WATERPROOF RELATIVE HUMIDITY & TEMPERATURE SENSOR FOR ROOMS

SAU 724 Eng.

CE

- **Capacitive humidity sensor unit**
- **Output humidity signal 0…5V– or 0…10V–**
- **Accuracy at mid-scale : ± 1.5 % RH**
- **Temperature sensing element : NTC 10Kohm/25°C**
- **Power supply: 24 V~ or +12 V– (from Coster electronic devices)**
- **Installation on wall; IP55 protection**

Version SAU 724 C1 uses a humidity sensor of new conception, with improved Teflon film protection against ambient pollutants

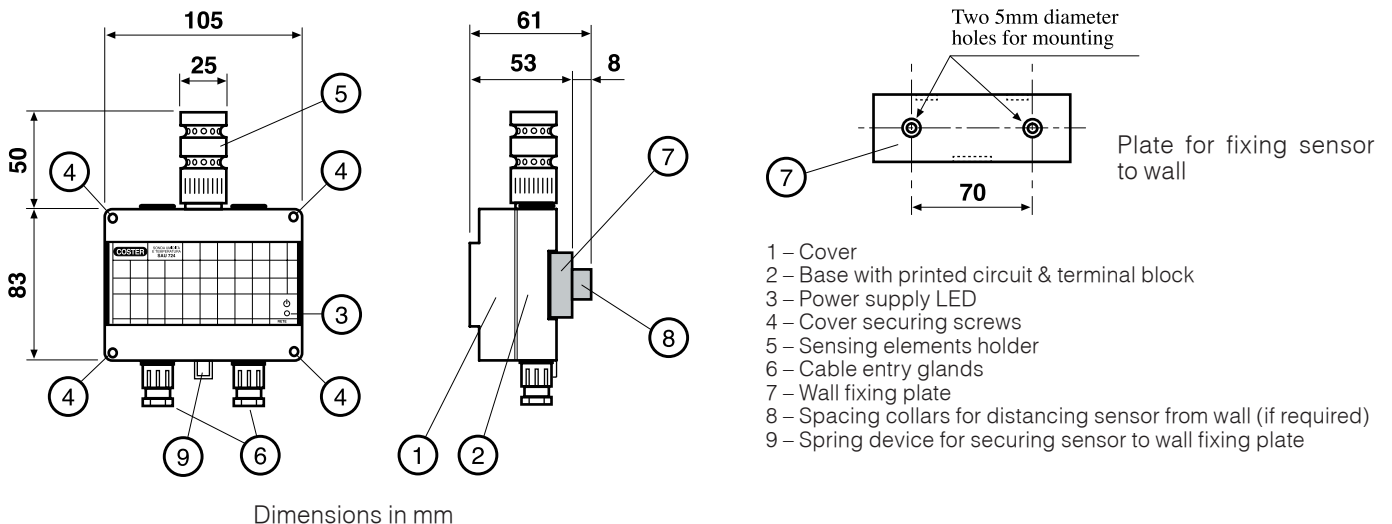## 1. APPLICATION

SAU724 is designed for measuring room humidity and temperature. Its waterproof enclosure makes it particularly suitable for use in atmospheres polluted by dust, gas, solvents: e.g. industrial-type premises, laboratories, swimming pools.

2. TECHNICAL DATA

Power supply	24 V ~	- output signal	0…5 V– or 0…10 V–
Frequency	50…60 Hz	Temperature measurement :	
Consumption	2.5 VA	- sensing element	thermistor NTC 10Kohm/25 °C
or		- measurement range	0…60 °C
Power supply	+12 V– from Coster	Materials:	
	electronic devices ("G"terminal)	- electronics enclosure	ABS
Consumption	0.180 W	- mounting for sensing elements	PVC
Humidity measurement :		Protection	IP 55
- sensing element	capacitive	Cable entry glands	PG 7
- measurement range	10…90 % RH	Operating temperature	0…60 °C
- mid-range accuracy (50%)	± 1.5 %	Storage temperature	–25…85 °C
- accuracy at scale limits (10…90%)	± 3 %	Weight	0.340 kg
- time constant	3 minutes		
- dependence on temperature	0.05 % RH / °C		
in respect of 20 °C (calibration temp.)			

3. FACIA & OVERALL DIMENSIONS

Two 5mm diameter holes for mounting

Plate for fixing sensor to wall

1 – Cover
2 – Base with printed circuit & terminal block
3 – Power supply LED
4 – Cover securing screws
5 – Sensing elements holder
6 – Cable entry glands
7 – Wall fixing plate
8 – Spacing collars for distancing sensor from wall (if required)
9 – Spring device for securing sensor to wall fixing plate

Dimensions in mm

4. SITING & INSTALLATION

The sensor comprises two parts
– the sensor itself, comprising the enclosure for the printed circuit (3.1, 3.2) and the sensing elements holder (3.5),
– the PVC wall fixing plate (3.7) which, screwed to the wall, serves as a base for installing the sensor.
In circumstances in which you wish to ensure that the sensor readings are not influenced by nearness to the wall, two spacing collars are supplied (3.8), which, mounted below the wall fixing plate, permit distancing the sensor from the wall.
The installation of the sensor on the wall fixing plate follows the same principle as installation on a DIN rail.
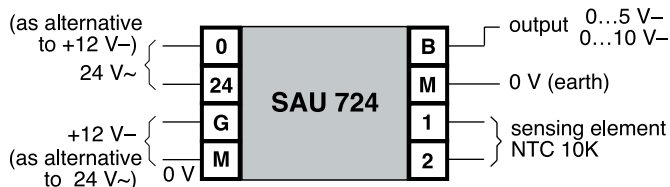
The sensor must be positioned at a height of 1.5… 2 metres from the floor, at a point which represents the average temperature and humidity of the space. It must be sited as far as possible from doors, windows, and sources of heat in general and must not be installed in a position subject to air currents.
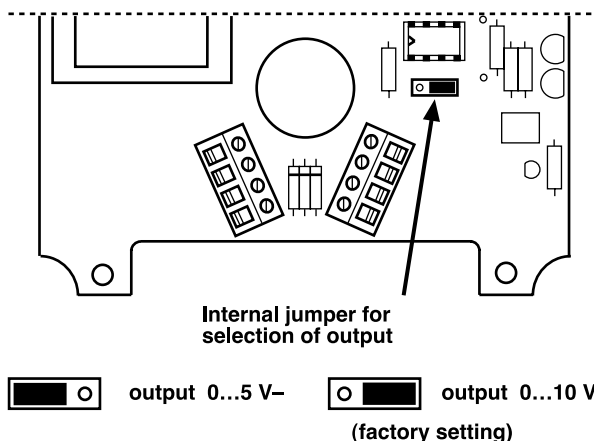
5. ELECTRICAL CONNECTIONS

Proceed as follows :
• Remove sensor cover (3.1) after having loosened the four securing screws (3.4),
• Carry out the wiring as in the diagram (6.) and in observance of the safety regulations in force, and using :
– 1.5 mm^2 cables for 24V~ power supply,
– 1 mm^2 cables for all other connections,
• Replace the cover taking care to position the protective seal correctly.
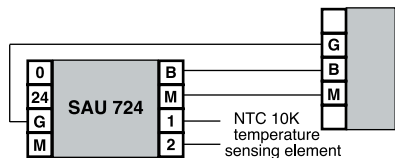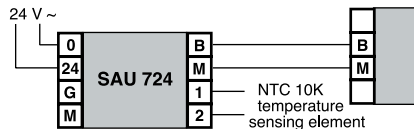
6.WIRING DIAGRAM

(as alternative to +12 V–)
24 V~
+12 V–
(as alternative to 24 V~)
0 V

SAU 724

0 | 24 | G | M

B | M | 1 | 2

output 0…5 V–
0…10 V–
0 V (earth)
sensing element NTC 10K

7. PROGRAMMING THE OUTPUT

Internal jumper for selection of output

output 0…5 V–   output 0…10 V–

(factory setting)

8. EXAMPLES OF WIRING

8.1 Example of connection to Coster electronic devices with output terminal "G" (+12 V –)

SAU 724
0 | 24 | G | M
B | M | 1 | 2
G | B | M
NTC 10K temperature sensing element

8.2 Example of connection to Coster electronic devices without output terminal "G" (+12 V–)

24 V ~
SAU 724
0 | 24 | G | M
B | M | 1 | 2
B | M
NTC 10K temperature sensing element

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Date	Revision No.	Page	Section	Amendment description
04.02.10 AM	**01**	1	Note	New humidity sensor