

# 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