

OWI-650 Low Power LP-WIVIS™

Present Weather and Visibility Sensor



LP-WIVIS™ Advantages

- Solar, Battery or AC Powered
- Small size, light weight, rugged design
- DSP based – no field calibration required
- Other sensors easily added
- Data radio options available
- Advanced scintillation technology
- Intelligent algorithms based on over 200 million hours of OSi sensor field data
- Easy Installation and integration
- Long-term reliability – designed for unattended operation 24/7/365
- Reports over 50 NWS / WMO codes
- Virtually no maintenance required
- Built-in self diagnostics & testing

The OWI-650 LP-WIVIS™ has been designed from the ground up for quick deployment anywhere. The LP-WIVIS is the first present weather and visibility sensor designed for battery powered or solar powered applications.

The LP-WIVIS™ is more than just a sensor. It is a system. Other sensors including wind, temperature, relative humidity, and barometric pressure may be easily added. The LP-WIVIS™ serves as both sensor and data acquisition system. No separate data acquisition system is required.

The fully automated instrument provides accurate visibility, present weather and precipitation measurement in a single sensor. This next generation intelligent sensor uses all digital signal processing (DSP) for no-drift high-accuracy results. OSi's patented environmentally adaptive algorithms use artificial-intelligence technology derived from over 25 years experience and over 200 million field hours of real-world data from our sensors installed around the world. The result is the most advanced / easily deployable weather sensor in the world.

The LP-WIVIS™ is already a low power present weather and visibility sensor but to further reduce the power requirements the LP-WIVIS™ may be operated in intermittent mode. In intermittent mode, the sensor is automatically powered up for one minute, reports present weather and visibility measurements and then is powered down. The heaters are independently controlled. In many environments the heaters are never powered on. Advanced detection algorithms report dew or frost on lens and control heater function.

The LP-WIVIS™ measures visibility and detects and quantifies rain, snow, drizzle, freezing and mixed precipitation conditions. The sensor is designed for

year-round continuous operation in all climates from Antarctica to tropical rain forests.

Thanks to the advanced DSP electronics, the typical need for field calibration is completely eliminated. OSi Sensors are widely used by airports and regional DOT's across the US & throughout the world. No other present weather and visibility sensor can provide this powerful combination of high performance, low power, quick deployability and proven reliability! No other company can provide the proven level of support and customer satisfaction that OSi does!

Rechargeable batteries, solar power kits, spread spectrum radios, and additional sensors are all available options.

LP-WIVIS™ Ordering Information:

- **Model no:** OWI-650-DR

LP-WIVIS™ Accessories:

- **QCS-130** Windows QwikCollect™ software
- **PSB-650** AC-powered junction box
- **PSB-650S** Power Junction Box with Solar Kit
- **Data Radio** Contact OSi
- **Sensors** Contact OSi

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OWI-650 LP-WIVIS™ Specifications

Performance Specification	
Measurement Technique	Scintillation with optical forward scatter and optional acoustic*
Data Reporting Update Rate	1 minute
Present Weather Codes Reported	More than 50 NWS and WMO codes
Present Weather Type Identification	Rain, freezing rain, snow, freezing drizzle, mist, mixed, fog, haze, clear, hail and ice pellets*
Snow / Rain Accumulation	.001 to 999 mm
Snow / Rain Measurement Resolution	0.001 mm
Rain Dynamic Range	0.1 to 3000 mm/hr
Rain Measurement Accuracy	5% accumulation
Snow Dynamic Range	0.01 to 300 mm/hr
Snow Measurement Accuracy	10% accumulation
Hail / Ice Pellet Reporting Accuracy	Correct ID better than 90% of time*
Visibility/RVR Dynamic Range (metric and ANSI units available)	0.001 to 10+ km 0.001 to 7.1 miles
Visibility/RVR Time Constant	3 minute harmonic
Visibility/RVR Contrast Threshold	5%
Ambient Light Dynamic Measurement Range	0 to 9,990 candles / m ²

Electronic Specification	
Power Requirements	10-18 VDC
Electronics	3.6 vdc @ 375 mA
Heaters	12 vdc @ 600 mA
Transient Protection	All power & signal lines fully protected
Signal Output	RS-232 ASCII, simple polled protocol

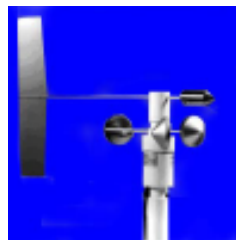
Environmental Specification	
Temperature	-40° to 140° F (-40° to 60° C)
Humidity	0 to 100%
Precipitation / Dust	NEMA 4 type protection

Physical Specification	
DSP-WIVIS Sensor Size	21 x 8 x 4 inches (53 x 20 x 10 cm)
DSP-WIVIS Sensor Weight	4.25 lbs. (1.9 kg)
Cable Length	12 ft. (3.7 meter)

OWI-650 LP-WIVIS™ Optional Sensors



The OWI-650 LP-WIVIS™ can now serve as the data acquisition system for OSi wind, temperature / RH, and barometric pressure sensors to create a stand-alone automated weather station. Never before has an automated weather station with present weather and visibility capability been this affordable. Simply install the OWI-650 and connect the optional sensors to the OWI-650 Power Supply and Junction Box. All sensor information is combined into the serial output of the OWI-650. No other data acquisition system is required. Solar power kits and data radio options are available.



Wind Sensor 2100-130

The 2100-130 is designed to operate within a temperature range of -30° to +70° C and with wind speeds up to 167 mph (75 m/s). Wind speed is measured using a sealed reed switch which provides a series of pulses at a rate proportional to wind speed. Aluminum cups are used for durability and strength.



Temperature/RH Probe 2100-110

The Model 2100-110 temperature humidity probe offers high accuracy and is designed for meteorological applications. The probe has separate 0 - 1 VDC linear outputs for temperature and humidity.



Best Value Pressure Sensor 2100-101-1

Low cost, accurate and stable barometric pressure sensor. The glass fused ceramic capacitive sensing capsule features inherent thermal stability, and low hysteresis



High Accuracy Pressure Sensor 2100-101-2

The Model 2100-101-2 barometric pressure sensor is designed for use in environmental applications that require excellent accuracy, fast dynamic response, and long-term stability and reliability.

Wind Sensor Model 2100-130 Performance Specification

Wind Speed	
Range	0 – 165 mph (0 – 75 m/s)
Starting Threshold	0.9 mph (0.4 m/s)
Accuracy < 22.7 mph (10 m/s)	.25 mph, 0.1 m/s
Accuracy > 22.7 mph (10 m/s)	±1%
Wind Direction	
Range (Mechanical)	0-360°
Range (Electrical)	0-356
Starting Threshold	0.9 mph (0.4 m/s)
Accuracy	± 4°

Temperature/RH Probe Model 2100-110 Performance Specification

Temperature	
Sensor Type	1/3 DIN RTD
Range	-40 - +60° C
Accuracy @ 23° C	± 0.2° C
Output	0 – 1 VDC
Humidity	
Sensor Type	Capacitive Humidity Sensor
Range	0 – 100%
Accuracy @ 23° C	<1.5%
Output	0 – 1 VDC

Barometric Pressure Sensor Model 2100-110-1 Performance Specification

Accuracy at 20° C	1.25 hPa
Compensated Range	0 to +55° C (+30 - +130° F)
Zero Shift	1% FS
Span Shift	1% FS
Long Term Stability	1.25 hPa per 6 months
Response Time	<10 mSec

Barometric Pressure Sensor Model 2100-110-2 Performance Specification

Accuracy at 20° C	± 0.5 hPa
Non-Linearity	± 0.4 hPa
Hysteresis @ 800 hPa	± 0.05hPa
Non-Repeatability @ 800 hPa	± 0.03 hPa
Resolution	.01 hPa
Response Time	<100 mSec

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