

RS485 Modbus communication module

Code: EK-MC1-MD

CE

Datasheet STEKMC1MD_EN

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RS485 Modbus communication module to be used with ekinex single phase and three phase energy counter through optical port.



Description

The RS485 Modbus communication module allows to collect and transmit to a remote station measurements data of the connected meter. These data are transmitted on a RS485 line, using Modbus RTU or ASCII protocols. Modbus is the most popular communication protocol designed to allow industrial equipment to communicate. The RS485 module is provided with a SET DEFAULT key to reset all communication parameters to factory default values. This function is very useful, i.e. in case of Modbus logical address forgotten. Two LEDs on the RS485 module provide information about power supply status and communication status.

Main characteristics

- Compact dimensions (1 DIN module)
- Easy to use: no physical connection thanks to optical port to be combined with the energy counter
- Possibility to switch the use of the communication module according to the required application

Technical data

Power supply

- Rated voltage: 230 Vac ±20% / 50 Hz
- Max repetitive voltage: 300 VAC
- Max non repetitive voltage peak: 320 Vac (20 ms)
- Consumption: max 5 VA
- Fuse: T type, 100 mA (to be mounted externally)

RS485 communication

- Protocol: Modbus RTU (8N1) and ASCII (7E2)
- Port: RS485
- Communication speed: 300÷115200 bps

- · Termination resistor integrated in the module
- Serial communication
- Type: optical port
- Communication speed: 38400 bps

Diameter wire for connection terminals

Terminals: 0,14÷2,5 mm²

Environmental conditions

- Operating temperature: between -15°C and +60°C
- Storage temperature: between -25°C and +75°C
- Humidity: 80% max without condensation
- Protection degree: IP20

Data communication

Through the optical port, the device can receive data by an ekinex single phase or three phase energy counter (to be ordered separately).

Mounting

The device has degree of protection IP20, and is therefore suitable for use in dry interior rooms. The housing is made for rail mounting according to EN 60715 in boards or cabinets for electrical distribution. The installation is in horizontal position, the correct position is when the RS485 connection terminals are located at the top and the 230 Vac power supply terminals are located at the bottom.

For the installation of the device on the rail proceed as follows:

- with the aid of a tool bring the locking device in the fully lowered position (1);
- place the upper edge of the rear inner profile on the upper edge of the rail (2);
- rotate the device towards the rail (3);
- push the locking device upward until it stops (4).

Before removing the device, be sure tall the terminals have been disconnected. Use a screwdriver to slide down the locking device and remove the device from the rail.





Note. When mounting the device in boards and cabinets it shall be provided the necessary ventilation so that the temperature can be kept within the operating range of the device.

Switching, display and connection elements



1) Terminals to be jumpered for termination resistor (RT) enabling

- 2) RS485 connection terminals
- 3) 230 Vac power supply terminals4) Communication LED (ACT/ERR)
- 5) Power supply LED (POWER) 6) SET pushbutton (DEFAULT)
- 7) IR (infrared) port





Warning! The electrical connection of the device can be carried out only by qualified personnel. The incorrect installation may result in electric shock or fire. Before making the electrical connections, make sure the power supply has been turned off.

Dimensions [mm]





Disposal



At the end of its useful life the product described in this datasheet is classified as waste from electronic equipment in accordance with the European Directive 2002/96/EC (WEEE), and cannot be disposed together with the municipal undifferentiated solid waste.



Warning! Incorrect disposal of this product may cause serious damage to the environment and human health. Please be informed about the correct disposal procedures for waste collecting and processing provided by local authorities.

Standards compliance

- EN61000-6-2 Immunity for industrial environments: EN61000-4-2 Electrostatic discharge, EN61000-4-3 RF radiated disturbance, EN61000-4-4 Fast Transient (BURST), EN61000-4-5 Overvoltage (Surge), EN61000-4-6 RF conducted disturbance, EN61000-4-11 Voltage dips and short interruptions, EN55011 Class A: radiated emissions, conducted emissions
- Safety: EN60950

Document

This datasheet refers to the release A1.0 of the ekinex® device EK-MC1-MD, and is available for download at www.ekinex.com as a PDF (Portable Data Format) file.

Warnings

- · Installation, electrical connection, configuration and commissioning of the device can only be carried out by qualified personnel in compliance with the applicable technical standards and laws of the respective countries
- Opening the housing of the device causes the immediate end of the warranty period
- In case of tampering, the compliance with the essential requirements of the applicable directives, for which the device has been certified, is no longer guaranteed
- ekinex® defective devices must be returned to the manufacturer at the following address: EKINEX S.p.A. Via Novara 37, I-28010 Vaprio d'Agogna (NO) Italy

Other information

- · This datasheet is aimed at installers, system integrators and planners
- For further information on the product, please contact the ekinex® technical support at the e-mail address: support@ekinex.com or visit the website www.ekinex. com
- Each ekinex® device has a unique serial number on the label. The serial number can be used by installers

or system integrators for documentation purposes and has to be added in each communication addressed to the EKINEX technical support in case of malfunctioning of the device

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