

DSTHG2-4

Duct Sensor for T, rH and Dew Point

Description

DSTHG2-4 is a duct sensor designed to measure temperature and relative humidity, as well as calculate the dew point in HVAC systems. The sensor features a modulating analogue output and a changeover relay output. The analogue output can be configured to operate according to the measured temperature, relative humidity, calculated dew point or a manual override value, depending on the selected output source. Modbus RTU communication allows measured values and configuration parameters to be accessed remotely. The unit operates on a 24 VDC or 24 VAC supply and features an IP54-rated enclosure and an IP20-rated sensor probe.

Key Features

- Integrated supply overvoltage protection up to 65 VDC.
- On-board LED indication for additional diagnostics of the device state.
- Accurate temperature and relative humidity measurements without the need for sensor calibration.
- Selectable temperature (−30—70 °C) and relative humidity (0—100 % RH) alert and alarm thresholds via Modbus registers.
- Access to device measurements and settings via Modbus RTU communication.
- Firmware updates via Modbus RTU communication.
- Robust enclosure made of Acrylonitrile Butadiene Styrene (ABS) plastic.

Article Code

Article code	Supply voltage
DSTHG2-4	24 VDC / 24 VAC ± 10 %

Area of Use

- Demand-controlled ventilation based on temperature, relative humidity and dew point

Standards

- Low Voltage Directive 2014/35/EU CE
- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- WEEE Directive 2012/19/EU
- Commission Delegated Directive (EU) 2015/863 (RoHS 3) of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances

Warnings and Attention Points

- This product is intended for indoor use only.
- Avoid mounting the device in locations affected by direct sunlight.
- Turn off the power supply before all servicing and maintenance.
- Applying overvoltage to any of the intelligent sensor parts will cause improper operation or failure to the internal circuit.
- Do not short-circuit the terminals or the input and output wiring.
- During operation, the unit must be closed.
- If the unit does not work according to the instructions, the wiring connections, supply voltage and settings need to be checked.
- Do not use this product as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.



Technical Specifications

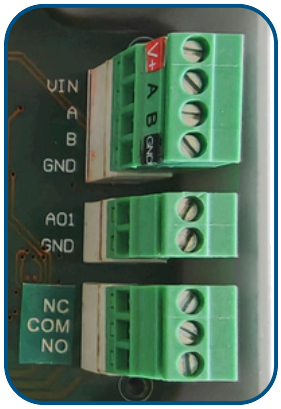
Current consumption	max. 40 mA
Minimum recommended airflow velocity	1 m/s
Analogue output	
0–10 VDC	load resistance ≥ 1 kΩ
2–10 VDC	
0–5 VDC	
0–20 mA	load resistance ≤ 500 Ω
4–20 mA	
PWM Push-Pull	frequency = 1 kHz, load resistance ≥ 1 kΩ, output voltage level = 12 VDC
PWM Open Collector	frequency = 1 kHz, pull-up resistance ≥ 1 kΩ, pull-up voltage level ≤ 12 VDC
Relay output	
Maximum switching voltage	48 VDC / 48 VAC
Rated current	2 A (resistive load)
Accuracy of measurements	
Temperature	±0,5 °C
Relative humidity	±2,5 % rH
Resolution	
Temperature	0,01 °C
Relative humidity	0,1 % rH
Measurement ranges	
Temperature	-30—70 °C
Relative humidity	0—100 % rH
Operating conditions	
Temperature	-10—50 °C
Relative humidity	0—90 % (non-condensing)
Protection standard	
Enclosure	IP54
Probe	IP20
Enclosure type	
Material	Acrylonitrile Butadiene Styrene (ABS) plastic
Colour	Grey (RAL 7035)



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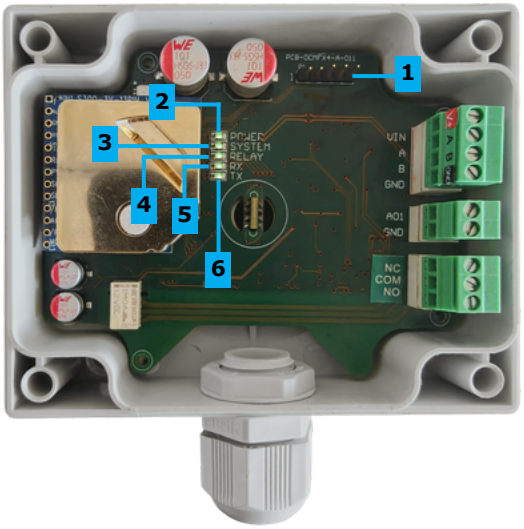
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Wiring and Connections



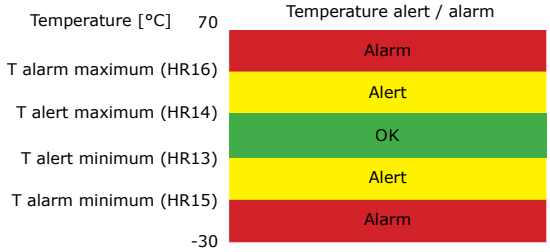
Supply voltage and Modbus communication	
VIN	24 VDC / 24 VAC ± 10%
A	Modbus RTU (RS485), signal A
B	Modbus RTU (RS485), signal /B
GND	Common ground
Analogue output	
AO1	12 VDC
GND	Analogue output, common ground
Relay output	
NC	Normally closed contact
COM	Common contact
NO	Normally open contact
Cable characteristics	Cat5 / EIB cable, cross section ≥ 0,5 mm²

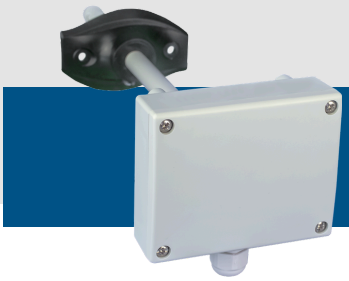
Settings and Indications



1 – PROG header, P1	1 2 3 4 5	Put a jumper onto pins 1 and 2 and wait for at least 5 seconds to reset the Modbus RTU communication parameters
		On-board LED indication
2 – Power indication	ON	The internal power supply (3,3 VDC) of the device is ok.
3 – System indication	ON	The device is powered and the system is ok.
	Slow blinking	The device is powered. There is a system error. Blinking frequency: 1 Hz
	Fast blinking	The device is powered, bootloader mode. Blinking frequency: 2 Hz
4 – Relay indication	ON	The relay is turned ON.
5 – RX indication	Blinking	A Modbus request from a master (client) is received.
6 – TX indication	Blinking	A Modbus response from the device is transmitted.

Temperature Diagram

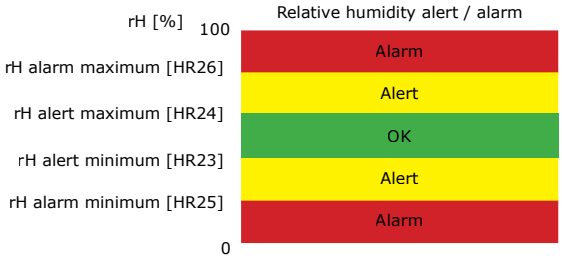




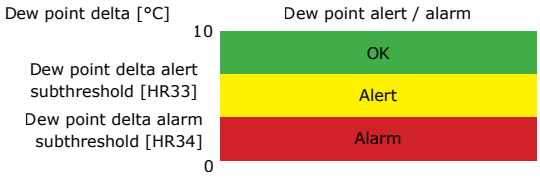
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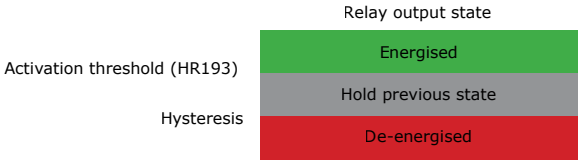
Relative Humidity Diagram



Dew Point Diagram



Relay Output



Connect Devices to SenteraWeb or SenCom

Via a Sentera Internet Gateway you can connect your installation to the **SenteraWeb** HVAC cloud and:

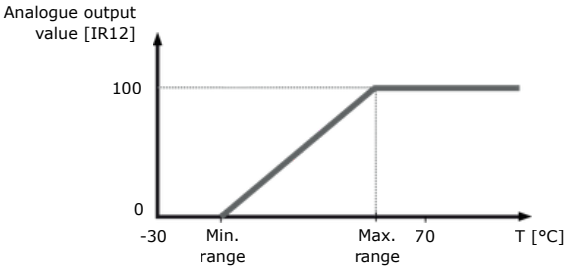
- Change the parameter settings of connected devices remotely.
- Define users and give them access to certain parameters of the installation via a standard web browser.
- Log data, create diagrams, and export logged data in CSV format.
- Receive alerts or warnings via email or SMS when measured values exceed thresholds or when errors occur.
- Use the day-week timer to create multiple regimes for your ventilation system.

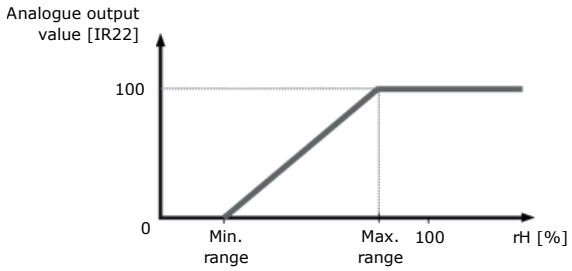
Via the **SenCom** software, you can connect devices to a local computer using a CNVT-USB-RS485-SET USB converter and:

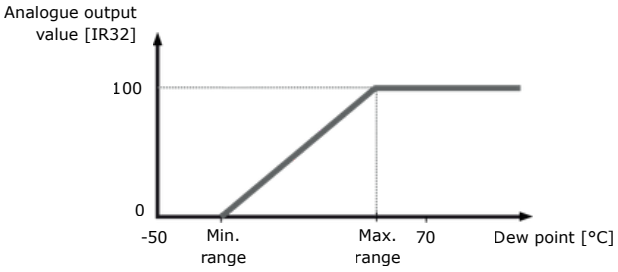
- Change the parameter settings of connected devices locally.
- Plot diagrams and export logged data in CSV format.
- Update the firmware of connected devices.

Please refer to the Modbus Register Map of the product for more details regarding the Modbus registers.

Operational Diagrams









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Fixing and Dimensions

