IMT
TECHNOLOGY

Digital Ambient Temperature Sensor
# Ta-ext-RS485-MB

Safety Instructions

The installation and assembly of electrical equipment must be carried out by electrically qualified persons.
The sensor may not be used with equipment whose direct or indirect purpose is to prevent death or injury,
or whose operation poses a risk to humans, animals or property.

Warranty and Liability

The sensor is designed for the measurement of ambient temperature. The warranty is for 1 year from the date of
the invoice for the intended use. IMT Technology does not accept any liability for possible losses or damage due to the
incorrect usage of the sensor. Liability for consequential damages is excluded.

Mounting Instructions

If mounted outdoors, avoid direct exposure to sunlight and rain to the sensor housing (INOX steel tube). If
necessary, provide protection from the sun and rain with the optional Shield-Tamb-Si.
The through holes used to fix the sensor to a stable and suitable surface shall be accessible when the housing is
opened. The tightening torque of the case cover is 180 Ncm.
When installing the sensor, the cables must be routed downwards from the housing.
The sensor cable needs a cable grip close to the sensor housing.
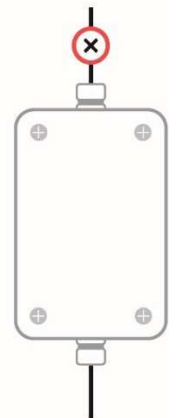
Electrical Connection

The sensors are designed for safety extra-low voltage (SELV) operation. The maximum power of the voltage supply is 50 VA ("Class 2 limited power").

The cable shield shall be connected to the PE during installation.

WARNING: Connecting the supply voltage to the signal lines will damage the device.
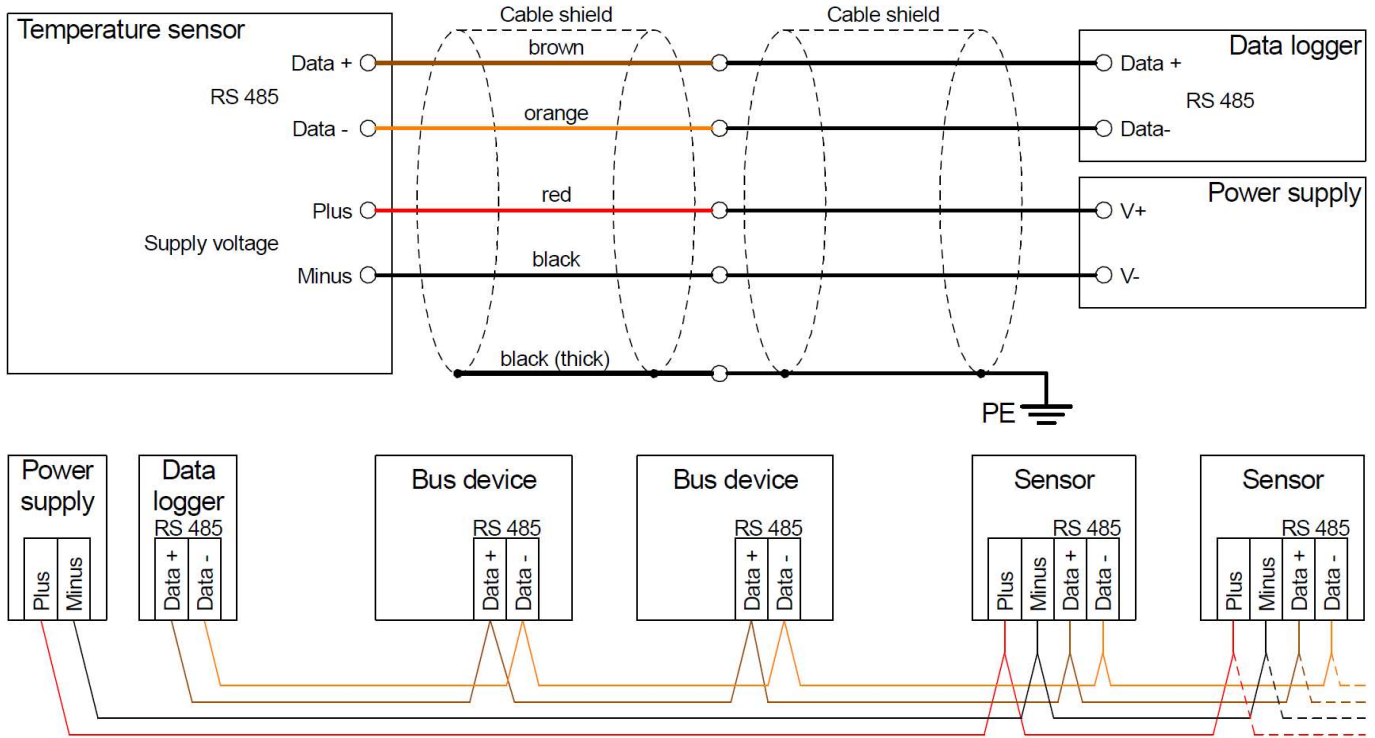
All MODBUS devices require the same bus parameter (baud rate, data format) but different addresses.

Termination of RS485 bus usually is not needed.

Cable Length

Supply voltage	Cable cross section						
	0.14 mm^2	0.25 mm^2	0.34 mm^2	0.5 mm^2	0.75 mm^2	1.0 mm^2	1.5 mm^2
24 V$_{DC}$	300 m	600 m	800 m	1000 m	1000 m	1000 m	1000 m
12 V$_{DC}$	50 m	100 m	150 m	200 m	300 m	400 m	650 m

Maximum additional cable length of sensors with 3 m connection cable at 24 V$_{DC}$ and 12 V$_{DC}$ supply voltage.

Note: If more sensors are supplied by the same voltage supply, the possible cable length is reduced accordingly.
Example: 3 sensors at 24 V$_{DC}$ and cable 0.14 mm: 300 m / 3 = 100 m

Maintenance

Scope of the regularly check (at least once a year): Cleaning, external damage, mechanical fastening, cable laying and any damage to the cable. Should damage be found that degrades the function or safety, the sensor is to be replaced.

A recalibration is recommended at least every 3 years.

Technical Data

Output Signal	RS485
Measurement range	-40 to +90°C
Uncertainty (-40 to +80°C)	1 K
Supply voltage	24 V_{DC} (10 to 28 V_{DC})
Current consumption	Typical 25 mA at 24 V_{DC}
Galvanic insulation	1000 V_{DC} between voltage supply and RS485
Sensor element	Pt1000 class AA as per EN 60751
Sensor element housing	INOX stell tube, diameter 6 mm, length 50 mm
Sensor cable (Pt1000)	Length: 3 m, PUR coated, shielded (LiYC11Y, 2 x 0.25 mm²)
Case material	Powder coated aluminium
Case dimension / protection level	98 mm x 64 mm x 34 mm / IP 67
Weight	500 g
Operating temperature	Sensor element: -40 to +90°C / Housing: -40 to +80°C
Connecting cable	Length: 3 m, PUR coated, shielded (LiYC11Y, 4 x 0.14 mm²)

Protocol	Bus parameter (default)	Note
Modbus (RTU)	Address: 1 Baud rate: 9600 baud Format: 8N1	Settings can be changed with „Si-Modbus-Configurator" software. Maximum baud rate: 38400 baud

Dimensions

Mounting Holes
Ø5 mm - 2x

86 mm

98 mm

36 mm

64 mm
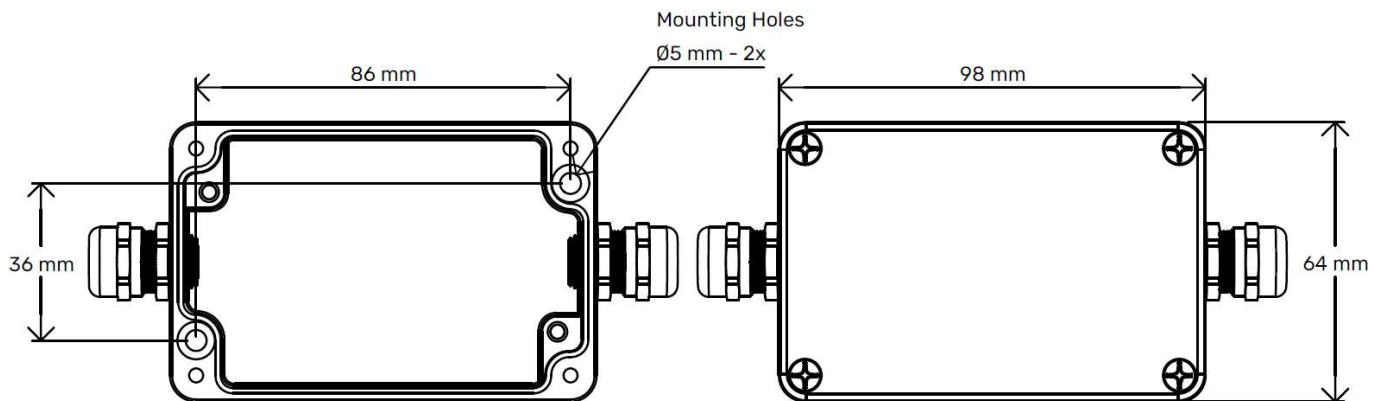
Scope of Delivery

- Sensor incl. pre-assembled connecting cable
- Calibration certificate for measurement electronic
- Instruction sheet