

How to use the SquirrelView software with the SQ2010/SQ2020/SQ2040 Data Loggers.



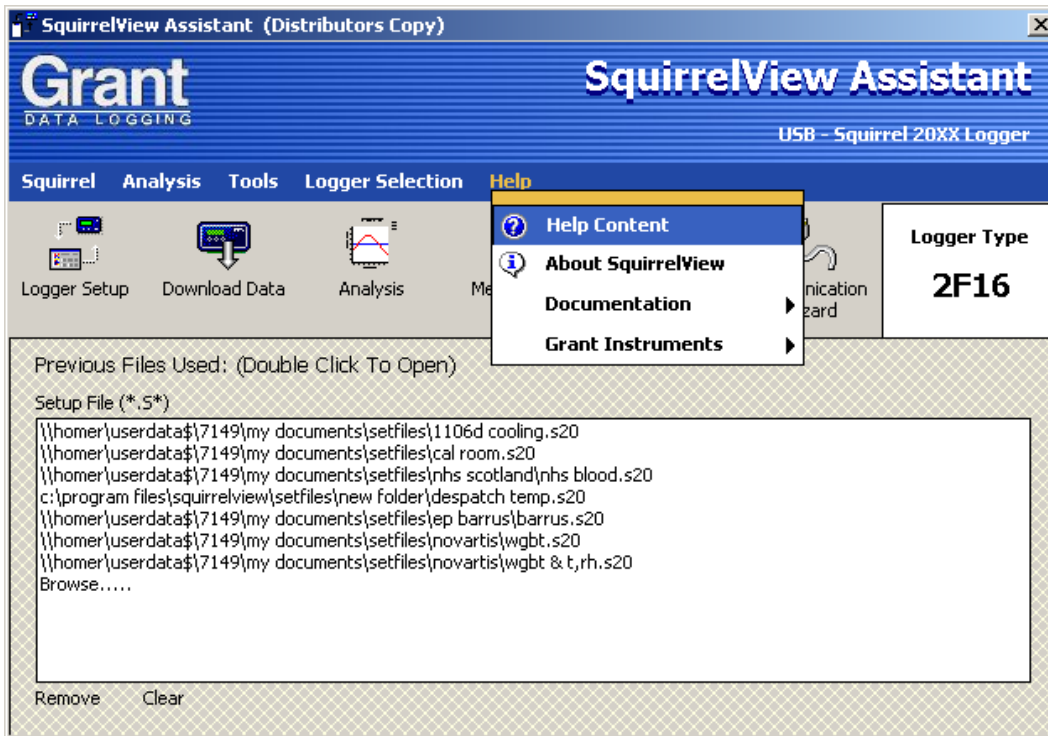
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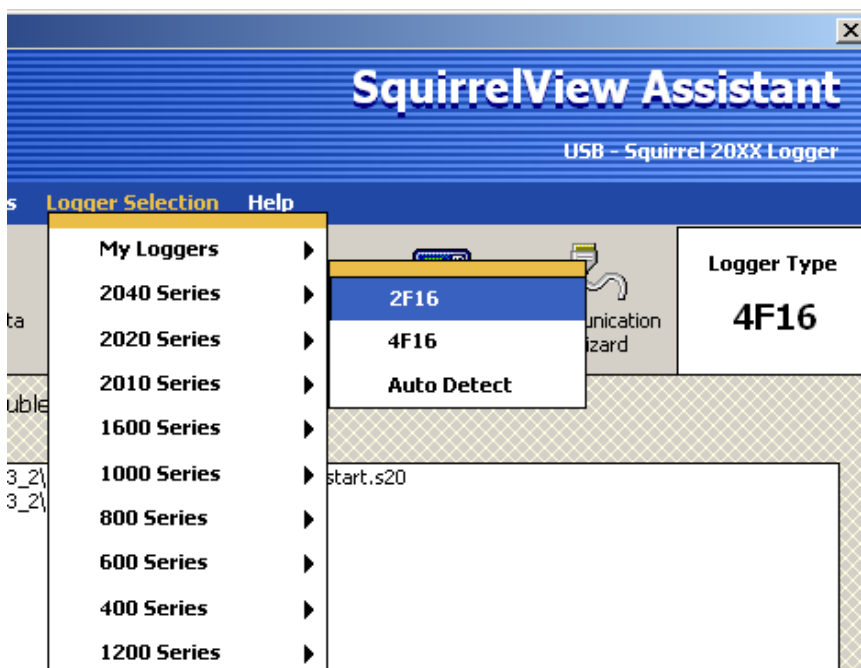
Squirrelview Help

Note: There is an extensive Help file within Squirrelview for information on using the software and logger.



Connecting Your Squirrel Data Logger

First you need to select the correct logger model



Logger Set-up

To start setting up the channels of the data logger click on the *Logger Setup* button.



Choose your sensor input from the selection range.

Sensor Type	Description	Block	Connections	Log Method	Log	Sensor Power
Not Set	Not Set	A		Not Set	<input type="checkbox"/>	Not Set
Not Set	Not Set	A		Not Set	<input type="checkbox"/>	Not Set
Not Set	Not Set	A		Not Set	<input type="checkbox"/>	Not Set
Not Set	Not Set					
Not Set	Not Set					
Not Set	Not Set					
Not Set	Not Set					
Not Set	Not Set					
Not Set	Not Set					
Not Set	Not Set					

Range Selection

Sensor Type

- Resistance - 2 Wire
- Voltage - Differential
- Voltage - Single ended
- Current
- U Thermistor
- S Thermistor
- Y Thermistor
- User Thermistor
- J Thermocouple - Differential
- K Thermocouple - Differential**
- N Thermocouple - Differential
- R Thermocouple - Differential
- S Thermocouple - Differential
- T Thermocouple - Differential
- J Thermocouple - Single ended
- K Thermocouple - Single ended
- N Thermocouple - Single ended
- R Thermocouple - Single ended
- S Thermocouple - Single ended
- T Thermocouple - Single ended
- PT1000 751 - 2 wire

Ranges available

- 200 to 1372 °C
- 328 to 2501 °F

New Range

Edit Range

Add/Edit Scaling

Untitled

Un-Set Channel

OK

Cancel

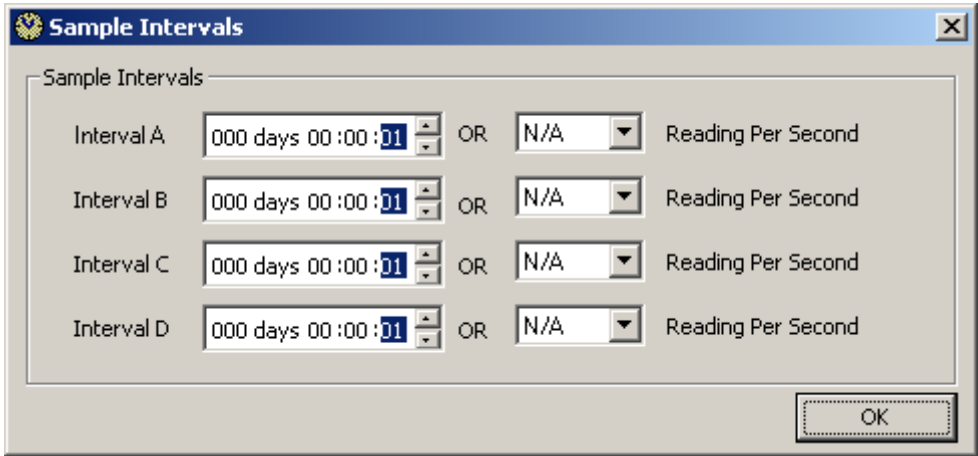
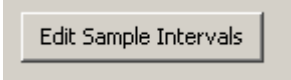
Connect the sensor as shown in the diagram.

Connect the sensor as shown in the diagram.

DATA ACQUISITION

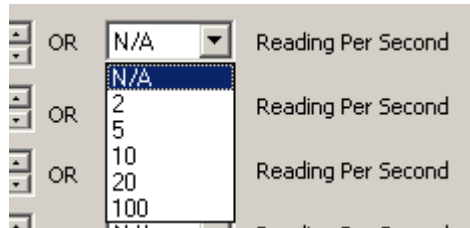
Hints and Tips

To alter the sample intervals select the Edit Sample Intervals button

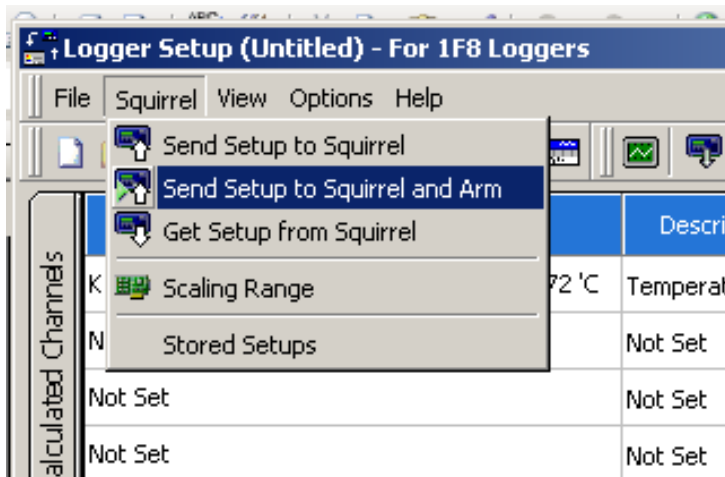


There is an option to run at sub second intervals.

Note: Only 10 readings per Second on the SQ2010 Loggers



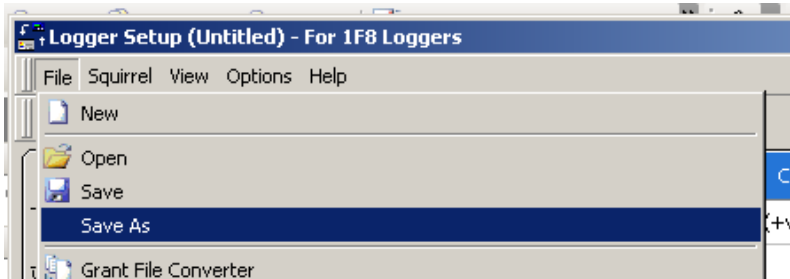
To send the setup to the logger and start logging go to Squirrel and Send Setup to Squirrel and Arm.



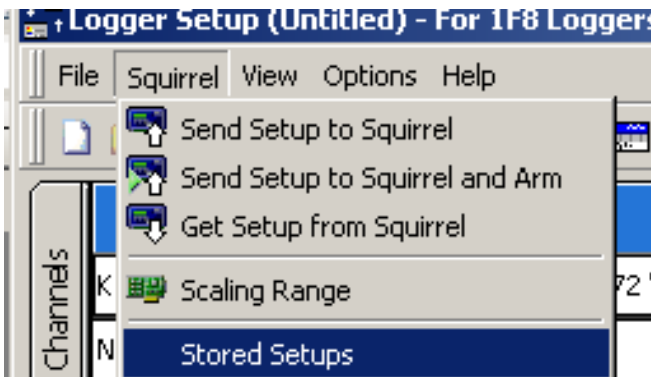
DATA ACQUISITION

Hints and Tips

The Setup can be saved on your PC by:



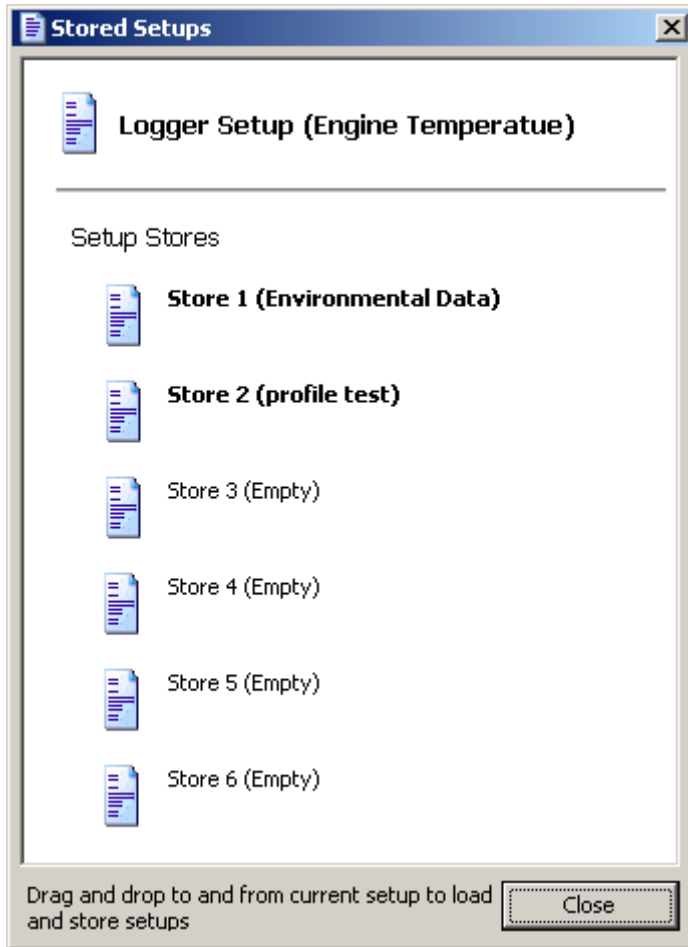
And click *Stored Setups* to store in the logger:



DATA ACQUISITION

Hints and Tips

The logger can hold up to six different setups.



Even more setups can be stored on removable MMC card.

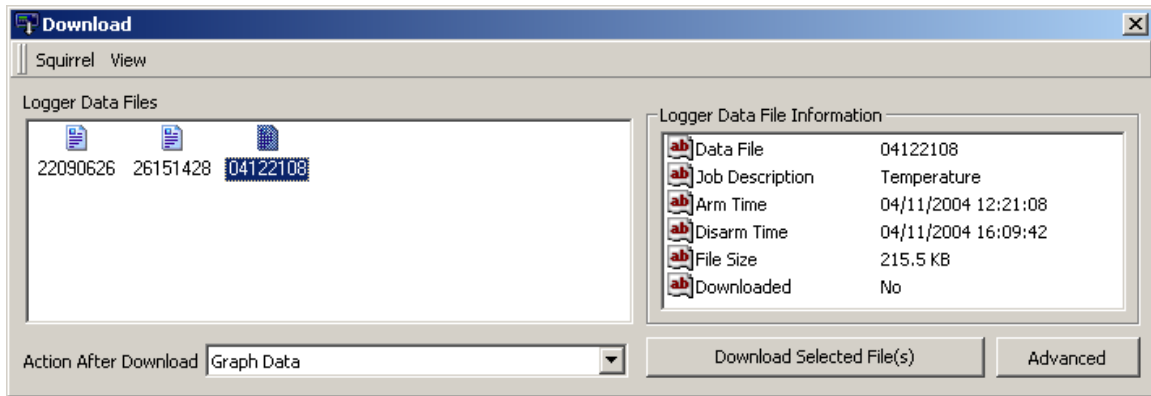
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Download Data

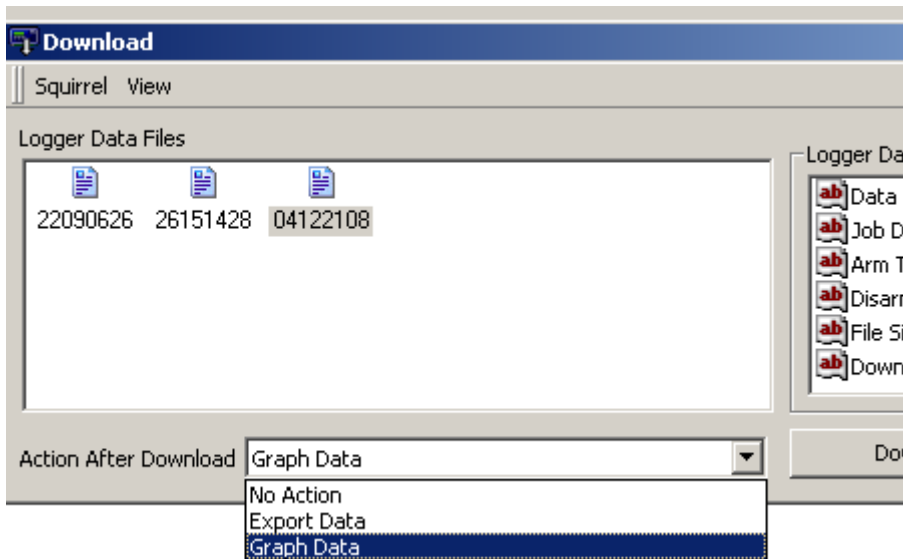
To start the download of data click *Download Data* button



Select the required Data file

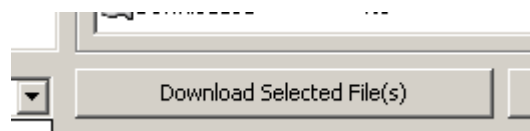


Select the Action after Download



(**Note** this action can be set as default in Tools / Download Settings).

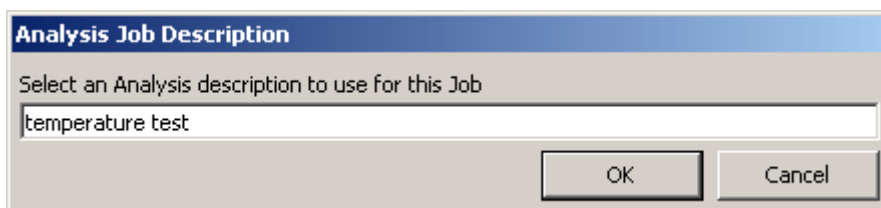
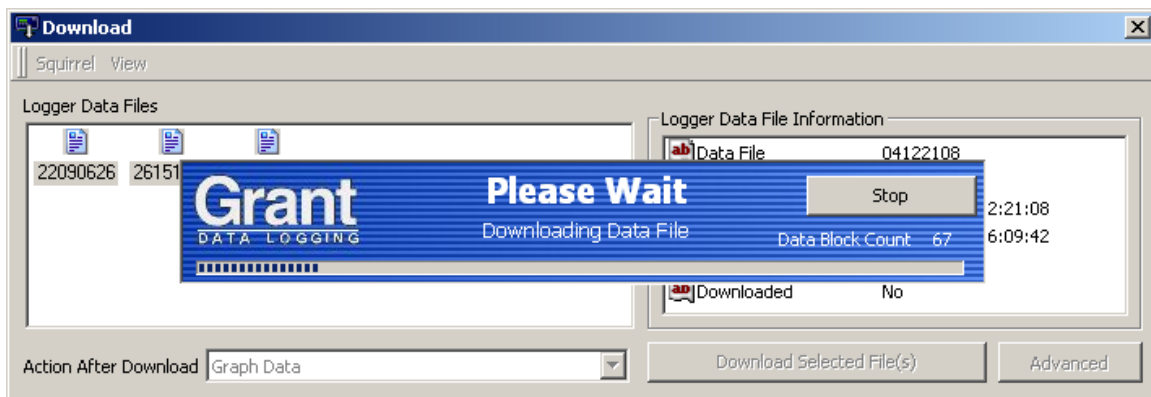
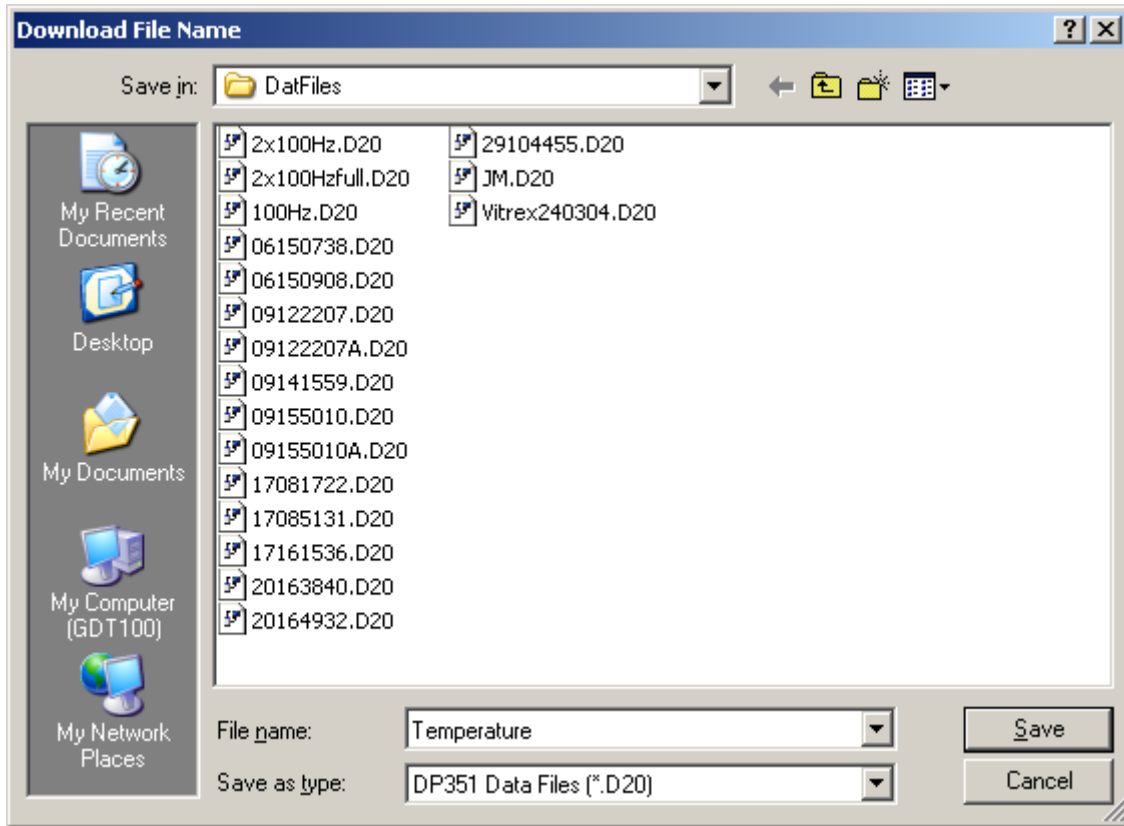
Select the *Download Selected File(s)*



DATA ACQUISITION

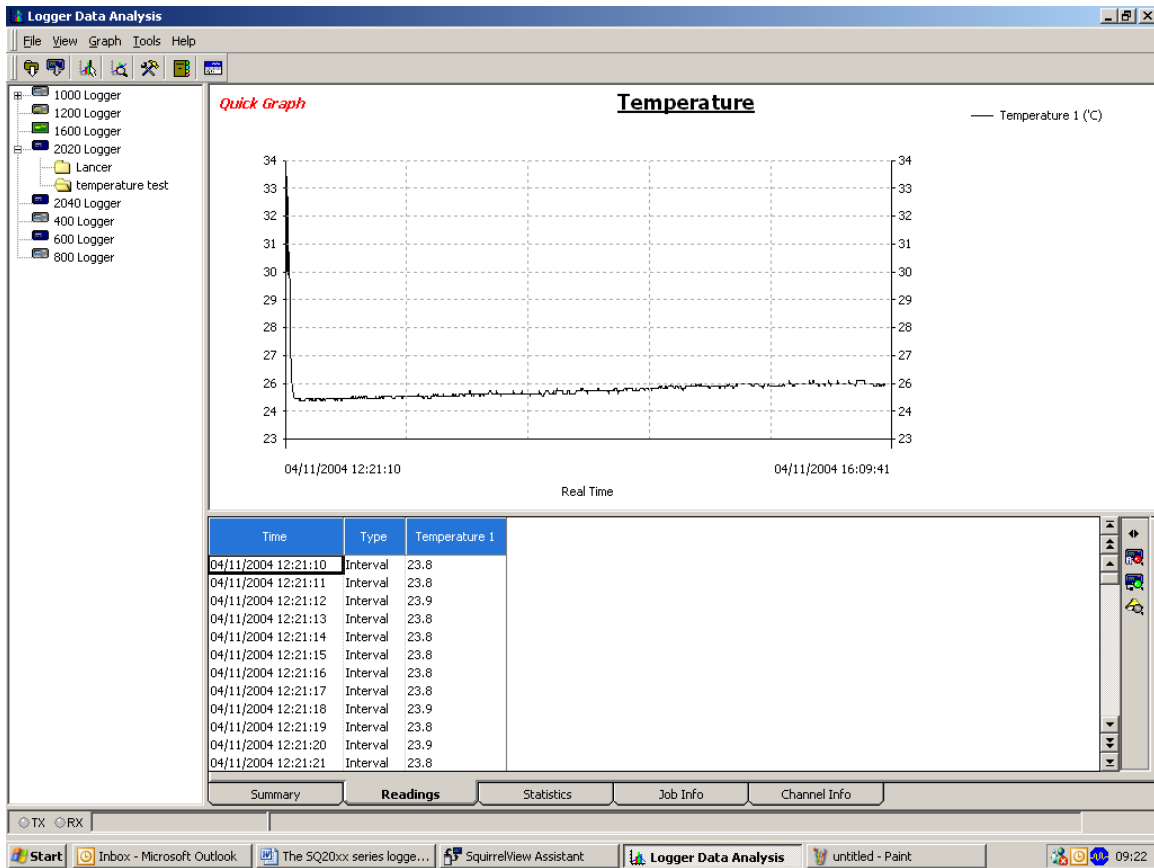
Hints and Tips

Give the File a name and Save.



DATA ACQUISITION

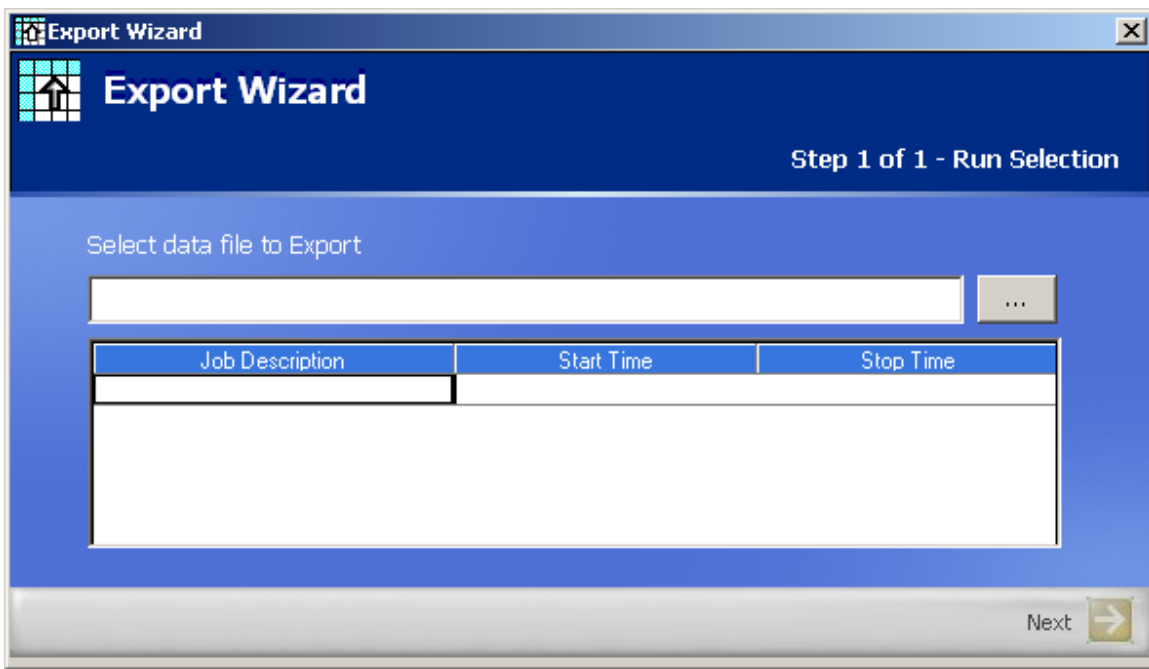
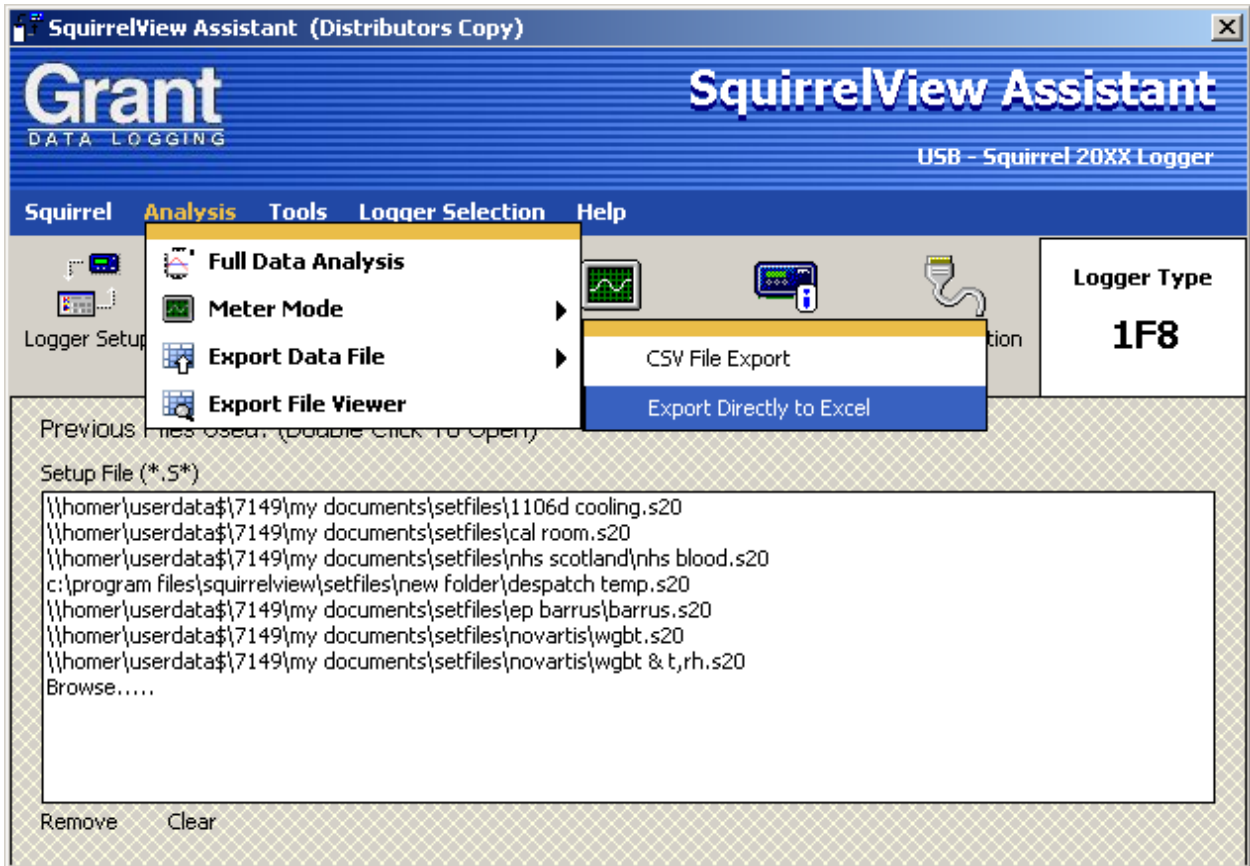
Hints and Tips



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Export Data

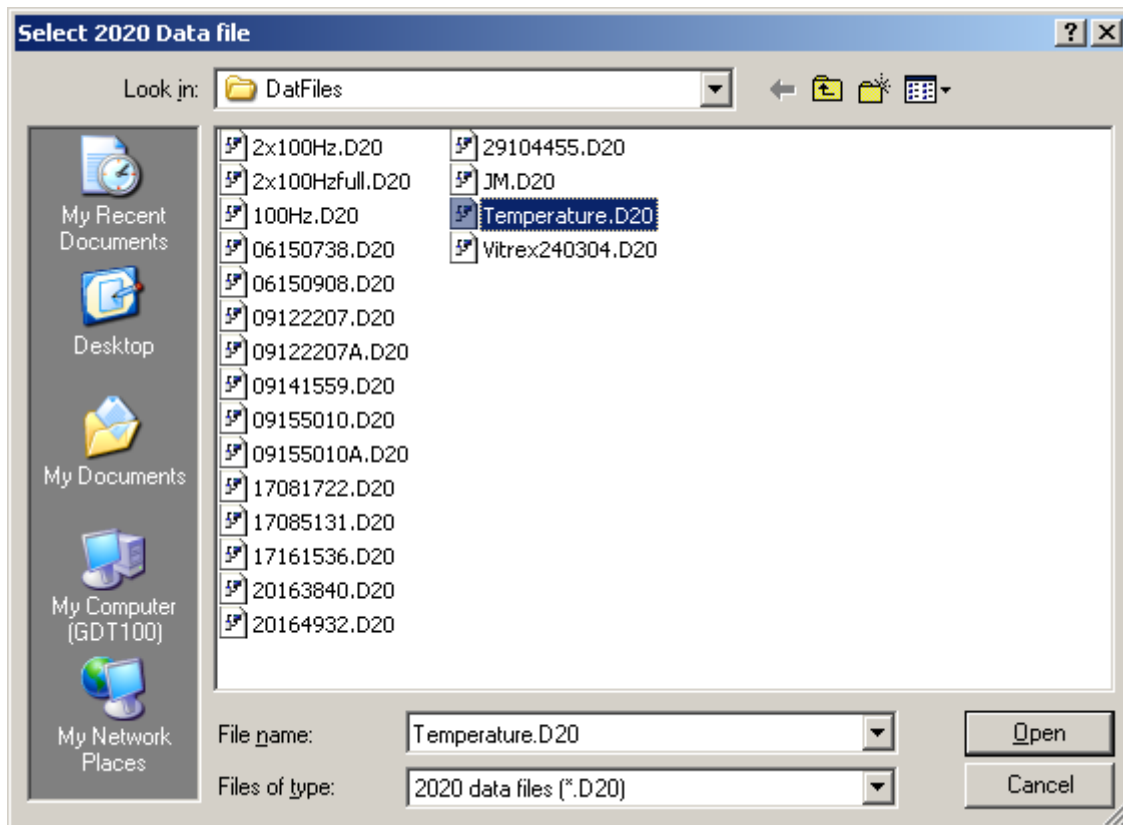
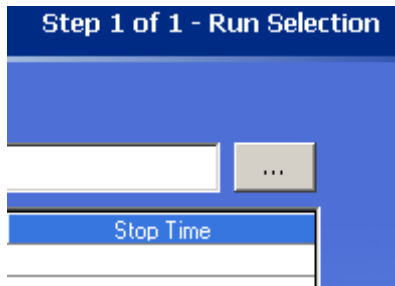
To export you data into excel



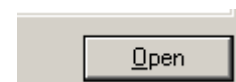
DATA ACQUISITION

Hints and Tips

Browse for File

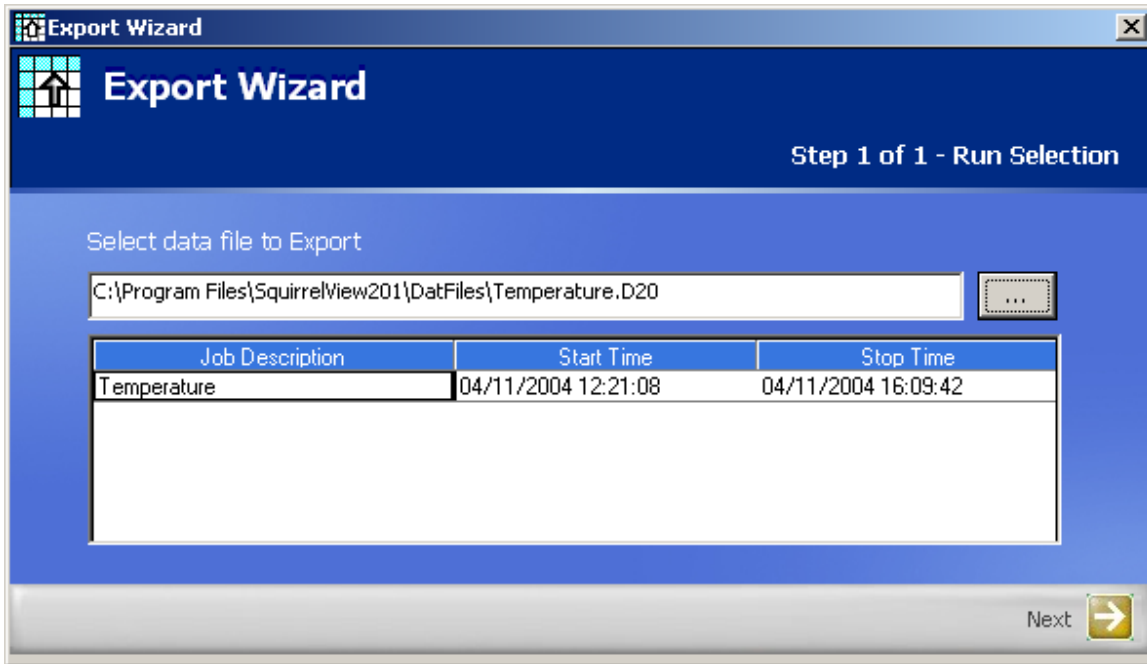


Choose the particular data file you wish to export and click.

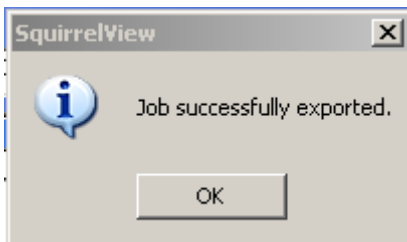


DATA ACQUISITION

Hints and Tips



Follow through the steps, and click the *Next* and *OK* buttons as required.



DATA ACQUISITION

Hints and Tips

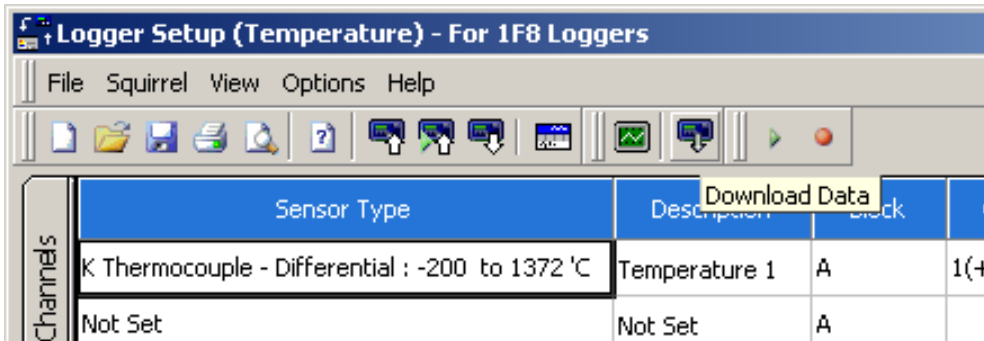
The following spreadsheet will be displayed.

Logger Details:			
1	Logger Details:		
2	Logger Type	2F8	
3	Serial Number	KS0345001	
4	Controller Firmware	2	
5	Aquisition Firmware	2	
6	Logger ID	Logger ID	
7			
8	Job Details		
9	Number of Analogue Channels	2	
10	Number of Digital Channels	0	
11	Total Number of Channels Used	2	
12			
13	Arm Time	11/04/2004 12:21	
14	Disarm Time	11/04/2004 16:09	
15	Duration	03:48:34	
16	Job Description	Temperature	
17	Readings per Channel	13712	
18			
19			
20	Channel Details		
21	Description	Temperatu Ref. Junction 1 (°C)	
22	Sample Interval	00:00:01 Not Logged	
23	Logging Interval	00:00:01 Not Logged	
24			
25			
26	Date/Time	Type	Temperature 1 (°C)
27	04/11/2004 12:21:10	Interval	23.8
28	04/11/2004 12:21:11	Interval	23.8
29	04/11/2004 12:21:12	Interval	23.9
30	04/11/2004 12:21:13	Interval	23.8
31	04/11/2004 12:21:14	Interval	23.8
32	04/11/2004 12:21:15	Interval	23.8
33	04/11/2004 12:21:16	Interval	23.8
34	04/11/2004 12:21:17	Interval	23.8

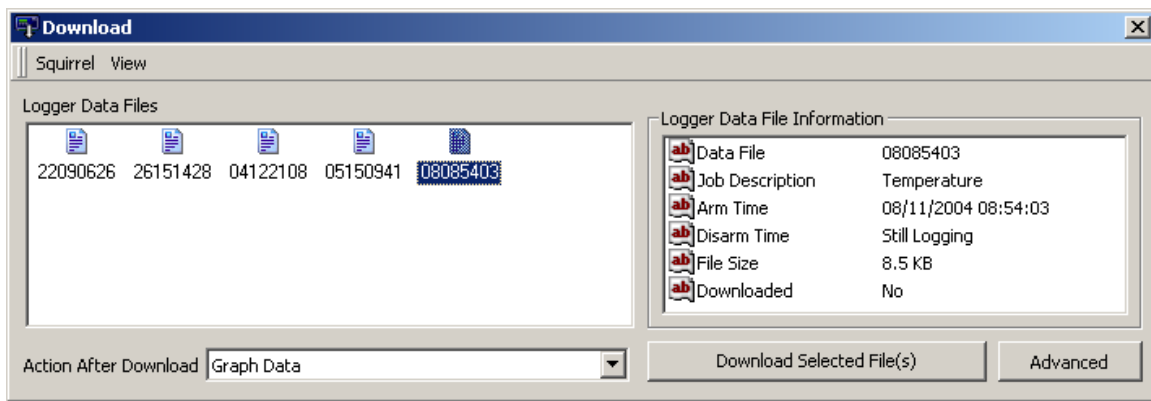
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Downloading Alarm data

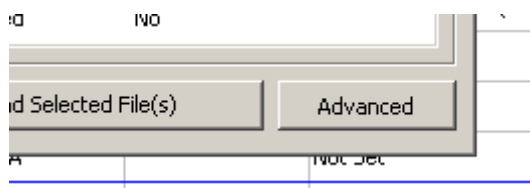
To download the alarm data select the *Download Data* button.



Select the required Data File.

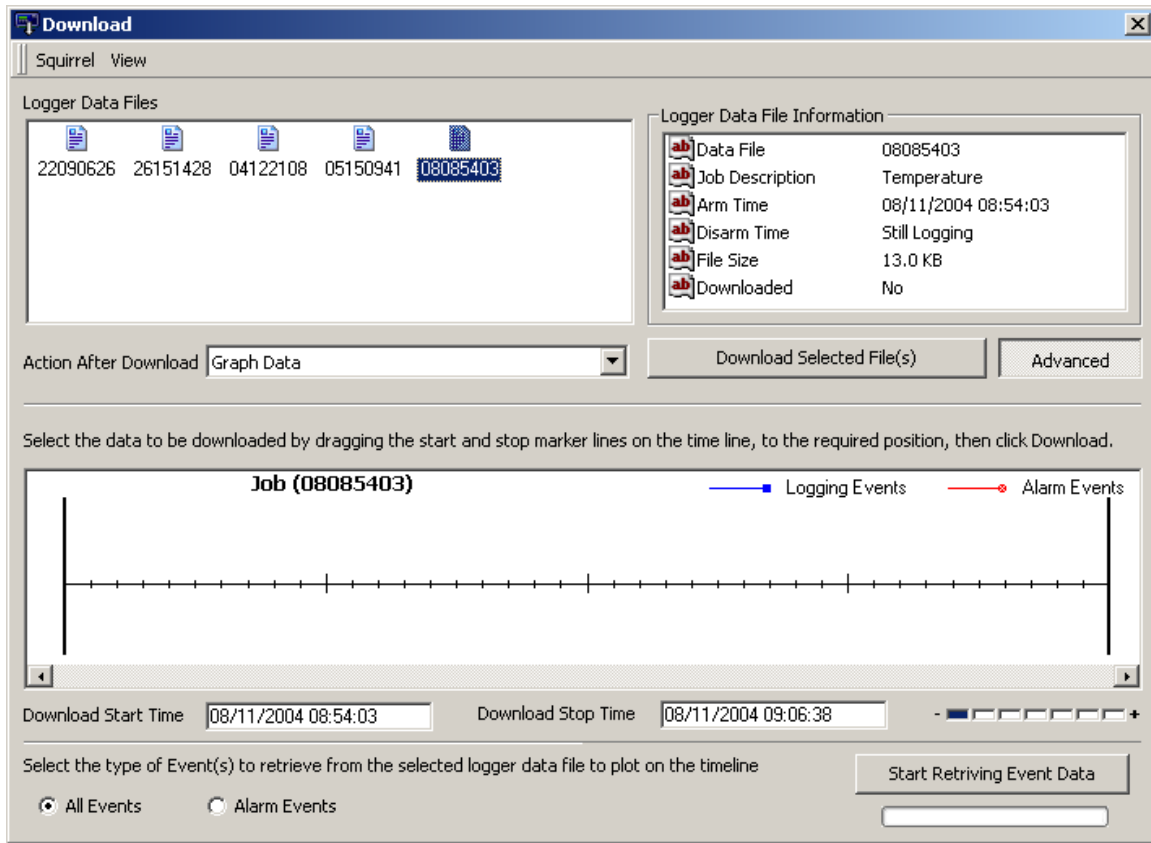


Click on the *Advanced* button.

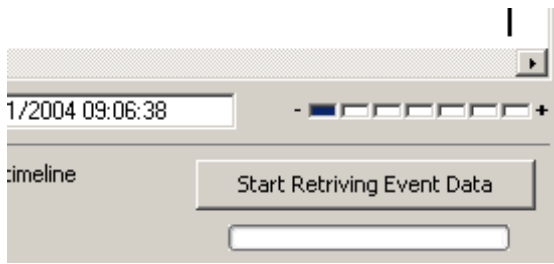


DATA ACQUISITION

Hints and Tips

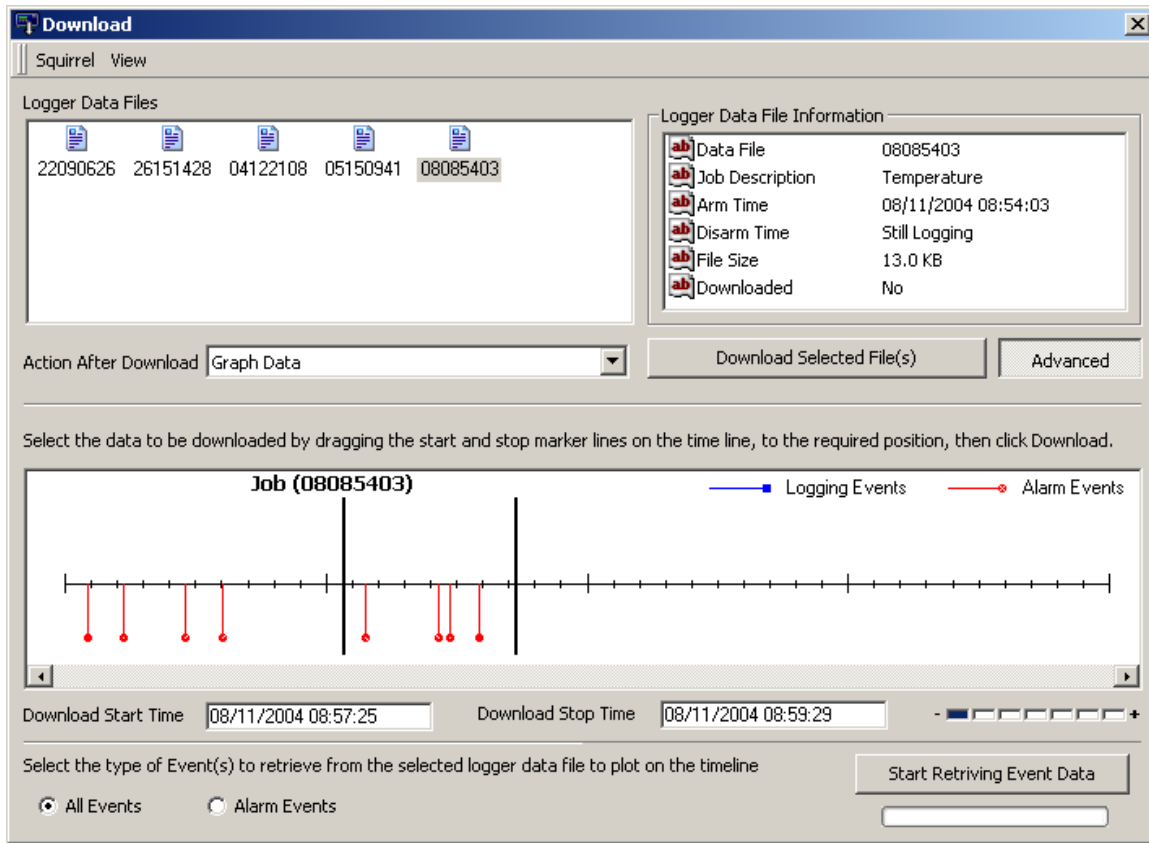


Click on the *Start Retrieving Event Data* button.



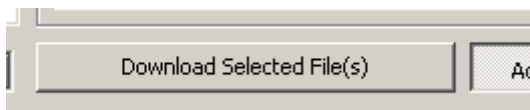
DATA ACQUISITION

Hints and Tips



The two side vertical lines can be dragged to section that you want to download

Click the *Download Selected File(s)* button.

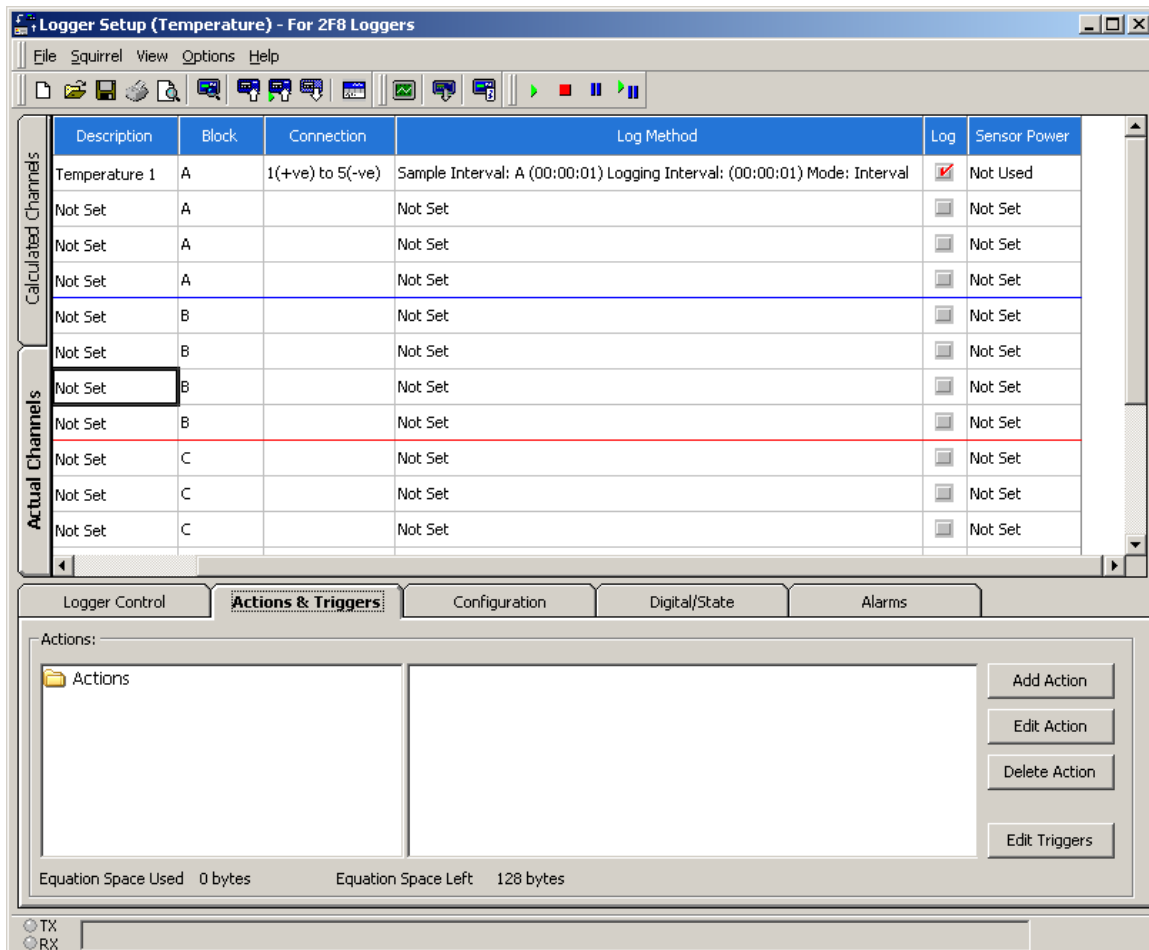


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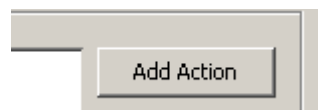
Setting a Start and Stop logging action

This example uses the event input to start and stop logging on an action.

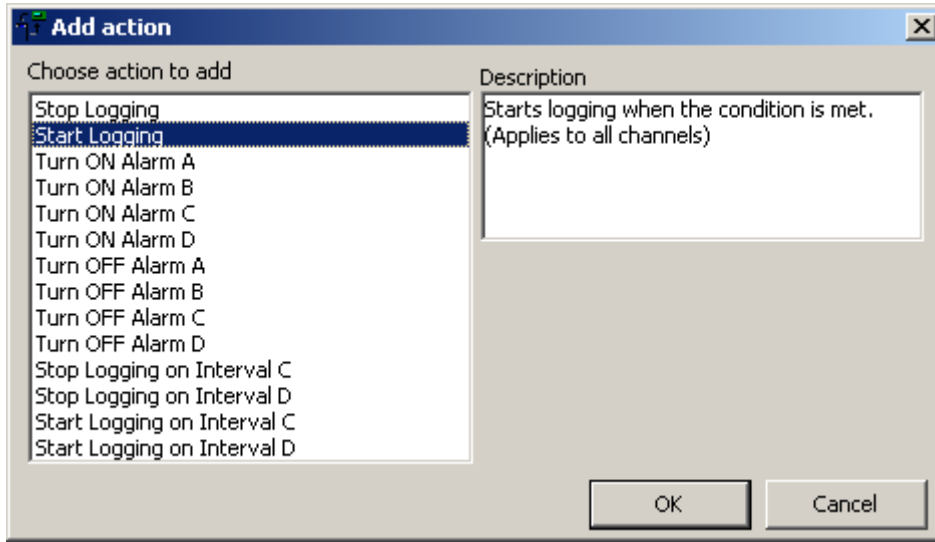
In Setup Screen Click on the *Actions & Triggers* tab



Click on the *Add Action* button.



To add the start action select the Start Logging action

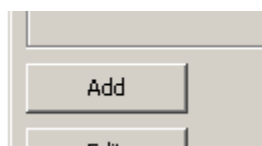


Click on the *OK* button.

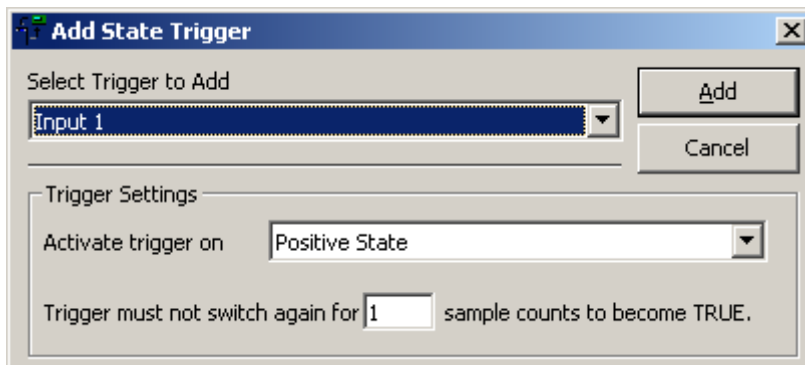
Select the State tab



And click on the *Add* button.



Select input 1

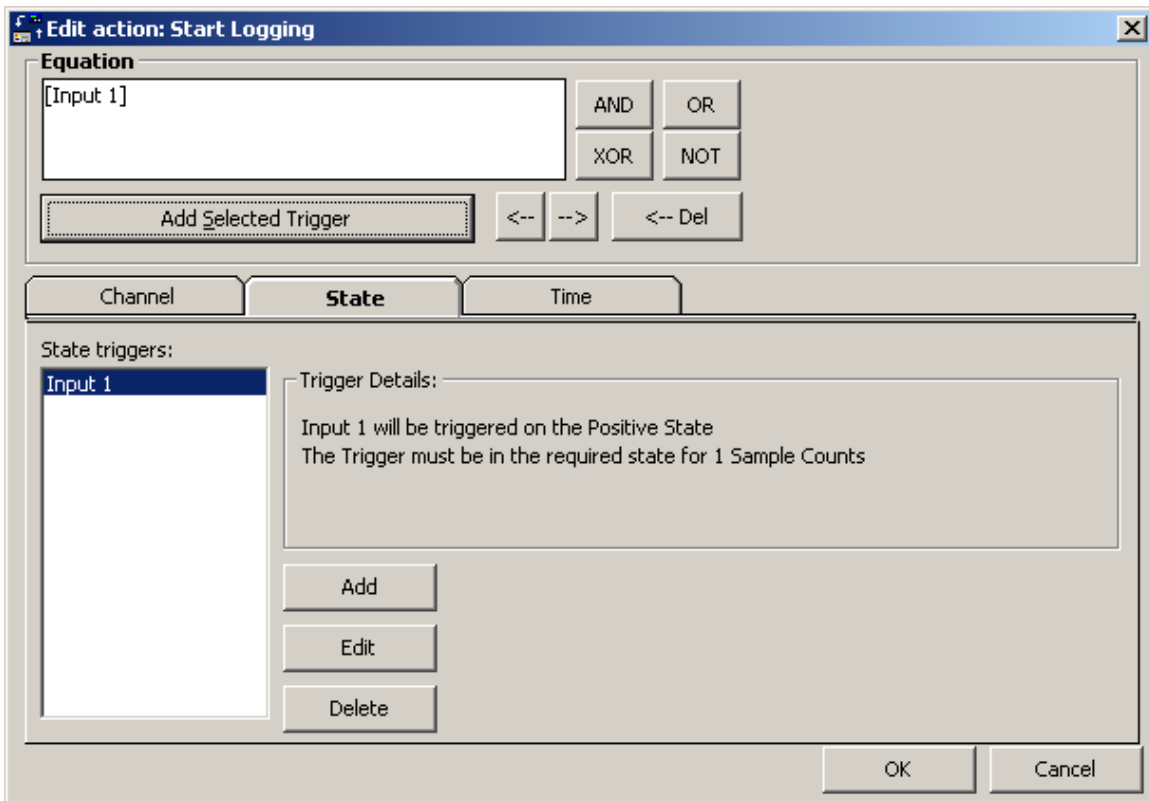
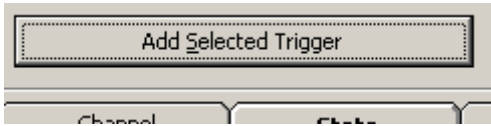


Then click on the *Add* button.

DATA ACQUISITION

Hints and Tips

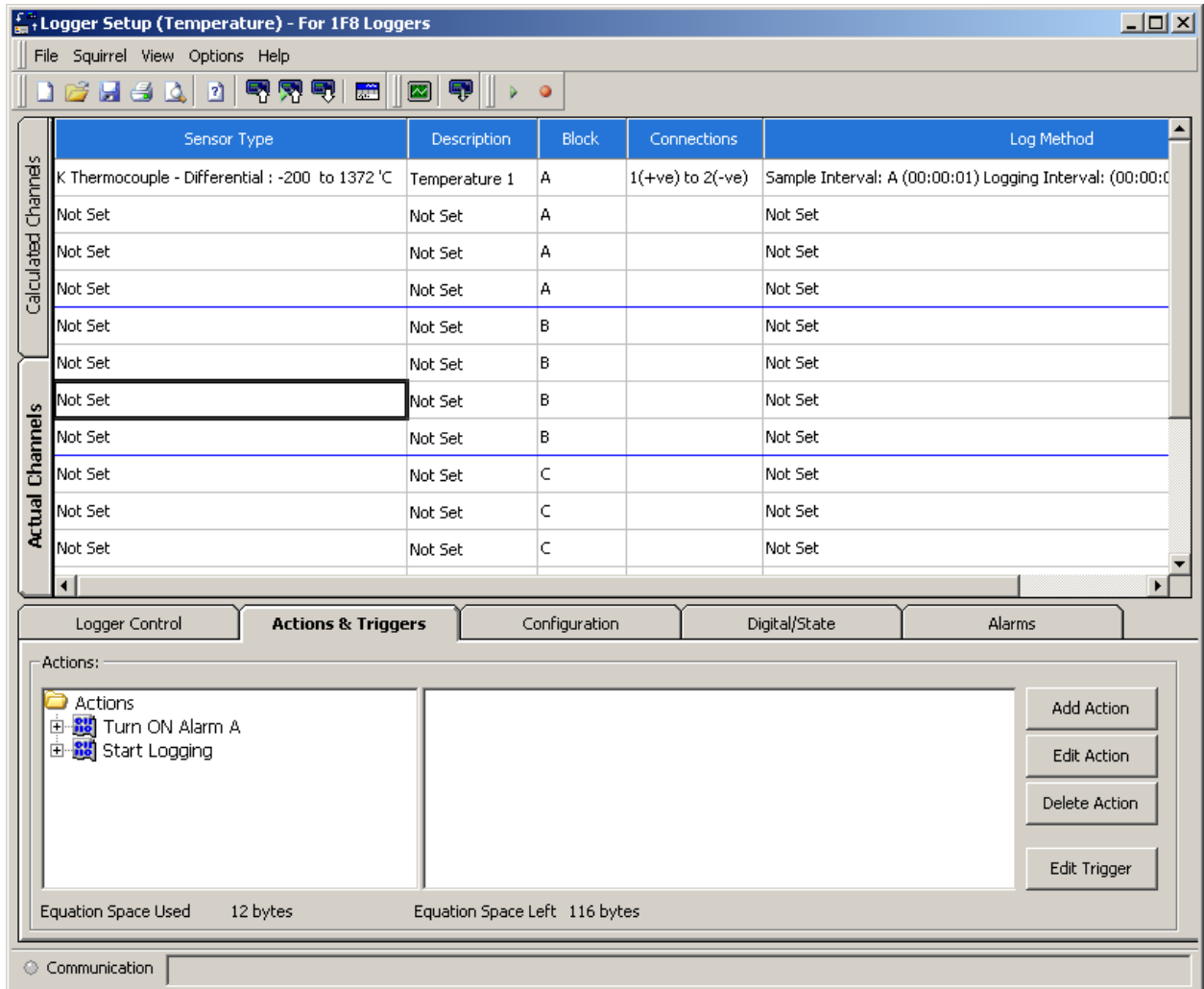
To add the action, click on the *Add Selected Trigger* button.



Click on the *OK* button.

DATA ACQUISITION

Hints and Tips



Now you need to add the stop logging action.

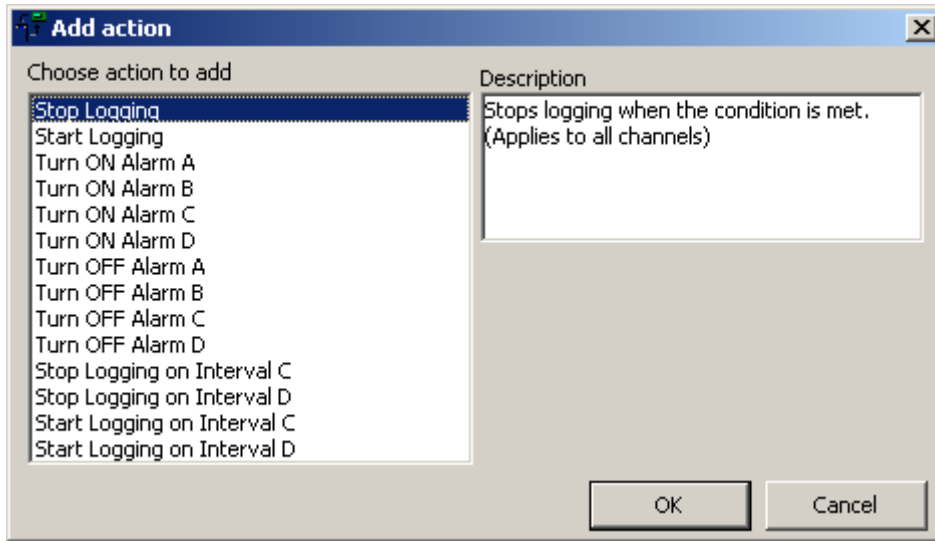
Click on the *Add Action* button.



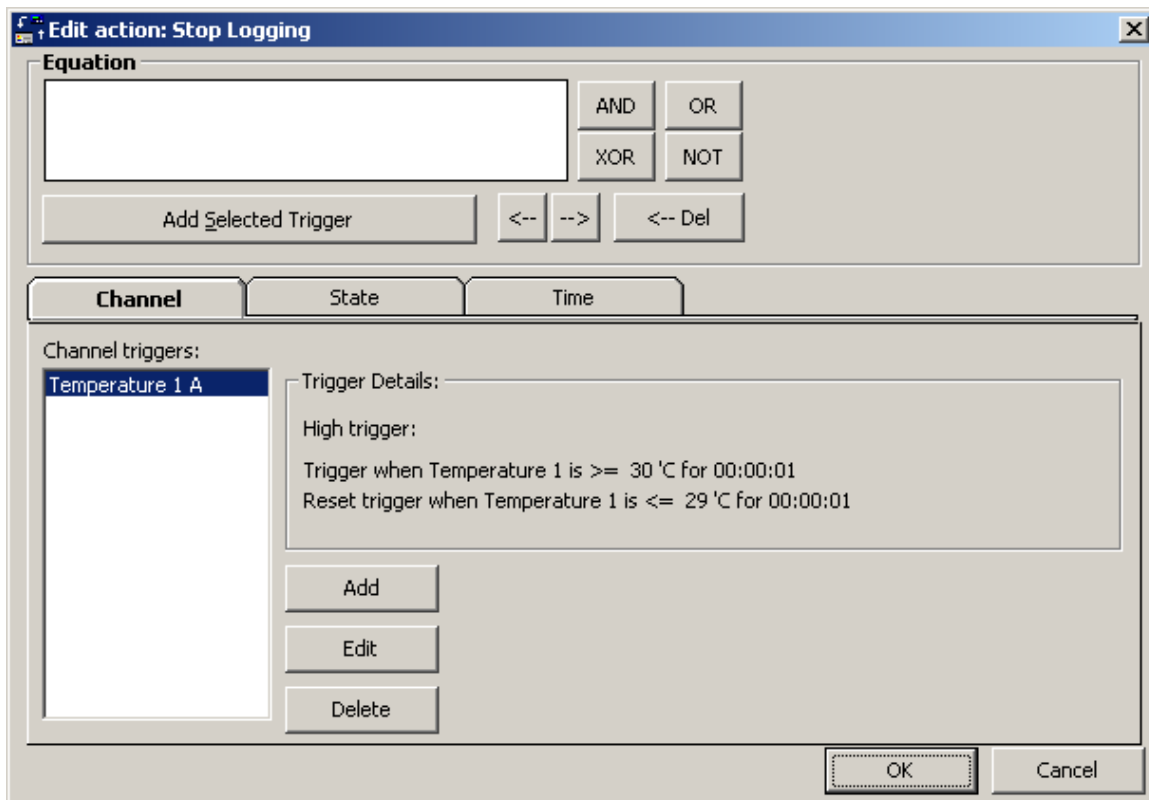
DATA ACQUISITION

Hints and Tips

Select the Stop Logging action.



Click on the *OK* button.



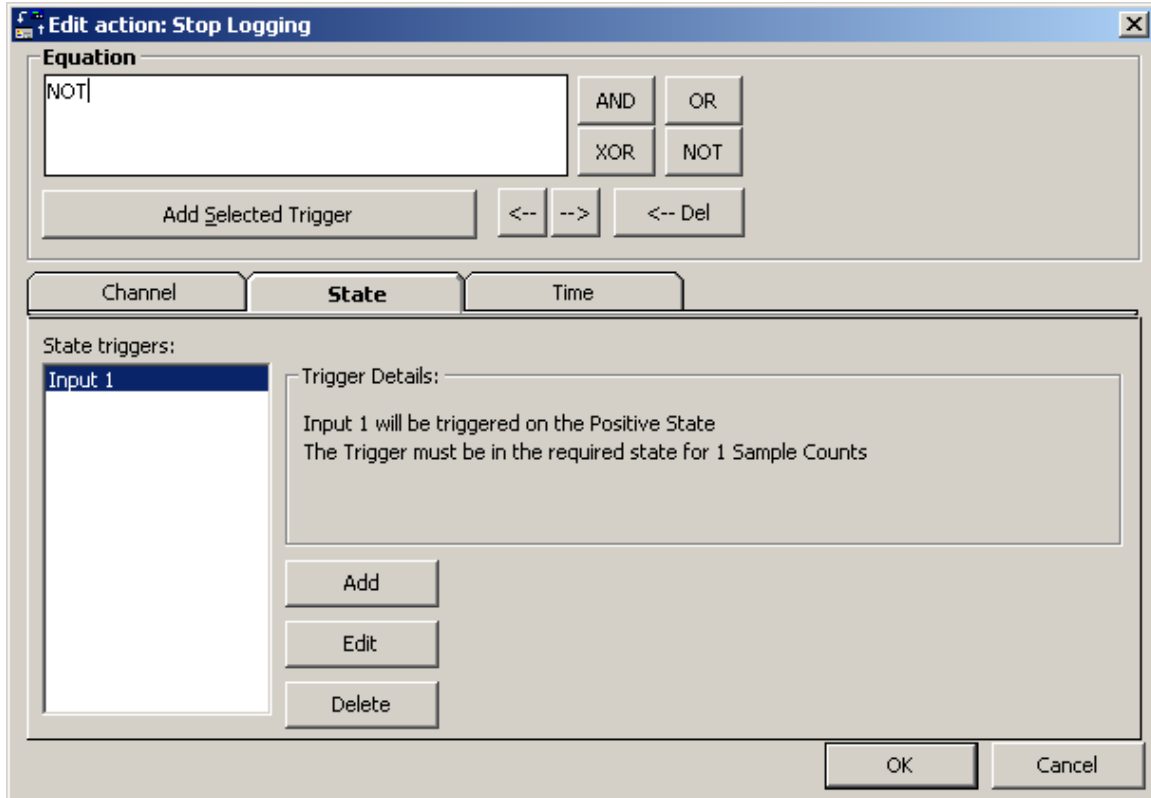
Select the State tab.



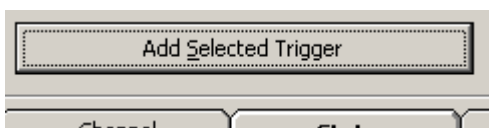
DATA ACQUISITION

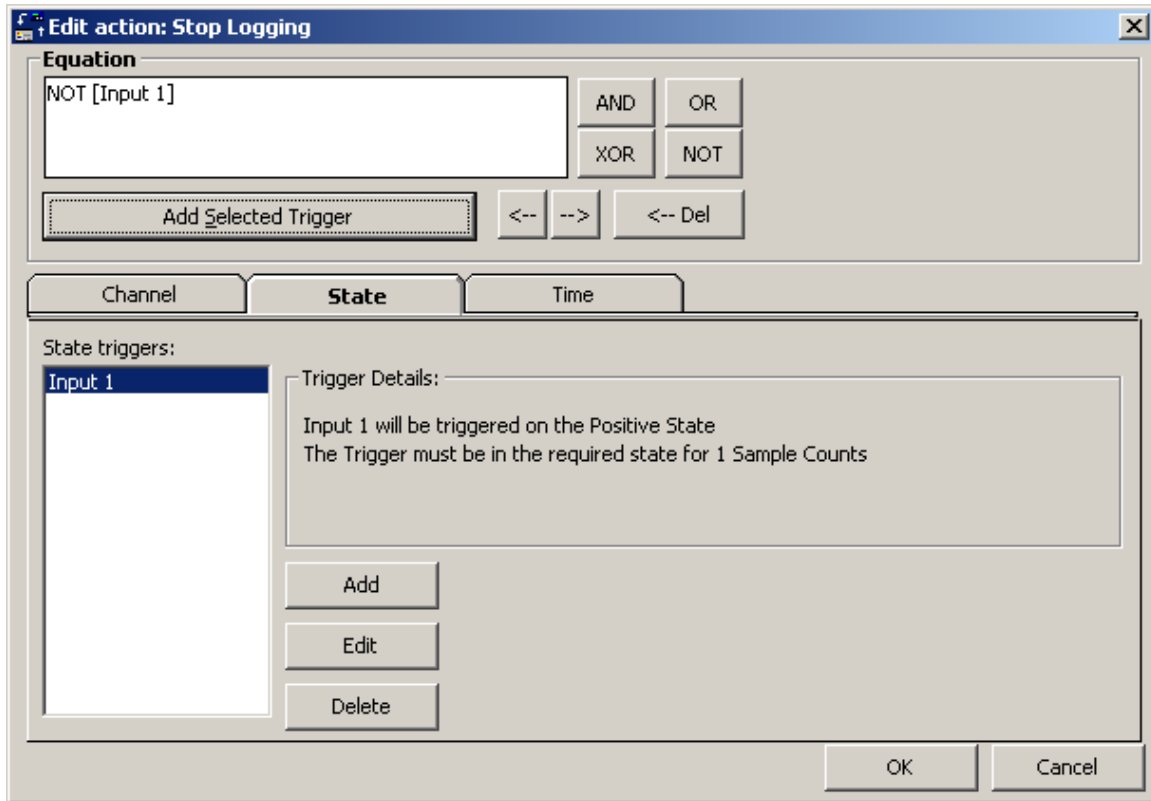
Hints and Tips

And click on the *NOT* button.

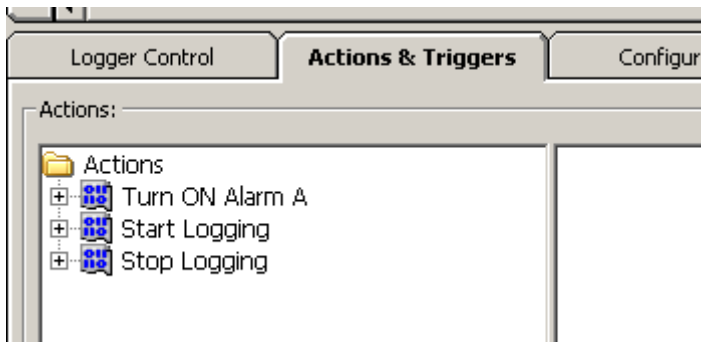


Click on the *Add Selected Trigger* button.

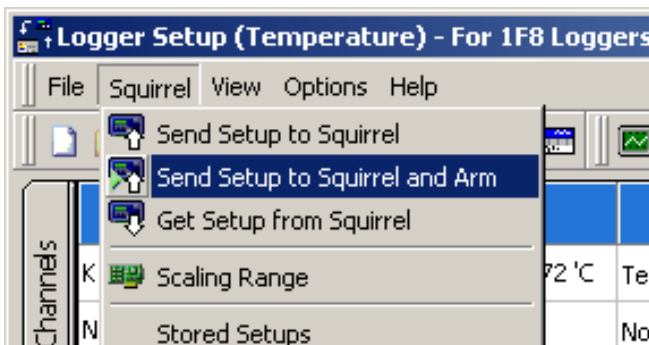




The logger will stop logging when the event is not activated
Click on the **OK** button.

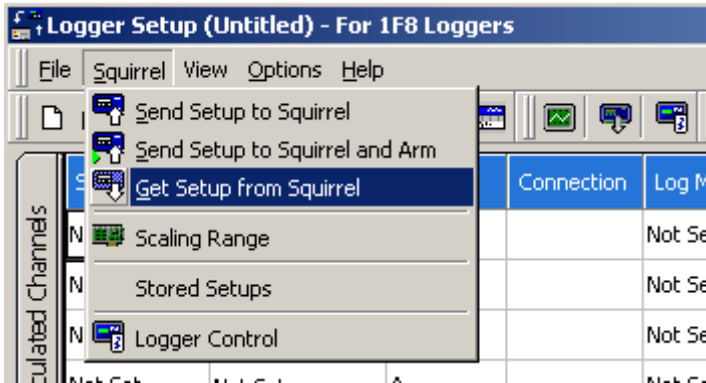


Save the Set-up
Then send the setup the logger and start logging.

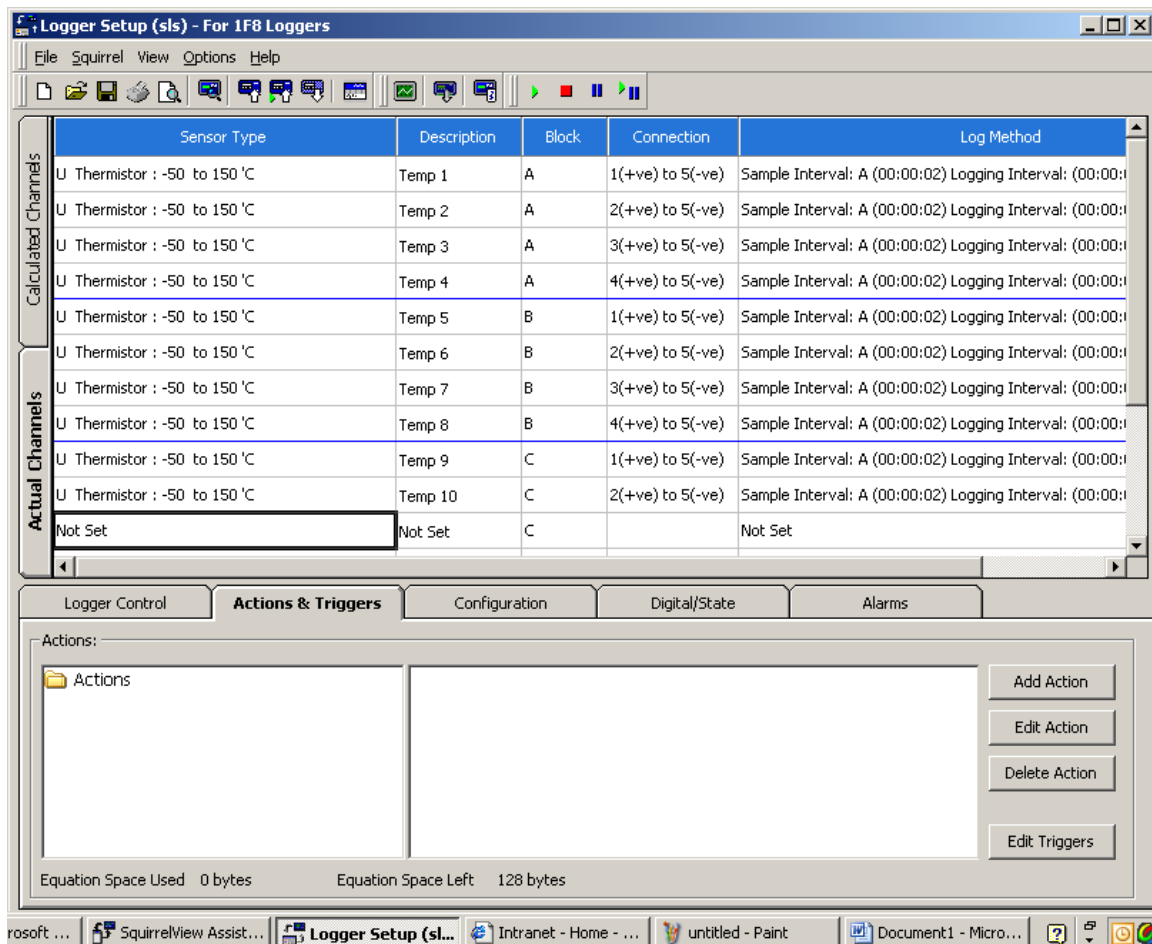


Setting an Alarm Action

In Logger Setup Screen Get Setup from Squirrel



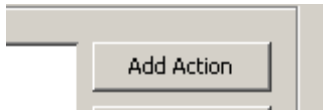
Click on Actions & Triggers tab



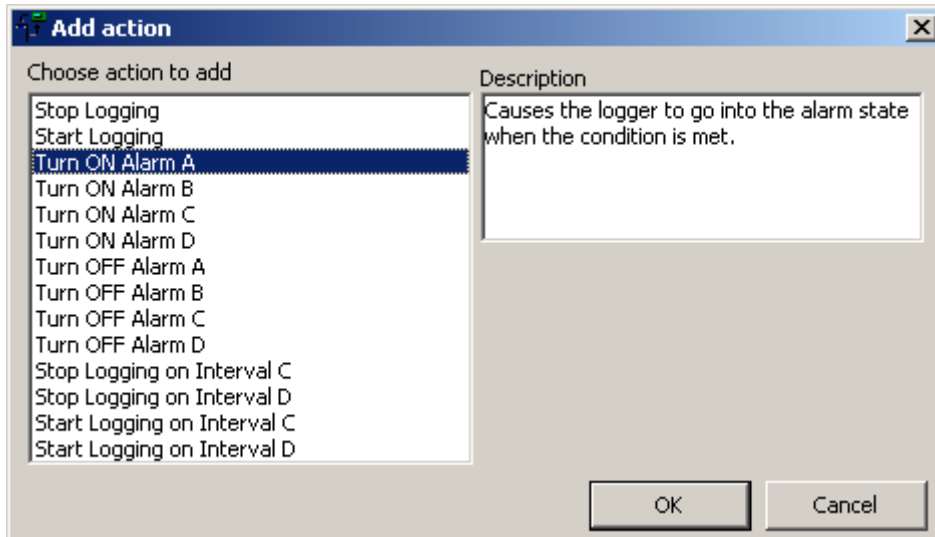
DATA ACQUISITION

Hints and Tips

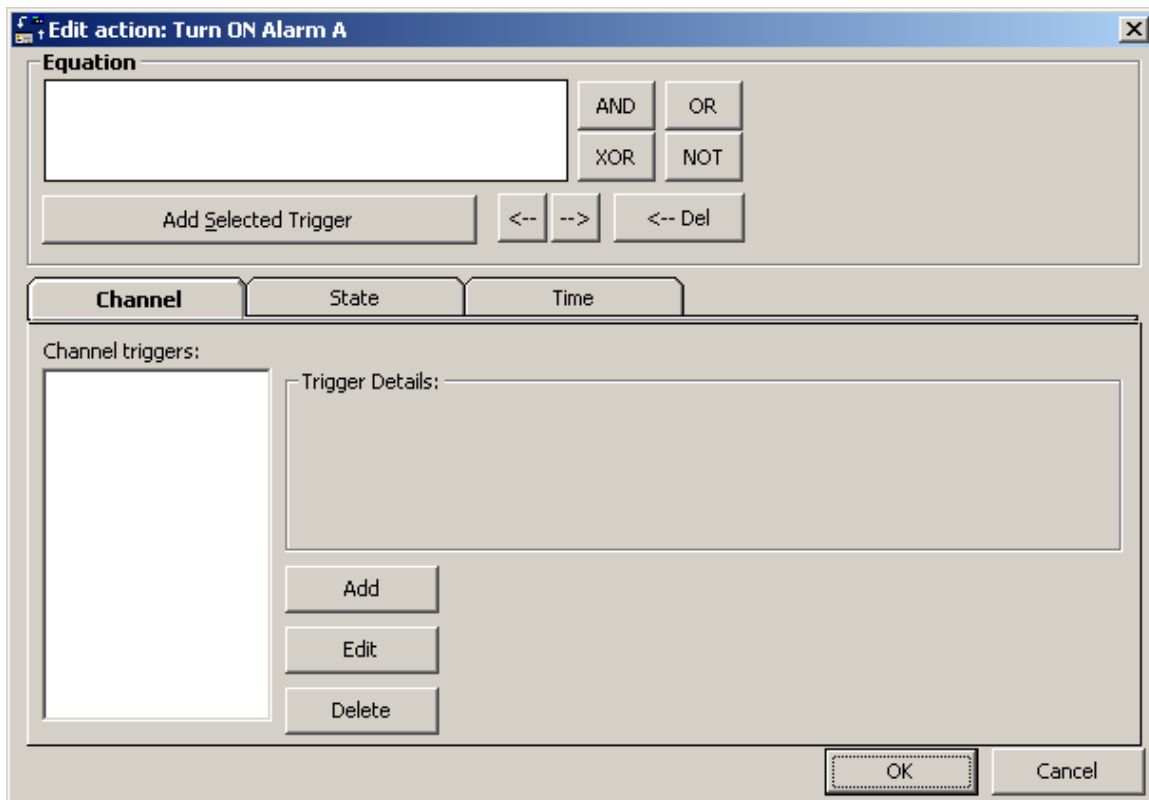
Click on the *Add Action* Button



Select an alarm to turn on and Click on the *OK* button



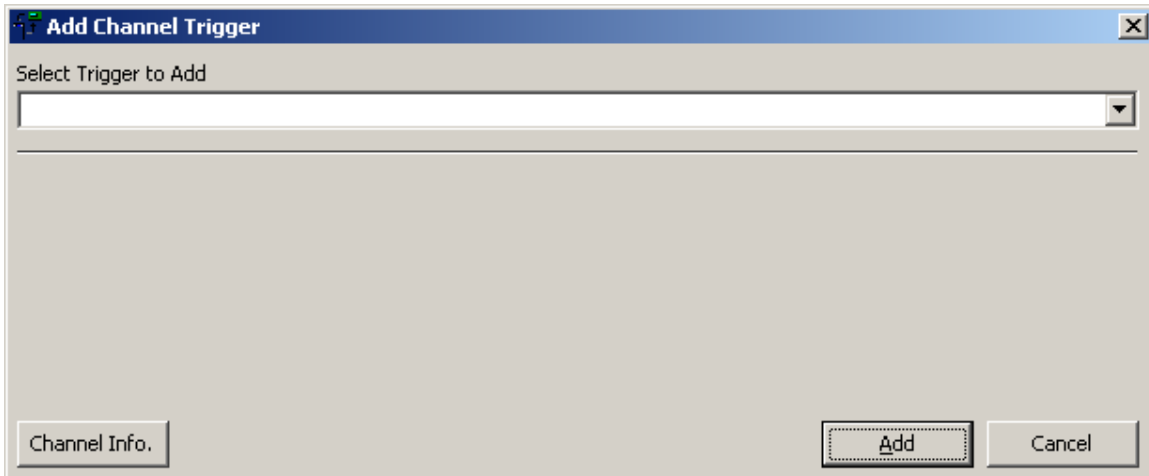
Click on the *Add* button



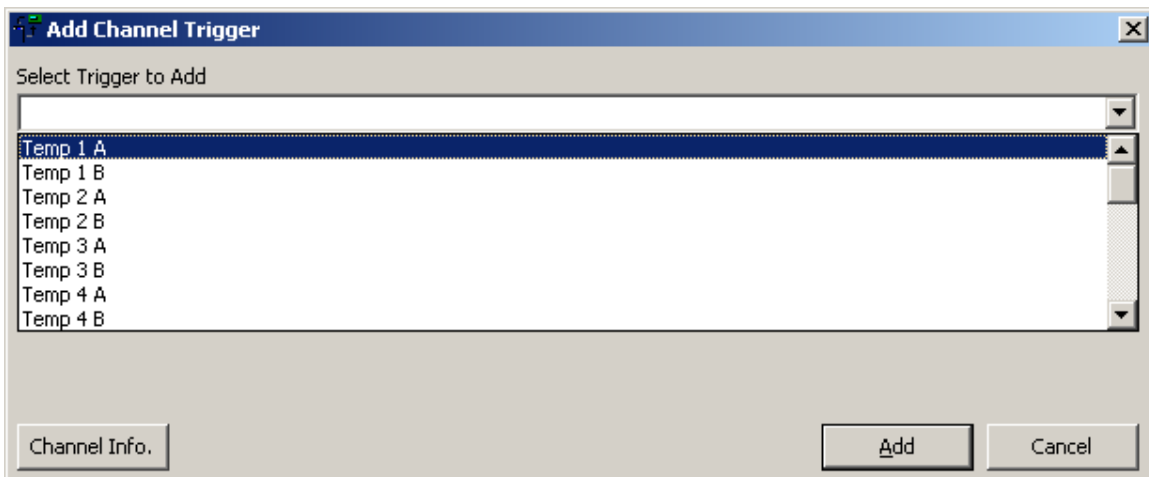
DATA ACQUISITION

Hints and Tips

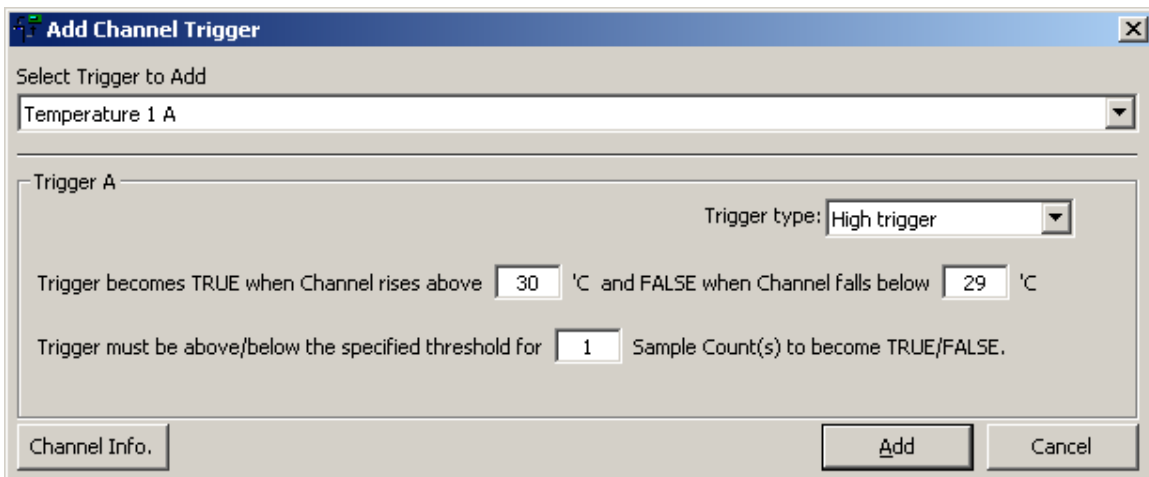
Enter the drop down box



Choose the trigger channel you want the alarm to apply too.



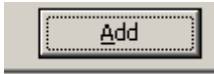
Choose the Trigger Type and enter the values required for the alarm



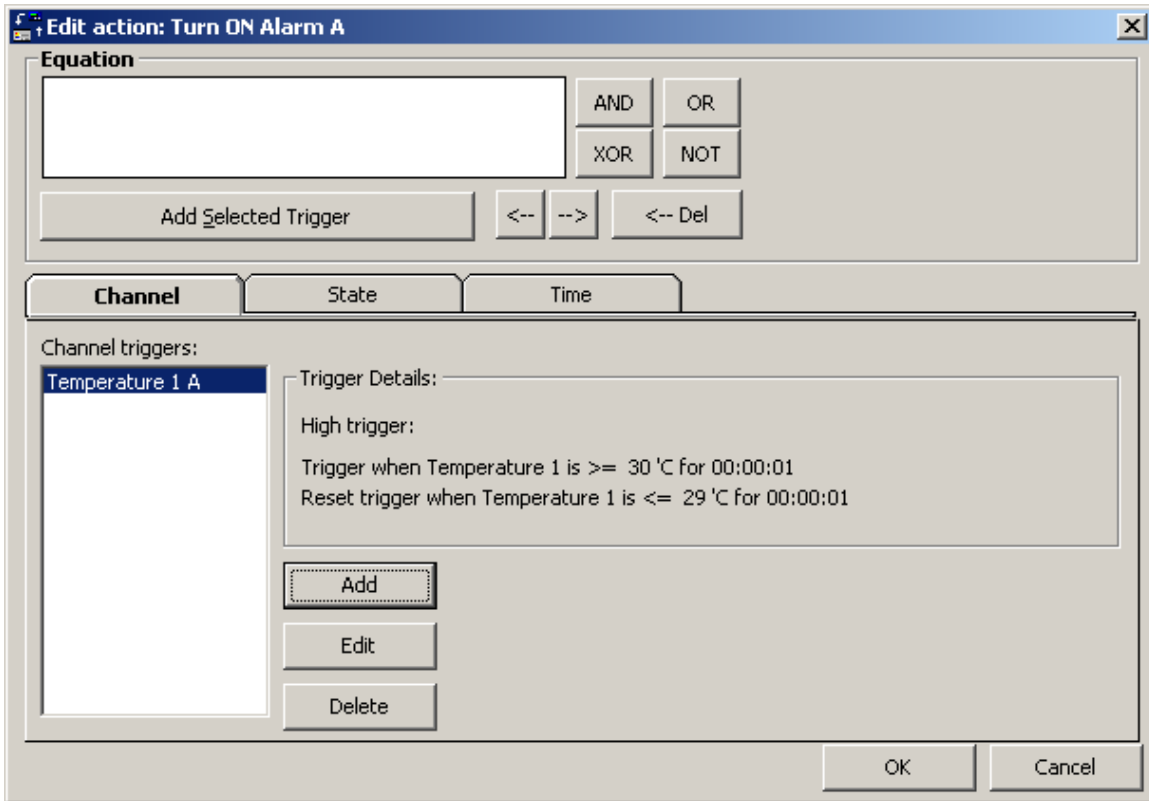
DATA ACQUISITION

Hints and Tips

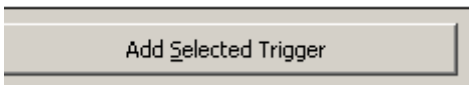
Click on the *Add* button

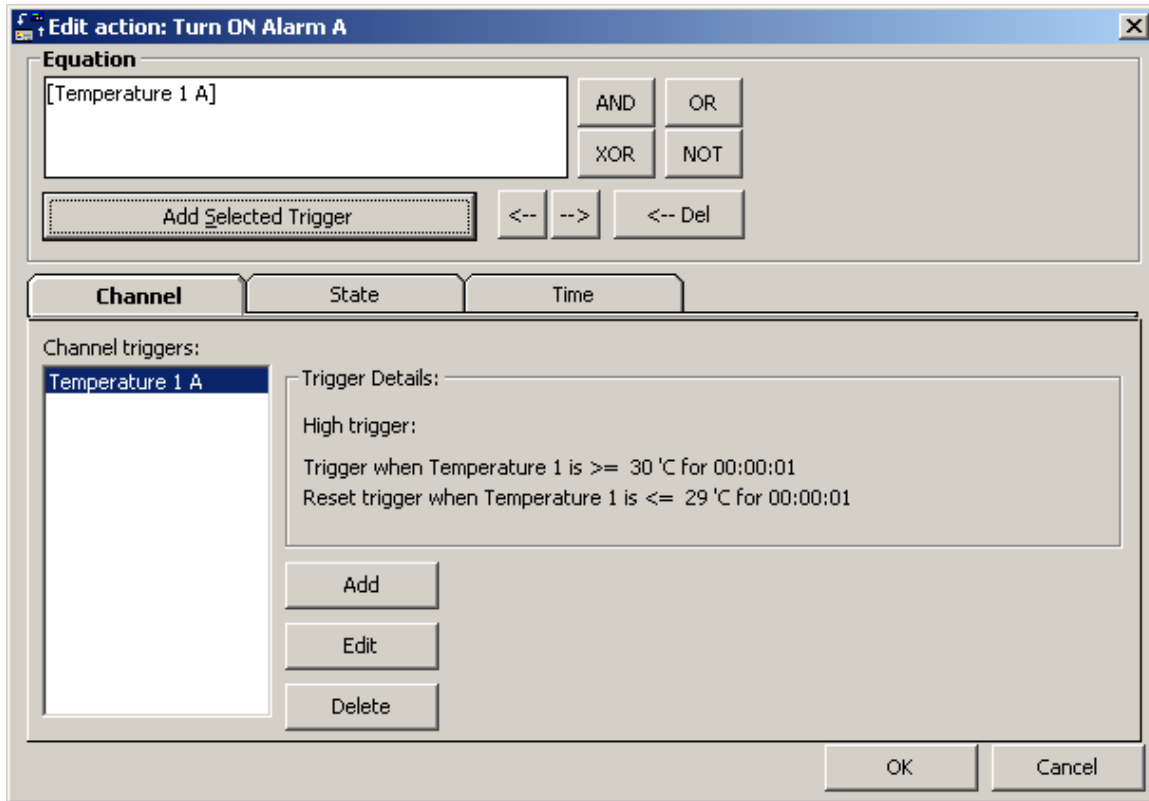


Highlight the Channel trigger to be added to the equation

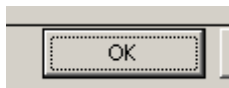


Click on the *Add Selected Trigger* button





Click on the *OK* button



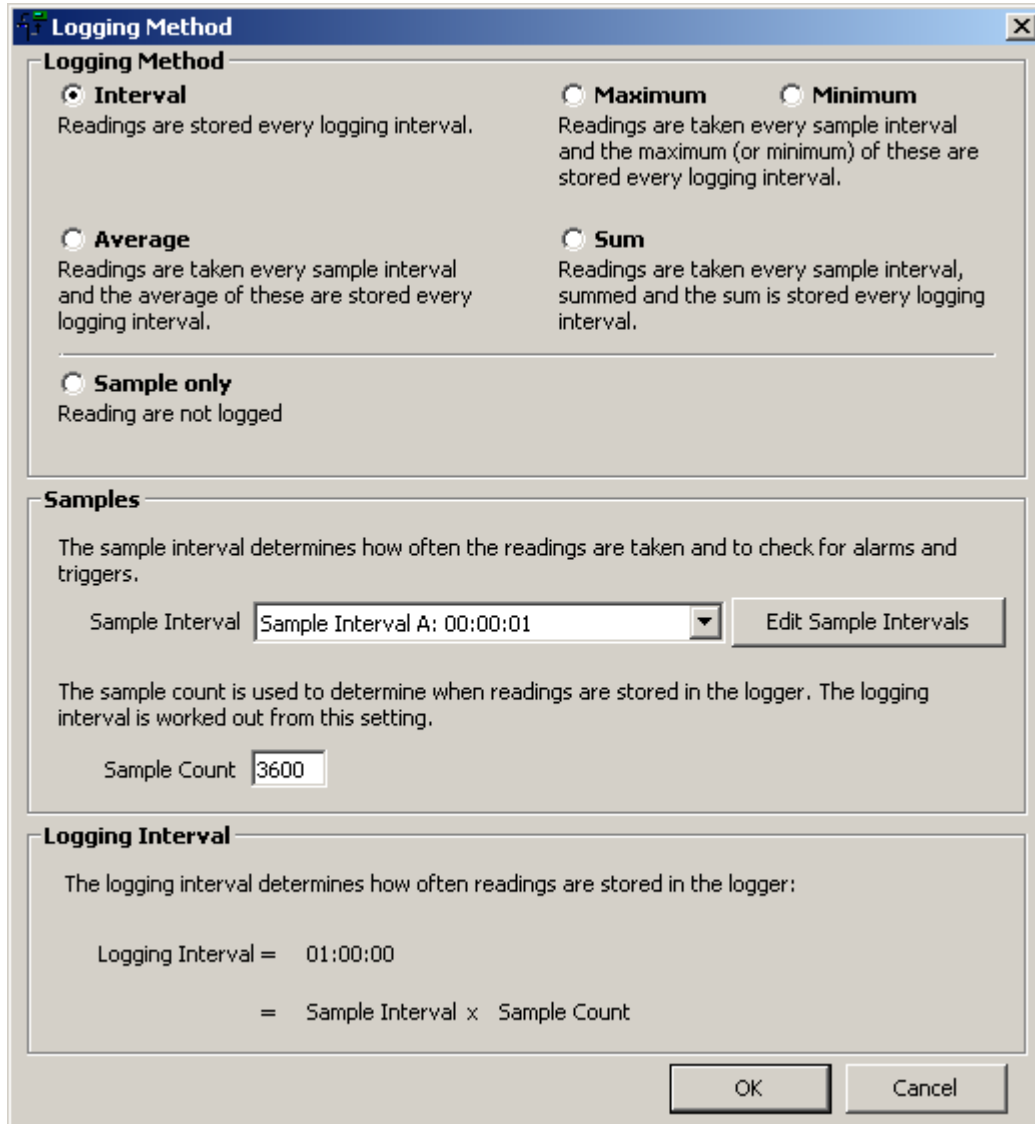
Action will appear as below in the Logger Setup window.



Tip for the setting of alarms:

The alarms operate at the logging interval, so if you have a slow logging interval but want to see the alarm as it happens then set a Sample Count Value so the alarm is sampled more often.

The example below shows the logger sampling every second for the alarms but only logging a reading every hour.



Logging Method

Logging Method

Interval
Readings are stored every logging interval.

Maximum **Minimum**
Readings are taken every sample interval and the maximum (or minimum) of these are stored every logging interval.

Average
Readings are taken every sample interval and the average of these are stored every logging interval.

Sum
Readings are taken every sample interval, summed and the sum is stored every logging interval.

Sample only
Reading are not logged

Samples

The sample interval determines how often the readings are taken and to check for alarms and triggers.

Sample Interval

The sample count is used to determine when readings are stored in the logger. The logging interval is worked out from this setting.

Sample Count

Logging Interval

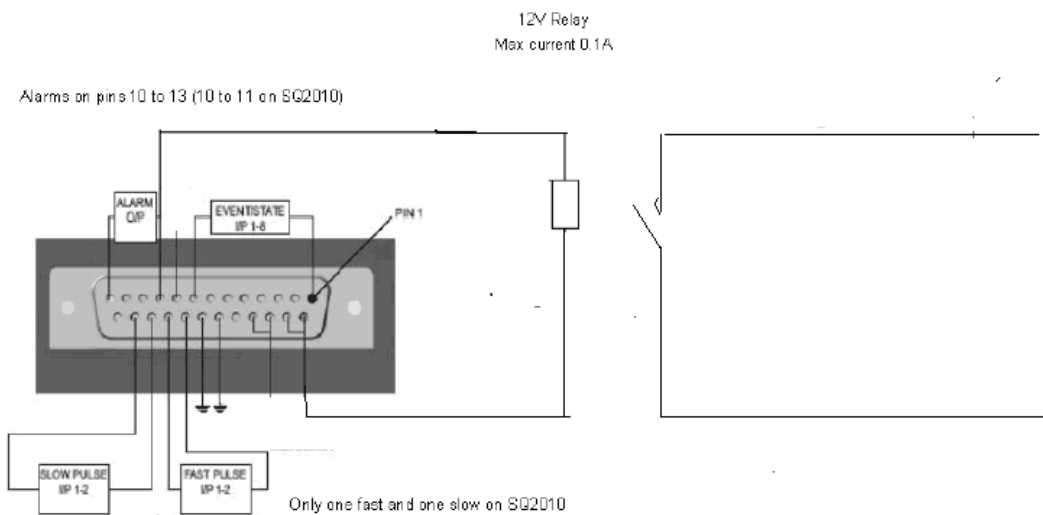
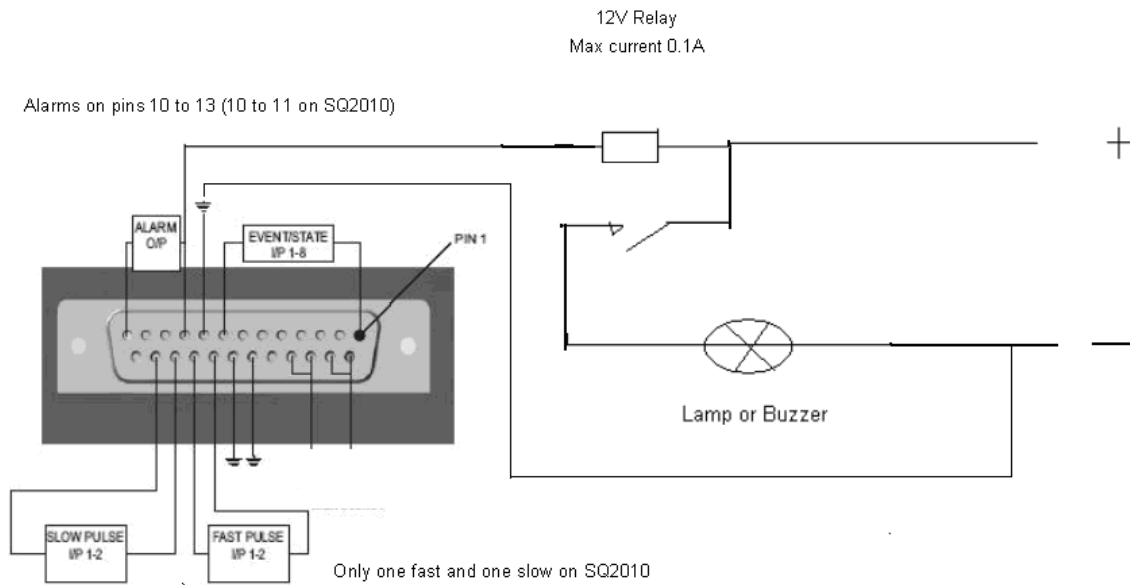
The logging interval determines how often readings are stored in the logger:

Logging Interval = 01:00:00
= Sample Interval x Sample Count

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Sample Alarm Circuit

Below are a couple of example alarm circuits



RS relay 211-1269

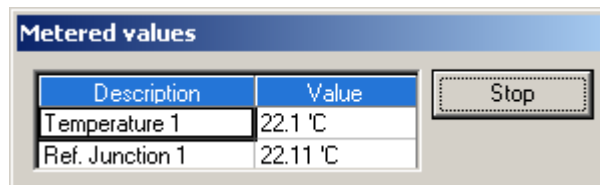
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Meter Mode

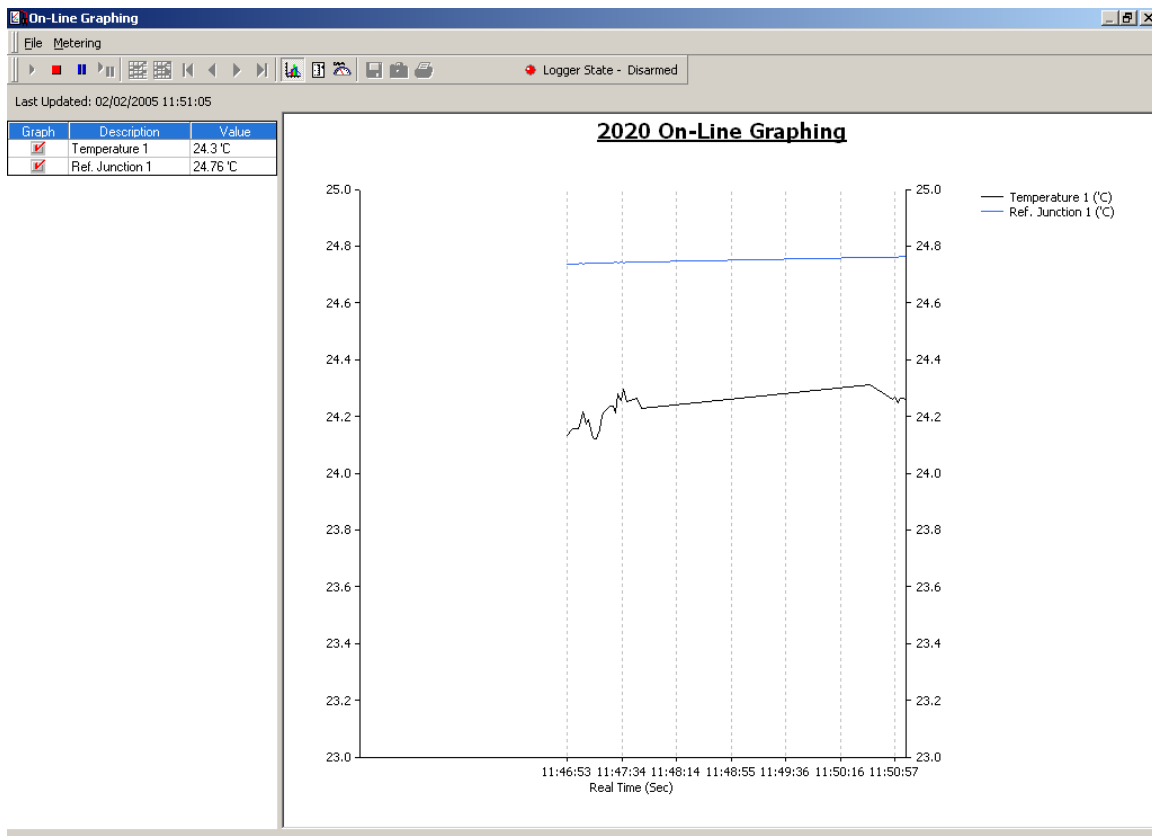
Once the channels have been set and the set file sent to the logger, click on the *Meter Mode* button on the front screen of the SquirrelView Assistant.



The Basic SquirrelView will display readings from the logger at approximately 1 Hz from all the channels that have been setup.



To see Online graphing, SquirrelView Plus software is required

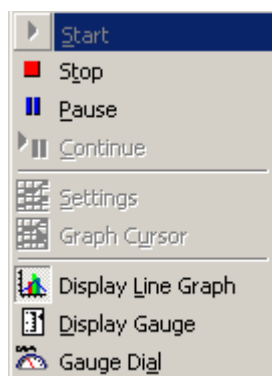


The graph is displayed with automatic scaling.

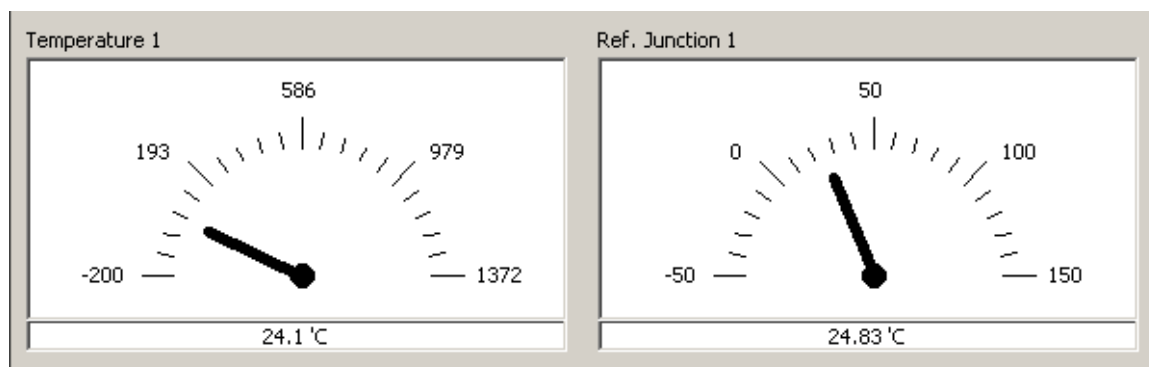
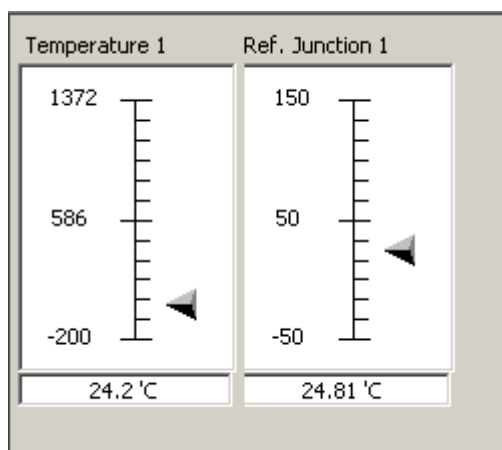
DATA ACQUISITION

Hints and Tips

Right click on the graph to change display type



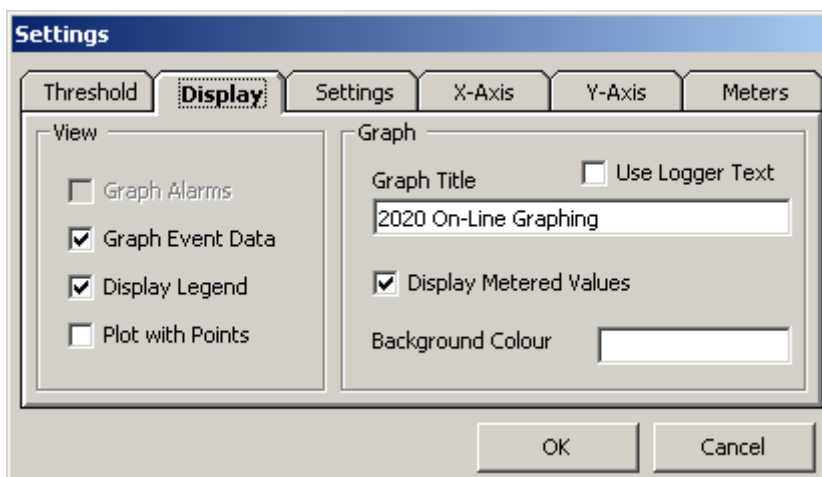
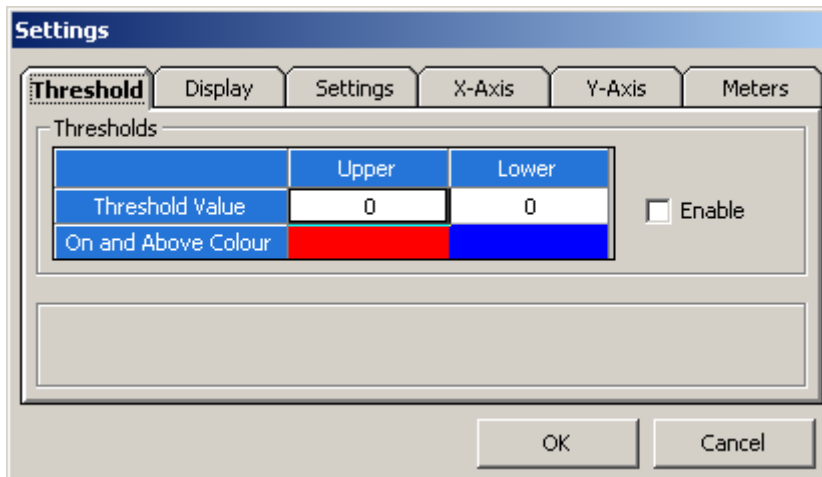
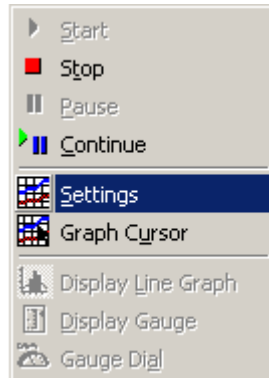
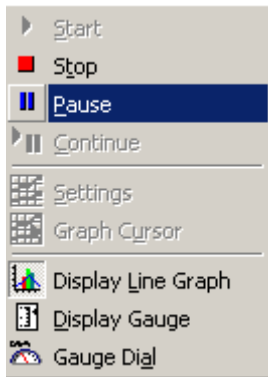
As well as a line graph a display gauge and a Dial gauge can be chosen.



DATA ACQUISITION

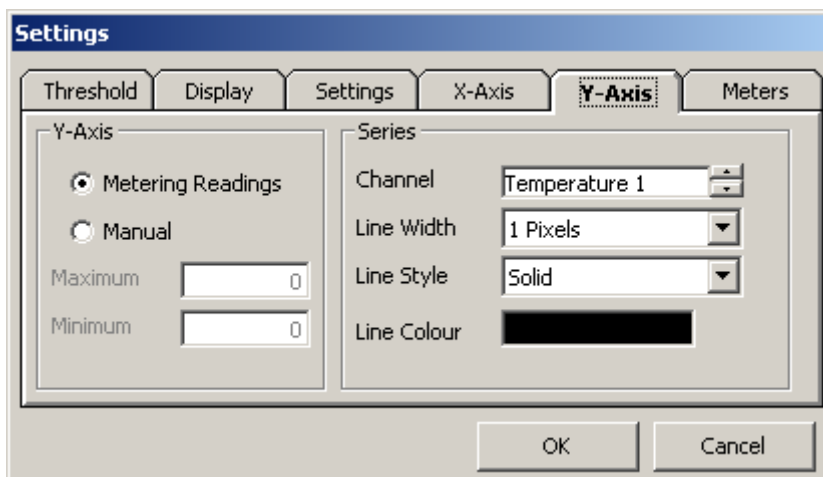
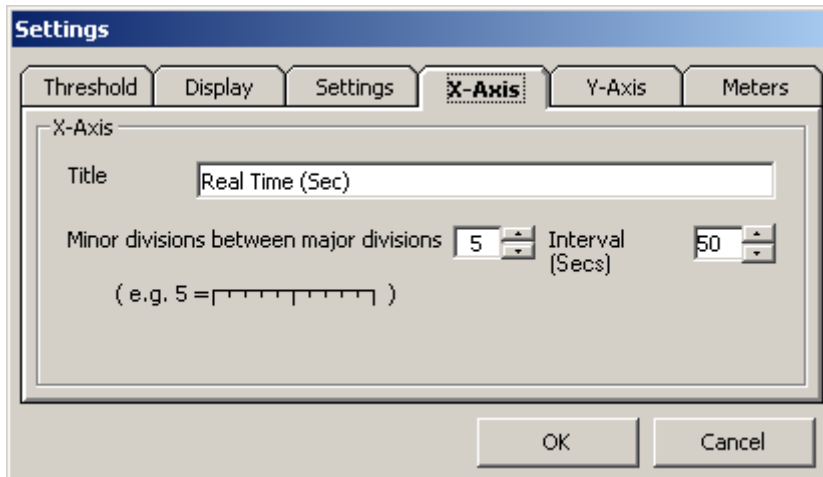
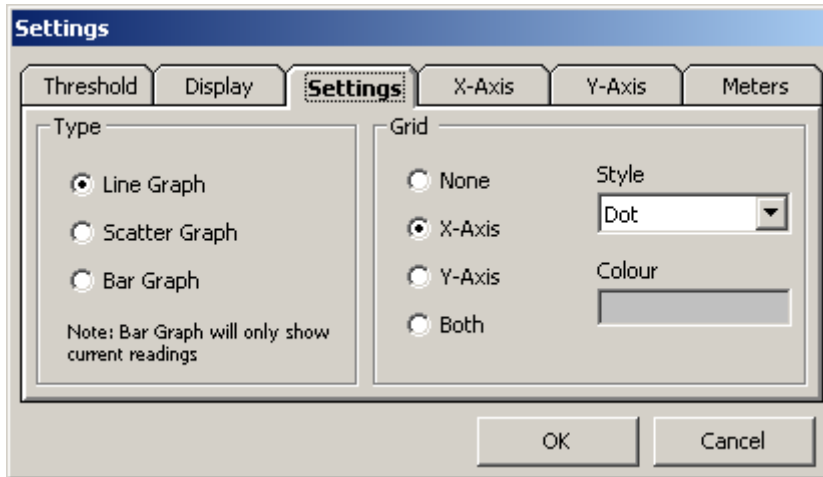
Hints and Tips

Pause to change settings



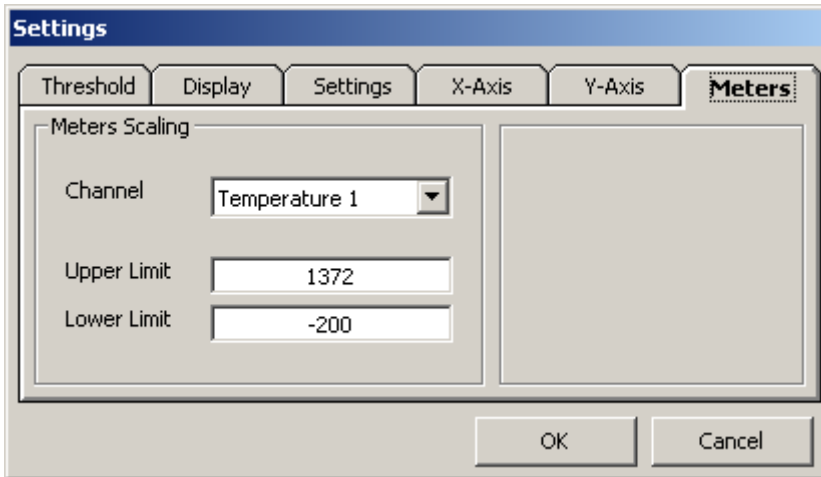
DATA ACQUISITION

Hints and Tips



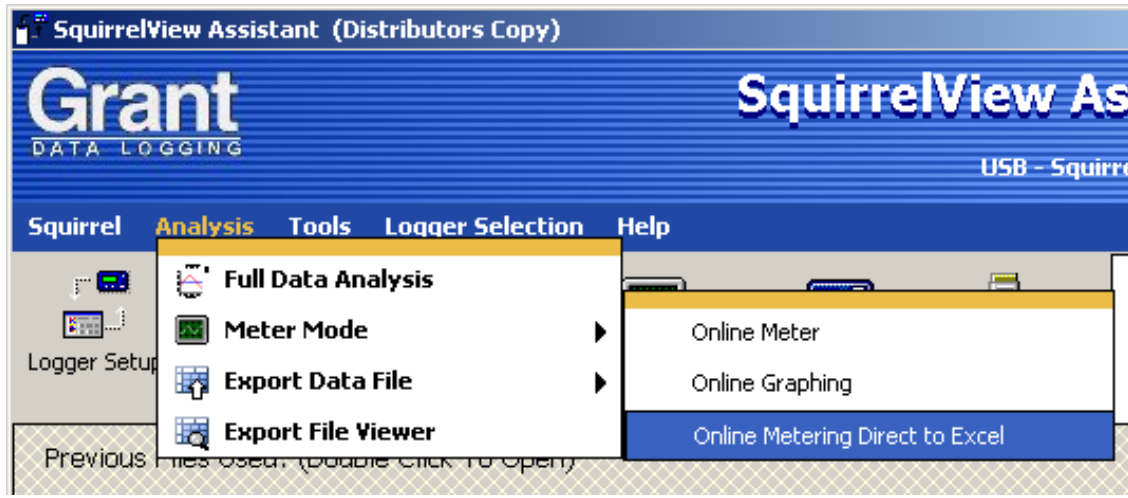
DATA ACQUISITION

Hints and Tips



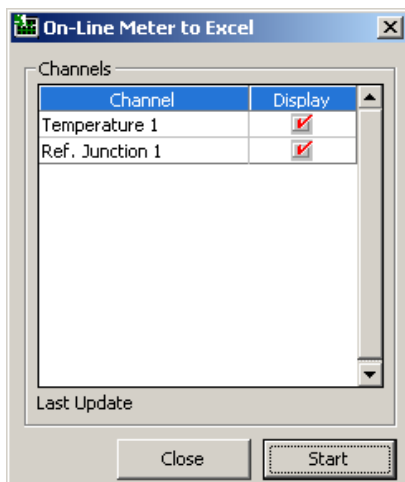
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Online Metering Direct to Excel



This metering function collects data values from selected setup channels in the logger, and places them into an Excel spreadsheet.

When this feature is activated the SquirrelView Assistant window will disappear and the below screen displayed.

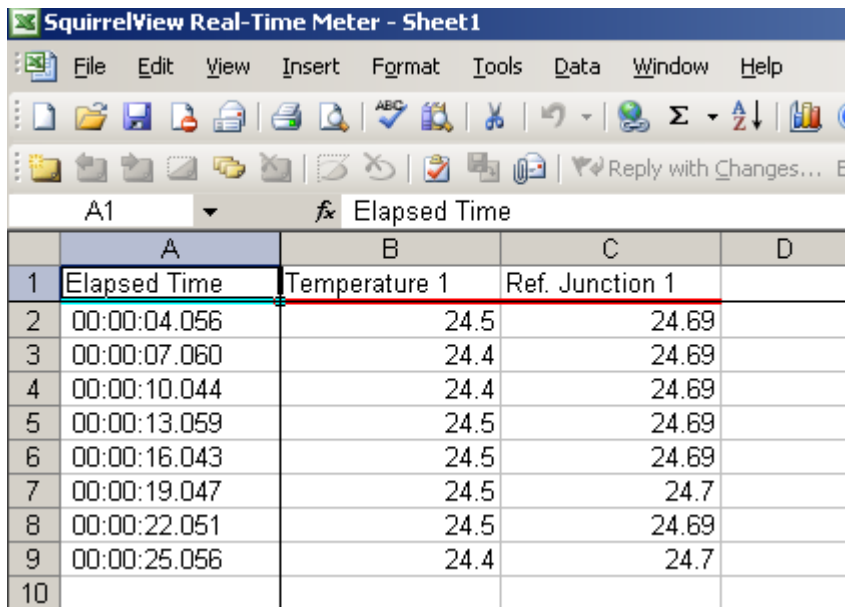


Select the required channels and click the *Start* button, If you need to change which channels are being metered you will have to restart the metering process.

An Excel application spreadsheet will then be automatically created, configured with the channels select metering to this spreadsheet.

DATA ACQUISITION

Hints and Tips



The screenshot shows a spreadsheet titled "SquirrelView Real-Time Meter - Sheet1" with a menu bar (File, Edit, View, Insert, Format, Tools, Data, Window, Help) and a toolbar. The active cell is A1, containing the formula "Elapsed Time". The spreadsheet has four columns: A (Elapsed Time), B (Temperature 1), C (Ref. Junction 1), and D. The data is as follows:

	A	B	C	D
1	Elapsed Time	Temperature 1	Ref. Junction 1	
2	00:00:04.056	24.5	24.69	
3	00:00:07.060	24.4	24.69	
4	00:00:10.044	24.4	24.69	
5	00:00:13.059	24.5	24.69	
6	00:00:16.043	24.5	24.69	
7	00:00:19.047	24.5	24.7	
8	00:00:22.051	24.5	24.69	
9	00:00:25.056	24.4	24.7	
10				

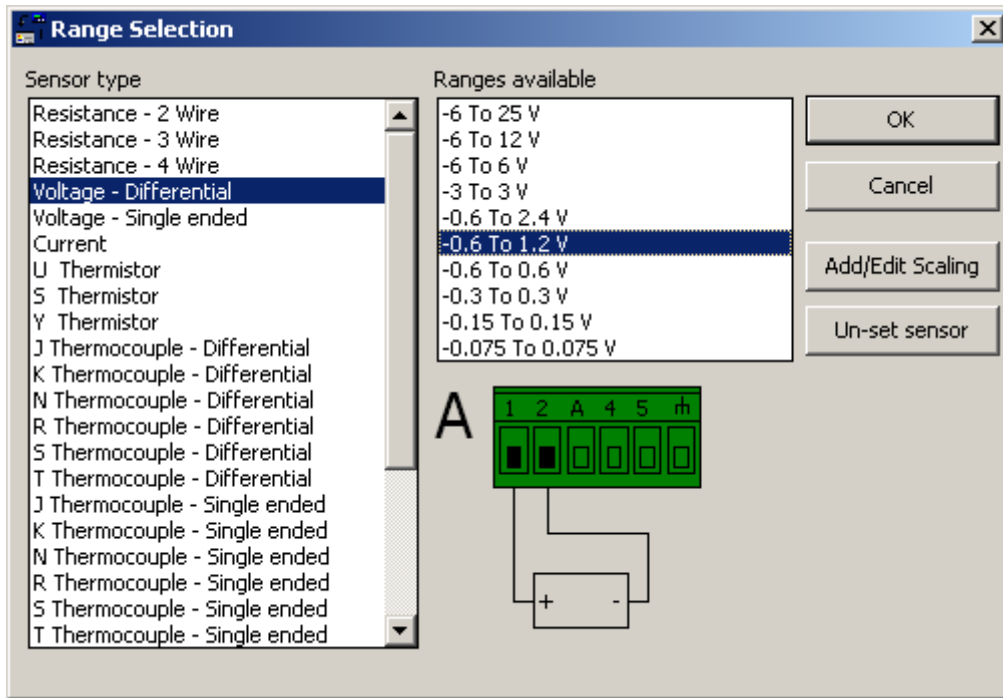
Note: It is requested not to edit or change any of the spreadsheets settings until metering has stopped and exited. Any modification to the spreadsheet whilst metering could lead to corruption of the data.

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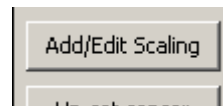
Engineering Units

To setup engineering units the following example shows a voltage input of 0 to 1 V which is equal to 0 to 100% rh

Select appropriate input and range in this case.



Click on the *Add/Edit Scaling* button.

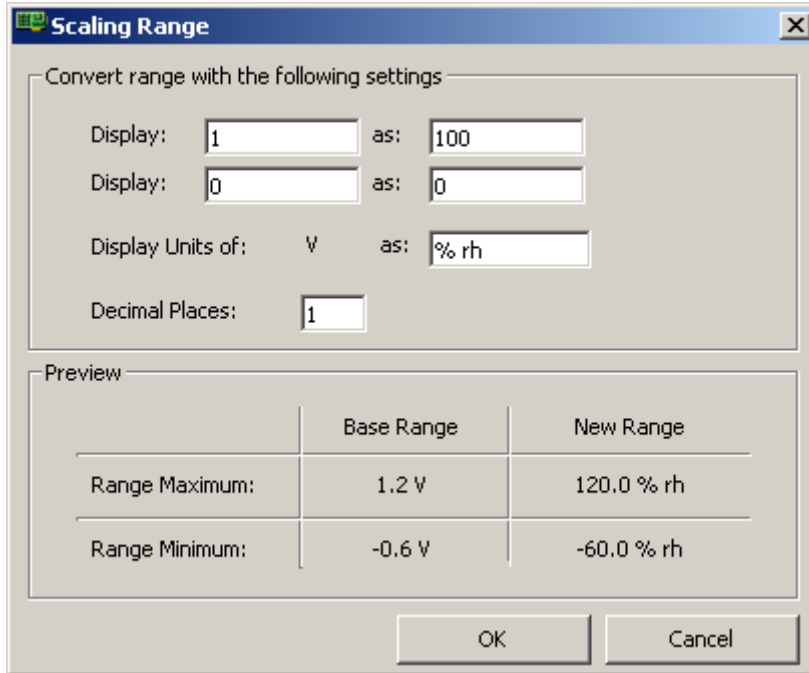


DATA ACQUISITION

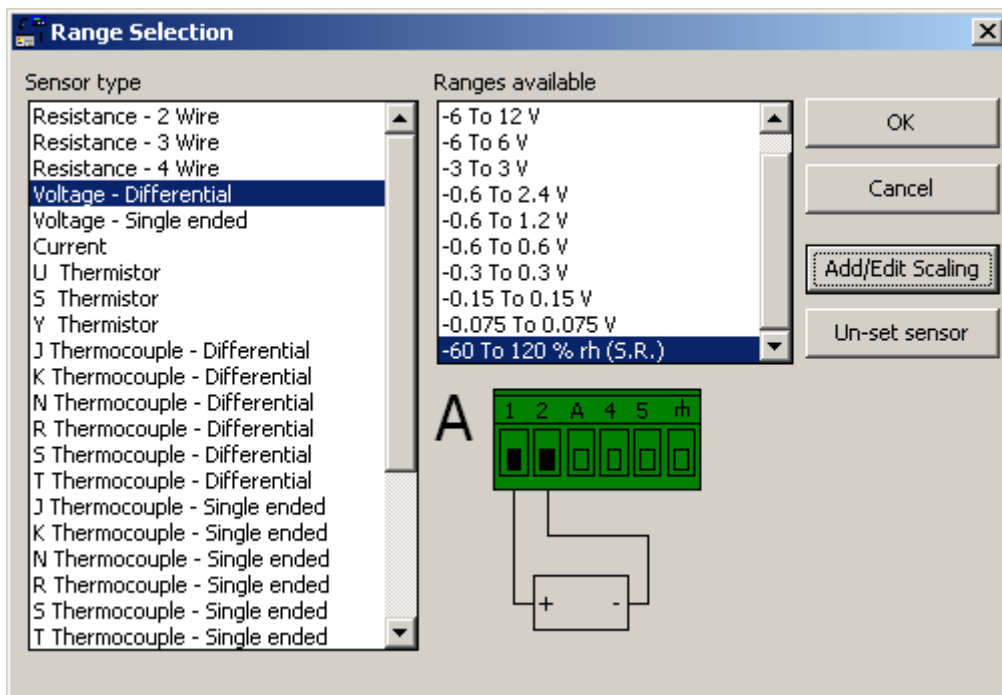
Hints and Tips

Set display 1 as: 100 and 0 as: 0
Units as %rh
Realistic number of decimal places

The logger will scale the whole range which is shown below



Click on the *OK* button.

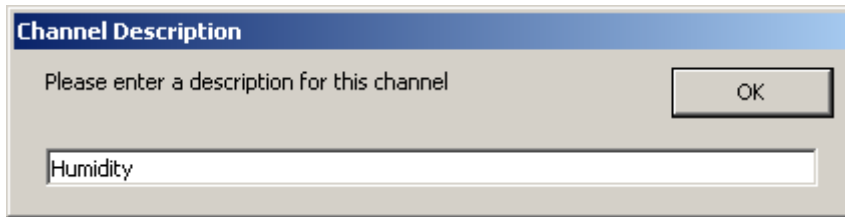


Select scaled range (SR) and click on the *OK* button.

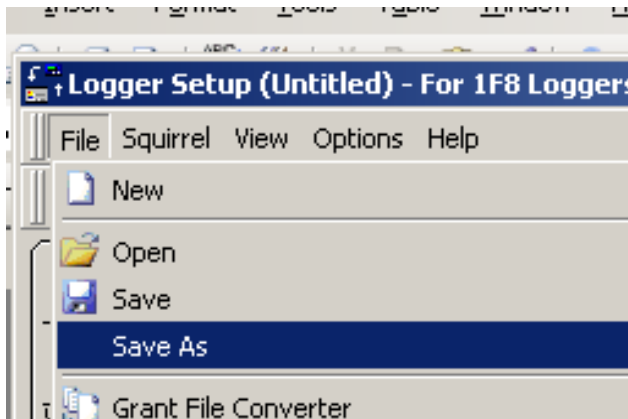
DATA ACQUISITION

Hints and Tips

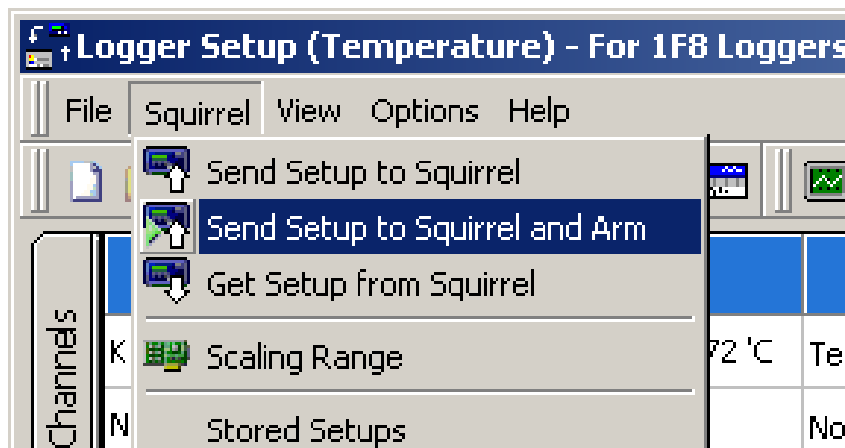
Enter a description for the channel.



Save the setup



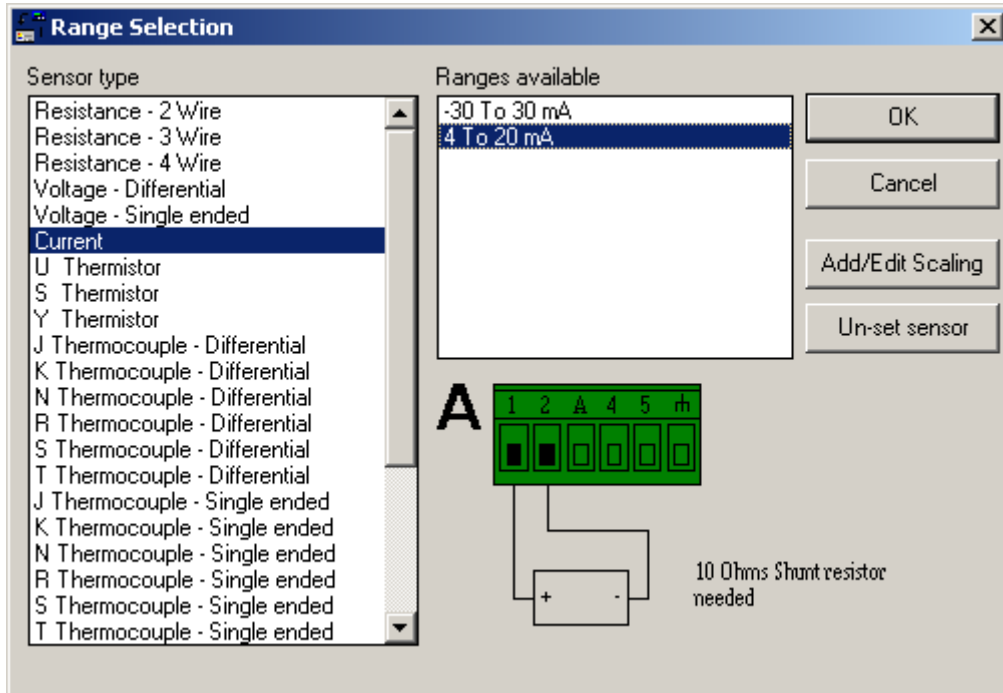
Send the setup to logger and Arm if required



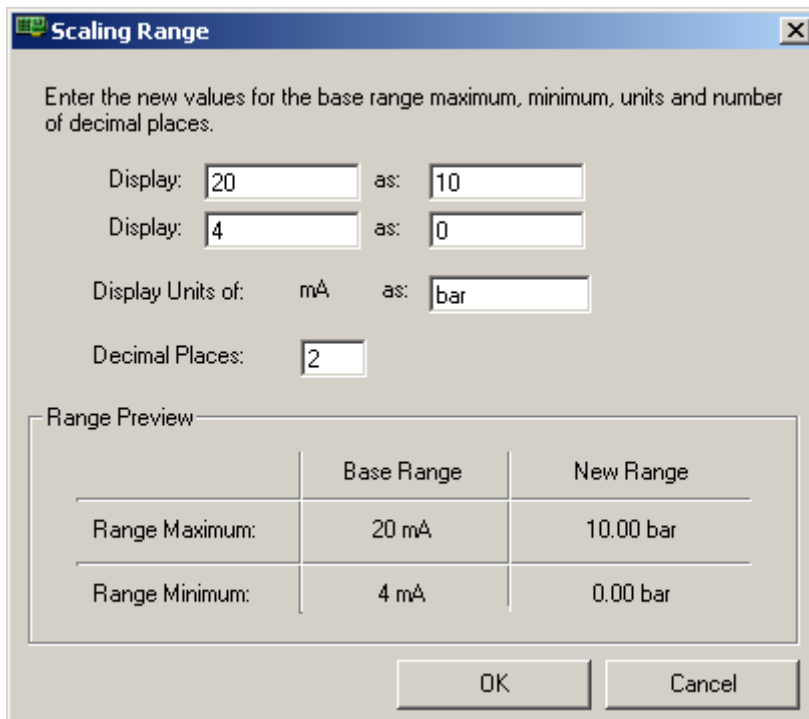
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4 to 20 mA Connections

In logger Setup screen double click in Sensor Type column of input channel required (Block A is shown) but can be A, B, C or D input block. Select the range as below then click on the **OK** button.

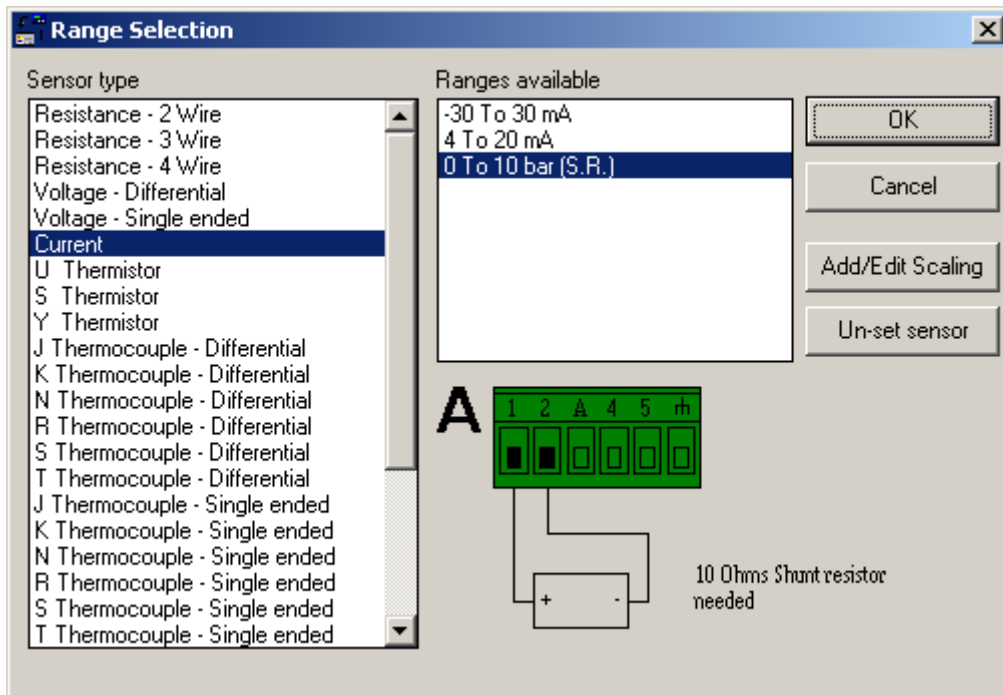


If engineering units are required click on **Add/Edit Scaling** button
The example below shows input scaled to log as 0 to 10 bar pressure

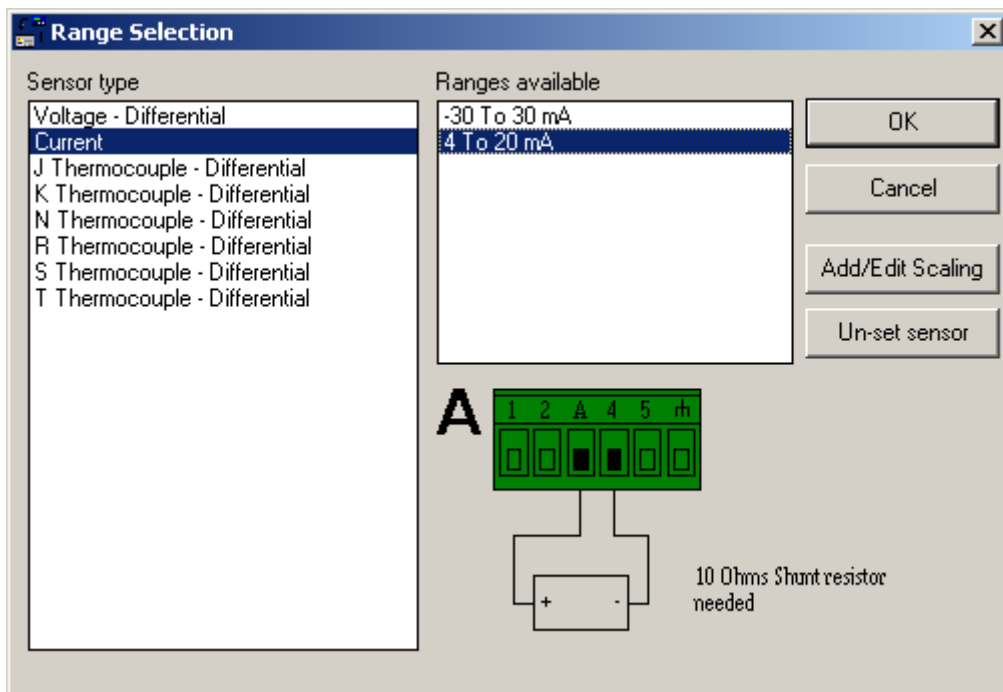


DATA ACQUISITION

Hints and Tips



For next sensor (Up to two sensors can be connected to each block)
Double click in next valid channel sensor type column select range as below add scaling if required then click on the *OK* button.



If more sensors are required, repeat above procedure with next channel on the next input block
Save and send set up to logger

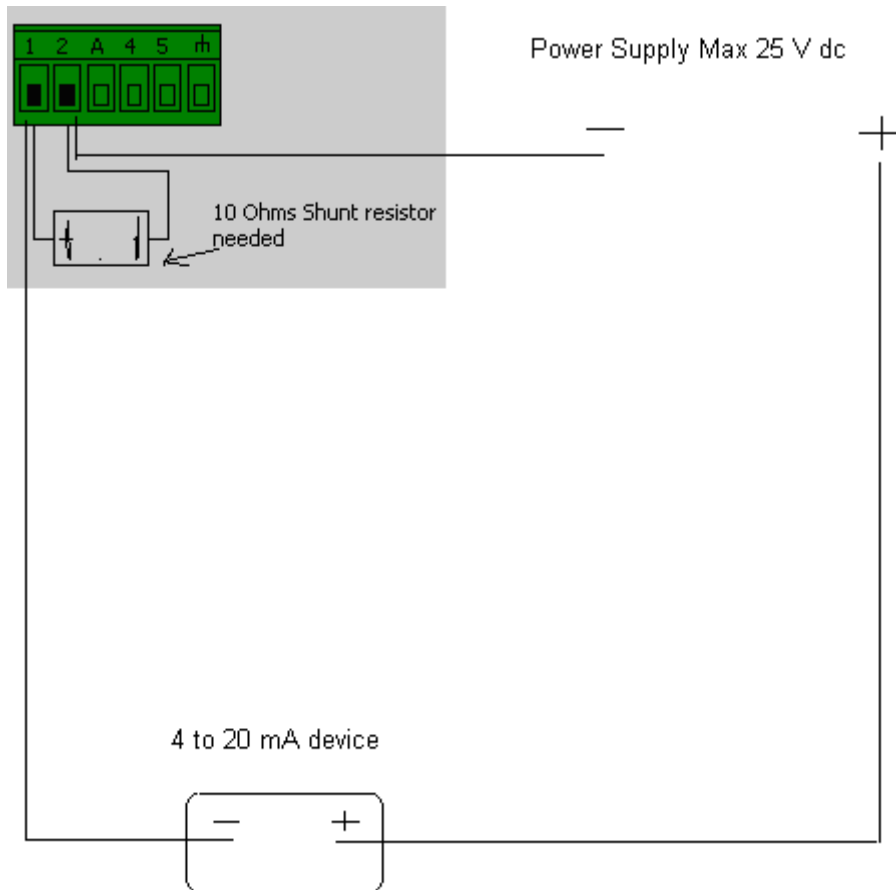
DATA ACQUISITION

Hints and Tips

Connect sensor wires as follows

Check colour code for sensors selected to ensure that probes are connected to correct polarity

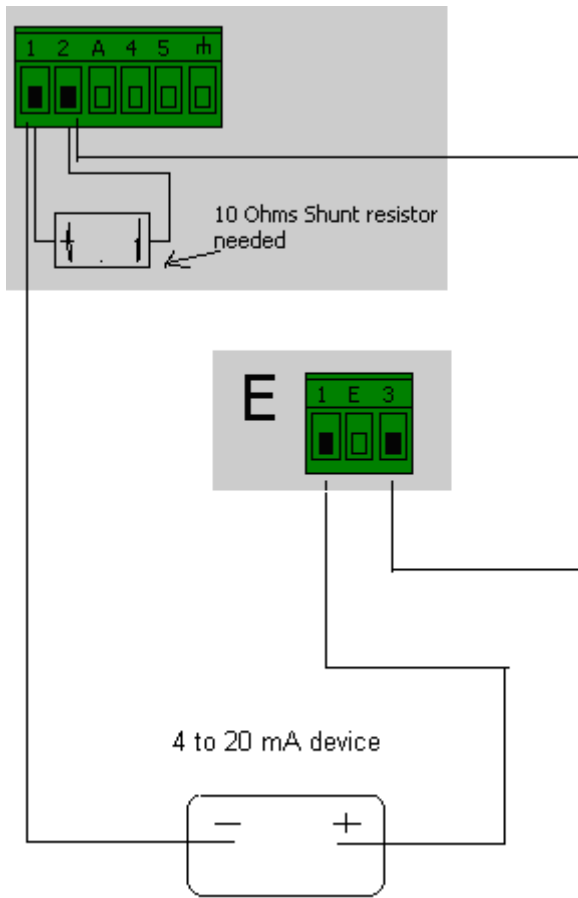
Connect probes with precision 10 Ohm resistor (pack of four grant part CS202 supplied with logger) across terminals as shown below



Sensors can be powered via the SQ2020/SQ2040 data logger if required maximum supply voltage is 18Vdc (supply volts) & total maximum current is 100mA.

DATA ACQUISITION

Hints and Tips



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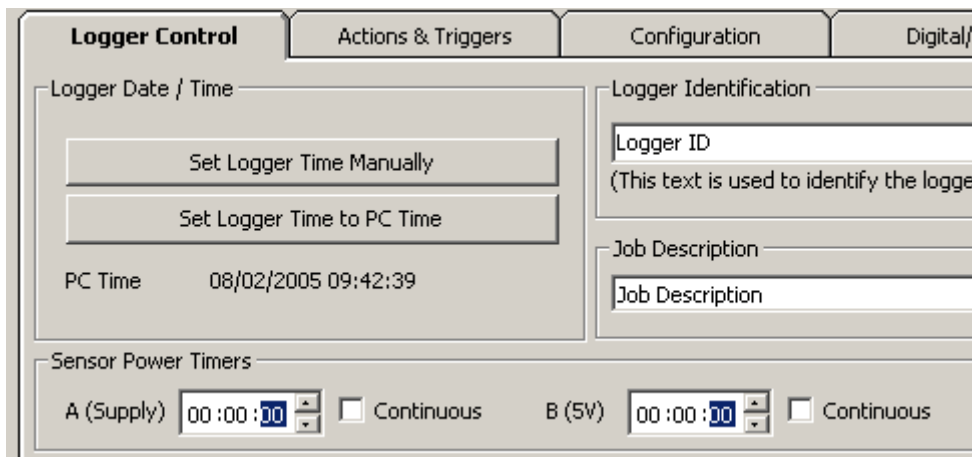
Sensor Power Supply

The choice of power is

A - External Supply (as supplied into the DC power plug, 100mA max)

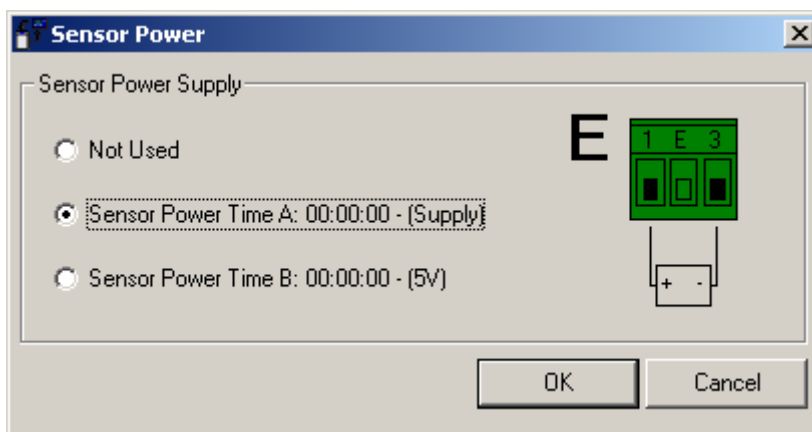
B - 5V (regulated output from logger, 50mA max)

Each supply can be set to turn on either continuously whilst the logger is Armed or at the required duration before a sensor is sampled (Sensor warm up time)



To activate Sensor Power Supply double click on “Not Used” in Sensor Power column of the input channel and select the one power supply required

Connection	Log Method	Log	Sensor Power
1(+ve) to 2(-ve)	Sample Interval: A (00:00:01) Logging Interval: (00:00:01) Mode: Interval	<input checked="" type="checkbox"/>	Not Used



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Setting up a Inbuilt Ethernet Connection

This is not available on the SQ2010 and the SQ2020 1F8 Data Loggers

For the SQ2020/SQ2040 to communicate using the Inbuilt Ethernet connection, the logger requires to be powered using an external power supply.

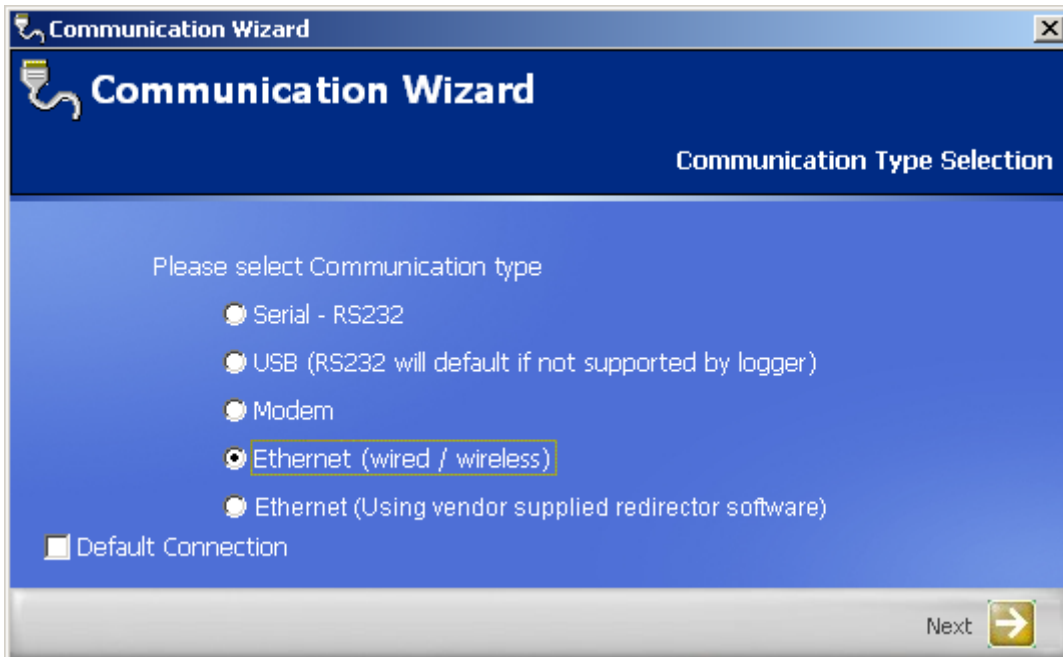
Refer to the Configuring the 20xx Inbuilt Ethernet Device manual which can be found on the Resource CD, In Squirrelview help under manuals or on the website at the following link: [Configuring Inbuilt Ethernet](#)

Once the SQ20xx Ethernet has been setup the IP address needs to be set in the Squirrelview software.

In the Squirrelview Assistant click on *Communications Wizard*



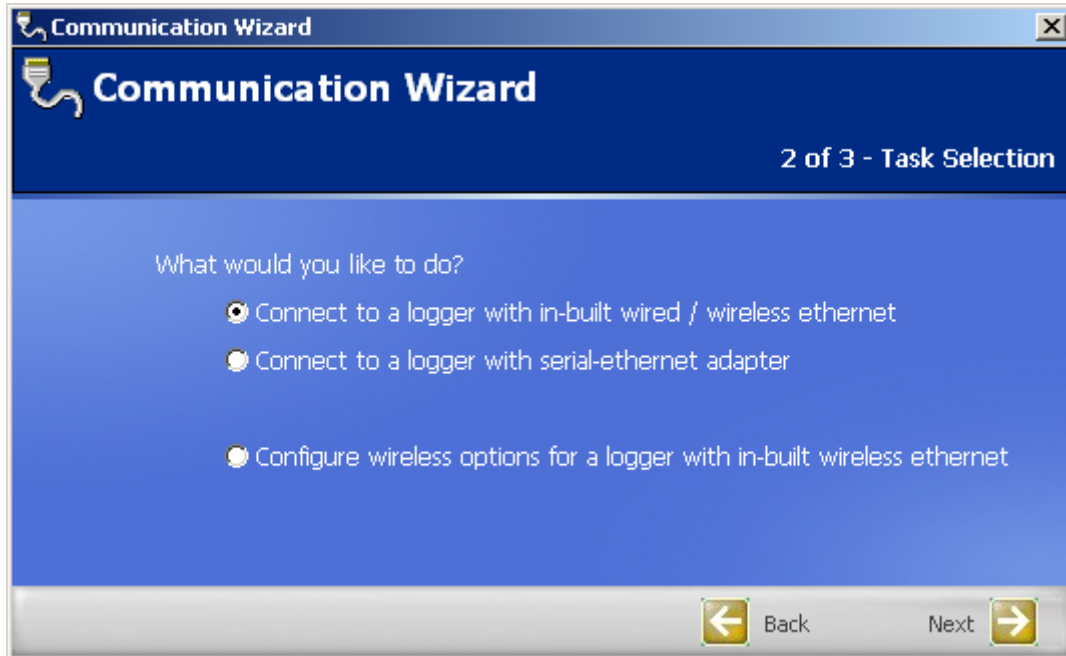
Click on the *Ethernet* communication type and then click the *Next* arrow



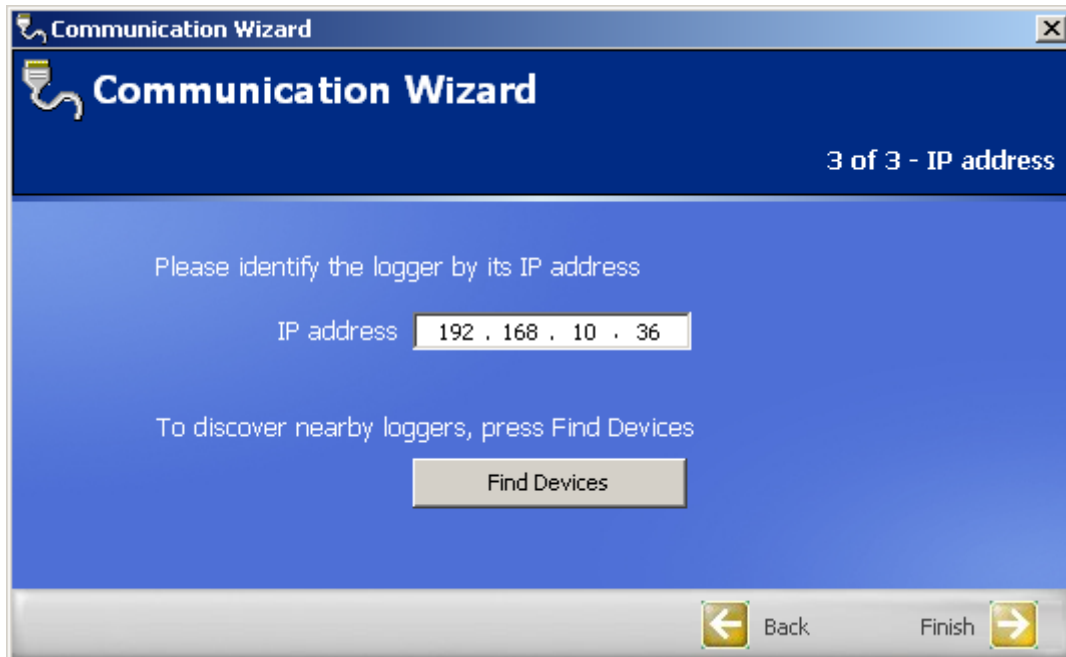
DATA ACQUISITION

Hints and Tips

Then choose *Connect to a logger with in-built wired/wireless Ethernet* and click on the *Next* arrow



Then enter the IP address that has been entered into the SQ20xx Datalogger when the inbuilt Ethernet was configured in the *Ethernet Device IP Address* box. Click on the *Finish* arrow.



Squirrelview can now communicate with the logger via the Ethernet.

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