

APG-815-DS™ ALL PRECIPITATION GAUGE



APG-815-DS measures rain and snow and applies algorithms to automatically determine the precipitation type, rate, and water equivalent accumulation. The APG-815-DS is vastly superior to traditional type sensors and offers the reliability and proven performance you need!

APG-815-DS measure rain and snow by detecting the optical irregularities induced within the sample volume by precipitation particles falling through a beam of partially coherent infrared light. These irregularities are known as scintillation. The twinkling of stars is a familiar example of scintillation. By detecting the intensity of the scintillations which are characteristic of precipitation, the actual rainfall rate can be determined.

APG-815-DS precipitation sensor provides accurate measurement of precipitation in all weather conditions. Designed for rugged, unattended operation, APGs have been field proven in adverse environments around the world and, unlike other sensors, on ocean deployed data buoys and ships.

OSI All Precipitation Gauge is not affected by environmental factors which cause significant errors with traditional rain and snow gauges. which collect precipitation to measure. The APG has no collectors, buckets, or siphons to corrode or clog. The sensors use AGC circuitry to eliminate the effects of LED output power or dirty optics. In fact, sensor performance is maintained even when over 75% of the light is blocked! Diagnostics alert the user if the signal strength is too low for normal operation. The electro-optical design provides for an extremely reliable sensor with a calculated MTBF in excess of 60,000 hours.

APG-815-DS™ Advantages

- **Optical scintillation determines precipitation rate and accumulation**
- **Advanced intelligent algorithms based on over 100 million hours of OSi sensor field data**
- **Improved with enhanced snow/liquid equivalent**
- **No wind-caused sampling problems. Slant path rain errors are negligible.**
- **No Evaporation or splash errors**
- **Works on moving platforms : ships & buoys**
- **Adaptive heater technology (AHT) energy conservation allows battery and solar power**
- **Networking via cellular modem communications**
- **Eco-friendly - no oil or antifreeze**
- **No moving parts**

This technology is the basis for the present weather sensor supplied to the FAA/NWS/U.S. Navy for the Automated Surface Observing System (ASOS).

Adding the optional HIP-100 acoustic sensor provides for enhanced hail and ice pellet discrimination. OSI sensors are widely used by airports and regional DOT's across the US & throughout the world. No other weather instrument can provide this powerful combination of high performance, low cost and proven reliability and no other company can provide the proven level of support and customer satisfaction that OSi does!

APG-815-DS Ordering Information:

- Model no: APG-815-DS (DC powered, RS-232 serial I/O – specify Metric or ANSI)

Accessories:

- HIP-100 Hail and Ice Pellet add-on sensor
- PSB-430 AC-powered junction box

The APG-815-DS sensors are based on technology developed and patented by OSI.
OSI has been granted patents in the following countries: USA 4754149, UK 22001510, and Canada 1285044.

APG-815-DS[™] Specifications

Performance Specification	
Measurement Technique	Scintillation with optical forward scatter and optional acoustic*
Rain Dynamic Range	0.1 to 500 mm/hr
Rain Accumulation	0.001 to 999.999 mm
Rain Accuracy	5% Accumulation
Rain Resolution	0.001 mm
Snow Dynamic Range	0.01 to 50 mm/hr water eq.
Snow Accumulation	0.001 to 999.999 mm water eq.
Snow Accuracy	10%
Snow Resolution	0.001 mm
Time Constant	10 seconds
APG Data Update Rate	Once per minute - typical Every 5 seconds - available
Hail / Ice Pellet Reporting Accuracy	Correct ID better than 90% of time*

Electronic Specification	
Supply Voltage	12- 15 VDC
Current Drain	300-400 ma (with AHT current drain depends on ambient temperature)
Signal Output	RS-232
Transient Protection	All power and signal lines protected by MOV

Environmental Specification	
Temperature	-40° to 122° F (-40° to 50° C)
Humidity	0 to 100%, Condensing
Precipitation / Dust	NEMA 4 type protection (Powder-coated aluminum)

Physical Specification	
Size	763 mm L x 254 mm W x 102 mm H
Weight	3 kg w/o cables
Cable Length	15 meter
Optional HIP-100 Size	34 x 4 x 9 inches (865 x 90 x 216 mm)
Optional HIP-100 Weight	5 lbs. (2.3 kg)

* References to acoustic / hail and ice particles requires optional HIP-100 Acoustic Hail and Ice Pellet add-on. Specifications are subject to change without notice.



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