reev

Installation Guide: Hardware components for reev

(Version 04/2025)

This guide applies to preconfigured charging stations that connect via LTE. It is intended for use when dynamic load management with the reev EMS is desired.

1. Safety instructions

- The steps described in this installation guide should only be carried out by a qualified electrician who can assess and execute each step safely based on their technical training and knowledge of the relevant standards.
- To ensure the correct functionality of the reev energy management system (EMS), all components must be installed according to the steps outlined. The installation details must be submitted using our installation protocol, and all charging stations must be commissioned to reev through our Installer app. If the steps specified in this installation guide are not followed properly or are documented incorrectly, this may lead to malfunctions during operation. This could result in an overload of the mains connection, damage to the installed devices, electric shocks, or fires.
- reev EMS will be activated once all relevant information is provided to reev & the reev Platform is set up for this location.
- Please pay attention to the following warning:

Danger:
sections marked with this symbol indicate electrical voltage which can be a risk to life and limb.

- reev GmbH is not liable for any damage resulting from improper installation or for damage caused by inadequate or incorrect documentation.

2. Components required for dynamic load management

Table 1 shows the components needed for installation. If any parts of the delivery are damaged, please contact reev GmbH or your authorised dealer.

Table 1

Item	Quantity
TQ EM420 electricity meter	1
Teltonika Router RUT241 (incl. Modbus TCP/MQTT Gateway)	1
I/O adapter (for grid control according to Article 14a EnWG)	1
SIM card	1

Note: reev EMS supports various energy meters. A complete list can be found here.

Table 2 shows additional components required for installation, which do not affect the functionality of the reev EMS

Table 2

Item	Quantity
Current transformerr (5A secondary current)	3
3-pin B16 circuit breaker	1
Network patch cable (RJ45)	2

3. Preparing for installation

The previously listed components are not protected against water and dust. Depending on the installation location, we recommend to install them within an enclosure that meets at least IP54 protection class. To establish a connection via LTE, it is essential that the Teltonika router is positioned in a location with sufficient signal strength. Depending on the situation at the installation site, this may require positioning the Teltonika router outside the enclosure.

4. Charging infrastructure

The charging stations must be installed according to the official installation instructions provided by the respective manufacturers. To avoid phase imbalance, the reev EMS requires information on the phase rotation of the installed charging stations. This information must be documented via reev's Installer app, which can be accessed via the QR code in the bottom right corner of this document.

5. Data connection of the charging stations

For preconfigured charging stations with an internet connection via LTE, there is no need for a connection between the charging stations, the Teltonika Router, and the switch.

Note: If a LAN connection is required for the Teltonika router, the RJ45 WAN port of the Teltonika Router must be connected to the local network. A list of the specific ports that the router can use locally for a successful LAN connection can be found in the Teltonika documentation, accessible via the QR code located at the bottom right of this page. Alternatively, please contact our support team at support@reev.com.

6. Installing the electricity meter

The correct installation is schematically shown on page 2.

Install the supplied TQ EM420 energy meter and appropriately sized current transformers (with at least accuracy class 1 and 5A secondary current – see wiring diagram on page two 2) according to the manufacturer's installation instructions. Please ensure that the transformer ratio is correctly set in the energy meter's configuration interface. To protect the energy meter, please use the 3-pole circuit breaker. Then connect one of the two LAN ports of the TQ EM42 energy meter to the LAN port of the Teltonika router to provide it with Ethernet connectivity.

7. Documentation of the installation

Use our installation protocol to document energy meter and router details. Providing accurate information ensures the maximum system performance. Once the data is submitted and reev's Dashboard/Platform is set up, the EMS will be activated for your electrical infrastructure.

Use our installer App to document all charging infrastructure and electrical components details. Providing accurate information ensures the maximum system performance. Once the data is submitted and reev's Dashboard/Platform is set up, the EMS will be activated for your electrical infrastructure.

8. Appendix

Component data sheets:
For wiring diagram see page 2

TQ EM420 electricity meter

Teltonika RUT241 router

Installation protocol

Click here to open installer app:
https://config.reev.com

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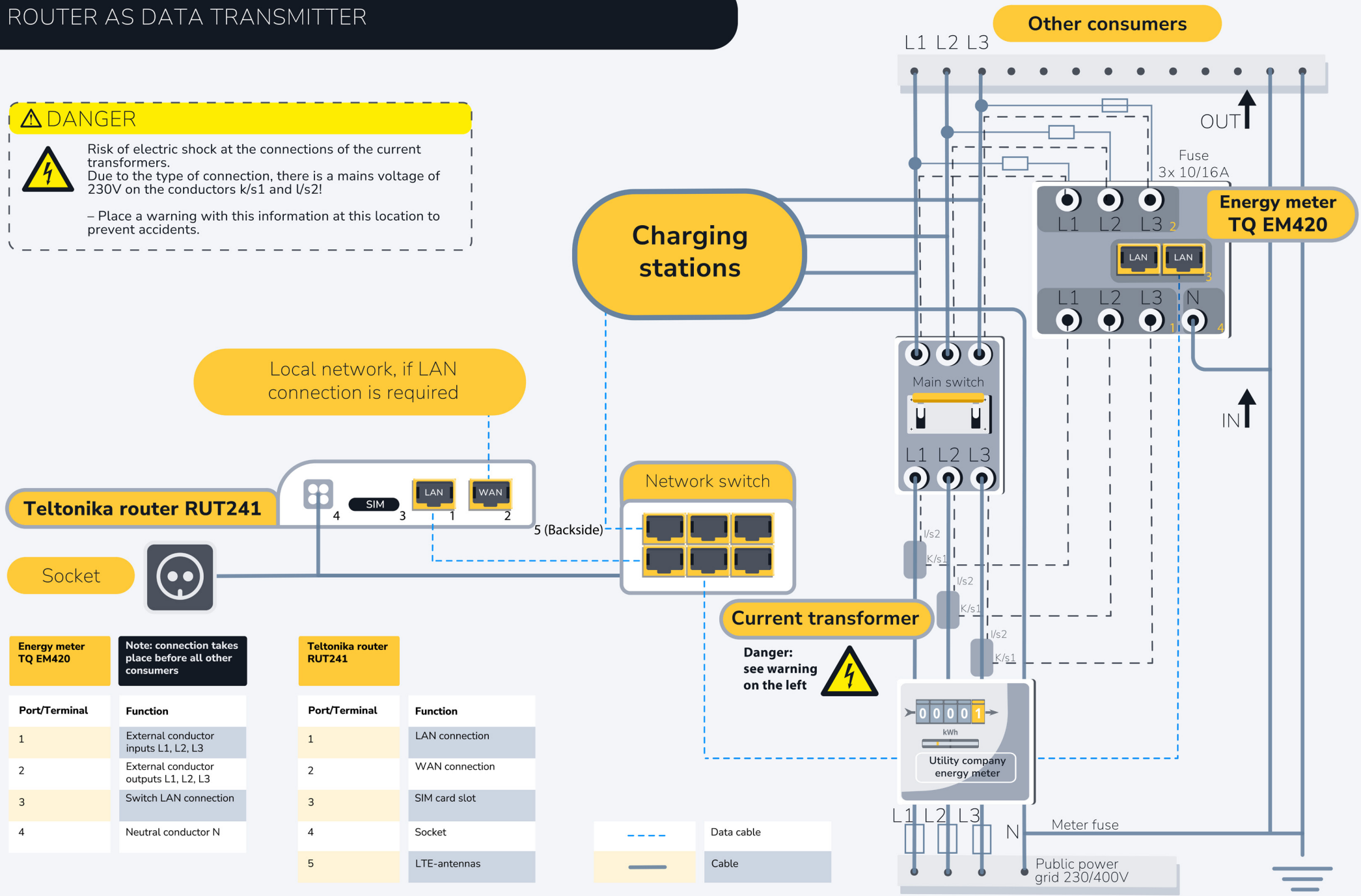
ROUTER AS DATA TRANSMITTER

⚠ DANGER

Risk of electric shock at the connections of the current transformers.
Due to the type of connection, there is a mains voltage of 230V on the conductors k/s1 and l/s2!

– Place a warning with this information at this location to prevent accidents.



Energy meter TQ EM420	Note: connection takes place before all other consumers
Port/Terminal	**Function**
1	External conductor inputs L1, L2, L3
2	External conductor outputs L1, L2, L3
3	Switch LAN connection
4	Neutral conductor N

Teltonika router RUT241	
Port/Terminal	**Function**
1	LAN connection
2	WAN connection
3	SIM card slot
4	Socket
5	LTE-antennas

	Data cable
	Cable