Excellent accuracy for a combined temperature, humidity & pressure sensor

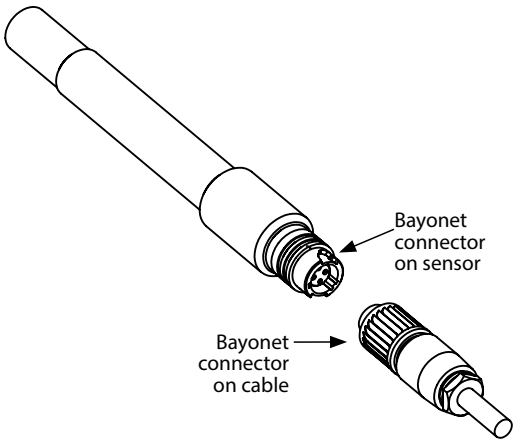
Very low 800µA power consumption

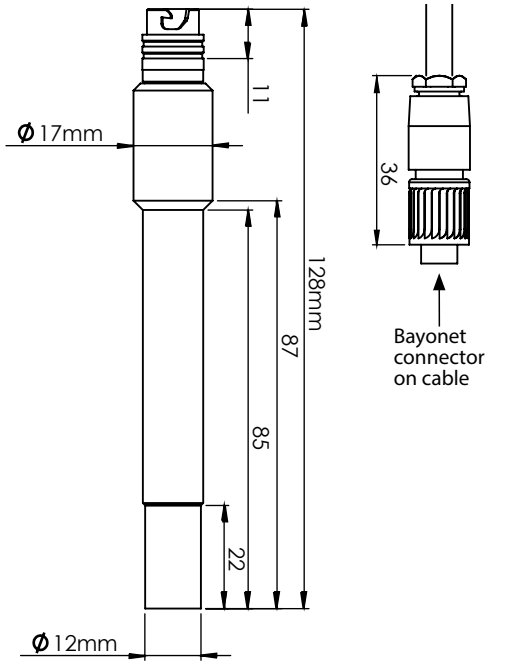
General Description

Combined temperature and humidity probe with integrated barometric pressure sensor that meets WMO measurement standards for accuracy in temperature, humidity and dew point (also frost point for road maintenance applications). It achieves an ultra low power consumption of only 800 µA (micro-amperes) which is best in class for a digital temperature probe and makes self-heating so negligible, that high accuracy can be achieved even in zero wind conditions.

It offers the following benefits:

- High accuracy meeting WMO standards
- Fast response (short time constant)
- Negligible self heating
- Ultra-low power consumption
- Digital RS485 MODBUS RTU & ASCII output
- Highest lightning protection with Class A result for surge, EFT/burst, ESD per EN 61000-4-2, EN 61000-4-4, EN 61000-4-5
- 5...15VDC operation





The high robustness of RS-485 MODBUS output and strong lightning protection (Class 5A result = no data loss) make this all-in-one sensor an ideal choice for high reliability applications. In combination with the patented helical MeteoShield (solar radiation shield) it creates a high reliability measurement solution with unsurpassed accuracy and long term measurement stability called MeteoAir.

MeteoAir - a complete solution

- 0.04°C average deviation from Stevenson screen shelter
- Combination of MeteoShield and MeteoTemp
- Very fast return to accuracy after rain
- Protection of sensor from sand, dirt, water & icing in all environments
- Significant reduction of sensor dirt buildup for long term stability
- Superb lightning protection for highest levels of reliability
- Bayonet connector for easy installation and maintenance
- -40°C to 80°C operation
- Simple setup and integration with unified RS-485 MODBUS (ASCII & RTU) communication common to all BARANI sensors
- Simple calibration common to all BARANI sensors (see Calibration guide)
- Universal mounting bracket for top and bottom mounting

Calibrated sensors

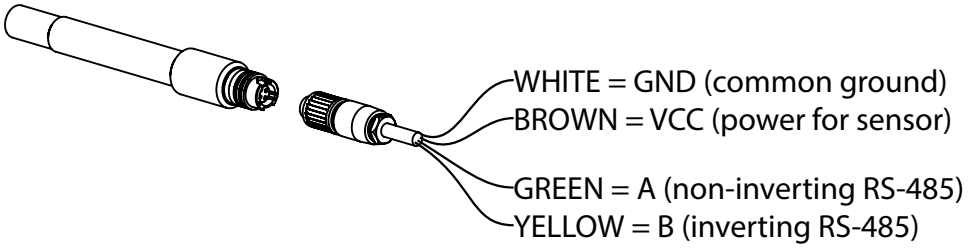
All sensors come standard with factory calibration. An independent accredited laboratory calibrated version of individual sensors with certificate per EN ISO/IEC 17025:2005 is available per request. Calibration enables configuration of each MeteoTemp sensor or your logger.

Additional information

Sensor connection recommendations & MODBUS communication protocol: see MODBUS guide.

Type	Accuracy	Stability	Resolution	Measuring range	Operating range	Response time	WMO
Temperature	±0.2°C (typical)	<0.02°C/year	0.1°C	-40°C…85°C	-40°C…85°C	5-30s	yes
Humidity	±1.8%RH @25°C, hysteresis ±1%	<0.25%RH/ year	0.1%RH	0…100%RH	0…100%RH	8s	yes
Dew point / Frost point (calculated)	±1°C		0.1°C	-15°C…50°C		8s	yes
Barometric pressure	±1.5hPa @25°C (750…1100hPa)		0.012hPa	300…1100hPa	10…1300hPa	0.2s	no

* τ63% sensor response time listed is without a filter cap. Response time with filter cap will vary based on cap porocity, material and application. In applications where sensors are used in wet, dirty and dusty environments, we recommend regular inspection of filter cap cleanliness to maintain long term accuracy. Inspection interval should be determined by application and user experience.



• WMO temperature • WMO humidity

according to Guide to Meteorological Instruments and Methods of Observation (WMO, 2008)