

Squirrel 2020 DATA LOGGERS

Squirrel 2020 series, the new generation data logger from Grant Instruments, combines high performance, comprehensive features and universal inputs in a compact and portable instrument. Using multiple analogue to digital convertors, convenient and low cost memory options positions the 2020 series as the ideal data logger for industrial, scientific research and quality assurance applications. The 2020 provides standalone data acquisition and metering that together with a suite of comprehensive software and functional good looks make the 2020 the "all in one box" first choice.

Free
Software
&
Technical
Helpline

Key Features

- Up to 24 inputs including high voltage, pulse and event with up to 16 universal inputs for voltage, current or resistance
- Inputs can be used with thermistor, thermocouple and RTD temperature sensors and 4-20mA instruments
- Sub second logging and concurrent sampling
- 16Mb of internal memory for approximately 1,000,000 to 2,000,000 readings
- Download to removable MMC (Multi Media Card) memory
- Easy to use removable connector system
- Power outputs for use with external devices
- Comprehensive access to information using the 2 line, 40 character LCD and button panel
- Readings can be scaled
- Calculated channels
- USB and RS232 ports
- Non volatile flash memory - data retention is virtually indefinite
- Multiple 24 bit analogue to digital convertors (ADC) for precision measurements
- Portable, battery operated or mains powered



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 2020.

Multiple set-ups stored in memory:

A set-up is the instruction that tells the 2020 how it will operate. Up to four preconfigured set-ups, together with the set-up in current use, are held in the memory. Switching between set-ups is extremely easy and fast using the convenient LCD and button panel, avoiding the need to connect to a PC, therefore 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 2020 data logger. The convenient LCD display and button panel enable metering and logging in true portable operation.

Concurrent sampling:

2020 multiple ADCs enables true concurrent sampling. For instance one channel can sample at high speed whilst retaining different sample speeds on other channels.

Software

SquirrelView:

Easy to use set-up and download software

SquirrelView Plus:

SquirrelView with on-line and historical graphing

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System Specification

Input channels:							
2020 TYPE	ANALOG INPUT CHANNELS			PULSE	EVENT/DIGITAL	HIGH VOLTAGE	INTERNAL CHANNELS
	DIFFERENTIAL	SINGLE ENDED	3 OR 4 WIRE				
1F8	8	16	0	(2 x fast - 64kHz) & (2 x slow -100Hz)	8 State inputs or 1 x 8 bit Binary	2	1 Temperature
2F8	8	16	4	(2 x fast - 64kHz) & (2 x slow -100Hz)	8 State inputs or 1 x 8 bit Binary	2	1 Temperature

Standard ranges for temperature channels:
Each channel can be individually set to any of the ranges listed below. Pt100/Pt1000 sensors to BS-EN-60751 or JIS1604.

INPUT TYPE	RANGES °C	RANGES °F	INPUT TYPE	RANGES °C	RANGES °F
Y & U: Thermistor	-50 to 150	-58 to 302	K: Thermocouple	-200 to 1372	-328 to 2501
S: Thermistor	-30 to 150	-22 to 302	T: Thermocouple	-260 to 400	-436 to 752
			J: Thermocouple	-210 to 1200	-346 to 2192
Pt100/Pt1000	-200 to 850	-328 to 1562	N: Thermocouple	-200 to 1372	-328 to 2372
			R & S: Thermocouple	-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 voltage inputs channels.

VOLTAGE RANGE	VOLTAGE RANGE	HIGH VOLTAGE RANGE	CURRENT RANGE (Ext.10Ω shunt)	RESISTANCE RANGE 2 wire	RESISTANCE RANGE 3 and 4 wire (2F8 version)
-0.075 to 0.075V	-3.0 to 3.0V	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	-6.0 to 6.0V	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 12.0V	4.0 to 60.0V		0.0 to 20000.0 Ω	
-0.6 to 0.6V	-6.0 to 25.0V			0.0 to 300000.0 Ω	
-0.6 to 1.2V					
-0.6 to 2.4V					

<p>ANALOG INPUTS Basic accuracy: (5-45°C) ± (0.05% readings + 0.025% range) Common mode rejection: 100dB Input impedance: > 1MΩ Linearity: 0.015% Series mode line rejection: 50/60Hz 100dB</p> <p>ANALOG-DIGITAL CONVERSION Type: Sigma-Delta. Resolution: 24bit, better than 0.5µV Sampling rate: 1F8-up to 20 readings per second 2F8-up to 40 readings per second</p> <p>ALARM OUTPUTS 4 x open drain FET (18V 0.1A Max)</p> <p>POWER OUTPUT FOR EXTERNAL DEVICE Regulated 5 VDC or supply voltage</p> <p>TIME AND DATE In built clock in 3 formats</p> <p>SCALING DATA Displays readings in preferred engineering units.</p> <p>MEMORY Internal: 16Mb (Up to 1,800,000 readings) External: Up to 64Mb removable MMC</p>	<p>CALCULATED CHANNELS Up to 16 virtual channels derived from physical input channels</p> <p>RESOLUTION Up to 6 significant digits</p> <p>PROGRAMMING/LOGGER SET-UP SquirrelView or SquirrelView Plus software</p> <p>COMMUNICATION Standard: RS232 (Auto bauding to 115k baud) USB 1.1 and 2.0 compatible External options: GSM and Ethernet</p> <p>POWER SUPPLY Internal: 6 x AA Alkaline batteries External: 10-18VDC Reverse polarity and over-voltage protected</p> <p>POWER CONSUMPTION Sleep mode: 600µA Logging: 110mA at 9VDC</p> <p>DIMENSIONS AND WEIGHT Dimensions: W225 x D170 x H60 mm Weight: Approx 1.2kgs Enclosure material: ABS</p> <p>MEMORY MODES (internal only) Stop when full or overwrite</p>	<p>ACCESSORIES MPU 12V: Universal switch mode power supply LC76: DC lead SQ20RB12-6: External rechargeable battery (12V, 6Ah) SQ20RB12-15: External rechargeable battery (12V, 15Ah) SB102: 25 way I/O extender cable LC77: Replacement USB lead LC71: RS232 serial lead WB6: Replacement wall bracket CS202: Current shunt kit (8 x 10Ω 0.25W) PEL4: Rugged weather proof enclosure CAL2020: Test and Calibration certificates</p> <p>OPTIONS SQ20A802: External GSM communications kit SQ20A801: External Ethernet adaptor kit</p> <p>DISPLAY AND KEYPAD 4 navigation keys 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 4 x pre-stored set-ups Status/diagnostics/memory Time and date</p> <p>OPERATING ENVIRONMENT -30°C to +65°C</p>
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Due to our policy of continuous improvements, specifications may change without prior notice. Grant believe that all information declared is correct at the time of issue. No liability is accepted for errors and omissions.



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Software

SquirrelView

2020 logger set-up, download and data export 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 export of data direct to Excel, on-line or historical graphing of data with manual and automatic scaling of charts. Readings can be listed in tabular format with date and time.

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 2020 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.