DATASHEET

# Weather Station

We offer several choices for each component used in the station and our data loggers are able to read a huge number of sensors and can be used to control external devices or trigger alarms on a monitoring PC

GEOSENSE

# Weather Station

## Overview

A weather station can be configured to meet your exact needs, from simple wind measurements to stations that monitor not only meteorological sensors but also other parameters such as soil moisture content, water levels or air quality.

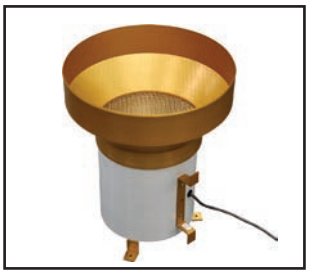
We offer several choices for each component used in the station and our data loggers are able to read a huge number of sensors and can be used to control external devices or trigger alarms on a monitoring PC.

### APPLICATIONS

- Meteorological monitoring
- Hydro-meterological stations
- Mining/Mineral extraction
- Road Studies
- Harbours & Ports
- Bridge Safety

### FEATURES

- Tailored to your individual requirements
- Precision measurement capability
- Rugged construction
- Wide operating temperature range
- Low power consumption



# Weather Station

## System Components

### DATA LOGGERS

Weather stations are based around a programmable datalogger which measures sensors and stores data. Data can be stored in your choice of engineering units (eg wind speed in miles per hour, metres per second, knots).

Sensor measurements are typically processed and stored as hourly and daily arrays (maxima, minima, averages). Conditional outputs such as rainfall intensity can also be processed and stored.

PC-based software is available to simplify datalogger programming, data retrieval and report generation. The datalogger can be modified to accommodate different sensor configurations or data processing requirements.

The datalogger has programmable execution intervals, on-board instructions for commonly used sensors, and adequate input channels to accommodate all standard sensor configurations. If a large number of sensors is required, the station's capabilities can be expanded by using measurement and control peripherals.

### SENSORS

All sensors interface directly to data loggers. Data loggers have analogue, pulse counter, and digital inputs compatible with sensors offered by most manufacturers.

Standard sensor range:

- **Wind Speed**: cup, propeller, or sonic anemometers.
- **Wind Direction:** vanes that use precision potentiometers, sonic anemometers. (A single sensor assembly may measure wind speed and direction.)
- **Solar Radiation:** silicon cell or thermopile pyranometers, quantum sensors, net radiometers.
- **Temperature (air, water, soil):** thermistors, thermocouples or RTDs.
- **Relative Humidity:** capacitive sensors that use integral signal conditioning. (RH and air temperature sensors are typically housed in a single body.)
- **Precipitation:** tipping bucket raingauges or weighing gauges. A snowfall conversion adapter that uses antifreeze or a heated tipping bucket can measure the water content of snow.
- **Barometric Pressure:** resonant quartz technology.
- **Soil Moisture:** moisture blocks, analogue output tensiometers or reflectometers.

Other sensors that may be used alongside a weather station: Water quality; leaf wetness; Heat Flux; Water Conductivity.

### POWER SUPPLY

Alkaline batteries or a sealed rechargeable battery which can be recharged via solar panel or AC power. Weather stations with high current drain peripherals (satellite, cellular phone) may require our larger capacity batteries.

### ENCLOSURES

Environmental enclosures house the datalogger, power supply, data retrieval peripherals and if desired, a barometer. The enclosures provide protection from dust, humidity, precipitation, sunlight and environmental pollution and are UV-stabilized and reflect solar radiation. Brackets with u-bolts allow enclosures to mount easily to tripods and towers.

### TRIPODS & TOWERS

They can be mounted on corrosion-resistant tripods and towers that provide sturdy support for sensors, solar panels, and enclosures.

Tripods are available in 2m or 3m heights; towers are available in 3m, 7m or 10m heights. Mounts for attaching wind sets, pyranometers and temperature/relative humidity sensors are also available.

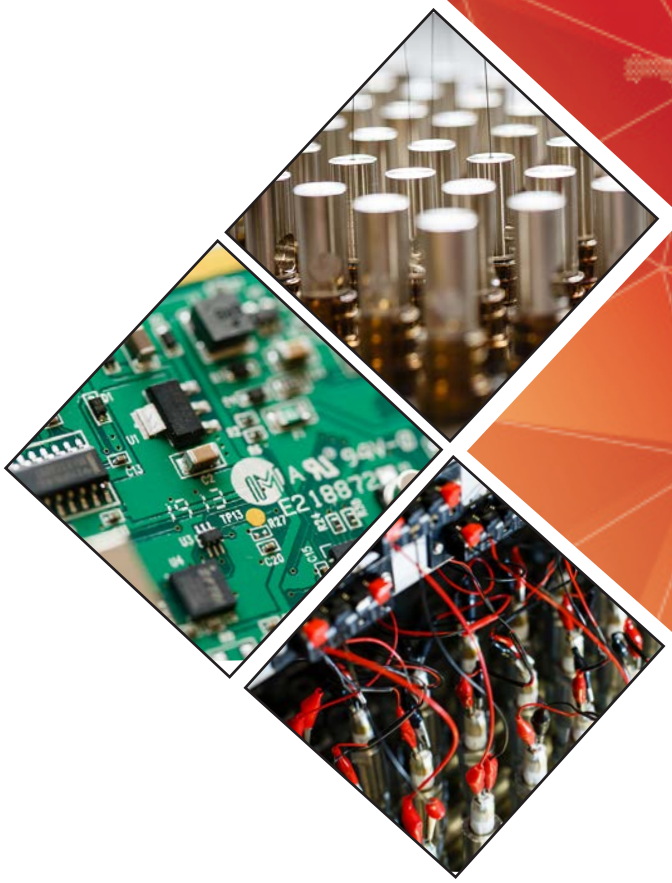
### COMMUNICATIONS & DATA RETRIEVAL PERIPHERALS

To determine the best option for your site, consider the accessibility of the site, availability of service (e.g., cellular phone or satellite coverage), quantity of data collected and time between data downloads.

On-site options include:
• Storage Modules
• Laptop Computer
• Datalogger Keyboard/Display
• Infra-red link
Telecommunication options include:
• Short-Haul Modems
• Telephone (including land line, voice-synthesized and cellular)
• Ethernet
• Radio Frequency (RF) Transceivers (including VHF, UHF, ELOS, Meteor burst and spread spectrum)
• Multidrop Interface (coaxial cable)
• Satellite Transmitters (including High Data Rate GOES,

### WEATHER STATION SOFTWARE

Software supports weather station programming, communications between the weather station and PC and data display.



GEOSENSE

Geosense Ltd, Nova House, Rougham Industrial Estate, Rougham, Bury St Edmunds, Suffolk IP30 9ND, England

www.geosense.co.uk e sales@geosense.co.uk t +44(0)1359 270457



V1.2 06/2023