Temperature and humidity sensor

GS7-PT100-1/3B TH

Thermohygrometer with **MODBUS RTU** support

GSoc Thermohygrometer
with RS485 MODBUS RTU support
AA accuracy class & Radiation Shield

GS7-PT100-1/3B TH is a precise digital thermohygrometer for measuring air temperature and humidity, designed for meteorological and industrial applications, as well as intelligent environmental monitoring systems.

The Class AA (DIN IEC 60751) Pt100 sensor ensures exceptional temperature measurement accuracy, while the high-quality humidity measurement module guarantees stability and low drift over time.

The device is equipped with RS485 communication (Modbus RTU) and a radiation shield, allowing for reliable measurements in direct sunlight and challenging weather conditions.

Communication	RS485 MODBUS RTU
Temperature measurment resolution	0.01°C
Temperature measurement accuracy	compliant with Pt100-1/3B DIN,(AA), i.e., typical ±0.1°C over the entire measurement range
Humidity measurement resolution	0.1% RH
Humidity measurement accuracy	typical 0.5% RH, max. 1.0% RH
Long-term temperature drift	<0.03°C/year
Long-term humidity drift:	<0.19% RH/year
Radiation housing	ABS with porous brass filter
Operating temperature	-40°C to +70°C
Power supply	5-30 V DC (typically 12 V DC)
Power consumption	Sleep mode/measurement ~500 µA / 2000 µA (max. average ~20 mW)

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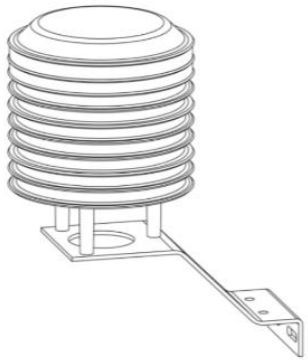
ANTI-RADIATION SHIELD



- Radiation shield for the temperature and humidity sensor, made of thermoformed plastic.
  Cylindrical shape, composed of 7 segments, equipped with a mounting arm and a universal holder.

- **Dimensions:**
  – Diameter: 17 cm
  – Height: 20 cm

CONNECTING THE MODBUS RTU SENSOR

Name	Description	Color
Power	Supply voltage 5÷30VDC max 20 mW	Brown
Masa	Supply voltage, ground	White
RS-485 A	RS-485 A (9600baud 8N1)	Green
RS-485 B	RS-485 B (9600baud 8N1)	Yellow
Screen	Screen, connect to ground or leave unconnected	Yellow-green

MODBUS RTU COMMUNICATION

MODBUS RTU register map

Address (holding registers 0x03)	Description
0x0A	A 16-bit word containing the current temperature measurement multiplied by 100 (e.g., 2333 = 23.33 degrees)
0x0B	A 16-bit word containing the current humidity measurement multiplied by 100 (e.g., 2555 = 25.55%)
0x02	Sensor address
0x30	Sensor address change register (0x00 – 0xff)

TRANSMISSION PARAMETERS

9600 baud, 8N1 (unchangeable)

ADDRESSING

The sensor is available at a unique MODBUS address, configurable in the range 0–255
Default is set to address 1

READING AND WRITING REGISTERS

- Data is read from registers using function 0x03 (read holding registers)
- Data is written to a register using function 0x06 (write single register)

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