# BPS-800

High-Precision Barometric Pressure Sensor for Meteorological Applications

Product Overview | Document No. MS-BPS-800-PO003-04 | 

## General Description

The **BPS-800** is a high-accuracy, field-ready barometric pressure sensor specifically developed for demanding meteorological applications. Housed in a rugged aluminum enclosure and equipped with multiple digital interfaces, it delivers precise atmospheric pressure readings and long-term data averages. With ultra-low power modes and robust protocol support, the BPS-800 integrates seamlessly into weather stations, climate research systems, and environmental monitoring networks.

## Functionality & Data Handling

- Real-time pressure values available on-demand
- Long-term averages auto-updated every 10 min
- Configuration via USB-C or digital interface (baud rate, parity, slave address, send interval)
- Internal FIFO buffering with oversampled precision
- All settings persist after power loss
- USB-C supports data streaming and batch logging to PC
- Compensation values readable/writable by us

## Typical Aplication

- Meteorological stations (national, regional, remote)
- Environmental and climate research observatories
- Helipad and runway weather instrumentation
- Mobile survey and air-quality trailers
- Calibration reference for pressure measurements

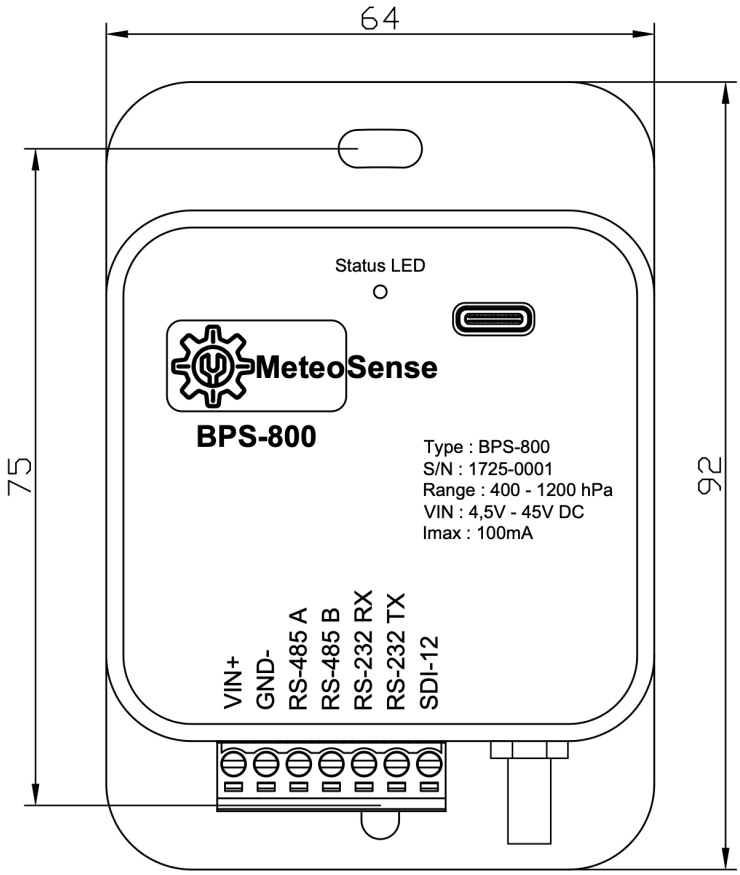
## Low Power Features

The BPS-800 includes an intelligent sleep management system. It detects master polling behavior and dynamically adjusts wake-up timing, minimizing energy use.
Typical sleep consumption: 20 µA, ideal for solar or battery-powered deployments.

| BPS-800 Electrical & General Specifications | |
|---|---|
| Dc Input Voltage | 5 VDC … 45 VDC<br>(Peak up to 60 VDC) |
| ESD Protection I/O | 15 kV |
| Reverse Polarity Protection | Yes |
| Power Consumption | 20µA at 12V |
| Power Consumption always on | 3mA at 12V |
| Number of Sensors | 3 |
| Temperature Compensation Range | -40°C … +80°C |
| Pressure Range | 400 hPa … 1200 hPa |
| Relative Pressure Accuracy 900 – 1100 hPa, 25 °C | ±0.0023 hPa |
| Relative Pressure Accuracy 700 – 1100 hPa, 15 – 55 °C, | ±0.035 hPa |
| Absolute Pressure Accuracy 400 – 1100 hPa, –5 – 65 °C | ±0.17–0.20 hPa |
| Absolute Pressure Accuracy 400 – 1100 hPa, –40 – 85 °C inkl. Drift, TCO, thermal drift | ±0.5 hPa |
| Pressure Noise | 0.0021–0.0025 hPa |
| Offset Temperature Coefficient (TCO)400 – 1100 hPa, – 5 – 65 °C | ±0.005 hPa/K |
| Max. thermal hysteresis 400 – 1100 hPa, 65 – 85 °C | +0.17 hPa |
| Max. thermal hysteresis 400 – 1100 hPa, -40 – 5°C | -0.095 hPa |
| Long-Term Drift | ±0.05–0.06 hPa |
| Short-Term Drift | ±0.009–0.010 hPa |
| Resolution | 1/64 hPa ≈ 0.0156 hPa |
| Linearity Compensation | 32 points per sensor |
| Hysteresis | 0.02 hPa |
| Interfaces | RS-485, RS-232, SDI-12, USB |
| Protocols | Modbus RTU/ASCII, SDI-12, USB-CDC |
| Baud Rate RS-485/RS-232 | 9.6, 19.2, 38.4, 57.6, 115.2 kbit/s |
| Baud Rate SDI-12 | 1.2, 2.4, 4.8 kbit/s |
| Output Interval Continuous Mode RS-485/RS-232/ SDI-12 | 1 s … 86400 s |
| Output Interval USB Streaming | 1s … 3600s |
| Housing | Anodized Aluminium |

***Notes:*** All output intervals and settings are user-configurable via USB or supported serial interfaces.

- All parameters are stored in non-volatile memory and persist across power cycles.




DIN rail mount