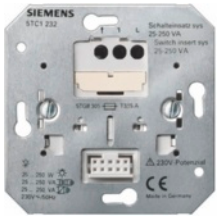
	Type	Description
		**sys switching inserts** Flush mounting • For the switching of incandescent lamps, HV and LV halogen lamps with electronic or conventional transformers, rated operational voltage 230 V AC • 2-wire connection method • Short-circuit protection through miniature fuse with spare fuse • 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.
	**UP 560**	**UP 560 wall-mounted transmitters "Aktor" 230 V wave** Flush mounting • 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 *instabus* 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 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.
	**GE 561/01**	**GE 561/01 wave switch actuators** 2 x 230 V AC, 16 A • KNX-RF transmitter/receiver for 868 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.
	**GE 561/11**	**GE 561/11 wave switch actuators** 2 x 230 V AC, 16 A, with EnOcean receiver • KNX-RF transmitter/receiver for 868 MHz • EnOcean radio receiver for 868 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 pushbuttons	sys shutter/blind pushbuttons[1)]	UP 211 wave shutter/blind pushbuttons	*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.

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
 5TC1 232		**sys switching inserts**[1)2)] Flush mounting							
		Versions							
		• Rated operational power 25 ... 250 VA	A	**5TC1 232**		1	1 unit	024	0.100
		• Rated operational power 15 ... 500 VA (for toroidal core transformers 15 ... 250 VA)	A	**5TC1 233**		1	1 unit	024	0.101
 5WG3 560-2AB01	**UP 560**	**UP 560 wall-mounted transmitters "Aktor" 230 V wave**[1)3)] Flush mounting	A	**5WG3 560-2AB01**		1	1 unit	030	0.106
 5WG3 561-4AB01	**GE 561/01**	**GE 561/01 wave switch actuators** 2 x 230 V AC, 16 A	A	**5WG3 561-4AB01**		1	1 unit	030	0.229
 5WG3 561-4AB11	**GE 561/11**	**GE 561/11 wave switch actuators**[4)] 2 x 230 V AC, 16 A, with EnOcean receiver	A	**5WG3 561-4AB11**		1	1 unit	030	0.249

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

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* You can order this quantity or a multiple thereof.

Socket outlet switches

Technical specifications

	Type	Description
	**S 564**	**S 564 wave socket outlet switches** • Intermediate connector 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 can 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 MHz • Powered via 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. kg
 5WG3 564-7AB11	**S 564**	**S 564 wave socket outlet switches** Intermediate connectors	A	**5WG3 564-7AB11**		1	1 unit	030	0.239

* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**AP 261**	**AP 261 wave binary inputs** With battery, surface mounting • 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 magnets 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 mm^2 (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 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 inputs**[1] With battery	A	**5WG3 261-3AB11**		1	1 unit	030	0.100

5WG3 261-3AB11

[1] Battery included in delivery.

* You can order this quantity or a multiple thereof.

Introduction

Overview

	Devices	Application	Page
	**Lighting**	The universal dimmer sys insert is a flush-mounting device for switching and dimming.	17/17
	**Sun protection, anti-glare protection, utilization of daylight**	Sun and anti-glare protection is provided by the appropriate actuators and sensors.	17/18
	**Safety**	These components for GAMMA wave offer protection against intrusion and fire.	17/20

Technical specifications

	Type	Description
		**Universal dimmer sys inserts** Flush mounting • For switching and dimming 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 solid state transformer • 2-wire connection method • Automatic load detection • Lamp friendly soft start • 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 (∅ 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 pushbuttons	sys shutter/blind pushbuttons[1]	UP 211 wave shutter/blind pushbuttons	*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.

Selection and ordering data

	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
	**Universal dimmer sys inserts**[1] Flush mounting	A	**5TC1 230**		1	1 unit	024	0.099

5TC1 230

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

* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**GE 520**	**GE 520 wave shutter/blind actuators** 1 x 230 V AC, 6 A • KNX-RF transmitter/receiver for 868 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 • 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.
		**Shutter/blind control sys inserts** Flush mounting • 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 capacity 1 motor with max. 1000 VA, with 2 relays which are interlocked against each other 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" • 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**	**AP 260 wave door/window contacts** With battery, surface mounting • 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 of 0.14 ... 0.5 mm^2 (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 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 pushbuttons	sys shutter/blind pushbuttons[1)]	UP 211 wave shutter/blind pushbuttons	*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.

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
 5WG3 520-4AB01	**GE 520**	**GE 520 wave shutter/blind actuators** 1 x 230 V AC, 6 A	A	**5WG3 520-4AB01**		1	1 unit	030	0.220
 5TC1 231		**Shutter/blind control sys inserts**[1)2)] Flush mounting	A	**5TC1 231**		1	1 unit	024	0.111
 5WG3 260-3AB11	**AP 260**	**AP 260 wave door/window contacts**[3)] With battery, surface mounting							
		Versions							
		• Titanium white	A	**5WG3 260-3AB11**		1	1 unit	030	0.100
		• Brown	B	**5WG3 260-3AB81**		1	1 unit	030	0.100

1) Matching frames must be ordered separately.
2) UP 211 wave shutter/blind pushbuttons must be ordered separately.
3) Battery included in delivery.

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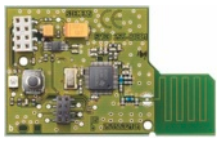
* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
		**DELTA reflex smoke detectors "Batterie"** Surface mounting • 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 • 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: ∅ 120, height 44.
		Accessories
		**Smoke detector modules "Relais"** • 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 • Terminals for cables with ∅ 0.4 ... 0.8 mm • Powered via smoke detector • Dimensions (H x W): 43 x 38 mm
	**M 255**	**DELTA reflex UNI M 255 wave smoke detector modules** • Radio modules with KNX-RF transmitter for 868 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 • 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**	**AP 260 wave door/window contacts** With battery, surface mounting • 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 of 0.14 ... 0.5 mm^2 (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 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.

Selection and ordering data

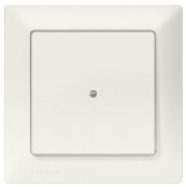
	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5TC1 290		**DELTA reflex smoke detectors "Batterie"**[1] Surface mounting, Titanium white	A	**5TC1 290**		1	1 unit	024	0.373
		Accessories							
 5TC1 291		**Smoke detector modules "Relais"**[2]	A	**5TC1 291**		1	1 unit	024	0.043
 5WG3 255-8AB01	**M 255**	**DELTA reflex UNI M 255 wave smoke detector modules**[2]	A	**5WG3 255-8AB01**		1	1 unit	030	0.044
 5WG3 260-3AB11	**AP 260**	**AP 260 wave door/window contacts**[1] With battery, surface mounting							
		Versions							
		• Titanium white	A	**5WG3 260-3AB11**		1	1 unit	030	0.100
		• Brown	B	**5WG3 260-3AB81**		1	1 unit	030	0.100

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

* You can order this quantity or a multiple thereof.

Introduction

Overview

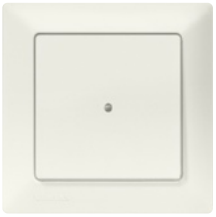
	Devices	Application	Page
	**KNX/KNX-RF**	wave/*instabus* couplers make wireless operation easy.	17/23
	**EnOcean/KNX-RF**	EnOcean/KNX-RF gateways allow integration of battery-less pushbuttons in the GAMMA wave system.	17/24

Technical specifications

	Type	Description
	UP 140	**UP 140 wave/instabus couplers** • For coupling GAMMA wave with GAMMA *instabus* • Coupling of a total of up to 50 GAMMA wave sensor channels with GAMMA *instabus* actuator channels or GAMMA *instabus* 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 or 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 MHz • 10-pole plug for plugging onto a UP 114 bus coupling unit, version BCU 2.1.

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

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
i-system									
 5WG3 140-2HB11	**UP 140**	**UP 140 wave coupler/*instabus*[1)2)]**							
		Versions							
		• Titanium white	A	**5WG3 140-2HB11**		1	1 unit	022	0.048
		• Carbon metallic	C	**5WG3 140-2HB21**		1	1 unit	022	0.048
		• Aluminum metallic	B	**5WG3 140-2HB31**		1	1 unit	022	0.048
DELTA profil									
 5WG3 140-2AB11	**UP 140**	**UP 140 wave coupler/*instabus*[1)2)]**							
		Versions							
		• Pearl gray	X	**5WG3 140-2AB01**		1	1 unit	022	0.052
		• Titanium white	A	**5WG3 140-2AB11**		1	1 unit	022	0.052
		• Anthracite	C	**5WG3 140-2AB21**		1	1 unit	022	0.052
		• Silver	B	**5WG3 140-2AB71**		1	1 unit	022	0.052
DELTA style									
 5WG3 140-2GB11	**UP 140**	**UP 140 wave coupler/*instabus*[1)2)]**							
		Versions							
		• Titanium white	A	**5WG3 140-2GB11**		1	1 unit	022	0.055
		• Basalt black	C	**5WG3 140-2GB21**		1	1 unit	022	0.054
		• Platinum metallic	B	**5WG3 140-2GB41**		1	1 unit	022	0.036

1) The bus coupling unit must be ordered separately.
2) The matching design frame must be ordered separately.

* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**GE 561/11**	**GE 561/11 wave switch actuators** With EnOcean/KNX-RF interface converters • KNX-RF transmitter/receiver for 868 MHz • EnOcean radio receiver for 868 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.

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
 5WG3 561-4AB11	**GE 561/11**	**GE 561/11 wave switch actuators**[1] 2 x 230 V AC, 16 A, with EnOcean/KNX-RF interface converter	A	**5WG3 561-4AB11**		1	1 unit	030	0.249

[1] For more products, see chapter "Radio system EnOcean".

* You can order this quantity or a multiple thereof.

Overview

	Devices	Application	Page
	**Transmitters, receivers**	This includes a selection of wall-mounted transmitters for wireless operation.	17/26
	**Repeaters**	Improves KNX radio communication when greater distances are required.	17/28

Transmitters, receivers

Technical specifications

	Type	Description
 	**UP 110** **UP 110/11**	**UP 110 wall-mounted transmitters wave** • 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 *instabus* 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 MHz • 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 UP 110 wall-mounted transmitters "Batterie" wave • 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 • 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** • 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 *instabus* 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 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 pushbuttons	sys shutter/blind pushbuttons[1)]	UP 211 wave shutter/blind pushbuttons	*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.

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
 5WG3 110-2AB01	**UP 110**	**UP 110 wall-mounted transmitters "Batterie" wave**[1)2)3)4)]	A	**5WG3 110-2AB01**		1	1 unit	030	0.088
 5WG3 110-2AB11	**UP 110/11**	**UP 110/11 wall-mounted transmitters 230 V wave**[1)2)3)]	B	**5WG3 110-2AB11**		1	1 unit	030	0.097
 5WG3 560-2AB01	**UP 560**	**UP 560 wall-mounted transmitters "Aktor" 230 V wave**[1)2)]	A	**5WG3 560-2AB01**		1	1 unit	030	0.106

1) The *instabus* pushbuttons must be ordered separately.
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.

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* You can order this quantity or a multiple thereof.

Repeaters

Technical specifications

	Type	Description
	**UP 141**	**UP 141 wave repeaters** • 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 MHz • Electronics powered via 230 V AC • For mounting in an installation box (∅ 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.

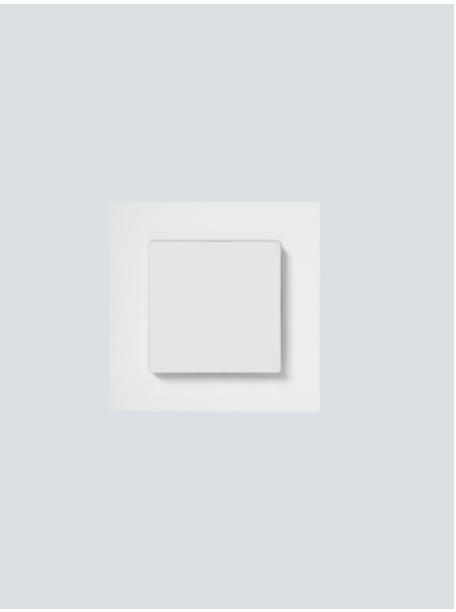
Selection and ordering data

	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
	**UP 141**	**UP 141 wave repeaters**[1)2)]	A	**5WG3 141-2AB01**		1	1 unit	030	0.102

5WG3 141-2AB01

1) Blanking cover plates must be ordered separately.
2) Matching frames must be ordered separately.

* You can order this quantity or a multiple thereof.



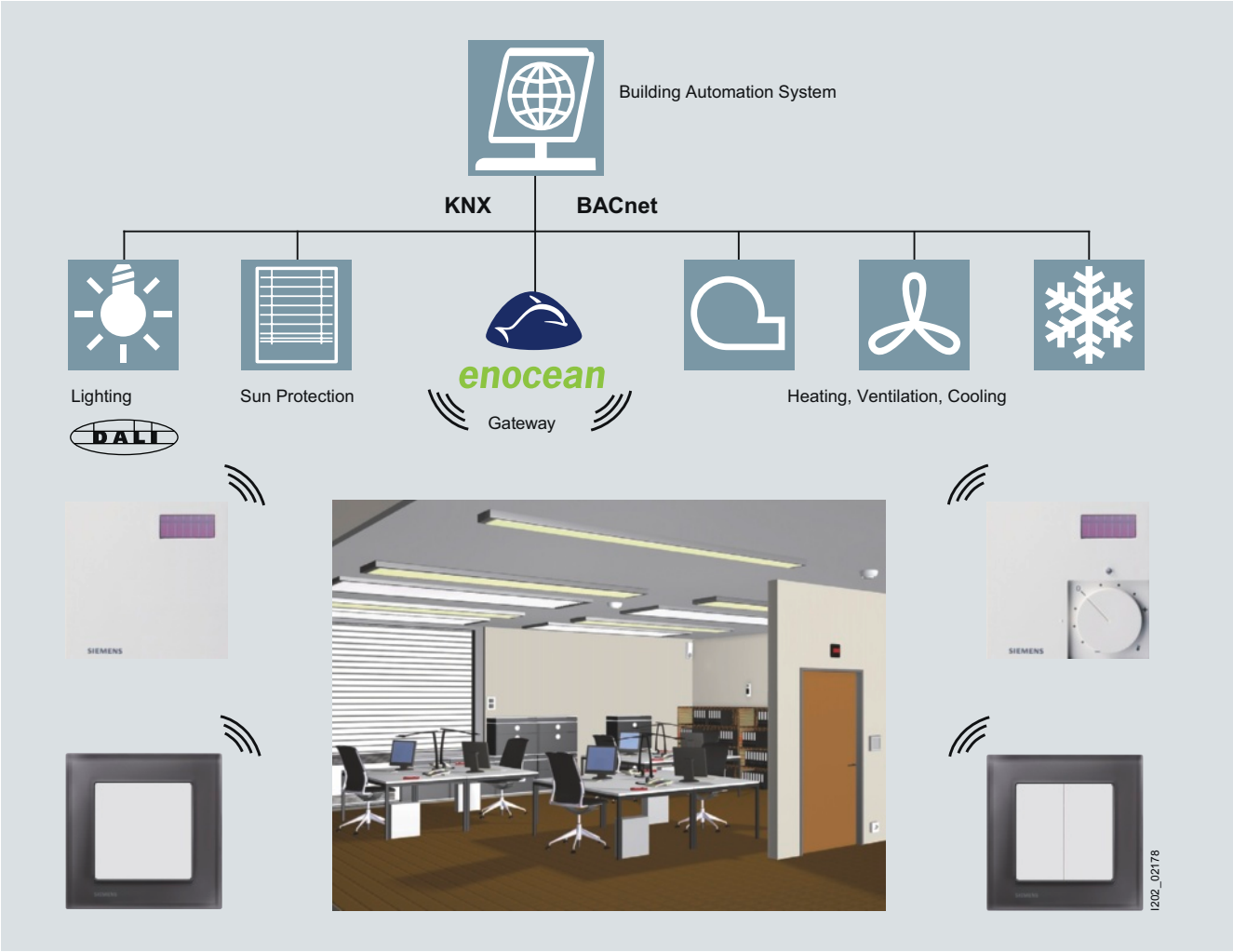
Introduction

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 and Osram 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

Wall-mounted transmitters

As a result of the flexible installation of the maintenance-free wall-mounted transmitter with EnOcean technology, switches can be fitted anywhere without extra cables.

With an EnOcean gateway, the integration of wall-mounted transmitters for lighting and sun protection applications into building automation systems is possible.

Completely flexible

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

Completely maintenance-free

The EnOcean wall-mounted transmitter is battery-less: It is not necessary to change batteries. The wall-mounted transmitters are therefore maintenance-free and environmentally friendly.

Technical specifications

	Type	Description	
	**AP 221** **AP 222**	**EnOcean AP 221 / AP 222 wall-mounted transmitters**	
		• One or two centered rockers • Vertical operation • Energy generation at the press of a button 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	• 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
	**AP 221HB** **AP 222HB**	**EnOcean AP 221HB/AP 222HB wall-mounted transmitters**	
		• Flat pushbutton rocker, single or double with intermediate position and vertical operation • For direct remote control of EnOcean radio actuators and remote control of wave radio actuators and *instabus* actuators over gateways • Switch ON/OFF and over, with short and long button press for switching ON/OFF and BRIGHTER/DARKER when dimming	• Short and long button press for UP/DOWN and adjustment of slats with the shutter/blind control function • Commissioning by pressing the pushbutton surface • Radio transmitter for 868 MHz, with battery-less EnOcean radio technology, with energy generation through maintenance-free electrodynamic energy generator • Floor plate for easy sticking or screwing to surfaces

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
 5WG4 221-3AB10	**AP 221**	**EnOcean AP 221 wall-mounted transmitters, single**[1] Battery-less, titanium white	A	**5WG4 221-3AB10**		1	1 unit	022	0.090
 5WG4 222-3AB10	**AP 222**	**EnOcean AP 222 wall-mounted transmitters, double**[1] Battery-less, titanium white	A	**5WG4 222-3AB10**		1	1 unit	022	0.090
 5WG3 221-3HB11	**AP 221**	**EnOcean AP 221 wall-mounted transmitters, single** (to be discontinued) Battery-less, flat, white	A	**5WG3 221-3HB11**		1	1 unit	030	0.112
 5WG3 222-3HB11	**AP 222**	**EnOcean AP 222 wall-mounted transmitters, double** (to be discontinued) Battery-less, flat, white	A	**5WG3 222-3HB11**		1	1 unit	030	0.113

[1] The accompanying frame, in DELTA line or DELTA miro design, must be ordered separately.

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

* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**AP 631/62**	**EnOcean/KNX gateway, AP 631/62 switch actuators, three-phase** • Plug-in connector outputs, gesis GST 18i3 black • Mains voltage connection, three-phase • Integrated bus coupling units • Bus connection via plug system • 4 channels • Rated contact voltage, 230/400 V AC • Rated contact current 16 A • EnOcean radio receiver • Dimensions (H x W x D): 32 x 254 x 112 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 631-3AL62	**AP 631/62**	**EnOcean/KNX gateway, AP 631/62 switch actuators** Three-phase, gesis EIB V-56/4	B	**5WG1 631-3AL62**		1	1 unit	030	0.400

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

* You can order this quantity or a multiple thereof.

Technical specifications

	Type	Description
	**GE 561/11**	**GE 561/11 wave switch actuators** With EnOcean/wave interface converters • KNX-RF transmitter/receiver for 868 MHz • EnOcean radio receiver for 868 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.

Selection and ordering data

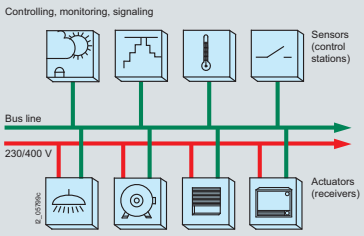
	Type	Version	DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
 5WG3 561-4AB11	**GE 561/11**	**GE 561/11 wave switch actuators** 2 x 230 V AC, 16 A, with EnOcean receiver	A	**5WG3 561-4AB11**		1	1 unit	030	0.249

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

* You can order this quantity or a multiple thereof.

Application Examples
Technical Information

19



Commissioning via Ethernet (LAN)

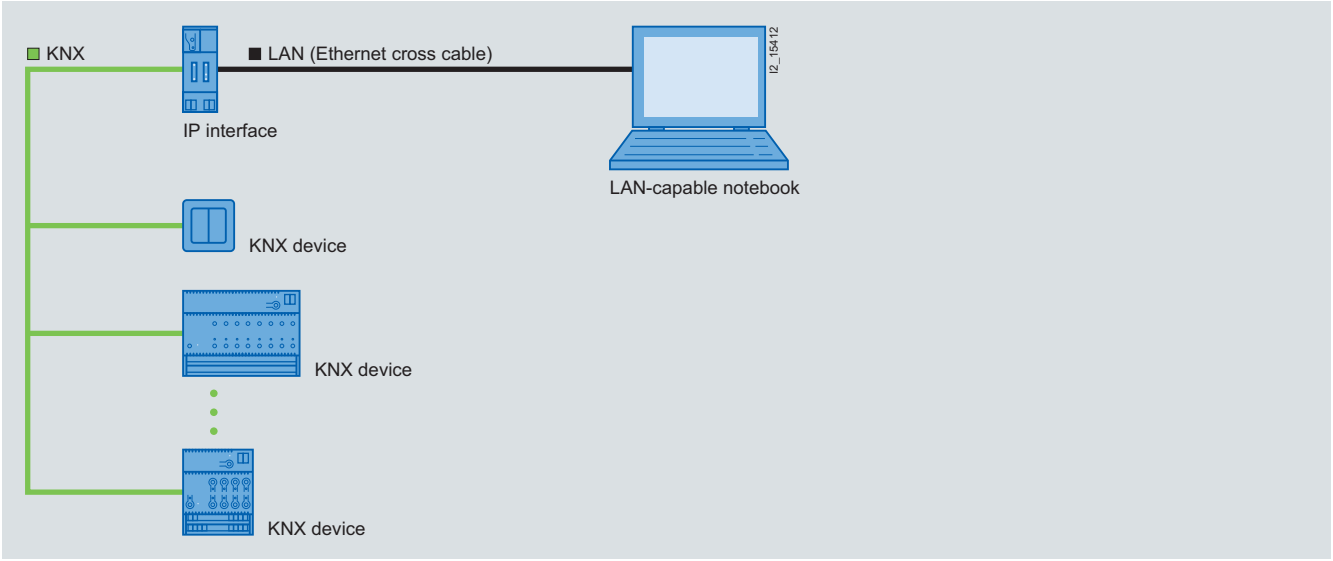
Overview

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 need 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)

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.

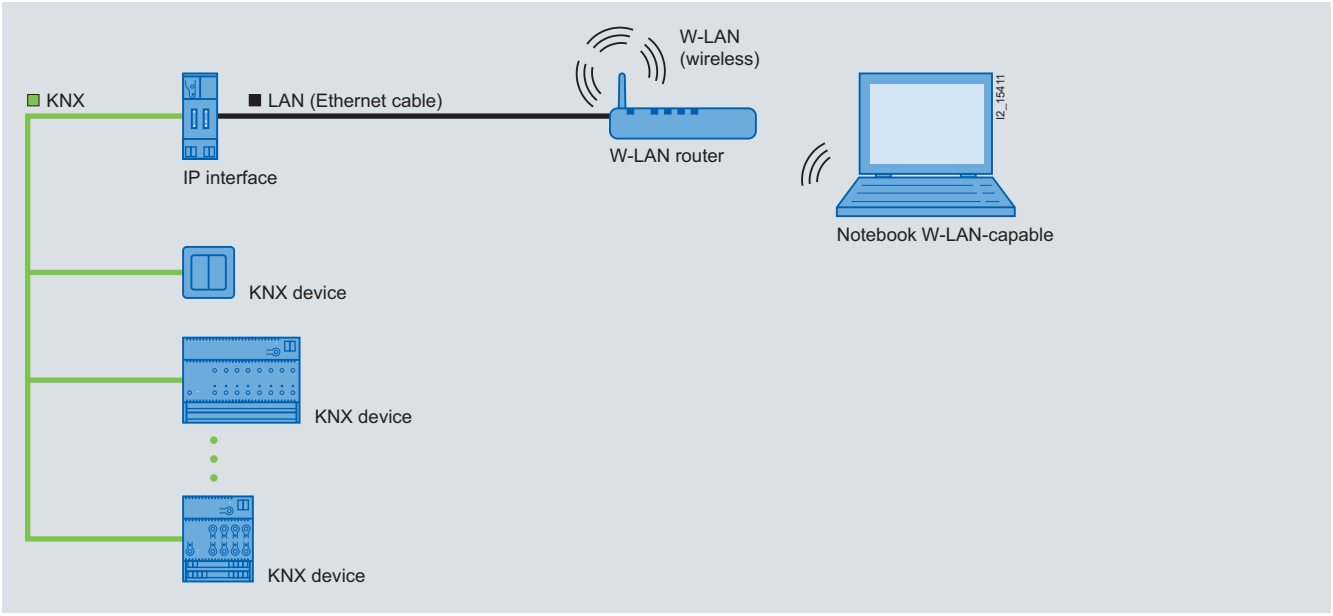
Overview

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 need 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)

Coupling lines via Ethernet (LAN)

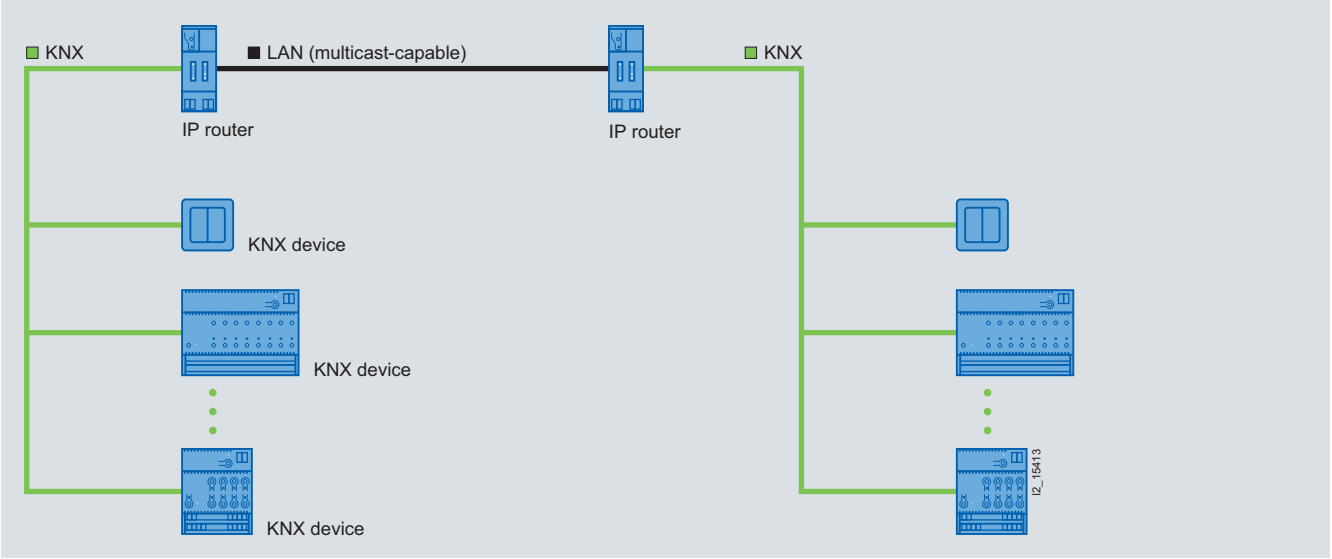
Overview

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 need 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.

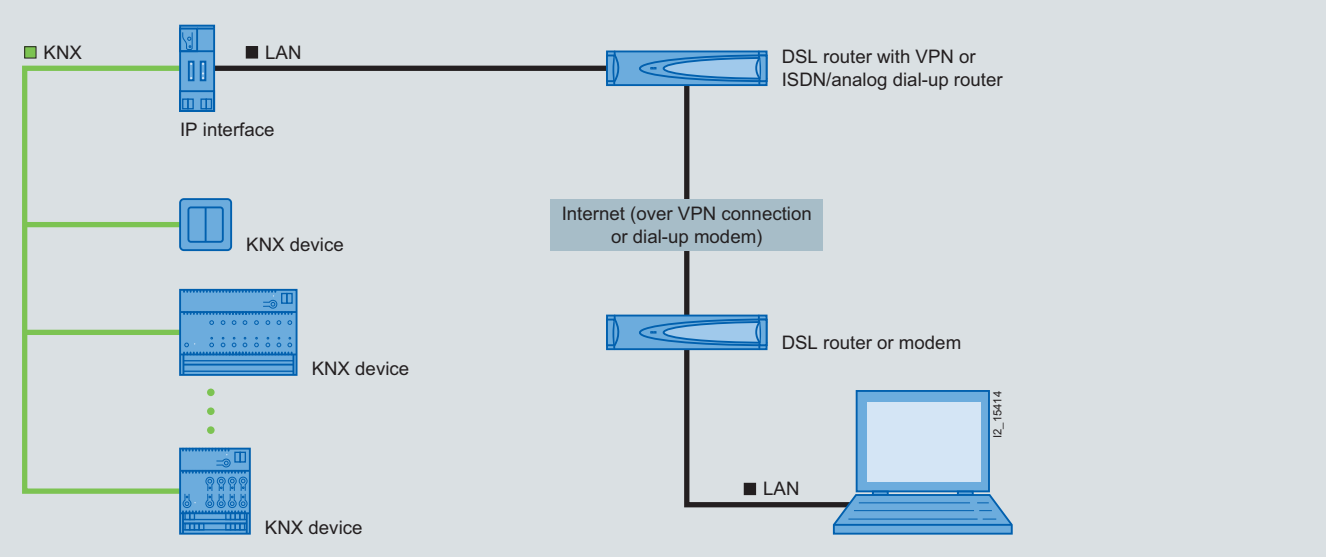
Overview

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 remotely. 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
- Date 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 need 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)
- 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.

Visualization via Ethernet (LAN)

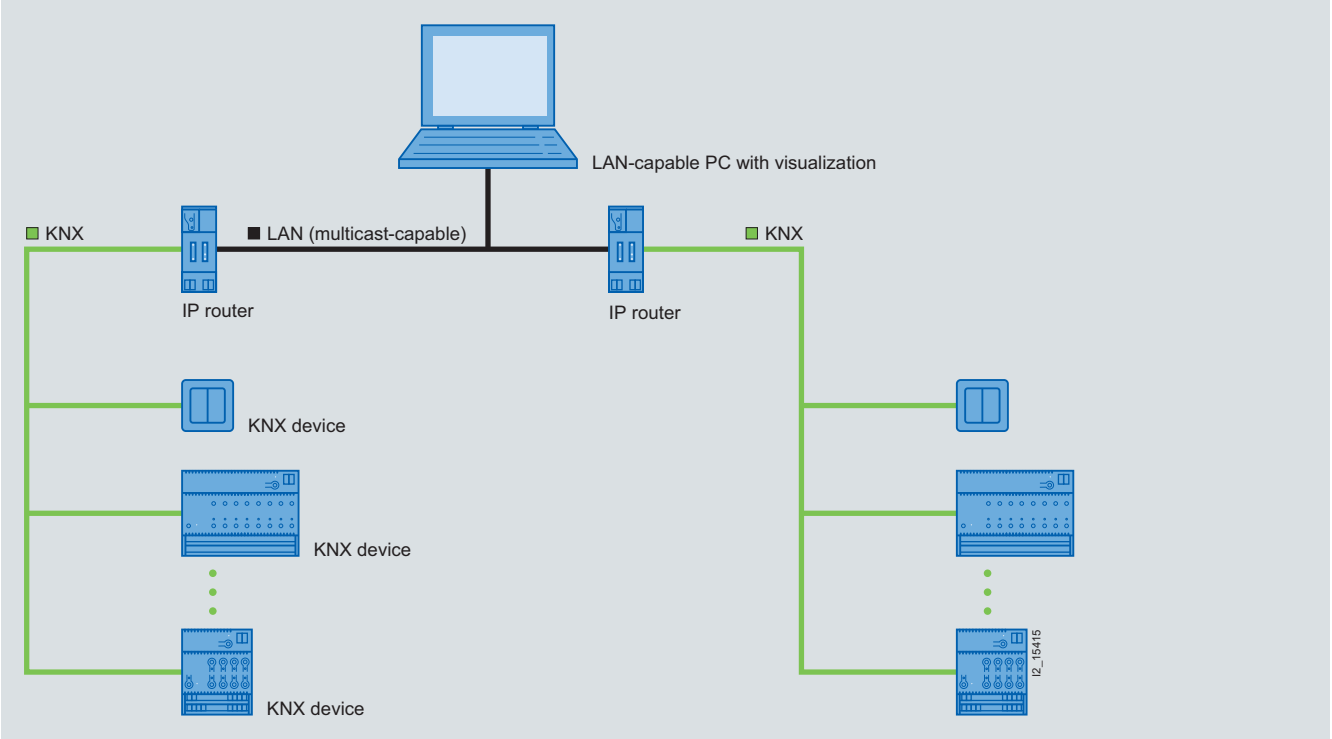
Overview

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 need 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

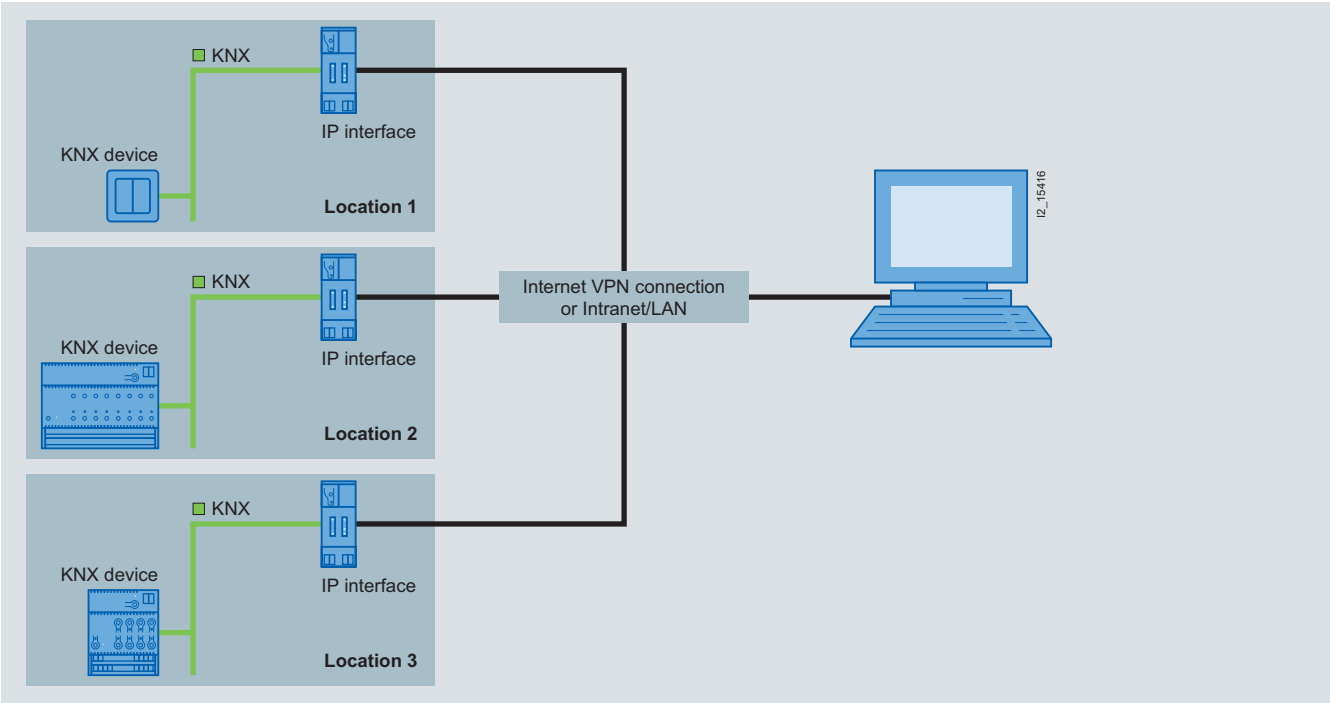
Remote operation and remote visualization

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 need 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.

Monitoring locations via Ethernet (LAN)

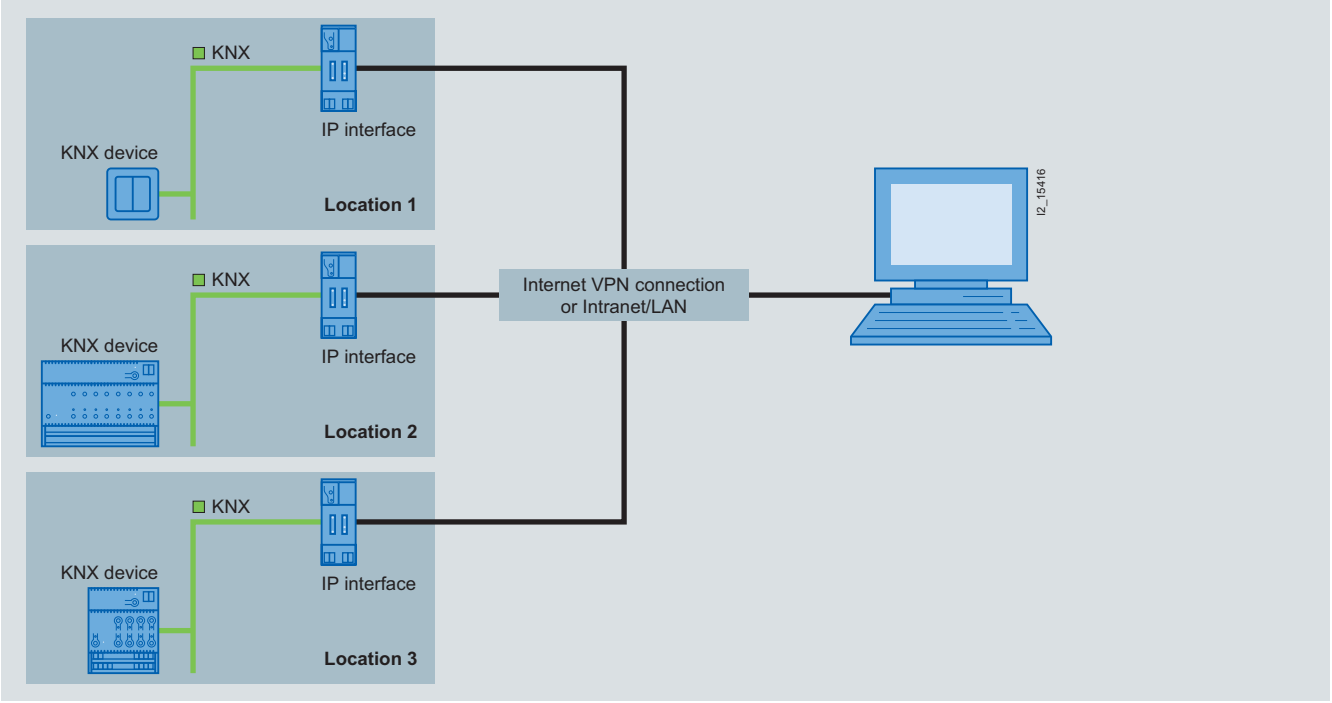
Overview

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 need 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.

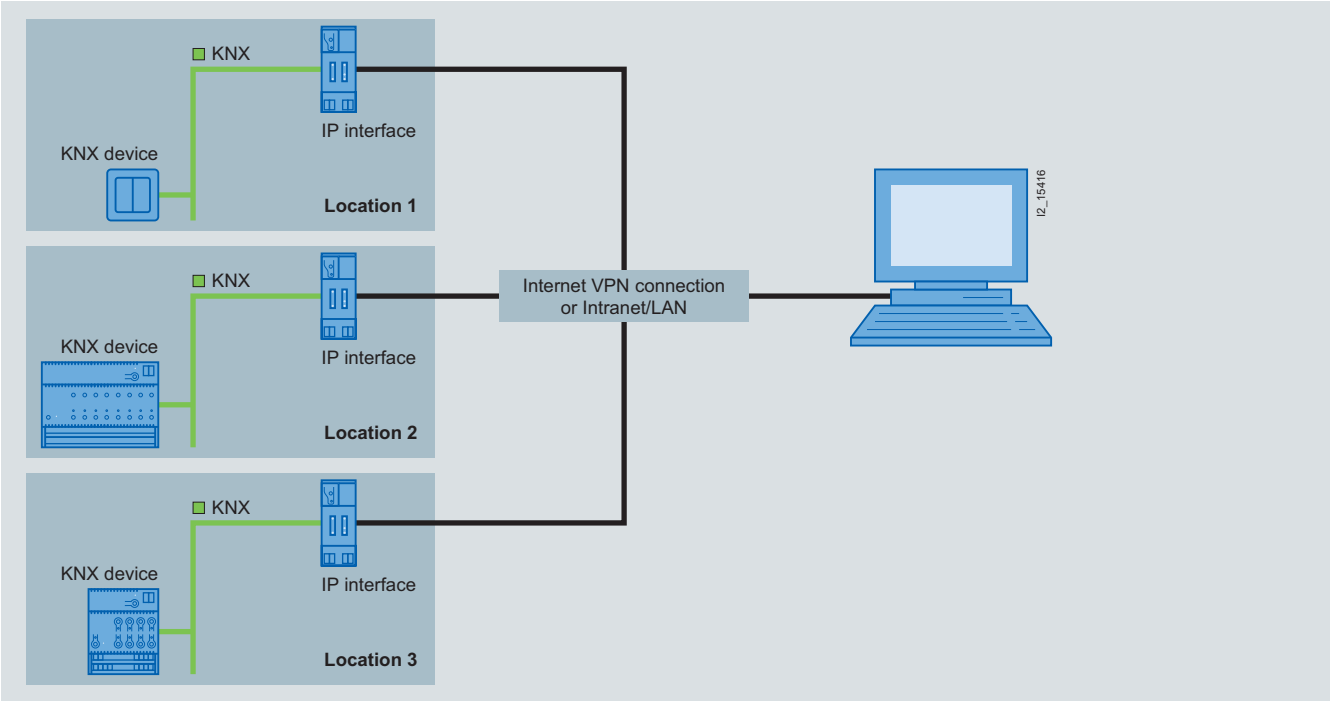
VPN (Virtual Private Network) lets you set up a secure subnetwork via an open, unsecured network (Internet, wireless network) by protecting all communication against access or being tapped into by unauthorized third parties. This is achieved by means of "tunneling" the data traffic via a VPN server, 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 need 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.

Switch/dimming actuators for controlling DALI lighting

Overview

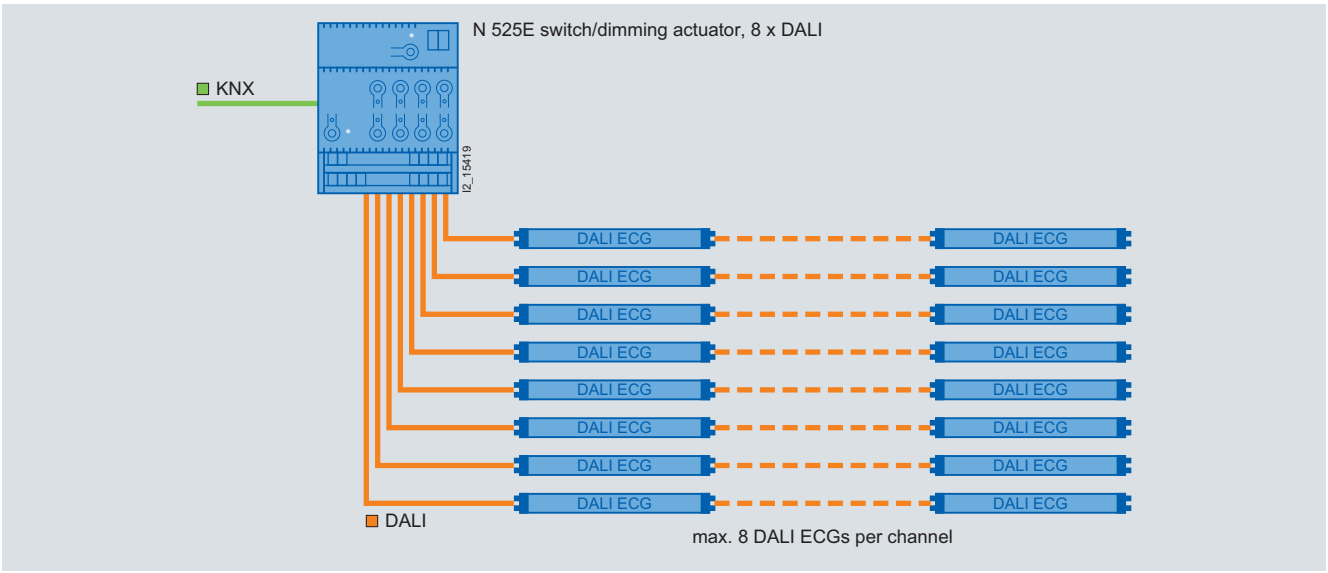
Using DALI lighting without complicated DALI commissioning

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 need the following

- N 525E switch/dimming actuators (5WG1 525-1EB01)
- Dimmable ECGs with DALI interface
- ETS3 (current version see www.knx.org)

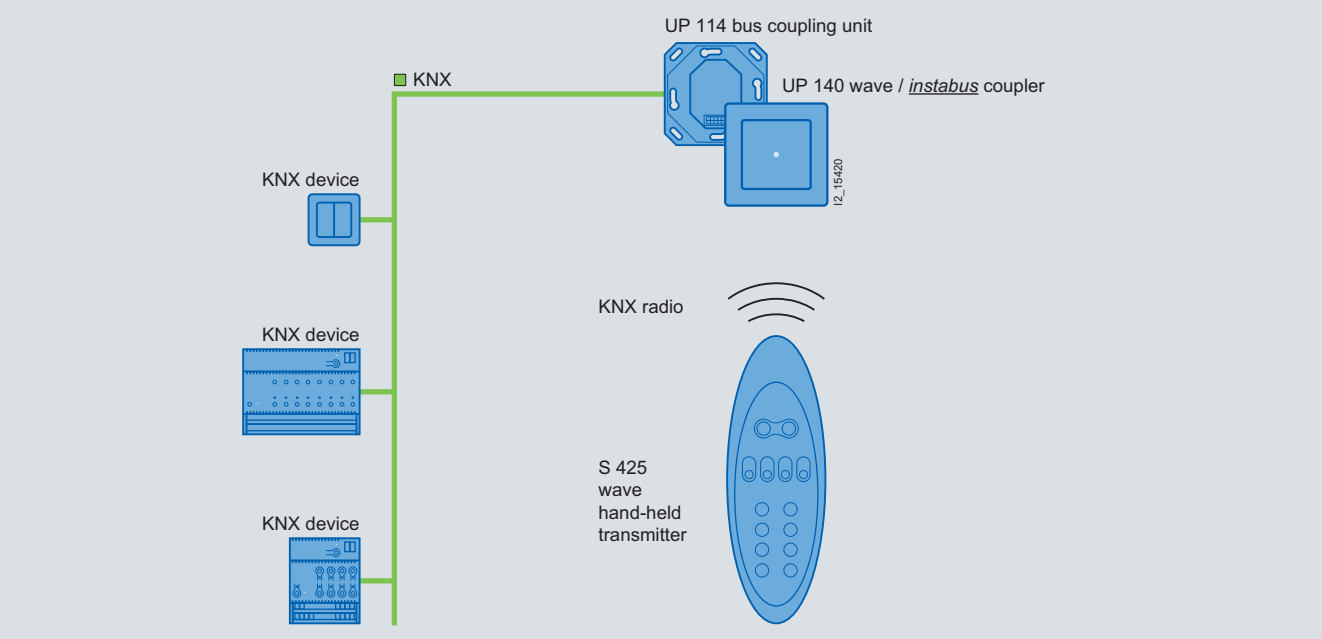
Overview

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)

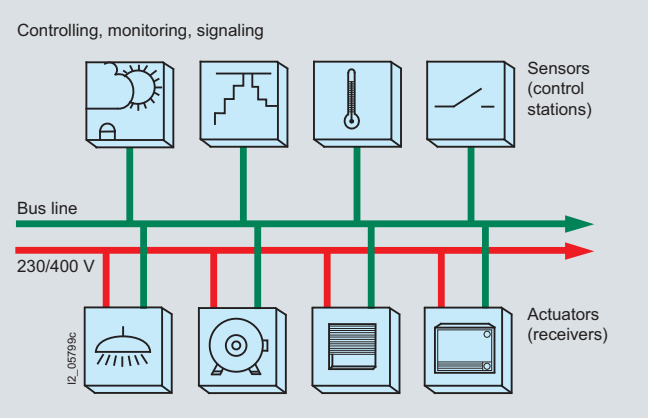
You need the following

- 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)

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 (*E*ngineering *T*ool *S*oftware).

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 (*C*arrier *S*ense). When the bus is unoccupied, any station can begin a transmission operation (*M*ultiple *A*ccess).

If two stations begin to transmit simultaneously, the higher-priority instantly asserts itself on the bus (*C*ollision *A*voidance), 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.

System overview

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.

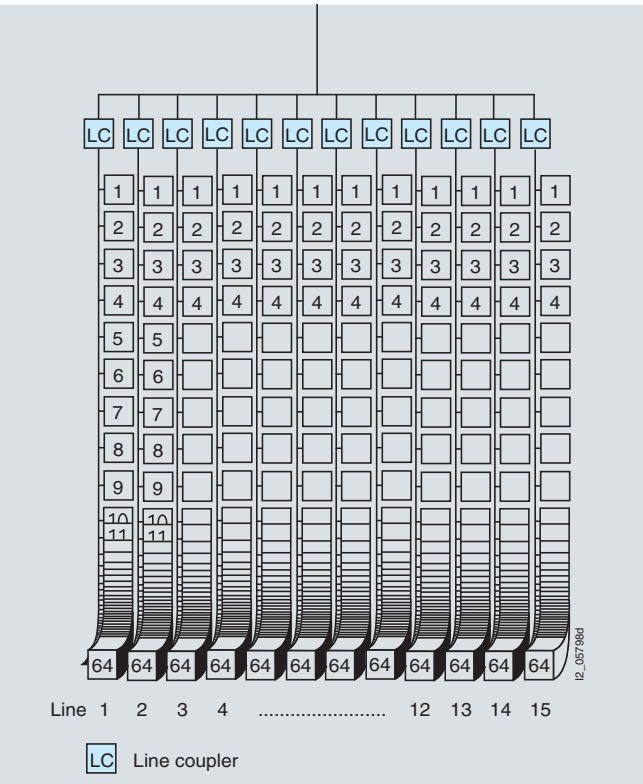
Although more than 14000 devices can be interconnected in a single unit, the clear-cut logic of the system is preserved. Telegrams only ever overstep the interfaces to other lines and function areas if they are needed in those areas. This minimizes the telegram load on the main line. Line/backbone couplers 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 TH 35 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.

System overview

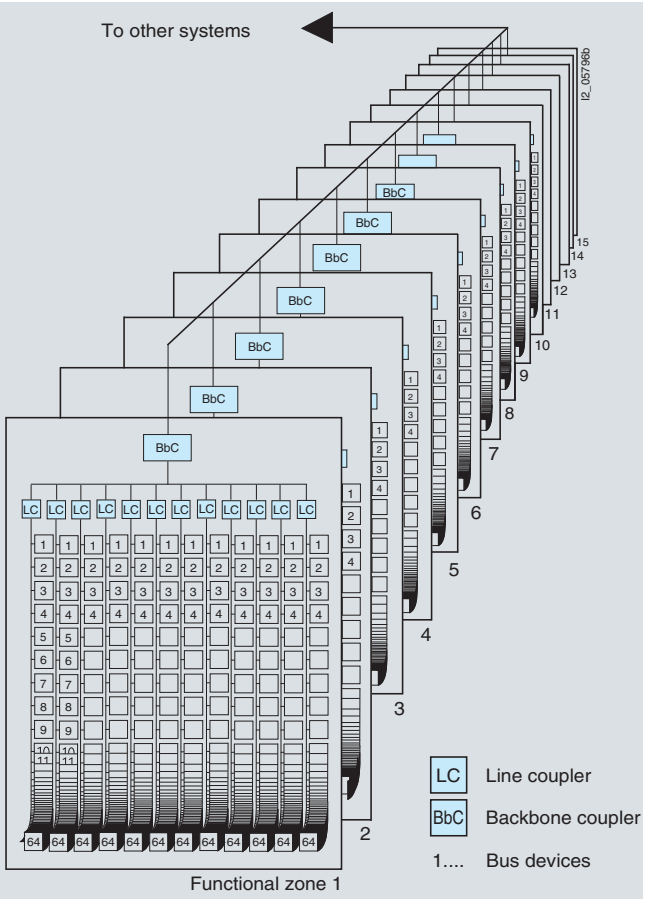
Devices

Each device generally comprises a universal *B*us *C*oupling *U*nit (BCU) and a task-specific *B*us *T*erminal (BT, e.g. pushbutton or display), which exchanges information with the BCU via the *U*ser *I*nterface. 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 *Micro*processor (MP) with a non-volatile ROM (*R*ead *O*nly *M*emory), a volatile RAM (*R*andom *A*ccess *M*emory) and a non-volatile EEPROM (*E*lectrically *E*rasable *P*rogrammable *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)/reactor	m	Max. 350
• Length between power supply unit (320 mA) and reactor		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)
• Power supply units per line for high current demand		Max. two power supply units at a distance of at least 200 m
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/*EIB* manual
Resistance to climate		prEN 50090-2-2, KNX/*EIB* 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/*EIB* certified
CE marking		Compliant with EMC Directive (residential and non-residential buildings), Low Voltage Directive

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

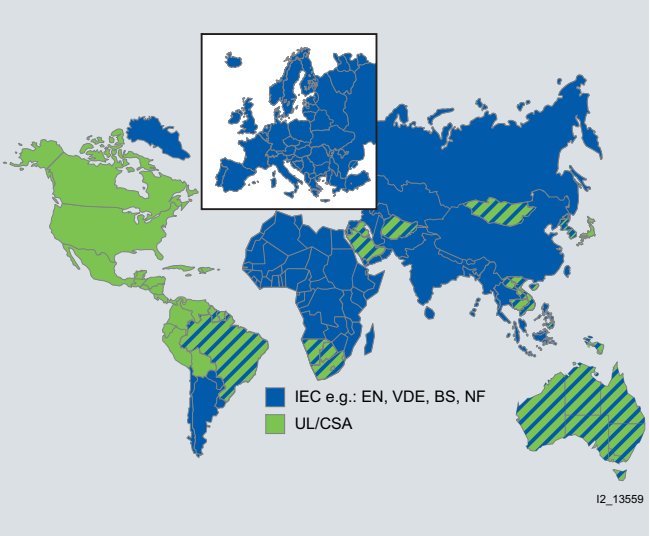
www.ul.com for general UL information

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

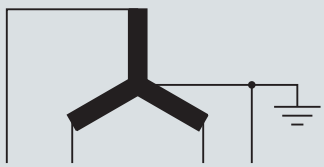
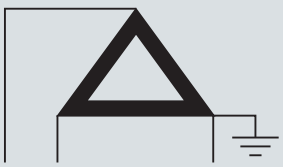
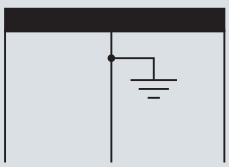
Overview of IEC – UL standards



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 60Hz is standard in North America.

Industry and commercial		**Residential**
		
Three-phase, 4 wires	Three-phase, 3 wires	Single-phase, 3 wires
Three-phase wye, 4 wires	Three-phase delta, 3 wires, grounded corner	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 V[1)]	240 V	240 V, phase conductor
600 V Y/347 V[1)]	480 V	120 V to ground
240 V Y/131 V[1)]	600 V	
208 V Y/120 V[1)]		

[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

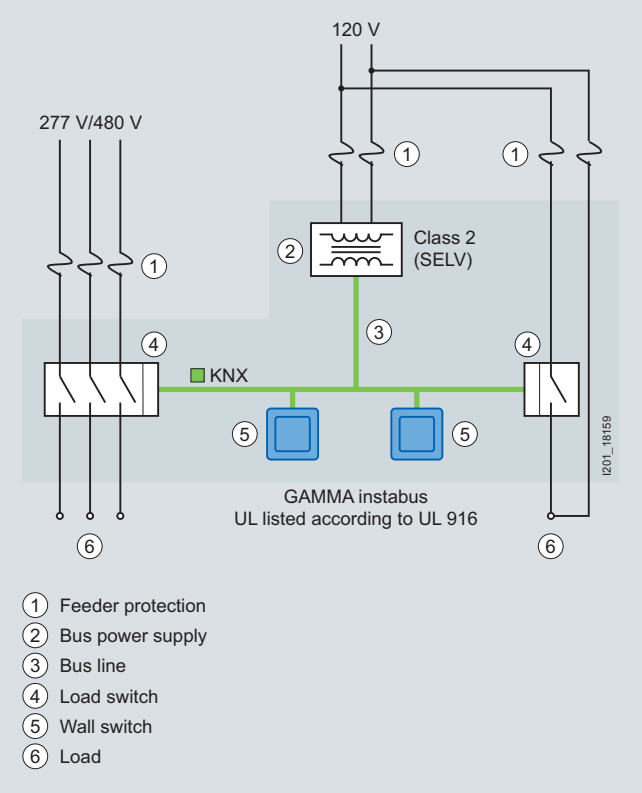
General information about UL can be found at: www.ul.com

Symbol	Application
	**UL symbol** 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.
	**c-UL symbol** 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.
	**c-UL US symbol** This symbol was introduced at the beginning of 1998. It means that the device bearing this mark complies with both UL and Canadian regulations.
	**UR, c-UR and c-UR US symbol** Recognized component mark and Canadian recognized component mark 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.
	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".
	The c UR US symbol was introduced in 1998 and means that the marked components meet both the UL and CSA regulations.

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, ...

UL standard



5TE6 804 socket outlets for distribution board mounting according 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 according 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 touch 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.

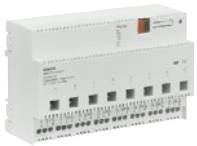
This means that both device series are suitable for universal use worldwide to IEC or UL standards.

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
 5WG1 125-1AB01	**N 125**	**N 125 power supply units** Integrated reactors, 160 mA	A	**5WG1 125-1AB01**		1	1 unit	030	0.290
	N 125/11	**N 125/11 power supply units** Integrated reactors, 320 mA	A	**5WG1 125-1AB11**		1	1 unit	030	0.292
	N 125/21	**N 125/21 power supply units** Integrated reactors, 640 mA, additional unchoked output, 29 V DC	A	**5WG1 125-1AB21**		1	1 unit	030	0.298
 5WG1 141-1AB02	**N 141/02**	**N 141/02 KNX/DALI gateways**	A	**5WG1 141-1AB02**		1	1 unit	030	0.200
 5WG1 261-1CB01	**N 261**	**N 261 binary inputs** 4 inputs for 24 V AC/DC	D	**5WG1 261-1CB01**		1	1 unit	030	0.136
 5WG1 512-1CB01	**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	030	0.619
 5WG1 526-1EB02	**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	030	0.527
 5WG1 523-1CB04	**N 523/CB04**	**N 523/CB04 shutter/blind actuators** 4 x 120 V AC, 6 A	A	**5WG1 523-1CB04**		1	1 unit	030	0.322

* You can order this quantity or a multiple thereof.

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	16 AX	20 AX	10	16	16	16	16	8	8
AC3 operation (p.f. = 0.45)	VA	2300	3680	3680	500	2500	3680	3680	1)	500	500
Maximum switch-on peak current (if more than one, specification of the highest current value)	A/ms	1)	1)	1)	1)	400/ 0.15	600/ 0.15	600/ 0.15	1)	1)	110/50
Contact voltage											
Rated voltage, AC	V	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
Electrical service life Switching operations in millions		0.1	0.1	0.1	0.1	1)	1)	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
Switching capacities/load types, loads											
Resistive load	W	3680	3680	4600	2300	3680	3680	3680	3680	1840	1840
Minimum switching capacity	V/mA	12/100	12/100	12/100	24/10	12/100	12/100	12/100	1)	5/100	24/10
DC switching capacity	V/A	24/10	24/16	24/20	30/10	24/10	24/10	24/10	24/16	24/8	30/10
Maximum capacitive load	µF	200	200	200	35	140	200	200	35	35	35
Incandescent lamps											
Incandescent lamps	W	2300	3680	3680	1000	2500	3680	3680	1000	1000	1000
Halogen lamp 230 V	W	2300	3680	3680	1000	2500	3680	3680	1000	1000	1000
LV halogen lamp with conventional transformer (inductive)	VA	1200	2000	2000	500	500	2000	2000	500	200 ... 500	200 ... 500
T5/T8 fluorescent lamps											
Uncorrected	VA	2300	3680	3680	500	2500	3680	3680	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
DUO circuit	VA	1500	3680	3680	1000	2500	3680	3680	1000	1000	1000
ECG Osram QTI 1 x 28/54W	Units	37	56	59	37	59	59	59	59	22	22
ECG Osram QTP 1 x 18/24/36 W	Units	16	31	31	14	31	31	31	14	14	14
ECG Osram QTP 1 x 58 W	Units	11	21	21	10	21	21	21	10	10	10
ECG Osram QTP 2 x 18/24/58 W; 3 x 18 W; 4 x 18 W	Units	5	9	9	5	9	9	9	5	5	5
Compact lamps											
Uncorrected	VA	1600	3680	3680	500	1600	3680	3680	500	500	500
Parallel corrected (at max. possible C)	W	1100	2500	2500	300	1100	3000	3000	300	300	300
ECG Osram Duluxtronics DT	Units	15	25	25	15	25	25	25	25	15	15
Mercury-vapor lamps											
ECG Osram PTI 35/220-240S	Units	7	14	14	7	14	14	14	7	7	7
ECG Osram PTI 70/220-240S	Units	4	8	8	4	8	8	8	4	4	4

1) On request.

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

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

Switch/dimming actuators

Technical specifications

Load data for switch/dimming actuators per channel

		N 525/02 switch/dimming actuators	N 526/02 switch/dimming actuators	N 526E02 switch/dimming actuators
Contact current				
Rated current, AC	A	16	6	16
Maximum switch-on peak current (if more than one, specification of the highest current value)	A/ms	[1]	120/20	400/0.15
Contact voltage				
Rated voltage, AC	V	230	230	230
Service life				
Mechanical service life Switching operations in millions		[1]	10	1
Electrical service life Switching operations in millions		0.05	0.4	[1]
Power loss				
Maximum power loss per device at rated power	W	2	6	9
Switching capacities/load types, loads				
Resistive load	W	3680	1380	3680
Minimum switching capacity	V/mA	12/500	[1]	12/100
DC switching capacity	V/A	30/16	30/8	24/10
Maximum capacitive load	µF	48	163	140
Incandescent lamps				
Incandescent lamps	W	2000	1380	2500
Halogen lamp 230 V	W	2000	1380	2500
LV halogen lamp with conventional transformer (inductive)	VA	[1]	500	500
T5/T8 fluorescent lamps				
Uncorrected	VA	2000	1380	2500
Parallel corrected (at max. possible C)	W	25 x 58	1380	1300
DUO circuit	VA	2000	1380	2500
ECG Osram QTI 1 x 28/54W	Units	59	22	59
ECG Osram QTP 1 x 18/24/36 W	Units	13	9	31
ECG Osram QTP 1 x 58 W	Units	10	6	21
ECG Osram QTP 2 x 18/24/58 W; 3 x 18 W; 4 x 18 W	Units	5	2	9
Compact lamps				
Uncorrected	VA	2000	1380	1600
Parallel corrected (at max. possible C)	W	920	1380	1100
ECG Osram Duluxtronics DT	Units	13	9	25
Mercury-vapor lamps				
ECG Osram PTI 35/220-240S	Units	8	4	14
ECG Osram PTI 70/220-240S	Units	5	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 shutter/blind actuators UP 520/11 shutter/blind actuators	UP 520/31 shutter/blind actuators	GE 521/02 shutter/blind switches
Contact current										
Rated current	A	6 (AC)	6 (AC)	6 (AC)	6 (AC)	8 (AC)	1 (DC)	6 (AC)	6 (AC)	6 (AC)
AC3 operation (p.f. = 0.45)	VA	200	500	200	200	200	200	500	1000	500
Contact voltage										
Rated voltage	V	230 AC	230 AC	230 AC	230 AC	230 AC	24 DC	230 AC	230 AC	230 AC
Service life										
Mechanical service life Switching operations in millions		20	50	20	20	20	20	10	1)	50
Electrical service life Switching operations in millions		0.1	0.1	0.1	0.1	0.1	0.1	0.1	1)	0.1
Power loss										
Maximum power loss per device at rated power	W	7	2	3	5	8	6	1)	1)	1)
Switching capacities/load types, loads										
Resistive load	W	1380	1380	1380	1380	1840	24	1380	1)	1380
Minimum switching capacity	V/mA	5/10	24/10	5/10	5/10	5/10	5/10	24/10	1)	24/10
DC switching capacity	V/A	24/8	30/10	24/8	24/8	24/8	24/8	30/10	1)	30/10

1) On request.

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

Notes

Appendix

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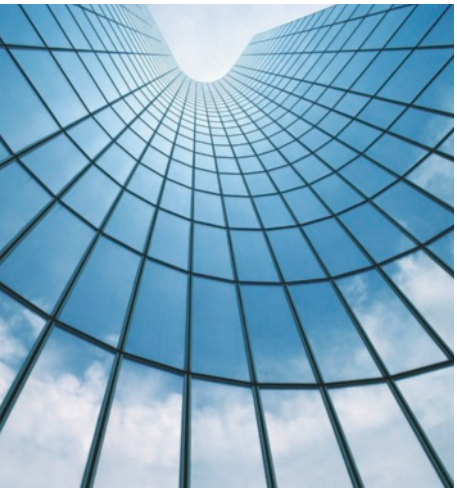


Catalog notes

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 in the catalog are for general information. The instruction manuals and the operating instructions on the products must be observed during assembly, operation and maintenance.

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

Configurators can be found under
www.siemens.com/lowvoltage/configurators

Assembly, operation and maintenance

The instruction manuals and the operating instructions on the products must be observed during assembly, operation and maintenance.

Overview

Ordering special versions

When ordering products that differ from the standard versions listed in the catalog, **"–Z"** must be added to the Order No. indicated and the required features must be specified using alphanumeric order codes or plain text.

Ordering very small quantities

When small orders are placed, the costs associated with order processing are greater than 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 € 250 we charge an € 20 supplement to cover our order processing and invoicing costs.

Explanations on the Selection and Ordering Data

Delivery time class (DT)

DT	Meaning
►	Preferred type
A	Two workdays
B	One week
C	Three weeks
D	Six weeks
X	On request

Preferred types are device types that can be delivered immediately ex works, i.e. they are dispatched within 24 hours.

Normal quantities of the products are usually delivered within the specified time following receipt of your order at our branch.

In exceptional cases, the actual delivery time may differ from that specified.

The delivery times apply up to the ramp at Siemens AG (products ready for dispatch).

The transport times depend on the destination and type of shipping. The standard shipping time for Germany is one day.

The delivery time classes specified here represent the state at 10/2010. They are permanently optimized. 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	For example, 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 (for example) 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 produce the following delivery: two cartons, each containing 100 units (= 200 units) and 4 bags, each containing 5 units (= 20 units).

Price groups (PG)

Each product is assigned 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
►	**5TG2 551-0**		1	1/10 units	021

DC: Preferred type
PU: One unit (on which price is based)
PS/P. unit: 1 = minimum order quantity / 10 = quantity per carton
PG: 021

DT	Order No.	Price per PU	PU (UNIT, SET, M)	PS/ P. unit	PG
A	**5TG4 324**		1	1/10 sets*	021

DC: A = two workdays
PU: One set, i.e. 4 units
PS/P. unit: The minimum order quantity is one set
PG: 021
* The selection and ordering data specifies that one set contains 4 units

Quality management

Overview

The quality management system of our I BT LV Business Unit complies with the international standard EN ISO 9001.

The products and systems listed in this catalog are marketed using a VDE-approved quality management system according to ISO 9001.

VDE certificate

Siemens AG
Industry Sector
Building Technologies Division

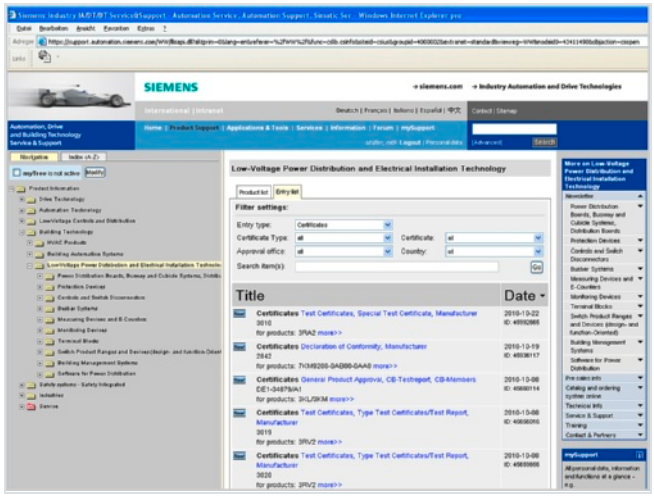
Low Voltage Distribution (I BT LV)
Reg. No.: 40017/QM/03.06

Certificates

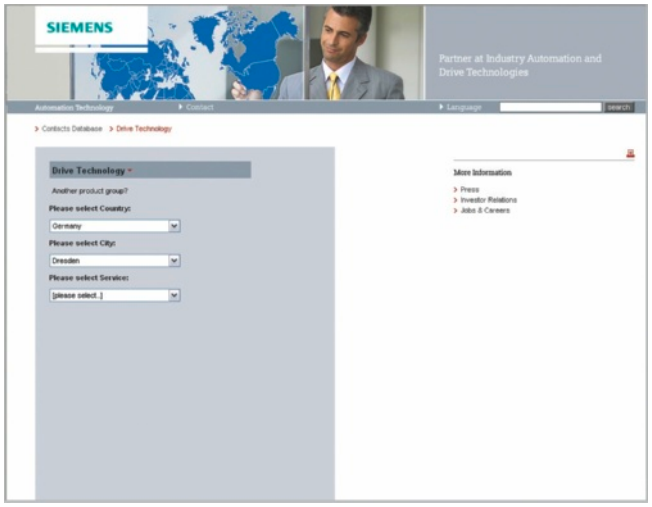
Information on the certificates available (CE, UL, CSA, FM, shipping authorizations) for low-voltage power distribution and electrical installation products can be found on the Internet at:

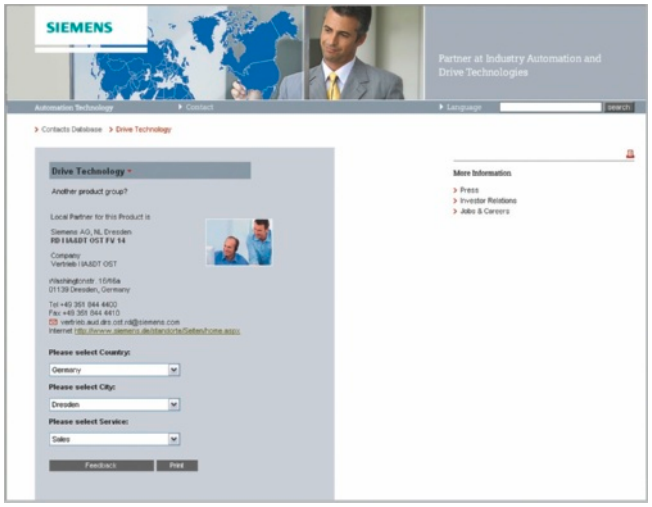
www.siemens.com/lowvoltage/support

In the Entry List you can use the certificate type (general product approval, explosion protection, test certificates, shipbuilding,...) as a filter criterion.



Contact partners at Siemens Industry





At Siemens Industry, 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 all industries – worldwide.

At your service locally, around the globe for consulting, sales, training, service, support, spare parts ... on the entire Industry range.

Your personal contact can be found in our Contacts Database at: www.siemens.com/automation/partner

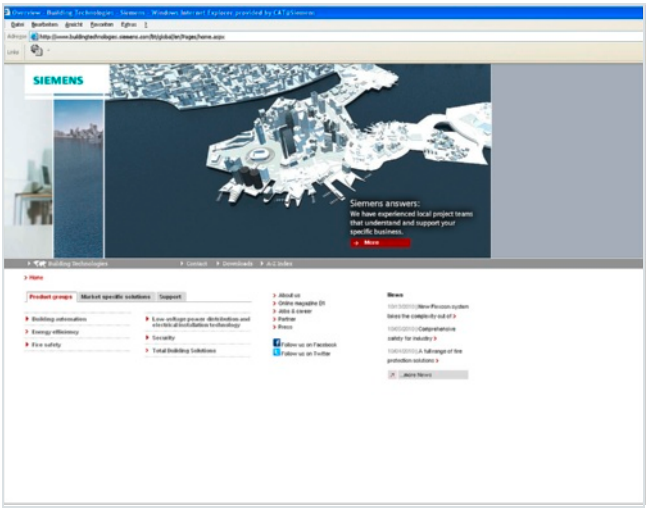
You start by selecting a

- Product group,
- Country,
- City,
- Service.

Appendix
Online Services

Information and ordering options available on the Internet and DVD

Siemens Building Technologies on the web



The Siemens Division Building Technologies offers the full range of products and solutions for secure and energy-efficient buildings and infrastructures – from building automation and heating, ventilation and air-conditioning systems (HLK) to fire protection, security, low-voltage power distribution and electrical installation technology.

Extensive information about all products, systems and services and support services is available in a compact and clear format on the Internet at:
www.siemens.com/buildingtechnologies

Product selection with the interactive catalog CA 01

Detailed information together with convenient interactive functions:

The interactive catalog CA 01 covers more than 80 000 products and thus provides a full summary of the Siemens Industry 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.

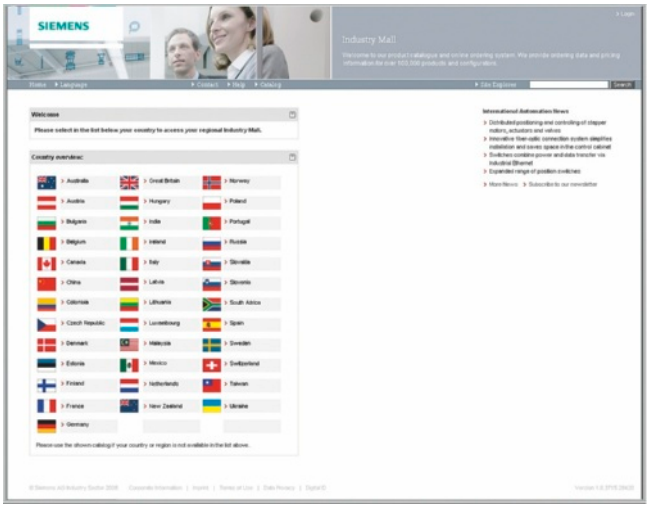
After selecting the product of your choice you can order at the press of a button, by fax or by online link.

Information on the interactive catalog CA 01 can be found in 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 clearly and informatively presented in electronic catalogs.

Data transfer via EDIFACT allows the whole procedure, from selection over ordering through to order tracking, to be carried out online over the Internet.

A range of functions offer comprehensive support.

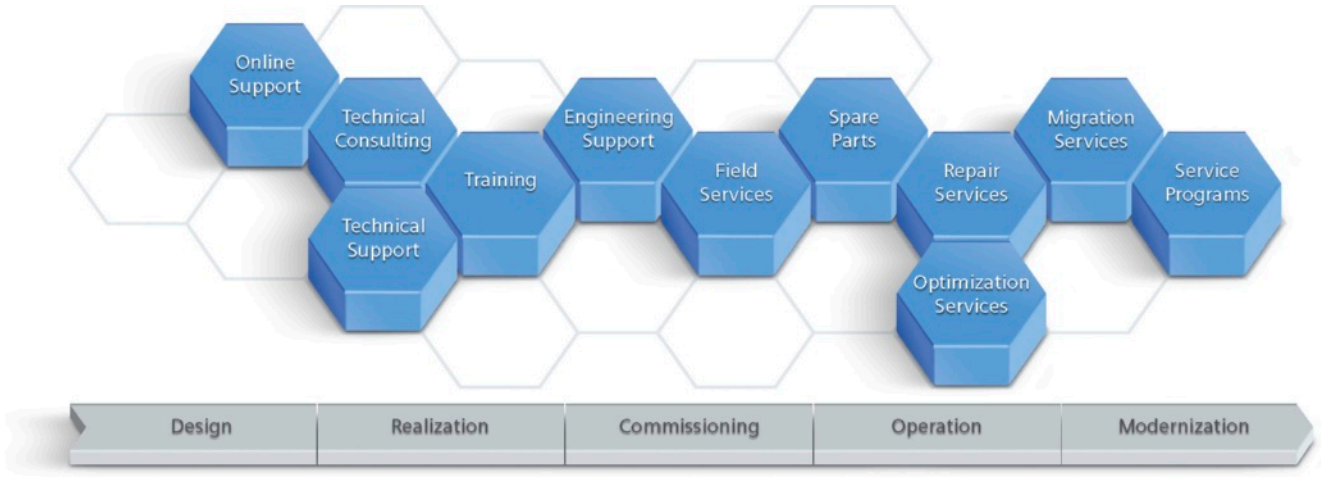
These include powerful search functions that make it easy to find the required products, which can then be immediately checked for availability. Customer-specific discounting and compilation of tenders are possible online, as is checking the status of your order (Tracking & Tracing).

You can find the Industry Mall on the Internet at:

www.siemens.com/industrymall

The unmatched complete service for the entire life cycle

Overview



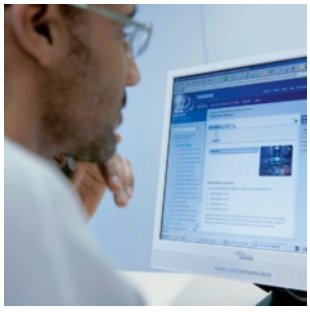
For machine constructors, solution providers and plant operators: The service offering from Siemens Industry, Automation and Drive Technologies includes comprehensive services for a wide range of different users in all sectors of the manufacturing and process industry

To accompany our products and systems, we offer integrated and structured services that provide valuable support in every phase of the life cycle of your machine or plant - from planning and implementation through commissioning as far as maintenance and modernization.

Our Service & Support accompanies you worldwide in all matters concerning automation and drives from Siemens. We provide direct on-site support in more than 100 countries through all phases of the life cycle of your machines and plants.

You have an experienced team of specialists at your side to provide active support and bundled know-how. Regular training courses and intensive contact among our employees - even across continents - ensure reliable service in the most diverse areas.

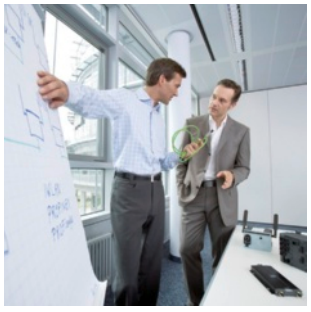
Online Support



The comprehensive online information platform supports you in all aspects of our Service & Support at any time and from any location in the world.

www.siemens.com/lowvoltage/support

Technical Consulting



Support in planning and designing your project: From detailed actual-state analysis, definition of the goal and consulting on product and system questions right through to the creation of the automation solution.

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

Training

Extend your competitive edge - through practical know-how directly from the manufacturer.

www.siemens.com/sitrain

Contact information is available in the Internet at:
www.siemens.com/automation/partner

The unmatched complete service for the entire life cycle

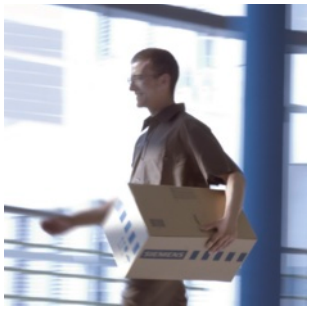
Engineering Support

Support during project engineering and development with services fine-tuned to your requirements, from configuration through to implementation of an automation project.

Field Service

Our Field Service offers you services for commissioning and maintenance - to ensure that your machines and plants are always available.

Spare parts



In every sector worldwide, plants and systems are required to operate with constantly increasing reliability. We will provide you with the support you need to prevent a standstill from occurring in the first place: with a worldwide network and optimum logistics chains.

Repairs

Downtimes cause problems in the plant as well as unnecessary costs. We can help you to reduce both to a minimum - with our worldwide repair facilities.

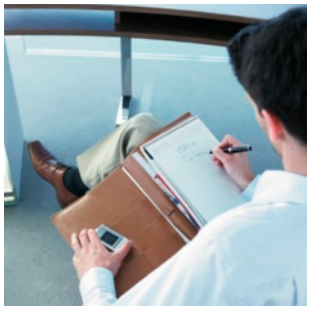
Optimization

During the service life of machines and plants, there is often a great potential for increasing productivity or reducing costs. To help you achieve this potential, we are offering a complete range of optimization services.

Modernization

You can also rely on our support when it comes to modernization - with comprehensive services from the planning phase all the way to commissioning.

Service programs



Our service programs are selected service packages for an automation and drives system or product group. The individual services are coordinated with each over to ensure smooth coverage of the entire life cycle and support optimum use of your products and systems.

The services of a service program can be flexibly adapted at any time and used separately.

Examples of service programs:

- Service contracts
- Plant IT Security Services
- Life Cycle Services for Drive Engineering
- SIMATIC PCS 7 Life Cycle Services
- SINUMERIK Manufacturing Excellence
- SIMATIC Remote Support Servicess

Advantages at a glance:

- Reduced downtimes for increased productivity
- Optimized maintenance costs due to a tailored scope of services
- Costs that can be calculated and therefore planned
- Service reliability due to guaranteed response times and spare part delivery times
- Customer service personnel will be supported and relieved of additional tasks
- Comprehensive service from a single source, fewer interfaces and greater expertise

Contact information is available in the Internet at:
www.siemens.com/automation/partner

Overview

In all issues for more efficiency - comprehensive support and access at any time to tried and tested tools, quickly and easily via the Internet.

Product information	
Website	Fast and targeted information about low-voltage power distribution: www.siemens.com/lowvoltage
Newsletter	Always up to date about our forward-looking products and systems: www.siemens.com/lowvoltage/newsletter
Product information/product & system selection	
Information and download center	Current catalogs, customer magazines, brochures, demo software and promotion packages: www.siemens.com/lowvoltage/infomaterial
Industry Mall	Comprehensive information and order platform for the Siemens Industry Basket: www.siemens.com/industrymall
Product- & System-Engineering	
SIMARIS Software tools	Support in planning and configuration the electrical power distribution: www.siemens.com/simaris
Engineering software ALPHA SELECT	Simple and fast configuration for distribution boards and meter cabinets with products from the Siemens Industry Basket: www.siemens.com/alpha-select
Product documentation	
Service & support portal	Comprehensive technical information - from planning to configuration and operation: www.siemens.com/lowvoltage/support
Cax Data	Collation of commercial and technical master product data: www.siemens.com/cax
Image database	Collection of product photographs and graphics, such as dimensional drawings and internal circuit diagrams: www.siemens.de/lowvoltage/bilddb
Product training	
SITRAIN Portal	Comprehensive training program about our products, systems and engineering tools: www.siemens.com/lowvoltage/training
Product hotline	
Technical support	Support in all technical queries about our products: E-mail: support.automation@siemens.com www.siemens.com/lowvoltage/technical-support

Subject index

Subject index

Order number index

Order No.	Page	DT	PU (UNIT, SET, M)	PS*/ P. unit	PG
4AC2					
4AC2 402	6/10, 12/7	B	1	1 unit	027
5TC1					
5TC1 230	17/17	A	1	1 unit	024
5TC1 231	17/19	A	1	1 unit	024
5TC1 232	17/13	A	1	1 unit	024
5TC1 233	17/13	A	1	1 unit	024
5TC1 290	17/21	A	1	1 unit	024
5TC1 291	17/21	A	1	1 unit	024
5TC7					
5TC7 900	12/6	A	1	1 unit	024
5TC7 901	12/6	A	1	1 unit	024
5TC7 902	12/6	A	1	1 unit	024
5TG1 1					
5TG1 101-0	1/33	A	1	1 unit	021
5TG1 101-1	1/33	A	1	1 unit	021
5TG1 101-2	1/33	A	1	1 unit	021
5TG1 101-3	1/33	A	1	1 unit	021
5TG1 101-4	1/33	A	1	1 unit	021
5TG1 102-0	1/33	A	1	1 unit	021
5TG1 102-1	1/33	A	1	1 unit	021
5TG1 102-2	1/33	A	1	1 unit	021
5TG1 102-3	1/33	A	1	1 unit	021
5TG1 102-4	1/33	A	1	1 unit	021
5TG1 103-0	1/33	A	1	1 unit	021
5TG1 103-1	1/33	A	1	1 unit	021
5TG1 103-2	1/33	A	1	1 unit	021
5TG1 103-3	1/33	A	1	1 unit	021
5TG1 103-4	1/33	A	1	1 unit	021
5TG1 104-0	1/33	A	1	1 unit	021
5TG1 104-1	1/33	A	1	1 unit	021
5TG1 104-2	1/33	A	1	1 unit	021
5TG1 104-3	1/33	A	1	1 unit	021
5TG1 104-4	1/33	A	1	1 unit	021
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5TG1 111-1	1/31	A	1	1/10 units	021
5TG1 111-2	1/31	A	1	1/10 units	021
5TG1 112-0	1/31	A	1	1/10 units	021
5TG1 112-1	1/31	A	1	1/10 units	021
5TG1 112-2	1/31	A	1	1/10 units	021
5TG1 113-0	1/31	A	1	1/10 units	021
5TG1 113-1	1/31	A	1	1/10 units	021
5TG1 113-2	1/31	A	1	1/10 units	021
5TG1 114-0	1/31	A	1	1/10 units	021
5TG1 114-1	1/31	A	1	1/10 units	021
5TG1 114-2	1/31	A	1	1/10 units	021
5TG1 115-0	1/31	A	1	1/3 units	021
5TG1 115-1	1/31	A	1	1/3 units	021
5TG1 115-2	1/31	A	1	1/3 units	021
5TG1 121-0	1/34	A	1	1 unit	021
5TG1 121-1	1/34	A	1	1 unit	021
5TG1 121-2	1/34	A	1	1 unit	021
5TG1 121-3	1/34	A	1	1 unit	021
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5TG1 122-1	1/34	A	1	1 unit	021
5TG1 122-2	1/34	A	1	1 unit	021
5TG1 122-3	1/34	A	1	1 unit	021
5TG1 123-0	1/34	A	1	1 unit	021
5TG1 123-1	1/34	A	1	1 unit	021
5TG1 123-2	1/34	A	1	1 unit	021
5TG1 123-3	1/34	A	1	1 unit	021
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5TG1 124-1	1/34	A	1	1 unit	021
5TG1 124-2	1/34	A	1	1 unit	021
5TG1 124-3	1/34	A	1	1 unit	021
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5TG1 125-2	1/34	A	1	1 unit	021
5TG1 125-3	1/34	A	1	1 unit	021
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5TG1 132-0	1/30	C	1	1 unit	021
5TG1 133-0	1/30	C	1	1 unit	021
5TG1 134-0	1/30	C	1	1 unit	021
5TG1 2					
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5TG1 201-1	1/32	A	1	1 unit	021
5TG1 201-2	1/32	A	1	1 unit	021
5TG1 201-3	1/32	A	1	1 unit	021
5TG1 201-4	1/32	A	1	1 unit	021
5TG1 202	1/32	A	1	1 unit	021
5TG1 202-1	1/32	A	1	1 unit	021
5TG1 202-2	1/32	A	1	1 unit	021
5TG1 202-3	1/32	A	1	1 unit	021
5TG1 202-4	1/32	A	1	1 unit	021
5TG1 203	1/32	A	1	1 unit	021
5TG1 203-1	1/32	A	1	1 unit	021
5TG1 203-2	1/32	A	1	1 unit	021
5TG1 203-3	1/32	A	1	1 unit	021
5TG1 203-4	1/32	A	1	1 unit	021
5TG1 204	1/32	A	1	1 unit	021
5TG1 204-1	1/32	A	1	1 unit	021
5TG1 204-2	1/32	A	1	1 unit	021
5TG1 204-3	1/32	A	1	1 unit	021
5TG1 204-4	1/32	A	1	1 unit	021
5TG1 205	1/32	A	1	1 unit	021
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5TG1 205-2	1/32	A	1	1 unit	021
5TG1 205-3	1/32	A	1	1 unit	021
5TG1 205-4	1/32	A	1	1 unit	021
5TG1 220	17/9	A	1	1/10 units	021
5TG1 250	17/9	A	1	1/10 units	021
5TG1 3					
5TG1 321	1/36	A	1	1/10 units	021
5TG1 321-1	1/36	A	1	1/10 units	021
5TG1 322	1/36	A	1	1/10 units	021
5TG1 322-1	1/36	A	1	1/10 units	021
5TG1 323	1/36	A	1	1/10 units	021
5TG1 323-1	1/36	A	1	1/10 units	021
5TG1 324	1/36	A	1	1/10 units	021
5TG1 324-1	1/36	A	1	1/10 units	021
5TG1 325	1/36	A	1	1/5 units	021
5TG1 325-1	1/36	A	1	1/5 units	021
5TG1 328	1/36	A	1	1/10 units	021
5TG1 328-1	1/36	A	1	1/10 units	021
5TG1 330	17/9	A	1	1/10 units	021
5TG1 361	1/36	A	1	1/10 units	021

* You can order this quantity or a multiple thereof.

Order number index

Order No.	Page	DT	PU (UNIT, SET, M)	PS*/ P. unit	PG
5TG1 362	1/36	A	1	1/10 units	021
5TG1 363	1/36	A	1	1/10 units	021
5TG1 364	1/36	A	1	1/10 units	021
5TG1 365	1/36	A	1	1/5 units	021
5TG1 368	1/36	A	1	1/10 units	021
5TG1 370	17/9	A	1	1/10 units	021
5TG1 7					
5TG1 701-1	1/35	A	1	1/10 units	021
5TG1 761	1/35	A	1	1/10 units	021
5TG1 763	1/35	A	1	1/10 units	021
5TG1 764	1/35	A	1	1/10 units	021
5TG1 770	17/9	A	1	1/10 units	021
5TG1 8					
5TG1 801	1/35	A	1	1/10 units	021
5TG1 802	1/35	A	1	1/10 units	021
5TG1 803	1/35	A	1	1/10 units	021
5TG1 804	1/35	A	1	1/10 units	021
5TG1 810	17/9	A	1	1/10 units	021
5TG1 825	1/37	A	1	1/5 units	021
5TG1 826	1/37	A	1	1/5 units	021
5TG1 831	1/35	A	1	1/10 units	021
5TG1 832	1/35	A	1	1/10 units	021
5TG1 833	1/35	A	1	1/10 units	021
5TG1 834	1/35	A	1	1/10 units	021
5TG1 840	17/9	A	1	1/10 units	021
5TG2					
5TG2 551-0	1/29	A	1	1/10 units	021
5TG2 551-1	1/29	A	1	1/10 units	021
5TG2 551-3	1/29	A	1	1/10 units	021
5TG2 551-4	1/29	A	1	1/10 units	021
5TG2 551-6	1/29	A	1	1/10 units	021
5TG2 551-7	1/29	A	1	1/10 units	021
5TG2 552-0	1/29	A	1	1/10 units	021
5TG2 552-1	1/29	A	1	1/10 units	021
5TG2 552-2	1/29	A	1	1/10 units	021
5TG2 552-3	1/29	A	1	1/10 units	021
5TG2 552-4	1/29	A	1	1/10 units	021
5TG2 552-5	1/29	A	1	1/10 units	021
5TG2 552-6	1/29	A	1	1/10 units	021
5TG2 552-7	1/29	A	1	1/10 units	021
5TG2 552-8	1/29	A	1	1/10 units	021
5TG2 553-0	1/29	A	1	1/10 units	021
5TG2 553-1	1/29	A	1	1/10 units	021
5TG2 553-2	1/29	A	1	1/10 units	021
5TG2 553-3	1/29	A	1	1/10 units	021
5TG2 553-6	1/29	A	1	1/10 units	021
5TG2 554-0	1/29	A	1	1/10 units	021
5TG2 554-1	1/29	A	1	1/10 units	021
5TG2 554-2	1/29	A	1	1/10 units	021
5TG2 554-3	1/29	A	1	1/10 units	021
5TG2 554-6	1/29	A	1	1/10 units	021
5TG2 555-0	1/29	A	1	1/5 units	021
5TG2 555-3	1/29	A	1	1/5 units	021
5TG2 555-6	1/29	A	1	1/5 units	021
5TG2 558	17/9	A	1	1/10 units	021
5TG2 581-0	1/29	A	1	1/10 units	021
5TG2 581-1	1/29	A	1	1/10 units	021
5TG2 582-0	1/29	A	1	1/10 units	021
5TG2 582-1	1/29	A	1	1/10 units	021
5TG2 582-2	1/29	A	1	1/10 units	021
5TG2 583-0	1/29	A	1	1/10 units	021
5TG2 583-1	1/29	A	1	1/10 units	021
5TG2 583-2	1/29	A	1	1/10 units	021
5TG2 584-0	1/29	A	1	1/10 units	021
5TG2 584-1	1/29	A	1	1/10 units	021
5TG2 584-2	1/29	A	1	1/10 units	021
5TG2 585-0	1/29	A	1	1/5 units	021
5TG2 861	1/37	A	1	1/5 units	021
5TG2 862	1/37	A	1	1/3 units	021
5TG2 863	1/37	A	1	1/2 units	021
5TG2 901	1/37	A	1	1/5 units	021
5TG2 902	1/37	A	1	1/3 units	021
5TG2 903	1/37	A	1	1/2 units	021
5TG4					
5TG4 324	1/17, 14/5	A	1	1/10 sets	021
5WG1 1					
5WG1 110-2AB03	14/4	A	1	1 unit	030
5WG1 110-2AB11	14/4	A	1	1 unit	030
5WG1 110-2CB03	14/4	B	1	1 unit	030
5WG1 114-2AB02	14/4	A	1	1 unit	030
5WG1 114-2CB02	14/4	B	1	1 unit	030
5WG1 115-3AB21	1/19	A	1	1 unit	022
5WG1 115-3AB31	1/19	A	1	1 unit	022
5WG1 116-2AB01	1/17, 14/5	A	1	1 unit	030
5WG1 116-2AB11	1/17, 14/5	A	1	1 unit	030
5WG1 116-2AB21	1/17, 14/5	A	1	1 unit	030
5WG1 116-2AB31	1/17, 14/5	A	1	1 unit	030
5WG1 117-2AB11	14/4	A	1	1 unit	030
5WG1 120-1AB02	14/10	A	1	1 unit	030
5WG1 125-1AB01	14/9, 19/19	A	1	1 unit	030
5WG1 125-1AB11	14/9, 19/19	A	1	1 unit	030
5WG1 125-1AB21	14/9, 19/19	A	1	1 unit	030
5WG1 140-1AB03	14/13	A	1	1 unit	030
5WG1 140-1AB13	14/13	A	1	1 unit	030
5WG1 140-7AU02	11/20	C	1	1 unit	030
5WG1 140-7AU22	11/20	C	1	1 unit	030
5WG1 141-1AB02	5/15, 11/8, 19/19	A	1	1 unit	030
5WG1 146-1AB02	11/6, 14/13, 14/15	A	1	1 unit	030
5WG1 146-2AB11	11/12	A	1	1 unit	022
5WG1 146-2AB21	11/12	D	1	1 unit	022
5WG1 146-2AB71	11/12	D	1	1 unit	022
5WG1 146-2EB11	11/10	A	1	1 unit	022
5WG1 146-2EB21	11/10	B	1	1 unit	022
5WG1 146-2EB71	11/10	C	1	1 unit	022
5WG1 148-1AB02	11/12	A	1	1 unit	030
5WG1 148-1AB04	11/12	B	1	1 unit	030
5WG1 148-1AB11	11/10	A	1	1 unit	030
5WG1 148-1AB21	14/15	X	1	1 unit	030
5WG1 148-1AB22	11/6	A	1	1 unit	030
5WG1 151-1AB01	1/52, 11/6, 14/15	A	1	1 unit	030
5WG1 190-7AU01	11/20	X	1	1 unit	030
5WG1 190-8AB01	15/5	A	1	5 units	030
5WG1 190-8AB02	15/5	A	1	5 units	030
5WG1 190-8AB03	15/5	A	1	5 units	030

*** 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 190-8AB04	15/5	A	1	5 units	030
5WG1 190-8AB11	15/5	B	1	5 units	030
5WG1 190-8AB12	15/5	B	1	5 units	030
5WG1 190-8AB13	15/5	B	1	5 units	030
5WG1 190-8AB14	15/5	B	1	5 units	030
5WG1 190-8AB21	15/5	B	1	5 units	030
5WG1 190-8AB22	15/5	B	1	5 units	030
5WG1 190-8AB23	15/5	B	1	5 units	030
5WG1 190-8AB24	15/5	B	1	5 units	030
5WG1 190-8AB31	15/5	B	1	5 units	030
5WG1 190-8AB32	15/5	B	1	5 units	030
5WG1 190-8AB33	15/5	B	1	5 units	030
5WG1 190-8AB34	15/5	B	1	5 units	030
5WG1 190-8AB41	15/5	B	1	5 units	030
5WG1 190-8AB42	15/5	B	1	5 units	030
5WG1 190-8AB43	15/5	B	1	5 units	030
5WG1 190-8AB44	15/5	B	1	5 units	030
5WG1 190-8AB51	15/5	B	1	5 units	030
5WG1 190-8AB52	15/5	B	1	5 units	030
5WG1 190-8AB53	15/5	B	1	5 units	030
5WG1 190-8AB54	15/5	B	1	5 units	030
5WG1 190-8AD01	15/6	B	1	1 unit	030
5WG1 191-5AB01	15/4	A	1	1 unit	030
5WG1 191-5AB11	15/4	A	1	1 unit	030
5WG1 192-8AA01	15/3	X	1	5 units	030
5WG1 193-8AB01	15/3	A	1	25 units	030
5WG1 195-3AB01	1/40	D	1	1 M	030
5WG1 195-8AB01	1/40	D	1	1 unit	030
5WG1 195-8AB11	1/40	D	1	1 unit	030
5WG1 195-8AB21	1/40	D	1	1 unit	030
5WG1 195-8AB31	1/40	D	1	1 unit	030
5WG1 195-8AB41	1/40	D	1	1 unit	030
5WG1 195-8AB51	1/40	D	1	1 unit	030
5WG1 196-2AB01	14/5	B	1	10 units	030
5WG1 197-8AB01	1/40	D	1	1 M	030
5WG1 198-8AB01	1/40	D	1	1 unit	030
5WG1 2					
5WG1 220-2AB02	3/5	X	1	1 unit	030
5WG1 220-2AB21	3/5	A	1	1 unit	030
5WG1 220-2AB31	3/5	A	1	1 unit	030
5WG1 221-2AB02	1/6, 1/12	B	1	1 unit	022
5WG1 221-2AB03	1/6	B	1	1 unit	022
5WG1 221-2AB12	1/6, 1/12	A	1	1 unit	022
5WG1 221-2AB13	1/6	A	1	1 unit	022
5WG1 221-2AB22	1/6, 1/12	B	1	1 unit	022
5WG1 221-2AB23	1/6	B	1	1 unit	022
5WG1 221-2AB32	1/6, 1/12	A	1	1 unit	022
5WG1 221-2AB33	1/6	B	1	1 unit	022
5WG1 221-2EB01	1/12	B	1	1 unit	022
5WG1 221-2EB11	1/12	A	1	1 unit	022
5WG1 221-2EB21	1/12	B	1	1 unit	022
5WG1 221-2EB31	1/12	A	1	1 unit	022
5WG1 222-2AB02	1/6, 1/12	B	1	1 unit	022
5WG1 222-2AB03	1/6	B	1	1 unit	022
5WG1 222-2AB12	1/6, 1/12	A	1	1 unit	022
5WG1 222-2AB13	1/6	A	1	1 unit	022
5WG1 222-2AB22	1/6, 1/12	B	1	1 unit	022
5WG1 222-2AB23	1/6	B	1	1 unit	022
5WG1 222-2AB32	1/6, 1/12	A	1	1 unit	022

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5WG1 222-2AB33	1/6	B	1	1 unit	022
5WG1 222-2EB01	1/12	B	1	1 unit	022
5WG1 222-2EB11	1/12	A	1	1 unit	022
5WG1 222-2EB21	1/12	B	1	1 unit	022
5WG1 222-2EB31	1/12	A	1	1 unit	022
5WG1 223-2AB02	1/6, 1/12	B	1	1 unit	022
5WG1 223-2AB03	1/6	B	1	1 unit	022
5WG1 223-2AB04	1/7	B	1	1 unit	022
5WG1 223-2AB05	1/7, 1/25, 11/14	B	1	1 unit	022
5WG1 223-2AB12	1/6, 1/12	A	1	1 unit	022
5WG1 223-2AB13	1/6	A	1	1 unit	022
5WG1 223-2AB14	1/7	B	1	1 unit	022
5WG1 223-2AB15	1/7, 1/25, 11/14	B	1	1 unit	022
5WG1 223-2AB22	1/6, 1/12	B	1	1 unit	022
5WG1 223-2AB23	1/6	B	1	1 unit	022
5WG1 223-2AB24	1/7	B	1	1 unit	022
5WG1 223-2AB25	1/7, 1/25, 11/14	B	1	1 unit	022
5WG1 223-2AB32	1/6, 1/12	A	1	1 unit	022
5WG1 223-2AB33	1/6	A	1	1 unit	022
5WG1 223-2AB34	1/7	B	1	1 unit	022
5WG1 223-2AB35	1/7, 1/25, 11/14	B	1	1 unit	022
5WG1 231-2AB13	7/9	X	1	1 unit	022
5WG1 231-2AB23	7/9	X	1	1 unit	022
5WG1 231-2AB73	7/9	X	1	1 unit	022
5WG1 231-2EB13	7/9	X	1	1 unit	022
5WG1 231-2EB23	7/9	X	1	1 unit	022
5WG1 237-2AB11	1/23, 7/7	A	1	1 unit	022
5WG1 237-2AB21	1/23, 7/7	B	1	1 unit	022
5WG1 237-2AB31	1/23, 7/7	A	1	1 unit	022
5WG1 237-2EB11	1/20, 7/5	A	1	1 unit	022
5WG1 237-2EB21	1/20, 7/5	B	1	1 unit	022
5WG1 237-2EB31	1/20, 7/5	A	1	1 unit	022
5WG1 237-2FB11	1/20, 7/5	A	1	1 unit	022
5WG1 237-2FB21	1/20, 7/5	B	1	1 unit	022
5WG1 237-2FB31	1/20, 7/5	A	1	1 unit	022
5WG1 240-8CB11	1/35	D	1	10 units	022
5WG1 241-2AB11	1/13	A	1	1 unit	022
5WG1 241-2AB12	1/7	A	1	1 unit	022
5WG1 241-2AB13	1/7	B	1	1 unit	022
5WG1 241-2AB21	1/13	C	1	1 unit	022
5WG1 241-2AB22	1/7	C	1	1 unit	022
5WG1 241-2AB23	1/7	B	1	1 unit	022
5WG1 241-2AB71	1/13	B	1	1 unit	022
5WG1 241-2AB72	1/7	B	1	1 unit	022
5WG1 241-2AB73	1/7	B	1	1 unit	022
5WG1 242-2AB11	1/13	B	1	1 unit	022
5WG1 243-2AB12	1/7	B	1	1 unit	022
5WG1 242-2AB21	1/13	C	1	1 unit	022
5WG1 243-2AB22	1/7	B	1	1 unit	022
5WG1 242-2AB71	1/13	B	1	1 unit	022
5WG1 243-2AB72	1/7	B	1	1 unit	022
5WG1 243-2AB11	1/13	A	1	1 unit	022
5WG1 243-2AB13	1/7	B	1	1 unit	022
5WG1 243-2AB21	1/13	C	1	1 unit	022
5WG1 243-2AB23	1/7	B	1	1 unit	022
5WG1 243-2AB71	1/13	B	1	1 unit	022

* You can order this quantity or a multiple thereof.

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5WG1 243-2AB73	1/7	B	1	1 unit	022
5WG1 244-2AB11	1/13	A	1	1 unit	022
5WG1 244-2AB21	1/13	C	1	1 unit	022
5WG1 244-2AB71	1/13	B	1	1 unit	022
5WG1 245-2AB11	1/13	A	1	1 unit	022
5WG1 245-2AB12	1/8	B	1	1 unit	022
5WG1 245-2AB13	1/8	B	1	1 unit	022
5WG1 245-2AB14	1/8	B	1	1 unit	022
5WG1 245-2AB15	1/8, 1/25, 11/14	A	1	1 unit	022
5WG1 245-2AB21	1/13	C	1	1 unit	022
5WG1 245-2AB22	1/8	B	1	1 unit	022
5WG1 245-2AB23	1/8	B	1	1 unit	022
5WG1 245-2AB24	1/8	B	1	1 unit	022
5WG1 245-2AB25	1/8, 1/25, 11/14	C	1	1 unit	022
5WG1 245-2AB71	1/13	B	1	1 unit	022
5WG1 245-2AB72	1/8	B	1	1 unit	022
5WG1 245-2AB73	1/8	B	1	1 unit	022
5WG1 245-2AB74	1/8	B	1	1 unit	022
5WG1 245-2AB75	1/8, 1/25, 11/14	B	1	1 unit	022
5WG1 246-2AB11	1/13	A	1	1 unit	022
5WG1 246-2AB21	1/13	C	1	1 unit	022
5WG1 246-2AB71	1/13	B	1	1 unit	022
5WG1 250-8AB01	1/23, 7/8	D	1	1 unit	030
5WG1 251-3AB11	12/6	A	1	1 unit	030
5WG1 251-3AB21	12/6	A	1	1 unit	030
5WG1 252-2AB13	1/23, 7/7	A	1	1 unit	022
5WG1 252-2AB23	1/23, 7/7	C	1	1 unit	022
5WG1 252-2AB73	1/23, 7/7	A	1	1 unit	022
5WG1 252-2EB11	1/21, 7/6	A	1	1 unit	022
5WG1 252-2EB21	1/21, 7/6	B	1	1 unit	022
5WG1 252-2EB71	1/21, 7/6	A	1	1 unit	022
5WG1 252-2FB11	1/21, 7/6	A	1	1 unit	022
5WG1 252-2FB21	1/21, 7/6	B	1	1 unit	022
5WG1 252-2FB71	1/21, 7/6	A	1	1 unit	022
5WG1 252-2HV11	1/23	C	1	1 unit	030
5WG1 252-4AB02	5/20, 12/7	A	1	1 unit	030
5WG1 253-4AB01	5/20, 12/7	A	1	1 unit	030
5WG1 254-2AB13	1/23, 7/8	A	1	1 unit	022
5WG1 254-2AB23	1/23, 7/8	B	1	1 unit	022
5WG1 254-2AB43	1/23, 7/8	B	1	1 unit	022
5WG1 254-2EB11	1/21, 7/6	A	1	1 unit	022
5WG1 254-2EB21	1/21, 7/6	B	1	1 unit	022
5WG1 254-2EB41	1/21, 7/6	B	1	1 unit	022
5WG1 254-2FB11	1/21, 7/6	A	1	1 unit	022
5WG1 254-2FB21	1/21, 7/6	B	1	1 unit	022
5WG1 254-2FB41	1/21, 7/6	B	1	1 unit	022
5WG1 254-3EY02	5/20, 7/4, 12/7, 12/8	A	1	1 unit	030
5WG1 254-4AB01	5/20, 12/7	A	1	1 unit	030
5WG1 255-2AB11	12/5	A	1	1 unit	022
5WG1 255-2AB12	12/5	A	1	1 unit	022
5WG1 255-2AB21	12/5	B	1	1 unit	022
5WG1 255-2AB22	12/5	B	1	1 unit	022
5WG1 255-2AB71	12/5	A	1	1 unit	022
5WG1 255-2AB72	12/5	A	1	1 unit	022
5WG1 255-4AB01	4/7, 5/15, 5/19	A	1	1 unit	030
5WG1 255-4AB02	4/7, 5/15, 5/19	C	1	1 unit	030
5WG1 255-4AB11	5/19, 12/7	B	1	1 unit	030
5WG1 255-4AB12	5/19, 12/7	B	1	1 unit	030
5WG1 255-4AB13	5/19, 12/7	B	1	1 unit	030
5WG1 255-7AB01	5/19	A	1	1 unit	030
5WG1 257-2AB13	12/5	B	1	1 unit	022
5WG1 257-2AB14	12/5	B	1	1 unit	022
5WG1 257-2AB21	12/5	B	1	1 unit	022
5WG1 257-2AB22	12/5	B	1	1 unit	022
5WG1 257-2AB41	12/5	B	1	1 unit	022
5WG1 257-2AB42	12/5	B	1	1 unit	022
5WG1 257-3AB22	6/10	B	1	1 unit	030
5WG1 257-3AB32	6/10	B	1	1 unit	030
5WG1 257-3AB42	6/10, 12/7	B	1	1 unit	030
5WG1 258-1AB02	7/4, 12/8	B	1	1 unit	030
5WG1 258-2AB11	5/20, 12/6	A	1	1 unit	030
5WG1 258-2AB21	5/20, 12/6	A	1	1 unit	030
5WG1 258-2HB11	12/5	A	1	1 unit	022
5WG1 258-2HB12	12/5	B	1	1 unit	022
5WG1 258-2HB21	12/5	C	1	1 unit	022
5WG1 258-2HB22	12/5	C	1	1 unit	022
5WG1 258-2HB31	12/5	B	1	1 unit	022
5WG1 258-2HB32	12/5	B	1	1 unit	022
5WG1 258-3EB21	5/20, 12/6	A	1	5 units	030
5WG1 260-1AB01	3/5	C	1	1 unit	030
5WG1 261-1AB01	3/5	D	1	1 unit	030
5WG1 261-1CB01	3/5, 19/19	D	1	1 unit	030
5WG1 262-1EB01	3/5	A	1	1 unit	030
5WG1 262-1EB11	3/5	A	1	1 unit	030
5WG1 262-4AB02	3/5	A	1	1 unit	030
5WG1 263-1EB01	3/5	A	1	1 unit	030
5WG1 263-1EB11	3/5	A	1	1 unit	030
5WG1 264-1EB11	3/5	A	1	1 unit	030
5WG1 266-1AB01	4/8, 9/3	B	1	1 unit	030
5WG1 272-2AB11	9/4, 12/8	A	1	1 unit	022
5WG1 272-2AB21	9/4, 12/8	C	1	1 unit	022
5WG1 272-2AB71	9/4, 12/8	B	1	1 unit	022
5WG1 281-8AB01	1/14	D	1	1 unit	030
5WG1 282-8AB01	1/14	D	1	1 unit	030
5WG1 283-8AB01	1/14	D	1	1 unit	030
5WG1 285-2AB11	1/14	A	1	1 unit	022
5WG1 285-2AB12	1/8	A	1	1 unit	022
5WG1 285-2AB13	1/8	A	1	1 unit	022
5WG1 285-2AB21	1/14	C	1	1 unit	022
5WG1 285-2AB22	1/8	C	1	1 unit	022
5WG1 285-2AB23	1/8	C	1	1 unit	022
5WG1 285-2AB41	1/14	B	1	1 unit	022
5WG1 285-2AB42	1/8	B	1	1 unit	022
5WG1 285-2AB43	1/8	B	1	1 unit	022
5WG1 286-2AB11	1/14	A	1	1 unit	022
5WG1 286-2AB12	1/9	A	1	1 unit	022
5WG1 286-2AB13	1/9	A	1	1 unit	022
5WG1 286-2AB21	1/14	B	1	1 unit	022
5WG1 286-2AB22	1/9	C	1	1 unit	022
5WG1 286-2AB23	1/9	C	1	1 unit	022
5WG1 286-2AB41	1/14	B	1	1 unit	022
5WG1 286-2AB42	1/9	B	1	1 unit	022
5WG1 286-2AB43	1/9	B	1	1 unit	022
5WG1 287-2AB11	1/14	A	1	1 unit	022
5WG1 287-2AB12	1/9	A	1	1 unit	022

*** You can order this quantity or a multiple thereof.**

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5WG1 287-2AB13	1/9	A	1	1 unit	022
5WG1 287-2AB14	1/9	A	1	1 unit	022
5WG1 287-2AB15	1/9, 1/25, 11/14	A	1	1 unit	022
5WG1 287-2AB21	1/14	B	1	1 unit	022
5WG1 287-2AB22	1/9	C	1	1 unit	022
5WG1 287-2AB23	1/9	C	1	1 unit	022
5WG1 287-2AB24	1/9	C	1	1 unit	022
5WG1 287-2AB25	1/9, 1/25, 11/14	C	1	1 unit	022
5WG1 287-2AB41	1/14	B	1	1 unit	022
5WG1 287-2AB42	1/9	B	1	1 unit	022
5WG1 287-2AB43	1/9	B	1	1 unit	022
5WG1 287-2AB44	1/9	B	1	1 unit	022
5WG1 287-2AB45	1/9, 1/25, 11/14	B	1	1 unit	022
5WG1 290-7AB11	7/12	B	1	1 unit	030
5WG1 290-7AB81	7/12	B	1	1 unit	030
5WG1 294-8AB01	14/5	B	1	10 units	030
5WG1 3					
5WG1 301-1AB01	13/4	A	1	1 unit	030
5WG1 302-1AB01	13/4	B	1	1 unit	030
5WG1 305-1AB01	13/4	A	1	1 unit	030
5WG1 341-1AB01	13/4	A	1	1 unit	030
5WG1 342-1AB01	5/19	B	1	1 unit	030
5WG1 343-1AB01	16/3	B	1	1 unit	030
5WG1 345-1AB01	9/3	A	1	1 unit	030
5WG1 347-1AB02	13/4	A	1	1 unit	030
5WG1 350-1AB01	13/4	B	1	1 unit	030
5WG1 350-1EB01	11/6, 13/4, 13/6, 14/15	A	1	1 unit	030
5WG1 360-1AB01	8/2	B	1	1 unit	030
5WG1 371-5EY01	13/6	A	1	1 unit	030
5WG1 372-5EY01	13/6	A	1	1 unit	030
5WG1 372-5EY02	13/6	A	1	1 unit	030
5WG1 373-5EY01	13/7	B	1	1 unit	030
5WG1 390-3EY01	13/7	A	1	1 unit	030
5WG1 4					
5WG1 420-3AB13	1/25, 1/46	B	1	1 unit	030
5WG1 421-3AB13	1/25, 1/46	B	1	1 unit	030
5WG1 422-3AB13	1/25, 1/46	B	1	1 unit	030
5WG1 425-7AB72	1/25, 1/46	B	1	1 unit	030
5WG1 440-7AB01	11/14	X	1	1 unit	030
5WG1 450-1AB02	11/14	X	1	1 unit	030
5WG1 5					
5WG1 501-1AB01	3/6, 4/7, 6/6	B	1	1 unit	030
5WG1 502-1AB01	2/9, 3/6, 4/7	B	1	1 unit	030
5WG1 510-1AB03	2/8	A	1	1 unit	030
5WG1 510-1AB04	2/8	A	1	1 unit	030
5WG1 511-1AB02	2/9	B	1	1 unit	030
5WG1 511-2AB10	2/10, 3/6, 4/8	A	1	1 unit	030
5WG1 512-1AB01	2/9	A	1	1 unit	030
5WG1 512-1AB11	2/8	B	1	1 unit	030
5WG1 512-1AB21	2/8	B	1	1 unit	030
5WG1 512-1CB01	2/9, 19/19	B	1	1 unit	030
5WG1 513-1AB11	2/8	B	1	1 unit	030
5WG1 520-2AB01	6/7	A	1	1 unit	030
5WG1 520-2AB11	6/7	A	1	1 unit	030
5WG1 520-2AB31	3/6, 4/8, 6/7	A	1	1 unit	030
5WG1 521-1AB01	6/7	A	1	1 unit	030
5WG1 521-4AB02	6/7	A	1	1 unit	030
5WG1 522-1AB03	6/6	A	1	1 unit	030
5WG1 523-1AB02	6/6	A	1	1 unit	030
5WG1 523-1AB03	6/6	A	1	1 unit	030
5WG1 523-1AB04	6/6	A	1	1 unit	030
5WG1 523-1AB11	6/6	A	1	1 unit	030
5WG1 523-1CB04	6/6, 19/19	A	1	1 unit	030
5WG1 524-1AB01	6/7	A	1	1 unit	030
5WG1 525-1AB02	5/15	D	1	1 unit	030
5WG1 525-1EB01	5/15, 11/8	A	1	1 unit	030
5WG1 525-2AB01	5/8	A	1	1 unit	030
5WG1 525-2AB11	5/8	A	1	1 unit	030
5WG1 525-2AB31	3/6, 4/8, 5/8	A	1	1 unit	030
5WG1 526-1AB02	4/7, 5/15, 5/19	A	1	1 unit	030
5WG1 526-1EB02	5/15, 19/19	A	1	1 unit	030
5WG1 527-1AB31	5/8	B	1	1 unit	030
5WG1 527-1AB41	5/8	B	1	1 unit	030
5WG1 527-1AB51	5/8	B	1	1 unit	030
5WG1 528-1AB31	5/8	B	1	1 unit	030
5WG1 528-1AB41	5/8	B	1	1 unit	030
5WG1 540-5AS01	7/11	B	1	1 unit	030
5WG1 540-5AS11	7/11	A	1	1 unit	030
5WG1 540-8AS01	7/11	A	1	1 unit	030
5WG1 561-4AB02	2/9	A	1	1 unit	030
5WG1 561-7AH01	7/13	B	1	1 unit	030
5WG1 561-7AH02	7/13	B	1	1 unit	030
5WG1 561-7AH03	7/13	B	1	1 unit	030
5WG1 561-7AH04	7/13	B	1	1 unit	030
5WG1 561-8AH01	7/13	B	1	1 unit	030
5WG1 561-8AH02	7/13	B	1	1 unit	030
5WG1 561-8AH03	7/13	B	1	1 unit	030
5WG1 561-8AH04	7/13	B	1	1 unit	030
5WG1 561-8AH05	7/13	B	1	1 unit	030
5WG1 561-8AH06	7/13	B	1	1 unit	030
5WG1 562-1AB02	2/9	A	1	1 unit	030
5WG1 562-1AB11	2/8	B	1	1 unit	030
5WG1 562-2AB01	2/9	A	1	1 unit	030
5WG1 562-2AB11	2/9	A	1	1 unit	030
5WG1 562-2AB31	2/9, 3/6, 4/8	A	1	1 unit	030
5WG1 567-1AB01	2/8	A	1	1 unit	030
5WG1 567-1AB11	2/8	A	1	1 unit	030
5WG1 567-1AB12	2/8	A	1	1 unit	030
5WG1 567-1AB22	2/8	B	1	1 unit	030
5WG1 584-2AB21	1/27	B	1	1 unit	022
5WG1 584-2AB41	1/27	B	1	1 unit	022
5WG1 585-2AB01	1/27	X	1	1 unit	022
5WG1 585-2AB11	1/27	A	1	1 unit	022
5WG1 585-2AB21	1/27	C	1	1 unit	022
5WG1 585-2AB71	1/27	B	1	1 unit	022
5WG1 587-2AB01	1/27	B	1	1 unit	022
5WG1 587-2AB02	1/27	B	1	1 unit	022
5WG1 587-2AB11	1/27	A	1	1 unit	022
5WG1 587-2AB12	1/27	A	1	1 unit	022
5WG1 587-2AB21	1/27	B	1	1 unit	022
5WG1 587-2AB22	1/27	B	1	1 unit	022
5WG1 587-2AB31	1/27	A	1	1 unit	022
5WG1 587-2AB32	1/27	A	1	1 unit	022
5WG1 588-2AB12	1/44	B	1	1 unit	030
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5WG1 588-2AB22	1/44	B	1	1 unit	030
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5WG1 588-8AB02	1/44	B	1	1 unit	030
5WG1 588-8AB03	1/44	B	1	1 unit	030
5WG1 588-8AB04	1/44	B	1	1 unit	030
5WG1 588-8AB05	1/44	B	1	1 unit	030
5WG1 588-8AB12	1/43	B	1	1 unit	030
5WG1 588-8AB13	1/43	B	1	1 unit	030
5WG1 588-8AB14	1/43	B	1	1 unit	030
5WG1 588-8AB15	1/43	B	1	1 unit	030
5WG1 588-8EB01	1/43, 1/44	B	1	1 unit	030
5WG1 6					
5WG1 605-1AB01	4/7, 7/12	A	1	1 unit	030
5WG1 605-1AB11	4/7, 7/12	A	1	1 unit	030
5WG1 611-3AL01	10/4	B	1	1 unit	030
5WG1 611-3AL11	10/4	B	1	1 unit	030
5WG1 611-3AL21	10/4	B	1	1 unit	030
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5WG1 611-3AL61	10/4	B	1	1 unit	030
5WG1 631-3AL01	10/6	B	1	1 unit	030
5WG1 631-3AL02	10/6	B	1	1 unit	030
5WG1 631-3AL11	10/6	B	1	1 unit	030
5WG1 631-3AL12	10/6	B	1	1 unit	030
5WG1 631-3AL21	10/6	B	1	1 unit	030
5WG1 631-3AL22	10/6	B	1	1 unit	030
5WG1 631-3AL32	10/6	B	1	1 unit	030
5WG1 631-3AL43	10/6	B	1	1 unit	030
5WG1 631-3AL44	10/6	B	1	1 unit	030
5WG1 631-3AL51	10/6	B	1	1 unit	030
5WG1 631-3AL52	10/6	B	1	1 unit	030
5WG1 631-3AL62	10/6, 11/16, 18/5	B	1	1 unit	030
5WG1 670-1AB03	2/11, 3/7, 4/7, 7/4, 7/12	A	1	1 unit	030
5WG1 8					
5WG1 810-0EY01	13/7	B	1	1 unit	030
5WG1 810-8EY01	13/7	B	1	1 unit	030
5WG1 810-8EY02	13/7	B	1	1 unit	030
5WG3					
5WG3 110-2AB01	17/27	A	1	1 unit	030
5WG3 110-2AB11	17/27	B	1	1 unit	030
5WG3 110-8AB01	1/37, 17/9	D	1	1 unit	022
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5WG3 140-2GB11	11/15, 17/23	A	1	1 unit	022
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5WG3 140-2GB41	17/23	B	1	1 unit	022
5WG3 140-2HB11	11/15, 17/23	A	1	1 unit	022
5WG3 140-2HB21	11/15, 17/23	C	1	1 unit	022
5WG3 140-2HB31	11/15, 17/23	B	1	1 unit	022
5WG3 141-2AB01	17/28	A	1	1 unit	030
5WG3 210-2AB11	17/8	A	1	1 unit	022
5WG3 210-2AB21	17/8	C	1	1 unit	022
5WG3 210-2AB71	17/8	B	1	1 unit	022
5WG3 210-2GB11	17/8	A	1	1 unit	022
5WG3 210-2GB21	17/8	C	1	1 unit	022
5WG3 210-2GB41	17/8	B	1	1 unit	022
5WG3 210-2HB11	17/8	A	1	1 unit	022
5WG3 210-2HB21	17/8	C	1	1 unit	022
5WG3 210-2HB31	17/8	B	1	1 unit	022
5WG3 211-2AB11	17/8	A	1	1 unit	022
5WG3 211-2AB21	17/8	C	1	1 unit	022
5WG3 211-2AB71	17/8	B	1	1 unit	022
5WG3 211-2GB11	17/8	A	1	1 unit	022
5WG3 211-2GB21	17/8	C	1	1 unit	022
5WG3 211-2GB41	17/8	B	1	1 unit	022
5WG3 211-2HB11	17/8	A	1	1 unit	022
5WG3 211-2HB21	17/8	C	1	1 unit	022
5WG3 211-2HB31	17/8	B	1	1 unit	022
5WG3 221-3HB11	18/4	A	1	1 unit	030
5WG3 222-3HB11	18/4	A	1	1 unit	030
5WG3 255-8AB01	17/21	A	1	1 unit	030
5WG3 260-3AB11	17/19, 17/21	A	1	1 unit	030
5WG3 260-3AB81	17/19, 17/21	B	1	1 unit	030
5WG3 261-3AB11	17/15	A	1	1 unit	030
5WG3 425-7AB21	1/46, 17/10	B	1	1 unit	030
5WG3 425-7AB71	1/46, 17/10	B	1	1 unit	030
5WG3 520-4AB01	17/19	A	1	1 unit	030
5WG3 560-2AB01	17/13, 17/27	A	1	1 unit	030
5WG3 561-4AB01	17/13	A	1	1 unit	030
5WG3 561-4AB11	17/13, 17/24, 18/6	A	1	1 unit	030
5WG3 564-7AB11	17/14	A	1	1 unit	030
5WG4					
5WG4 221-3AB10	18/4	A	1	1 unit	022
5WG4 222-3AB10	18/4	A	1	1 unit	022
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6AV6 643-7AC10-0AA1	11/19	C	1	1 unit	2Z7
6BK1					
6BK1 700-0BA00-0AA2	13/11, 11/17	C	1	1 unit	475
6ED1					
6ED1 050-1AA00-0AE7	13/11	A	1	1 unit	200
6ED1 050-1AA00-0BE7	13/11	A	1	1 unit	200
6ED1 052-1FB00-0BA6	13/10	A	1	1 unit	200
6ED1 052-1MD00-0BA6	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
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GWR:63101-32-87	1/51				
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Appendix

Notes

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Further information can be obtained from our branch offices listed in the appendix or at www.siemens.com/automation/partner

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