15 Remote Control Systems

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GAMMA wave – The Multifunctional System

Introduction

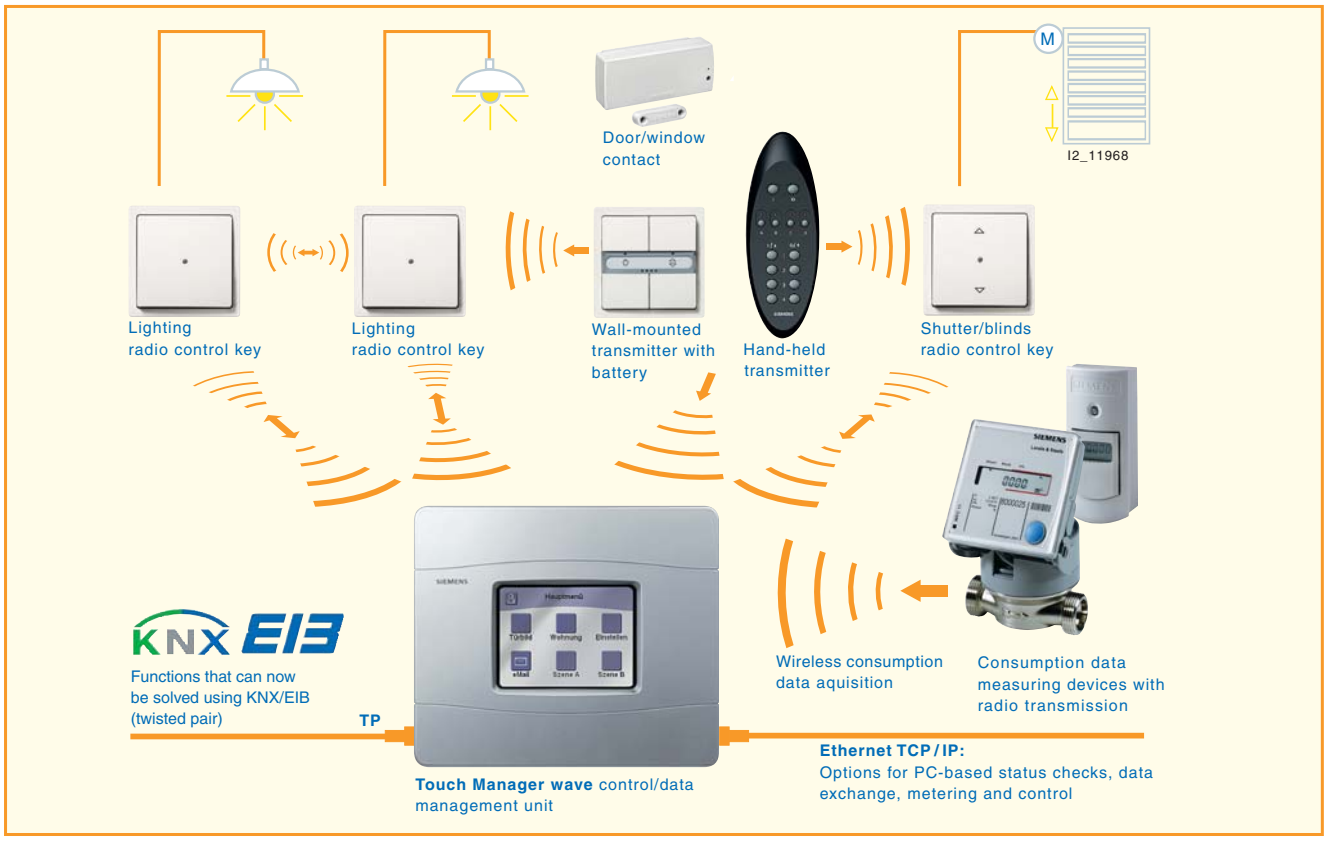
Overview

Enjoy all the advantages of a modern building control 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 fail-safe and problem-free transmission.

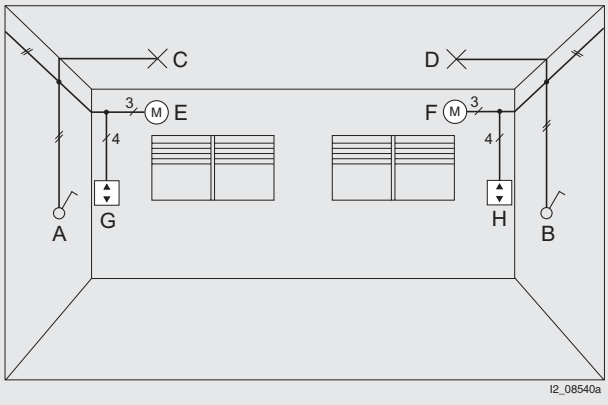
The main feature: GAMMA wave is a unique bi-directional radio system – this means that the products and components can be both transmitter and receiver.

And: GAMMA wave is based on the new, uniform standard for building control systems KNX in the 868 MHz range.



Overview

Before: 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)
- Blind (E) can only be operated by switch (G).
- Blind (F) can only be operated by switch (H).

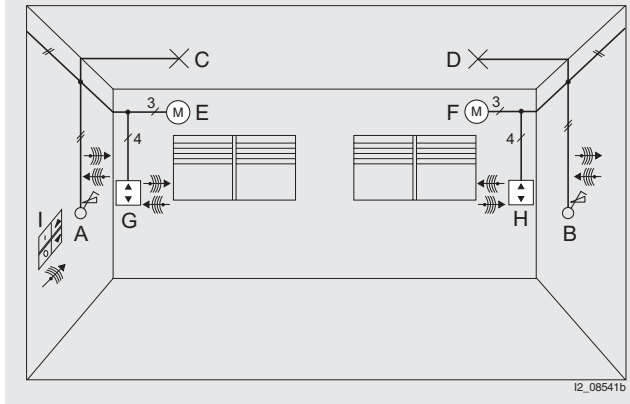
Advantages

- Standard technology

Disadvantages

- Inflexible
- No operational ease (each source must be operated separately).

After: Lighting and shutter/blind control with GAMMA wave ("bi-directional" radio wave controlled 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 insert
- UP 210 DELTA wave pushbutton

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

- Shutter/blind control sys insert
- UP 211 DELTA wave shutter/blind pushbutton

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 (I) wave wall-mounted battery transmitter with a mounted
- *instabus* KNX *EIB* - pushbutton, double

can be installed.

Advantages

- Flexible
- Greater operational ease
- Groups can be formed
- Fewer devices required/lower costs
- Simple and clean retrofitting - no structural alterations required.

GAMMA wave – The Multifunctional System

Introduction

Overview

Due to its implementation 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. Up to 64 devices can communicate with each other in a single system (e.g. closed residential unit), whereby each radio-linked actuator channel of up to 10 sensors can be operated in different groups.

The product line includes the UP 210 DELTA wave pushbutton for lighting control, the UP 211 DELTA wave shutter pushbutton for shutter/blind control, and the UP 110 wave wall-mounted battery transmitter.

The UP 210 DELTA wave pushbutton and the UP 211 DELTA wave shutter/blind pushbutton must be used in combination with the universal dimmer sys inserts and 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 radio-linked universal dimmers or shutter/blind control sys inserts.

The *instabus* KNX *EIB* pushbutton (single or double) must be plugged as an operator interface for the UP 110 wave wall-mounted transmitter battery. In accordance with their intended purpose, the pushbutton rocker enables remote control of the universal dimmer sys inserts or shutter/blind control sys inserts, which are equipped with the UP 210 DELTA wave pushbutton.

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 device product range

	Operator interfaces				
	DELTA sys pushbutton	UP 210 DELTA wave pushbutton	DELTA sys shutter/blind pushbutton	UP 211 DELTA wave shutter/blind pushbutton	*instabus* pushbutton, single, double
Device contact units					
Universal dimmer sys insert	●	●	--	--	--
Shutter/blind control sys insert	--	--	●	●	--
UP 110 wave wall-mounted battery transmitter	--	--	--	--	●
Switching sys insert	--	●	--	--	--
UP 110 wave wall-mounted transmitter 230 V	--	--	--	--	●
Actuator UP 560 wave wall-mounted transmitter 230 V	--	--	--	--	●

Selection and ordering data

		Order No.	Price 1 item	PG	PS*/ P. unit Items
	**UP 141 repeater wave** radio transmitter/receiver sends on each correctly received radio telegram for installation in a flush mounting switch box the repeater is needed in large residential units or houses when radio telegrams are so weakened by walls, ceilings or furniture that an assigned receiver is no longer able to receive the telegrams correctly the repeater is powered from the 230 V supply. hole pitch 71 mm mounting depth 32 mm a blanking cover plate is used as top	**5WG3 141-2AB01**		030	1
	Top, see section / Product range / Page *Accessories and spare parts* / *DELTA i-system* / 1/37 *DELTA profil* / 5/41 *DELTA style* / 6/31				
	**Wall-mounted UP 110 wave transmitter 230 V** radio sender for the wireless operation of room functions for installation in a flush mounting switch box an *instabus* KNX *EIB* single or double pushbutton is plugged on a the operator interface and connected to the insert by means of a 10-pole plug-in connection parameters can be assigned for the following functions: switching, dimming, shutter/blind and scene the wall-mounted transmitter is powered from the 230 V supply. Hole pitch 71 mm Mounting depth 32 mm	**5WG3 110-2AB11**		030	1
	Top, see section / Product range / Page *GAMMA instabus* / *DELTA profil* / 5/29 *DELTA style* / 6/21				
	**UP 110 wall-mounted battery wave transmitter** radio sender for the wireless operation of room functions for installation in a flush mounting switch box an *instabus* KNX *EIB* single or double pushbutton is plugged on a the operator interface and connected to the insert by means of a 10-pole plug-in connection parameters can be assigned for the following functions: switching, dimming, shutter/blind and scene the wall-mounted transmitter is powered by a 1/2 AA 3.6 V lithium battery hole pitch 71 mm mounting depth 24 mm	**5WG3 110-2AB01**		030	1
	Top, see section / Product range / Page *GAMMA instabus* / *DELTA profil* / 5/29 *DELTA style* / 6/21				

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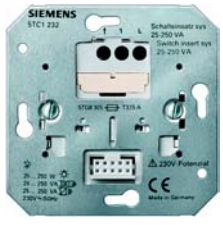
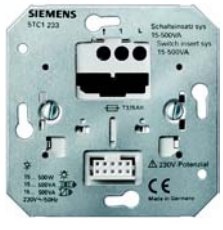
* You can order this quantity or a multiple thereof.

Inserts

		Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Sys switching insert, 25 to 250 VA** the sys switching insert is a flush mounting device for switching different electrical consumers, such as • Incandescent lamps • HV halogen lamps • LV halogen lamps with conventional transformer • LV halogen lamps with an electronic transformer It is operated by means of the *UP 210 wave pushbutton*	**5TC1 232**		024	1

Section	Product range	Page
Switches and pushbuttons	*DELTA i-system*	1/7
	DELTA profil	5/8
	DELTA style	6/7

Product features:	
2-wire connection method	
Spare fuse at the fuse carrier	
Overload protection (thermal release)	
Extension unit operation by conventional pushbuttons without glow lamps	
Technical specifications	
Short-circuit protection by miniature fuse	T3,15 A H 250 V
Number of extension units	unlimited
Extension unit cable (total)	max. 100 m
Rated voltage	230 V AC / 50 Hz
Connected load	
• Incandescent lamp load	25 to 250 W
• Conventional transformers	25 to 250 W
• Electronic transformers	25 to 250 W

	**Sys switching insert, 15 to 500 VA** The sys switching insert is a flush mounting device for switching different electrical consumers, such as • Incandescent lamps • HV halogen lamps • LV halogen lamps with conventional transformer • LV halogen lamps with an electronic transformer It is operated by means of the *UP 210 wave pushbutton*	**5TC1 233**		024	1

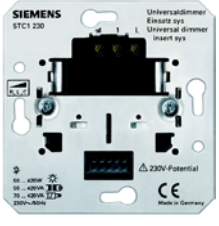
Section	Product range	Page
Switches and pushbuttons	*DELTA i-system*	1/7
	DELTA profil	5/8
	DELTA style	6/7

Product features:	
2-wire connection method	
Spare fuse at the fuse carrier	
Overload protection (thermal release)	
Extension unit operation by conventional pushbuttons without glow lamps	
Technical specifications	
Short-circuit protection by miniature fuse	T3,15 A H 250 V
Number of extension units	unlimited
Extension unit cable (total)	max. 100 m
Rated voltage	230 V AC / 50 Hz
Connected load	
• Incandescent lamp load	15 to 500 W
• Conventional transformers (except toroidal-core transformers)	15 to 500 W
• Toroidal-core transformers	15 to 250 W

* You can order this quantity or a multiple thereof.

		Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Actuator UP 560 wave wall-mounted transmitter 230 V** radio sender for the wireless operation of room functions, which is equipped in addition with a switch actuator for 230 V / 6 A for installation in a flush mounting switch box an *instabus* KNX *EIB* single or double pushbutton is plugged on as operator interface and connected to the insert by means of a 10-pole plug-in connection parameters can be assigned for the following functions: switching, dimming, shutter/blind and scene as an additional function the switch actuator can be operated as a time switch with an adjustable overrun time in the range from 1 to 60 min. 6 A rated current for resistive load at 230 V AC hole pitch 71 mm mounting depth 32 mm	**5WG3 560-2AB01**		030	1

Top, see section	Product range	Page
GAMMA instabus	*DELTA profil*	5/29
	DELTA style	6/21

		Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Universal dimmer sys insert** flush mounting insert for switching and dimming different electronic loads operation by *sys pushbutton* or *UP 210 wave pushbutton.* for claw and screw fixing screw-type terminals 2-wire connection method automatic load detection lamp-kind soft-start storing and switching on at one brightness value memory value retained even after power failure electronic short-circuit protection and overtemperature protection on elimination of the short circuit/cooling automatic return to normal mode secondary operation over conventional pushbutton number of secondary branches: unlimited rated voltage: 230 V AC, 50 Hz connected load, incandescent lamp rating: 50 to 420 W connected load of conventional transformers: 50 to 420 VA connected load of electronic transformers: 70 to 420 VA only mixed loads of incandescent lamp ratings and electronic transformers are permissible	**5TC1 230**		024	1

Symbol	Top, see section	Product range	On page (ff.)
R, L, C	*Dimmers*	*DELTA i-system*	1/18
		DELTA profil	5/19
		DELTA style	6/13

Note	*Section*	Page
For further technical information, see ...	*Technical information/Dimmers/Universal dimmer sys inserts*	18/18

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

Inserts

		Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Shutter/blind control sys insert** for controlling a shutter/blind motor with mechanical or electronic limit switches flush mounting device operation by means of *shutter/blind sys pushbutton* and *UP 211 wave shutter/blind pushbutton*	**5TC1 231**		024	1

Product features:

- 2 electric safety locking relays with a minimum changeover time of 1 s
- Group and central controls through combination of several shutter/blind control sys inserts
- The "wind alarm" safety function can be implemented through the UP secondary input
- Multiphase operation possible (i.e. different phases at the main and secondary branches)
- Jumpering of power failures < 0.2 s
- Conventional shutter/blind pushbutton (5TA2 114) or switch (5TA2 154) can be connected over secondary inputs
- Number of secondary branches: unlimited
- Rated voltage: 230 V AC, 50 Hz (neutral conductor required)
- Connected load max. 1 motor 1000 VA.

Top, see section	Product range	On page (ff.)
Shutter/blind control	*DELTA i-system*	1/23
	DELTA profil	5/24
	DELTA style	6/17

Note	Section	Page
For further technical information, see ...	*Technical information/Shutter/blind control/Shutter/blind control sys inserts*	18/47

* You can order this quantity or a multiple thereof.

Selection and ordering data

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	**AP 260 wave door/window contact** surface mounting device with integrated radio sender which detects the opening and closing of windows and doors and signals the condition by wireless means in addition to an integrated reed relay contact, which is triggered by means of a magnet fitted to the window, it is also possible to connect one or more conventional window contacts in series powered by a lithium battery (1/2 AA 3.6 V) a battery is supplied with the device. 87 mm x 36 mm x 27 mm				
	• titanium white	**5WG3 260-3AB11**		030	1
	• brown	**5WG3 260-3AB81**		030	1
	**AP 261 binary input wave** NEW radio sender with a sensor channel, designed as surface mounting device. As well as the integrated reed contact, which transmits switching commands over radio when the binary input opens and closes, it is also possible to connect an external contact. Used together with pushbuttons UP 210 wave and the actuator UP 560 wave wall-mounted transmitter 230 V, these switching commands (ON/OFF) allow control of all switchable actuators, such as Switchgear insert sys or Universal dimmer sys contact units. The binary input is powered over a (1/2 AA 3.6 V) lithium battery (battery is supplied with the device) 87 mm x 36 mm x 27, titanium white	**5WG3 261-3AB11**		030	1
	**S 425 wave hand-held transmitter** 17-channel radio sender for the wireless operation of 16 different room functions that can be triggered by means of 4 pushbutton pairs and 4 preselect pushbuttons for better clarity there is also a separate pushbutton pair for a central function parameters can be assigned for the following functions: switching, dimming, shutter/blind and scene powered by two batteries (LR03/AAA; 1.5 V), batteries are supplied with the device				
	• black	**5WG3 425-7AB21**		030	1
	• silver	**5WG3 425-7AB71**		030	1

* You can order this quantity or a multiple thereof.

DELTA FERN RF

Complete assemblies

Overview

Using the DELTA FERN RF radio remote control system, electricians can offer cable-saving solutions that reduce planning costs and are particularly suitable for retrofitting installations and the flexible upgrading of building interiors.

DELTA FERN RF is a unidirectional radio remote control system for use in electrical installation systems and offers an interesting alternative that has made its niche between conventional electrical installations and general EIB technology.

Applications

Typical applications of the DELTA FERN RF radio remote control system are buildings with extensive lighting and shutter/blind systems. With its total flexibility, the system is ideal in situations where the purpose or format of a room needs to be changed. Energy savings can be achieved with lighting by using a central shutdown function, for example, by means of a "Central Off receiver" in connection with a control center, time switch, dusk switch, etc. When leaving the room, a Central Off transmitter ensures that the lighting is completely switched off.

One of the main arguments in favor of the DELTA FERN RF is the cable-saving installation method and the low fire load. While the power supply for the lights, rolling drives, shutters and blinds can be distributed, the cables to the control point can be omitted entirely. This eliminates any laborious structural alterations if you want to change or add to your system later.

For integration in a higher-level GAMMA *instabus* installation, interfaces are available from radio to twisted pair and vice versa for the transmission of switching commands.

Retrofitting

These days, if the retrofitting or expansion of an existing electrical installation is required, electrical companies are expected to offer solutions that require a minimum of labor/structural alterations and create a minimum of dust and dirt. This is where DELTA FERN RF comes into its own. For example in commercial plants, in doctor's surgeries, law firms and in residential buildings. Additional control points are simply created by installing wall-mounted transmitters and adding switch box receivers instead of light switches.

New installation

The DELTA FERN RF radio remote control system is particularly ideal for electrical installations in new buildings because it is not necessary to decide the location of control points in advance, thus omitting the need for time-consuming planning. Only the lights and terminals for the other current-using equipment are installed in the cable run.

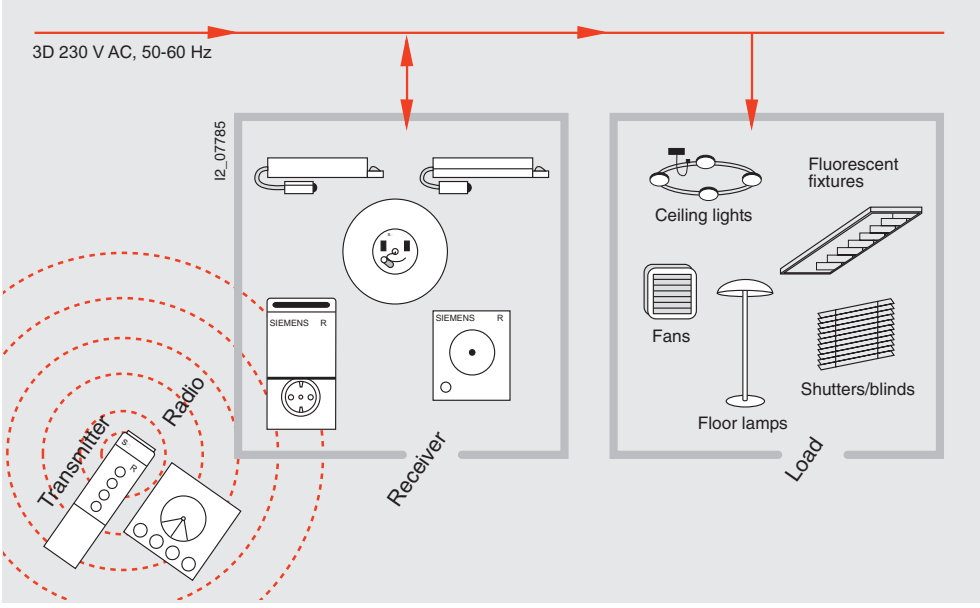
The wall-mounted transmitters and the plug-in outlet receivers are positioned once everything is finished in the home according to the individual requirements of the occupant. This type of electrical installation has proven particularly suitable for facing brickwork, facing concrete and glass walls. And last but not least, in the event of a move, you can take all your DELTA FERN RF components with you as they are not permanently mounted on the building structure.

Advantages at a glance

- Cable-saving installation and low fire load
- Problem solvers in prefab building, glass walls, flexible partitions, etc.
- Increasing comfort at home and at work
- Energy saving through central shutdown
- Reduced planning costs
- Creating additional control points without the mess
- Mobile control elements by means of hand-held transmitters
- The assignment of transmitters to receivers is simple and can also be performed by users

Technology

With its 4 function pushbuttons, the key features of the DELTA-FERN RF are the simple handling, easy installation, flexibility and enhanced operational ease. The system operates on the frequency of 434.42 MHz with an On-Off keying modulation. The radio waves penetrate walls and ceilings and can transmit switching commands, such as switching and dimming, from room to room. And even though they offer a range of approx. 30 m. within buildings, the radiant flux is negligibly low. Basic components are handheld and wall-mounted transmitters suitable for the respective site, and receivers in various designs.



Transmitters

The quadruple hand-held transmitters offer total flexibility for switching operations. Surface mounting wall-mounted transmitters, powered by a 9-V monobloc battery complies with IEC 6LR61 (service life approx. 3 years, depending on operation), are available with 1, 2 or 4 function pushbuttons. The flat devices, available in the design "DELTA fläche, titanium white", can be stuck or screwed directly onto the wall or fastened to switch and socket boxes with or without fläche frames.

One pushbutton can execute two functions: a short keystroke means "ON" or "OFF", a long keystroke means "Dim". Each function key is assigned its own coded and uniquely formed radio signal.

Each transmitter is assigned a serial number at the factory according to a specific system that enables more than a billion individual numbers. This ensures that no receivers in the system receive or execute signals from other radio systems.

Receiver

The receivers are used to switch or dim incandescent lamps, resistive loads and fluorescent lamps or operate remote control switches. There are a range of designs for this purpose:

- for flush mounting switch and socket boxes
- for mounting in fluorescent fixtures
- for SCHUKO outlets and
- for ceiling rose lights

Allocation of transmitter to receiver

The transmitters are assigned to receivers through a learning process: the receivers have a slide switch with the positions "operation" and "learn". When the slide switch is set to position "learn" the transmitters can be assigned by keystroke to the receivers. The slide switch is then set to "operation".

Note: up to eight different transmitter function pushbuttons can be assigned to each receiver. The "Delete" function lets you delete individual assignments or all eight learnt assignments.

Transmission range and security

The special selection of the operating frequency 434.42 MHz and the approval restrictions on radio signal transmitter power ensure that transmission ranges of the transmitter can cover up to 30 m in buildings.

The screening behavior of the structural environment, such as reinforced concrete ceilings, may limit the range. Radio signals from other radio systems can also influence transmission ranges.

The single assignment of transmitters to the receivers ensures that only the assigned transmitter switches the receiver. This is ensured by the unique code with which the transmitters are equipped.

No tripping of switching pulses by third-party radio systems with the DELTA FERN RF system.

Advantages at a glance

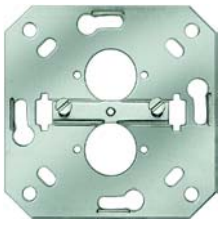
- No visibly targeted direction of transmission required
- Switching of functions in other rooms
- Pushbutton function can be selected: e.g. ON/OFF, dimming
- Central functions from room to room through wireless technology, e.g. Central lighting OFF
- Interface to *instabus* KNX *EIB* - available soon

Technical specifications

Operating frequency	434.42 MHz
Modulation	amplitude modulation (On-Off keying)
Data signaling rate	2.5 kbit/s
Telegram length	67 bit
Coding	rolling code
Typical ranges in buildings	approx. 30 m
Temperature range	0 to 45 °C

Complete assemblies

Selection and ordering data

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Hand-held transmitter, 4 function pushbuttons** dimensions: 155 mm x 37 mm x 22 mm battery: 9 V IEC 6LR61 (not included in delivery) titanium white (similar to RAL 9010) discontinued model	**5TC4 200**		024	1
	**Wall-mounted transmitter, battery operation, one function key** discontinued model	**5TC4 210**		024	1
	Note				
	Cutout frames must be ordered separately.				
	• single	**5TG2 161**		021	1/10
	• double	**5TG2 162**		021	1/10
	**Wall-mounted transmitter, battery operation, 1 function pushbutton with "Central Off" function** switching on is not possible dimensions: 70 mm x 70 mm, 20 mm deep depth: 40 mm titanium white (similar to RAL 9010) discontinued model	**5TC4 213**		024	1
	Note				
	Cutout frames must be ordered separately.				
	• single	**5TG2 161**		021	1/10
	• double	**5TG2 162**		021	1/10
	**Wall-mounted transmitter, battery operation, 2 function pushbuttons** dimensions: 70 mm x 70 mm, 20 mm deep depth: 40 mm titanium white (similar to RAL 9010) discontinued model	**5TC4 211**		024	1
	Note				
	Cutout frames must be ordered separately.				
	• single	**5TG2 161**		021	1/10
	• double	**5TG2 162**		021	1/10
	**Wall-mounted transmitter, battery operation, 4 function pushbuttons** dimensions: 70 mm x 70 mm, 20 mm deep depth: 40 mm titanium white (similar to RAL 9010) discontinued model	**5TC4 212**		024	1
	Note				
	Cutout frames must be ordered separately.				
	• single	**5TG2 161**		021	1/10
	• double	**5TG2 162**		021	1/10
	**Mounting plate, for "wall-mounted transmitter, with battery operation"** for mounting on inserts with vertically arranged screw fixing discontinued model	**5TG8 405**		024	1/5

* You can order this quantity or a multiple thereof.

	Design		Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Plug-in outlet receiver, switch** neutral conductor required titanium white (similar to RAL 9010) discontinued model		**5TC4 300**		024	1
	Technical specifications					
	Rated voltage	230 V AC, 50 to 60 Hz				
	Switching capacity	5 A (µ contact), p. f. = 1				
	Incandescent lamps	1000 W				
	Uncorrected fluorescent fixtures	p.f. = 0.5 / 500 W				
	Fluorescent lamps with parallel p.f. correction	p.f. = 1, C_{tot} 7µF / 1 x 58 W or 2 x 36 W or 3 x 18 W 6 Osram ECG single-lamp 3 Osram ECG twin-lamp				
	Halogen lamps	1000 W, 230 V AC, 50 Hz				
	LV halogen lamps	with electronic transformer, 500 W, with conventional transformer, 500 W				
	Fuse	5TG8 400 (T 5 A)				
	Note					
	Cutout frames must be ordered separately.					
	• single		**5TG2 161**		021	1/10
	• double		**5TG2 162**		021	1/10
	**Plug-in outlet receiver, dimmer** neutral conductor not required titanium white (similar to RAL 9010) discontinued model		**5TC4 301**		024	1
	Technical specifications					
	Rated voltage	230 V AC, 50 to 60 Hz				
	Incandescent lamps	20 to 400 W				
	LV halogen lamps	20 to 300 VA, with conventional transformer				
	Fuse	5TG8 302 (T 1.6 A)				
	Note					
	Cutout frames must be ordered separately.					
	• single		**5TG2 161**		021	1/10
	• double		**5TG2 162**		021	1/10
	**Plug-in outlet receiver, pushbutton** neutral conductor required titanium white (similar to RAL 9010) discontinued model		**5TC4 302**		024	1
	Technical specifications					
	Rated voltage	230 V AC, 50 to 60 Hz				
	Load	5 A (µ contact), p.f. = 1				
	Fuse	5TG8 400 (T 5 A)				
	Note					
	Cutout frames must be ordered separately.					
	• single		**5TG2 161**		021	1/10
	• double		**5TG2 162**		021	1/10

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

Complete assemblies

	Design		Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Plug-in outlet receiver, switch** neutral conductor required for SCHUKO outlets and outlets with CEE7-compliant grounding pin for SCHUKO connectors and Euro plugs titanium white (similar to RAL 9010) discontinued model		**5TC4 310**		024	1
	Technical specifications					
	Rated voltage	230 V AC µ, 50 to 60 Hz				
	Switching capacity	5 A				
	Incandescent lamps	1000 W				
	Uncorrected fluorescent fixtures	p.f. = 0.5 / 500 W				
	Fluorescent lamps with parallel p.f. correction	p.f. = 1, C_{tot} 7µF / 1 x 58 W or 2 x 36 W or 3 x 18 W 6 Osram ECG single-lamp 3 Osram ECG twin-lamp				
	Halogen lamps	1000 W, 230 V AC, 50 Hz				
	LV halogen lamps	with electronic transformer, 500 W, with conventional transformer, 500 W				
	Fuse	5TG8 400 (T 5 A)				
	**Plug-in outlet receiver, dimmer** neutral conductor required for SCHUKO outlets and outlets with CEE7-compliant grounding pin for SCHUKO connectors and Euro plugs titanium white (similar to RAL 9010) discontinued model		**5TC4 311**		024	1
	Technical specifications					
	Rated voltage	230 V AC, 50 to 60 Hz				
	Incandescent lamps	40 to 400 W				
	LV halogen lamps	50 to 300 VA, with conventional transformer				
	Fuse	5TG8 302 (T 1.6 A)				
	**SCHUKO outlet** titanium white (similar to RAL 9010) discontinued model		**5UB1 294**		021	1/10
	**Ceiling-rose receiver, switch** neutral conductor required for ceiling mounting dimensions: Ø 124 mm, Height 26 mm titanium white (similar to RAL 9010) discontinued model		**5TC4 320**		024	1
	Technical specifications					
	Rated voltage	230 V AC µ, 50 to 60 Hz				
	Switching capacity	5 A				
	Incandescent lamps	1000 W				
	Uncorrected fluorescent lamp	p.f. = 0.5 / 500 W				
	Fluorescent lamp with parallel p.f. correction	p.f. = 1, C_{tot} 7µF / 1 x 58 W or 2 x 36 W or 3 x 18 W 6 Osram ECG single-lamp 3 Osram ECG twin-lamp				
	Halogen lamps	1000 W, 230 V AC, 50 Hz				
	LV halogen lamps	with electronic transformer, 500 W, with conventional transformer, 500 W				
	Fuse	5TG8 400 (T 5 A)				

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

Complete assemblies

	Design		Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Ceiling-rose receiver, dimmer** neutral conductor required for ceiling mounting dimensions: Ø 124 mm, Height 26 mm titanium white (similar to RAL 9010) discontinued model		**5TC4 321**		024	1
	Technical specifications					
	Rated voltage	230 V AC, 50 to 60 Hz				
	Incandescent lamps	40 to 400 W				
	LV halogen lamps	50 to 300 VA, with conventional transformer				
	Fuse	5TG8 302 (T 1.6 A)				
	**Built-in receiver for ECG lights, switch** Neutral conductor required, with local operation, for installation in fluorescent fixtures, dimensions: 218 mm x 28 mm x 28 mm titanium white (similar to RAL 9010) discontinued model		**5TC4 330**		024	1
	Technical specifications					
	Rated voltage	230 V AC, 50 to 60 Hz				
	Switching capacity	5 A (µ contact), p.f. = 1				
	Incandescent lamps	1000 W				
	Uncorrected fluorescent lamp	p.f. = 0.5 / 500 W				
	Fluorescent lamp with parallel p.f. correction	p.f. = 1, C_{tot} 14µF / 2 x 58 W or 3 x 36 W or 6 x 18 W 10 Osram ECG single-lamp 5 Osram ECG twin-lamp				
	Halogen lamps	1000 W, 230 V AC, 50 Hz				
	LV halogen lamps	with electronic transformer, 500 W, with conventional transformer, 500 W				
	Fuse	5TG8 400 (T 5 A)				
	Ambient temperature	± 0 to +60 °C				
	**Built-in receiver for ECG lights, "Central Off" switch** neutral conductor required with local operation for installation in fluorescent fixtures dimensions: 218 mm x 28 mm x 28 mm technical specifications are the same as for switch 5TC4 330 titanium white (similar to RAL 9010) discontinued model		**5TC4 332**		024	1
	**Built-in receiver for ECG lights, pushbutton** neutral conductor required with local operation for installation in fluorescent fixtures dimensions: 218 mm x 28 mm x 28 mm titanium white (similar to RAL 9010) discontinued model		**5TC4 331**		024	1
	Technical specifications					
	Rated voltage	230 V AC, 50 to 60 Hz				
	Load	5 A (µ contact), p.f. = 1				
	Fuse	5TG8 400 (T 5 A)				
	Ambient temperature	± 0 to +60 °C				
	Pulse duration	80 ms 30 ms				

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

Complete assemblies

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Switching/dimming module, switch/switch "Central Off"** neutral conductor require without local operation for installation in fluorescent fixtures with dimmable electronic primary switching devices dimensions: 280 mm x 28 mm x 28 mm titanium white (similar to RAL 9010) discontinued model	**5TC4 340**		024	1

Technical specifications	
Rated voltage	230 V AC, 50 to 60 Hz
Rated current	5 A (µ contact), cos φ = 0.5
Load capability of control output	50 ECG dynamic or 16 signal amplifiers
Load capability of switch contact	10 Osram ECG, single-lamp, 5 Osram, ECG twin-lamp
Terminals, line terminals 230 V AC	screw-type terminals 0.14 to 4 mm^2, solid, 0.14 to 2.5 mm^2, finely stranded
Terminals, control terminals 1 to 10 V	plug-in terminals, 0.5 to 2.5 mm^2, solid, 1.5 mm^2, finely stranded
Switch contact	non-floating
Fuse	electronic fuse at control output 1 to 10 V
Runtime 1 to 10 V	approx. 5.5 s
Runtime 10 to 1 V	approx. 5.5 s
Ambient temperature	± 0 to +60 °C

Accessories and spare parts

Selection and ordering data

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Spare fuse for switches and pushbuttons** for switches and pushbuttons 5 A, T 5 A Type G for "Central Off" switches 5 A, T 5 A Type G	**5TG8 400**		024	1/10
	**Spare fuse for dimmer** for dimmers 20 to 400 W, T 1.6 A Type G	**5TG8 302**		024	1/10
	**Surface mounting enclosure** with integrated base plate 75 mm x 77 mm x 41 mm titanium white (similar to RAL 9010) discontinued model	**5TG2 166**		021	1

* You can order this quantity or a multiple thereof.

Overview

Applications

Industry

- Test bays
- Mining
- Mechanical engineering systems
- Elevators
- Traveling trolleys
- Crane systems
- Loading equipment
- Lifting platforms

Non-residential buildings

- Sound studio applications
- Rotor aerials
- Screens
- Multimedia shows
- Lecture rooms

Outdoor areas

- Residential areas
- Stadiums
- Sports grounds
- Sports equipment (automatic shooting facilities, ball throwing machines)
- Swimming pools (lighting, covering)

Special applications

- Installation in damp locations
- Call systems in catering premises
- Customized IR controls

Modern infrared technology offers a wide range of applications as well as ease of operation, security and lower costs during installation. Not only do they enhance and change well-known technologies, they also offer greater warmth, flexibility and comfort in the workplace. The modular design and the handling of the system is uncomplicated and offers maximum insensitivity to interference during transmission of the control signals through infrared light.

The IR-64K infrared remote control system uses this technology. The system offers a broad range of unit combinations and expansion options for many fields of application. The IR-64K system is a module and device system for all kinds of remote control based on infrared technology with ranges of up to 50 m. There are none of the usual interferences, thanks to the high propagation rate. The 9-bit pulse code modulation (PCM) used in the IR-64K system has an extremely high interference immunity against other remote control systems, such as ultrasonic or radio.

The IR-64K system covers the entire range of IR applications. The product range comprises hand-held transmitters that can be encoded with up to 64 channels, receiver preamplifiers, decoders, circuit-breakers with 4 or 8 outputs and corresponding power supply units. The range is rounded off with compact systems with up to 8 switching functions. The modules enable problem-free setup of remote controls for simple switching functions through to complex applications. The modules are suitable for installation in devices and systems, for external mounting and as device accessories.

The system devices and modules have the BZT registration number G105 376C/IW.

Combination options

The components can be used in any combination, your choice depends largely on the type of application and local conditions.

Complete assemblies

Hand-held transmitters

The hand-held transmitters vary in design, number of pushbuttons and the type of command encoding.

Receiver preamplifiers

The receiver preamplifiers can be operated on all decoders and compact systems of the IR-64K system. In order to ensure selection of the correct preamplifier, it is important to take the reception, installation, operating and environmental conditions into consideration.

Decoders

The decoders vary in design, number of receiver preamplifier inputs, type of signal outputs and operating voltage. All modules can be encoded using the DIL switch.

Further expansion modules are also available which allow extension of the system to up to 64 channels.

Power electronics assemblies

To increase the switching capacity at the outputs of the decoder and the expansion module, a range of power electronics assemblies are available, which vary in their switching capacity, number of outputs and operating voltage.

Compact systems

In the compact systems, all key components are combined in a single enclosure and on a single module. They comprise decoders, power supply units and power outputs with potential-free changeover contacts.

Power supply units

The modules are powered by the power supply units. They supply a controlled voltage of 12 V at a load of 500 mA or 1.0 A.

Selection and ordering data

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	General information				
	Note: For further technical information, see ... — Section: *Technical information/ Remote control/IR-64K* — Page: 18/64				
	**Mini hand-held transmitter, 4-channel** NEW IP30 dimensions: 73 mm x 43.5 mm x 18.5 mm 255 commands can be coded for each pushbutton	**5TC6 107**		024	1
	**Hand-held transmitter, 2-channel** IP30 dimensions: 155 mm x 40 mm, 22.5 mm high 64 commands can be coded for each pushbutton	**5TC6 100**		024	1
	**Hand-held transmitter, 4-channel** IP30 dimensions: 155 mm x 40 mm, 22.5 mm high 64 commands can be coded for each pushbutton	**5TC6 101**		024	1
	**Hand-held transmitter, 8-channel** IP30 dimensions: 155 mm x 40 mm, 22.5 mm high 64 commands can be coded for each pushbutton	**5TC6 102**		024	1

* You can order this quantity or a multiple thereof.

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Hand-held transmitter, 8 x 8-channel** IP30 dimensions: 155 mm x 40 mm, 22.5 mm high 8 commands can be coded for each pushbutton with rotary selector switch A-H Note 5TC6 103 replaces the following hand-held transmitters: • 20-channel 5TC6 104 • 35-channel 5TC6 105 • 53-channel 5TC6 106	**5TC6 103**		024	1
	**Spare hand-held transmitter, 4-channel** for INFRAFERN IP30 dimensions: 155 mm x 40 mm, 22.5 mm high discontinued model	**5TC6 190**		024	1
	**Spare hand-held transmitter, 8-channel** for INFRAFERN IP30 dimensions: 155 mm x 40 mm, 22.5 mm high discontinued model	**5TC6 191**		024	1
	**Wall mounting bracket for "hand-held transmitter" and "spare hand-held transmitter"** Note Wall mounting brackets can be used for the following hand-held transmitters: • 5TC6 100 • 5TC6 101 • 5TC6 102 • 5TC6 103 • 5TC6 190 • 5TC6 191	**5TC6 900**		024	1
	**Industrial hand-held transmitter, 2-channel** IP54 64 commands can be coded for each pushbutton. Dimensions: 157 mm x 63 mm, 23 mm high	**5TC6 110**		024	1
	**Industrial hand-held transmitter, 4-channel** IP54 64 commands can be coded for each pushbutton dimensions: 157 mm x 63 mm, 23 mm high	**5TC6 111**		024	1

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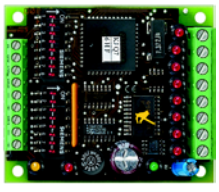
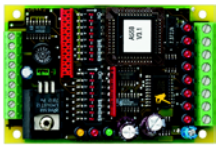
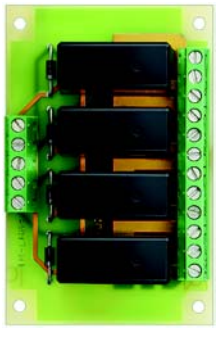
*** You can order this quantity or a multiple thereof.**

Complete assemblies

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Industrial hand-held transmitter, 8-channel** IP54 64 commands can be coded for each pushbutton dimensions: 157 mm x 63 mm, 23 mm high	**5TC6 112**		024	1
	**Receiver preamplifier, reception lens on front, metal enclosure** IP20	**5TC6 200**		024	1
	**Receiver preamplifier, reception lens on side, metal enclosure** IP20	**5TC6 201**		024	1
	**Receiver preamplifier, focussing lens on front, metal enclosure** IP30	**5TC6 202**		024	1
	**Receiver preamplifier, focussing lens on side, metal enclosure** IP30	**5TC6 203**		024	1
	**Receiver preamplifier, focussing lens on front, molded** IP65	**5TC6 204**		024	1

* You can order this quantity or a multiple thereof.

Complete assemblies

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Receiver preamplifier, focussing lens on side, molded** IP65	**5TC6 205**		024	1
	**Decoder, 8-channel** 12 V DC	**5TC6 250**		024	1
	**Decoder, 8-channel expandable** 12 V/24 V DC maximum 4 expansion module 5TC6 252 can be operated with 1 decoder	**5TC6 251**		024	1
	**Expansion module for "decoder, 8-channel expandable"** 16-channel, 10 to 28 V DC	**5TC6 252**		024	1
	**Circuit-breaker, 4 inputs/outputs, 12 V DC** 16 A	**5TC6 300**		024	1

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* You can order this quantity or a multiple thereof.

Complete assemblies

	Design	Order No.	Price 1 item	PG	PS*/ P. unit Items
	**Circuit-breaker, 4 inputs/outputs, 24 V DC** 16 A	**5TC6 301**		024	1
	**Plug-in power supply unit** 230 V AC/12 V DC, 0.5 A with Euro plugs dimensions: 64 mm x 95 mm x 46 mm	**5TC6 330**		024	1
	**Power supply unit** 230 V AC/12 V DC, 1 A for wall mounting dimensions: 79 mm x 149 mm x 63 mm	**5TC6 331**		024	1
	**Compact system, 8-channel** 230 V AC, 50 Hz, IP65 with power supply unit without receiver preamplifier 4 preamplifier inputs, 8 power relay outputs expansion to more than 8 channels through parallel switching of 5TC6 380, dimensions: 115 mm x 325 mm x 250 mm	**5TC6 380**		024	1
	**Compact system, 2-channel** 230 V AC, 50 Hz, IP65 with power supply unit without receiver preamplifier 2 preamplifier inputs, 2 power relay outputs expansion to more than 4 channels through parallel switching of 5TC6 383 dimensions: 62 mm x 168 mm x 123 mm	**5TC6 383**		024	1

* You can order this quantity or a multiple thereof.