

# Mini-met WEATHER STATION

*A rugged, battery operated weather station for permanent installation or portable application. The system consists of a strong, lightweight frame fitted with high performance sensors, and at the heart of the Mini-met is a SQ800 series data logger fitted inside a weatherproof enclosure.*

## Accurate Sensor Measurements

### Rainfall

Collected rain is measured by the well-proven tipping bucket method and the aerodynamic rainfall gauge has been designed by the Institute of Hydrology to minimise errors by presenting a reduced area to the wind.

### Wind speed

The robust 3-cup anemometer, designed for permanent installations, is based on a sensor developed for the UK Ministry of Defence and calibrated to National Standards.

### Solar radiation

The silicon diffused photocell is a compact sensor for solar energy measurements calibrated against precision reference thermocouple pyranometers in natural light conditions. The integral levelling device allows correct positioning of the sensor.

### Soil temperature

This stainless steel probe uses a thermistor to achieve high accuracy.

### Wind direction

Designed to withstand hurricane force winds, the windvane is specially balanced to turn in very light winds, and with bearings protected from moisture make it suitable for permanent exposure.

### Relative humidity and air temperature

Equipped with an accurate thermistor sensor, and the latest Vaisala HUMICAP™ sensor, this probe provides high accuracy, excellent long-term stability and negligible hysteresis.

### Atmospheric pressure

An absolute pressure sensor utilising the outstanding elasticity characteristics of single-crystal silicon, achieving excellent repeatability and long term temperature stability.

*Talk to Grant for  
all your data  
logging solutions*

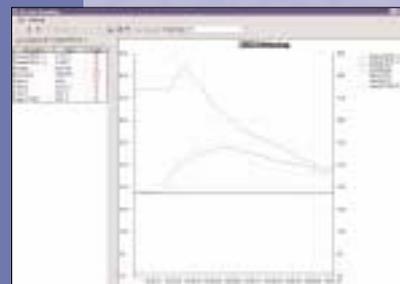


## Key Features

- Weatherproof enclosure to withstand the rigours of severe climatic conditions.
- Built-in Squirrel 800 Series data logger.
- Battery backup allows recorded data to be retained for up to two years even if power is completely lost to the data logger.
- High performance sensors.

## Applications include:

- Environment
- Industry
- Research
- Education
- Agriculture
- Construction...



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**Grant**  
DATA LOGGING

## System Specification

### DATA LOGGER

#### Squirrel SQ800 Series

Non-volatile memory: 64,000 readings  
Logging intervals: 1 second to 24 hours  
Ambient temperature: -30 to +65°C  
Humidity: to 95%RH (non-condensing)  
Internal power: manganese alkaline batteries

### SENSORS

#### Combination air temperature / humidity probe

Part No. VH-G-Z1 (RAD)  
Humidity range: 0 to 100%RH, accuracy:  $\pm 2\%$ RH (0 to 90%RH)  
Negligible hysteresis and excellent long-term stability even in very high humidity applications  
Air temperature range: -30 to +70°C, accuracy: better than 0.4°C (5 to 45°C)

#### Soil, or deep soil, temperature probe

Part No. HS-U or CS-U  
Temperature range: -30 to +70°C  
Accuracy: better than 0.4°C (5 to 45°C)  
Description: pointed end, 321 stainless steel  
Dimensions: 4.8mm dia/125mm length

#### Leaf temperature probe

Part No. FF-U  
Temperature range: -30 to +70°C  
System accuracy: (5 to 45°C) better than 0.4°C  
Description: catheter probe, sensor at end of flexible nylon tubing, tip covered with epoxy coating  
Dimensions: tip 2mm dia, tube 1.4mm dia, 100mm length

#### Wind direction

Part No. W200P  
Range: 360° mechanical angle full circle continuous rotation  
Threshold: 0.5m/s, maximum wind speed: 60m/s  
Accuracy:  $\pm 4^\circ$ , temperature range: -30 to +70°C

#### Wind speed

Part No. A100L2  
Range: 0.15 - 62ms  
Temperature range: -50 to +70°C  
Relative humidity: 0 to 100% (condensing)  
Accuracy:  $\pm 1\%$  of reading (10m/s to 55m/s),  $\pm 0.1$ m/s (0.1m/s to 10m/s)

### Rainfall

Part No. ARG100  
Resolution: 0.2mm rain per tip  
Funnel dia 254, height 340mm  
Temperature range: -30 to +65°C

### Solar radiation

Part No. SES  
Waveband: 300 to 1100nm  
Range: 0 to 5000W/sqm  
Overall dia: 76mm  
Temperature range: -35 to +75°C

### Atmospheric pressure

Part No. PTB100A  
Pressure range: 800 to 1060hPa (mbar)  
Temperature range: -40 to +50°C  
Accuracy at +20°C:  $\pm 0.30$ hPa (mbar)

### Enclosure for Squirrel data logger

Class IP65 (protection against ingress of dust and liquid)  
Material: structural resin  
Dimensions: Width 327mm, Depth 152mm, Length 343mm  
Temperature range: -40 to +120°C

### Stand

Material: aluminium  
Overall pole height: 2m, tripod dia: 800mm

### External power supply

Part No. RB12-6  
Sealed lead-acid rechargeable battery (12V, 6.5Ah).  
Battery life: 60 days with input scan every 30 secs.  
and averaged at 15 minute intervals. 2 batteries supplied.

### Solar power supply

Part No. SSP  
Silicon, solid-state charge regulation unit  
Peak output: 5W, normal voltage: 12V  
Panel size: width 270, length 250mm

### Overall system

**Temperature range:** -25 to +55°C (non-icing)  
**Weight** (complete unit): approx. 13kg

## The Total Solution

*Years of experience in solving data logging problems means Grant can help you save time by putting together the right package, starting with the sensor right through to the data analysis.*

## Software

### Darca

Data acquisition and remote control application for effortless setup, display and download straight into your favourite spreadsheet or analysis program.



*A mini-met on the Tien Shan Glacier at 6,000m*

**Grant**

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**Guarantee** The Grant Mini-met weather station is guaranteed against faulty materials or workmanship for three years. If repairs are carried out under guarantee, no charge is made for labour or materials, and within the United Kingdom, no charge is made for carriage.  
**CE mark** The Grant Mini-met weather station bears a CE mark and meets relevant European directives.  
**Quality Statement** Grant Instruments operates a Quality Management System complying with BS EN ISO 9002: 1994. It is Grant's policy to supply customers with products which are fit for their intended purpose, safe in use, perform reliably to published specification and are backed by a fast and efficient customer support service.