

SERIES LINE: J-SERIES WEATHER SENSORS

TYPE: ALL-IN-ONE, COMPACT, SMART

CATEGORY: WEATHER & ENVIRONMENTAL

ALL-IN-ONE

WS601-J All-in-One Weather Sensor

Measure More. Maintain Less. Reliable Weather and Precipitation Monitoring in One Station

The professional Lufft WS-J Series of Compact Weather Sensors, builds on the previous WS-UMB weather sensor reputation for consistent, long-lasting performance in all weather situations. With the WS601-J you gain improved accuracy at higher output rates and improved feature set in measured parameters, connectivity, and housekeeping functions. Achieved by implementing a new processor generation for higher sampling rates and a redesigned temperature stabilized A/D conversion.

METEOROLOGICAL OBSERVATION	SOLAR ENERGY
HYDROMET	AGMET
	RESEARCH



KEY BENEFITS

1. Standardized with Proven Measurement Technologies

The WS601-J integrated design offering WMO compliant wind gust calculation and 200 cm² orifice size for accurate rain measurements. Proven measurement technology delivers dependable rainfall data for environmental monitoring, forecasting, and operational decision-making.

2. Reduced Risk, Improved Self-Diagnostics

The WS-J's incorporates improved house-keeping functions, live heating-voltage monitoring, and automatic self-diagnostics to catch a failing component before it corrupts the rest of the instrument and finally your decision making data set.

3. Easy Integration into Professional Monitoring Networks

The WS601-J integrates wind speed and direction, rain intensity and quantity, air temperature, rel. humidity, and air pressure measurements into one compact station with a single installation point. Power consumption is lower and well suited for solar powered stations. One sensor, one interface, and one maintenance routine simplify network deployment and reduce operational complexity.

4. One Platform Across Networks

The J-Series is a drop-in replacement for legacy WS units, sharing size, weight, mounting, cable connections, available protocol formats and interfaces, and software across the platform. One calibration reference, one spare pool, one standard.

SUPPORTS EXTERNAL SENSOR CONNECTIVITY	READ/ WRITE: UMB, MODBUS RTU, NMEA SDI-12 1.4, ASCII	UPGRADED ADC HARDWARE	EXPERIENCE 20+ WS SENSORS MADE BY LUFFT
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Technical Specifications

PRODUCT MODEL: WS601-J

01 – GENERAL

Article number	J8376.1
Dimensions	Ø164 × 445 mm
Weight	1650 g
Communication Interface	Non-isolated RS485; SDI-12

02- ELECTRICAL

Power supply operational range	4 to 28 V DC
Power supply best performance heater, fan for aspirated mode	Below 24 V DC
Current consumption heater	850 mA / 20 VA at 24 V
Current consumption normal 12v	85 mA
Current consumption normal 24v	85 mA
Current consumption power safe mode 1 at 12v	26 mA
Current consumption power safe mode 1 at 24v	15 mA

03 – TEMPERATURE

Measuring range	-50 to +60 degC
Unit	degC; degF
Accuracy	+/-0.2 degC
Resolution	0.1 deg C

04 - RELATIVE HUMIDITY

Measuring range	0 to 100 % RH
Unit	% RH; g/m ³
Accuracy	+/-2 % RH
Resolution	0.1 % RH

05 - AIR PRESSURE

Measuring range	300 to 1200 hPa
Unit	hPa
Accuracy	+/-0.5 hPa (0 to +40 degC)
Resolution	0.1 hPa

06- WIND DIRECTION

Measuring range	0 to 359.9 deg
Unit	deg
Accuracy	<3 deg (>1 m/s), RMSE
Resolution	0.1 deg

07- WIND SPEED

Measuring range	0 to 30 m/s
Unit	m/s; km/h; mph; kts
Accuracy	+/-0.3 m/s or +/-3 %, RMS
Resolution	0.1 m/s

08 - COMPASS

Measuring range	0 to 359.9 deg
Unit	1.0 deg
Accuracy	+/-10 deg
Output rate	5 s

09 - EXTERNAL TEMPERATURE

Measuring range	-40 to +80 degC
Accuracy	+/-1 degC; WST1 +/-0.3 degC from -10 to +10 degC

10 - PRECIPITATION, RAIN GAUGE

Accuracy	2 %
Resolution	0.2 mm
Maximum Intensity	-
Accuracy with reduction ring	2 %
Resolution with reduction ring	0.5 mm
Maximum Intensity with reduction ring	-

12 MODELS & 15 DERIVATIVES

J-Series Overview

MODELS WS200-J - WS800-J

PARAMETER	WS200-J	WS300-J	WS400-J	WS401-J	WS500-J	WS501-J	WS502-J	WS510-J	WS600-J*	WS601-J*	WS700-J*	WS800-J*
WIND												
Speed	✓	—	—	—	✓	✓	✓	✓	✓	✓	✓	✓
Direction	✓	—	—	—	✓	✓	✓	✓	✓	✓	✓	✓
Gust (WMO-Compliant 3-Sec)	✓	—	—	—	✓	✓	✓	✓	✓	✓	✓	✓
TEMPERATURE & HUMIDITY												
Temperature	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Relative Humidity	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Barometric Pressure	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PRECIPITATION												
Measuring Principle	—	—	radar	gauge	—	—	—	—	radar	gauge	radar	radar
Quantity	—	—	✓	✓	—	—	—	—	—	✓	✓	✓
Type	—	—	✓	—	—	—	—	—	✓	—	✓	✓
Intensity	—	—	✓	✓	—	—	—	—	✓	✓	✓	✓
Doppler Radar Precipitation Technology	—	—	✓	—	—	—	—	—	✓	—	✓	✓
Tipping Bucket Precipitation Technology	—	—	—	✓	—	—	—	—	—	✓	—	—
SOLAR RADIATION												
Silicon Photocell	—	—	—	—	—	—	—	—	✓	✓	✓	✓
Thermopile	—	—	—	—	—	✓	—	✓	—	—	—	—
LIGHTNING												
Strike Count	—	—	—	—	—	—	—	—	—	—	—	✓
INTERFACE												
External Precipitation input	✓	✓	—	—	✓	✓	✓	✓	—	—	—	—
Temperature Sensor input (PT1000 connection)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Parameter supported on this model

— Not available on this model

* WS600-J, WS700-J, and WS800-J include North America (NA) regional variant



J-SERIES MANUAL