DOL 114 0-10 V

Humidity and Temperature Sensor



For other language variants of this document we refer to www.dol-sensors.com or your local dealer.

1 Product description

DOL 114 is a high-precision humidity sensor for measuring relative humidity and temperature. It is intended for application in livestock houses but is also well suited for a number of industrial applications.

The sensor features two analogue outputs with very low output resistances and full protection against short circuits and wiring failures.

The special sensor element and the built-in filter enable application in livestock houses with constantly high humidity. The sensor ships with a built-in connector or cable, and with a specific adapted specification area - all according to your needs.

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

Sensor can be supplied with blinded LED for applications where this is needed.

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.

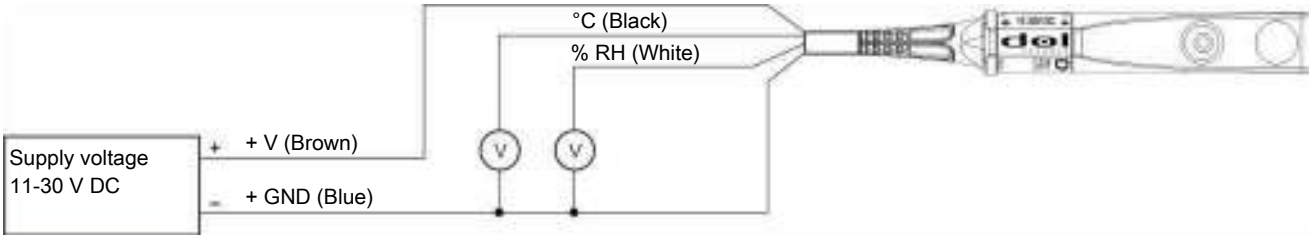
Remember to put on a protection cap before mounting the cable.

3 Installation guide



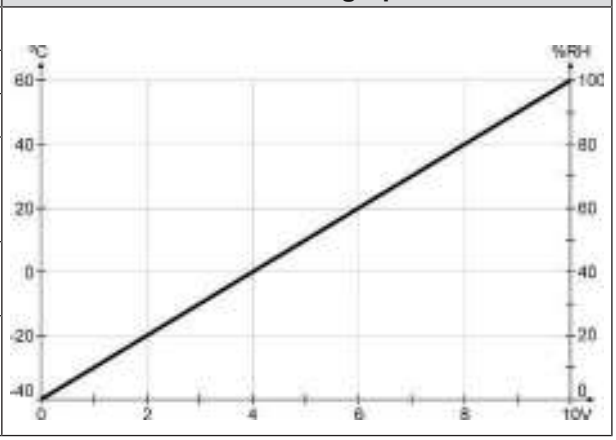
Installation, servicing and troubleshooting of all electrical equipment must be carried out by qualified personnel in compliance with the applicable national and international standard EN 60204-1 and any other EU standards that are applicable in Europe.

3.1 Connection of the sensor



Signals and wire colors

DOL 14		DOL 14 HQ		DOL 114 0-10 V
(BK) Black = 13 24 V DC	→	(WH) White = 13 28 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
No temperature output	→	No temperature output	→	(BK) Black = 0…10 V°C
(BU) Blue = GND (0 V)	→	(BN) Brown = 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



Clean the sensor with water and a brush without using:

- High-pressure cleaner
- Highly compressed air
- Solvents
- Corrosive/caustic agents
- Alcohol-based disinfectants

During cleaning and disinfection, the sensor should be removed and the sealing plug for the cable should be mounted. Alternatively, the sensor protective cap can be mounted. The sensor must be placed with the tip pointing upwards during disinfection.

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

		Humidity measurement	Temperature measurement
Specifications			
Measurement range		0 - 100% RH	- 40 °C – 60 °C
Accuracy		± 2 % RH (40–85 %) ± 3 % RH (10-95 %) at 0-40 °C	± 0.5 °C (10 – 40 °C) ± 1.5 °C (- 30 – 60 °C)
Output signal		0.1 V/% RH	0.1 V/°C at 4 V
Time constant T_{63}		20 s at 0.5 m/s air speed	6 min. at 0.5 m/s air speed
		Common	
Electrical			
Supply voltage	V DC	11 - 30	
Current	mA	12 mA no load 55 mA max. load	
Load	Ω	> 500 Ω - < 10 MΩ	

		Humidity measurement	Temperature measurement
Recommended load	Ω	≥100 kΩ	
Max. output current	mA	20	
Output impedance	Ω	< 1	
Mechanical			
Cable dimensions	AWG	2 m 4 x 22 AWG / 0.34 mm^2	
Max. cable length	m	200 m at 1.50 mm^2	
Environment			
Temperature, operation	°C	0 °C – 60 °C	
Temperature, storage	°C	- 40 °C – 60 °C	
Protection class	IP	67	
Shipment			
Packing dimensions H x W x D	mm	275 × 200 × 20	
Shipment weight ex. connector	g	150	

5.1 Dimensions

Dimensions in mm.



603008 • 2022-11-18 • en-US • Made in Denmark