

DXH

Duct humidity sensor / switch



The DXH series are sensors / switches which measure the relative humidity in ducts. Four pre-defined ranges provide ideal measurement windows with one user-definable range. The implemented digital sensor is self-calibrating and maintenance-free. These units are equipped with Modbus RTU (RS485) communication and have an analog output and a relay output.



Key features

- Microcontroller based design
- 1 analog and 1 relay output
- Modbus RTU (RS485) communication
- Multiple ranges as measurement windows available
- Selectable switching point
- Fixed and selectable hysteresis
- Innovative self-calibrating algorithm
- Long-term stability and accuracy

Technical specifications

Outputs	1 analog output (0–10 VDC / 0–20 mA) 1 C/O relay output (230 VAC / 2 A)	
Power consumption	No load: maximum 55 mA Full load: maximum 75 mA	
Load resistance	0–10 VDC mode	> 500 Ω
	0–20 mA mode	< 500 Ω
Sensor ranges	20–90 % rH 0–60 % rH 0–80 % rH 0–95 % rH	
Sensor range (Modbus selection)	0–95 % rH, free selectable	
Fixed hysteresis in standalone mode	5 % rH	
Hysteresis values (Modbus selection)	1 / 3 / 5 / 7 / 10 % rH	
Switching point	Selectable by trimmer or via Modbus RTU	
Accuracy	±3 % rH (0–95 % rH)	
Protection standard	Enclosure: IP54, probe: IP20	
Ambient conditions	Temperature	0–50 °C
	Rel. humidity	< 95 % rH (non-condensing)

Article codes

	Supply	Connection
DXH-G	15–24 VAC ±10 % 18–34 VDC	3-wire
DXH-F	18–34 VDC	4-wire

Area of use

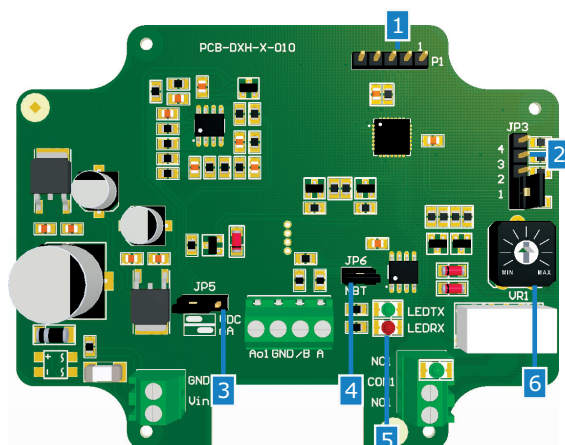
- Monitoring and maintaining constant relative humidity level in duct systems

Wiring and connections

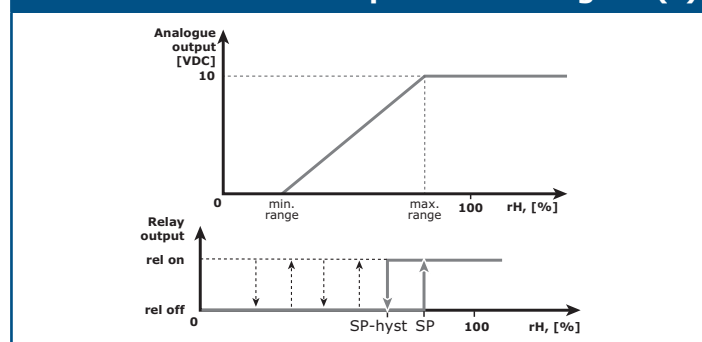
Vin	Positive DC voltage / AC ~
GND	Ground / AC ~
A	Modbus RTU (RS485) signal A
/B	Modbus RTU (RS485) signal /B
Ao1	Analog output (0–10 VAC / 0–20 mA)
GND	Ground
NO1	Normally open contact
COM1	Common contact
NC1	Normally closed contact
Connections	Cable cross section: max. 1,5 mm ² Cable gland clamping range: 5–10 mm

Caution: If an external AC / DC powered unit (G-series) is using the same safety transformer as a DC powered unit (F-series), a **SHORT CIRCUIT** in the source may result when connecting 3-wire applications (common ground)!

If an AC power supply is used with any of the units on a Modbus network, the **GND** terminal should **NOT BE CONNECTED** to other units on the network or via the **CNVT-USB-RS485** converter. This may cause permanent damage to the communication semiconductors and / or the computer!



Operational diagram(s)



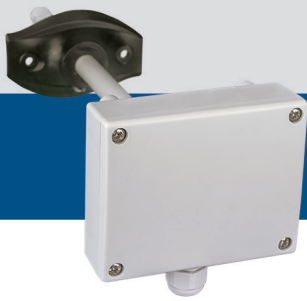
Modbus registers



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 – Modbus settings reset jumper (P1)		Put and hold for 20 seconds
2 – Sensor range selection JP3		20–90 % rH
		0–60 % rH
		0–80 % rH
		0–95 % rH
3 – Analog output selection JP5		0–10 VDC
		0–20 mA
4 – Network bus termination resistor JP6 (NBT)		The DXH is the first or the last unit
5 – Modbus communication indication	Blinking green	Transmitting
	Blinking green	Receiving
6 – Setpoint trimmer		VR1 - switching point for the relay

indicates the position of the jumper.)

Standards

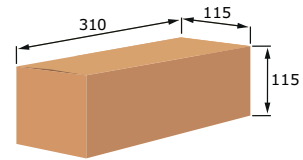
- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC: EN 61326
- WEEE Directive 2012/19/EU
- RoHS Directive 2011/65/EU



Global trade item numbers (GTIN)

Packaging	DXH-F	DXH-G
Unit	-	05401003002162
Box	-	05401003500941

Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
DXH-F	Unit (1 pc.)	310	115	115	0,20 kg	0,32 kg
	Box (20 pcs.)	590	380	505	4,00 kg	7,65 kg
DXH-G	Unit (1 pc.)	310	115	115	0,20 kg	0,32 kg
	Box (20 pcs.)	590	380	505	4,00 kg	7,65 kg

Fixing and dimensions

