DOL 104 1-3 V

Humidity sensor

1 Product description

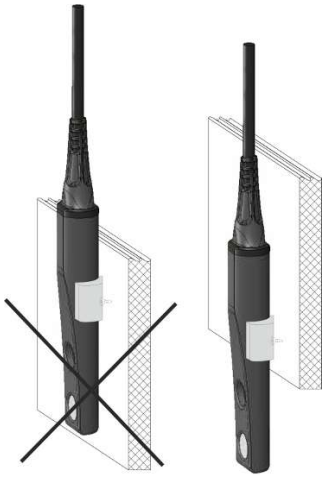
DOL 104 is a high-precision sensor for measuring relative humidity. It is intended for use in livestock houses but is also well suited for a number of industrial applications.

The sensor features one analogue output with full protection against short-circuits and wiring failures.

The special sensor element and the built-in Teflon filter enable application in livestock houses with constantly high humidity.

The sensor is microprocessor-controlled and has a two-color light emitting diode (LED) to communicate the operation status and the error diagnostic.

2 Mounting guide



For optimum mounting of the sensor, use mounting clip or mount it free-hanging in the cable.

The sensor element of the sensor requires free air passage.

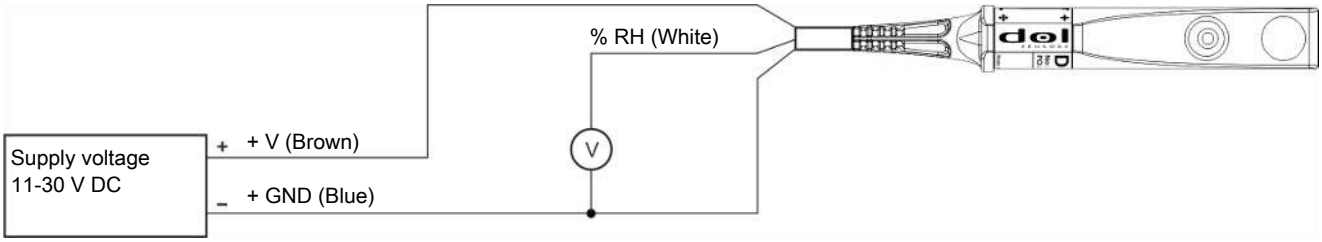
Mount the sensor so it is not exposed to direct sunlight, as this would affect the measurement.

● Remember to put on a protection cap before mounting the cable.

3 Installation guide

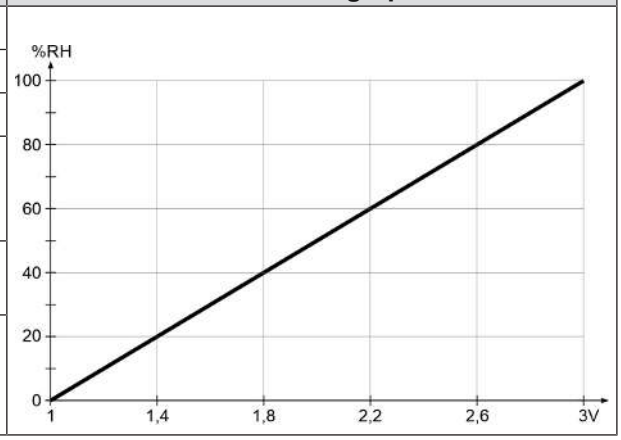
Installation, servicing and troubleshooting of all electrical equipment must be carried out by qualified personnel in compliance with the applicable national and international standard EN 60204-1 and any other EU standards that are applicable in Europe.

3.1 Connection of the sensor



Signals and wire colors

DOL 14		DOL 14 HQ		DOL 114 0-10 V		DOL 104 1-3 V
(BK) Black = +13-24 V DC	→	(WH) White = +13-28 V DC	→	(BN) Brown = +11-30 V DC	→	(BN) Brown = +11-30 V DC
(BN) Brown = 0…10 V/%RH	→	(GN) Green 0…10 V/%RH	→	(WH) White = 0…10 V/%RH	→	(WH) White = 1…3 V/%RH
No temperature output	→	No temperature output	→	(BK) Black = 0…10 V/°C	→	No temperature output
(BU) Blue = GND (0 V)	→	(BN) Brown = GND (0 V)	→	(BU) Blue = GND (0 V)	→	(BU) Blue = GND (0 V)

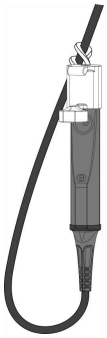
LED/LIGHT PROTOCOL			Functional graph
LED		**Status**	
Green	**Red**		
ON		Operation OK	
Flash		Outside normal range (below 10 % RH or exceeding 95 % RH)	
	ON	Connection error Load < 500 Ω	
	Flash	Sensor defect Over or under voltage alarm Overload	

4 Maintenance

When cleaning and disinfecting the house, the protective cap must be put on the sensor so that it hangs with the tip up, as shown in the picture.

Sensor is cleaned with:

- Water and brush
- High-pressure cleaning with cold water (only with attached protective cap)



Avoid using:

- High-pressure cleaning with hot water
- Highly compressed air
- Solvents
- Corrosive/caustic agents
- Alcohol-based disinfectants

After the sensor has been exposed to water and condensation, it requires a period where the relative humidity is lower than 80 %RH in order for it to measure correctly.

Do not bend the sensor as this would inflict permanent damage on the electronics of the sensor.

5 Technical data

Measuring range	% RH	0 - 100
Accuracy	% RH	± 3% RH (40–85 %) ± 4% RH (10-95 %) at 0-40 °C
Output signal	V	0.02 V / % RH
Time constant	T_{63}	20 s at 0.5 m/s air speed
Supply voltage	V DC	11 – 30
Current	mA	12 mA no load 35 mA max. load
Load	Ω	> 500 Ω - < 10 MΩ

Recommended load	kΩ	≥ 100
Max. output current	mA	20
Output impedance	Ω	< 1
Cable		2 m 3 x 22 AWG / 0.34 mm^2
Max. Cable length at 0.75 mm^2	m	100
Max. Cable length at 1.50 mm^2	m	200
Temperature, operation and storage	°C	-40 to +60
Protection class	IP	67
Measurement, shipment	mm	275 × 200 × 20
Shipment weight ex. connector	g	150

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5.1 Dimensions

Dimensions in mm.