

BAR - Barometer with static port (Rev.3 110121)



Description

Barometers of the BAR series are electronic differential atmospheric pressure sensors with analog output that use an accuracy piezo-resistive transducer. The sensor output signal is conditioned by an internal microprocessor and temperature compensated to ensure a linear and stabilized measuring perfectly proportional with atmospheric pressure.

BAR provides high accuracy measurements with excellent repeatability, low hysteresis and good behaviour at variations of temperature and wind. This behaviour is improved by a special static port that reduces the dynamic pressure errors caused by the wind blasts and fluctuations.

The BAR barometer requires a DC supply voltage from 9 to 24Vdc; besides the low power consumption render it suitable for remote meteorological data acquisition systems powered by solar panel. It is available with analog outputs 0 ... 5Vdc and 4 ... 20mA .

Advantages

- ✓ Excellent quality / price ratio
- ✓ Excellent repeatability
- ✓ Low hysteresis
- ✓ Excellent temperature behavior
- ✓ Calibration Certificate certifiability by Accredia

Main Applications

- ✓ Environmental analysis
- ✓ Meteorology and glaciology
- ✓ Hydrology and marine applications
- ✓ Wind energy

Technical Specs

Model	BAR-I	BAR-V
Standard measuring range	800...1100hPa (600...1100 o 500...1100hPa on request)	
Transducer	Integrated differential piezo-resistive transducer temperature compensated with static port	
Output	4...20mA	0...5Vdc
Power supply and consumption	9...24Vdc @ < 28mA	9...24Vdc @ < 10mA
Accuracy	±0.4hPa @ 900...1100hPa, ±0.6hPa @ 800...900hPa	
Resolution	0.1hPa	
Repeatability	±0.3hPa	
Long term stability	±0.01hPa / year	
Thermal drift	None (temperature compensated sensor)	
Response time (63%)	1ms	
Operating temperature	-40...+125°C	
Maintenance	Check >24 months	
Connector	IP68 quick coupling (cable excluded)	
Mounting	STF-UNI Universal support for horizontal or vertical poles ømax:42mm	
Sensor housing & materials	IP65, Polycarbonate, anodized aluminium and stainless steel screws	
Dimensions & Weight	170 x 50 x 100mm, 370g	

Accessories

Cable	Shielded for outdoor. Available lengths: 4, 12, 22m (others upon request)
Cod. CSxx (xx= meters of cable)	Sensor cable with IP68 connector (sensor side) and open wires (datalogger side)
Cod. CSDxx	Sensor- Geoves' datalogger cable with IP68 connector (sensor side) and terminal (datalogger side)

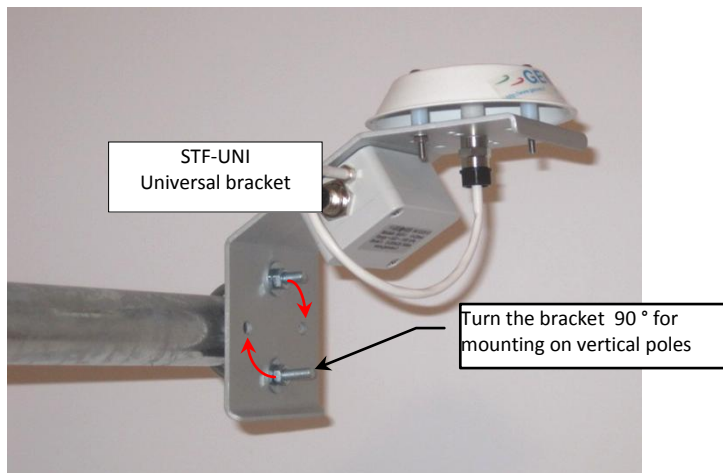
Electrical Connection

Model	BAR-I (Current output)	BAR-V (Voltage output)
Electrical output	4...20mA (where 4mA=800hPa; 20mA= 1100hPa)	0...5Vdc (where 0Vdc=800hPa; 5Vdc= 1100hPa)
Shunt resistive load	25...440Ω (tip.100Ω)	
IP68 Sensor connector	Pin1: Iout+ Pin2: Pin3: Pin4: Gnd Pin5: +Vdc (9...24Vdc)	Pin1: Vout+ Pin2: Vout- Pin3: Pin4: Gnd Pin5: +Vdc (9...24Vdc)



Installation

In all models, the sensor and the electronics are housed within a rugged polycarbonate case with IP65 protection degree, fixed to a universal bracket that allows user to mount the barometer on horizontal or vertical masts (\varnothing max 42mm) or over wall surface. Being equipped with a static pressure sampling system, the sensor can be installed at outdoor environments as not affected by errors caused by wind flow over the atmospheric pressure sampling mouth.



Installation according to the application

Application	Height from ground	Location and orientation
Meteorology (ref. Annex 8 - WMO)	1,5...2m	Install in a well ventilated area (not pond) where we are not present strong variations in temperature and sudden changes in air flow. Outdoor installation with static sampling device