RS485toMBus-5M M-Bus to RS485 interface communication converter

> **Connection of up to five M-Bus slave devices**
> **Wide operating ranges of DC and AC power**
> **Safeguards and filters insuring high durability of the entire device against surges and failures**
> **Communication speeds up to 9600bps max.**

Overview

RS485toMBus-5M communication converter is a durable converter of the M-Bus industrial communication bus to the common RS485 serial interface. It is intended for connection of measuring devices with M-Bus interface to control/computer systems for data collection and processing. These converters convert signals from one communication interface to the other directly without any need for setting up the communication parameters or modifications to the transferred messages.

The M-Bus port has a connection capacity for one to five M-Bus slave devices. The interface has the highest grade of surge protection and is resilient against failures on the M-Bus bus.

The converter can operate on a wide range of DC and AC power voltages and has a protection against overvoltage.

Operational statuses are indicated by four LEDs which makes it easy to determine the actual state of the converter or possible causes of failure. The LEDs indicate the state of the power supply voltage, M-Bus communication and fault conditions of the M-Bus line.

Technical parameters

RS485 communication interface	
Communication signals	A, B and GND
Protection	protection against 15kV ESD
Galvanic separation	1kV from the M-Bus line
M-Bus Master communication interface	
Number of devices that can be connected	1 to 5 SLAVE devices, idle current max. 7.5mA
Baud rate	300-9600 bps
Protection	- overvoltage protection TVS 600W - electronic protection against overloads and short circuit on line note: converter can withstand a sustained short circuit on the line
Galvanic separation	1kV from power supply and from the RS485 line
Power supply - recommended range	
DC power	7.5V to 40V
AC power	7.5V to 28V
Protection	overvoltage protection TVS 1500W
Power consumption	0.25W to 1.1W depends on M-Bus line load and communication. Max. consumption during M-Bus line short 1.5W.
Temperature	
Operating range	-20°C to 70°C

Mechanical parameters of the converter

The converter is built in a standard plastic box designed for mounting on a 35 mm DIN rail. The converter has a very small width of just 17.5mm. Weight of the converter is 52g.

Top view

Side view
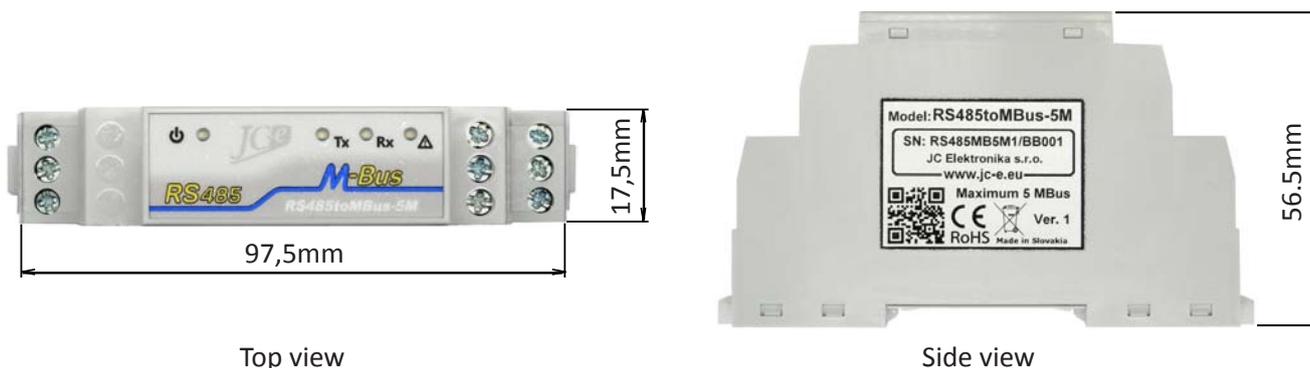
EMC compatibility

EMC compatibility of the M-Bus converter has been tested according to the following standards in an accredited laboratory.

EMC emission tests		
Standard	**Test**	**Level**
EN 55022	Power line - CONDUCTED EMISSIONS 10/150 kHz - 30 MHz	Class B
EN 55022	RADIATED EMISSIONS (Electric Field) 30 MHz - 1000 MHz	Class B

EMC immunity tests		
Standard	**Test**	**Level**
EN 61000-4-2	ELECTROSTATIC DISCHARGE (ESD) - Contact discharge	± 4kV
EN 61000-4-2	ELECTROSTATIC DISCHARGE (ESD) - Air discharge	± 8kV
EN 61000-4-4	ELECTRICAL FAST TRANSIENT/BURST - Power line	± 4 kV
EN 61000-4-4	ELECTRICAL FAST TRANSIENT/BURST - M-Bus line	± 4 kV
EN 61000-4-5	SURGE IMMUNITY - Power line. Common/differential mode.	± 1kV / ± 0,5kV
EN 61000-4-5	SURGE IMMUNITY - M-Bus line. Cable shielding.	± 4 kV
EN 61000-4-5	SURGE IMMUNITY - M-Bus line. Common/differential mode.*	± 2kV / ± 1kV
EN 61000-4-6	CONDUCTED DISTURBANCES, INDUCED BY RADIO-FREQUENCY FIELDS 0,15MHz - 80 MHZ. Power line and M-Bus line.	3 V

* Test carried out at the request of the manufacturer. The M-Bus port has an increased durability against over voltage. Carrying out this type of test is not required with the use of shield cable. Reaching a high level of protection on the M-Bus port also guarantees a very high reliability of the converter. The M-Bus interface often poses the greatest risk of over voltage and the ensuing destruction of the converter.