# Lufft UMB Sensor Overview

| | Wind | Temperature<br>Rel. humidity<br>Air pressure | Temperature<br>Rel. humidity<br>Air pressure<br>Precipitation | Temperature<br>Rel. humidity<br>Air pressure<br>Radiance<br>(solar radiation) |
|---|---|---|---|---|
| **Titan** | | | | |
| | Ventus | | | WS303 |
| **Platinum** | | | | |
| | | | | WS301 |
| **Gold** | | | | |
| | V200A | WS300 | WS400 | WS304 |
| **Professional** | | | | |
| | WS200 | | WS401 | WS302 |

| Temperature<br>Rel. humidity<br>Air pressure<br>Wind speed<br>Wind direction | Temperature<br>Rel. humidity<br>Air pressure<br>Wind speed<br>Wind direction<br>Radiance<br>(solar radiation) | Temperature<br>Rel. humidity<br>Air pressure<br>Wind speed<br>Wind direction<br>Precipitation | 2 Channel<br>EXPANDER | Protocols |
|---|---|---|---|---|
| | | | ANACON | UMB<br>MODBUS<br>ASCII<br>SDI12 |
| | WS503 | | | |
| | | | ANACON | UMB<br>MODBUS<br>ASCII<br>SDI12 |
| | WS501 | | | |
| | | | ANACON | UMB<br>MODBUS<br>ASCII<br>SDI12 |
| WS500 | WS504 | WS600 | | |
| | | | ANACON | UMB<br>MODBUS<br>ASCII<br>SDI12 |
| | WS502 | WS601 | | |

# Lufft WS300-UMB – Temperature, Air Pressure, Relative Humidity

From the WS product family of professional intelligent measurement transducers with digital interface for environmental applications.

Integrated design with ventilated radiation protection for measuring:

**- Air temperature**
**- Relative humidity**
**- Air pressure**

Relative humidity is measured by means of a capacitive sensor element;
a precision NTC measuring element is used to measure air temperature.

Measurement output can be accessed by the following protocolls:
UMB-Binary, UMB-ASCII, SDI-12, MODBUS

**One external temperature or rain sensor is connectable.**

| Lufft WS300-UMB Smart Weather Sensor | | | Order No. |
|---|---|---|---|
| ***WS300-UMB*** | | | **8372.U01** |
| **Technical data** | Dimensions | Ø approx. 150 mm, height approx. 223 mm | |
| | Weight | approx. 1.0 kg | |
| **Temperature** | Principle | NTC | |
| | Measuring range | –50 … 60 °C | |
| | Accuracy | ±0.2 °C (–20 °C … 50 °C), otherwise ±0.5 °C (>–30 °C) | |
| **Relative humidity** | Principle | Capacitive | |
| | Measuring range | 0 … 100 % RH | |
| | Accuracy | ±2 % RH | |
| **Air pressure** | Principle | MEMS Capacitive | |
| | Measuring range | 300 … 1200 hPa | |
| | Accuracy | ±0.5 hPa (0 … 40°C) | |
| **General i nformation** | Interface | RS485, 2-wire, half-duplex | |
| | Protection type housing | IP66 | |
| | Op. power consumption | 4...32 VDC | |
| | Operating humidity range | 0 … 100 % | |
| | Op. temperature range | –50 … 60 °C | |
| **Accessories** | Surge protection | | **8379.USP** |
| | Power supply 24 V/4 A | | **8366.USV1** |
| | UMB Interface converter ISOCON-UMB | | **8160.UISO** |
| | Digital-analog-converter DACON8-UMB | | **8160.UDAC** |
| | Temperature sensor WT1 | | **8160.WT1** |
| | Road surface temperature sensor WST1 | | **8160.WST1** |
| | Rain sensor WTB100 | | **8353.10** |
| | Connection cable, 20m | | **8370.UKAB20** |

Aspirated temperature/humidity measurement

Open communication protocol:
- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analoge outputs in combination with 8160.UDAC

Third-party-rain gauge sensors are compatible: 0.1 mm, 0.2 mm, 0.5 mm, 1mm heated and unheated.

# Standard-Certificate for all UMB-Sensors

LUFFT Mess- und Regeltechnik GmbH



**Herstellerprüfzertifikat M nach DIN 55350-18-4.2.2**
***Manufacturer test certificate M according to DIN 55350-18-4.2.2***

| | | | |
|---|---|---|---|
| Gegenstand<br>*Object* | **IRS31-UMB** | | |
| Sensornummer<br>*Sensor number* | | Seriennummer<br>*Serial number* | |
| Hersteller<br>*Manufacturer* | **G. Lufft Mess- und Regeltechnik GmbH**<br>**Gutenbergstraße 20**<br>**70736 Fellbach, Germany** | | |

**Temperaturmessung** / ***Temperature measurement***

| **Prüfpunkt**<br>***Test point*** | **Prüfbedingung**<br>***Test conditions*** | **Bestanden**<br>***Passed*** | |
|---|---|---|---|
| | | Ja<br>*Yes* | Nein<br>*No* |
| Fahrbahnoberflächentemperatur<br>*Road surface temperature* | Temperatur = 0,0 °C ±0,1 °C<br>*Temperature = 0,0 °C ±0,1 °C* | X | |
| Tiefentemperatur 1<br>*Temperature under ground 1* | Temperatur = 0,0 °C ±0,1 °C<br>*Temperature = 0,0 °C ±0,1 °C* | X | |
| Tiefentemperatur 2<br>*Temperature under ground 2* | Temperatur = 0,0 °C ±0,1 °C<br>*Temperature = 0,0 °C ±0,1 °C* | X | |

**Temperatursensor** / ***Temperature sensor***

| **Prüfpunkt**<br>***Test point*** | **Prüfbedingung**<br>***Test conditions*** | **Bestanden**<br>***Passed*** | |
|---|---|---|---|
| | | Ja<br>*Yes* | Nein<br>*No* |
| Fahrbahnoberflächensensor<br>*Road surface sensor* | Temperatur = 0,0 °C ±0,1 °C<br>*Temperature = 0,0 °C ±0,1 °C* | | |
| Tiefentemperatursensor 1<br>*Temperature sensor under ground 1* | Temperatur = 0,0 °C ±0,1 °C<br>*Temperature = 0,0 °C ±0,1 °C* | | |
| Tiefentemperatursensor 2<br>*Temperature sensor under ground 2* | Temperatur = 0,0 °C ±0,1 °C<br>*Temperature = 0,0 °C ±0,1 °C* | | |

Dieses Prüfzertifikat darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Ä
bedürfen der Genehmigung des Ausstellers. Prüfzertifikate ohne Unterschrift und Stempel haben keine
*This test certificate may not be reproduced other than in full except with the permission of the exhibitin*
*Test certificates without signature and seal are not valid.*

| Stempel<br>*Seal* | Datum<br>*Date* | Qualitätssicherung<br>*Quality control* | Bearbeiter<br>*Person in charge* |
|---|---|---|---|
| | | i. V. Rolf Großmann | |

LUFFT Mess- und Regeltechnik GmbH

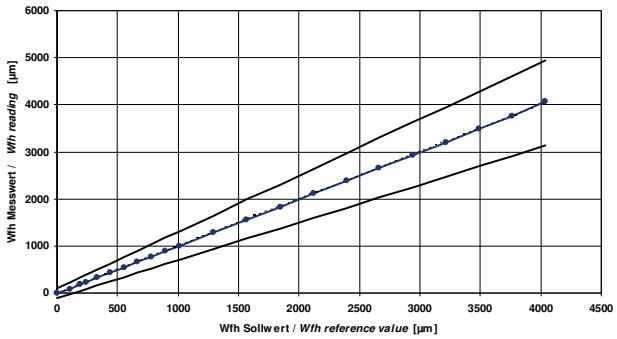


**Herstellerprüfzertifikat M nach DIN 55350-18-4.2.2**
***Manufacturer test certificate M according to DIN 55350-18-4.2.2***
**Seriennummer** / ***Serial number*:**

**Kalibrierung Gefriertemperatur** / ***Calibration freezing point***

| **Wasserfilmhöhe**<br>***water film height*** | **Gefriertemperatur**<br>***freezing point*** | **Sollwert**<br>**reference value** | **Messwert**<br>**reading** |
|---|---|---|---|
| $H_2O$ + NaCl 11,8 %, 1000 µm | -8,9 °C ± 1 °C | 11,8 % ± 1,0 % | % |
| $H_2O$ + NaCl 2,0 %, 500 µm | -1,0 °C ± 1 °C | 2,0 % ± 1,0 % | % |
| $H_2O$ + NaCl 1,1 %, 250 µm | -0,6 °C ± 1 °C | 1,1 % ± 1,0 % | % |

**Kalibrierung Wasserfilmhöhe** / ***Calibration water film height***




**Funktionstest** / ***Function test***

| **Prüfpunkt**<br>***Test point*** | **Prüfbedingung**<br>***Test conditions*** | **Bestanden**<br>***Passed*** | |
|---|---|---|---|
| | | Ja<br>*Yes* | Nein<br>*No* |
| Temperaturzyklus von –30 °C…+70 °C<br>*Temperaturecycle from –30 °C...+70 °C* | Alle Messwerte korrekt<br>*All measured values correctly* | X | |