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SMART COMMUNICATION

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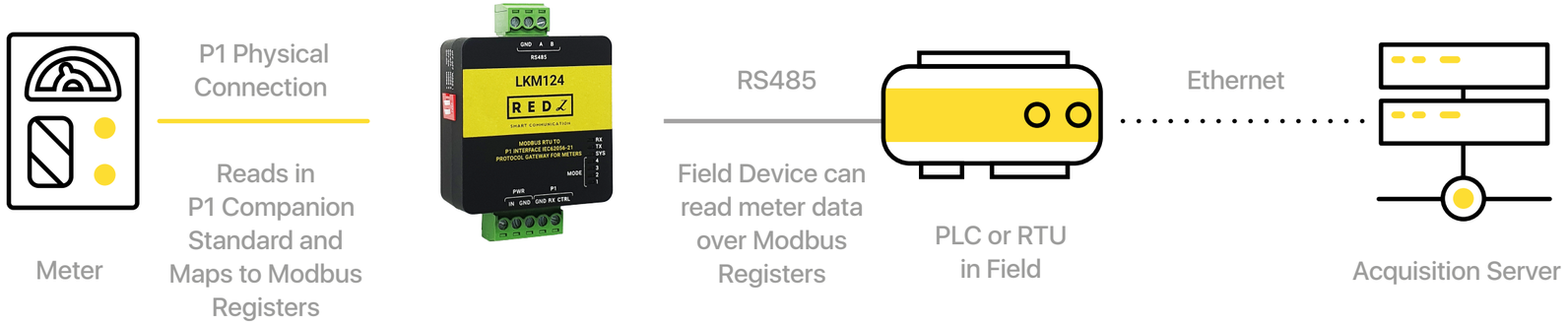
LKM124 MODBUS RTU to P1 Companion Standard Meter Gateway

With RS485 2 Wire Connection on Modem Side
and P1 Companion Standard Interface on Meter Side

Main Features

- Auto reads Electricity meters that communicates in P1 Companion Standard and maps in predefined MODBUS register table
- Configurable Modbus address via Modbus Commands
- Configurable Reading Period on P1 Companion Standard side via Modbus Commands
- Auto requests data from meter
- Wide range power input: 5V – 24V DC
- Wide operating temperature range from -40 to 85 °C
- Very Small form factor, only 2.1 x 4.2 x 4.4cm
- Customization of reading process and register tables based on client request
- Firmware upgradable over serial line



LKM Series Modbus RTU to P1 Companion Standard Protocol Gateway is designed to be used with electricity meters that communicates in P1 Companion Standard

The meters that supports P1 Companion Standard has read out table that has several data such as import energy, export energy, phase voltages and currents. LKM Series Modbus RTU to P1 Companion Standard 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 P1 Companion Standard protocol implementation.

Technical Details

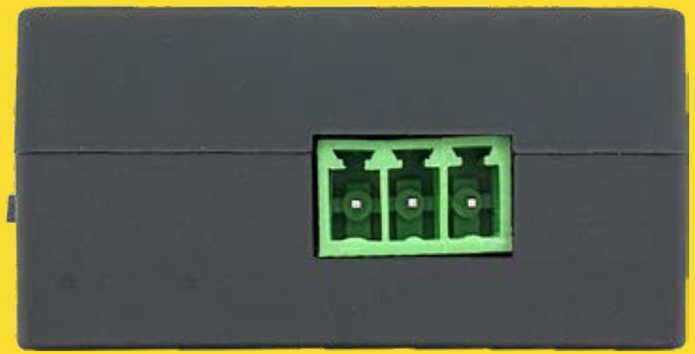
Interface and Indicators

P1 Connector	Terminal Connector for 3 wire P1 connection (Data, Data Request, GND) on Meter Side RJ12 cable connection to meter must be prepared for meter connection based on desired length. (Check manual for cable pins.)
RS485 Connector	Terminal Connector for 2 wire RS485 connection and GND 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)	9600 8N1	9600 8N1
Mode 2 (LED 2 ON)	19200 8N1	19200 8N1
Mode 3 (LED 3 ON)	57600 8N1	57600 8N1
Mode 4 (LED 4 ON)	115200 8N1	115200 8N1

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



Modbus RTU and P1 Companion Standard Characteristics

Modbus RTU Address	Default value is 0x01 Changeable via Modbus Command
Reading Period on P1 Protocol Meter Side	Default value is 10 (in seconds) Changeable via Modbus Command
P1 Protocol Meter Reading Method	Reads each line of table and registers data during reading
P1 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

Firmware Upgrade

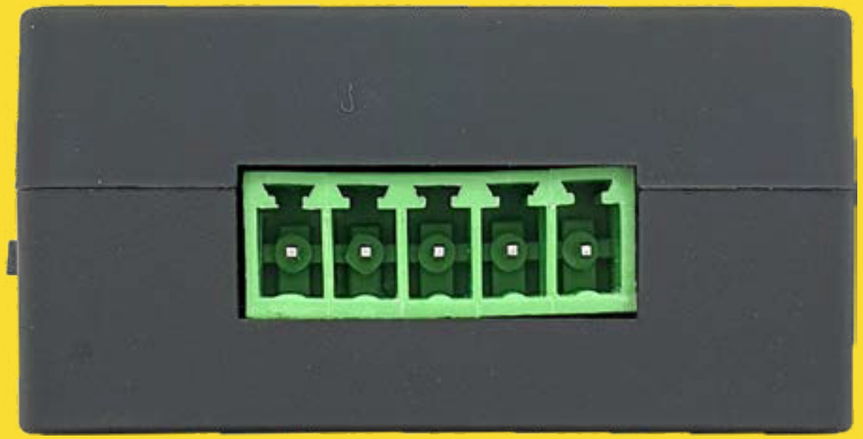
Upgrade over Serial Line	**Available from Modem side Serial Line** RS485 on LKM124 Device must be on operating mode 19200 8N1 for firmware upgrade process.

Power

Power Input	5V – 24V DC
Reverse Polarity Protection	Available
Thermal Shutdown Protection	Available

Physical & Environmental Characteristics

Enclosure	ABS, IP40
Dimensions	21 × 42 × 44 (h × w × d) mm
Weight	~ 60 g
Storage Temperature	– 55 to 125 °C
Operating Temperature	– 40 to 85 °C
Operating Humidity	5% to 95% Non-condensing



Ordering Information

LKM124
Modem side RS485, Meter side P1 Interface, Modbus RTU to P1 Companion Standard Meter gateway

Product Selection

Model	5-24V DC Power Input	Plug into Meter and Play, No external Power Needed	Operating Mode Selections	Modem Side RS232 Connection	Modem Side RS485 Connection	Meter Side RS232 Connection	Meter Side RS485 Connection	Meter Side P1 Companion Standard	Firmware Upgrade Over Serial Line
LKM111	●		●	●		●			●
LKM114	●		●		●	●			●
LKM124	●		●		●			●	●
LKM141	●		●	●			●		●
LKM144	●		●		●		●		●
LKM614		●	●						●