

Industrial Range

INTELLIGENT SWITCHING TECHNOLOGY FOR TIME AND TEMPERATURE.

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Intelligent products for efficient use of time, temperature and light.

SOLUTIONS TO SATISFY HIGHEST STANDARDS.

Dedicated to more quality of life

“Your senses. Our solutions.” is the promise of performance that Grässlin keeps in all of its activities: we are dedicated to people feeling comfortable in their living and working spaces. We do this with future-oriented product ranges for time, temperature and light that also help save precious energy. It is no coincidence that Grässlin is esteemed as the trusted partner of industry, electricians and wholesalers in over 50 countries. This is ensured by our keen sense for process-oriented and economical solutions that delight users and ensure the highest possible degree of customer satisfaction.

Innovation backed by tradition and vision

Grässlin was founded in 1956 and is considered a pioneer in time switch technology. With a number of inventions in the early years already, the company was quickly established as an internationally respected specialist in the sectors of time switch technology, temperature and light control as well as hour metering technology. In the course of globalization, Grässlin followed new pathways. Today, Grässlin is a member of Intermatic Inc., a market leader in time switch technology in the United States, Canada, Mexico and other countries. Through intensive cooperation in research and development, Grässlin is thus able to implement international expertise in all its products. This is an advantage that our customers and partners profit greatly from.

Trusted partner of the industry for innovative and reliable solutions.

OUR INDUSTRIAL RANGE.

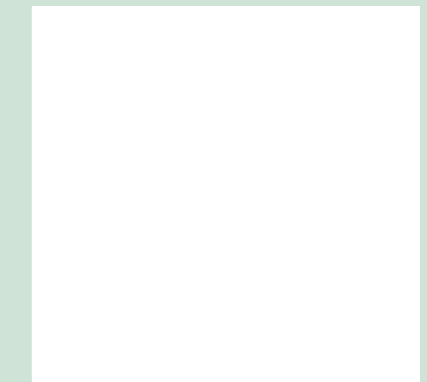
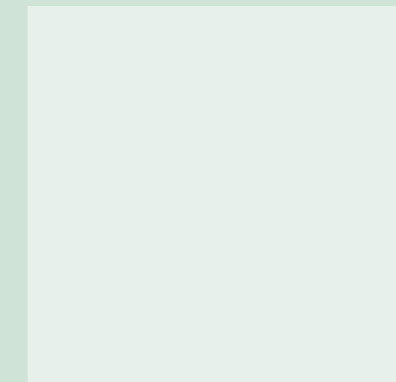
The success of long standing partnerships

Grässlin's success story is closely linked with renowned enterprises in the heating and electrical engineering sectors. The combined innovative potential of Grässlin and the market experience of our partners have generated numerous products that work reliably as fixed ele-

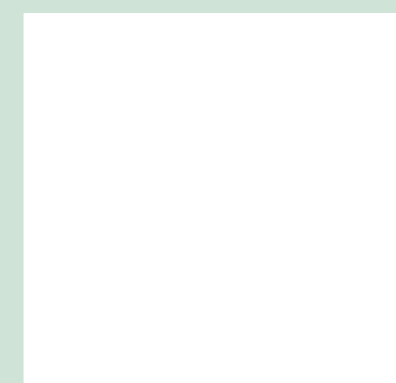
ments in complex systems and make an intrinsically valuable contribution to our mutual success. Grässlin is dedicated to its function as the supplier of time switch modules and room thermostats and will continue to be committed to the further development of these alliances with new product solutions in the future.



Longstanding experience.



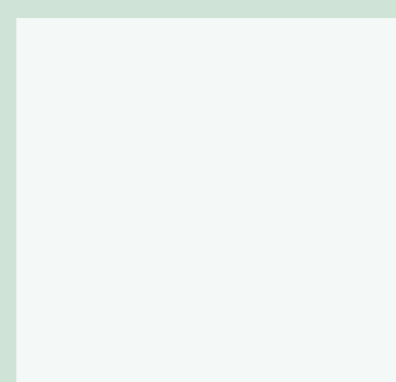
Professional support.



Innovative technologies.



Individual, tailored solutions.



Cooperative collaboration.



Programmed for success. NEWS FROM GRÄSSLIN.



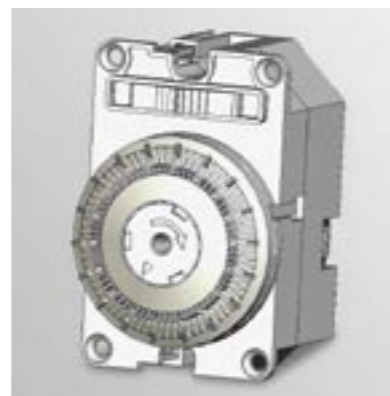
Grässlin Website

Grässlin has launched a completely new internet presentation with a number of new service modules for the entire business spectrum, paying special attention to user-friendly navigation. For example, extensive product-specific information and descriptions are available 24 hours a day to our customers and partners, and the Download Center contains a complete archive of operating manuals for the entire product range. Technical information and the respective data sheets can be viewed and downloaded anytime via the product overview.



OEM Portal

Especially for OEM partners, Grässlin has introduced an individual portal on the website where detailed information for the further use of Grässlin products can be found. Many devices in the Grässlin product range can be viewed in 3-D format and detailed dimensions of the respective product can easily be taken from the drawing. Thus, required details are available quickly and conveniently at any time. By means of a construction software, the required product data and drawings can additionally be downloaded for individual processing and afterwards easily integrated into your



own construction planning. This helps choosing the most suitable product from the Grässlin product range quickly and, therefore, in completing the plans for the end product technically as well as visually. Access authorization to the portal can be requested at the Grässlin website www.graesslin.de following the link "OEM Portal".



Grässlin OEM Portal

Available around the clock: services especially for OEM partners, enabling you to work even better with our products.



Product overview

Clearly arranged according to product groups so that you can easily find the product you are looking for.



Download area

CAD models of all relevant products: various formats available for download, enabling you to easily integrate our products into your plans.

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Simple handling, elegant design and compelling performance features for controlling time and temperature as needed.

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Time switches

Solutions for centrally switching different rooms, universal tasks and specific requirements.

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AC operating hour meters

Reliable hour meter product range for years to come.

AC operating hour meters

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Mechanical and digital room thermostats and chronothermostats

Year-round comfort with precision room thermostats.

- Analog and digital for individual requirements.
- Wired or wireless fitting for renovation purposes as well as for new buildings.
- Extremely easy programming through intuitive programming in digital devices.
- Different operating modes for various conditions.
- From simple temperature control to high-performance combined time and temperature control.



Room thermostats & chronothermostats, wired connection

feeling D101
feeling D201
famoso
thermio E

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Wireless chronothermostats

feeling D101 rf
feeling D201 rf
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Receivers wireless chronothermostats

for famoso & feeling Standard
for feeling Medium

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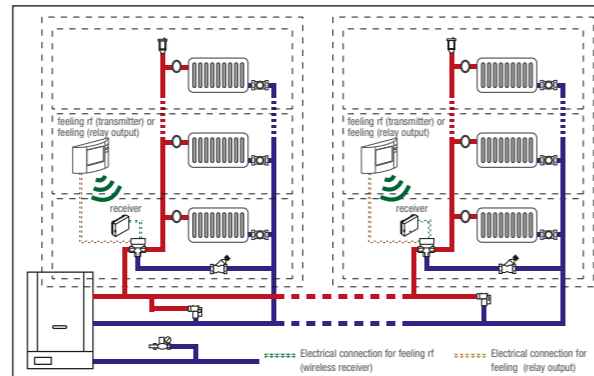
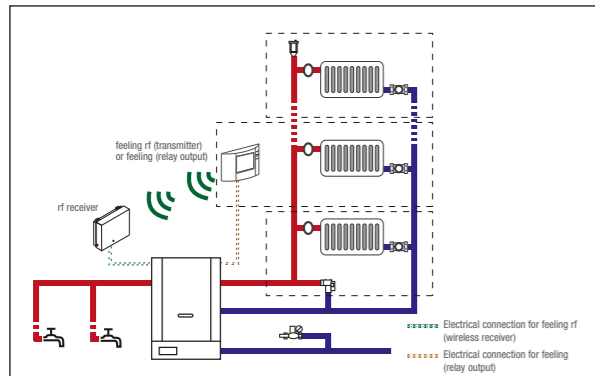
Radio controlled chronothermostats – Applications

Central heating solutions – 1 channel



feeling

- feeling rf is specifically designed for both new-build or retrofit installations
- Digital weekly clock thermostat with modern design and large, easy-to-read display
- Up to 48 different time & temperature „events“ per day; 4 pre-set programs & 1 user defined program available
- Various running modes like AUTO, Override, ECO-FIX, Cleaning, Countdown, Party, Holiday and OFF



Central heating solutions – 1 channel



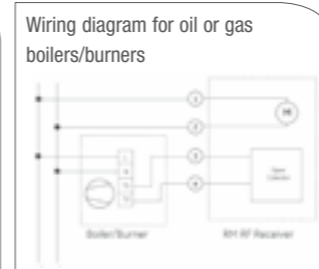
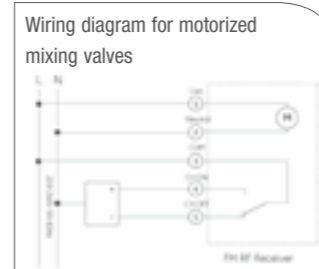
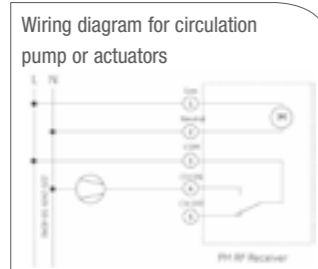
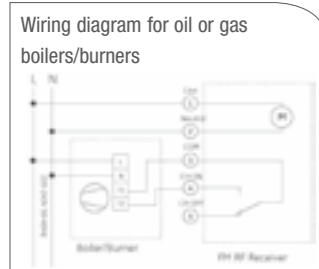
analog: famoso 601/651 rT + FM/1 rf or RM/1 rf

- famoso 601 rf Set is specially designed for both new-build or retrofit installations
- Clock thermostat brings different running modes, AUTO, comfort temperature and reduced temperature
- Daily or weekly programming defined by user
- Emergency mode is enabled into receiver to ensure a minimum temperature level in case transmission is lost during a long period of time



digital: famoso 1000 rT + FM/1 rf or RM/1 rf

- famoso 1000 rf Set is specially designed for both new-build or retrofit installations
- Clock thermostat brings different running modes, AUTO, comfort temperature, reduced temperature, party, holiday and override
- Daily or weekly programming, 2 different programs predefined from factory and one program to be defined by user
- Emergency mode is enabled into receiver to ensure a minimum temperature level in case transmission is lost during a long period of time

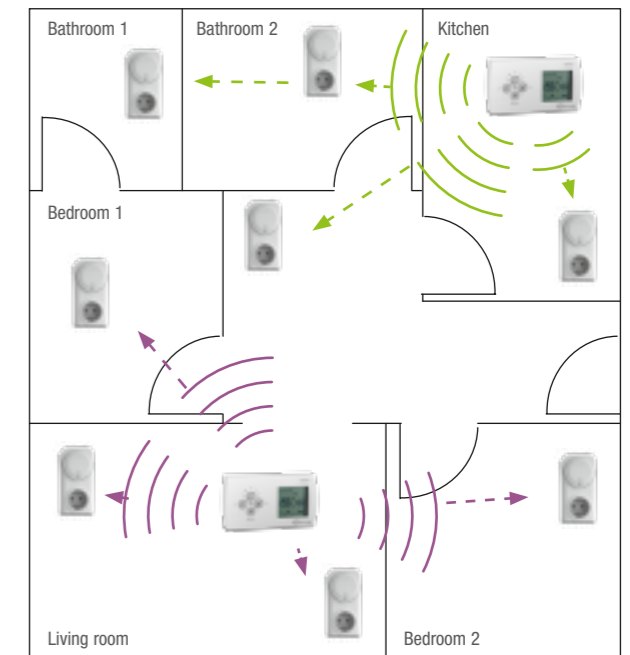
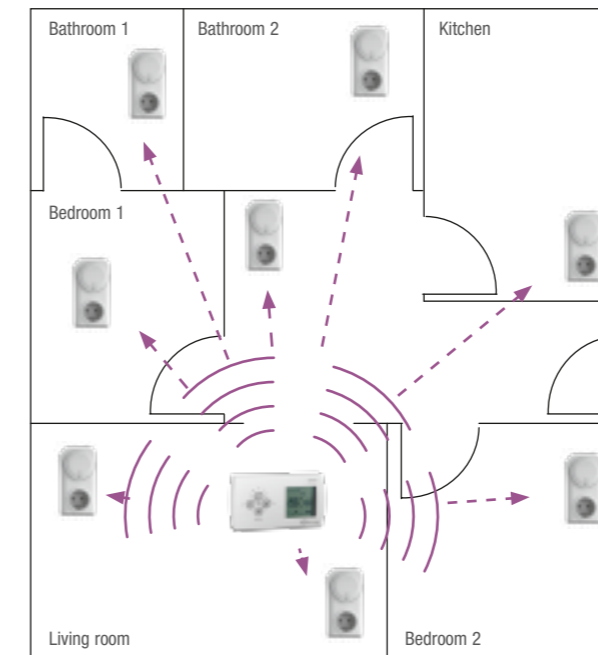


Central heating solutions – 1 channel



famoso 1000 rf T DH + Rec Tip rf

- Famoso 1000 rf DH Set is specially designed to control portable electrical heaters.
- You can control as many receivers/heaters as you need.
- Switching capacity up to 16A per each receiver/circuit
- Clock thermostat brings different running modes, AUTO, comfort temperature, reduced temperature, party, holiday and override
- Daily or weekly programming, 4 different programs predefined from factory and one program to be defined by user
- Emergency mode is enabled into receiver to ensure a minimum temperature level in case transmission is lost during a long period of time

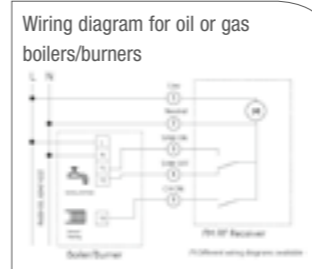


Central heating & domestic hot water solutions – 2 channels





famoso 1000 rT + FM/2 rf

- Famoso 1000 rf Set is specially designed for both new-build or retrofit installations
- Clock thermostat brings different running modes, AUTO, comfort temperature, reduced temperature, party, holiday and override
- Daily or weekly programming, 2 different programs predefined from factory and one program to be defined by user
- Emergency mode is enabled into receiver to ensure a minimum temperature level in case transmission is lost during a long period of time
- Two channels, Central Heating (CH) channel programmable depending on time frames and temperature levels and domestic hot water (dhw) channel programmable depending on time frames



Overview room thermostats & chronothermostats – wired connection



	feeling D101 Digital chronothermostat	feeling D201 Digital chronothermostat	famoso 1000 Digital chronothermostat
			
Controller	–	–	–
Available colours	<input type="checkbox"/> White <input checked="" type="checkbox"/> Anthracite <input checked="" type="checkbox"/> Silver	<input type="checkbox"/> White <input checked="" type="checkbox"/> Anthracite <input checked="" type="checkbox"/> Silver	<input type="checkbox"/> White
Switching programs	weekly program with up to 48 time and temperature level changes	weekly program with up to 48 time and temperature level changes	weekly program
Display	LCD	LCD	LCD
Further technical information	p. 16	p. 16	p. 18

famoso 601 Analog chronothermostat	thermio E Digital room thermostat
	
–	Bi-metal
<input type="checkbox"/> White	<input type="checkbox"/> White
daily program	–
–	LCD
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Chronothermostats – wired connection

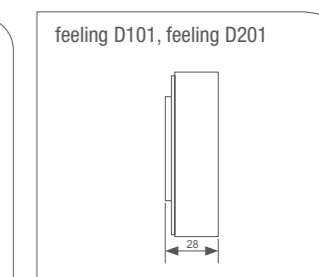
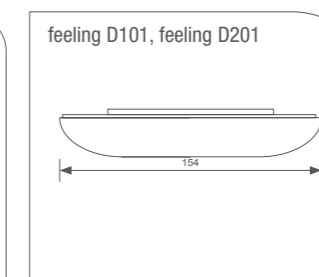
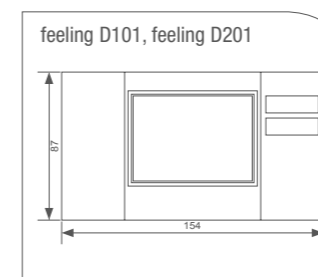
- Digital weekly chronothermostats with modern design and large, easy-to-read display
- Available in 3 modern colors: White, Anthracite, Silver
- Up to 48 different time & temperature “events” per day to create a comfortable environment all day long; 4 pre-set programs & 1 user defined program available
- Various running modes to select from depending on the situation: AUTO, Override, ECO-FIX, Cleaning, Countdown, Party, Holiday and OFF
- Total OFF function with anti-freeze temperature
- Wide temperature control range (+5°C ... +32°C)
- Problem-free installation with adjustable anti-freeze temperature (+3°C ... +7°C)
- Battery discharge level monitoring and notice when batteries have to be replaced
- Integrated operating hour counter
- Automatic adjustment for summer- / wintertime
- 2-wired connection for heating applications
- Suitable for flush or wall installation

	Voltage	Description	RAL Color
 <p>Standard range: feeling D101</p> <p>2 x 1.5 V White 9016</p> <p>2 x 1.5 V Anthracite 7016</p> <p>2 x 1.5 V Silver 9006</p> <p>– Battery type LR6 – Battery powered/Relay output</p> <p> <input type="checkbox"/> White <input checked="" type="checkbox"/> Anthracite <input type="checkbox"/> Silver </p>			
 <p>Medium range: feeling D201</p> <p>2 x 1.5 V White 9016</p> <p>2 x 1.5 V Anthracite 7016</p> <p>2 x 1.5 V Silver 9006</p> <p>– Battery type LR6 – Battery powered/Relay output – Backlighted LCD – Indoor relative humidity measurement in % – Adjustable regulation methods – Self-learning function</p> <p> <input type="checkbox"/> White <input checked="" type="checkbox"/> Anthracite <input type="checkbox"/> Silver </p>			

Technical Data





	feeling D101	feeling D201
Dimensions HxWxD (mm)	87 x 154 x 27	87 x 154 x 27
Weight (g)	200	200
Power supply	2 x 1.5 V AA LR6 Alkaline batteries	2 x 1.5 V AA LR6 Alkaline batteries
Battery life time	2 years	2 years
Battery back-up	> 10 min. (programs retained in EPROM)	> 10 min. (programs retained in EPROM)
Switching type	SPDT (potential free)	SPDT (potential free)
Switching capacity	6 (2) A 250 V	6 (2) A 250 V
Connection type	max. 1.5 mm ²	max. 1.5 mm ²
Backlighted LCD	no	yes
Indoor relative humidity measurement	no	yes
Outdoor temperature & relative humidity measurement (requires add. accessory)	no	no
Remote phone connection (requires additional accessories)	no	yes
Regulation cycles (selectable)	2 points, PID	2 points, PID, self-learning
Sensing element	100K (at 25°C) NTC	100K (at 25°C) NTC
Ambient temperature resolution	0.1 °C	0.1 °C
Temperature setting display range	+5°C ... +32°C (0.5°C steps)	+5°C ... +32°C (0.5°C steps)
Frost protection	+5°C (adjustable 3°C ... 7°C)	+5°C (adjustable 3°C ... 7°C)
Ambient temperature resolution	24 h or 12 h AM/PM format	24 h or 12 h AM/PM format
Time setting resolution	1 minute	1 minute
Time of day	30 minutes	30 minutes
Temperature control accuracy	0.5°C (20°C 3K/hour)	0.5°C (20°C 3K/hour)
Thermal gradient (heating system)	3K/hour	3K/hour
Room temperature display range	0°C ... +50°C	0°C ... +50°C
Programming	weekly program with up to 48 time and temperature level changes	weekly program with up to 48 time and temperature level changes
Pre-set programs	4 + 1 user defined	4 + 1 user defined
Output signal	–	–
RF signal	–	–
RF signal range	–	–
Coding	–	–
RF Power transmission	–	–
Operating temperature limits	Max. 45°C	Max. 45°C
Operating humidity range	10% to 90% RH not condensing	10% to 90% RH not condensing
Storing temperature limits	-20°C to +55°C	-20°C to +55°C
Protection class	II	II
Protection type	IP40	IP40
According to	EN 60730-1, EN 60730-2-7 EN 60730-2-9, EN 55014-1 EN 55014-2, EN 61000-6-2	EN 60730-1, EN 60730-2-7 EN 60730-2-9, EN 55014-1 EN 55014-2, EN 61000-6-2

Drawings:



Room thermostats & chronothermostats – wired connection

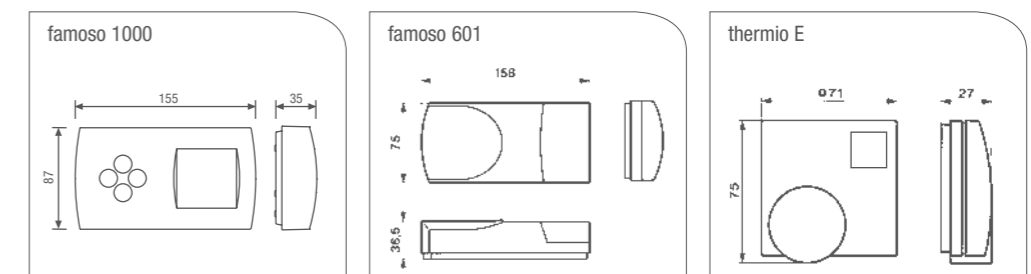
- Wired connection
- Flat and attractive design
- Time and temperature control accuracy

	Contact, Voltage	Specifications
 <p>famoso 1000 1 NO contact, 5 (1) A/250 V AC</p> <p>– Easy programming – Easy and quick installation – Holiday program up to 99 days – 2-wired connection – Battery operation</p>		Digital chronothermostats
 <p>famoso 601 1 CO contact, 5 (1) A/250 V AC</p> <p>– Easy programming – Easy and quick installation – 2-wired connection – Battery operation</p>		Analog chromthermostat
 <p>thermio E 24 V/50-60 Hz</p> <p>– Electronic control with current/set temperature display – With powerstealing – no batteries necessary – For surface mounting</p>		Digital room thermostat
 <p>Frames</p> <p>– 80,5 x 80,5 mm (5 mm thick)</p>		Frame for all thermostats thermio

Technical Data



	famoso 1000	famoso 601	thermio E
Dimensions H x W x D (mm)	87 x 155 x 35	158 x 75 x 36,4	75 x 71 x 21
Weight approx. (g.)	185	250	60
Switching contact	1 NO, opens with raising temperature	1 CO, opens with raising temperature	1 NO, opens with raising temperature
Operating voltage	2 x LR 6 alkaline batteries	2 x LR 6 alkaline batteries	24 V/50-60 Hz
Time accuracy at 25°C	± 2,5 s/day	± 2,5 s/day	–
Battery lifetime	1 year (dep. on switching frequency)	1 year (dep. on switching frequency)	–
Control range of day temperature	+5°C ... +30°C	+5°C ... +32°C	+5°C ... +30°C
Control range of night temperature	+5°C ... +30°C	+5°C ... +32°C	+5°C ... +30°C
Ambient temperature	-5°C ... +45°C	-5°C ... +45°C	-5°C ... +45°C
Antifreeze	5°C	setting at 5°C	–
Differential gap of temperature	± 0,25 ... 0,4 K	± 0,25 ... 0,5 K	approx. 0,5 K
Controller	electronic, PID/2 points	electronic, PID/2 points	electronic
Protection type	IP 20	IP 20	IP 20
Daily program	0,5 h	15 min	–
Weekly program	0,5 h (programmable every 30 min)	2 h (programmable every hour)	–
Operating modes	Day/Night/Party/ Holiday/AUTO/Override	Day/Night/AUTO	–
Timer/control	sign for heating	yes/–	–
Selector switch	Operating mode (Temp 1/2, Auto- matic, party and holidays)	Temp 1/2, Automatic	–
Assembly mode	Mounting with receptacle terminals on support plate	Mounting with receptacle terminals on support plate	Wall mounting
Control period	5 ... 30 min	5 ... 30 min	–
Protection class	II	II	II
Protection type	IP 20, see legend	IP 20, see legend	IP 20, see legend
According to	EN 60730-1, EN 60730-2-7 EN 60730-2-9	EN 60730-1, EN 60730-2-7 EN 60730-2-9	EN 60730-1, EN 60730-2-7 EN 60730-2-9
Language instruction manual (more languages possible)	D, GB, F, I, NL	D, GB, F, I, NL	D, GB, F, I, NL

Drawings:



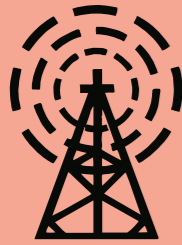
Overview wireless chronothermostats

	feeling D101 rf Digital wireless chronothermostat	feeling D201 rf Digital wireless chronothermostat	famoso 1000 Digital wireless chronothermostat
			
Available colors	<input type="checkbox"/> White <input checked="" type="checkbox"/> Anthracite <input type="checkbox"/> Silver	<input type="checkbox"/> White <input checked="" type="checkbox"/> Anthracite <input type="checkbox"/> Silver	<input type="checkbox"/> White
Switching programs	weekly program with up to 48 time and temperature level changes	weekly program with up to 48 time and temperature level changes	weekly program
Display	LCD	LCD	LCD
Further technical information	p. 22	p. 22	p. 24

famoso 601 Analog wireless chronothermostat	famoso 651 Analog wireless chronothermostat
	
<input type="checkbox"/> White	<input type="checkbox"/> White
daily program	weekly program
–	–
p. 24	p. 24



Wireless chronothermostats



- Digital weekly room thermostat clock with modern design and large, easy-to-read display
- Available in 3 modern colors: White, Anthracite, Silver
- Up to 48 different time & temperature "events" per day to create a comfortable environment all day long; 4 pre-set programs & 1 user defined program available
- Various running modes to select from depending on the situation: AUTO, Override, ECO-FIX, Cleaning, Countdown, Party, Holiday and OFF
- Total OFF function with anti-freeze temperature
- Wide temperature control range (+5°C ... +32°C)
- Problem-free installation with adjustable anti-freeze temperature (+3°C ... +7°C)
- Battery discharge level monitoring and notice when batteries have to be replaced
- Integrated operating hour counter
- Automatic adjustment for summer- / wintertime
- Suitable for flush or wall installation

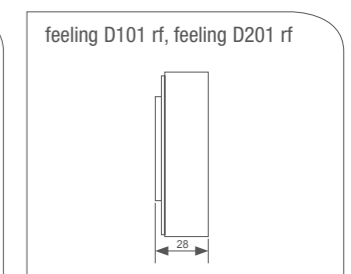
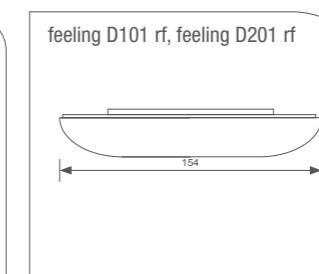
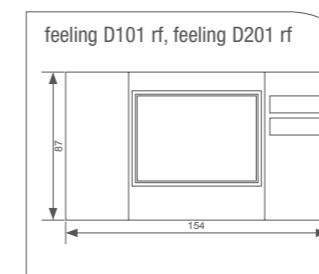
Voltage	Description	RAL Colour
Standard range: feeling D101 rf		
2 x 1.5 V	White	9016
2 x 1.5 V	Anthracite	7016
2 x 1.5 V	Silver	9006
<ul style="list-style-type: none"> - Battery type LR6 - Battery powered/RF output Tx - Reliable 868 MHz RF signal that guarantees perfect communication between transmitter and receiver - Transmission range up to 30 meters (indoor usage 2 walls & 1 ceiling) 		
Medium range: feeling D201 rf		
2 x 1.5 V	White	9016
2 x 1.5 V	Anthracite	7016
2 x 1.5 V	Silver	9006
<ul style="list-style-type: none"> - Battery type LR6 - Battery powered/RF output Tx - Backlighted LCD - Indoor relative humidity measurement in % - Bi-directional communication between transmitter and receiver - Wireless accessories for an individual system (remote-controlled phone connection, external temperature sensor, etc.) 		

Technical Data

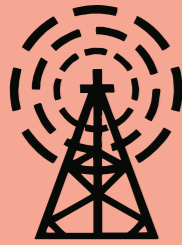
	feeling D101 rf	feeling D201 rf
Dimensions HxWxD (mm)	87 x 154 x 27	87 x 154 x 27
Weight (g)	200	200
Power supply	2 x 1,5V AA LR6 Alkaline batteries	2 x 1,5V AA LR6 Alkaline batteries
Battery life time	2 years (depending on switching)	2 years (depending on switching)
Battery back-up	>10 min. (programs retained in EEPROM)	>10 min. (programs retained in EEPROM)
Switching type	depending on receiver type see p. 26	depending on receiver type see p. 27
Switching capacity	depending on receiver type see p. 26	depending on receiver type see p. 27
Connection type	depending on receiver type see p. 26	depending on receiver type see p. 27
Backlighted LCD	no	yes
Indoor relative humidity measurement	no	yes
Outdoor temperature & relative humidity measurement (requires add. accessory)	no	yes*
Remote phone connection (requires additional accessories)	no	yes
Regulation cycles (selectable)	2 points, PID	2 points, PID, self-learning
Sensing element	100K (at 25°C) NTC	100K (at 25°C) NTC
Ambient temperature resolution	0,1 °C	0,1 °C
Temperature setting display range	+5°C ... +32°C (0,5°C steps)	+5°C ... +32°C (0,5°C steps)
Frost protection	5°C (adjustable 3°C ... 7°C)	+5°C (adjustable +3°C ... +7°C)
Time display	24 hour or 12 hour AM/PM format	24 hour or 12 hour AM/PM format
Time setting resolution	1 minute	1 minute
Time of day	30 minutes	30 minutes
Temperature control accuracy	+/- 0,5°C (20°C 3K/hour)	+/- 0,5°C (20°C 3K/hour)
Thermal gradient (heating system)	3K/hour	3K/hour
Room temperature display range	+0°C ... +50°C	+0°C ... +50°C
Programming	weekly program with up to 48 time and temperature level changes	weekly program with up to 48 time and temperature level changes
Pre-set programs	4 + 1 user defined	4 + 1 user defined
Output signal	RF signal	RF signal
RF signal	868,3 MHz	868,3 MHz (bi-directional)
RF signal range	Inside buildings 30 m (2 walls + 1 ceiling)	Inside buildings 30 m (2 walls + 1 ceiling)
Coding	> 16,8 Mio.	> 16,8 Mio.
RF power transmission	<1 mW	< 1mW
Operating temperature limits	Max. 45°C	Max. 45°C
Operating humidity range	10% to 90% RH not condensing	10% to 90% RH not condensing
Storing temperature limits	-20°C to +55°C	-20°C to +55°C
Protection Class	II	II
Protection type	IP40	IP40
According to	EN 60730-1, EN 60730-2-7 EN 60730-2-9, EN 55014-1 EN 55014-2, EN 61000-6-2 ETSI EN 300 220-1 ETSI EN 300 220-3 ETSI EN 301 489-3	EN 60730-1, EN 60730-2-7 EN 60730-2-9, EN 55014-1 EN 55014-2, EN 61000-6-2 ETSI EN 300 220-1 ETSI EN 300 220-3 ETSI EN 301 489-3

*) For more information about these accessories please visit our website at www.graesslin.de



Drawings:



Wireless chronothermostats



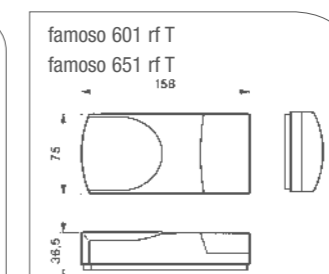
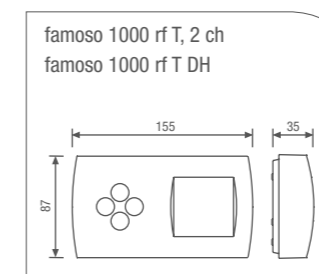
- Transmission ensured by high quality 868 MHz
- Communication range of up to 30 meters
- Flat and attractive design
- Battery operation
- Different receivers available (s. page 26 – 27)

	Channels	Specifications
	famoso 1000 rf T DH 1 channel (electrical direct heating)	Digital chronothermostat
	famoso 1000 rf T 1ch 1 channel (central heating)	Digital chronothermostat
	famoso 1000 rf T 2ch 2 channels (central heating/warm water)	Digital chronothermostat
		– 1 channel version for electrical direct heating – 1 channel version for central heating – 2 channel version for central heating and warm water – Easy programming – Easy and quick installation
	famoso 601 rf T 1 channel	Daily program, analog chronothermostat
	famoso 651 rf T 1 channel	Weekly program, analog chronothermostat
		– Easy programming – Easy and quick installation





Technical Data

	famoso 1000 rf T 1ch, 2 ch famoso 1000 rf T DH	famoso 601 rf T famoso 651 rf T
Dimensions HxWxD (mm)	87 x 155 x 35	158 x 75 x 36,4
Weight (g) approx.	185	250
Switching contact	Depending on receiver type (see page 26)	Depending on receiver type (see page 26)
Operating voltage	2 x LR 6 alkaline batteries	2 x LR 6 alkaline batteries
Running reserve at 20°C	Program memory	–
Time accuracy at 25°C	± 2,5 s/day	± 2,5 s/day
Battery lifetime	1 year (dep. on switching frequency)	1 year (dep. on switching frequency)
Control range of day temperatures	+5°C ... +30°C	+5°C ... +32°C
Control range of night temperatures	+5°C ... +30°C	+5°C ... +32°C
Ambient temperature	-5°C ... +45°C	-5°C ... +45°C
Antifreeze	5°C	setting at 5°C
Differential gap of temperature	± 0,25 ... 0,4 K	± 0,25 ... 0,5 K
Controller	electronic, PID / 2 points	electronic, 2 points
Protection type	IP 20	IP 20
Day program	0,5 h	15 min
Week program	0,5 h (programmable every 30 min)	2 h (programmable every hour)
Operating modes	Day/Night/Party/Holiday/AUTO/Override	Day/Night/Party/Holiday/AUTO/Override
Timer/ control	sign for heating	yes/–
Selector switch	Temp 1/2, Automatic, party and holidays	Temp 1/2, „Automatic“
Assembling mode	wall mounting	wall mounting
Connection	wireless	wireless
Control period	5 ... 30min	5 ... 30min
Transmission frequency	868,3 MHz	868,3 MHz
Transmission power	corresp. LEPT/ERC/REC 70-03 E class 7a	corresp. LEPT/ERC/REC 70-03 E class 7a
Transmission range	approx. 30 m, in buildings	approx. 30 m, in buildings
Antenna	internal	internal
Coding	> 16,8 Mio.	> 16,8 Mio.
Power transmission	< 1mW	< 1mW
Radio state display	symbol	–
Protection Class	II	II
Protection type	IP 20, see legend	IP 20, see legend
According to	EN 60730-1, EN 60730-2-7 EN 60730-2-9	EN 60730-1, EN 60730-2-7 EN 60730-2-9
Language instruction manual (more languages possible)	D, GB, F, I, NL	D, GB, F, I, NL

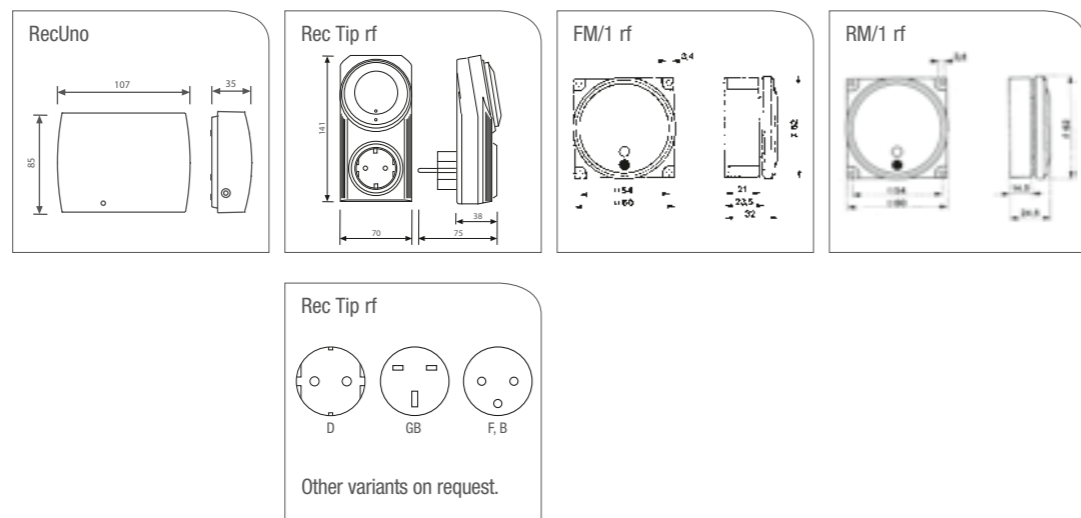
Drawings:







Receivers famoso and feeling Standard

	RecUno	Rec Tip rf	FM/1 rf	RM/1 rf
				
Dimensions HxWxD (mm)	85 x 107 x 35	141 x 70 x 38	60 x 60 x 32	60 x 60 x 24,5
Weight approx. (g)	113	207	67	47
Contact type	1 CO (potential-free)	1 NO	1 CO (potential-free)	Open collector oder CMOS
Operating voltage	230V +/-10% 50-60Hz	220-240 V~	220-240 V~	5-33 V DC
Switching capacity	5 (1) A/250 V	16 (4) A/250 V	5 (1) A/250V	5 mA/24 V DC
Connection type	Screws max. 1,5 mm ²	Plug	AMP 6,3	7 pins (socket 2,54 pitch pins)
RF signal	868,3 MHz	868,3 MHz	868,3 MHz	868,3 MHz
RF signal range inside buildings	30m (2 walls + 1 ceiling)	30m (2 walls + 1 ceiling)	30m (2 walls + 1 ceiling)	30m (2 walls + 1 ceiling)
Coding	> 16,8 Mio	> 16,8 Mio	> 16,8 Mio	> 16,8 Mio
RF Power transmission	<1mW	<1mW	<1mW	<1mW
Transmission status symbol	LED	LED	LED	LED
Operating temperature limits	Max. +45°C	Max. +45°C	Max. +45°C	Max. +45°C
Operating humidity range	10% to 90% RH not condensing	10% to 90% RH not condensing	10% to 90% RH not condensing	10% to 90% RH not condensing
Storing temperature limits	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C
Protection class	II	II	II	II
Protection type	IP20	IP20	IP20	IP20

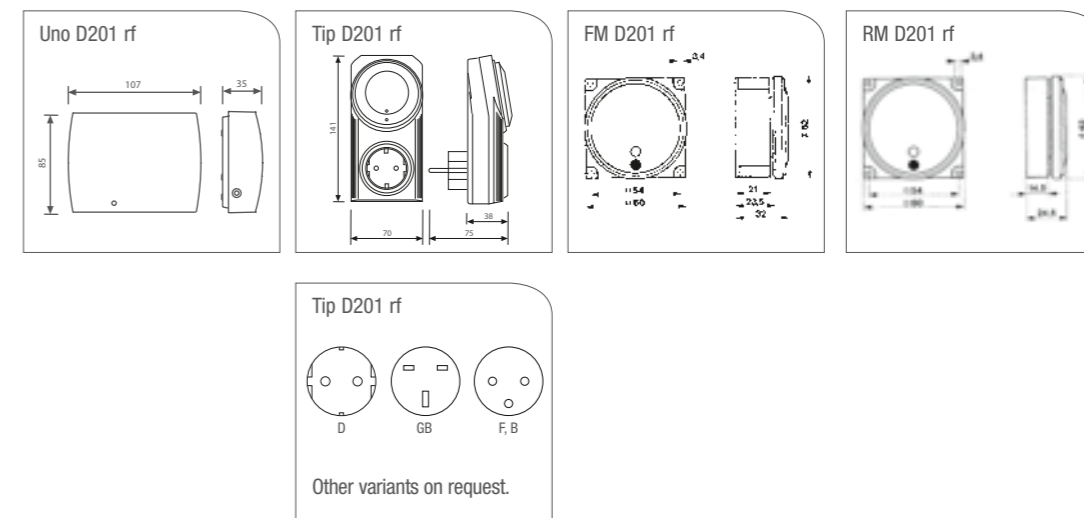
Drawings:



Overview receivers feeling Medium

	Uno D201 rf	Tip D201 rf	FM D201 rf	RM D201 rf
				
Dimensions HxWxD (mm)	85 x 107 x 35	141 x 70 x 38	60 x 60 x 32	60 x 60 x 24,5
Weight approx. (g)	113	207	67	47
Contact type	1 CO (potentialfrei)	1 NO	1 CO (potentialfrei)	Open collector oder CMOS
Operating voltage	220-240 V AC	220-240 V aC	220-240 V AC	5-33 V DC
Switching capacity	5 (1) A/250 V	16 A (4)/250 V	5 (1) A/250 V	5 mA/24 V DC
Connection type	Screws max. 1,5mm ²	Plug	AMP 6,3	7 pins (socket 2,54 pitch pins)
RF signal	868,3 MHz (bi-directional)	868,3 MHz (bi-directional)	868,3 MHz (bi-directional)	868,3 MHz (bi-directional)
RF signal range inside buildings	30m (2 walls + 1 ceiling)	30m (2 walls + 1 ceiling)	30m (2 walls + 1 ceiling)	30m (2 walls + 1 ceiling)
Coding	> 16,8 Mio	> 16,8 Mio	> 16,8 Mio	> 16,8 Mio
RF power transmission	<1mW	<1mW	<1mW	<1mW
Transmission status symbol	LED	LED	LED	LED
Operating temperature limits	Max. +45°C	Max. +45°C	Max. +45°C	Max. +45°C
Operating humidity range	10% to 90% RH not condensing	10% to 90% RH not condensing	10% to 90% RH not condensing	10% to 90% RH not condensing
Storing temperature limits	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C
Protection class	II	II	II	II
Protection type	IP 20	IP 20	IP20	IP20

Drawings:



Mechanical and digital time switches and modules

Save energy with intelligent time switch technology.

- Analog and digital in multiple sizes and shapes for your individual requirements.
- Multiple switching outputs like relay, CMOS or Open collector.
- Diverse voltages available for every application.
- Big variety of colors for flexible customization possibilities.
- Extremely easy programming philosophy even in digital devices.



Mechanical time switch modules

RM	p. 34
FM	p. 36
MM – KM	p. 40
Accessories	p. 42

Digital time switch modules

RMD	p. 48
FMD	p. 50
IMD	p. 52
EMD	p. 54

Mechanical universal time switches

tactic	p. 58
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Digital univesal time switches

tactic plus	p. 60
Accessories	p. 62

Overview mechanical time switch modules

	RM/1 Q	FM/1 S	FM/1 Q	FM/1 Q
				
Field of application	Flush mounting, suitable for electrical applications; PCB mounting possible	Flush mounting, suitable for applications up to 16 A	Flush mounting, suitable for applications up to 16 A	Flush mounting low load (0,1 A)
S = Synchronous drive Q = Quarz drive	Q	S	Q	Q
Switching program D = day/W = Week	D/W	D/W	D/W	D/W
Programmable every ...	D = 15 min W = 1 h	D = 15 min W = 2 h	D = 15 min W = 2 h	D = 15 min W = 2 h
Switching power acc. to VDE, IEC	5 mA/5 V DC to 100 mA/42 V DC switching contact	16 (8) A/250 V AC switching contact	16 (8) A/250 V AC switching contact	100 mA/250 V AC switching contact
Switching power acc. to UL	–	21 A/250 V AC switching contact	21 A/250 V AC switching contact	100 mA/125 V AC switching contact
Ambient temperature	0 °C to +55 °C	-40 °C to +85 °C	-20 °C to +55 °C	-20 °C to +55 °C
H = Manual switch possible (Permanent ON/AUTO/OFF) Z = Clock face possible	H/Z	H/Z	H/Z	H/Z
Dimensions (mm)	∅ = 64 □ = 60 T = 24,5	∅ = 64 □ = 60 T = 32	∅ = 64 □ = 60 T = 32	∅ = 64 □ = 60 T = 32
Further technical informationen	p. 35	p. 37	p. 37	p. 37

	FM/1 Su 12 h	MM/1 S	KM2/1 S
			
Field of application	Flush mounting, predominantly for defrost applications	Mini-module, for installation in compact application to 16 A	For installation in compact applications up to 16 A, comfortable manual control switch
S = Synchronous drive Q = Quarz drive	S	S	S
Switching program D = day/W = Week	12 hour program	D	D/W
Programmable every ...	D = 15 min W = 2 h	D = 20 min	D = 20 min W = 2,5 h
Switching power acc. to VDE, IEC	16 (8) A/250 V AC switching contact	16 (8) A/250 V AC switching contact	16 (8) A/250 V AC switching contact
Switching power acc. to UL	21 A/250 V AC switching contact	21 A/250 V AC switching contact	21 A/250 V AC switching contact
Ambient temperature	-40 °C to +85 °C	-20 °C to +85 °C	-20 °C to +85 °C
H = Manual switch possible (Permanent ON/AUTO/OFF) Z = Clock face possible	–	H	H
Dimensions (mm)	∅ = 64 □ = 60 T = 32	W = 57 H = 53 D = 51	W = 42,4 H = 67 D = 42,5
Further technical informationen	p. 39	p. 41	p. 41

Color variants for mechanical time switch modules

Color tappets: Minimum order:	white (light grey) unlimited	yellow 1.000 pieces	red 1.000 pieces	blue 1.000 pieces
FM – RM				
Basic color black Clock face white				
Color variant	Standard	01	02	03
Basic color grey Clock face black				
Color variant	–	05	06	07
KM – MM				
Basic color black				
Color variant	Standard	01	02	03
Basic color grey				
Color variant	–	05	06	07

Connection variants FM – RM

Connection variant:	Standard	W09	W18	W27
FM				
Output direction				
RM				
Output direction				

green 1.000 pieces	black 1.000 pieces
04	–
08	09
04	–
08	09

Nomenclature of product names:

	Abbreviation	Meaning	Examples
Drive	S Q	Synchronous Quartz	Example 1: RM/1 QTuZH with Quartz drive, daily program and clock face, manual switch
Switching program	T W	Daily program Weekly program	
Manual switch	H	Manual switch	Example 2: RM/1 QWuZH with Quartz drive, weekly program and clock face, manual switch
Clock face	Z	Clock face	

Mechanical time switch modules

- Extremely low profile
- Daily or weekly program
- All modules also available without time base
- 1 Channel
- Flush mounting, preferably into electronic circuits
- Fitting compatible with digital time switch modules RMD
- Display of switching position
- Additional color combinations see page 32-33

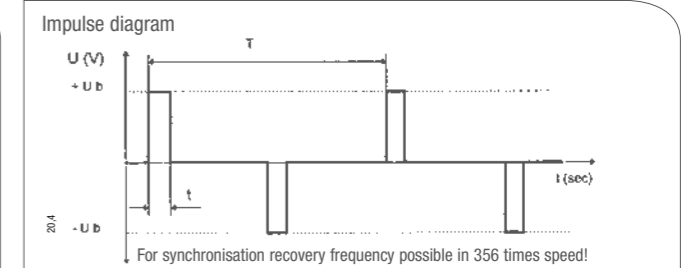
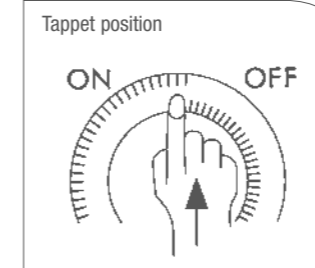
Applications
For installation into electrical circuits

	Drive	Program	Specifications
	RM/1 QTuZH Quartz drive	Daily program	With clock face and manual switch
	RM/1 QWuZH Quartz drive	Weekly program	With clock face and manual switch
	RM/1 QTuZ Quartz drive	Daily program	With clock face
	RM/1 QWuZ Quartz drive	Weekly program	With clock face
	RM/1 QTuH Quartz drive	Daily program	Without clock face, with manual switch
	RM/1 QWuH Quartz drive	Weekly program	Without clock face, with manual switch
	RM/1 QTu Quartz drive	Daily program	Without clock face and manual switch
	RM/1 QWu Quartz drive	Weekly program	Without clock face and manual switch

Technical Data

	RM/1 Q	RM/1 without timebase
Dimensions H x W x D (mm)	60 x 60 x 24,5	
Cut out (mm)	Ø 64	
Fitting depths (mm)	14,5	
Weight (g) approx.	75	
Nominal voltage	1,2-1,6 V DC	Range of current supply (limits)
Current consumption	0,16 mA (impulse 6mA) at 1,5 V DC	1,2 ... 1,6 V DC
Switching contacts – Sub miniature switch	Switch, galvanic insulation	Remaining waves
Switching current AC – Resistive load (VDE, IEC)	100 mA/42 V AC 1 A/250 V AC	< 0,1 V
Switching current DC	100 mA/42 V DC	Current consumption
Minimum switching current DC	0,05 mA/5 V DC	< 0,3 mW
Operation accuracy	typ ±1,5 s/day at +20° C	Coil resistance
Ambient temperature	0° C ... +55° C	280 ±30 Ω
Security level	User related	Controlling:
Shortest switching time – Daily program – Weekly program	15 min 2 h	Duration of impulse (t)
Shortest switching interval – Daily program – Weekly program	15 min 1 h	46,9 ... 62,5 ms
Switching status display	yes	Control frequency
Automatic override	possible	Normal operation:
Clock face	possible	– Duration of period (T)
Type of connection	Socket rail Pitch of 2.54 mm, countersunk into module	– Steps/s
		– Recommended frequency (Δt/f)
		Recovery frequency:
		– Duration of period (T)
		– Steps/s
		Angle of step (rotor)
		Revolution of rotor per second
		Torque (Ncm/35,2 V DC)
		> 1,25 cNcm and 1/min

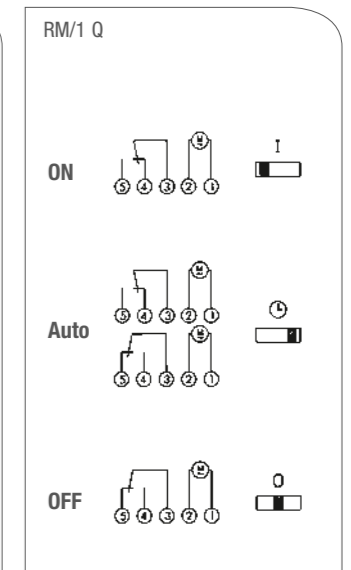
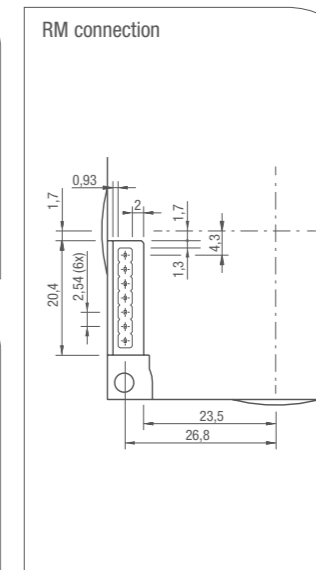
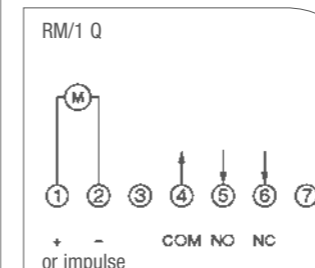
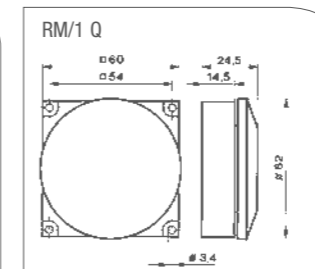
Dimensional drawings / circuit diagrams:



Note:

The required contact protection must be observed for installation in electrical unit. Both driving and load circuit must have safetyextra-low voltage or must be at the same potential. The clearance distance between driving and load circuit is 0.5 mm.

Please note the connection layout of the digital RMD on page 49.



Mechanical time switch modules

- Battery backup with quartz version
- Daily or weekly program
- Improved dust protection
- 1 channel
- 16 A/250 V AC switching capacity
- Fitting compatible with digital time switch modules FMD
- Only for fitted mounting
- Additional color combinations see page 32-33

Applications
For solutions up to 16 A

	Drive	Program	Specifications
	FM/1 STuZH		
	Synchronous drive	Daily program	With clock face and manual switch
	FM/1 SWuZH		
	Synchronous drive	Weekly program	With clock face and manual switch
	FM/1 QRTuZH		
	Quartz drive	Daily program	With clock face and manual switch
	FM/1 QRWuZH		
	Quartz drive	Weekly program	With clock face and manual switch
	FM/1 STuZ		
	Synchronous drive	Daily program	With clock face, without manual switch
	FM/1 SWuZ		
	Synchronous drive	Weekly program	With clock face, without manual switch
	FM/1 QRTuZ		
	Quartz drive	Daily program	With clock face, without manual switch
	FM/1 QRWuZ		
	Quartz drive	Weekly program	With clock face, without manual switch
	FM/1 STuH		
	Synchronous drive	Daily program	Without clock face, with manual switch
	FM/1 SWuH		
	Synchronous drive	Weekly program	Without clock face, with manual switch
	FM/1 QRTuH		
	Quartz drive	Daily program	Without clock face, with manual switch
	FM/1 QRWuH		
	Quartz drive	Weekly program	Without clock face, with manual switch

Technical Data

	FM/1 S	FM/1 Q (16 A)	FM/1 Q low load (0,1 A)
Dimensions H x W x D (mm)	60 x 60 x 32	60 x 60 x 32	60 x 60 x 32
Cut out (mm)	Ø 64	Ø 64	Ø 64
Fitting depths (mm)	21	21	21
Weight (g) approx.	75	75	75
Nominal voltage	220-240 V AC/50 Hz 110-120 V AC/60 Hz	230V AC/130 V DC	230V AC/130 V DC
Power consumption	1 VA at 220 V AC	2 VA at 220 V AC 0,2 VA at 24 V DC	2 VA at 220 V AC 0,2 VA at 24 V DC
Current output – Relay	Switch, galvanic insulation	Switch, galvanic insulation	Switch, galvanic insulation
Switching current AC			
– Resistive load (VDE, IEC)	16 A/250 V AC	16 A/250 V AC	0,1 A/250 V AC
– Resistive load (UL)	21 A/250 V AC	21 A/250 V AC	0,1 A/125 V AC
– Inductive load cos. φ 0,6	8 A/250 V AC	8 A/250 V AC	0,05 A/250 V AC
– Incandescent lamp load	1350 W	1350 W	–
Switching current DC	–	–	100 mA/24 V DC 100 mA/60 V DC 100 mA/220 V DC
Minimum switching current AC	100 mA/20 V AC	100 mA/20 V AC	5 mA/300 mV AC
Minimum switching current DC	100 mA/20 V DC	100 mA/20 V DC	5 mA/300 mV DC
Battery backup	–	150 h	150 h
Battery charge time	–	70 h	70 h
Operation accuracy	Mains synchronous	type ± 1.5 s/day at 20°C	type ± 1.5 s/day at 20°C
Ambient temperature	-40°C ... +85°C	-20°C ... +55°C	-20°C ... +55°C
Security level for fitting acc. to instructions	II	II	II
Shortest switching time			
– Daily program	15 min	15 min	15 min
– Weekly program	2 h	2 h	2 h
Shortest switching interval			
– Daily program	15 min	15 min	15 min
– Weekly program	2 h	2 h	2 h
Automatic override	possible	possible	possible
Clock face	possible	possible	possible
According to	EN 60730-1 EN 60730-2-7	EN 60730-1 EN 60730-2-7	EN 60730-1 EN 60730-2-7
Type of connection	flat DIN 6.3 mm	flat DIN 6.3 mm	flat DIN 6.3 mm

Dimensional drawings/circuit diagrams:

Voltage variants	Nominal range AC (tolerance: -15%/+10%) Details on unit and packaging	Nominal range DC (tolerance: -15%/+10%) Details on unit and packaging	Information on invoice and delivery note
Quartz drive 45 – 60 Hz	24-36 V 48-72 V 100-160 V 220-240 V	12-15 V 24-36 V 48-72 V 100-160 V	30 V AC/12 V DC 60 V AC/30 V DC 130 V AC/60 V DC 230 V AC/130 V DC
Synchronous drive 50 or 60 Hz	24 V/50 Hz 110-120 V/60 Hz 220-240 V/50 Hz 220-240 V/60 Hz	– – – –	24 V/50 Hz 110-120 V/60 Hz 220-240 V/50 Hz 220-240 V/60 Hz

Mechanical time switch modules

- Synchronous drive
- 12 h program with FM modules
- 1 channel
- 16 A/250 V AC Switching current

Applications

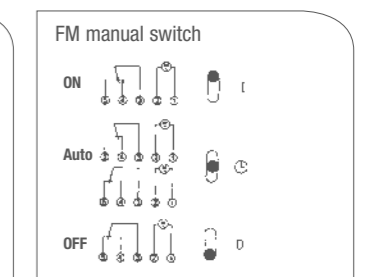
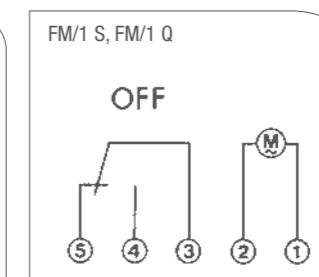
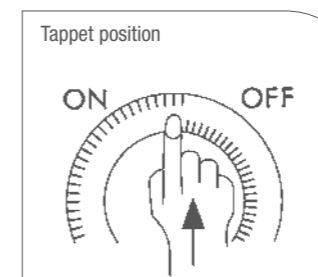
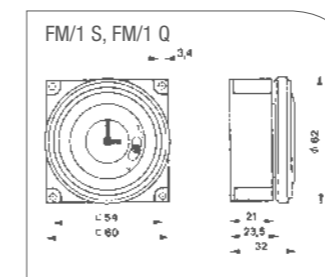
- For solutions up to 16 A
- Defrost technology

	Drive	Program	Specifications
	FM/1 STu		
	Synchronous drive	Daily program	Without clock face and manual switch
	FM/1 SWu		
	Synchronous drive	Weekly program	Without clock face and manual switch
	FM/1 QRTu		
	Quartz drive	Daily program	Without clock face and manual switch
	FM/1 QRWu		
	Quartz drive	Weekly program	Without clock face and manual switch
FM/1 Su 12 h			
Synchronous drive	12 hour program	FM-module	

Technical Data

	FM/1 S	FM/1 Su 12 h	FM/1 Q (16 A)	FM/1 Q low load (0,1 A)
Dimensions H x W x D (mm)	60 x 60 x 32		60 x 60 x 32	60 x 60 x 32
Cut out (mm)	Ø 64		Ø 64	Ø 64
Fitting depths (mm)	21		21	21
Weight (g) approx.	75		75	75
Nominal voltage	220-240 V AC/50 Hz 110-120 V AC/60 Hz		230V AC/130 V DC	230V AC/130 V DC
Power consumption	1 VA at 220 V AC		2 VA at 220 V AC 0,2 VA at 24 V DC	2 VA at 220 V AC 0,2 VA at 24 V DC
Current output – Relay	Switch, galvanic insulation		Switch, galvanic insulation	Switch, galvanic insulation
Switching current AC				
– Resistive load (VDE, IEC)	16 A/250 V AC		16 A/250 V AC	0,1 A/250 V AC
– Resistive load (UL)	21 A/250 V AC		21 A/250 V AC	0,1 A/125 V AC
– Inductive load cos. j 0.6	8 A/250 V AC		8 A/250 V AC	0,05 A/250 V AC
– Incandescent lamp load	1350 W		1350 W	–
Switching current DC	–		–	100 mA/24 V DC 100 mA/60 V DC 100 mA/220 V DC
Minimum switching current AC	100 mA/20 V AC		100 mA/20 V AC	5 mA/300 mV AC
Minimum switching current DC	100 mA/20 V DC	–	100 mA/20 V DC	5 mA/300 mV DC
Battery backup	–		150 h	150 h
Battery charge time	–		70 h	70 h
Operation accuracy	Mains synchronous		type ± 1.5 s/day at 20°C	type ± 1.5 s/day at 20°C
Ambient temperature	-40°C ... +85°C		-20°C ... +55°C	-20°C ... +55°C
Security level for fitting acc. to instructions	II		II	II
Shortest switching time				
– Daily program	15 min	–	15 min	15 min
– Weekly program	2 h	–	2 h	2 h
– 12h program	–	7,5 min	–	–
Shortest switching interval				
– Daily program	15 min	–	15 min	15 min
– Weekly program	2 h	–	2 h	2 h
– 12h program	–	7,5 min	–	–
Automatic override	possible	–	possible	possible
Clock face	possible	–	possible	possible
According to	EN 60730-1 EN 60730-2-7		EN 60730-1 EN 60730-2-7	EN 60730-1 EN 60730-2-7
Type of connection	flat DIN 6.3 mm		flat DIN 6.33 mm	flat DIN 6.3 mm

Dimensional drawings/circuit diagrams:



For voltage variants refer to p. 37.

Mechanical time switch modules

- Synchronous drive
- Weekly or daily program
- 1 channel
- Further color combinations see page 32-33

Applications
For compact applications up to 16 A

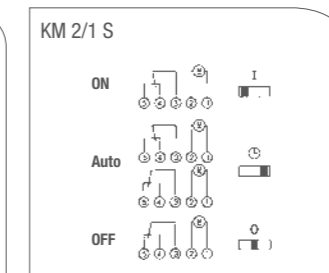
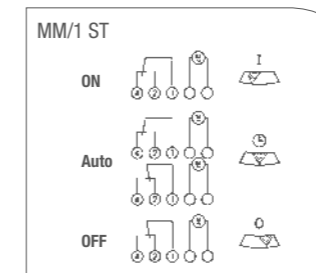
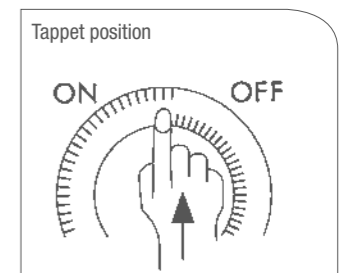
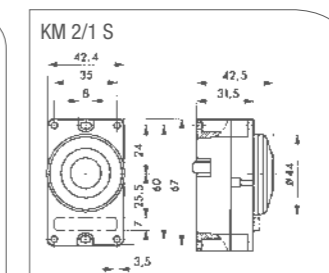
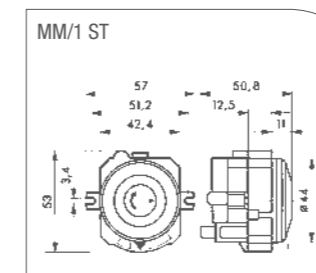
	Drive	Program	Specifications
	MM/1 STuH		
	Synchronous drive	Daily program	Mini-module with manual switch Also available without mounting lugs
	KM 2/1 STuH		
	Synchronous drive	Daily program	With manual switch
	KM 2/1 SWuH		
	Synchronous drive	Weekly program	With manual switch
	KM 2/1 STu		
	Synchronous drive	Daily program	Without manual switch
	KM 2/1 SWu		
	Synchronous drive	Weekly program	Without manual switch

Voltage variants	Nominal range AC (tolerance: -15%/+10%) Details on unit and packaging	Information on invoice and delivery note
Synchronous drive 50 or 60 Hz	24 V/50 Hz 110-120 V/60 Hz 220-240 V/50 Hz 220-240 V/60 Hz	24 V/50 Hz 110-120 V/60 Hz 220-240 V/50 Hz 220-240 V/60 Hz

Technical Data

	MM/1 S	KM 2/1 S
Dimensions H x W x D (mm)	53 x 57 x 51	67 x 42,4 x 42,5
Cut out (mm)	Ø 44	Ø 44
Fitting depths (mm)	40	31,5
Weight (g) approx.	55	65
Nominal voltage	220-240 V AC/50 Hz 110-120 V AC/60 Hz	220-240 V AC/50 Hz 110-120 V AC/60 Hz
Power consumption	1 VA at 220 V AC	1 VA at 220 V AC
Current output – miniature switch	Switch, galvanic insulation	Switch, galvanic insulation
Switching current AC – Resistive load (VDE, IEC) – Resistive load (UL) – Inductive load cos. φ 0.6 – Incandescent lamp load	16 A/250 V AC 21 A/250 V AC 8 A/250 V AC 1350 W	16 A/250 V AC 21 A/250 V AC 8 A/250 V AC 1350 W
Minimum switching current AC	100 mA/20 V AC	100 mA/20 V AC
Minimum switching current DC	100 mA/20 V DC	100 mA/20 V DC
Operation accuracy	Mains synchronous	Mains synchronous
Ambient temperature	-20° C ... + 85° C	-20° C ... + 85° C
Security level for fitting according to instructions	II	II
Shortest switching time – Daily program – Weekly program	20 min –	20 min 2 h 20 min
Shortest switching interval – Daily program – Weekly program	20 min –	20 min 2 h 20 min
Automatic override	possible	possible
According to	EN 60730-1 EN 60730-2-7	EN 60730-1 EN 60730-2-7
Type of connection	flat DIN 6.3 mm	flat DIN 6.3 mm

Dimensional drawings /
circuit diagrams:







Accessories

No.	Product	L = standard comp. EZ = spare parts/accessory	Art.-No.
Accessory for FM (mechanical), RM (mechanical)			
1	glass	-/EZ	01.76.0054.6
Accessory for FM program (mechanical and digita)			
2	installation base	-/EZ	01.79.0002.2
3	soldered base	-/EZ	07.76.0150.2
Accessory for KM 2/1 S			
4	glass	-/EZ	01.02.0021.6
5	adapter	-/EZ	01.02.0004.2
Accessory for MM/1			
4	glass	-/EZ	01.02.0021.6



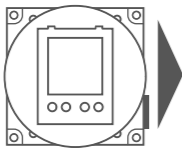
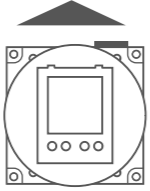
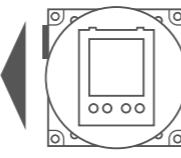
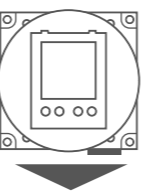
Time switches

Overview digital time switch modules

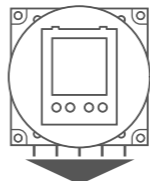
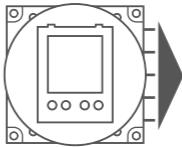
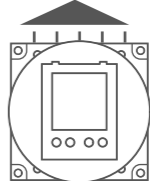
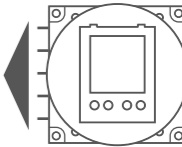
	RMD 120	RMD 220	RMD 150	RMD 250
				
Channels	1	2	1	2
Current output/ Power consumption	CMOS: 0,1 mA at 3,4 V DC Open collector: 25 mA at 40 V	CMOS: 0,1 mA at 3,4 V DC Open collector: 25 mA at 40 V	CMOS: 0,1 mA at 3,4 V DC	CMOS: 0,1 mA at 3,4 V DC
Text programming	–	–	X	X
Weekday blocks	Single days Mo – Fr Mo – Sa Mo – Su Sa + Su	Single days Mo – Fr Mo – Sa Mo – Su Sa + Su	Free	Free
Number of memory spaces	20	20	50	50
Override ON/OFF	X	X	X	X
AM/PM switch	X	X	X	X
Battery backup (years)	3	3	3	3
Position of electrical connection	Stand. W09 W18 W27	Stand. W09 W18 W27	Stand. W09 W18 W27	Stand. W09 W18 W27
Dimensions (mm)	∅ = 64 □ = 60 T = 24,5	∅ = 64 □ = 60 T = 24,5	∅ = 64 □ = 60 T = 24,5	∅ = 64 □ = 60 T = 24,5
Further technical information	p. 49	p. 49	p. 49	p. 49

	FMD 120	FMD 220	FMD 150	FMD 250
				
Channels	1	2	1	2
Current output/ Power consumption	Relay: 16 A NO CMOS: 0,1 mA at 3,4 V DC Open collector: 25 mA at 40 V	Relay: 2 x 5 A NO CMOS: 0,1 mA at 3,4 V DC Open collector: 25 mA at 40 V	Relay: 16 A NO CMOS: 0,1 mA at 3,4 V DC Open collector: 25 mA at 40 V	Relay: 2 x 5 A NO CMOS: 0,1 mA at 3,4 V DC Open collector: 25 mA at 40 V
Text programming	–	–	X	X
Weekday blocks	Single days Mo – Fr Mo – Sa Mo – Su Sa + Su	Single days Mo – Fr Mo – Sa Mo – Su Sa + Su	Free	Free
Number of memory spaces	20	20	50	50
Override ON/OFF	X	X	X	X
AM/PM switch	X	X	X	X
Battery backup (years)	3	3	3	3
Position of electrical connection	Stand. W09 W18 W27	Stand. W09 W18 W27	Stand. W09 W18 W27	Stand. W09 W18 W27
Dimensions (mm)	∅ = 64 □ = 60 T = 32	∅ = 64 □ = 60 T = 32	∅ = 64 □ = 60 T = 32	∅ = 64 □ = 60 T = 32
Further technical information	p. 51	p. 51	p. 51	p. 51





Connection variants RMD




Connection variant:	Standard	W09	W18	W27
RMD				
Output direction				

Connection variants FMD

Connection variant:	Standard	W09	W18	W27
FMD				
Output direction				

Overview digital time switch modules



	IMD 120	IMD 220	IMD 150	IMD 250
				
Channels	1	2	1	2
Current output/ Power consumption	CMOS: 0,1 mA at 3,4 V DC	CMOS: 0,1 mA at 3,4 V DC	CMOS: 0,1 mA at 3,4 V DC	CMOS: 0,1 mA at 3,4 V DC
Text programming	–	–	X	X
Weekday blocks	Single days Mo – Fr Mo – Sa Mo – Su Sa + Su	Single days Mo – Fr Mo – Sa Mo – Su Sa + Su	Free	Free
Number of memory spaces	20	20	50	50
Override ON/OFF	X	X	X	X
AM/PM Switch	X	X	X	X
Battery backup (years)	3	3	3	3
Dimensions (mm)	H = 41,6 W = 32,4 D = 14,9	H = 41,6 W = 32,4 D = 14,9	H = 41,6 W = 32,4 D = 14,9	H = 41,6 W = 32,4 D = 14,9
Further technical information	p. 53	p. 53	p. 53	p. 53

	EMD 120	EMD 220	EMD 250
			
Channels	1	2	2
Current output/ Power consumption	CMOS: 0,1 mA at 3,4 V DC	CMOS: 0,1 mA at 3,4 V DC	CMOS: 0,1 mA at 3,4 V DC
Text programming	–	–	X
Weekday blocks	Single days Mo – Fr Mo – Sa Mo – Su Sa + Su	Single days Mo – Fr Mo – Sa Mo – Su Sa + Su	Free
Number of memory spaces	20	20	50
Override ON/OFF	X	X	X
AM/PM Switch	3	3	3
Battery backup (years)	X	X	X
Dimensions (mm)	H = 51 W = 64 D = 15,5	H = 51 W = 64 D = 15,5	H = 51 W = 64 D = 15,5
Further technical information	p. 55	p. 55	p. 55

Digital time switch modules

- Easy programming (menu or text programming)
- Current output: Open collector or CMOS
- Weekly and daily program
- Standard program
- Compact housing/low profile
- Mounting into electronic circuits possible
- Compatible fitting with mechanical time switch modules RM
- Only flush mounting

Applications
For installation in electronic circuits

Channels	Specifications
	
RMD 120	
1 channel	Menu-led programming with flexible and fixed programs
RMD 220	
2 channels	Menu-led programming with flexible and fixed programs
	<ul style="list-style-type: none"> - 20 memory spaces - Manual switch-over to daylight saving time - Switching output: <ul style="list-style-type: none"> - CMOS - Open collector
	
RMD 150	
1 channel	Text programming
RMD 250	
2 channels	Text programming
	<ul style="list-style-type: none"> - 50 memory spaces - Automatic switch-over to daylight saving time - Switching output: CMOS - Pre-set time and date - Several programming languages: D, GB, F, I, E, P, NL, CZ

Technical Data

	RMD 120 Open collector	RMD 220 CMOS	RMD 120 CMOS	RMD 220 CMOS	RMD 150 CMOS	RMD 250 CMOS
Dimensions H x W x D (mm)	60 x 60 x 24,5	60 x 60 x 24,5	60 x 60 x 24,5	60 x 60 x 24,5	60 x 60 x 24,5	60 x 60 x 24,5
Cut out (mm)	Ø 64	Ø 64	Ø 64	Ø 64	Ø 64	Ø 64
Fitting depths (mm)	14,5	14,5	14,5	14,5	14,5	14,5
Weight (g) approx.	70	70	70	70	70	70
Nominal voltage	1,2-5,0 V DC	1,2-5,0 V DC	1,2-5,0 V DC	1,2-5,0 V DC	1,2-5,0 V DC	1,2-5,0 V DC
Current consumption without load	0,015 mA	0,015 mA	0,015 mA	0,015 mA	0,015 mA	0,015 mA
Current output - Transistor	Open collector	CMOS	CMOS	CMOS	CMOS	CMOS
Switching current DC - Open collector	Isink (max.) U (max.)	25 mA 40 V	- -	- -	- -	- -
- CMOS	-	0,1 mA/3,4 V DC	0,1 mA/3,4 V DC	0,1 mA/3,4 V DC	0,1 mA/3,4 V DC	0,1 mA/3,4 V DC
Battery backup *)	3 years from factory at 20°C	3 years from factory at 20°C	3 years from factory at 20°C	3 years from factory at 20°C	3 years from factory at 20°C	3 years from factory at 20°C
Operation accuracy	type ±1 s/day at 20°C	type ±1 s/day at 20°C	type ±1 s/day at 20°C	type ±1 s/day at 20°C	type ±1 s/day at 20°C	type ±1 s/day at 20°C
Ambient temperature	-10°C ... +55°C	-10°C ... +55°C	-10°C ... +55°C	-10°C ... +55°C	-10°C ... +55°C	-10°C ... +55°C
Shortest switching time	1 min	1 min	1 min	1 min	1 min	1 min
Shortest switching interval	1 min	1 min	1 min	1 min	1 min	1 min
Number of channels	1	2	1	2	1	2
Number of memory spaces	20	20	20	20	50	50
Override	yes	yes	yes	yes	yes	yes
Display of output status	yes	yes	yes	yes	yes	yes
Switch-over to daylight saving time	button ±1 h	button ±1 h	button ±1 h	button ±1 h	automatic	automatic
Type of connection	Socket rail 2,54 mm	Socket rail 2,54 mm	Socket rail 2,54 mm	Socket rail 2,54 mm	Socket rail 2,54 mm	Socket rail 2,54 mm
According to	EN 60730-1/EN 60730-2-7	EN 60730-1/EN 60730-2-7	EN 60730-1/EN 60730-2-7	EN 60730-1/EN 60730-2-7	EN 60730-1/EN 60730-2-7	EN 60730-1/EN 60730-2-7

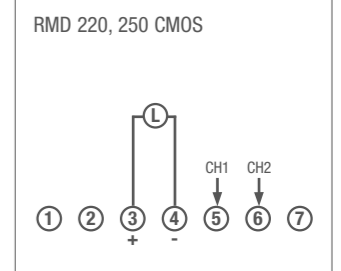
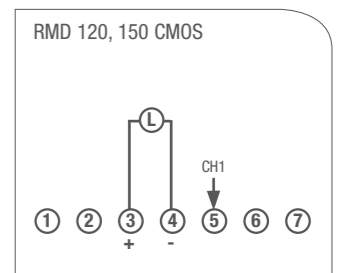
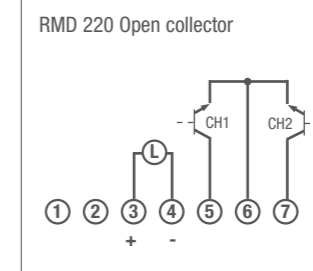
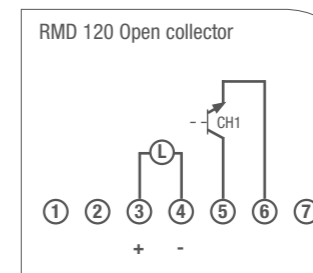
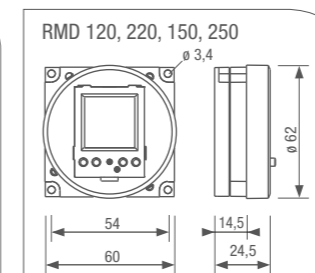
*) non rechargeable

Dimensional drawings/circuit diagrams:

Note:

The required contact protection must be observed for installation in electrical unit. Both driving and load circuit must have safety extra-low voltage or must be at the same potential. The clearance distance between the driving and load circuit is 0.5 mm.

Please note the connection layout on page 35, for mechanical RM.



Digital time switch modules

- Easy programming (menu or text programming)
- Battery backup 3 years
- Weekly and daily program
- Compatible flush with mechanical time switch modules FM
- Only flush mounting
- Menu-led programming (120/220)
- Text programming (150/250)

Applications
For solutions up to 16 A

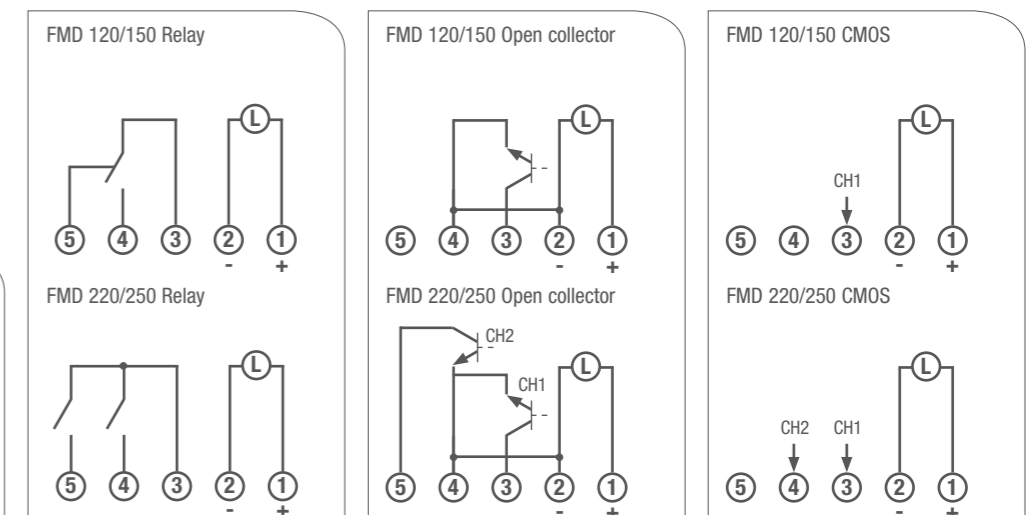
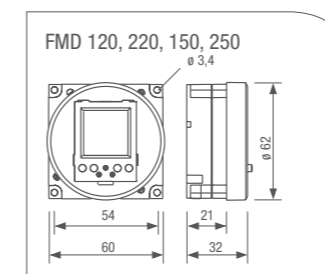
Channel	Specifications
	
FMD 120	
1 channel	Menu-led programming with flexible and fixed programs
FMD 220	
2 channels	Menu-led programming with flexible and fixed programs
	– 20 memory spaces – Manual switch-over to daylight saving time – Switching output: – Relay – CMOS – Open collector
	
FMD 150	
1 channel	Text programming
FMD 250	
2 channels	Text programming
	– 50 memory spaces – Automatic switch-over to daylight saving time – Switching output: – Relay – CMOS – Open collector – Pre-set time and date – Several programming languages: D, GB, F, I, E, P, NL, CZ

Technical Data

	FMD 120 FMD 150	FMD 220 FMD 250	FMD 120 FMD 150	RMD 220 RMD 250	FMD 120 FMD 150	FMD 220 FMD 250
	Relay		Open collector		CMOS	
Dimensions H x W x D (mm)	60 x 60 x 32		60 x 60 x 32		60 x 60 x 32	
Cut out (mm)	Ø 64		Ø 64		Ø 64	
Fitting depths (mm)	21		21		21	
Weight (g) approx.	90		70		70	
Nominal voltage	230 V AC/50-60 Hz 110-120 V AC/50-60 Hz 24 V AC/DC (FMD 120/220) 12 V DC (FMD 120/220)		1,2-5,0 V DC		1,2-5,0 V DC	
Power consumption	4,4 VA		< 1 VA		< 1 VA	
Current consumption without load	0,015 mA		0,015 mA		0,015 mA	
Current output						
– Relay	Shutter, galvanic insulation		–		–	
– Transistor	–		Open collector		CMOS	
Switching current AC						
– Resistive load (VDE, IEC)	16 A /250 V AC		5 A /250 V AC		–	
– Resistive load (UL)	16 A /250 V AC		–		–	
– Inductive load cos. φ 0,6	4 A /250 V AC (FMD 120) 8 A/250 V AC (FMD 150)		1 A /250 V AC		–	
– Incandescent lamp load	1000 W		–		–	
Switching current DC	10 A/24 V DC 3 A/60 V DC 1 A/100 V DC		2 A/24 V DC 0,3 A/60 V DC 0,1 A/100 V DC		Isink (max.) 25 mA U (max.) 40 V	
Minimum switching current AC	100 mA / 20 V AC		–		–	
Minimum switching current DC	100 mA / 20 V DC		–		–	
Battery backup *)	3 years from factory at 20°C		3 years from factory at 20°C		3 years from factory at 20°C	
Operation accuracy	type ±1 s/day at 20°C		type ±1 s/day at 20°C		type ±1 s/day at 20°C	
Ambient temperature	–10°C ... +55°C		–10°C ... +55°C		–10°C ... +55°C	
Shortest switching time	1 min		1 min		1 min	
Shortest switching interval	1 min		1 min		1 min	
Number of channels	1	2	1	2	1	2
Number of memory spaces	20 (FMD 120/220) 50 (FMD 150/250)		20 (FMD 120/220) 50 (FMD 150/250)		20 (FMD 120/220) 50 (FMD 150/250)	
Override	yes		yes		yes	
Display of output status	yes		yes		yes	
Switch-over to daylight saving time	button ±1 h (FMD 120/220) automatic (FMD 150/250)		button ±1 h (FMD 120/220) automatic (FMD 150/250)		button ±1 h (FMD 120/220) automatic (FMD 150/250)	
Type of connection	DIN blade terminal 6.3 mm **)		DIN blade terminal 6.3 mm **)		DIN blade terminal 6.3 mm **)	
According to	EN 60730-1; EN 60730-2-7		EN 60730-1; EN 60730-2-7		EN 60730-1; EN 60730-2-7	

*) non rechargeable **) Further types of connection on request


Dimensional drawings/circuit diagrams:



Digital time switch modules

- Easy programming (menu or text programming)
- 1 or 2 channels
- Daily and weekly program
- Programmable every minute
- CMOS output for direct mounting into electronic circuits
- Display of switching position
- Flush mounting

Applications
For compact applications

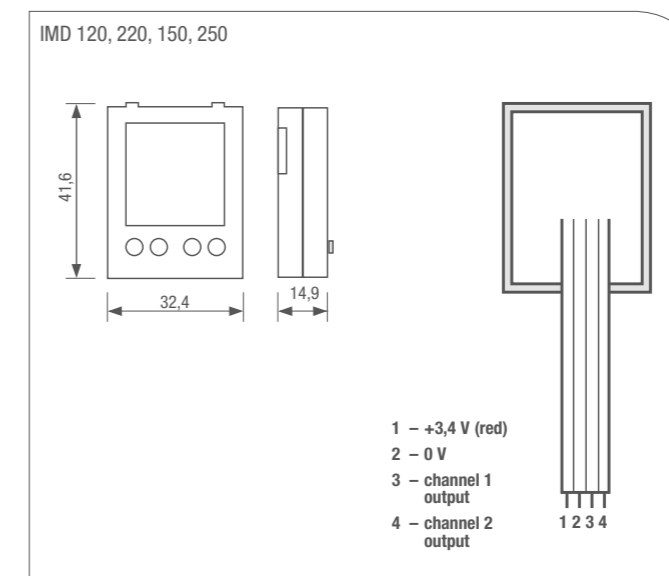
Channels	Specifications
	<p>IMD 120</p> <p>1 channel Menu-led programming with flexible and fixed programs</p>
	<p>IMD 220</p> <p>2 channels Menu-led programming with flexible and fixed programs</p> <p>– 20 memory spaces – Manual switch-over to daylight saving time – Switching output: CMOS</p>
	<p>IMD 150</p> <p>1 channel Text programming</p>
	<p>IMD 250</p> <p>2 channels Text programming</p> <p>– 50 memory spaces – Automatic switch-over to daylight saving time – Switching output: - CMOS – Several programming languages: D, GB, F, I, E, P, NL, CZ</p>

Technical Data

	IMD 120	IMD 220	IMD 150	IMD 250
	CMOS		CMOS	
Dimensions H x W x D (mm)	41,6 x 32,4 x 14,9		41,6 x 32,4 x 14,9	
Fitting depths (mm)	12		12	
Weight (g) approx.	22		22	
Nominal voltage	3,4-6 V DC		3,4-6 V DC	
Current consumption without load	0,015 mA at 3,4 V DC		0,015 mA at 3,4 V DC	
Current output – Transistor	CMOS		CMOS	
Switching current DC – CMOS	0,1 mA at 3,4 V DC		0,1 mA at 3,4 V DC	
Battery backup *)	3 years from factory at 20°C		3 years from factory at 20°C	
Operation accuracy	type ±1 s/day at 20°C		type ±1 s/day at 20°C	
Ambient temperature	–10°C ... +55°C		–10°C ... +55°C	
Shortest switching time	1 min		1 min	
Shortest switching interval	1 min		1 min	
Number of channels	1	2	1	2
Number of memory spaces	20		50	
Override	yes		yes	
Display of output status	yes		yes	
Switch-over to daylight saving time	button ± 1h		automatic	
Type of connection	4-pole flat cable		4-pole flat cable	
According to	EN 60730-1 EN 60730-2-7		EN 60730-1 EN 60730-2-7	

*) non rechargeable



Dimensional drawings/circuit diagrams:



Digital time switch modules

- Easy programming (menu or text programming)
- 1 or 2 channels
- Daily and weekly program
- Programmable every minute
- CMOS output for direct mounting into electronic circuits
- Display of switching position
- Flush mounting

Applications
For compact applications

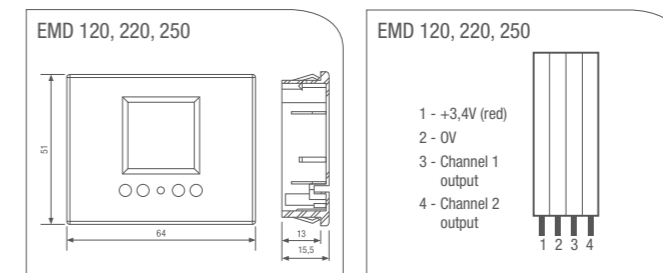
	Channels	Specifications
	EMD 120 1 channel	Menu-led programming with flexible and fixed programs
	EMD 220 2 channels	Menu-led programming with flexible and fixed programs
		<ul style="list-style-type: none"> - 20 memory spaces - Manual switch-over to daylight saving time - Switching output: CMOS
	EMD 250 2 channels	Text programming
		<ul style="list-style-type: none"> - 50 memory spaces - Automatic switch-over to daylight saving time - Switching output: CMOS - Several programming languages: D, GB, F, I, E, P, NL, CZ

Technical Data

	EMD 120	EMD 220	EMD 250
Dimensions H x W x D (mm)	51 x 64 x 15,5	51 x 64 x 15,5	51 x 64 x 15,5
Fitting depths (mm)	13	13	13
Weight (g) approx.	22	22	22
Nominal voltage	3,4-6 V DC	3,4-6 V DC	3,4-6 V DC
Current consumption without load	0,015 mA at 3,4 V DC	0,015 mA at 3,4 V DC	0,015 mA at 3,4 V DC
Current output - Transistor	CMOS	CMOS	CMOS
Schaltleistung DC - CMOS	0,1 mA at 3,4 V DC	0,1 mA at 3,4 V DC	0,1 mA at 3,4 V DC
Battery backup *)	3 years from factory at 20°C	3 years from factory at 20°C	3 years from factory at 20°C
Operation accuracy	type ±1 s/day at 20°C	type ±1 s/day at 20°C	type ±1 s/day at 20°C
Ambient temperature	-10°C ... +55°C	-10°C ... +55°C	-10°C ... +55°C
Shortest switching time	1 min	1 min	1 min
Shortest switching interval	1 min	1 min	1 min
Number of channels	1	2	2
Number of memory spaces	20	20	50
Override	yes	yes	yes
Display of output status	yes	yes	yes
Switch-over to daylight saving time	button ±1 h	button ±1 h	automatic
Type of connection	4-pole flat cable	4-pole flat cable	4-pole flat cable
According to	EN 60730-1 EN 60730-2-7	EN 60730-1 EN 60730-2-7	EN 60730-1 EN 60730-2-7

*) non rechargeable

Dimensional drawings/circuit diagrams:







Overview mechanical universal time switches

	tactic 111.2	tactic 171.2	tactic 211.2	tactic 271.2
				
Field of application	Flush mounting, suitable for applications up to 16 A	Flush mounting, suitable for applications up to 16 A	Flush mounting, suitable for applications up to 16 A	Flush mounting, low load (0,1 A)
S = Synchronous drive Q = Quartz drive	S	S	Q	Q
Switching program D = Day / W = Week	D	W	D	W
Programmable every ...	15 min	2 h	15 min	2 h
Switching power acc. to VDE, IEC	16 (8) A/250 V AC Switching contact	16 (8) A/250 V AC Switching contact	16 (8) A/250 V AC Switching contact	16 (8) A/250 V AC Switching contact
Switching power acc. to UL	21 A/250 V AC Switching contact	21 A/250 V AC Switching contact	21 A/250 V AC Switching contact	21 A/250 V AC Switching contact
Ambient temperature	-20° C ... +55° C	-20° C ... +85° C	-20° C ... +55° C	-20° C ... +55° C
H = Manual Switch possible (Permanent ON/AUTO/OFF) Z = Clock face possible	H/Z	H/Z	H/Z	H/Z
Fitting dimensions (mm)	□ = 66 D = 20,5	□ = 66 D = 20,5	□ = 66 D = 20,5	□ = 66 D = 20,5
Further technical information	p. 56	p. 56	p. 56	p. 56


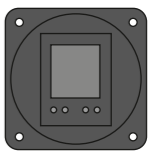


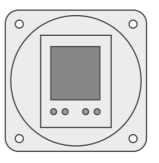
Color variants tactic

Color tappets: Minimum order:	white (light grey) unlimited	yellow 1.000 pieces	red 1.000 pieces	blue 1.000 pieces
Basic color black Clock face white				
Color variant	Standard	01	02	03
Basic color grey Clock face black				
Color variant	-	05	06	07

Overview digital universal time switches

	tactic 371.2 plus	tactic 372.1 plus	tactic 571.2 plus	tactic 572.1 plus
				
Channels	1	2	1	2
Current output/ Power consumption	Relay: NO 16 (4) A/250 V AC	Relay: NO 16 (2,5) A/250 V AC	Relay: NO 16 (8) A/250 V AC	Relay: NO 16 (2,5) A/250 V AC
Text programming	-	-	X	X
Weekday blocks	Single days Mo - Fr Mo - Sa Mo - Su Sa + Su	Single days Mo - Fr Mo - Sa Mo - Su Sa + Su	free	free
Number of memory spaces	20	20	50	50
Override ON/OFF	-	-	-	-
Permanent ON/OFF	X	X	X	X
AM/PM switch	X	X	X	X
Battery backup (years)	3	3	3	3
Fitting dimensions (mm)	□ = 66 D = 20,5	□ = 66 D = 20,5	□ = 66 D = 42	□ = 66 D = 42
Further technical information	p. 57	p. 57	p. 57	p. 57





Color variants for tactic plus

	green 1.000 pieces	black 1.000 pieces	Minimum order:	unlimited
			Basic color black	
Color variant	04	-	Color variant	Standard 1
			Basic color grey	
Color variant	08	09	Color variant	Standard 2

Mechanical universal time switches

- Easy fitting into switch boards
- Quartz drive with battery backup
- Synchronous drive without battery backup
- 1 channel
- Weekly or daily program
- 16 A/250 V AC switching capacity
- Flush mounting
- Further color combinations page 56-57

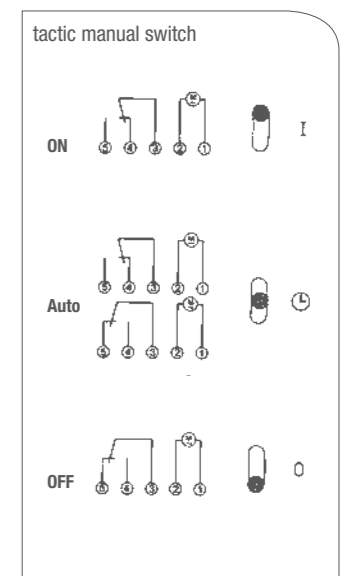
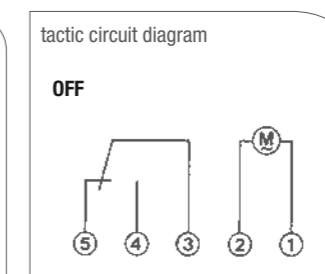
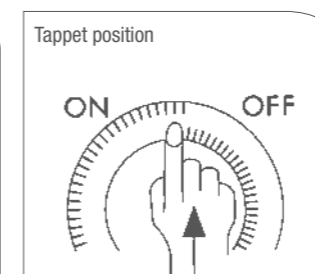
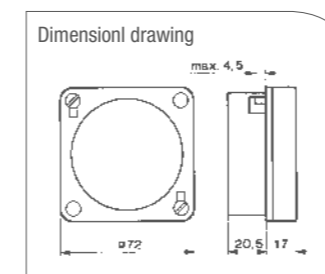
Applikations
For solutions up to 16 A

	Drive	Program	Specifications
	tactic 211.2		
	Quartz drive	Daily program	With clock face
	tactic 271.2		
	Quartz drive	Weekly program	With clock face
	tactic 111.2		
	Synchronous drive	Daily program	With clock face
	tactic 171.2		
	Synchronous drive	Weekly program	With clock face

Technical Data

	tactic 111.2 tactic 171.2	tactic 211.2 tactic 271.2
Dimensions H x W x D (mm)	72 x 72 x 34,5	72 x 72 x 34,5
Cut out (mm)	66 x 66	66 x 66
Dimensions of front frame (mm)	72 x 72	72 x 72
Fitting depths (mm)	20,5	20,5
Weight (g) ca.	100	100
Nominal voltage	220-240 V AC/50 Hz 100-120 V AC/60 Hz	230 V AC/130 V DC 130 V AC/60 V DC 60 V AC/30 V DC 30 V AC/12 V DC
Power consumption	1 VA at 230 V AC	2 VA at 230 V AC 0,2 VA at 24 V DC
Current output – Relay	1 changeover contact, galvanic insulation	1 changeover contact, galvanic insulation
Switching current AC – Resistive load (VDE, IEC) – Resistive load (UL) – Inductive load cos. φ 0,6 – Incandescent lamp load	16 A/250 V AC 21 A/250 V AC 8 A/250 V AC 1300 W	16 A/250 V AC 21 A/250 V AC 8 A/250 V AC 1300 W
Minimum switching current AC	100 mA/20 V AC	100 mA/20 V AC
Minimum switching current DC	100 mA/20 V DC	100 mA/20 V DC
Battery backup	–	150 h
Battery charge time	–	70 h
Operation accuracy	Mains synchronous	type ± 1,5s/day at 20°C
Ambient temperature	–20°C ... +55°C	–20°C ... +55°C
Security level for fitting according to instructions	II	II
Shortest switching time – Daily program – Weekly program	15 min 2 h	15 min 2 h
Shortest switching interval – Daily program – Weekly program	15 min 2 h	15 min 2 h
Automatic override	possible	possible
Clock face	yes	yes
Sealing	possible	possible
According to	EN 60730-1 EN 60730-2-7	EN 60730-1 EN 60730-2-7
Type of connection	flat DIN 6.3 mm Fitted socket (Accessories)	flat DIN 6.3 mm Fitted socket (Accessories)


Dimensional drawings/circuit diagrams:



Digital universal time switches

- Battery backup
- Weekly and daily program
- Easy programming
- Compatible fitting with mechanical universal time switches tactic
- Flush or surface mounting

Applications
For solutions up to 16 A

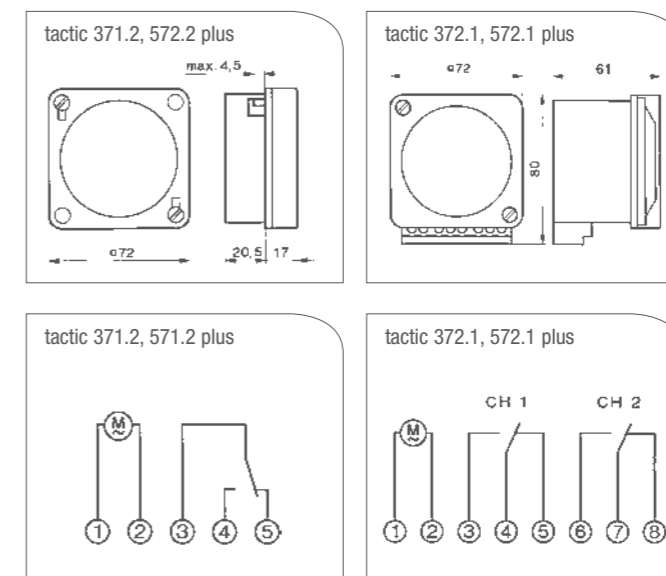
Channel	Specifications
	<p>tactic 371.2 plus</p> <p>1 Channel Menu-led programming with flexible and fixed programs</p>
	<p>tactic 372.1 plus</p> <p>2 Channels Menu-led programming with flexible and fixed programs</p> <p>– 20 Memory spaces</p> <p>– Manual switch-over to daylight saving time</p>
	<p>tactic 571.2 plus</p> <p>1 Channel Text programming</p>
	<p>tactic 572.1 plus</p> <p>2 Channels Text programming</p> <p>– 50 Memory spaces</p> <p>– Automatic switch-over to daylight saving time</p> <p>– Pre-set time and date</p> <p>– Several programming languages: D, GB, F, I, E, P, NL, CZ</p>

Technical Data

	tactic 371.2 plus	tactic 571.2 plus	tactic 372.1 plus	tactic 572.1 plus
Dimensions H x W x D (mm)	72 x 72 x 35	80 x 72 x 58	72 x 72 x 35	80 x 72 x 58
Cut out (mm)	66 x 66		66 x 66	
Fitting depths (mm)	20,5	42	20,5	42
Frame dimensions DIN 43700 (mm)	72 x 72		72 x 72	
Weight (g) ca.	135	220	135	220
Nominal voltage	230 V AC/50-60 Hz 110-120 V AC/50-60 Hz		230 V AC/50-60 Hz 24 V AC/DC 12 V DC	
Power consumption	4,4 VA		4,4 VA	
Current output – Relay	1 changeover contact, galvanic insulation		2 changeover contacts, galvanic insulation	
Switching current AC – Resistive load (VDE, IEC) – Inductive load cos. φ 0,6 – Incandescent lamp load	16 A/250 V AC 4 A/250 V AC 8 A/250 V AC 1000 W		16 A/250 V AC 2,5 A/250 V AC 500 W	
Switching current DC	10 A/24 V DC 3 A/60 V DC 1 A/100 V DC		13 A/24 V DC 0,7 A/60 V DC 0,3 A/100 V DC	
Minimum switching current AC	100 mA/20 V AC		100 mA/20 V AC	
Minimum switching current DC	100 mA/20 V DC		100 mA/20 V DC	
Battery backup *)	3 years from factory at 20°C		3 years from factory at 20°C	
Operation accuracy	type ±1 s/day at 20°C		type ±1 s/day at 20°C	
Ambient temperature	–10°C ... +55°C		–10°C ... +55°C	
Shortest switching time	1 min		1 min	
Shortest switching interval	1 min		1 min	
Number of channels	1		2	
Number of memory spaces	20	50	20	50
Permanent ON/OFF	yes		yes	
Display of output status	yes		yes	
Switch-over to daylight saving time	button ±1 h	automatic	button ±1 h	automatic
According to	EN 60730-1 EN 60730-2-7		EN 60730-1 EN 60730-2-7	

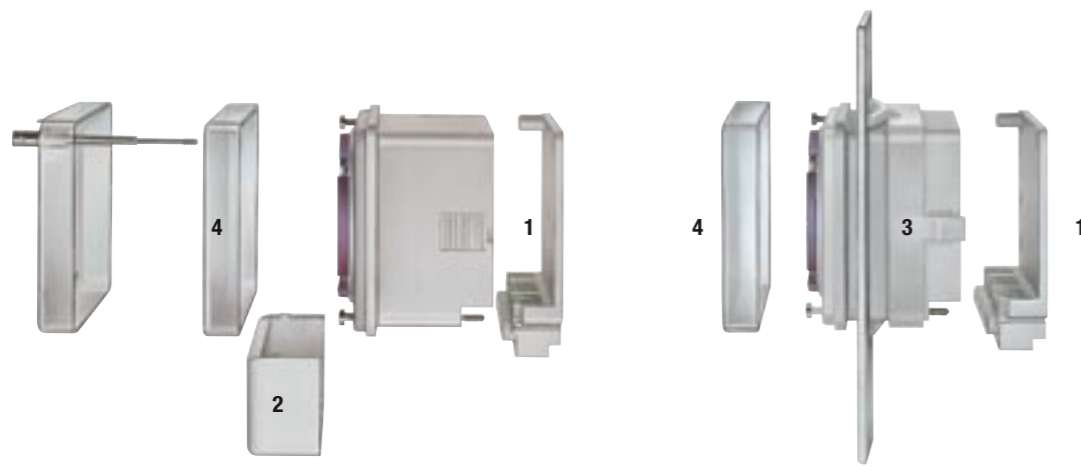
*) non rechargeable

Dimensional drawings/circuit diagrams:

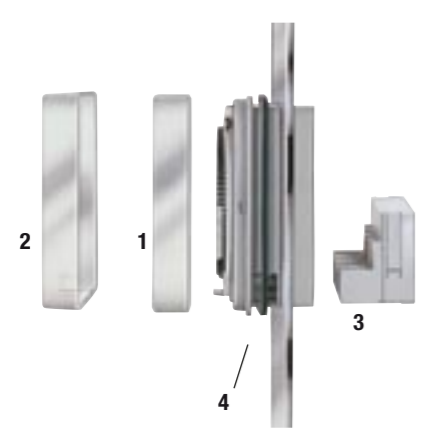


Accessories universal time switches

No.	Product	L = standard comp. EZ = spare parts/accessory	Art.-No.
Accessories for tactic 572.1 plus, tactic 372.1 plus			
1	base (2 channel)	L/EZ	01.96.0001.2
2	terminal cover (2 channel)	L/EZ	01.96.0043.6
3	latching frame	L/EZ	44.27.0001.4
4	glass	L/EZ	01.46.0082.6



No.	Product	L = standard comp. EZ = spare parts/accessory	Art.-No.
Accessories for tactic 571.2 plus, tactic 371.2 plus, tactic 111.2 plus, tactic 171.2, tactic 211.2, tactic 271.2			
1	glass	L/EZ	01.46.0082.6
2	sealed glass	-/EZ	01.78.0021.6
3	installation base	-/EZ	01.79.0002.2
4	seal	-/EZ	01.45.0017.6




AC operating hour meters

Efficiently link time to activity.




- Multiple sizes and shapes for your individual application.
- Extremely robust and reliable – maintenance-free for years.
- Diverse voltages available for every application.



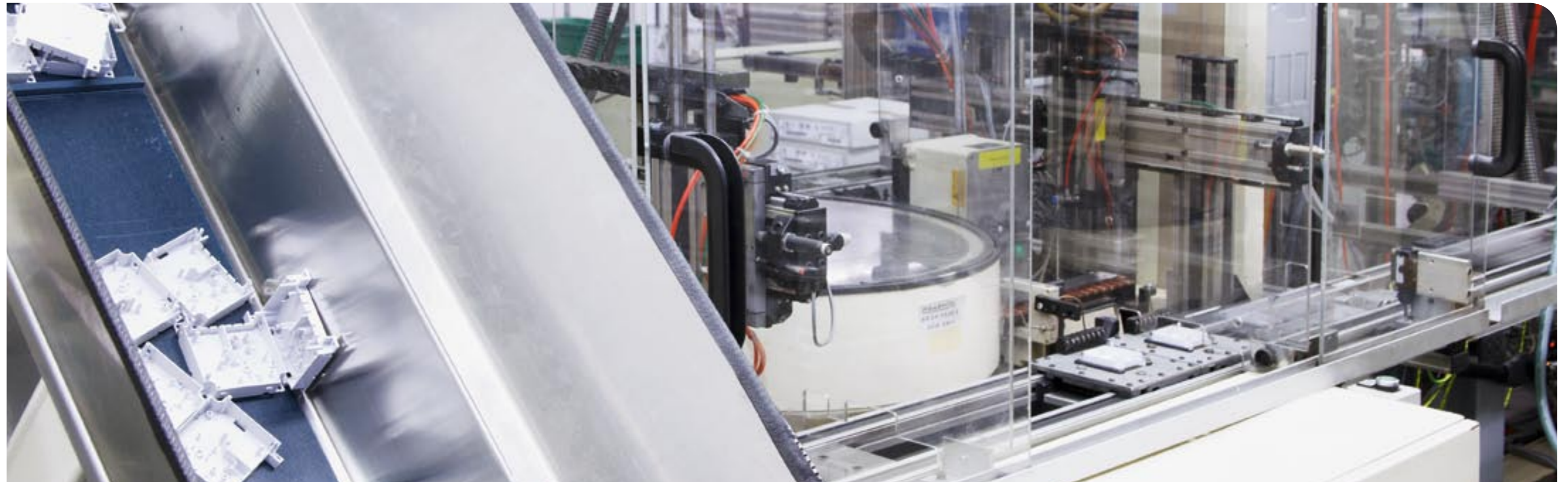
AC operating hour meters

taxxo 101	p. 68	taxxo 202, taxxo 212	p. 68
taxxo 100	p. 68	taxxo 502, taxxo 512	p. 70
taxxo 102, taxxo 112	p. 68	taxxo 602, taxxo 612	p. 70
taxxo 122, taxxo 132	p. 68	taxxo 702, taxxo 712	p. 70

Overview AC operating hour meters






	taxxo 101	taxxo 100	taxxo 102 taxxo 112	taxxo 122 taxxo 132
				
Counting capacity	99 999,99 h	99 999,99 h	99 999,99 h	99 999,99 h
Operating capacity	yes	yes	yes	yes
Mounting options	latching screws	latching screws	latching screws	latching screws
Further technical informationen	p. 68	p. 68	p. 68	p. 68

taxxo 202 taxxo 212	taxxo 502 taxxo 512	taxxo 602	taxxo 612	taxxo 702	taxxo 712
					
99 999,99 h	99 999,99 h	99 999,99 h		99 999,99 h	
yes	yes	yes		yes	
latching screws	latching screws	latching screws	low profile plugs	latching screws	low profile plugs
p. 68	p. 70	p. 70		p. 70	






AC operating hour meters

- Flush or surface mounting
- Durable, maintenance-free technology
- Robust and reliable
- Various sizes, round and square
- Latching screws or low profile plugs

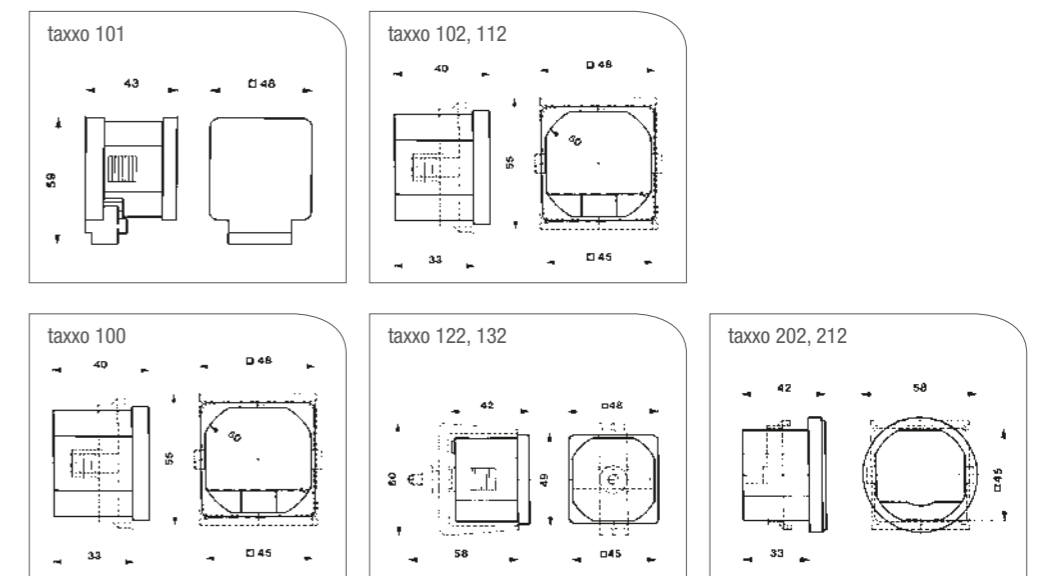
	Counting capacity	Connection type
 <p>taxxo 101 99 999,99 h</p> <p>– without terminal cover – also available in grey</p>	99 999,99 h	low profile plugs
 <p>taxxo 100 99 999,99 h</p>	99 999,99 h	low profile plugs
 <p>taxxo 102, taxxo 112 99 999,99 h</p> <p>– also available in black</p>	99 999,99 h	taxxo 102: low profile plugs, taxxo 112: latching screws
 <p>taxxo 122, taxxo 132 99 999,99 h</p> <p>– central mounting – also available in black</p>	99 999,99 h	taxxo 122: low profile plugs, taxxo 132: latching screws
 <p>taxxo 202, taxxo 212 99 999,99 h</p>	99 999,99 h	taxxo 202: low profile plugs, taxxo 212: latching screws

Technical Data

	taxxo 101	taxxo 100	taxxo 102 taxxo 122	taxxo 112 taxxo 132	taxxo 202	taxxo 212
Dimensions H x W x D (mm)	refer to drawing		refer to drawing		refer to drawing	
Switchboard panel (mm)	–		45 x 45		Ø 50 (60) or 45 x 45	
Mounting depth (mm)	43		33		33	
Weight (g) approx.	70		60		60	
Power consumption	approx. 1 VA		approx. 1 VA		approx. 1 VA	
Ambient temperature	-20 °C ... +55 °C		-20 °C ... +55 °C		-20 °C ... +55 °C	
Protection class (VDE 0633)	II		II		II	
Protection type front (DIN 40 050)	IP20		IP20		IP20	
Approbations	 EN 60335-1 EN 60335-2-26		 EN 60335-1 EN 60335-2-26		 EN 60335-1 EN 60335-2-26	
Accuracy	synchronic to network		synchronic to network		synchronic to network	
Counting capacity	99 999,99 h		99 999,99 h		99 999,99 h	
Operating capacity	yes		yes		yes	
Assembling mode	assembling without clamp cover	assembling with clamp cover	integration		integration	
Connection type	receptacle with latching screws		latching screws	low profile plugs 6,3 mm	latching screws	low profile plugs 6,3 mm

	taxxo 101 taxxo 112	taxxo 100 taxxo 102	taxxo 122	taxxo 132	taxxo 202	taxxo 212
Nominal	220-240 V/50 Hz 110-120 V/50 Hz 18-26 V/50 Hz 220-240 V/60 Hz 110-127 V/60 Hz	220-240 V/50 Hz 330-380 V/50 Hz 110-120 V/50 Hz 36-48 V/50 Hz 18-26 V/50 Hz 220-240 V/60 Hz 110-127 V/60 Hz 24-30 V/60 Hz	220-240 V/50 Hz		220-240 V/50 Hz 36-48 V/50 Hz 18-26 V/50 Hz 220-240 V/60 Hz 110-127 V/60 Hz 24-30 V/60 Hz	220-240 V/50 Hz 110-120 V/50 Hz

Dimensional drawings:






AC operating hour meters

- Flush or user-specific installation
- Durable, maintenance-free technology
- Robust and durable
- Latching screws or low profile plugs

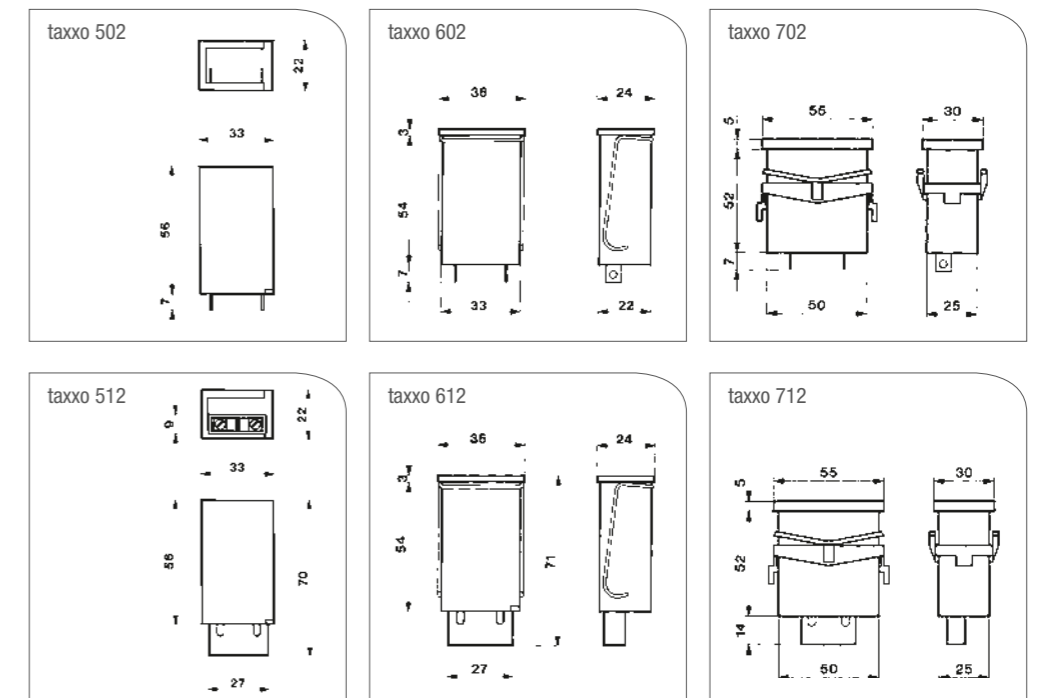
	Counting capacity	Connection type
	taxxo 502, taxxo 512 99 999,99 h	taxxo 502: low profile plugs, taxxo 512: latching screws
	taxxo 602, taxxo 612 99 999,99 h	taxxo 602: low profile plugs, taxxo 612: latching screws
	taxxo 702, taxxo 712 99 999,99 h – also available in grey	taxxo 702: low profile plugs, taxxo 712: latching screws

Technical Data


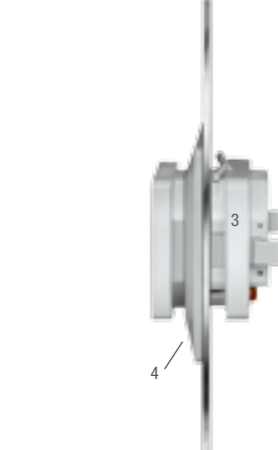
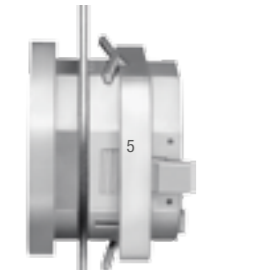
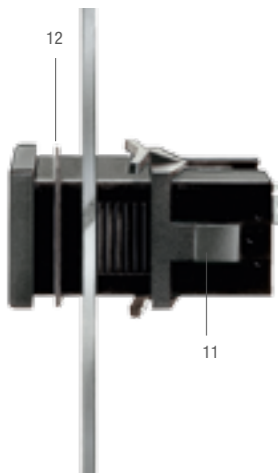
	taxxo 502	taxxo 512	taxxo 602	taxxo 612	taxxo 702	taxxo 712
Dimensions H x W x D (mm)	refer to drawing		refer to drawing		refer to drawing	
Switchboard panel (mm)	–		22 x 33		50 x 25	
Mounting depth (mm)	63 (70)		61 (68)		59 (66)	
Weight (g) approx.	33		34		50	
Power consumption	1 VA		1 VA		1 VA	
Ambient temperature	-20 °C ... +55 °C		-20 °C ... +55 °C		-20 °C ... +55 °C	
Protection class (VDE 0633)	II		II		IP20	
Protection type front (DIN 40 050)	IP20		IP20 (IP50 with seal, refer to accessories)		IP20 (IP50 with seal, refer to accessories)	
Approbations	 EN 60335-1 EN 60335-2-26		 EN 60335-1 EN 60335-2-26		 EN 60335-1 EN 60335-2-26	
Accuracy	synchronic to network		synchronic to network		synchronic to network	
Counting capacity	99 999,99 h		99 999,99 h		99 999,99 h	
Operating capacity	yes		yes		yes	
Assembling mode	integration		integration		integration	
Connection type	latching screws	low profile plugs 6,3 mm	latching screws	low profile plugs 6,3 mm	latching screws	low profile plugs 6,3 mm

	taxxo 502	taxxo 512	taxxo 602	taxxo 612	taxxo 702	taxxo 712
Nominal	220-240 V/50 Hz 110-127 V/60 Hz		220-240 V/50 Hz 110-127 V/60 Hz – –	220-240 V/50 Hz 330-380 V/50 Hz 18-26 V/50 Hz 110-127 V/60 Hz	220-240 V/50 Hz 110-120 V/50 Hz 18-26 V/50 Hz 220-240 V/60 Hz 110-127 V/60 Hz – –	220-240 V/50 Hz 110-120 V/50 Hz 36-48 V/50 Hz 18-26 V/50 Hz 220-240 V/60 Hz 110-127 V/60 Hz 24-30 V/60 Hz

Dimensional drawings:



AC operating hour meters – Accessories

	Product	L = Scope of delivery EZ = Spare parts/Accessories	Ord.-No.
	for taxxo 100		
	1 - Base	L / E Z	15.92.0021.4
	2 - Surface mounting housing	L / E Z	50.12.0001.4
	for taxxo 102, taxxo 112		
	3 - Ratchet clamp	L / E Z	15.27.0011.4
	4 - Cover 55 x 55	- / E Z	05.27.0011.4
	or: Cover 72 x 72	- / E Z	16.26.0006.4
	Sealing	- / E Z	11.24.0008.8
	for taxxo 202, taxxo 212		
	5 - Ratchet clamp	L / E Z	15.27.0011.4
	for taxxo 612		
	11 - Spring clip (comp. image taxxo 602 + 612)	L / E Z	15.20.0026.6
	12 - Sealing	- / E Z	11.24.0007.8
	for taxxo 712		
	11 - Ratchet clamp	L / E Z	14.27.0002.4
	12 - Sealing	- / E Z	14.24.0001.5



