

SQUIRREL 450 / 850 SERIES



Easy to use customised data loggers

The Squirrel 450/850 series is a cost effective portable data logger with a maximum of 4 or 8 universal inputs.

In common with its bigger brother, the Squirrel 1000 series data logger, it is equipped with impressive specifications, long battery life and a three year guarantee. Models 451 and 851 have 4 or 8 universal inputs respectively, configurable for voltage, current and temperature for both thermocouple and thermistor sensors. In addition a serial interface is available for special applications, including Vaisala weather sensors WMT52 & WXT520.

Key Features

- Modular construction
- Battery or mains operated and easily portable
- Configuration and Metering by:
 - Panel controls and display
 - Locally connected PC (using Darca Software)
 - Remotely connected PC (using Darca Software) via GSM, Ethernet, landline or radio modem
- Multi language set up menu
- Non volatile internal memory providing up to 250,000 readings of secure data, with options to expand to 2,000,000 readings
- Readings can be scaled into appropriate units (e.g. m/sec, p.p.m.)
- Low power consumption for long term unattended use/portable operation
- Clearly labelled connector panel for quick on-site installation
- LAN Network adaptor for Ethernet connection
- Optional Text message on alarm using and /or remote access, external GSM modem

Common Features

- Highly accurate: $\pm(0.1\%$ of reading, $+0.2\%$ of range span)
- 12 bit resolution
- Standard internal memory for 250 000 readings
- Sensor power outputs
- External triggers can start and stop the logger
- Environmental: -30 to $+65^{\circ}\text{C}$, 0 to 95° RH non-condensing
- External power supply: 9 to 14V DC (internal battery: 9V)
- Communications via RS232C with auto-baud detect
- Rapid memory download at 38400 baud

Optional Features

- Wall bracket
- AC Power supply MP12U (110/250AC) to 12VDC
- Alarms and threshold can be set for all channels
- Internal memory expandable to 2,080,000 readings
- Outdoor enclosure

Accessories

- Moxa De-311 Serial to Ethernet Converter
- GSM Modem Kit, for SMS and/or remote access
- Comprehensive range of sensors including RH and temperature probe, thermocouple / thermistor probes, current clamps, pH electrode etc.

452 / 852



Vaisala weather Sensors



Available Models

Model	Inputs	Features
451 / 851	4 / 8 universal	Each channel configurable for temperature, voltage or current input
451T / 851T	4 / 8 universal	0.1sec Interval (Fast Recording)
451pH	4 universal (inc. pH)	Supports up to 2 x external pH adaptor modules type pH-int (purchase separately).
451MC	4 universal	PCMCIA memory slot installed to accept SRAM card (purchase separately)
452	4 Pulse only	
453	1 Event + 8 Pulse (5Hz)	
456/856	4 / 8 universal	plus 1 x pulse and 1 x event input
451WXT/WMT	4 universal + 1 serial	Serial input for Vaisala WXT520 / WMT52 weather sensor*
851WXT/WMT	8 universal + 1 serial	Serial input for Vaisala WXT520 / WMT52 weather sensor*
451L/851L	4 V(extended range)/C + thermistor	includes +/- 10mV range, for use with Hukseflux HFP01 heat flux sensor

System Specification

Logging Modes

Interval / average / event / externally triggered

Log / Scan Interval

1 sec to 24 hours
Optional: 0.1 sec minimum

Analogue Inputs

Accuracy: $\pm(0.1\%$ of reading, +0.2% of range span)
Common mode range: 15V
Input Impedance: 1M Ω

Analogue Input Types & Ranges

see tables below

Sensor Excitation

5V/supply voltage - internally selectable

Data memory

Internal memory: 250,000 readings
Option: 2 million readings or PC slot with SRAM card (2 million readings)
Memory modes: stop when full or overwrite current run

Scaling Data

Readings scaled as engineering units

Configuration

Panel controls and display and/or Darca Lite or Darca Plus (PC Software)

Display

2 line, 32-character display for local status monitoring, configuration and stored readings

Communications

RS232 half duplex - 2400 to 38.4K Baud
Modem compatible protocol

Darca Software

Darca Plus for control, download and export, plus graphing and analysis tools

Power supply

Internal: 6 x AA Alkaline batteries
External: 9 to 14 VDC (1.4 watts)
Mains adapter: 12 VDC 6 watts
Battery Life: sampling 8 channels every 5 minutes provides typically 6 months operation

Case

Scratch resistant Nextel coated ABS
width 180mm, height 120mm, depth - see table below

Operating Environment

Temperature range:-30 to 65°C
Humidity: 95% non condensing.
For harsh environments an optional IP67 enclosure is available

Standard ranges for DC voltage/current channels and temperature channels

Each channel can be individually set to any of the following ranges:

Temperature:

Input type	Range °C	Resolution °C
U thermistor	-50 to 150	0.1 (-25 to 100) 0.2 (-40 to 125) 0.4 (-50 to 100)
K: thermocouple	0 to 900 -200 to 450	0.5 0.2
T: thermocouple	-200 to 350	0.2

Voltage/Current:

Each V/C channel can be set to any of the 18 voltage or 2 current ranges.

50 μ V Resolution	0.5mV Resolution	5mV Resolution
0 to 50mV -25 to 25mV 0 to 100mV -50 to 50mV 0 to 200mV -100 to 100mV	0 to 500mV -250 to 250mV 0 to 1V -500 to 500 mV 0 to 2V -1 to 1V	0 to 5V -2.5 to 2.5V 0 to 10V -5 to 5V 0 to 20V -10 to 10V

*Weather:

The Vaisala weather sensors are:
WMT52 - wind speed and wind velocity
WXT520 - as WMT50, with rainfall, barometric pressure, RH and temperature.

Note: **Vaisala sensors can be powered by the logger batteries/supply.**

Additional range 451L only Resolution **Note: no thermocouple channels on 451L**

Resolution
± 10 mV
5mV

Range	Resolution
0 to 20mA	10 μ A
4 to 20mA*	0.05%

* displayed as 0-100%

Omni Instruments Ltd can supply the Vaisala sensors if required.



Guarantee: Equipment manufactured is guaranteed against faulty materials or workmanship for three years. For repairs carried out under guarantee, no charge is made for labour or materials.