REDZ
SMART COMMUNICATION

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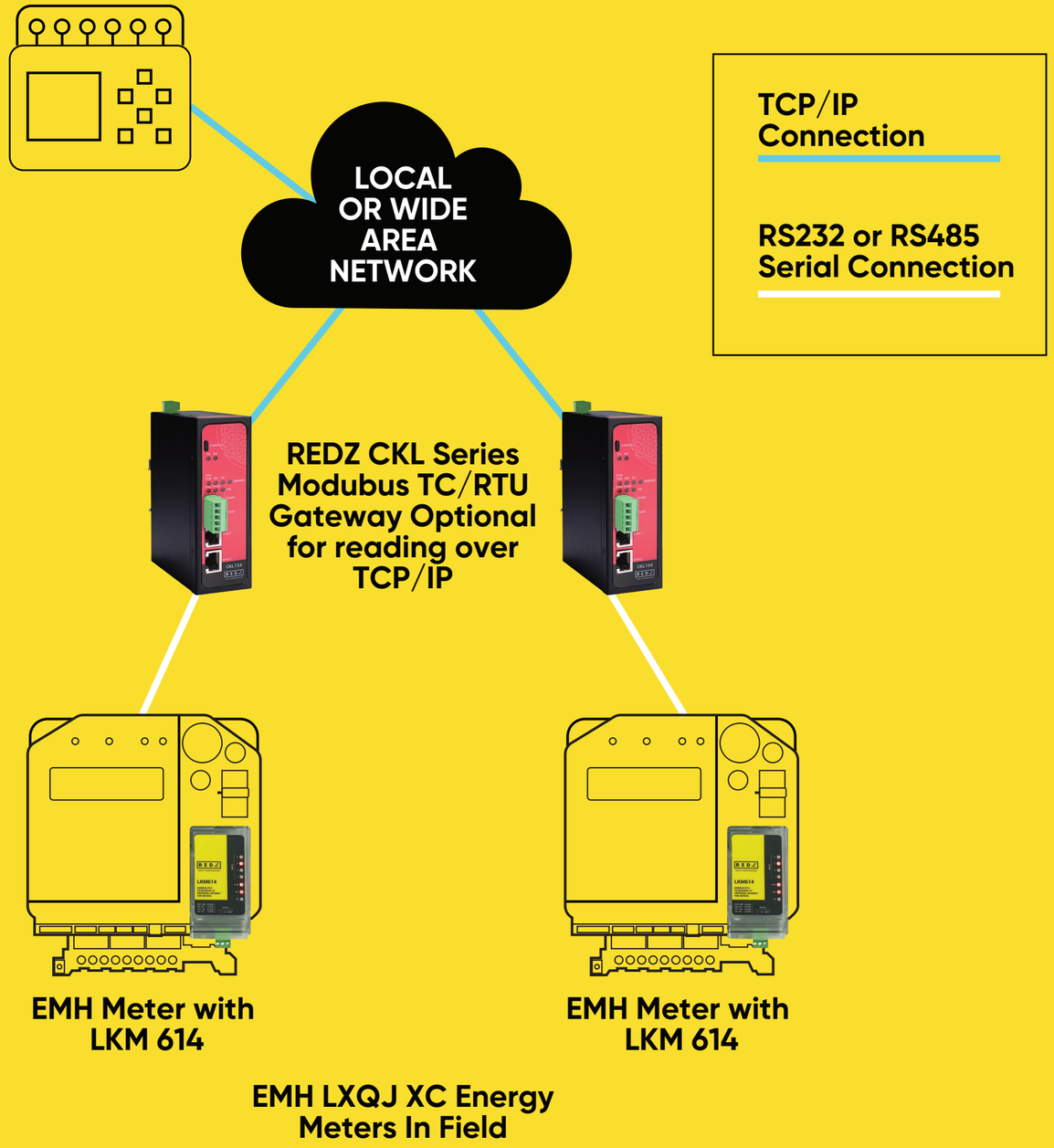
LKM614 MODBUS RTU to IEC62056-21 Protocol Meter Gateway for EMH LZQJ-XC Meters

With RS485 2 Wire Connection on Modem Side

Main Features

- Especially plug and play designed for EMH LXQJ-XC meters
- Direct replacement for Variomod XC modules for EMH meters
- Auto reads EMH meters and maps values in predefined MODBUS register table
- Configurable Modbus address via Modbus Commands
- Configurable Reading Period on IEC6056-21 side via Modbus Commands
- Configurable Reading Table Number on IEC6056-21 side via Modbus Commands
- Gets power directly from meter
- Serial interface directly connected to meter (with 15kV ESD protection)
- Wide operating temperature range from -40 to 85 °C
- Customization of reading process and register tables based on client request
- Firmware upgradable over serial line



Description

LKM Series Modbus RTU to IEC62056-21 Protocol Gateways are designed to be used with electricity meters that communicates in IEC62056-21 standard. The meters that support IEC62056-21 standard has read out tables that has several data such as import energy, export energy, phase voltages and currents. LKM Series Modbus RTU to IEC62056-21 Protocol Gateway automatically reads that values and maps to Modbus registers. Field devices or software systems can easily read data over Modbus RTU protocol so that energy meter reading can easily be integrated to field automation or monitoring systems without need of IEC6056-21 protocol implementation.

LKM614 is especially designed for EMH LZQJ-XC meters and it is direct replacement for Variomod XC modules.

Technical Specifications

MODBUS RTU AND IEC62056-21 CHARACTERISTICS

Modbus RTU Address	Default value is 0x01 Changeable via Modbus Command
Reading Period on IEC62056-21 Protocol Meter Side	Default value is 10 (in seconds) Changeable via Modbus Command
IEC62056-21 Protocol Meter Read Out Table	Default value is 0x30 = ‘0’in ASCII Changeable via Modbus Command
IEC62056-21 Protocol Meter Reading Method	2 Methods available 1. Method 1: Read full table and check BCC and register data 2. Method 2: Read each line of table and register data during reading Default Method is 2 Changeable via Modbus Command
IEC62056-21 Protocol Meter Read Out Data	Date Time Import and Export Active Energy Import and Export Reactive Energy Reactive Energy in 4 Quadrants Import and Export Maximum Demands Active Power Phase Currents for each phase Phase Voltages for each phase Frequency Error Code Extendable/Changeable via firmware change
Monitoring Parameters	IEC Read counter Time counter (in seconds) FW version Query able via Modbus Commands

Interface And Indicators

RS485 Connector

Terminal Connector for 2 wire RS485 connection and GND both on Modem Side

Operation Mode Selection Switch

Selects the operating mode of the device.

Mode Selection	Modem Side Communication Parameters	Meter Side Communication Parameters
Mode 1 (LED 1 ON)	19200 8N1	Starts with 300 baud rate and changes during transmission to target baud rate based on IEC62056-21 protocol
Mode 2 (LED 2 ON)	9600 8N1	Starts with 300 baud rate and changes during transmission to target baud rate based on IEC62056-21 protocol
Mode 3 (LED 3 ON)	19200 8N1	19200 7E1 Fixed
Mode 4 (LED 4 ON)	9600 8N1	9600 7E1 Fixed

Indicators

LED Indicators

Following LEDs available to show system status.
1 – Mode 1 LED
2 – Mode 2 LED
3 – Mode 3 LED
4 – Mode 4 LED
5 – System LED: Blinks every second
6 – Tx LED: Sending data from Modem Side to Meter Side
7 – Rx LED: Receiving data from Meter Side to Modem Side

Firmware Upgrade

Upgrade over Serial Line	Available from Modem side Serial Line RS485 on LKM144 Device must be on operating mode 19200 8N1 for firmware upgrade process.

Power

Power Input	Gets power directly from Meter

Physical And Environmental Characteristics

Enclosure	ABS, IP51
Dimensions	105 x 45 x 27 (h x w x d) mm
Weight	~~60g
Storage Temperature	-55 to 125 °C
Operating Temperature	-40 to 85 °C
Operating Humidity	5% to 95%Non-condensing

Ordering Information

LKM614
Modbus RTU to IEC 62056-21 Protocol
Meter gateway specially designed for
EMH LZQJ-XC Meter with RS485 on Modem Side

Product Comparison

Model	3.3-28V DC Power input	Operating Mode Selections	Modem Side RS232 DB9 Female Connector	Modem Side RS485 Terminal Connector	Firmware Upgrade Over Serial Line	Plug into Meter and Play, No external Power Needed
LKM141	●	●	●		●	
LKM144	●	●		●	●	
LKM614		●		●		●