Squirrel SQ400 & SQ800
DATA LOGGERS

Grant
DATA LOGGING

The Squirrel SQ400 and SQ800 are universal data loggers that reliably and accurately measure inputs from a wide range of sensors making them suitable for many different applications in Industry, Research, Science and Environmental Monitoring. The SQ400 and SQ800 can be used as portable meters, standalone data loggers or as PC based data acquisition systems.

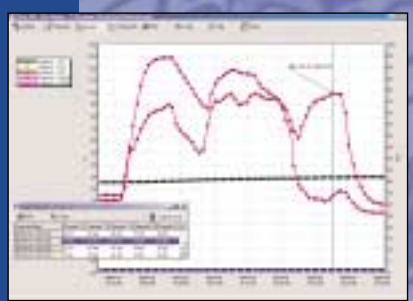
Talk to Grant for all your data logging solutions

Key Features

- 4 or 8 Universal inputs avoids application redundancy, saving you money.
- Direct connection of thermocouples, voltage, 4 to 20mA, current, and thermistors.
- Battery or mains operated and easily portable.
- Simple 3 button set-up via built in display or from PC.
- Non-volatile memory provides up to 2 million readings of secure data.
- Time and date reported with each reading.
- Readings can be scaled into meaningful engineering units (e.g. m/sec, ppm).
- Low power consumption for long term unattended use or portable operation.
- Sensor connection is via removable screw terminals for ease of use in the field.
- Remote set-up and download via GSM, PSTN, radio or satellite modem links for 'set & forget' applications.
- Ethernet option allows loggers to be sited anywhere you have a network port, making installation easier and more cost effective.

Standard Features

- 12bit resolution.
- Highly accurate ±(0.1% of reading, +0.2% of range span).
- Up to 8 sensor power outputs.
- 1 pulse count channel.
- 8 event/digital channels.
- External triggers can start and stop the logger.
- Environmental operation: -30 to +65°C, 0 to 95%RH.
- External power supply: 9 to 14Vdc (9V internal battery included).
- Communications via RS232C with auto-baud detect.
- Rapid memory download at 19.2 kbit/s.
- Up to 99 logger 'runs' may be stored.
- Alphanumeric display of 2 x 16 characters shows readings and status of logger.
- Small size: 180x120x60mm, weight 1kg.



Squirrel SQ400 & SQ800
DATA LOGGERS

Grant
DATA LOGGING

System Specification

ANALOG INPUTS
Channels: 4 (with the SQ400) or
8 (with the SQ800) universal inputs.
Accuracy: ±(0.1% of reading +0.2% of range span)
Common mode range: 15V.
Common mode rejection: up to 120dB.
Input impedance: 1MΩ.
Linearity: better than 0.02% FSR.

ANALOG-DIGITAL CONVERSION
Type: Successive approximation.
Resolution: 12bit.
Sampling rate: 1Hz to 12 hours. For Pulse and Event channels the fastest rate is 1Hz.

ANALOG INPUT TYPES/RANGES
Voltage Ranges: 18 software programmable ranges from 25mV to 10V.
Thermocouples: Types K, and T with cold junction compensation.
Thermistors: Type U only.
DC Current: 20 mA including 4 to 20mA loop (needs external shunt).

Sensor excitation
Up to 8 outputs (4 on SQ400), four regulated 5V and four battery or external supply between 9 to 14V. Excitation available continuously from 1 second to 60 seconds before taking readings.

Digital inputs
8 way input, software selectable as 256 State inputs or 8 Event inputs. Input State: low = 0 to 0.5V, high = 4.5 to 5V. Can be used to measure logic state of individual channels or channel groups.

Pulse counters
1 counter up to 2kHz and a total of 650k counts, software selectable.

Time and Date
Formats: DD/MM/YY, MM/DD/YY, YY/MM/DD, HH:MM:SS. Resolution 1sec, accuracy better than 1 sec/day @ 25°C.

Data memory
Internal memory stores 64 thousand readings as standard. Optional memory expansion is capable of storing up to 2 million readings. Memory modes: stop when full, overwrite current run.

Scaling data
Data read from input channels as electrical units can be automatically scaled to user defined engineering units.

Logging modes
Data can be recorded at programmed time intervals. An external trigger can automatically start and stop logging.
Trigger state: low = 0 to 0.5V, high = 4.5 to 5V.

Data manipulation
Using Darca software, data can be exported as ASCII straight into Excel, Lotus and other software packages for data analysis. Data downloads straight into Darca for quick and easy data analysis.

Programming/Logger Setup
Carried out by Darca or via 3 buttons on the logger display, data can be stored in separate 'runs' for easy retrieval.

Display and keypad
2 line x 16 alphanumeric display allows simple set-up and shows readings, status of logger, channel status and system information. 3 button keypad selects set-up functions and status of logger.

Communications
RS232 half duplex autobaud selection between 2400 and 19.2k Baud. Protocol compatible with PCs, mobile phones, modems, and satellite ground terminals etc.

Power supply
External power: 9 to 14VDC, 1.4Watts max.
Mains Power: via 9VDC AC adapter.
Alkaline 'AA' cells, typically sampling 8 channels every 5 minutes gives 6 months operation with Alkaline batteries.

Case
Nextel coated ABS, which can be housed in a portable, or fixed, IP 67 weatherproof enclosure.
Width 180mm, Depth 120mm, Height 60mm.
Operating environment: Temperature range -30 to 65°C, Humidity 95%.

System Kits include:
Logger, Darca software and RS232 communications cable.

Standard ranges for temperature channels each channel can be individually set to any of the ranges listed

INPUT TYPE	RANGES °C	(°F)	RESOLUTION °C	
U: Thermistor	-50 to 150	(-58 to 302)	0.05 (-5 to 75)	0.1 (-25 to 100)
			0.2 (-40 to 125)	0.4 (-50 to 150)
K: Thermocouple	-200 to 450	(-328 to 842)	0.2	
	0 to 950	(-32 to 1742)	0.5	
T: Thermocouple	-200 to 350	(-328 to 662)	0.2	

Standard ranges for d.c.voltage/current channels each channel can be set to any of the 18 voltage ranges or the 2 current ranges

RANGE	RESOLUTION	RANGE	RESOLUTION	RANGE	RESOLUTION	RANGE	RESOLUTION
0 to 50mV	50µV	0 to 500mV	0.5mV	0 to 5V	5mV	0 to 20mA	10µA
-25 to 25mV	50µV	-250 to 250mV	0.5mV	-2.5 to 2.5V	5mV	4 to 20mA*	0.05%
0 to 100mV	50µV	0 to 1V	0.5mV	0 to 10V	5mV		
-50 to 50mV	50µV	-500 to 500mV	0.5mV	-5 to 5V	5mV		
0 to 200mV	50µV	0 to 2V	0.5mV	0 to 20V	5mV		
-100 to 100mV	50µV	-1 to 1V	0.5mV	-10 to 10V	5mV	*displayed as 0-100%	