The Energy Meter is a measuring device which company. For applications > 63 A, current trans
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sumption of active power as defined in the EU Di
The Energy Meter is for private use only.

Symbols Used

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>✖️</td>
<td>A problem that might occur</td>
</tr>
<tr>
<td>❌</td>
<td>A hazardous situation which, if not avoided, will result in death or serious injury</td>
</tr>
<tr>
<td>🚨</td>
<td>A hazardous situation which, if not avoided, can result in death or serious injury</td>
</tr>
<tr>
<td>CAUTION</td>
<td>Indicates a hazardous situation which, if not avoided, can result in minor or moderate injury</td>
</tr>
<tr>
<td>NOTICE</td>
<td>Information that is important for a specific topic or goal, but is not safety-relevant</td>
</tr>
<tr>
<td>⚠️</td>
<td>Indicates a requirement for executing a specific goal</td>
</tr>
<tr>
<td>∆</td>
<td>Desired result</td>
</tr>
<tr>
<td>❌</td>
<td>A problem that might occur</td>
</tr>
</tbody>
</table>

**Intended Use**

The Energy Meter is a measuring device which detects electrical measured values at the connection point and makes them available via Speedwire. The Energy Meter is for private use only. This product is NOT an energy meter for the consumption of active power as defined in the EU Directive 2004/22/EC (MID). The Energy Meter must not be used for billing purposes. The data collected by the Energy Meter relating to the power generated by your PV system may deviate from the data of the main Energy Meter. The Energy Meter must only be connected to the substations of the household on the load side behind the Energy Meter of the electric utility company. For applications > 63 A, current transformers must be connected to the Energy Meter.

**Safety Precautions**

- **DANGER**
  - Danger to life due to electric shock
    - Lethal voltages are present in the live conductors.
      - Only use the Energy Meter in a dry environment and keep it away from liquids.
      - Install the Energy Meter in the switch cabinet only and ensure that the connection areas for the line conductors and the neutral conductor are behind a cover or have contact protection.
      - Disconnect the Energy Meter from voltage sources before cleaning. The Energy Meter must be cleaned with a dry cloth only.
      - Observe the preserved minimum clearance between the network cable and installation components, or use suitable insulation.

- **WARNING**
  - Danger to life due to electric shock
    - If network cables are laid outdoors, they may be subject to overvoltages, e.g. due to flash of lightning. This can result in death or serious injury.
    - Network cables laid outdoors must be suitably protected from overvoltage.

**Product Description**

- **Scope of Delivery**
  - 1 x Energy Meter (EMETER-10.GR1)
  - 1 x installation manual
  - Contact your distributor if the scope of delivery is incomplete or damaged.

**Technical Data**

- Communication: Speedwire
- Nominal voltage: 230 V/400 V AC
- Frequency: 50 Hz/60 Hz ± 5%
- Self-consumption: 2 W
- Limiting current/line conductor: 63 A
- Connection cross-section with current transformers: See recommendations of the current transformer manufacturer
- Connection cross-section without current transformers: 10 mm² to 25 mm²
- Torque for screw terminals: 2 Nm
- Weight: 0.30 kg
- Dimensions (W/H/D): 70 mm x 88 mm x 65 mm
- Ambient temperature in operation: 25°C to +40°C
- Ambient temperature during transport/storage: -10°C to +55°C
- Relative air humidity*: 5% to 95%
- Protection class: IP2X
- In accordance with IEC 60529

**Scope of Delivery**

- 1 x Energy Meter (EMETER-10.GR1)
- 1 x installation manual
- Contact your distributor if the scope of delivery is incomplete or damaged.

**LED States**

- **Status LED**
  - Glowing green: Energy Meter is switched on.
  - Flashing green slowly: Energy Meter starting up.
  - Flashing green fast: Firmware update running.
  - Glowing or flashing red or orange: an error has occurred. Refer to Section “Troubleshooting”.

**Communication**

- Speedwire LED ( ): Speedwire connection established
- Speedwire LED ( ): Speedwire connection established

**WARNING**

- Fire hazard
  - If a fuse is missing or incorrect and a fault occurs, a fire may be caused. This can result in death or serious injury.
  - Protect the line conductors of the Energy Meter with a fuse or a main/selection circuit breaker, max. 63 A.

**Installation Manual**

**Electrical Connection for Applications ≤ 63 A**

The following figure shows a connection example. For exact connection specifications, contact your electric utility company.

**Procedure:**

**WARNING**

- Danger to life due to electric shock
  - Lethal voltages are present in the switch cabinet.
  - Disconnect the connection point from voltage sources and make sure it cannot be reconnected.
  - Ensure that the conductors to be connected to the Energy Meter are free of voltage.

**Complete Multicast support required**

- Incomplete Multicast support of individual network components can lead to malfunction of the Energy Meter.

**Electrical Connection for Applications > 63 A**

Additionally required material (not included in the scope of delivery):

- 3 x current transformer
- Connection cables for current transformers

**Recommendations for the current transformer**

SMA Solar Technology AG recommends current transformers designed for a secondary current of 5 A. The current transformers should have at least accuracy class 1.
1. Connect the network cable to the network terminal.

2. On each current transformer, connect one conductor to the secondary current terminal.

3. Connect the connection cables for current measurement to the correct function of the Energy Meter, all conductors.

4. Enter the required transformation ratio in the Current Transformer ratio field.

5. Select [Apply].

Commissioning
1. Cover the Energy Meter with the cover or the contact protection of the subdistribution.
2. Switch the power supply to the subdistribution back on.
   ☑ The LEDs of the Energy Meter glow during startup. If there is only one Energy Meter in the system, the Energy Meter connects automatically to SMA communication products in the same local network. For more information on commissioning, see the user manual of the supported devices.
   ☑ The LEDs are not glowing or the Energy Meter is not displayed by the SMA communication products?
   • Correct the error (see Section “Troubleshooting”).

Resetting the Energy Meter to Default Settings
Procedure:
• Press the reset button with a sharp object and hold it for two to six seconds.

Restarting the Energy Meter
Procedure:
• Press the reset button with a sharp object and hold it for six seconds or longer.

Accessing the User Interface
Procedure:
1. Call up the Internet browser and in the address line enter http://energymeter “Serial number” Local, e.g.:
   http://energymeter7435667356.local
Note: The serial number can be found on the type label of the Energy Meter.
2. Press Enter.
   ☑ The user interface of the Energy Meter opens.
   ☑ The user interface does not open?
   • Correct the error (see Section “Troubleshooting”).

Configuring the Current Transformer
Procedure:
1. On the homepage, select Device settings > Current Transformer settings.
2. Activate the checkbox Use Current Transformers.
3. Enter the required transformation ratio in the field Current Transformer ratio.
4. Select [Apply].

Performing a Firmware Update
Procedure:
1. Download the update file from www.SMA-Solar.com and save it to your computer.
2. Open the user interface of the Energy Meter (see Section “Accessing the User Interface”)
3. Follow the instructions in the menu Firmware update

Firmware procedure for Replacing an Energy Meter
Procedure:
• If more than one Energy Meter is installed in your system and you have replaced one or more Energy Meters, you will need to adjust the serial number of the corresponding Energy Meter in the Sunny Island/Sunny Boy Smart Energy. This will void inaccurate meter reading data in the Speedwire data module Sunny Island/Sunny Boy Smart Energy.
   - In systems without Sunny Home Manager, enter the serial number of the Energy Meter via Sunny Explorer in the Sunny Island/Sunny Boy Smart Energy (for information on changing device parameters, see user manual of the Sunny Explorer).
   - In systems with Sunny Home Manager, configure the Energy Meter in Sunny Portal (see user manual of the Sunny Home Manager).

Troubleshooting
The status LEDs are off.
• The Energy Meter is not supplied with power.
• Make sure that at least the line conductor L1 and the neutral conductor are connected to the Energy Meter.

The status LEDs are glowing or flashing red or orange.
• An error has occurred.
• Restart the Energy Meter (see Section “Restarting the Energy Meter”).
• Contact the SMA Service Line.

The Speedwire LEDs are not glowing, or
• The Energy Meter is not displayed by the SMA communication product.
• The network cable has not been correctly connected to the network terminal.
• Make sure that the network cable is correctly connected to the network terminal.

The Energy Meter is not integrated into the same local network as the SMA communication product.
• Connect the Energy Meter to the same router/network switch as the SMA communication product.

The Energy Meter provides unrealistic measured values.
• The Energy Meter has been installed the wrong way round.
• Connect and commission again.

The user interface cannot be called up via http://energymeter “Serial number” Local. The name resolution via Avahi (Multicast DNS) is not working.

   • Call up the user interface via the current IP address of the Energy Meter. Call up the user interface of the router and read off the IP address of the Energy Meter (see router manual).

   • With Windows XP/7/8:
   Install Apple Bonjour® (download links at www.apple.com. Note: Apple Bonjour® is also contained in Apple iTunes®)
   • Contact your network administrator.

Disposal
Procedure:
• Dispose of the Energy Meter in accordance with the locally applicable disposal regulations for electronic waste.

Open Source Licenses
The license text and corresponding information is displayed in the user interface of the Energy Meter. You can request the source code with modifications from the SMA Service Line.

Contact
If you have technical problems concerning our products, contact the SMA Service line. We require the following information in order to provide you with the necessary assistance:
• Type and serial number of the Energy Meter (see type label of the Energy Meter)
• Type and serial number of the SMA products (e.g. Sunny Home Manager, Sunny Explorer, Sunny Island)
• Error description

Procedure:
1. Connect the network cable to each line conductor L1, L2 and L3.
2. On each current transformer, connect one connection cable for current measurement to each of the secondary current terminals (k/S1 and l/S2).
   • Observing the connected current transformers are to receive measured values must be integrated in the same local network.

Network Terminal
IGMP protocol from version 2 must be supported
The Energy Meter works with Multicasts. For the correct function of the Energy Meter, all network devices used must support the IGMP protocol, minimum required version 2 (IGMP V2).

Additionally required material (not included in the scope of delivery):
• 1 x network cable

Recommended cable types:
• SF/UTP, S-FTP, S/UTP, SF/FTP, S/FTP, S-STP

Procedure:
1. Connect the network cable to the network terminal (Speedwire) of the Energy Meter.
2. Connect the other end of the network cable to a router/network switch. SMA products which are to receive measured values must be integrated in the same local network.

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