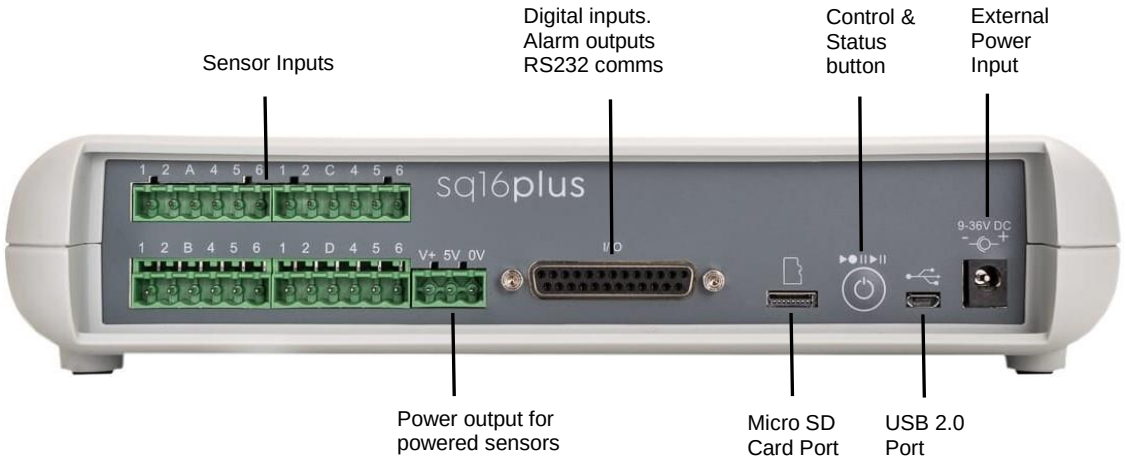
Getting Started Guide
sq16 and sq16plus

1 Box contents

sq16 or sq16 plus Datalogger
Mains Adapter MPU 12V
USB cable
AA Batteries x 6
Current shunt resistors for -30 to 30mA and 4 to 20mA inputs, 10Ohms x 4
Sensor Connectors, 6-way x 4, 3-way x1 with cable ties
Getting Started Guide (this booklet)
Warranty Card

Unpack the contents, check everything is present and retain the outer packaging for future use.

2 sq16 and sq16 plus front panel connections and indicators



Action	Control & Status button colour	What this means
Momentarily press button	Alternate for 3 seconds	Logger is idle (not logging or armed or waiting for a trigger)
Momentarily press button	Flash for 3 seconds	Logger is logging
Momentarily press button	Flash for 3 seconds	Indicates alarm(s) triggered
Momentarily press button	Continuous for 3 seconds	Indicates a logger fault
Momentarily press button	Alternate for 3 seconds	Logger is programmed, armed and ready to log waiting for a trigger or has a delayed start
When idle press and hold button until it flashes green rapidly (about 2 seconds) and then release	Flash for 3 seconds	Start Logging
When logging press and hold button until it flashes green rapidly (about 3 seconds) and then release	Alternate for 3 seconds	Stop Logging
Press button all through the rapid green flashing described above until it flashes blue rapidly (about 5 seconds) and then release	Flashing after button held for 5s Bluetooth ON, flash every 10s Bluetooth is OFF, no blue flash	Turns Bluetooth ON if OFF or OFF if already ON.

3 Essential Safety information

3.1 Meaning of safety symbols on equipment

	Read these instructions before installation or use of the datalogger
	Warning, hazard: read these instructions before proceeding to ensure you understand the nature of the hazard.

3.2 Safety warnings

	Use only as specified by the operating instructions: if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. Please refer to full manual “34707 Logger Operating Manual ”
	Do not connect the logger to hazardous voltages:- because it is floating with respect to earth, the hazardous voltage can appear on other terminals (as well as damaging the logger).
	The insulation of the wiring used to connect to the sensor inputs must be adequate for the voltages to be measured. This means for example that at least 75V rated insulation is required if using the -25V to +50V range (sq16) and that at least 100V rated insulation is required if using the -40V to +60V range (sq16plus).
	The logger is designed to be powered by a class II power supply (no Earth connection) for maximum flexibility.
	Remove the batteries when the logger is not used for long periods of time or is being transported
	This logger is not designed for safety critical applications: do not rely on it to verify safe conditions before carrying out any potentially hazardous activities.

4 Powering your sq16 logger

Fit the AA Manganese alkaline batteries when remote or mobile operation is required and to ensure logged data protection in the event of unexpected mains power loss. The battery compartment is at the rear of the logger.
When batteries are first fitted, and they are the only power source, then press and hold the Control & Status button until the lights up and then release to power up the logger.

It is recommended that replacement batteries are of the same manufacturer, type, and condition.

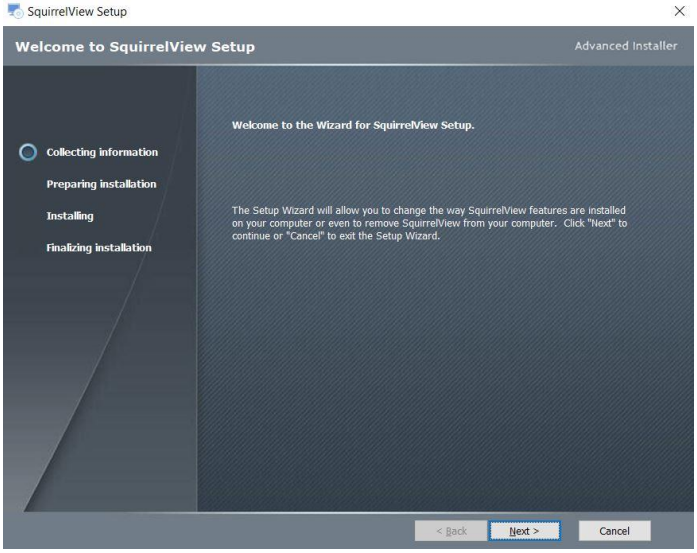
Power can be provided by a USB connection from a powered USB socket in a PC or Laptop.
For continuous use where mains power is available, plug the MPU 12V mains adapter into an accessible mains outlet. Insert the Jack plug into the sq16 External Power Input.
Only use the mains adapter supplied by Grant Instruments for the external power source.
Always power your sq16 logger using the mains adapter if external sensors powered by the logger are being used.

5 Downloading and installing SquirrelView desktop software

Minimum PC requirements: Windows 10.
Ensure you have administrative rights for the PC on which to install the software

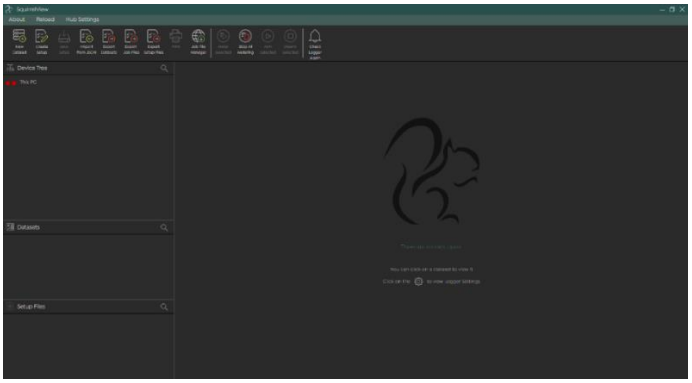
Please follow the steps below

1. Follow this link or copy the URL into your browser SquirrelView Software - Grant Instruments or scan the QR code
2. From the webpage Software Download area, download the SquirrelViewinstaller.zip file and open the folder to view the contents
3. Save a copy of the Licence certBasic.pem file in your PC Download folder.
4. If you have purchased the SQS200 or SQS300 professional software upgrade, register online to receive the upgraded licence. This is available on the same SquirrelView Software web page or directly from this link Request Professional software - Grant Instruments or this QR code
5. The Licence file will be sent to your registered email address. Save a copy of the Licence certPro.pem file in your PC Download folder.
6. Run SquirrelView_Installer.exe program to start the installation



7. Follow the on-screen installation wizard. Click on Finish to complete the installation
8. Start SquirrelView
9. When prompted, click on the **Import Key** button.
   Select the certBasic.pem or certPro.pem (if available) file from the Download folder and click **Open**.
   To upgrade from the Basic to Professional Licence at a later stage, click on the **About** button in SquirrelView followed by the **Import New Licence** button.

SquirrelView is now ready to use



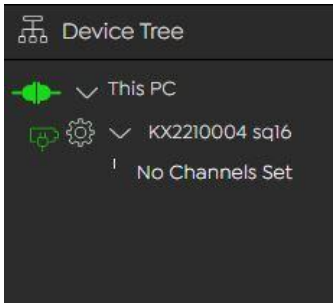
6 Connecting to your logger using USB

Important: please ensure the software is installed before connecting your logger

Connect your sq16 logger to the PC using the USB lead supplied.

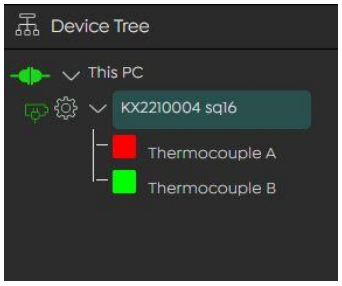
Start SquirrelView Desktop.

Click on the Plug icon to connect to the logger.



The Plug icon will change to Connected and the logger will appear in the Device Tree with the logger serial number followed by the logger model sq16 or sq16plus for example KX2120113 sq16.

Click on the Logger Settings icon to configure your logger with sensor inputs and other logging configuration details.



Once configured, click on the logger's name to select and enable logging and metering of sensor data.

For further information of how to use SquirrelView Software and further product details please refer to "34707 Logger Operating Manual" available to download from the Grant website at:
sq Series Overview - Grant Instruments

Connecting to your logger over a Local Area Network using wired Ethernet or Wi-fi can be achieved using a sq hub Communication Gateway.

More information on the sqhub is available on the Grant website at:
sqhub - Grant Instruments

7 Connecting to your logger using a mobile device

You can communicate with your sq16 logger directly on any Android, iPad or iPhone device using Bluetooth or through a sqhub using Wi-Fi.

Download the SquirrelView App from your App Store and install on your mobile device. Scan the QR codes below to get started.

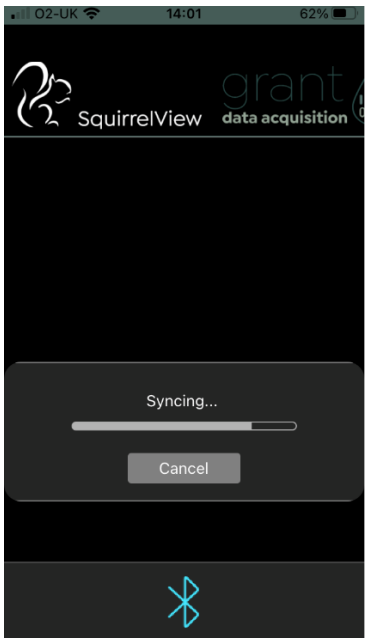
Google Play App Store for Android

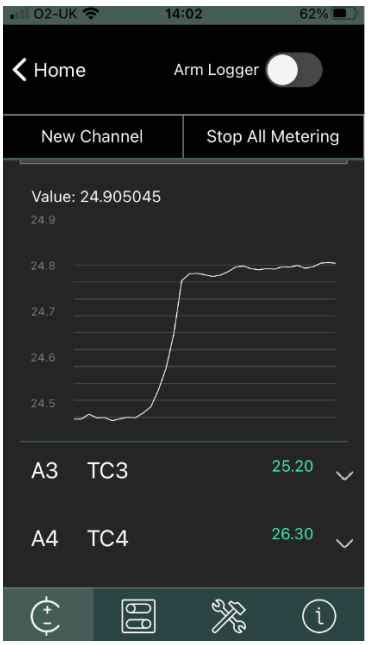
Apple App Store for iOS

Ensure your logger is powered up with the Bluetooth turned on (see section 2)
Open the SquirrelView App and select the Bluetooth icon

The App will find all available Grant loggers within range using Bluetooth or Wi-Fi (if using a sqhub). Your logger can be identified by its serial number, for example KX2120113 or it's Logger Identification name if it has been configured.

Tap on the logger item in the list to setup the sensor inputs, meter real time data and configure other logger settings.





Scan to find further help and resources on how to use your sq16 logger and SquirrelView App

8 Technical Specification

The product is a low-power data-logger designed for indoor use by, or supervised by, a professional user.

1. Floating connections			
Connection	**Description**	**Maximum permissible ratings**	
Sensor Inputs sq16	Inputs for measuring voltage, current and temperature	Common-mode voltage w.r.t. supply 0V	+/-60Vdc
		Voltage between pins	75Vdc
Sensor Inputs sq16plus	Inputs for measuring voltage, current and temperature	Common-mode voltage w.r.t. supply 0V	+/-60Vdc
		Voltage between pins	100Vdc

2. Connections referenced to 0V of External Power Input		
Connection	**Description**	**Maximum permissible ratings**
Power output for powered sensors “5V”	5V output. 0V common with External Power Input	50mA
Power output for powered sensors “V+”	Tracks External Power Input (9-36Vdc)	100mA
Digital inputs	Logic level inputs	0 to 5V
Alarm outputs	4 x open drain FET	36V 0.1A Max
External Power Input	Input for Class II power-supply	9-36Vdc, 1.1A

3. Physical properties	
Dimensions:	W235 x D175 x H55 mm
Weight:	1.2kgs
Operating (ambient) temperature limits:	-30°C to +60°C
Storage (ambient) temperature limits:	-30°C to +65°C
Altitude above sea level:	Up to 2,000m (6,500ft)
Maximum relative humidity:	80% RH up to 31°C

9 Contact Us

If you have any feedback on Grant's products or services, we would like to hear from you.

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