POLLUTION
ANALYTICAL EQUIPMENT

Ultrasonic Anemometer

Two axes ultrasonic anemometer, multiparameter and high-range, for measuring: wind speed and wind direction, temperature, relative humidity, atmospheric pressure, and solar radiation. The anemometer is also equipped with an electronic compass with tilt angles and integrated heating.

HIGH PERFORMANCE IN ANY ENVIRONMENTAL CONDITIONS

Due to its robust design and measurement accuracy, the ultrasonic anemometer is widely used in automatic weather stations, airports, harbour areas, industrial environments and offshore applications.
In addition to measuring **wind speed and direction**, this instrument is equipped with **integrated sensors** for **temperature, relative humidity, atmospheric pressure and global solar radiation**, allowing it to be used in a variety of applications. The built-in heater ensures accurate measurements in all environmental conditions, and the presence of a compass and tilt angles allows the instrument to be oriented in space, enabling it to be **installed on mobile platforms**.

MULTI-PARAMETER FOR A WIDE RANGE OF APPLICATIONS

- **Integrated sensors**: Measures air temperature, relative humidity, atmospheric pressure and global solar radiation.
- **Integrated heater**: Allows rapid defrost to ensure accurate measurements in extremely cold environments.
- **Compass and tilt angles**: Enable the determination of the instrument's spatial orientation at any time. This allows installation on mobile platforms, such as boats, and allows automatic correction of any misalignment or imperfect north orientation in fixed installations.
- **Electromagnetic immunity**: Suitable for measurements in electrically noisy environments such as industrial sites or wind farms.

TECHNICAL SPECIFICATIONS

Measured parameters	Wind speed and direction, atmospheric pressure, relative humidity and air temperature, global solar radiation, compass + tilt angles, heating.	
Power supply	12...30 Vdc (without heater)	
Power consumption	60 mA @ 24 Vdc (without heater)	
Serial outputs	Isolated RS232, RS485 and RS422	
Communication protocols	NMEA, MODBUS-RTU, ASCII proprietary	
Analog outputs	2 analog outputs, for wind speed and direction or for velocity U-V cartesian components. Output at choice among 4...20 mA (standard), 0...1, 0...5 and 0...10 V	
Measurement interval	From 250 ms to 1 s	
Wind speed averaging interval	Configurable from 1 s to 10 min	
Wind Gust calculation interval	Configurable from 1 s to 10 min	
Electrical connection	19-pole M23 male connector	
Operating temperature	From -40°C to +70°C	
Protection degree	IP 66	
Anti-corrosion test	MIL-STD-810G Method 509.6 (48 hours of exposure + 48 hours of drying) EN ISO 9227:2017	
Survival speed	90 m/s	
Weight	About 1 kg	
Case	ASA with aluminium and AISI 316 metal parts	
Installation	on mast Ø 40 mm external and Ø 36 mm internal	
	Wind speed	**Wind direction**
Sensor	Ultrasounds	Ultrasounds
Measuring range	0...75 m/s	0...359,9°
Resolution	0,01 m/s	0,1°
Accuracy	± 0,2 m/s or ± 2% of measure, the greatest (0...65 m/s) ± 3% (> 65 m/s)	± 2° RMSE wind speed > 2 m/s
	Air temperature	**Relative humidity**
Sensor	Pt100	Capacitive
Measuring range	From -40°C to +70°C	0...100 %RH
Resolution	0,1 °C	0,1 %
Accuracy	± 0,15 °C ± 0,1% of measure	▪ @ T = From +15°C to +35°C: ± 1,5 %RH (0...90 %RH), ± 2 %RH (remaining range) ▪ @ T = From -40°C to +70°C: ± (1.5 + 1.5 % of measure) %RH
	Atmospheric pressure	**Global solar radiation**
Sensor	Piezoresistive	Thermopile
Measuring range	300...1100 hPa	0...2000 W/m²
Resolution	0,1 hPa	1 W/m²
Accuracy	± 0,5 hPa (700...1100 hPa) @ 20 °C ± 1 hPa (500...1100 hPa) @T = 0...60 °C ± 1,5 hPa (300...500 hPa) @T = 0...60 °C	Spectrally Flat Classe C
	Compass + tilt angles	
Resolution	0,05°	
Accuracy	± 1°	
	Heating	
Heater power supply	24 Vdc ± 10%	
Heater power consumption	15 W	

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