Digital air temperature sensor

GS7-PT100-1/3B T

RS485 Modbus RTU – accuracy class AA, anti-radiation shield

GSoc GS7-PT100-1/3B T

GSoc GS7-PT100-1/3B T is a professional air temperature sensor with Class AA accuracy, designed for meteorological and industrial applications, as well as intelligent environmental monitoring systems.

The Pt100 sensing element guarantees high precision across the entire temperature range, while the built-in RS485 (Modbus RTU) communication ensures easy integration with IoT systems, BMS, and weather stations.

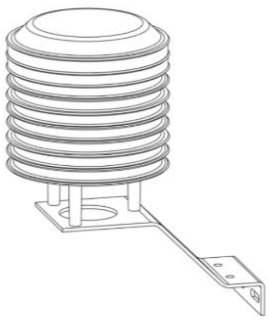
The sensor is supplied with an anti-radiation shield, allowing for reliable measurements in sunlight and variable weather conditions.

Communication	RS485 MODBUS RTU
Temperature measurment resolution	0.01°C
Temperature measurement accuracy	Class AA (Pt100-1/3B DIN IEC 60751), typically ±0.1 °C over the entire range
Long-term drift	< 0.03 °C/year
Operating temperature	-40°C to +70°C
Sensor housing material	Stainless Steel
Protection rating	IP65 or higher (with cover)
Power supply	5–30 V DC (typically 12 V DC)
Current consumption	sleep/measurement ~500 µA / 2000 µA (max. average ~20 mW)

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



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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)