

# RELATIVE HUMIDITY DETECTOR FOR AIR DUCTS

**SUR 704 Eng.**



- Capacitive type humidity sensing element
- Output signal : 0...5 V- or 0...10 V-
- Accuracy at middle of scale  $\pm 2,5\%$
- Power supply: 24 V~ or +12 V- (from Coster devices)
- Protection : IP55

## 1. APPLICATION

For measuring relative humidity. Specially designed for installation in air ducts.

## 2. TECHNICAL DATA

Power supply :

Voltage	24 V ~
Frequency	50...60 Hz
Consumption	2.5 VA

or

Voltage	+12 V- ("G" terminal of Coster device)
Consumption	15 mA

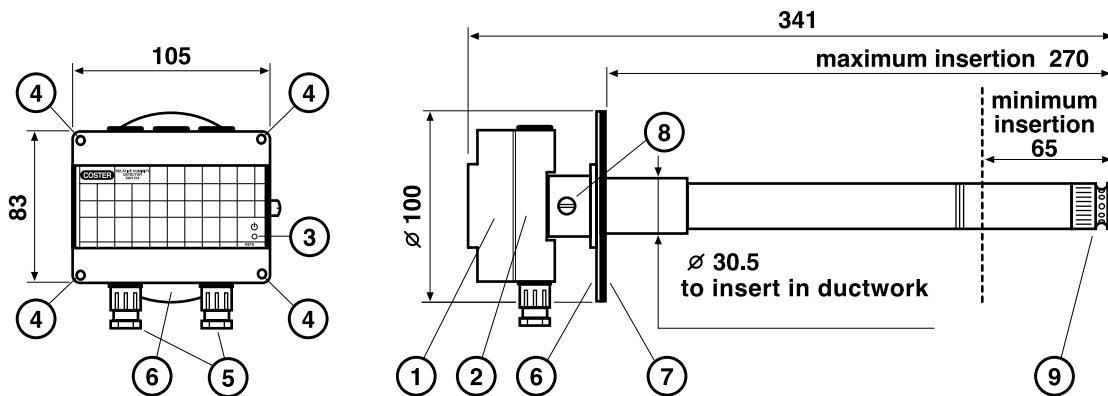
Materialis:

Housing	ABS
Tube for sensing element	PVC
Protection	IP 55
Cable entry	PG 7
Operating temperature	0...60 °C
Storage temperature	-25...+85 °C
Weight	0.780 kg

Humidity measurement :

Sensing element	capacitive
Measurement range	10...90 %
Accuracy at middle of scale (50 %)	$\pm 2.5\%$
Accuracy at extremes of scale (10...90 %)	$\pm 5\%$
Time constant	3 minutes
Influence of temperature variation (from 20 °C)	0.1 %/°C
Output signal	0...5 V- or 0...10 V-

## 3. OVERALL DIMENSIONS (in mm.)



- 1 – Cover
- 2 – Base with electronic printed circuit & terminal block
- 3 – Power LED
- 4 – Cover securing screws
- 5 – PG7 cable entry

- 6 – Flange for securing to air duct
- 7 – Seal
- 8 – Securing screw
- 9 – Sensing element container

**4. INSTALLATION**

Proceed as follows :

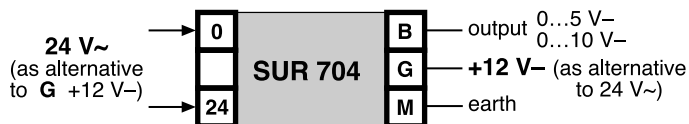
- On the air duct make the central hole (min. 32 mm) and the three holes for attaching the flange,
- Insert the seal between the flange and the air duct wall and then secure everything with the three self-threading screws supplied,
- Introduce the cylindrical tube containing the sensing element into the central hole on the flange,
- The tube must be inserted at least up to the point at which you hear it click into place (minimum depth); or, according to requirements, up to the point where tube containing the sensing element is resting on the flange (maximum depth),
- Finally, secure the detector with the screw provided (3.8).

**5. ELECTRICAL CONNECTIONS**

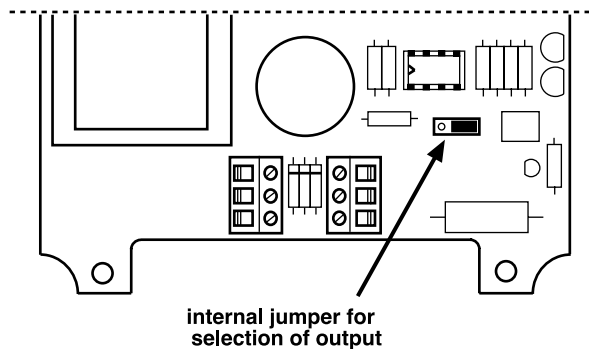
Proceed as follows :

- Remove the detector cover (3.1) after loosening the securing screws (3.4),
- Make the electrical connections according to the wiring diagram (6) and in strict observance of the safety regulations in force, using :
  - cables of minimum 1.5 mm<sup>2</sup> cross section for power supply,
  - cables of minimum 1mm<sup>2</sup> cross section for all other connections,
- Replace the cover taking care that the protective seal is correctly positioned.

**6. WIRING DIAGRAM**

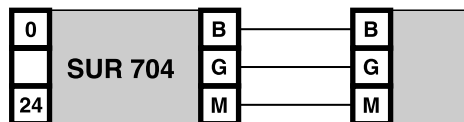


**7. OUTPUT SIGNAL**

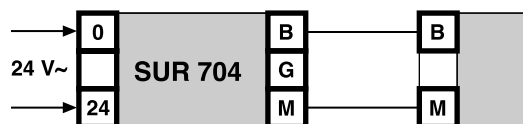


**8. EXAMPLES OF WIRING**

**8.1 Example of connection with Coster devices fitted with output "G" (+12 V-)**

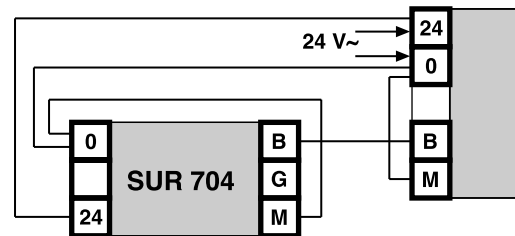


**8.2 Example of connection with with Coster devices without output "G" (+12 V-)**



**8.3 Esempio di collegamento con apparecchiature Coster in cui una fase dell'alimentazione 24 V~ è utilizzata anche come 0V (massa) e collegata al morsetto "M"**

This connection is used to replace existing detectors which used three connecting wires, and where it may not be possible to add a fourth wire. It is, however, not recommended because disturbances present on the power supply line could be introduced also into the signals line. In new plants connection shown in 8.2 is recommended.



**Data sheet amendments**

from version	to version	Page	Section	Amendment description
19.03.04 LB	18.01.06 LB	1	2. TECHNICAL DATA	Amended photograph. Removed RH value



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