



DSVCX-R

Air quality duct transmitter

DSVCX-R are multifunctional duct transmitters which measure temperature, relative humidity and a broad range of total volatile organic compounds (TVOC). The TVOC concentration is an accurate indicator for indoor air quality. The series feature 3 analogue / modulating outputs - one for temperature, one for relative humidity and one for TVOC. All the parameters and measurements are accessible via Modbus RTU.

Key features

- Suitable for duct mounting
- 3 analogue / modulating outputs
- Selectable temperature, relative humidity and TVOC ranges
- Silicon based sensor elements for TVOC measurements
- Bootloader for updating the firmware via Modbus RTU communication
- Modbus RTU (RS485)
- Long-term stability and accuracy
- Replaceable TVOC sensor module
- Based on the temperature and relative humidity measurements, the dew-point temperature is calculated

Area of use

- Measurement of temperature, relative humidity and TVOC in ducts
- Monitoring of air quality in ducts

Article codes

Article code	Supply	Imax
DSVCG-R	18–34 VDC	115 mA
	15–24 VAC ±10%	
DSVCF-R	18–34 VDC	

Technical specifications

3 analogue / modulating outputs	0–10 VDC mode: $R_L \geq 50 \text{ k}\Omega$	
	0–20 mA mode: $R_L \leq 500 \Omega$	
	PWM (open-collector type) mode: 1 kHz, $R_L \geq 50 \text{ k}\Omega$, PWM voltage level: 3,3 or 12 VDC	
Warm-up time	15 minutes	
Typical field of use	Temperature range	-30–70 °C
	Relative humidity range	0–100 % rH (non-condensing)
	TVOC range	0–60.000 ppb
Accuracy	$\pm 0,4 \text{ }^\circ\text{C}$ (-30–70 °C)	
	$\pm 3 \text{ % rH}$ (0–100 % rH)	
Protection standard	Enclosure: IP54; probe: IP20	

Standards

- EMC Directive 2014/30/EC:
 - EN 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
- WEEE Directive 2012/19/EC
- RoHS Directive 2011/65/EC



Wiring and connections

Article type	DSVCF-R	DSVCG-R	
VIN	18–34 VDC	18–34 VDC	15–24 VAC ±10%
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 TVOC 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.

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>



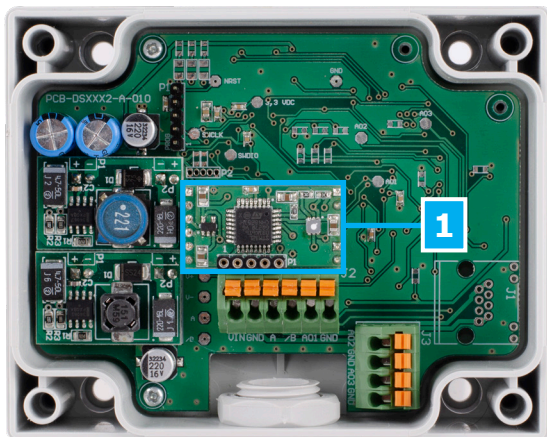
For more information about the Modbus registers, please refer to the product Modbus Register Map.

DSVCX-R

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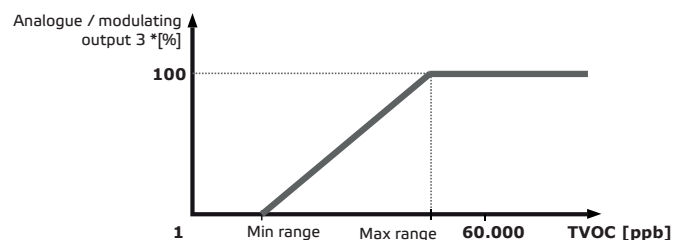
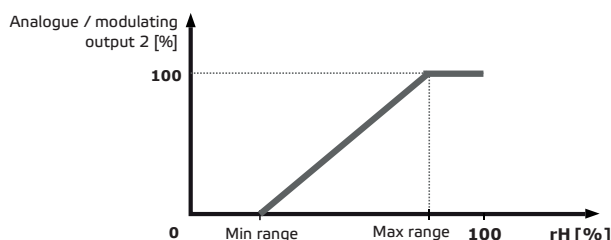
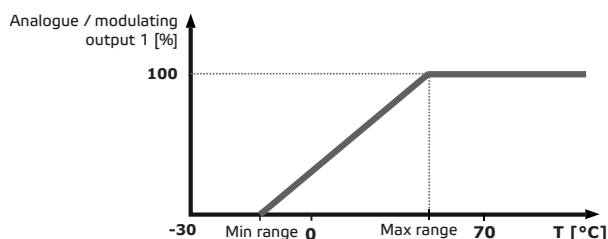
Settings



1 - TVOC sensor element

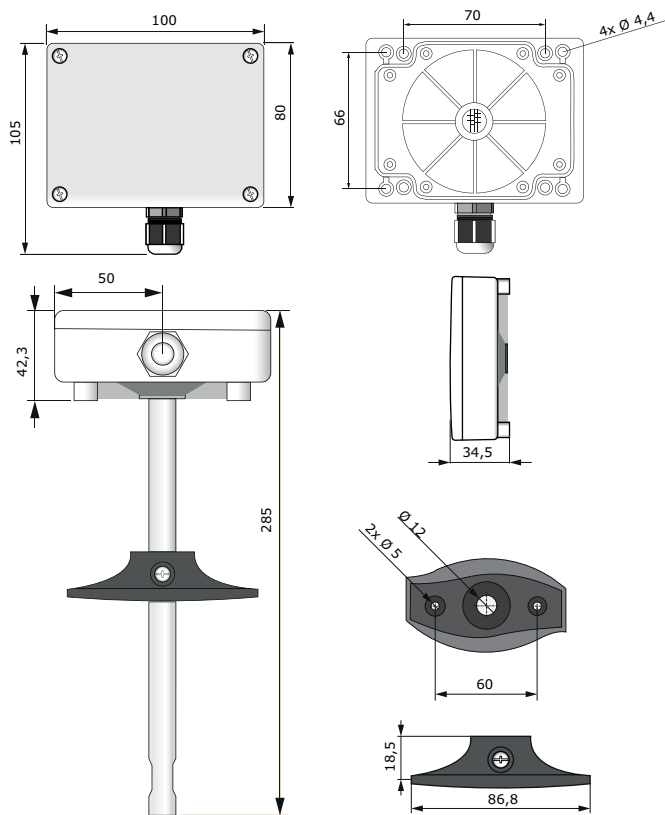
Replaceable in case of faulty operation

Operational diagrams

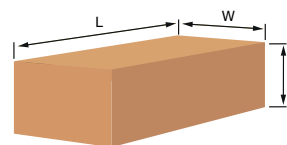


*TVOC measurement will return 0 ppb during warm-up time.

Fixing and dimensions



Packaging



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

Global trade item numbers (GTIN)

Packaging	DSVCF-R	DSVCG-R
Unit	05401003002001	05401003002018
Box	05401003500781	05401003500798