



## HSS VPF-730 PRESENT WEATHER SENSOR

As with all the HSS sensors the HSS VPF-710 sensor is configured for accurate measurement of visibility in the densest of fogs to very clear air conditions and is the refinement of 2 decades of experience and technology resulting in a compact, robust instrument with excellent performance.

Originally designed for the US military, the HSS VPF-710 is suitable for use in any system where a digital\* output is required and sophisticated levels of remote monitoring are desired, for example on road or national weather networks feeding data back to a central collection point. It is a very compact, robust instrument with all electronics contained in the sensor head. It has excellent time proven performance and is suitable for use in extreme conditions

### Features:

- Measures visibility AND present weather
- Proven accuracy, reliability and repeatability
- Self-test and monitoring system
- Very low power requirements
- Only sensor with adjustable matrix for varying wind conditions
- Minimal maintenance requirements and running costs



*Sensor nearby runway*



*Present weather sensor*

## GENERAL

### Present Weather

Present Weather includes: all forms of liquid, freezing and frozen precipitation; e.g., rain, drizzle, snow, snow pellets, snow grains, ice pellets (formerly sleet) and hail, and those suspended particles that are classed as obstructions to vision; namely, mist, fog, haze, dust and smoke.

### Measurement Principle

The sensor calculates EXCO (the atmospheric EXtinction COefficient) by measuring the amount of light scattered by the particles in the sampling volume. From this EXCO value the MOR (Meteorological Optical Range) and thus visibility is determined.

### Data Output

The sensor is configured with RS-232C signal output as standard with RS-422 communication available as an option. The data is output in various ASCII data strings, such as a small compressed data string, expanded data string and remote maintenance data string amongst others. The unit can be set in either automatic or polled mode and data sent to a printer or to a PC for tagging, processing and archiving.

### Maintenance, calibration, self-test and monitoring

The sensor is fully calibrated at the time of manufacture. Routine maintenance, including a check on calibrations, can be performed easily in a matter of a few minutes and a re-calibration (although this should never be required) takes only slightly longer. The sensor condition and performance can be monitored remotely using the self-test and monitoring system detailed overleaf.

Measures **Visibility and Present Weather**  
Output **digital**  
Range **10 m to 75 Km (33 ft to 47 miles)**  
Accuracy **+/- 2%**  
Light source **infra-red**  
Light source wavelength **880 nm**  
\*FSM angle used **45°**  
Measurement Geometry **horizontal**  
Sample volume size (cm<sup>3</sup>) **400**  
Power supply: **mains, battery or solar**

Power requirements:

sensor head **2.0 W**

window heaters **2.5 W**

Hood heating option available **Yes**

Hood heater power requirements **45 W**

Operating temp. range **-50°C to +60°C (-58°F to +140°F)**

Weight: **7 kg (15 lbs)**

Output rate (seconds) **30 to 300 (selectable)**

Method of Construction **salt-dip brazing**

Materials **hard-anodised aluminium**

Reliability **> 8 years mean time before failure**

Undisturbed sample volume **Yes**

Detection threshold **rain : 0.015 mm / hr**

**snow : 0.0015 mm / hr**

Maximum rain rate **250 mm / hr**



Rietdekkerstraat 6  
2984 BM Ridderkerk

P.O. Box 60  
2980 AB Ridderkerk  
The Netherlands

Phone +31 (0)180 463 411  
Telefax +31 (0)180 463 530  
E-mail [info@observator.com](mailto:info@observator.com)  
[www.observator.com](http://www.observator.com)