KLK duct humidity transmitter

The KLK duct humidity transmitters measure relative humidity and temperature inside ventilation ducts. They are designed for high- and low-humidity applications in non-condensing environments. These transmitters have a broad humidity measurement range and a wide temperature measurement range. You can set a custom measurement range (low and high limit) separately for both humidity and temperature measurement.

The transmitter has one humidity output and one temperature output. You can select the output signal mode separately for each output during commissioning. The available output signal modes are voltage (Vdc) and current (mA). The voltage output is scalable. You can select the scale using the ML-SER commissioning tool or via Modbus communication (-M models). The current output is not scalable.

The transmitters options include:

- Display (-N models)
- Relay output (-R model)
- Modbus RTU communication (-M models)

The -N models have a backlit dot-matrix display. The display shows both humidity and temperature readings at the same time. You can also set the display to show only one measurement (humidity or temperature).

The -R models have a relay output. You can adjust the relay switching point. The relay switches according to one measurement value or according to all values. You can use the relay output, for example, to switch an alarm or a ventilation fan on and off.

The -M models have an RS-485 connection for Modbus RTU communication.

The transmitter has a PI controller. You can use one of the outputs as a control output to keep humidity or temperature within the configured range. The controller can control the output according to one measurement value or according to the maximum selection of all values. You can change the controller settings with the ML-SER commissioning tool or via Modbus communication (-M models).

You can commission all models using the ML-SER commissioning tool. For -M models, you can also configure the transmitter settings via bus. However, Modbus communication settings must be configured with the ML-SER commissioning tool before you can access the transmitter settings via bus.

The KLK duct humidity transmitters are typically used in building automation systems for measuring and controlling humidity in locations where relative humidity must be kept constant.

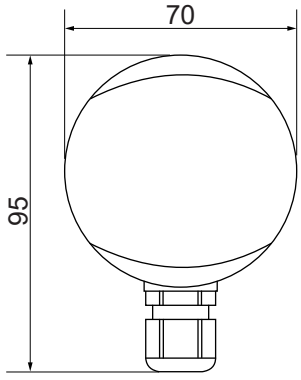
Technical specifications

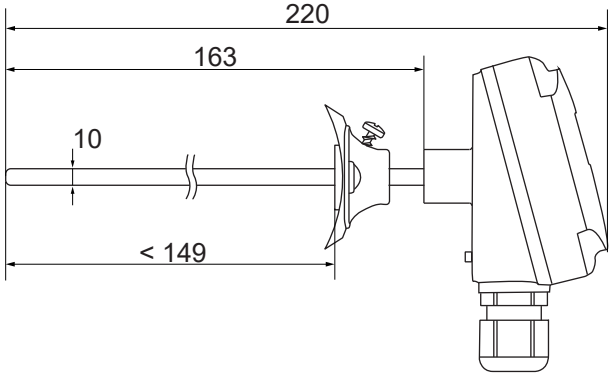
Property	Value
Power supply	24 Vac/dc (21…28 V)
Power supply (-R models)	24 Vac/dc
Power consumption	< 2 W
Humidity measurement	
Range	0…100 %rH
Accuracy	±2 %rH (20…80 %rH, 25 °C), max. ±3 %rH
Long-term stability	±0.5 %rH / 2 years
Temperature measurement	
Range	-50...50 °C
Accuracy	±0.5 °C (at 25 °C)
Controller	
Controller type	P/PI
Control functions	The controller can control humidity or temperature.
Analogue outputs	The device has 2 output connectors.
Voltage outputs	
Range	0...10 / 2...10 / 0...5 Vdc, 2 mA
Output signals	Humidity measurement, temperature measurement, and control output signal
Current outputs	
Range	4…20 mA < 500 Ω
Output signals	Humidity measurement, temperature measurement, and control output signal
Relay output (-R models)	24 Vac/dc, max. 1 A res.
Modbus communication (-M models)	* factory setting
Protocol	Modbus RTU
Interface	RS-485
Bus speed	9600*/19200/38400 bit/s
Data bits	8
Parity	none*/odd/even
Stop bits	1
Unit load	max. 1/4 UL
Display (-N models)	Backlit dot-matrix display, 15.8 x 35 mm **Note:** When the temperature drops below 0 °C, the display fades slightly and the response time increases. The display can stop operating at very low temperatures. It will resume operation when the temperature rises.
Wiring terminals	

Property	Value
Type	Tilted screw terminals
Wire	0.2...1.5 mm^2 (24...16 AWG)
Tightening torque	0.4 Nm
Commissioning tool	ML-SER transmitter commissioning tool
Appliance class (IEC 60664-1)	III
Operating conditions	
Ambient temperature	-30...50 °C
Ambient humidity	0...90 %rH (non-condensing)
Housing	
Protection class	IP54, cable or probe downwards
Cable gland	M16
Materials	PBT, PC, PA
Probe	
Protection class	IP20
Materials	Stainless steel
Mounting	to a ventilation duct with a duct flange, probe length adjustable
Dimensions (w x h x d)	70 x 95 x 220 mm
Weight	122 g
Warranty	5 years
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.
Company certificates	
Quality management	ISO 9001
Environmental management	ISO 14001

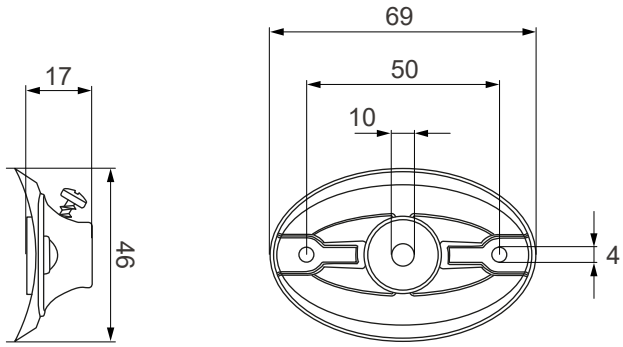
Dimensions

All dimensions are in millimetres (mm).





Duct flange dimensions



Wiring

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

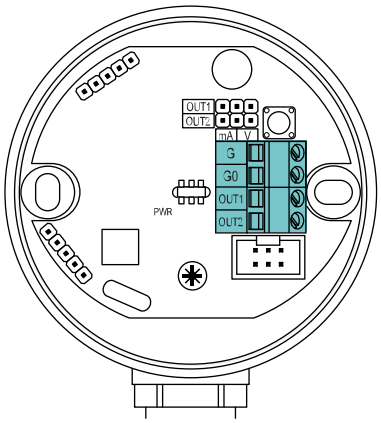
WARNING: This product is appliance class III product according to IEC 60664-1. The product may only be connected to SELV (separated extra low voltage) electricity network.

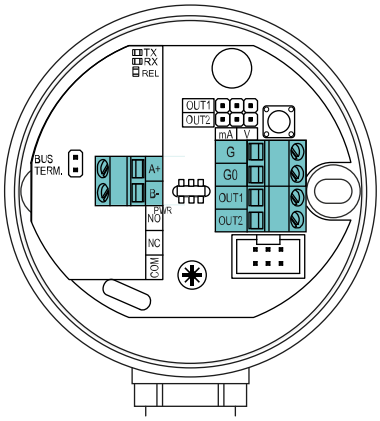
WARNING: The relay port is not protected internally against overload. The wiring of the relay port must be either protected with an external fuse with maximum current rating of 1 A slow blow or the power consumption of the connected external circuitry must be inherently limited to less than 15 W in both normal operation and failure condition.

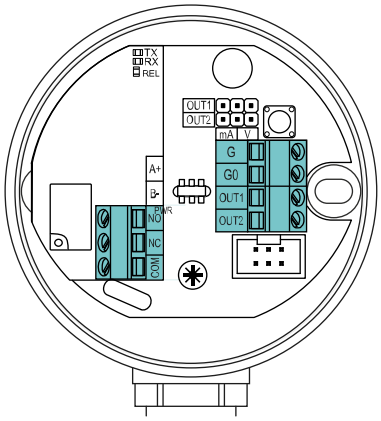
WARNING: The relay port may be connected only to SELV (separated extra low voltage) circuitry.

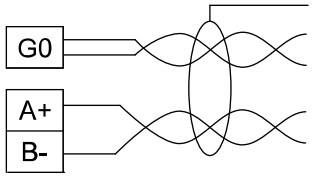
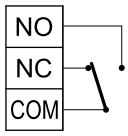
CAUTION: Use single stranded wires or use wire end sleeves if multi stranded wires are used.

Important: For CE and UKCA compliance, a properly grounded shielding cable is required.







G		Supply, 24 Vac/dc, 2 VA
G0		0 V
OUT1		Humidity output / control output
OUT2		Temperature output / control output
A+ *B-*		Modbus RTU, RS-485 (-M models)
NO *NC* *COM*		Relay output, 24 Vac/dc, max. 1 A res. (-R models)

The nominal tightening torque for wiring terminal screws is 0.4 Nm.

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

Ordering information

	Model	Product number	Description
	KLK 100	1132240	Duct humidity transmitter
	KLK 100-N	1132241	Duct humidity transmitter with a display
	KLK-M	1132610	Duct humidity transmitter with Modbus RTU communication
	KLK-M-N	1132611	Duct humidity transmitter with Modbus RTU communication and a display
	KLK 100-R	1132240A00	Duct humidity transmitter with a relay output (24 Vac, 1 A)

	Model	Product number	Description
	ML-SER	1139010	Transmitter commissioning tool