WeatherSens MP

Compact Weather Sensors

Meteorology

General Description

The MP Series compact weather sensors are designed for robust and maintenance-free measurements in hydrology, meteorology and weather-critical applications where durability, precision and operations in different climatic conditions are required.

The compact devices allow for single or all-in-one measurements of up to 6 parameters such as:

- Wind speed for 60 m/s or 75 m/s (option)
- Wind direction
- Temperature
- Humidity
- Air-pressure
- Radiation

All sensors have been tested and approved against following environment conditions:

- High and low temperature ranges
- Humid weather (humidity and ingress protection)
- Windy and coastal environments (vibration and salt spray sustainability)

Applications

WeatherSens MP is especially suitable for hydro-meteorological applications by one sensor design and construction, e.g. for

- Automatic Weather Stations
- Smart Cities, Urban Areas and Munici-palities
- Road weather monitoring
- Road traffic and railway traffic/energy control systems
- Bridges and tunnel monitoring
- Photovoltaic farms
- Chemical and industrial areas
- Building Automation
- Harbour monitoring and container terminals
- Airfield and helicopter landing platform
- Offshore platforms and wind Energy Industry

Features

- Low costs of installation and total costs of ownership
- Aluminum alloy with teflon coating for harshest environment
- Product portfolio to suit best to
- automatic weather stations
- Build-In data processing and algorithm
- Universal and selectable interfaces and protocols such as SDI-12 or RS 485 (MODBUS-RTU)
- Easy integration into 3rd party systems
- Low power consumption to be supplied by solar power packages
- No moving parts and maintenance-free with high IP grade 66
- Sustainability and high accuracy
- Metric and imperial units
- Unheated versions: Operating measuring and deployment temperature range from -40 °C to +70° C
- Heated versions: Heating control range from -10 °C to +4 °C for wind speed and direction
- Extended versions for models E-H with wind speed up to 75 m/s, heater, ventilation for T/RH and electronic compass.

Accessories

- Cable with matching **M12 connector**
- **Poles:** with 2" or 50 mm outer diameter for 2 or 3.5 m measuring height
- **iRIS dataloggers and data modems:**
  - robust housing
  - single or redundant wireless IP communication
  - SDI-12, Modbus

Please ask for details.

Alternative: WeatherSens WS Series

The WS Series compact weather sensors measure wind speed up to 45 m/s. Made of corrosion-resistant polycarbonate material, they are suitable for the harshest environments.

Please ask for details.

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Variants

MP500	MP650	MP300
Measures – wind speed – wind direction – temperature – relative humidity – air pressure	Measures – wind speed – wind direction – temperature – relative humidity – air pressure – solar radiation	Measures – air temperature – relative humidit – barometric pressure
H 308 x D 160 mm, 1.4 kg (H 12.13 x D 6.3 inch, 3.09 lbs) 23 mA @ 12 VDC *	H 333 x D 160 mm, 1.4 kg (H 13.11 x D 6.3 inch, 3.09 lbs) 27 mA @ 12 VDC *	H 145 x D 126 mm, 0.8 kg (H 5.71 x D 4.96 inch, 1.76 lbs) 12 mA @ 12 VDC *

Technical Specifications

IP Class	IP66
Interfaces	SDI-12 (default) / RS 485
Protocols	SDI-12 V 1.3 (default) / RS 485 (MODBUS-RTU)
Operating Voltage	10 ... 30 VDC for all sensors (MP500/MP650 opt. heater: 1 A@24 VDC or 24 Watt for wind speed and direction transducers)
Connector and Cable	MP500/MP650: Connector M12 8-pin MP300: Connector M12 4-pin All: cable PUR 10 m (32.8 ft) (other lengths on request)
Operating Temperature and Humidity	-40 °C ... +70 °C (-40 to 158 °F); 5 % ... 100 % RH
Operating Measuring and Deployment Range	-40 °C ... +70 °C (-40 to 158 °F) (without snow accumulation and/or ice accretion)
Temperature Control Range for Wind Speed and Direction	-10 °C ... +4 °C (14 °F to 39 °F)

Parameters

	Wind Speed	Wind Direction	Temperature	Relative Humidity	Air Pressure	Solar Radiation
Principle	Ultrasonic	Ultrasonic	Diode voltage	Capacitive	Piezoresistor	Photoelectric
Range	0 ... 60 m/s or 75 m/s (0 to 134 mph or 167 mph)	0 ... 359.9°	-40 ... +80 °C (-40 ... 176 °F)	0 ... 100 % RH	10 ... 1100 hPa	300 ... 2100 nm; 0 ... 2000 W/m²
Accuracy	±0.3 m/s (±0.67 mph) or 3 %	±3°	±0.3 °C ** (±0.54 °F) MP300: ±0.5 °C (±0.9 °F)	±3 % RH	±0.3 hPa MP300: ±0.5 hPa	±5 %
Resolution	0.1 m/s (0.22 mph)	0.1°	0.1 °C (0.18 °F)	0.1 % RH	0.1 hPa	0.1 W/m²
Additional Device	-	-	-	-	-	MPS100: H 160 x D 100 mm (H 6.3 x D 3.94 inch) 1.2 kg (2.65 lbs) 17 mA @ 12 VDC

* Please note: With interface RS 485 the power consumption is 20 ... 30 % less. Please ask for details.
** Accuracy in measuring range 0 ... 40 °C: ±0.2 °C

Specifications are subject to change without notice. Weights and dimensions are indicative. - © 2024 KISTERS AG | Version: 2026-03

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