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

One external temperature sensor is connectable.

All in One

Aspirated temperature/humidity measurement Maintenance-free operation

Open communication protocol:

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

WS700-UMB EU, USA, Canada B380.U01 WS700-UMB UK	Lufft WS700-UMB S	Lufft WS700-UMB Smart Weather Sensor			
WS700-UMB UK Technical data Dimensions Ø approx. 150 mm, height approx. 343 mm Weight approx. 1.5 kg	WS700-UMB FU, USA, Canada			8380.U01	
Weight				8380.U02	
Principle	Technical data	Dimensions			
Measuring range -50 60 ° C Accuracy ±0.2 ° C (-20 ° C 50 ° C), otherwise ±0.5 ° C (>-30 ° C) Principle Capacitive Measuring range 0 100 % RH Accuracy ±2 % RH Precipitation Resolution 0.01 mm Quantity Measuring range Drop size 0.3 5 mm Reproducibility typ.>90 % Precipitation type Rain/snow Air pressure Principle MEMS capacitive Measuring range 300 1200 hPa Accuracy +/- 0.5 hPa (040 °C) Radiation Response time (95%) < 1s		Weight	approx. 1.5 kg		
Accuracy	Temperature	Principle	NTC		
Otherwise ±0.5 °C (>-30 °C)		Measuring range	−50 60 ° C		
Measuring range 0100 % RH Accuracy ±2 % RH Precipitation quantity Resolution 0.01 mm Measuring range Drop size 0.35 mm Reproducibility typ.>90 % Precipitation type Rain/snow Air pressure Principle MEMS capacitive Measuring range 300 1200 hPa Accuracy +/- 0.5 hPa (040 °C) Radiation Response time (95%) < 1s		Accuracy			
Accuracy ±2% RH Precipitation quantity Resolution 0.01 mm Measuring range Drop size 0.35 mm Reproducibility typ.>90% Precipitation type Rain/snow Air pressure Principle MEMS capacitive Measuring range 3001200 hPa Accuracy +/- 0.5 hPa (040°C) Radiation Response time (95%) < 1s Spectral range 3001100nm Measuring range 1400W/m² Wind direction Principle Ultrasonic Measuring range 0359.9° Accuracy < 3° RMSE >1.0 m/s Wind speed Principle Ultrasonic Measuring range 075 m/s Accuracy < 3° RMSE >1.0 m/s Wind speed Principle Ultrasonic Measuring range 1075 m/s Accuracy 40.3 m/s or 3% (035 m/s) RMS of reading, whichever is greater ±5% (>35 m/s) RMS General Information Heating 40 VA at 24 VDC Protection type housing IP66 Interface RS485, 2-wire, half-duplex Op. power consumption 432 VDC Operating humidity range 0100%	Relative humidity	Principle	Capacitive		
Precipitation quantity Resolution Quantity Measuring range Reproducibility Precipitation type Air pressure Principle Measuring range Accuracy Precipitation Response time (95%) Spectral range Measuring		Measuring range	0100% RH		
quantity Measuring range Reproducibility Drop size 0.35mm Precipitation type Rain/snow Air pressure Principle Measuring range MEMS capacitive Measuring range 3001200 hPa Accuracy +/- 0.5 hPa (040°C) Radiation Response time (95%) < 1s Spectral range 3001100nm Measuring range 1400W/m² Wind direction Principle Ultrasonic Measuring range 0359.9° Accuracy < 3° RMSE >1.0 m/s Wind speed Principle Ultrasonic Measuring range 075 m/s Accuracy ±0.3 m/s or 3 % (035 m/s) RMS of reading, whichever is greater ±5 % (>35 m/s) RMS General Information Heating 40 VA at 24 VDC Interface RS485, 2-wire, half-duplex Op. power consumption 432 VDC Operating humidity range 0 100 %		Accuracy	±2 % RH		
Reproducibility typ.>90 % Precipitation type Rain/snow Air pressure Principle MEMS capacitive Measuring range 3001200hPa Accuracy +/- 0.5 hPa (040°C) Radiation Response time (95%) < 1s Spectral range 3001100nm Measuring range 1400W/m² Wind direction Principle Ultrasonic Measuring range 0359.9° Accuracy < 3° RMSE >1.0 m/s Wind speed Principle Ultrasonic Measuring range 075 m/s Accuracy ±0.3 m/s or 3 % (035 m/s) RMS of reading, whichever is greater ±5 % (>35 m/s) RMS General Information Protection type housing IP66 Interface RS485, 2-wire, half-duplex Op. power consumption 432 VDC Operating humidity range 0100 %	•	Resolution	0.01 mm		
Precipitation type Rain/snow MEMS capacitive Air pressure Principle MEMS capacitive Measuring range 3001200 hPa Accuracy +/- 0.5 hPa (040°C) Radiation Response time (95%) < 1s		Measuring range	Drop size 0.35 mm		
Air pressure Principle Measuring range Accuracy Probe time (95%) Radiation Response time (95%) Spectral range Measuring range Measuring range Wind direction Principle Principle Ultrasonic Measuring range Principle Ultrasonic Measuring range Accuracy Principle Ultrasonic Measuring range O359.9° Accuracy Accuracy Vind speed Principle Ultrasonic Measuring range O75m/s Accuracy Lo.3m/s or 3 % (035 m/s) RMS of reading, whichever is greater ±5 % (>35m/s) RMS General Information Heating Protection type housing IP66 Interface RS485, 2-wire, half-duplex Op. power consumption Operating humidity range O100 %		Reproducibility	typ.>90%		
Measuring range 3001200 hPa Accuracy +/- 0.5 hPa (040°C) Radiation Response time (95%) < 1s	Precipitation type	Rain/snow			
Accuracy	Air pressure	Principle	MEMS capacitive		
Radiation Response time (95%) < 1s		Measuring range	3001200 hPa		
Spectral range 3001100nm		Accuracy	+/- 0.5 hPa (040°C)		
Measuring range	Radiation	Response time (95%)	<1s		
Wind direction Principle Measuring range 0359.9° Accuracy < 3° RMSE >1.0 m/s Wind speed Principle Ultrasonic Measuring range 075 m/s Accuracy ±0.3 m/s or 3 % (035 m/s) RMS of reading, whichever is greater ±5 % (>35 m/s) RMS General Information Heating Protection type housing IP66 Interface RS485, 2-wire, half-duplex Qp. power consumption 432 VDC Operating humidity range 0100 %		Spectral range			
Measuring range		Measuring range	1400W/m ²		
Accuracy	Wind direction	Principle	Ultrasonic		
Wind speed Principle Measuring range Accuracy Dultrasonic Measuring range Dultrasonic Measuring range Dultrasonic		Measuring range	0359.9°		
Measuring range 075 m/s Accuracy ±0.3 m/s or 3 % (035 m/s) RMS of reading, whichever is greater ±5 % (>35 m/s) RMS General Heating 40 VA at 24 VDC Protection type housing IP66 Interface RS485, 2-wire, half-duplex Op. power consumption 432 VDC Operating humidity range 0100 %		Accuracy	< 3° RMSE >1.0 m/s		
Accuracy ±0.3 m/s or 3 % (035 m/s) RMS of reading, whichever is greater ±5 % (>35 m/s) RMS General Heating 40 VA at 24 VDC Protection type housing IP66 Interface RS485, 2-wire, half-duplex Op. power consumption 432 VDC Operating humidity range 0100 %	Wind speed	Principle	Ultrasonic		
reading, whichever is greater ±5% (>35 m/s) RMS General Heating 40 VA at 24 VDC Information IP66 Interface RS485, 2-wire, half-duplex Op. power consumption 432 VDC Operating humidity range 0100%		Measuring range	* * * * * * * * * * * * * * * * * * * *		
Information Protection type housing IP66 Interface RS485, 2-wire, half-duplex Op. power consumption 432 VDC Operating humidity range 0100%		Accuracy	reading, whichever is greater ±5%		
Interface RS485, 2-wire, half-duplex Op. power consumption 432 VDC Operating humidity range 0100 %		Heating	40 VA at 24 VDC		
Op. power consumption 432 VDC Operating humidity range 0100 %		Protection type housing	IP66		
Operating humidity range 0100%		Interface	RS485, 2-wire, half-duplex		
		Op. power consumption	432 VDC		
Op. temperature range -50 60 ° C		Operating humidity range	0100%		
		Op. temperature range	−50 60 ° C		

