Safety

WARNING
All electrical connections must be performed by a fully qualified electrician.

NOTICE
Switch on the power supply only after wiring of the device has been completed.

1. Overview

IC4-M is a USB-RS485 bidirectional adapter. It enables the PC to be connected to the RS485 industrial bus via a USB port. It provides reliable galvanic isolation between the interfaces. The device is powered directly through the USB port.

2. Driver installation

When you first connect the device to the PC, the driver is installed automatically if the Internet connection is available.

If the device should be connected to a PC without internet connection, the driver must be installed on the PC before the device connection. The latest version of the driver is available for download at *www.akytec.de*.

Execute the installation file and follow the instructions.

The driver runs under:

- Windows XP/2K/Server 2003/Vista/7/8/8.1/10
- Linux 2.6.x/3.x.x
- Mac OSX

3. Specifications

Table 1 General specifications

Parameter	Value
Power supply voltage range	4.75 – 5.25 V DC (over USB)
Power consumption, max.	2 W
Galvanic isolation	1780 V
USB interface	
USB specification	USB 2.0
USB connector type	Micro-USB
USB data lines	D+, D-
Cable length, max.	2 m
RS485 interface	
RS485 specification	EIA/TIA-485
Connector type	Pluggable terminal block
Baud rate	up to 115.2 kbit/s
Data lines	D+, D-
Number of devices in the network, max.	32
Cable length, max	1200 m
Dimensions	27 × 72,5 × 26 mm
Mounting	DIN rail (35 mm)
Weight	approx. 45 g

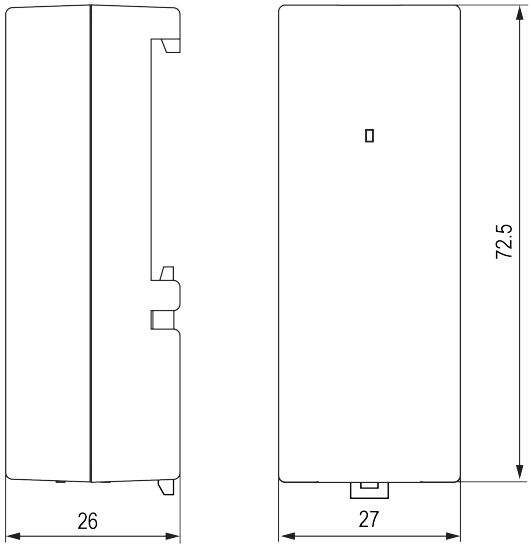


Fig. 1 – Dimensions

4. Environmental conditions

The device is designed for natural convection cooling that should be taken into account when choosing the installation site.

The following environment conditions must be observed:

- clean, dry and controlled environment, low dust level.
- closed non-hazardous areas, free of corrosive or flammable gases.

Table 2 Environmental conditions

Condition	Permissible range
Ambient temperature	-20…+75°C
Relative humidity	up to 80% (at +25°C, non-condensing)
Altitude	up to 1000 m above sea level
IP code	IP20
Protection class	III

5. Control elements

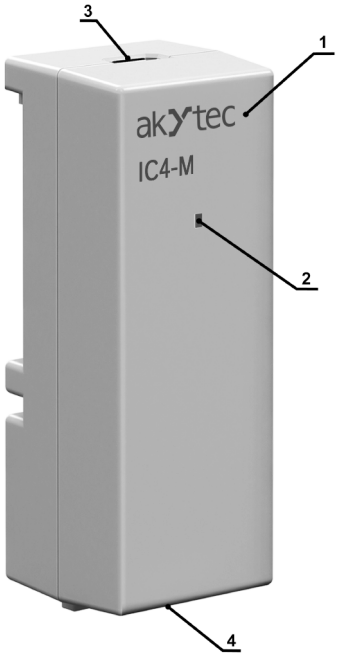


Fig. 2 – Control elements

1. Plastic housing (DIN rail 35 mm montage).
2. Status LED indicator (see *Table 3*).
3. Micro-USB connector.
4. RS485 interface pluggable connector (screw terminal block).

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Table 3 Status LED indicator

LED state	Description
ON	Power supply OK
OFF	No power supply

6. Installation and connection

The device is designed to be mounted on 35 mm DIN rail according to its overall dimensions (see *Fig 1*.).

The converter must be protected from dust, moisture, and foreign objects at the place of installation.

The device should be connected according to the wiring diagram shown in the *Fig. 3*:

- Connect the USB port of the converter to the USB port of the PC.
- Connect the RS485 terminals of the converter to the RS485 terminals of the Slave device, observing polarity.

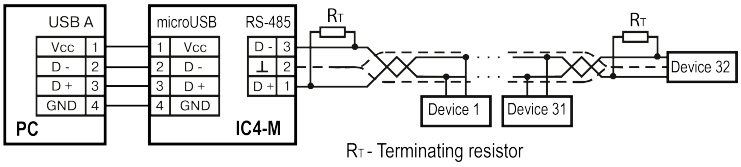


Fig. 3 – Wiring

A stranded copper wire twisted pair cable must be used for the connection to the RS485 network. The maximum conductor cross-section is 0.75 mm². Strip and terminate the cable wires before connection to the device terminals.

For better noise immunity:

- Use shielded cables.
- Run the low voltage interface cables and power cables separately.
- Route the cables away from powerful EMI sources.

7. Maintenance

The maintenance includes:

- cleaning of the housing and terminal blocks from dust, dirt and debris.
- checking the fastening of the device.
- checking the wiring (connecting leads, fastenings, mechanical damage).

The device should be cleaned with a damp cloth only. No abrasives or solvent-containing cleaners may be used. When carrying out maintenance the safety information must be observed.

8. Transportation and storage

Pack the device in such a way as to protect it reliably against impact for storage and transportation. The original packaging provides optimum protection.

If the device is not taken immediately after delivery into operation, it must be carefully stored at a protected location. The device should not be stored in an atmosphere with chemically active substances.

Transportation conditions:

- ambient temperature: −20… +75 °C.
- relative humidity: up to 95% (at +35 °C).

Storage conditions:

- ambient temperature: +5… +40 °C.
- relative humidity: up to 80% (at +25 °C).

9. Scope of delivery

IC4−M	–	1 pc.
Short Guide	–	1 pc.
Cable USB Type A - microUSB Type B	–	1 pc.
Pluggable screw terminal block to RS-485	–	1 pc.

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