m2mserver WM-E3S Modem for Electricity Meters User Guide

**m2mserver WM-E3S Modem for Electricity Meters**

Please take it to a collection point designated by your local authorities once it has reached the end of its life, some will accept products for free. By recycling the product and its packaging in this manner you help to conserve the environment and protect human health.

Contents

INSTALLATION STEPS – Elster® AS3000, AS3500

- **Step #1:** Take off the meter's communication module plastic case by releasing the screw from the top middle part of the housing.
- **Step #2**: Now snap the modem unit PCB into the communication module's plastic housing by sliding it through the guiding rails of the case until you hear a click sound. Beware to place the modem unit PCB to the slot nearer the screw. The 12 pins communication interface connector (3) must be in the right angle and direction, closer to the SMA antenna connector (6) (right top side on the picture).
- **Step #3:** The PCB must be pushed until it is locked and fixed into the communication module's case. At the middle of the modem unit PCB there is whole that permits to the fixation hook of the communication module's housing to fix and holds back the modem unit PCB. When you want to remove the modem unit PCB, you must force the hook to release the PCB.
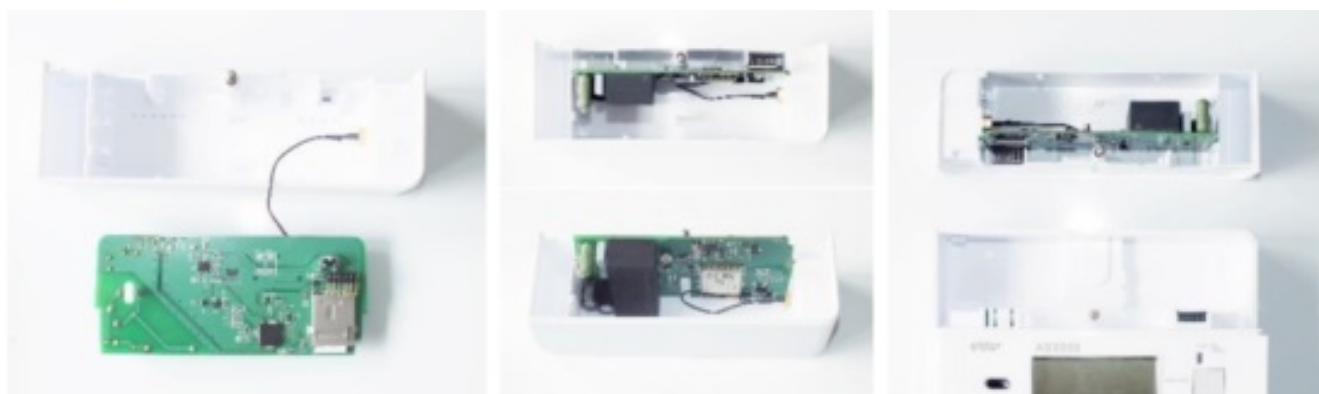
- **Step #4**: Now we can connect the communication module to the meter by sliding the communication unit into the meter housing.
- **Step #5:** The communication interface (3) and the mains connectors (1) must be connected to the connector pairs from the meter housing.

INSTALLATION STEPS – Elster® AS220, AS230

- **Step #1**: Disassemble the meter's communication module plastic case. Release the top screw at the middle and take off the cover from the modem (at top).
- **Step #2:** The modem PCB can be inserted into the transparent plastic housing of the communication modem.
- **Step #3:** Inside the communication module's transparent plastic case, mount the SMA-M antenna connector on the housing (fasten by connector's screw).
- **Step #4:** The communication modem is ready to be attached to the meter by attaching to the meter housing. The 12 pins communication interface (3) and the mains connector (1) now plugs into the meter.

INSTALLATION STEPS – Elster® AS1440

- Step #1: Connect the external PCB adapter with the 12 pins ribbon cable and slide the connector to the 12-pins communication interface (3) of the modem PCB. The wire marked with red must be positioned towards the edge of the modem PCB. The communication / power of the electricity meter is provided by the 6-pin Elster® - customized interface connection adapter.
- Step #2: Take off the meter's terminal cover that hosts the communication module's plastic housing and release the back cover of the module to place the modem to the terminal cover.
- Step #3: Mount the SMA-M antenna connector on the back cover of the modem . Fasten with the antenna connector's screw.
- Step #4: Insert the modem PCB inside the terminal cover's communication module housing by sliding it through the guiding rails that are closer to the fastening screws. Take care to position pf the PCB amd the power supply module (10) – it must be on the right-side – as it is shown on the picture. The 12-pins connector and its wire must be oriented to the left side.
- Step #5: The modem PCB must be pushed, until it will be locked and fixed into the case. In the terminal cover are fastening points to hold the PCB in the cover.
- Step #6: Place the external power supply adapter PCB into the terminal cover case at the proper direction as it can be seen in the picture. The 6-pins Microfit connector must be oriented to upside, the 12-pins wire must be placed to the left side. Please mind to arrange the ribbon cable to not obstruct the cover to be fixed on top of the modem housing!
- Step #7: Now place back modem's cover and fasten by locking tabs and the screw. Insert the modem unit tot he electricity meter. The 6-pins connector will provide power and data connection from the meter to the module.

TURN ON THE DEVICE

After assembling the modem, turn on the meter. The modem begins its operation.
The LED signals will notify about the current operation, status.

COMMUNICATION PROPERTIES

- The WM-E3S ® modem is and AMR communication equipment with 4G LTE – with optional 3G / 2G „fallback"
  – or LTE Cat.M / Cat.NB communication capabilities for remote reading of a connected electricity meter .
- The modem was specially developed for Honeywell® / Elster® AS3000, AS3500 and AS220, AS230, AS300,

AS1440 electricity meters.

- Cellular module: according to the chosen internet module type
- SIM-card holder (replaceable push-insert SIM, 2FF type)
- External antenna interface: SMA-M (50 Ohm) – internal & external connectivity also possible
- Serial connection accomplishment with internal data interface, Honeywell® / Elster® compatible connectivity to the meter (connector outfit)

CURRENT, CONSUMPTION

- The modems are powered internally with 230V from the meter's integrated connectors.
- Power supply: 100 – 230 VAC / ±15% at 50-60Hz ±5% Hz, wired connection from the electric meter – through power wire connector (AC)
- Power consumption: 2.9W / Rated current: stand-by current 24mA @ 100V, 12mA @ 230V, average current 30mA @ 100V, 15mA @ 230V
- Surge protection from 4kV up to 12kV (IEC 60060-1:2010), 1 min

DESIGN

- Plastic enclosure / cover, which perfectly fits to the meter enclosure (easy installation)
- Class II equipment, IP21 (PCB), IP53 immunity protection
- Temperature limits: Operational between -25°C and +70°C / Storage temperature: between -40°C and+80°C, at 0 – 95% rel. humidity.

TECHNICAL DESIGN AND CONSTRUCTION

- Dimensions (W x L x H) – PCB: 124 x 55 x 35 mm (without expansion board), 124 x 55 x 45mm (with expansion board), Case: depending on the meter type / Weight: 50-90gr (according to the chosen expansion board option)
- The modem can be connected to the meter by sliding into the meters' communication module slot and can be sealed. It has a housing (assured by the electricity meter). The modem terminal case can be fixed with sealable screws into the meter under its coverage at top of the meter case.

MAIN FEATURES

- Design meets with the manufacturer standard
- Sealed and separated from meter
- The modem can be assembled into the meter enclosure and fastened securely
- Power supply from the metrology (AC power)
- Supports the meter load management & disconnector functions
- Surge protection from 4kV up to 12kV
- „Push" and „Pull" operation modes are supported
- Optional P1 interface (RJ12 connector) with DSMR / DLMS protocol
- Data encryption
- Scheduled data sending or triggered by an alarm

- Remote switch of the meter operation mode
- Can be operated from private network with NAT also, modem connects to the HES (Head End System)
- Secure firmware upgrade
- Outage Management (monitoring network outages with Last GASP SMS notification)
- RTC module with remote synchronisation, for Last GASP SMS notification
- Remote control tasks (modifying configuration)
- Security features: password protected access, time management and calendar (with remote server and local RTC module)
- Configuration with the WM-E Term® software

1. Mains connector
2. Push button
3. Internal data connector (to the meter)
4. SIM card holder (push-insert. mini SW. 2FF type)
5. Connector (for factory purposes only)
6. SMA antenna connector
7. U.FL antenna connector
8. Telit LTE module
9. Recharegeable backup battery
10. Power supply unit
11. 6pcs Status LEDs (other side)
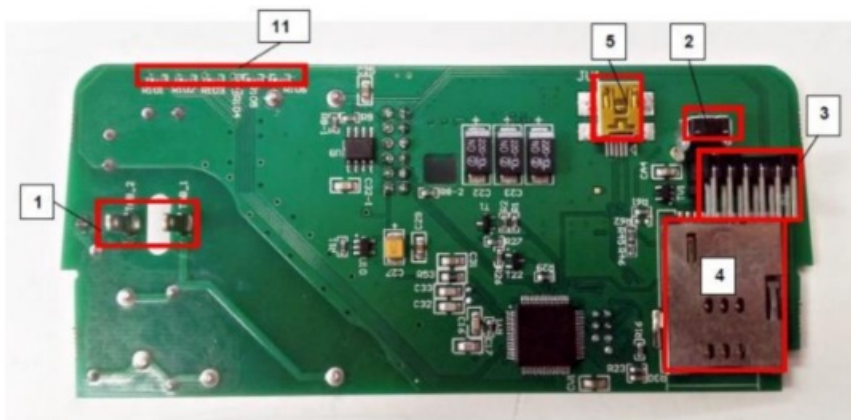
OPERATION

- AMR communication equipment with wireless network data transmitting capabilities
- Data can be remotely readout (parameters, load profile, register values, identifiers, events, parameter changes, consumption amount
- Transparent data transmission with TCP/IP Stack network protocol to the HES
- Autonomous operation without a host system. Continuous, always online operation which assures high availability (HA), high accuracy and stability
- Supports the bidirectional communication among the Measurement Point and the Control Center, dual-dual mode and secure modes: wireless network data sending (default), GPRS backup
- Independently controllable via the serial interfaces
- Protocol independent, supports and works with DLMS and EN62056-21 mode C
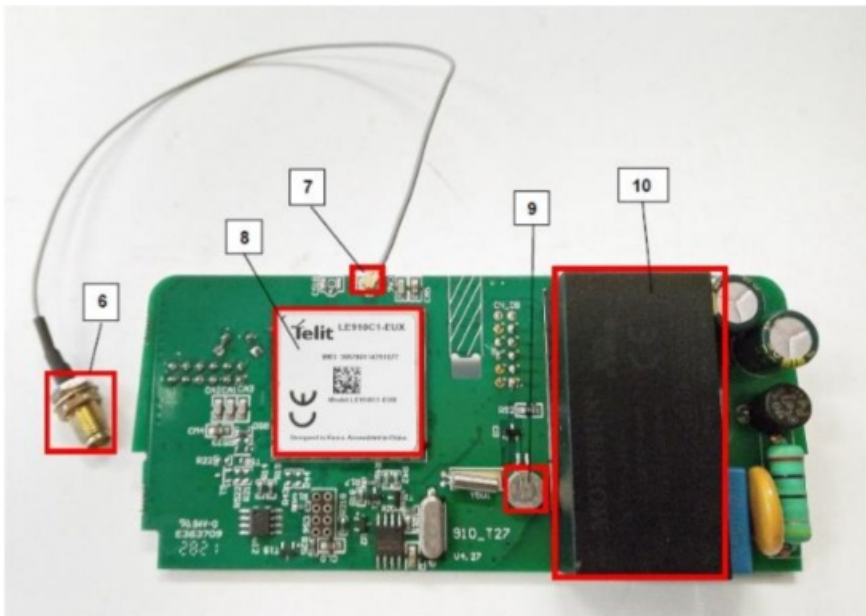
CERTIFICATIONS

CE The device compliance with the CE certification directives, related international.
This product assigned with CE symbol according to the European regulations.

This symbol on the product or packaging means that according to local laws and regulations this product should be not be disposed of in the household waste but sent for recycling.

SUPPORT

Download the user manual of the modem from the product website. Read the manual and configure the device according to the information and requirements: **https://m2mserver.com/en/product/wm-e3s/**

Documents / Resources

 m2mserver WM-E3S Modem for Electricity Meters [pdf] User Guide
WM-E3S MBUS, WM-E3S Modem for Electricity Meters, WM-E3S, Modem for Electricity Meters, Electricity Meters, Meters

References

- **User Manual**