



Weather Identifier & Visibility Sensor (WIVIS®) S1376Z

- **Automatic identification of precipitation type**
 - **Measures rain and snow**
 - **Visibility**
 - **No moving parts**
 - **Rugged & compact**

The Weather Identifier and Visibility sensor is an automated instrument which provides accurate detection, discrimination, and quantitative measurement of rain and snow, as well as mixed precipitation conditions. This sensor also provides visibility based on the presence of rain, snow, fog, dust, smoke, blowing sand, or other obscurants.

The WIVIS® functions by using in-beam and off-beam receivers to detect the infrared signal transmitted by the head assembly transmitter. The in-beam receiver measures precipitation by analyzing the fluctuation of an infrared light beam, which rain or snow fall through. The amount of fluctuation of the light beam is proportional to the intensity of the precipitation, providing a well-calibrated precipitation rate measurement. Rain has a statistically smaller particle size and faster falling velocity than snow, so it has a higher fluctuation frequency. Analysis of the frequency composition, as well as signal strength, allows the WIVIS® to measure the precipitation rates and to discriminate between the two as well.

The WIVIS® sensor head has heated optics to prevent ice, dew, or frost build-up on the lens, which would interfere with sensor performance. The sensor head is completely sealed from water intrusion. Shielded cables attach to the sensor with mil-spec connectors to form a water-tight seal that protects the sensor and cable from water or moisture entry.

Visibility: The signal detected by the off-beam receiver consists of electronic and background noise when the weather is clear. For any weather precipitation, or obscurant particles (such as rain, snow, hail, fog, haze, dust, or blowing sand) – or man-made particles (such as smoke, aerosol particulates, or pollution) passing through the infrared beam, forward-scattering produces a signal at the off-beam receiver. The strength of this infrared signal provides the necessary information to calculate the visibility of the environment.

Reliability: The instrument has been designed to provide a MTBF to 38,000 hours and MTTR of 15 minutes. These features make the WIVIS® ideal for unattended operation. Maintenance is both simple and infrequent.





Technical Specifications

S1376Z

Present Weather Codes:	More than 50 NWS and WMO codes
Optical Path Length:	0.3 m
Source:	Infrared LED, 850 nm, 10 mw
Receiver:	PIN photo-detector
Dynamic Measurement Range	
Rain:	0.1 to 3000 mm/hr
Snow:	0.01 to 50 mm/hr (water equivalent)
Visibility:	0.001 to 1 mile (3 km)
Power:	Factory selectable, 100/115/220/230 VAC, 50/60 Hz @ 80 VA 12 VDC optional 20 VA nominal
Signal Output:	RS-232 ASCII
Environmental	
Temperature Range	
Storage:	-70°C to +80°C
Operation:	-40°C to +50°C
Humidity:	0 - 100%
Environmental Conditions:	All weather, full water and ice proof
Precipitation Dust:	NEMA-4 type protection
MTBF:	38,000 hours
MTTR:	15 minutes
Maintenance:	Every 3 months (cleaning optics)
Field Calibration:	Approximately every 2 years
PHYSICAL	
Size	
Head:	29 in. x 4 in. x 10 in.
Electronic Enclosure:	18 in. x 12 in. x 9 in.
Weight	
Head:	10 lbs
Electronic Enclosure:	24.2 lbs