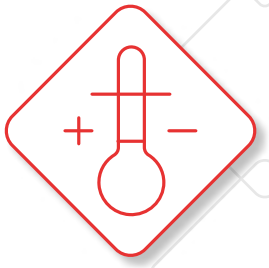
pizzi instruments

Weather Sensors



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Instruments and Systems for Geotechnical and Structural Monitoring

Weather Sensors

Description

Pizzi Instruments offers a wide range of instruments for meteorological and environmental monitoring to be integrated into geotechnical and structural monitoring systems.

The sensors are connected to our automatic acquisition units CUM3000 or DAC3000, also used for all other sensors in a system. This makes it possible to correlate structural data with environmental data, parameters for the latter often being at the origin of changes in geological and structural problems.

Among the sensors we offer we highlight:

- **Rain gauges**
- **Barometers**
- **Anemometers**
- **Termometer**
- **Hygrometers**
- **Evaporimeters**
- **Level meters**
- **Solar radiation**
- **Others on request**

Applications

Each instrument has its own specific application and all instruments have the same purpose: monitoring meteorological and environmental parameters in order to predict significant changes of climate which could cause major problems for work activities, people and structures.

Typical applications for all weather instrumentation are:

- **All types of Dams**
- **Rivers**
- **Monuments and archaeological sites**
- **Landslides**
- **Galleries**
- **Excavations**
- **Mining**
- **Other**

Features and benefits

- **Accuracy**
- **Measurement speed**
- **Long-term repeatability**
- **Easy to use**
- **Automated Measurements**
- **Remote instrumentation management by dedicated control unit and software**
- **Instrumentation compliant with ISO9060 standards, and IEC-17025 to WMO**

Measurement principle

Each instrument has its own mode of operation and its own measuring principle, in fact, each sensor measures a different parameter from all other sensors. Their shared purpose is monitoring such parameters in order to anticipate potential changes in weather conditions and monitor their various phases of development.
Optimum management of observations is essential, as these are the first link in the chain, both from a technical and scientific perspective. Observations form the basis for understanding phenomena and for subsequent weather forecasting.

Barometer

Instrument for measuring atmospheric pressure . Its meteorological use is for forecasting weather.

Modelli:

TEM3201002 sensor with a 0-2Vdc output signal

TEM3201001 sensor with a 4-20 mA output signal

Technical Features

Measuring Type	Atmospheric Pressure
Transducer	Semiconductor
Measuring Range	700 mB/1100 mB
Accuracy	± 0,5 mB
Sensitivity	0,1 mB
Output Signal	2 V (700 mB) / + 2 V (1100 mB) or 4-20 mA
Working Temperature	-30°C/ +70° C Compensation in temperature
Dimensions	L110xP60xH80 mm
Weight	300 g

Rain gauge

Instrument for measuring rainfall with surface collection of water.

Model:

TEM2001103 collection surface 1000cm², pulse output

Technical features

Measuring Type	Rainfall
Transducer	Oscillating motion
Collection Surface	400 cm2 or 1000cm2
Range	0-200 mm/h
Accuracy	± 2%
Sensitivity	0,2 mm
Signal Output	Reed Contact o 4-20 mA
Working temperature	-10°C/ +80° C

Termometer

Instrument for measuring air and water temperatures

Models:

Output Signal PT100

Output Signal 0-2Vdc

Output Signal 4-20mA

Technical features

Measuring Type	Environmental Temperature
Transducer	PT100 thermoresistances or thermistor
Range	-40°C/ +60°C (altri disponibili su richiesta)
Accuracy	± 0,1°C
Resolution	0,01°C
Output signal	Variation of resistance or 4-20 mA o 0-2Vdc
Dimensions	Diameter 240 mm and height 200 mm
Weight	1 kg

Hydrometer

Instrument for measuring relative humidity of the air, i.e. the ratio between absolute humidity (defined as the quantity of water present in the atmosphere in a specific moment) and saturation humidity.

Models:

- Hygrometer with output 4-20 mA
- Hygrometer with forced ventilation with output 4-20 mA
- Hygrometer with output 0-1Vdc
- Hygrometer with forced ventilation 0-1Vdc

Technical features

Measuring Type	Environmental Humidity
Transducer	Capacitive
Measuring Range	0-100%
Precision	± 2% F.S.
Sensitivity	0,5%
Output signal	0/1 Vcc o 4-20 mA
Dimensions	Diameter 240 mm and height 200 mm
Weight	1 kg

Anemometer (wind speed)

Instrument for measuring wind speed

Models:

Output 4-20 mA

Output 0-2 Vdc

Technical features

Measuring Type	Wind direction
Transducer	3 cups with toroidal magnet and Hall effect sensor
Measuring Range	0,28 – 50 m/s
Accuracy	0,1 m/s in the range of 0,4 a 30 m/s; <± 1% over than 30 m/s
Sensitivity	0,05 m/s
Output Signal	0-2 Vcc o 4/20 mA
Working temperature	-10°C +70°C
Dimensions	Diameter 370 mm and height 250 mm
Weight	800 g

Anemometer (wind direction)

Instrument for measuring wind direction

Models:

Output signal : 0-2 Vdc

Output signal : 4-20 mA

Technical features

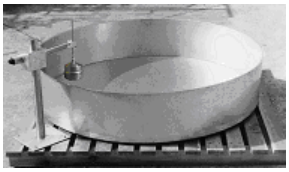
Measuring	Wind direction
Transducer	Vane with potentiometer sensor
Measuring range	0-359°
Accuracy	± 0,1°
Sensitivity	0,1°
Output Signal	0-2 Vcc o 4/20 mA
Working temperature	-10°C +70°C
Dimensions	Diameter 370 mm and height 430 mm
Weight	300 g

Evaporimeter

System for measuring water evaporation, consisting of:

Stainless steel tank

LVDT sensor for measuring the water level in the tank, range 0÷100mm, 0÷200mm



Technical features

Measuring type	Water evaporation
Transducer	LVDT
Measuring Range	± 25 mm
Accuracy	± 0,5% F.S.
Sensitivity	0,1 m
Output signal	0-2 Vcc o 4/20 mA
Working temperature	-2°C/+70°C
Dimensions of the stainless steel tank	Diameter 120 mm

Global solar radiation sensor (pyramometer)

Instrument that monitors the solar radiation for the full solar spectrum range

Models:

TEM6001302 output -5/+5 V

TEM6001301 output 4-20 mA

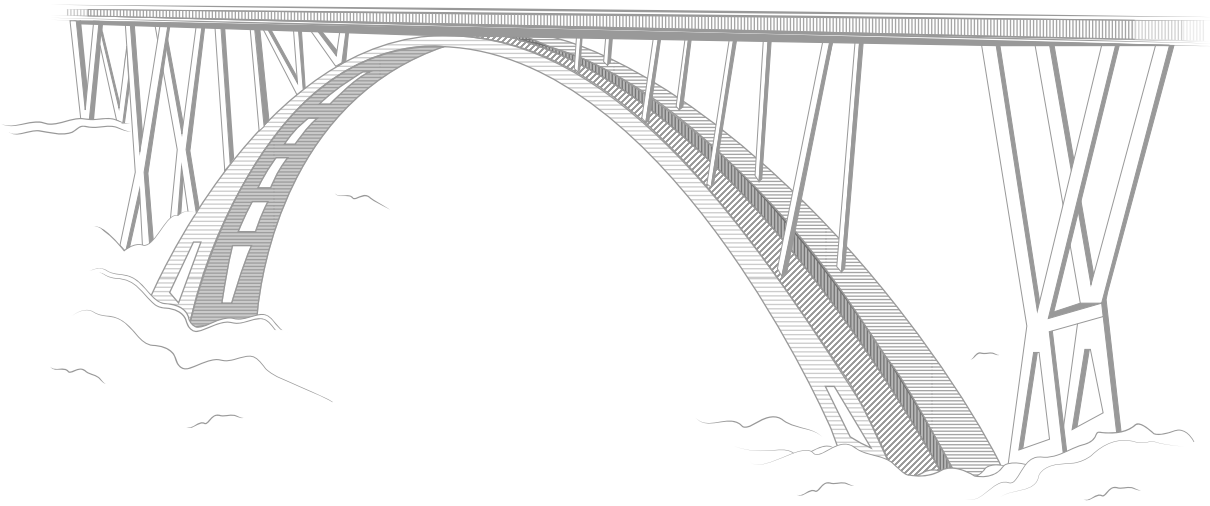
Technical features

Measuring type	II Class Thermopile Pyramometer
Transducer	Electronical
Measuring Range	0 ÷ 2000W/m2
Sensitivity	10µV/m2
Output Signal	0÷2Vdc, 4÷20mA, RS485/Modbus
Working Temperature	-40 ÷ +80°C
Dimensions of the stainless steel tank	Diameter 92 mm and height 220 mm
Power Supply	10 ÷ 30Vdc
According to	Standard ISO9060, WMO e IEC-17025

The Company

For over 40 years we have been producing precision and large facility monitoring instruments sold throughout the world.

Accuracy in design, efficiency in construction, reliability in management; these are the prerogatives that every major work must have and that Structural Monitoring Systems must guarantee.



Technical assitance

If you have any requests or questions about our instruments or if you have special needs that require different solutions from the standard, please contact us. Our team will provide all the necessary information and will be very happy to work with you to study, develop and customize instruments and solutions suitable for your specific needs.

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