Manual

Four Channel Relay Control Module

Model 6525B

Revision History

File name / Revision	Date	Authors & Change Details	Checked/ Approved
Previous version BX	2004	RS/ JH	MS
Unidata Manual - 6525 4 Channel Relay Control Module User Manual Issue 2.0	2007	AB/CB/JH/MS/KC	MS
Unidata Manual - 6525 4 Channel Relay Control Module User Manual Issue 3.0	11 09 13	MP	MS
Unidata Manual - 6525B 4 Channel Relay Control Module Issue 4.0.docx	03 06 14	IM/CB Update	MS

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1.0   INTRODUCTION

The 4-Channel Relay Control Module 6525B is an interface designed to allow the datalogger to control four magnetically latched relays.

This permits a datalogger to be used as a controller of four external devices through the four potential free contacts.

2.0   CONTROLLING THE RELAYS

The 4 Channel Relay Control Module is controlled by the datalogger. The Logger provides power to the module as well as controlling the relays.

The scan synchronised power source provides power to the module. This source switches on with every scan.

Each relay is controlled by command from the datalogger using one of the high speed bi-directional serial ports. The commands sent from logger to 6525B module tells the module which relay(s) to activate. These commands are first interpreted by the module, then implemented when the logger sends a pulse to the module.

Note: If using an NRT logger with this device please make sure that the 5V regulated switched option on the field termination strip is provided (Model 2103E-S5)

2.1   The High Speed Bi-Directional Serial Port

The High Speed Serial Port consists of a DATA line and a CLOCK line. The CLOCK enables commands sent on the serial DATA line to be interpreted correctly by the module. Each logger scan, the serial ports are read. The Sync signal is used to indicate to the remote equipment that a logger read scan is about to begin. This signal is usually used to load the serial shift register(s) in the remote equipment in preparation of being read.

The Starlogger and Prologger offer two bi-directional serial data ports,
DATA 0 and DATA 1.
CLOCK 0 should be used for DATA0 and CLOCK 1 should be used with DATA 1.

### 2.2   Programming the Relays

This section provides a simple example of how to program the relays. In some cases, the skills of an experienced programmer may be necessary.

In this example, two of the relays on the 4-Channel Relay Control Module are used to operate alarms when the water level of a river is either very high or very low. A Hydrostatic Water Depth Probe connected to a Starlogger is used to monitor water level in the river.
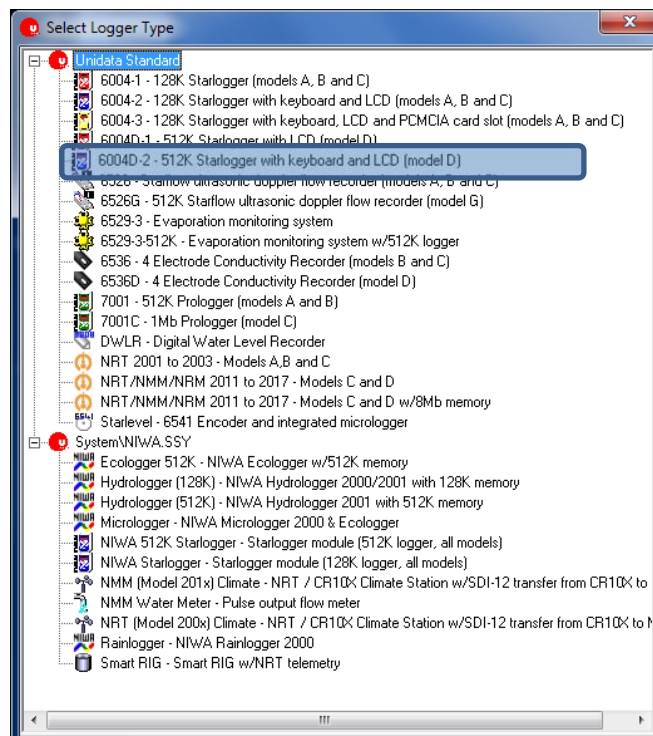
The Scheme: Every 5 seconds (scan rate) data from the probe is being sent to a Starlogger on Analog Channel 0 (a0).
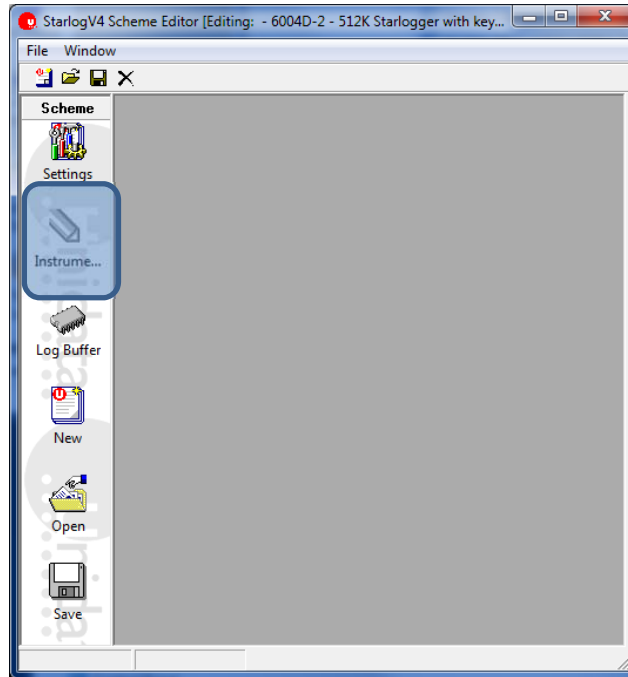
Using the Starlog V4 create a Scheme which includes the above details.

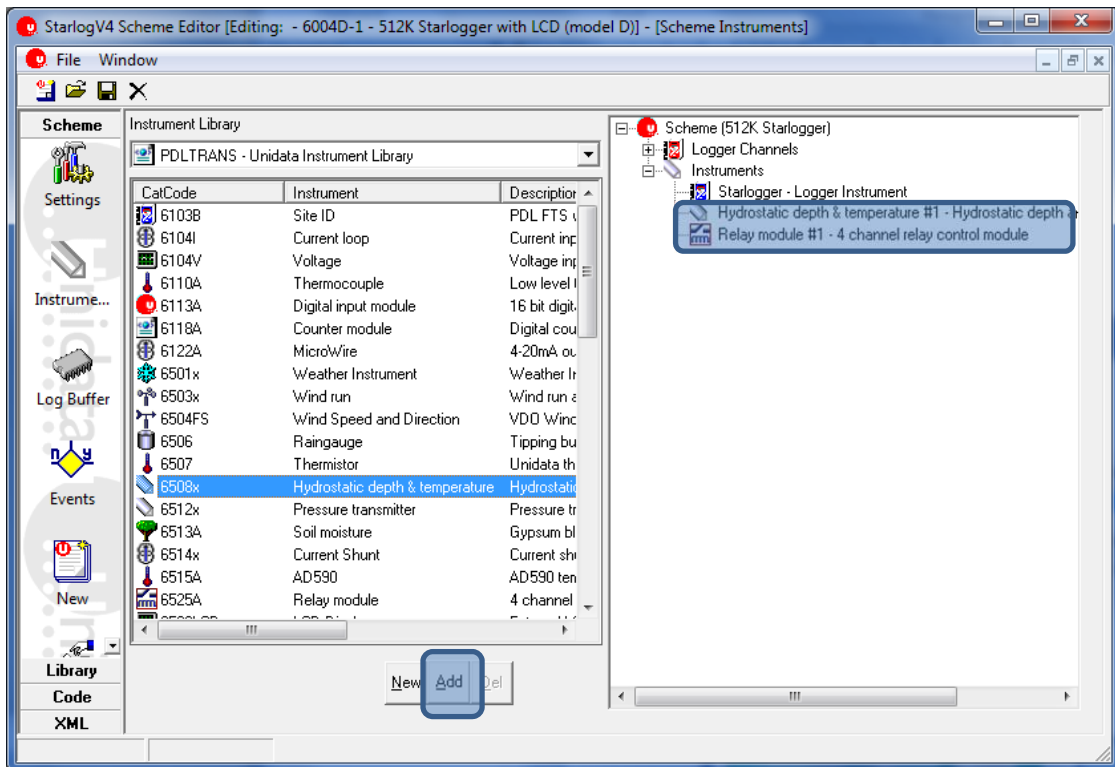To create a scheme, select a Scheme Editor, New
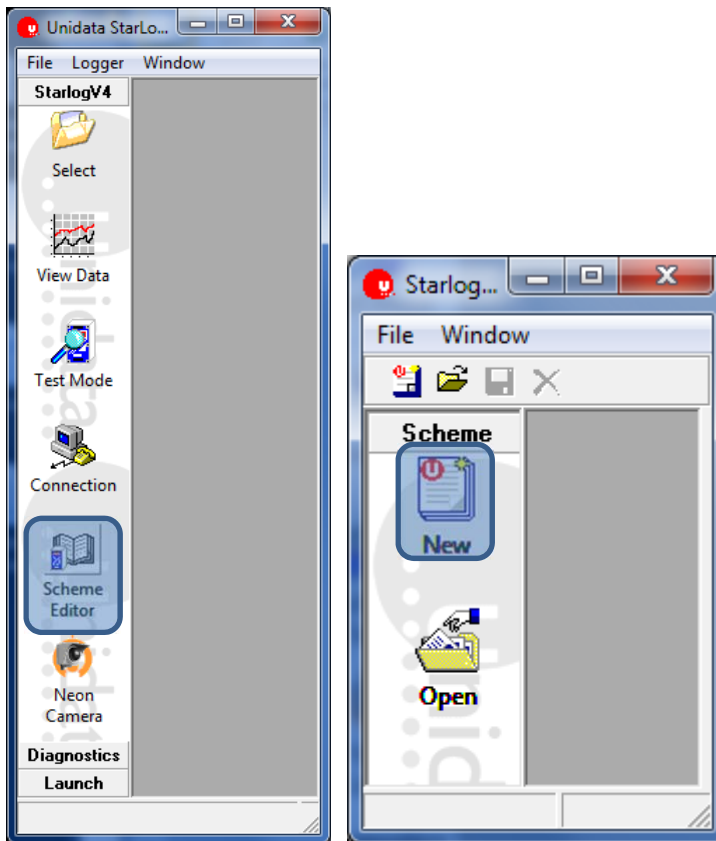
Select logger that you intend to use (e.g.6004-2 512K Starlogger), select Instruments
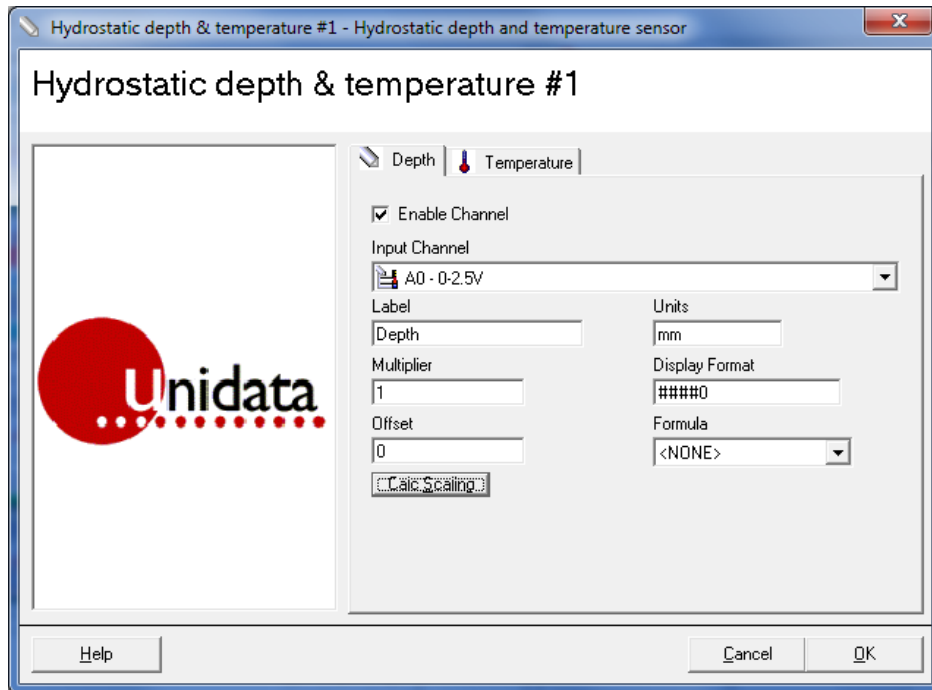
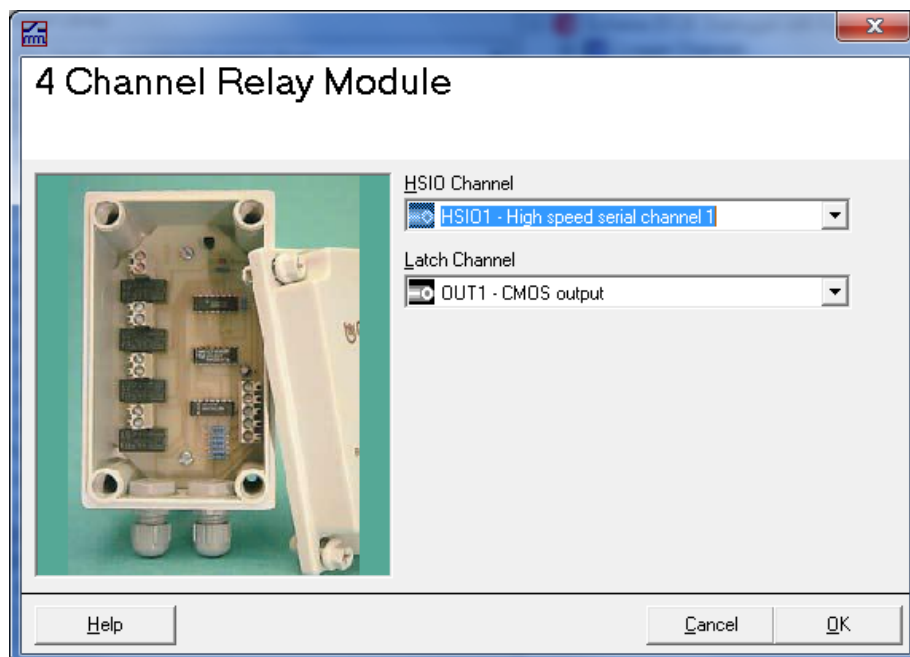Select 6508x hydrostatic depth probe and 6525A instrument and Add

Double click on selected scheme

1. Depth probe – select A0 input channel

2. Four channel relay module
   Edit HSIO Channel and Latch Channel, OK

Let's say, the river height is usually approximately 50cm. If it drops to 25 cm, then the cattle will have to be moved into a paddock with a dam. On the other hand, if the river rises to 75 cm, then the pump will have to be relocated.

-   When the probe measures 25 cm or less we want to trigger the LOW alarm.
-   When the probe reads 75 cm or higher we want to trigger the HIGH alarm.

Data from the water depth probe on analog channel 0 will be used to trigger the alarms. Therefore, the readings which will trigger the alarms are:

Label	Actual Height	As Read by Logger *
High	75 cm	191
Low	25 cm	63

* This is a value which corresponds to actual height on a scale from 0
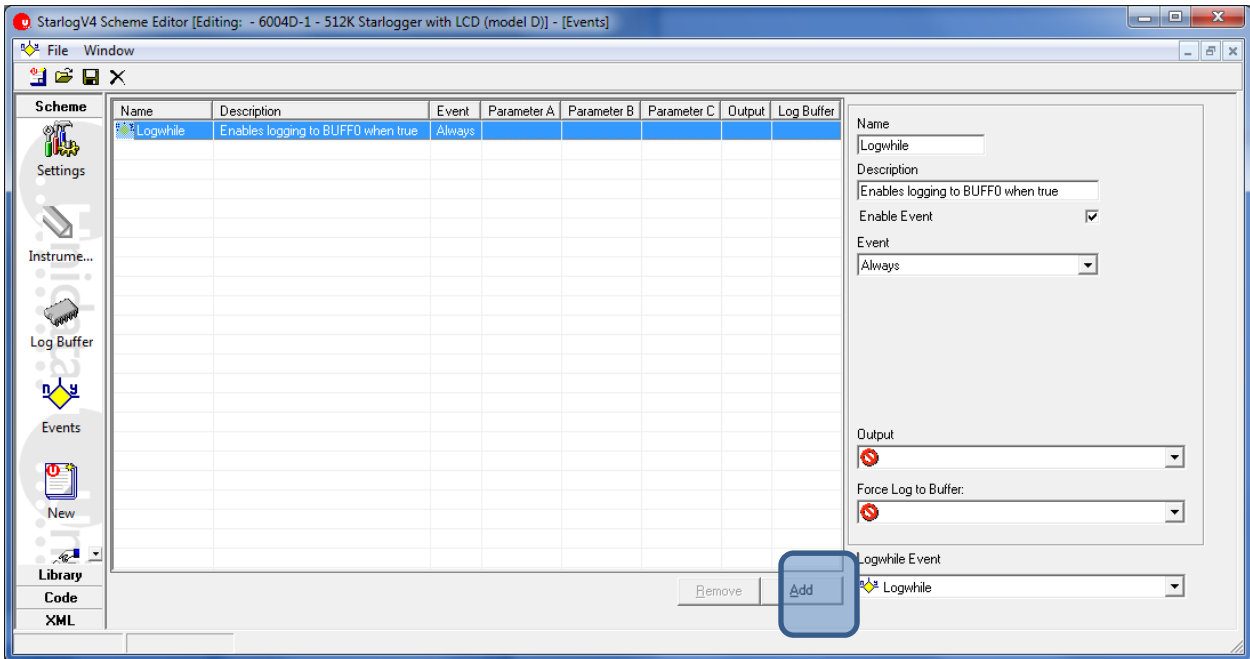
In this example you will connect the High River alarm to Relay 1 and the Low River alarm to Relay 2. You will want Relay 1 to open when water level is 75cm or greater.
This sets off the High River Alarm.
Likewise, you will want Relay 2 to open when water level is 25cm or less.
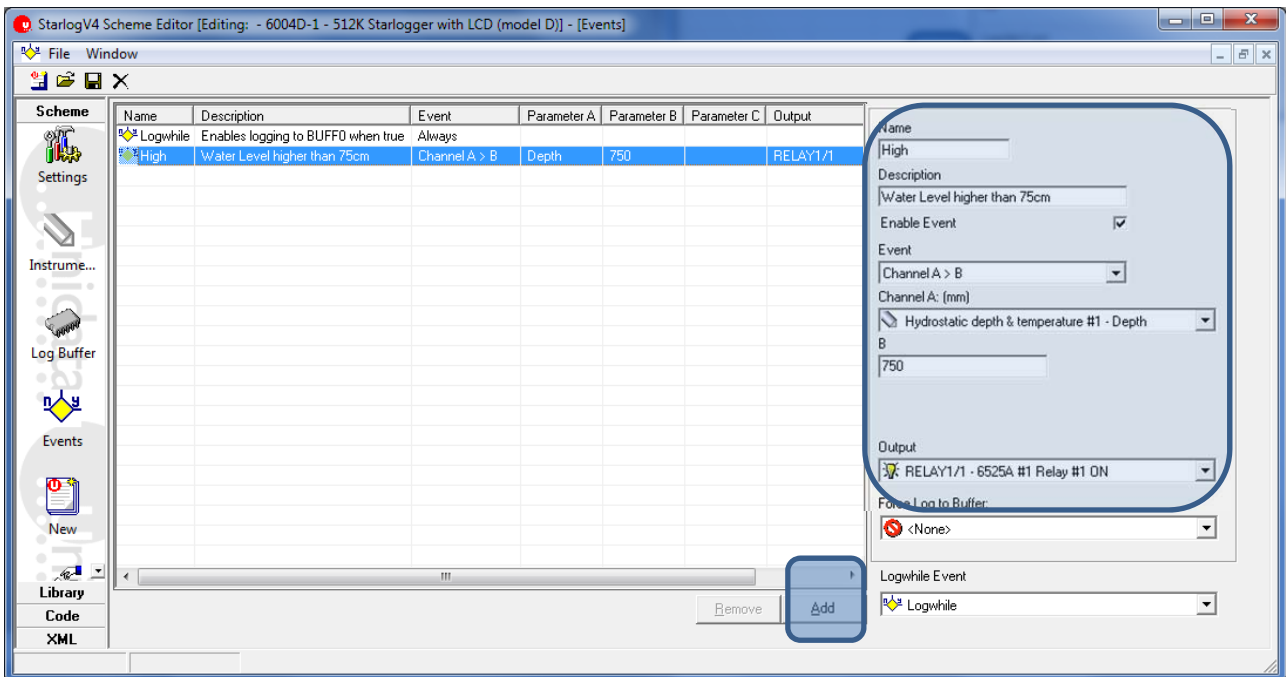This sets off the Low River alarm.
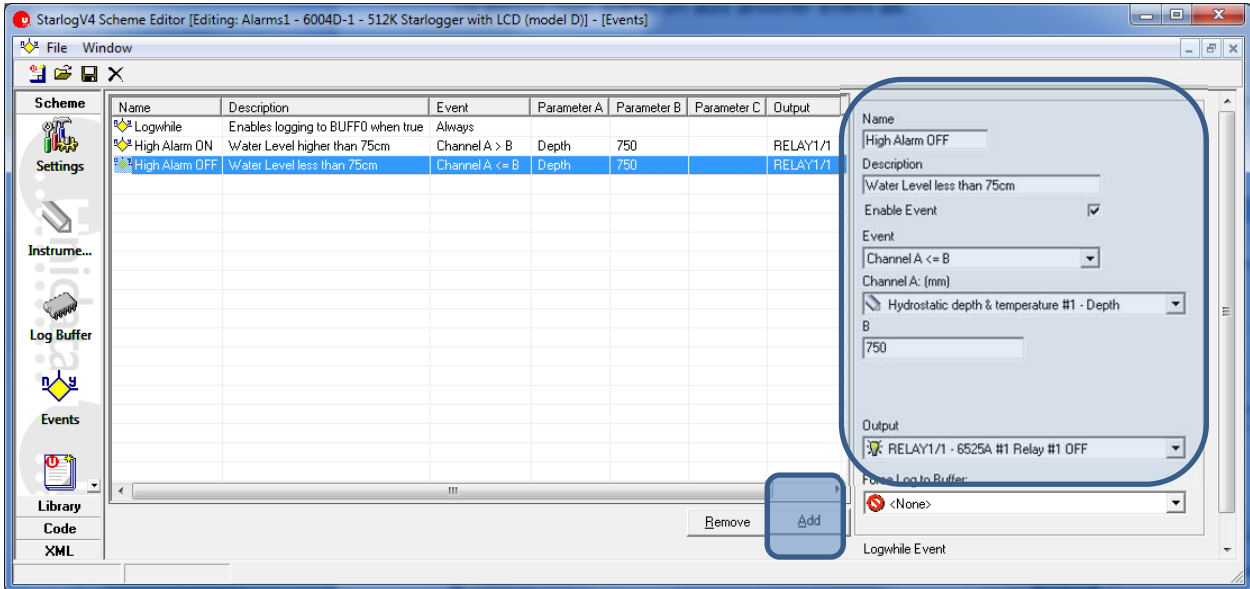
To edit events select Events
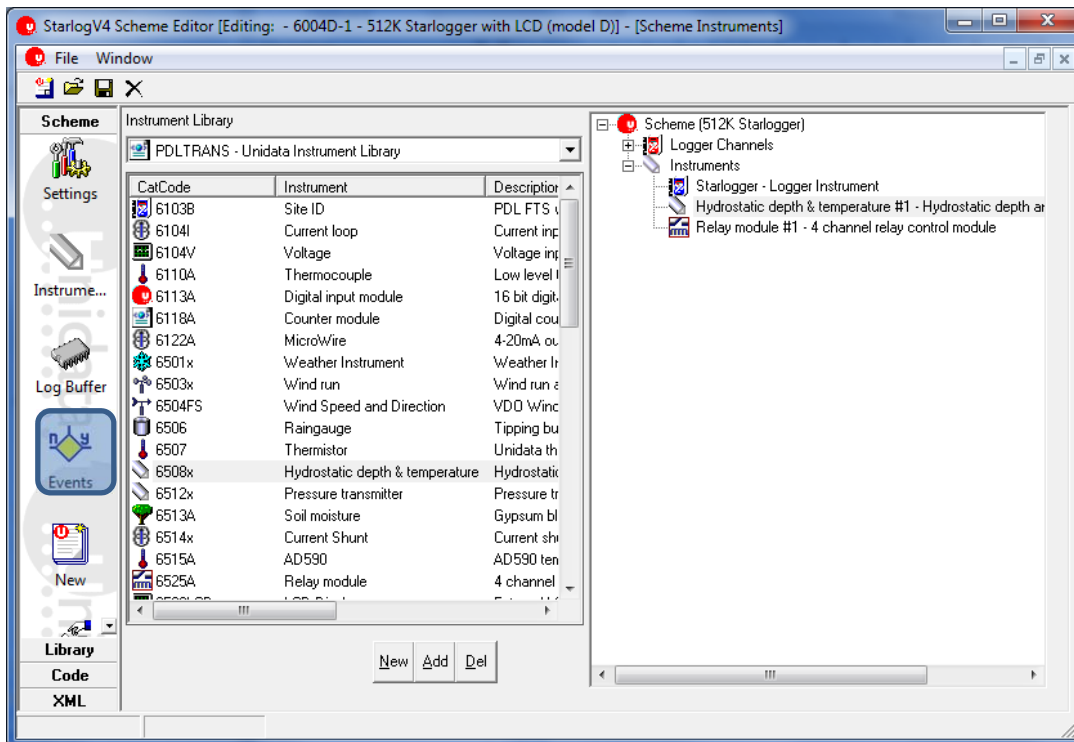
Select Add
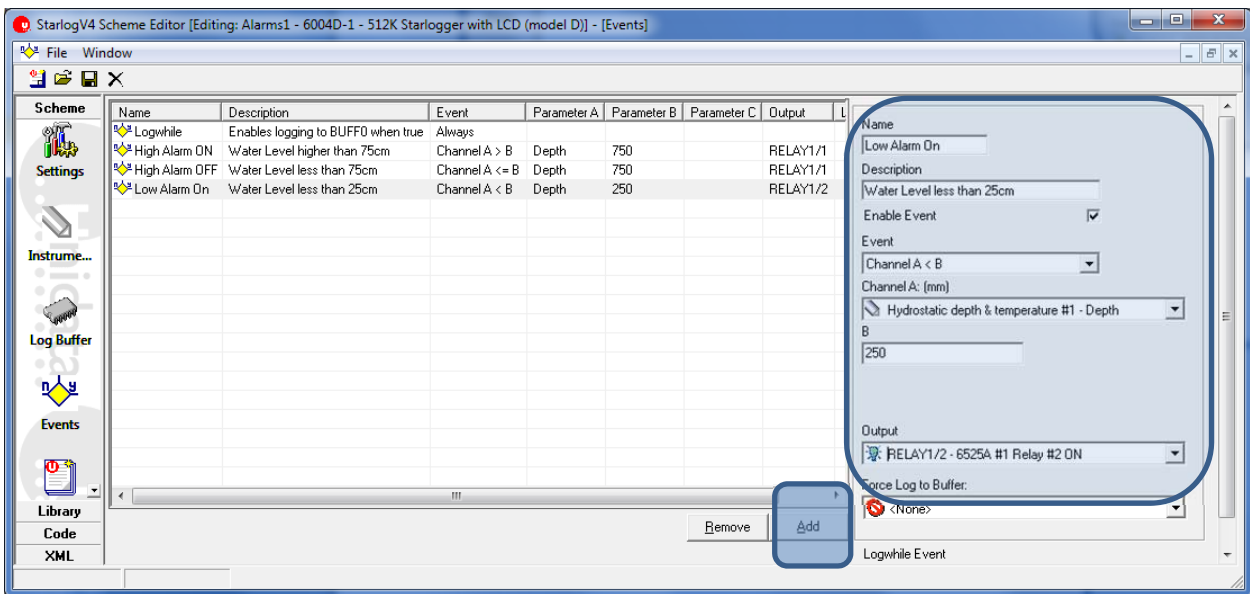

Create "high" event as:

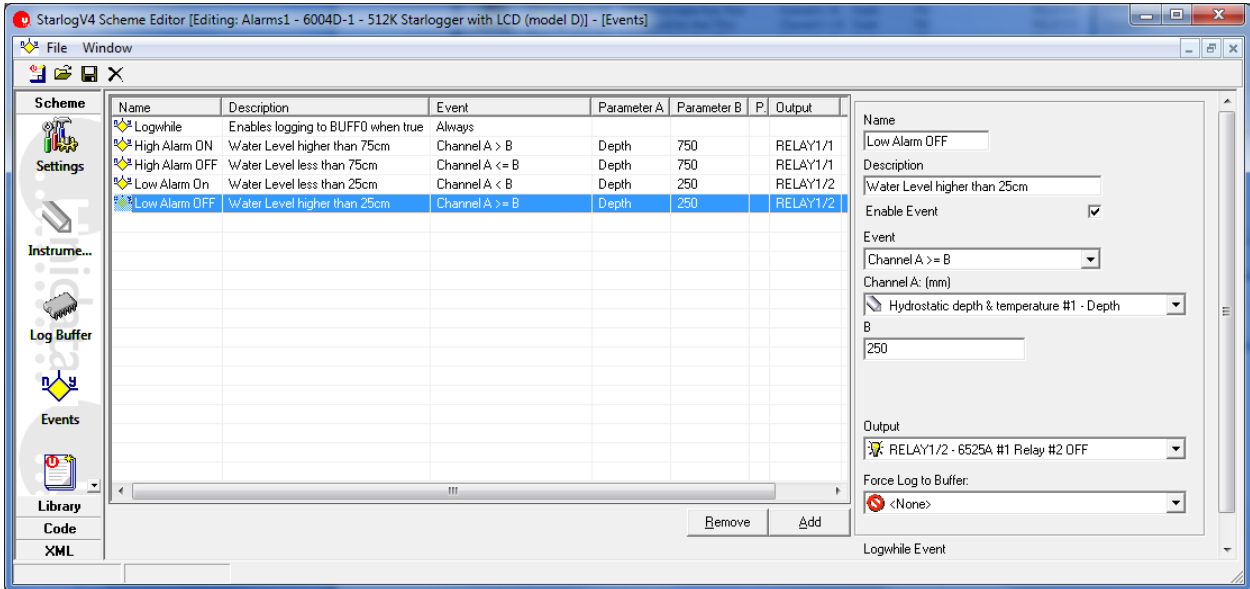Note: depth probe measures depth in mm

To switch high alarm off add another event as:

Select Add to create "low" event

To switch low alarm off add another event as:

Save Scheme and program logger with the scheme

3.0   CONNECTIONS

Connector	6525B	Starlogger FTS		Prologger FTS	
CN5	PULSE	42	Out 0	44	Out 0
CN5	CLOCK 1	13	Clock 1	16	Clock 1
CN5	DATA 1	45	Data 1	15	Data 1
CN6	GND	10	Dig Gnd	13	DIG GND
CN6	+5V	15,16,17	5V	14	Sync 5V
CN1	RELAY 0 output				
CN1	RELAY 0 output				
CN2	RELAY 1 output				
CN2	RELAY 1 output		External Connection		
CN3	RELAY 2 output				
CN3	RELAY 2 output				
CN4	RELAY 3 output				
CN4	RELAY 3 output				
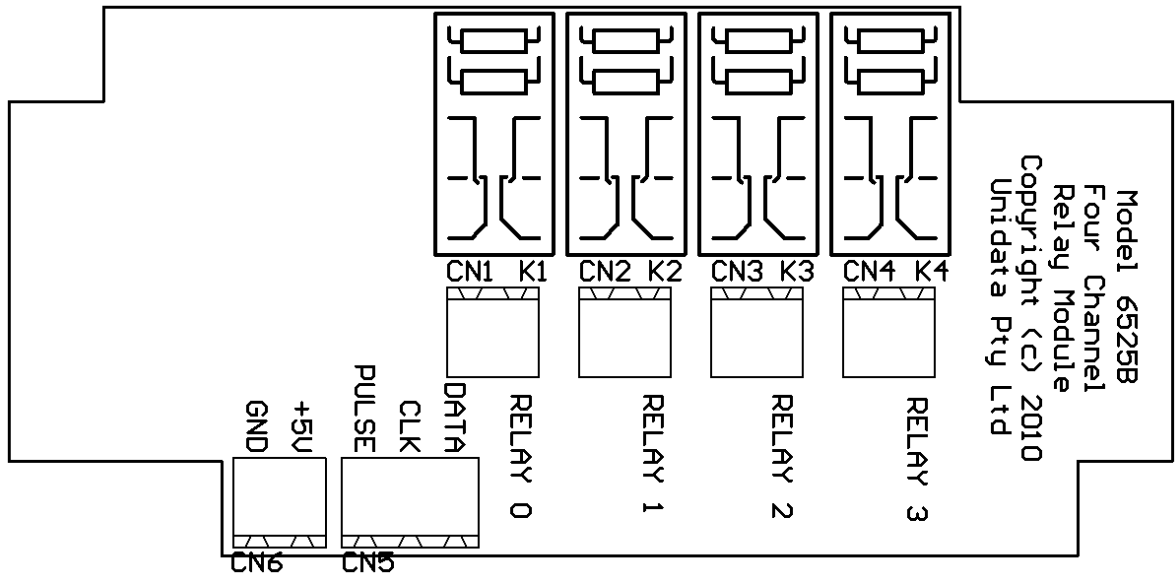
4-Way Relay Module Layout

4.0   SPECIFICATIONS

Dimensions:	110mm x 65mm x 55mm
Input:	Programmable output control from Logger
Output:	Potential free latched relay contact (DPDT)
Power Usage:	2mA max. Relay Contact
Ratings:	240V AC @ 0.5 A max.