



# THX-DL Data Logger

USER & INSTALLATION MANUAL V1.2012



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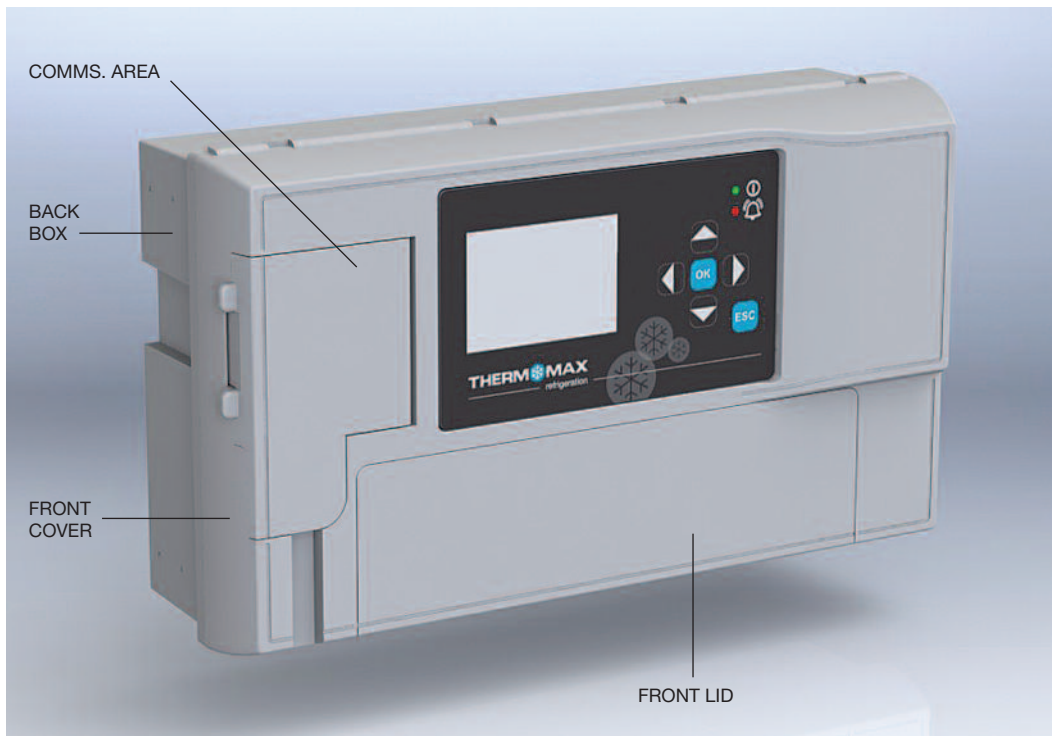
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## SPECIFICATION

## Presentation



## SUMMARY OF FEATURES

### Datalogger

- Temperature /humidity from each Channel can be set to sample every 1/5/15/30/60 minutes and stored to an internal databank
- Up to 12 channels of data logging can be employed using the module configuration
- Power Supply 100 – 240V AC Mains
- Contents of internal databank can be transferred to the USB Flash Memory and viewed or transferred to the PC via website
- Universal panel mount or wall mount box
- Expandable modular design
- IP54 Rated
- Battery Back-up up to 6hrs
- Backward compatible with old sensors (PT 100 terminated with RJ 11)
- EN12830 certified
- CE tested
- On Board Web Server (IP addressable)
- Large data storage capacity
- USB Firmware Upgrade Functionality
- Module Auto-Detect and self-configuration
- Door Alarm Configuration Function (4 doors per module)

### Alarm

- 2-Stage high and low level alarms with mute facility
- Stage 1 temperature threshold with trigger delay
- Stage 2 limit temperature with immediate trigger
- Alarm history record for low alarm, high alarm and power fail
- Battery back-up for power-fail operation
- Summary screen for Alarm Overview

*Note: The information supplied in this manual is for guidance only – no part of this may be used for any agreement, whether express or implied, or to form any contract.*

# Installation

*Note: This installation procedure is for guidance only, and its suitability should be verified by the installer.*

## SAFETY PRECAUTIONS

The following safety precautions are strongly recommended:

1. Before attempting to install and operate the unit, read the instruction and installation manual carefully.
2. Installation and any maintenance should only be carried out by suitably qualified personnel.
3. It is recommended that the unit be connected to the mains supply via a suitably rated isolating switch.
4. **WARNING: When the unit is connected to the mains supply and the cover is open, the circuits at mains voltage will be exposed.** Therefore when installing the unit, ensure all required connections (including battery connected, if included), are made and covers replaced before turning on the mains supply. Ensure that all the connections made are secure. If any maintenance work e.g. installing a new battery, is required ensure that the unit is isolated from the mains supply before removing the cover. **Never leave the unit unattended if the cover has been removed and the mains supply is connected.**
5. Do not exceed unit ratings as shown on the ratings label.
6. It is advisable to route mains cables away from low voltage or sensor cables.

### (i) THX Unit

*Note: For viewing comfort, the unit should be positioned at eye level. The ambient temperature of the unit is (0°C to +40°C). It is always good practice to keep electronic equipment away from cold, heat and electrical plant, as extremes of temperature may reduce the lifetime of the device, and heavy electrical loads, switches, relays or contactors too close to the device may cause electrical and electro-magnetic interference when switched on or off.*

### (ii) Sensors

The THX may be used with a variety of sensors of different cable lengths. If required, sensors are available with extended cable lengths or alternatively, sensor extenders are available also in a variety of lengths. If the sensors need to be extended, but factory-made extenders are not available, they can be extended using a suitable 3 or 4 core cable, according to the diagram shown below



Please note however, that as with all PT100 sensor applications, a good connection is vital. It is therefore recommended that wherever there is any doubt, a factory extended sensor or sensor extender should be used.

### (iii) Alarm Relay

*Note: The alarm relays are 2 contact arrangements which are isolated (volt-free). These relays may be used to trigger an external bell, warning lamp or digital communicator (telephone dialler).*

Max rating of Alarm relays is 5A @ 240 VAC.

The alarm relay is software configurable to accommodate normally open or normally closed operation, as described below.

Normally Closed Operation – This is the default mode.

Normally Open Operation – In this mode, the relay outputs will break contact (open circuit) in the event of an alarm and make contact (closed circuit) in the event of power failure.

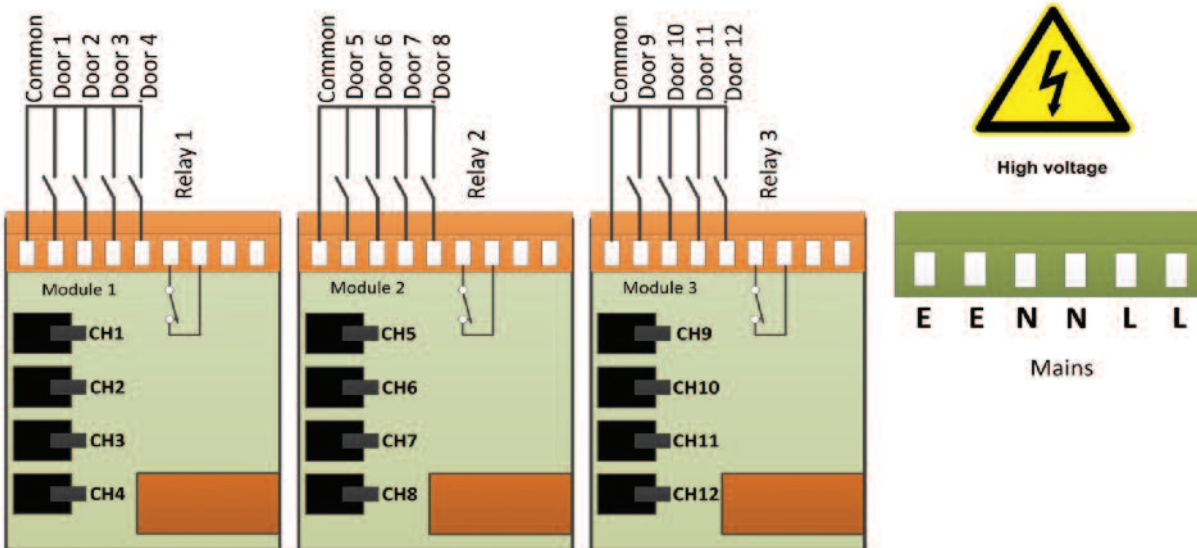
If the external device is used, connect the alarm as appropriate, according to the diagram opposite.

# Installation

## (iv) Power Connections and Wiring Diagram

*Note: This device should be properly earthed. Flexible wires simplify connection to the terminals. All connections should be secure and adequately tightened. It is good practice to keep mains cables away from sensor cables and other low voltage signal cables.*

Connect the supply to the unit, as per diagram below, using the appropriate input voltage according to the application.



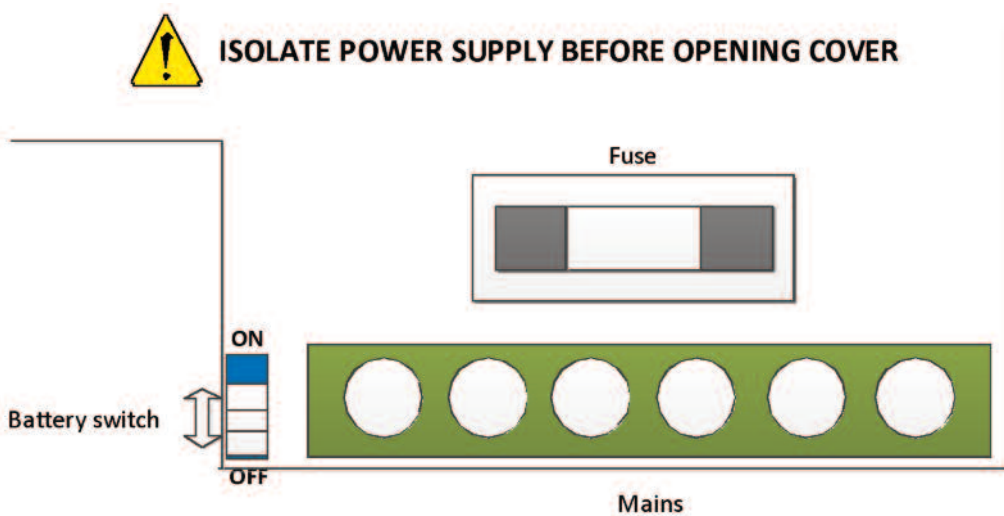
## (v) Battery

The battery supplied is a 3.7V Lithium-polymer rechargeable battery and is plugged in but switched OFF. This should be switched ON after installation. See picture below. This battery is not essential for the system operation, but is used in the case of power failure, thereby continuing to log the 12 sensor inputs for approximately 6 hours.

The system parameters will remain intact, in the event of a power failure, however all interface options (Ethernet, screen, keypad options, USB etc. will not function as normal)

It is recommended that the battery is changed every 24 months, in order to maintain good power failure backup operation. When replacing, ensure that the type of rechargeable battery used is as specified.

(3.7V Lithium-polymer rechargeable battery)



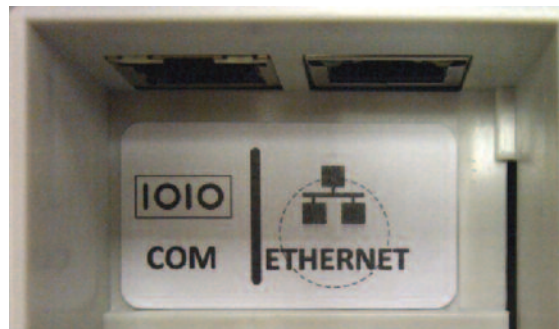
# Installation

## WALL MOUNT

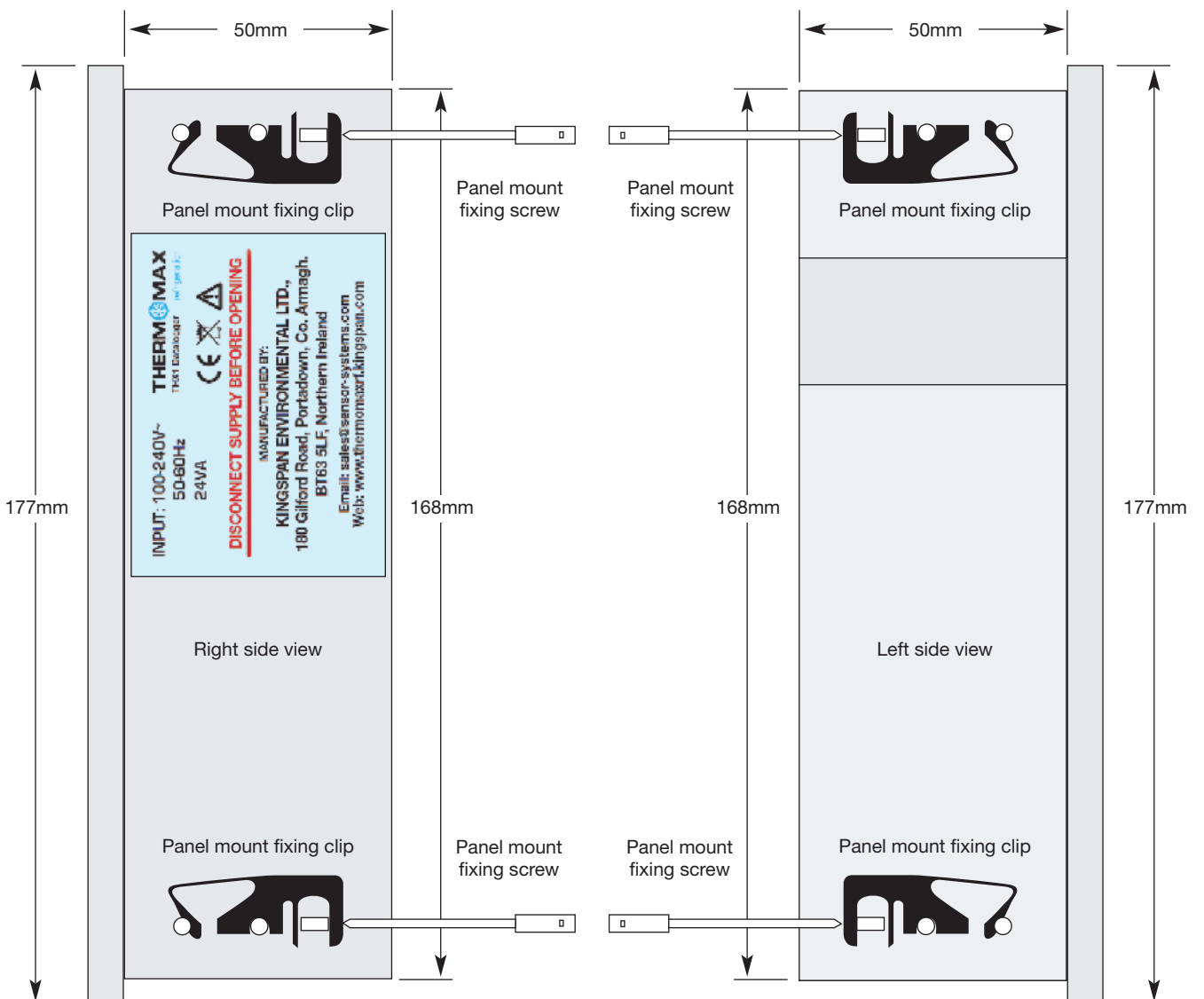
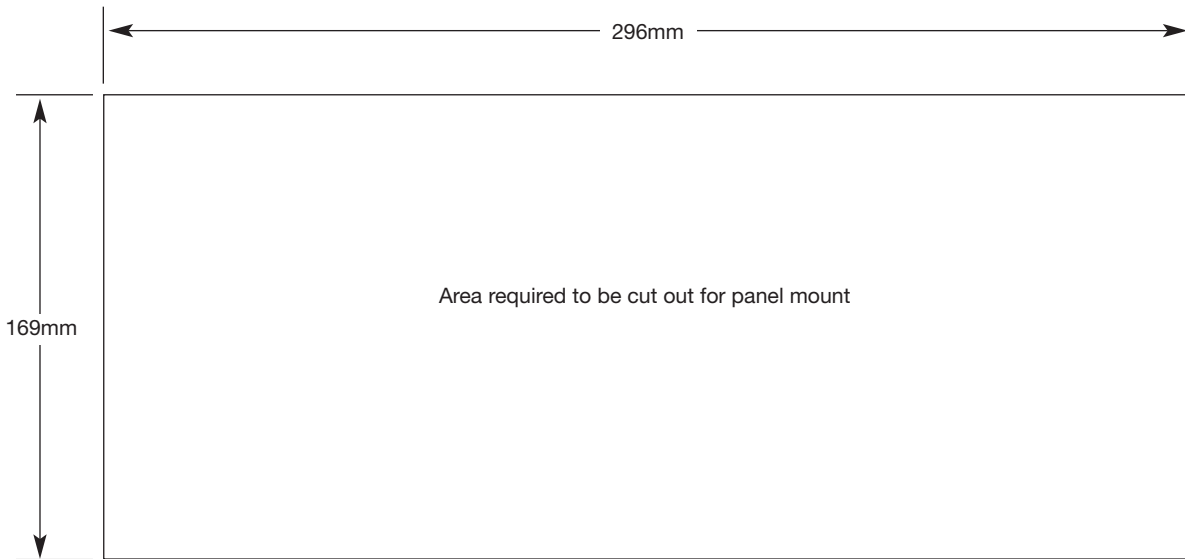
1. Drill four holes in the wall, according to the template and insert the wall plugs
2. Remove the Front Lid by unscrewing two screws
3. Disconnect the modules
4. Separate the front cover by unscrewing two screws
5. Remove the required knock outs from Back Box for the cables to pass through (always separate front cover before removing the knock outs)
6. Insert the cable glands
7. Screw in the Back Box to the wall
8. Pass the cables through the glands
9. Mount the Front Cover on the Back Box
10. Insert the modules
11. Connect the power supply cable and sensors
12. Tighten the cable glands
13. Mount the front lid

## PANEL MOUNT (required panel mount kit)

1. Cut a hole in the panel with the described dimensions, (see page 7)
2. Remove the Front Lid unscrewing two screws
3. Disconnect the modules
4. Separate the front cover by unscrewing two screws
5. Remove the required knock outs from Back Box for the cables to pass through (always separate front cover before removing the knock outs). Ethernet cable can be passed through the hole which is under the label on the front cover (see picture below)
6. Attach the Panel Mount Seal, ensure that it is on the right position
7. Insert the Back Box into the panel cut out
8. Attach the four Panel Mount Fixing Clips (supplied), to the four studs at either side of the unit, (see page 7).
9. Tighten the four Panel Mount Fixing Screws
10. Insert the cable glands
11. Pass the cables through the glands
12. Mount the Front Cover on the Back Box
13. Insert the modules
14. Connect the power supply cable and sensors
15. Tighten the cable glands
16. Mount the front lid

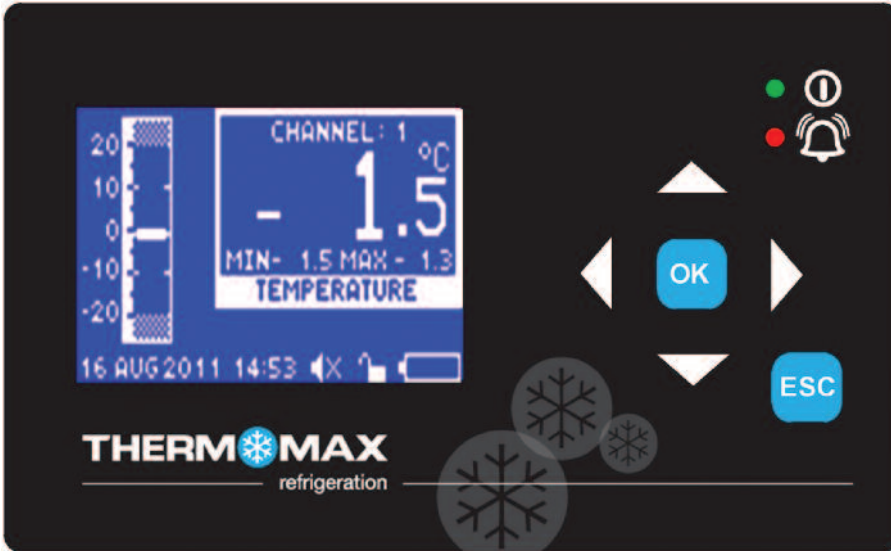


# Installation



# THX-DL Operation

In order to fully understand the operation of the unit, this section should be read carefully.



## (i) Graphic LCD Display





Displays all the information. The contrast is adjustable to suit the user. (Refer to section 6.2)

## (ii) Function Keys

The six keys are used to navigate through the unit's menus, allowing for easy access to the THX many options and settings.

The four arrow keys select an option in the displayed menu, the **ESC** key select the menu and the **OK** key returns to the previous menu. A menu I.D. is displayed at the top of each screen to indicate to the user which particular menu is being addressed.

## (iii) Indicators

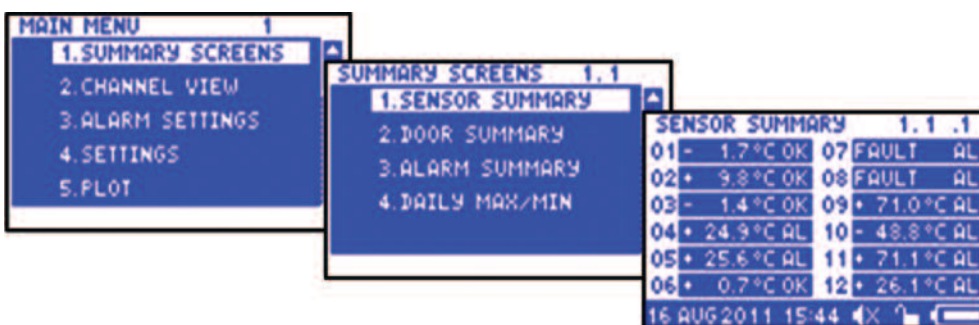
-   Power ON/OFF Indicator
-   Alarm Triggered Indicator

## 1.0 SUMMARY SCREENS

These screens allow the user to view all the data logged by the unit for each channel, e.g. Sensor Summary, Door Summary, Alarm Summary, and Daily Max/Min Temperatures.

### 1.1 Sensor Summary

From the Main Menu screen, press **OK** key twice to reveal the Sensor Summary Screen.



This screen displays the current temperature/humidity readings of each of the connected channels and indicates if that channel is in alarm or not.


The **ESC** key will return the user to the previous menu option.

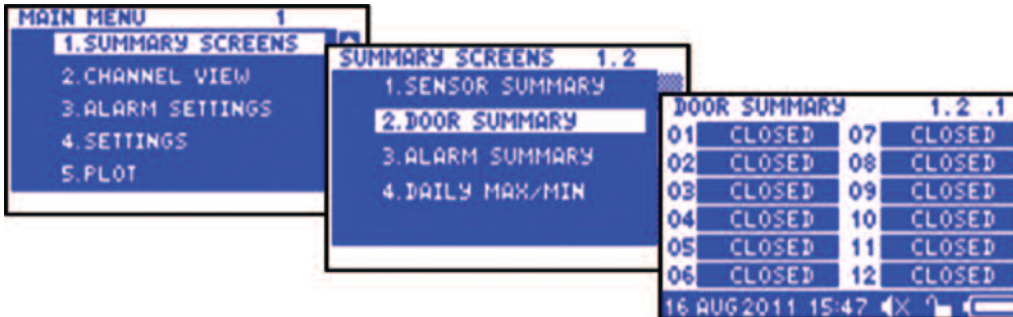


# THX-DL Operation

## 1.2 Door Summary

From the Main Screen, press the  key, followed by the  key to select


Door Summary in the menu. Confirm selection using the  key to reveal the Door Summary Screen.

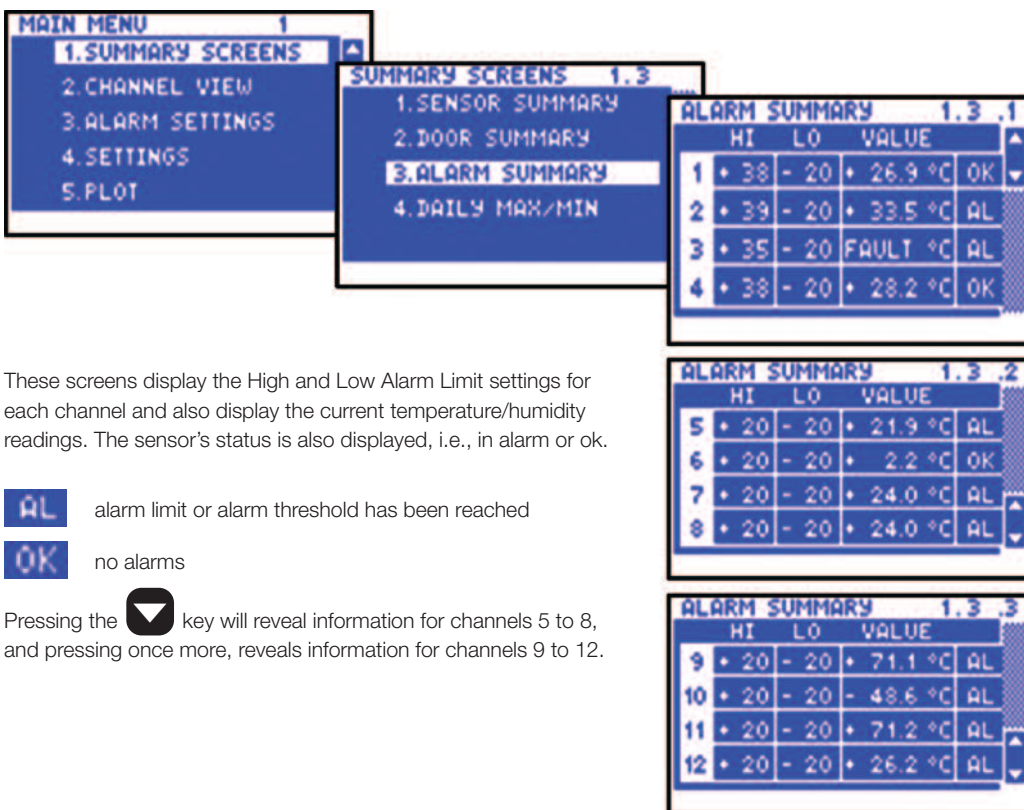


This screen displays the status of each of the 12 digital inputs, indicating whether it is OPEN, CLOSED or OFF. (Default status is OFF)



## 1.3 Alarm Summary


From the Main Screen, press the  key, followed by the  key to select

Alarm Summary in the menu. Confirm selection using the  key to reveal the Alarm Summary Screen.



These screens display the High and Low Alarm Limit settings for each channel and also display the current temperature/humidity readings. The sensor's status is also displayed, i.e., in alarm or ok.


-  alarm limit or alarm threshold has been reached
-  no alarms

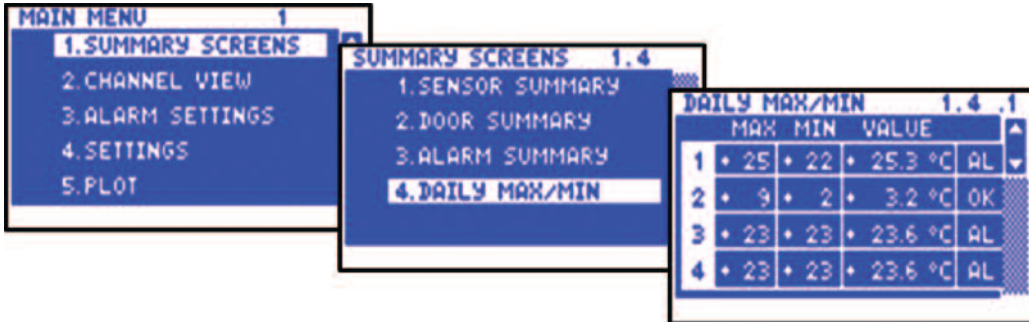
Pressing the  key will reveal information for channels 5 to 8, and pressing once more, reveals information for channels 9 to 12.

# THX-DL Operation



## 1.4 Daily Max/Min Readings

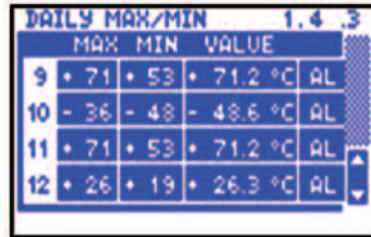
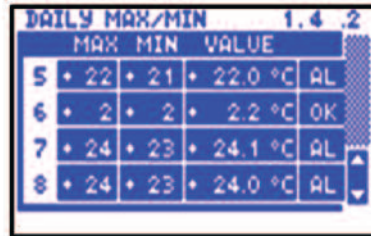
From the Main Screen, press the  key, followed by the  key to select Daily Max/Min in the menu.

Confirm selection using the  key to reveal the Daily Max/Min Screen.





This function enables the user to view the minimum and maximum Temperatures that have been recorded on each channel over the past 24 hours.

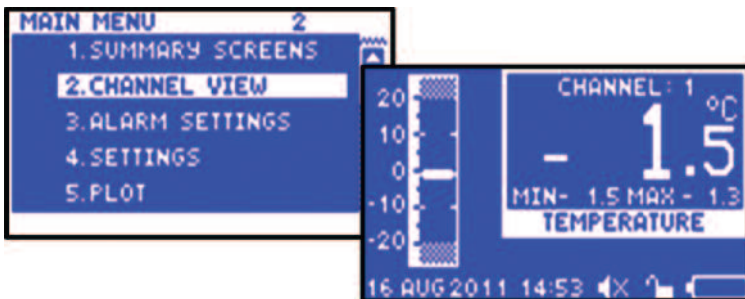
-  alarm limit or alarm threshold has been reached
-  no alarms




## 2.0 CHANNEL VIEW

From the Main Screen, press the  key to select Channel View from the main menu.

Confirm using the  key to reveal the Channel View screen.





The user can view any of the channels from 1 to 12 using the  and  keys.




- The clock is displayed in 24-hour format.
- The temperature bar graph displays the current temperature of the selected channel. The high and low alarm limits are shown as shaded areas.
- Any channel can be set up to read either temperature or humidity by choosing the sensor type, as per Section 4.4 of this manual. TEMPERATURE or REL HUMIDITY will be displayed as per above illustration and the values will be displayed as either °C or % rH (relative humidity).
- The current temperature/humidity for the selected channel is displayed digitally along with the daily maximum and minimum temperature, which are reset at midnight.

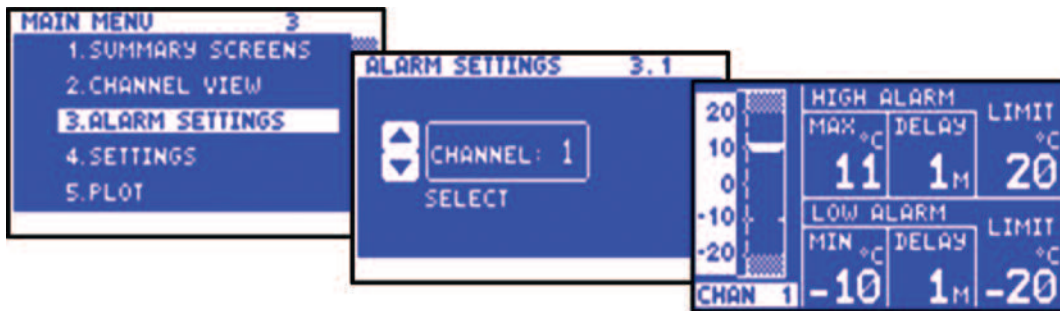
# THX-DL Operation

## 3.0 ALARM SETTINGS



From the Main Screen, press the  key to select Alarms Settings from the main menu.

Confirm selection using the  key to reveal the Alarms Selection screen.

From this screen, the user can select to view the alarm information on any of the channels from 1 to 12, using the  and  keys and pressing the  key to confirm.



- **Bar Graph Scale**

By pressing the  or  key, the bar graph display scale may be adjusted to show temperature/humidity range best suited to the particular installation.

- **High Alarm Stage 1 Temperature (-99°C to +150°C)/Humidity (0%rH to 100%rH)**

The Stage 1 Alarm is a time/temperature related alarm. If the maximum threshold is exceeded, a timer is initiated, and no further action is taken at this time.



- **High Alarm Stage Delay (1-99 min.)**

After the maximum threshold has been exceeded, the alarm will not be triggered until the timer exceeds the time delay set here. If the temperature drops below the threshold before the expiry of this delay, the timer is reset. If following this, the temperature rises above the threshold again, the timer restarts from zero.



- **High Alarm Limit Stage 2 temperature (-99°C to +150°C/Humidity (0%rH to 100%rH)**

If at any time this limit is exceeded, the time delays will be overridden and the alarm will trigger immediately.



- **Low Alarm**

All the functions described for the high alarm also apply to the low alarm.

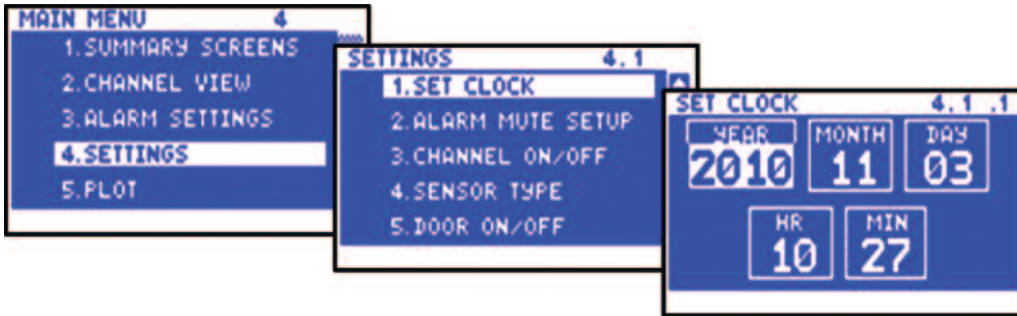
# THX-DL Operation

## 4.0 SETTINGS

### 4.1 Set Clock




From the Main Screen, press the  key to select Settings from the main menu.

Confirm selection using the  key to reveal the Settings Menu. Select Set Clock from the menu and press the  key to confirm.



The Set Clock screen allows the user to change the time and date settings of the unit.

The highlighted parameter is adjusted by pressing the  or  key. The parameters are Year, Month, Day, Hour and Minutes.

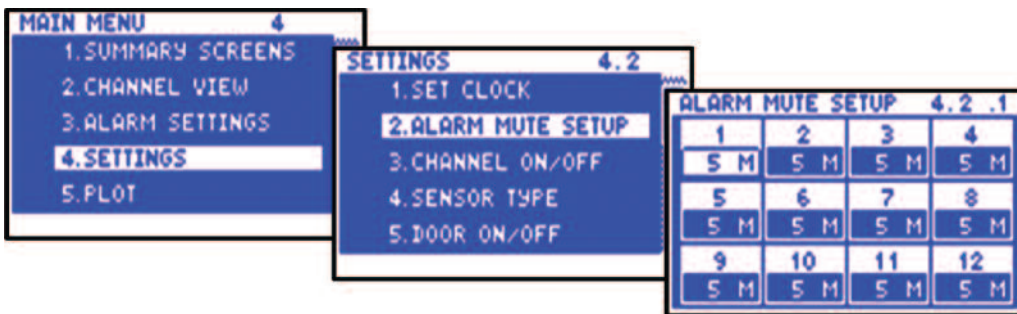
To change any of these, press the  or  key. Press the  key to confirm the changes and back to the previous screen.

### 4.2 Alarm Mute Setup


From the Main Screen, press the  key to select Settings from the main menu.



Confirm selection using the  key to reveal the Settings Menu.

Select Alarm Mute Setup from the menu and press the  key to confirm.



The Alarm Mute Period for all channels ranges from 0 to 95 minutes. If any key is pressed during an alarm situation for a channel, the buzzer will be muted for this period. The default alarm mute period is 5 minutes.

In order to change the alarm mute period for any channel, move to the required channel by using the  or  key

to increase the alarm mute period, press the  key. To decrease, press  key.

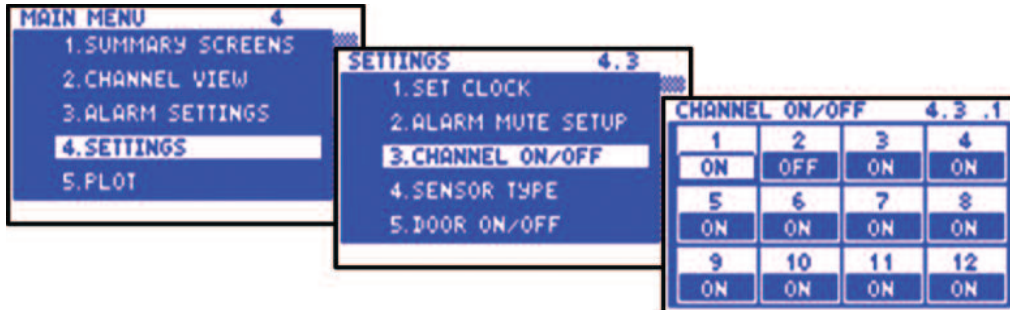
If a channel is switched off, the alarm parameters will automatically revert back to the default factory settings to prevent an alarm occurrence. These parameters cannot be changed until the sensor input is switched on again.

# THX-DL Operation



## 4.3 Channel On/Off

From the Main Screen, press the  key to select Settings from the main menu.

Confirm selection using the  key to reveal the Settings Menu. Select Channel On/Off from the menu and press the  key to confirm.



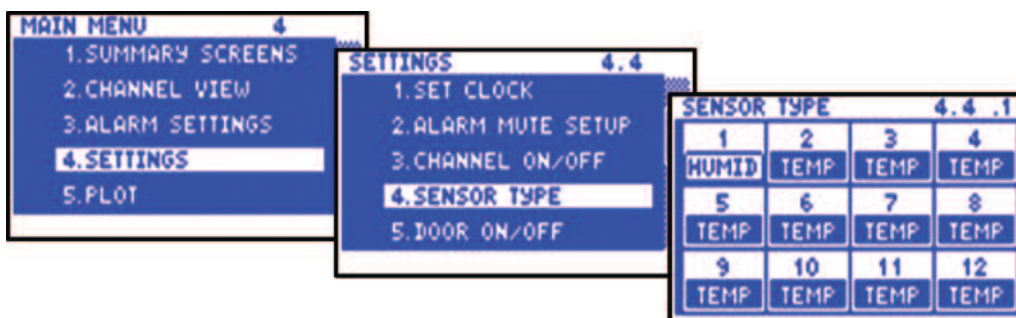
Each sensor channel can be switched on or off. By default, all channels are on. If a new module is inserted the default mode for the new channels will be on. When the sensor input is switched on, the actual reading will be monitored every 15 minutes (default sample period). If the sensor input is switched off, the unit will display OFF.

To switch channel off, press the  key. To switch the channel back on, press the  key.

## 4.4 Sensor Type

From the Main Screen, press the  key to select Settings from the main menu.

Confirm selection using the  key to reveal the Settings Menu. Select Sensor Type from the menu and press the  key to confirm.



The 12 sensors inputs can be configured to read either Temperature or Relative Humidity. As a factory default, all 12 sensor inputs are configured to accept temperature sensors.

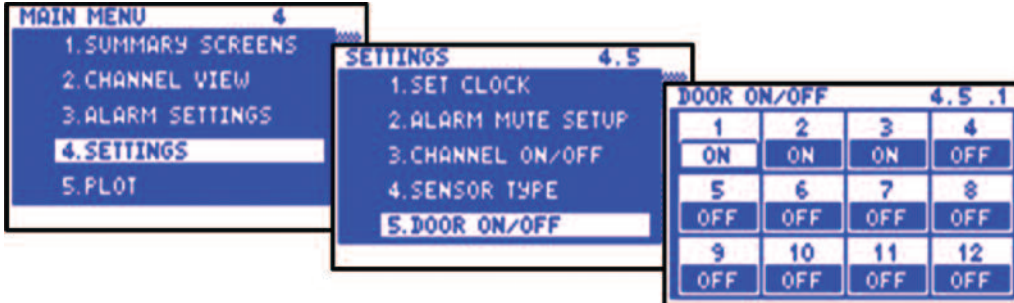
To change the sensor input configuration to Humidity, press the  key. To change it back to Temperature, press the  key.

# THX-DL Operation



## 4.5 Door On/Off

From the Main Screen, press the  key to select Settings from the main menu.

Confirm selection using the  key to reveal the Settings Menu. Select Door On/Off from the menu and press the  key to confirm.





The status of 12 doors can be configured to be switched ON or OFF. As a factory default, all 12 doors are switched OFF.

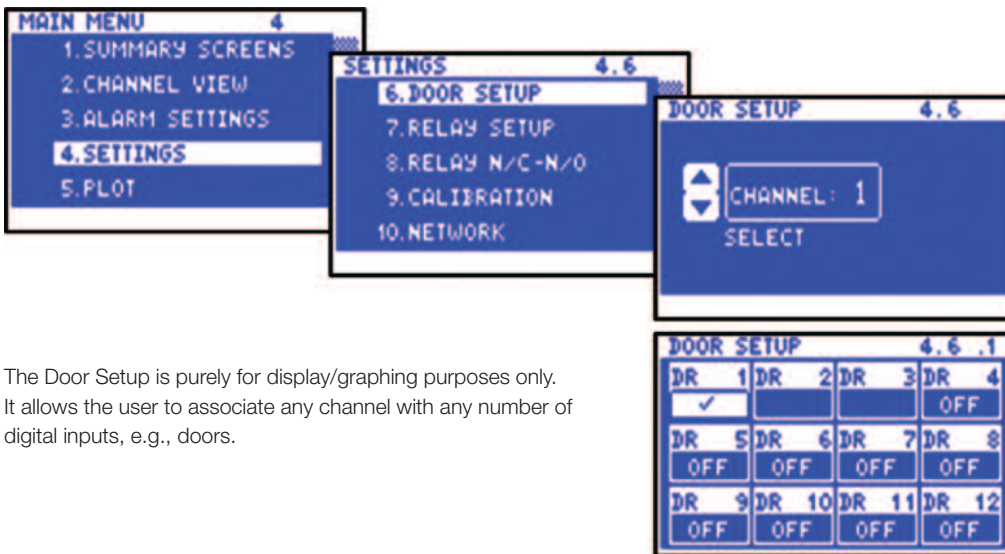
To switch a door off, press the  key. To switch a door back on, press the  key.

## 4.6 Door Setup

From the Main Screen, press the  key to select Settings from the main menu.





Confirm selection using the  key to reveal the Settings Menu.




Scroll down using the  key to the second page of the menu, select Door Setup from the menu and press  key to confirm.



The Door Setup is purely for display/graphing purposes only. It allows the user to associate any channel with any number of digital inputs, e.g., doors.

The user can select any channel from screen 4.6 using  and  keys and pressing the  key to confirm.

To set which door inputs are associated with each channel use the  and  keys to select a door input and use the  key to select and the  key to deselect.




-  Indicates that the digital input is associated with the selected channel.
-  Indicates that the digital input is not associated with selected channel.
-  Indicates that the status of the door is OFF.

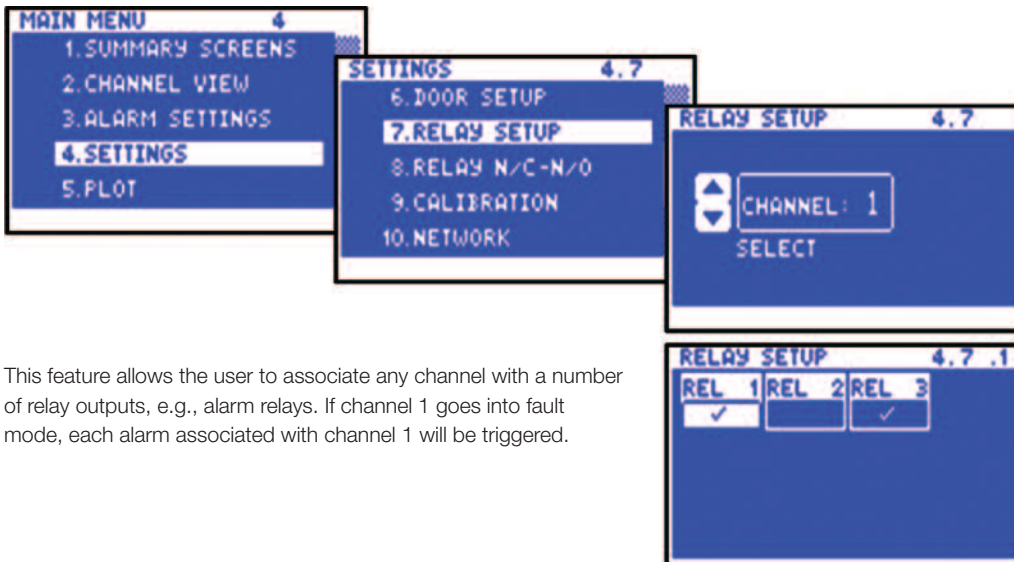
*Note* The user cannot set the door input association if a door is turned off (see 4.5)

# THX-DL Operation

## 4.7 Relay Setup

From the Main Screen, press the  key to select Settings from the main menu.

Confirm selection using the  key to reveal the Settings Menu. Scroll down using the  key to the second page of the menu, select Relay Setup from the menu and press the  key to confirm.



This feature allows the user to associate any channel with a number of relay outputs, e.g., alarm relays. If channel 1 goes into fault mode, each alarm associated with channel 1 will be triggered.




The user can select any channel from screen 4.7 using  and  keys and pressing the  key to confirm.

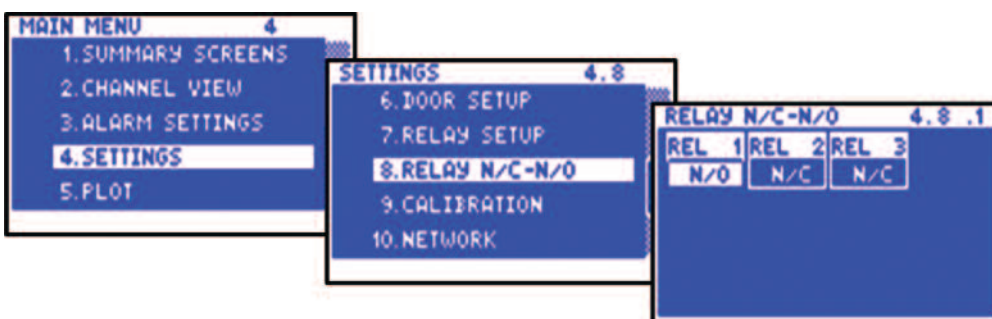
To set which channel is associated with each relay use the  and  keys to select a channel and use the  key to select and the  key to deselect.

*Note: Every channel can be configured to work with each relay.*

## 4.8 Relay Normally Closed/Normally Open

From the Main Screen, press the  key to select Settings from the main menu.


Confirm selection using the  key to reveal the Settings Menu. Scroll down using the  key to the second page of the menu, select Relay N/C – N/O from the menu and press the  key to confirm.




The default state of each relay is set to normally closed (N/C). The user can change the setting of individual relays to be N/O or N/C.

**N/C** Normally Closed Operation. This is the default mode. The relay outputs will make contact in the event of an alarm or power failure.

**N/O** Normally Open Operation. In this mode, the relay outputs will break contact (open circuit) in the event of an alarm and make contact (closed circuit) in the event of power failure.

To change the setting of each relay to normally closed, press the  key.


To change the setting back to normally open, press the  key.

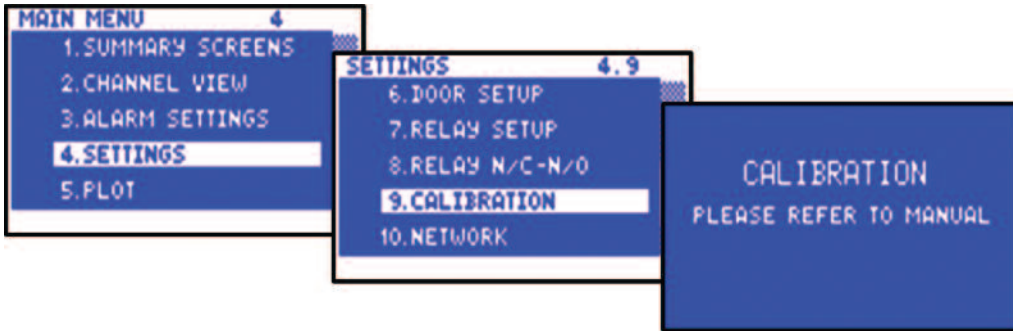
# THX-DL Operation


## 4.9 Calibration

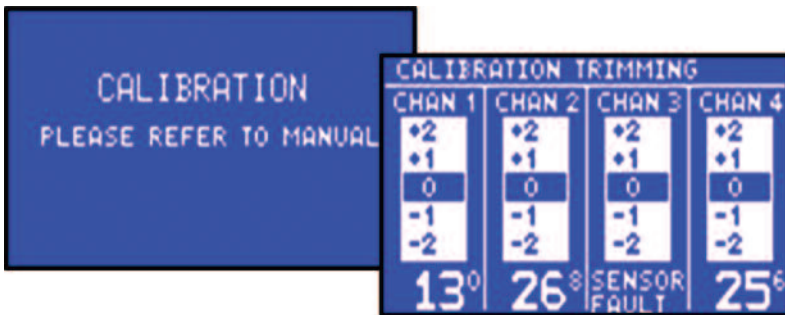
From the Main Screen, press the  key to select Settings from the main menu.

Confirm selection using the  key to reveal the Settings Menu. Scroll down using the  key to the second page of the menu,

select Calibration from the menu and press the  key to confirm.



To enter the Calibration Trimming screen, press and hold the  key for 8 seconds.



Calibration trimming allows qualified personnel to adjust the Sensor Measurement by  $\pm 3^{\circ}\text{C}$  /  $\pm 3\% \text{rH}$ . A known reference value should be used.




Use the   keys to move to the channel that requires calibration trimming. Then use the  or  key to adjust the current temperature reading to the reference value read at the input.

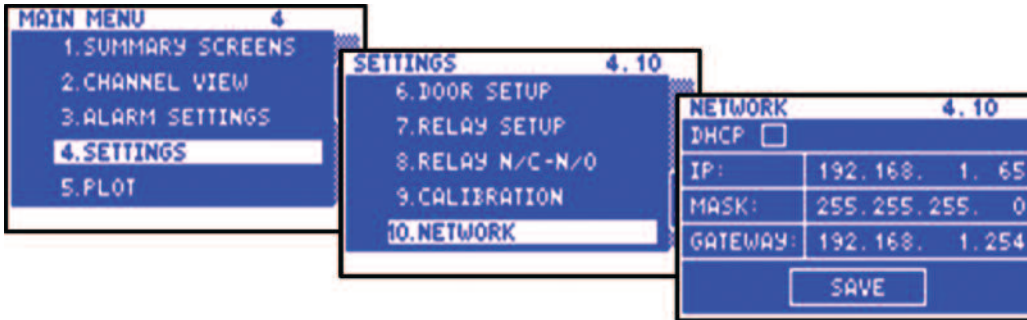


# THX-DL Operation

## 4.10 Network

From the Main Screen, press the  key to select Settings from the main menu.

Confirm selection using the  key to reveal the Settings Menu. Scroll down using the  key to the second page of the menu, select Network from the menu and press the  key to confirm.



Please enter your network details or choose DHCP for Automatic Network Configuration.

To set Automatic Network Configuration, use the  key to select DHCP and use the  key to select or deselect this option.

 Indicates that the DHCP is OFF.

 Indicates that the DHCP is ON.

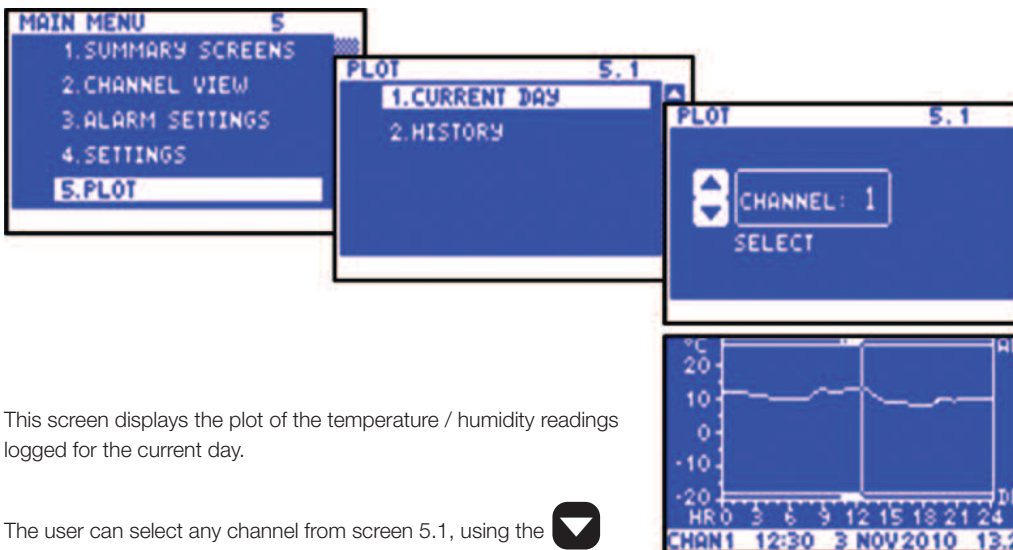
Select  and use the  key to save the settings.

## 5.0 PLOT




### 5.1 Current Day

From the Main Screen, press the  key to select Plot from the main menu.

Confirm selection using the  key to reveal the Plot Menu. Select Current Day from the menu and press the  key to confirm.



This screen displays the plot of the temperature / humidity readings logged for the current day.

The user can select any channel from screen 5.1, using the  and  keys and pressing the  key to confirm.

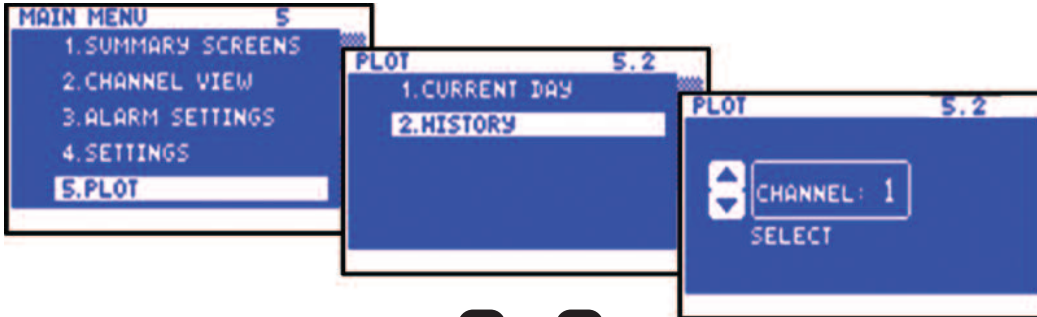
The user can read sample information using the  and  keys.




# THX-DL Operation




## 5.2 History

From the Main Screen, press the  key to select Plot from the main menu.

Confirm selection using the  key to reveal the Plot Menu. Select History from the menu and press the  key to confirm.






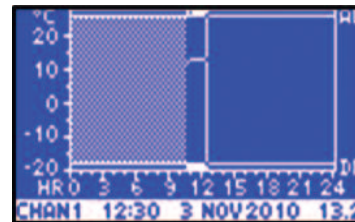
1 Select the channel to be displayed using the  and  keys and press the  key to confirm.


2 Select the year, month and day using the  and  keys and press the  key to confirm.




History functions that are available from this screen are as follows:

- By pressing the  key, the values of the previous day will be displayed.
- By pressing the  key, the unit will increment through the values, according to the sample period. At the end of each day, the next day logged in the databank will be displayed.
- By pressing the  key, several new options become available to the user, these are detailed below.






Return to the Main Menu, by selecting MAIN MENU from the pop-up menu and pressing the  key






Go to the select day screen, by selecting SELECT DAY from the pop-up menu and pressing the  key.



Use the   keys to select the date and press the  key to confirm.



Display the door information by selecting SHOW DOOR from the pop-up menu and pressing the  key to confirm.


View the information of any door by using the   keys.

DOOR INFO		17 AUG 2011			
DOOR 1		TOTAL DOOR OPEN = 00:00HRS			
		MAX DOOR OPEN = 0 MIN			
CH 01	DOOR	1	5	9	
		2	6	10	
		3	7	11	
		4	8	12	

# THX-DL Operation

## 6.0 SERVICE

### 6.1 Test


From the Main Screen, press the  key to scroll down to the second page of the menu. Select Service from the main menu.



Confirm selection using the  key to reveal the Service menu.

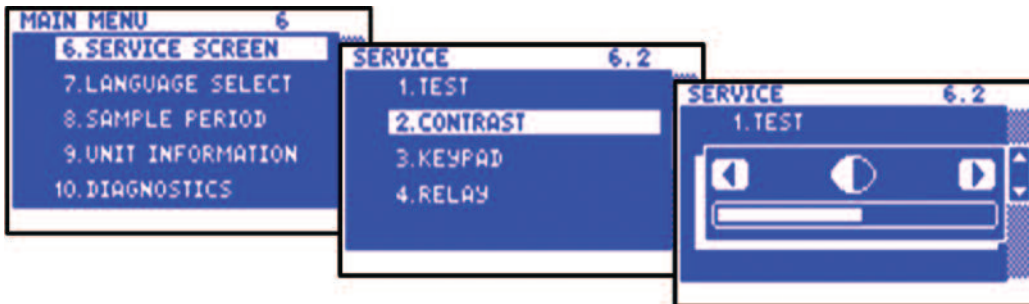




Press the  key when the TEST menu is selected, the THX internal audible alarm will 'sound' and all LED indicators will illuminate.

### 6.2 Contrast


From the Main Screen, press the  key to scroll down to the second page of the menu. Select Service from the main menu.



Confirm selection using the  key to reveal the Service menu. Select Contrast from the menu and press the  key to confirm.

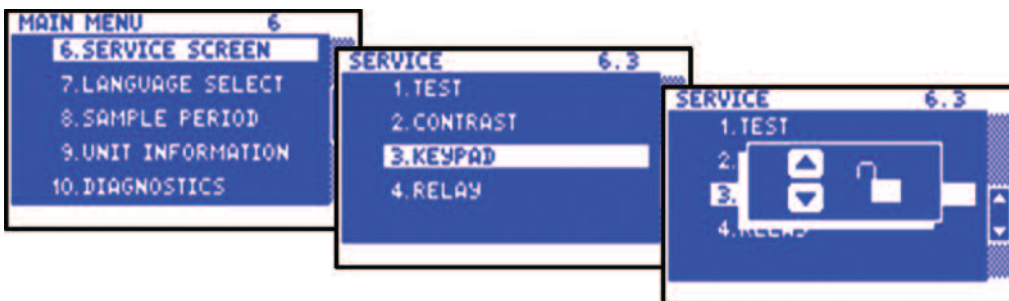



Use the   keys to adjust the contrast.

### 6.3 Keypad

From the Main Screen, press the  key to scroll down to the second page of the menu. Select Service from the main menu.

Confirm selection using the  key to reveal the Service menu. Select Keypad from the menu and press the  key to confirm.




To lock, press the  key.



To unlock, press the  key.

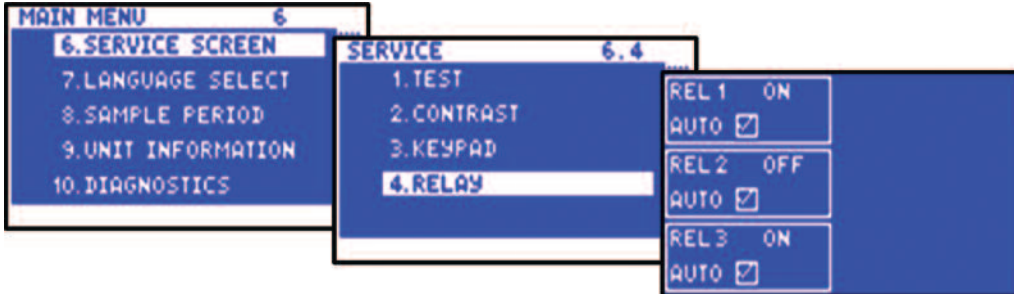
When the keypad is locked, the THX enters into a security mode, which renders the unit 'tamper-proof'.

# THX-DL Operation

## 6.4 Relay




From the Main Screen, press the  key to scroll down to the second page of the menu. Select Service from the main menu.





Confirm selection using the  key to reveal the Service menu. Select Relay from the menu and press the  key to confirm.



This screen displays the current status of the three alarm relays.

The menu allows the user to test the functionality of the relay manually. The default mode is auto.

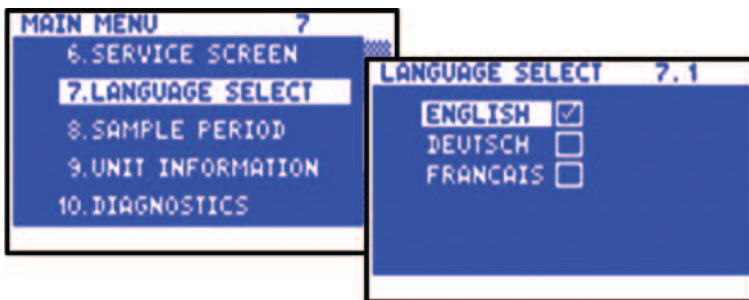
To change the relay status, select AUTO and press the  key to switch off the AUTO mode, press the  key, then use the  key to switch the relay ON or OFF.

-  Indicates that the relay is on AUTO mode
-  Indicates that the relay is on Manual mode
-  Indicates that the relay is ON
-  Indicates that the relay is OFF

## 7.0 LANGUAGE SELECT

From the Main Screen, press the  key to scroll down to the second page of the menu. Select Language Select from the main menu.

Confirm selection using the  key.



The language used by the THX to communicate the information may be selected here, i.e., English, German or French.

Use the  or  key to select the required language and then confirm the selection using the  key.

✓ indicates the language that is currently selected.

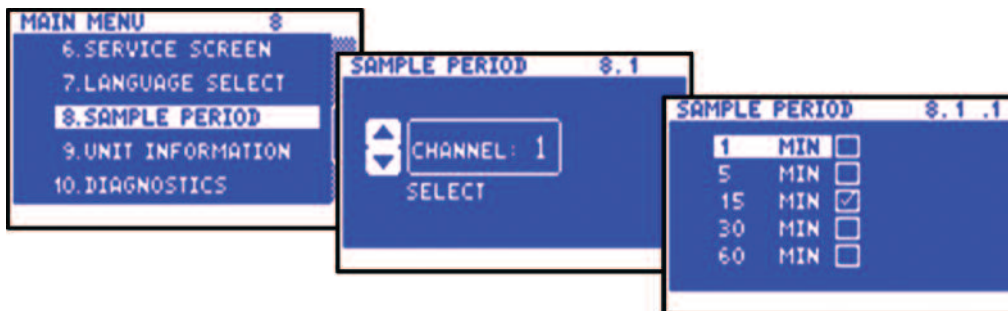
Press the  key to exit.



# THX-DL Operation

## 8.0 SAMPLE PERIOD

From the Main Screen, press the  key to scroll down to the second page of the menu. Select Sample Period from the main menu.

Confirm selection using the  key.



Choose channel and press the  key. Use the  or  key to select the required sample period and then confirm the selection using the  key.

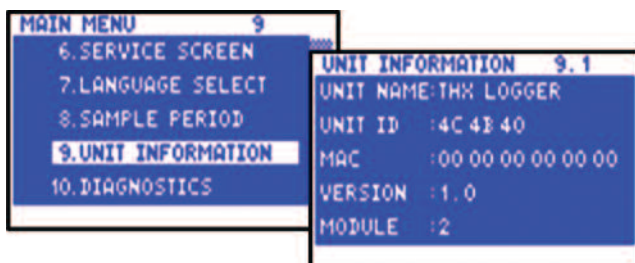
✓ indicates the sample period that is currently selected.

Press the  key to exit.

## 9.0 UNIT INFORMATION

From the Main Screen, press the  key to scroll down to the second page of the menu. Select Unit Information from the main menu.

Confirm selection using the  key.




This screen displays information about the unit, including the name, identification number (electronic serial number), MAC address, software version number and module information.

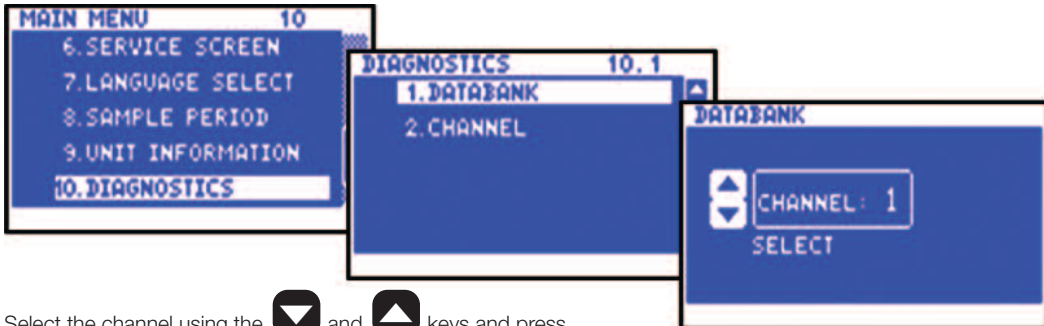
# THX-DL Operation

## 10.0 DIAGNOSTICS

### 10.1 Databank

From the Main Screen, press the  key to scroll down to the second page of the menu. Select Sample Period from the main menu.

Confirm selection using the  key to reveal the Diagnostics Menu. Select Databank from the menu and press the  key to confirm.





Select the channel using the  and  keys and press the  key to confirm.

- The DAYS USED window shows the used capacity of the internal databank.
- The DAYS FREE window shows the number of days which have not yet been used.
- The PERC FREE window shows the percentage of the databank which has not been used.
- The LAST ALARM window shows the last date on which an alarm condition occurred.
- The TRANSF ON window shows the date on which the contents of internal databank need to be transferred.
- The MAINS FL window shows the last date on which the power failed. During a power fail situation, this window will display the duration in minutes of the power failure

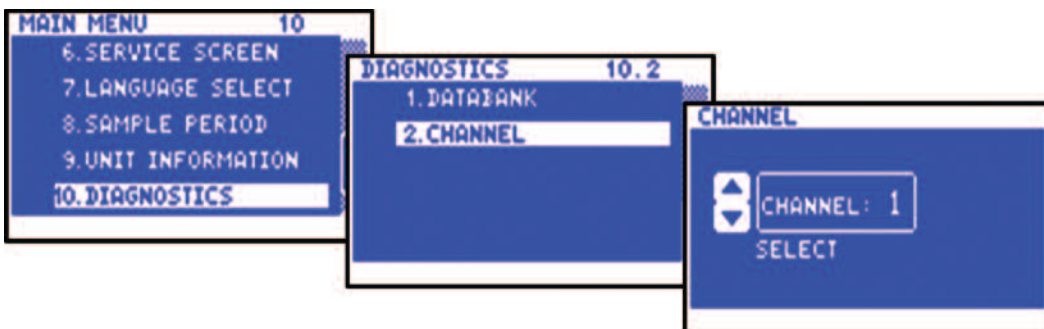
DATABANK	CHAN 1
DAYS USED:	45 DAYS
DAYS FREE:	931 DAYS
PERC FREE:	95 % FREE
LAST ALARM:	3 NOV 2010
TRANSF ON:	22 MAY 2013
MAINS FL:	NO HISTORY

### 10.2 Channel

From the Main Screen, press the  key to scroll down to the second page of the menu. Select Sample Period from the main menu.

Confirm selection using the  key to reveal the Diagnostics Menu. Select Channel from the menu and press the  key to confirm.

Select the channel using the  and  keys and press the  key to confirm.



- The CHANNEL window shows the number of the currently selected channel.
- The MODULE window shows the number of the currently selected module.
- The INPUT TYPE window shows which type of sensor is being used.
- The CALIB DATA window shows calibration values, for factory use only.
- The LAST CALIB window shows the date when the THX was calibrated.
- The ALARM HI window shows the date when the last high alarm condition occurred for this channel.
- The ALARM LO window shows the date when the last alarm condition occurred for this channel.

CHANNEL	1
MODULE	1
INPUT TYPE	PT100
CALIB DATA	0FCF7A 74BCE7
LAST CALIB	23 JUN 2010
ALARM HI:	3 NOV 2010
ALARM LO:	3 NOV 2010

# USB

THX data logger can transfer data to/from a USB memory stick. The user can download the logged data and the unit settings to any USB memory device in FAT 32 format.

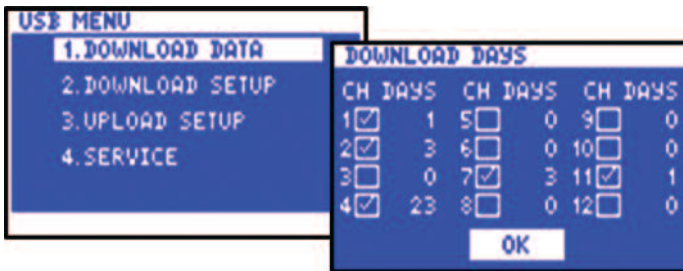
The USB memory key can also be used to load new unit settings; this is useful, for example, for importing the settings from a previously configured unit.

To enter to the USB menu, connect the USB stick to USB port when the Sensor Summary Screen is displayed.



## 1. Download Data

From the USB Menu screen, press **OK** key to reveal the Download Data Screen.



Use the **▼** or **▲** key to select the required channel and

then confirm the selection using the **OK** key.

Choose the sample period from the pop-up menu using

the **▼** or **▲** key and then confirm the selection using the **OK** key.

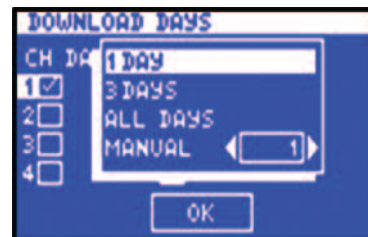
Choose another channel or select OK and confirm using the **OK** key.

The download bar will appear indicate the downloading progress.

Do not remove the memory stick until the progress bar disappears.

The data is saved to a file in '.csv' format, compatible with Microsoft® Excel.

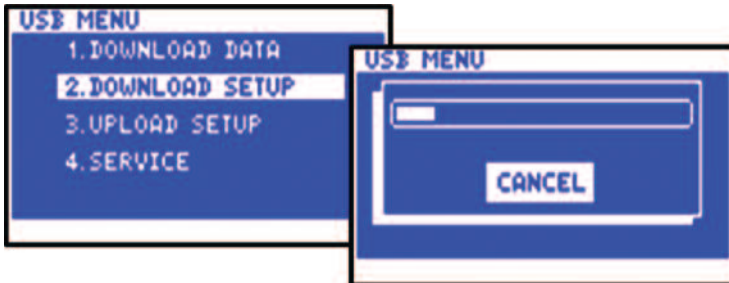
The file name is automatically generated by the Data Logger.



# USB

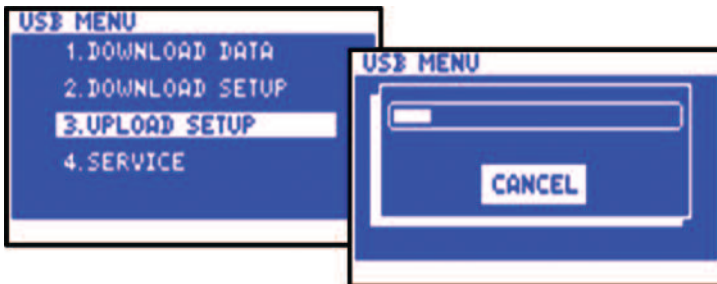
## 2. Download Setup

From the Main Screen, press the **OK** key, followed by the **▼** key to select Download Setup in the menu and then confirm selection using the **OK** key to start download the settings. Do not remove the memory stick until the progress bar disappears. The data is saved to a file in 'setup.txt' format.



## 3. Upload Setup

From the Main Screen, press the **OK** key, followed by the **▼** key to select Upload Setup in the menu and then confirm selection using the **OK** key to start upload previously downloaded settings from the memory stick. Do not remove the memory stick until the progress bar disappears.



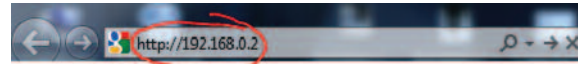
## 4. Service

For use only by authorised personnel and trained installers.

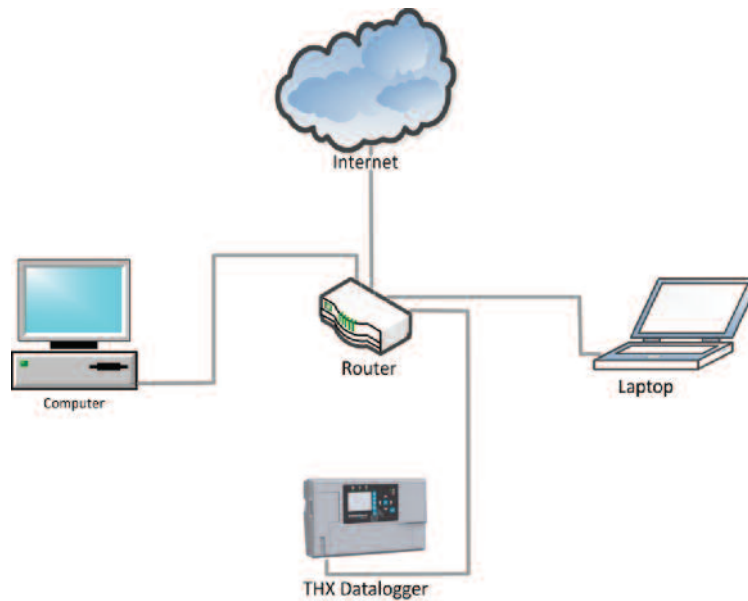


## Web Server

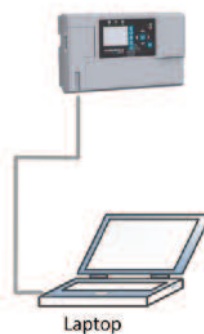
To connect with unit's embedded Web Server, connect unit to the network (switch, hub, router etc.) using Ethernet CAT-5 cable or directly to the network adapter on your computer and open a web browser - Windows Internet Explorer (version 8.0 or higher) or Firefox. Input the unit's IP address (default -192.168.0.2), see section 4.10.



Network connection



Direct connection



Enter the username and password (as provided below).

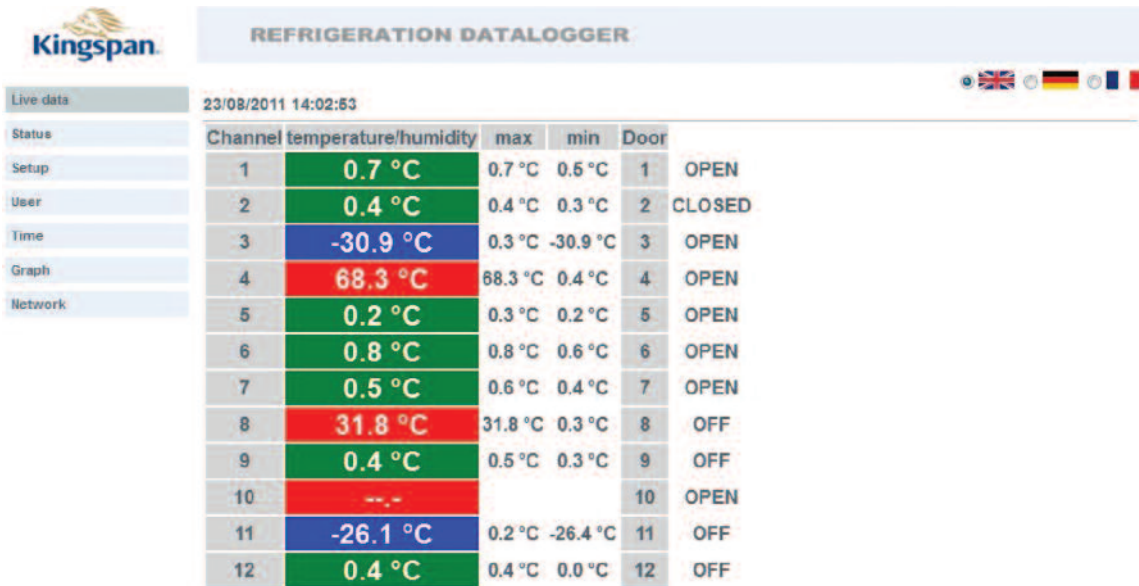
Default username and password:

User: user

Password: password

# Web Server

## 1. Live Data



The interface shows the Kingspan REFRIGERATION DATALOGGER with a date and time of 23/08/2011 14:02:53. It features a navigation menu on the left and a table of 12 channels. Each channel row includes a temperature/humidity reading (with max and min values), a door status, and a color-coded background for the temperature reading.

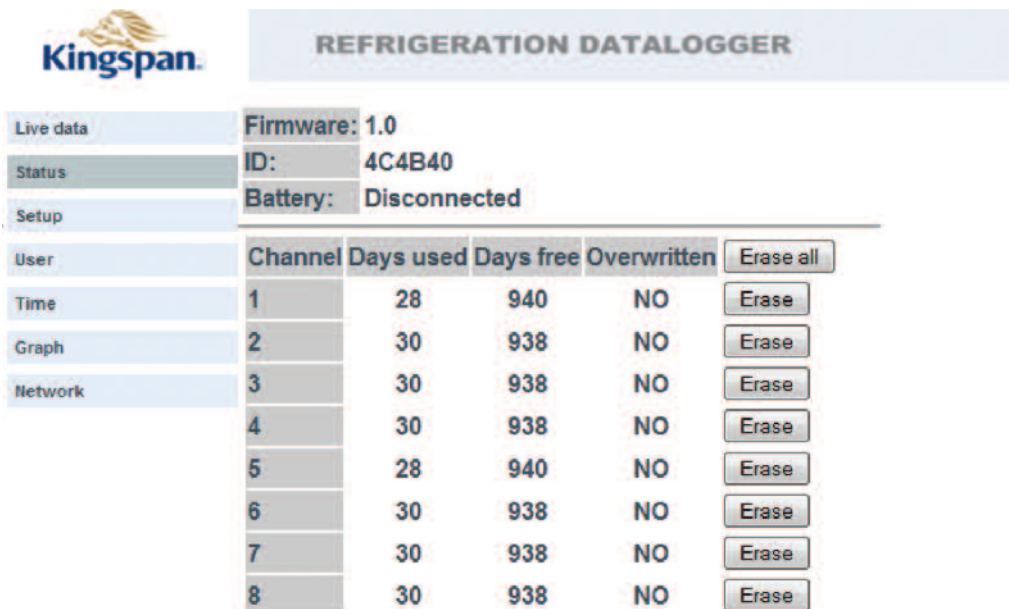
Channel	temperature/humidity	max	min	Door
1	0.7 °C	0.7 °C	0.5 °C	1 OPEN
2	0.4 °C	0.4 °C	0.3 °C	2 CLOSED
3	-30.9 °C	0.3 °C	-30.9 °C	3 OPEN
4	68.3 °C	68.3 °C	0.4 °C	4 OPEN
5	0.2 °C	0.3 °C	0.2 °C	5 OPEN
6	0.8 °C	0.8 °C	0.6 °C	6 OPEN
7	0.5 °C	0.6 °C	0.4 °C	7 OPEN
8	31.8 °C	31.8 °C	0.3 °C	8 OFF
9	0.4 °C	0.5 °C	0.3 °C	9 OFF
10	--.--			10 OPEN
11	-26.1 °C	0.2 °C	-26.4 °C	11 OFF
12	0.4 °C	0.4 °C	0.0 °C	12 OFF

Live data screen displays the current temperature/humidity readings of each of the connected channels and indicates if that channel is in alarm or not. The status of each of the 12 digital inputs is also displayed, indicating whether it is OPEN, CLOSED or OFF.

To change the language, click on the suitable flag as outlined below.



## 2. Status



The interface shows the Kingspan REFRIGERATION DATALOGGER with status information: Firmware: 1.0, ID: 4C4B40, and Battery: Disconnected. Below this is a table with 8 channels, each having columns for Days used, Days free, and Overwritten, along with an Erase button.

Channel	Days used	Days free	Overwritten	Erase
1	28	940	NO	Erase
2	30	938	NO	Erase
3	30	938	NO	Erase
4	30	938	NO	Erase
5	28	940	NO	Erase
6	30	938	NO	Erase
7	30	938	NO	Erase
8	30	938	NO	Erase

This screen displays the current Firmware, ID and battery status.

The memory status of each channel is represented in Days used and Days free.

Users can erase data from each channel by pressing **Erase** button and confirm or erase all data by pressing **Erase all** and confirm.

# Web Server

## 3. Setup

Setup screen display settings for each channel and allows user to edit them.

Choose the channel for which you want to change the settings **Channel 1** and edit them:

- switch channel ON or OFF  ON  OFF
- choose the sensor type  Temperature  Rel humidity
- choose the sample period **Sample period**  
 1 min  5 min  15 min  30 min  60 min
- set the High Alarm thresholds **Alarm HI**  
Limit: 20 °C / %  
Max: 10 °C / % Delay: 1 min
- set the Low Alarm thresholds **Alarm LO**  
Limit: -20 °C / %  
Min: -10 °C / % Delay: 1 min
- associate door with chosen channel **Door**  
 1  2  3  4  5  6  7  8
- associate Alarm relay with chosen channel **Relay**  
 1  2  3

To save the changes click the **Set** button.

# Web Server

## 4. User

The screenshot shows the 'User' settings page of the Kingspan Refrigeration Datalogger. On the left is a navigation menu with options: Live data, Status, Setup, User (highlighted), Time, Graph, and Network. The main content area has a header with the Kingspan logo and 'REFRIGERATION DATALOGGER'. Below the header, there are input fields for 'Old username:' (containing 'user'), 'Old password:', 'New username:', and 'Old password:'. A 'SET' button is located below these fields. At the bottom of the page, there is a 'FACTORY SETTINGS' button.

User screen allow user to change the username and password and to restore factory settings.

To change the password enter old username and password, then enter new username and password, confirm password and click the **SET** button.

To restore factory setting click the **FACTORY SETTINGS** button and confirm.

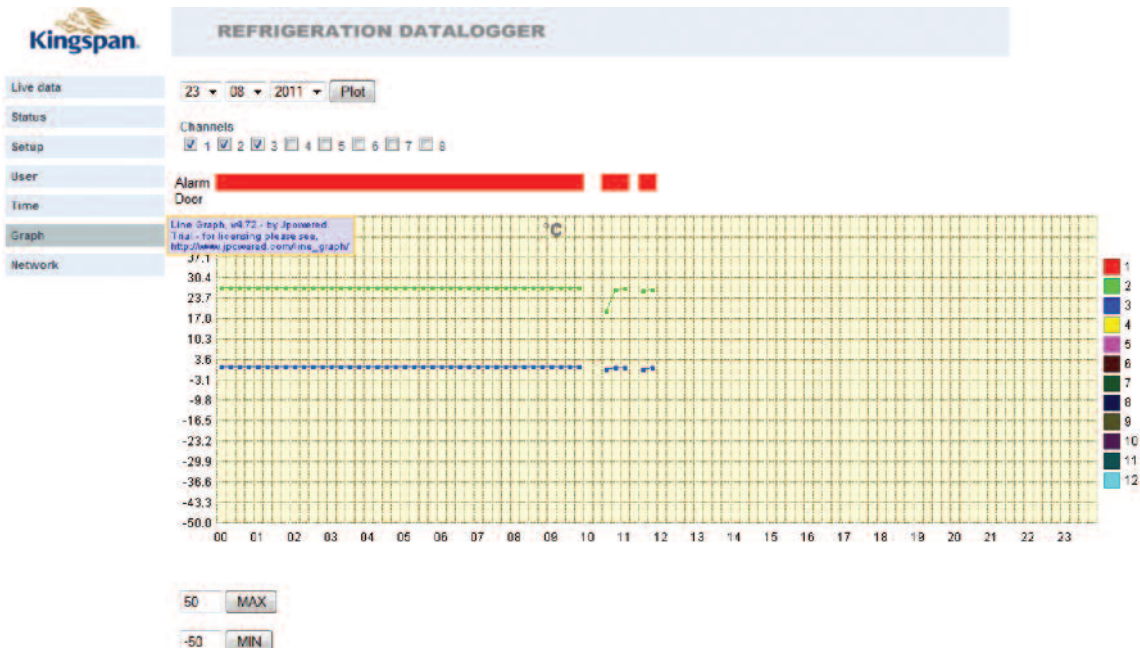
## 5. Time

The screenshot shows the 'Time' settings page of the Kingspan Refrigeration Datalogger. On the left is a navigation menu with options: Live data, Status, Setup, User, Time (highlighted), Graph, and Network. The main content area has a header with the Kingspan logo and 'REFRIGERATION DATALOGGER'. Below the header, there are date and time selection controls. The date is set to '23 / 08 / 2011' and the time is set to '11 : 54'. A 'Set' button is located below these controls.

To change the date and time use the **23 / 08 / 2011** , **11 : 54** and click on the **Set** button to save the changes.

# Web Server

## 6. Graph



Graph screen allow user to generate multiple channel graph.

To generate the graph, set the date **23** / **08** / **2011** , choose the channels  1  2  3  4  5  6  7  8 and click on the **Plot** button.

User can set the graph scale using **50** **MAX** **-50** **MIN** buttons.

## 7. Network

Network screen display network setting for the unit and allow user to change them.

Please enter your network details or choose DHCP for Automatic Network Configuration.

To set Automatic Network Configuration, click on the  **DHCP** and click the **Set** button to save.

**DHCP** Indicates that the DHCP is OFF.

**DHCP** Indicates that the DHCP is ON.

# Specification

## ELECTRICAL

<b>Supply Voltage:</b>	110-240V AC Single Phase
<b>Fuses:</b>	1A 20mm Slow Blow Glass Fuse
<b>Relay Output:</b>	Alarm: 5A changeover 2 pin isolated – (volt free contacts)
<b>Ambient Temperature:</b>	0°C to +40°C

## MECHANICAL:

<b>Dimensions:</b>	width: 300mm height: 100mm depth: 180mm weight: 1.4kg sensor: (each) 0.13kg
<b>Box Material:</b>	Plastic
<b>Display:</b>	Large LCD with backlight

## SENSORS:

<b>Type:</b>	SX™ PT 100 Platinum Film
<b>Compensation:</b>	3 wire compensated
<b>Cable Length:</b>	A variety of lengths are available from 5m to 50m
<b>Battery:</b>	3.7V Lithium polymer 1000mAh

## ACCESSORIES:

- 4 – Channel Module
- Sensor (5m Cable)
- Sensor (15m Cable)
- Sensor (25m Cable)
- Sensor Extender 10m
- Sensor Extender 20m
- Sensor Extender 50m
- Humidity Sensor
- Wall Bracket for Humidity Sensor



WALL MOUNT TEMPLATE





### **Kingspan Environmental**

180 Gilford Road, Portadown, Co. Armagh,  
Northern Ireland BT63 5LF

**Sales Support Office:** +44 (0) 28 3836 4444

**Email:** [info@thermomax-refrigeration.com](mailto:info@thermomax-refrigeration.com)

**[www.thermomax-refrigeration.com](http://www.thermomax-refrigeration.com)**

*Part of*



In keeping with Company policy of continuing research and development and in order to offer our clients the most advanced products, Kingspan Environmental reserves the right to alter specifications and drawings without prior notice.

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