

DSCOX-R

Multifunctional duct transmitter



DSCOX-R are multifunctional duct transmitters which measure temperature, relative humidity, carbon monoxide and nitrogen dioxide levels in ducts. Based on the temperature and relative humidity measurements, the dew-point temperature is calculated. They feature 3 analogue/ modulating outputs - one for temperature, one for relative humidity and one for CO/ NO₂. All the parameters and measurements are accessible via Modbus RTU.

Key features

- Suitable for duct mounting
- Selectable temperature, relative humidity, CO and NO₂ ranges
- Silicon based sensor elements for CO and NO₂ measurements
- Bootloader for updating the firmware via Modbus RTU communication
- Long-term stability and accuracy
- Modbus RTU communication
- Replaceable CO and NO₂ sensor module
- Replaceable CO/NO₂ sensor module

Area of use

- Monitoring of temperature, relative humidity, CO and NO₂ levels in ducts
- Underground car park ventilation systems

Article codes

Article code	Supply	Imax
DSCOG-R	18–34 VDC	114 mA
	15–24 VAC ±10%	
DSCOF-R	18–34 VDC	

Technical specifications

3 analogue / modulating outputs	0–10 VDC mode: RL ≥ 50 kΩ	
	0–20 mA mode: RL ≤ 500 Ω	
	PWM (open-collector type) mode: 1 kHz, RL ≥ 50 kΩ, PWM voltage level: 3,3 or 12 VDC	
Typical range of use	Temperature range	-30–70 °C
	Relative humidity range	0–100 % rH (non-condensing)
	CO	1–1.000 ppm
	NO ₂	0,05–10 ppm
Accuracy	±0,4 °C (-30–70 °C)	
	±3 % rH (0–100 % rH)	
	Trend sensor (CO and NO ₂)	
Protection standard	Enclosure: IP54; probe: IP20	

Standards

- EMC Directive 2014/30/EC:
 - N 61000-6-1:2007 Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
 - EN 61000-6-3:2007 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments Amendments A1:2011 and AC:2012 to EN 61000-6-3
 - EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
 - EN 61326-2-3:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements - Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning
- RoHS Directive 2011/65/EC



Wiring and connections

Article type	DSCOF-R	DSCOG-R	
VIN	18–34 VDC	18–34 VDC	18–34 VDC
GND	Ground	Common ground*	AC ~*
A	Modbus RTU (RS485), signal A		
/B	Modbus RTU (RS485), signal /B		
AO1	Analogue / modulating output 1 for temperature measurement (0–10 VDC / 0–20 mA / PWM)		
GND	Ground AO1	Common ground*	
AO2	Analogue / modulating output 2 for relative humidity measurement (0–10 VDC / 0–20 mA / PWM)		
GND	Ground AO2	Common ground*	
AO3	Analogue / modulating output 3 for CO/NO ₂ ** measurement (0–10 VDC / 0–20 mA / PWM)		
GND	Ground AO3	Common ground*	
Connections	Spring contact terminal blocks, cable cross section: 1,5 mm ²		

*Attention! The -F version of the product is not suited for 3-wire connection. It has separate grounds for power supply and analogue output. Connecting both grounds together might result in incorrect measurements. Minimum 4 wires are required to connect -F type sensors.

The -G version is intended for 3-wire connection and features a 'common ground'. This means that the ground of the analogue output is internally connected with the ground of the power supply. For this reason, -G and -F types cannot be used together on the same network. Never connect the common ground of -G type articles to other devices powered by a DC voltage. Doing so might cause permanent damage to the connected devices.

**Adjustable via Modbus Holding register 67 (default is CO measurement).

Modbus registers



The Sensistant Modbus configurator allows you to easily monitor and/or configure Modbus parameters.

The parameters of the unit can be monitored / configured through the 3SMODBUS software platform. You can download it from the following link:

<https://www.sentera.eu/en/3SMCenter>

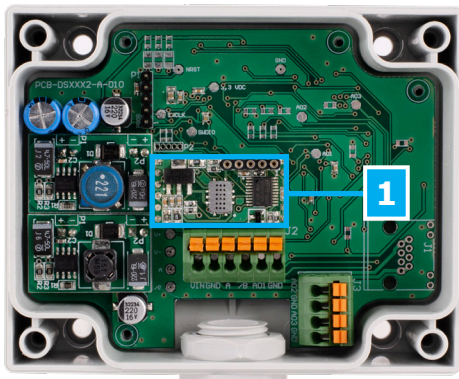
For more information about the Modbus registers, please refer to the product Modbus Register Map.



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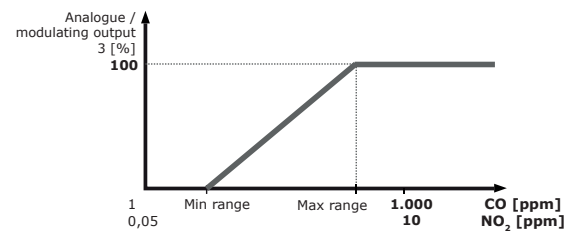
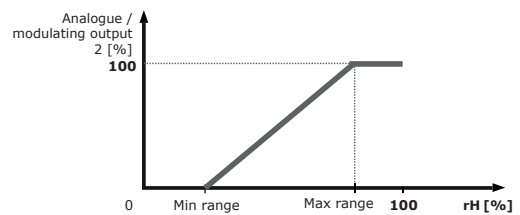
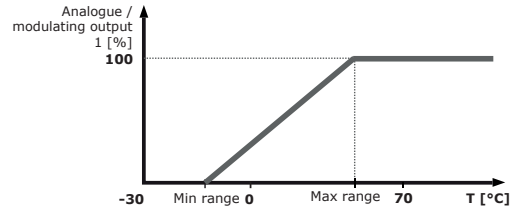
Settings



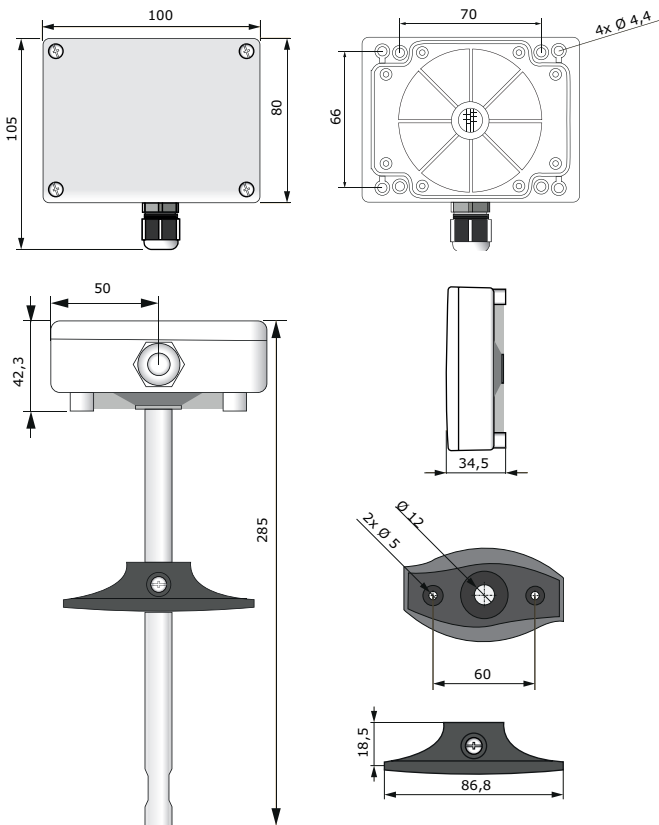
1 - CO/NO₂ sensor element

Replaceable in case of faulty operation. This CO / NO₂ trend sensor is intended to control ventilation systems in HVAC applications. It detects changes in concentration of carbon monoxide, Nitrogen dioxide, Ethanol, Hydrogen, Ammonia and Methane.

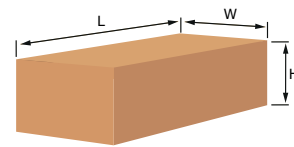
Operational diagram



Fixing and dimensions



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
DSCOF-R	Unit (1 pc.)	310	115	115	0,16 kg	0,24 kg
DSCOG-R	Box (20 pcs.)	590	380	505	3,20 kg	6,03 kg

Global trade item numbers (GTIN)

Packaging	DSCOF-R	DSCOG-R
Unit	05401003001882	05401003001899
Box	05401003500668	05401003500675