TEK-M - Modbus duct temperature transmitter

TEK-M Modbus temperature transmitters measure duct temperatures in automated ventilation systems. They can transmit temperature measurement data to the building management system or operate as controllers. In the controller mode, the transmitter can control a thermal actuator or other device based on the measurement data.

The transmitter measures the temperature with a Pt 1000 sensor element. The transmitter converts the resistance data from the sensor element into a 0...10 V signal that can be read via Modbus. You can select the temperature measurement range during commissioning.

The Modbus RTU (RS-485) interface allows the building management system to read the temperature measurement values from the device. You can also set the output range and change the device settings via Modbus.

The transmitter is mounted to the ventilation duct with an adjustable duct flange that allows easy installation and accurate depth adjustment for both round and rectangular ducts. The advanced design of the duct flange minimises air leaks in the duct.

You can commission the transmitter with the ML-SER commissioning tool. With the commissioning tool, you can do the following:

- Convert the temperature output into a control output and configure the controller settings.
- Select the output range.
- Configure the Modbus communication settings.
- Tune temperature measurement on the field using the one-point tuning method.
- Change other transmitter settings.

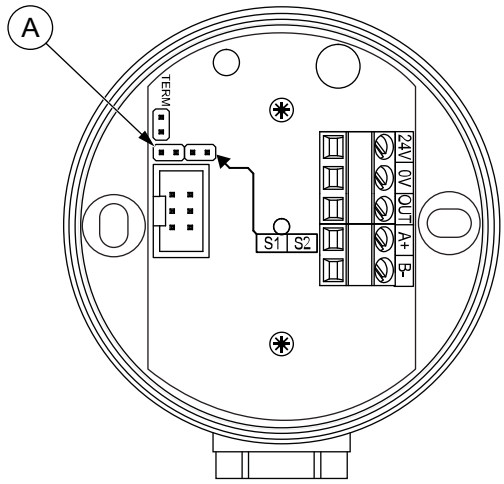
Technical specifications

Property	Value
Supply	24 Vac/dc (22...30 V), < 1 VA
Temperature measurement	
Sensor	Pt1000 EN 60751B
Measurement range	0...50 °C / *0...100 °C / -50...50 °C / -50...150 °C
Accuracy (50 °C)	±0.5 °C

Property	Value
Output	0...10 Vdc, < 2 mA (temperature or controller)
Communication	Modbus RTU (RS-485)
Bus speed	9600*/19200/38400/56000/57600/76800/115200 bit/s
Data bits	8
Parity	none*/odd/even
Stop bits	1
Unit load	1/4 UL
Appliance class (IEC 60664-1)	III
Commissioning tool	ML-SER
Display (-N model)	3.5-digit LCD, resolution 0.1 °C
Operating conditions	
Temperature	0...60 °C
Humidity	0...90 %rH (non-condensing)
Wiring terminals	
Type	tilted screw terminals
Recommended wire	0.2...1.5 mm² (24...16 AWG), stripping length 5 mm
Tightening torque	0.6 Nm
Probe	
Material	stainless steel (AISI 316)
Dimensions	Ø 8 mm x 200 mm
Housing	
Protection class	IP54, cable gland or probe downwards
Materials	PC and PBT plastic
Cable gland	M16
Duct flange	
Materials	LLPDP
Mounting	with the duct flange, probe immersion length adjustable: 100...180 mm (probe length 200 mm)
Dimensions (w x h x d)	70 x 95 x 291 mm (probe length 200 mm)
CE UKCA	Refer to the EU Declaration of Conformity or the UK Declaration of Conformity for compliance information. You can find the declarations on this product's page at www.produal.com.
	* factory setting

Temperature measurement range selection

CAUTION: Make sure that the device is de-energised before changing the jumper settings. Do not remove the cover when the supply voltage is connected.



A. Measurement range selection jumpers

	0...50 °C	*0...100 °C	-50...50 °C	-50...150 °C
S1	■	■	• •	• •
S2	• •	■	■	• •

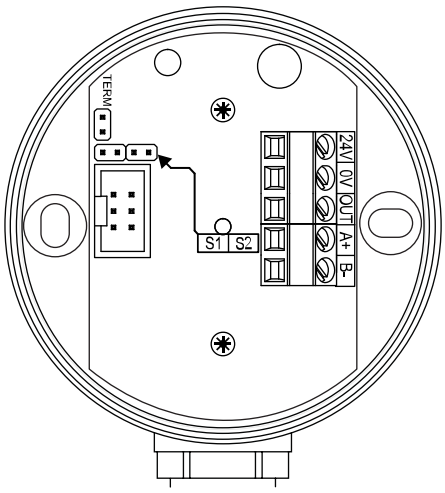
* factory default

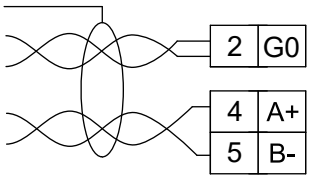
Wiring

WARNING: Device wiring and commissioning can only be carried out by qualified professionals. Always make the device wirings in de-energised electricity network.

WARNING: This product is appliance class III product according to IEC 60664-1. The product may only be connected to SELV (separated extra low voltage) electricity network.

CAUTION: The product may only be connected to overvoltage category I, II or III electricity network according to IEC 60664-1.



24 V	Supply, 24 Vac/dc, < 1 VA	
0V	0 V	
OUT	Voltage output (temperature or controller), 0...10 / 2...10 / 0...5 Vdc, < 2 mA	
A+ *B-*		Modbus RTU, RS-485

The nominal tightening torque for wire terminal screws is 0.6 Nm.

Important: Do not use excessive force when you tighten the wiring terminal screws.

CAUTION: Ensure that all covers are closed before you connect the supply voltage to the product. Do not remove the covers when the supply voltage is connected.

Ordering information

	Model	Product number	Description
	TEK-M	117Z040	Modbus duct temperature transmitter, 0...10 Vdc
	TEK-M-N	117Z040N00	Modbus duct temperature transmitter, display, 0...10 Vdc
	ML-SER	1139010	Transmitter commissioning tool

Dimensions

All dimensions are in millimeters (mm).