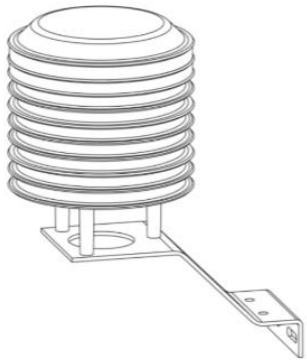
Digital atmospheric pressure sensor

# GS7-PTP-01-P

RS485 Modbus RTU – high precision ±0.1 hPa



## GSoc GS7-PTP-01-P
with RS485 MODBUS RTU support

**GSoc GS7-P-01** is a precise digital atmospheric pressure sensor designed for use in meteorological, industrial, and environmental monitoring applications.
The sensor provides high resolution (0.01 hPa) and exceptional measurement stability, both in laboratory and field conditions.
Thanks to RS485 (Modbus RTU) communication, the device can be easily integrated into existing systems. Its IP65-rated housing ensures resistance to harsh weather conditions.

| | |
|---|---|
| **Communication** | RS485 MODBUS RTU |
| **Atmospheric pressure measurment range** | 300 – 1250 hPa |
| **Atmospheric pressure measuring range with full accuracy** | 700 – 1100 hPa |
| **Relative accuracy** | typ. ±3 Pa (≈ ±0.25 m) in the range 700 – 1100 hPa, 25 – 40 °C |
| **Absolute accuracy** | typ. ±50 Pa in the range 300 – 1100 hPa, –0 – +65 °C |
| **Resolution** | 0.01 hPa |
| **Power supply** | 5–30 V DC (typically 12 V DC) |
| **Power consumption** | Sleep mode/measurement ~500 µA / 2000 µA (max. average ~20 mW) |
| **Operating temperature** | –40 °C – +70 °C |
| **Housing** | ABS with porous brass filter (sensor protection) |
| **Protection class** | IP65 (or higher), Suitable for operation in full sunlight and outdoor conditions |

## 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
Protects against direct sunlight and precipitation

› **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

### TRANSMISSION PARAMETERS

Speed: 9600 baud (fixed)
Format: 8N1 (8 data bits, no parity, 1 stop bit)

### ADDRESSING

Address 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)

**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) |