

# Lufft WS700-UMB – Temperature, Relative Humidity, Wind, Precipitation, Air Pressure, Radiation, Electronic Compass

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
- Precipitation intensity
- Precipitation type
- Precipitation quantity
- Radiation
- Air pressure
- Wind direction
- Wind speed

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

Precipitation is measured by a 24 GHz Doppler radar, which measures the drop speed of an individual drop of rain/snow.

Precipitation quantity and intensity are calculated from the correlation between drop size and speed.

The difference in drop speed determines the type of precipitation (rain/snow).

Maintenance-free measurement offers a major advantage over the common tipping spoon and tipping bucket processes.

Ultrasonic sensor technology is used to take wind measurements.

Measurement output can be accessed by the following protocols:

UMB-Binary, UMB-ASCII, SDI-12, MODBUS

**One external temperature sensor is connectable.**

| Lufft WS700-UMB Smart Weather Sensor |                          |  | Order No.       |
|--------------------------------------|--------------------------|--|-----------------|
| <b>WS700-UMB</b> EU, USA, Canada     |                          |  | <b>8380.U01</b> |
| <b>WS700-UMB</b> UK                  |                          |  | <b>8380.U02</b> |
| <b>Technical data</b>                | Dimensions               | Ø approx. 150 mm, height approx. 343 mm  |                 |
|                                      | Weight                   | approx. 1.5 kg   |                 |
| <b>Temperature</b>                   | Principle                | NTC  |                 |
|                                      | Measuring range          | -50 ... 60 °C  |                 |
|                                      | Accuracy                 | ±0.2 °C (-20 °C ... 50 °C), otherwise ±0.5 °C (>-30 °C)                              |                 |
| <b>Relative humidity</b>             | Principle                | Capacitive   |                 |
|                                      | Measuring range          | 0 ... 100 % RH   |                 |
|                                      | Accuracy                 | ±2 % RH  |                 |
| <b>Precipitation quantity</b>        | Resolution               | 0.01 mm  |                 |
|                                      | Measuring range          | Drop size 0.3 ... 5 mm   |                 |
|                                      | Reproducibility          | typ. >90 %   |                 |
| <b>Precipitation type</b>            | Rain/snow                |  |                 |
| <b>Air pressure</b>                  | Principle                | MEMS capacitive  |                 |
|                                      | Measuring range          | 300 ... 1200 hPa   |                 |
|                                      | Accuracy                 | +/- 0.5 hPa (0...40°C)   |                 |
| <b>Radiation</b>                     | Response time (95%)      | < 1 s  |                 |
|                                      | Spectral range           | 300...1100nm   |                 |
|                                      | Measuring range          | 1400W/m <sup>2</sup>   |                 |
| <b>Wind direction</b>                | Principle                | Ultrasonic   |                 |
|                                      | Measuring range          | 0 ... 359.9°   |                 |
|                                      | Accuracy                 | < 3° RMSE >1.0 m/s   |                 |
| <b>Wind speed</b>                    | Principle                | Ultrasonic   |                 |
|                                      | Measuring range          | 0 ... 75 m/s   |                 |
|                                      | Accuracy                 | ±0.3 m/s or 3% (0 ... 35 m/s) RMS of reading, whichever is greater ±5% (>35 m/s) RMS |                 |
| <b>General Information</b>           | Heating                  | 40 VA at 24 VDC  |                 |
|                                      | Protection type housing  | IP66   |                 |
|                                      | Interface                | RS485, 2-wire, half-duplex   |                 |
|                                      | Op. power consumption    | 4...32 VDC   |                 |
|                                      | Operating humidity range | 0 ... 100 %  |                 |
|                                      | Op. temperature range    | -50 ... 60 °C  |                 |



All in One

Aspirated temperature/humidity measurement

Maintenance-free operation

Open communication protocol:

- UMB-ASCII
- UMB-Binary
- SDI-12
- MODBUS
- Analogue outputs in combination with 8160.UDAC