NEW for 2011!

Squirrel SQ2020 Wi-Fi

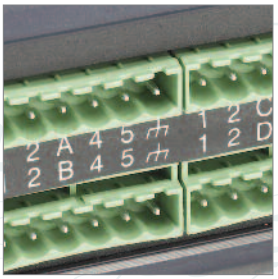
Powerful data loggers for all applications

Overview

The Squirrel 2020 Wi-Fi hand held data logger combines high performance and universal inputs with the simplicity of Wi-Fi networking in a compact and easy-to-use instrument.

Using high accuracy, 24-bit analogue to digital converters, removable memory and wireless Ethernet (Wi-Fi) networking, the SQ2020 Wi-Fi is the ideal data logger for industrial, scientific research and quality assurance applications.

Together with our comprehensive suite of software, SquirrelView, the SQ2020 provides standalone data acquisition, simple Wi-Fi networking, real-time metering and data analysis straight out-of-the-box.



Key features

- Fully configurable via the integrated keypad
- 8 true differential or 16 single ended universal analogue inputs for voltage, current or resistance measurements plus 2 high voltage, 4 pulse and 8 digital event/state inputs
- Analogue inputs can be used with thermistors, thermocouples, 2,3 or 4 wire RTD temperature sensors and 4-20mA signals
- Logging rates of up to 100Hz on up to 2 channels
- Standard (802.11b) wireless Ethernet (Wi-Fi) networking, USB and RS232 communication ports
- Large non-volatile internal memory storage for up to 14 million readings
- Download of internal data to removable MMC / SD card
- Sensor power and FET outputs for use with external devices
- Clear 128*68 dot graphical LCD display
- Calculated channels derived from real channels using advanced mathematical functions e.g. log(x); ln(x); sqrt(x)

Analogue inputs supported

- Thermistors
- Thermocouples
- Pt100 / Pt1000 (maximum of four 3- or 4-wire Pt100 / Pt1000 sensors)
- Voltage
- Current
- Resistance

- Up to 16 universal inputs
- High precision (0.05% of reading + 0.025% of range)
- Advanced data management to MMC /SD card
- Flexible communications (Wi-Fi, USB, RS232)
- High speed option (100Hz)

Large, clear 128 * 64 dot graphical LCD display

To operate the logger simply use the four integral push buttons and display, or use the convenient SquirrelView set-up, download and export software – free with every Squirrel logger

Robust, ergonomically designed case with easy access to all user facilities

Store up to 14 million readings in the Squirrel's on board memory

Store up to 6 logger configurations. Load from a removable MMC / SD card for speed and convenience, or download data files to the card

Power output for sensor excitation / external devices

8 to 16 universal analogue inputs for recording temperature, current, voltage and resistance

Easy to use, removable connector system

2 high voltage channels (up to 60V) for automotive applications

USB, Wi-Fi and RS232 connectivity for quick and easy PC and remote communication and Wi-Fi networking

Power supply – internal alkaline batteries or external DC power supply

Up to 8 digital and 4 pulse rate / counter inputs. Can be logged or used as triggers

4 alarm outputs for triggering external devices

Communications

Wi-Fi, USB and RS232 serial ports are inbuilt. This allows simple connection to either a PC based TCP/IP network, a wireless to PC connection or to a GSM modem for remote data downloading. This flexibility enables global data access and retrieval as well as complete system integration of the SQ2020 2F8 into complex and critical applications

Multiple configurations stored in the logger:

Up to six logger configurations (channel type, names, logging speeds, triggers etc.) together with the current configuration can be held in the logger`s internal memory. Additional configuration settings can also be loaded from the external MMC/SD memory card. This allows the operator to quickly and easily switch between logger configurations without the need for a PC.

Software configuration via SquirrelView:

The SquirrelView software (supplied with the SQ2020 Wi-Fi data logger) allows logger configuration, data download and export whilst giving the user full control over SQ2020. The optional SquirrelView Plus gives the user access to many advanced data analyses and archiving/transfer features. Refer to SquirrelView data sheet for specifications.

Concurrent sampling:

The SQ2020 2F8 uses multiple analogue and digital converters that enables true concurrent sampling and logging. It allows the user to configure a channel to log at a rate of 100Hz whilst retaining different sample speeds on the other channels. Ideal for measuring dynamic parameters that change at different rates such as temperature and pressure.

Capabilities

- Create complex schedules of logging rates, triggers and alarm outputs
- Scale and view readings in real time on the integral display or on a PC running SquirrelView
- Select logging rates up to 100 readings per second on up to 2 channels
- Derive up to 16 calculated (virtual) channels from real input channels using mathematical functions

Applications


HVAC


Process industry


Horticultural research

Squirrel 2020 Wi-Fi Technical Specifications

	SQ2020-2F8 Wi-Fi
Analogue Input Channel Options	**A/D converters:** 2 **Differential:** 8 **Single Ended*:** 16 **3 or 4 wire:** 4
Additional Channels	**Pulse:** (2 x fast-64kHz)& (2 x slow - 100Hz) **Event/digital:** 8 state inputs or 1 x 8 bit binary **Single Ended*:** 2
Analogue Inputs	Accuracy: (at 25°C) voltage and resistance (± 0.05% readings + 0.025% range) Common mode rejection: 100dB Linearity: 0.015% Input impedance: > 1MΩ Series mode line rejection: 50/60Hz 100dB
Analogue - Digital Conversion	Type: Sigma - Delta Resolution: 24bit Sampling rate: up to 10, 20* or 100* readings per sec. per ADC. (* with mains rejection off)
Thermistor Ranges	**Y & U-type:** - 50 to 150°C **Pt100/ Pt1000:** - 200 to - 850°C (3 or 4 wire) **Customer specific thermistor range**
Thermocouple Ranges; Differential and Single Ended	**K-type:** - 200 to 1372°C **R-type:** - 50 to 1768°C **B-type:** 250 to 1820°C **T-type:** - 200 to 400°C **S-type:** - 50 to 1768°C **C-type:** 0 to 2320°C **N-type:** - 200 to 1300°C **J-type:** -200 to 1200°C **D-type:** 0 to 2320°C
Working Environment	- 30 to 65°C, RH up to 95% (non-condensing)
Voltage Ranges; Differential and Single Ended	- 0.075V to 0.075V, - 0.15V to 0.15V, - 0.3V to 0.3V, - 0.6V to 0.6V, 0.6V to 1.2V, 0.6V to 2.4V, - 3V to 3V, - 6V to 6V, -6V to 12V, - 6V to 25V
High Voltage Input Range	4V to 20V, 4V to 40V, 4V to 60V (max 2 may be selected)
Current Ranges, Differential (Requires external 10Ω shunt)	-30.0 to 30.0mA, 4 to 20mA
Resistance Ranges, all 2 wire	0 to 1250Ω, 0 to 5000Ω, 0 to 20000Ω, 0 to 300000Ω
Resistance Range 3 and 4 wire	0 to 500Ω, 0 to 4000Ω
Digital/Alarm Outputs	4 open drain FET (18V 0.1A)
Memory	Internal: up tp 128Mb (up to 14 million readings) External: Up to 1Gb - removable MMC/ SD (for transferring internal memory and storing setups only)
Internal Memory Modes	Stop when full or overwrite
Calculated Channels	Up to 16 virtual channels derived from physical input channels
Resolution	Up to 6 significant digits
Display/Keypad	128*64 dot graphical display,4 button keypad
Power Supply	Internal: 6 x AA alkaline batteries External: 10-18VDC. Reverse and polarity and over-voltage protected
Power Consumption @ 9V	Sleep mode: 600µA Logging: 40 - 80 mA
Power Output for External device	Regulated 5VDC at 50mA or logger supply voltage at 100mA
Time and Date	In-built clock in 3 formats
Communication	Standard: **Wireless Ethernet (Wi-Fi):** 802.11b, 2.4GHz, 1 to 14 channels. Security: Open, WEP(64 or128bi encryption), WPA orWPA2/ 802.11i. Network: Infrastructure only with specified SSID(external mains power required for Wi-Fi connection) **RS232** (Auto bauding to 115200 baud) **USB** 1.1 & 2.0 compatible External options: GSM and PSTN Modems
Programming / Logger Setup	SquirrelView or SquirrelView Plus Software
Dimensions (w x d x h), Weight	235 mm x 175 mm x 55 mm, 1.2 kg, enclosure material ABS

Note: SQ2020 is supplied with software, manual, USB cable, wall bracket, batteries and 4 current shunt resistors.