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

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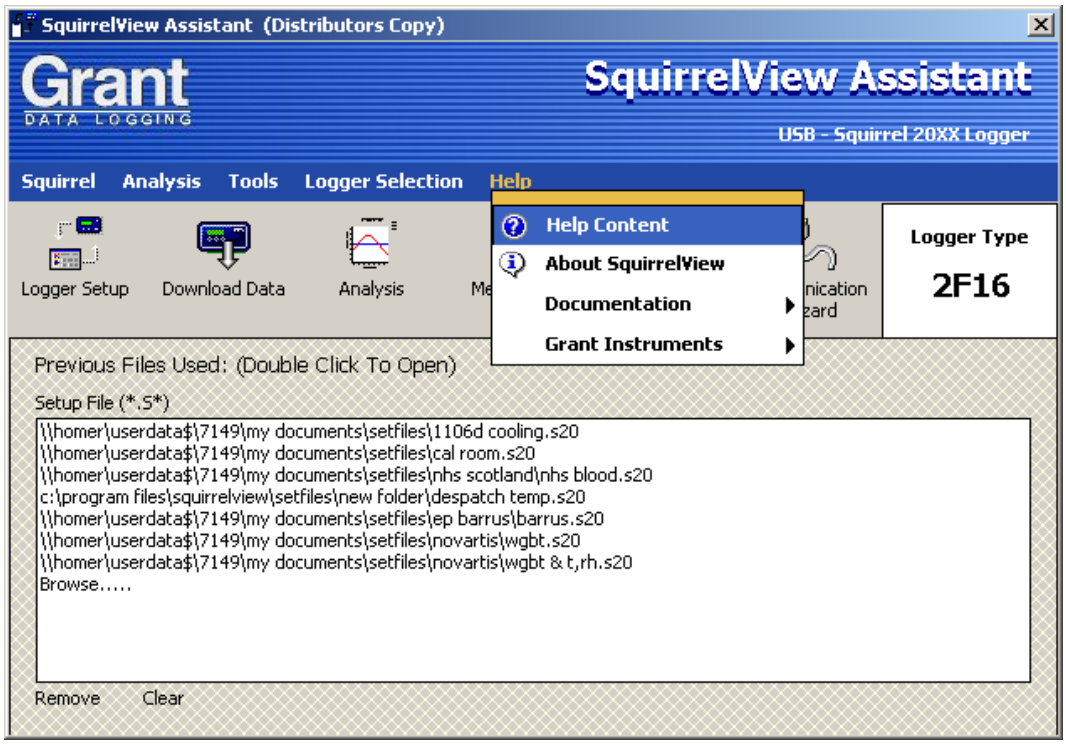
Reference No: 03/11 V3.0

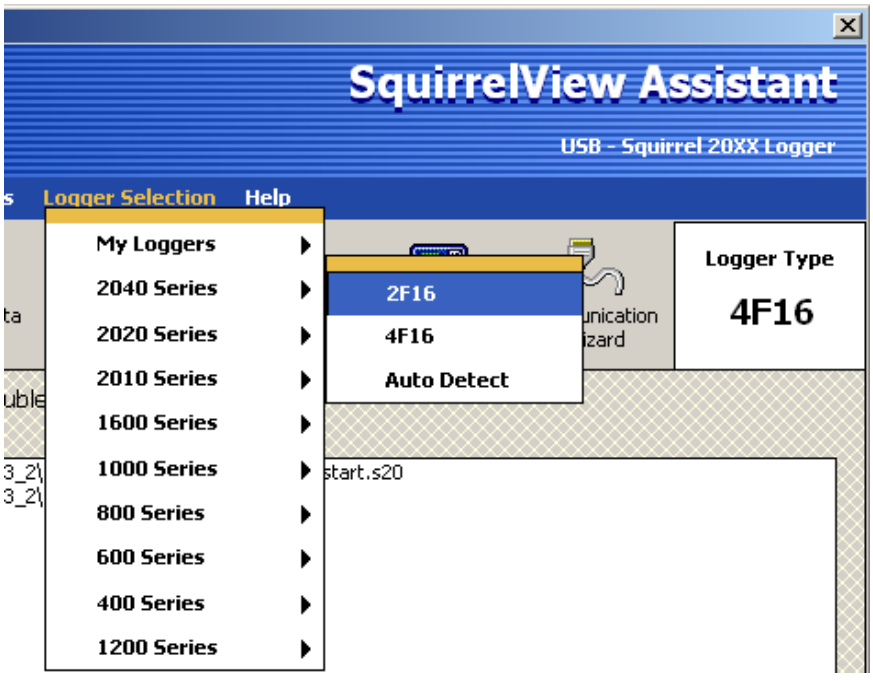
Squirrelview Help

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



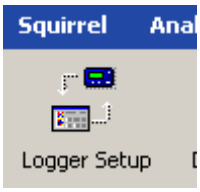
Connecting Your Squirrel Data Logger

First you need to select the correct logger model

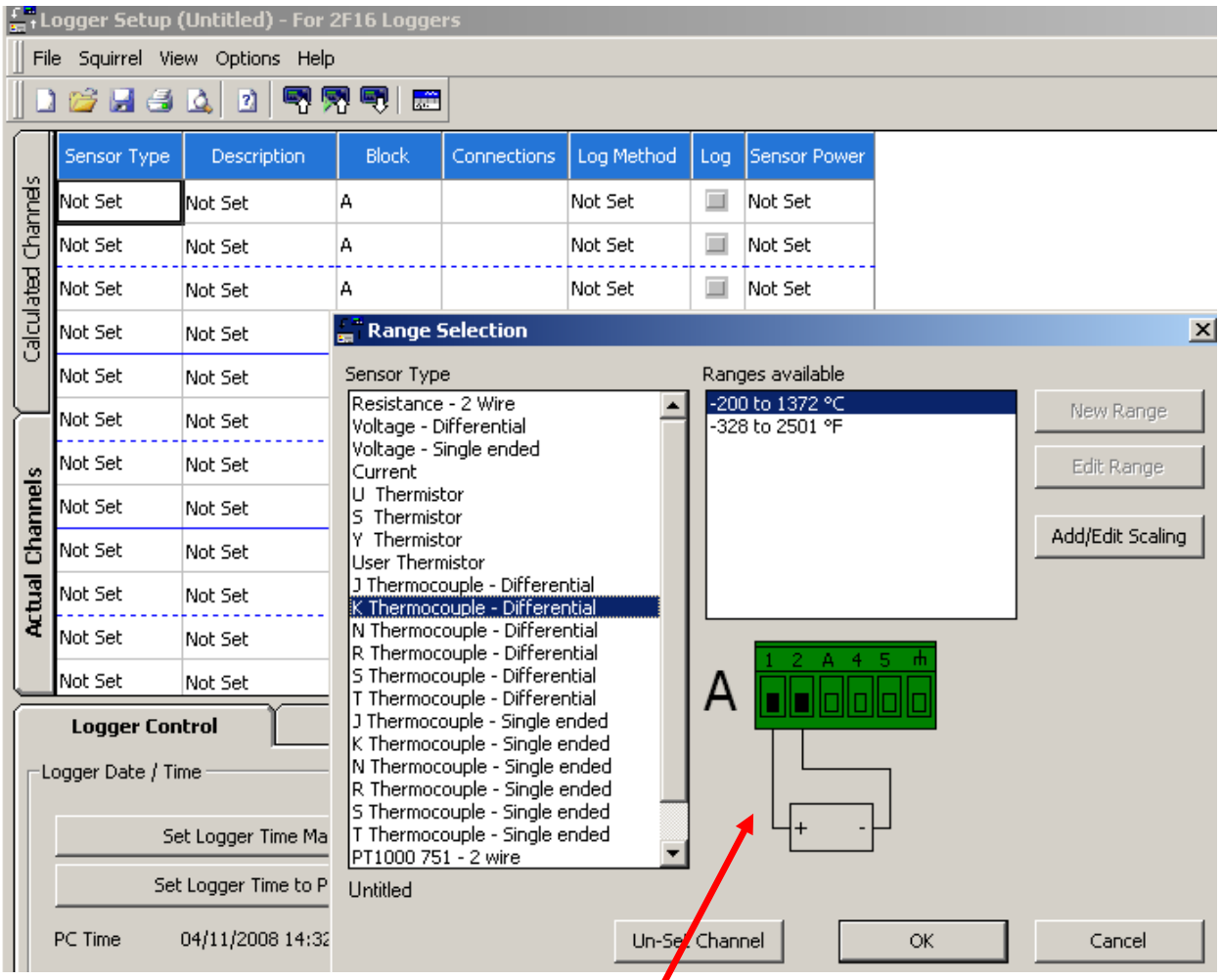


Logger Set-up

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



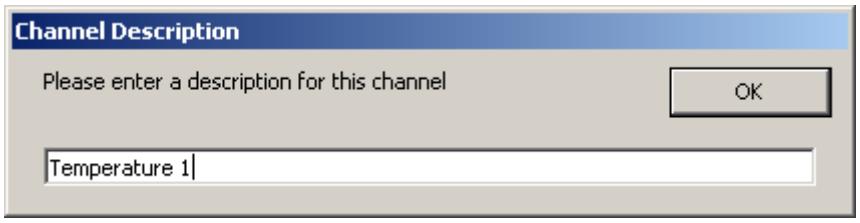
Choose your sensor input from the selection range.



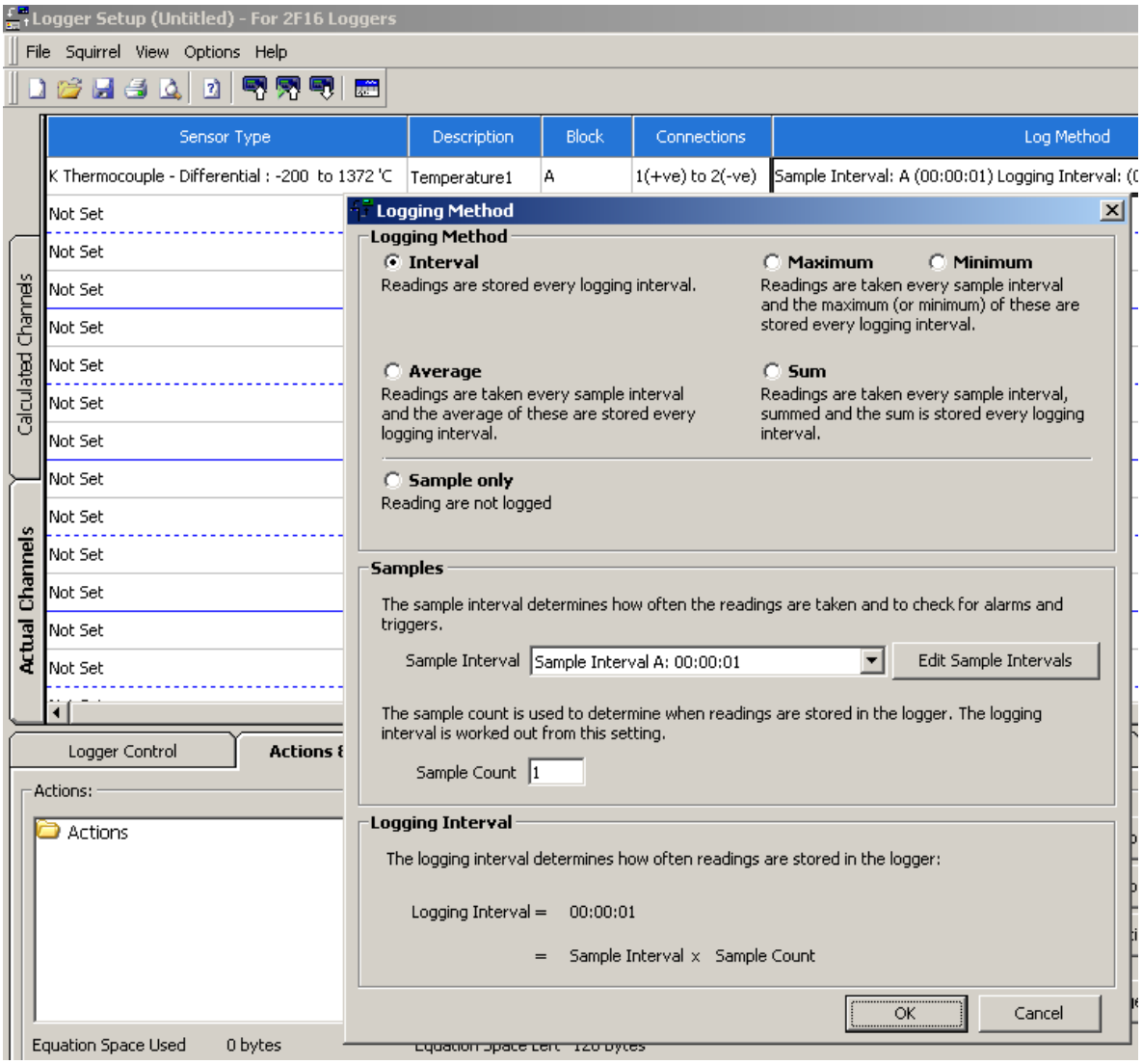
Connect the sensor as shown in the diagram.

- Squirrels loggers use the "Screw Terminal", (ST) 5.0 mm pitch plug and header connector system.
- Sensors are connected to screw terminal plug-in terminal blocks. Blocks of 3, 4 or 6 with cable strain relief

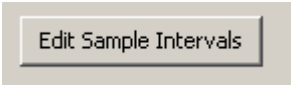
You will need to give the sensor input a description..

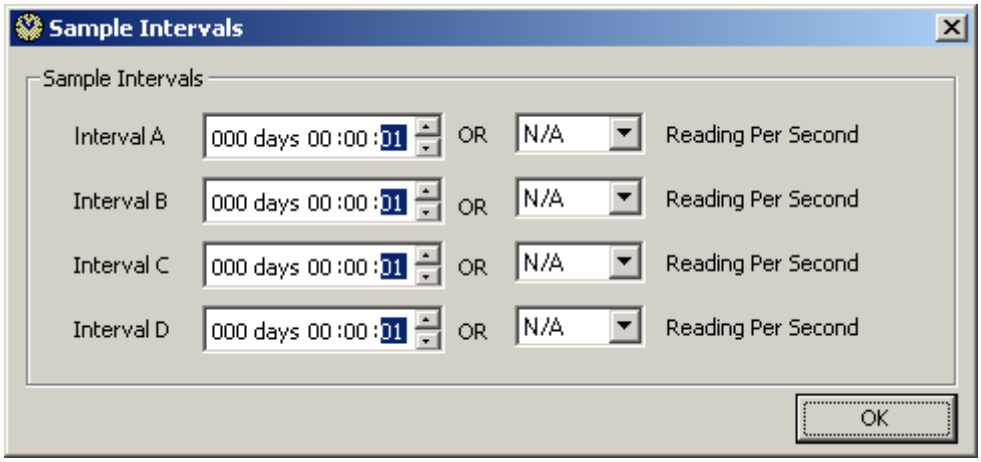


Select logging method and interval required (channels can be at different speeds).



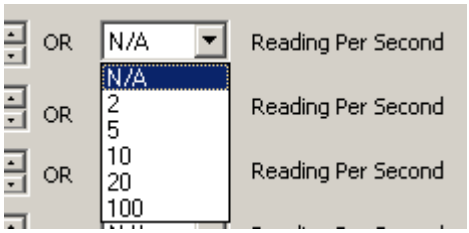
To alter the sample intervals select the Edit Sample Intervals button



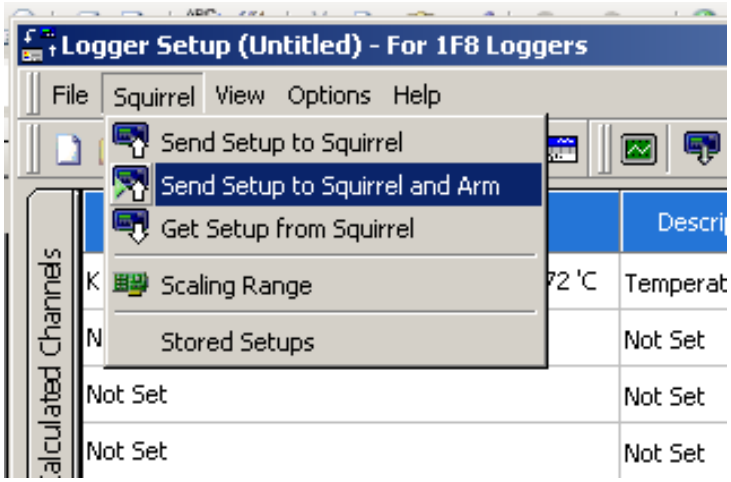


There is an option to run at sub second intervals.

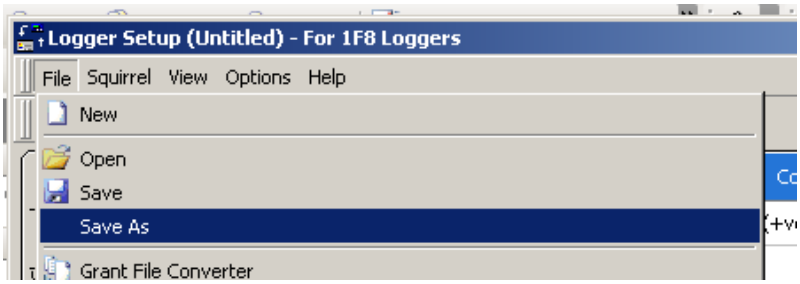
Note: Only 10 readings per Second on the SQ2010 Loggers



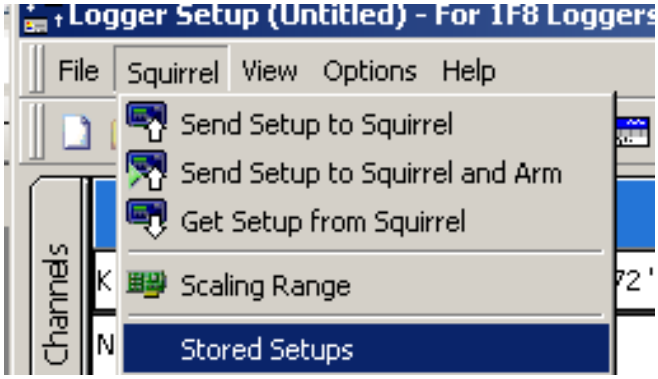
To send the setup to the logger and start logging go to Squirrel and Send Setup to Squirrel and Arm.



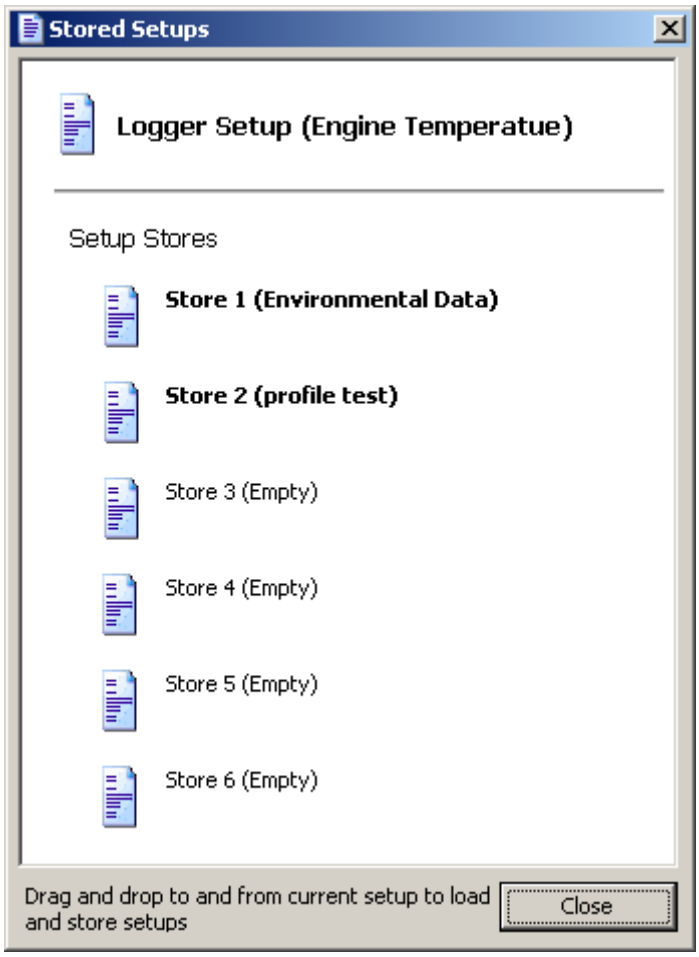
The Setup can be saved on your PC by:



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



The logger can hold up to six different setups.



Even more setups can be stored on removable MMC card.

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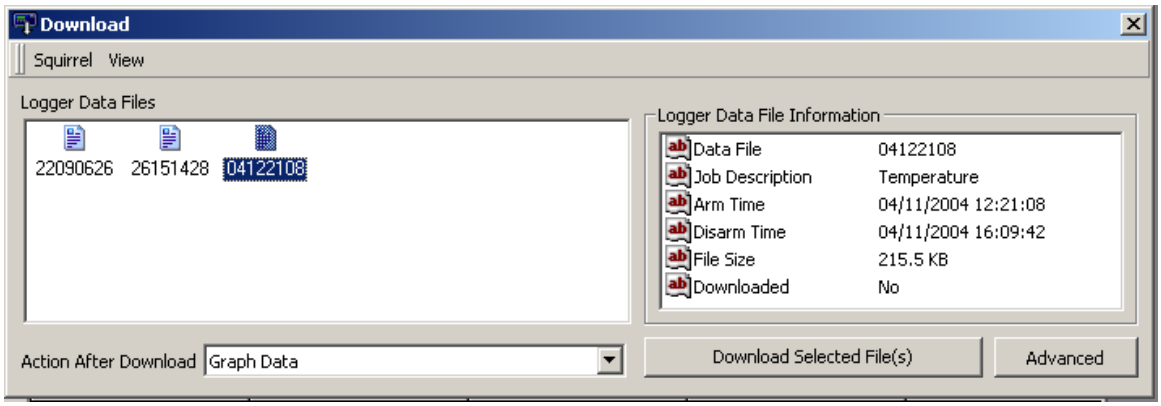
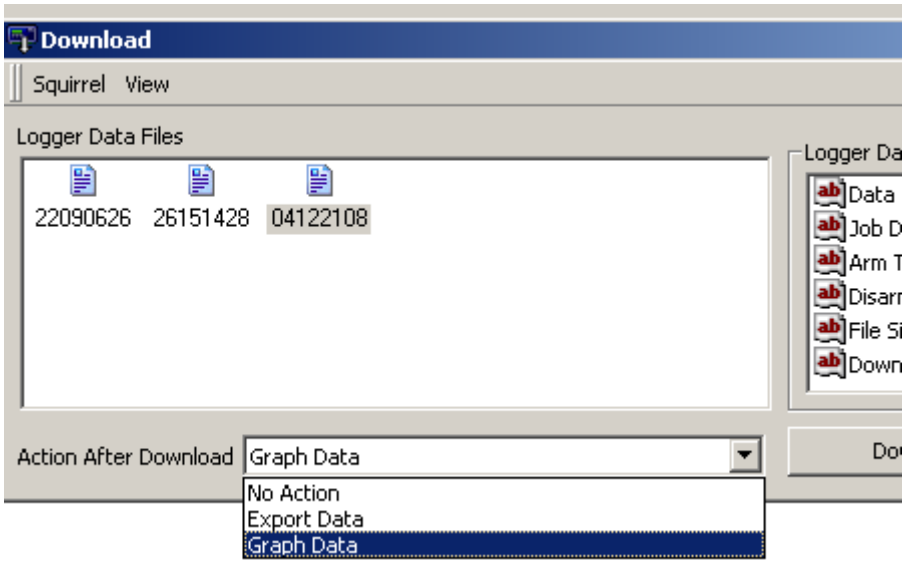
Download Data

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

Select the required Data file

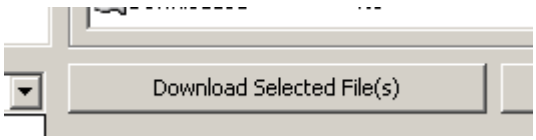


Select the Action after Download

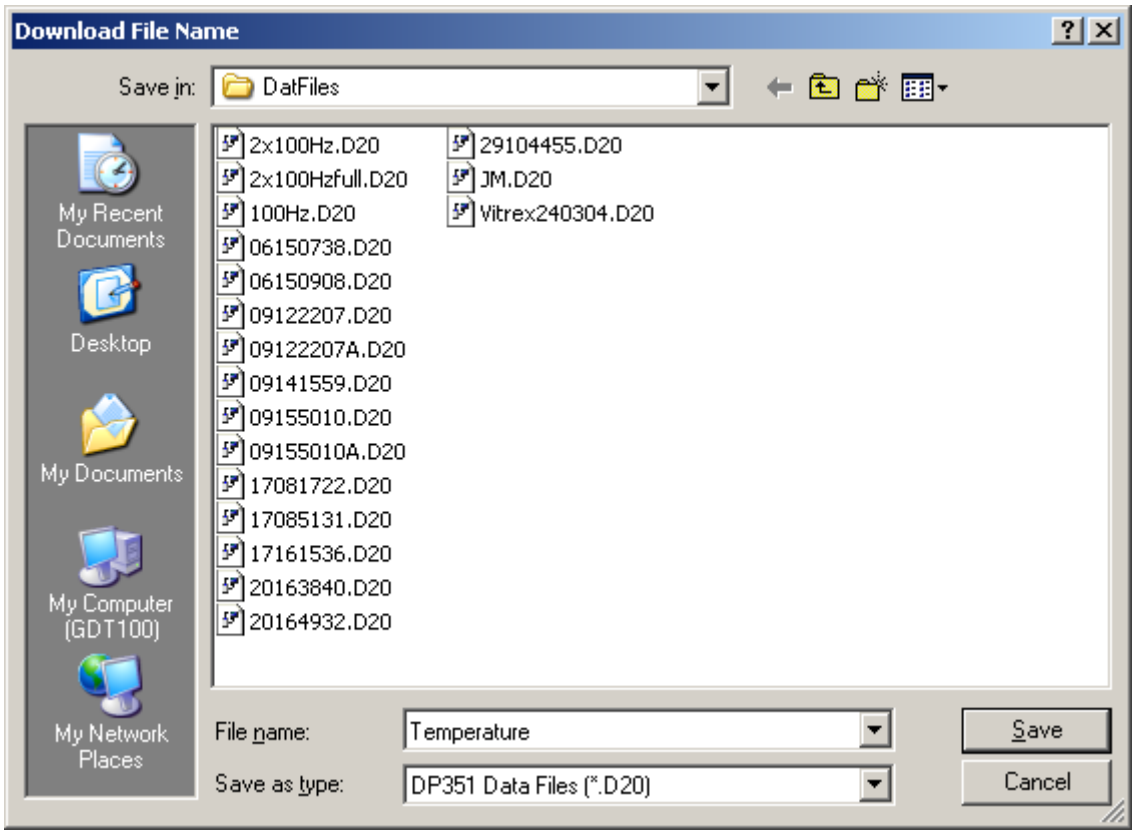


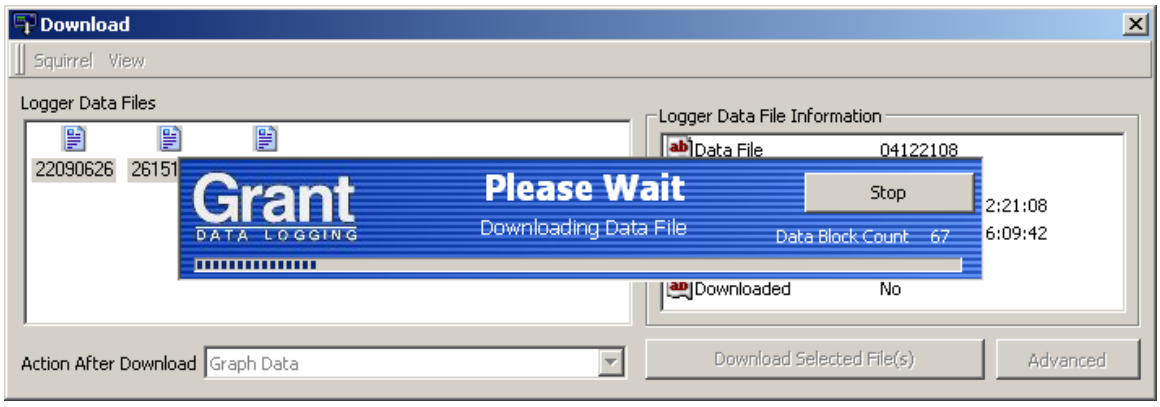
(**Note** this action can be set as default in Tools / Download Settings).

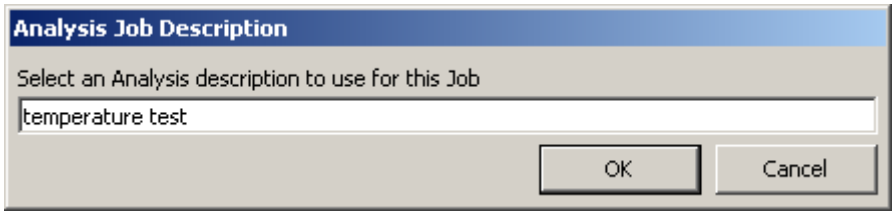
Select the *Download Selected File(s)*

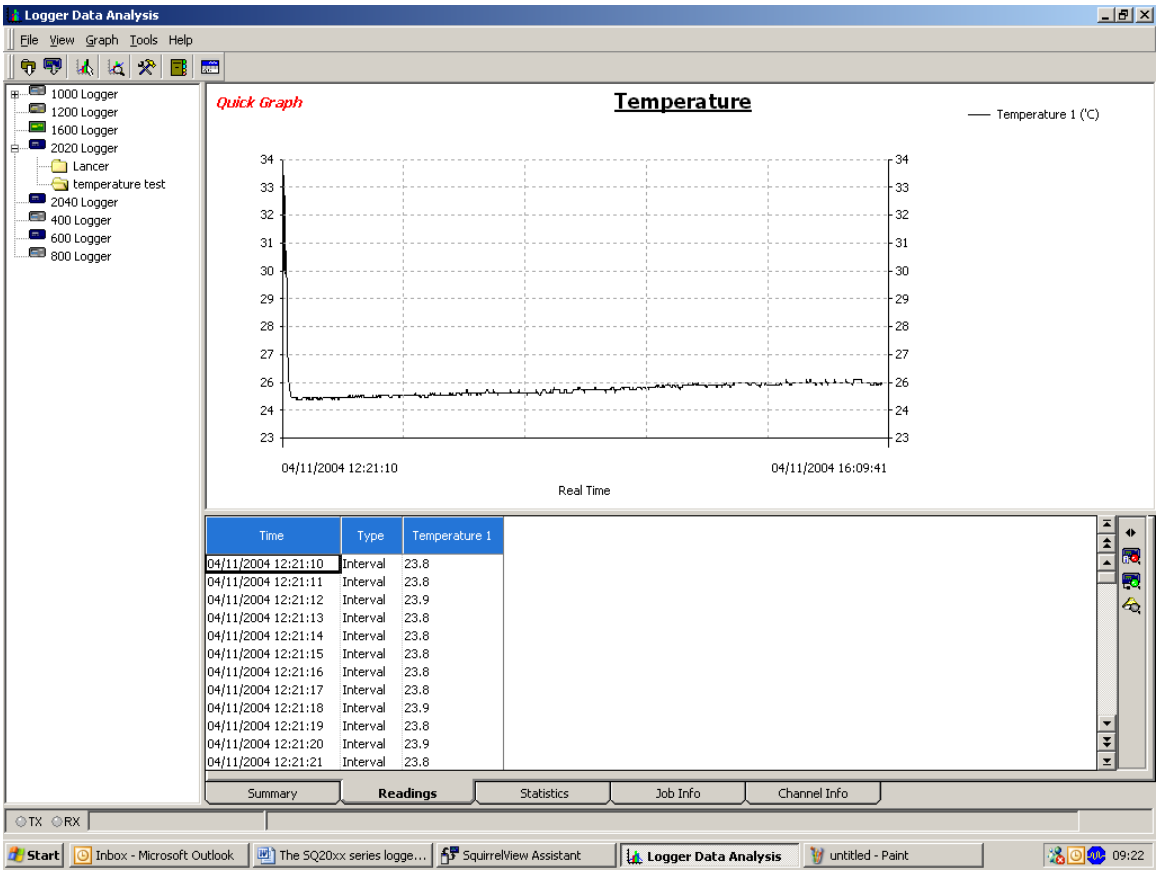


Give the File a name and Save.









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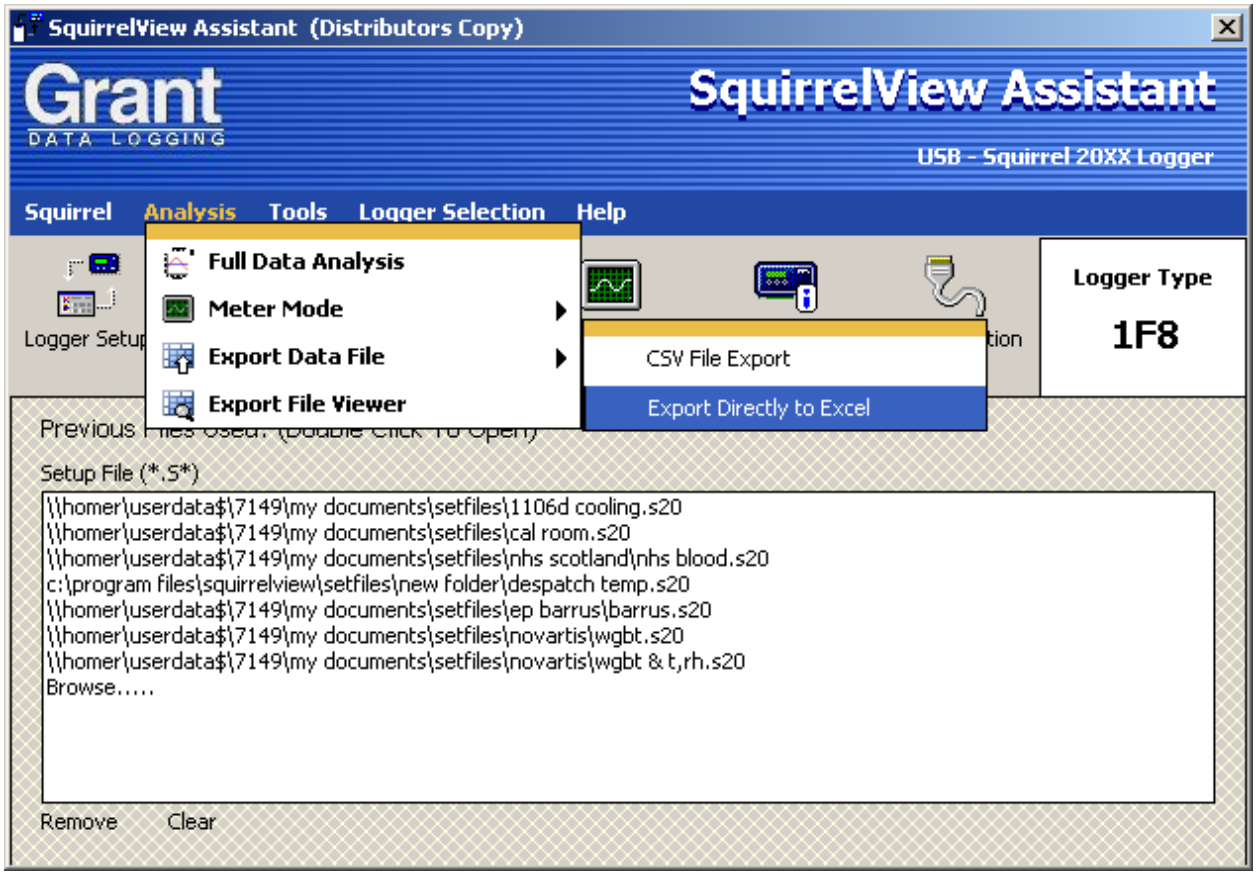
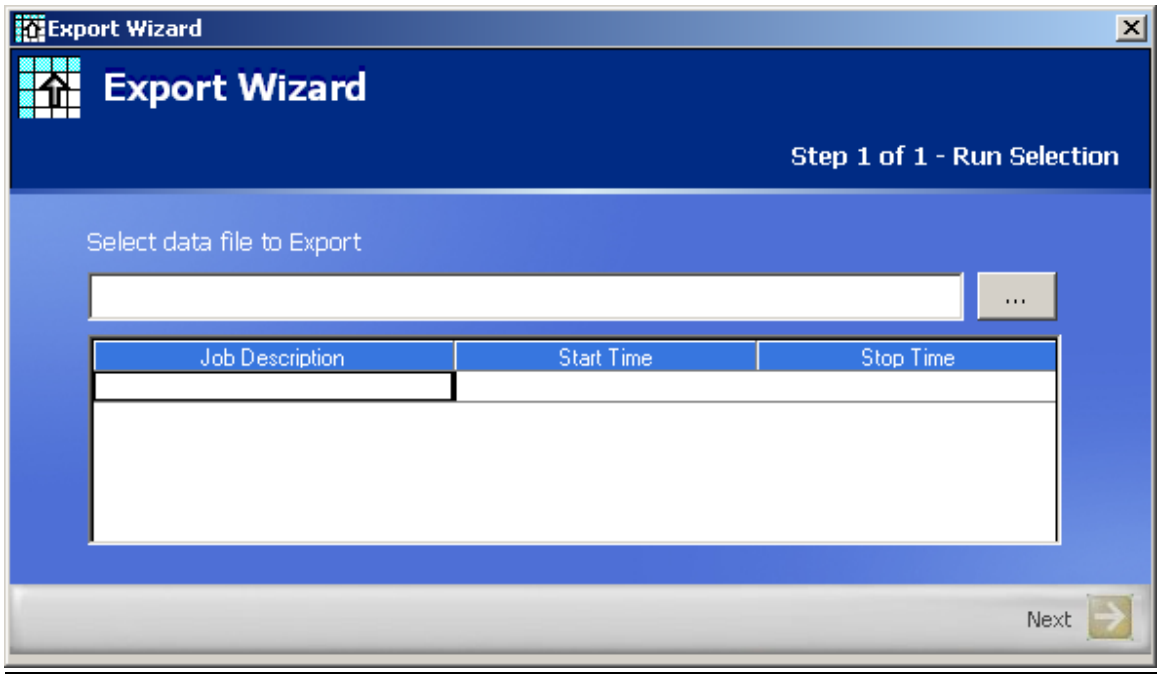
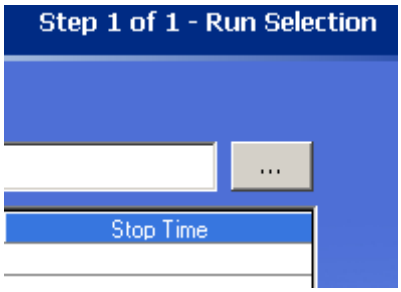
Export Data

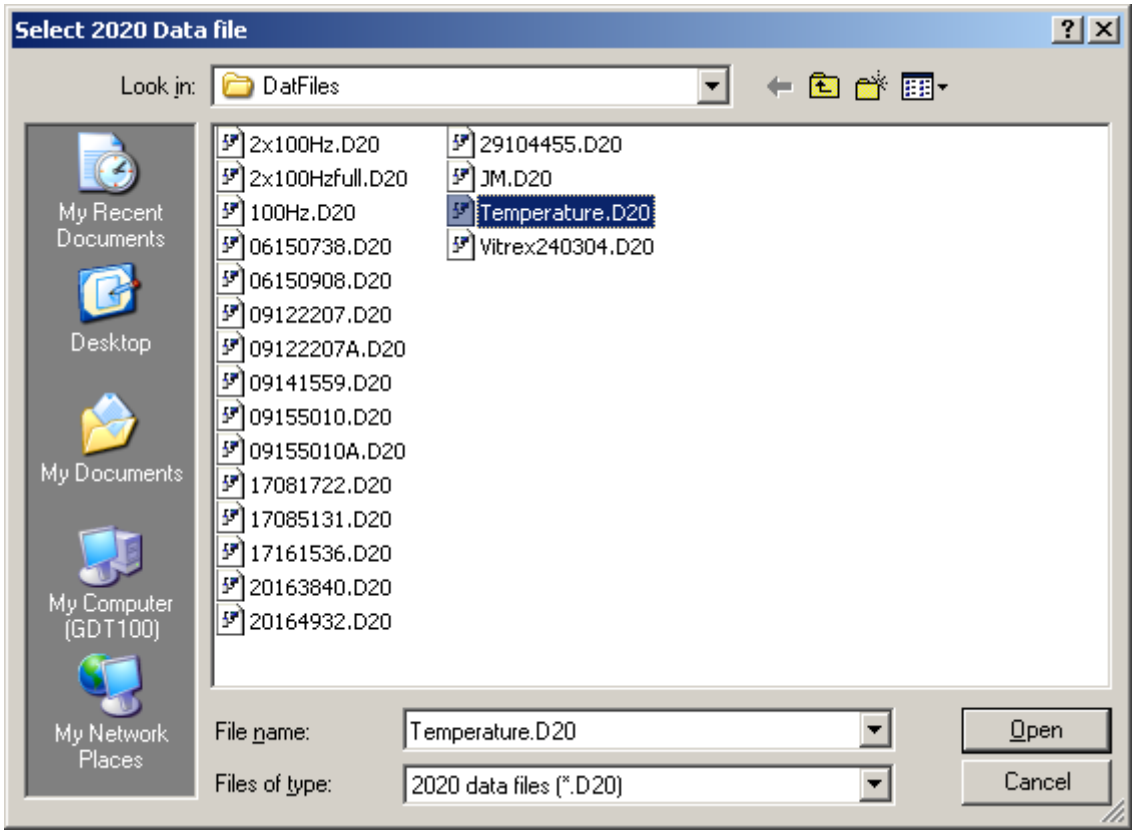
To export you data into excel



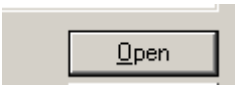


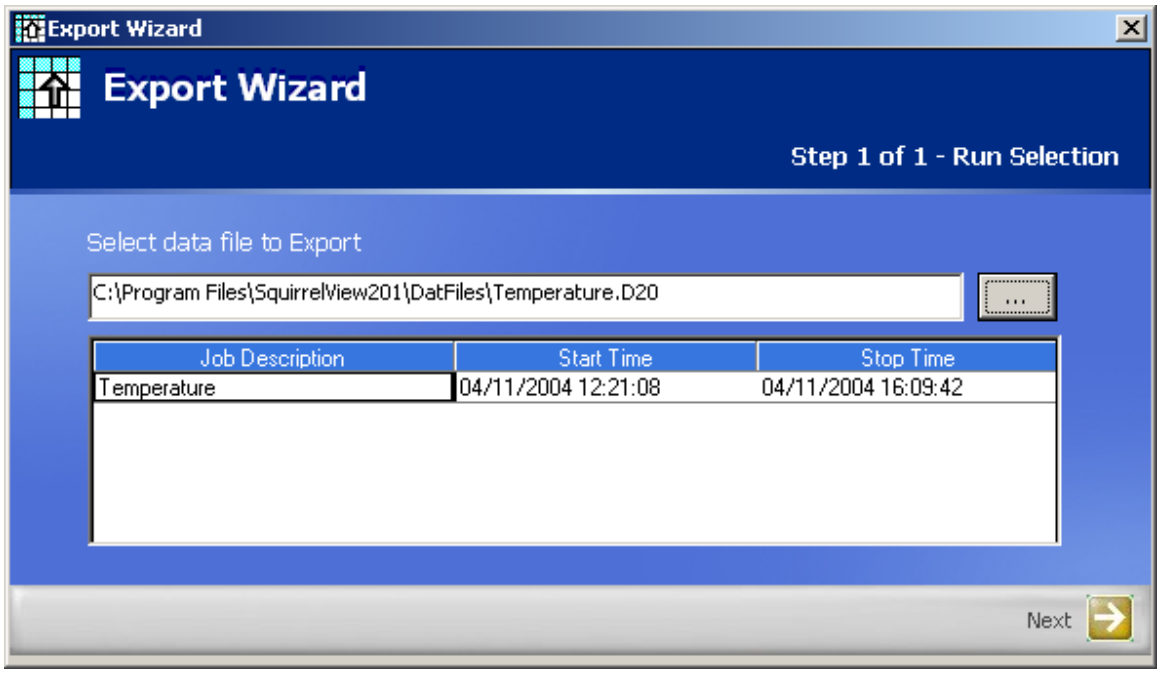
Browse for File



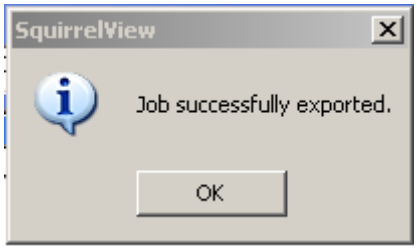


Choose the particular data file you wish to export and click.

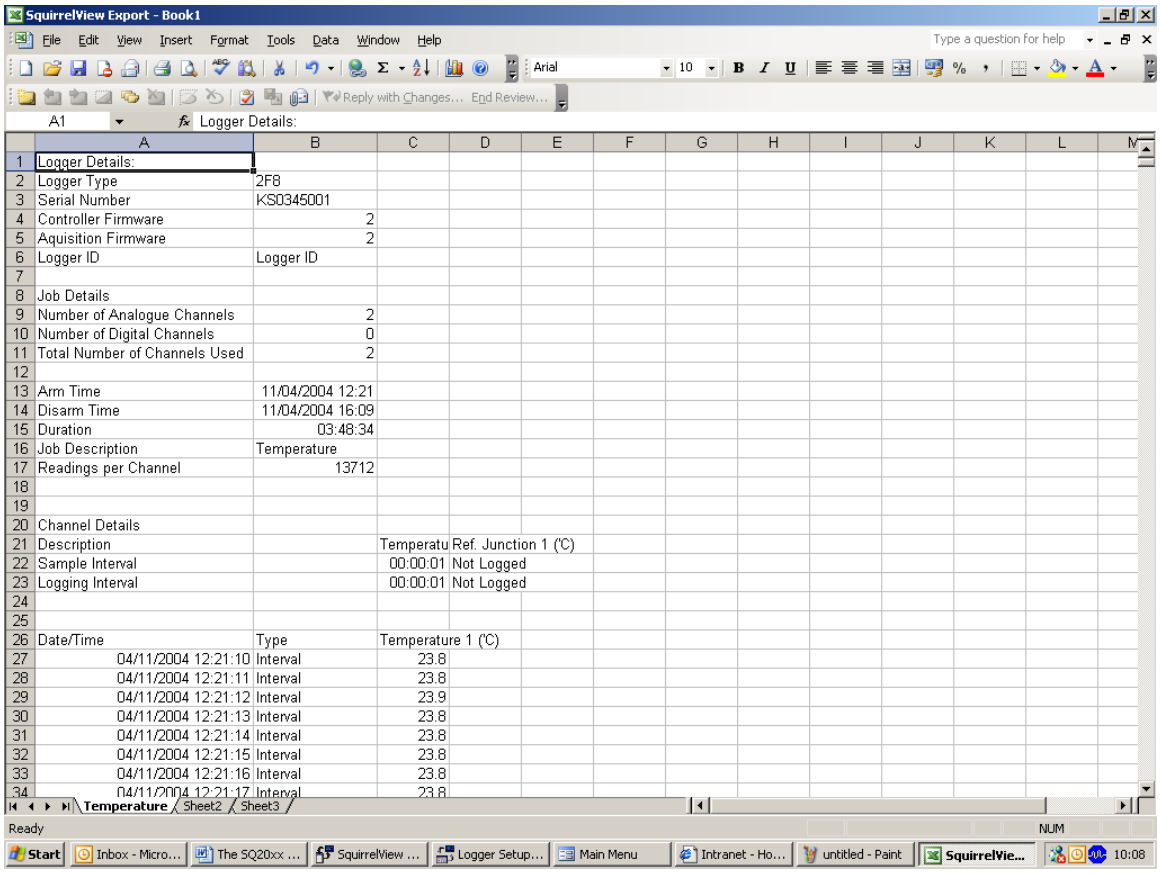




Follow through the steps, and click the *Next* and *OK* buttons as required.



The following spreadsheet will be displayed.



	A	B	C	D
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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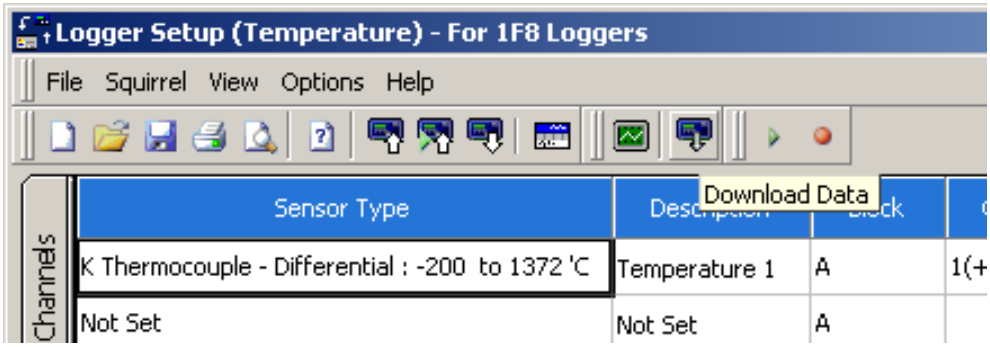
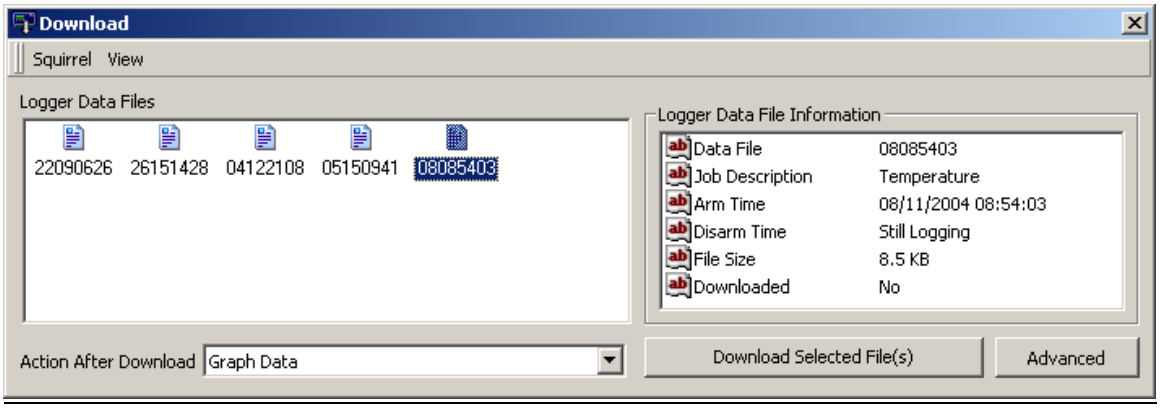
Downloading Alarm data

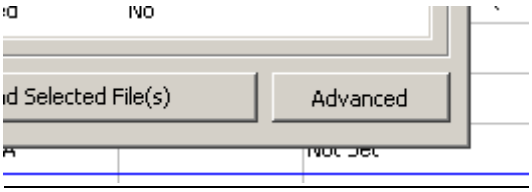
To download the alarm data select the *Download Data* button.

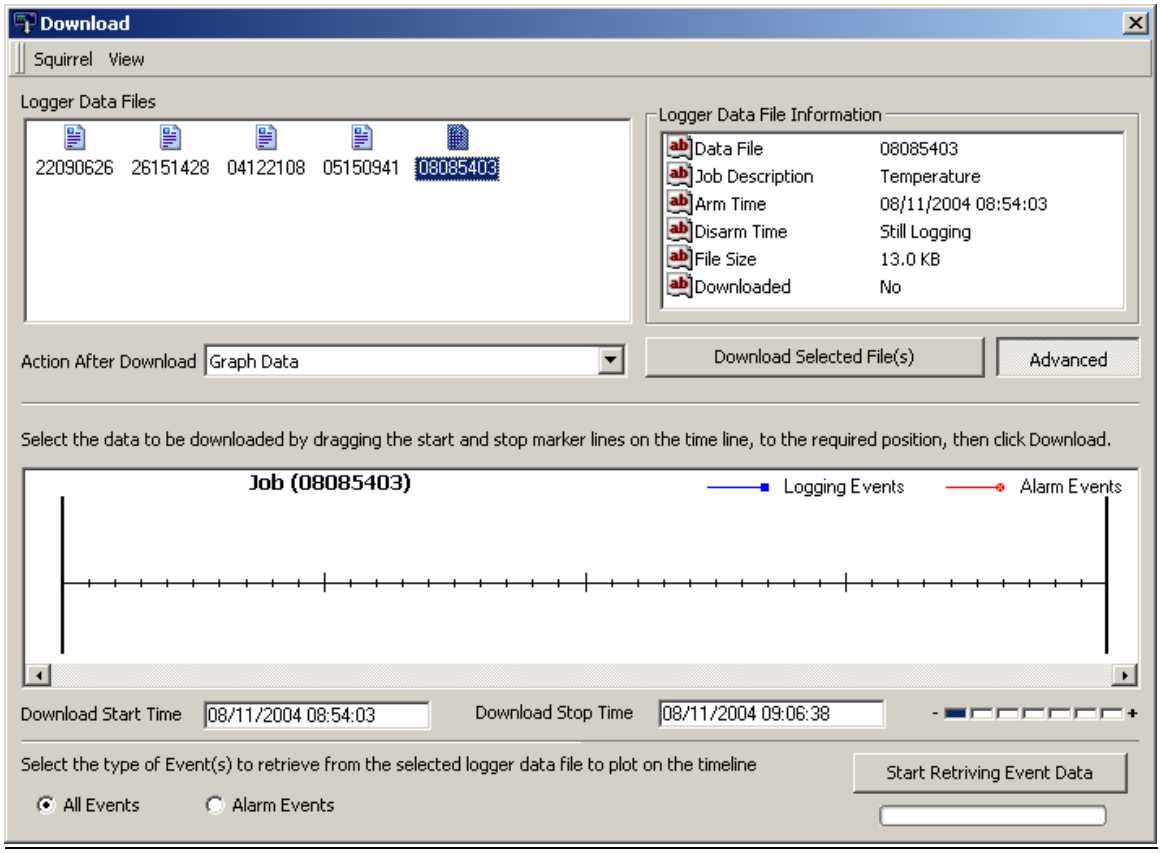


Select the required Data File.

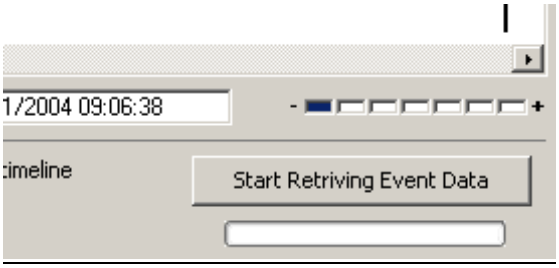


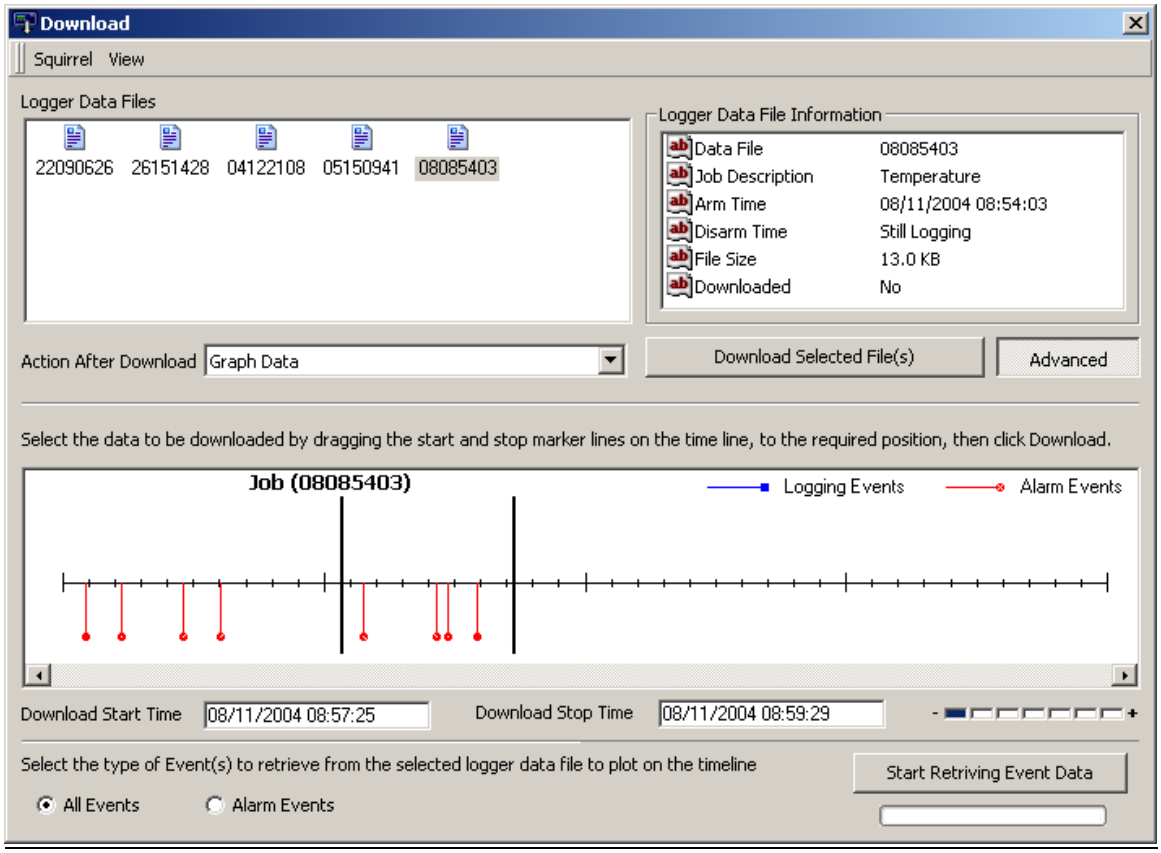
Click on the *Advanced* button.





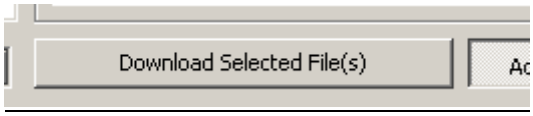
Click on the *Start Retrieving Event Data* button.





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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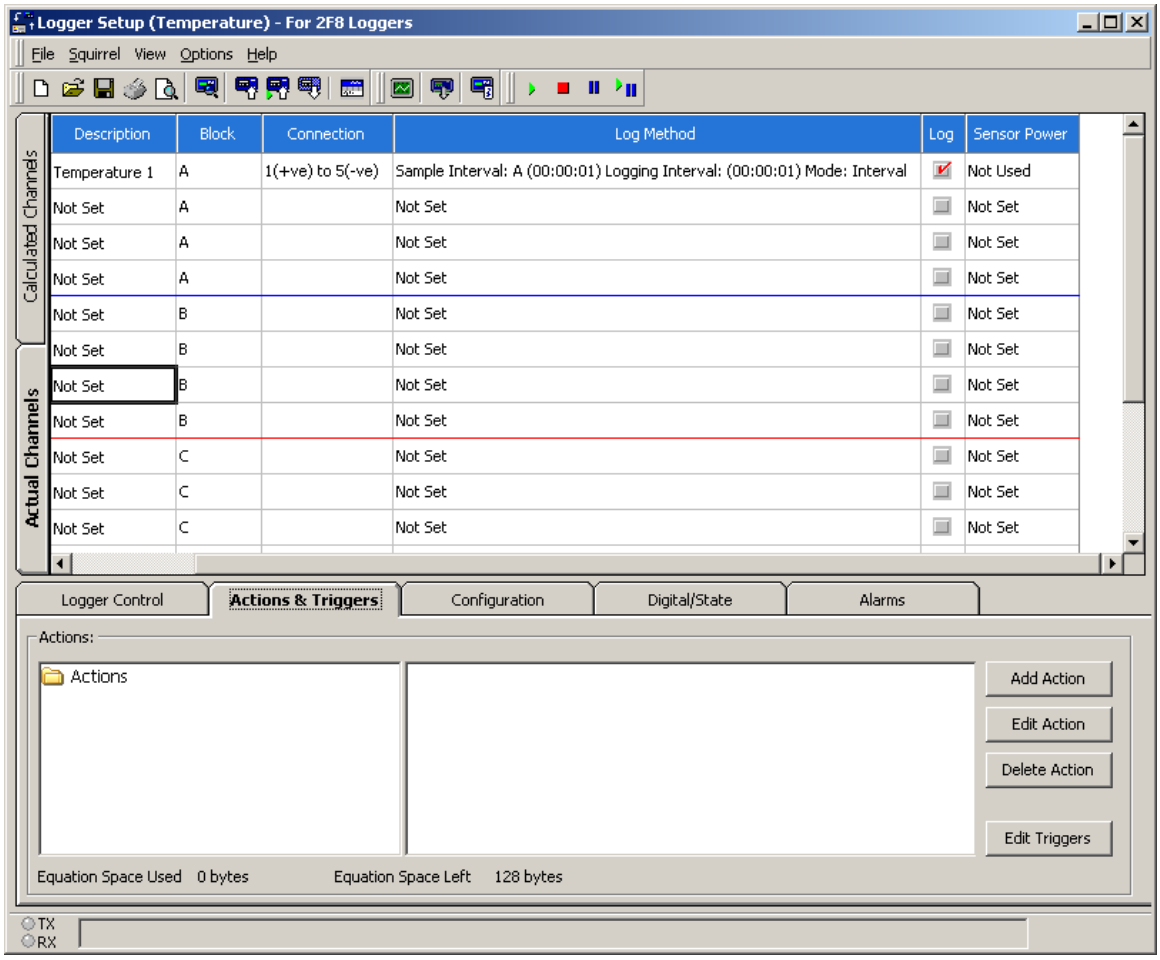
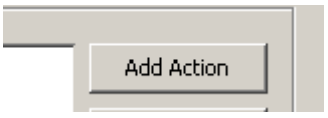
Setting a Start and Stop logging action

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

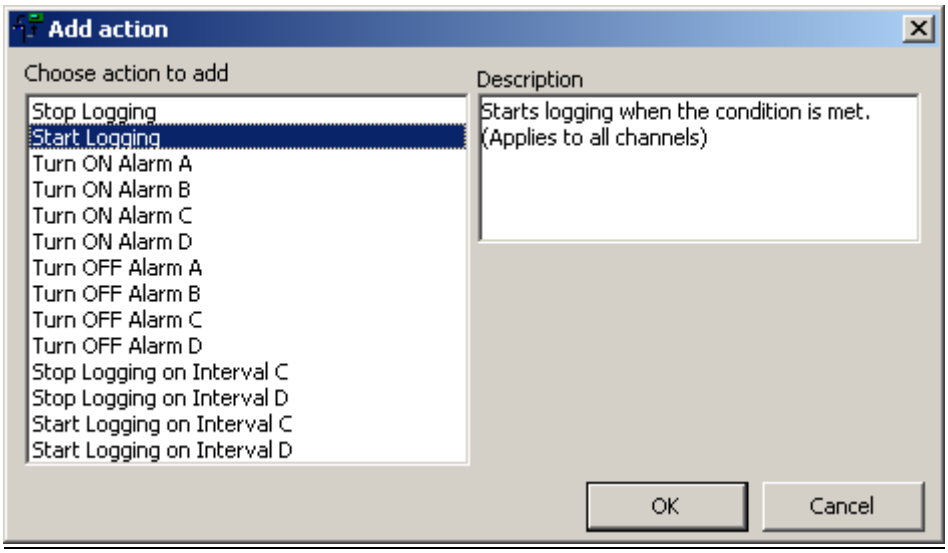
In Setup Screen Click on the *Actions & Triggers* tab



Click on the *Add Action* button.



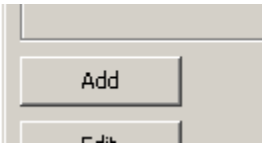
To add the start action select the Start Logging action



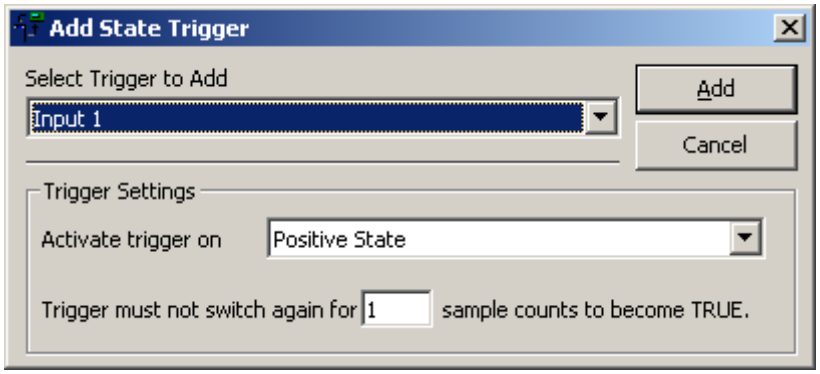
Click on the *OK* button.

Select the State tab

And click on the *Add* button.

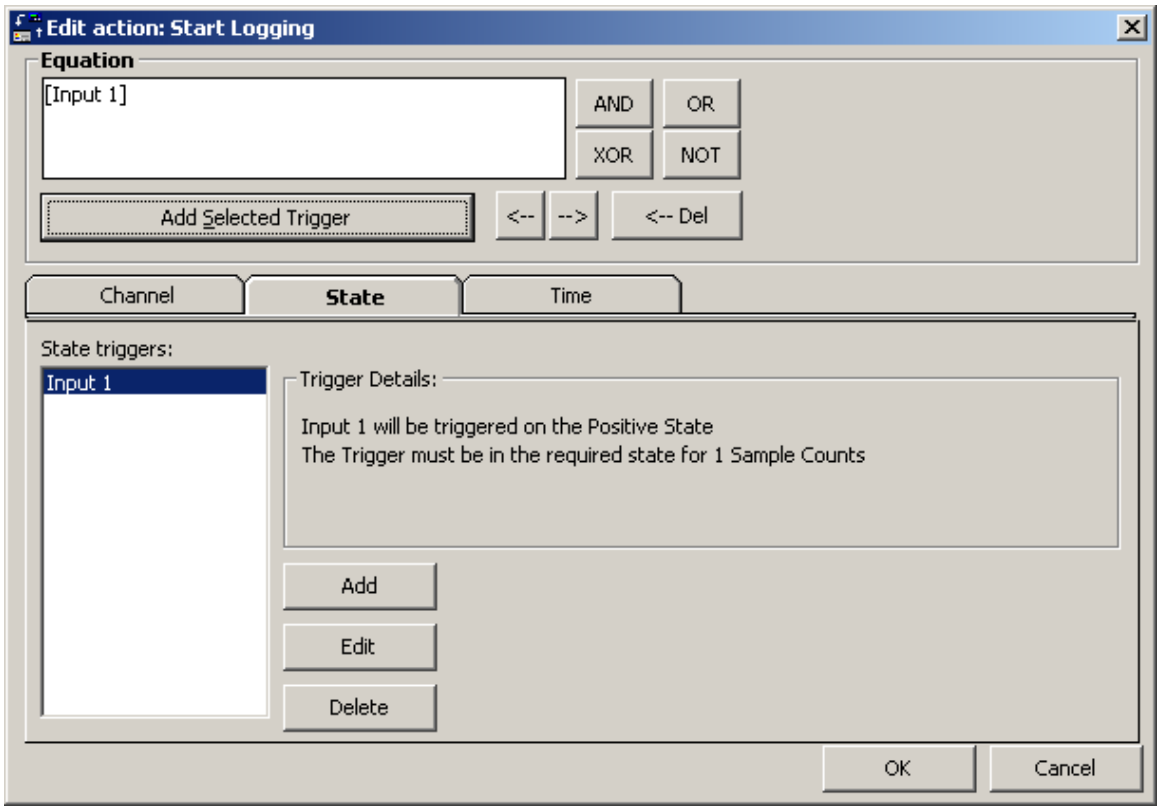


Select input 1

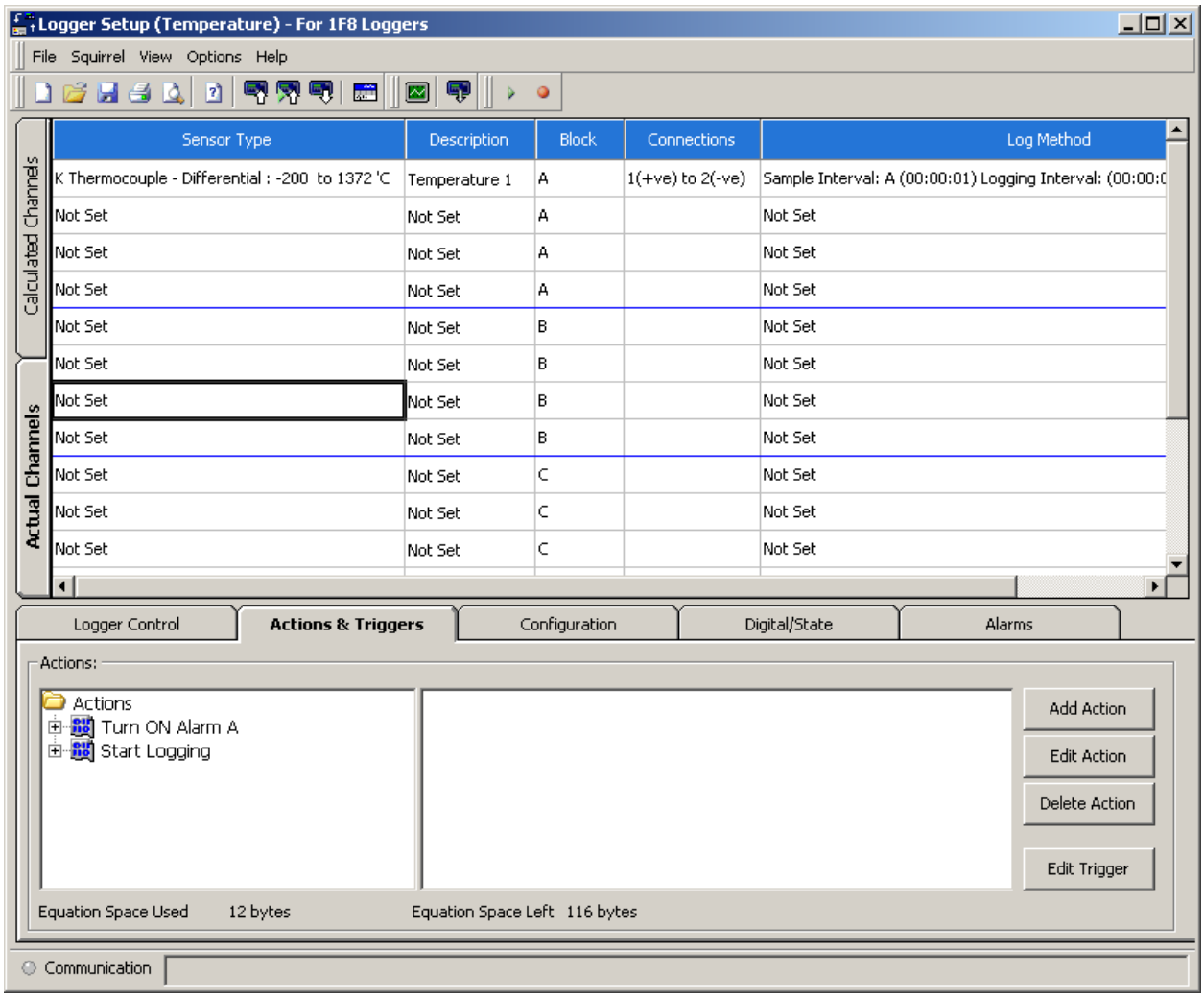


Then click on the *Add* button.

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



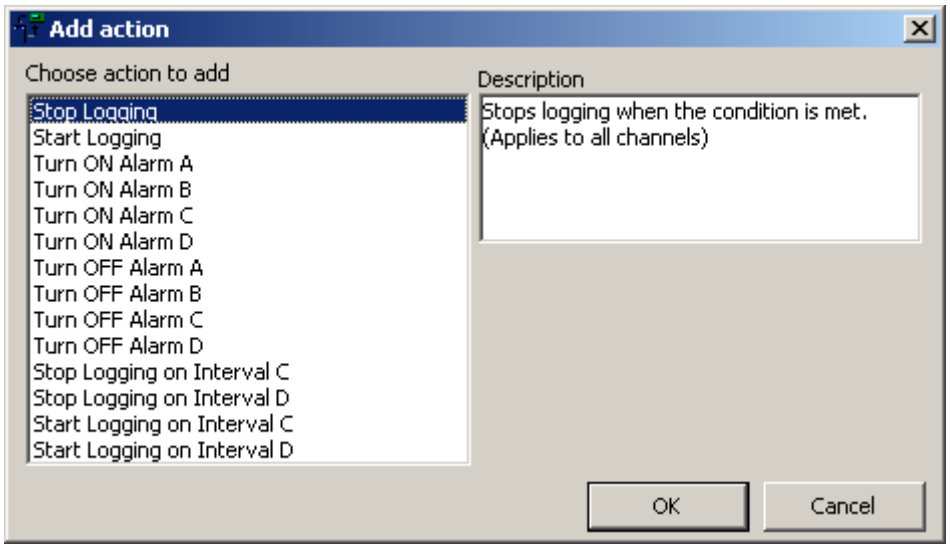
Click on the *OK* button.



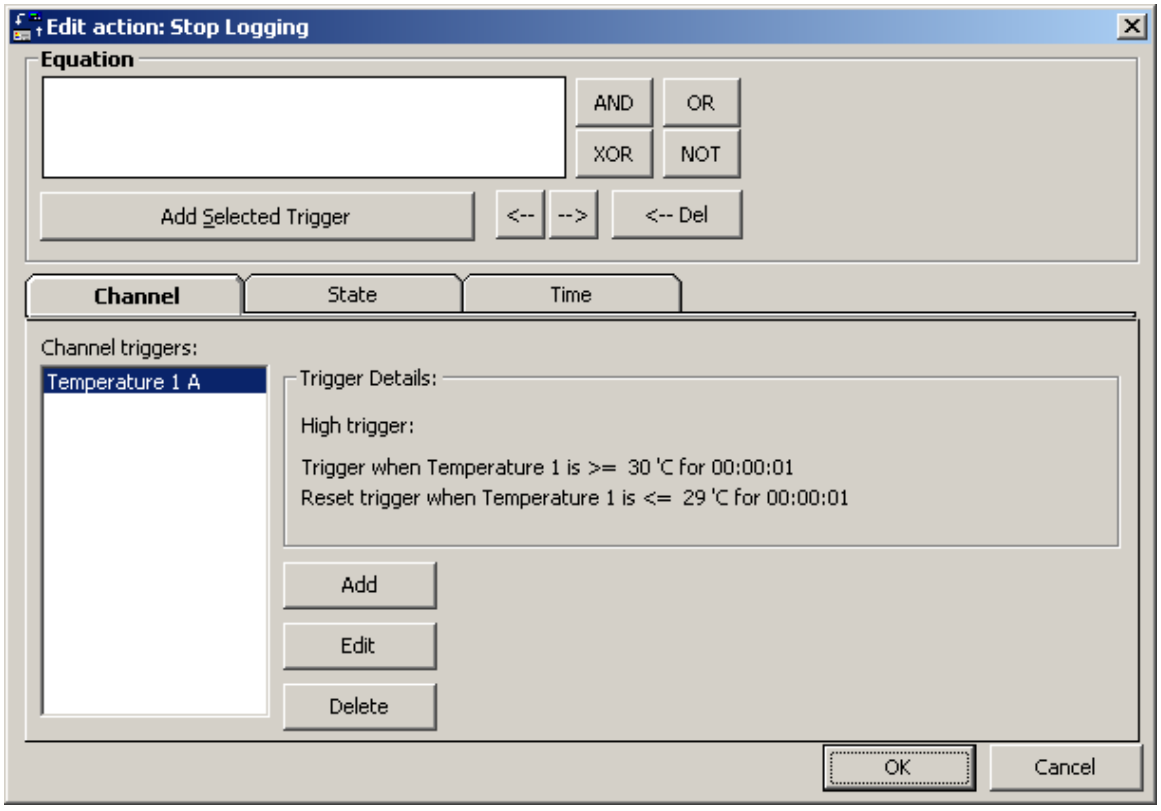
Now you need to add the stop logging action.

Click on the *Add Action* button.

Select the Stop Logging action.

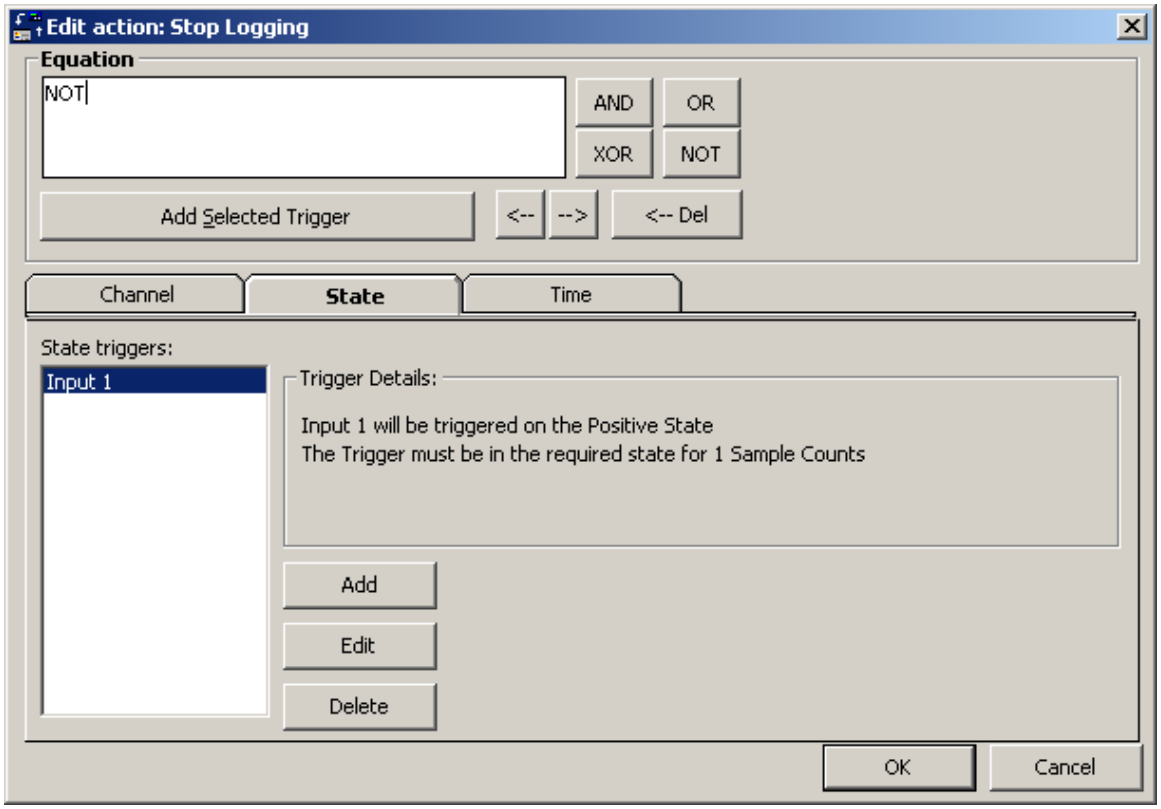


Click on the *OK* button.

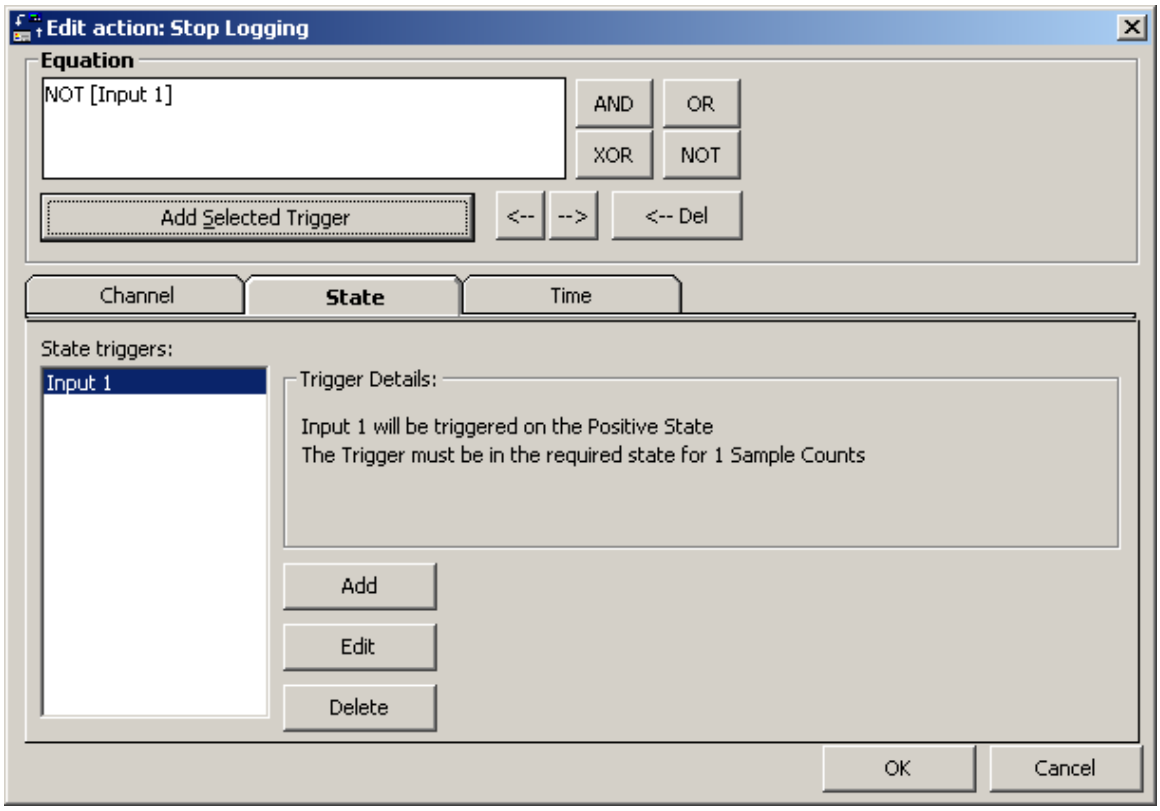


Select the State tab.

And click on the *NOT* button.

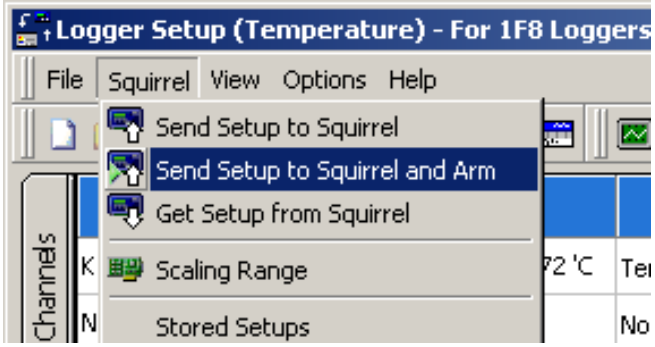


Click on the *Add Selected Trigger* button.



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.



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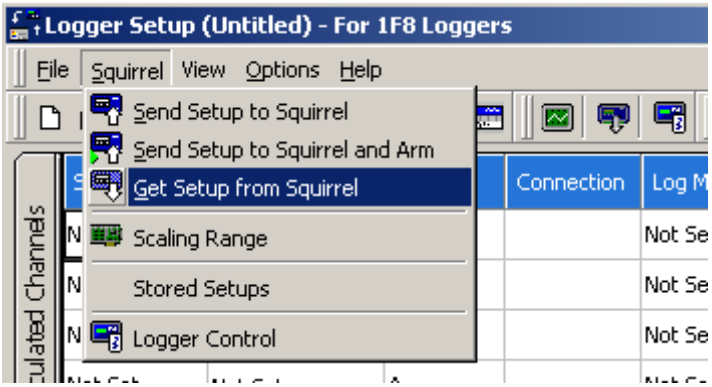
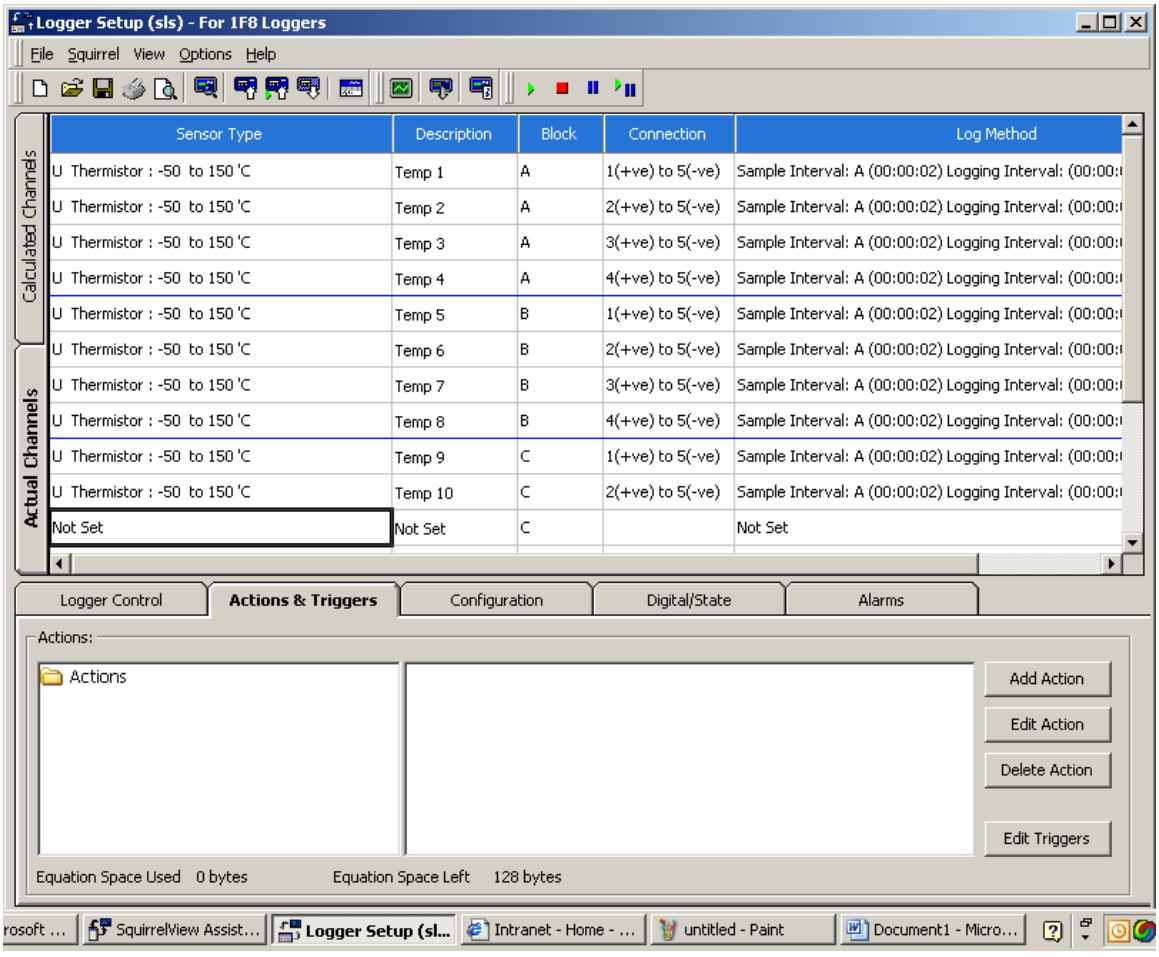
Setting an Alarm Action

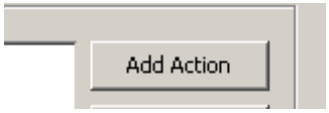
In Logger Setup Screen Get Setup from Squirrel



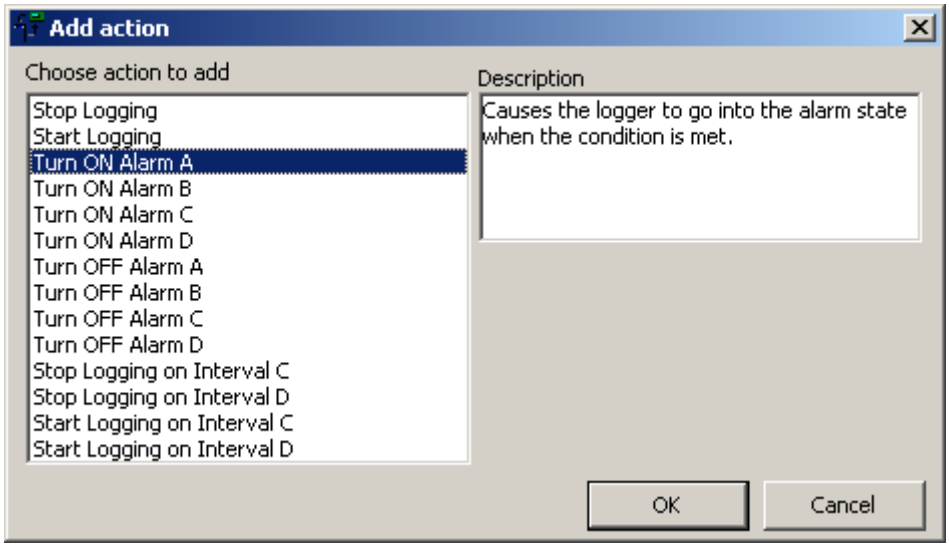
Click on Actions & Triggers tab



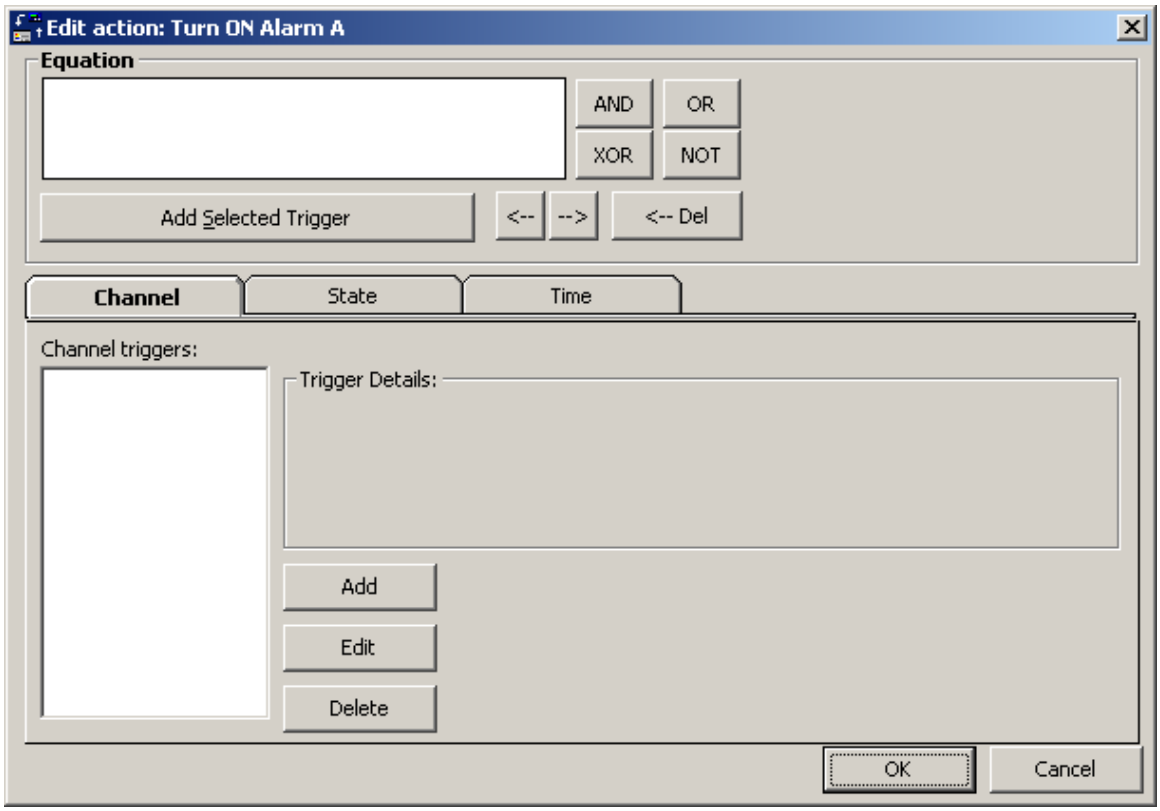
Click on the *Add Action* Button



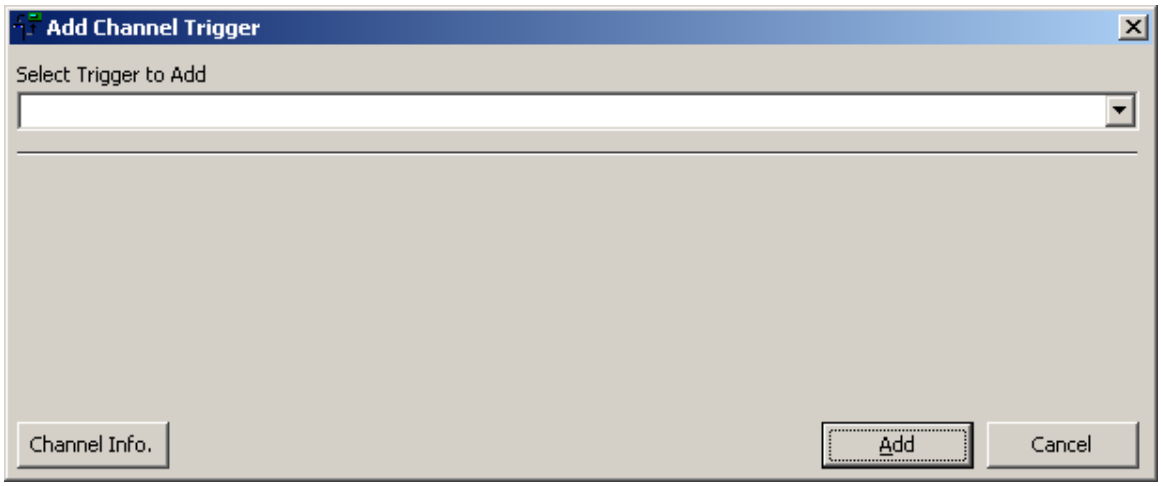
Select an alarm to turn on and Click on the *OK* button



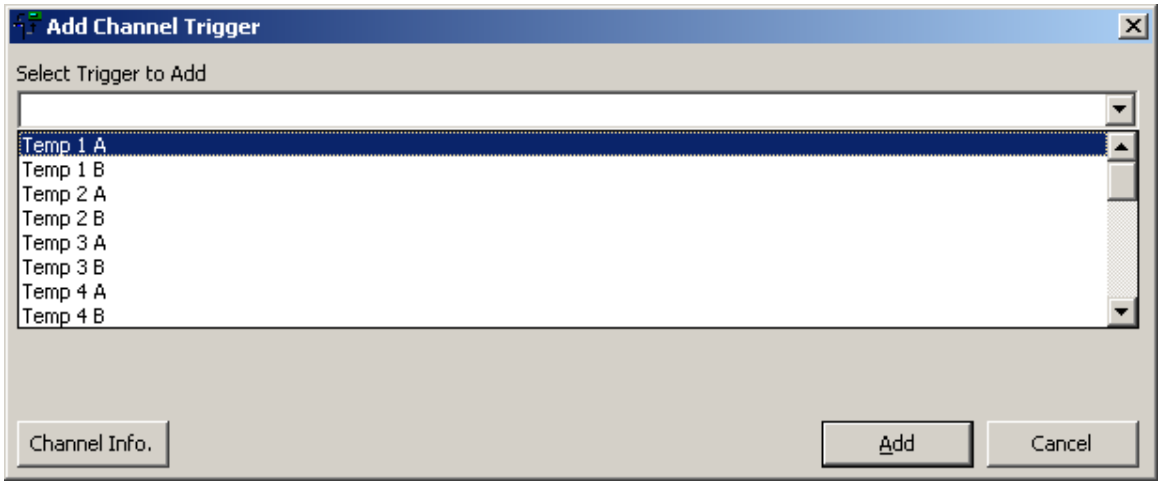
Click on the *Add* button



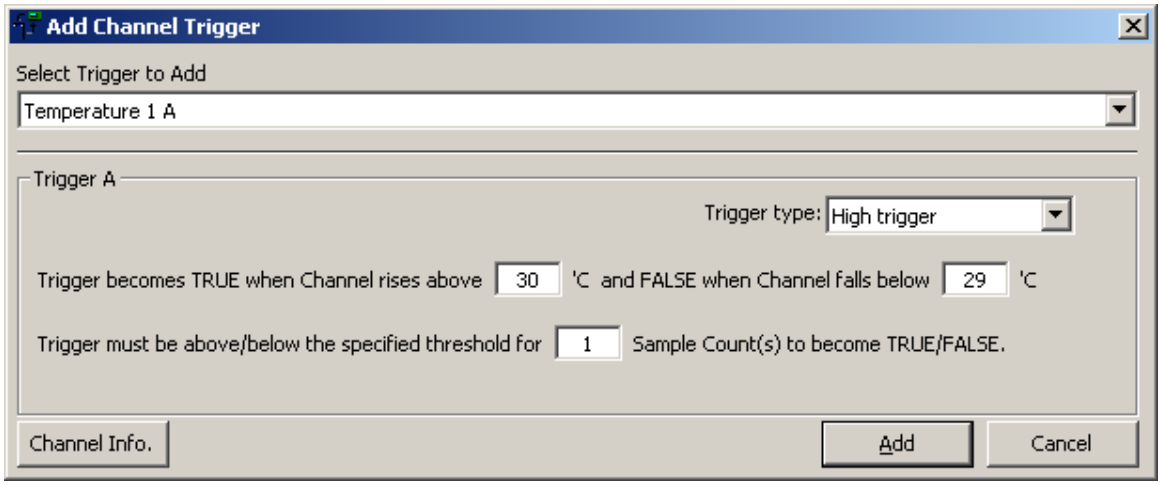
Enter the drop down box



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

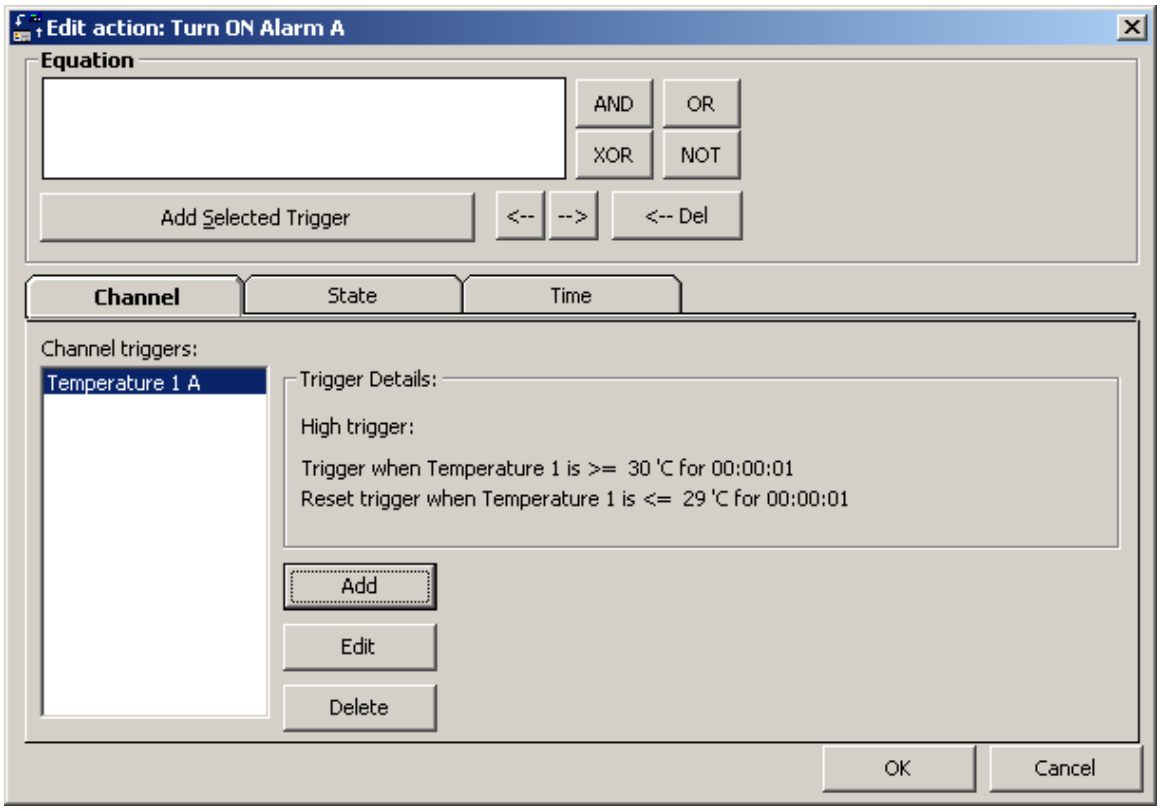


Choose the Trigger Type and enter the values required for the alarm

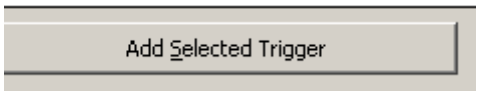


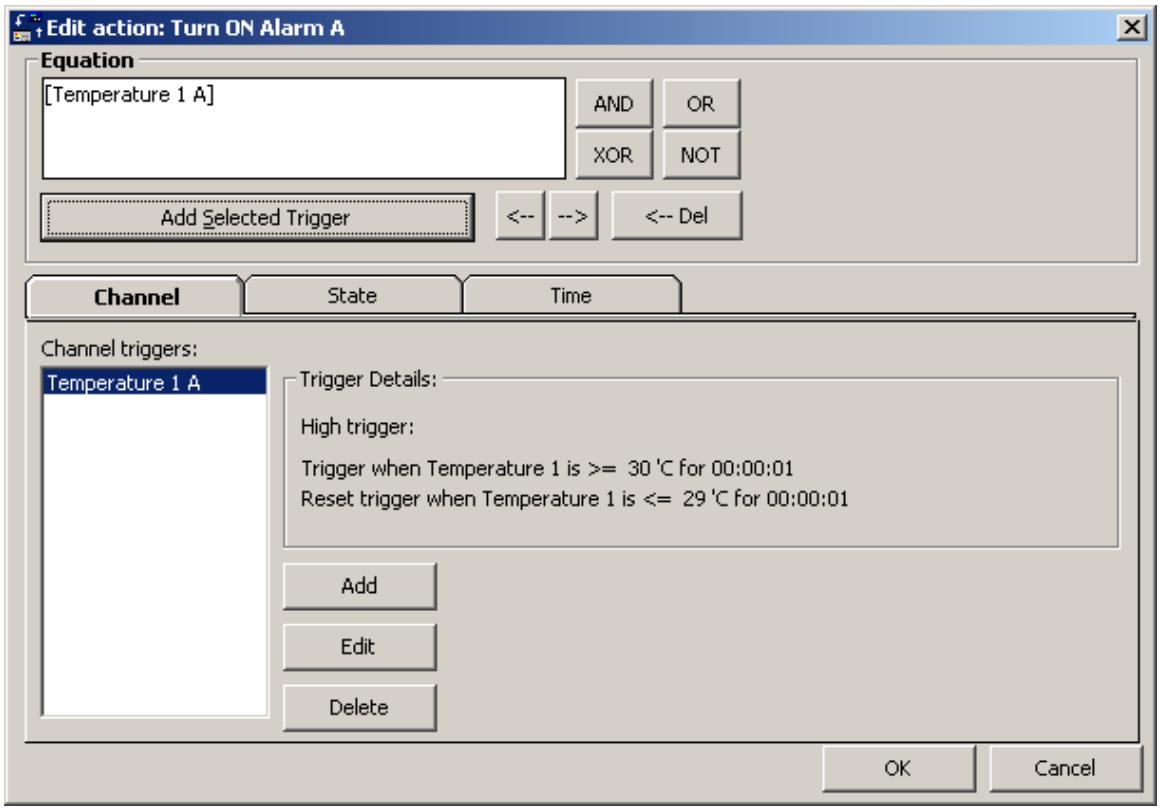
Click on the *Add* button

Highlight the Channel trigger to be added to the equation



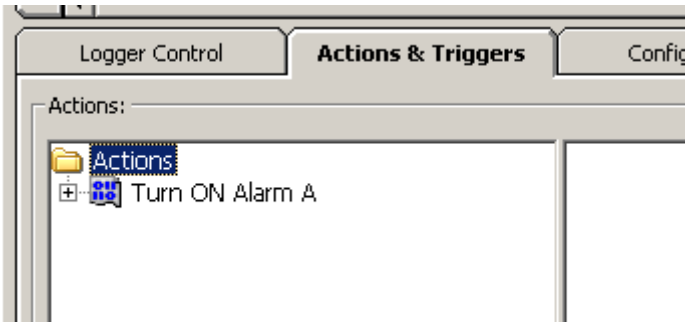
Click on the *Add Selected Trigger* button





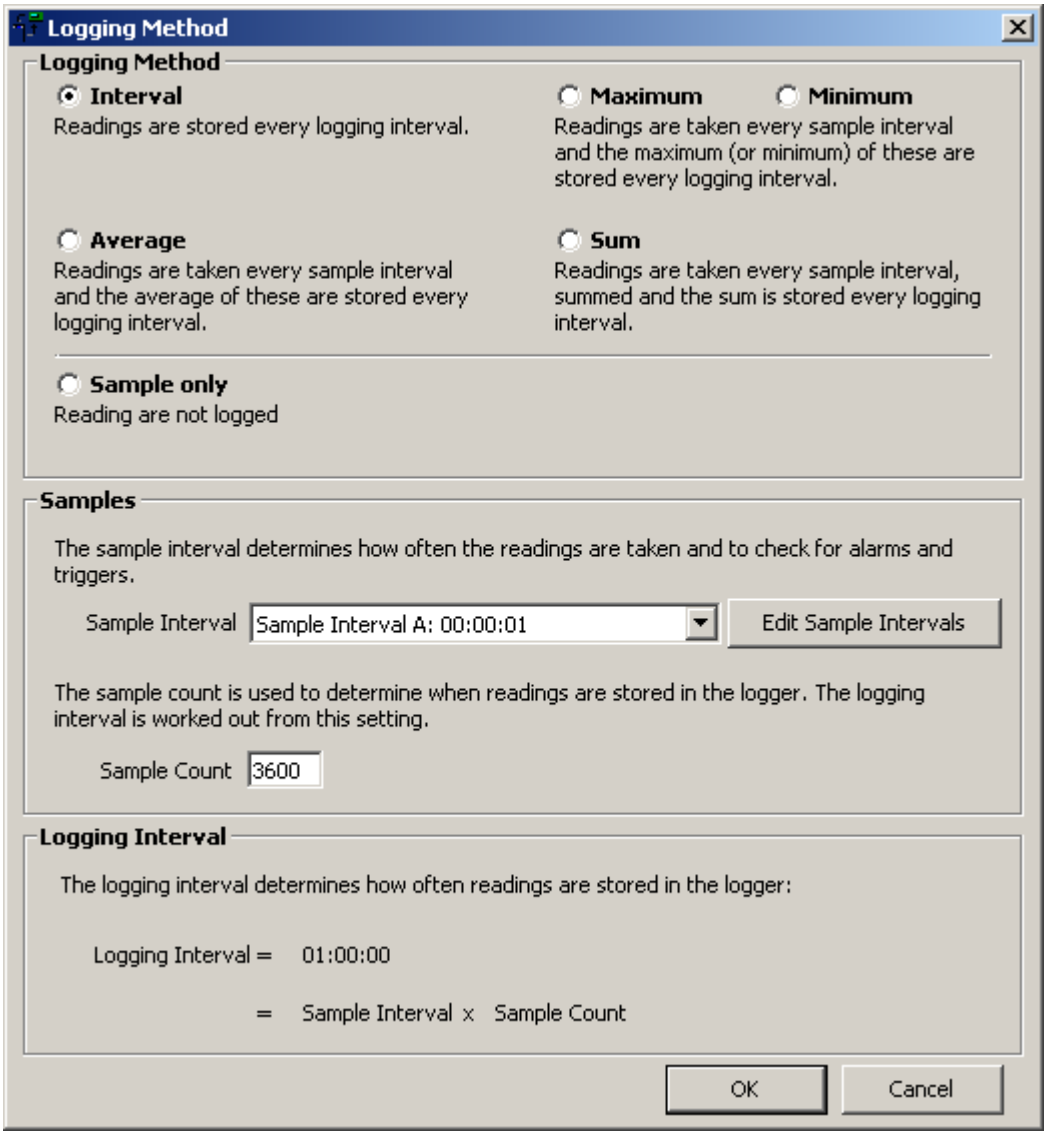
Click on the *OK* button

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.



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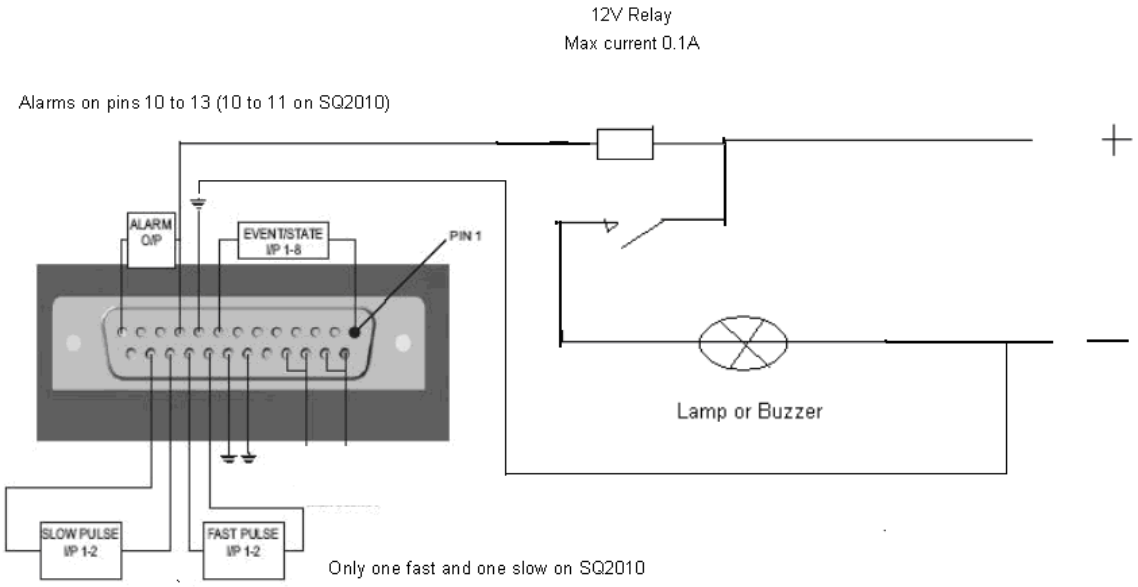
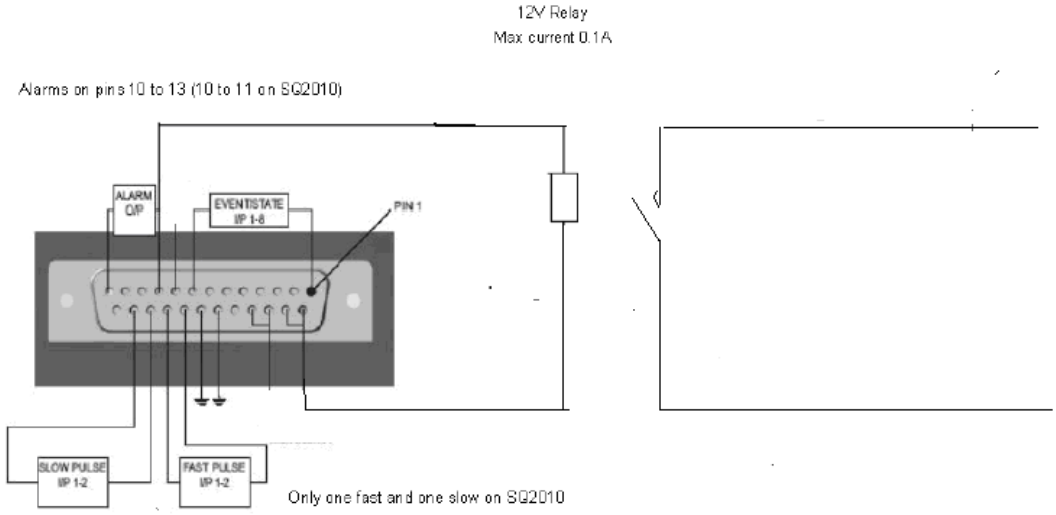
Sample Alarm Circuit

Below are a couple of example alarm circuits





RS relay 211-1269

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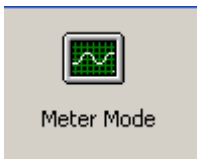
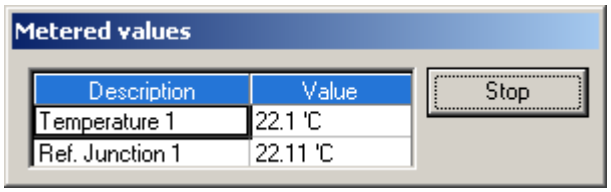
Meter Mode

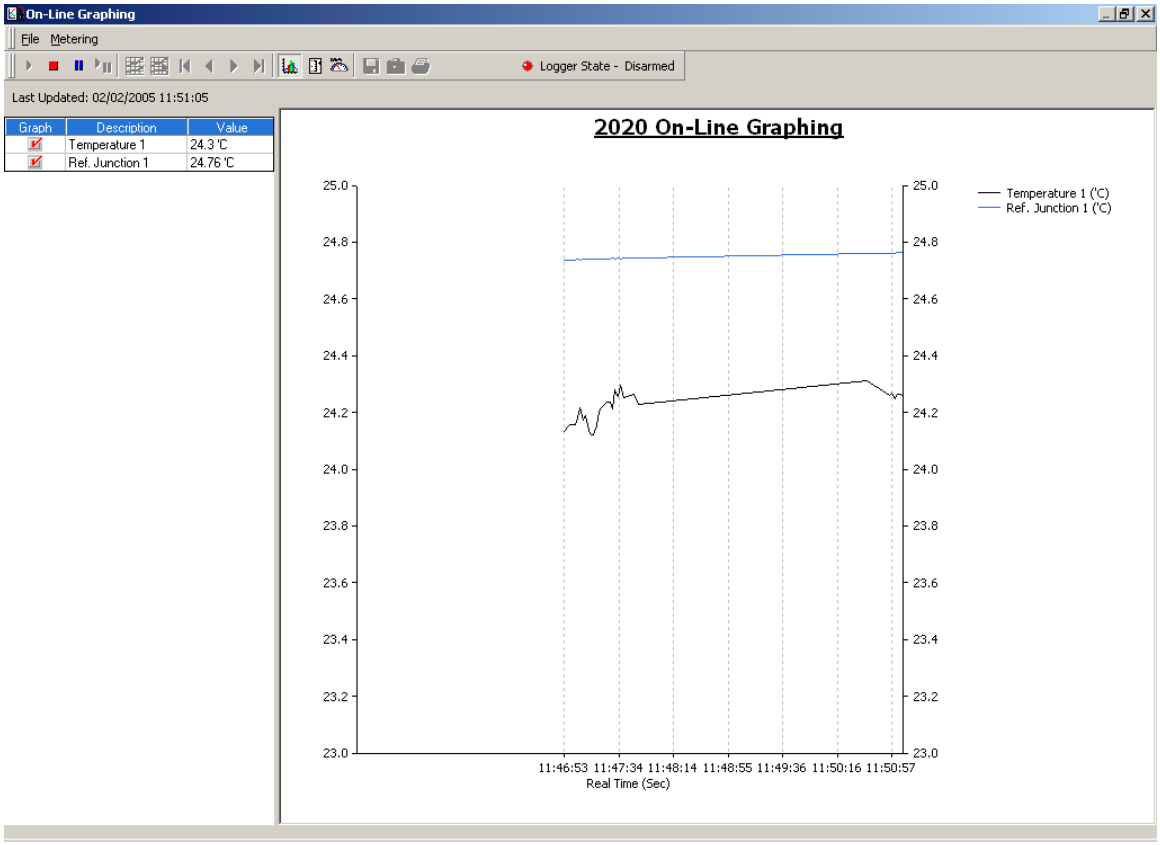
Once the channels have been set and the set file sent to the logger, click on the *Meter Mode* button on the front screen of the SquirrelView Assistant.



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

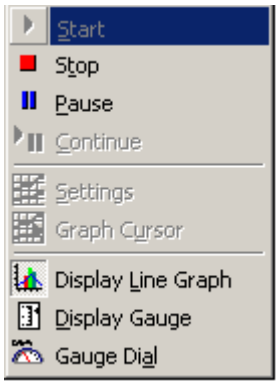


To see Online graphing, SquirrelView Plus software is required

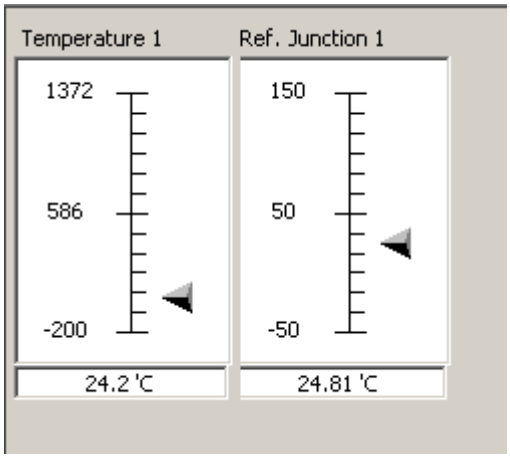


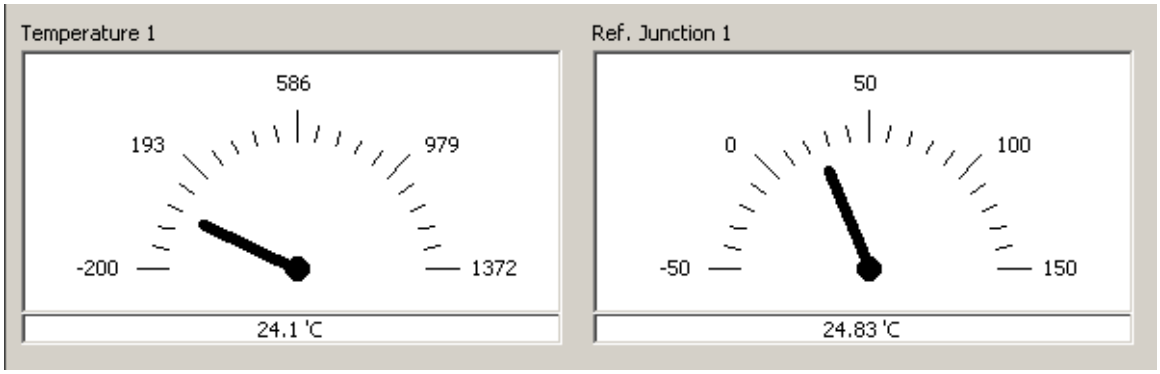
The graph is displayed with automatic scaling.

Right click on the graph to change display type

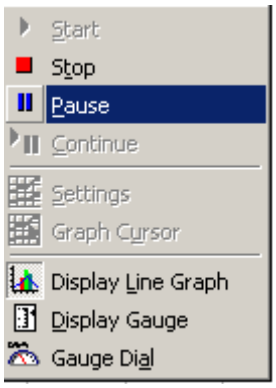


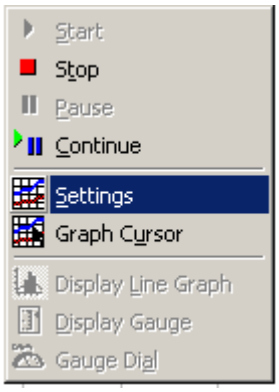
As well as a line graph a display gauge and a Dial gauge can be chosen.

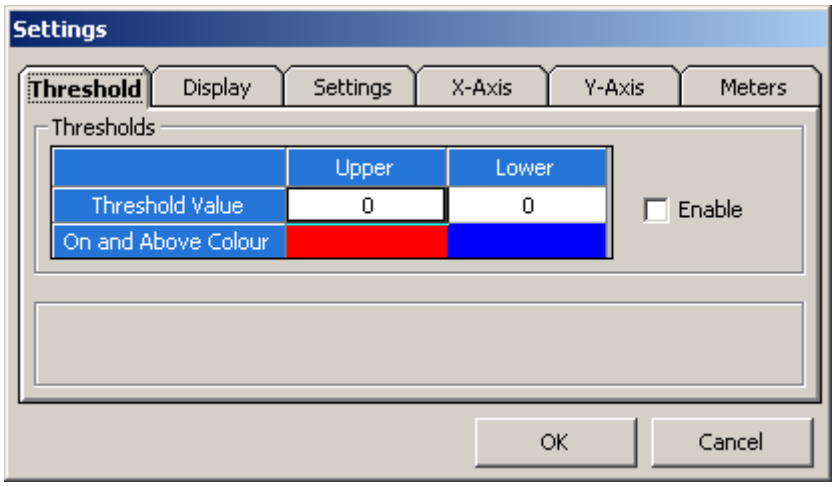


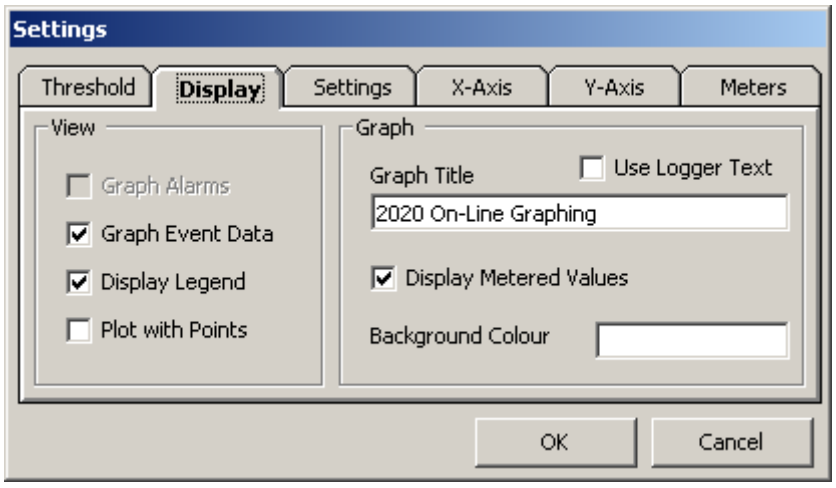


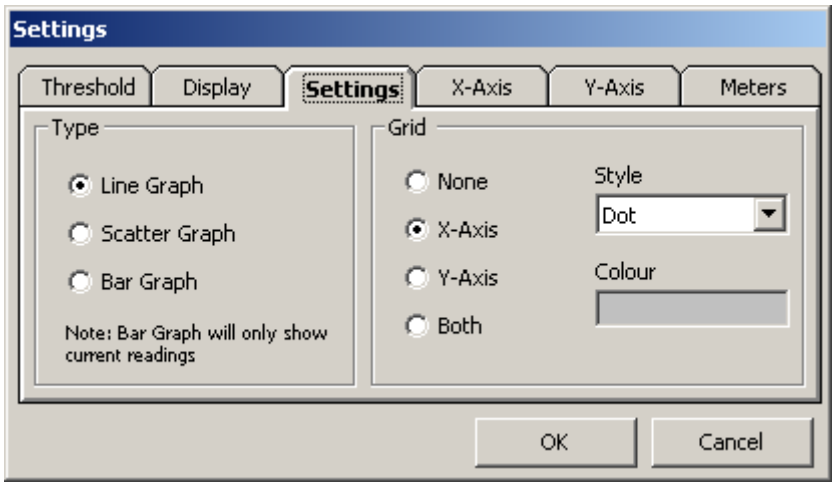
Pause to change settings

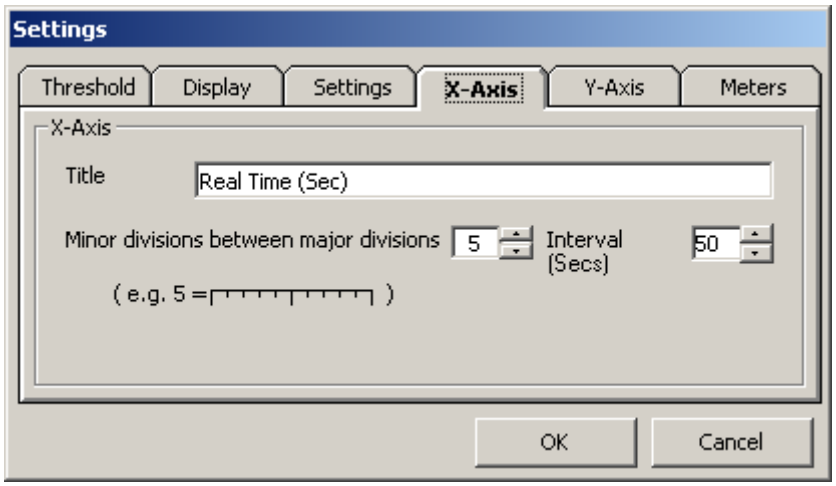


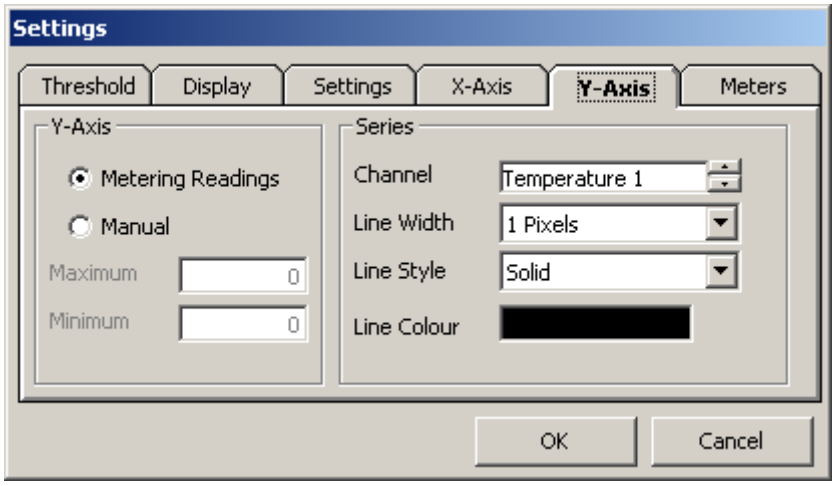


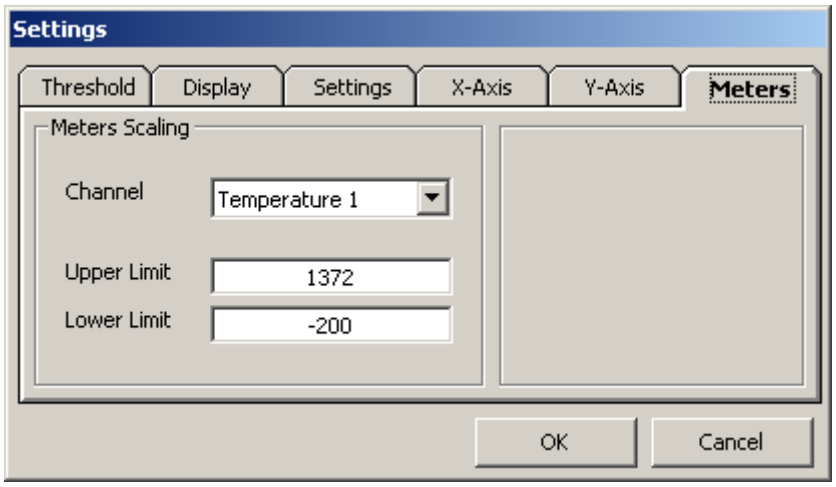





Settings
Threshold
Display
Settings
X-Axis
Y-Axis
Meters
Type
Line Graph
Scatter Graph
Bar Graph
Note: Bar Graph will only show current readings
Grid
None
X-Axis
Y-Axis
Both
Style
Dot
Colour
OK
Cancel


Settings
Threshold
Display
Settings
X-Axis
Y-Axis
Meters
X-Axis
Title
Real Time (Sec)
Minor divisions between major divisions
5
Interval (Secs)
50
(e.g. 5 =┌'''┬'''┐)
OK
Cancel


Settings
Threshold
Display
Settings
X-Axis
Y-Axis
Meters
Y-Axis
Metering Readings
Manual
Maximum
0
Minimum
0
Series
Channel
Temperature 1
Line Width
1 Pixels
Line Style
Solid
Line Colour
OK
Cancel



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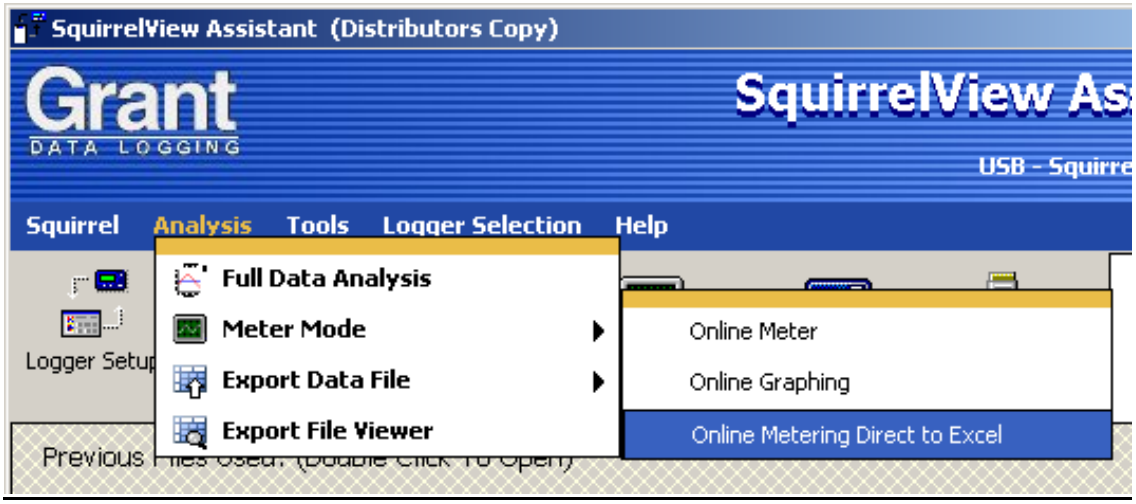
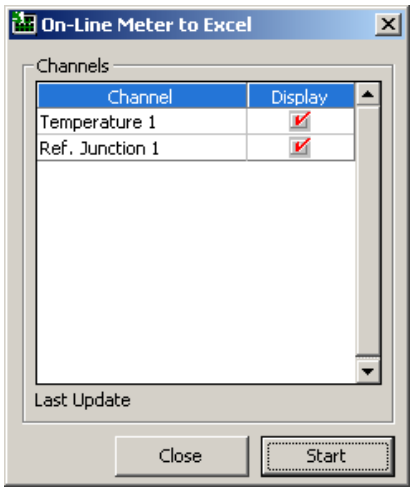
Online Metering Direct to Excel



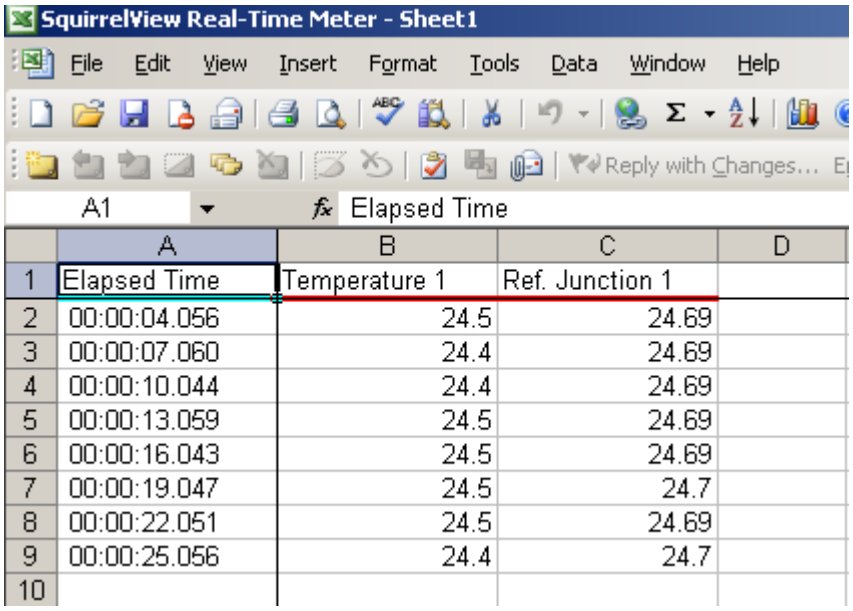
This metering function collects data values from selected setup channels in the logger, and places them into an Excel spreadsheet.

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.



	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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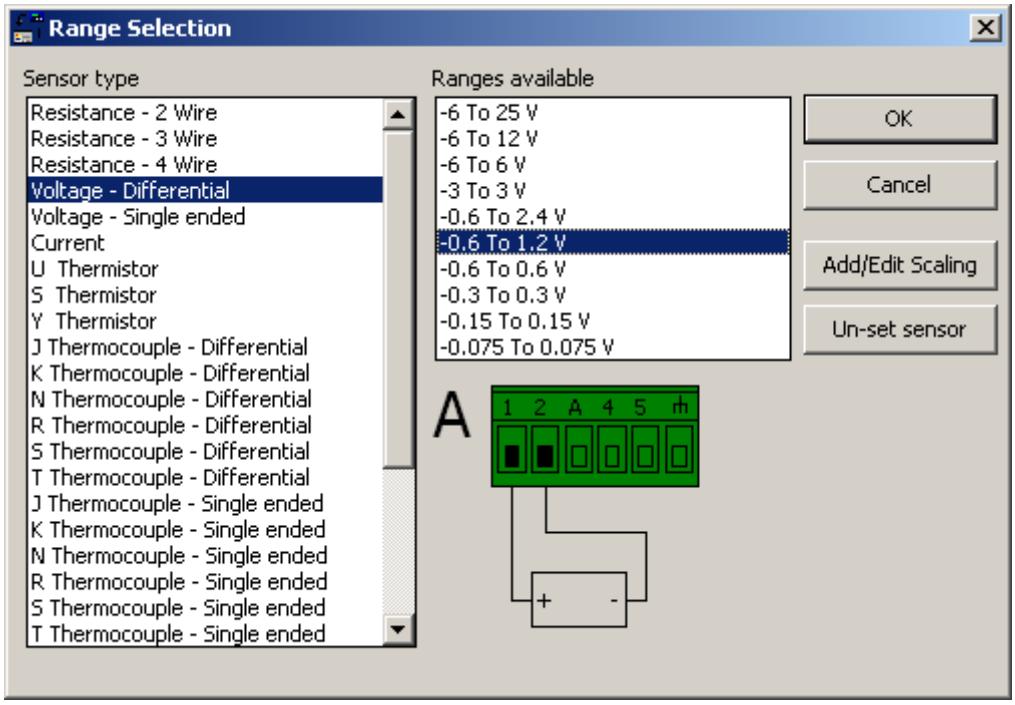
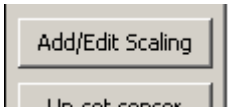
Engineering Units

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.

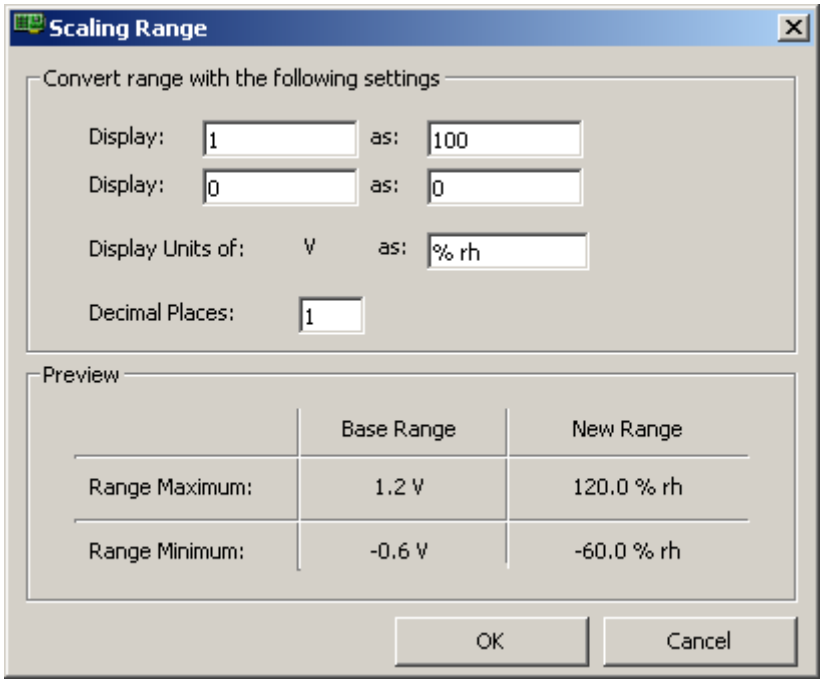


Click on the *Add/Edit Scaling* button.

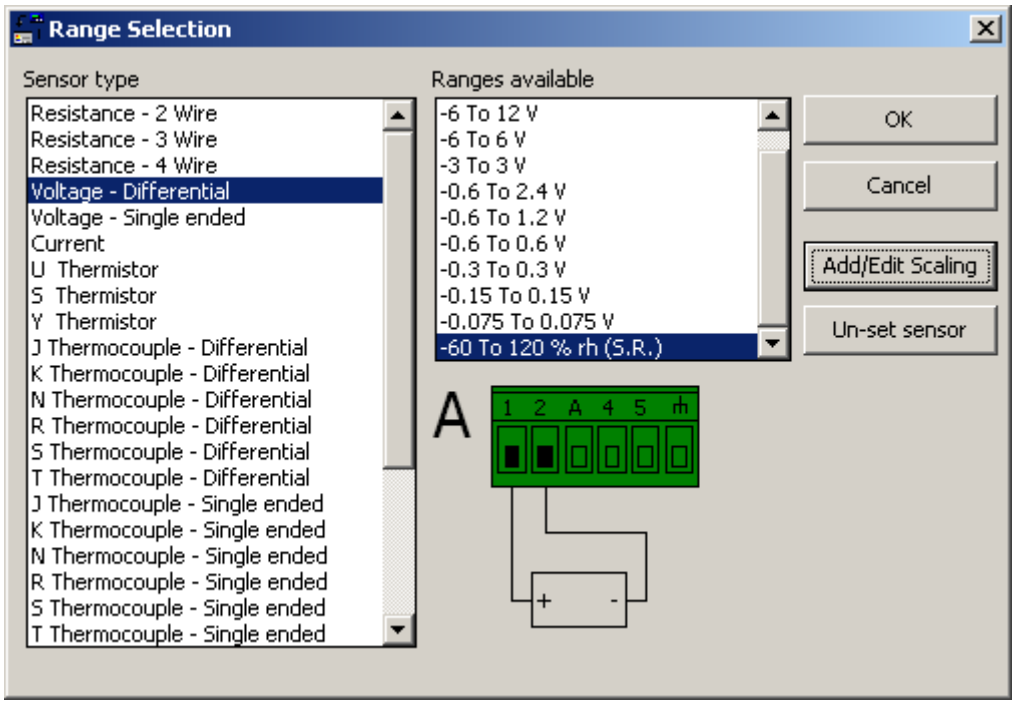


Set display 1 as: 100 and 0 as: 0
Units as %rh
Realistic number of decimal places

The logger will scale the whole range which is shown below

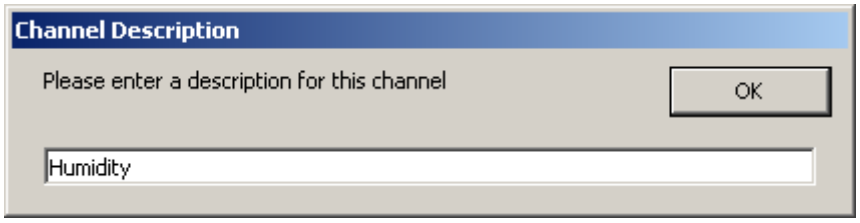


Click on the *OK* button.

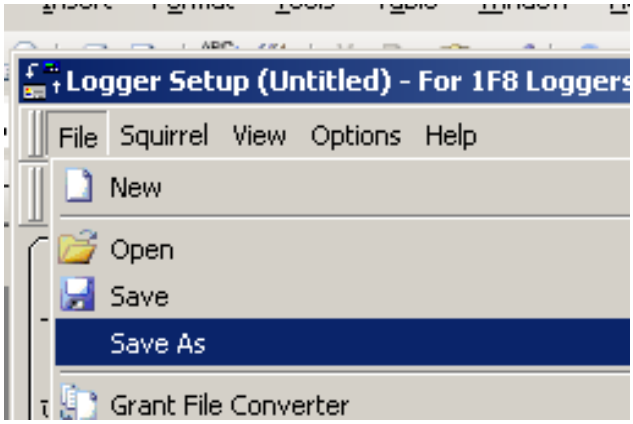


Select scaled range (SR) and click on the *OK* button.

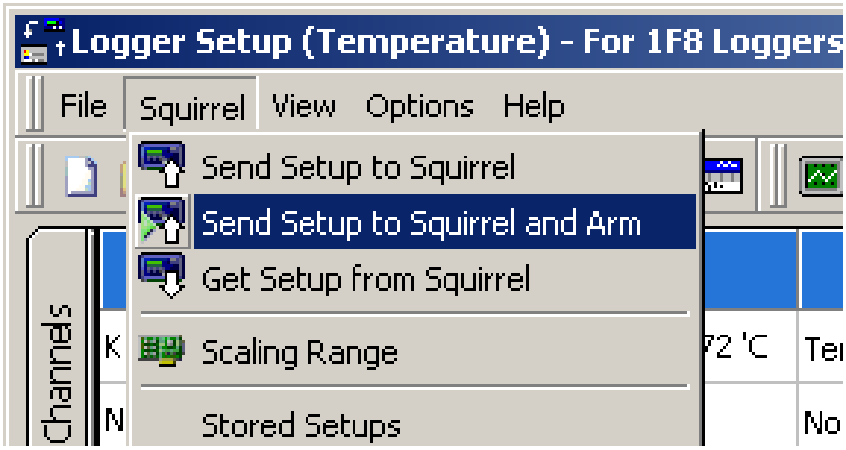
Enter a description for the channel.



Save the setup



Send the setup to logger and Arm if required



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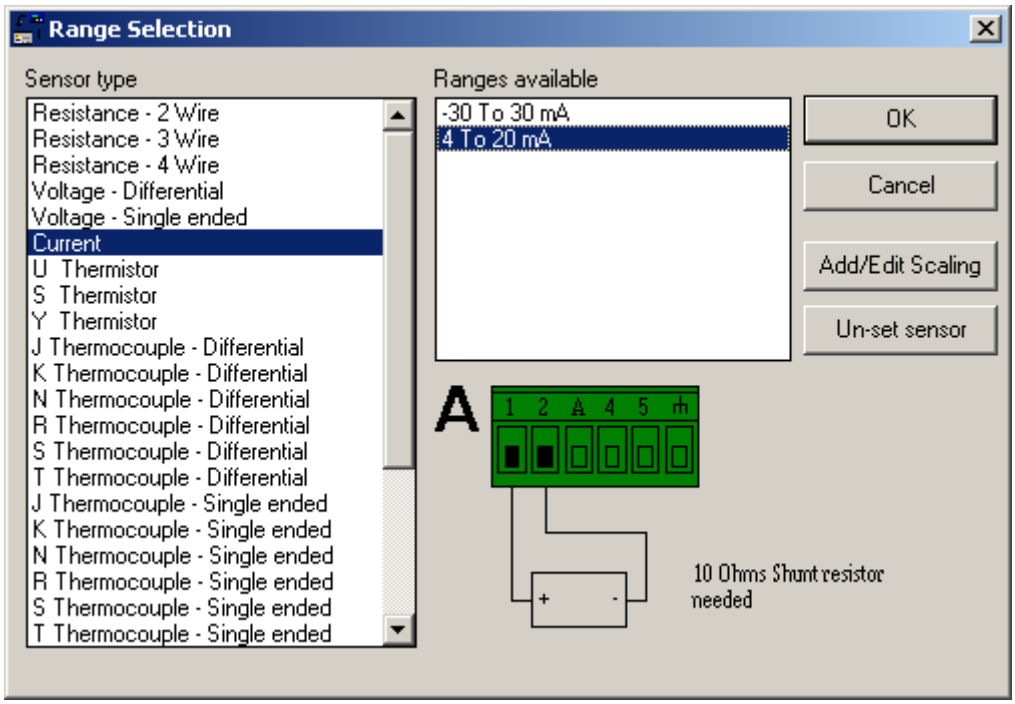
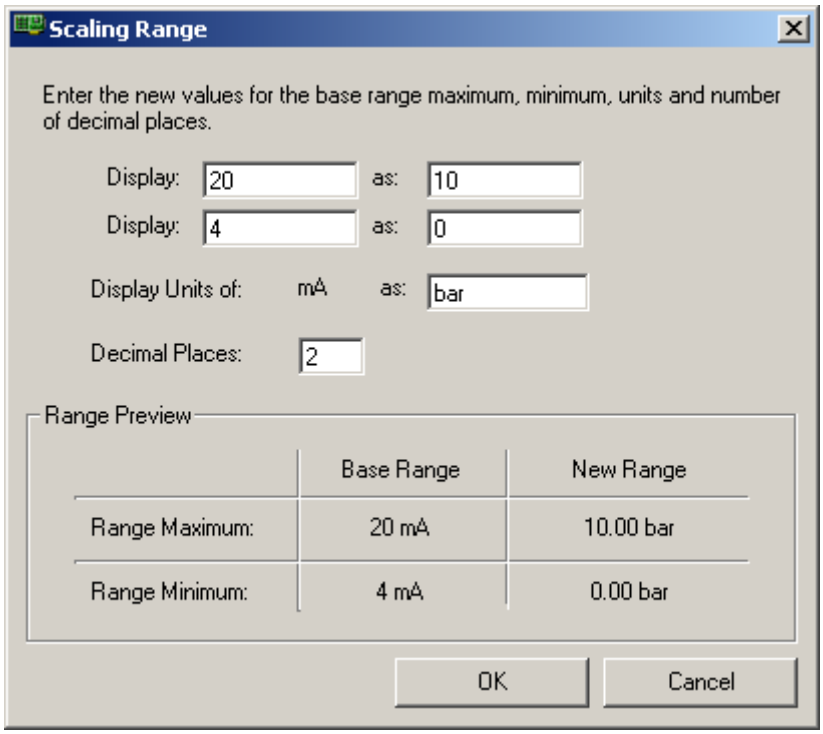
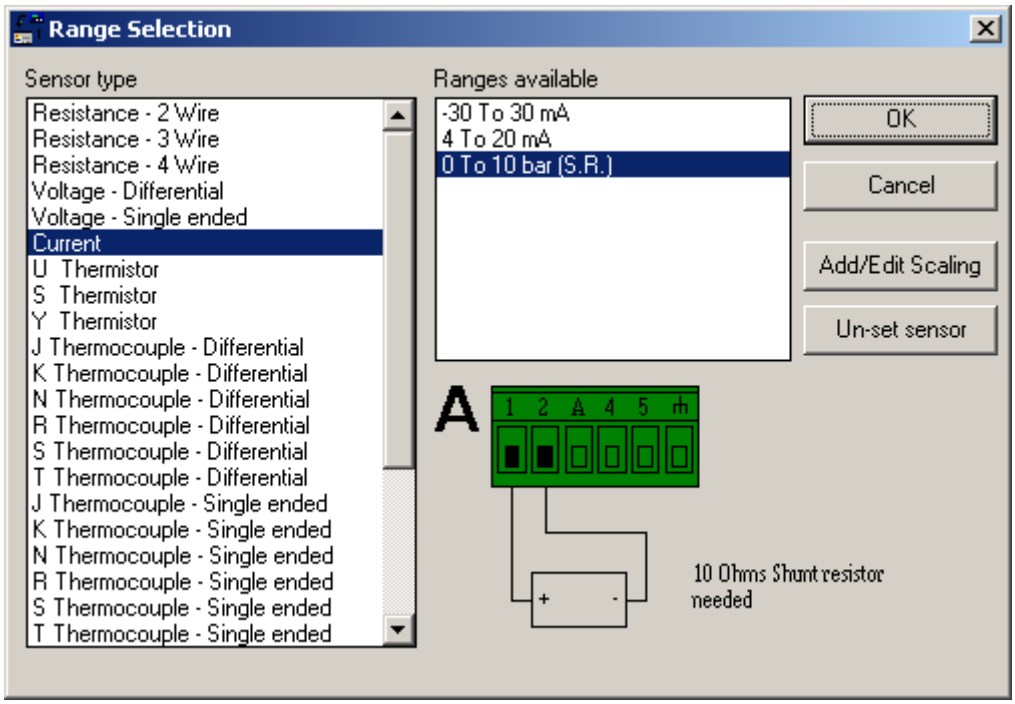
4 to 20 mA Connections

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.

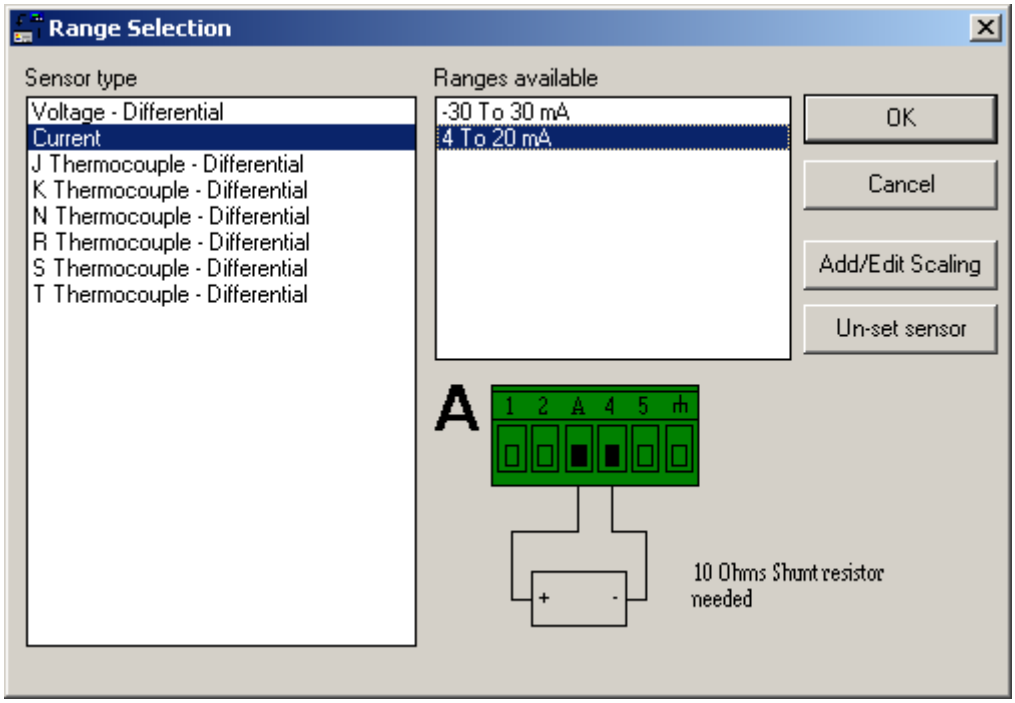


If engineering units are required click on Add/Edit Scaling button
The example below shows input scaled to log as 0 to 10 bar pressure





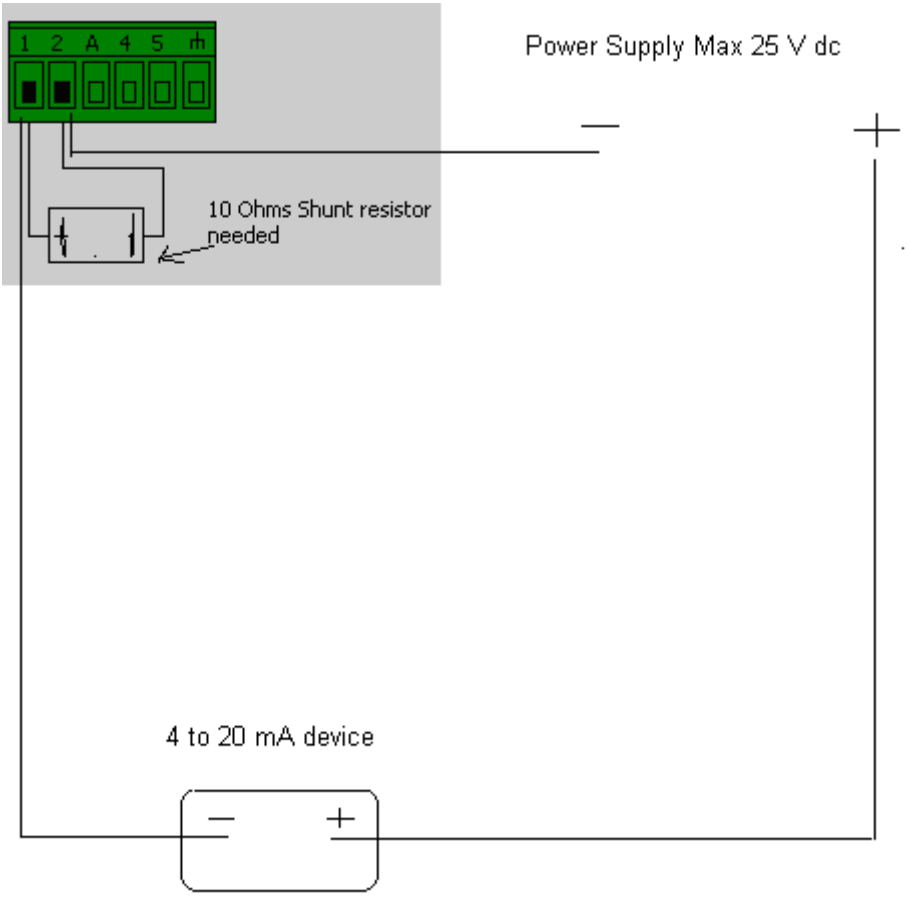
For next sensor (Up to two sensors can be connected to each block)
Double click in next valid channel sensor type column select range as below add scaling if required then click on the *OK* button.



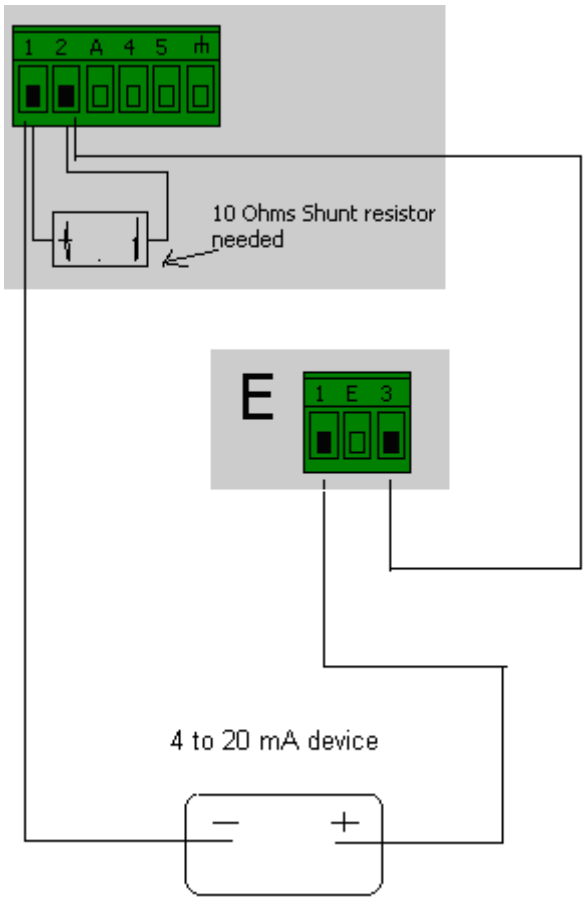
If more sensors are required, repeat above procedure with next channel on the next input block
Save and send set up to logger

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.



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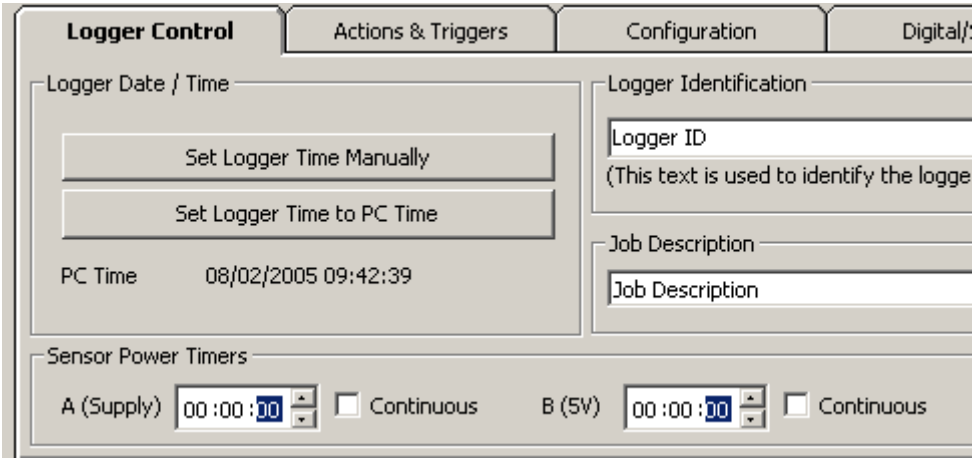
Sensor Power Supply

The choice of power is

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

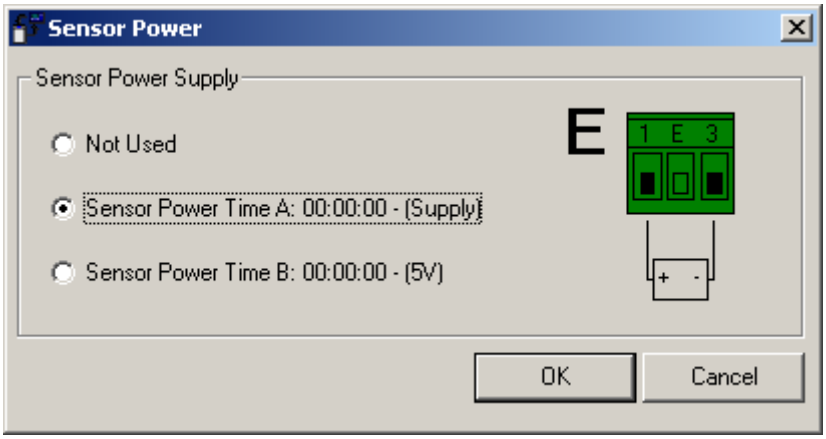
B - 5V (regulated output from logger, 50mA max)

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	☑	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

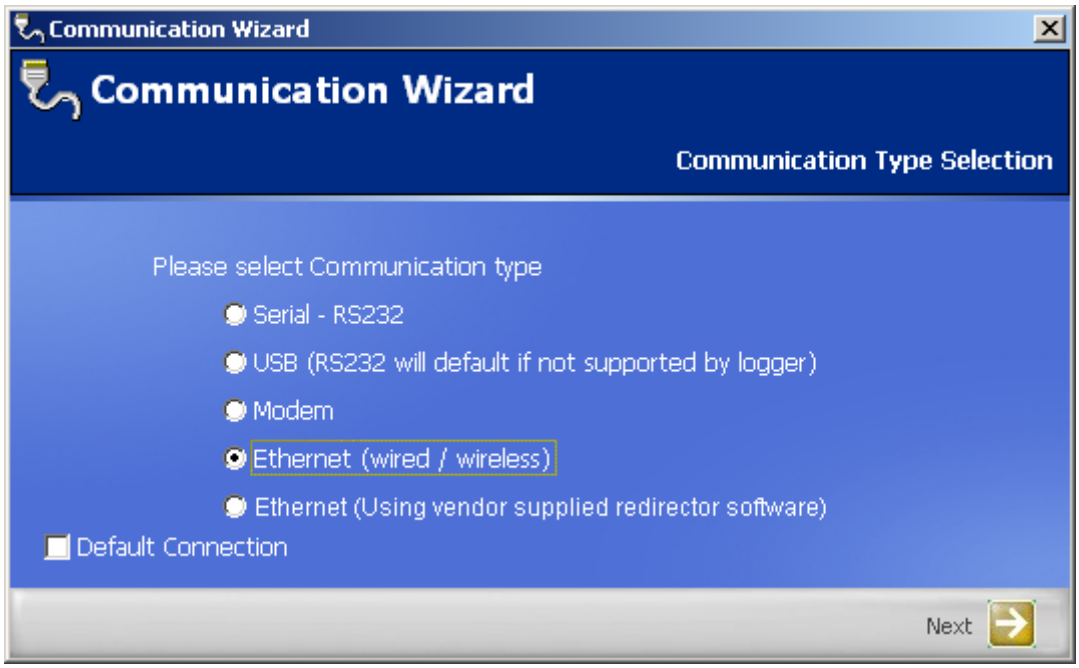
For the SQ2020/SQ2040 to communicate using the Inbuilt Ethernet connection, the logger requires to be powered using an external power supply.

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

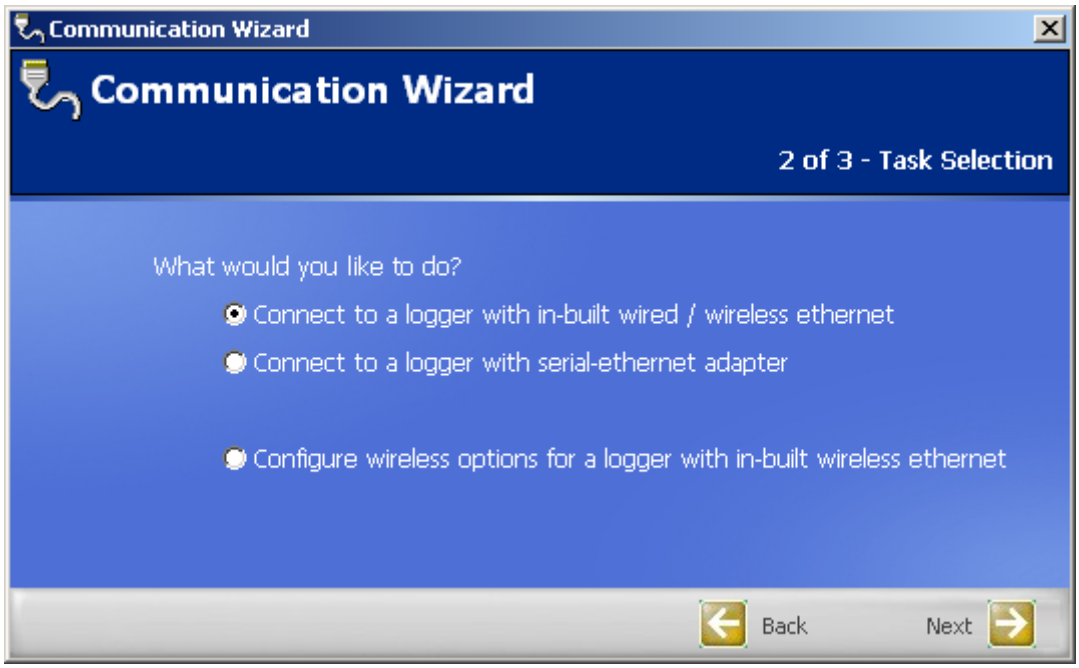
Once the SQ20xx Ethernet has been setup the IP address needs to be set in the Squirrelview software.

In the Squirrelview Assistant click on *Communications Wizard*

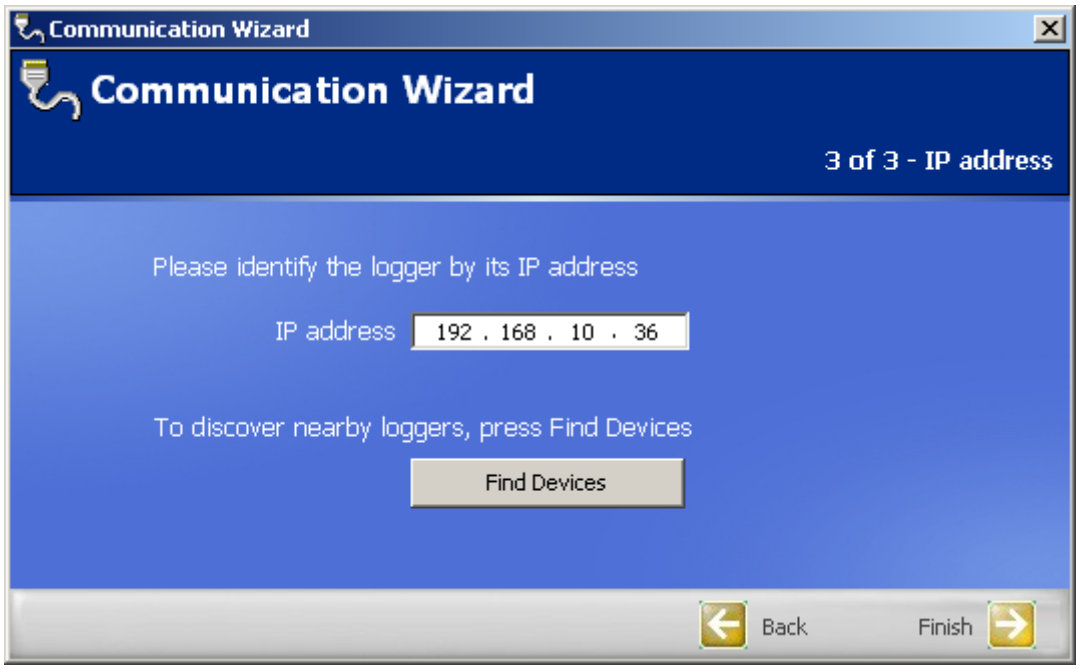
Click on the *Ethernet* communication type and then click the *Next* arrow



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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