

# 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 for 60 m/s or 75 m/s (option)
- 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 (MODBUS-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
- 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

- **M12 cables:** 10 m / 8-pol (sensor)
- **Poles:** with 2" or 50 mm outer diameter for 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
  - iLink software

**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.**

## Variants

**MP500**



- Measures
- wind speed
  - wind direction
  - temperature
  - relative humidity
  - air 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 \*

**MP601**



- Measures
- wind speed
  - wind direction
  - temperature
  - relative humidity
  - air pressure
  - rainfall (photoelectric)

H 350 x D 160 mm, 1.5 kg  
(H 13.78 x D 6.3 inch, 3.31 lbs)  
57 mA @ 12 V DC \*

**MP650**



- Measures
- wind speed
  - wind direction
  - temperature
  - relative humidity
  - air pressure
  - solar radiation

H 333 x D 160 mm, 1.4 kg  
(H 13.11 x D 6.3 inch, 3.09 lbs)  
27 mA @ 12 VDC \*

**AR200**



- Measures
- wind speed
  - wind direction

H 194 x D 160 mm, 1.1 kg  
(H 7.64 x D 6.3 inch, 2.43 lbs)  
20 mA @ 12 VDC \*

**MP700**



- Measures
- wind speed
  - wind direction
  - temperature
  - relative humidity
  - air pressure
  - solar radiation
  - rainfall (photoelectric)

H 350 x D 160 mm, 1.5 kg  
(H 13.78 x D 6.3 inch, 3.31 lbs)  
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 10 m (32.8 ft) (other lengths on request)
<b>Operating Temperature and Humidity</b>	-40 °C to +70 °C (-40 to 158 °F); 5 % to 100 % RH
<b>Operating Measuring and Deployment Range</b>	-40 °C to +70 °C (-40 to 158 °F) (without snow accumulation and/or ice accretion)
<b>Operating Measuring Range for Rain</b>	0 °C to +70 °C (32 °F to 158 °F)
<b>Temperature Control Range for Wind Speed and Direction</b>	-10 °C to +4 °C (14 °F to 39 °F)

## 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 60 m/s or 75 m/s (0 to 134 mph or 167 mph)	0 to 359.9°	-40 to +80 °C (-40 to 176 °F)	0 to 100 % RH	500 to 1100 hPa	0 to 400 mm/h (0 to 15,75 inch/h)	300 to 2100 nm; 0 to 2000 W/m²
<b>Accuracy</b>	±0.3 m/s (±0.67 mph) or 3 %	±3°	±0.3 °C ** (±0.54 °F)	±3 % RH	±0.3 hPa	±0.2 mm or ±10 %	±5 %
<b>Resolution</b>	0.1 m/s (0.22 mph)	0.1°	0.1 °C (0.18 °F)	0.1 % RH	0.1 hPa	0.1 mm	0.1 W/m²
<b>Additional Device</b>	-	-	-	-	-	MPR101: H 160 x D 100 mm (H 6.3 x D 3.94 inch) 1.25 kg (2.76 lbs) 12 mA @ 12 VDC	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 to 30 % less. Please ask for details.

\*\* Accuracy in measuring range 0 to 40 °C: ±0.2 °C

Reseller

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