

**dol**  
SENSORS

MAKING SENSE IN YOUR PRODUCTION

# DOL 104 4-20 mA

Technical User Guide



For **other language variants** of this document we refer to [www.dol-sensors.com](http://www.dol-sensors.com) or your local dealer.

## PRODUCT DESCRIPTION

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

## MAINTENANCE

### IMPORTANT

Clean DOL 104 using water and a brush. Do not use:

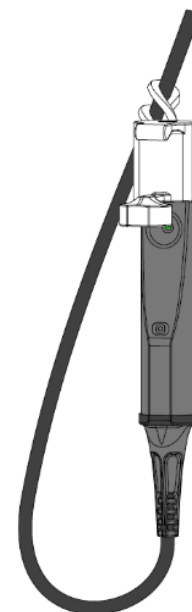
- High-pressure cleaner
- Highly compressed air
- Solvents
- Corrosive/caustic agents
- Alcohol-based disinfectants

During cleaning and disinfection, the sensor must be protected using a protection cap and be placed in vertical position.

After the sensor has been exposed to water and condensation, the sensor requires time during which the relative humidity is less than 80% in order to measure correctly.

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

dol-sensors reserve the right to change this document and the product herein described without further notice.



LED/LIGHT PROTOCOL		Status
LED		
Green	Red	
ON		Operation OK
Flash		Outside normal range (below 10% RH or exceeding 95% RH)
	ON	Connection error Load error, Fig 4.
	Flash	Sensor defect Over/under voltage alarm Overload

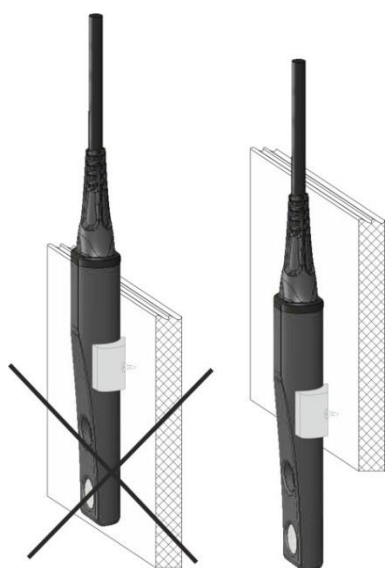


Figure 1 Mounting

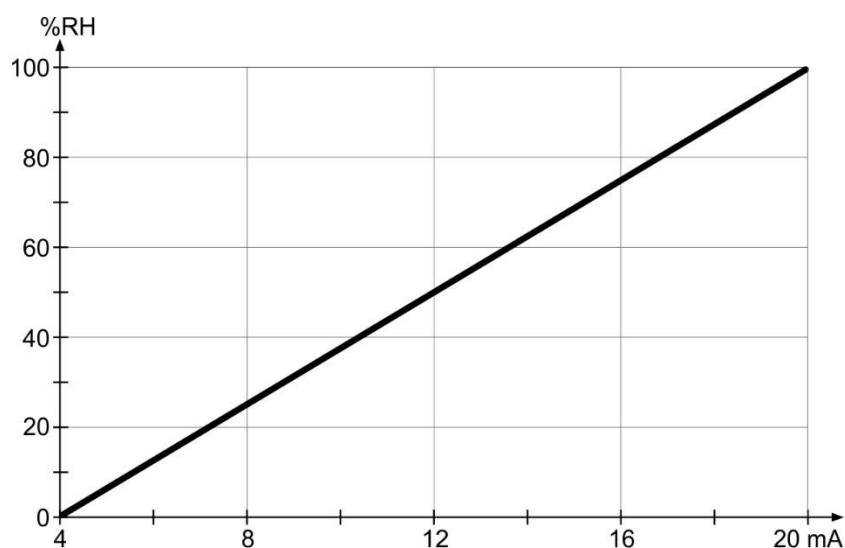


Figure 2: Functional graph

## INSTALLATION

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

The sensor element requires free air passage. See Figure 1.

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.

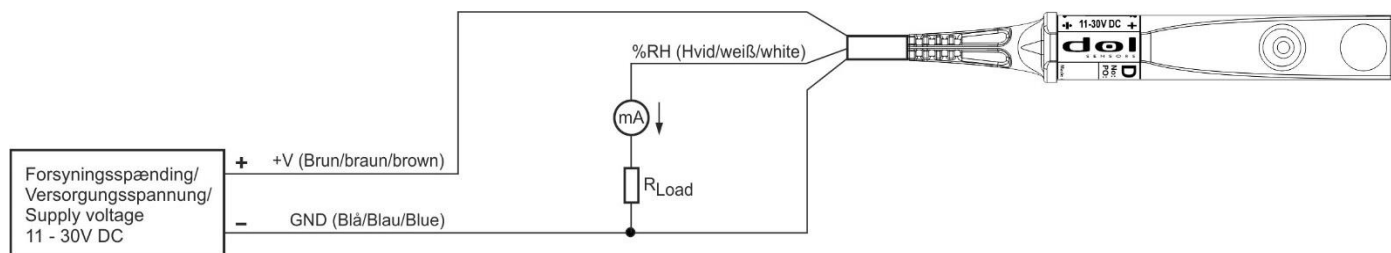


Figure 3 Connection

DOL 14		DOL 14 HQ		DOL 114		DOL 104
<b>Black = +13-24V DC</b>	→	<b>White = +13-28V DC</b>	→	<b>Brown = +11-30V DC</b>	→	<b>Brown = +11-30V DC</b>
<b>Brown = 0...10V / %RH</b>	→	<b>Green = 0...10V / %RH</b>	→	<b>White = 0...10V / %RH</b>	→	<b>White = 0...10V / %RH</b>
No temperature output		No temperature output		<b>Black = 0...10V / °C</b>		No temperature output
<b>Blue = GND (0V)</b>	→	<b>Brown = GND (0V)</b>	→	<b>Blue = GND (0V)</b>	→	<b>Blue = GND (0V)</b>

Table 1: Signals and wire colors in other products.

## TECHNICAL DATA

<b>Measuring range</b>	0 – 100 % RH
<b>Accuracy</b>	± 2% RH (40–85 %) ± 3% RH (10-95 %) at 0-40 °C *
<b>Output signal</b>	0.16 mA / % RH
<b>Time constant T<sub>63</sub></b>	20 s at 0.5 m/s air velocity
<b>Supply voltage</b>	11 – 30 V DC
<b>Supply current max.</b>	35 mA
<b>Load</b>	See Figure 4.
<b>Recommended load</b>	500 kΩ at 24 V DC supply voltage
<b>Output current</b>	20 mA (current limited)
<b>Temperature, operation and storage</b>	- 40 °C – 60 °C
<b>IP classification</b>	IP 67
<b>Cable</b>	2 m. 3 x 22 AWG / 0.34 mm <sup>2</sup>
<b>Shipment weight ex. connector</b>	150 g
<b>Measure, shipment</b>	275 x 200 x 20 mm

\* After direct water exposure and condensation a period with less than 80%RH is needed for correct measurement.

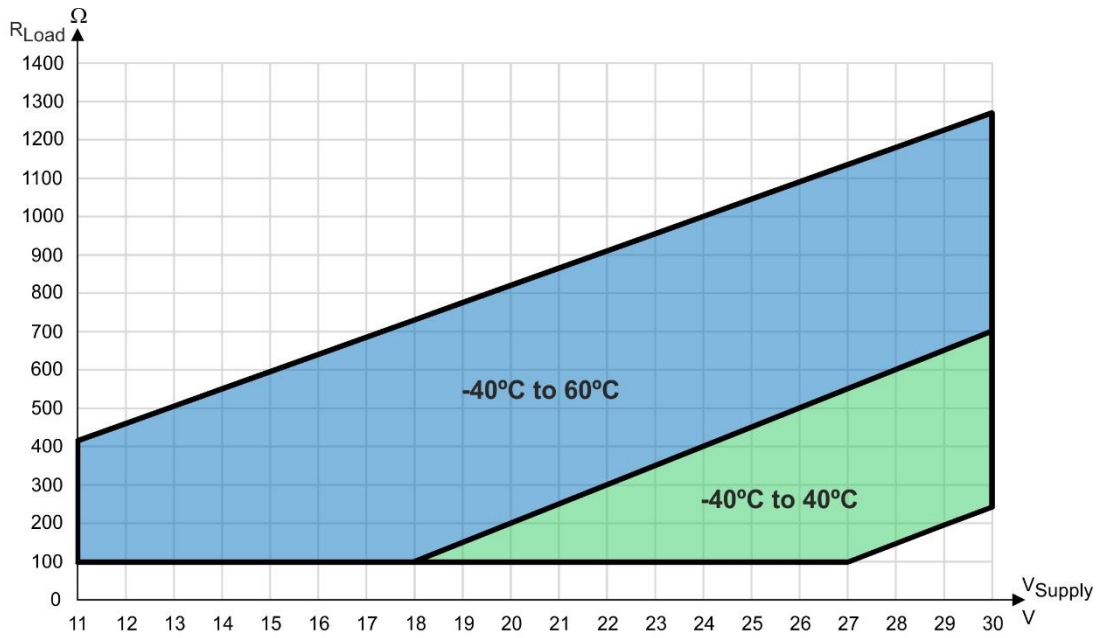


Figure 4

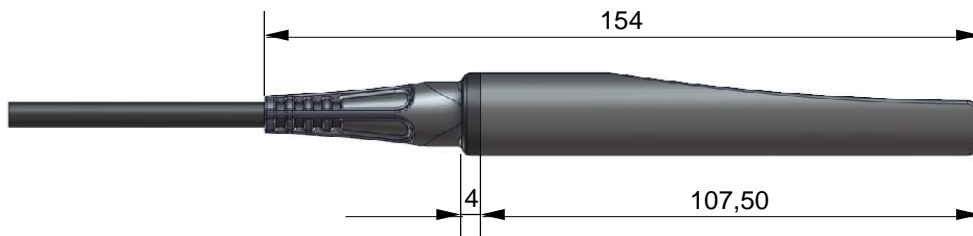


Figure 5 Dimensions (mm)