Present Weather Sensor Model 6490

Overview

The Model 6490 Present Weather Sensor optically measures precipitation induced scintillation and applies algorithms to automatically determine the precipitation occurrence, type, and rate. This sensor is vastly superior to traditional type sensors, and offers the reliability and proven performance you need.

The sensor measures precipitation be detecting the optical irregularities — known as scintillations — induced by particles falling through a beam of partially coherent infrared light (in the sample volume).

By detecting the intensity of the scintillations characteristic of precipitation, the precipitation rate is determined, allowing it to be used as a precipitation accumulation sensor.

By analyzing the frequency spectrum of the induced scintillation, the precipitation type is determined.

Options

The Model 6490 Present Weather Sensor also offers several features that can be customized to fit a specific need. These features include...

- NWS or WMO weather code formats
- English or metric units of measure
- Past data (15 min and 60 min)
- Automated Calibration

The sensor can be further customized by adding an optional Hail and Ice Pellet Sensor (HIPS). With a HIPS unit, precipitation is measured using the sensor head “in-beam” optics.

An optional rechargeable backup battery kit (housed in the Model 1190 DCP) is available to power the sensor in the even of AC power failure.

Precipitation types:

- **Drizzle**
- **Rain**
- **Snow**
- **Precipitation**
- **Freezing Rain**
- **Freezing Drizzle**

Reliability

All Weather Inc.’s Model 6490 precipitation sensor provides accurate measurement of precipitation in all weather conditions. Designed for rugged, unattended operation, these sensors have been field-proved in adverse environments around the world in locations such as Antarctica, Europe, the Far East, and North America.

SENSORS

SPECIFICATIONS

Parameter	Specification	
Present Weather Codes Reported	>50 NWS and WMO codes	
Rain Dynamic Range	0.1 to 3000 mm/h	
Rain Accumulation	0.1 to 999.999 mm	
Rain Accumulation Resolution	0.001 mm	
Rain Accumulation Accuracy	5%	
Snow Dynamic Range	0.01 to 300 mm/h water equivalent	
Snow Accumulation	0.001–999,999 mm water equivalent	
Snow Accumulation Resolution	0.001 mm	
Snow Accumulation Accuracy	10%	
Data Update Rate	Once per minute	
Serial Output	RS-485	
Baud Rate	4800	
Serial Port Parameter Setting	8-N-1 (8 data bits, no parity, 1 stop bit)	
Environmental		
Operating Temperature	-40 to +50ºC (-40 to +122ºF)	
Storage Temperature	-50 to +60ºC (-58 to +140ºF)	
Relative Humidity	0–100%, noncondensing	
Power Requirements	*6490 6490-I*	*6490-A*
AC Supply Voltage	115/230 V, 50/60 Hz, 50 V•A	115 V, 50/60 Hz, 50 V•A
Transient Protection	AC power and RS-485 signal lines fully protected	
Mechanical	*6490 6490-I*	*6490-A*
Electronics Enclosure	NEMA 4X fiberglass	NEMA 4X electro-polished 304 stainless steel

ORDERING INFORMATION

Part Number	Description
6490	Present Weather Sensor (standard for North America)
6490-A	Present Weather Sensor (with heater for AWSS installations)
6490-I	Present Weather Sensor (standard for outside North America)
M488173-01	Hardware Mounting Kit
M105655-00	Deck Mounting Pole
11903	Battery Back-up (North America Systems Only)

DIMENSIONS & WEIGHTS

Size (Sensor Assembly)		4.5” x 9.1” x 28.75” (11.5 x 23.0 x 73.0 cm)
Size	6490/6490-I Electronics Enclosure	14” W × 16” H × 8” D (36 cm × 41 cm × 20 cm)
	6490-A Electronics Enclosure	16” W × 20” H × 9.25” D (41 cm × 51 cm × 24 cm)
Weight (Sensor Assembly)		8.82 lb (4 kg)
Weight • 6490/6490-I Electronics Enclosure • 6490-A Electronics Enclosure		22 lb (10 kg) 27 lb (12 kg)
Shipping Weight		**Box 1**: 24 lb (11 kg) **Box 2**: 11 lb (5 kg)

All Weather Inc.

www.allweatherinc.com

Phone: 916-928-1000
USA Toll Free: 800-824-5873
Fax: 916-928-1165

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