



All-in-one weather sensor with measurement of temperature, relative humidity, air pressure, wind velocity / direction, precipitation amount / intensity / type, UV index, sun direction, brightness and twilight and global radiation

- **Parameters measured**
air temperature, relative humidity, air pressure, wind direction / velocity, precipitation amount / intensity / type, UV index, sun direction, brightness, twilight and radiation
- **Measurement technology**
Capacitive, Doppler radar, silicon pyranometer, thermal
- **Product highlights**
Compact, multiparameter, economic, with dome heating, maintenance-free, open communication protocol, good price performance ratio
- **Interfaces**
RS485, 2-wire, half-duplex; WLAN; supporting Modbus, UMB, UMB ASCII 2.0 protocol
- **Article number**
8368.WS10P; 8368.WS10AP

The All-in-One Weather Sensor WS10 covers 10 parameters simultaneously. It's particularly suitable for building automation, smart city applications and solar rooftops. The data transfer takes place via Wi-Fi or RS485.

General

Housing	
Dimensions	13 x 145 x 227 mm
Weight	0.5 kg
Protection class	IP66

Electrical parameters	
Input voltage range	9-36 VDC
Power consumption (without dome heating)	120 mA (at still air @24V); 360 mA (from ~7 m/s wind @24V)
Dome heating	24 VA @ 24 VDC
Max. input power	32.5 VA @ 24 VDC

Environmental conditions	
Permissible rel. humidity	0 ... 100 %
Permissible operating temperature	-40 ... +60 °C / -40 ... +140 °F

Communication	
Interfaces	RS485, 2-wire, half-duplex; WLAN (2.4 GHz; 802.11b/g/n)
Protocols	Modbus, UMB, UMB ASCII 2.0

Compass	
Measurement range	360 °
Accuracy	±10 %

GPS	
Accuracy	±5 m (50 % CEP)

Temperature	
Measurement range	-40 ... +60 °C / -40 ... 140 °F
Accuracy	±1.0 °C (-5 ... +25 °C, wind > 2m/s) otherwise < ±2.0 °C, with inactive dome heater

Relative humidity	
Principle	Capacitive
Measurement range	0 ... 100 % RH
Accuracy	±5 % (at 20 °C and <80 % rH)

Precipitation	
Principle	Doppler Radar
Measurement range	0 ... 100 mm/h
Accuracy	20 % under laboratory conditions
Precipit. type	Rain, snow, sleet, freezing rain, hail

Global radiation	
Principle	Silicon pyranometer

Measurement range	0 ... 1500 W/ m ²
Accuracy	10 % or @ ±120 W/m ² , the greater value applies

Sun direction	
Principle	Calculated

UVA / UVB index	
Principle	Silicon pyranometer
Measurement range	0 ... 15 UV index

Brightness (ambient light sensor)	
Principle	Silicon pyranometer
Measurement range	0 ... 160 klx
Accuracy	±5 % of the measured value

Twilight	
Principle	Silicon pyranometer
Measurement range	0 ... 500 lx
Accuracy	±10 lx

Air pressure	
Principle	Capacitive
Measurement range	300 ... 1100 hPa
Accuracy	±0.5 hPa (@ room temp. 25 °C / 77 °F)

Wind direction	
Principle	Thermal
Measurement range	0 ... 359.9 °
Accuracy	±10 °

Wind velocity	
Principle	Thermal
Measurement range	0 ... 40 m/s (0 ... 90 mph)
Accuracy	±1 m/s (2.2 mph) or 5 %, the greater value applies