

ROOM TEMPERATURE & RELATIVE HUMIDITY SENSOR

SAU 914 Eng.



- Capacitive type humidity sensor
- Humidity output signal : 0...5 V- or 0...10 V-
- Mid-scale accuracy : ± 2.5 % RH
- Temperature sensing element : NTC 10Kohm/25°C
- Power supply : 24 V~ or +12 V- (from Coster electronic devices)
- Wall-mounting; IP42 protection

1. APPLICATION

SAU 914 sensor is designed for the measurement of temperature and relative humidity. The enclosure is suitable for wall-mounting, making it is particularly suitable for use in dwellings..

2. TECHNICAL DATA

Power supply (for relative humidity) :

- power supply 24 V ~
- frequency 50...60 Hz
- consumption 2 VA

or

- power supply +12 V- ("G" terminal on Coster)
- consumption 15 mA

Materials :

- base nylon + glass wool
- cover ABS

Protection

IP 42

Operating temperature

0...45 °C

Storage temperature

-25...60 °C

Weight

0.240 kg

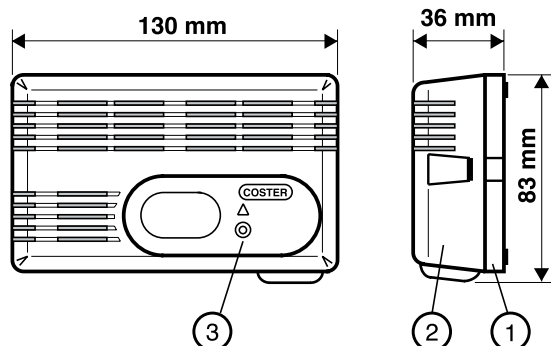
Humidity measurement :

- sensing element capacitive
- measurement range 10...90 %RH
- accuracy :
 - mid range (50 %) ± 2,5 %RH
 - at scale limits (10...90 %) ± 5 %RH
- **temperature range within which the above accuracies are guaranteed** 18... 27 °C
- time constant 3 minutes
- influence temperature variation (from 20 °C) 0.1 %RH / °C
- output signal: programmable 0...5 V- or 0...10 V-

Temperature measurement :

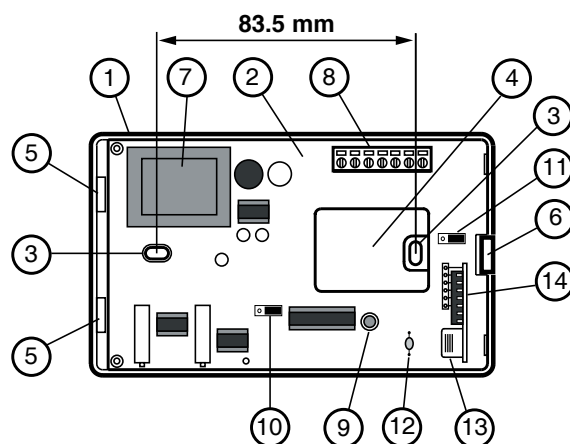
- sensing element resistive NTC 10 kohm / 25 °C
- measurement 0...45 °C
- time constant 1 minute

3. OVERALL DIMENSIONS



- 1 - Base
- 2 - Cover
- 3 - Power LED

4. BASE



- 1 - Base
- 2 - Printed circuit
- 3 - Holes for fixing screws
- 4 - Knockout for electric cables
- 5 - Cover hinge elements
- 6 - Cover securing clip
- 7 - Transformer
- 8 - Terminal block
- 9 - Power LED
- 10 - Programmer of humidity signal output
- 11 - Programmer of temperature compensation
- 12 - Temperature sensing element
- 13 - Humidity sensing element
- 14 - Humidity module

5. SITING, INSTALLATION & ELECTRICAL CONNECTIONS

The sensor must be installed in the space to be controlled. It is designed for wall mounting and can be fixed directly to the wall or mounted to a standard USH patress box.

The sensor must be installed at a height of about 1.5 metres from the ground, at a point which represents the average temperature and humidity of the space. It must be sited as far as possible from doors, windows and sources of heat and should not be placed in corners or behind curtains.

- Separate the cover from the base by releasing the cover securing clip (4.6).
- Screw the base to the wall or to the patress using the holes provided.
- Make the electrical connections according to the diagrams in sections 7. and 9. below using 1.5 mm² cables and in observance of the safety regulations in force.
- Insert the cover in the cover hinge elements (4.5) and rotate it until it clicks into the cover securing clip (4.6).

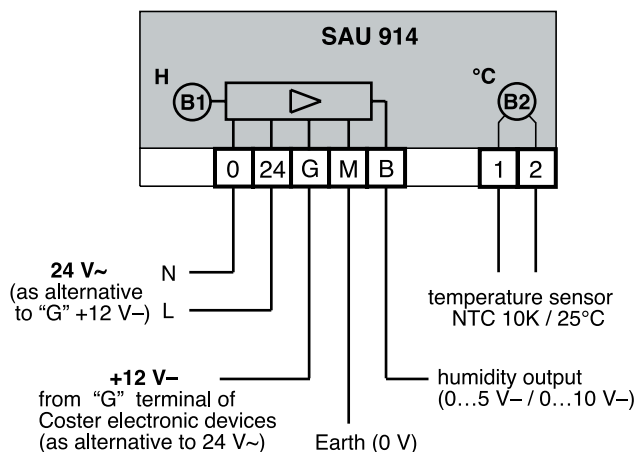
Warning: measurements by the sensors could be influenced by air currents from the ducting carrying the electric cables. To prevent this air circulation, the ducting should be sealed.

6. OPERATION

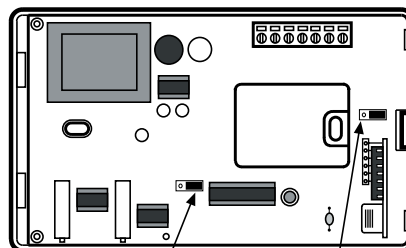
The temperature sensing element is connected directly to the sensor output terminal block. Its monitoring efficiency depends on the power supply to the sensing element: if the sensor is powered by 24 V~ an alteration in the internal temperature takes place owing to the self-heating produced by the power transformer; this does not take place, on the other hand, if the sensor is powered by 12V-. A jumper, correctly positioned, permits compensating, if necessary, this internal self-heating (see section 8. below).

The relative humidity sensor provides a voltage output: by means of a second jumper an output of either 0...5V- or 0...10V- can be selected (see section 8.).

7. WIRING DIAGRAM



8. PROGRAMMING



Jumper for selection of type of output

- output 0...5 V-
- output 0...10 V-***

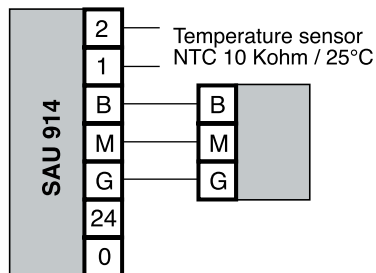
*** factory setting

Jumper for compensation of temperature sensor according to type of power supply

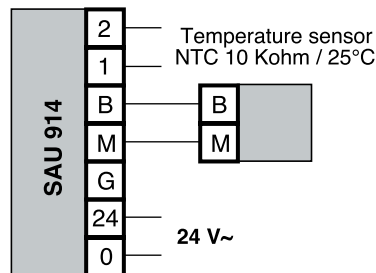
- without compensation (power supply +12 V- from Coster electronic device)
- with compensation*** (power supply 24 V~)

9. EXAMPLES OF WIRING DIAGRAMS

9.1 Example of connection with Coster electronic devices having a "G" output (+12 V-)



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



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Head Office & Sales
 Via San G.B. De La Salle, 4/a Tel. +39 022722121
 20132 - Milano Fax +39 022593645
 Orders Fax +39 0227221239
 Reg. Off. Central & Southern
 Via S. Longanesi, 14 Tel. +39 06573330
 00146 - Roma Fax +39 065566517
 Shipping
 Via Gen. Treboldi, 190/192 Tel. +39 0364773200
 25048 - Edolo (BS) Tel. +39 0364773202
 E-mail: info@coster.eu Web: www.coster.eu



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