



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**  
PTC, 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

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

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We reserve the right to make technical changes and improvements without notice. V-18/04/2024  
OTT Hydromet GmbH, Germany



Protection class	IP67
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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	24VA @ 24VDC
Max. input power	32.5VA @ 24VDC

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	±5m (50% CEP)

Temperature	
Principle	PTC
Measurement range	-40 ... +60°C / -40 ... 140°F

Relative humidity	
Accuracy	±1.0°C (@ +5 ... +60°C), otherwise <±2.0°C
Principle	Capacitive
Measurement range	0 ... 100 % RH
Accuracy	±5% (at 20 °C and <80 % rH)

Precipitation	
Principle	Doppler Radar
Measurement range	0 ... 100mm/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 <sup>2</sup>
Accuracy	10% or @ ±120 W/m <sup>2</sup> , the greater value applies

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# Technical Data

Lufft WS10 Smart Weather Sensor

## Sun direction

Principle	Calculated
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## 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 ... 40m/s (0 ... 90 mph)
Accuracy	±1 m/s (2.2 mph) or 5%, the greater value applies