Squirrel datalogger 450 / 850 Series

Eltek
SPECIALIST 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 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

452 / 852

Vaisala weather Sensors

WMT52   WXT520

Common Features

- Highly accurate: ±(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°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 Convertor

- 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.

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Available Models

Model	Inputs	Features	Application
451 / 851		Each channel configurable for temperature, voltage or current input	
451SMD / 851SMD	4 / 8 universal	as 451 / 851	
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	
452 / 852	4 / 8 pulse only		
453	1 Event + 8 pulse	Plus 1 x pulse and 1 x event input	
451L / 851L	4 / 8 V/C + 1 thermistor	Includes +/- 10mV range, for use with Hukseflux HFP01 heat flux sensor	Solar radiation
451/851 WXT530	4 / 8 universal + 1 serial	As above, plus serial input for Vaisala WXT520 / WMT52 weather sensor*[1]	Weather (inc. solar radiation)

*[1]Weather:

The Vaisala weather sensors are:

WMT52 - wind speed and wind velocity
WXT520 - as WMT52, with rainfall, barometric pressure, RH and temperature.
Vaisala sensors can be powered by the logger batteries/supply. Eltek can supply the Vaisala sensors if required.

* indicates to be ordered separately

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: ±(0.1% of reading, +0.2% of range span)
Common mode range: 15V
Input Impedance: 1MΩ

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 continuous

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

Range specification

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.

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

Pulse:

Maximum frequency: 5Hz
Maximum pulses counted per logging interval: 65,000

10mV Hukseflux range	Resolution
± 10mV	5µV

Range	Resolution
0 to 20mA	10µA
4 to 20mA*	0.05%
* displayed as 0-100%	

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