GRÄSSLIN

Product overview

Grässlin time switch technology 2023

“A new idea every day”

Dieter Grässlin
Company founder and ideas man

Reliable technology meets maximum user convenience

- Grässlin develops and manufactures groundbreaking products of premium quality in the fields of time switch technology, lighting control and hour counters.
- Since our very beginnings, we have been developing solutions to make the work of our users easier and more efficient. Our aim is to deliver technologically advanced user-friendly products with customised functions for efficient building automation.
- Grässlin products are used in a wide range of applications: from the time-based control of lighting systems, pump controls, gates and shop windows to measuring the use of machines, vehicles and buildings on the basis of operation.

A strong partner to industry

- As a pioneer in time switch technology and temperature control, Grässlin maintains long-term partnerships with the world’s leading manufacturers in the heating & electronics industry.
- We work in close collaboration with our industry customers to develop customer-specific OEM solutions which are designed to meet individual requirements.
- Sound market knowledge and more than 60 years of practical experience combined with in-depth technical expertise provide the basis for successful and mutually beneficial OEM partnerships.

Contents

Products with a global reputation – Expertise with a global reputation

Time switch technology

Hour counters

Lighting control/sensor technology

THE TIME SWITCH

talento smart

The talento smart LAN module enables time switches to be programmed from home

The coronavirus pandemic has meant that even engineers and building services engineers are required to work from home for large parts of their days. Visiting customers can be risky for both sides. And it's not just people who have to adjust (or be adjusted) to the new situation, but buildings, too. Shops are closing, others are changing their opening hours, access points have been moved. One consequence of this is that control mechanisms for doors, lighting, air conditioning and ventilation technology, access gates, etc., need to be brought in line with changing demand.

The advantages of the LAN module developed by Grässlin for its talento smart distributor time switches are particularly clear at this time. The module enables the time switch technology to be accessed from any location for programming, analysis and program modifications. All risk-free from your desk at home.

The introduction of an app and free PC software for the talento smart has already helped engineers to save a great deal of time. Once they have downloaded the free software onto their PC, they can create or alter any program from the comfort of their desk and then email them to a smartphone or tablet. From there, the program can then be transferred to the time switch in the distributor box via Bluetooth. While the whole process is contactless, proximity to the switch is still important – this means that the engineer either needs to be close to the switch themselves or someone on site has to have the talento smart app so that they can transfer the data.

The talento smart LAN module combined with the talento smart S25 distributor time switch offers a decisive advantage – particularly in the exceptional circumstances we currently find ourselves in. Since data can be transferred over a network or the cloud, installation engineers are able to control time switches remotely, staying safe and protected wherever they are. The module is installed next to the time switch in the distributor box and connected to

a network. The LAN module then communicates with PCs, tablets or smartphones over this network or the cloud and uses Bluetooth to transfer new programs to “its own” time switch(es) – convenient, fast and cost-effective.

Originally designed as a way to make working life easier, this function has now proven itself to be indispensable and is one of the countless examples from this current crisis of how we can benefit from digitalisation.

Version	B10	B15	B25	C15	C25	C25 24V	S25	CE2	LAN
Channels Channels	1	1	2	1	2	2	2	2	–
Memory locations Memory locations	100	100	100	500	500	500	800	800	–
Number of programs Number of programs	10	10	10	50	50	50	80	80	–
Programs with date Programs with date	1	1	2	50	50	50	80	80	–
Special functions Special functions	–	–		•	•	•	•	•	–
Expandable Expandable	–	–	–	–	–	–	•	•	•

Time switch technology

Digital time switches, DIN-rail, weekly program

talento smart B15

talento smart B25

Description

Digital distributor time switch with 100 memory locations for creating one date-dependent program (ON/OFF) and ten date-independent programs (ON/OFF) with a shortest switching time of 1 minute. Free week day block formation. Summer-winter time changeovers can take place automatically, on a specific date or can even be deactivated. 12/24 h setting. Switching status indicator. Built-in hour counter with service function. Manual switch: automatic mode, fixed ON/OFF, override. White display lighting for better legibility.

Non-volatile memory (EEPROM) for backing up programs in the event of a power failure. Battery-based power reserve for up to eight years. The time switch is sealable and can be PIN-protected against unwanted access. Programming takes place either directly on the switch itself or via convenient remote programming using mobile devices and corresponding apps (Android and iOS) and suitable PC software.

talento smart B15
- 1 channel

talento smart B25
- 2 channels

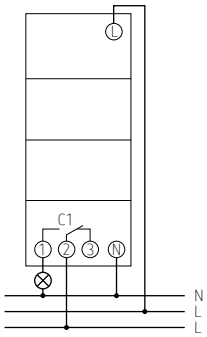
Product selection

Program	Program functions	Number of channels	Type	Item no.
Weekly program Annual program	ON-OFF	1	talento smart B15	43.02.0001.1
		2	talento smart B25	43.02.0002.1
UL devices available on request				

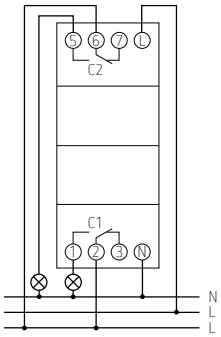
Technical data

	talento smart B15/B25
Operating voltage	110–230 V AC
Frequency	50–60 Hz
Width	2 modules
Type of installation	DIN-rail
Type of contact	Changeover contact
Power reserve	8 years
Switching capacity at 250 V AC, cos phi = 1	16 A
Switching capacity at 250 V AC, cos phi = 0.6	10 A
Incandescent/halogen lamp load	2600 W
Compact fluorescent lamps	1000 W
LED lamp < 2 W (typ.)	100 W
LED lamp > 2 W (typ.)	600 W
Shortest switching time	1 min
Time accuracy at 20 °C	Typically ± 0.3 s/day (quartz)
Standby output	< 1 W
Protection rating	IP 20
Protection class	II as per EN 60 730-1
Ambient temperature	–20 °C … +55 °C

Connection example



talento smart B15



talento smart B25

Time switch technology

Digital Astro time switches, DIN-rail, annual program

talento smart C15

talento smart C25
talento smart C25 24V (12–24 V)

Description

Digital Astro distributor time switch with 500 memory locations for creating 50 date-dependent programs (ON, OFF, cycle, pulse, random ON, random OFF) and 50 date-independent programs (ON, OFF, cycle, pulse, random ON, random OFF) with a shortest switching time of 1 minute (ON-OFF) or 1 second (cycle, pulse). Free week day block formation. Summer-winter time changeovers can take place automatically, on a specific date or can even be deactivated. 12/24 h setting. Switching status indicator.
Built-in hour counter with service function.

Manual switch: automatic mode, fixed ON/OFF, override. White display lighting for better legibility. Non-volatile memory (EEPROM) for backing up programs in the event of a power failure. Battery-based power reserve for up to eight years. The time switch is sealable and can be PIN-protected against unwanted access. Programming takes place either directly on the switch itself or via convenient remote programming using mobile devices and corresponding apps (Android and iOS) and suitable PC software.

talento smart C15
- 1 channel

talento smart C25
- 2 channels

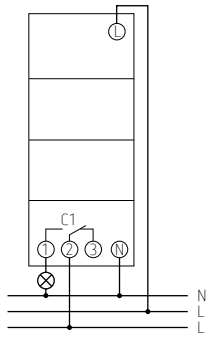
Product selection

Program	Program functions	Number of channels	Operating voltage	Type	Item no.
Astro program Annual program	ON/OFF, pulse, cycle	1	110–230 V AC	talento smart C15	43.03.0001.1
		2	110–230 V AC	talento smart C25	43.03.0002.1
			12–24 V AC/DC	talento smart C25 24V	43.03.0003.1
UL devices available on request (talento smart C15, talento smart C25)					

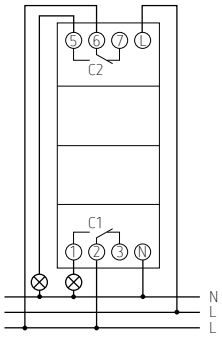
Technical data

	talento smart C15/C25	talento smart C25 24V
Operating voltage	110–230 V AC	12–24 V AC/DC
Frequency	50–60 Hz	
Width	2 modules	
Type of installation	DIN-rail	
Type of contact	Changeover contact	Changeover contact/NO contact
Power reserve	8 years	
Switching capacity at 250 V AC, cos phi = 1	16 A	
Switching capacity at 250 V AC, cos phi = 0.6	10 A	
Incandescent/halogen lamp load	2600 W	
Compact fluorescent lamps	1000 W	
LED lamp < 2 W (typ.)	100 W	
LED lamp > 2 W (typ.)	600 W	
Shortest switching time	1 min	
Time accuracy at 20 °C	Typically ± 0.3 s/day (quartz)	
Standby output	< 1 W	
Protection rating	IP 20	
Protection class	II as per EN 60 730-1	
Ambient temperature	–20 °C … +55 °C	

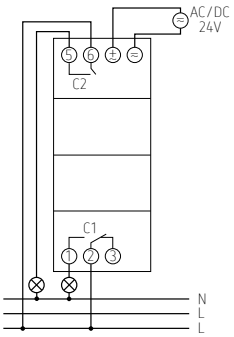
Connection example



talento smart C15



talento smart C25



talento smart C25 24V

System version for Astro time switches, DIN-rail, annual program

talento smart S25

talento smart CE2

talento smart LAN

Description

General functions

- The system version of the talento smart S25 enables installation engineers to develop a full system with up to 8 channels using the extension modules talento smart CE2.
- In addition to standard applications, the talento smart LAN module enables installation engineers to transfer and read out programs on the S25 remotely and also enjoy convenient management of large applications.
- Digital astro distributor time switch with 800 memory locations for creating 50 date-dependent programs (ON, OFF, cycle, pulse, random ON, random OFF) and 50 date-independent programs (ON, OFF, cycle, pulse, random ON, random OFF) with a shortest switching time of 1 minute (ON-OFF) or 1 second (cycle, pulse).
- Free week day block formation. Summer-winter time changeovers can take place automatically, on a specific date or can even be deactivated.
- 12/24 h setting. Switching status indicator. Built-in hour counter with service function. Manual switch: automatic mode, fixed ON/OFF, override. White display lighting for better legibility. Non-volatile memory (EEPROM) for backing up programs in the event of a power failure. Battery-based power reserve for up to eight years. The time switch is sealable and can be PIN-protected against unwanted access. Programming takes place either directly on the switch itself or via convenient remote programming using mobile devices and corresponding apps (Android and iOS) and suitable PC software.

talento smart S25

- 2 channels
- Basic system version device with largest package of functions

talento smart CE2

- 2 channels
- Channel expansion for developing a system with up to 8 channels in combination with the talento smart S25

talento smart LAN

- LAN-network-based module for remote access to the talento smart S25

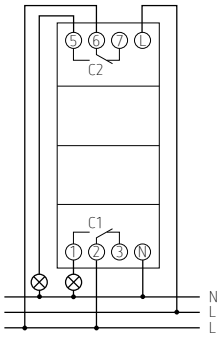
Product selection

Program	Program functions	Number of channels	Type	Type	Item no.
Astro program Annual program	ON/OFF, pulse, cycle	2	Basic module	talento smart S25	43.04.0001.1
			Channel extension	talento smart CE2	43.04.0004.1
-	-	-	Remote access module	talento smart LAN	43.04.0006.1
UL devices available on request (talento smart S25, talento smart CE2)					

Technical data

	talento smart S25	talento smart CE2	talento smart LAN
Operating voltage	110–230 V AC		230 V AC
Frequency	50–60 Hz		
Width	2 modules		
Type of installation	DIN-rail		
Type of contact	Changeover contact		–
Power reserve	8 years	–	–
Switching capacity at 250 V AC, cos phi = 1	16 A		–
Switching capacity at 250 V AC, cos phi = 0.6	10 A		–
Incandescent/halogen lamp load	2600 W		–
Compact fluorescent lamps	1000 W		–
LED lamp < 2 W (typ.)	100 W		–
LED lamp > 2 W (typ.)	600 W		–
Shortest switching time	1 min		–
Time accuracy at 20 °C	Typically ± 0.3 s/day (quartz)		–
Standby output	< 1 W		4 W
Protection rating	IP 20		
Protection class	II as per EN 60 730-1		
Ambient temperature	–20 °C … +55 °C		

Connection example



talento smart S25/CE2

Time switch technology

Digital time switches, DIN-rail, weekly program, 1 module

talento smart B10 mini

Description

1-module-wide distributor time switch without a display. Programs can be created directly on smartphones, tablets or PCs using an app and transferred to the switch using contactless Bluetooth pairing. Depending on your needs, programs can be created both with and without a date. There is also the option to combine and consolidate several week days. The talento smart B10 mini has enough space for date-independent and date-dependent programs and has capacity for 100 memory locations. The space-saving design is particularly suited for retrofitting in distributor time switch boxes with limited space.

Product selection

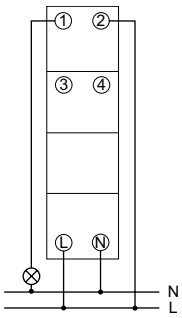
Program	Program functions	Number of channels	Type	Item no.
Weekly program	ON-OFF	1	talento smart B10 mini	43.02.0005.1

Digital time switches, DIN-rail, weekly program, 1 module

Technical data

	talento smart B10 mini
Operating voltage	110–230 V AC
Frequency	50–60 Hz
Width	1 module
Type of installation	DIN-rail
Type of contact	Changeover contact
Power reserve	3 days
Switching capacity at 250 V AC, cos phi = 1	16 A
Switching capacity at 250 V AC, cos phi = 0.6	10 A
Incandescent/halogen lamp load	2600 W
Compact fluorescent lamps	Up to 322 W
LED lamp < 2 W (typ.)	100 W
LED lamp > 2 W (typ.)	360 W
Shortest switching time	1 min
Time accuracy at 20 °C	Typically ± 0.3 s/day (quartz)
Standby output	< 1 W
Protection rating	IP 20
Protection class	II as per EN 60 730-1
Ambient temperature	–20 °C … +55 °C

Connection example



Time switch technology

Distributor time switches, digital, DIN-rail, 2 modules

talento easy B1

talento easy C1

Description

talento easy B1

Digital time switch for DIN-rails with 1 channel, daily/weekly program and 50 memory locations for creating one date-dependent program (ON-OFF) and ten date-independent programs (ON-OFF) with a minimum switching time of 1 minute (ON-OFF). Free week day block formation. Summer-winter time changeover can take place automatically, on a specific date or can also be deactivated. 12/24 h setting. Switching status indicator. Integrated hour counter with service mode. Manual switch: automatic mode, fixed ON/OFF, override. Green display lighting for good legibility. Non-volatile memory (EEPROM) for saving programs in the event of a power failure. Battery-based power reserve for up to six years. The time switch can be sealed and also PIN-protected against unwanted access. Programming is not completed directly on the time switch itself.

- Daily/weekly program
- Shortest switching time: 1 min(ON-OFF)
- DIN-rail
- 50 memory locations
- Automatic summer/winter time changeover

talento easy C1

Digital time switch for DIN-rails with 1 channel, Astro/daily/weekly program and 50 memory locations for creating one date-dependent program (ON-OFF) and ten date-independent programs (ON-OFF) with a minimum switching time of 1 minute (ON-OFF) or 1 second (cycle, pulse). Geographical database for 45 countries and 280 cities. Trigger modes for sunrise/sunset or dawn/dusk. Free formation of week day blocks. Summer-winter time changeover can take place automatically, on a specific date or can also be deactivated. 12/24 h setting. Switching status indicator. Integrated hour counter with service mode. Manual switch: automatic mode, fixed ON/OFF, override. Green display lighting for good legibility. Non-volatile memory (EEPROM) for saving programs in the event of a power failure. Battery-based power reserve for up to six years. The time switch can be sealed and also PIN-protected against unwanted access. Programming is not completed directly on the time switch itself.

- Astro/daily/weekly program
- Shortest switching time: 1 min(ON-OFF)
- DIN-rail
- 50 memory locations
- Geographical database for 45 countries and 280 cities
- Trigger modes for sunrise/sunset or dawn/dusk

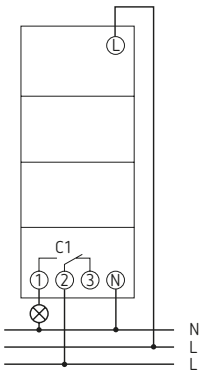
Product selection

Program	Number of channels	Operating voltage	Protection rating	Type	Item no.
Daily/weekly program	1	230 V AC	IP 20	talento easy B1	03.61.0001.1
Daily/weekly program, Astro program	1	230 V AC	IP 20	talento easy C1	03.61.0002.1

Technical data

	talento easy B1	talento easy C1
Operating voltage	230 V AC	230 V AC
Frequency	50/60 Hz	50/60 Hz
Width	2 modules	2 modules
Type of installation	DIN-rail	DIN-rail
Type of contact	NO contact	NO contact
Power reserve	6 years	6 years
Switching capacity at 250 V AC, cos phi = 1	16 A	16 A
Switching capacity at 250 V AC, cos phi = 0.6	10 A	10 A
Shortest switching time	1 min/1 s (pulse)	1 min/1 s (pulse)
Time accuracy at 20 °C	Typically ± 0.5 s/day (quartz)	Typically ± 0.5 s/day (quartz)
Standby output	6 VA	6 VA
Protection rating	IP 20	IP 20
Protection class	II	II
Ambient temperature	–10 °C ... +55 °C	–10 °C ... +55 °C

Connection example



Time switch technology

Analogue time switches, DIN-rail, switching segments, 1 module

talento 111 mini

talento 211 mini

Description

Grässlin's range of analogue distributor time switches enable switch commands to be issued in daily programs. The time and switching times can be checked at a glance, resulting in a wide array of usage options, such as lighting for underpasses, display window lighting in boutiques or pump control in fountains.

talento 111 mini

- Without power reserve

talento 211 mini

- With power reserve
- Quartz controlled

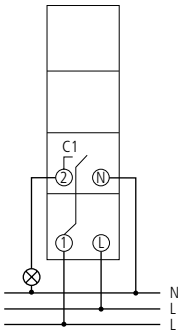
Product selection

Program	Number of channels	Power reserve	Shortest switching time	Programmable every	Type of contact	Operating voltage	Type	Item no.
Daily program	1	–	15 min	15 min	NO contact	230 V AC	talento 111 mini	01.06.0004.1
		3 days	15 min	15 min	NO contact	230 V AC	talento 211 mini	02.03.0003.1

Technical data

	talento 111 mini	talento 211 mini
Operating voltage	230 V AC	230 V AC
Frequency	50 Hz	50–60 Hz
Width	1 module	
Type of installation	DIN-rail	
Program	Daily program	
Type of contact	NO contact	
Power reserve	–	3 days
Switching capacity at 250 V AC, cos phi = 1	16 A	
Switching capacity at 250 V AC, cos phi = 0.6	4 A	
Incandescent/halogen lamp load	1000 W	
Compact fluorescent lamps	150 W	
LED lamp < 2 W (typ.)	30 W	
LED lamp > 2 W (typ.)	300 W	
Shortest switching time	15 min	
Programmable every	15 min	
Time accuracy at 25 °C	Synchronised with mains	≤ ± 1 s/day (Quartz)
Standby output	0.9 W	0.5 W
Protection rating	IP 20	
Protection class	II as per EN 60 730-1	
Ambient temperature	–25 °C … +50 °C	–10 °C … +50 °C

Connection example



Time switch technology

Analogue time switches, DIN-rail, switching segments, 3 modules

talento 121

talento 111/talento 111 SK

talento 211/talento 211 SK

Description

These analogue distributor time switches by Grässlin enable switch commands to be issued in both daily programs and 1-hour programs. The majority of these products are equipped with a pointer mechanism, making it much easier for the time to be set – particularly in the weekly program version. The time and switching times can be checked at a glance, resulting in a wide array of usage options, such as lighting for underpasses, display window lighting in boutiques or pump control in fountains.

talento 121
- 60 minute program
- Without power reserve

talento 111
- Daily program
- Without power reserve

talento 211
- Daily program
- With power reserve
- Quartz controlled

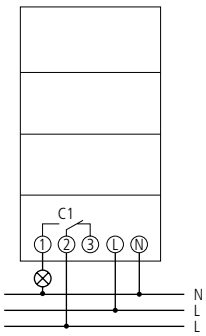
Product selection

Program	Number of channels	Power reserve	Shortest switching time	Programmable every	Type of contact	Operating voltage	Type of connection	Type	Item no.
60 minute program	1	–	37.5 s	37.5 s	Changeover contact	230 V AC	Plug-in terminal	talento 121	01.28.0003.1
Daily program	1	–	15 min	15 min	Changeover contact	230 V AC	Plug-in terminal	talento 111	01.28.0001.1
							Screw terminal	talento 111 SK	01.28.1001.1
		3 days	15 min	15 min	Changeover contact	110–230 V AC	Plug-in terminal	talento 211	02.28.0001.1
							Screw terminal	talento 211 SK	02.28.1001.1

Technical data

	talento 121	talento 111	talento 211
Operating voltage	230 V AC		110–230 V AC
Frequency	50 Hz		50–60 Hz
Width	3 modules		
Type of installation	DIN-rail		
Type of contact	Changeover contact		
Program	60 minute program	Daily program	
Power reserve	–		3 days, approx. 50 hours at 110 V
Switching capacity at 250 V AC, cos phi = 1	10 A	16 A	
Switching capacity at 250 V AC, cos phi = 0.6	4 A		
Incandescent/halogen lamp load	1100 W		
LED lamp < 2 W (typ.)	20 W		
LED lamp > 2 W (typ.)	180 W		
Shortest switching time	37.5 s	15 min	
Programmable every	37.5 s	15 min	
Time accuracy at 25 °C	Synchronised with mains		≤ ± 1 s/day (Quartz)
Standby output	0.9 W	0.5 W	
Protection rating	IP 20		
Protection class	II as per EN 60 730-1		
Ambient temperature	–20 °C … +55 °C		

Connection examples



Time switch technology

Time switch modules, switching segments

FM Synchron

FM Quarz

Description

The analogue time switch modules are only suitable for installation and provides versatile application options throughout buildings and outdoors. They are used for universal switching tasks such as in switchgear, machine controls, or specific solutions as swimming pool control units and sprinkler systems. The analogue time switch modules from the FM series feature enhanced dust protection and are used to control devices, motors, pumps, household appliances and boilers.

FM Synchron

- Without power reserve

FM Quarz

- With power reserve
- Quartz controlled

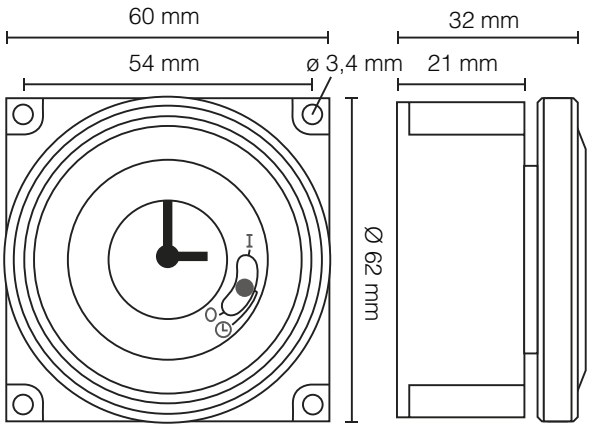
Product selection

Type of installation	Operating voltage	Type	Item no.	Available from
Structure	230 V AC	FM Synchron	01.76.1001.1	03/2023
Installation	230 V AC	FM Quarz	02.76.1001.1	03/2023

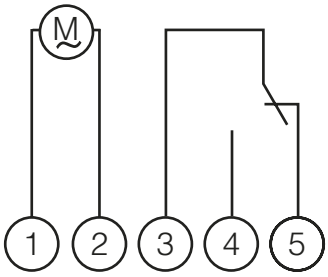
Technical data

	FM synchronous	FM Quartz
Operating voltage	230 V AC	
Frequency	50 Hz	50/60 Hz
Type of installation	Time switch module	
Program	Daily program	
Power reserve	–	Max. 3 days
Switching capacity at 250 V AC, cos phi = 1	16 A	
Switching capacity at 250 V AC, cos phi = 0.6	8 A	
Shortest switching time	15 min	
Programmable every	15 min	
Standby output	2 W	
Time accuracy at 25 °C	synchronised with mains	≤ ± 1.5 s/day (Quartz)
Protection class	II as per EN 60 730-1	
Ambient temperature	–20 °C … +55 °C	

Scale drawings



Connection example



Time switch technology
Digital time switch modules

FMD smart

FMD easy B1

FMD easy C1

Description

FMD smart

The time switch module FMD smart C15 is suitable for installation and provides versatile application options throughout buildings and outdoors. It is used for universal switching tasks such as in switchgears, machine controls, or specific solutions as swimming pool controls and sprinkler systems. The FMD smart is designed for installation in customer-specific switching applications.

The device can be operated and programmed via Bluetooth with the talento smart App.

FMD easy B1

The time switch module FMD easy is suitable for installation and provides versatile application options throughout buildings and outdoors. It is used for universal switching tasks such as in switchgears, machine controls, or specific solutions as swimming pool controls and sprinkler systems. The FMD easy is designed for installation in customer-specific switching applications. All FMD and FM modules are identical in terms of size and have the same terminal assignments. They are therefore interchangeable.

FMD easy C1

The time switch module FMD easy C1 is suitable for installation and provides versatile application options throughout buildings and outdoors. The special thing about this time switch module is that it is able to process Astro programs. This means that the time switch calculates sunrise and sunset times automatically depending on the location and can therefore switch applications on and off depending on the position of the sun. The FMD easy is designed for installation in customer-specific switching applications. All FMD and FM modules are identical in terms of size and have the same terminal assignments. They are therefore interchangeable.

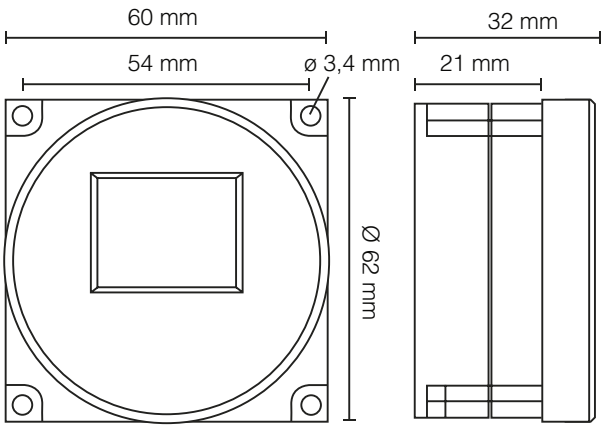
Product selection

Program	LED load	Operating voltage	Type	Item no.	Available from
Weekly, annual and Astro programs	400 W	110–230 V AC	FMD smart	43.60.0001.1	03/2023
Weekly program, pulse/cycle		230 V AC	FMD easy B1	43.61.0001.1	03/2023
Astro program		230 V AC	FMD easy C1	43.61.0002.1	03/2023

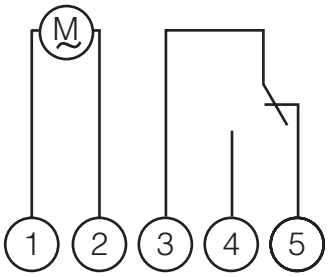
Technical data

	FMD smart	FMD easy B1	FMD easy C1
Operating voltage	110 V–230 V AC	230 V AC	230 V AC
Frequency	50–60 Hz	50–60 Hz	50–60 Hz
Switching capacity at 250 VAC, cos phi = 1	16A	16A	16A
Switching capacity at 250 VAC, cos phi = 0.6	10A	10A	10A
Shortest switching time		Weekly program: 1 min/pulse: 1 s	Weekly program: 1 min
Incandescent/halogen lamp load	2600 W		
LED load	400W		
Ambient temperature	-20 °C ... +55 °C	-10 °C ... +55 °C	-10 °C ... +55 °C
Time accuracy	< ± 0.3 s/day at 20 °C	< ± 0.5 s/day at 20 °C	< ± 0.5 s/day at 20 °C
Power reserve	8 years	6 years	6 years
Standby output	< 1 W	< 6 VA	< 6 VA
Relay outputs	1	1	1
PROG. Functions	Weekly function, yearly function, Astro function, pulse/cycle function	Weekly function, pulse/cycle function	Astro programs (sunrise/sunset) and adjustable offset of 0...99 min.
protection	IP 20	IP 20	IP 20

Scale drawings



Connection example



Time switch technology

Analogue time switches, Front panel/wall installation, switching segments

tactic 111.1

tactic 211.1

Description

The universal time switches from our tactic product range provide versatile application options throughout buildings and outdoors. For instance, they can be used in switchgears, machine control units and also specific solutions such as swimming pool control systems or sprinkler systems. The analogue 1-channel universal time switches from the tactic range are suited for surface mounting, cabinet installation or DIN-rain mounting. They are synonymous with simple operation and come equipped with a Quartz or synchronous drive.

tactic 111.1
- Without power reserve

tactic 211.1
- With power reserve
- Quartz controlled

Product selection

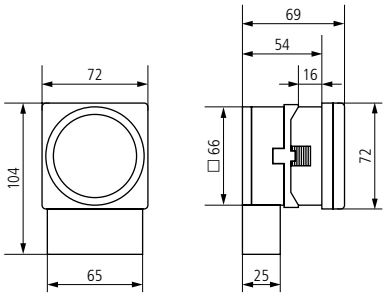
Program	Number of channels	Power reserve	Shortest switching time	Programmable every	Type of contact	Operating voltage	Type	Item no.
Daily program	1	–	15 min	15 min	Changeover contact	230 V AC	tactic 111.1	01.80.0001.1
		3 days	15 min	15 min	Changeover contact	230 V AC	tactic 211.1	02.80.0001.1

Analogue time switches, Front panel/wall installation, switching segments

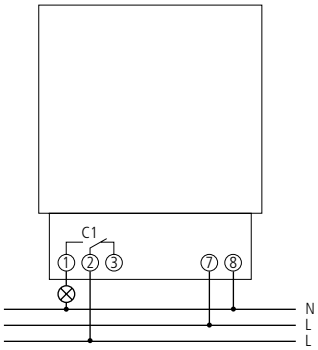
Technical data

	tactic 111.1	tactic 211.1
Operating voltage	230 V AC	
Frequency	50 Hz	50–60 Hz
Type of installation	Front panel installation/wall installation	
Type of contact	Changeover contact	
Program	Daily program	
Power reserve	–	3 days, full power reserve approx. 3 days after being connected to the operating voltage
Switching capacity at 250 V AC, cos phi = 1	10 A	
Switching capacity at 250 V AC, cos phi = 0.6	2 A	
Shortest switching time	15 min	
Programmable every	15 min	
Time accuracy at 25 °C	Synchronised with mains	≤ ± 1 s/day (Quartz)
Standby output	0.9 W	0.5 W
Protection rating	IP 20	
Protection class	II as per EN 60 730-1	
Ambient temperature	–10 °C … +55 °C	

Scale drawings



Connection example



Time switch technology

Analogue time switches, Front panel/wall installation, switching segments

tactic 111 A

tactic 211 A

Description

The universal time switches from our tactic product range provide versatile application options throughout buildings and outdoors. They can used to control swimming pools or sprinkler systems, for example.

The analogue 1-channel, surface-mounted universal switches are synonymous with simple operation and are equipped with a Quartz or synchronous drive.

tactic 111 A

- Without power reserve

tactic 211 A

- With power reserve
- Quartz controlled

Product selection

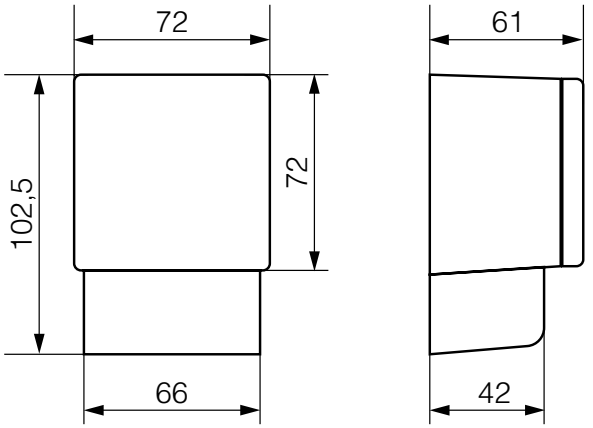
Program	Number of channels	Power reserve	Shortest switching time	Programmable every	Type of contact	Operating voltage	Type	Item no.	Available from
Daily program	1	–	15 min	15 min	Changeover contact	230 V AC	tactic 111 A	01.78.1001.1	03/2023
		3 days	15 min	15 min	Changeover contact	230 V AC	tactic 211 A	02.78.1001.1	03/2023

Analogue time switches, Front panel/wall installation, switching segments

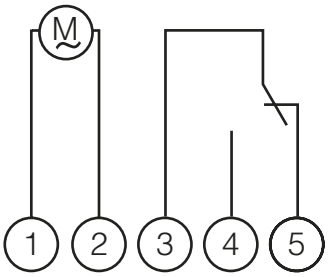
Technical data

	tactic 111 A	tactic 211 A
Operating voltage	230 V AC	
Frequency	50 Hz	50–60 Hz
Type of installation	Surface mounting	
Type of contact	Changeover contact	
Program	Daily program	
Manual switch	Auto/Fix ON/Fix OFF	
Power reserve	–	3 days, full power reserve approx. 3 days after being connected to the operating voltage
Switching capacity at 250 V AC, cos phi = 1	16 A	
Switching capacity at 250 V AC, cos phi = 0.6	4 A	
Shortest switching time	15 min	
Time accuracy at 25 °C	Synchronised with mains	≤ ± 1.5 s/day (Quartz)
Standby output	2 W	
Protection rating	IP 20	
Protection class	II as per EN 60 730-1	
Ambient temperature	–10 °C … +50 °C	

Scale drawings



Connection example



Time switch technology

Digital time switches, Front panel/wall installation

tactic smart A

tactic easy B1 A

tactic easy C1 A

Description

tactic smart

The tactic smart provides versatile application options throughout the building and outdoors. It is used for universal switching tasks such as in switchgear, machine controls, or specific solutions as swimming pool controls and sprinkler systems. The tactic smart is suitable for universal wall installation as well as for installation in switching applications, or for top-hat rail mounting.

The device can be operated and programmed via Bluetooth with the talento smart App.

tactic easy

The tactic easy provides versatile application options throughout buildings and outdoors. It is used for universal switching tasks, such as controlling swimming pools or sprinkler systems. The tactic easy is suitable for universal wall installation

tactic easy B1 A

- Without power reserve

tactic easy C1 A

- With power reserve
- Quartz controlled
- Astro program (time switch calculates sunrise and sunset times automatically depending on the location and can therefore switch applications on and off depending on the position of the sun).

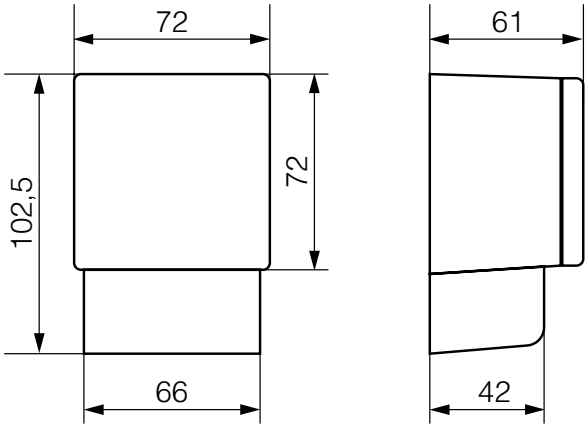
Product selection

Program	Type of installation	Operating voltage	Type	Item no.	Available from
Weekly, annual and Astro programs	Structure	110–230 V AC	tactic smart A	43.87.0002.1	03/2023
Weekly program, pulse/cycle	Structure	230 V AC	tactic easy B1 A	03.80.1001.1	03/2023
Astro program	Structure	230 V AC	tactic easy C1 A	03.80.1003.1	03/2023

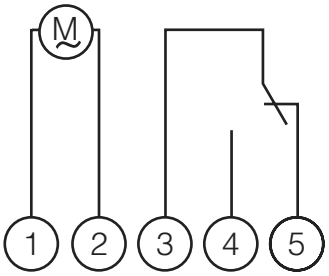
Technical data

	tactic smart A	tactic easy B1 A	tactic easy C1 A
Operating voltage	110 V–230 V AC	230 VAC	230 VAC
Frequency	50–60 Hz	50–60 Hz	50–60 Hz
Switching capacity at 250 VAC, cos phi = 1	16 A	16 A	16 A
Switching capacity at 250 VAC, cos phi = 0.6	10 A	10 A	10 A
Incandescent/halogen lamp load	2600 W	2000 W	2000 W
LED load	400 W	300 W	300 W
Ambient temperature	–20 °C … +55 °C	–10 °C … +55 °C	–10 °C … +55 °C
Time accuracy	< ± 0.3 s/day at 20 °C	< ± 0.3 s/day at 20 °C	< ± 0.3 s/day at 20 °C
Power reserve	8 years	6 years	6 years
Standby output	< 1 W	< 6 VA	< 6 VA
Relay outputs	1	1	1
PROG. Functions	Weekly function, yearly function, Astro function, pulse/cycle function	Weekly function, pulse/cycle function	Astro programs (sunrise/sunset) and adjustable offset of 0...99 min.
protection	IP 20	IP 20	IP 20
Type of installation	Wall-mounted	Wall-mounted	Wall-mounted

Scale drawings



Connection example



Time switch technology

Socket time switch, digital

topica smart

Description

The topica smart is a Schuko socket time switch suitable for all switching tasks in the domestic and industrial sector. Thanks to its high functional diversity, the topica smart can be used universally.

The device can be operated and programmed via Bluetooth with the talento smart App.

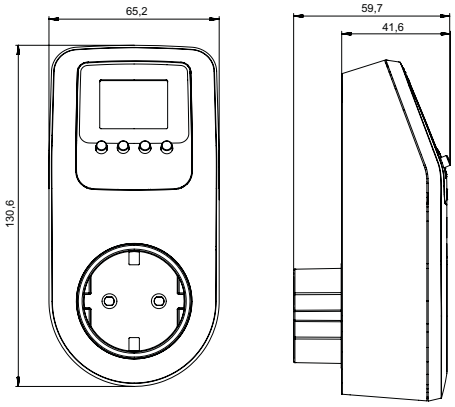
Product selection

Function	Time basis	Frequency	Operating voltage	Type	Item no.
Weekly, annual and Astro function	Quartz	50 Hz	230 V AC	topica smart	43.15.0001.1

Technical data

	topica smart
Operating voltage	230 V AC
Frequency	50 Hz
Type of installation	Socket-intermediate connector
Type of contact	NO contact
Program functions	Weekly function, yearly function, Astro function, pulse/cycle function
Smartphone-based operation using built-in Bluetooth	Yes
Program functions	ON-OFF
Number of channels	1
Number of memory locations	500
Power reserve at 25 °C	6 years
Switching capacity at 250 V AC, cos phi = 1	16 A
Switching capacity at 250 V AC, cos phi = 0.6	10 A
Incandescent/halogen lamp load	2600 W
LED lamps < 2 W	30 W
LED lamps > 2 W	300 W
Shortest switching time (pulse/cycle function)	1 s
Shortest switching time (weekly, annual, Astro function)	1 min
Resistive load	3680 W
Time accuracy at 25 °C	< 0.3 s/day (Quartz)
Time basis	Quartz
Standby output	0.9 W
Display	LCD display
Protection rating	IP 20
Protection class	II for housing, I for plug system as per EN 62 730-1
Ambient temperature	–10 °C...+40 °C

Scale drawings



Hour counters

Hour counters, Installation, analogue

taxxo 112

taxxo 612

taxxo 712

taxxo 200

taxxo 100

Description

- Hour counters with synchronous motor drive
- Front panel devices/wall-mounted devices with click-in or tension clamp brackets for walls up to a maximum of 10 mm thick
- Clamp or flat plug connection 6.3 mm
- Progress display

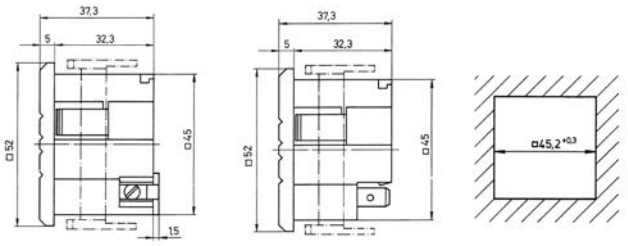
Product selection

Type of installation	Colour	Operating voltage	Packaging type	Type	Item no.
Installation, 45.2 x 45.2 mm	Black	120 V/60 Hz	Individual packaging	taxxo 112	05.15.1031.1
	Grey	230 V AC, 60 Hz	Individual packaging	taxxo 112	05.15.1123.1
	Grey	24 V AC, 50 Hz	Individual packaging	taxxo 112	05.15.1125.1
	Grey	230 V AC, 50 Hz	Individual packaging	taxxo 112	05.15.1127.1
	Grey	230 V AC, 60 Hz	Individual packaging	taxxo 112	05.15.1135.1
	Black	230 V AC, 50 Hz	Individual packaging	taxxo 112	05.15.1142.1
	Black	230 V AC, 60 Hz	Individual packaging	taxxo 112	05.15.1143.1
Installation, 33 x 22 mm	Black	230 V AC, 50 Hz	Individual packaging	taxxo 612	05.20.0006.1
Installation, 50.2 x 25.2 mm	Black	230 V AC, 50 Hz	Individual packaging	taxxo 712	05.20 .0004.1
Installation, Ø 50.2 mm	Grey	230 V AC, 50 Hz	Individual packaging	taxxo 200	05.15.1096.1
Surface mounting, 48 x 48 mm	Grey	230 V AC, 50 Hz	Individual packaging	taxxo 100	05.15.1001.1

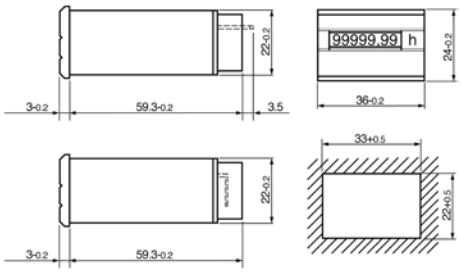
Technical data

	taxxo 112 - 05.15.1031.1	taxxo 112 - 05.15.1123.1	taxxo 112 - 05.15.1125.1	taxxo 112 - 05.15.1127.1	taxxo 112 - 05.15.1135.1	taxxo 112 - 05.15.1142.1	taxxo 112 - 05.15.1143.1	taxxo 612	taxxo 712	taxxo 200	taxxo 100
Operating voltage	120 V	230 V AC	24 V AC	230 V AC				230 V AC			
Frequency	60 Hz		50 Hz		60 Hz	50 Hz	60 Hz	50 Hz			
Type of installation	Installation										Structure
Front plate size	48 x 48 mm							36 x 24 mm	54 x 29 mm	Ø 58 mm	48 x 48 mm
Counting range	99,999.9 hours without reset										
Protection rating	IP 65 on the front/IP 20 for the terminals										
Protection class	II as per EN 60 335-1										
Ambient temperature	–30 °C to +80 °C										

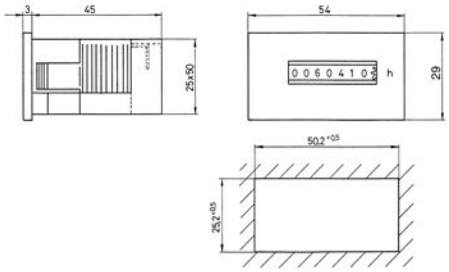
Scale drawing



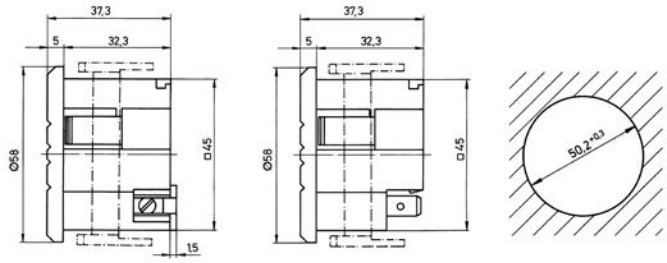
taxxo 112



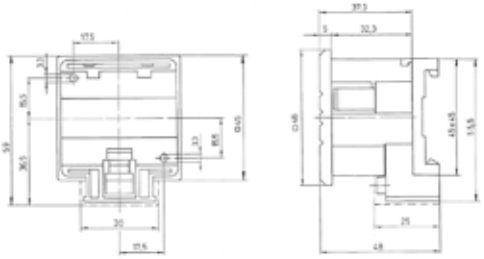
taxxo 612



taxxo 712



taxxo 200

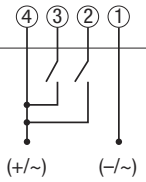


taxxo 100

Connection examples

Pin 1 + 4 = Versorgungsspannung

1 = DC „–“ (GND) oder AC
2 = Zeit- bzw. Impulszählereingang
3 = Reset
4 = DC „+“ oder AC



Hour counters

Hour counters, DIN-rail, analogue

taxxo 403

Description

- Hour counters with synchronous motor drive
- Distributor installation device with snap-on mounting for 35 mm DIN rail
- Top mounting with additional terminal cover plate, sealable
- Control panel installation with optional mounting kit
- Contact protection to comply with accident prevention regulation BGV A3
- Captive terminal screws

Product selection

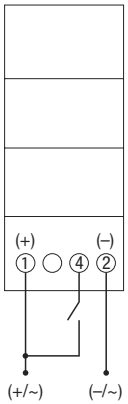
Type of installation	Operating voltage	Type	Item no.
DIN-rail	120 V, 50 Hz	taxxo 403	05.21.0002.1
	400 V, 50 Hz	taxxo 403	05.21.0006.1
	230 V, 50 Hz	taxxo 403	05.21.0001.1
	230 V, 60 Hz	taxxo 403	05.21.0005.1

Hour counters, DIN-rail, analogue

Technical data

	taxxo 403 - 05.21.0002.1	taxxo 403 - 05.21.0006.1	taxxo 403 - 05.21.0001.1	taxxo 403 - 05.21.0005.1
Operating voltage	120 V AC	400 V AC	230 V AC	
Frequency	50 Hz			60 Hz
Width	2 modules			
Type of installation	DIN-rail			
Front plate size	35 x 45 mm			
Counting range	99,999.9 hours without reset			
Protection rating	IP 65 for the housing/IP 20 for the terminals			
Protection class	II as per EN 60 335-1			
Ambient temperature	–10 °C to +70 °C			

Connection examples



Pin 1 + 4 = Versorgungsspannung

1 = DC „–“ (GND) oder AC
2 = Zeit- bzw. Impulszählereingang
4 = DC „+“ oder AC

Hour counters

Hour counters, Installation, digital

taxxo 9112

taxxo 9612

Description

- Digital operating hour counter
- EEPROM memory ensures reliable elapsed time counting, even during a loss of power.
- Control panel installation
- 7-digit high-contrast LCD display
- Terminal screws
- On-screen progress display
- Tension clamp brackets for walls up to 5mm thick
- Quartz controlled version

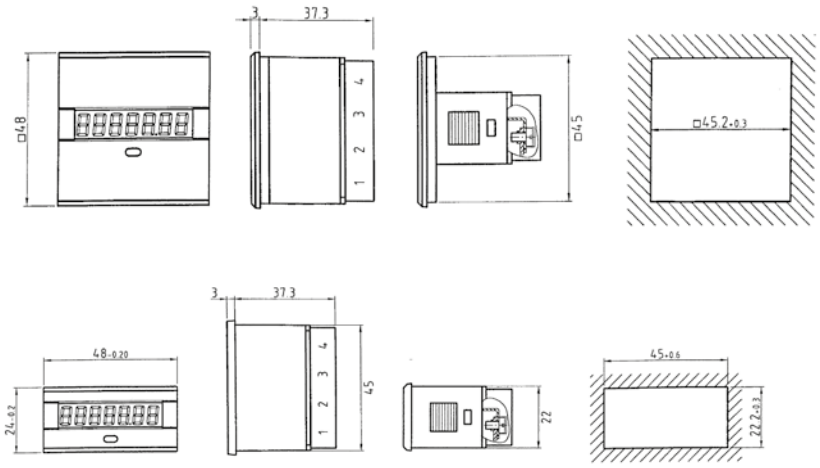
Product selection

Type of installation	Colour	Operating voltage	Type	Item no.
Installation, 45.2 x 45.2 mm	Black	12–24 V DC	taxxo 9112	05.25.0005.1
Installation, 45.2 x 22.2 mm	Black	12–24 V DC	taxxo 9612	05.25.0006.1

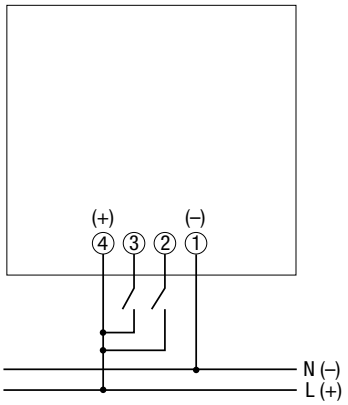
Technical data

	taxxo 9112	taxxo 9612
Operating voltage	12–24 V DC	
Type of installation	Installation	
Front plate size	48 x 48 mm	48 x 24 mm
Integrated part	45.2 x 45.2 mm	45 x 22.2 mm
Counting range	99,999.99 hours	
Protection rating	IP 65	
Protection class	II as per EN 60 335-1	
Ambient temperature	–30 °C to +70 °C	

Scale drawing



Connection examples



Hour counters, DIN-rail, digital

taxxo 9403

Description

- Digital operating hour counter
- EEPROM memory ensures reliable elapsed time counting, even during a loss of power.
- Distributor installation device with snap-on mounting for 35 mm DIN rail
- Surface mounting with additional terminal box cover plate option
- 7-digit high-contrast LCD display
- Captive terminal screws
- On-screen progress display

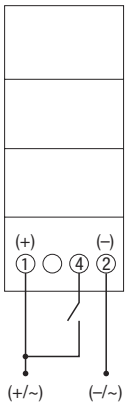
Product selection

Type of installation	Operating voltage	Type	Item no.
DIN-rail	24–240 V AC/12–150 V DC	taxxo 9403	05.25.0007.1

Technical data

	taxxo 9403
Operating voltage	24–240 V AC/ 12–150 V DC
Frequency	50–60 Hz
Width	2 modules
Type of installation	DIN-rail
Front plate size	36 x 45 mm
Counting range	999,999.9 hours without reset
Protection rating	IP 65 for the housing/IP 20 for the terminals
Protection class	II as per EN 60 335-1
Ambient temperature	–10 °C to +70 °C

Connection examples



Pin 1 + 4 = Versorgungsspannung

1 = DC „–“ (GND) oder AC
2 = Zeit- bzw. Impulszählereingang
4 = DC „+“ oder AC

Lighting control

Staircase light timer switches, DIN-rail, Electronic

trealux 510

trealux 450

Description

The trealux staircase light timer switches offer maximum functionality and allow for individual control concepts in residential buildings, offices, commercial premises, and industrial and outdoor settings, delivering noticeable improvements to energy efficiency. Our trealux range offers simple, universal installation with automatic detection of the wiring option. These products are therefore ideally suited for use with modern lighting technology, such as energy-saving lamps and various ballasts.

trealux 510

- Staircase light timer switch
- DIN-rail

trealux 450

- Staircase light timer switch
- DIN-rail
- Universal installation thanks to automatic detection of wiring type (3- or 4-wire)

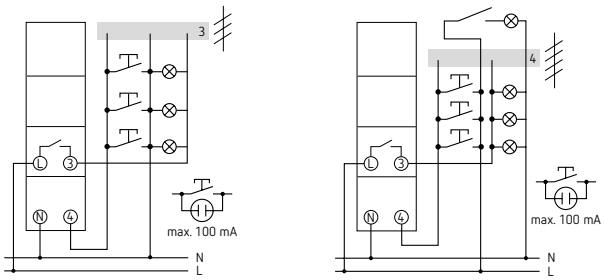
Product selection

Incandescent/halogen lamp load	Switch-off pre-warning	Zero-cross switching	Type	Item no.
2600 W	Yes	Yes	trealux 510	18.13.0016.1
2600 W	Yes	Yes	trealux 450	18.13.0001.1

Technical data

	trealux 510	trealux 450
Operating voltage	230 V AC	230 V AC
Frequency	50 Hz	50 Hz
Standby output	0.3 W	0.3 W
Neon lamp load	100 mA	50 mA
Time setting range	0.5–20 min	0.5–20 min
3/4 conductors	Automatic	Automatic
Type of contact	NO contact	NO contact
Switch output	Non-floating (230 V), floating at multi-voltage input	Non-floating (230 V)
Incandescent/halogen lamp load	2600 W	2600 W
Fluorescent lamps EB	1100 W	1100 W
LED lamp < 2 W (typ.)	55 W	50 W
LED lamp > 2 W (typ.)	600 W	400 W
Switching capacity	16 A (at 230 V AC, cos phi = 1), 10 A (at 230 V AC, cos phi = 0.3)	16 A (at 230 V AC, cos phi = 1), 10 A (at 230 V AC, cos phi = 0.6)
Ambient temperature	–25 °C … +50 °C	–10 °C … +50 °C
Protection class	II	II
Protection rating	IP 20	IP 20

Connection examples



Lighting control

Twilight switches, analogue, DIN-rail

turnus 501 E

turnus 501 A

Description

The 1-channel turnus 501 twilight switch offers ultimate functionality and allows for individual control concepts in residential, office, commercial and industrial buildings as well as any outdoor setting, delivering a noticeable improvement to energy efficiency at the same time. Thanks to its external brightness sensor, it can deliver accurate control based on the light intensity. The turnus model is ideally suited for use in display windows, billboard lighting or street lighting.

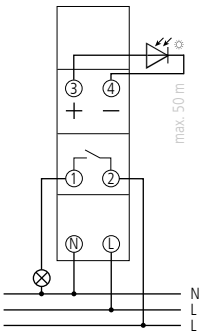
Product selection

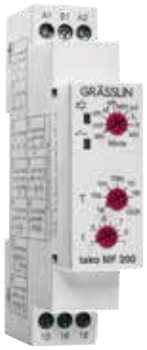
Brightness setting range	On/off switching delay	Operating voltage	Sensor (included)	Protection rating	Type	Item no.
2–2000 lx	20 s/80 s	230 V AC	Flush fitting light sensor, ball throw tested	IP 20, sensor IP 66 (front), ball throw tested I IP 40 (back)	turnus 501 E	18.18.0014.1
			Surface-mounted light sensor	IP 20, sensor IP 55	turnus 501 A	18.18.0013.1

Technical data

	turnus 501
Operating voltage	230 V AC
Frequency	50–60 Hz
Standby output	0.3 W
Brightness setting range	2–2000 lx
Switch-on delay	20 s
Switch-off delay	80 s
Type of contact	NO contact
Switch output	Floating
Width	1 module
Switching capacity	16 A (at 250 V AC, cos phi = 1), 10 A (fluorescent lamp load)
Incandescent/halogen lamp load	2600 W
LED lamp < 2 W (typ.)	30 W
LED lamp > 2 W (typ.)	350 W
Ambient temperature	–30 °C … +55 °C
Protection class	II, sensor III
Max. line length to sensor	50 m

Connection example





tako MF 200

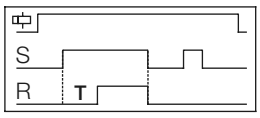
Description

The tako MF 200 is an electronic time relay with 10 different, freely selectable functions. It is therefore suited to a wide range of applications.

The tako MF 200 is intended for mounting on top-hat rails.

Functional description

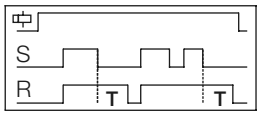
① Switch-on delay



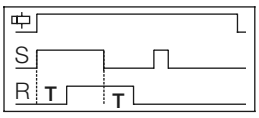
② Cyclic ON/OFF

③ Cyclic OFF/ON

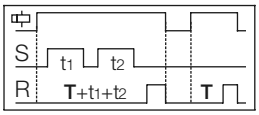
④ Signal OFF delay



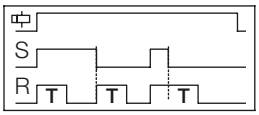
⑤ On and off delay



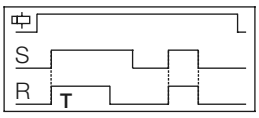
⑥ Accumulated switch-on delay



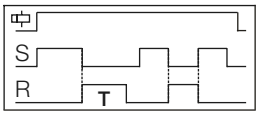
⑦ Pulses when control contact switches On or Off



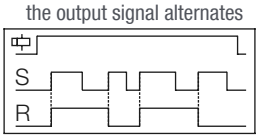
⑧ Pulses when control contact switches On



⑨ Pulses when control contact switches off



⑩ With each control contact On Pulse, the output signal alternates



Funktionen 1–10 (Mode)

① stn ▶ Signal ON delay: Timing starts when switch S is closed. R energizes at end of period T and de-energizes when switch S is opened.

② cnf ▶ Cyclic ON/OFF (ON start): Initially the relay R is on for period T after the power is applied. The relay R keeps on changing its status till power is removed with on and period = T.

③ cfn ▶ Cyclic OFF/ON (OFF start): Initially the relay R is off for period T after the power is applied. The relay R keeps on changing its status till power is removed with on and off period = T.

④ sf ▶ OFF delay, constant supply: R energizes when switch S is closed. Timing commences after switch S is opend and then the relay de-energizes.

⑤ sfn ▶ Signal OFF/ON: When switch S is closed or opened for present time T, the relay changes its state after time duration T.

⑥ san ▶ Accumulate delay ON signal: Time commences as supply is present and switch S is open. Closing switch S pauses timing. Timing resumes when switch S opened again. R energizes at the end of timing.

⑦ inf ▶ Impulse ON/OFF: R energizes for the period T when switch S is openend or closed. When timing commences, changing state of switch S does not affect R but resets timer.

⑧ iL ▶ ON impulse, constant supply: When switch S is closed and remains closed output relay energizes until timing is over. If switch S is opened during period T, R resets.

⑨ it ▶ ON impulse, constant supply: When switch S is openend, R energizes and de-energizes when timing is over. If switch S is closed during period T, R resets.

⑩ sbi ▶ Leading edge bistabile or step relay: After every signel, the output contact changes state, alternately switching from open to closed & vice versa

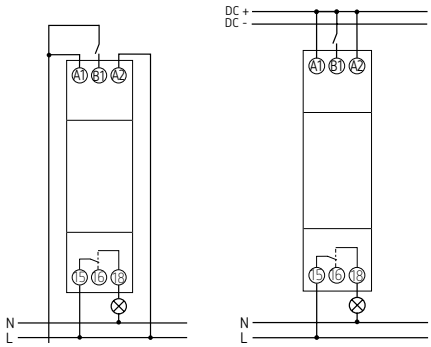
Product selection

Frequency	Standby output	Operating voltage	Type	Item no.
50/60 Hz	3 VA	230 V AC	tako MF 200	40.01.0001.1

Technical data

	tako MF 200
Operating voltage	230 V AC
Frequency	50/60 Hz
Recovery time	200 ms
Standby output	< 5 VA
Switching capacity cos phi = 1	16 A at 250 V AC
DC switching capacity	16 A at 24 V DC
Ambient temperature	–10 °C ... +60 °C
Setting accuracy	5% full scale
Repeatability	1%
Adjustable time range	0.1 s to 100 h
Protection rating	IP 20
Switching cycles, electrical	5 x 10^5
Switching cycles, mechanical	1 x 10^6
Max. humidity	95 % RH (non-condensing)

Connection example



Lighting control

Twilight switches, analogue, wall installation

turnus 200

Description

The turnus 200 twilight switch offers ultimate functionality and allows for individual control concepts in residential, office, commercial and industrial buildings as well as any outdoor setting, delivering a noticeable improvement to energy efficiency at the same time. Thanks to its built-in light sensor, it can deliver accurate control based on the light intensity. The turnus model is ideally suited for use in display windows, billboard lighting or street lighting. The turnus' hallmark features include simple, flexible installation thanks to mounting assembly, and a stripped-back design.

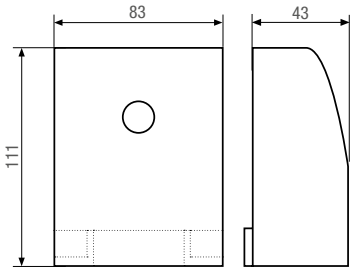
Product selection

Brightness setting range	On/off switching delay	Operating voltage	Protection rating	Type	Item no.
2–2000 lx	20–120 s	230 V AC	IP 54	turnus 200	18.17.0001.1

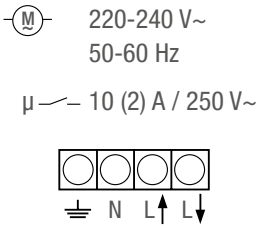
Technical data

	turnus 200
Operating voltage	230 V AC
Frequency	50–60 Hz
Standby output	6 W
Brightness setting range	2–2000 lx
On/off switching delay	20–120 s
Switching capacity	10 A (at 250 V AC, cos phi = 1), 2 A (at 250 V AC, cos phi = 0.6)
Incandescent/halogen lamp load	1200 W
Ambient temperature	–35 °C … +60 °C
Protection class	II
Protection rating	IP 54

Scale drawings



Connection example



talis 180 A

talis 360 A

talis 360 E

talis 360 E mini

Description

Whether they are surface-mounted or flush-mounted, talis detectors are ideally suited for use both indoors and outdoors. Bringing together energy efficiency and cost savings, safety and comfort – all with very little effort. The motion detectors can be used to detect movement indoors and also in outdoor areas with low levels of daylight. The devices reliably detect a wide range of movements and only activate lighting when it is actually required, e.g. in sanitary facilities, cellars, warehouses, garages or dark outdoor areas. The detectors are installed in just a few steps, while the detection area, switching time and light level value are easy to adjust using just three rotary switches.

talis 180 A

- Passive infrared motion detector for wall mounting in outdoor areas
- 180° detection area
- 1 channel
- Outdoor detector sensor head can be turned by ± 90° horizontally and tilted 35° downwards
- Mixed light measurement suitable for fluorescent lamps (FL/PL/ESL), halogen/incandescent lamps and LEDs
- Adjustable brightness switching value and time delay
- Protect the channel with type B or C series-connected circuit breakers (EN 60898-1) of max. 10 A

talis 360 A

- Passive infrared motion detector for surface-mounted ceiling installation in indoor settings
- 360° detection area
- 1 channel
- Mixed light measurement suitable for fluorescent lamps (FL/PL/ESL), halogen/incandescent lamps and LEDs
- Adjustable brightness switching value and time delay
- Protect the channel with type B or C series-connected circuit breakers (EN 60898-1) of max. 10 A

talis 360 E

- Passive infrared motion detector for surface-mounted ceiling installation in indoor settings
- 360° detection area
- 1 channel
- Mixed light measurement suitable for fluorescent lamps (FL/PL/ESL), halogen/incandescent lamps and LEDs
- Adjustable brightness switching value and time delay
- Protect the channel with type B or C series-connected circuit breakers (EN 60898-1) of max. 10 A

talis 360 E mini

- Passive infrared motion detector for ceiling installation in indoor settings
- 360° detection area
- 1 channel
- Mixed light measurement suitable for fluorescent lamps (FL/PL/ESL), halogen/incandescent lamps and LEDs
- Adjustable brightness switching value and time delay
- Protect the channel with type B or C series-connected circuit breakers (EN 60898-1) of max. 10 A

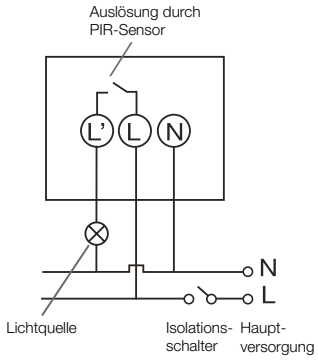
Product selection

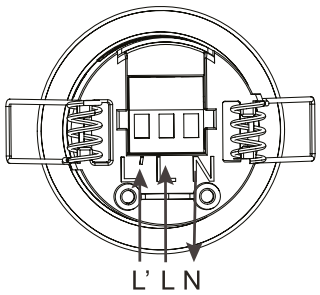
Brightness setting range	On/off switching delay	Operating voltage	Protection rating	Type	Item no.
10–1000 lx	3 s–18 min	230 V AC	IP 55	talis 180 A	18.06.0025.1
10–1000 lx	3 s–18 min	230 V AC	IP 40	talis 360 A	18.06.0026.1
10–1000 lx	3 s–18 min	230 V AC	IP 40	talis 360 E	18.06.0027.1
10–1000 lx	3 s–18 min	230 V AC	IP 40	talis 360 E mini	18.06.0028.1

Technical data

	talis 180 A	talis 360 A	talis 360 E	talis 360 E mini
Operating voltage	230 V AC	230 V AC	230 V AC	230 V AC
Frequency	50 Hz	50 Hz	50 Hz	50 Hz
Standby output	< 1 W	< 1 W	< 1 W	< 1 W
Brightness setting range	10–1000 lx	10–1000 lx	10–1000 lx	10–1000 lx
Detection angle	180°	360°	360°	360°
On/off switching delay	3 s–18 min	3 s–18 min	3 s–18 min	3 s–18 min
LED lamp	200 W	200 W	200 W	200 W
Incandescent/halogen lamp load	1000 W	1000 W	1000 W	1000 W
Ambient temperature	–20 °C … +40 °C	–20 °C … +40 °C	–20 °C … +40 °C	–20 °C … +40 °C
Protection class	II	II	II	II
Protection rating	IP 55	IP 40	IP 40	IP 40

Connection example





Lighting control

Flush-mounted universal dimmer

trim 100

Description

- UP universal dimmer for R and C loads with automatic load detection
- Push button operation
- Optimised settings for LEDs and incandescent lamps (minimum dimming level setting)
- Easy flush-mounting design thanks to extra compact housing
- Ideal for dimmable LEDs, halogen lamps and incandescent lamps
- Memory function saves the most recent light level value set

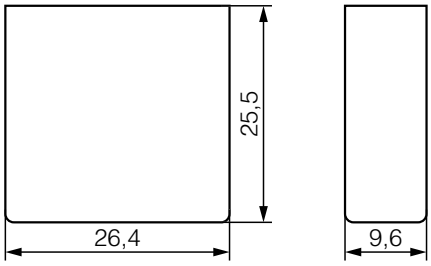
Product selection

Frequency	Operating voltage	Type	Item no.
50 Hz	230 V AC	trim 100	49.01.0001.1
Accessories			
		Compensation module	89.01.0001.1

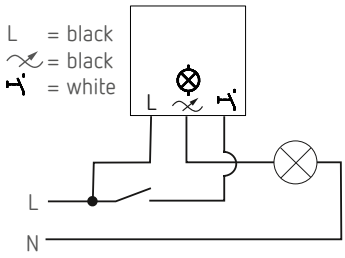
Technical data

	trim 100
Operating voltage	230 V AC
Frequency	50/60 Hz
Type of installation	Flush-mounting
Standby output	Approx. 0.2 W
Incandescent/halogen load	150 W
LED load	150 W
Ambient temperature	–10 °C ... +45 °C
Fuse types	Overload protection, temperature protection, short-circuit protection
Length of connecting wires	approx. 100 mm

Scale drawings



Connection examples



Accessories

Compensation module (89.01.0001.1)

- LED compensation module for dimmers
- To prevent afterglow with LED lamps
- For connection parallel to the load
- Housing 30 mm long, 7 mm diameter

Sensor technology
CO2 monitor

tenso 200

Description

- Mobile CO_2 sensor with USB cable for measuring air quality
- Suitable for schools/nurseries, offices, conference and meeting rooms, and rooms in homes
- If a potentially dangerous level of CO_2 is detected, the device issues a visual warning using its LED
- traffic light system, enabling ventilation to be improved straight away and a healthy environment to be restored B15
- Green threshold: up to 1,000 ppm CO_2, good standard of hygiene, everything is fine! B17
- Orange threshold: up to 2,000 ppm CO_2, abnormal standard of hygiene, airing the room would be a good idea!B17
- Red threshold: over 2,000 ppm CO_2, poor standard of hygiene, ventilation is essential!
- A supply of fresh air must be established by the time the red threshold is reached at the latest and stale air must be diverted away
- Includes USB cable for simple setup
- Base and non-slip pad included in scope of delivery, wall mounting also possible as an alternative
- Developed on the basis of recommendations for CO_2 levels in indoor air issued by the German Environment Agency in accordance with various directives, e.g. Bavaria's Directive to Finance Investment Costs for Technical Measures for Infection-Control-Compliant Ventilation in Schools (FILS-R)"

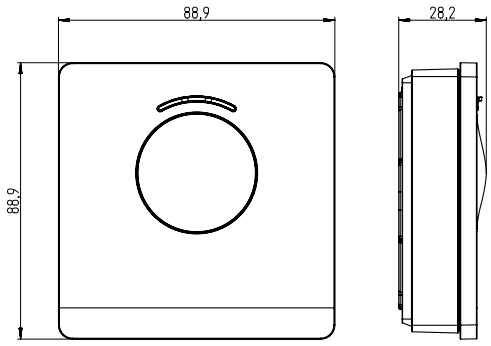
Product selection

Frequency	Operating voltage	Type	Item no.
50 Hz	230 V AC	tenso 200	07.09.0010.1

Technical data

	tenso 200
Operating voltage	5 V DC via USB bus voltage
Measurement range CO_2	0… 5000 ppm
Type of connection	USB, cable length 1.5 m
Display	LED
Protection rating	IP 20
Protection class	III

Scale drawings



Set

GRÄSSLIN

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