



# **ISOLATED CONVERTER**

**MS USB-RS485 - 1**

**MS USB-RS485 - 2**



**USER MANUAL**

**PLOVDIV 2013**

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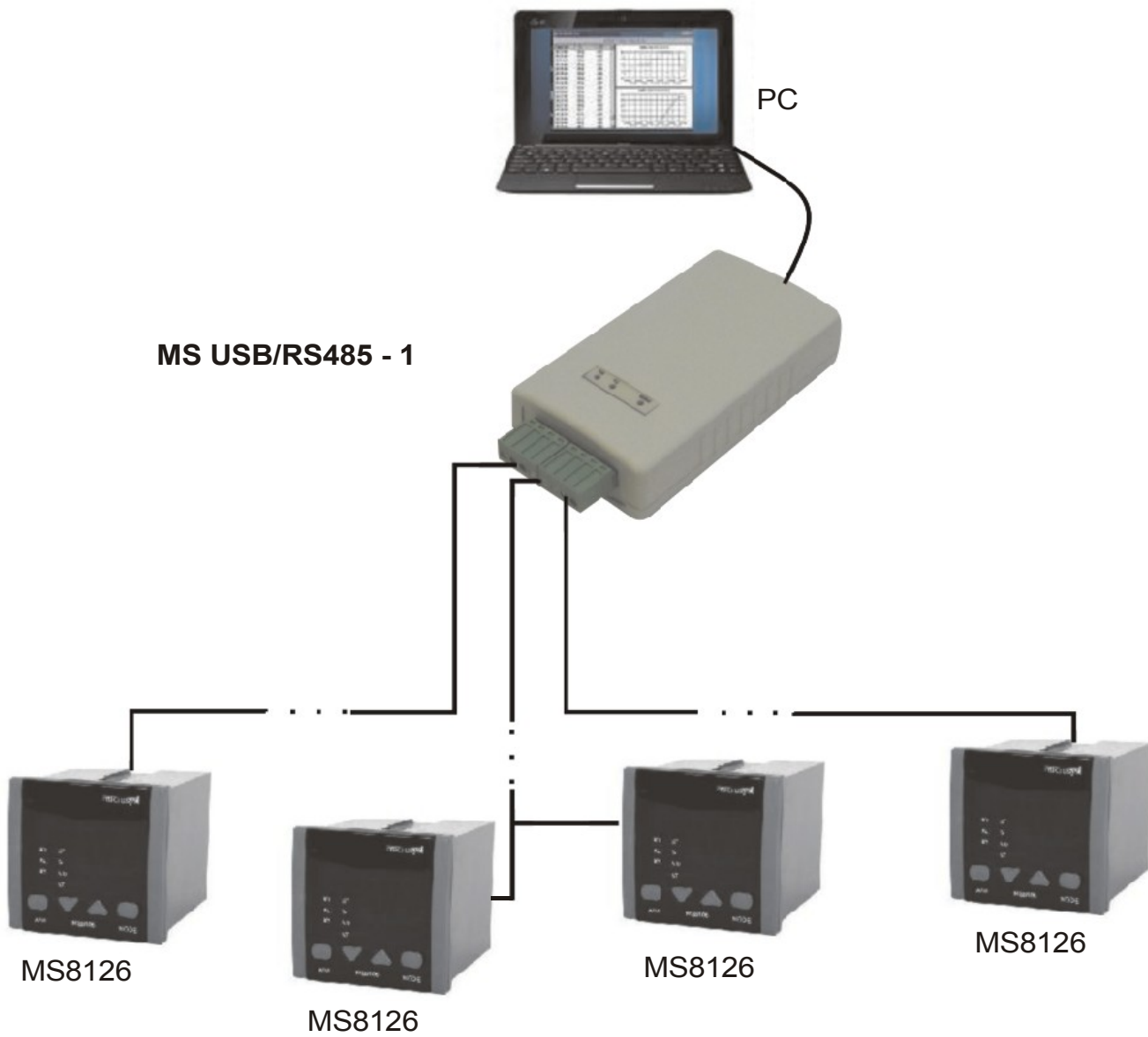
*Converters require drivers to be installed for the corresponding version of WINDOWS.*

## **II. VERSION SPECIFICS**

- MS USB-RS485 - 1 : branches out the network in up to 3 serial lines, united in a star type, when powered by the RS line.
- MS USB-RS485 - 2 : branches out the network in up to 2 serial lines, united in a star type, when powered by the RS line.
- The two converters are isolated galvanically.
- MS USB-RS485 - 2 : doesn't require an external supply for RS485.

## **III. DESIGNATION AND OPERATION**

The MS USB-RS485 converter is used to convert signals from an USB interface into a RS485 serial interface and vice versa. The serial interface of the RS485 is a hardware module for systems that uses a two-wire data transmission line in semi-duplex mode. Up to 32 devices (up to 256 on request) can be connected to the RS485 network by default.



## IV. TECHNICAL DATA

|  |  |
|--|--|
| <b>Interface RS485 serial lines</b>                    |  |
| MS USB-RS485 – 1                                       | Up to 3 serial lines, type star  |
| MS USB-RS485 – 2                                       | Up to 2 serial lines, type star  |
| Device number  | Max 32 (up to 256, by request) on a single line  |
| Format   | 8/7 data 1/2 stop odd/even//no parity  |
| <b>Interface USB</b>                                   |  |
| USB 2.0 B  | Connection to a PC   |
| <b>Galvanic isolation</b>                              |  |
| Between USB and RS485 interface                        | 1 kV   |
| <b>PC software</b>                                     |  |
| Applications   | After installing a driver, it is interpreted as a COM PORT from any serial communication program, SCADA software, MSDLNET3.02 archive system, MODBUS RTU / ASCII applications, and more. |
| <b>Operating system</b>                                |  |
| Compatibility  | Windows 8 /Windows 7/Vista x64 / XP x64 / Server 2003 x64 / Vista / XP / Server 2003 / 2000 / ME / 98 / CE.NET (от 4.2)<br>Linux, Mac OS X / OS 9 / OS 8                                 |
| <b>Indication</b>                                      |  |
| LED  | Rx, Tx, Power  |
| <b>Power supply</b>                                    |  |
| MS USB - RS485 – 1                                     | External : 9÷14VAC / 9÷18V DC  |
| MS USB - RS485 – 2                                     | Provided by a PC – galvanically isolated   |
| <b>Operating conditions</b>                            |  |
| Temperature and relative humidity without condensation | Operating conditions: -10 ÷ 65 °C / 20 ÷ 90 % rh<br>Storage conditions: -10 ÷ 70 °C / 20 ÷ 90 % rh   |
| <b>Dimensions</b>                                      |  |
| Overall dimensions (WxHxL)                             | 50 x 90x 25mm  |
| Weight   | max 50 g   |
| Protection class                                       | IP40   |

## VI. TERMINALS AND CONNECTION SCHEMATIC

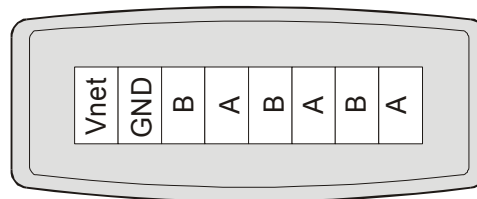


In some of the MICROSYST devices, the designation of the RS485 interface is: A corresponds to IO + and B corresponds to IO-.

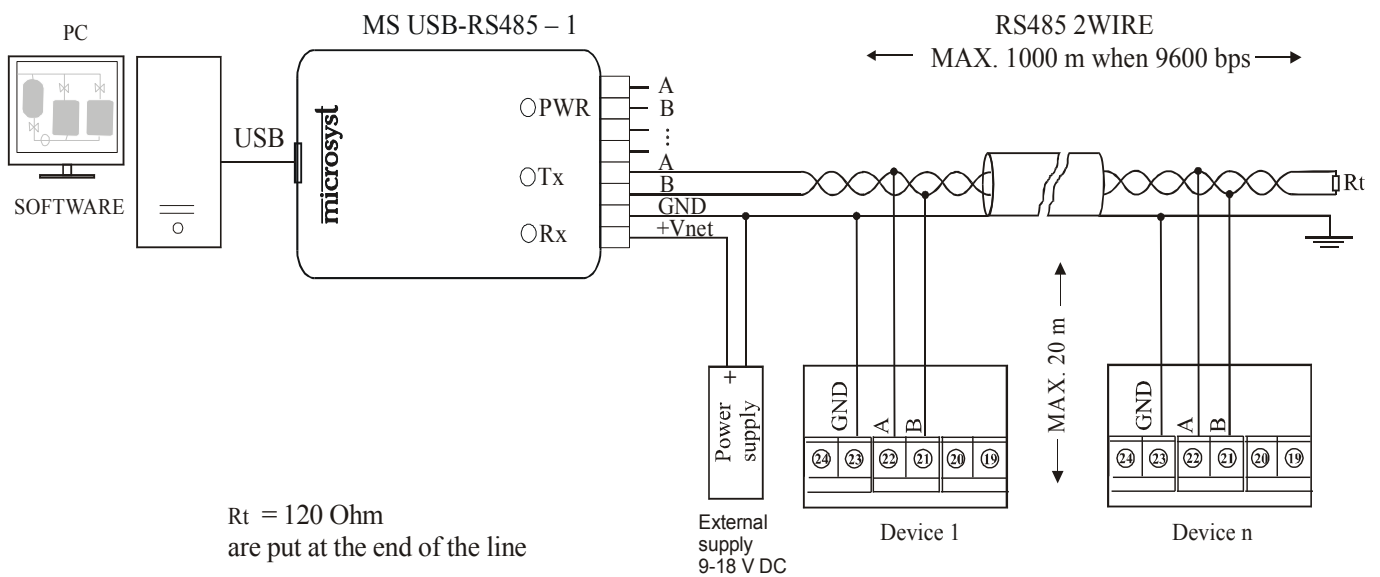
The connection of the convertor to the RS line is done via screw connection and dividing connectors, and to a computer via an USB 2.0B cable.

### 1. Terminals and connection schematic of MS USB-RS485 – 1

Terminals of MS USB-RS485 -1



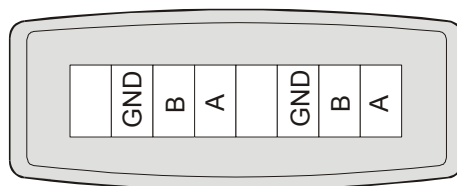
Connection schematic of MS USB-RS485 - 1



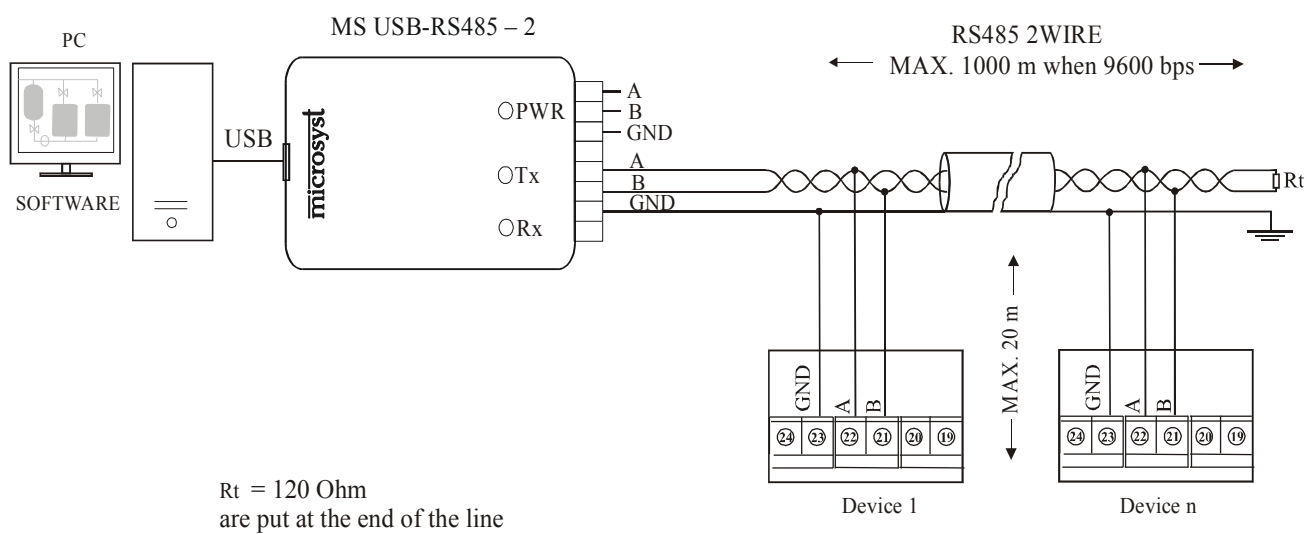
\* For the other two lines, the connection is analogous to the one shown above.

## 2. Terminals and connection schematic of MS USB-RS485 - 2

### Terminals of MS USB-RS485 - 2



### Connection schematic of MS USB-RS485 - 2



\* For the second line, the connection is analogous to the one shown above.

## **VI. RECOMMENDATIONS AGAINST INTERFERENCE**

### **Recommendations for use of connecting wires**

- ✓ For longer distances for lines subjected to electromagnetic interference, it is desirable to use a twisted pair conductor.
- ✓ For better noise protection, a shielded cable may be used, which must be grounded at one end only.
- ✓ Wires that carry similar type of signals can be packed together, but if the signals are different, the wires must be separated to prevent electromagnetic interaction.
- ✓ When wires with different signals have to be crossed, it must be done at an angle of 90 degrees and a long distance.

## WARRANTY CARD

Warranty Card № : .....

Warranty term : ..... months

Factory number : .....

The article is bought by : .....

With Invoice № : ...../..... 20..... y.

## WARRANTY CONDITIONS

The guarantee consists of free repair of any manufacturing defects that may occur during the warranty period. **The repair can be done when this warranty card and the invoice, with which the device is bought, are presented in the repair base.** The warranty does not cover failure, caused by bad transport, bad storage, incorrect usage, nature elements, nonobservance of the instruction for operation, and the cases, in which there is an attempt for repairing by another people. In these cases the defect can be repaired only for payment. The service during the warranty term and settling of the reclamations will be done in accordance with the relevant Union and national legislation in force.

## REPAIRS MADE IN THE SERVICE BASE

| Service | Date of entering | Order number | Type of repair made | Date of delivering | The repair is made be |
|---------|------------------|--------------|---------------------|--------------------|-----------------------|
|         |                  |              |                     |                    |                       |

Seller:.....

Customer:.....

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