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DATA SHEET

KLK-Passive

Produal

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KLK-Passive duct humidity transmitter - KLK 100-NTC 10



The KLK-Passive duct humidity transmitter with passive temperature measurement measures relative humidity and temperature inside ventilation ducts. It is designed for high- and low-humidity applications in non-condensing environments. It can control relative humidity and temperature in room spaces.

The transmitter measures temperature with a passive sensor and an active sensor. It has a resistance output for the passive sensor data and a dual-mode output (voltage/current) for the active sensor data. In addition, the transmitter has one dual-mode output for humidity measurement data.

This transmitter has a broad humidity measurement range and a wide temperature measurement range. You can set a custom measurement range (low and high limit) separately to temperature and humidity measured with the active sensors.

The transmitter has a P/PI controller. You can use one of the dual-mode 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.

The KLK-Passive 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) < 2 VA
Humidity measurement	
Range	0...100 %rH
Accuracy (25 °C)	±2 %rH (20...80 %rH), max. ±3 %rH (determined based on the voltage output signal of the dual-mode output)
Long-term stability	±0.5 %rH / 2 years
Active temperature measurement	
Range	-50...50 °C
Accuracy (25 °C)	±0.5 °C

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Property	Value
Passive temperature measurement	
Sensor (NTC 10 model)	10 kΩ NTC element
Range	-30...50 °C
Accuracy (25 °C)	±0.2 °C (see Detailed measurement accuracy on page 3)
Controller	
Controller type	P/PI
Control functions	The controller can control humidity or temperature.
Analogue outputs	This device has 2 dual-mode output connectors (voltage/current) and 1 resistive output connector.
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
Resistive outputs	
NTC 10 model	1 x NTC 10
Output signals	Temperature measurement
Wiring terminals	
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 (cable diameter 5...10 mm)
Materials	PBT, PC and PA plastic
Probe	
Diameter	10 mm
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

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Property	Value
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

Sensor resistance at different temperatures

See the table below for *NTC 10* passive sensor resistance at different temperatures.

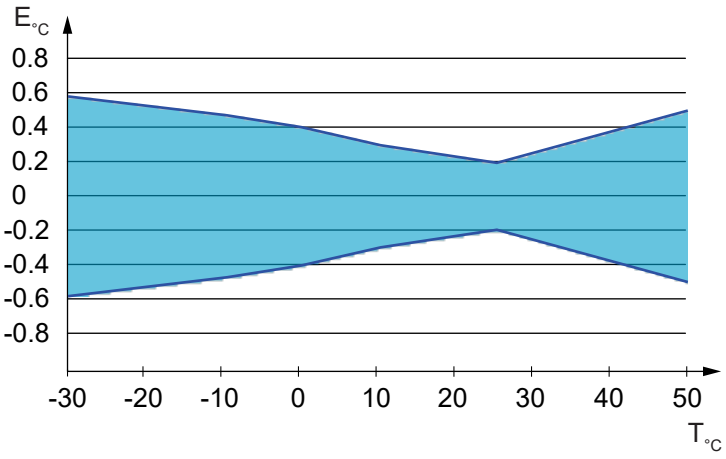
°C	Ω
-30	177000
-25	130400
-20	97070
-15	72980
-10	55330
-5	42340

°C	Ω
0	32650
5	25400
10	19900
15	15710
20	12490
25	10000

°C	Ω
30	8057
35	6532
40	5327
45	4368
50	3603

Detailed measurement accuracy

See the following figure for detailed measurement accuracy of the NTC 10 passive temperature sensor.

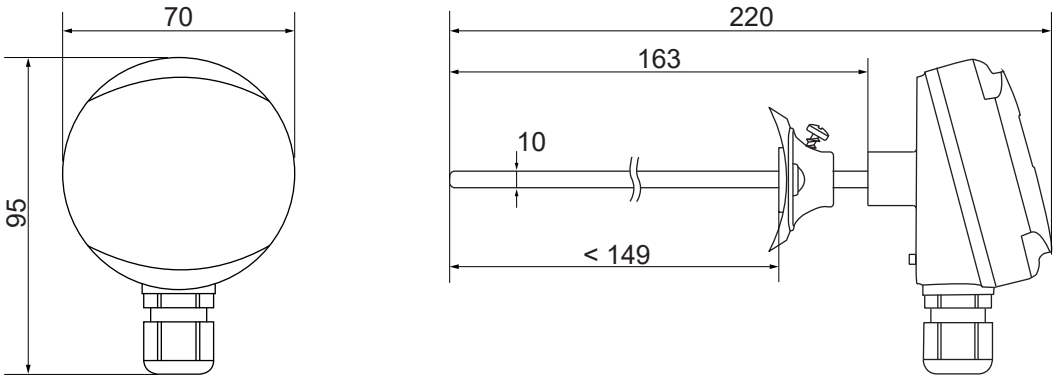


E°C Measurement error (°C)

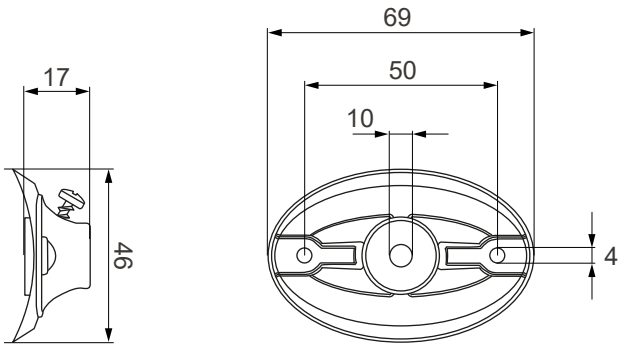
T°C Measured temperature (°C)

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.

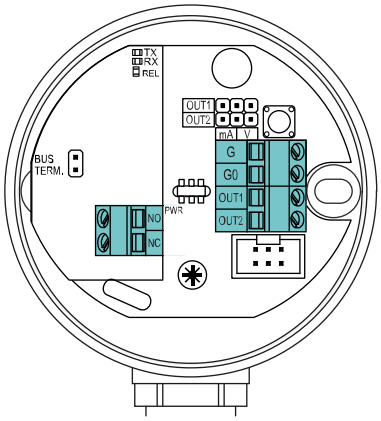
CAUTION: Use single stranded wires or use wire end sleeves if multi stranded wires are used.

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

1. Turn the cover counterclockwise to open it.
2. Unscrew the strain relief on the cable gland.
3. Route the cable through the strain relief and the cable gland.

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4. Connect the wires to the terminal block and the resistive output connector according to the table below.



G	Power supply, 24 Vac/dc < 2 VA
G0	0 V
OUT1	Dual-mode humidity output / control output
OUT2	Dual-mode temperature output / control output
NO	Resistive temperature output (passive sensor)
NC	

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.

5. Tighten the strain relief.
6. Close the cover.

Ordering information

	Model	Product number	Description
	KLK 100-NTC 10	1132240B00	Duct humidity transmitter with NTC 10 output