100 years
Since 1925

SIAP+MICROS
Environmental Monitoring Solutions

RELATIVE HUMIDITY
Sensor
t003 SMARH

- Very high precision sensor even in extreme environmental conditions
- Use of a patented, high-performance natural ventilation protection screen: SMarT CELLino
- Optimal long-term stability

Description

SMARH provides accurate and reliable measurements of Relative Humidity of the air. The sensing component features a precision laser-cut polymer capacitive transducer with an integrated signal processing system. The sensitive element is inserted in a filtering structure which offers excellent protection even in critical operating conditions due to the presence of rain, dust, dirt, oil or chemical products. This measure makes the sensitive element more immune to aging and, consequently, to reconditioning and calibration. The transducer is protected from external radiation by the patented SMarT CELLino screen, which isolates it from interference (errors) connected to solar radiation or air stagnation, promoting perfect natural ventilation. The screen is made of anti-UV plastic material (UV stab. ASA) and assembled with stainless steel screws. The patented “S” section of the screen plates creates natural internal ventilation even in calm wind conditions (<1 m/s), which constitutes an ideal measurement environment in all weather and climatic conditions.
The sensor is supplied with power and signal cable (4 m).

Main Features

- **High accuracy**
- **Compact and affordable**
- **Protection against overvoltages**
- **Easy to mantain**

Technical Specifications*

Measurement performance			
Relative Humidity [%]			
Sensing element	Capacitive		
Measurement range	0 ÷ 100		
Accuracy *(Temperatures -20 ÷ 60°C)*	±2		
Resolution	0.01		
Repeatability	0.15		
Long-term stability	< 0.25 a year		
Operating conditions			
Temperature	-30°C ÷ +60°C		
Humidity	0% ÷ 100%		
Outputs			
RS485-Modbus	Relative humidity [%]		
SDI–12	Relative humidity [%]		
Tension	0 ÷ 1 V ↔ 0% ÷ 100%		
Current	4 ÷ 20 mA ↔ 0% ÷ 100%		
Power supply and Consumption			
Voltage supply	7 ÷ 30 Vdc		
Power consumption (mA)	Min	Typical	Max
RS485-Modbus / SDI – 12 / 0 ÷ 2 V	-	1	3
4 ÷ 20 mA	5	-	25
Mechanical specifications			
Protective body	Plastic material (ASA) and stainless steel screws		
Weight	1.2 kg		
Dimensions	Ø = 175 mm; Height = 310 mm		
Electrical connections (t003n)	IP67 / 4 male poles		
Electrical connections (t003-o/p)	IP67 / 7 male poles		
Ordering codes			
Tension output	PSM-t003n-SMARH-V		
RS485-Modbus Current, serial output	PSM-t003o-SMARH-IVS		
SDI-12 serial output	PSM-t003p-SMARH-12		

*Changes on technical performances can be applied upon request of specific calibration

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