

# 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 7 parameters such as:

- Wind speed
- Wind direction
- Temperature
- Humidity
- Air-pressure
- Rainfall
- 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 Municipalities
- 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 (MOD-BUS-RTU, ASCII, NMEA 0183)
- 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 at entire wide temperature operating range from -40 to +158°F (-40 to +70 °C) (non-heated versions)
- Metric and imperial units
- Unheated versions: Operating measuring and deployment temperature range from -40 °F to +158 °F (-40 °C to +70 °C)
- Heated versions: Heating control range from 14 °F to 39 °F (-10 °C to +4 °C) for wind speed and direction

### Accessories

- **M12 cables:** 32.8 ft (10 m) / 8-pol (sensor)
- **Poles:** with 2" (50 mm) outer diameter for 6.6 or 11.5 ft (2 or 3.5 m) measuring height
- **iRIS dataloggers and data modems:** robust housing; IP over one or two channels of your choice (xG / GPRS, satellite, IoT); I/O: analog, digital, SDI-12, Modbus; iLink software; Telemetry or cloud app

Please ask for details.

#### Alternative: WeatherSens WS Series

HyQuest Solutions' WS Series compact weather sensors measure wind speed up to 49,21 yd/s (45 m/s). Made of corrosion-resistant polycarbonate material, they are suitable for the harshest environments. Please ask for details.

## Variantes

MP500	MP601	MP650	AR200	MP700
				
<b>Measures</b> <ul style="list-style-type: none"> <li>wind speed</li> <li>wind direction</li> <li>temperature</li> <li>relative humidity</li> <li>air pressure</li> </ul>	<b>Measures</b> <ul style="list-style-type: none"> <li>wind speed</li> <li>wind direction</li> <li>temperature</li> <li>relative humidity</li> <li>air pressure</li> <li>rainfall (photoelectric)</li> </ul>	<b>Measures</b> <ul style="list-style-type: none"> <li>wind speed</li> <li>wind direction</li> <li>temperature</li> <li>relative humidity</li> <li>air pressure</li> <li>solar radiation</li> </ul>	<b>Measures</b> <ul style="list-style-type: none"> <li>wind speed</li> <li>wind direction</li> </ul>	<b>Measures</b> <ul style="list-style-type: none"> <li>wind speed</li> <li>wind direction</li> <li>temperature</li> <li>relative humidity</li> <li>air pressure</li> <li>solar radiation</li> <li>rainfall (photoelectric)</li> </ul>
H 12.13 x D 6.3 inch (H 308 x D 160 mm) 3.09 lbs (1.4 kg) 23 mA @ 12 VDC *	H 13.78 x D 6.3 inch (H 350 x D 160 mm) 3.31 lbs (1.5 kg) 57 mA @ 12 V DC *	H 13.11 x D 6.3 inch (H 333 x D 160 mm) 3.09 lbs (1.4 kg) 27 mA @ 12 VDC *	H 7.64 x D 6.3 inch (H 194 x D 160 mm) 2.43 lbs (1.1 kg) 20 mA @ 12 VDC *	H 13.78 x D 6.3 inch (H 350 x D 160 mm) 3.31 lbs (1.5 kg) 63 mA @ 12 VDC *

## Technical Specifications

<b>IP Class</b>	IP66
<b>Interfaces</b>	SDI-12 (default) / RS 485
<b>Protocols</b>	SDI-12 V 1.3 (default) / RS 485 (MODBUS-RTU, ASCII, NMEA 0183)
<b>Operating Voltage</b>	10 to 30 VDC for all measuring parameters (opt. heater: 1 A@24 VDC or 24 Watt for wind speed and direction transducers)
<b>Connector and Cable</b>	Connector M12-8pol; Cable PUR 32.8 ft (10 m) (other lengths on request)
<b>Operating Temperature and Humidity</b>	-40 to 158 °F (-40 °C to +70 °C); 5 % to 100 % RH
<b>Operating Measuring and Deployment Range</b>	-40 to 158 °F (-40 °C to +70 °C) (without snow accumulation and/or ice accretion)
<b>Operating Measuring Range for Rain</b>	32 °F to 158 °F (0 °C to +70 °C)
<b>Temperature Control Range for Wind Speed and Direction</b>	14 °F to 39 °F (-10 °C to +4 °C)

## Parameters

	Wind Speed	Wind Direction	Temperature	Relative Humidity	Air Pressure	Rainfall	Solar Radiation
<b>Principle</b>	Ultrasonic	Ultrasonic	Diode voltage	Capacitive	Piezoresistor	Photoelectric	Photoelectric
<b>Range</b>	0 to 167 mph (0 to 75 m/s)	0 to 359.9°	-40 to 176 °F (-40 to +80 °C)	0 to 100 % RH	10 to 1100 hPa	0 to 15,75 inch/h (0 to 400 mm/h)	300 to 2100 nm; 0 to 2000 W/m <sup>2</sup>
<b>Accuracy</b>	±0.67 mph (±0.3 m/s) or 3 %	±3°	±0.54 °F (±0.3 °C **)	±3 % RH	±0.3 hPa	±0.2 mm or ±10 %	±5 %
<b>Resolution</b>	0.22 mph (0.1 m/s)	0.1°	0.18 °F (0.1 °C)	0.1 % RH	0.1 hPa	0.1 mm	0.1 W/m <sup>2</sup>
<b>Additional Device</b>	-	-	-	-	-	MPR101: H6,3 x D3,94 inch (H160 x D100 mm) 2,76 lbs (1.25 kg) 50 mA @ 12 VDC	MPS100: H6,3 x D3,94 inch (H160 x D100 mm) 2,65 lbs (1.2 kg) 17 mA @ 12 VDC

\* Please note: With interface RS 485 the power consumption is 20 to 30 % less. Please ask for details.

\*\* Accuracy in measuring range 0 to 104°F (0 to 40 °C): ±32,4 °F (±0.2 °C)

## Contact us

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