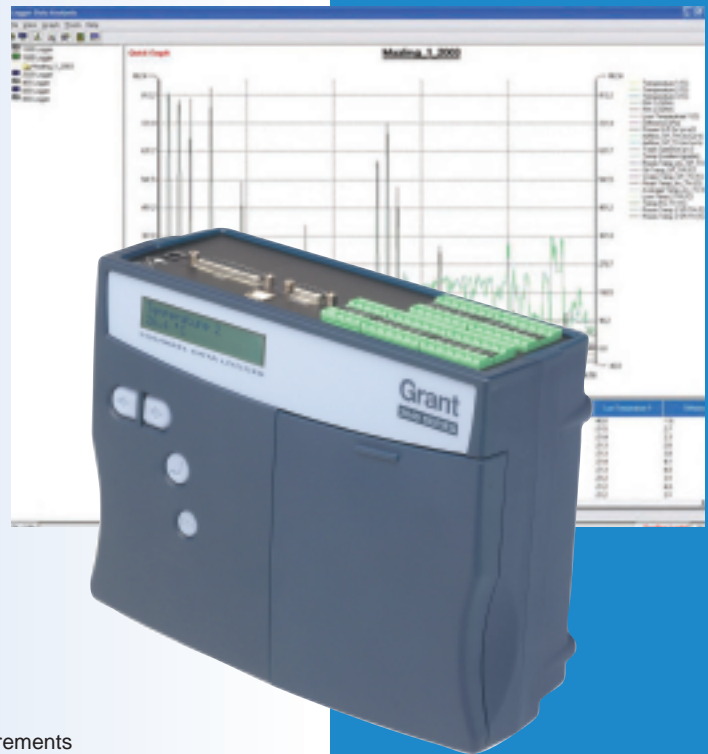


Squirrel 2040 DATA LOGGERS

Squirrel 2040 series, the new generation data logger from Grant Instruments, combines higher channel count with the same high performance, comprehensive features and universal inputs of the smaller 2020 in a neat compact and portable instrument. Using multiple analog to digital convertors, twin processors and removable memory options positions the 2040 series as the ideal data logger for industrial, scientific research and quality assurance applications. The 2040 provides standalone data acquisition and metering that together with a suite of comprehensive software and functional design make the 2040 the "all in one box" first choice.

Key Features

- 32 universal analog inputs for voltage, current or resistance measurements plus 2 high voltage, 4 pulse and 8 digital event/state inputs
- Analog inputs can be used with thermistor, thermocouple and RTD temperature sensors and 4-20mA instruments
- User selectable logging rates of up to 100Hz on a single channel
- 16Mb of internal memory for approximately 1 to 2 million readings
- Download of internal data to removable MMC (Multi Media Card) memory
- Easy to use removable connector system
- Sensor power and relay outputs for use with external devices
- Comprehensive access to information using the 2 line, 40 character LCD and button panel
- Readings can be scaled and viewed in realtime on a PC or on the local LCD
- Calculated channels derived from real channels using basic math's functions e.g. channel 1 x channel 2
- USB and RS232 communication ports
- Non volatile flash memory - data retention is virtually indefinite
- Multiple 24 bit analog to digital convertors (ADC) for precision measurements
- Portable, battery operated or mains powered



Free
Software
&
Technical
Helpline

Communications:

USB and RS232 serial ports are standard with external options for Ethernet, Landline and GSM communications enabling global access and system integration of the 2040.

Multiple setups stored in internal and external memory:

A setup is the instruction that tells the 2040 how it will operate. Up to six preconfigured setups, together with the setup in current use, are held in the internal memory. In addition a further 25 setups can be loaded from the external memory. Switching between setups is extremely easy and fast using the convenient LCD display and button panel, avoiding the need to connect to a PC, thereby reducing time and effort to switch between different data logging applications.

Comprehensive configuration:

SquirrelView configuration, download and data export software permits full control and use of the 2040 data logger. The convenient LCD display and button panel enable metering and logging in true portable operation.

Concurrent sampling:

2040 multiple ADCs allows true concurrent sampling and logging. For instance one channel can sample at a rate of 100Hz whilst retaining different sample speeds on other channels, making the 2040 ideal for measuring parameters that change at different rates such as temperature and pressure.

Software

SquirrelView:

Easy to use setup and download software

SquirrelView Plus:

SquirrelView with on-line and historical graphing

Squirrel 2040

DATA LOGGERS



System Specification

Input channels:					ADDITIONAL CHANNELS			
2040 TYPE	ADCs	DIFFERENTIAL	SINGLE ENDED	3 OR 4 WIRE	PULSE	EVENT/DIGITAL	HIGH VOLTAGE	INTERNAL CHANNELS
2F16	x 2	16	32	0	(2 x fast - 64kHz) & (2 x slow -100Hz)	8 State inputs or 1 x 8 bit Binary	2	2 Temperature
4F16	x 4	16	32	8	(2 x fast - 64kHz) & (2 x slow -100Hz)	8 State inputs or 1 x 8 bit Binary	2	2 Temperature

Standard ranges for temperature channels:
Each channel can be individually set to any of the ranges listed below. Pt100 to IEC751 and JIS1604 and Pt1000 to IEC751.

INPUT TYPE	RANGES °C	RANGES °F	INPUT TYPE	RANGES °C	RANGES °F
Thermistor Y & U:	-50 to150	-58 to 302	Thermocouple K:	-200 to 1372	-328 to 2501
Thermistor S:	-30 to150	-22 to 302	Thermocouple T:	-200 to 400	-328 to 752
			Thermocouple J:	-200 to 1200	-328 to 2192
Pt100/Pt1000 *	-200 to 850	-328 to1562	Thermocouple N:	-200 to 1300	-328 to 2372
* 2 wire only on 2F16, 3 or 4 wire on 4F16			Thermocouple R & S:	-50 to 1768	-58 to 3214

Standard ranges for d.c. voltage/current and resistance channels:
Each voltage/current channel can be any of the voltage or current ranges below. Mixed differential and single ended configurations are permitted.
Note: current ranges use differential input channels.

VOLTAGE RANGE	VOLTAGE RANGE	HIGH VOLTAGE RANGE	CURRENT RANGE (EXT.10Ω SHUNT)	RESISTANCE RANGE 2 WIRE	RESISTANCE RANGE 3 AND 4 WIRE (4F16 VERSION)
-0.075 to 0.075V	-0.6 to 2.4V	4.0 to 20.0V	-30.0 to 30.0mA	0.0 to 1250.0 Ω	0.0 to 500.0 Ω
-0.15 to 0.15V	-3.0 to 3.0V	4.0 to 40.0V	4 to 20mA	0.0 to 5000.0 Ω	0.0 to 4000.0 Ω
-0.3 to 0.3V	-6.0 to 6.0V	4.0 to 60.0V		0.0 to 20000.0 Ω	
-0.6 to 0.6V	-6.0 to 12.0V			0.0 to 300000.0 Ω	
-0.6 to 1.2V	-6.0 to 25.0V				

ANALOG INPUTS
Accuracy: (at 25°C) voltage and resistance ± (0.05% readings + 0.025% range)
Common mode rejection: 100dB
Input impedance: > 1MΩ
Linearity: 0.0015%
Series mode line rejection: 50/60Hz 100dB

ANALOG-DIGITAL CONVERSION
Type: Sigma-Delta
Resolution: 24bit
Sampling rate: up to 10, 20* or 100* readings per second per ADC

ALARM OUTPUTS
4 x open drain FET (18V 0.1A)

POWER OUTPUT FOR EXTERNAL DEVICE
Regulated 5 VDC at 50mA or logger supply voltage at 100mA

TIME AND DATE
In built clock in 3 formats

SCALING DATA
Displays readings in preferred engineering units.

MEMORY
Internal: 16Mb (Up to 1,800,000 readings)
External: Up to 64Mb - removable MMC
(For transferring internal memory and storing setups only)

*With mains rejection off

CALCULATED CHANNELS
Up to 16 virtual channels derived from physical input channels

RESOLUTION
Up to 6 significant digits

PROGRAMMING/LOGGER SETUP
SquirrelView or SquirrelView Plus software

COMMUNICATION
Standard: RS232 (Auto bauding to 115k baud)
USB 1.1 and 2.0 compatible
External options: Ethernet, GSM and PSTN Modems

POWER SUPPLY
Internal: 6 x AA Alkaline batteries
External: 10-18VDC
Reverse polarity and over-voltage protected

POWER CONSUMPTION @ 9V
Sleep mode: < 600µA
Logging: 40-120mA

DIMENSIONS AND WEIGHT
Dimensions: W235 x D175 x H92mm
Weight: Approx 1.5kgs
Enclosure material: ABS

MEMORY MODES (internal only)
Stop when full or overwrite

DISPLAY AND KEYPAD
2 line x 40 character LCD display
Battery state and external power indicator
Keypad lock
Navigate to:
Arm/disarm/pause/continue
Meter any channel or alarm
Select from up to 6 x pre-stored setups
Status/diagnostics/memory/time and date
Download to MMC

OPERATING ENVIRONMENT
-30°C to +65°C
Humidity: 90% at 40°C non condensing

ACCESSORIES
MPU 12V: Universal (97-263V AC) power supply
LC76: DC lead
SQ20RB12-6: External rechargeable battery (12V, 6Ah)
SB102: 25 way digital I/O connector
CS202: Current shunt kit (8 x 10Ω 0.125W)
PEL4: Rugged weather proof enclosure
CAL2040: Test and Calibration certificates
SQ20A802: External GSM communications kit
SQ20A801: External Ethernet adaptor kit
MMC64: Multi Media Card
(Please see price list for additional accessories)

Please note: SQ2040 is supplied with software, manual, USB cable, wall bracket and batteries.



Grant Instruments
(Cambridge) Ltd
Shepreth
Cambridgeshire
SG8 6GB England

Tel: +44 (0) 1763 260811
Fax: +44 (0) 1763 262410
www.grant.co.uk
loggersales@grant.co.uk

Printed in England-2040/0405UK/V2

Software

SquirrelView - supplied with 2040
2040 logger setup, download and data export to Excel or CSV application for Windows 98, 2000 and XP. Features include metering and support for Modem, Ethernet and GSM communications.

SquirrelView Plus
As SquirrelView with additional features including on-line or historical graphing of data with manual and automatic scaling of graphs. Readings can be listed in tabular format with timestamps and statistics.

Warranty: Equipment manufactured by Grant Instruments is warranted against faulty materials or workmanship for three years. For repairs carried out under warranty, no charge is made for labour, materials or return carriage.

CE mark: The Grant 2040 data acquisition system bears a CE mark and meets relevant European directives.

Quality Statement: Grant Instruments operates a Quality Management System complying with ISO9001:2000.

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.

Manufactured and designed in Cambridge, England.