homematic IP HmIP-ESI-IEC Interface for Smart Meters Installation Guide

Contents

homematic IP

homematic IP HmIP-ESI-IEC Interface for Smart Meters

Product Specifications

- **Product Name:** Interface for smart meters – HmIP-ESI-IEC
- **Languages:** DE, EN, FR, ES, IT, NL

Product Usage Instructions

1. **Installation**
   Ensure the installation and operating manual is followed carefully for proper setup.
2. **Getting Started**
   To initiate the device, follow the steps below:
   1. **Pairing**
      Follow the pairing instructions provided in the manual to connect the device.
   2. **Mounting**
      There are three mounting options available:
      - **Klebestreifenmontage:** Attach using adhesive strips as described in section 6.2.1 of the manual.
      - **Schraubmontage:** Mount using screws following the steps in section 6.2.2.
      - **Sensormontage:** Detailed sensor mounting instructions can be found in section 6.2.3.
3. **Battery Replacement**
   When needed, replace the batteries as per the instructions provided in section 7 of the manual.
4. **Troubleshooting**
   If you encounter issues, refer to the troubleshooting section (8) for guidance on resolving common problems.

Frequently Asked Questions (FAQ)

- **Q: How do I reset the device to factory settings?**
  A: To restore factory settings, follow the steps outlined in section 9 of the manual.

- **Q: What are the technical specifications of the HmIP-ESI?**
  A: Detailed technical specifications can be found in section 13.1 of the manual.

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Scope of delivery

- 1x Interface for energy sensors
- 1x Energy sensor for smart meters
- 2x Double-sided adhesive strips
- 2x 1.5 V LR6/Mignon/AA batteries
- 1x Operating manual

Information about this manual

Please read this manual carefully before operating your Homematic IP components. 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:

- **Important!**
  This indicates a hazard.
- Note. This section contains additional important information!

Hazard information

- Do not open the device. It does not contain any parts that need to be maintained by the user. In the event of an error, please have the device checked by an expert.
- We accept no liability for damage to property or personal injury caused by improper use or the failure to observe the hazard warnings. In such cases, all warranty claims are void. We accept no liability for any consequential damage.
- For safety and licensing reasons (CE), unauthorized change and/or modification of the device is not permitted.
- The device may only be operated in a dry and dust-free environment. It must be protected from the effects of moisture, solar or other methods of heat radiation, exces-sive 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.

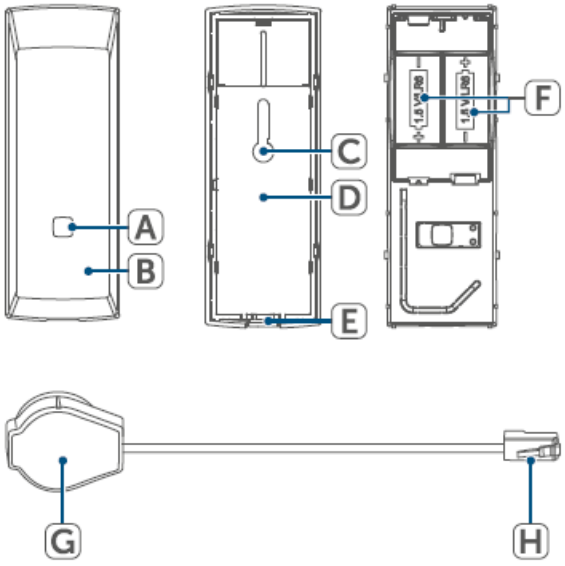
- The device must only be operated within residential buildings.
- Using the device for any purpose other than that described in this operating manual does not fall within the scope of intended use and will invalidate any warranty or liability.

Function and device overview

The Homematic IP interface for energy sensors is a battery-powered wireless module for integrating electricity meters into Homematic IP installations. It is used for acquiring all meter readings and the latest consumption data from the electricity meter. The device is compatible with the serial optical interface of meters by IEC 62056-21. The IEC interface corresponds to the current standard of electronic household electricity meters. The data is acquired by the sensor and sent to the Homematic IP access point.

Device overview:

- **(A)** System button (pairing button + LED)
- **(B)** Cover
- **(C)** Screw channel
- **(D)** Electronics unit
- **(E)** Connection port
- **(F)** Battery compartment
- **(G)** Reader’s head
- **(H)** Connection cable with connector



In the meter menu, activate the extended data set if this function is available. If this function is not available on your meter, consult the operating instructions for your meter for details. If necessary, also request the free PIN from the metering point operator. Keep the PIN in a safe place so that you can change this setting again if the meter reverts to the reduced data set after a power failure, for example.

The D0 Mode A to D and SML protocols are supported. Idis CII (Austria) is not supported. The data transmitted includes the current power value, the meter reading of the incoming energy supply during peak tariff periods, the meter reading of the incoming energy supply during off-peak tariff periods, and the meter reading of the ongoing supply. Thus, the device can be used on feed-in meters, con-sumption meters, bi-directional meters, single tariff meters and dual tariff meters. If the meter does not provide any power values, the HmIP-ESI calculates them from the change in the meter readings.

The resolution depends on the resolution of the meter readings and is approximately:

Wh	W
0.01	0.12
0.1	1.2
1	12
10	120

For meter readings with a lower resolution, the power is not calculated.

General system information

This device is a part of the Homematic IP Smart Home system and communicates via the Homematic IP wireless protocol. All devices of the Homematic IP system can be configured comfortably and individually with a smartphone via
the Homematic IP app. Alternatively, you have the option of operating Homematic IP devices via the CCU3 or in conjunction with many partner solutions. 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.homematic-ip.com**.

Start-up

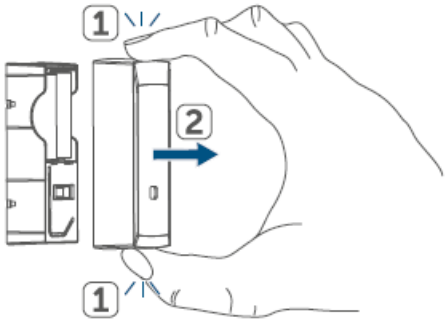
Only put the cover (B) on once you have completed the mounting and installation work.

Pairing

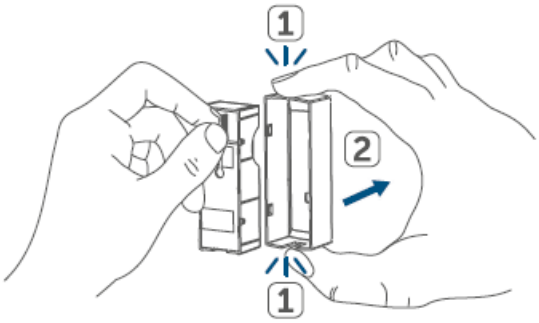
- Please read this entire section before starting the pairing proce-dure.
- First, set up your Homematic IP access point using the Homematic IP app so that you can use other Homematic IP devices in the system. For further information, please refer to the operating manual of the access point.
- So that the device to be integrated into your system and to communicate with other Homematic IP devices, it must first be paired on the Homematic IP Access Point.

For pairing, proceed as follows:

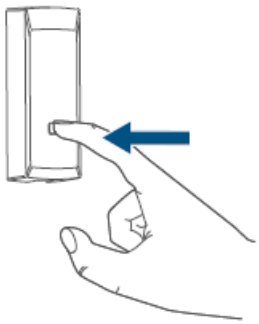
- Open the Homematic IP app on your smartphone.
- Select the menu item “Add device”.
- Remove the cover (B) to open the battery compartment (F).
- When mounted, the cover (B) can be removed by pressing ihe upper and lower sides and pulling the cover (B) forward.



- When not mounted, the cover cap (B) can be removed by pressing the upper and lower sides with one hand. At the same time, take hold of the rib of the electronics unit (G) on the rear side of the HmIP-ESI with your other hand and pull it out of the cover.



- Pull the insulating strip out of the battery compartment (F).
- The pairing mode is active for 3 minutes.
    - You can start the pairing mode for a further 3 minutes by pressing the system button (A) briefly.



Your device will automatically appear in the Homematic IP app.

- To confirm, enter the last four digits of the device number (SGTIN) in your app, or scan the QR code. The device number can be found on the sticker supplied or attached to the device.
- Wait until pairing is completed.
- If the pairing is successful, the LED (A) lights up green. The device is now ready for use.
- If the LED lights up red, please try again.
- In the app, give the device a name and allocate it to a room.

Installation
You can use either

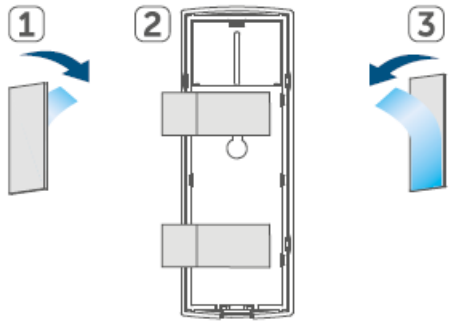
- the supplied double-sided adhesive strips or
- a screw (not included in the delivery) to affix the HmIP-ESI in the chosen position.
    - Make sure that the mounting location does not affect the wireless communication between the HmIP-ESI

and the access point.

Adhesive strip mounting
Make sure that the mounting surface is smooth, solid, non-dis-turbed, free of dust, grease and solvents and not too cold to ensure long-term adherence.

To mount the HmIP-ESI using the adhesive strips, proceed as follows:

- Affix the double-sided adhesive strips to the rear side of the electronics unit (D).



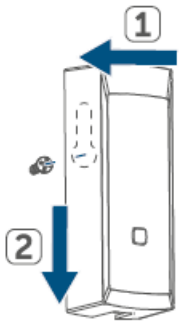
- Press the device’s rear side first onto the chosen position.
- Put the cover (B) on, ensuring that it latches fully into place.

Screw mounting

- When selecting the installation location, check for electrical wires and power supply cables.
- A round-headed screw with a 3 mm diameter is to be used for mounting.

To mount the HmIP-ESI using a screw, proceed as follows:

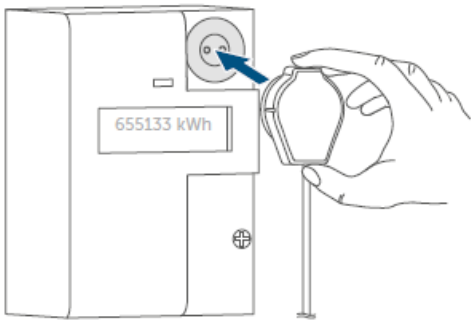
- Draw a drill hole on the chosen position using a pen.
- Screw the screw into the wall (use a wall plug if necessary).
    - For wooden walls, you can pre-drill the hole with a 1.5 mm drill to make it easier to screw in the screw.
    - The clearance between the bottom of the screw head and the mounting surface should be approximately 2 mm.
- Thread the screw channel (C) on the rear side over the screw head.



- Put the cover (B) onto the electronics unit (D), ensuring that it latches fully into place.

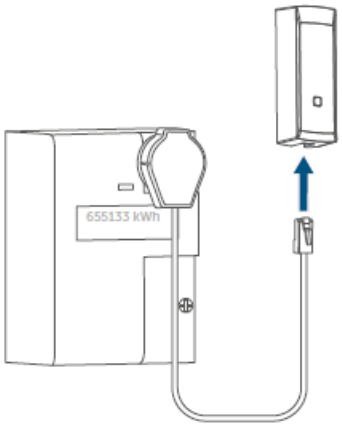
Mounting the sensor
To mount the sensor, proceed as follows:

- Place the reader head (G) in the centre of the meter interface.



The integrated magnet ensures it remains in place. With standard-com-pliant interfaces, the cable is routed downwards.

- Finally, insert the sensor connector (H) on the underside of the HmIP-ESI into the connection point (E) until it audibly clicks into place.

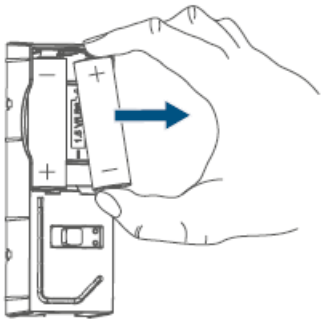


Changing the batteries

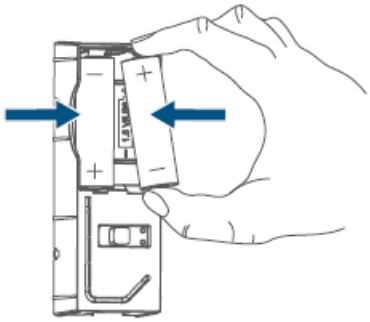
If an empty battery is displayed in the app or on the device (see„ Error codes and flashing sequences“), replace the used batteries with two new LR6/Mignon/AA batteries. You must observe the correct battery polarity.

To replace the device batteries, please proceed as follows:

- Remove the cover (B) to open the battery compartment (F) (see illustrations).
- Remove the used batteries.



- Place the two new 1.5 V LR6/Mignon/AA batteries in the battery compartment (F) by the polarity markings.



- After inserting the batteries, pay attention to the flashing sequences of the LED (see „ Error codes and flashing sequences“).
- Put the cover (B) back onto the mounted electronics unit (D), en-suring that it latches fully into place.

Once the batteries have been inserted, the device will perform a self-test for approx. 2 seconds. Afterwards, initialisation is carried out. The LED test display will indicate that initialisation is complete by lighting up orange and green.

- **Caution!** There is a risk of explosion if the battery is not replaced correctly. Replace only with the same or equivalent type. Never recharge non-rechargeable batteries. Do not throw the batteries into a fire. Do not expose batteries to excessive heat. Do not short-circuit batteries. There is a risk of an explosion
- After replacing the batteries, you may need to update the meter reading to display the correct data again.

Troubleshooting

Weak batteries

- Provided that the voltage value permits it, the device will remain ready for operation even if the battery voltage is low. Depending on the particular load, it may be possible to send transmissions again repeatedly once the batter-ies have been allowed a brief recovery period.
- If the voltage drops again while sending, this will be displayed in the Homematic IP app and on the device (see Error codes and flashing sequences “). In this case, replace the empty batteries with two new ones (see „ Changing the batter-ies“).

Duty cycle

- The duty cycle is a legally regulated limit of the transmission time of devices in the 868 MHz range. This regulation aims 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 ends.
- 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 pairing processes mean that it may be reached in isolated instances during the start-up or initial installation of a system. If the duty cycle is exceeded, this is indicated by one long red flashing of the device LED (A), and may manifest itself in the device temporarily working incorrectly. The device starts working correctly again after a short period (max. 1 hour).

Error codes and flashing sequences

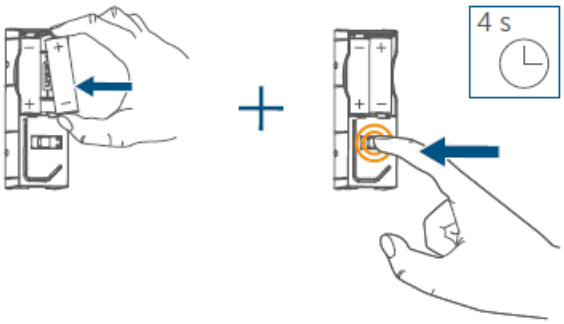
Flashing code	Meaning	Solution
Short orange flashes	Radio transmission/send attempt/d ata transmission	Wait until the transmission is compl eted.
1x long green lighting	Transmission confirmed	You can continue othe operation.
1x long red flash	Transmission failed or duty cycle li mit reached	Try again (see „ Duty cycle“).
Brief orange flashing (every 10 s)	Pairing mode active	Enter the last four digits of the devic e serial number to confirm (see „Pai ring “).
Brief orange glow (after green or re d receipt message)	Batteries empty	Replace the device batteries (see „ Changing the batteries“).
Alternating long and short orange fl ashing	Device software updating (OTAU)	Wait until the update is completed.
6x long red flashes	Sensor not plugged in or protocol n ot detected.	Check the sensor connection and c orrect installation on your meter.
1x orange, 1x green lighting (after i nserting batteries)	Test display	You can continue once the test disp lay has stopped.

Restoring factory settings

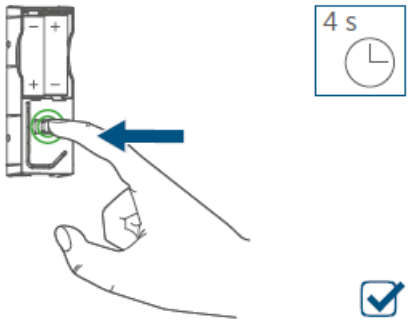
The device’s factory settings can be restored. If you do this, you will lose all your settings.

To restore the factory settings of the device, please proceed as follows:

- When mounted, the cover (B) can be easily removed from the mount-ed device by pressing the upper and lower sides and pulling the cover forward (see illustration).
- Remove a battery (see illustration).
- Insert the fresh battery making sure that it is the right way around while pressing the system button (A) at the same time. Hold the system button (A) down until the LED (A) starts to flash orange rapidly.



- Release the system button (A) briefly and then hold the system button (A) down again until the orange flashes are replaced by a green light.



- Release the system button (A) again to complete restoring the factory settings.

The device will perform a restart.

Maintenance and cleaning

- The device does not require you to carry out any maintenance other than replacing the battery when necessary. Enlist the help of an expert to carry out any repairs.
- Clean the device using a soft, clean, dry and lint-free cloth. Do not use any detergents containing solvents, as they could corrode the plastic housing and label.

General information about radio operation

Radio transmission is performed on a non-exclusive transmission path, which means that there is a possibility of interference occurring. Switching operations, electrical motors or defec-tive electrical devices can also cause interference.

- The transmission range within buildings can differ significantly from that available in open space. Besides the transmitting power and the reception characteristics of the receiver, environmental factors such as humidity in the vicinity play an important role, as do on-site structural/screening conditions.
- eQ-3 AG, Maiburger Str. 29, 26789 Leer, Germany, hereby declares that the wireless system of the type Homematic IP HmIP-ESI is inbyirective 2014/53/EU. The full text of the EU Declaration of conformity is available at **www.homematic-ip.com**

Disposal

Instructions for disposal

- This symbol means that the device and the batteries or accumulators must not be disposed of with household waste, the residual waste bin or the yellow bin or yellow bag. For the protection of health and the environment, you must take the product, all electronic parts included in the scope of delivery, and the batteries to a municipal collection point for old electrical and electronic equipment to ensure their correct disposal. Distributors of electrical and electronic equip-ment or batteries must also take back obsolete equipment or batteries free of charge.
- By disposing of it separately, you are making a valuable contribution to the reuse, recycling and other methods of recovery of old devices and old batter-ies.
- You must separate any old batteries and accumulators of old electrical and electronic devices from the old

device if they are not enclosed by the old device before handing it over to a collec-tion point and dispose of them separately at the local collection points. Please also remember that you, the end user, are responsible for deleting personal data on any old electrical and electronic equipment before disposing of it.

Information about conformity

- The CE mark is a free trademark that is intended exclusively for the authorities and does not imply any assurance of properties.
- For technical support, please contact your retailer.

Technical specifications

HmIP-ESI technical data

- **Device short description:** HmIP-ESI
- **Supply voltage:** 2x 1.5 V LR6/Mignon/AA
- **Current consumption:** max. 30 mA
- **Battery life:** 5 years (typical, with ES-IEC, SML)
- **Protection rating:** IP20
- **Ambient temperature:** 5 to 35°C
- **Dimensions (W x H x D):** 39 x 109 x 29 mm
- **Weight:** 100 g (including batteries)
- **Transmission interval (typ.):** 6 minutes
- **Radio frequency band:**
  - 868.0-868.6 MHz
  - 869.4-869.65 MHz
- **Max. radio transmission power:** 10 dBm
- **Receiver category:** SRD category 2
- **Typical range in open space:** 300 m
- **Duty cycle:** < 1 % per h/< 10 % per h

ES-IEC technical data

- **Device short description:** ES-IEC
- **Design by:** IEC 62056-21
- **Transmission speed:** 300-9,600 Bd
- **Supply voltage:** via evaluation unit
- **Temperature range:** 5 to 35°C
- **Reader head dimensions (W x H x D):** 32 x 40 x 20 mm
- **Weight (including cabling):** 52 g

Subject to modifications.

Free download of the Homematic IP app!

eQ-3 AG

- Maiburger Straße 29 26789 Leer/GERMANY
- www.eQ-3.de.

Documents / Resources

	homematic IP HmIP-ESI-IEC Interface for Smart Meters [pdf] Installation Guide HmIP-ESI-IEC, HmIP-ESI-IEC Interface for Smart Meters, Interface for Smart Meters, Smart Meters, Meters

References

- Home page | Homematic IP
- User Manual