WeatherSens MP | Quick installation guide

KISTERS

Package type

Overseas shipping box with foam inlet

Package content

— WeatherSens model with 10 m cable
— Calibration and test-certificate (FTC)
— WeatherSens installation guide

Available versions

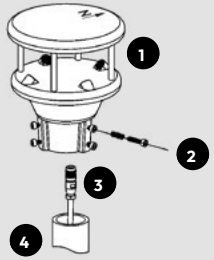
— 2 Parameter (Wind): AR 200
— 5 Parameter (W/T/RH/P): MP 500
— 5 P + Radiation: MP 650
— 1 Parameter (R): MPS 100
— Option heater and 75 m/s:
AR 200-P-H/MP 500 P-H/MP 650 P-H

Factory settings

SDI 12 or RS 485 | M-version: MODBUS | N-version: NMEA 0183

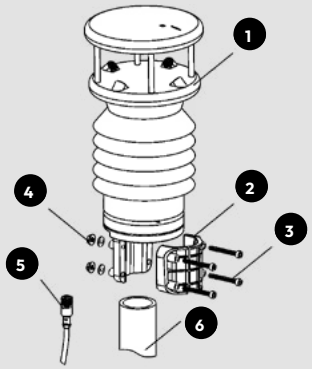
Tube 1

1. Sensor
2. M6 screw and spring
3. Cable and plug
4. Fixing rod (OD 50 mm)



Tube 2

1. Sensor
2. Bracket
3. Screws
4. Nuts
5. Cable and plug
6. Fixing rod
(min. OD 50 mm)



Mounting and alignment

WeatherSens wind direction measurements require alignment with geographic North. Align the sensor before fixing it. If it's already installed, loosen the nuts evenly to turn the sensor easily.

The top plate of the WeatherSens has a clearly marked "N" and an arrow, which must point to geographic North (see figure 1 ↘).

Since compasses show magnetic North, use a compass with adjustable declination to account for the difference between magnetic and geographic North.

Use an online calculator to find the magnetic declination for your installation site.

Set the compass to account for declination so that it points to geographic North. Typically, the compass needle points to magnetic North, while an arrow or lines indicate geographic North.

Align the "N" and arrow on the sensor top plate with geographic North using the adjusted compass.

Configuration Software

HyComm is **KISTERS** software for local communication between a computer or portable device and the **WeatherSens sensor.** In addition to configuration tasks (setting communication mode to SDI-12 or Modbus, choosing units from metric to imperial, setting the sensor address), **HyComm** also allows recording data from the sensor and visualizing the data in graphical form.

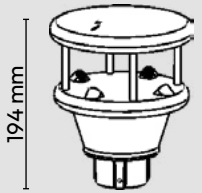
Download HyComm Installer

To connect

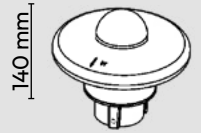
1. Use a Modbus/USB adapter to connect the sensor to the computer: see figure 2 ↘
2. Apply supply voltage to the WeatherSens.
3. Start up **HyComm** on your computer or portable device. Select the proper serial interface. From the menu select **WeatherSens** as the connected device.

Illustrations (not representative for all versions)

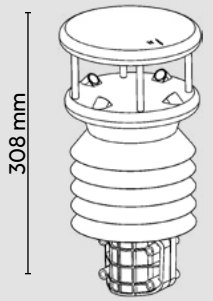
AR 200
Ø 160 mm / 1.1 kg



MPS 100
Ø 100 mm / 1.2 kg



MP 500
Ø 160 mm / 1.4 kg



MP 650
Ø 160 mm / 1.4 kg

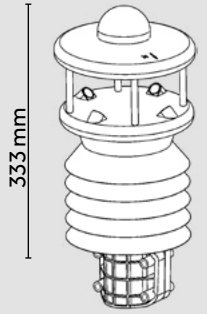


Figure 1

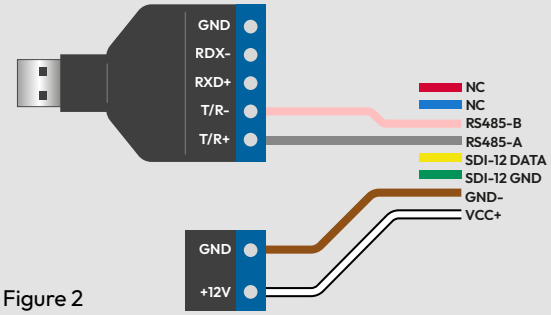


Figure 2

Serial interface

Serial interfaces can be selected either SDI-12 or RS485 by key user commands through RS485/USB converter connected to PC by standard terminal SW

Function	Steps	Commands	Detail
Switch to SDI-12 protocol under any protocol	1	$AACFG 1<CR><LF>	AA:address,Default:00,1:Back to ASCII mode
	2	$AAQ 04<CR><LF>	Select SDI-12 protocol
Switch to MODBUS-RTU Floating protocol under any protocol	1	$AACFG 1<CR><LF>	AA:address,Default:00,1:Back to ASCII mode
	2	$AAQ 02<CR><LF>	Select MODBUS-RTU Floating protocol

Sensor connection and cable assignment

— All non-heated WeatherSens MP-Series devices are equipped with an M12 8-pin male connector.

— Use the appropriate accessories to connect the device to a data logger and power supply with M12 SAC 8-pin sensor cables.

⚠ **Caution: Improper or incorrect connections can damage the instrument.**

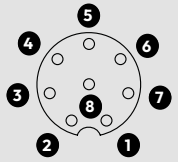
The illustrations and drawings below demonstrate only the sensor cables.

The shield should be connected to PE (protective earth) inside the control cabinet or data logger.

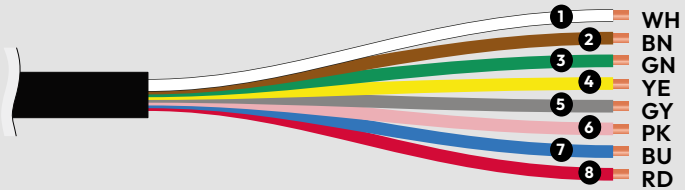
Sensor cable M12 SAC-8pin

1	2	3	4	5	6	7	8
Power VCC +	Power GND -	SDI-12 GND	SDI-12 Data	RS485A	RS485B	VCC Heater GND	VCC Heater supply voltage

Pin assignment



Connection diagram



Technical Specifications

Wind speed	Range: 0 to 60 m/s – Accuracy: ± 0,3 m/s or ± 3 %
Wind direction	Range: 0 to 360 ° – Accuracy: ± 3 °
Temperature	Range: -40 to +80 °C – Accuracy ± 0.3 °C; ± 0.2 °C @ 0 to +40 °C
Humidity	Range: 0 to 100% RH – Accuracy: ± 3 %
Air pressure	Range: 500 to 1100 hPa – Accuracy: ± 0.3 hPa
Solar radiation	Range: 300 to 2100 nm – 0 to 2000 W/m² – Accuracy: 3 %
Operating voltage	10 to 30 VDC | Optional heater: 1A@24 VDC
Power consumption @12VDC	AR 200: 20 mA; MP 500: 23 mA; MP 650: 27 mA; MP 700: 63 mA; MPS 100: 17 mA; MPR 101: 12 mA
Interfaces	SDI-12 / RS 485 (selectable)
Protocols	SDI-12 V 1.3 or RS 485 (MODBUS-RTU, ASCII; NMEA 0183)
Sensor cables	M12 SAC-8pin: 10 m sensor cable
Operating temperature range	-40 to +70 °C non-heated – non-icing conditions and without snow cumulation
Heater temperature control range	-10 to +4 °C
IP Class	IP 66

Connection table

	SDI-12	RS485
Power VCC +	WH	WH
Power GND -	BN*	BN
SDI-12 GND	GN*	—
SDI-12 DATA	YE	—
RS485A	—	GY
RS485B	—	PK
Heater power + 24 VDC	BU	BU
Heater power -/GND	RD	RD

*Optional for 4 wire SDI-12 connection.
Connection of Power GND – is mandatory and recommended for 3 wire SDI-12 connection.