



PRODUCT CATALOGUE GRÄSSLIN
Intelligent products for
ambitious electricians

Time switch technology

Light control

Meters

Temperature control

Outstanding products

Grässlin products stand for reliable quality, highest precision and total ease of use. The product range includes analogue and digital time switches delivered with versatile programs and extensive standard functionality as well as products combining regular time switch functions with sensors. These include, among others, motion sensors, presence sensors and twilight switches. The range is complemented by time switch modules, meters and products to control heating systems.

Impressive benefits

The combination of sophisticated technology and ease of use enables the simple controlling of complex applications and achieve the highest possible energy efficiency at the same time. Individual programming options and numerous valuable functions ensure that even the most ambitious individual needs can be met.



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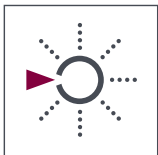
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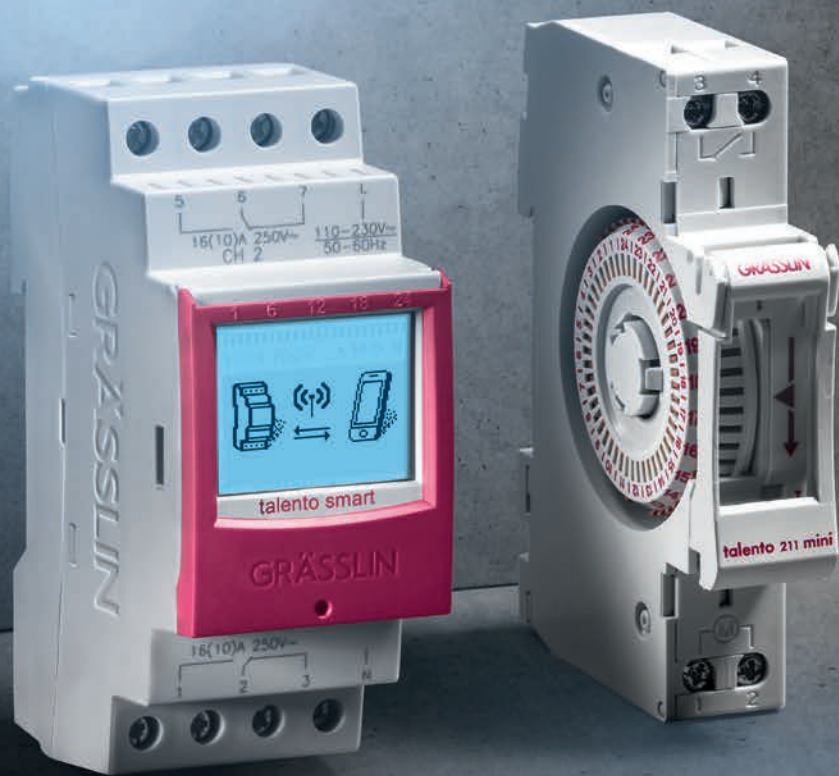
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Digital DIN rail time switches talento smart – Selection guide

	talento smart B15	talento smart B25	talento smart C15
			
Supply voltage	AC 110-230 V ± 10% 50-60 Hz	AC 110-230 V ± 10% 50-60 Hz	AC 110-230 V ± 10% 50-60 Hz
Current output	Changeover, potential-free, opening width < 3 mm, phase-independent (zero crossing)	Changeover, potential-free, opening width < 3 mm, phase-independent (zero crossing)	Changeover, potential-free, opening width < 3 mm, phase-independent (zero crossing)
Channels	1	2	1
Memory spaces	100	100	500
Program (functions)	Free weekday block formation 10 date-independent programs (Weekly program) 1 date-dependent program (Holiday, annual program) ON OFF	Free weekday block formation 10 date-independent programs (Weekly program) 2 date-dependent programs (Holiday, annual program) ON OFF	Free weekday block formation 50 date-independent programs (Weekly program) 50 date-dependent programs (Holiday, annual program) ON OFF Pulse Cycle Astro function Random ON Random OFF
Shortest switching time	1 minute	1 minute	ON/OFF 1 minute Pulse 1 second Cycle 1 second
Programming on the PC, mobile devices	●	●	●
Interface	Bluetooth 4.0	Bluetooth 4.0	Bluetooth 4.0
Page	10	10	12

talento smart C25	talento smart S25	talento smart CE2
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AC 110-230 V ± 10% 50-60 Hz	AC 110-230 V ± 10% 50-60 Hz	AC 110-230 V ± 10% 50-60 Hz
AC/DC 12/24 V ± 10% 50-60 Hz		
Changeover, potential-free, opening width < 3 mm, phase-independent (zero crossing)	Changeover, potential-free, opening width < 3 mm, phase-independent (zero crossing)	Changeover, potential-free, opening width < 3 mm, phase-independent (zero crossing)
Changeover, potential-free and switch contact, opening width < 3 mm, phase-independent		
2	2	2
500	800	
Free weekday block formation	Free weekday block formation	Free weekday block formation*
50 date-independent programs (Weekly program)	80 date-independent programs (Weekly program)	ON*
50 date-dependent programs (Holiday, annual program)	80 date-dependent programs (Holiday, annual program)	OFF*
ON	ON	Pulse*
OFF	OFF	Cycle*
Pulse	Pulse	Astro function*
Cycle	Cycle	Random ON*
Astro function	Astro function	Random OFF*
Random ON	Random ON	
Random OFF	Random OFF	*only in combination with talento smart S25
ON/OFF 1 minute	ON/OFF 1 minute	
Pulse 1 second	Pulse 1 second	
Cycle 1 second	Cycle 1 second	
●	●	●
Bluetooth 4.0	Bluetooth 4.0	Bluetooth 4.0

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Digital DIN rail time switches – talento smart

talento smart B15



PRODUCT DESCRIPTION

- ▶ cost effective solution for standard requirements
- ▶ program creation possible with or without date
- ▶ available as 1-channel or 2-channel version
- ▶ integrated Bluetooth interface for wireless Programming and data exchange



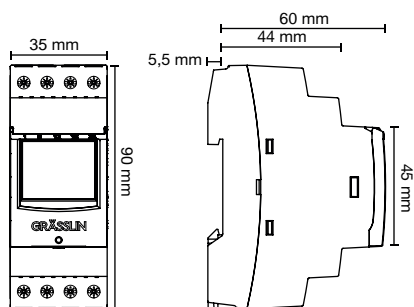
APPLICATION AREAS

- ▶ Street lighting
- ▶ Window lighting
- ▶ Advertising lighting
- ▶ Machinery, motors and pumps control

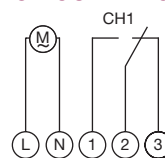
talento smart B25



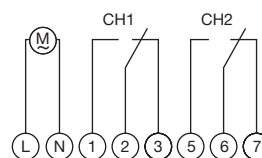
DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



talento smart B15



talento smart B25

PRODUCT VARIANTS

	talento smart B15	talento smart B25
Item no.	43.02.0001.1	43.02.0002.1
EAN Code	4010940044718	4010940044725
Channels	1	2
Programs	1 date-dependent program (holiday/annual program)	2 date-dependent programs (holiday/annual program)

TECHNICAL DATA

Electrical specifications

Supply voltage	AC 110-230 V \pm 10% 50-60 Hz
Current output	Changeover, potential-free, opening width < 3 mm, phase-independent (zero crossing)
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	10 A / 250 V AC
Load incandescent / halogen lamp	2,600 VA
Load fluorescent lamps	730 VA (parallel compensated), 1,000 VA (dual circuit) 1,000 VA (not compensated), 1,000 VA (series compensated)
Load compact fluorescent lamp	14 x 23 W, 16 x 15 W, 16 x 20 W, 18 x 11 W, 22 x 7 W
Load LED lamps < 2 W	Max. 30 W
Load LED lamps 2-8 W	Max. 100 W
Load LED lamps > 8 W	Max. 120 W
Load sodium lamp - uncompensated	1 x 400 W, 2 x 250 W
Load sodium lamp - parallel compensated	1 x 250 W (32 μ F), 1 x 400 W (45 μ F), 2 x 150 W (20 μ F)
Load mercury vapour lamp - parallel compensated	1 x 400 W (25 μ F), 1 x 700 W (40 μ F), 2 x 250 W (18 μ F), 4 x 125 W (10 μ F), 6 x 50 W (7 μ F)
Load mercury vapour lamp - uncompensated	1 x 700 W, 2 x 250 W, 4 x 125 W
Switching capacity - DC	300 mA / 60 V DC, 800 mA / 24 V DC
Power consumption	<1 VA (standby mode)
Accuracy	\pm 0.3 second/day at 20° C
Timebase	Quartz
Power reserve	8 years, programs saved in EEPROM

Electrical connection

Device	Screw terminal with wire protection max. 2,5 mm ² , captive screw terminal
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Communication type

Radio signal	Bluetooth 4.0
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Operating data

Hand switch	Automatic mode, Fix ON/OFF, Override
Tamper protection	PIN code, sealable
Programs	10 date-dependent programs (weekly program), ON, OFF, free weekday block formation
Programming	Time switch, PC, mobile devices
Memory space	100
Counter	Hour meter with service function

Display and format

Display lighting	White
Format time display	12-hour format (AM/PM) and 24-hour format (default)
Shortest switching time	ON/OFF 1 minute
Summer/winter time change	Automatic, date-related, can be deactivated
Status display	Switching state display

Environmental conditions

Temperature (operation)	-20° C ... +55° C
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General data

Number of modules	2
Weight	180 g / 200 g
Material	High-temperature resistant, self-extinguishing thermoplastic
Mounting	DIN rail
Languages	CS, DA, DE, EN, ES, FI, FR, HU, IT, NL, NO, PL, PT, SV

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE, FCC, VDE

APP



Digital DIN rail time switches – talento smart

talento smart C15



PRODUCT DESCRIPTION

- ▶ enhanced functions (pulse, cycle, random and astro functions) for more complex requirements
- ▶ program creation possible with or without date
- ▶ available as 1-channel or 2-channel version
- ▶ integrated Bluetooth interface for wireless programming and data exchange



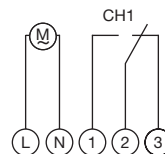
APPLICATION AREAS

- ▶ Street lighting
- ▶ Show window lighting
- ▶ Advertising lighting
- ▶ Machinery, motors and pumps control
- ▶ Roller blinds and sun blinds control
- ▶ School bells / church bells control
- ▶ Presence simulation

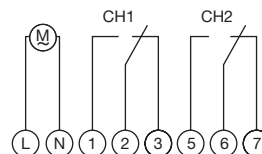
talento smart C25



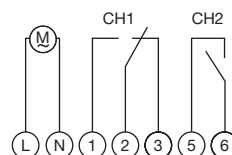
CIRCUIT DIAGRAMS



talento smart C15

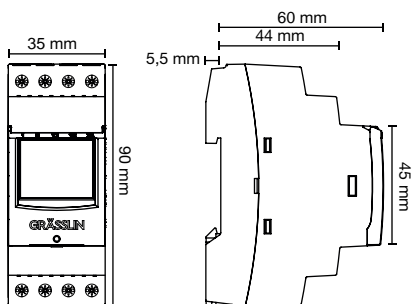


talento smart C25



talento smart C25
12/24V

DIMENSIONAL DRAWINGS



PRODUCT VARIANTS

	talento smart C15	talento smart C25	talento smart C25
Item no.	43.03.0001.1	43.03.0002.1	43.03.0003.1
EAN Code	4010940044749	4010940044756	4010940044787
Channels	1	2	2
Supply voltage	AC 110-230 V ± 10% 50-60 Hz	AC 110-230 V ± 10% 50-60 Hz	AC/DC 12/24 V ± 10% 50-60 Hz
Current output	Phase-independent (zero crossing) Changeover, potential-free, opening width < 3 mm	Phase-independent (zero crossing) Changeover, potential-free, opening width < 3 mm	Phase-independent Changeover, potential-free and switch contact, opening width < 3 mm

TECHNICAL DATA

Electrical specifications

Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	10 A / 250 V AC
Load incandescent / halogen lamp	2,600 VA
Load fluorescent lamps	730 VA (parallel compensated), 1,000 VA (dual circuit) 1,000 VA (not compensated), 1,000 VA (series compensated)
Load compact fluorescent lamp	16 x 15 W, 16 x 20 W, 14 x 23 W, 18 x 11 W, 22 x 7 W
Load LED lamps < 2 W	Max. 30 W
Load LED lamps 2-8 W	Max. 100 W
Load LED lamps > 8 W	Max. 120 W
Load sodium lamp - uncompensated	1 x 400 W, 2 x 250 W
Load sodium lamp - parallel compensated	1 x 250 W (32 µF), 1 x 400 W (45 µF), 2 x 150 W (20 µF)
Load mercury vapour lamp - parallel compensated	1 x 400 W (25 µF), 1 x 700 W (40 µF), 2 x 250 W (18 µF), 4 x 125 W (10 µF), 6 x 50 W (7 µF)
Load mercury vapour lamp - uncompensated	1 x 700 W, 2 x 250 W, 4 x 125 W
Switching capacity - DC	300 mA / 60 V DC, 800 mA / 24 V DC
Power consumption	<1 VA (standby mode)
Accuracy	± 0.3 second/day at 20° C
Timebase	Quartz
Power reserve	8 years, programs saved in EEPROM

Electrical connection

Device	Screw terminal with wire protection max. 2,5 mm ² , captive screw terminal
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Communication type

Radio signal	Bluetooth 4.0
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Operating data

Hand switch	Automatic mode, Fix ON/OFF, Override
Tamper protection	PIN code, sealable
Programs	50 date-dependent programs (holiday/annual program), 50 date-independent programs (week program), astro function, OFF, ON, pulse, random OFF, random ON, cycle, free weekday block formation
Programming	Time switch, PC, mobile devices
Memory spaces	500
Counter	Hour meter with service function

Display and format

Display lighting	White
Format time display	12-hour format (AM/PM) and 24-hour format (default)
Shortest switching time	ON/OFF 1 minute, pulse 1 second, cycle 1 second
Summer/winter time change	Automatic, date-related, can be deactivated
Status display	Switching state display

Environmental conditions

Temperature (operation)	-20° C ... +55° C
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General data

Number of modules	2
Weight	180 g / 200 g
Material	High-temperature resistant, self-extinguishing thermoplastic
Mounting	DIN rail
Languages	CS, DA, DE, EN, ES, FI, FR, HU, IT, NL, NO, PL, PT, SV

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE, FCC, VDE

APP



Digital DIN rail time switches – talento smart S25



PRODUCT DESCRIPTION

- ▶ greatest functional range and storage capacity for complex applications
- ▶ program creation possible with or without date
- ▶ available as 2-channel version
- ▶ integrated Bluetooth interface for wireless programming and data exchange
- ▶ system version for setting up a system with up to 8 channels in combination with talento smart CE2

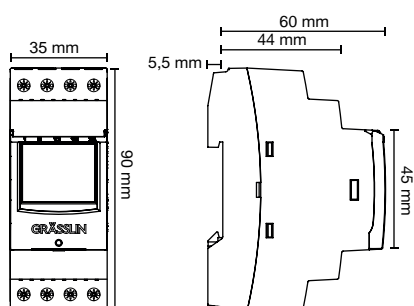


APPLICATION AREAS

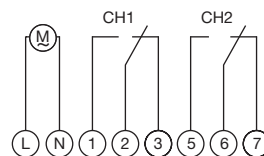
- ▶ Street lighting
- ▶ Show window lighting
- ▶ Advertising lighting
- ▶ Machinery, motors and pumps control
- ▶ Roller blinds and sun blinds control
- ▶ School bells / church bells control
- ▶ Presence simulation

Item no.	43.04.0001.1
EAN Code	4010940044763

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical specifications

Supply voltage	AC 110-230 V \pm 10% 50-60 Hz
Current output	Phase-independent (zero crossing)
Current output	Changeover, potential-free, opening width < 3 mm
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	10 A / 250 V AC
Load incandescent / halogen lamp	2,600 VA
Load fluorescent lamps	730 VA (parallel compensated), 1,000 VA (dual circuit) 1,000 VA (not compensated), 1,000 VA (series compensated)
Load compact fluorescent lamp	16 x 15 W, 16 x 20 W, 14 x 23 W, 18 x 11 W, 22 x 7 W
Load LED lamps < 2 W	Max. 30 W
Load LED lamps 2-8 W	Max. 100 W
Load LED lamps > 8 W	Max. 120 W
Load sodium lamp - uncompensated	1 x 400 W, 2 x 250 W
Load sodium lamp - parallel compensated	1 x 250 W (32 μ F), 1 x 400 W (45 μ F), 2 x 150 W (20 μ F)
Load mercury vapour lamp - parallel compensated	1 x 400 W (25 μ F), 1 x 700 W (40 μ F), 2 x 250 W (18 μ F), 4 x 125 W (10 μ F), 6 x 50 W (7 μ F)
Load mercury vapour lamp - uncompensated	1 x 700 W, 2 x 250 W, 4 x 125 W
Switching capacity - DC	300 mA / 60 V DC, 800 mA / 24 V DC
Power consumption	<1 VA (standby mode)
Accuracy	\pm 0.3 second/day at 20° C
Timebase	Quartz
Power reserve	8 years, programs saved in EEPROM

Electrical connection

Device	Screw terminal with wire protection max. 2,5 mm ² , captive screw terminal
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Communication type

Radio signal	Bluetooth 4.0
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Operating data

Hand switch	Automatic mode, Fix ON/OFF, Override
Channels	2
Tamper protection	PIN code, sealable
Programs	80 date-dependent programs (holiday/annual program), 80 date-independent programs (weekly program), astro function, OFF, ON, pulse, random OFF, random ON, cycle, free weekday block formation
Programming	Time switch, PC, mobile devices
Memory locations	800
Counter	Hour meter with service function

Display and format

Display lighting	White
Format time display	12-hour format (AM/PM) and 24-hour format (default)
Shortest switching time	ON/OFF 1 minute, pulse 1 second, cycle 1 second
Summer/winter time change	Automatic, date-related, can be deactivated
Status display	Switching state display

Environmental conditions

Temperature (operation)	-20° C ... +55° C
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General data

Number of modules	2
Weight	200 g
Material	High-temperature resistant, self-extinguishing thermoplastic
Mounting	DIN rail
Languages	CS, DA, DE, EN, ES, FI, FR, HU, IT, NL, NO, PL, PT, SV

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE, FCC, VDE

APP



Digital DIN rail time switches – talento smart CE2



PRODUCT DESCRIPTION

- ▶ channel extension for setting up a system with up to 8 channels in combination with talento smart S25
- ▶ the channel extension accesses the configuration and programs from talento smart S25 via Bluetooth 4.0
- ▶ the system can be programmed directly via the talento smart S25, via the apps or on the PC
- ▶ can only be used in combination with talento smart S25

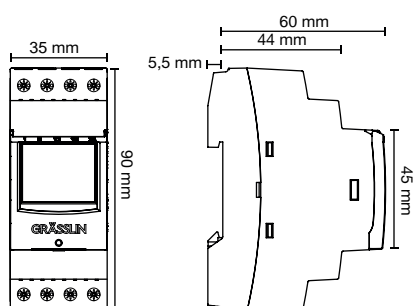


APPLICATION AREAS

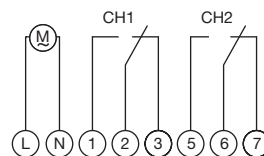
- ▶ Street lighting
- ▶ Show window lighting
- ▶ Advertising lighting
- ▶ Temperature and ventilation control
- ▶ Machinery, motors and pumps control
- ▶ Roller blinds and sun blinds control
- ▶ School bells / church bells control
- ▶ Presence simulation

Item no.	43.04.0004.1
EAN Code	4010940045463

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical specifications

Supply voltage	AC 110-230 V \pm 10% 50-60 Hz
Current output	Phase-independent (zero crossing)
Current output	Changeover, potential-free, opening width < 3 mm
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	10 A / 250 V AC
Load incandescent / halogen lamp	2,600 VA
Load fluorescent lamps	730 VA (parallel compensated), 1,000 VA (dual circuit) 1,000 VA (not compensated), 1,000 VA (series compensated)
Load compact fluorescent lamp	16 x 15 W, 16 x 20 W, 14 x 23 W, 18 x 11 W, 22 x 7 W
Load LED lamps < 2 W	Max. 30 W
Load LED lamps 2-8 W	Max. 100 W
Load LED lamps > 8 W	Max. 120 W
Load sodium lamp - uncompensated	1 x 400 W, 2 x 250 W
Load sodium lamp - parallel compensated	1 x 250 W (32 μ F), 1 x 400 W (45 μ F), 2 x 150 W (20 μ F)
Load mercury vapour lamp - parallel compensated	1 x 400 W (25 μ F), 1 x 700 W (40 μ F), 2 x 250 W (18 μ F), 4 x 125 W (10 μ F), 6 x 50 W (7 μ F)
Load mercury vapour lamp - uncompensated	1 x 700 W, 2 x 250 W, 4 x 125 W
Switching capacity - DC	300 mA / 60 V DC, 800 mA / 24 V DC
Power consumption	<1 VA (standby mode)
Accuracy*	\pm 0,3 Second /Day at 20 °C
Power reserve	no

Electrical connection

Device	Screw terminal with wire protection max. 2,5 mm ² , captive screw terminal
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Communication type

Radio signal	Bluetooth 4.0
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Operating data

Hand switch	Automatic mode, Fix ON/OFF, Override
Channels	2
Tamper protection	PIN code*, sealable
Programs*	Free weekday block formation, ON, OFF, Impulse, Cycle, Astro function, Random ON, Random OFF
Programming	talento smart S25
Counter	Hour meter with service function

Display and format

Display lighting	White
Format time display*	12-hour format (AM/PM) and 24-hour format (default)
Shortest switching time*	ON/OFF 1 minute, pulse 1 second, cycle 1 second
Status display	Switching state display

Environmental conditions

Temperature (operation)	-20° C ... +55° C
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General data

Number of modules	2
Weight	200 g
Material	High-temperature resistant, self-extinguishing thermoplastic
Mounting	DIN rail
Languages	CS, DA, DE, EN, ES, FI, FR, HU, IT, NL, NO, PL, PT, SV

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE, FCC, VDE

*only in combination with talento smart S25

APP



Digital DIN rail time switches – talento smart LAN

Available from 3rd quarter 2018



PRODUCT DESCRIPTION

- ▶ Interface/gateway for remote access to talento smart S25, in order to transfer or export programmes
- ▶ Remote access is via a LAN network
- ▶ Each talento smart LAN module can be connected to up to five talento smart S25 units
- ▶ Easy management of large applications thanks to simple grouping

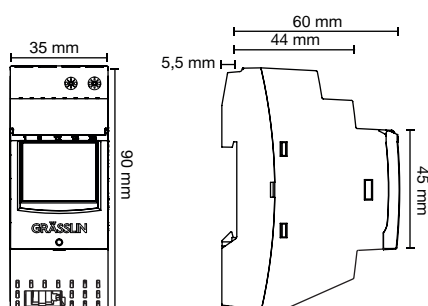


APPLICATION AREAS

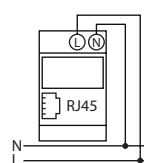
- ▶ Supermarkets
- ▶ Chain stores
- ▶ Administrations (e.g. municipal authorities)
- ▶ Schools

Item no.	43.04.0006.1
EAN Code	4010940045746

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical specifications

Supply voltage	AC 230 V ± 10% 50-60 Hz
Power consumption	4 W

Electrical connection

Device	Screw terminal with wire protection max. 2,5 mm ² , captive screw terminal
Network interface (Ethernet)	RJ45

Communication type

Radio signal	Bluetooth 4.0
Protocols	HTTP, HTTPS, TCP/IP, DHCP, UDP, SNTP, MQTT, ICMP

Operating data

Tamper protection	PIN code, sealable
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Display and format

Display lighting	White
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Environmental conditions

Temperature (operation)	-20° C ... +55° C
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General data

Number of modules	2
Weight	200 g
Material	High-temperature resistant, self-extinguishing thermoplastic
Mounting	DIN rail
Languages	CS, DA, DE, EN, ES, FI, FR, HU, IT, NL, NO, PL, PT, SV

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE, FCC, VDE

Digital DIN rail time switches – talento 371 mini pro



PRODUCT DESCRIPTION

- ▶ Convenient, automatic change from summer to winter time
- ▶ Optimal tamper protection through PIN code and sealable housing

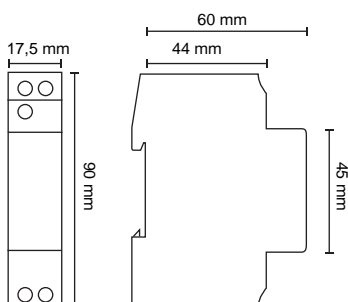


APPLICATION AREAS

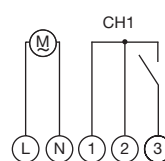
- ▶ Advertising lighting
- ▶ Street lighting
- ▶ Show window lighting

Item no.	03.90.0002.1
EAN Code	4010940028718

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA**Electrical specifications**

Supply voltage	AC 230 V ± 10% 50-60 Hz
Current output	Switch contact, opening width < 3 mm, phase-independent
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	8 A / 250 V AC
Load incandescent bulb	1,000 W
Switching capacity - DC	150 mA / 220 V DC, 300 mA / 50 V DC, 800 mA / 24 V DC
Power consumption	3 VA
Accuracy	± 1 second/day at 20° C
Timebase	Quartz
Power reserve	3 years, programs saved in EEPROM
Battery	CR2032

Electrical connection

Device	Screw terminal with wire protection max. 2.5 mm ² , captive screw terminal
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Operating data

Hand switch	Automatic mode Fix ON/OFF Override
Channels	1
Tamper protection	PIN code, sealable
Programs	Holiday program (ON/OFF, OFF) Weekly program (ON/OFF) Free weekday block formation
Programming	Device
Memory spaces	70
Counter	Hour meter with service function

Display and format

Format time display	12-hour format (AM/PM) 24-hour format (default)
Shortest switching time	ON/OFF 1 minute
Summer/winter time change	Automatic, date-related, can be deactivated
Status display	Switching state display

Environmental conditions

Temperature (operation)	-10° C ... +55° C
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General data

Number of modules	1
Weight	100 g
Material	High-temperature resistant, self-extinguishing thermoplastic
Mounting	DIN rail
Languages	CS, DA, DE, EN, ES, FI, FR, HU, IT, NL, NO, PL, PT, SV

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE

Analogue DIN rail time switches – Selection guide

talento 111 mini



talento 211 mini



talento 111



Supply voltage	AC 220-240 V ± 10% 50 Hz	DC 130 V AC 230 V ± 10% 50-60 Hz	AC 220-240 V ± 10% 50 Hz
Current output	Switch contact, potential-free	Switch contact, potential-free	Changeover, potential free
Channels	1	1	1
Number of modules	1	1	3
Shortest switching time	30 minutes	30 minutes	30 minutes
Accuracy	Network synchronous	± 2.5 second/day at 20° C	Network synchronous
Power reserve	–	> 50 hours	–
Program (switching programs)	Daily program	Daily program	Daily program
Clock	without hands	without hands	Analogue hands
Drive type	Synchronous	Quartz	Synchronous
Accessories	Wall installation kit 1 TE	Wall installation kit 1 TE	Wall installation kit 2-3 TE

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talento 121	talento 211	talento 271
--------------------	--------------------	--------------------



AC 220-240 V ± 10% 50 Hz	DC 130 V AC 230 V ± 10% 50-60 Hz	DC 130 V AC 230 V ± 10% 50-60 Hz
Changeover, potential free	Changeover, potential free	Changeover, potential free
1	1	1
3	3	3
1.25 minutes	30 minutes	3 Hours
Network synchronous	± 2.5 second/day at 20° C	± 2.5 second/day at 20° C
–	> 150 hours	> 150 hours
Hourly program	Daily program	Weekly program
Analogue hands	Analogue hands	Analogue hands
Synchronous	Quartz	Quartz
Wall installation kit 2-3 TE	Wall installation kit 2-3 TE	Wall installation kit 2-3 TE

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Analogue DIN rail time switches – talento

talento 111 mini

talento 211 mini

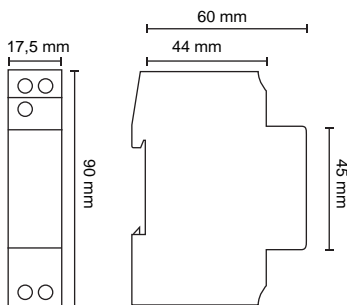


APPLICATION AREAS

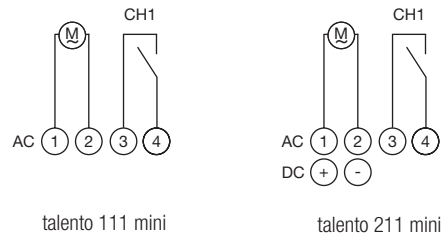
- ▶ Advertising lighting
- ▶ Show window lighting
- ▶ Water treatment
- ▶ Pump control



DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



PRODUCT VARIANTS

	talento 111 mini	talento 211 mini
Item no.	01.06.0004.1	02.03.0003.1
EAN Code	4010940022556	4010940022563

Electrical specifications

Supply voltage	AC 220-240 V ± 10% 50 Hz	DC 130 V AC 230 V ± 10% 50-60 Hz
Accuracy	Network synchronous	± 2.5 seconds / day at 20° C
Power reserve	–	> 50 hours

Environmental conditions

Temperature (operation)	-25° C ... +55° C	-20° C ... +55° C
-------------------------	-------------------	-------------------

General data

Weight	100 g	110 g
--------	-------	-------

TECHNICAL DATA

Electrical specifications

Current output	Switch contact, potential-free
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	4 A / 250 V AC
Load incandescent bulb	1,000 W
Power consumption	1 VA

Electrical connection

Device	Screw terminal with wire protection max. 4 mm ² Captive screw terminal
--------	--

Operating data

Hand switch	Automatic mode, Fix ON
Channels	1
Tamper protection	Sealable
Programs	Daily program (ON/OFF)

Display and format

Shortest switching time	ON/OFF 30 minutes
-------------------------	-------------------

General data

Number of modules	1
Mounting	DIN rail

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE VDE

Analogue DIN rail time switches – talento 111, talento 121



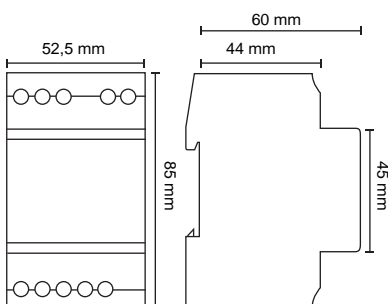
Example representation

APPLICATION AREAS

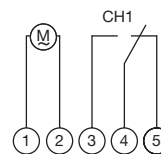
- ▶ Advertising lighting
- ▶ Show window lighting
- ▶ Water treatment
- ▶ Pump control



DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



PRODUCT VARIANTS

	talento 111	talento 121
Item no.	01.28.0001.1	01.28.0003.1
EAN Code	4010940020668	4010940020682
Programs	Daily program (ON/OFF)	Hourly program (ON/OFF)
Shortest switching time	ON/OFF 30 minutes	ON/OFF 1.25 minutes

TECHNICAL DATA**Electrical specifications**

Supply voltage	AC 220-240 V ± 10% 50 Hz
Current output	Changeover, potential free
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	4 A / 250 V AC
Load incandescent bulb	1,350 W
Power consumption	1 VA
Accuracy	Network synchronous
Power reserve	–

Electrical connection

Device	Screw terminal with wire protection max. 4 mm ² Captive screw terminal
--------	--

Operating data

Hand switch	Automatic mode Fix ON/OFF
Channels	1
Tamper protection	Sealable

Display and format

Clock	Analogue hands
-------	----------------

Environmental conditions

Temperature (operation)	-25° C ... +55° C
-------------------------	-------------------

General data

Number of modules	3
Weight	170 g
Mounting	DIN rail

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE VDE

Analogue DIN rail time switches – talento 211, talento 271



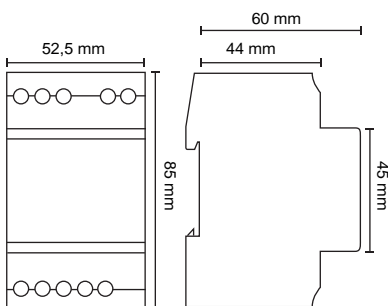
Example representation

APPLICATION AREAS

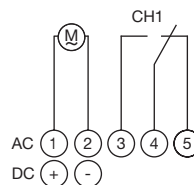
- ▶ Advertising lighting
- ▶ Show window lighting
- ▶ Water treatment
- ▶ Pump control



DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



PRODUCT VARIANTS

	talento 211	talento 271
Item no.	02.28.0001.1	02.28.0004.1
EAN Code	4010940020750	4010940020729

Operating data

Programs	Daily program (ON/OFF)	Weekly program (ON/OFF)
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Display and format

Shortest switching time	ON/OFF 30 minutes	ON/OFF 3 hours
-------------------------	-------------------	----------------

TECHNICAL DATA

Electrical specifications

Supply voltage	DC 130 V / AC 230 V \pm 10% 50-60 Hz
Current output	Changeover, potential free
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	4 A / 250 V AC
Load incandescent bulb	1,350 W
Power consumption	1 VA
Accuracy	\pm 2.5 seconds/day at 20° C
Power reserve	> 150 hours

Electrical connection

Device	Screw terminal with wire protection max. 4 mm ² Captive screw terminal
--------	--

Operating data

Hand switch	Automatic mode, Fix ON/OFF
Channels	1
Tamper protection	Sealable

Display and format

Clock	Analogue hands
-------	----------------

Environmental conditions

Temperature (operation)	-20° C ... +55° C
-------------------------	-------------------

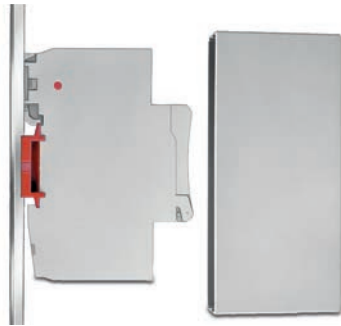
General data

Number of modules	3
Weight	170 g
Mounting	DIN rail

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE VDE

Accessories – DIN rail time-switches

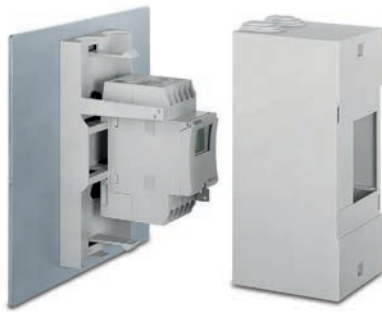


Wall installation kit 1 TE

ITEM NO. 18.01.0004.2
EAN CODE 4010940002657

for:

- ▶ talento 111 mini
- ▶ talento 211 mini
- ▶ talento 371 mini pro



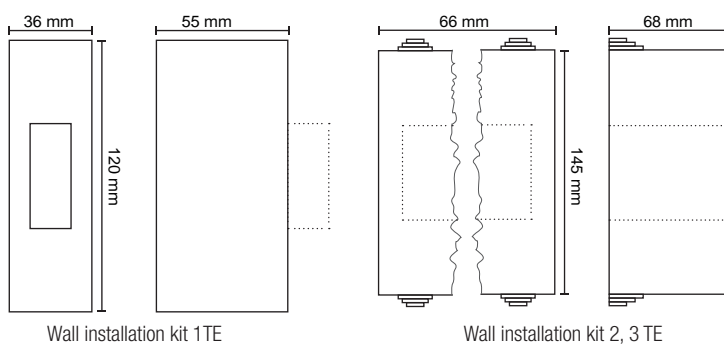
Wall installation kit 2-3 TE

ITEM NO. 03.53.0083.2
EAN CODE 4010940021719

for:

- ▶ talento pro
- ▶ talento 111, 121, 171, 211, 271

DIMENSIONAL DRAWINGS





Digital universal time switches – Selection guide

tactic 372.1 plus

tactic 571.1 plus



Channels	2	1
Memory spaces	20	50
Supply voltage	AC 230 V ± 10% 50-60 Hz	AC 230 V ± 10% 50-60 Hz
Switching capacity - resistive load	16 A / 250 V AC	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	2.5 A / 250 V AC	8 A / 250 V AC
Switching capacity - DC	1,3 A / 24 V DC	10 A / 24 V DC
	0,7 A / 60 V DC	3 A / 60 V DC
	0,3 A / 100 V DC	1 A / 100 V DC
Load incandescent bulb	500 W	1,000 W
Program (switching programs)	Daily program	Daily program
	Weekly program	Weekly program
		Free weekday block formation
Text programming	–	●
Summer/winter time change	Manual	Automatic
Accessories	Base	Base
	Terminal cover	Terminal cover
	Catch frame	Glass
	Glass	Sealing glass

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tactic 572.1 plus

2

50

AC 230 V \pm 10% 50-60 Hz

16 A / 250 V AC

2.5 A / 250 V AC

1,3 A / 24 V DC

0,7 A / 60 V DC

0,3 A / 100 V DC

500 W

Daily program

Weekly program

Free weekday block formation

•

Automatic

Base

Terminal cover

Catch frame

Glass

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Digital universal time switches – tactic 372.1 plus



Example representation

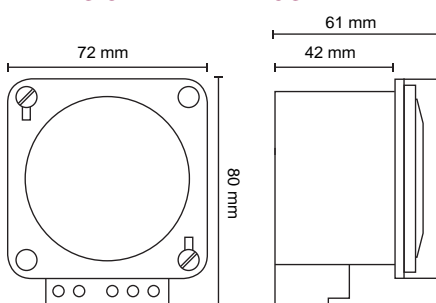
APPLICATION AREAS

- ▶ Machinery control
- ▶ Heating systems control
- ▶ Devices, motors and pumps control

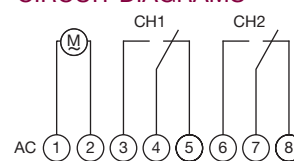


Item no.	03.62.0002.1
EAN Code	4010940038014

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA**Electrical specifications**

Supply voltage	AC 230 V ± 10% 50-60 Hz
Current output	Changeover, potential free
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	2.5 A / 250 V AC
Load incandescent bulb	500 W
Switching capacity - DC	1.3 A / 24 V DC 0.7 A / 60 V DC 0.3 A / 100 V DC
Power consumption	4.4 VA
Accuracy	± 1 second/day at 20° C
Power reserve	3 years

Operating data

Hand switch	Automatic mode Fix ON/OFF
Channels	2
Programs	Daily program (ON/OFF) Weekly program (ON/OFF) Set individual days or weekday block formation Menu programming with free and fixed programs
Memory spaces	20

Display and format

Format time display	12-hour format (AM/PM) 24-hour format
Shortest switching time	ON/OFF 1 minute
Summer/winter time changeover	Manual
Clock	Digital
Status display	Switching state display

Environmental conditions

Temperature (operation)	-10° C ... +55° C
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General data

Weight	190 g
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General data

Colour	Gray
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Standard compliance

Approvals	CE
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Scope of delivery

Housing	Terminal cover 2-channel Catch frame 2-channel Base 2-channel
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Digital universal time switches – tactic

tactic 571.1 plus
tactic 572.1 plus



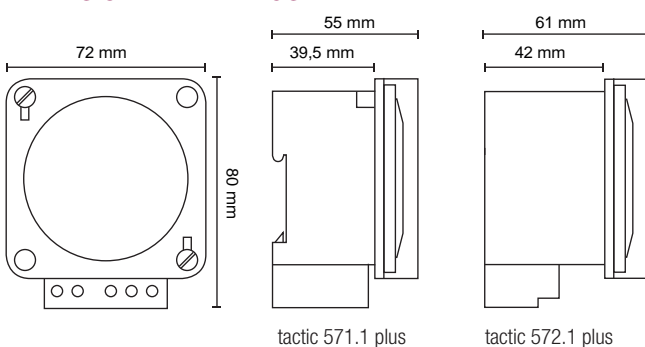
Example representation

APPLICATION AREAS

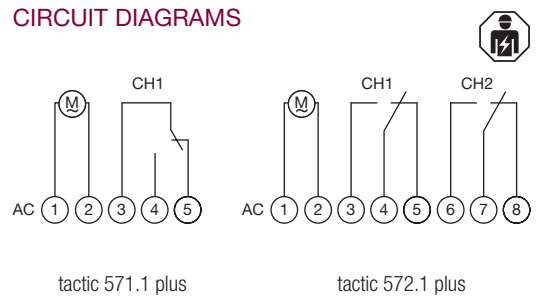
- ▶ Machinery control
- ▶ Heating systems control
- ▶ Devices, motors and pumps control



DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical specifications

Current output	Changeover, potential free
Switching capacity - resistive load	16 A / 250 V AC
Power consumption	4.4 VA
Accuracy	± 1 second/day at 20° C
Power reserve	3 years

Operating data

Hand switch	Automatic mode, Fix ON/OFF
Memory spaces	50
Programs	Daily program (ON/OFF), weekly program (ON/OFF) Free weekday block formation

Display and format

Format time display	12-hour format (AM/PM) and 24-hour format
Shortest switching time	ON/OFF 1 minute
Summer/winter time change	Automatic
Clock	Digital
Status display	Switching state display

Environmental conditions

Temperature (operation)	-10° C ... +55° C
-------------------------	-------------------

General data

Colour	Gray
Languages	CS, DE, EN, ES, FR, HU, IT, PT

Standard compliance

Approvals	CE, GOST
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Scope of delivery

Housing	Glass
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PRODUCT VARIANTS

	tactic 571.1 plus	tactic 572.1 plus
Item no.	03.87.0001.1	03.87.0003.1
EAN Code	4010940038021	4010940038045

Electrical specifications

Supply voltage	AC 230 V ± 10% 50-60 Hz	AC 230 V ± 10% 50-60 Hz
Switching capacity inductive load cos. phi 0.6	8 A / 250 V AC	2.5 A / 250 V AC
Load incandescent bulb	1,000 W	500 W
Switching capacity - DC	10 A / 24 V DC	1.3 A / 24 V DC
	3 A / 60 V DC	0.7 A / 60 V DC
	1 A / 100 V DC	0.3 A / 100 V DC

Operating data

Channels	1	2
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General data

Weight	170 g	190 g
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Scope of delivery

Terminal cover 1-channel	Terminal cover 2-channel
Base 1-channel	Base 2-channel

Analogue universal time switches – Selection guide

tactic 111.1

tactic 171.1



Supply voltage	AC 220-240 V ± 10% 50 Hz	AC 220-240 V ± 10% 50 Hz
Power consumption	1 VA	1 VA
Current output	Changeover, potential free	Changeover, potential free
Shortest switching time	15 minutes	2 Hours
Accuracy	Network synchronous	Network synchronous
Power reserve	–	–
Program (switching programs)	Daily program (ON/OFF)	Weekly program (ON/OFF)
Drive type	Synchronous	Synchronous
Electrical connection	Flat connection DIN 6.3	Flat connection DIN 6.3
Accessories	Sealing Installation base Glass Terminal cover Sealing glass Base	Sealing Installation base Glass Terminal cover Sealing glass Base

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tactic 211.1

tactic 271.1



DC 130 V	DC 130 V
AC 230 V ± 10% 50-60 Hz	AC 230 V ± 10% 50-60 Hz
2 VA	2 VA
Changeover, potential free	Changeover, potential free
15 minutes	2 Hours
± 1.5 seconds/day at 20° C	± 1.5 seconds/day at 20° C
> 150 hours	> 150 hours
Daily program (ON/OFF)	Weekly program (ON/OFF)
Quartz	Quartz
Flat connection DIN 6.3	Flat connection DIN 6.3
Sealing	Sealing
Installation base	Installation base
Glass	Glass
Terminal cover	Terminal cover
Sealing glass	Sealing glass
Base	Base

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Analogue universal time switches – tactic

tactic 111.1

tactic 171.1



Example representation

APPLICATION AREAS

- ▶ Machinery control
- ▶ Heating systems control
- ▶ Devices, motors and pumps control



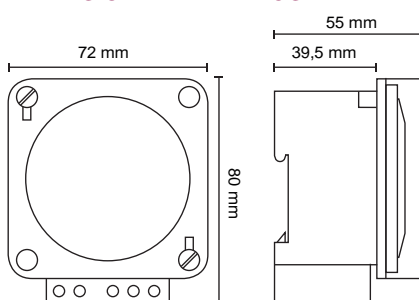
tactic 211.1

tactic 271.1

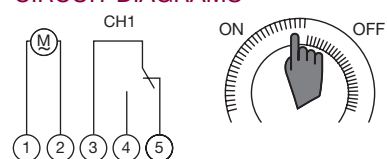


Example representation

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical specifications

Current output	Changeover, potential free
Switching capacity - resistive load	16 A / 250 V AC
	21 A / 250 V AC (UL)
Switching capacity - inductive load cos. phi 0.6	8 A / 250 V AC
Load incandescent bulb	1,300 W

Electrical connection

Device	Flat connection DIN 6.3
--------	-------------------------

Operating data

Hand switch	Automatic mode
	Fix ON/OFF
Channels	1
Tamper protection	Sealable

Environmental conditions

Temperature (operation)	-20° C ... +55° C
-------------------------	-------------------

General data

Colour	Gray
--------	------

Standard compliance

Protection class	II, after appropriate mounting
Approvals	CE, VDE

Scope of delivery

Housing	Glass
	Terminal cover
	Base

PRODUCT VARIANTS

	tactic 111.1	tactic 171.1	tactic 211.1	tactic 271.1
Item no.	01.80.0001.1	01.80.0002.1	02.80.0001.1	02.80.0002.1
EAN Code	4010940003975	4010940003982	4010940004019	4010940004026

Electrical specifications

Supply voltage	AC 220-240 V ± 10% 50 Hz	AC 220-240 V ± 10% 50 Hz	DC 130 V / AC 230 V ± 10% 50-60 Hz	DC 130 V / AC 230 V ± 10% 50-60 Hz
Power consumption	1 VA	1 VA	2 VA	2 VA
Accuracy	Network synchronous	Network synchronous	± 1.5 seconds/day at 20° C	± 1.5 seconds/day at 20° C
Power reserve	–	–	> 150 hours	> 150 hours

Operating data

Programs	Daily program (ON/OFF)	Weekly program (ON/OFF)	Daily program (ON/OFF)	Weekly program (ON/OFF)
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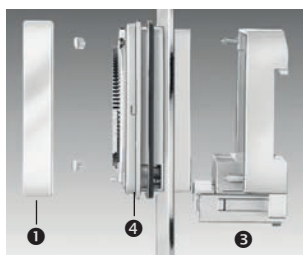
Display and format

Shortest switching time	ON/OFF 15 minutes	ON/OFF 2 hours	ON/OFF 15 minutes	ON/OFF 2 hours
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General data

Drive type	Synchronous	Synchronous	Quartz	Quartz
Weight	155 g	155 g	165 g	165 g

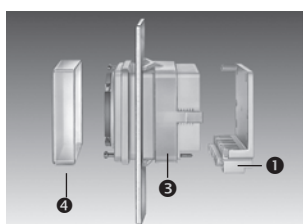
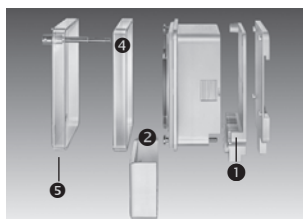
Universal time switches / time switch modules – Accessories



Accessories for:

- ▶ tactic 111.1
- ▶ tactic 171.1
- ▶ tactic 211.1
- ▶ tactic 271.1

	Scope of delivery	Replacement part /Item no. Accessories	EAN Code
1 Glass	●	● 01.46.0082.6	4010940037567
2 Terminal cover	●	● 01.78.0004.6	4010940002817
3 Base	●	● 01.78.0002.2	4010940003340
4 Sealing	–	● 01.45.0017.6	4010940002848
5 Installation base (For front panel mounting, when the sheet thickness is more than 1.5 mm)	–	● 01.79.0002.2	4010940002831



Accessories for:

- ▶ tactic 372.1 plus
- ▶ tactic 571.1 plus
- ▶ tactic 572.1 plus

	Scope of delivery	Replacement part /Item no. Accessories	EAN Code
1 Base (1-channel)	●	● 01.78.0002.2	4010940003340
Base (2-channel)	●	● 03.52.0003.2	4010940002718
2 Terminal cover (1-channel)	●	● 01.78.0004.6	4010940002817
Terminal cover (2-channel)	●	● 01.96.0043.6	4010940002749
3 Catch frame (2-channel)	●	● 03.52.0006.6	4010940002763
4 Glass	●	● 01.46.0082.6	4010940037567
5 Sealing glass (1-channel)	–	● 01.78.0021.6	4010940003210



Time switch modules – Selection guide

FMD 120



FM/1 STuZH



Supply voltage	AC 230 V \pm 10 % 50-60 Hz	AC 220-240 V \pm 10% 50 Hz
Switching capacity - resistive load	16 A / 250 V AC	16 A / 250 V AC 21 A / 250 V AC (UL)
Switching capacity - inductive load cos. phi 0.6	4 A / 250 V AC	8 A / 250 V AC
Load incandescent bulb	1.000 W	1.350 W
Switching capacity - DC	10 A / 24 V DC, 3 A / 60 V DC, 1 A / 100 V DC	–
Power consumption	4,4 VA	1 VA
Current consumption	0.015 mA (without load)	–
Accuracy	\pm 1 second/day at 20° C	Network synchronous
Power reserve	3 years	–
Hand switch	Automatic mode, override	Automatic mode; Fix ON/OFF
Programs (switching programs)	Daily program (ON/OFF), weekly program (ON/OFF) Set individual days or weekday block formation Menu programming with free and fixed programs	Daily program (ON/OFF)
Memory spaces	20	–
Format time display	12-hour format (AM/PM) and 24-hour format	–
Shortest switching time	ON/OFF 1 minute	15 minutes
Clock	Digital	–
Summer/winter time change	Manual	–
Status display	Switching state display	–
Drive type	–	Synchronous
Operating temperature	-10° C ... +55° C	-40° C ... +85° C
Accessories	–	Glass Installation base

FM/1 QRTuZH

FM/1 QRWuZH



AC 230 V ± 10% 50-60 Hz	AC 230 V ± 10% 50-60 Hz
DC 130 V	DC 130 V
16 A / 250 V AC	16 A / 250 V AC
21 A / 250 V AC (UL)	21 A / 250 V AC (UL)
8 A / 250 V AC	8 A / 250 V AC
1.350 W	1.350 W
–	–
2 VA	2 VA
–	–
± 1.5 seconds/day at 20° C	± 1.5 seconds/day at 20° C
> 150 hours	> 150 hours
Automatic mode; Fix ON/OFF	Automatic mode; Fix ON/OFF
Daily program (ON/OFF)	Weekly program (ON/OFF)
–	–
–	–
15 minutes	2 Hours
–	–
–	–
–	–
Quartz	Quartz
-20° C ... +55° C	-20° C ... +55° C
Glass	Glass
Installation base	Installation base

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Digital time switch module – FMD

(discontinued model)

FMD 120



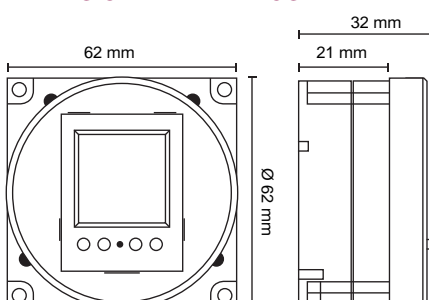
APPLICATION AREAS

- ▶ Household devices control
- ▶ Gas boilers control
- ▶ Devices, motors and pumps control

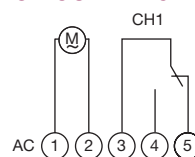


Item no.	03.58.0017.1
EAN Code	4010940037949

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical specifications

Supply voltage	AC 230 V ± 10% 50-60 Hz
Current output	Changeover, potential free
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	4 A / 250 V AC
Load incandescent bulb	1,000 W
Switching capacity - DC	10 A / 24 V DC, 3 A / 60 V DC, 1 A / 100 V DC
Power consumption	4.4 VA
Current consumption	0.015 mA (without load)
Accuracy	± 1 second/day at 20° C
Power reserve	3 years

Electrical connection

Device	Flat connection DIN 6.3
--------	-------------------------

Operating data

Hand switch	Automatic mode, override
Channels	1
Programs	Daily program (ON/OFF), weekly program (ON/OFF) Set individual days or weekday block formation Menu programming with free and fixed programs
Memory spaces	20

Display and format

Format time display	12-hour format (AM/PM) and 24-hour format
Shortest switching time	ON/OFF 1 minute
Clock	Digital
Summer/winter time change	Manual
Status display	Switching state display

Environmental conditions

Temperature (operation)	-10° C ... +55° C
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General data

Colour	Gray
Weight	90 g

Standard compliance

Approvals	CE
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Analogue time switch modules – FM

FM/1 STuZH



APPLICATION AREAS

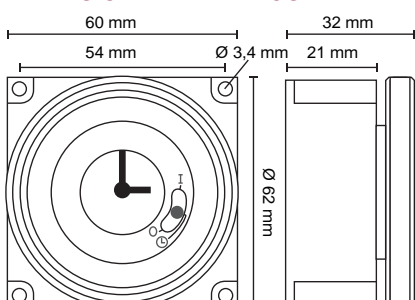
- ▶ Household devices control
- ▶ Gas boilers control
- ▶ Devices, motors or pumps control



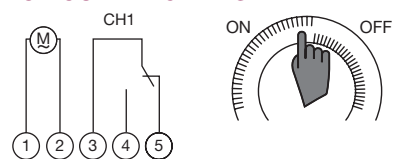
FM/1 QRTuZH FM/1 QRWuZH



DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical specifications

Current output	Changeover, potential free
Switching capacity - resistive load	16 A / 250 V AC
	21 A / 250 V AC (UL)
Switching capacity - inductive load cos. phi 0.6	8 A / 250 V AC
Load incandescent bulb	1,350 W

Electrical connection

Device	Flat connection DIN 6.3
--------	-------------------------

Operating data

Hand switch	Automatic mode Fix ON/OFF
Channels	1

General data

Colour	Gray
Weight	75 g

Standard compliance

Protection class	II, after appropriate mounting
Approvals	CE, VDE, UL

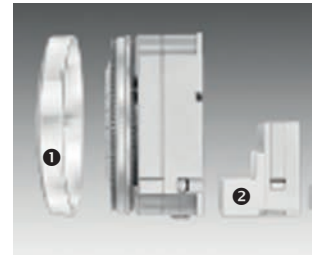
REPLACEMENT PARTS / ACCESSORIES

► Glass ❶

Item no. 01.76.0054.6
EAN Code 4010940011215

► Installation base ❷

Item no. 01.79.0002.2
EAN Code 4010940002831



PRODUCT VARIANTS

	FM/1 STuZH	FM/1 QRTuZH	FM/1 QRWuZH
Item no.	01.76.0088.1	02.76.0075.1	02.76.0076.1
EAN Code	4010940000264	4010940000592	4010940000608
Electrical specifications			
Supply voltage	AC 220-240 V ± 10% 50 Hz	DC 130 V / AC 230 V ± 10% 50-60 Hz	DC 130 V / AC 230 V ± 10% 50-60 Hz
Power consumption	1 VA	2 VA	2 VA
Accuracy	Network synchronous	± 1.5 seconds/day at 20° C	± 1.5 seconds/day at 20° C
Power reserve	–	> 150 hours	> 150 hours
Operating data			
Programs	Daily program (ON/OFF)	Daily program (ON/OFF)	Weekly program (ON/OFF)
Environmental conditions			
Temperature (operation)	-40° C ... +85° C	-20° C ... +55° C	-20° C ... +55° C
Display and format			
Shortest switching time	ON/OFF 15 minutes	ON/OFF 15 minutes	ON/OFF 2 hours
General data			
Drive type	Synchronous	Quartz	Quartz

Plug-in time switches – Selection guide

topica 200 S

topica 400 S






Type	Analogue	Analogue
Clock	without hands	Analogue hands
Shortest switching time	15 minutes	15 minutes
Power reserve	–	–
Program (switching programs)	Daily program (ON/OFF)	Daily program (ON/OFF)
Memory spaces	–	–
Status display	–	–
Protection type	–	–

Page

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52

topica 450 S	topica 410 S	topica 600
		
Analogue	Analogue	Digital
Analogue hands	Analogue hands	Digital
2 Hours	15 minutes	1 minute
–	–	3 years
Weekly program (ON/OFF)	Daily program (ON/OFF)	Daily program (ON/OFF) Weekly program (ON/OFF) Random program
–	–	20
–	–	●
–	IP54	–
52	52	52

Plug-in time switches – topica

topica 200 S



Example representation

topica 400 S topica 450 S



Example representation

topica 410 S



Example representation

topica 600



Example representation

APPLICATION AREAS

- ▶ Household devices control
- ▶ Direct heating systems control
- ▶ Light control
- ▶ Presence simulation



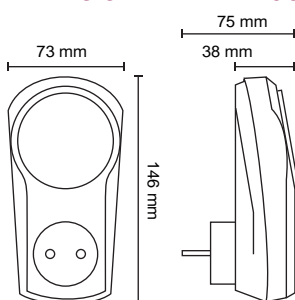
Available with the following plug variants:

	Type	Item no.	EAN Code
topica 200 S	A	16.25.0008.1	4010940002428
	F	16.25.0014.1	4010940003531
	G	16.25.0034.1	4010940045579
	L	16.25.0005.1	4010940004309
topica 400 S	A	16.26.0008.1	4010940002435
topica 450 S	A	16.40.0001.1	4010940003906
topica 410 S	A	16.27.0001.1	4010940016241
	F	16.27.0004.1	4010940017453
topica 600	A	16.15.0001.1	4010940039387
	L	16.15.0002.1	4010940039394

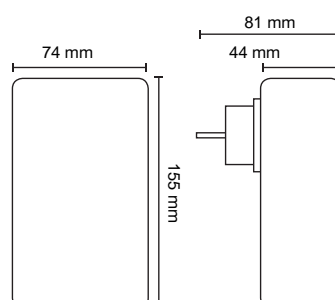
Type	Socket	Plug
A		
F		
G		
L		

Technical data for the various plug variants is available on request.

DIMENSIONAL DRAWINGS



topica 200 S
topica 400 S
topica 450 S
topica 600



topica 410 S

TECHNICAL DATA

Electrical specifications

Switching capacity - resistive load	16 A / 250 V AC
Power consumption	5 VA

Operating data

Hand switch	Automatic mode Fix ON/OFF
-------------	------------------------------

Environmental conditions

Temperature (operation)	-10° C ... +55° C
-------------------------	-------------------

General data

Drive type	Synchronous (topica 200 S, 400 S, 450 S, 410 S)
------------	---

Standard compliance

Approvals	CE VDE (topica 200 S, topica 400 S, topica 450 S)
-----------	--

PRODUCT VARIANTS

	topica 200 S*	topica 400 S*	topica 450 S*	topica 410 S*	topica 600*
Item no.	16.25.0008.1	16.26.0008.1	16.40.0001.1	16.27.0001.1	16.15.0001.1
EAN Code	4010940002428	4010940002435	4010940003906	4010940016241	4010940039387

Electrical specifications

Supply voltage	AC 220-240 V ± 10% 50 Hz	AC 220-240 V ± 10% 50 Hz	AC 220-240 V ± 10% 50 Hz	AC 220-240 V ± 10% 50 Hz	AC 230 V ± 10% 50-60 Hz
Switching capacity - inductive load cos. phi 0.6	8 A / 250 V AC	8 A / 250 V AC	8 A / 250 V AC	8 A / 250 V AC	4 A / 250 V AC
Power reserve	no	no	no	no	3 years

Operating data

Programs	Daily program (ON/OFF)	Daily program (ON/OFF)	Weekly program (ON/OFF)	Daily program (ON/OFF)	Daily program (ON/OFF) Weekly program (ON/OFF) Set individual days or week-day block formation Menu programming with free and fixed programs Random program (1 ... 45 min)
	–	–	–	–	
	–	–	–	–	
	–	–	–	–	
	–	–	–	–	
Memory spaces	–	–	–	–	20

Display and format

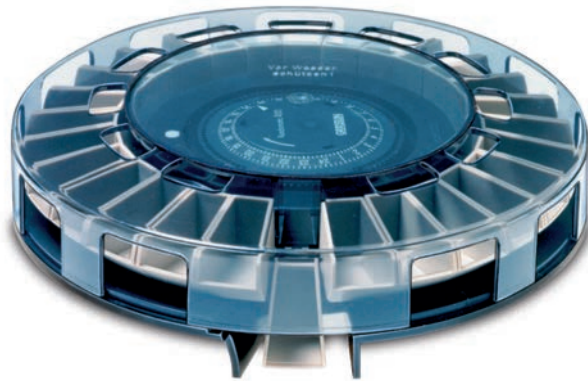
Shortest switching time	ON/OFF 15 minutes	ON/OFF 15 minutes	ON/OFF 2 hours	ON/OFF 15 minutes	ON/OFF 1 minute
Clock	Without hands	Analogue hands	Analogue hands	Analogue hands	Digital
Status display	–	–	–	–	Switching state display

Standard compliance

Protection type	–	–	–	IP54	–
-----------------	---	---	---	------	---

Technical data for the various plug variants is available on request.

Automatic fish feeder – rondomatic 400 (automatic fish feeder)



PRODUCT DESCRIPTION

The rondomatic 400 automatic fish feeder takes care of ornamental fish even during your absence. Additionally, it offers aquarium owners the option of precisely matching the feeding times to the biorhythm of the fish. Thus, the automatic feeder enables a relaxed holiday with the good feeling that the fish remaining at home are well cared for.

Depending on requirements, a one-time filling can supply up to 27 days, so that even extended trips are possible. It does not matter what type of feed is used, the automatic feeder can handle anything: Whether flake food or larvae, tablets or drugs - anything can be fed exactly to schedule with the rondomatic 400. Multiple feedings per day are therefore possible. After returning, cleaning the feeders is not a problem because the feeding bowls are individually removable and dishwasher safe. There are several attachment options.

The additional use of a Grässlin timer is recommended for equally precise control of lighting.

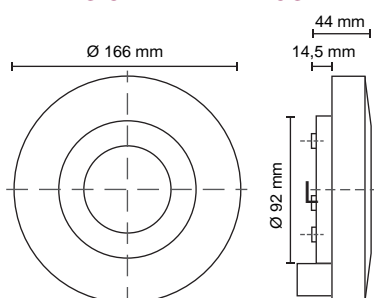


APPLICATION AREAS

- Aquarium

Item no.	16.58.0001.1
EAN Code	4010940003364

DIMENSIONAL DRAWINGS



TECHNICAL DATA

Electrical specifications

Supply voltage	AC 230 V ± 10% 50-60 Hz
Equipment operating voltage	AC/DC 24 V 50 Hz
Power consumption	5 VA

Operating data

Minimum feeding interval	2 Hours
Longest possible feeding period	28 days (for daily feeding)
Feeding bowls	28
Feed volume	3.5 cc (per feeding bowl) about 100 cc (total)
Feeder program repetition	every 24 hours

Standard compliance

Approvals	CE
-----------	----

Scope of delivery

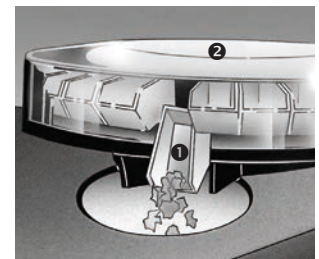
Housing	Mounting bracket Feeding bowl Glass Tappets
---------	--

SCOPE OF DELIVERY

- ▶ **Feeding bowl ①**
Item no. 85.21.0002.4
EAN Code 4010940017316
- ▶ **Glass ②**
Item no. 85.13.0001.3
EAN Code 4010940017323
- ▶ **Tappet**
Item no. 85.15.0006.4
EAN Code 4010940024079
- ▶ **Mounting bracket**
Item no. 16.58.0016.6
EAN Code 4010940024086

ACCESSORIES

- ▶ **Feeding bowl ①**
Item no. 85.21.0002.4
EAN Code 4010940017316
- ▶ **Glass ②**
Item no. 85.13.0001.3
EAN Code 4010940017323
- ▶ **Tappet**
Item number: 85.15.0006.4
EAN Code 4010940024079
- ▶ **Mounting bracket**
Item no. 16.58.0016.6
EAN Code 4010940024086
- ▶ **Assembly kit**
Item no. 16.58.0004.2
EAN Code 4010940024093



Light control: Selective use of lighting thanks to intelligent light control

Motion and presence detectors: The reliable solution to detect motion 58

Motion detectors – talis 58
Presence detectors – talis 66

Twilight switches: The right solution to switch light on according to intensity and time 74

Twilight switches – turnus 74
Accessories twilight and staircase lighting time switches 81

Staircase lighting time switches: The optimal solution for selective light control in the staircase 82

Staircase lighting time switches – trealux 82



Motion detector – Selection guide

talis MW 180-12-1

talis MW 240-16-1



Scope of application	Inside and outside	Inside and outside
Communication type	2-wire	2-wire
Angle of detection	180°	240°
Photosensitivity	5 lux - infinity	5 lux - infinity
Range	12 m (At an installation height of 2 m, at 20 - 25° C)	16 m (At an installation height of 2.5 m, at 20 - 25° C)
Time setting	about 5 seconds - 12 minutes	about 5 seconds - 30 minutes
Learning function	–	●
Test mode	–	●
Protection type	IP54	IP55
Mounting	Construction	Construction

Page

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talis MFM 360-6-1

talis MWF2 200-9-1

talis MWF3 200-9-1



Inside	Inside	Inside
2-wire	2-wire	3-wire
360°	200°	200°
10 lux - infinity	5 lux - infinity	5 lux - infinity
6 m (At an installation height of 2.5 m, at 20 - 25° C) about 1 minute - 15 minutes	9 m (At an installation height of 1.5 m, at 20 - 25° C) about 5 seconds - 30 minutes	9 m (At an installation height of 1.5 m, at 20 - 25° C) about 5 seconds - 30 minutes
–	●	●
●	●	●
IP44	IP40	IP40
Installation	Flush mounting	Flush mounting
62	64	64

Motion detector – talis MW

talis MW 180-12-1



talis MW 240-16-1



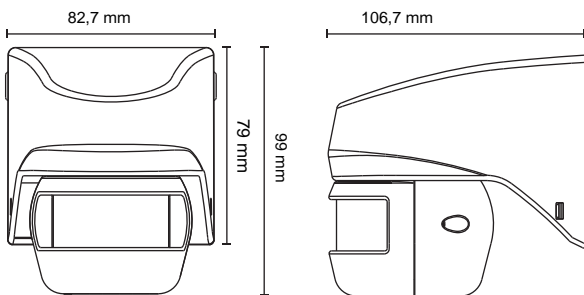
PRODUCT DESCRIPTION

The talis MW 180-12-1 and talis MW 240-16-1 outdoor motion detectors function according to the principle of passive infra-red sensors (PIR sensor) like all motion detectors from Grässlin. They react to temperature changes within their detection range, for example, people passing by, and turn on the connected load for a set period of time, depending on the set light value. Three knobs at the bottom allow for easy setting of the parameters detection area, switching time and light value. The talis MW 240-16-1 also has a pivoting and rotating head and provides a standard corner adapter. Other useful functions are an alternating holiday program and a visual LED display of detections in monitor mode.

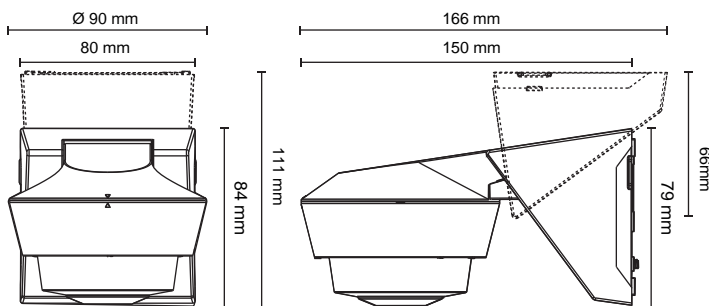
- ▶ Surface mounting for easy and quick installation
- ▶ Increased weathering resistance for outdoor applications
- ▶ Simple and modern design
- ▶ Ensuring the defined power-on time by one-time light balancing with detection



DIMENSIONAL DRAWINGS



talis MW 180-12-1

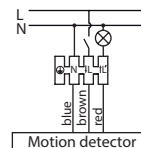


talis MW 240-16-1 and corner adapter

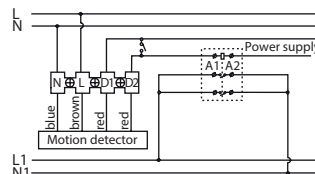
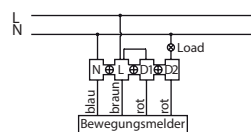
APPLICATION AREAS

- ▶ Staircases
- ▶ Building entrances and corridors
- ▶ Reception areas and cellar rooms

CIRCUIT DIAGRAM



talis MW 180-12-1



talis MW 240-16-1

Electrical specifications

Supply voltage	AC 230 V ± 10 % 50-60 Hz
Power consumption	1 VA (in standby mode)
Parallel switching	Max. 6 sensors

Communication type

Wired	2-wire
-------	--------

Display and format

Photosensitivity	5 lux - infinity
------------------	------------------

Operating conditions

Temperature (operation)	-20° C ... +45° C
-------------------------	-------------------

General data

Scope of application	Inside/outside
Colour	White
Mounting	Construction
Sensor	Passive infra-red (PIR)

Standard compliance

Protection class	II, after appropriate mounting
Approvals	CE

REPLACEMENT PART / ACCESSORY

- Scope of delivery
- Corner adapter
- talis MW 240-16-1

PRODUCT VARIANTS

	talis MW 180-12-1	talis MW 240-16-1
Item no.	18.06.0002.1	18.06.0003.1
EAN Code	4010940043957	4010940043964

Electrical specifications

	talis MW 180-12-1	talis MW 240-16-1
Load incandescent bulb	1,000 W	2,300 W
Load halogen lamp	500 W (AC)	1,000 W (AC)
	–	1,000 VA / 600 W (conventional)
	–	1,000 VA / 900 W (electronic)
Load fluorescent lamps	200 W (not compensated)	900 VA (compensated); 1,000 VA (not compensated)
	–	600 W (not compensated)
Load LED lamp	150 W	400 W
Load energy-saving bulbs	max. 180 W	600 VA / 400 W (incl. CFL and PL lamp)

Display and format

	talis MW 180-12-1	talis MW 240-16-1
Angle of detection	180°	240°
Range	12 m (At an installation height of 2 m, at 20 - 25° C)	16 m (At an installation height of 2.5 m, at 20 - 25° C)
Time setting	5 seconds - 12 minutes	about 5 seconds - 30 minutes

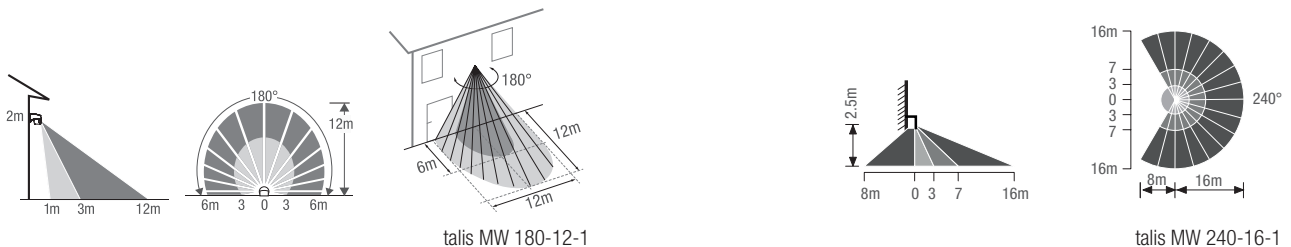
Standard compliance

	talis MW 180-12-1	talis MW 240-16-1
Protection type	IP54	IP55

Operating data

	talis MW 180-12-1	talis MW 240-16-1
Operating mode	–	Learning function; test mode

DETECTION / RANGE



Motion detector – talis MFM 360-6-1



PRODUCT DESCRIPTION

The talis MFM 360-6-1 motion detector with a detection range of 360° functions according to the principle of passive infra-red sensors (PIR sensor).

It reliably detects even the smallest movements and switches on the connected load for a set period of time, depending on the set light value. This extremely compact motion detector is the ideal solution for small and narrow spaces and can be built into the ceiling to save space.

The parameters are set via the large, visible rotary knobs. The sensor adapts to the conditions and increases its detection field as needed up to 11 m.

- ▶ Moisture proof, therefore appropriate for use in sanitary rooms or public toilets
- ▶ Two mounting springs for quick and easy flush or cavity mounting
- ▶ Ensuring the defined power-on time by one-time light balancing with detection

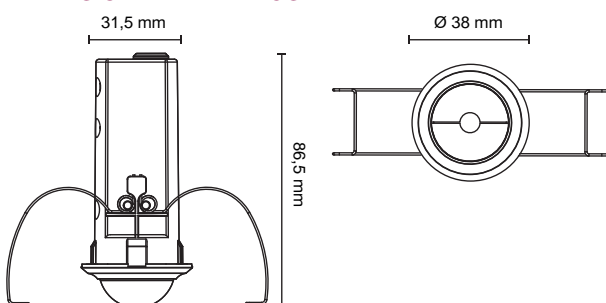


AREAS OF USE

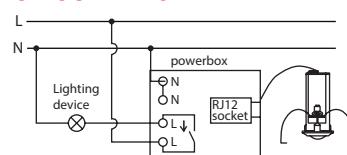
- ▶ Small and confined spaces such as toilets or storerooms

Item no.	18.06.0009.1
EAN Code	4010940044022

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Supply voltage	AC 230 V ± 10 % 50-60 Hz
Load incandescent bulb	2,000 W
Load halogen lamp	1,000 W (AC) 1,000 VA / 600 W (conventional) 1,000 VA / 900 W (electronic)
Load fluorescent lamps	900 VA (compensated)
max. numbers of electronic ballasts	5 x (2 x 58 W) 7 x (2 x 36 W) 10 x (1 x 58 W) 12 x (2 x 18 W) 15 x (1 x 36 W) 25 x (1 x 18 W)
Load energy-saving bulbs	600 VA / 400 W (incl. CFL and PL lamp)
Load LED lamp	400 W
Power consumption	1 VA (in standby mode)
Parallel switching	Max. 6 sensors

Communication type

Wired	2-wire
-------	--------

Operating data

Operating mode	Test mode
----------------	-----------

Display and format

Angle of detection	360°
Photosensitivity	10 lux - infinity
Range	6 m (At an installation height of 2.5 m, at 20 - 25° C)
Time setting	about 1 minute - 15 minutes

Environmental conditions

Temperature (operation)	0° C ... +45° C
-------------------------	-----------------

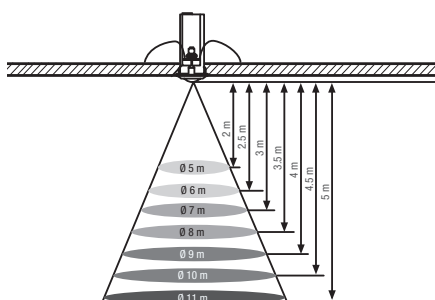
General data

Scope of application	Inside
Colour	White
Mounting	Installation
Sensor	Passive infra-red (PIR)

Standard compliance

Protection type	IP44, power supply IP20
Protection class	II, after appropriate mounting
Approvals	CE

DETECTION / RANGE



Motion detector – talis MWF

talis MWF2 200-9-1



PRODUCT DESCRIPTION

The talis MWF2 200-9-1 and talis MWF3 200-9-1 interior motion detectors have a switch for manual adjustment of the operating mode (ON, AUTO and OFF) and have a range of up to 9 m. The talis MWF3 200-9-1 model can be connected in parallel and is ideally suited to reliably detect even over large distances.

- ▶ Mounting in standard flush-mounted boxes with a diameter of 68 mm, as well as cavity boxes
- ▶ Available as 2-wire and 3-wire variants
- ▶ Universal housing design, compatible with standard switching programs
- ▶ Ensuring the defined power-on time by one-time light balancing with detection



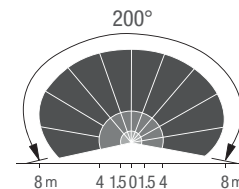
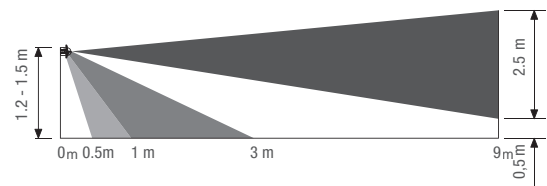
talis MWF3 200-9-1



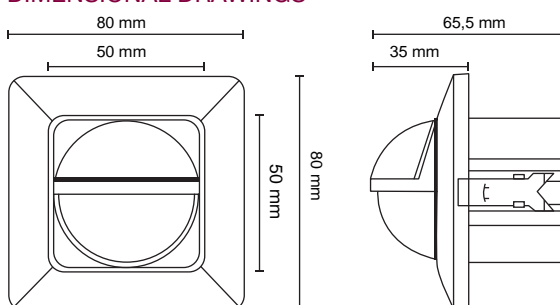
APPLICATION AREAS

- ▶ Corridors
- ▶ Hotel rooms
- ▶ Classrooms
- ▶ Work and meeting spaces

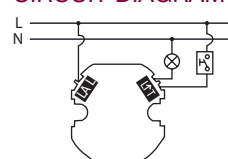
DETECTION / RANGE



DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Supply voltage	AC 230 V ± 10 % 50-60 Hz
Power consumption	1 VA (in standby mode)
Parallel switching	Max. 6 sensors

Operating data

Operating mode	Learning function Test mode
----------------	--------------------------------

Display and format

Angle of detection	200°
Photosensitivity	5 lux - infinity
Range	9 m (At an installation height of 1.5 m, at 20 - 25° C)
Time setting	about 5 seconds - 30 minutes

Operating conditions

Temperature (operation)	0° C ... +45° C
-------------------------	-----------------

General data

Scope of application	Inside
Mounting	Flush mounting
Sensor	Passive infra-red (PIR)

Standard compliance

Protection type	IP40
Protection class	II, after appropriate mounting
Approvals	CE

PRODUCT VARIANTS

	talis MWF2 200-9-1	talis MWF3 200-9-1
Item no.	18.06.0011.1	18.06.0012.1
EAN Code	4010940044046	4010940044053

Electrical specifications

Load incandescent bulb	5 - 300 W	2,000 W
Load halogen lamp	5 - 300 W (AC)	1,000 W (AC)
	5 - 150 W (conventional)	1,000 VA / 600 W (conventional)
	5 - 150 W (electronic)	1,000 VA / 900 W (electronic)
Load fluorescent lamps max. numbers of electronic ballasts	5 - 150 VA	900 VA (compensated)
	8 x 18 W	5 x (2 x 58 W)
	4 x 36 W	7 x (2 x 36 W)
	2 x 58 W	10 x (1 x 58 W)
		12 x (2 x 18 W)
	15 x (1 x 36 W)	
	25 x (1 x 18 W)	
Load energy-saving bulbs	5 - 150 VA (incl. CFL and PL lamp)	600 VA / 400 W (incl. CFL and PL lamp)
Load LED lamp	5 - 100 W	400 W

Communication type

Wired	2-wire	3-wire
-------	--------	--------

Presence detectors – Selection guide

talis PS 360-7-1

talis PF 360-8-1

talis PF 360-8-2



Channels	1	1	2
Photosensitivity	10 lux - infinity	10 lux - infinity	10 lux - infinity
Range	7 m (At an installation height of 2.5 m, at 20 - 25° C)	8 m (At an installation height of 2.5 m, at 20 - 25° C)	8 m (At an installation height of 2.5 m, at 20 - 25° C)
Time setting	about 5 seconds - 30 minutes	about 5 seconds - 30 minutes	Channel 1: about 5 seconds - 30 minutes Channel 2: about 10 seconds - 60 minutes
Learning function	●	●	●
Test mode	●	●	●
Remote operation	–	–	–
Function	–	–	–
Protection type	IP40	IP44	IP44
Mounting	Surface mounting ceiling	Recessed ceiling	Recessed ceiling
Page	68	70	70

talis PFDR 360-8-1	talis PFMR 360-8-1	talis PFSL 360-8-1
--------------------	--------------------	--------------------



1	1	–
10 lux - 2,000 lux	10 lux - infinity	–
8 m (At an installation height of 2.5 m, at 20 - 25° C) about 5 seconds - 30 minutes	8 m (At an installation height of 2.5 m, at 20 - 25° C) about 5 seconds - 30 minutes	8 m (At an installation height of 2.5 m, at 20 - 25° C) –
•	•	–
•	•	–
•	•	–
Dimmable	Master	Slave
IP44	IP44	IP44
Recessed ceiling	Recessed ceiling	Recessed ceiling

72

72

72

Presence detector – talis PS 360-7-1



PRODUCT DESCRIPTION

The talis PS 360-7-1 surface-mounted presence detector works on the principle of passive infra-red sensors (PIR sensor) like all presence detectors from Grässlin. It reacts to temperature changes within its detection range, for example, people passing by, and turns on the connected load for a set period of time, depending on the set light value. The talis PS 360-7-1 is the ideal solution when a presence detector must be visibly attached, but should not be visually disruptive on the ceiling. Captive mounting screws allow easy installation of the housing body on the ceiling.

- ▶ Simple and modern design
- ▶ High energy efficiency through regular light balancing and offline function when there is sufficient daylight

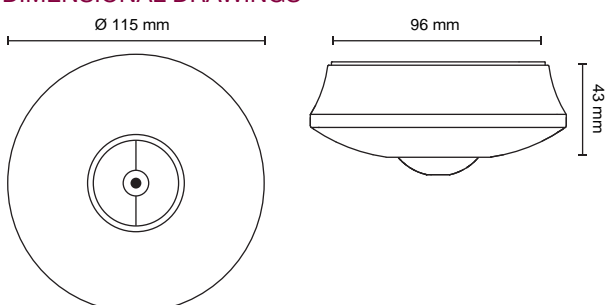


AREAS OF USE

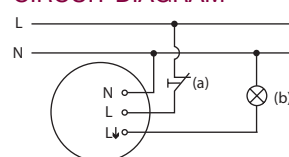
- ▶ Offices
- ▶ Staircases
- ▶ Building entrances
- ▶ Halls
- ▶ Corridors
- ▶ Passages
- ▶ Basement

Item no.	18.06.0004.1
EAN Code	4010940043971

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical specifications

Supply voltage	AC 230 V ± 10 % 50-60 Hz
Load incandescent bulb	2,000 W
Load halogen lamp	1,000 W (AC) 1,000 VA / 600 W (conventional) 1,000 VA / 900 W (electronic)
Load fluorescent lamps	900 VA (compensated)
max. numbers of electronic ballasts	5 x (2 x 58 W) 7 x (2 x 36 W) 10 x (1 x 58 W) 12 x (2 x 18 W) 15 x (1 x 36 W) 25 x (1 x 18 W)
Load energy-saving bulbs	600 VA / 400 W (incl. CFL and PL lamp)
Load LED lamp	400 W
Power consumption	1 VA (in standby mode)
Parallel switching	Max. 6 sensors

Communication type

Wired	2-wire
-------	--------

Operating data

Operating mode	Learning function Test mode
Channels	1

Display and format

Angle of detection	360°
Photosensitivity	10 lux - infinity
Range	7 m (At an installation height of 2.5 m, at 20 - 25° C)
Time setting	about 5 seconds - 30 minutes

Operating conditions

Temperature (operation)	0° C ... +45° C
-------------------------	-----------------

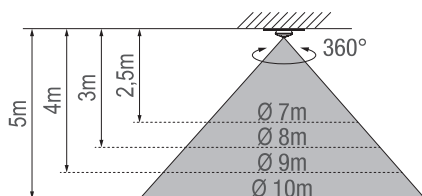
General data

Scope of application	Inside
Colour	White
Mounting	Surface mounting ceiling
Sensor	Passive infra-red (PIR)

Standard compliance

Protection type	IP40
Protection class	II, after appropriate mounting
Approvals	CE

DETECTION / RANGE



Presence detector – talis PF 360-8-1, talis PF 360-8-2



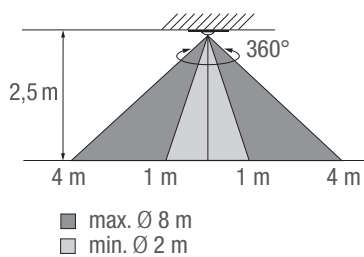
PRODUCT DESCRIPTION

The PF 360-8-1 and talis PF 360-8-2 flush-mounted presence detector function according to the principle of passive infra-red sensors (PIR sensor) like all Grässlin presence detectors. They react to temperature changes within their detection range, for example, people passing by, and turn on the connected load for a set period of time, depending on the set light value. The talis PF 360-8-1 is particularly suitable for areas where people are present for a long time such as offices or gyms. Thanks to its two channels, the talis PF 360-8-2 not only activates light, but simultaneously controls additional loads such as the heating or air conditioning. It is primarily used in areas in which these applications are used in parallel, such as offices or conference rooms.

- ▶ Simple and modern design
- ▶ Two mounting springs for quick and easy flush or cavity mounting
- ▶ High energy efficiency through regular light balancing and offline function when there is sufficient daylight



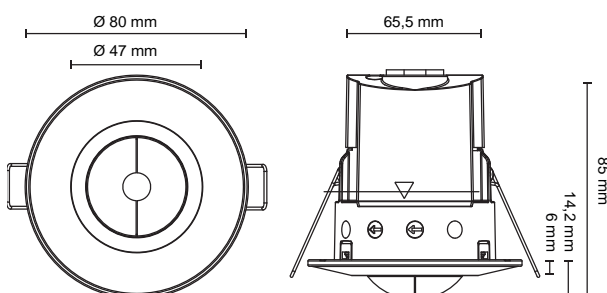
DETECTION / RANGE



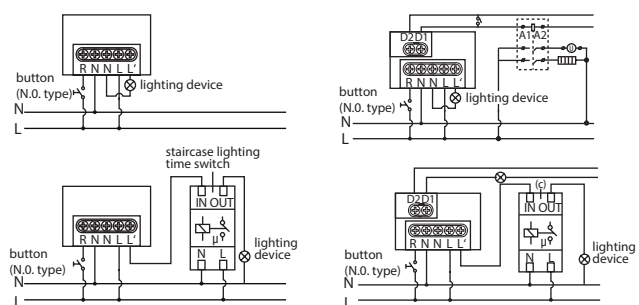
AREAS OF USE

- ▶ Offices
- ▶ Conference rooms

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical Data

Supply voltage	AC 230 V ± 10 % 50-60 Hz
Load incandescent bulb	2,000 W
Load halogen lamp	1,000 W (AC) 1,000 VA / 600 W (conventional) 1,000 VA / 900 W (electronic)
Load fluorescent lamps	900 VA (compensated)
max. numbers of electronic ballasts	5 x (2 x 58 W); 7 x (2 x 36 W); 10 x (1 x 58 W); 12 x (2 x 18 W) 15 x (1 x 36 W); 25 x (1 x 18 W)
Load energy-saving bulbs	600 VA / 400 W (incl. CFL and PL lamp)
Load LED lamp	400 W
Power consumption	1 VA (in standby mode)

Communication type

Wired	2-wire
-------	--------

Display and format

Angle of detection	360°
Range	8 m (At an installation height of 2.5 m, at 20 - 25° C)

Operating conditions

Temperature (operation)	0° C ... +45° C
-------------------------	-----------------

General data

Scope of application	Inside
Colour	White
Mounting	Recessed ceiling
Sensor	Passive infra-red (PIR)

Standard compliance

Protection type	IP44
Protection class	II, after appropriate mounting
Approvals	CE

PRODUCT VARIANTS

	talis PF 360-8-1	talis PF 360-8-2
Item no.	18.06.0005.1	18.06.0006.1
EAN Code	4010940043988	4010940043995

Electrical specifications

Parallel switching	Max. 6 sensors	Max. 6 sensors
--------------------	----------------	----------------

Operating data

Operating mode	Learning function Test mode	Learning function Test mode
Channels	1	2

Display and format

Photosensitivity	10 lux - infinity	10 lux - infinity (channel 1)
Time setting	about 5 seconds - 30 minutes	about 5 seconds - 30 minutes (channel 1) about 10 seconds - 60 minutes (channel 2)

Presence detector – talis PFDR 360-8-1, talis PFMR 360-8-1, talis PFSL 360-8-1



PRODUCT DESCRIPTION

The talis flush-mounted presence detectors of the talis PF family function according to the principle of passive infra-red sensors (PIR sensor). In addition to the base model talis PF 360-8-1, Grässlin also offers the PFDR 360-8-1, which provides reduced backlight. With the master-slave variant (talis PFMR 360-8-1 and talis PFSL 360-8-1), motion can be efficiently detected even in large rooms.

There is a remote control switch for the talis PFDR 360-8-1 and talis PFMR 360-8-1 models, which is available in two versions: Variant talis RP with extensive functions or variant talis REU with reduced functionality.

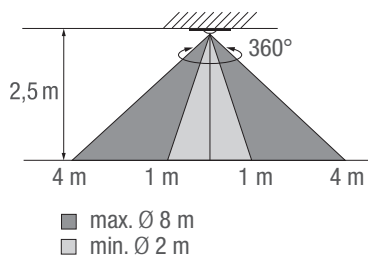
- ▶ Simple and modern design
- ▶ Two mounting springs for quick and easy flush or cavity mounting
- ▶ Easy operation and adjustment by remote control
- ▶ High energy efficiency through regular light balancing and offline function when there is sufficient daylight



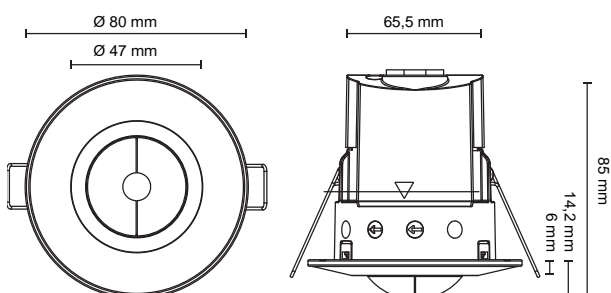
AREAS OF USE

- ▶ Offices
- ▶ Classrooms
- ▶ Work and meeting spaces
- ▶ Hotel rooms
- ▶ Sport halls

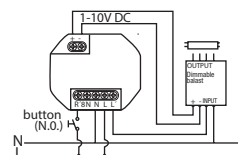
DETECTION / RANGE



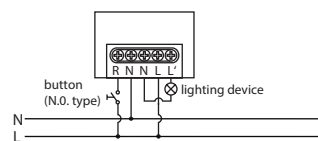
DIMENSIONAL DRAWINGS



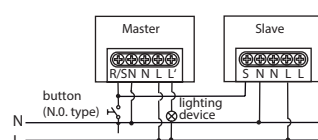
CIRCUIT DIAGRAMS



talis PFDR 360-8-1



talis PFMR 360-8-1



talis PFSL 360-8-1

TECHNICAL DATA

Electrical specifications

Supply voltage	AC 230 V ± 10 % 50-60 Hz
Load incandescent bulb	2,000 W
Load halogen lamp	1,000 W (AC) 1,000 VA / 600 W (conventional) 1,000 VA / 900 W (electronic)
Load fluorescent lamps	900 VA (compensated)
max. numbers of electronic ballasts	5 x (2 x 58 W); 7 x (2 x 36 W); 10 x (1 x 58 W); 12 x (2 x 18 W) 15 x (1 x 36 W); 25 x (1 x 18 W)
Load energy-saving bulbs	600 VA / 400 W (incl. CFL and PL lamp)
Load LED lamp	400 W
Power consumption	1 VA (in standby mode)

Communication type

Wired	2-wire
-------	--------

Display and format

Angle of detection	360°
Range	8 m (At an installation height of 2.5 m, at 20 - 25° C)

Operating conditions

Temperature (operation)	0° C ... +45° C
-------------------------	-----------------

General data

Scope of application	Inside
Colour	White
Mounting	Recessed ceiling
Sensor	Passive infra-red (PIR)

Standard compliance

Protection type	IP44
Protection class	II, after appropriate mounting
Approvals	CE

REPLACEMENT PART / ACCESSORY

► **talis RP**

Item no. 07.10.0002.1
EAN Code 4010940035358



► **talis REU**

Item no. 07.10.0001.1
EAN Code 4010940035341



PRODUCT VARIANTS

	talis PFDR 360-8-1	talis PFMR 360-8-1	talis PFSL 360-8-1*
Item no.	18.06.0010.1	18.06.0007.1	18.06.0008.1
EAN Code	4010940044039	4010940044008	4010940044015

Electrical specifications

Parallel switching	–	Max. 6 sensors	Max. 10 slaves per master
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Communication type

IR interface	Remote operation talis RP, talis REU	Remote operation talis RP, talis REU	–
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Operating data

Operating mode	Learning function	Learning function	–
	Test mode	Test mode	–
Channels	1	1	–

Display and format

Photosensitivity	10 - 2,000 lux	10 lux - infinity	–
Time setting	about 5 seconds - 30 minutes	about 5 seconds - 30 minutes	–

General data

Function type	Dimming function Remote controllable	Master function Remote controllable	Slave function –
---------------	---	--	---------------------

* only to extend the range, load information valid only for talis PFDR and talis PFMR

Twilight switches – Selection guide

turnus 501 A

turnus 501 E



Channels	1	1
Photosensitivity	2 - 500 lux	2 - 500 lux
Switching delay	ON/OFF 100 seconds	ON/OFF 100 seconds
Brightness sensor	Construction	Installation
Ambient temperature	-20° C ... +55° C -30° C ... +70° C (sensor)	-20° C ... +55° C -30° C ... +70° C (sensor)
Protection type	IP20 IP65 (sensor)	IP20 IP65 (sensor)

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turnus 200

1

2 - 2,000 lux

ON/OFF

20 - 120 seconds

Integrated

-35° C ... +60° C

IP54

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Twilight switches – turnus

turnus 501 A, turnus 501 E



PRODUCT DESCRIPTION

The turnus twilight switches offer maximum functionality and allow the individual control of the desired situation in residential, office, commercial and industrial buildings and on the entire outside area and also provide noticeably more energy efficiency. They precisely control according to light intensity through an external brightness sensor. The turnus is ideally suited for the use in shop windows, for illuminated billboards or street lighting.

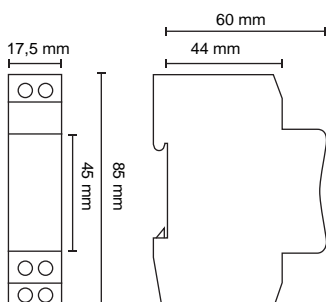
- ▶ Easy and quick installation
- ▶ Superior manipulation protection through sealable housing



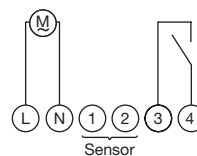
AREAS OF USE

- ▶ Show window lighting
- ▶ Parking lot lighting
- ▶ Roller shutter control
- ▶ Advertising lighting
- ▶ Street lighting
- ▶ Blinds

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



turnus 501 A
turnus 501 E



TECHNICAL DATA

Electrical Data

Supply voltage	AC 230 V ± 10 % 50-60 Hz
Load incandescent bulb	2,000 W
Switching capacity - DC	150 mA / 220 V DC, 300 mA / 60 V DC, 800 mA / 24 V DC
Hysteresis	1.3 x Photosensitivity

Electrical connection

Cable length sensor	max. 100 m
Cable width sensor	min. 0.75 mm ²

Display and format

Photosensitivity	2 - 500 lux
------------------	-------------

General data

Mounting	DIN rail
----------	----------

Standard compliance

Protection type	IP20
Approvals	CE VDE

PRODUCT VARIANTS

	turnus 501 A	turnus 501 E
Item no.	18.18.0001.1	18.18.0006.1
EAN Code	4010940023249	4010940024031

Electrical specifications

Current output	Switch contact, potential-free	Switch contact, potential-free
Switching capacity - resistive load	16 A / 250 V AC	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	8 A / 250 V AC	8 A / 250 V AC
Power consumption	5 VA	5 VA

Electrical connection

Device	Captive latching screw	Captive latching screw
--------	------------------------	------------------------

Operating data

Operating mode	ON/OFF - Switching delay 100 seconds	ON/OFF - Switching delay 100 seconds
Channels	1	1
Tamper protection	-	-

Environmental conditions

Temperature (operation)	-20° C ... +55° C -30° C ... +70° C (sensor)	-20° C ... +55° C -30° C ... +70° C (sensor)
-------------------------	---	---

General data

Weight	75 g	75 g
--------	------	------

Standard compliance

	IP65 (sensor)	IP65 (sensor)
--	---------------	---------------

Scope of delivery

Sensors	Brightness sensor surface mount	Brightness sensor fl ush mount
---------	---------------------------------	--------------------------------

Twilight switches – turnus 200



PRODUCT DESCRIPTION

The turnus 200 twilight switch offers maximum functionality and allows the individual control of the desired situation in residential, office, commercial and industrial buildings and on the entire outside area and also provides noticeably more energy efficiency. It precisely controls according to light intensity through its integrated light sensor. The turnus is ideally suited for use in shop windows, for illuminated billboards or street lighting. The turnus is characterised by simple and flexible installation through surface mounting and simple design.

- ▶ Flexible adaptation through individual setting of the ON/OFF delay time

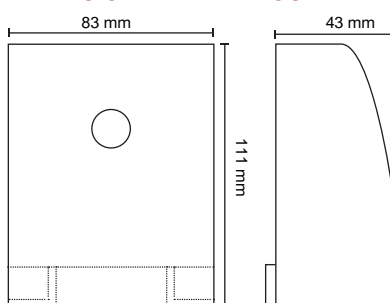


AREAS OF USE

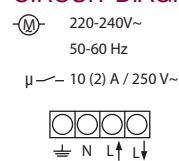
- ▶ Show window lighting
- ▶ Parking lot lighting
- ▶ Roller shutter control
- ▶ Advertising lighting
- ▶ Street lighting

Item no.	18.17.0001.1
EAN Code	4010940018986

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA**Electrical Data**

Supply voltage	AC 220-240 V 50-60 Hz
Current output	Switch contact, not potential-free
Switching capacity - resistive load	10 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	2 A / 250 V AC
Load incandescent / halogen lamp	1,200 W
Power consumption	6 VA
Hysteresis	1.3 x Photosensitivity

Electrical connection

Device	Captive latching screw
--------	------------------------

Operating data

Operating mode	IN/OUT - Switching delay 20 - 120 seconds
Channels	1

Display and format

Photosensitivity	2 - 2,000 lux
------------------	---------------

Operating conditions

Temperature (operation)	-35° C ... +60° C
-------------------------	-------------------

General data

Weight	175 g
Light sensor	Integrated
Mounting	Construction

Standard compliance

Protection type	IP54
Approval mark	CE

Twilight switches – Accessories

Sensor LF-structure



Item no.	07.02.0001.1
EAN Code	4010940002671

Display and format

Photosensitivity	2 - 500 lux
------------------	-------------

Operating conditions

Temperature (operation)	-30° C ... +70° C (sensor)
-------------------------	----------------------------

Standard compliance

Protection type	IP65 (sensor)
-----------------	---------------

Sensor LF-installation



Item no.	07.02.0003.1
EAN Code	4010940016630

Display and format

Photosensitivity	2 - 500 lux
------------------	-------------

Operating conditions

Temperature (operation)	-30° C ... +70° C (sensor)
-------------------------	----------------------------

Standard compliance

Protection type	IP65 (sensor)
-----------------	---------------

Cap LF

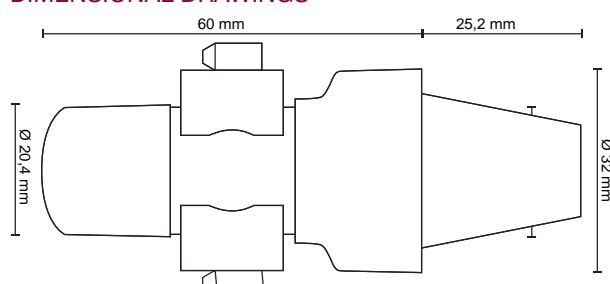


Item no.	07.02.0003.2
EAN Code	4010940029166

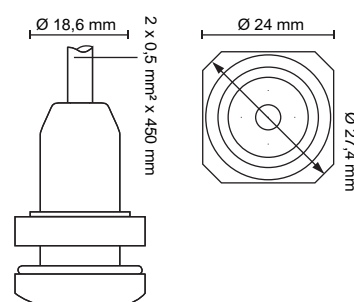
Display and format

Photosensitivity	500 - 10,000 lux
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DIMENSIONAL DRAWINGS



Sensor LF-structure



Sensor LF-installation

Twilight and staircase lighting time switches – Accessories

Wall installation kit 1 TE

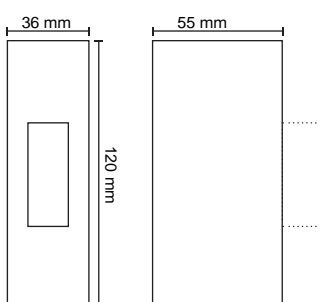
for:

- ▶ turnus 501
- ▶ trealux 210
- ▶ trealux 510



Item no.	18.01.0004.2
EAN Code	4010940002657

DIMENSIONAL DRAWINGS



Wall installation kit 1TE

Staircase lighting time switches – Selection guide

trealux 210



Switching capacity AC	2,300 W
Switching capacity EVG	500 VA
Switching capacity SG	1,000 VA
Switching capacity LED	750 W
Glow lamp load	Max. 50 button x 1 mA
Operating mode	1 x resettable
Service function	–
Advance warning	–

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trealux 510



3,600 W
1,000 VA
1,500 VA
1,200 W
Max. 150 button x 1 mA
3 x resettable
1 hour
●

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Staircase lighting time switches – trealux

trealux 210



trealux 510



PRODUCT DESCRIPTION

The trealux staircase time switches offer maximum functionality and allow the individual control of the desired situation in residential, office, commercial and industrial buildings and on the entire outside area and also provide noticeably more power efficiency. The trealux enable universal and easy installation with automatic detection of the type of wiring. Thus, they are ideally suited for use with modern light sources such as energy-saving bulbs and various ballasts.

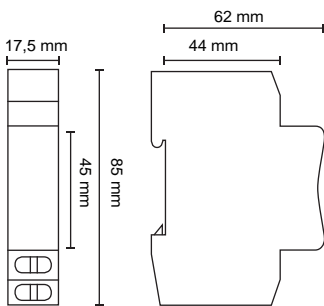
- ▶ Immediate extension of the power-on time through reactivation
- ▶ Universal installation through automatic recognition of the wiring type (3 or 4 wire)
- ▶ Easy installation through wiring from below



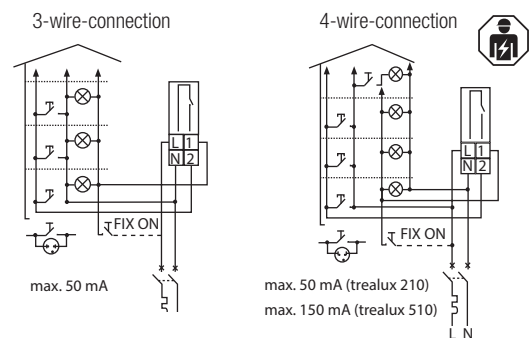
AREAS OF USE

- ▶ Ventilation
- ▶ Staircases
- ▶ Basement
- ▶ Entrance areas
- ▶ Toilets

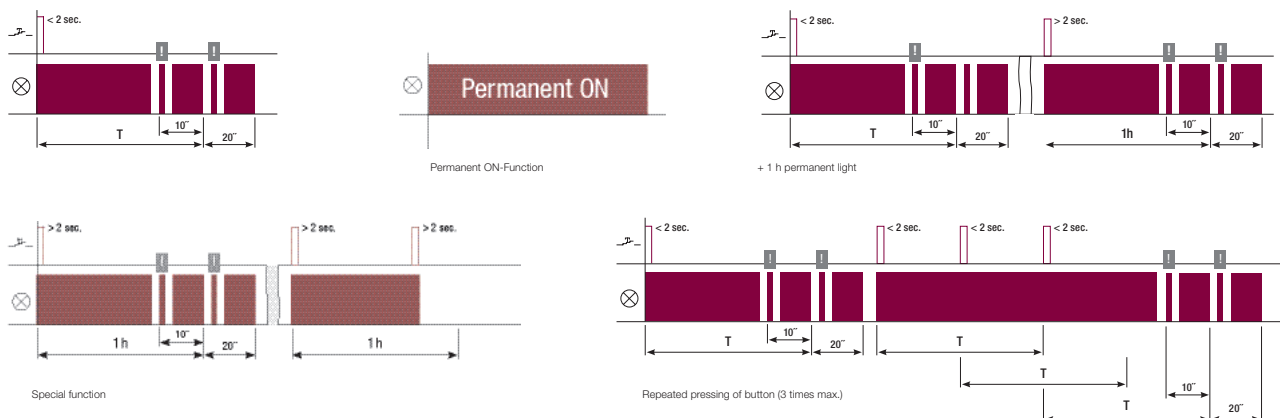
DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



SWITCHING BEHAVIOUR



TECHNICAL DATA

Electrical specifications

Current output	Switch Contact
Switching capacity - resistive load	16 A / 250 V AC
Switching capacity - inductive load cos. phi 0.6	10 A / 250 V AC
Power consumption	0.5 W

Electrical connection

Device	Latching screw with wire protection max. 4 mm ² Captive latching screw
--------	--

Communication type

Wired	3- or 4-wire (automatic detection)
-------	------------------------------------

Operating data

Operating mode	Immediately resettable
Hand switch	Fix ON

Operating conditions

Temperature (operation)	-10° C ... +55° C
-------------------------	-------------------

General data

Mounting	DIN rail
----------	----------

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE VDE

REPLACEMENT PART / ACCESSORY

► Wall installation kit 1 TE

Item no. 18.01.0004.2
EAN Code 4010940002657

for:

- turnus 501
- trealux 210
- trealux 510



PRODUCT VARIANTS

	trealux 210	trealux 510
Item no.	18.13.0009.1	18.13.0016.1
EAN Code	4010940024789	4010940039127

Electrical specifications

	trealux 210	trealux 510
Supply voltage	AC 230 V ± 10 % 50 Hz	AC 230 V ± 10 % 50-60 Hz
Load incandescent / halogen lamp	2,300 VA	3,600 VA
Load fluorescent lamps	20 x 58 W (parallel compensated) 40 x 58 W (series compensated) 20 x 2 x 58 W (dual switching)	3,600 VA (dual switching) 3,600 VA (series compensated) 3,600 VA (parallel compensated)
Load LED lamp	750 W	1,200 W
EVG	500 VA	1000 VA
VVG	1000 W	1500 VA
CFL (EVG)	15 x 7 W 12 x 11 W 11 x 15 W 10 x 20 W	34 x 7 W 27 x 11 W 24 x 15 W 22 x 23 W

Operating data

Operating mode	1 x resettable	3 x resettable
----------------	----------------	----------------

Display and format

Time setting	30 seconds - 20 minutes	30 seconds - 20 minutes 1 hour (service function)
Status display	–	Advance warning

Meters: Easily make energy consumption and operating hours visible

Energy meter: The ideal solution for making energy consumption visible 88

Digital energy meters 88
Analogue energy meters 96

Hour meters: The best solution for accurately measuring operating times 98

Surface mounting hour meters 100
Built-in mounting hour meters 102
DIN rail mounting hour meters 108



Energy meters – Selection guide

taxxo ER 80-1

taxxo E 45-1-MID



Number of modules	2	1
Number of phases	1	1
Resolution	0.1 kWh	0.01 kWh
Wired	2-wire	2-wire
Accuracy class	1	B (MID)
Impulse duration	90 ms	90 ms
Power consumption	8 VA	8 VA
Maximum current (I _{max})	80 A	45 A
Standards and guidelines	DIN 43684 IEC 62052-11 IEC 62053-21	DIN 43684 EN 50470-1 EN 50470-3
Temperature (operation)	-20° C ... +65° C	-25° C ... +55° C
Consumption indicator	Digital (2 x 6 digits) kWh Total kWh	Digital (7 digits) kWh
Power loss	0.4 W	0.4 W
Supply voltage	AC 230 V ± 20 % 50-60 Hz	AC 230 V ± 20 % 50 Hz ± 10 %

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taxxo E 100-3-MID

taxxo M 45-1



7	1
3	1
0.1 kWh	0.1 kWh
4-wire	2-wire
B (MID)	1
30 - 80 ms	90 ms
10 VA	8 VA
100 A	45 A
DIN 43684	DIN 43684
EN 50470-1	IEC 62052-11
EN 50470-4	IEC 62053-21
-25° C ... +55° C	-20° C ... +65° C
Digital (7 digits) kWh	Analogue (6 digits) kWh
2 W	0.4 W
AC 230 V ± 20 % 50 Hz ± 10 % AC 400 V ± 20 % 50 Hz ± 10 %	AC 230 V ± 20 % 50-60 Hz

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Energy meter – taxxo ER 80-1



PRODUCT DESCRIPTION

The taxxo ER 80-1 is a single-phase meter. The illuminated LC display can display two lines each with up to six digits. Equipped with a reset function, the intermediate meter can be set to zero at any time. This means yet more simple monitoring of consumption at a location, e.g. for cost control of important power consumers.

- ▶ Superior manipulation protection through lead-sealable housing
- ▶ Signalisation of the facility's condition through LED

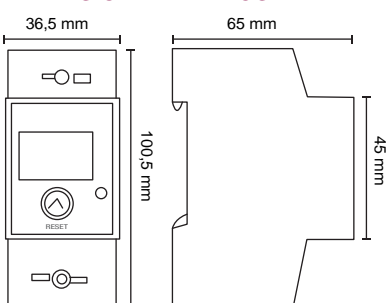


APPLICATION AREAS

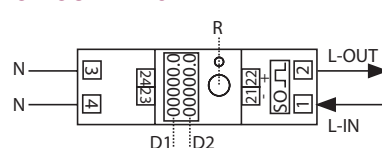
- ▶ Electrical energy consumption measurement
- ▶ Electrical heating facilities
- ▶ Installation in industrial and switching facilities
- ▶ Office complexes
- ▶ Camping and gardening facilities
- ▶ Separate areas, e.g. in apartment buildings
- ▶ Charging stations for electric cars
- ▶ Control cabinets
- ▶ Shopping centres
- ▶ Exhibition halls
- ▶ Marinas

Item no.	05.25.0003.1
EAN Code	4010940044107

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Interface	S0
Supply voltage	AC 230 V ± 20 % 50-60 Hz
Phase	1
Withstand voltage at mains frequency	4 kV
Rated impulse withstand voltage (Uimp)	6 kV
Impulse voltage	DC 12-27 V
Base current (Ib)	5 A
Initial current	0.004 Ib
Maximum current (Imax)	80 A
Minimum current (Imin)	0.25 A
Impulse current	27 mA
Impulses	1,000 Impulse/kWh
Impulse duration	90 ms
Power consumption	8 VA
Power loss	0.4 W
Accuracy class	1

Electric connection

Device	Screw terminal with wire protection 6 mm ² ... 16 mm ²
Cable length	20 m

Communication type

Wired	2-wire
Status indicator	LED

Operating data

Operating mode	Reset function
Manipulation protection	Lead-sealable

Display and format

Consumption indicator	Digital (2 x 6 digits) kWh Total kWh
Status indicator	Pulse indicator (LED) Sensor status indicator

Operating conditions

Temperature (operation)	-20° C ... +65° C
-------------------------	-------------------

General data

Number of modules	2
Colour	Grey
Mounting	DIN rail

Standard compliance

Protection type	IP51
Protection class	II, according to corresponding mounting
Approval mark	CE

Energy meter – taxxo E 45-1-MID



PRODUCT DESCRIPTION

The taxxo E 45-1-MID is a digital single-phase meter. With only one module width, the device provides the easiest and least expensive method for billable counting of energy consumption. The taxxo E 45-1-MID has a high resolution display with two decimal places on which the energy consumption is displayed.

- ▶ High accuracy and maximum reliability through MID certification for custody transfer
- ▶ Superior manipulation protection through lead-sealable housing
- ▶ Signalisation of the facility's condition through LED

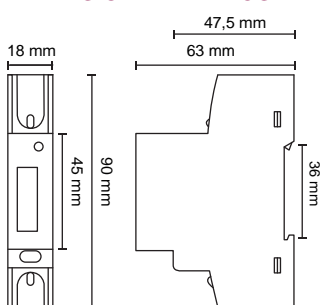


APPLICATION AREAS

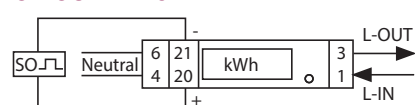
- ▶ Electrical energy consumption measurement
- ▶ Electrical heating facilities
- ▶ Installation in industrial and switching facilities
- ▶ Office complexes
- ▶ Camping and gardening facilities
- ▶ Separate areas, e.g. in apartment buildings
- ▶ Charging stations for electric cars
- ▶ Shopping centres
- ▶ Exhibition halls
- ▶ Marinas

Item no.	05.25.0002.1
EAN Code	4010940044091

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Interface	S0
Supply voltage	AC 230 V ± 20 % 50 Hz ± 10 %
Phase	1
Withstand voltage at mains frequency	4 kV
Rated impulse withstand voltage (Uimp)	6 kV
Impulse voltage	DC 12-27 V
Base current (Ib)	5 A
Initial current	0.004 Ib
Maximum current (Imax)	45 A
Minimum current (Imin)	0.25 A
Impulse current	27 mA
Impulses	1,000 Impulse/kWh
Impulse duration	90 ms
Power consumption	8 VA
Power loss	0.4 W
Accuracy class	B (MID)

Electric connection

Device	Screw terminal with wire protection 4 mm ² ... 6 mm ²
Cable length	20 m

Communication type

Wired	2-wire
Status indicator	LED

Operating data

Manipulation protection	Lead-sealable
-------------------------	---------------

Display and format

Consumption indicator	Digital (7 digits) kWh
Status indicator	Pulse indicator (LED) Sensor status indicator

Operating conditions

Temperature (operation)	-25° C ... +55° C
-------------------------	-------------------

General data

Number of modules	1
Colour	Grey
Mounting	DIN rail

Standard compliance

Protection type	IP51
Protection class	II, according to corresponding mounting
Approval mark	CE MID

Energy meter – taxxo E 100-3-MID



PRODUCT DESCRIPTION

The taxxo E 100-3-MID is most suitable for monitoring more than just one consumer. This energy meter covers seven module widths. The three-phase connection allows the recording of consumption of multiple users over a three-phase circuit. The device is suitable for billing in multi-party houses, in shopping malls or at camp sites and marinas. The amount of energy consumed per shift can be verified in shift work.

- ▶ High accuracy and maximum reliability through MID certification for custody transfer
- ▶ Superior manipulation protection through lead-sealable housing
- ▶ Signalisation of the facility's condition through LED

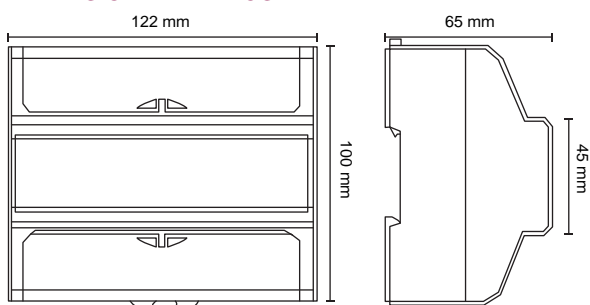


APPLICATION AREAS

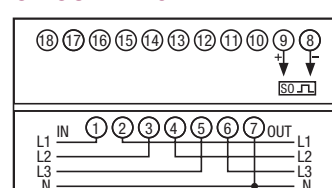
- ▶ Electrical energy consumption measurement
- ▶ Electrical heating facilities
- ▶ Installation in industrial or switching systems or other consumers of heavy current, power current, construction current and three-phase current
- ▶ Office complexes
- ▶ Camping and gardening facilities
- ▶ Separate areas, e.g. in apartment buildings
- ▶ Shopping centres
- ▶ Exhibition halls
- ▶ Marinas
- ▶ Building services and wear monitoring for plants or machines

Item no.	05.25.0004.1
EAN Code	4010940044114

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Interface	S0
Supply voltage	AC 230 V \pm 20 % 50 Hz \pm 10 % AC 400 V \pm 20 % 50 Hz \pm 10 %
Phase	3
Withstand voltage at mains frequency	4 kV
Rated impulse withstand voltage (Uimp)	6 kV
Impulse voltage	DC 12-27 V
Base current (Ib)	5 A
Initial current	0.004 Ib
Maximum current (Imax)	100 A
Minimum current (Imin)	0.25 A
Impulse current	27 mA
Impulse	1,000 Impulse/kWh
Impulse duration	30 - 80 ms
Power consumption	10 VA
Power loss	2 W
Accuracy class	B (MID)

Electric connection

Device	Screw terminal with wire protection 18 mm ² ... 28 mm ²
Cable length	20 m

Communication type

Wired	4-wire
Status indicator	LED

Operating data

Manipulation protection	Lead-sealable
-------------------------	---------------

Display and format

Consumption indicator	Digital (7 digits) kWh
Status indicator	Pulse indicator (LED) Sensor status indicator

Operating conditions

Temperature (operation)	-25° C ... +55° C
-------------------------	-------------------

General data

Number of modules	7
Colour	Grey
Mounting	DIN rail

Standard compliance

Protection type	IP51
Protection class	II, according to corresponding mounting
Approval mark	CE MID

Energy meter – taxxo M 45-1



PRODUCT DESCRIPTION

The taxxo M 45-1 is an analogue single-phase meter. It is suitable for mounting on DIN rails and takes up very little space in your control cabinet with only one module width. Even without additional power supply, the taxxo M 45-1 reliably displays the counted value at any time, which is why it is used frequently in the private sector.

- ▶ Superior manipulation protection through lead-sealable housing
- ▶ Signalisation of the facility's condition through LED

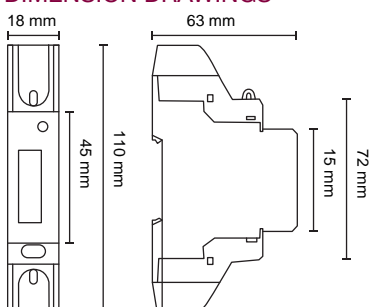


APPLICATION AREAS

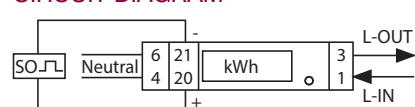
- ▶ Electrical energy consumption measurement
- ▶ Electrical heating facilities
- ▶ Installation in industrial and switching facilities
- ▶ Office complexes
- ▶ Camping and gardening facilities
- ▶ Separate areas, e.g. in apartment buildings
- ▶ Shopping centres
- ▶ Exhibition halls
- ▶ Marinas

Item no.	05.25.0001.1
EAN Code	4010940044084

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Interface	S0
Supply voltage	AC 230 V ± 20 % 50-60 Hz
Phase	1
Withstand voltage at mains frequency	4 kV
Rated impulse withstand voltage (Uimp)	6 kV
Impulse voltage	DC 12-27 V
Base current (Ib)	5 A
Initial current	0.004 Ib
Maximum current (Imax)	45 A
Minimum current (Imin)	0.25 A
Impulse current	27 mA
Impulse	1,000 Impulse/kWh
Impulse duration	90 ms
Power consumption	8 VA
Power loss	0.4 W
Accuracy class	1

Electric connection

Device	Screw terminal with wire protection 4 mm ² ... 6 mm ²
Cable length	20 m

Communication type

Wired	2-wire
Status indicator	LED

Operating data

Manipulation protection	Lead-sealable
-------------------------	---------------

Display and format

Consumption indicator	Analogue (6 digits) kWh
Status indicator	Pulse indicator (LED) Sensor status indicator

Operating conditions

Temperature (operation)	-20° C ... +65° C
-------------------------	-------------------

General data

Number of modules	1
Colour	Grey
Mounting	DIN rail

Standard compliance

Protection type	IP51
Protection class	II, according to corresponding mounting
Approval mark	CE

Hour meter – Selection guide

taxxo 100	taxxo 112
------------------	------------------






Mounting	Surface mounting	Built-in mounting
Electric connection	Screw terminal with wire protection max. 2.5 mm ² Socket	Flat plug DIN 6.3
Supply voltage	AC 18-26 V ± 10 % 50 Hz	AC 18-26 V ± 10 % 50 Hz AC 110-120 V ± 10 % 50 Hz AC 110-127 V ± 10 % 60 Hz AC 220-240 V ± 10 % 50 Hz
Replacement part / accessory	Base Surface mount housing	Ratchet clamp Cover 55 x 55 Cover 72 x 72 Sealing IP54 for cover 72 x 72
Protection type	IP20	IP20 IP54 with sealing

Page

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102

taxxo 612	taxxo 712	taxxo 403
		
<p>Built-in mounting Flat plug DIN 6.3</p>	<p>Built-in mounting Flat plug DIN 6.3</p>	<p>DIN rail mounting Screw terminal with wire protection max. 2.5 mm² undetachable screw terminals</p>
<p>AC 18-26 V ± 10 % 50 Hz AC 220-240 V ± 10 % 50 Hz AC 330-380 V ± 10 % 50 Hz</p>	<p>AC 18-26 V ± 10 % 50 Hz AC 110-120 V ± 10 % 50 Hz AC 110-127 V ± 10 % 60 Hz AC 220-240 V ± 10 % 50 Hz</p>	<p>AC 18-26 V ± 10 % 50 Hz AC 36-48 V ± 10 % 50 Hz AC 110-120 V ± 10 % 50 Hz AC 110-127 V ± 10 % 60 Hz AC 220-240 V ± 10 % 50 Hz AC 330-380 V ± 10 % 50 Hz</p>
<p>Sealing IP50 Spring clip</p>	<p>Sealing IP50 Ratchet clamp</p>	<p>–</p>
<p>IP20 IP50 with sealing</p>	<p>IP20 IP50 with sealing</p>	<p>IP20</p>
<p>104</p>	<p>106</p>	<p>108</p>

Hour meter surface mounting – taxxo 100



PRODUCT DESCRIPTION

The taxxo 100 hour meter with AC intended for surface mounting is available in different voltage variants. The device is equipped with a plug base with screw terminals and operates mains synchronised within an ambient temperature of -20 °C ... + 55 °C. The meter can monitor up to 99,999.99 hours of operation. The product complies with the safety guidelines of protection class II and protection type IP20. taxxo is characterised by long-life and maintenance-free technology with robust and reliable design.

- ▶ Surface mounting for easy and quick installation

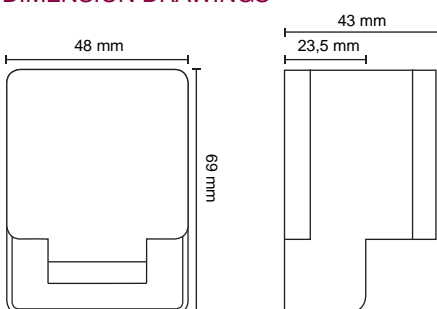


APPLICATION AREAS

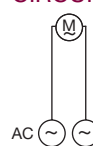
- ▶ Machinery working time control
- ▶ Pumps working time control
- ▶ Effective runtime measurement of vehicles and machines

Item no.	05.15.1001.1
EAN Code	4010940001339

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Supply voltage	AC 220-240 V ± 10 % 50 Hz
Power consumption	1 VA
Accuracy	Mains synchronised

Electric connection

Device	Screw terminal with wire protection max. 2.5 mm ² Socket
--------	--

Display and format

Meter display	Analogue (7 digits) Hours
---------------	------------------------------

Operating conditions

Temperature (operation)	-20° C ... +55° C
-------------------------	-------------------

General data

Mounting	Construction Terminal cover
----------	--------------------------------

Standard compliance

Protection type	IP20
Protection class	II, according to corresponding mounting
Approval mark	CE VDE CSA

SCOPE OF DELIVERY

- ▶ **Base ①**
Item number: 15.92.0021.4
EAN Code: 4010940002862
- ▶ **Mounting housing ②**
Item number: 50.12.0001.4
EAN Code: 4010940002879

REPLACEMENT PART / ACCESSORY

- ▶ **Base ①**
Item number: 15.92.0021.4
EAN Code: 4010940002862
- ▶ **Mounting housing ②**
Item number: 50.12.0001.4
EAN Code: 4010940002879



Hour meters built-in mounting – taxxo 112



PRODUCT DESCRIPTION

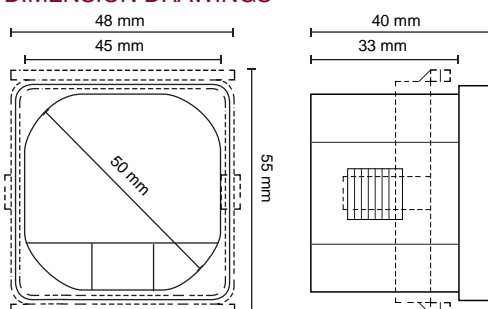
The taxxo 112 hour meters with AC intended for built-in mounting is available in different voltage variants. The device is equipped with screw terminals and operates mains synchronised within an ambient temperature of -20 °C ... + 55 °C. The meter can monitor up to 99,999.99 hours of operation. The product complies with the safety guidelines of protection class II and protection type IP20 and even protection type IP54 by using a baffle with seal. taxxo is characterised by long-life and maintenance-free technology with robust and reliable design.



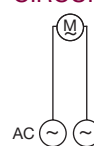
APPLICATION AREAS

- ▶ Machinery working time control
- ▶ Pumps working time control
- ▶ Effective runtime measurement of vehicles and machines

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Power consumption	1 VA
Accuracy	Mains synchronised

Electric connection

Device	Flat plug DIN 6.3
--------	-------------------

Display and format

Meter display	Analogue (7 digits) Hours
---------------	------------------------------

Operating conditions

Temperature (operation)	-20° C ... +55° C
-------------------------	-------------------

General data

Mounting	Built-in
----------	----------

Standard compliance

Protection type	IP20 IP54 with sealing
Protection class	II, according to corresponding mounting

SCOPE OF DELIVERY

- ▶ **Catch frame ①**
Item number: 15.27.0011.4
EAN Code: 4010940002886

REPLACEMENT PART / ACCESSORY

- ▶ **Catch frame ①**
Item number: 15.27.0011.4
EAN Code: 4010940002886
- ▶ **Baffle 55 x 55 ②**
Item number: 05.15.0065.6
EAN Code: 4010940008802
- ▶ **Baffle 72 x 72 ②**
Item number: 16.26.0006.4
EAN Code: 4010940008819
- ▶ **Sealing IP54 for baffle 72 x 72 ②**
Item number: 11.24.0008.8
EAN Code: 4010940011253



PRODUCT VARIANTS

Item no.	05.15.1016.1	05.15.1031.1*	05.15.1038.1	05.15.1118.1
EAN code	4010940002275	4010940002299*	4010940002268	4010940002282
Supply voltage	AC 18-26 V ± 10 % 50 Hz	AC 110-127 V ± 10 % 60 Hz	AC 220-240 V ± 10 % 50 Hz	AC 110-120 V ± 10 % 50 Hz
Approval marks	CE, VDE, CSA, UL	CE, CSA, UL	CE, VDE, CSA, UL	CE, VDE, CSA, UL

* These product variants are only produced by order

Hour meters built-in mounting – taxxo 612



PRODUCT DESCRIPTION

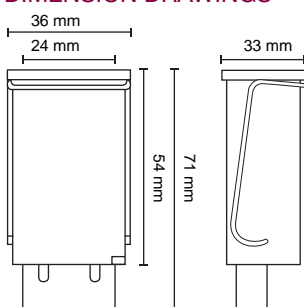
The taxxo 612 hour meter with AC intended for built-in mounting is available in different voltage variants. The device operates network synchronously within an ambient temperature of $-20\text{ °C} \dots +55\text{ °C}$. The meter can monitor up to 99,999.99 hours of operation. The product complies with the safety guidelines of protection class II and protection type IP20 and even protection type IP50 by using a seal. taxxo is characterised by long-life and maintenance-free technology with robust and reliable design.



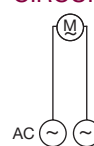
APPLICATION AREAS

- ▶ Machinery working time control
- ▶ Pumps working time control
- ▶ Effective runtime measurement of vehicles and machines

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Power consumption	1 VA
Accuracy	Mains synchronised

Electric connection

Device	Flat plug DIN 6.3
--------	-------------------

Display and format

Meter display	Analogue (7 digits) Hours
---------------	------------------------------

Operating conditions

Temperature (operation)	-20° C ... +55° C
-------------------------	-------------------

General data

Mounting	Built-in
----------	----------

Standard compliance

Protection type	IP20 IP50 with sealing
Protection class	II, according to corresponding mounting
Approval mark	CE VDE CSA UL

SCOPE OF DELIVERY

- **Spring clip ①**
Item number: 05.20.0026.6
EAN Code: 4010940002961

REPLACEMENT PART / ACCESSORY

- **Spring clip ①**
Item number: 05.20.0026.6
EAN Code: 4010940002961



PRODUCT VARIANTS

Item no.	05.20.0006.1	05.20.0016.1	05.20.0033.1
EAN code	4010940001599	4010940001667	4010940001742
Supply voltage	AC 220-240 V ± 10 % 50 Hz	AC 18-26 V ± 10 % 50 Hz	AC 330-380 V ± 10 % 50 Hz

Hour meters built-in mounting – taxxo 712



PRODUCT DESCRIPTION

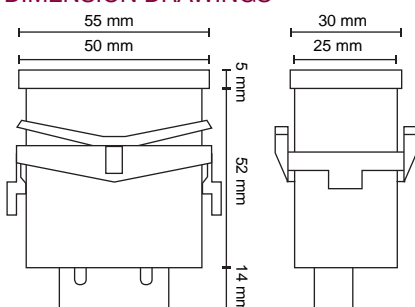
The taxxo 712 hour meter with AC intended for built-in mounting is available in different voltage variants. The device operates mains synchronised within an ambient temperature of -20 °C ... + 55 °C. The meter can monitor up to 99,999.99 hours of operation. The product complies with the safety guidelines of protection class II and protection type IP20 and even protection type IP50 by using a seal. taxxo is characterised by long-life and maintenance-free technology with robust and reliable design.



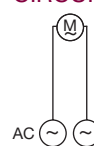
APPLICATION AREAS

- ▶ Machinery working time control
- ▶ Pumps working time control
- ▶ Effective runtime measurement of vehicles and machines

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Power consumption	1 VA
Accuracy	Mains synchronised

Electric connection

Device	Flat plug DIN 6.3
--------	-------------------

Display and format

Meter display	Analogue (7 digits) Hours
---------------	------------------------------

Operating conditions

Temperature (operation)	-20° C ... +55° C
-------------------------	-------------------

General data

Mounting	Built-in
----------	----------

Standard compliance

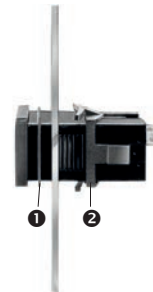
Protection type	IP20
	IP50 with sealing
Protection class	II, according to corresponding mounting

SCOPE OF DELIVERY

- ▶ **Catch frame ②**
Item number: 14.27.0002.4
EAN Code: 4010940002985

REPLACEMENT PART / ACCESSORY

- ▶ **Seal IP50 ①**
Item number: 14.24.0001.5
EAN Code: 4010940002992
- ▶ **Catch frame ②**
Item number: 14.27.0002.4
EAN Code: 4010940002985



PRODUCT VARIANTS

Item no.	05.20.0004.1	05.20.0008.1*	05.20.0018.1	05.20.0029.1
EAN code	4010940001582	4010940001629*	4010940001681	4010940001728
Supply voltage	AC 220-240 V ± 10 % 50 Hz	AC 110-127 V ± 10 % 60 Hz	AC 18-26 V ± 10 % 50 Hz	AC 110-120 V ± 10 % 50 Hz
Approval mark	CE, VDE, CSA, UL	CE, CSA, UL	CE, VDE, CSA, UL	CE, VDE, CSA, UL

* These product variants are only produced by order

Hour meter DIN rail mounting – taxxo 403



PRODUCT DESCRIPTION

The taxxo 403 hour meter with AC intended for DIN rail mounting is available in different voltage variants. The device is equipped with undetachable screw terminals and operates mains synchronised within an ambient temperature of -20 °C ... + 55 °C. The meter can monitor up to 99,999.99 hours of operation. The product complies with the safety guidelines of protection class II and protection type IP20. taxxo is characterised by long-life and maintenance-free technology with robust and reliable design.

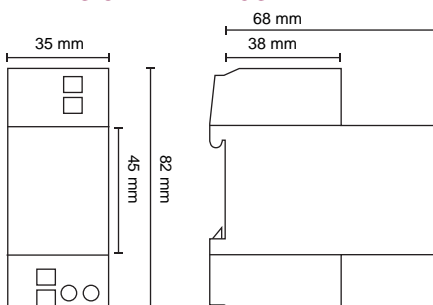
- ▶ Easy and quick installation



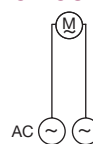
APPLICATION AREAS

- ▶ Machinery working time control
- ▶ Pumps working time control
- ▶ Effective runtime measurement of vehicles and machinery

DIMENSION DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical Data

Power consumption	1 VA
Accuracy	Mains synchronised

Electric connection

Device	Screw terminal with wire protection max. 2.5 mm ² Undetachable screw
--------	--

Display and format

Meter display	Analogue (7 digits) Hours
---------------	------------------------------

Operating conditions

Temperature (operation)	-20° C ... +55° C
-------------------------	-------------------

General data

Weight	90 g
Mounting	DIN rail

Standard compliance

Protection type	IP20
Protection class	II, according to corresponding mounting

PRODUCT VARIANTS

Item no.	05.21.0002.1	05.21.0003.1*	05.21.0004.1*	05.21.0009.1*	05.21.0001.1	05.21.0006.1
EAN code	4010940001780	4010940001797*	4010940001803*	4010940001810*	4010940001773	4010940007959
Supply voltage	AC 110-120 V ± 10 % 50 Hz	AC 36-48 V ± 10 % 60 Hz	AC 18-26 V ± 10 % 50 Hz	AC 110-127 V ± 10 % 50 Hz	AC 220-240 V ± 10 % 50 Hz	AC 330-380 V ± 10 % 50 Hz
Approval marks	CE, VDE	CE, VDE	CE, VDE	CE	CE, VDE	CE, VDE

* These product variants are only produced by order

Temperature control: Feel good at any time of year

Timer: The easy solution for controlling the heating time 112

Economy 7 timer – thermio™ eco	112
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Programmable room thermostats: The comfortable solution for the heating time & temperature control 156

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Water treatment	172



Economy 7 timer – Selection guide

thermio™ eco C1B



Item no.	04.08.0005.1
Battery life	40 days (depending on the switching frequency)
Switching output	Normally open contact, not potential-free
Load of halogen lamp	750 W (AC)
Load of fluorescent lamps	500 W
Load of compact fluorescent lamp	100 W
Load of LED lamp	200 W
Accuracy	± 1.5 seconds/day at 20 °C
Power reserve	40 days
Fuse	Programs saved in EEPROM
Device	BS1362 (1" x 1/4") changeable
Operating mode	Screw terminal with wire protection, max. 2.5 mm ²
Manual switch	Reset function
Tampering protection	Advance mode
Programs	Advance mode
Resolution	–
Display update	Daily Program
Display lighting	Individual programming (max. 4 ON/OFF switching times)
Shortest switching time	Time of day: 1 minute
Summer/winter time	every 30 seconds
Time	Light blue
Installation	ON/OFF 1 minute
Protection class	Program Time 1 minute
	Boost: 1, 2 Hours
	Automatic summer/winter time adjustment
	Digital
	Flush mounting BS 4662
	On-wall BS 5733
	II, when installed accordingly

thermio™ eco C7SB

ECOsave



04.08.0006.1	04.33.0020.1
40 days (depending on the switching frequency)	–
Normally open contact, not potential-free	Changeover contact, potential-free, opening width < 3 mm
750 W (AC)	–
500 W	–
100 W	–
200 W	–
± 1.5 seconds/day at 20 °C	± 2.5 seconds/day at 20 °C
40 days	> 72 Hours
Programs saved in EEPROM	–
BS1362 (1" x 1/4") changeable	–
Screw terminal with wire protection, max. 2.5 mm ²	Screw terminal with wire protection 1.5 mm ² to 4 mm ²
Reset function	–
Advance mode	–
Advance mode	–
–	Plastic cover
7 days	Daily Program
5-2 days	
1-7 days	
Daily Program	
Weekly program	
Individual programming (max. 4 ON/OFF switching times)	
Time of day: 1 minute	15 minutes
every 30 seconds	–
Light blue	–
ON/OFF 1 minute	Manual Boost 15, 30, 60, 120 minutes
Program Time 1 minute	Program Time 15 minutes
Boost: 1, 2 Hours	
Automatic summer/winter time adjustment	–
Digital	Analogue
Flush mounting BS 4662	On-wall
On-wall BS 5733	
II, when installed accordingly	I, when installed accordingly

Economy 7 timer – thermio™ eco

thermio™ eco C1B

thermio™ eco C7SB



PRODUCT DESCRIPTION

The electronic economy 7 timers C1B and C7SB are an excellent choice if you want to implement a variety of applications outside cost-intensive peak times. Programmable over 24 hours or 7 days and with up to 28 ON/OFF programmes per week, they control a variety of applications safely and thereby help save energy and money. Both timers feature an additional boost function that enables need-based operation for 1 or 2 hours.

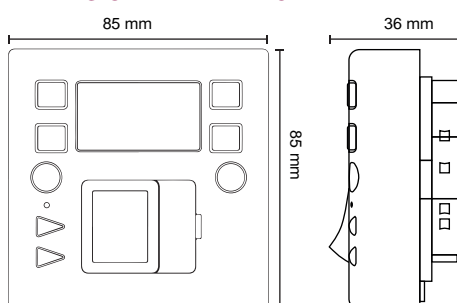
- ▶ Convenient, automatic change from summer to winter time
- ▶ Utilisation of economy 7 rates for devices such as immersion heaters and storage heater up to 13 A
- ▶ Individual Programs are saved and continue to be available even after a power failure
- ▶ Simple, quick and flexible installation thanks to simple electrical connections, external cable feed-through and integrated strain relief
- ▶ Convenient and simple reading of information thanks to the back-lit display, even in low-light conditions
- ▶ 2 selectable Boost periods allow for rapid and needs-based operating times of 1 or 2 Hours that temporarily override the Programs



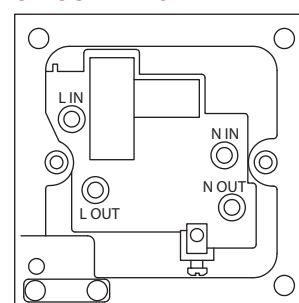
APPLICATION AREAS

- ▶ Electric radiators and heating elements
- ▶ Oil fired radiators
- ▶ Electric towel rails
- ▶ Panel heaters
- ▶ Fan heaters
- ▶ Lighting (not discharge lamps)
- ▶ Single immersion heater to 3.000 watts

DIMENSIONAL DRAWING



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Supply voltage	AC 230 V ± 10% 50 Hz
Battery life	40 days (depending on the switching frequency)
Switching output	Normally open contact, not potential-free
Switching capacity – resistive load	13 A (3000 W)
Switching capacity – inductive load cos. phi 0.6	5 A/ 250 V AC
Load of halogen lamp	750 W (AC)
Load of fluorescent lamps	500 W
Load of compact fluorescent lamp	100 W
Load of LED lamp	200 W
Power consumption	1 VA
Accuracy	± 1.5 seconds/day at 20 °C
Power reserve	40 days, Programs saved in EEPROM
Fuse	BS1362 (1" x 1/4") changeable

Electrical connection

Device	Screw terminal with wire protection max. 2.5 mm ²
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Operating data

Operating mode	Reset function, advance mode, Boost mode
Manual switch	Boost Time, ON/OFF (double-pole switch), ON/OFF/AUTO, Advance
Channels	1

Display and format

Resolution	Time of day: 1 minute
Refresh display	every 30 seconds
Display lighting	Light blue
Time display format	24-hour format
Shortest switching time	ON/OFF 1 minute, Program Time 1 minute, Boost 1, 2 Hours
Summer/winter time	Automatic summer/winter time adjustment
Time	Digital
Status display	Operation mode, switching state display

Ambient conditions

Humidity (operating)	20% to 60% relative humidity, condensation-free
Temperature (operating)	±0 °C to +40 °C

General data

Colour	White
Weight	158 g
Material	High-temperature resistant, self-extinguishing thermoplastics
Installation	Flush mounting BS 4662, on-wall BS 5733

Compliance with standards

Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE

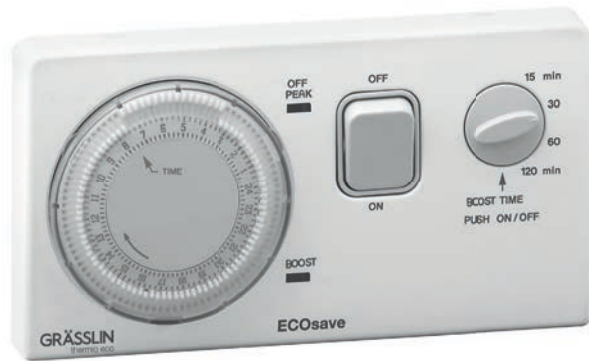
PRODUCT VARIANTS

	thermio™ eco C1B	thermio™ eco C7SB
Item no.	04.08.0005.1	04.08.0006.1
EAN code	4010940045081	4010940045098

Operating data

Programs	Boost, daily Program, individual programming (max. 4 ON/OFF switching times)	7 days, 5-2 days, 1-7 days, Boost, daily Program, weekly Program, individual programming (max. 4 ON/OFF switching times)
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Economy 7 timer – ECOsave



PRODUCT DESCRIPTION

ECOsave is a mechanical economy 7 time switch designed for use with economy 7 off peak rate overnight electricity. It allows individual adjustment of the heating period within 24 hours every 15 minutes in order to avoid expensive peak hours. ECOsave features a boost function with which hot water is quickly processed within 15, 30, 60 or 120 minutes. The time switch enables the control of electric immersion heaters with a capacity of up to 3.000 watts. The ECOsave is distinguished by a simple and modern design, with low profile and easy mounting on flush-mounted boxes.

- ▶ Short-term and need-based hot water preparation through boost function
- ▶ Tamper-proof through transparent plastic cover

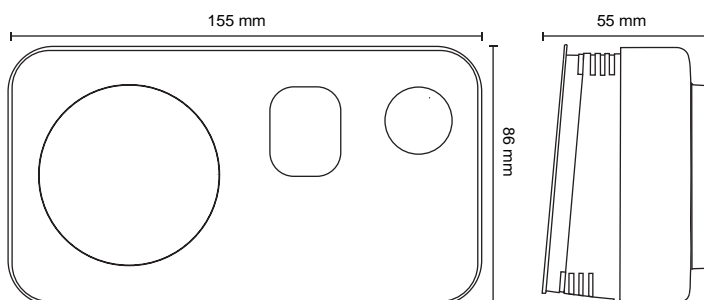


APPLICATION AREAS

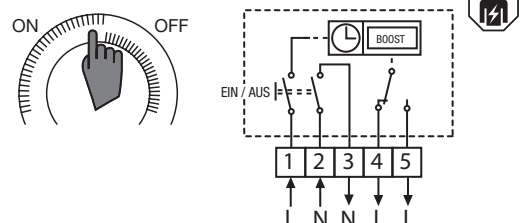
- ▶ Single immersion heater to 3000 watts
- ▶ Twin immersion heater to 3000 watts
- ▶ Dual immersion heater to 3000 watts
- ▶ Storage heater

Item no.	04.33.0020.1
EAN code	4010940044633

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical specifications

Supply voltage	AC 230 V ± 10% 50 Hz
Current output	Changeover, potential-free, opening width < 3 mm
Switching capacity – resistive load	13 A (3000 W)
Accuracy	± 2.5 seconds/day at 20 °C
Power reserve	> 72 hours

Electrical connection

Device	Screw terminal with wire protection 1.5 mm ² ... 4 mm ²
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Operating data

Hand switch	Boost time ON/OFF
Channels	1
Tampering protection	Plastic cover
Programs	Boost, Daily program

Display and format

Shortest switching time	Boost 15, 30, 60, 120 minutes, Program time 15 minutes
Time	Analogue hands
Status display	Operation mode, Status display heating

Environmental conditions

Humidity (operating)	10% ... 90% relative humidity, non-condensing
Temperature (operation)	-10 °C ... +35 °C

General data

Colour	White/grey
Mounting	Surface mounting

Standard compliance

Protection type	IP20
Protection class	I, after appropriate mounting
Approvals	CE

Boost timer – thermio™ eco

thermio™ eco B2B



PRODUCT DESCRIPTION

Push & Forget: Probably the most accurate description of countdown timers B2B and B4B from the thermio™ eco product line. Both models offer four boost times for a variety of applications that you can read easily thanks to the large and illuminated LEDs. Timers switch off automatically and thereby help you save energy and money.

- ▶ Very easy to operate thanks to an illuminated Boost button – Push, Run & Forget
- ▶ Indication of the system state and remaining system runtime through the system state LEDs
- ▶ 4 selectable Boost times allow additional operating periods of 15, 30, 60 or 120 minutes or 1, 2, 3 or 4 hours for a variety of applications
- ▶ Simple, quick and flexible installation thanks to simple electrical connections, cable selection on the front and integrated strain relief
- ▶ Suitable for installation in 25 mm standard on-wall or flush mounting sockets
- ▶ No visible screws thanks to plastic cladding

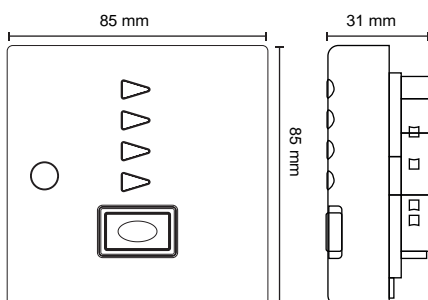
thermio™ eco B4B



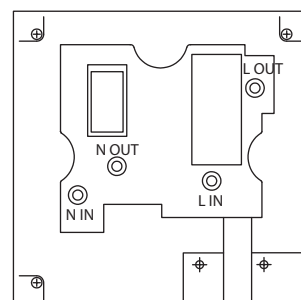
APPLICATION AREAS

- ▶ Electric radiators and heating elements
- ▶ Oil fired radiators
- ▶ Electric towel rails
- ▶ Panel heaters
- ▶ Fan heaters
- ▶ Lighting (not discharge lamps)
- ▶ Single immersion heater to 3000 watts

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Supply voltage	AC 230 V ± 10% 50 Hz
Switching output	Normally open contact, not potential-free
Switching capacity – resistive load	13 A (3000 W)
Switching capacity – inductive load cos. phi 0.6	5 A/ 250 V AC
Load of halogen lamp	1000 W (AC)
Load of fluorescent lamps	500 W
Power consumption	1 VA
Accuracy	± 1.5 seconds/day at 20 °C

Electrical connection

Device	Screw terminal with wire protection max. 2.5 mm ²
--------	--

Operating data

Operating mode	Boost mode
Manual switch	Boost time
Channels	1

Display and format

Status display	Operating mode Switching state display
Backlight	white / blue

Ambient conditions

Humidity (operating)	20% to 60% relative humidity, condensation-free
Temperature (operating)	±0 °C to +45 °C

General data

Colour	White
Weight	114 g
Material	High-temperature resistant, self-extinguishing thermoplastics
Installation	Flush mounting BS 4662, on-wall BS 5733

Compliance with standards

Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE

PRODUCT VARIANTS

	thermio™ eco B2B	thermio™ eco B4B
Item no.	04.08.0001.1	04.08.0002.1
EAN code	4010940045043	4010940045050

Display and format

Shortest switching time	Boost: 15, 30, 60, 120 minutes ON/OFF: 15 minutes	Boost: 1, 2, 3, 4 Hours ON/OFF: 1 hour
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Programmer – Selection guide

thermio™ eco C1

thermio™ eco C2



Item no.	04.07.0005.1	04.07.0006.1
Supply voltage	AC 230 V ± 10% 50-60 Hz	AC 230 V ± 10% 50-60 Hz
Battery replacement Time (power reserve)	> 30 days (Programs saved in EEPROM)	> 30 days (Programs saved in EEPROM)
Switching capacity – resistive load	3 A / 250 V AC	3 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	1 A / 250 V AC	1 A / 250 V AC
Control function	Heating	Heating
Control type	Two-point (ON/OFF)	Two-point (ON/OFF)
Control range	+5 °C to +35 °C +10 °C (+5 °C to +20 °C frost protection)	+5 °C to +35 °C +10 °C (+5 °C to +20 °C frost protection)
Electrical connection of the device	Screw terminal with wire protection, max. 2.5 mm ²	Screw terminal with wire protection, max. 2.5 mm ²
Manual switch	Boost Time + Advance	Boost Time + Advance
Channels	1	2
Programs	7 days 5-2 days 1-7 days Advance Boost Holiday Program Individual programming (max. 3 ON/OFF switching times) Daily Program Weekly Program	7 days 5-2 days 1-7 days Advance Boost Holiday Program Individual programming (max. 3 ON/OFF switching times) Daily Program Weekly Program
Resolution	Room temperature 0.1 °C Temperature setpoint 1 °C Time of day 1 minute	Room temperature 0.1 °C Temperature setpoint 1 °C Time of day 1 minute
Display lighting	Light blue	Light blue
Time display format	12-hour format (AM/PM) 24-hour format	12-hour format (AM/PM) 24-hour format
Shortest switching time	Boost 1, 2, 3 Hours ON/OFF 10 minutes Program Time 10 minutes	Boost 1, 2, 3 Hours ON/OFF 10 minutes Program Time 10 minutes
Room temperature display	+10 °C to +50 °C	+10 °C to +50 °C
Summer/winter time	Automatic summer/winter time adjustment	Automatic summer/winter time adjustment
Time	Digital	Digital
ErP class	I	I
ErP function	ON/OFF room thermostat	ON/OFF room thermostat
ErP contribution to seasonal characteristic space heating energy efficiency	1%	1%

thermio™ eco C3

thermio™ eco B1

thermio™ eco B2



04.07.0007.1	04.07.0008.1	04.07.0009.1
AC 230 V ± 10% 50-60 Hz	AC 220-240 V ± 10% 50 Hz	AC 220-240 V ± 10% 50 Hz
> 30 days (Programs saved in EEPROM)	–	–
3 A / 250 V AC	5 A / 250 V AC	5 A / 250 V AC
1 A / 250 V AC	2 A / 250 V AC	2 A / 250 V AC
Heating	–	–
Two-point (ON/OFF)	–	–
+5 °C to +35 °C	–	–
+10 °C (+5 °C to +20 °C frost protection)	–	–
Screw terminal with wire protection, max. 2.5 mm ²	Screw terminal with wire protection, max. 4 mm ²	Screw terminal with wire protection, max. 4 mm ²
Boost Time + Advance	ON/OFF/AUTO	ON/OFF/AUTO
3	1	2
7 days	Daily Program	Daily Program
5-2 days		
1-7 days		
Advance		
Boost		
Holiday Program		
Individual programming (max. 3 ON/OFF switching times)		
Daily Program		
Weekly Program		
Room temperature 0.1 °C	–	–
Temperature setpoint 1 °C	–	–
Time of day 1 minute	–	–
Light blue	–	–
12-hour format (AM/PM)	24-hour format	24-hour format
24-hour format		
Boost 1, 2, 3 Hours	ON/OFF 15 minutes	ON/OFF 15 minutes
ON/OFF 10 minutes	Program Time 15 minutes	Program Time 15 minutes
Program Time 10 minutes		
+10 °C to +50 °C	–	–
Automatic summer/winter time adjustment	Manual summer/winter time adjustment	Manual summer/winter time adjustment
Digital	Analogue	Analogue
I	–	–
ON/OFF room thermostat	–	–
1%	–	–

Digital programmer – thermio™ eco

thermio™ eco C1



thermio™ eco C2



thermio™ eco C3



PRODUCT DESCRIPTION

The digital programmer in product line C are available in three versions: Model C1 enables simultaneous control of central heating and hot water through a single switching output. The two independent switching outputs of model C2 enable individual control of central heating and hot water. Multi-channel model C3 even features three independent switching outputs and thereby enables individual control of two separate heating zones and hot water.

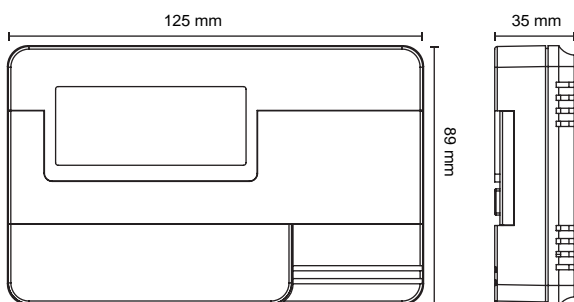
- ▶ Cost savings through integrated temperature control and frost protection function as no additional room thermostat for the control of the central heating is required
- ▶ Increased comfort through wide temperature control range
- ▶ Short-term and need-based heating through Boost function
- ▶ Up to 3 ON/OFF commands (selectable in pairs) per day provide a comfortable room climate
- ▶ Easy and fast installation
- ▶ Convenient, automatic change from summer to winter time
- ▶ Individual Programs are saved and continue to be available even after a power failure
- ▶ Convenient and simple reading of information thanks to the back-lit display, even in low-light conditions



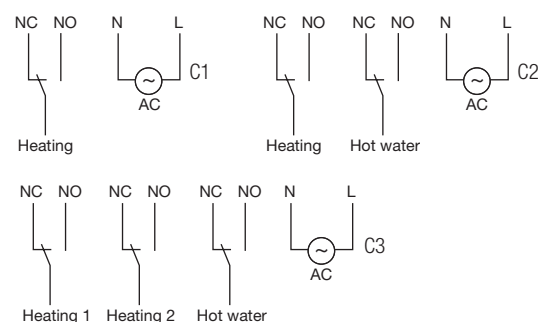
APPLICATION AREAS

- ▶ Boiler & combination boiler
- ▶ Domestic heating systems for heating and hot water
- ▶ Pump-controlled central heating systems
- ▶ Gravity heating systems

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical data

Supply voltage	AC 230 V ± 10% 50-60 Hz
Battery replacement Time (power reserve)	> 30 days (Programs saved in EEPROM)
Current output	Changeover, potential free
Switching capacity – resistive load	3 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	1 A / 250 V AC
Accuracy	±1 second /day at 20 °C
Battery	CR2032
Control function	Heating
Control type	Two-point (ON/OFF)
Hysteresis	±0.5 K / ±1 K
Control range	+5 °C to +35 °C +10 °C (+5 °C to +20 °C frost protection)
Control accuracy	±0.5 °C

Electrical connection

Device	Screw terminal with wire protection max. 2.5 mm ²
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Operating data

Operating mode	RUN/AUTO
Manual switch	Boost Time + Advance
Programs	7 days, 5-2 days, 1-7 days, Advance, Boost, holiday Program, individual programming (max. 3 ON/OFF switching times), daily program, weekly program

Display and format

Resolution	Room temperature 0.1 °C, target temperature 1 °C, day time 1 minute
Display lighting	Light blue
Time display format	12-hour format (AM/PM), 24-hour format
Shortest switching time	Boost 1, 2, 3 Hours; ON/OFF 10 minutes; Program Time 10 minutes
Room temperature display	+10 °C to +50 °C
Summer/winter time	Automatic summer/winter time adjustment
Time	Digital
Status display	Operating mode, status display for heating

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	±0 °C to +50 °C

General data

Colour	White/grey
Weight	330 g
Material	ABS plastic
Installation	On-wall

Compliance with standards

ErP class	I
ErP function	ON/OFF room thermostat
ErP contribution to seasonal characteristic space heating energy efficiency	1%
Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE, Energy Saving Trust

PRODUCT VARIANTS

	thermio™ eco C1	thermio™ eco C2	thermio™ eco C3
Item no.	04.07.0005.1	04.07.0006.1	04.07.0007.1
EAN code	4010940045012	4010940045029	4010940045036

Operating data

Channels	1	2	3
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Analogue programmer – thermio™ eco

thermio™ eco B1



PRODUCT DESCRIPTION

The B1 is an analogue single-channel programmer, the B2 an analogue two-channel programmer. Daily programming with a very short switching time of 15 minutes is very simple using the tappet of the mechanical time switch. Switching between the operating modes automatic, fixed ON and OFF can be made using a manual hand switch. The time switches are distinguished by a simple and modern design, with a low profile and easy installation through a universal mounting plate.

- ▶ On-wall mounting for easy and quick installation
- ▶ Simultaneous control of central heating and hot water through a single switching output (B1)
- ▶ Individual control of central heating and hot water through two independent switching outputs (B2)



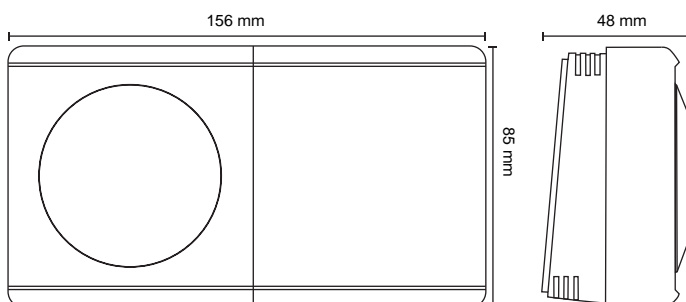
thermio™ eco B2



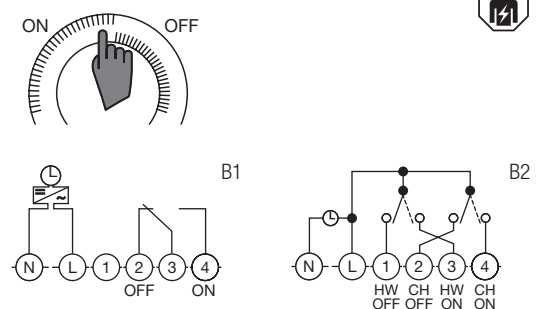
APPLICATION AREAS

- ▶ Boiler & combination boiler
- ▶ Domestic heating systems for heating and hot water
- ▶ Pump-controlled central heating systems
- ▶ Gravity heating systems

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical data

Supply voltage	AC 220-240 V 50 Hz
Switching output	Changeover contact, potential-free
Switching capacity – resistive load	5 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	2 A / 250 V AC
Time basis	Synchronous (network frequency)

Electrical connection

Device	Screw terminal with wire protection max. 4 mm ²
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Operating data

Manual switch	ON/OFF/AUTO
Programs	Daily Program

Display and format

Shortest switching time	Programme Time 15 minutes
Status display	Status display for heating

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-10 °C to +50 °C

General data

Colour	White/grey
Installation	On-wall

Compliance with standards

Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE, Energy Saving Trust

PRODUCT VARIANTS

	thermio™ eco B1	thermio™ eco B2
Item no.	04.07.0008.1	04.07.0009.1
EAN code	4010940045470	4010940045487

Operating data

Channels	1	2
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Immersion heater timer – Selection guide

thermio™ eco BI1S



Item no.	04.33.0023.1
Switching capacity – resistive load	16 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	8 A / 250 V AC
Load of incandescent/halogen lamp	1300 VA
Switching capacity – DC	–
Power consumption	1 VA
Accuracy	Mains synchronised
Time basis	Synchronous (network frequency)
Power reserve	–
Battery	–
Programs	Daily Program
Memory spaces	–
Time display format	24-hour format
Shortest switching time	ON/OFF 15 minutes Program Time 15 minutes
Time	Analogue
Status display	–

thermio™ eco B17S

thermio™ eco C17



04.33.0024.1	04.33.0025.1
16 A / 250 V AC	16 A / 250 V AC
8 A / 250 V AC	4 A / 250 V AC
1300 VA	1000 VA
–	3 A / 60 V DC
1 VA	10 A / 24 V DC
Mains synchronised	4.4 VA
Synchronous (network frequency)	±1 second /day at 20 °C
–	Synchronous (network frequency)
–	3 years
Weekly Program	CR2032
–	7 days
–	5-2 days
–	1-7 days
–	Free weekday block formation
–	Daily Program
–	Weekly Program
–	20
24-hour format	12-hour format
–	24-hour format
ON/OFF 2 Hours	ON/OFF 1 minute
Program Time 2 Hours	Program Time 1 minute
Analogue	Digital
–	Switching state display

128

130

Analogue immersion heater timer – thermio™ eco

thermio™ eco BI1S



PRODUCT DESCRIPTION

The BI1S and the BI7S are immersion heater timer with daily or weekly program. They allow individual adjustment of the heating period within 24 hours, every 15 minutes or every day in 24 hours, as well as every 2 hours in order to avoid expensive peak hours. They are suitable for wall mounting and offer timed control for every fixed wiring device such as an electronic immersion heater with a performance of up to 3000 watts.

- ▶ On-wall mounting for easy and quick installation
- ▶ Optimal manipulation protection through sealable housing
- ▶ 96 or 84 tappets allow the system to be switched ON/OFF at the current time with up to 48 or 42 ON/OFF switching times



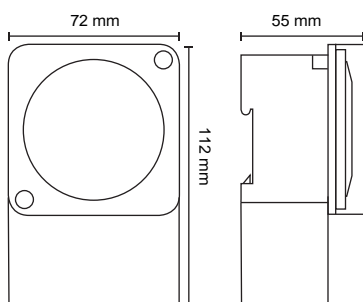
thermio™ eco BI7S



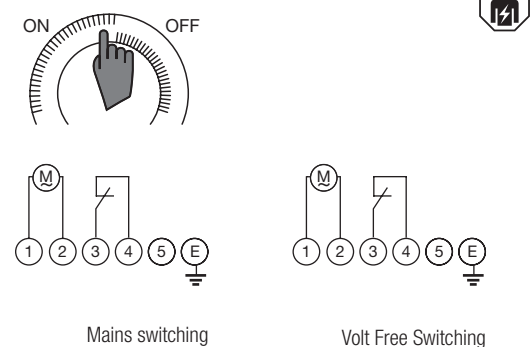
APPLICATION AREAS

- ▶ Single immersion heater to 3000 watts
- ▶ Heating systems
- ▶ Pumps
- ▶ Motors
- ▶ Machines
- ▶ Universally usable

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical data

Supply voltage	AC 230 V ± 10% 50-60 Hz
Switching output	Changeover contact, potential-free, opening width < 3 mm
Switching capacity – resistive load	16 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	8 A / 250 V AC
Load of incandescent/halogen lamp	1300 VA
Power consumption	1 VA
Accuracy	Mains synchronised
Time basis	Synchronous (network frequency)

Electrical connection

Device	Screw terminal with wire protection max. 2.5 mm ²
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Operating data

Manual switch	ON/OFF/AUTO
Channels	1
Tampering protection	Sealable

Display and format

Time	Analogue hands
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Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-20 °C to +85 °C

General data

Colour	White/grey
Weight	160 g
Material	High-temperature resistant, self-extinguishing thermoplastics
Installation	On-wall

Compliance with standards

Protection class	I, when installed accordingly
Approvals	CE

PRODUCT VARIANTS

	thermio™ eco BI1S	thermio™ eco BI7S
Item no.	04.33.0023.1	04.33.0024.1
EAN code	4010940045142	4010940045159

Operating data

Programs	Daily Program	Weekly Program
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Display and format

Shortest switching time	ON/OFF: 15 minutes Programme Time 15 minutes	ON/OFF 2 Hours Program Time 2 Hours
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Digital immersion heater timer – thermio™ eco C17



PRODUCT DESCRIPTION

The C 17 is a digital immersion heater timer with 20 storage spaces and 3 different time periods (daily, 5 days plus 2 or 7 day programming) or free block formation. It has a very short switching time of just one minute and enables need-based control. Switching between the operating modes automatic, fixed ON and OFF can be made using a hand switch.

- ▶ On-wall mounting for easy and quick installation
- ▶ Optimal manipulation protection through sealable housing

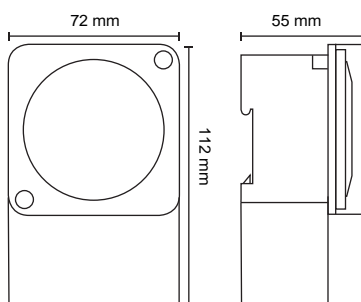


APPLICATION AREAS

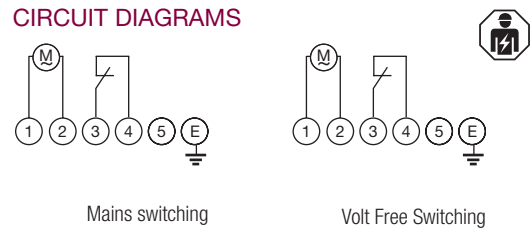
- ▶ Single immersion heater to 3000 watts
- ▶ Heating systems
- ▶ Pumps
- ▶ Motors
- ▶ Machines
- ▶ Universally usable

Item no.	04.33.0025.1
EAN code	4010940045166

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical data

Supply voltage	AC 230 V ± 10% 50-60 Hz
Switching output	Changeover contact, potential-free, opening width < 3 mm
Switching capacity – resistive load	16 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	4 A / 250 V AC
Load of incandescent/halogen lamp	1000 VA
Switching capacity – DC	1 A / 100 V DC 3 A / 60 V DC 10 A / 24 V DC
Power consumption	4.4 VA
Accuracy	± 1 second /day at 20 °C
Time basis	Synchronous (network frequency)
Power reserve	3 years
Battery	CR2032

Electrical connection

Device	Screw terminal with wire protection max. 2.5 mm ²
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Operating data

Manual switch	ON/OFF/AUTO
Channels	1
Tampering protection	Sealable
Programs	7 days, 5-2 days, 1-7 days, free block formation, daily Program, weekly Program
Memory spaces	20

Display and format

Time display format	12-hour format (AM/PM) 24-hour format
Shortest switching time	ON/OFF 1 minute, Program Time 1 minute
Summer/winter time	Manual summer/winter time adjustment
Time	Digital
Status display	Switching state display

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-10 °C to +55 °C

General data

Colour	White/grey
Weight	170 g
Material	High-temperature resistant, self-extinguishing thermoplastics
Installation	On-wall

Compliance with standards

Protection class	I, when installed accordingly
Approvals	CE

General purpose timer – Selection guide

thermio™ eco BG1S



Item no.	04.36.0009.1
Supply voltage	AC 230 V ± 10% 50-60 Hz
Switching capacity – resistive load	16 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	8 A / 250 V AC
Load of incandescent/halogen lamp	1300 VA
Switching capacity – DC	–
Power consumption	1 VA
Accuracy	Mains synchronised
Time basis	Synchronous (network frequency)
Power reserve	–
Battery	–
Programs	Daily Program
Memory spaces	–
Time display format	24-hour format
Shortest switching time	ON/OFF 15 minutes Program Time 15 minutes
Time	Analogue
Status display	–

thermio™ eco BG7S	thermio™ eco BG1Q	thermio™ eco CG7
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04.36.0010.1	04.36.0011.1	04.36.0012.1
AC 230 V ± 10% 50-60 Hz	DC 24-36 V 45-60 Hz	AC 230 V ± 10% 50-60 Hz
16 A / 250 V AC	16 A / 250 V AC	16 A / 250 V AC
8 A / 250 V AC	8 A / 250 V AC	4 A / 250 V AC
1300 VA	1300 VA	1000 VA
-	-	1 A / 100 V DC
-	-	3 A / 60 V DC
-	-	10 A / 24 V DC
1 VA	2 VA	4.4 VA
Mains synchronised	± 1.5 seconds/day at 20 °C	±1 second /day at 20 °C
Synchronous (network frequency)	Quartz	Synchronous (network frequency)
-	> 72 Hours	3 years
-	-	CR2032
Weekly Program	Daily Program	7 days
-	-	5-2 days
-	-	1-7 days
-	-	Free weekday block formation
-	-	Daily Program
-	-	Weekly Program
-	-	20
24-hour format	24-hour format	12-hour format
-	-	24-hour format
ON/OFF 2 Hours	ON/OFF 15 minutes	ON/OFF 1 minute
Program Time 2 Hours	Program Time 15 minutes	Program Time 1 minute
Analogue	Analogue	Digital
-	-	Switching state display

134

134

136

Analogue general purpose timer – thermio™ eco

thermio™ eco BG1S



thermio™ eco BG7S



thermio™ eco BG1Q



PRODUCT DESCRIPTION

The BG1S, BG7S and the BG1Q are analogue, single-channel general purpose timer. Using the tappets of the mechanical clock, the daily or weekly programming is very easy with a very short switching time of 15 minutes and 2 hours. Switching between the operating modes automatic, fixed ON and OFF can be made using a manual hand switch. These versions are distinguished by a simple and modern design with a low profile and easy mounting on flush boxes.

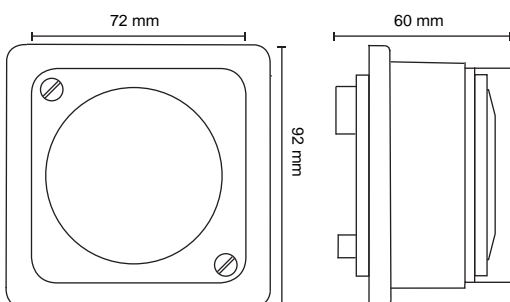
- ▶ Easy and fast installation
- ▶ Optimal manipulation protection through sealable housing
- ▶ 96 or 84 tappets allow the system to be switched ON/OFF at the current time with up to 48 or 42 ON/OFF switching times



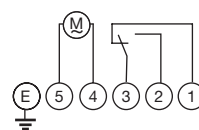
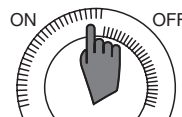
APPLICATION AREAS

- ▶ Single immersion heater to 3000 watts
- ▶ Heating systems
- ▶ Pumps
- ▶ Motors
- ▶ Machines
- ▶ Universally usable

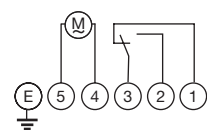
DIMENSIONAL DRAWINGS



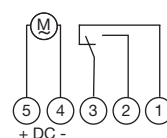
CIRCUIT DIAGRAMS



Mains Switching
BG1S, BG7S



Volt Free Switching
BG1S, BG7S



BG1Q

TECHNICAL DATA

Electrical data

Switching output	Changeover contact, potential-free, opening width < 3 mm
Switching capacity – resistive load	16 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	8 A / 250 V AC
Switching capacity – minimal	100 mA / 20 V AC/DC
Load of incandescent/halogen lamp	1300 VA

Electrical connection

Device	Screw terminal with wire protection max. 2.5 mm ²
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Operating data

Manual switch	ON/OFF/AUTO
Channels	1
Tampering protection	Sealable

Display and format

Time	Analogue hands
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Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
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General data

Colour	White/grey
Material	High-temperature resistant, self-extinguishing thermoplastics
Installation	Flush mounting BS 4662, on-wall BS 5733

Compliance with standards

Protection class	I, when installed accordingly
Approvals	CE

PRODUCT VARIANTS

	thermio™ eco BG1S	thermio™ eco BG7S	thermio™ eco BG1Q
Item no.	04.36.0009.1	04.36.0010.1	04.36.0011.1
EAN code	4010940045104	4010940045111	4010940045128

Electrical data

Supply voltage	AC 230 V ± 10% 50-60 Hz	AC 230 V ± 10% 50-60 Hz	DC 24-36 V 45-60 Hz
Power consumption	1 VA	1 VA	2 VA
Accuracy	Mains synchronised	Mains synchronised	± 1.5 second /day at 20 °C
Time basis	Synchronous (network frequency)	Synchronous (network frequency)	Quartz
Power reserve	–	–	> 72 Hours

Operating data

Programs	Daily Program	Weekly Program	Daily Program
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Display and format

Shortest switching time	ON/OFF: 15 minutes Programme Time 15 minutes	ON/OFF 2 Hours Program Time 2 Hours	ON/OFF: 15 minutes Programme Time 15 minutes
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Ambient conditions

Temperature (operating)	-20 °C to +85 °C	-20 °C to +85 °C	-20 °C to +55 °C
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General data

Weight	160 g	160 g	170 g
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Digital general purpose timer – thermio™ eco CG7



PRODUCT DESCRIPTION

The CG7 is a digital general purpose timer with 20 storage spaces and 3 different time periods (daily, 5 days plus 2 or 7 day programming) or free block formation. The very short switching time of just one minute enables demand-oriented control of, for example, a heating system. Switching between the operating modes automatic, fixed ON and OFF can be made using a manual hand switch. The CG7 is distinguished by a simple and modern design, with a low profile and easy installation.

- ▶ Easy and fast installation
- ▶ Optimal manipulation protection through sealable housing

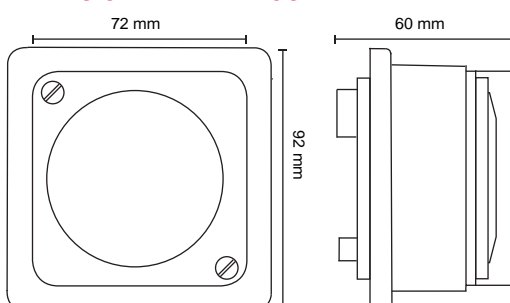


APPLICATION AREAS

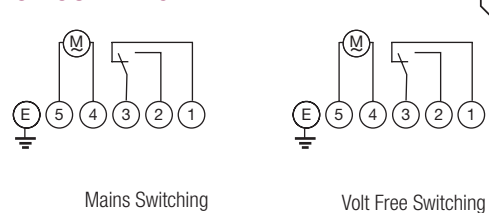
- ▶ Single immersion heater to 3000 watts
- ▶ Heating systems
- ▶ Pumps
- ▶ Motors
- ▶ Machines
- ▶ Universally usable

item no.	04.36.0012.1
EAN code	4010940045135

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Supply voltage	AC 230 V ± 10% 50-60 Hz
Switching output	Changeover contact, potential-free, opening width < 3 mm
Switching capacity – resistive load	16 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	4 A / 250 V AC
Load of incandescent/halogen lamp	1000 VA
Switching capacity – DC	1 A / 100 V DC 3 A / 60 V DC 10 A / 24 V DC
Power consumption	4.4 VA
Accuracy	± 1 second /day at 20 °C
Time basis	Synchronous (network frequency)
Power reserve	3 years
Battery	CR2032

Electrical connection

Device	Screw terminal with wire protection max. 2.5 mm ²
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Operating data

Manual switch	ON/OFF/AUTO
Channels	1
Tampering protection	Sealable
Programs	7 days, 5-2 days, 1-7 days, free block formation, daily Program, weekly Program
Memory spaces	20

Display and format

Time display format	12-hour format (AM/PM), 24-hour format
Shortest switching time	ON/OFF 1 minute, Program Time 1 minute
Summer/winter time	Manual summer/winter time adjustment
Time	Digital
Status display	Switching state display

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-10 °C to +55 °C

General data

Colour	White/grey
Weight	170 g
Material	High-temperature resistant, self-extinguishing thermoplastics
Installation	Flush mounting BS 4662, on-wall BS 5733

Compliance with standards

Protection class	I, when installed accordingly
Approvals	CE

Cylinder & pipe thermostats – thermio™ essential BCP



PRODUCT DESCRIPTION

The thermio™ essential BCP is an ErP class I thermostat that can be fastened to a cylinder or a pipe:

The spring wire required for installation on a pipe, or the wire strap required for installation on a hot water cylinder, are both supplied by Grässlin as part of the contents. The water temperature is measured directly on the surface of the cylinder or pipe by means of a contact. When the thermostat detects a drop in temperature, the heating system is switched on and then switched off again when the target value is reached, unless the boiler is controlled by other products such as a timer, for example.

- ▶ Flexible, simple and quick installation due to a spring wire and a wire strap (dual use)
- ▶ Wide temperature control range of ± 0 °C to +80 °C allows for safe and energy-efficient water heating
- ▶ Very simple operation through a large temperature adjustment knob with a precise clearly marked dial and indicator marker

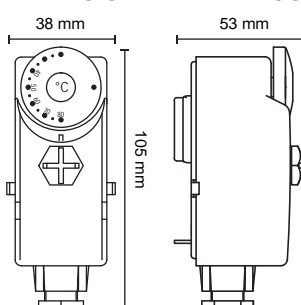
CE ErP I (1%) 

APPLICATION AREAS

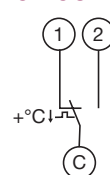
- ▶ Cylinder with a diameter of up to 470 mm
- ▶ Pipes with a diameter of up to 75 mm
- ▶ Actuation of zone valves
- ▶ Pump-controlled central heating systems
- ▶ Boiler
- ▶ Gravity heating

Item no.	04.47.0001.1
EAN code	4010940020149

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA**Electrical data**

Equipment operating voltage	AC 230 V ± 10% 50-60 Hz
Switching output	Changeover contact, potential-free
Switching capacity – resistive load	16 A / 250 V AC 6 A / 400 V AC
Switching capacity – inductive load cos. phi 0.6	4 A / 250 V AC 1 A / 400 V AC
Control function	Heating
Control type	Two-point (ON/OFF)
Measuring range	+0 °C to +110 °C
Control range	+0 °C to +80 °C

Electrical connection

Device	Cable gland PG11, screw terminal with wire protection max. 2.5 mm ²
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Display and format

Resolution	Temperature setpoint 1 °C
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Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	±0 °C to +55 °C

General data

Colour	White
Weight	159 g
Material	ABS plastic
Installation	Hot-water pipe, cylinder

Compliance with standards

ErP class	I
ErP function	ON/OFF room thermostat
ErP contribution to seasonal characteristic space heating energy efficiency	1%
Protection type	IP40
Protection class	I, when installed accordingly
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- ▶ Spring wire (24 cm)
- ▶ Plastic-sheathed wire strap 1.5 m

Frost thermostats – thermio™ essential BFT



PRODUCT DESCRIPTION

The thermio™ essential BFT is a mechanical frost thermostat of ErP class I that offers automatic and energy-efficient frost protection and is used in central heating systems as well as pipes in areas prone to freezing. Its tamper-proof temperature adjustment knob for the temperature setpoint allows optional limitation of the temperature range and serves as a lock for the set temperature and as protection against unauthorised access by third parties.

- ▶ On-wall mounting for easy and quick installation
- ▶ Very easy to use due to the large temperature adjustment knob with a precise clearly marked dial and precise indicator markers as well as a manual ON/OFF switch
- ▶ A broad temperature control range of -5 °C to + 15 °C ensures that the system is activated in frost conditions
- ▶ Offers automatic, energy-efficient frost protection for central heating systems and pipes in locations at risk of frost damage, and for general building protection

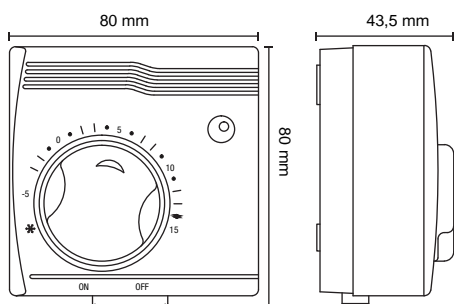
CEErP I (1%) 

APPLICATION AREAS

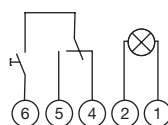
- ▶ Boiler
- ▶ Pipes
- ▶ Water pipes
- ▶ Cylinder

Item no.	04.47.0002.1
EAN code	4010940020156

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA**Electrical data**

Equipment operating voltage	AC 230 V ± 10% 50-60 Hz
Switching output	Changeover contact, potential-free
Switching capacity – resistive load	10 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	4 A / 250 V AC
Power consumption	0.25 W
Control function	Heating
Control type	Two-point (ON/OFF)
Control range	-5 °C to +15 °C

Operating data

Manual switch	ON/OFF
Tampering protection	Adjustable temperature adjustment knob

Display and format

Resolution	Temperature setpoint 1 °C
Status indicator	Status display heating (LED)

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-15 °C to +50 °C

General data

Colour	White/black
Weight	126 g
Material	High-temperature resistant, self-extinguishing thermoplastics ABS plastic
Installation	On-wall

Compliance with standards

ErP class	I
ErP function	ON/OFF room thermostat
ErP contribution to seasonal space heating energy efficiency	1%
Protection type	IP20
Protection class	I, when installed accordingly
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

► Bezel




Analogue programmable room thermostats – Selection guide

thermio™ essential B

thermio™ essential C



Item no.	04.46.0020.1	04.46.0021.1
Supply voltage / equipment operating voltage	AC 24 V to 230 V 50-60 Hz	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	–	2 years (depending on the switching frequency)
Switching capacity – resistive load	6 A / 250 V AC	8 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	3 A / 250 V AC	3 A / 250 V AC
Control type	Two-point (ON/OFF)	Two-point (ON/OFF)
Control range	+10 °C to +30 °C	+5 °C to +35 °C
Heating cycle	–	–
Electrical connection of the device	Screw terminal with wire protection, max. 2.5 mm ²	Screw terminal with wire protection, max. 2.5 mm ²
Radio signal	–	–
Range	–	–
Operating mode	Temperature reduction mode/AUTO	Reset function Temperature reduction mode/AUTO
Manual switch	ON/OFF	ON/OFF
Tampering protection	–	–
Offset	–	–
Programs	–	–
Programming	–	–
Resolution	Temperature setpoint 1 °C	Room temperature: 0.1 °C, temperature setpoint 0.2 °C
Shortest switching time	–	–
Display update	–	every 60 seconds
Room temperature display	–	±0 °C to +50 °C
Summer/winter time	–	–
Time	–	–
Status display	–	Battery condition Status display for heating
ErP class	I	I
ErP function	ON/OFF room thermostat	ON/OFF room thermostat
ErP contribution to seasonal characteristic space heating energy efficiency	1%	1%

thermio™ essential Srf	thermio™ essential Brf	thermio™ essential smart
		
04.46.0024.1	04.46.0025.1	04.46.0023.1
DC 3 V (2 x 1.5 V AA LR6 alkaline battery) AC 230 V ± 10% 50-60 Hz	DC 3 V (2 x 1.5 V AA LR6 alkaline battery) AC 230 V ± 10% 50-60 Hz	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
2 years (depending on the switching frequency)	2 years (depending on the switching frequency)	1 year (depending on the switching frequency)
16 A / 250 V AC	16 A / 250 V AC, 20 A / 125 V AC, 16 A / 30 V DC	8 A / 250 V AC
3 A / 250 V AC	8 A / 250 V AC, 8 A / 125 V AC	3 A / 250 V AC
Two-point (ON/OFF)	Two-point (ON/OFF)	PID (factory setting), 2-point (ON/OFF)
+5 °C (frost protection), +5 °C to +35 °C	+5 °C (frost protection), +5 °C to +35 °C	+5 °C (frost protection), +5 °C to +35 °C
–	–	6 times per hour (3 to 12 times per hour)
Screw terminal with wire protection, max. 2.5 mm ²	Screw terminal with wire protection, max. 2.5 mm ² Flat plug DIN 6.3	Screw terminal with wire protection, max. 2.5 mm ²
868.3 MHz	868.3 MHz	Bluetooth 4.0 / 2,4 GHz
30 m (inside building)	30 m (inside building)	10 m
OFF mode (5 °C frost protection), reset function, temperature reduction mode/AUTO	OFF mode (5 °C frost protection), reset function, temperature reduction mode/AUTO	Manual mode, OFF mode (5 °C frost protection), reset function, key lock, override mode, Boost mode, temperature reduction mode/AUTO, holiday mode
ON/OFF	ON/OFF	ON/OFF/AUTO
–	–	PIN code
–	–	-3 °C to +3 °C
–	–	7 days, 5-2 days, 1-7 days, Boost, manual, individual programming (max. 4 or 6 ON/OFF switching times)
–	–	Smartphone/tablet
Room temperature: 0.1 °C, temperature setpoint 0.2 °C	Room temperature: 0.1 °C, temperature setpoint 0.2 °C	Room temperature: 0.1 °C, temperature setpoint 0.5 °C, Time of day 1 minute
–	–	Boost 1, 2, 3 Hours ON/OFF 10 minutes Program Time 10 minutes
every 60 seconds	every 60 seconds	–
±0 °C to +50 °C	±0 °C to +50 °C	-10 °C to +50 °C
–	–	Automatic summer/winter time adjustment
–	–	Digital
Battery condition	Battery condition	Battery condition
Operating mode	Operating mode	Operating mode
Radio signal strength indication	Radio signal strength indication	Radio signal strength indication
Status display for heating	Status display for heating	Status display for heating
LED	LED	Temperature profile
I	I	I, IV
ON/OFF room thermostat	ON/OFF room thermostat	ON/OFF room thermostat; TPI room thermostat for use with on/off heaters
1%	–	1%, 2%

Analogue room thermostats – thermio™ essential B



PRODUCT DESCRIPTION

The thermio™ essential B is an analogue room thermostat of ErP class I for convenient control of the room temperature. Its simple, individual and automatic temperature control as well as its analogue technology contribute to a significant reduction in energy costs. The thermio™ essential B features a toggle switch that is used to switch the thermostat on and off. An additional mounting plate not only enables quick and easy on-wall mounting, but also contributes towards an elegant appearance.

- ▶ Easy, individual and automatic temperature control and energy conservation through analogue technology
- ▶ Increased comfort through a wide temperature control range of +10 °C to +30 °C
- ▶ Very easy to use due to the large temperature adjustment knob with a precise clearly marked dial and precise indicator markers as well as a manual ON/OFF switch
- ▶ Fast, simple and safe installation through on-wall mounting

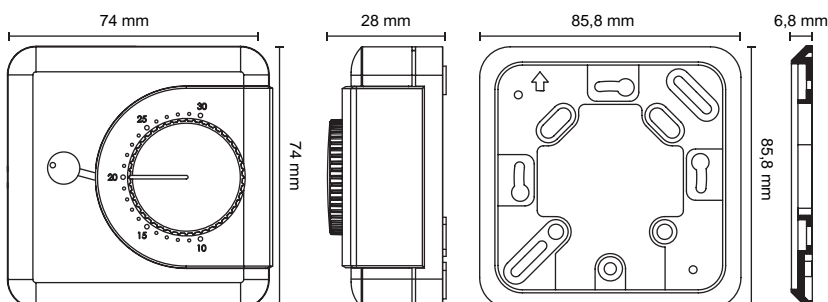
CEErP^I (1%) 

APPLICATION AREAS

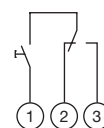
- ▶ Heating systems
- ▶ Heat pump
- ▶ Circulating pump
- ▶ Electric heating
- ▶ Motorised valves
- ▶ Actuators

Item no.	04.46.0020.1
EAN code	4010940044961

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Equipment operating voltage	AC 24 V to 230 V 50-60 Hz
Switching output	Changeover contact, potential-free
Switching capacity – resistive load	6 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	3 A / 250 V AC
Control function	Heating
Control type	Two-point (ON/OFF)
Control range	+10 °C to +30 °C

Electrical connection

Device	Screw terminal with wire protection, max. 2.5 mm ²
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Operating data

Manual switch	ON/OFF
---------------	--------

Display and format

Resolution	Temperature setpoint 1 °C
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Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-10 °C to +50 °C

General data

Colour	White/grey
Weight	159 g
Material	High-temperature resistant, self-extinguishing thermoplastics ABS plastic
Installation	On-wall (4-hole installation on flush-mounted socket), on-wall, flush mounting BS 4662, on-wall BS 5733

Compliance with standards

ErP class	I
ErP function	ON/OFF room thermostat
ErP contribution to seasonal space heating energy efficiency	1%
Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- Bezel

Digital room thermostats – thermio™ essential C



PRODUCT DESCRIPTION

The thermio™ essential C is a digital room thermostat of ErP class I for convenient control and monitoring of the room temperature. A display shows the target and temperature setpoint as well as the state of the system. Its high control accuracy and low power consumption contribute to a significant reduction in energy costs. The thermio™ essential C features a toggle switch that is used to switch the thermostat on and off. An additional mounting plate not only enables quick and easy on-wall mounting, but also contributes towards an elegant appearance.

- ▶ Long battery life through efficient energy management
- ▶ Monitoring of the battery status and display when a battery change is required
- ▶ Very easy and convenient to use through large LC display, manual ON/OFF switch and reset button
- ▶ Cost reduction and efficient energy management through high level of control accuracy
- ▶ Increased comfort through a wide temperature control range of +5 °C to +35 °C
- ▶ Fast, simple and safe installation through on-wall mounting

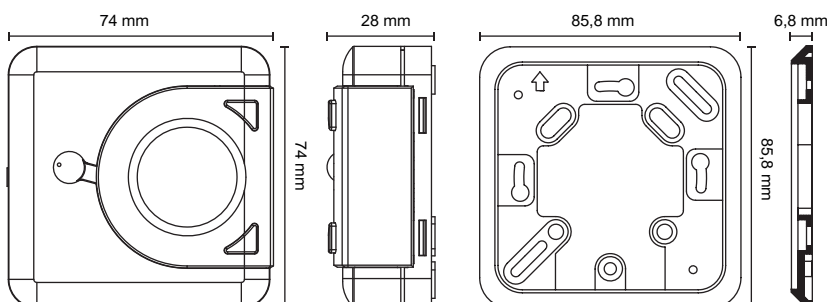
CEErP I (1%) 

APPLICATION AREAS

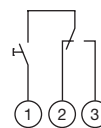
- ▶ Heating systems
- ▶ Heat pump
- ▶ Circulating pump
- ▶ Electric heating
- ▶ Motorised valves
- ▶ Actuators

Item no.	04.46.0021.1
EAN code	4010940044978

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Supply voltage	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	2 years (depending on the switching frequency)
Switching output	Changeover contact, potential-free
Switching capacity – resistive load	8 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	3 A / 250 V AC
Power consumption	5 VA
Control function	Heating
Control type	Two-point (ON/OFF)
Control range	+5 °C to +35 °C

Electrical connection

Device	Screw terminal with wire protection, max. 2.5 mm ²
--------	---

Operating data

Operating mode	Reset function
Manual switch	ON/OFF

Display and format

Resolution	Room temperature 0.1 °C, temperature setpoint 0.2 °C
Display update	every 60 seconds
Room temperature display	±0 °C to +50 °C
Status display	Battery condition

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-10 °C to +50 °C

General data

Colour	White/grey
Weight	158 g
Material	High-temperature resistant, self-extinguishing thermoplastics ABS plastic
Installation	On-wall (4-hole installation on flush-mounted socket), on-wall, flush mounting BS 4662, on-wall BS 5733

Compliance with standards

ErP class	I
ErP function	ON/OFF room thermostat
ErP contribution to seasonal space heating energy efficiency	1%
Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- Bezel

Digital wireless room thermostats – thermio™ essential Srf



PRODUCT DESCRIPTION

The thermio™ essential Srf is a digital room thermostat of ErP class I. Its wireless radio technology allows it to be placed anywhere in the room without laying electrical cables and thereby enables extremely convenient control and monitoring of the room temperature. Its integrated frost protection function is activated automatically as soon as ambient temperatures drop below the saved temperature setpoint. Up to 16 receivers can be connected to the transmitter. In case of poor radio communication, manual operation is possible using an ON/OFF switch. An additional mounting plate not only enables quick and easy on-wall mounting, but also contributes towards an elegant appearance.

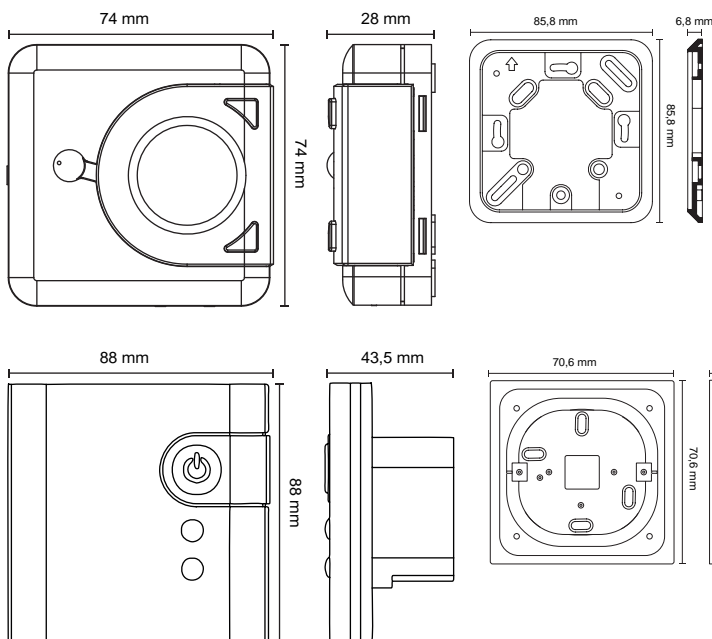
- ▶ The wireless radio technology allows individual placement in rooms without laying electric cables
- ▶ Signalling and control accuracy ensured through high frequency radio signal range of up to 30 metres inside buildings
- ▶ Long battery life through efficient energy management
- ▶ Monitoring of the battery status and display when a battery change is required
- ▶ The frost protection function prevents the freezing of radiators or icing of piping, even when switched OFF
- ▶ Cost reduction and efficient energy management through high level of control accuracy
- ▶ Very easy and convenient to use through large LC display, manual ON/OFF switch and reset button
- ▶ High flexibility – up to 16 receivers can be connected to the device
- ▶ Increased comfort through a wide temperature control range of +5 °C to +35 °C
- ▶ Fast, simple and safe installation through on-wall mounting



APPLICATION AREAS

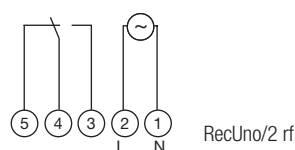
- ▶ Heating systems
- ▶ Electric heating
- ▶ Motorised valves
- ▶ Actuators

DIMENSIONAL DRAWINGS



Item no.	04.46.0024.1
EAN code	4010940045371

CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Supply voltage	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	2 years (depending on the switching frequency)
Power consumption	5 VA
Control function	Heating
Control type	Two-point (ON/OFF)
Control range	+5 °C to +35 °C, +5 °C (frost protection)

Electrical connection

Device	Screw terminal with wire protection, max. 2.5 mm ²
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Communication type

Radio signal	868.3 MHz
Range	30 m (inside building)

Operating data

Operating mode	OFF mode (5 °C frost protection), reset function, temperature reduction mode/AUTO
Manual switch	ON/OFF

Display and format

Resolution	Room temperature: 0.1 °C, temperature setpoint 0.2 °C
Display update	every 60 seconds
Room temperature display	±0 °C to +50 °C
Status display	Battery condition, operating mode, radio signal strength indication, status display for heating

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-10 °C to +50 °C

General data

Colour	White/grey
Weight	178 g
Material	High-temperature resistant, self-extinguishing thermoplastics ABS plastic
Installation	On-wall (4-hole installation on flush-mounted socket), on-wall, flush mounting BS 4662, on-wall BS 5733

Compliance with standards

ErP class	I
ErP function	ON/OFF room thermostat
ErP contribution to seasonal characteristic space heating energy efficiency	1%
Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- ▶ thermio™ essential H rf – transmitter + Bezel
- ▶ RecUno/2 rf – receiver + Wall mounting housing



REPLACEMENT PART / ACCESSORY

- ▶ thermio™ essential H rf – transmitter + Bezel
item no. 04.46.0022.1
EAN Code 4010940044985



- ▶ RecUno/2 rf – receiver + wall mounting housing
item no. 04.52.0013.1
EAN Code 4010940040697



- ▶ RecFM/2 rf – receiver
item no. 04.52.0011.1
EAN Code 4010940039714



You will find the technical data for the RecUno/2 rf receiver and the RecFM/2 rf receiver on page 154.

Digital wireless room thermostats – thermio™ essential Brf



PRODUCT DESCRIPTION

The thermio™ essential Brf is a digital radio room thermostat of ErP class I. Its wireless radio technology allows it to be placed anywhere in the room without laying electrical cables and thereby enables extremely convenient control and monitoring of the room temperature. Its integrated frost protection function is activated automatically as soon as ambient temperatures drop below the saved temperature setpoint. Up to 16 receivers can be connected to the transmitter. In case of poor radio communication, manual operation is possible using an ON/OFF switch. An additional mounting plate not only enables quick and easy on-wall mounting, but also contributes towards an elegant appearance.

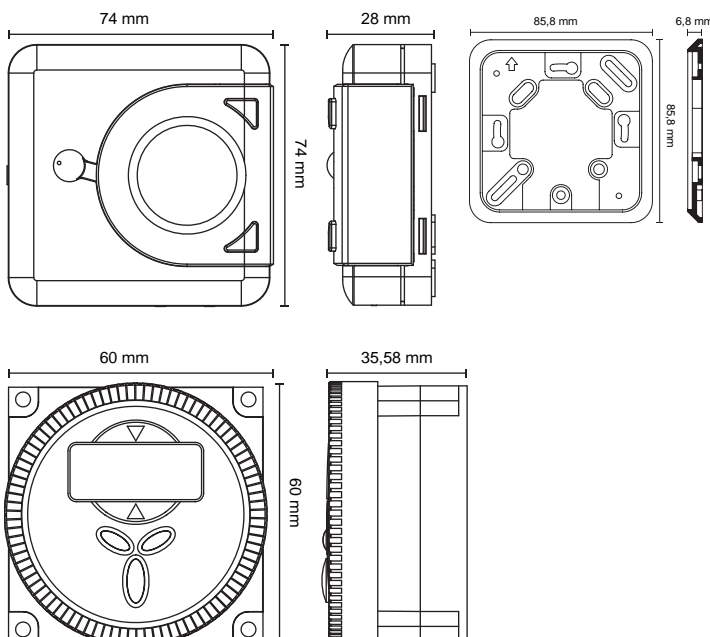
- ▶ The wireless radio technology allows individual placement in rooms without laying electric cables
- ▶ Signalling and control accuracy ensured through high frequency radio signal range of up to 30 metres inside buildings
- ▶ Long battery life through efficient energy management
- ▶ Monitoring of the battery status and display when a battery change is required
- ▶ The frost protection function prevents the freezing of radiators or icing of piping, even when switched off
- ▶ Cost reduction and efficient energy management through high level of control accuracy
- ▶ Very easy and convenient to use through large LC display, manual ON/OFF switch and reset button
- ▶ High flexibility – up to 16 receivers can be connected to the device
- ▶ Increased comfort through a wide temperature control range of +5 °C to +35 °C
- ▶ Fast, simple and safe installation through on-wall mount



APPLICATION AREAS

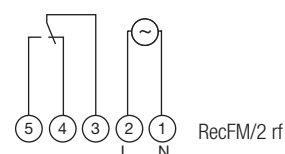
- ▶ Installation integrated in a gas boiler

DIMENSIONAL DRAWINGS



Item no.	04.46.0025.1
EAN code	4010940045388

CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Supply voltage	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	2 years (depending on the switching frequency)
Power consumption	5 VA
Control function	Heating
Control type	Two-point (ON/OFF)
Control range	+5 °C to +35 °C, +5 °C (frost protection)

Communication type

Radio signal	868.3 MHz
Range	30 m (inside building)

Operating data

Operating mode	OFF mode (5 °C frost protection), reset function, temperature reduction mode/AUTO
Manual switch	ON/OFF

Display and format

Resolution	Room temperature: 0.1 °C, temperature setpoint 0.2 °C
Display update	every 60 seconds
Room temperature display	±0 °C to +50 °C
Status display	Battery condition, operating mode, radio signal strength indication, status display for heating

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-10 °C to +50 °C

General data

Colour	White/grey
Weight	178 g
Material	High-temperature resistant, self-extinguishing thermoplastics ABS plastic
Installation	On-wall (4-hole installation on flush-mounted socket), on-wall, flush mounting BS 4662, on-wall BS 5733

Compliance with standards

ErP class	I
ErP function	ON/OFF room thermostat
ErP contribution to seasonal space heating energy efficiency	1%
Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- ▶ thermio™ essential H rf – transmitter + Bezel
- ▶ RecFM/2 rf – receiver



REPLACEMENT PART / ACCESSORY

- ▶ thermio™ essential H rf – transmitter + Bezel
item no. 04.46.0022.1
EAN Code 4010940044985



- ▶ RecFM/2 rf – receiver
item no. 04.52.0011.1
EAN Code 4010940039714



- ▶ RecUno/2 rf – receiver + wall mounting housing
item no. 04.52.0013.1
EAN Code 4010940040697



You will find the technical data for the RecUno/2 rf receiver and the RecFM/2 rf receiver on page 154.

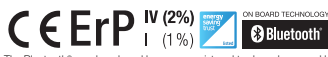
Digital room thermostats – thermio™ essential smart



PRODUCT DESCRIPTION

The thermio™ essential smart is a digital room thermostat of ErP class IV that can be programmed and operated easily and conveniently with a free app. Thanks to the integrated Bluetooth functionality, temperature profiles and schedules created on a mobile device can be transmitted and adapted easily and simply to the thermio™ essential smart via Bluetooth. This allows individual temperature profiles to be implemented easily, lowered automatically and thereby significantly reduce heating costs – without any loss of convenience. Of course the thermio™ essential smart can also be operated without the app: A large LC display and a manual ON/OFF switch make the room thermostat easy to operate.

- ▶ Extended scope of functions and excellent user guidance via the graphic user interface on a mobile device
- ▶ Intuitive and simple operation as well as fast and convenient programming with the free app
- ▶ Short-term and need-based heating through Boost function
- ▶ Optimal manipulation protection through PIN code protection for service interval settings
- ▶ Effective security against unauthorised operation, e.g. in public spaces
- ▶ Needs-based and fast temperature regulation without deviation ensures high energy efficiency



The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Grässlin GmbH is under license. Other trademarks and trade names are those of their respective owners.

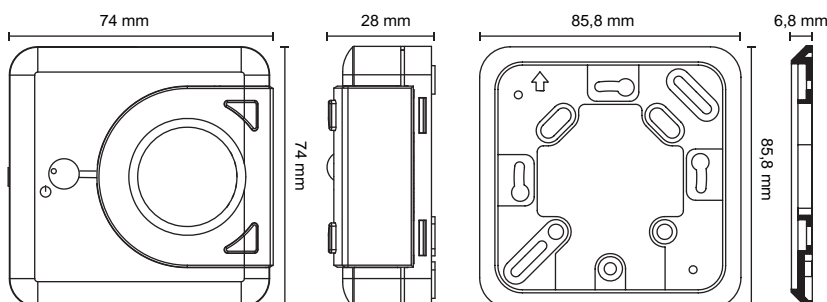
Item no.	04.46.0023.1
EAN code	4010940044992

APPLICATION AREAS

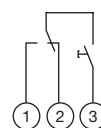
- ▶ Heating systems
- ▶ Heat pump
- ▶ Circulating pump
- ▶ Electric heating
- ▶ Motorised valves
- ▶ Actuators



DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Supply voltage	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	1 year (depending on the switching frequency)
Switching output	Changeover contact, potential-free
Switching capacity – resistive load	8 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	3 A / 250 V AC
Power consumption	5 VA
Power reserve	Programs saved in EEPROM
Control function	Heating
Control type	PID (factory setting), 2-point (ON/OFF)
Control range	+5 °C to +35 °C, +5 °C (frost protection)
Heating cycle	6 times per hour (3 to 12 times per hour)

Electrical connection

Device	Screw terminal with wire protection, max. 2.5 mm ²
--------	---

Communication type

Radio signal	Bluetooth 4.0, 2.4 GHz
Range	10 m
Output power	< 1 mW
Status display	Bluetooth symbol

Operating data

Operating mode	Manual mode, OFF mode (5 °C frost protection), reset function, key lock, override mode, Boost mode, temperature reduction mode/AUTO, holiday mode
Manual switch	ON/OFF/AUTO
Tampering protection	PIN code
Offset	-3 °C to +3 °C
Programs	7 days, 5-2 days, 1-7 days, Boost, manual, individual programming (max. 4 or 6 ON/OFF switching times)
Programming	Smartphone/tablet

Display and format

Resolution	Room temperature 0.1 °C, temperature setpoint 0.5 °C, Time of day 1 minute
Shortest switching time	Boost 1, 2, 3 Hours, ON/OFF 10 minutes, Program Time 10 minutes
Room temperature display	-10 °C to +50 °C
Summer/winter time	Automatic summer/winter time adjustment
Time	Digital
Status display	Battery condition, operating mode, status display for heating, temperature profile

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-10 °C to +50 °C

General data

Colour	White/grey
Weight	282 g
Material	High-temperature resistant, self-extinguishing thermoplastics, ABS plastic
Installation	On-wall (4-hole installation on flush-mounted socket), on-wall, flush mounting BS 4662, on-wall BS 5733

Compliance with standards

ErP class	I, IV
ErP function	ON/OFF room thermostat TPI room thermostat for use with on/off heaters
ErP contribution to seasonal characteristic space heating energy efficiency	1%, 2%
Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- Bezel

Receiver room thermostats

RecUno/2 rf



PRODUCT DESCRIPTION

RecUno/2 rf and RecFM/2 rf are radio receivers for use with Grässlin radio room thermostats of the thermio™ essential product line. The wireless radio technology allows individual placement in rooms without laying electric cables. The signal and control accuracy is ensured by the high radio range of up to 30 metres inside buildings.

- ▶ The wireless radio technology allows individual placement in rooms without laying electric cables
- ▶ Signalling and control accuracy ensured through high frequency radio signal range of up to 30 metres inside buildings
- ▶ Indication of the system state through the system state and radio signal strength LEDs
- ▶ Flexible, simple and fast installation on a flush-mounted socket or on-wall through use of the wall mounting housing (RecUno/2 rf)
- ▶ Easy and fast integration in the boiler control panel through standardised construction and DIN 6.3 flat plug (RecFM/2 rf)
- ▶ Manual operation through ON/OFF manual switch if radio communication is bad

RecFM/2 rf



APPLICATION AREAS

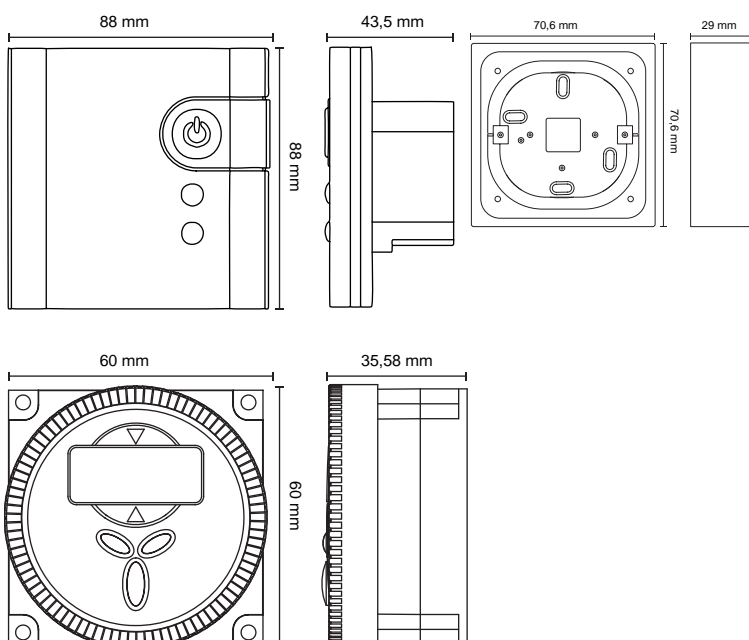
RecUno/2 rf:

- ▶ Heating systems
- ▶ Electric heating
- ▶ Motorised valves
- ▶ Actuators

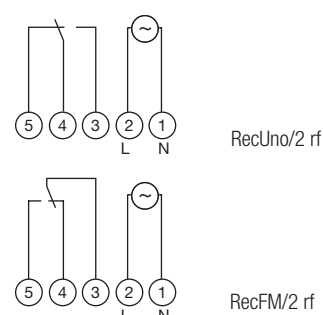
RecFM/2 rf:

- ▶ Installation integrated in a gas boiler

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical data

Supply voltage	AC 230 V ± 10% 50-60 Hz
Switching output	Changeover contact, potential-free
Power consumption	5 VA

Communication type

Wired	2-wire
Radio signal	868.3 MHz
Range	30 m (inside building)
Status display	LED

Operating data

Manual switch	ON/OFF
Programs	Manual

Display and format

Status display	Operating mode, radio signal strength indication, status display for heating
----------------	--

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	±0 °C to +50 °C

General data

Material	High-temperature resistant, self-extinguishing thermoplastics
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Compliance with standards

Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- ▶ Wall mounting housing
RecUno/2 rf

REPLACEMENT PART / ACCESSORY

- ▶ Installation base
item no. 01.79.0002.2
EAN Code 4010940002831



PRODUCT VARIANTS

	RecUno/2 rf	RecFM/2 rf
Item no.	04.52.0013.1	04.52.0011.1
EAN code	4010940040697	4010940039714

Electrical data

Switching capacity – resistive load	16 A / 250 V AC	16 A / 250 V AC, 20 A / 125 V AC, 16 A / 30 V DC
Switching capacity – inductive load cos. phi 0.6	3 A / 250 V AC	8 A / 250 V AC, 8 A / 125 V AC

Electrical connection

Device	Screw terminal with wire protection, max. 2.5 mm ²	Flat plug DIN 6.3
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General data

Colour	White/grey	White
Weight	266 g	110 g
Installation	Flush mounting, on-wall	Installation (boiler)

Programmable room thermostats – Selection guide

famoso 601 rf

feeling D101



Item no.	04.53.0005.1	04.10.0001.1
Interface	–	–
Supply voltage	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	1 year (depending on the switching frequency)	2 years (depending on the switching frequency)
External inputs	–	–
Communication type	Radio 868.3 MHz	Two-wire
Operating mode	Auto mode (Program dependent), night temperature mode	Auto mode (Program dependent), anti-legionella function, countdown mode (OFF mode after Hours), holiday mode (auto mode after days), manual eco fix mode (program dependent Ø temperature), OFF mode (5 °C frost protection, party mode (auto mode after Hours), cleaning mode (OFF mode after 2 Hours), key lock
Manual switch	Auto temperature, control temperature 1, control temperature 2	–
Offset	–	-5 °C to +5 °C
Programs	Daily Program	7 days, 5-2 days, 1-7 days, free weekday block formation, individual Programming
Hour meter	–	–
Time display format	24-hour format	12-hour format, 24-hour format
Shortest switching time	Programme Time 15 minutes	Programme Time 30 minutes
Room temperature display	–	±0 °C to +50 °C
Summer/winter time	Manual	Automatic
Time	Analogue hands	Digital
Status display	Battery condition, radio signal strength indication	Battery condition, operating mode, status display for heating, temperature profile
ErP class	I	I, IV

feeling D101 rf

feeling D201 OT



04.11.0004.1	04.12.0005.1
–	OpenTherm interface V3.0
DC 3 V (2 x 1.5 V AA LR6 alkaline battery)	OpenTherm BUS (optionally 2 x 1.5 V AA LR6 alkaline battery)
2 years (depending on the switching frequency)	2 years (depending on the switching frequency)
–	–
Radio 868.3 MHz	Two-wire
Auto mode (Program dependent), anti-legionella function, countdown mode (OFF mode after Hours), holiday mode (auto mode after days), manual eco fix mode (program dependent 0 temperature), OFF mode (5 °C frost protection), party mode (auto mode after Hours), cleaning mode (OFF mode after 2 Hours), key lock	Temperature reduction mode (auto mode after one day), auto mode (Program dependent), anti-legionella function, holiday mode (auto mode after days), comfort temperature mode (auto mode after one day), OFF mode (5 °C frost protection), Optimum Start, key lock
–	–
-5 °C to +5 °C	-5 °C to +5 °C
7 days, 5-2 days, 1-7 days, free weekday block formation, individual Programming	7 days, 5-2 days, 1-7 days, free weekday block formation, individual Programming
–	–
12-hour format, 24-hour format	12-hour format, 24-hour format
Programme Time 30 minutes	Programme Time 30 minutes
±0 °C to +50 °C	±0 °C to +50 °C
Automatic	Automatic
Digital	Digital
Battery condition, operating mode, radio signal strength indication, status display for heating, temperature profile	Battery condition, operating mode, OTC (weather-dependent control), status display for heating, temperature profile
I, IV	V, VI

Analogue programmable room thermostat – famoso 601 rf



PRODUCT DESCRIPTION

The famoso 601 rf is a programmable room thermostat with electronic temperature controller and analogue time switch with day program and a very short switching time of just 15 minutes. The wireless technology enables individual placement in the room without the laying of electrical cables and is especially suitable for use in new buildings or for retrofitting. The signal and control accuracy is ensured by the high radio range of up to 30 metres inside buildings. Individual comfort temperatures can be set via two room temperature controls, which can be selected via a dial. The battery status is monitored and displayed by a status LED with the required battery change. The famoso 601 rf is distinguished by a simple and modern design, which allows it to be easily integrated into any room.

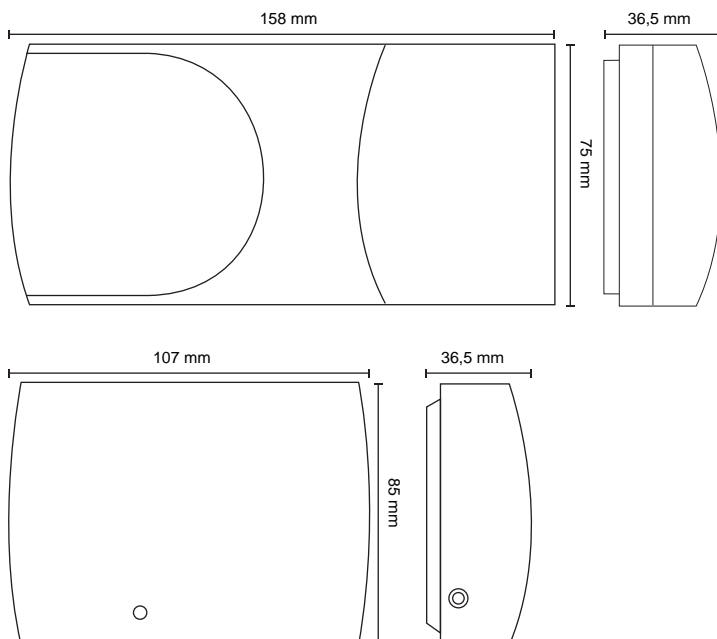
- ▶ Monitoring the battery status and display with the required battery change
- ▶ Increased comfort through wide temperature control range
- ▶ Long battery life through efficient energy management
- ▶ Surface mounting for easy and quick installation
- ▶ The wireless technology individual placement in the room without laying electrical cable
- ▶ Ensuring signalling and control accuracy by high frequency radio signal range of up to 30 metres inside buildings
- ▶ Signalling of system status via LEDs
- ▶ Simple and modern design



APPLICATION AREAS

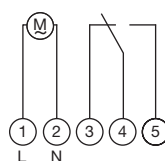
- ▶ Heating systems
- ▶ Underfloor heating
- ▶ Electric heaters
- ▶ Motorised valves
- ▶ Actuators

DIMENSIONAL DRAWINGS



Item no.	04.53.0005.1
EAN code	4010940040505

CIRCUIT DIAGRAM



RecUno rf - Receiver



TECHNICAL DATA

Electrical specifications

Supply voltage	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	1 year (depending on switching frequency)
Control function	Heating
Control type	2-point (ON/OFF)
Hysteresis	±0.25 K ... ±0.5 K
Control range	+5 °C (frost protection) +5 °C ... +30 °C
Control accuracy	± 2.5 seconds/day at +25 °C
Control period	5 ... 30 minutes

Communication type

Radio signal	868.3 MHz
Range	30 m (inside building)
Coding	> 16.8 mil.
Output power	< 1 mW

Operating data

Operating mode	Auto mode (program dependent) Night temperature mode
Hand switch	Auto temperature Control temperature 1 Control temperature 2
Programs	Daily program (ON/OFF)

Display and format

Format time display	24-hour format
Shortest switching time	Program time 15 minutes
Clock	Analogue hands
Status display	Battery state

Environmental conditions

Humidity (operating)	10% ... 90% relative humidity, non-condensing
Temperature (operation)	-5 °C ... +45 °C

General data

Colour	White
Weight	250 g
Material	Plastic ABS
Mounting	Surface mounting (4-hole mounting on flush-mounted box)

Standard compliance

ErP class	I
ErP function	ON/OFF room thermostat
ErP contribution to seasonal characteristic space heating energy efficiency	1%
Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- ▶ famoso 601 rf - transmitter
- ▶ RecUno rf - receiver



REPLACEMENT PARTS / ACCESSORIES

- ▶ famoso 601 rf - transmitter
Item no. 04.53.0002.1
EAN-Code 4010940037444



- ▶ RecUno rf - receiver
Item no. 04.52.0001.1
EAN-Code 4010940031220



- ▶ RecFM/1 rf - receiver
Item no. 04.52.0012.1
EAN-Code 4010940040680



Specifications for the RecUno rf - transmitter and RecFM/1 rf - transmitter can be found on page 166.

Digital programmable room thermostat – feeling D101



PRODUCT DESCRIPTION

The feeling D101 is a digital, programmable room thermostat. It enables fast, suitable and energy-saving individual room control with legionella protection. The high control accuracy also enables efficient utilisation of the system. The thermostat has various operating modes, which allow a comfortable indoor climate according to the individual needs. User-friendly programming and operation is ensured with its large display. The feeling D101 has up to 48 different time-temperature programs to increase room comfort. The feeling D101 stands for simple and modern design and can be integrated perfectly into the interior design.

- ▶ Convenient, automatic change from summer to winter time
- ▶ Effective security against unauthorised operation, e.g. in public spaces
- ▶ Long battery life through efficient energy management
- ▶ Individual programs are saved and continue to be available even after a power failure
- ▶ Monitoring the battery status and display with the required battery change
- ▶ Child-proof lock as system security for children and elderly

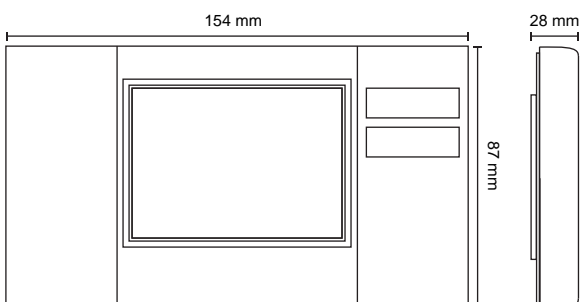


APPLICATION AREAS

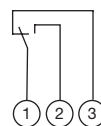
- ▶ Heating systems
- ▶ Underfloor heating
- ▶ Electric heaters
- ▶ Motorised valves
- ▶ Actuators

Item no.	04.10.0001.1
EAN code	4010940039578

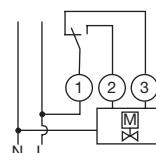
DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



Wiring diagram for boiler / heater



Wiring diagram for motorized valves

TECHNICAL DATA

Electrical specifications

Supply voltage	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	2 years (depending on switching frequency)
Battery replacement time (power reserve)	> 10 minutes, (programs saved in EEPROM)
Current output	Changeover, potential-free, opening width < 3 mm
Switching capacity – resistive load	6 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	2 A / 250 V AC
Control function	Heating
Control type	PID (factory setting), 2-point (ON/OFF)
Hysteresis	±0.4 K (±0.1 K ... ±0.9 K)
Control range	+5 °C ... +32 °C, +5 °C (+3 °C ... +7 °C frost protection)
Control accuracy	±0.5 °C (20 K/hour)
Sensor (thermistor)	100 K (at 25 °C) NTC
Heat measurement (heating system)	3 K/hour

Electrical connection

Device	Screw terminal with wire protection max. 1.5 mm ²
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Communication type

Wired	2-wire
-------	--------

Operating data

Operating mode	Auto mode, Anti-Legionella function, countdown mode, holiday mode, manual eco-fix mode, OFF mode, party mode, cleaning mode, key lock
Offset	-5 °C ... +5 °C
Programs	7 days, 5-2 days, 1-7 days, free weekday block formation, individual programming (max. 7 programs with 48 switching times)

Display and format

Resolution	Room temperature 0.1 °C, target temperature 0.5 °C, day time 1 minute
Display update	every 10 seconds
Format time display	24-hour format (factory setting), 12-hour format (AM/PM)
Shortest switching time	Program time 30 minutes
Room temperature display	+0 °C ... +50 °C
Summer/winter time	Automatic summer/winter time change
Status display	Battery status, operating mode, status display heating (flame symbol), temperature profile

Environmental conditions

Humidity (operating)	10% ... 90% relative humidity, non-condensing
Temperature (operation)	±0 °C ... +45 °C

General data

Colour	White
Weight	200 g
Material	Plastic ABS
Mounting	Surface mounting (4-hole mounting on flush-mounted box)

Standard compliance

ErP class	I, IV
ErP function	ON/OFF room thermostat TPI room thermostat for use with on/off heaters
ErP contribution to seasonal characteristic space heating energy efficiency	1%, 2%
Protection type	IP40
Protection class	II, after appropriate mounting
Approvals	CE, Energy Saving Trust

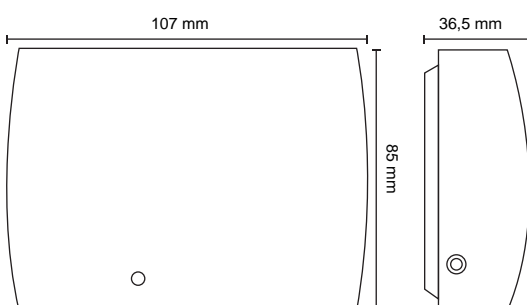
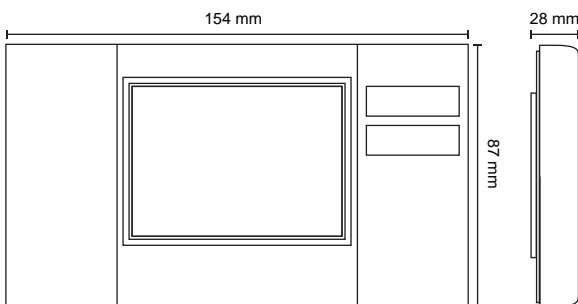
Digital programmable room thermostat – feeling D101 rf



APPLICATION AREAS

- ▶ Heating systems
- ▶ Underfloor heating
- ▶ Electric heating
- ▶ Motorised valves
- ▶ Actuators

DIMENSIONAL DRAWINGS



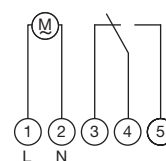
PRODUCT DESCRIPTION

The feeling D101 rf is a digital, programmable room thermostat. It enables fast, suitable and energy-saving individual room control with legionella protection. The high control accuracy also enables efficient utilisation of the system. The chronostat has various operating modes, which allow a comfortable indoor climate according to the individual needs. User-friendly programming and operation is ensured with its large display. It has up to 48 different time-temperature programs to increase room comfort. The feeling D101 rf stands for simple and modern design and can be integrated perfectly into the interior design. The wireless technology enables individual placement in the room without laying electrical cables and is especially suitable for use in new buildings or for retrofitting. The signal and control accuracy is ensured by the high radio range of up to 30 metres inside buildings.

- ▶ Long battery life through efficient energy management
- ▶ Convenient, automatic change from summer to winter time
- ▶ Monitoring the battery status and display with required battery change
- ▶ Effective protection against unauthorised use e.g. in public places
- ▶ Individual programs are saved and continue to be available even after a power failure
- ▶ Child-proof lock as system security for children and elderly
- ▶ The wireless technology allows individual placement in rooms without laying electric cable
- ▶ Ensuring signalling and control accuracy through high frequency radio signal range of up to 30 metres inside buildings
- ▶ Signalling of system status via LEDs

Item no.	04.11.0004.1
EAN code	4010940039974

CIRCUIT DIAGRAM



RecUno rf - Receiver

TECHNICAL DATA

Electrical specifications

Supply voltage	DC 3 V (2 x 1.5 V AA LR6 alkaline battery)
Battery life	2 years (depending on switching frequency)
Battery replacement time (power reserve)	> 10 minutes, (programs saved in EEPROM)
Control function	Heating
Control type	PID (factory setting), 2-point (ON/OFF)
Hysteresis	±0.4 K (±0.1 K ... ±0.9 K)
Control range	+5 °C ... +32 °C, +5 °C (+3 °C ... +7 °C frost protection)
Control accuracy	±0.5 °C (20 K/hour)
Sensor (thermistor)	100 K (at 25 °C) NTC
Heat measurement (heating system)	3 K/hour

Electrical connection

Device	Latching screw with wire protection max. 1.5 mm ²
--------	--

Communication type

Radio signal	868.3 MHz
Range	30 m (inside building)
Coding	> 16.8 mil.
Output power	< 1 mW

Operating data

Operating mode	Auto mode, anti-Legionella function, countdown mode, holiday mode, manual eco-fix mode, OFF mode, party mode, cleaning mode, key lock
Offset	-5 °C ... +5 °C
Programs	7 days, 5-2 days, 1-7 days, free weekday block formation, individual programming (max. 7 programs with 48 switching times)

Display and format

Resolution	Room temperature 0.1 °C, target temperature 0.5 °C, day time 1 minute
Display Update	every 10 seconds
Format time display	24-hour format (factory setting) and 12-hour format (AM/PM)
Shortest switching time	Program time 30 minutes
Room temperature display	+0 °C ... +50 °C
Summer/winter time	Automatic summer/winter time change
Status display	Battery status, operating mode, radio signal strength indication, status display heating (flame symbol), temperature profile

Environmental conditions

Humidity (operating)	10% ... 90% relative humidity, non-condensing
Temperature (operation)	±0 °C ... +45 °C

General data

Colour	White
Weight	200 g
Material	Plastic ABS
Mounting	Surface mounting (4-hole mounting on flush-mounted box)

Standard compliance

ErP class	I, IV
ErP function	ON/OFF room thermostat TPI room thermostat for use with on/off heaters
ErP contribution to seasonal characteristic space heating energy efficiency	1%, 2%
Protection type	IP40
Protection class	II, after appropriate mounting
Approvals	CE, Energy Saving Trust

SCOPE OF DELIVERY

- ▶ feeling D101 rf - transmitter
- ▶ RecUno rf - receiver



REPLACEMENT PARTS / ACCESSORIES

- ▶ feeling D101 rf - transmitter
Item no. 04.11.0001.1
EAN-Code 4010940039943



- ▶ RecUno rf - receiver
Item no. 04.52.0001.1
EAN-Code 4010940031220



- ▶ RecFM/1 rf - receiver
Item no. 04.52.0012.1
EAN-Code 4010940040680



Specifications for the RecUno rf - transmitter and RecFM/1 rf - transmitter can be found on page 166.

Digital programmable room thermostat – feeling D201 OT



PRODUCT DESCRIPTION

The feeling D201 OT is a digital, programmable room thermostat with OpenTherm interface. The modulating control enables fast, need-based and energy-saving individual room control and flow optimisation, and to domestic water heating with legionella protection. The high control accuracy also enables efficient utilisation of the plant. The thermostat has various operating modes, which allow a comfortable indoor climate according to the individual needs. With the large, backlit display, user-friendly programming and operation is ensured, even in low light conditions. The display of the system operating hours enables monitoring of energy consumption and helps save energy. To increase the energy balance, the feeling D201 OT has external inputs that, for example, can realise the weather-dependent control system with an outdoor temperature sensor. The feeling D201 OT stands for simple and modern design and can therefore be optimally integrated into the interior design.

- ▶ Individual programs are saved and continue to be available even after a power failure
- ▶ Display of the operating hours enables conclusions on energy consumption
- ▶ Increasing the energy balance through external inputs connected to motion or presence detectors, temperature sensors, floor sensors, window contact or telephone remote switch
- ▶ Need-based and energy-saving individual room control, flow optimisation, and domestic water heating through OpenTherm interface
- ▶ Effective security against unauthorised operation, e.g. in public spaces
- ▶ Child-proof lock as system security for children and elderly

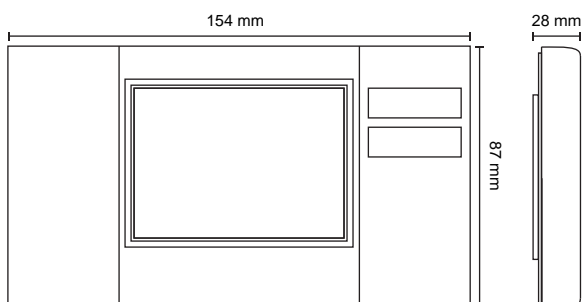


APPLICATION AREAS

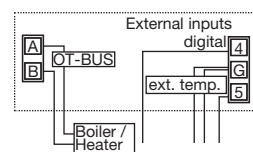
- ▶ Modulating heating systems with OpenTherm interface

Item no.	04.12.0005.1
EAN code	4010940041472

DIMENSIONAL DRAWING



CIRCUIT DIAGRAM



TECHNICAL DATA

Electrical specifications

Interface	OpenTherm interface V3.0
Supply voltage	OpenTherm BUS (optional 2 x 1.5 V AA LR6 alkaline battery)
Battery life	2 years (depending on switching frequency)
Battery replacement time (power reserve)	> 1 hour, (programs saved in EEPROM)
Control function	Heating
Control type	PID (factory setting), 2-point (ON/OFF)
Hysteresis	±0.4 K (±0.1 K ... ±0.9 K)
Control range	+5 °C ... +32 °C, +5 °C (+3 °C ... +7 °C frost protection)
Control accuracy	±0.5 °C (20 K/hour)
Sensor (thermistor)	100 K (at 25 °C) NTC
Heat measurement (heating system)	3 K/hour

Electrical connection

Device	Latching screw with wire protection max. 1.5 mm ²
External inputs	Plug-in terminal with wire protection

Communication type

Wired	2-wire
-------	--------

External inputs

Analogue	Potential free
Digital	Outside temperature sensor NTC 100 kΩ

Operating data

Operating mode	Temperature reduction mode, auto mode, anti-Legionella function, holiday mode, comfort temperature mode, optimum start, keylock
Offset	-5 °C ... +5 °C
Programs	7 days 5-2 days, 1-7 days, free weekday block formation Individual programming (max. 7 programs with 48 switching times)
Counter	Hour meter

Display and format

Resolution	Room temperature 0.1 °C, target temperature 0.5 °C, day time 1 minute
Display update	every 10 seconds
Display lighting	White
Format time display	24-hour format (factory setting), 12-hour format (AM/PM)
Shortest switching time	Program time 30 minutes
Room temperature display	+0 °C ... +50 °C
Summer/winter time	Automatic summer/winter time change
Status display	Battery status, operating mode, OTC (weather-dependent control) Status display heating (flame symbol), temperature profile

Environmental conditions

Humidity (operating)	10% ... 90% relative humidity, non-condensing
Temperature (operation)	±0 °C ... +45 °C

General data

Colour	White
Weight	200 g
Material	Plastic ABS
Mounting	Surface mounting (4-hole mounting on flush-mounted box)

Standard compliance

ErP class	V, VI
ErP function	Modulating room thermostat for use with modulating heaters Weather-dependent controller and room temperature sensor for use with modulating heaters
ErP contribution to seasonal characteristic space heating energy efficiency	3%, 4%
Protection type	IP40
Protection class	II, after appropriate mounting
Approvals	CE, OpenTherm Protocol Specification V3.0

► The perfect combination for better energy balance

The feeling D201 OT can also be used for energy-efficient control of, for example, weather-dependent systems. For this purpose, the external inputs enable the connection of required products, such as e.g.:

- motion and presence detectors
- temperature sensors
- floor sensors
- window contacts
- telephone remote switching

Detailed information about the motion and presence detectors can be found in our lighting control product catalogue (page.56)

Receiver programmable room thermostats

RecUno rf



PRODUCT DESCRIPTION

The RecUno rf and the RecFM/1 rf are radio receivers for use with wireless controllers from Grässlin. The wireless technology enables individual placement in the room without laying electrical cables and is especially suitable for use in new buildings or for retrofitting. The signal and control accuracy is ensured by the high radio range of up to 30 metres inside buildings.

- ▶ The wireless technology enables individual placement in rooms without laying electric cable
- ▶ Ensuring signalling and control accuracy by high frequency radio signal range of up to 30 metres inside buildings
- ▶ Signalling of system status via LEDs
- ▶ Simple and modern design

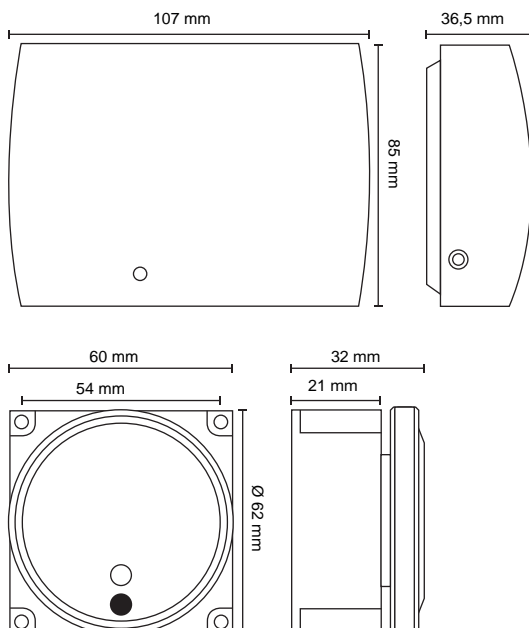
RecFM/1 rf



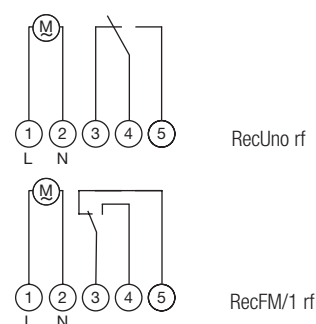
APPLICATION AREAS

- ▶ Heating systems
- ▶ Electric heaters
- ▶ Motorised valves
- ▶ Actuators
- ▶ Gas-Boiler

DIMENSIONAL DRAWINGS



CIRCUIT DIAGRAMS



TECHNICAL DATA

Electrical specifications

Supply voltage	AC 230 V ± 10% 50-60 Hz
Current output	Changeover, potential-free, opening width < 3 mm
Switching capacity – resistive load	5 A / 250 V AC
Switching capacity – inductive load cos. phi 0.6	1 A / 250 V AC

Electrical connection

Device	Screw terminal with wire protection max. 1.5 mm ²
--------	--

Communication type

Wired	2-wire
Radio signal	868.3 MHz
Range	30 m (inside building)
Coding	> 16.8 mil.
Output power	< 1 mW
Status display	LED

Display and format

Status display	Status display heating (LED)
----------------	------------------------------

Environmental conditions

Humidity (operating)	10% ... 90% relative humidity, non-condensing
Temperature (operation)	-5 °C ... +45 °C

General data

Colour	White
Weight	113 g
Material	Plastic ABS

Standard compliance

Protection type	IP20
Protection class	II, after appropriate mounting
Approvals	CE

REPLACEMENT PARTS / ACCESSORIES

► Mounting socket

Item no. 01.79.0002.2

EAN-Code 4010940002831



PRODUCT VARIANTS

	RecUno rf	RecFM/1 rf
Item no.	04.52.0001.1	04.52.0012.1
EAN-Code	4010940031220	4010940040680
Electrical connection		
Device	Screw terminal with wire protection max. 1.5 mm ²	Flat DIN 6,3
General data		
Weight	113 g	67 g
Mounting	Surface mounting (4-hole mounting on flush-mounted box)	Built-in (Boiler)

Motorized zone valves

2PV2 / 2PV8



3PV2 / 3PV8



PRODUCT DESCRIPTION

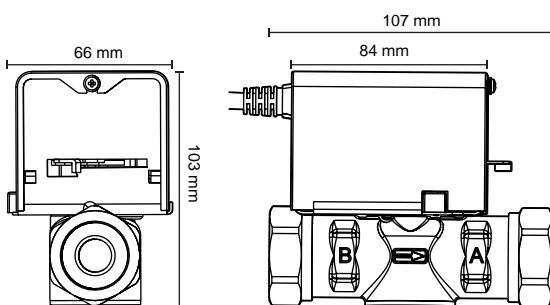
2PV2 and 2PV8 are two-way valves with spring-loaded return and motorised actuator. They are attached via the inlet and outlet sides according to the direction of flow indicator and can be set to manual or automatic by means of the adjusting lever.

To allow the heating pipeline system to be filled, drained or bled manually, the adjusting lever is pushed down with slight pressure into the locked position. Automatic adjustment is enabled by a control signal that is sent along the wire. For this purpose, the adjusting lever is released from the locked position once the heating pipeline system has been filled and bled.

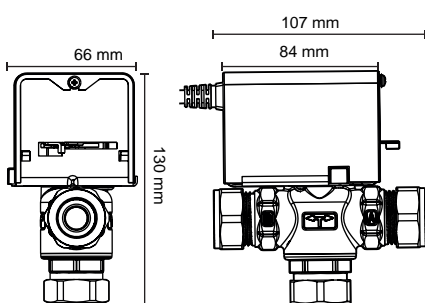
3PV2 and 3PV8 are three-way valve with spring-loaded return to the middle position and actuator. They are attached via the inlet side and the 2 outlets according to the direction of flow indicator and can be set to manual or automatic by means of the adjusting lever. The inlet side provides the supply of fresh water and the 2 outlets provide the inflows for central heating (A) and for water heating (B).

- ▶ Quick and simplified installation due to a 1.2 mtrs length cable with wires with standard colour coding, a potential-free auxiliary switch and a manual lever for filling and draining the pipe system
- ▶ Flexible installation through compact construction for use in cramped ambient conditions
- ▶ Easy to replace in the event of a fault without draining the pipe system due to a valve motor that can be removed at the push of a button

MASSZEICHNUNGEN



2PV2 / 2PV8



3PV2 / 3PV8



AREAS OF APPLICATION

- ▶ Controlling and shutting OFF hot water through a heating system (2PV2 / 2PV8)
- ▶ Controlling the flow of fresh water through a heating system for central heating or hot water (3PV2 / 3PV8)

TECHNICAL DATA

Electrical data

Supply voltage	AC 230 V ± 10% 50-60 Hz
Switching capacity – resistive load	3 A / 230 V AC
Switching capacity – inductive load cos. phi 0.6	1 A / 250 V AC
Power consumption	5 VA
Control type	Two-point (ON/OFF)

Electrical connection

Device	Cable length 1.2 m (heat-resistant and flexible)
--------	--

Operating data

Manual switch	ON/OFF/AUTO
---------------	-------------

Display and format

Shortest switching time	Opening 12 seconds, closing 5 seconds
-------------------------	--

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	±0 °C to +50 °C

General data

Drive type	Synchronous
Material	Brass
Installation	Heating pipeline system
Medium	Hot water, cold water
Temperature of medium (in operation)	+5 °C to +100 °C

Compliance with standards

Protection type	IP20
Protection class	I, when installed accordingly
Approvals	CE

REPLACEMENT PART / ACCESSORY

- Replacement Head VRMH2
item no. 17.32.0001.1
EAN Code 4010940045234



- Replacement Head VRMH3
item no. 17.32.0002.1
EAN Code 4010940045425



PRODUCT VARIANTS

	2PV2	2PV8	3PV2	3PV8
Item no.	17.30.0001.1	17.30.0002.1	17.31.0001.1	17.31.0002.1
EAN code	4010940045197	4010940045203	4010940045210	4010940045227

General data

Weight	900 g	1100 g	1100 g	1200 g
Connection diameter	22 mm	28 mm	22 mm	28 mm
Flow factor	3.5 m³/h	4.6 m³/h	3.5 m³/h	4.6 m³/h
Maximum differential pressure	0.7 bar	0.45 bar	0.7 bar	0.45 bar
Maximum static pressure	8.6 bar	8 bar	8.6 bar	8 bar
Maximum operating pressure	0.7 bar	0.45 bar	0.7 bar	0.45 bar

Wiring centres

Junction Box JB12



PRODUCT DESCRIPTION

The wiring centres JB12 and WC16 are used to simplify the wiring of electrical installations or central heating systems, for example.

Junction box JB12 features 12 large terminals, 15 possible cable inlets, a large voltage warning sign and strain relief clamps and thereby guarantees professional, safe and conform installation and troubleshooting.

Wiring centre WC16 features 16 large terminals, 5 possible cable inlets and a large voltage warning sign. The WC16 was specially designed for use with a 2- or 3-way central heating system. For a better overview of the incoming and outgoing cables, the contents include cable identification labels that can be attached to the cables of various control components for clear identification.

- ▶ A professional and safe design is indicated by a voltage warning sign and cable identification labels for S plan and Y plan wiring diagrams
- ▶ Shortened switching test and troubleshooting through professional wiring of the electrical installation
- ▶ On-wall mounting for easy and quick installation

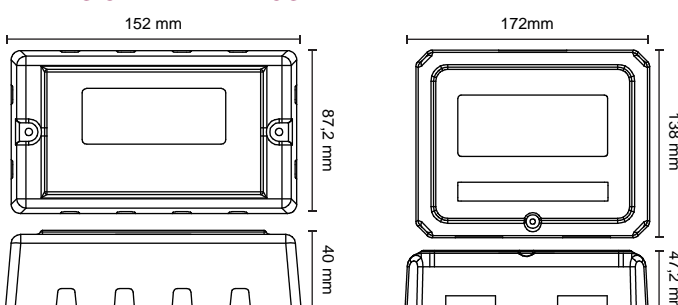
Wiring Centre WC16



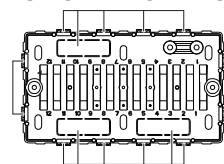
APPLICATION AREAS

- ▶ Electrical installations
- ▶ Central heating systems
- ▶ S Plan, Y Plan and S-Plan-Plus

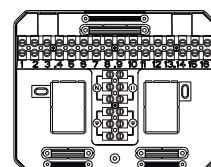
DIMENSIONAL DRAWINGS



CONNECTION DIAGRAMS



JB12



WC16

TECHNICAL DATA**Electrical data**

Equipment operating voltage	AC 230 V ± 10% 50 Hz
Terminal current	10 A

Electrical connection

Device	Screw terminal with wire protection max. 1.5 mm ²
--------	--

Ambient conditions

Humidity (operating)	10% to 90% relative humidity, condensation-free
Temperature (operating)	-15 °C to +55 °C

General data

Colour	White
Material	ABS plastic
Installation	On-wall

Compliance with standards

Protection type	IP20
Protection class	II, when installed accordingly
Approvals	CE
Standards and directives	BS6220

SCOPE OF DELIVERY

- ▶ 2 x cable identification labels

PRODUCT VARIANTS

	Junction Box JB12	Wiring Centre WC16
Item no.	09.30.0001.1	09.30.0002.1
EAN code	4010940045289	4010940045296

Electrical connection

Cable inlet	4 x top, 4 x bottom, 3 x back, 2 x left, 2 x right	1 x top, 2 x bottom, 2 x back
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Communication type

Wired	12-way	16-way
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General data

Weight	224 g	276 g
--------	-------	-------

Water treatment compliance pack – ComPack

ITEM NO. 09.21.0001.1 / EAN-CODE 4010940045432



PRODUCT DESCRIPTION

The compliance pack for water treatment from Grässlin is used to clean central heating systems and protects heaters and heat distributors in heating systems reliably from sediments, encrustations, scale formation and corrosion. The ComPack meets the requirements of the Domestic Building Services Compliance Guide. The contents of the ComPack include:

MAGNETIC FILTER MF2

The magnetic filter integrated in the pipe system completely removes iron oxide sludge and thereby not only extends the operating service life of the central heating system but also reduces maintenance costs and heating costs by up to 6% per year. It also reduces CO2 emissions.

- ▶ Removes water impurities in the system
- ▶ Quick and easy to install
- ▶ Immediate system protection
- ▶ Reduces maintenance and servicing costs
- ▶ Extends the system's service life
- ▶ No running operating costs
- ▶ Compact design for installation in narrow spaces

INHIBITOR INH 0.5L

The phosphate-free Grässlin Inhibitor is suitable for all water hardness levels and prevents both corrosion and lime scale deposits in the system and is suitable for sealed or open central heating systems. In addition, it prevents the development of magnetite and reduces the frequency of component failures in pumps and heat exchangers, thereby making an essential contribution towards maintaining system efficiency and reducing heating costs.

- ▶ Reduces the occurrence of component failures (pumps and heat exchangers) and the resulting repair costs
- ▶ Maintains comfortable room temperatures and prevents cold spots on radiators
- ▶ For all water hardness levels
- ▶ Suitable for all metals and other materials that are usually used in heating installations



CLEANER CLE 0.5L

This highly effective and 100% biodegradable universal cleaner quickly removes deposits and rust sludge deposits and is suitable for both sealed and open central heating systems. The concentrate is highly economical for the treatment of 100 litres of water and restores the efficiency of existing systems even during normal heating operation.

- ▶ Removes rust sludge and deposits and restores the efficiency of existing systems
- ▶ Restores the efficiency of existing systems even during normal heating operation
- ▶ Suitable for all heating systems and water types
- ▶ Suitable for all metals and other materials that are usually used in heating installations

ELECTROLYTIC INHIBITOR ESI15 15MM

This eco-friendly and maintenance-free water conditioner changes the crystal structure of the lime scale and thereby prevents lime scale from settling on pipes or other surfaces for up to 10 years. The ESI15 does not require a power supply.



AREAS OF APPLICATION

- ▶ Central heating systems
- ▶ Open vented systems
- ▶ Sealed systems

AREAS OF APPLICATION

- ▶ Central heating systems
- ▶ For open vented systems fill via header tank
- ▶ For sealed systems fill via a radiator
- ▶ For use in indirect systems only
- ▶ For use in accordance with BS7593:2006
- ▶ Classified as non-hazardous while delivering effective protection against corrosion and limescale - non-toxic and biodegradable

AREAS OF APPLICATION

- ▶ Comprehensive house protection
- ▶ Protects against lime scale deposits in individual devices

TECHNICAL DATA – MAGNETIC FILTER MF2

General data	
Weight	600 g
Material	Glass fibre reinforced nylon
Connection diameter	22 mm
Maximum static pressure	10 bar
Magnet	4 element neodymium magnet arrangement, hermetically sealed in stainless steel 304 11000 Gauss
Valve body	Inlet and outlet, 360 ° swivelling valves
Drain valve	1/2" BSP drain valve with key
Container capacity	500 ml
Dirt trap	304 Stainless steel dirt trap for non-magnetic particles
Ambient conditions	
Temperature (operating)	±0 °C to +82 °C

TECHNICAL DATA – INHIBITOR INH & CLEANER CLE

	Inhibitor IHN	Cleaner CLE
Ambient conditions		
Packing, transport and storage	Safe, but should be kept inaccessible to children like all household chemicals. Avoid eye or skin contact. Store at temperatures above 0 °C Store in a cool and well-ventilated place. Keep container sealed Store only in its original packaging	

Physical and chemical properties

	Inhibitor	Cleaner
Type		
Use	Water treatment for the heating system	System cleaner for heating systems
Colour	Straw	Brown
pH (concentrated solution)	8	4
Relative density	1.13	1.01 – 1.04
Appearance	Liquid	
Odour	Mild aromatic	
Solubility (water)	Soluble in cold and hot water	
Yield	100 litres of water, 10 radiators	
Content	500 ml	

Compliance with standards

Approvals	BuildCert CIAS
Standards and directives	BS7593:2006

TECHNICAL DATA – ELECTROLYTIC INHIBITOR ESI15 15MM

General data	
Weight	510 g
Material	Copper body with zinc anode inside
Dimension	190 mm x Ø 35 mm
Connection diameter	15 mm
Maximum static pressure	10 bar
Compliance with standards	
Standards and directives	WRAS

SCOPE OF DELIVERY

- Inhibitor test strip according to benchmark for quick determination of water hardness (ESI15)



- Gas boiler system commissioning checklist according to the benchmark



- Spanner for magnetic filter MF2



GRÄSSLIN Services



Technology in plain text

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses, income, and transfers between accounts.

The second part of the document provides a detailed breakdown of the accounting cycle. It outlines the ten steps involved in the process, from identifying the accounting entity to preparing financial statements. Each step is explained in detail, with examples provided to illustrate the concepts.

The third part of the document discusses the various types of accounts used in accounting. It distinguishes between assets, liabilities, equity, revenue, and expense accounts, and explains how they are classified and balanced. It also covers the concept of debits and credits, and how they are used to record transactions.

The fourth part of the document discusses the importance of internal controls in accounting. It explains how internal controls help to prevent errors and fraud, and how they can be designed to ensure the accuracy and reliability of financial information.

The fifth part of the document discusses the role of accounting in business decision-making. It explains how financial statements provide valuable information to management and other stakeholders, and how this information is used to make informed decisions about the future of the business.

The sixth part of the document discusses the importance of ethics in accounting. It explains how accountants have a responsibility to act ethically and to provide accurate and honest financial information. It also discusses the consequences of unethical behavior and the importance of maintaining high standards of integrity.

The seventh part of the document discusses the role of accounting in the economy. It explains how accounting provides a common language for business transactions, and how this helps to facilitate trade and economic growth.

The eighth part of the document discusses the importance of technology in accounting. It explains how computerized accounting systems have revolutionized the industry, and how they have made it easier and more efficient to manage financial information.

The ninth part of the document discusses the importance of communication in accounting. It explains how accountants must be able to communicate effectively with their clients and other stakeholders, and how this helps to build trust and ensure the success of the business.

The tenth part of the document discusses the importance of continuous learning in accounting. It explains how the field of accounting is constantly evolving, and how accountants must stay up-to-date on the latest developments and techniques to remain effective in their roles.



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