

# Model GEO-SWS-100 / GEO-SWS-200

## VISIBILITY AND PRESENT WEATHER SENSORS



### TYPICAL APPLICATIONS

#### ROADS

provides roadside weather information and switches road warning signs in snow, ice, spray and fog.

#### TUNNELS

switches ventilation controls and provides a back up to smoke detection systems to improve fire safety

#### WEATHER NETWORKS

supplies visibility and present weather data to meteorological networks to assist in forecasting

#### CLIMATOLOGY

historical, accurate, reliable and repeatable visibility and present weather data

#### FLOOD FORECASTING

provides detailed precipitation data for predicting and mapping flood events and soil saturation

#### NAVIGATION/WARNING AIDS

Aviation: automatically switches warning lights to alert aircraft of tall structures. Other: automatically switches lights, horns and equipment to alert of danger

## DESCRIPTION



The Visibility and Present Weather Sensors **GEO-SWS-100/200** have been designed for continuous environmental monitoring of roads and tunnels for traffic safety, sea ports and airports, as well as for many other classical uses in meteorology, climatology and weather networks.

There are available two models: **GEO-SWS-100** and **GEO-SWS-200**. There's only one difference:

Model **GEO-SWS-200** also measures the precipitation intensity. General Specifications of both models are indicated in the table on the next page.

The two models can be connected to **GEONICA** Data Acquisition and Transmission Unit Model **METEO DATA** for local data recording, data and alarm transmission to a Central Station via 3G/GPRS, Radio, Fiber Optic or satellite, as part of our **AWOS** and **SAFE ROAD** systems. This unit can also generate SMS Alert Messages or to activate Variable Message Signs (VMS) located along side the road for advising drivers about the visibility and present weather environmental conditions ahead.

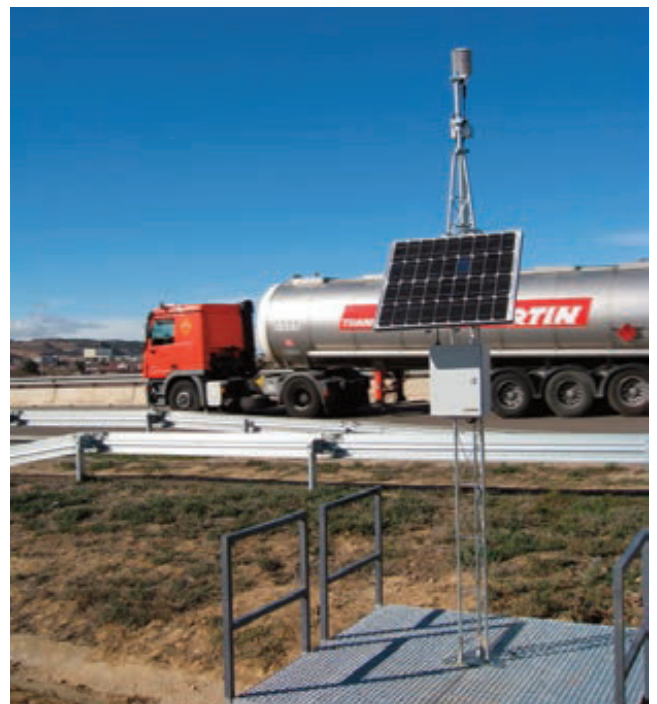
## WHAT DO THEY MEASURE?

The sensors use Forward Scatter Meter Technology to measure Present Weather and Meteorological Optical Range (MOR).

Present Weather is the atmospheric phenomena surrounding the sensor.

The atmospheric phenomena include:

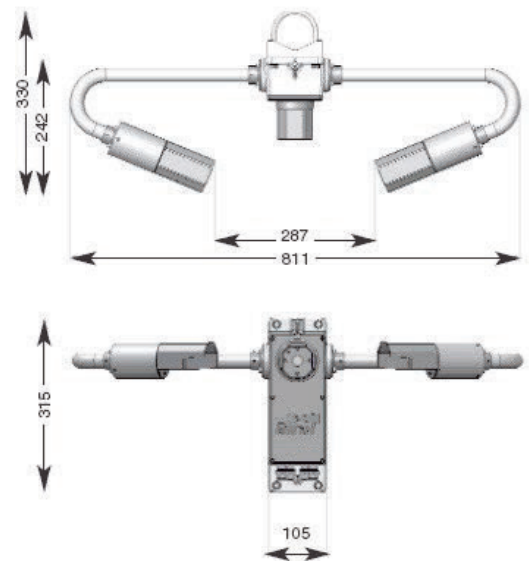
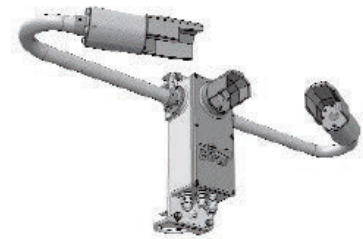
- a) All forms of liquid and frozen precipitation:  
e.g.: rain, drizzle and snow.
- b) Suspended particles that are classed as obstructions to vision, namely: fog, haze, dust and smoke.



SPECIFICATIONS	GEO-SWS-100	GEO-SWS-200
Measurement range selectable (at time of order): <10m - 2 km (default), 10 km, 20 km, 32 km, 50 km or 75 km	•	•
Measurement Error: ≤4.5% at 600m, ≤5.0% at 1,500m, ≤5.1% at 2km, ≤12.5% at 15km, ≤20% at 30km	•	•
Measures: Visibility (MOR - Meteorological Optical Range), caused by any obstruction to vision (liquid, frozen, dry particulate)	•	•
Present Weather: snow, rain, fog, drizzle, haze (WMO table 4680 codes)	7 codes	14 codes
Additionally measures precipitation intensity and accumulation with a fixed 24 hour time frame (using an additional back scatter measuring window)		•
Detection threshold: 0.015 mm/h rain 0.0015 mm/h snow Maximum rain rate: ~500 mm/h	•	•
Rain Intensity accuracy: ≤15% max.	•	•
Outputs: - Digital output RS-232, RS-422, RS-485 - Analogue outputs: 0-10 V (4-20 mA or 0-20 mA optional) - Present Weather selected WMO 4680 table codes - 3 configurable switching relays	•	•
Dimensions: 810 x 315 x 330 mm	•	•
Weight: 4.5 kg	•	•
Protection Class: IP66 /IP67 (NEMA - 4x/6)	•	•
Power supply : 9-36 VDC	•	•
Operating humidity: 0 - 100 % RH	•	•
Material: Powder paint coated aluminium	•	•
Temperature range: -40°C to +60°C	•	•
Window heaters	•	•
Optional hood heaters (requires 24 VDC power supply)	•	•
Self-test & Monitoring of Operation Status	•	•
Date and time stamp on data strings available	•	•
Accessories: cable, calibration kit, mounting brackets, transit case	•	•
Certifications: EMC EN61326-1997, 1998, 2001 / CE / RoHS and WEEE	•	•



Direct connection to **GEONICA**  
Data Acquisition and  
Transmission Units  
Model **METEODATA**



Dimensions in mm