homematic IP HmIP-FSM16 Switch Actuator-Meter Flushm Instruction Manual

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HmIP-FSM16 Switch Actuator-Meter Flushm

Installations

Installation instruction and operating manual

Schalt-Mess-Aktor (16 A) – Unterputz

Switch Actuator and Meter (16 A) – flush-mount

HmIP-FSM16

Quantity Description

1 Homematic IP Switch Actuator and Meter (16 A) – flush-mount

1 Operating manual

150241 (web)

Version 1.3 (04/2023)

Information about this manual

1 Information about this manual Please read this manual carefully before beginning operation with your Homematic IP component. Keep the manual so you can refer to it at a later date if you need to. If you hand over the device to other persons for use, please hand over this manual as well.

Symbols used:

Attention!

This indicates a hazard.

Please note: This section contains important ad ditional information.

2 Hazard information

Do not open the device. It does not contain any parts that can be maintained by the user. There is a risk of electric shock if the device is opened. If you have any doubts, have the device checked by an expert.

For safety and licensing reasons (CE), unauthorized change and/or modification of the device is not permitted.

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Hazard information

Do not use the device if there are signs of damage to the housing, control elements or connecting sockets, for example. If you have any doubts, have the device checked by an expert.

The device may only be operated in dry and dust free environment and must be protected from the effects of moisture, vibrations, solar or other methods of heat radiation, cold and mechanical loads.

The device is not a toy; do not allow children to play with it. Do not leave packaging material lying around. Plastic films/bags, pieces of polystyrene, etc. can be dangerous in the hands of a child.

We do not assume any liability for damage to property or personal injury caused by improper use or the failure to observe the hazard information. In such cases, any claim under warranty is extinguished! For consequential damages, we assume no liability!

The device may only be used for fixed installations. The device must be securely attached within a fixed installation.

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Hazard information

The actuator is part of the building installation. The relevant national standards and directives must be taken into consideration during planning and set-up. The device has been designed solely for operation on a 230 V/50 Hz AC supply. Only qualified electricians (to VDE 0100) are permitted to carry out work on the 230 V mains. Applicable accident prevention regulations must be complied with whilst such work is being carried out. To avoid electric shocks from the device, please disconnect the mains voltage (trip the miniature circuit-breaker). Non-compliance with the installation instructions can cause fire or introduce other hazards.

When connecting to the device terminals, take the permissible cables and cable cross sections into account.

Connected loads require sufficient insulation.

Please take the technical data (in particular the maximum permissible switching capacity of the relay and the type of load to be connected) into account before connecting a load! All load data relates to ohmic loads. Do not exceed the capacity specified for the device.

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Hazard information

Exceeding this capacity could lead to the destruction of the device, fires or electric shocks.

The circuit to the which the device and the load will be connected has to be secured by a cable protection switch

in accordance with EN60898-1 (tripping characteristic B or C, max. 16 A rated current, min. 6 kA interrupting rating, energy limiting class 3). Installation regulations according to VDE 0100 and HD382 or 60364 have to be considered. Users must be able to easily access the cable protection switch. This must be marked as disconnecting device for the actuator.

Before the actuator is connected, remove the fuse from the fuse box.

The device has not been designed to support safety disconnection.

Devices with electronic power supply units (e.g. TV or high voltage LED light sources) are no ohmic loads. They can generate inrush currents with more than 100 A. Switching such kind of loads may lead to premature wear of the actuator. In such cases, we recommend to use switch-on current limiters at the switching outputs.

The device may only be operated within residential buildings.

Using the device for any purpose other than that described in this operating manual does not fall within the scope of intended use and shall invalidate any warranty or liability.

3 Function and device overview

The Homematic IP Switch Actuator and Meter (16 A) offers installation with a flush-mounting or surface mounting box. Once installed, the device switches connected loads (e.g. lamps) on and off and measures the energy consumption.

The switch actuator and meter enables comfortable control of connected loads via a remote control or smartphone app.

With the user interface, you always have an overview of the energy consumption and costs of connected loads.

Device overview (see figure 1):

(A) System button (reset button und LED) (B) Fixing lug

(C) Connecting terminal 1 (switched phase)

(D) Connecting terminal N (neutral conductor) (E) Connecting terminal L (phase conductor)

4 General system information

This device is part of a smart home system and works with the Homematic IP radio protocol. All devices of the system can be configured comfortably and individually with a smartphone or PC. The available functions provided by the system in combination with other components are described in the Homematic IP User Guide. All current technical documents and updates are provided at www.eQ-3.de.

5 Start-up

5.1 Installation instructions

Please read this entire section before starting to install the device.

Before installation, please note the device number (SGTIN) labelled on the device as well as the exact installation location in order to make later allocation easier. You can also find the device number on the QR code sticker supplied.

Please note! Only to be installed by persons with the relevant electro-technical knowledge and experience!*

Incorrect installation can put

• your own life at risk;

• and the lives of other users of the electrical system.

Incorrect installation also means that you are running the risk of serious damage to property, e.g. because of a fire. You may be personally liable in the event of injuries or damage to property.

Contact an electrical installer!

*Specialist knowledge required for installation: The following specialist knowledge is particularly important during installation:

• The “5 safety rules” to be used:

Disconnect from mains; Safeguard from switching on again; Check that system is deenergized; Earth and short circuit; Cover or cordon off neighboring live parts;

• Select suitable tool, measuring equipment and, if necessary, personal safety equipment;

• Evaluation of measuring results;

• Selection of electrical installation material for safeguard ing shut-off conditions;

• IP protection types;

• Installation of electrical installation material;

• Type of supply network (TN system, IT system, TT sys tem) and the resulting connecting conditions (classical zero balancing, protective earthing, required additional measures etc.).

Installation may only take place in normal commercial switch boxes (device boxes) in accordance with DIN 49073-1 or surface mounting boxes in accordance with DIN 60670-1 (e.g. Abox 025 or Abox 040).

Please observe the hazard information in section „2 Hazard information“ on page 24 during installation.

Permitted cable cross sections for connecting to the switch actuator and meter are:

rigid cable [mm2]	flexible cable without ferrule [mm2]
1.5 – 2.50	1.5 – 2.50

5.2 Installation

You can install the switch actuator and meter

• in a flush-mounting box or

• in a surface-mounting box

5.2.1 Flush-mounting box installation

To install the switch actuator and meter in a flush-mount ing box, please proceed as follows:

• Switch off the fuse of the power circuit.

• Connect the actuator to L(D) and N (D) to obtain 36 Start-up power supply (see fig. 2).

• Route the switched phase (C) to the consumer (see fig. 2).

• Fix the actuator to an appropriate flush-mounting box. If required, you can remove the fixing lug (B).

• Close the flush-mounting box using an appropriate cover.

• Switch the fuse of the power circuit on again, to activate the pairing mode of the device (see „5.3 Pairing“ on page 38).

5.2.2 Surface-mounting box installation

To install the switch actuator and meter in a surface mounting box, please proceed as follows:

• Switch off the fuse of the power circuit.

• Connect the actuator to L (E) and N (D) to obtain power supply (see fig. 2).

• Route the switched phase (C) to the consumer (see fig. 2).

• Fix the actuator to an appropriate surface mounting box (e.g. Abox 025 or Abox 040) (see figure 3).

• Fix the actuator to the holding mandrel using the fixing lug.

• Close the surface-mounting box using the cor responding cover.

• Switch the fuse of the power circuit on again, to activate the pairing mode of the device (see „5.3 37 Start-up Pairing“ on page 38).

5.3 Pairing

Please read this entire section before starting the add procedure.

First set up your Homematic IP Access Point via the Homematic IP app to enable operation of other Homematic IP devices within your system. For further information, please refer to the operating manual of the Access Point.

You can connect the device either to the Access Point or to the Homematic Central Control Unit CCU3. For detailed information, please refer to the Homematic IP User Guide, available for download in the download area of www.eQ-3.de.

To integrate the switch actuator and meter into your system and enable it to communicate with other Homematic IP devices, you must add the device to your Homematic IP Access Point first.

To add the switch actuator and meter, please proceed as follows:

• Open the Homematic IP app on your smart phone.

• Select the menu item “Add device”.

Troubleshooting

• After installation, the pairing mode remains activated for 3 minutes.

If the 3 minutes have expired, disconnect and re connect the mains voltage to start the pairing mode again.

• Your device will automatically appear in the Homematic IP app.

• To confirm, please enter the last four digits of the device number (SGTIN) in your app or scan the QR code. Therefore, please see the sticker sup plied or attached to the device.

• Please wait until add is completed.

• If pairing was successful, the LED lights up green. The device is now ready for use.

• If the LED lights up red, please try again.

• Select the desired solution for your device.

• In the app, give the device a name and allocate it to a room.

6 Troubleshooting

6.1 Command not confirmed

If at least one receiver does not confirm a command, the device LED lights up red at the end of the failed trans mission process. The failed transmission may be caused by radio interference (see „8 General information about

Troubleshooting radio operation“ on page 44). This may be caused be the following:

• Receiver cannot be reached.

• Receiver is unable to execute the command (load failure, mechanical blockade, etc.).

• Receiver is defective.

6.2 Duty cycle

The duty cycle is a legally regulated limit of the transmis sion time of devices in the 868 MHz range. The aim of this regulation is to safeguard the operation of all devices working in the 868 MHz range.

In the 868 MHz frequency range we use, the maximum transmission time of any device is 1% of an hour (i.e. 36 seconds in an hour). Devices must cease transmission when they reach the 1% limit until this time restriction comes to an end. Homematic IP devices are designed and produced with 100% conformity to this regulation.

During normal operation, the duty cycle is not usually reached. However, repeated and radio-intensive pair processes mean that it may be reached in isolated instances during start-up or initial installation of a system. If the duty cycle is exceeded, this is indicated by one long red lighting of the device LED, and may manifest itself in the device temporarily working incorrectly. The device starts working correctly again after a short period (max. 1 hour).

Troubleshooting

6.3 Error codes and flashing sequences

Flashing code	Meaning	Solution
Short orange flashing	Radio transmission/ attempting to transmit/data transmission	Wait until the transmission is completed.
1x long green lighting	Transmission confirmed	You can continue operation.
1x long red lighting	Transmission failed	Please try again (s. „6.1 Command not confirmed“ on page 39).
Short orange flashing (every 10 s)	Pairing mode active	Please enter the last four numbers of the device serial number to confirm (see „5.3 Pairing“ on page 38).

Restore factory settings

1x long red lighting	Transmission failed or duty cycle limit is reached	Please try again (see sec. „6.1 Command not confirmed“ on page 39 or „6.2 Duty cycle“ on page 40).
6x long red flashing	Device defective	Please see your app for error message or contact your retailer.
1x orange and 1 x green lighting	Test display	Once the test display has stopped, you can continue.

7 Restore factory settings

The factory settings of the device can be restored. If you do this, you will lose all your settings.

To restore the factory settings of the switch actuator and meter, please proceed as follows:

• Press and hold down the system button (A) for at least 4 seconds using a VDE screwdriver, until the LED quickly starts flashing orange.

• Release the system button again.

• Press and hold down the system button again for 4 seconds, until the LED lights up green.

• Release the system button to finish the proce dure.

The device will perform a restart.

After the restart, you can again integrate your device into your Homematic IP system.

8 Maintenance and cleaning

The product does not require any maintenance. Enlist the help of an expert to carry out any main tenance or repairs.

The mains voltage must be disconnected before the device is removed (trip the miniature circuit breaker). Only qualified electricians (to VDE 0100) are permitted to carry out work on the 230 V mains.

Clean the device using a soft, lint-free cloth that is clean and dry. You may dampen the cloth a little with lukewarm water in order to remove more stubborn marks. Make sure that no moisture will ingress into the housing. Do not use any detergents containing solvents, as they could corrode the plastic housing and label.

9 General information about radio operation

Radio transmission is performed on a non-exclusive transmission path, which means that there is a possibil ity of interference occurring. Interference can also be caused by switching operations, electrical motors or de fective electrical devices.

The range of transmission within buildings can differ greatly from that available in the open air. Besides the transmitting power and the reception characteristics of the receiver, environmental factors such as humidity in the vicinity have an important role to play, as do on-site structural/

screening conditions.

Hereby, eQ-3 AG, Maiburger Str. 29, 26789 Leer/Ger many declares that the radio equipment type Home matic IP HmIP-FSM16 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of con formity is available at the following internet address: www.eq-3.com

10 Technical specifications

Device short description: HmIP-FSM16 Supply voltage: 230 V/50 Hz Current consumption: 16 A max.

Technical specifications

Standby power

consumption: 0.2 W

Max. switching capacity: 2760 W permanent 3680 W for 20 minutes

Max. switching current: 12 A permanent 16 A for 20 minutes

Kind of load: ohmic load, cosφ≥0.95 Relay: NO contact, 1-pole, µ contact

Cable type and cross section: rigid and flexible cable, 1.5 – 2.5 mm²

Installation: only in switch boxes (device boxes) in

accordance with DIN

49073-1 or junction

boxes (surface-mounting

boxes) in accordance

with DIN 60670-1

Degree of protection: IP20

Measurement category: CAT III

Ambient temperature: 5 to 35 °C

Dimensions (W x H x D): 54 x 33 x 41 mm Weight: 49 g

Radio frequency band: 868.0-868.6 MHz 869.4-868.65 MHz

Maximum radiated power: 10 dBm

Receiver category: SRD category 2 Typ. open area RF range: 180 m

Technical specifications

Duty cycle: < 1 % per h/< 10 % per h

Load type	Relay
Ohmic load	13 A
Incandescent lamp load	1500 W
Self-ballasted lamps (LED/compact fluorescent lamp)	200 W
HV halogen lamps	1500 W
Electronic transformers for NV halogen lamps	1500 W
Iron core transformers for NV halogen lamps	1500 W
Fluorescent lamps (uncompensated)	1500 W
Fluorescent lamps (parallel compensated)	1500 W
Electric radiators and other electric heating systems (ohmic load)	8 A (200.000 switching cycles)

Subject to technical changes.

Technical specifications

Instructions for disposal

Do not dispose of the device with regular domestic waste! Electronic equipment must be disposed of at local collection points for waste electronic equipment in compliance with the Waste Electrical and Electronic Equipment Directive. 

Information about conformity

The CE sign is a free trading sign addressed exclusively to the authorities and does not include any warranty of any properties.

For technical support, please contact your retailer.

Free download of the Homematic IP app!

Manufacturer’s authorised representative:

eQ-3

eQ-3 AGMaiburger Straße 2926789 Leer / GERMANY
www.eQ-3.de

Documents / Resources

	homematic IP HmIP-FSM16 Switch Actuator-Meter Flushm [pdf] Instruction Manual HmIP-FSM16 Switch Actuator-Meter Flushm, HmIP-FSM16, Switch Actuator-Meter Flushm, Actuator-Meter Flushm, Meter Flushm, Flushm

References

- Start - eQ-3
- Startseite - eQ-3