COMPACT WEATHER STATION WS501-UMB

Item-No.: 423.307

DESCRIPTION OF FUNCTIONS

The WS501-UMB compact weather station is used to measure air temperature, relative humidity, solar irradiance, air pressure, wind direction and wind speed. Furthermore, it has an RS485 Modbus interface, which guarantees an easy connection to every meteocontrol data logger.

TECHNICAL DATA

Supply voltage for the sensors: 4 … 32 V DC, limitations apply in case of supply voltages lower than 12 V DC, recommended is 24 V DC
Power consumption sensors: 3,48 W (without heating)
Supply voltage heating: 12 … 24 V DC, functional restrictions in winter operation on voltages lower than 24 V DC
Power consumption heating: 20 W
Interface: RS485, 2 wire, half-duplex
Operating temperature: -50 … 60 °C
Rel. humidity: 0 … 100 % r.h.
Protection class: IP 66
Cable length: 10 m
Gewicht: approx. 1,5 kg
Dimensions: Ø approx. 150 mm, height approx. 332 mm

IRRADIANCE MEASUREMENT

ISO 9060 classification: Second class pyranometer (CMP3)
Principle: Thermal detector
Spectral range (50% points): 300 … 2800 nm
Measuring range: 0 … 1400 W/m²
Inclination error (at 1000 W/m²): <1 %
Directional error (at 80° and 1000 W/m²): <20 W/m²
Non-linearity (0 … 1000 W/m²): <1 %
Stability deviation (per annum): <1 %
Response time (95%): <18 s
Temperature dependence of the sensitivity: <5 % (-10 … 40 °C)

TEMPERATURE

Principle: NTC
Measuring range: -50 … 60 °C
Accuracy: ±0,2 °C (-20 … 50 °C), otherwise ±0,5 °C (> -30 °C)
**REL. HUMIDITY**
Principle: capacitive
Measuring range: 0 ... 100 % r. h.
Accuracy: ± 2 % r. h.

**AIR PRESSURE**
Principle: MEMS capacitive
Measuring range: 300 ... 1200 hPa
Accuracy: ±0,5 hPa

**WIND DIRECTION**
Principle: Ultrasound
Measuring range: 0 ... 359.9 °
Accuracy: < 3 ° RMSE, > 1.0 m/s

**WIND SPEED**
Principle: Ultrasound
Measuring range: 0 ... 75 m/s
Accuracy: ± 0.3 m/s or 3 % (0 ... 35 m/s) RMS (whichever figure is the higher) ± 5 % (> 35 m/s) RMS

**CONFIGURATION**
Interface: RS485
Protocol: Modbus RTU
Baud rate: 19200
Address range: 61 to 70, see identification label
Data format: 8N1

**MEASUREMENT VALUES RECORDED**
- E_AH_REL: Humidity relative
- E_AP_REL: Air pressure relative
- E_W_D: Wind direction
- E_G_U: Irradiance horizontal
- E_AT: Air temperature
- E_W_S: Wind speed
- E_AH_ABS: Humidity absolute
- E_AP_ABS: Air pressure absolute

Further information: [www.meteocontrol.com](http://www.meteocontrol.com)