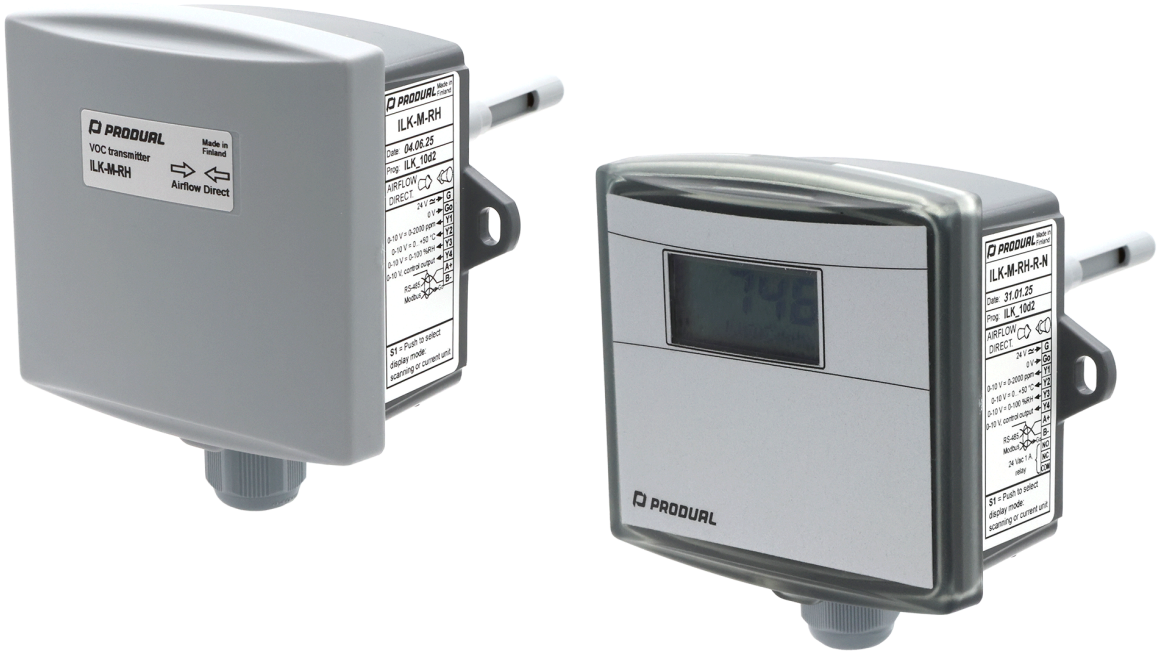
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DATA SHEET

ILK

Produal

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ILK duct air quality transmitter





The ILK duct air quality transmitters measure volatile organic compounds (VOC) level, temperature and relative humidity inside ventilation ducts.

Volatile organic compounds are molecules of hazardous chemicals in the air. Exposure to these chemicals can cause negative impact to health. Effective demand-based ventilation is key to healthy indoor air. The ILK transmitters can control the VOC level in room spaces by increasing ventilation when necessary. The metal oxide sensor technology (MOX) and four sensing elements ensure reliable VOC level measurement. The VOC sensor detects a wide variety of hydrocarbons, including cigarette smoke, exhaled breathing air, solvent vapours, building material emissions and cleaning agent vapours. The sensor uses automatic baseline correction to compensate for ozone and other oxidizing gases.

The transmitter has one voltage output for each measurement and one control output.

This transmitter has a P/PI controller. It can control the control output according to one measurement value or according to the maximum selection of all values.

The transmitters options include:

- Display (-N models)
- Relative humidity measurement and control (-RH models)
- Relay output (-R model)
- Modbus RTU communication (-M models)

The measurement values scroll on the display of the -N models. You can also lock the display to show one of the values.

The -R models have a relay and 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.

You can commission all models using the ML-SER commissioning tool. You can also configure the -M model 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 Modbus network.

The ILK duct air quality transmitters are typically used in building automation systems in hotels, offices, schools, kindergartens, residential buildings and other locations where clean, healthy indoor air is important.

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Technical specifications

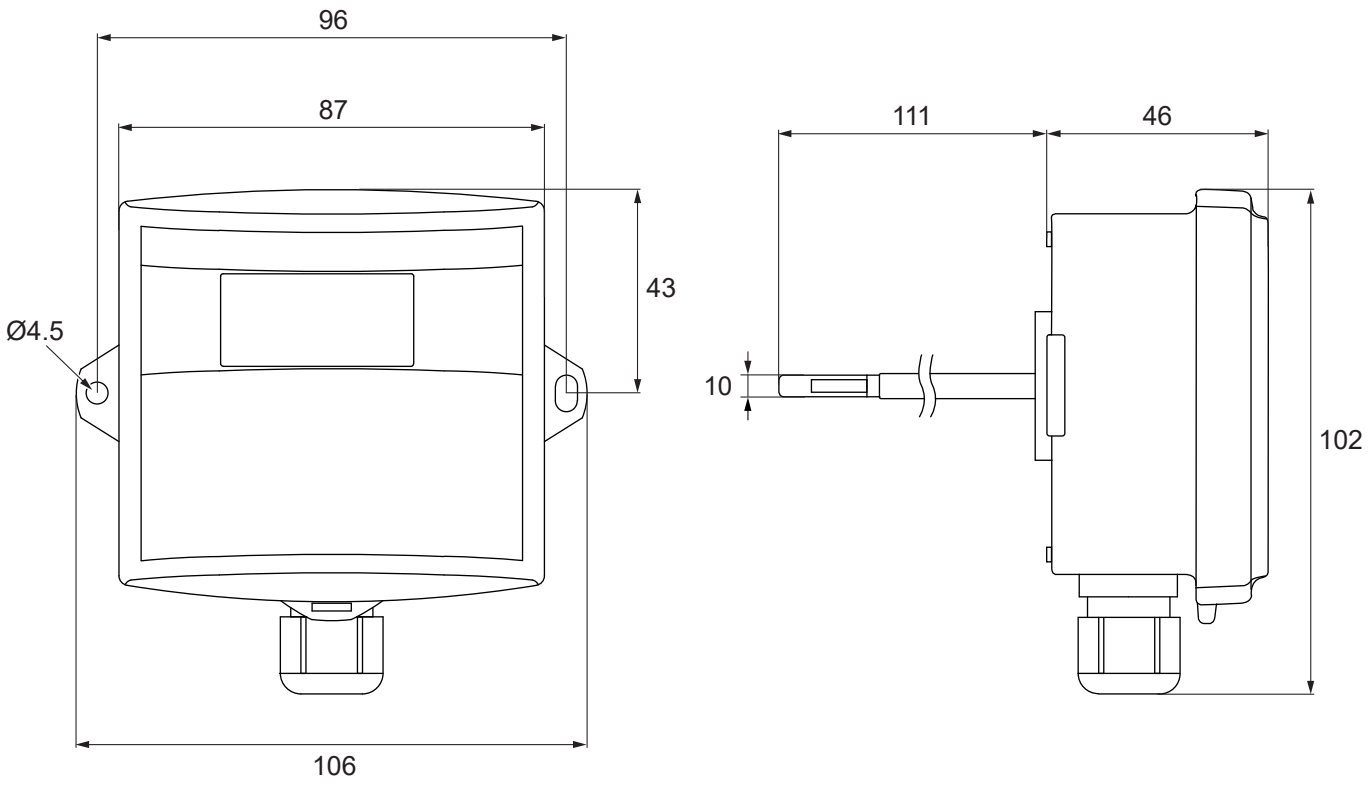
Property	Value
Power supply	24 Vac/dc (22…28 V)
Power supply (-R models)	24 Vac/dc
Power consumption	< 2 W
VOC measurement	
Range	450…2000 ppm (CO_2 equivalent)
Accuracy	Determining the measurement accuracy precisely is difficult due to the diverse properties of VOCs. VOC sensors measure relative changes in VOC levels instead of absolute values. While the VOC sensor is calibrated against a standard gas mixture, its sensing elements respond non-selectively to a broad range of VOCs. For optimum measurement accuracy, relative humidity should be 20...80 %rH. If humidity is outside this range, it can have an effect on the output signal. **Note:** The VOC sensor requires airflow in the duct to operate correctly.
Warm-up time	Readings are available 3 minutes after every start-up. After the initial start-up after delivery, reasonable VOC readings are available after 1 hour. **Note:** Initial start-up is completed after 24 hours of continuous operation. The accuracy of the readings improves during the first 48 hours of operation.
Temperature measurement	
Range	0...50 °C
Accuracy (25 °C)	±0.5 °C
Humidity measurement (*-RH* models)	
Range	0…100 %rH
Accuracy (25 °C)	±2 %rH
Controller	
Controller type	P/PI
Control functions	The controller can control air quality (VOC level) or temperature. The *-RH* models can also control relative humidity. The controller has a maximum selection control option.
Analogue outputs	The *-RH* models have 4 output connectors. Other models have 3 output connectors.
Voltage outputs	
Range	0...10 Vdc, < 2 mA
Output signals	VOC measurement, temperature measurement, and control output signal
Output signals, -RH models	VOC measurement, temperature measurement, humidity measurement and control output signal
Relay output (-R models)	24 Vac/dc, max. 1 A res.

Property	Value
Modbus communication (-M models)	* factory setting
Protocol	Modbus RTU
Interface	RS-485
Bus speed	9600*/19200/38400
Data bits	8
Parity	none*/even/odd
Stop bits	1
Unit load	max. 1/4 UL
Display (-N models)	Dot-matrix display, 15.8 x 35 mm
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	0...50 °C
Ambient humidity	0...85 %rH (non-condensing)
Housing	
Protection class	IP54, cable downwards
Cable gland	M16
Materials	PC and PBT plastic
Probe	
Dimensions	Ø 10 mm x 110 mm, duct insulation thickness < 75 mm
Materials	PA plastic
Mounting	to a ventilation duct with screws through external lugs
Dimensions (w x h x d)	106 x 102 x 157 mm
Weight	175 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

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Dimensions

All dimensions are in millimetres (mm).



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: Connect this device to SELV (separated extra low voltage) electricity network only. This device is an appliance class III product according to IEC 60664-1.

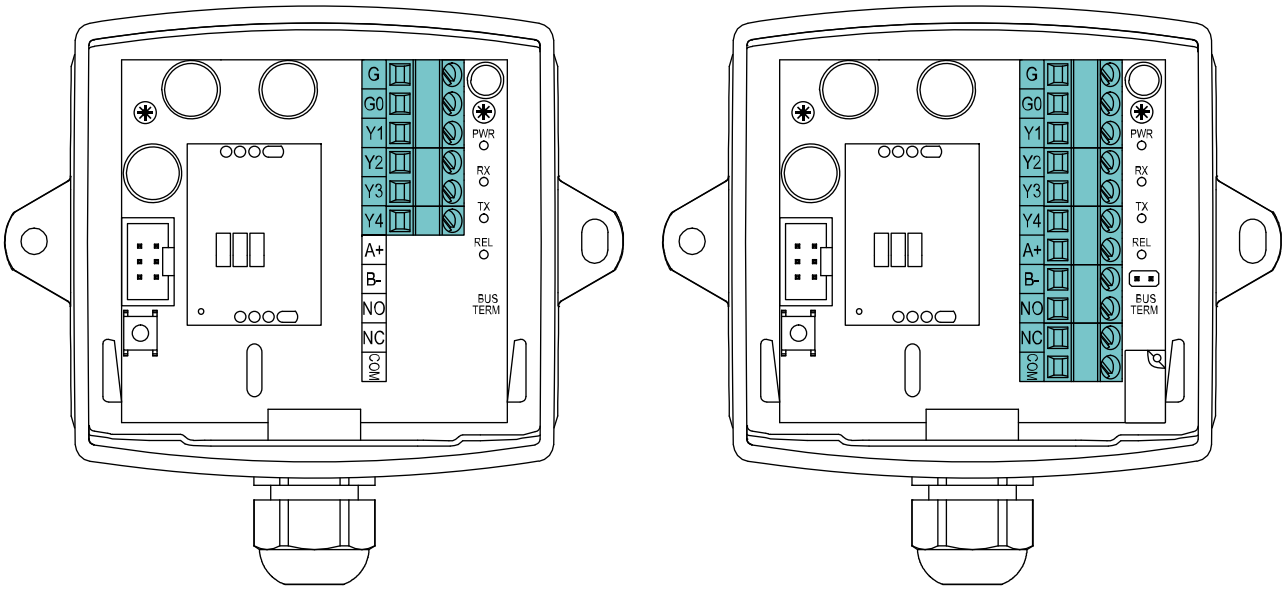
WARNING: Protect the relay port with an external slow blow fuse with maximum current rating of 1 A. Alternatively, you can limit the power consumption of the connected external circuitry to less than 15 W in both normal operation and failure condition. The relay port is not protected internally against overload.

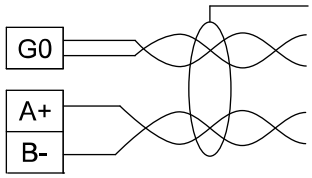
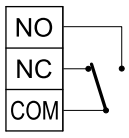
WARNING: Only connect the relay port to SELV (separated extra low voltage) circuitry.

CAUTION: Use single-stranded wires if possible. If you use multi-stranded wires, always install wire end sleeves to the wires to prevent short circuits and ensure secure attachment.

Important: For CE and UKCA compliance, use correctly grounded, shielded cable.

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G	Power supply, 24 Vac/dc	
G0	0 V	
Y1	VOC output	
Y2	Temperature output	
Y3	Humidity output (-RH models)	
Y4	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
	ILK	1135630	Duct air quality transmitter
	ILK-N	1135631	Duct air quality transmitter with display
	ILK-RH	1135632	Duct air quality transmitter with humidity measurement

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	Model	Product number	Description
	ILK-RH-N	1135633	Duct air quality transmitter with humidity measurement and display
	ILK-M	1135640	Modbus duct air quality transmitter
	ILK-M-N	1135641	Modbus duct air quality transmitter with display
	ILK-M-RH	1135642	Modbus duct air quality transmitter with humidity measurement
	ILK-M-RH-N	1135643	Modbus duct air quality transmitter with humidity measurement and display
	ILK-M-RH-R-N	1135643A00	Modbus duct air quality transmitter with humidity measurement, relay and display
	ML-SER	1139010	Transmitter commissioning tool

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