

EN

OPERATING MANUAL
MULTIPLE SOCKET OUTLET

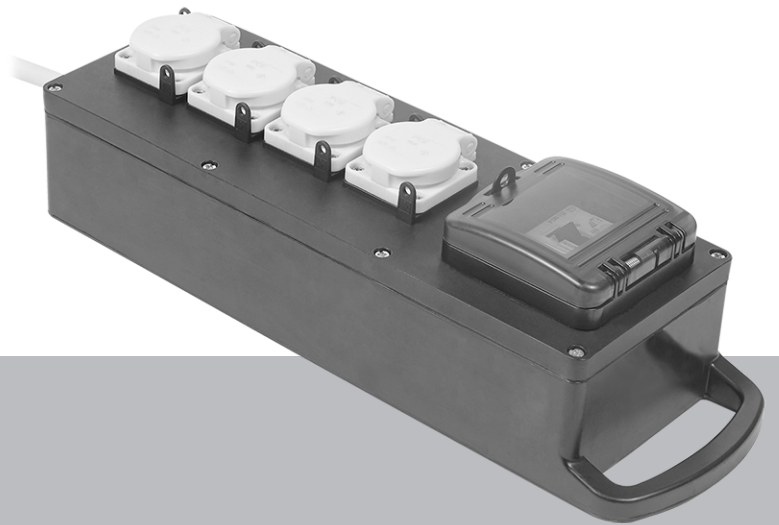


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Notes regarding the operating manual

Symbols



Warning of electrical voltage

This symbol indicates dangers to the life and health of persons due to electrical voltage.



Warning

This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.



Caution

This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

Note

This signal word indicates important information (e.g. material damage), but does not indicate hazards.



Info

Information marked with this symbol helps you to carry out your tasks quickly and safely.



Follow the manual

Information marked with this symbol indicates that the operating manual must be observed.

You can download the current version of the operating manual and the EU declaration of conformity via the following link:



PV4-MID-PS



<https://hub.trotec.com/?id=44147>

Safety

Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use!



Warning

Read all safety warnings and all instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and / or serious injury.

Save all warnings and instructions for future reference.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

- Do not use the device in potentially explosive rooms.
- Do not use the device in aggressive atmosphere.
- Do not use the device with wet or damp hands.
- Do not immerse the device in water.
- This appliance is not a toy. Keep away from children and animals. Do not leave the device unattended during operation.
- Check the device for potential damage before each application. Do not use any defective devices or device parts.
- Never use the device if electric cables or the power connection are damaged!
- Insert the CEE plug into a properly secured CEE socket.
- Observe the following safety rules when performing work on the electrical equipment: 1. De-energise, 2. Secure against restart, 3. Verify de-energised state, 4. Earth and short-circuit, 5. Cover or fence off live parts.

- Before carrying out maintenance, care or repair work on the device, remove the mains plug from the mains socket. Hold onto the mains plug while doing so.
- Do not under any circumstances use the device if you detect damages on the mains plug or power cable. If the supply cord is damaged, it must be replaced by the manufacturer, his service agent or similarly qualified persons in order to avoid a hazard. Defective power cables pose a serious health risk!
- Always plug in only one device per socket and never cover the multiple socket outlet.
- Multiple socket outlet plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) electrical devices. Unmodified plugs and matching outlets will reduce risk of electric shock.
- Do not force the power tool. Only use the device with the capacity range specified on the nameplate.
- Observe the storage and operating conditions as given in the Technical data chapter.
- Do not expose the device to heat or direct sunlight.
- Do not manipulate the device and do not make any adaptations to the multiple socket outlet.
- Always plug in only one device per socket and do not cover the multiple socket outlet during operation.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Any operation other than as described in this manual is prohibited. Non-observance renders all claims for liability and guarantee null and void.

Intended use

The device serves as mobile multiple socket outlet.

The multiple socket outlet is suitable for indoor and outdoor applications.

Only use multiple socket outlets matching the protection type required at the application site.

The device may only be used on grounded sockets of the installation site.

The device may only be used complying with the voltage and capacity range specified on the nameplate of the device.

When operating the device on construction or installation sites at sockets of the building's site with unknown protective measures, a BGI608-compliant plug adapter must be used.

Only qualified electricians are allowed to perform repair work on the multiple socket outlet.

Improper use

Any unauthorised changes, modifications or alterations to the device are forbidden.

Do not use the device in potentially explosive areas. Do not place the device on wet or flooded ground.

Personnel qualifications

People who use this device must:

- have read and understood the operating manual, especially the Safety chapter.

Initial start-up and maintenance tasks which require the housing to be opened must only be carried out by qualified electricians.

Electrically skilled person

Electrically skilled personnel must be able to read and understand electric circuit diagrams, to put electrical systems into service and to maintain them, to wire control cabinets, to ensure the functionality of electrical components and to identify possible hazards from electrical and electronic systems.

Residual risks



Warning of electrical voltage

Work on the electrical components must only be carried out by a qualified electrician!



Warning of electrical voltage

Before any work on the device, remove the mains plug from the mains socket!
Hold onto the mains plug while pulling the power cable out of the mains socket.



Warning

Covering the multiple socket outlet can lead to heat build-up within the housing possibly resulting in a fire. Never cover the multiple socket outlet. Do not place any objects on the multiple socket outlet.



Warning of electrical voltage

Have loose or defective mounting sockets replaced by a qualified electrician.



Warning of electrical voltage

Connection and extension lines must not be kinked, jammed or run over.



Warning

Risk of suffocation!
Do not leave the packaging lying around. Children may use it as a dangerous toy.



Warning

The device is not a toy and does not belong in the hands of children.



Warning

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way! Observe the personnel qualifications!



Caution

Keep a sufficient distance from heat sources.

Note

To prevent damages to the device, do not expose it to extreme temperatures, extreme humidity or moisture.

Note

Do not use abrasive cleaners or solvents to clean the device.

Behaviour in the event of an emergency

1. In an emergency, disconnect the device from the mains feed-in:
Pull the mains plug.
2. Do not reconnect a defective device to the mains.

Information about the device

Device description

The device serves for the mobile power supply on varying application devices. It comes with the following device characteristics:

- 4 safety sockets CEE 7/3 with one PlugSafe appliance each
- Solid rubber housing with integrated carrying handle
- Secured beneath a transparent sealing cap that can be locked optionally
- 1 MID-compliant energy meter (kWh)
- 8 eyelets
- 1 residual current device (RCD) for commercial and industrial use in wet rooms

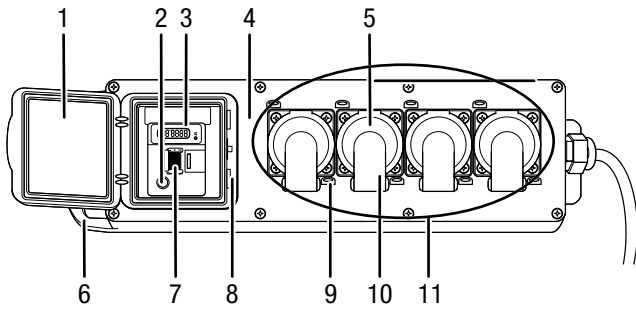
The PlugSafe appliance serves for protecting an inserted plug from unauthorised replacing or swapping and from unauthorised plugging of an additional consumer to the PV4-MID PS.

For sealing the sockets, use the Trotec pull-up seals (numbered consecutively). The seals can prevent manipulations. You can purchase the consecutively numbered pull-up seals under the article number 6.100.002.085 in a pack of 10.

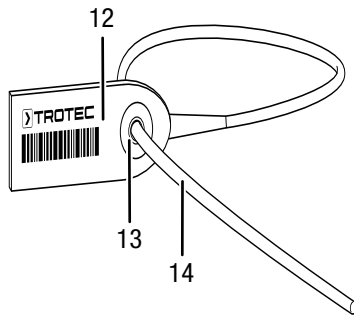
The German supervisory authority requires MID-compliant energy meters for the use of devices in the renovation area or for drying housings, if the energy consumption is to be recorded and billed by use of the energy meter. Moreover, it has to be ensured that the measuring device cannot be manipulated.

Please note that the connected devices that are equipped with service sockets have to be protected from the unauthorised connection of additional consumers and from the unauthorised replacement of a justifiably connected consumer according to the Measurement and Calibration Act. If required, you can separately purchase the Plug Safe flange plate for this purpose under the article number 6.100.002.083 in a pack of 10. Have the flange plate mounted by a qualified electrician at the service socket of your device. You can close the multiple socket outlet by pulling the seals through the eyelets.

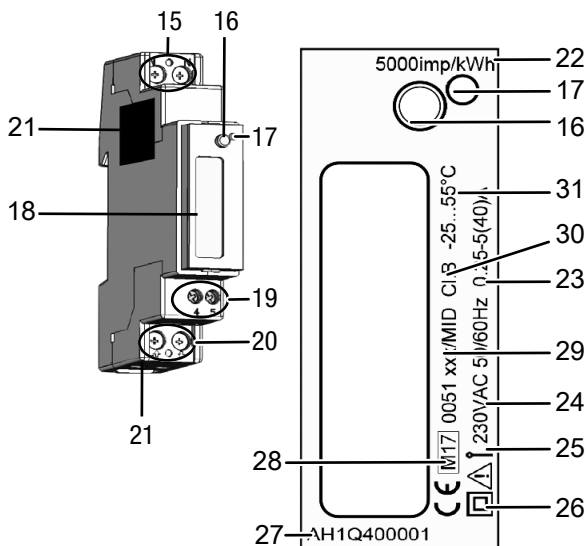
Device depiction



Seal



MID-compliant energy meter



No.:	Designation
1	Sealing cap
2	Test button T
3	MID-compliant energy meter
4	Robust solid rubber housing
5	Safety socket
6	Handle
7	Residual current device
8	Locking lug for sealing cap
9	Eyelet for seal
10	Safety socket cover
11	PlugSafe appliance
12	Seal
13	Anchoring for seal
14	Open end of seal
15	Terminals for neutral conductors
16	Multifunction button
17	Metrological LED
18	Backlit LC display
19	Terminals for S0 output
20	Current and voltage terminals
21	Safety label
22	Pulse value in kWh (metrological LED)
23	Min./reference current (max. continuous current)
24	Nominal voltage/ frequency
25	Connection diagram (1 phase and neutral conductor)
26	Type of protection
27	Serial number
28	MID designation
29	Homologation number
30	Accuracy class
31	Operating temperature range

Technical data

Parameter	PV4-MID-PS
Input voltage	230 V , 50 Hz
Power consumption	max. 3.6 kVA
Preliminary fuse	max. 16 A or max. 2300 W
Socket	4 x safety socket CEE 7/3
Connection cable	H07RN-F 3G2.5, l = 2 m safety plug CEE 7/7
Type of protection	IP44
Operating temperature	-20 °C – 45 °C
Storage temperature	-25 °C – 55 °C
Dimensions	450 x109 130 mm
Weight	2.85 kg
Rated diversity factor; RDF	0.25"

Parameter	Residual current device (RCD)
Rated current	25 A, type A, pulse current sensitive
Rated residual current	≤ 0.03 A (I Δ n)
Rated voltage	230 V , 50 Hz

Parameter	MID-compliant energy meter
<i>General information</i>	
Housing in accordance with	DIN 43880
Terminals according to	EN 60999
Nominal voltage	230 V \pm 20 %
Max. power input	1,5 V – 1 W
Nominal frequency	50/60 Hz
<i>Current</i>	
Max. current I _{max}	40 A
Reference current I _{ref} (I _b)	5 A
Transfer current I _{tr}	500 mA
Min. current I _{min}	250 mA
Starting current I _{st}	20 mA
<i>Accuracy</i>	
Active energy class B according to	EN 50470-3 (MID)
Active energy class 1 according to	EN 62053-21 (NO MID)
Reactive energy class 2 according to	EN 62053-23
<i>S0 output</i>	
Passive optoisolated	
Max. values (according to directive EN 602053-31)	27 V DC – 27 mA

Meter constant. The measuring unit (Imp/kWh, Imp/kVAh, Imp/kvarh) changes accordingly to the corresponding counters (kWh, kVAh, kvarh).	1000 imp/kWh
Pulse duration	100 \pm 0.5 ms
<i>Metrological test LED</i>	
Meter constant	5000 imp/kWh
Pulse duration	4 \pm 0.1 ms
<i>Connectable conductor</i>	
For measuring voltage and current	1.5 ... 6 mm ²
for S0 output	0.14 ... 2.5 mm ²
<i>Safety according to EN 50470-1</i>	
Degree of pollution	2
Protection class (EN 50470-1)	II
Pulse voltage test	1.2/50 μ s 6 kV
AC voltage test (EN 50470-3, 7.2)	4 kV
Flammability resistance housing	UL 94 class VO
<i>Ambient conditions</i>	
Mechanical environment class	M1
Electromagnetic environment class	E2
Operating temperature range	-25 °C – + 55 °C
Storage temperature range	-40 °C – + 75 °C
Relative humidity (without condensation)	80 % max.
Sinusoidal vibration amplitude	50 Hz \pm 0.075 mm
Protection type – front	IP 50
Protection type – terminals	IP 20

Transport and storage

Note

If you store or transport the device improperly, the device may be damaged.

Note the information regarding transport and storage of the device.

Transport

To make the device easier to transport, it is fitted with a carry handle.

Before transporting the device, observe the following:

- Always close the sealing cap of the MID-compliant energy meter before transporting the device.

Storage

When the device is not being used, observe the following storage conditions:

- dry and protected from frost and heat
- protected from dust and direct sunlight
- with a cover to protect it from invasive dust, if necessary
- The storage temperature is the same as the range given in the Technical data chapter.

Start-up



Warning of electrical voltage

Work on the electrical components must only be carried out by a qualified electrician!



Warning of electrical voltage

Before any work on the device, remove the mains plug from the mains socket!

Hold onto the mains plug while pulling the power cable out of the mains socket.

Note

Prior to initial start-up, have all pre-assembled connection screws inside the housing checked and, if necessary, retightened by a qualified electrician.

- Do not create tripping hazards when laying the power cable or other electric cables when positioning the device. If necessary, use cable bridges.
- Make sure that extension cables are unrolled completely.
- Do not cover the device.
- Do not place any further objects on the device.
- Insert the CEE plug into a properly secured socket.

Operation

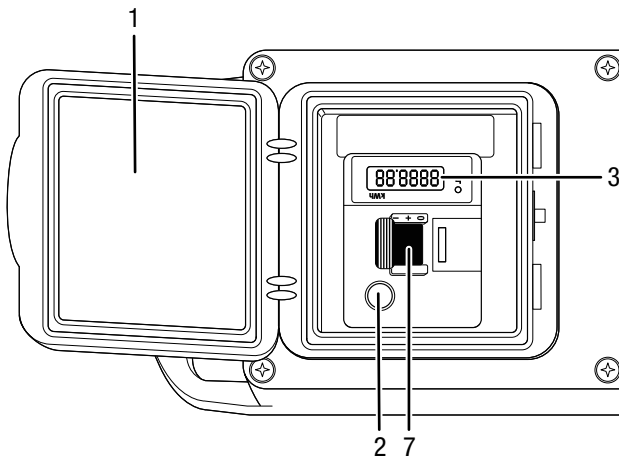
Connecting the multiple socket outlet

1. Insert the device plug of the device PV4-MID-PS into a properly secured socket.
- ⇒ The device is now connected.
- ⇒ In order to use the device, the residual current device must be switched on.

Using the residual current device (RCD)

If you switch on the bipolar residual current device RCD (7), it can prevent an electric shock. The colour indicator shows the switching state (red=ON, green=OFF).

1. Open the sealing cap (1).
2. Set the flip switch of the residual current device RCD (7) to 'red'.
- ⇒ The residual current protection is activated.
3. Set the flip switch of the residual current device RCD (7) to 'green'.
- ⇒ The residual current protection is deactivated.

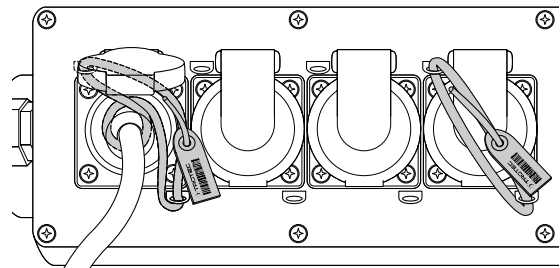


Securing the multiple socket outlet by means of seals

You can protect the multiple socket outlet against unauthorised access by means of one or more seals (12). Securing the multiple socket outlet can be realised whether a plug has been inserted into the safety socket (5) or not.

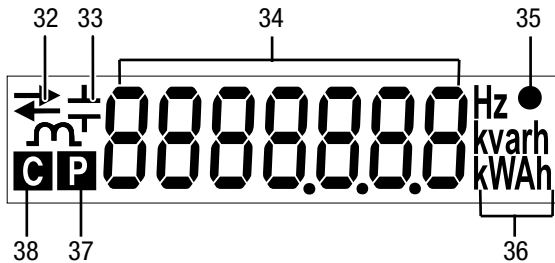
One seal (12) per plug or safety socket (5) will be required. For assembly of the seals (12) please proceed as follows:

1. Open the cover of a safety socket (10).
2. Pull the open end of the seal cable (14) out of the anchoring at the end of the seal (12).
3. Then, pull the open end of the seal cable (14) through an eyelet (9) of a safety socket (5).
4. If there is a plug inserted in the safety socket (5), wind the seal cable around the safety plug one time.
5. Then, pull the open end of the seal cable (14) through the opposing eyelet (9) of the safety socket (5).
6. Pull the open end of the seal cable (14) through the anchoring for the seal (13) and tighten the seal cable.
7. Check whether the safety socket (5) can be opened.
- ⇒ If this is the case, tighten the seal cable or repeat steps 1–7.
- ⇒ If you cannot open the safety socket (5) any longer or if the plug cannot be pulled out, the safety socket (5) is secured.



MID-compliant energy meter

You can measure your power consumption using the MID-compliant energy meter.




No.	Designation
32	Import → and export ← performance or energy value
33	Capacitive or inductive value
34	Main display. If Code XX is displayed: Corrupted metrological parameters. Meter has become non-usable and must be returned to the manufacturer immediately.
35	Status of active S0 output
36	Measuring unit display
37	Partial counter value (flashing = meter stopped)
38	Active communication

Measurements




All functions or settings are controlled via the multifunction button (16).

The ● symbol indicates a standard value, the ■ indicates a bidirectional value.

All total counter values (kWh, kVAh, kvarh) can be assigned to the S0 output.

Instantaneous values	Icon	Measuring unit	Display	Port
Voltage	V	V	●	●
Current	I	A	■	■
Power factor	PF	-	■	■
Active power	P	kW	■	■
Apparent power	S	kVA	■	■
Reactive power	Q	kvar	■	■
Frequency	f	Hz	●	●
Power direction	 +/-	-	●	●

Recorded data	Measuring unit	Display	Port
Total active energy	kWh	■	■
Total ind. and cap. apparent energy	kVAh	■	■
Total ind. and cap. reactive energy	kvarh	■	■
Resettable partial counter	kWh, KVAh, kvarh	■	■

Other information	Icon	Status	Display	Port
Partial counter/ status	 	start/ stop	●	●
S0 output status		active	●	
Metrological error display. Non-usable meter, return to manufacturer	Code XX	-	●	●

Key functions

Functions	Where	Press time
Scroll page	each page	press briefly
Total energy display of meter	total counter page	press for 2 s
Indication of partial counter functions	partial counter page	press for 2 s
Changing a function (start, stop, reset)	pages: start, stop, reset	press briefly
Confirming displayed functions (start, stop, reset)	pages: start, stop, reset	press for 3 s
Accessing the settings pages	side: Setup	2 s
Setting a value/digit to start with	Settings pages	press for 2 s
Changing a value	Settings pages	press briefly
Confirming a value/digit	Settings pages	press for 2 s
Changing a digit (Y, N, C)	side: Save	press briefly
Confirming the indicated digit (Y, N, C)	side: Save	press for 2 s

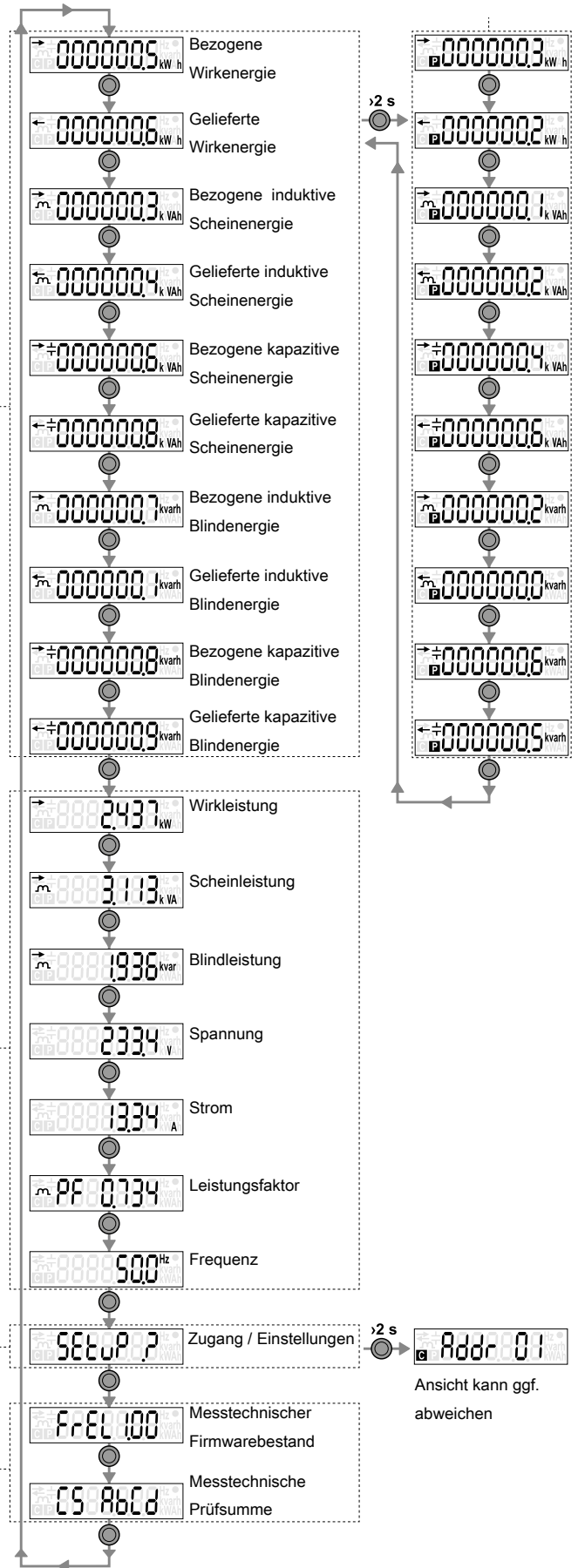
Selecting the indication page

The MID-compliant energy meter allows to display instantaneous values, settings and further information.

The total counter records the total consumption. If required, the partial counter can be activated in addition to record a value during a certain period of time. The partial counter can be started, stopped and reset.

1. On each counter page, press the multifunction button (16) for 2 s to indicate the respective partial counter.
2. Press the multifunction button (16) another time to continue browsing the partial counters.
3. Once you have reached the last partial counter page, press the multifunction button (16) to exit the area for the partial counter again.

⇒ The total counter page will be displayed.



Starting, stopping and resetting the partial counter

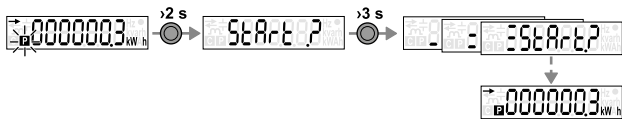
The functions *Starting and stopping the partial counter* and *Resetting* are only available on the partial counter page.

Starting the partial counter

1. Press the multifunction button (16) for 2 s on the page of the partial counter that you would like to start.
 - ⇒ The partial counter page will be displayed indicating the *Start* sequence.
2. Press the multifunction button (16) for 3 s.
 - ⇒ During these 3 seconds, 3 bars will be displayed next to the *Start* sequence.
 - ⇒ Once the *Start* sequence is completely indicated, the

partial counter will be started. The **P** symbol will be displayed.

- ⇒ If you let go of the multifunction button (16) during the 3 s, the partial counter will not be started.

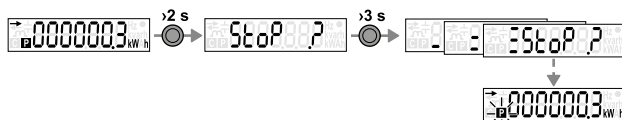


Stopping the partial counter

1. Press the multifunction button (16) for 2 s to stop the partial counter.
 - ⇒ The partial counter page will be displayed indicating the *Stop* sequence.
2. Press the multifunction button (16) for 3 s.
 - ⇒ During these 3 seconds, 3 bars will be displayed next to the *Stop* sequence.
 - ⇒ Once the *Stop* sequence is completely indicated, the

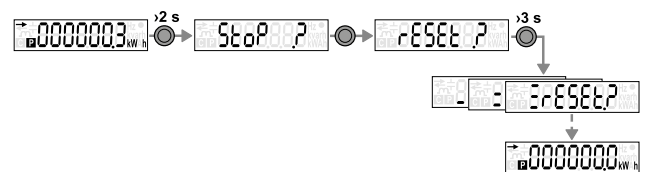
partial counter will be stopped. The **P** symbol will be displayed.

- ⇒ If you let go of the multifunction button (16) during the 3 s, the partial counter will not be stopped.



Resetting the partial counter

1. Press the multifunction button (16) for 2 s.
 - ⇒ According to the counter status, either *Start* or *Stop* will be displayed.
2. Briefly press the multifunction button (16) one time.
 - ⇒ The partial counter page will be displayed indicating the *Reset* sequence.
3. Press the multifunction button (16) for 3 s.
 - ⇒ During these 3 seconds, 3 bars will be displayed next to the *Reset* sequence.
 - ⇒ Once the *Reset* sequence is completely indicated, the partial counter will be reset.
 - ⇒ If you let go of the multifunction button (16) during the 3 s, the partial counter will not be reset.



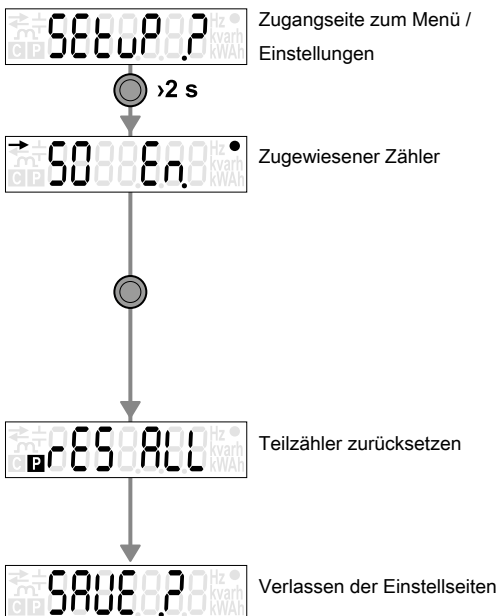
Return to the partial counter page without making adaptations

1. Press the multifunction button (16) several times to return to the partial counter page without having made an action or an adaptation (*Start*, *Stop* or *Reset*).
 - ⇒ The partial counter page will be displayed.



Settings pages

1. Press the multifunction button (16) for 2 s if you have currently selected the access page *Menu / settings*.
⇒ The sequence regarding the assigned counter will be displayed.
2. Press the multifunction button (16) for 3 s.
⇒ The elements identifying counter and starting value (e.g. kWh) are flashing.
3. Press the multifunction button (16) once to change the counter that is to be assigned to the output.
4. In order to deactivate the output, press the button several times until **dis** will be displayed.
5. Press the multifunction button (16) for 2 s to confirm the setting.
6. Press the multifunction button (16) for 2 s to reset the partial counter.
⇒ The elements identifying the counter will start flashing.
7. In order to exit the settings pages again, press the multifunction button (16) for 2 s.
⇒ A confirmation sequence will be displayed.
8. Press the multifunction button (16) once to change the value. Select **Y** to exit and save the changes and **N** to exit without saving the changes. Select **C** to continue browsing the *Menu / settings*.
9. Briefly press the multifunction button (16) to confirm your selection.



Cleaning



Warning of electrical voltage

Before any work on the device, remove the mains plug from the mains socket!
Hold onto the mains plug while pulling the power cable out of the mains socket.

Clean the device with a soft, damp and lint-free cloth. Ensure that no moisture enters the housing. Protect electrical components from moisture. Do not use any aggressive cleaning agents such as cleaning sprays, solvents, alcohol-based or abrasive cleaners to dampen the cloth.

Wipe the housing dry after cleaning.

Errors and faults

The device has been checked for proper functioning several times during production. If malfunctions occur nonetheless, check the device according to the following list.

The residual current device trips:

First carry out a visual check of the multiple socket outlet and the connected devices.

There is a **defect** on the multiple socket outlet or on the connected consumer:

- Take the defective multiple socket outlet out of operation and do not use it any longer.
- Take the connected defective device out of operation and do not use it any longer.

Have the connected device and / or the multiple socket outlet checked by a qualified electrician.

There is **no defect** on the multiple socket outlet:

- Switch the residual current device (7) back on.

The residual current device trips repeatedly:

Carry out the following steps for verifying the defect:

- Carry out a function test of the multiple socket outlet by checking it according to the Maintenance chapter without a device being connected.
- If the residual current device (7) does not trip when actuating the test button **T** (2), do not use the multiple socket outlet any longer. Have it checked by a qualified electrician.
- If the residual current device (7) trips when actuating the test button **T** (2), switch the residual current device (7) back on again and connect the device to the multiple socket outlet. If the residual current device (7) then trips again, take the device out of operation and have it checked by a qualified electrician.



Warning

Risk of injury by unintentional start-up of consumers! Electronic devices connected to the multiple socket outlet can start up automatically and cause injuries when a triggered residual current device restarts. Only switch on the residual current device after having switched off the connected devices or after having disconnected them from the multiple socket outlet.

Maintenance

Visual inspection

Check the device for external damage before every start-up. Should you detect any damage at the device or its mains cable, have it fixed by a qualified electrician.

Regular inspections



Warning of electrical voltage

Work on the electrical components must only be carried out by a qualified electrician!



Warning of electrical voltage

There is a risk of an electric shock when touching damaged, open or live parts.

Never clean a live socket.

Always disconnect the mains plug from the socket before cleaning it.

Never immerse the multiple socket outlet in water!

Clean the multiple socket outlet with a dry cloth.

The device must be regularly checked by a qualified electrician for proper functioning and proper condition. If used in office spaces or similar ambient conditions, this inspection shall be carried out at least every 2 years. If used on construction and installation sites, the inspection shall be carried out every 3 months. If an error rate of < 2 % is reached, the inspection intervals may be extended to max. once per year.

Checking the residual current device



Info

Generally, the power supply of all consumers is interrupted for testing the residual current device. Make sure that – when testing the residual current device – no currently required consumer is connected to the device.

The proper functioning of the residual current device (7) needs to be checked at intervals of approx. 3 months.

The functionality can be checked by means of the test button **T** (2) every residual current device is equipped with.

If you press the test button **T** (2), an artificial residual current will be generated and the residual current device (7) has to trip.

Also observe the inspection intervals specified in the regulations and provisions (e.g. accident prevention regulations).

Disposal



The icon with the crossed-out waste bin on waste electrical or electronic equipment stipulates that this equipment must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. For further return options provided by us please refer to our website <https://de.trotec.com/shop/>.

The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.

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