



HSS visibility and present weather sensors for airport use

- ***WHY are the HSS visibility sensors chosen for airport installations?***
- ***WHICH models of HSS visibility sensors are used on airports?***
- ***DO you need a turn-key solution for your airport?***
- ***SOME of the airports using HSS visibility sensors***
- ***DID you know you can use an HSS visibility sensor to check and adjust other sensors?***



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Visibility sensors for airports



The HSS visibility sensors are used on airports around the world for general airport visibility and Runway Visual Range (RVR). With the best durability and accuracy on the market they are used in both turn-key solutions by other manufacturers (examples below) as well as being incorporated into customised systems.

WHY are the HSS visibility sensors chosen for airport installations?

The 3 key requirements for an airport visibility monitoring system are **reliability**, **accuracy** and **repeatability**:

- Reliability - with a track record of over 20 years the HSS visibility sensors have proven reliability even in harsh environments.
- Accuracy - due to the patented design concepts there is no other visibility sensor that can equal the accuracy of the Biral units (typically 2 percent error accuracy to 2 km).
- Repeatability - a National Weather Service showed that three Biral visibility sensors compared to each other and a human observer only had a 3 percent deviation between them all, while other sensors showed as much as 25 percent deviation due to small construction errors and differences in alignments, light sources used etc.

Visibility sensors for airports



WHICH models of HSS visibility sensors are used on airports?

It depends very much on an airport's requirements but usually we recommend the **HSS VPF-710 visibility sensor** for **general airport applications** and the **HSS VPF-730 visibility / present weather sensor** for **RVR systems**.

A typical RVR installation could incorporate three HSS sensors with **at least one** of those being an HSS VPF-730 (ie 2 x VPF-710 sensors and 1 x VPF-730 sensor) with the optional ambient light (background luminance) sensor.

Below are the recommended accessories for each sensor:

For general airport applications:

Use the HSS VPF-710 visibility sensor with:

- - Calibration Kit
- - Stainless Steel Mounting Hardware
- - Heating (optional)



Pictured is the VPF-710 visibility sensor - our most popular model for general us

As part of an RVR solution:

Use the HSS VPF-730 visibility and present weather sensor with:

- - Advance self test and monitoring
- - Ambient light sensor
- - Calibration Kit
- - Stainless Steel Mounting Hardware
- - Heating (optional)



Pictured is the VPF-730 visibility and present weather sensor which has a central backscatter measuring head

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DO you need a turn-key solution for your airport?

If you are looking for existing turn-key airport weather and runway visibility systems you may be interested in one of the following:

The USA SuperAWOS system (uses HSS VPF-710)



The SuperAWOS system is designed for weather reporting on unmanned US airports. This is a very affordable system developed **BY** airport owners and pilots **FOR** airport owners and pilots. The SuperAWOS has been approved by the US Federal Aviation Authority (FAA) and is even approved for FAA AIP funding

Pictured is the SuperAWOS system on a small US airfield

The AGVIS FSI RVR system (uses HSS VPF-730)



The AGVIS FSI system is an automatic runway visibility (RVR) system combining the measurement of Met Visibility (MOR) with Runway Visibility and Present Weather (PW). The FSI RVR system is easily installed and requires little maintenance combining an HSS VPF-730 visibility and present weather sensor with AGI's experience in automated IRVR measurements.

Pictured is the AGVIS FSI RVR system at Birmingham Airport, UK

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Techsense AWOS System (uses HSS VPF-710 or 730)

The Techsense Aviation Weather Observation System forms an advanced real-time internet-ready airport meteorological data processing system suitable for international and domestic airports. The system uses the HSS VPF-710 and 730 visibility and present weather sensors for RVR calculations and the optional HSS ambient light (background luminance) sensor for runway light intensity measurements.

Techsense say:

"Biral VPF710 or VPF730 is an essential item in Techsense's Automated Weather Observing System (AWOS) Solution. Biral's products integrate to Techsense AQ Data Logger and METairport Software seamlessly. They provide reliable and accurate Visibility data for the derivation of Runway Visual Range (RVR) in the AWOS application for Aviation Industry. In addition, the VPF710 and VPF730 provided important equipment health status which allows our software to present the monitoring status accurately."

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Some of the airports using HSS visibility sensors

Adisucipto International Airport, Yogyakarta, Indonesia (JOG/ WIIJ)

Annapolis MD, USA

Apple Valley CA, USA

Ashland OR, USA

Batu Berendam Airport, Melaka, Malaysia (MKZ/ WMKM)

Beijing Airport, China

Bintulu Airport, Bintulu, Malaysia (BTU/ WBGB)

Blaine WA, USA

Blythe Airport CA, USA

Britton SD, USA

Bryant Field, Mono CA, USA

Buffalo Lancaster NY, USA

Conrad MT, USA

Dona Ana Santa Teresa NM, USA

Duchesne UT, USA

Ekalaka MT, USA

Ennis Big Sky MT, USA

Fallbrook Airport CA, USA

Gettysburg SD, USA

Grants Pass OR, USA

Houston Exec TX, USA

Humberside Aiport, UK

Illinois Valley OR, USA

Inyokern CA, USA

Visibility sensors for airports



Jackson County NC, USA

Kingston Ulster NY , USA

Kuala Lumpur International, Malaysia

Kuantan Airport, Kuantan, Malaysia (KUA/ WMKD) – Military Airport

Kuching International Airport, Kuching, Malaysia (KCH/ WBGG)

LaBelle FL, USA

Labuan International Airport, Labuan, Malaysia (LBU/ WBKL) – Military Airport

Lake Chelan WA, USA

Langkawi International Airport, Langkawi, Malaysia (LGK/ WMAM)

Laurel MT, USA

Lemmon SD, USA

Lincoln County SD, USA

Little River CA, USA

Malta MT, USA

Milbank SD, USA

Milton FL, USA

Mendocino Hospital CA, USA

Miri Airport, Miri, Malaysia (MYY/ WBGR)

Mogollon Airpark AZ, USA

Mountain Home ID, USA

Neosho MO, USA

Orange County Airport NY, USA

Palms CA, USA

Penang International Airport, Penang, Malaysia (PEN/ WMKP)

Plains MT, USA

Potomac Airfield MD, USA

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Rangely Airport CO, USA

Redlands CA, USA

RMAF Butterworth Airport, Butterworth, Malaysia (BWH/ WMKB) - Military

RMAF Gong Kedak Airport, Gong Kedak, Malaysia (--/ WMGK) – Military Airport

Ronan MT, USA

Roundup MT, USA

Sandakan Airport, Sandakan, Malaysia (SDK/ WBKS)

Scobey MT, USA

Sebastion FL, USA

Sibu Airport, Sibu, Malaysia (SBW/ WBGS)

Silver Springs NV, USA

Springfield CO, USA

Sturgis SD, USA

Sultan Abdul Hamid Airport, Alor Setar, Malaysia (AOR/ WMKA)

Sultan Abdul Aziz Shah Airport, Subang, Malaysia (SZB/ WMSA)

Sultan Azlan Shah Airport, Ipoh, Malaysia (IPH/ WMKI)

Tawau Airport, Tawau, Malaysia (TWU/ WBKW)

Tercio Ranch CO, USA

Thompson Falls MT, USA

Three Forks MT, USA

Twin Bridges MT, USA

Valkaria FL, USA

Vermillion SD, USA

Waterford, Cork, Ireland

Wheatland County MT, USA

Yerrington NV, USA

Visibility sensors for airports



The HSS sensors are also used on multiple US aircraft carriers and several UK search and rescue helipads

DID you know you can use an HSS visibility sensor to check and adjust other sensors?

For example - the FAA developed the performance specification (FAA 2003a) for specific visibility sensors and ambient light sensors used in RVR systems.

. . . the testing for this was carried out at the Otis Weather Test Facility and the test site's 2 reference transmissometers were checked for alignment and calibration using an HSS visibility sensor

. . and an HSS present weather sensor was used to classify precipitation by detecting individual precipitation particles ?