TQ35

CENTRAL ALARM PANEL

OPERATING MANUAL

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Table of Contents

List of Figures

PROPRIETARY

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WARNINGS, CAUTIONS AND NOTES

 **Warnings identify an operating or maintenance procedure, practice, condition, or statement that, if not strictly followed, could result in death or injury to personnel.**

 Cautions, which appear elsewhere in this manual, identify an operating or maintenance procedure, practice, condition, or statement that if not strictly followed could result in equipment damage or serious impairment of system operation.

Notes highlight certain operating or maintenance conditions or statements that are essential but not of known hazardous nature as indicated by Warnings and Cautions.

Warnings, Cautions and Notes are included throughout this manual, as required. Additionally, this section contains important Warnings that may not be contained elsewhere within this instruction manual.

SAFETY WARNINGS

- **FOR SAFETY REASONS, THE TQ35 CENTRAL ALARM PANEL MUST BE INSTALLED, OPERATED AND SERVICED BY QUALIFIED PERSONNEL ONLY.**
- **READ AND UNDERSTAND THIS INSTRUCTION MANUAL COMPLETELY BEFORE OPERATING THE TQ35.**
- **THE OPERATION DESCRIBED IN THIS DOCUMENT IS THE INTENDED USE OF THE TQ35.**
- **TQ ENVIRONMENTAL LIMITED CANNOT BE HELD RESPONSIBLE IF THE TQ35 IS USED FOR ANY PURPOSE OTHER THAN THAT STATED. ANY OTHER USE OF THE TQ35 WILL INVALIDATE ANY CERTIFICATES ISSUED.**

1.0 Introduction

The TQ35 Central Alarm Panel enables the group monitoring of up to 16 TQ32 Area Alarm Panels which in turn enables the group monitoring of commonly used refrigerant gases such as R410A in areas with air conditioning systems etc. using the TQ31 Refrigerant sensor.

The TQ35 Central Alarm Panel will provide a local visual and audible alarm indication when any of its connected TQ32 Area Alarm Panels have entered the alarm state. It can also provide outputs for an External Sounder as well as providing two common alarm volt-free contacts.

The TQ35 Central Alarm Panel consists of a Touchscreen Display that will automatically blank after 5 minutes of inactivity to conserve power. The Touchscreen Display will be woken up automatically if an alarm condition is detected and remain active while the alarm condition is still present. The Touchscreen Display will also wake up if the user presses on the Touchscreen.

The TQ35 Central Alarm Panel communicates with the TQ32 Area Alarm Panels via an RS485 communication channel. The RS485 Communications channel is daisy-chained to all the connected TQ32 Area Alarm Panels.

Note: Communications Cable conforming to the RS485 Standard should be used for the installation of the TQ35 Central Alarm Panel and the TQ32 Area Alarm Panels. Specifically; 3 cores are required, 1 twisted pair plus 1 single, screened with a cable Characteristic Impedance, *Z0*, of 120Ω.
See page 14 for further cable and connection details

1.1 Indication LED's and Main Display Overview

The LED's on the TQ35 Central Alarm Panel are used to indicate the status of the Unit. There are two LED's and a Touchscreen Display situated on the front of the Panel.

The **System Healthy** LED is a green LED and should normally be illuminated when power is applied to the TQ35 Central Alarm Panel **and the software is running**. The **Refrigerant Alarm** LED is a red LED and should illuminate when an Alarm Input has entered an alarm condition. When the alarm condition has been removed at the TQ32 Area Alarm Panel, the Alarm LED will extinguish.

The main Touchscreen Display is used to show the TQ32 Area Alarm Panel information. Above the TQ32 Area Alarm Panel image, the first line shows the TQ32 Area Alarm Panel Number, the second line shows the TQ32 Area Alarm Panel Location, and the third line shows the TQ32 Area Alarm Panel alarm state. Any TQ32 Area Alarm Panels that are inactive or unused are greyed out.

Pressing the **Silence Alarm** button on the bottom of the TQ35 Central Alarm Panel Touchscreen Display accepts any alarms and silences the audible alarm.

Note: Audible alarms from room sensors will only be silenced when any gas has cleared, and the alarm condition has gone.

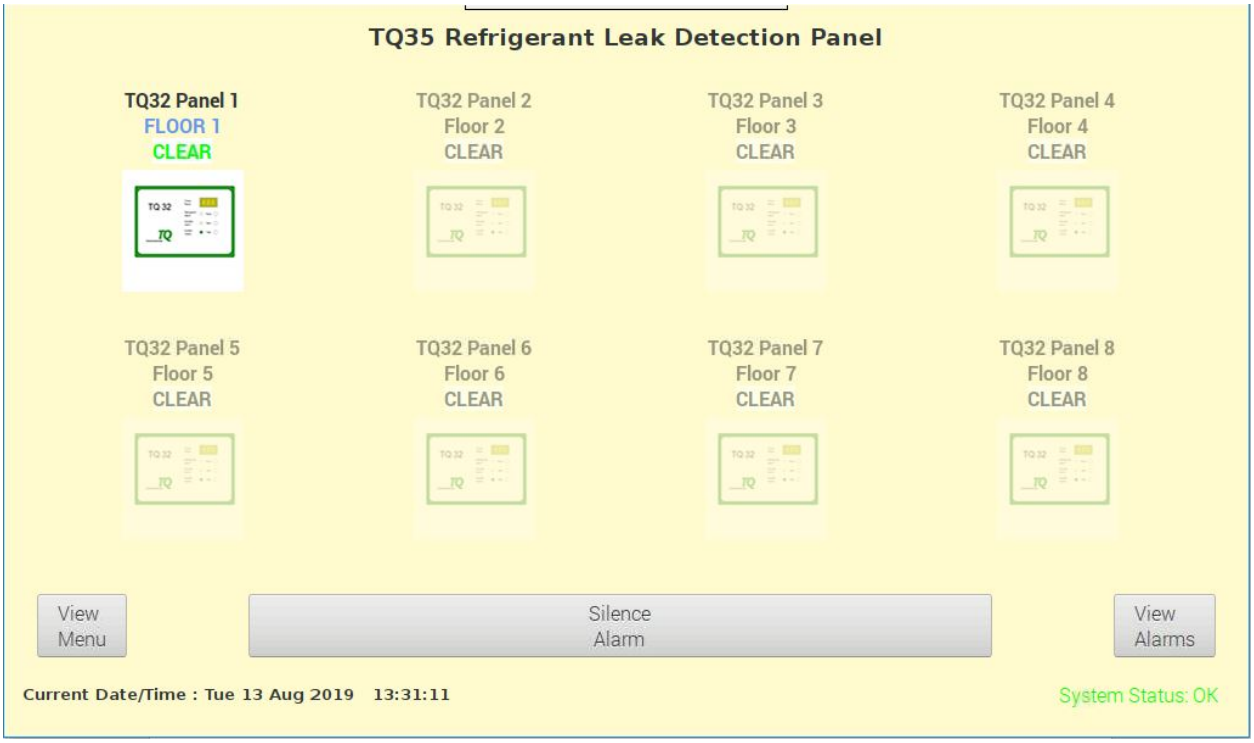

Figure 1 - Main Touchscreen Display

1.2 Alarm Indication Overview

When any TQ32 Area Alarm Panel goes into the alarm state, the TQ35 Central Alarm Panel will indicate which TQ32 Area Alarm Panel is in alarm by changing its alarm state from the green *"CLEAR"* to red flashing *"ALARM"* and the audible alarm and alarm LED will activate. Pressing the **Silence Alarm** button will stop the red flashing *"ALARM"* and change to red continuous *"ALARM"* and silence the audible alarm. The System Status indicator at the bottom right of the Touchscreen Display will change to display *"SENSOR ALARM"*.

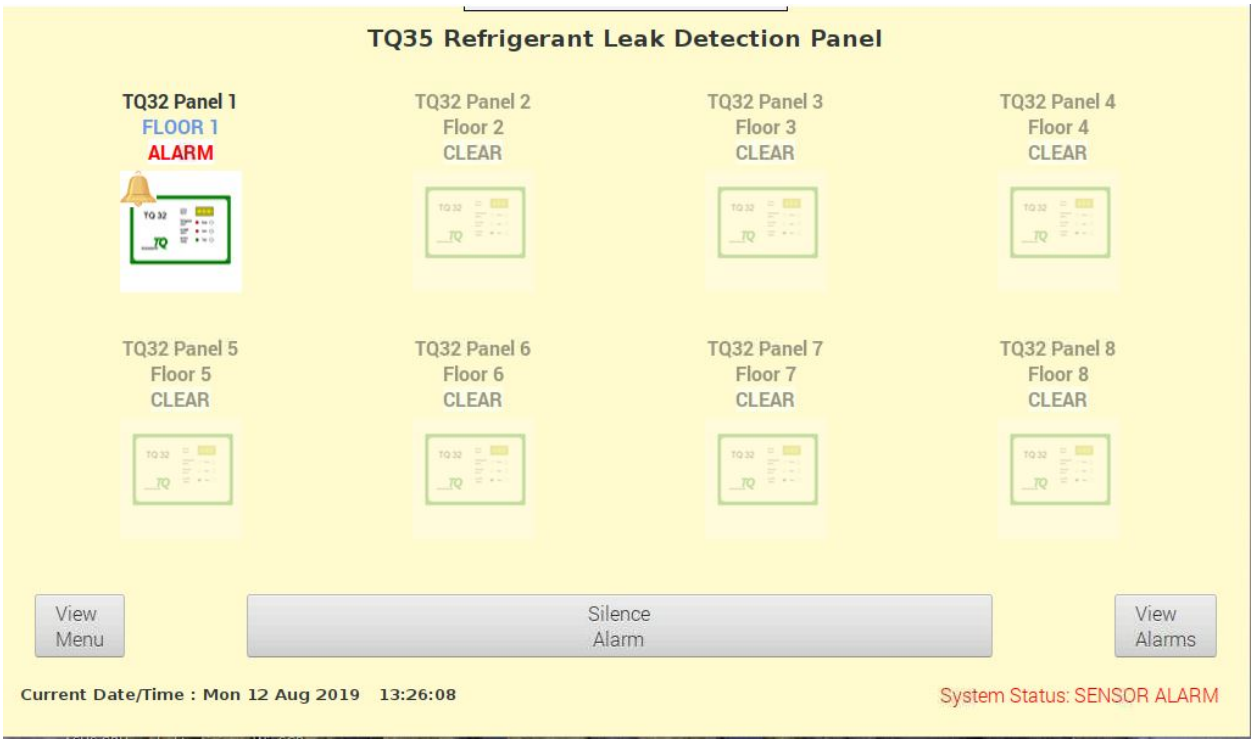

Figure 2 - Sensor Alarm Display

The user may then interrogate the TQ35 Central Alarm Panel to find out which sensor/room number has its alarm activated. This is achieved by pressing on the relevant TQ32 Area Alarm Panel image to display the Sensor Status page of that panel. The Sensor Number, Room Number/Location and the alarm state will be displayed for each sensor connected to the corresponding TQ32 Area Alarm Panel.

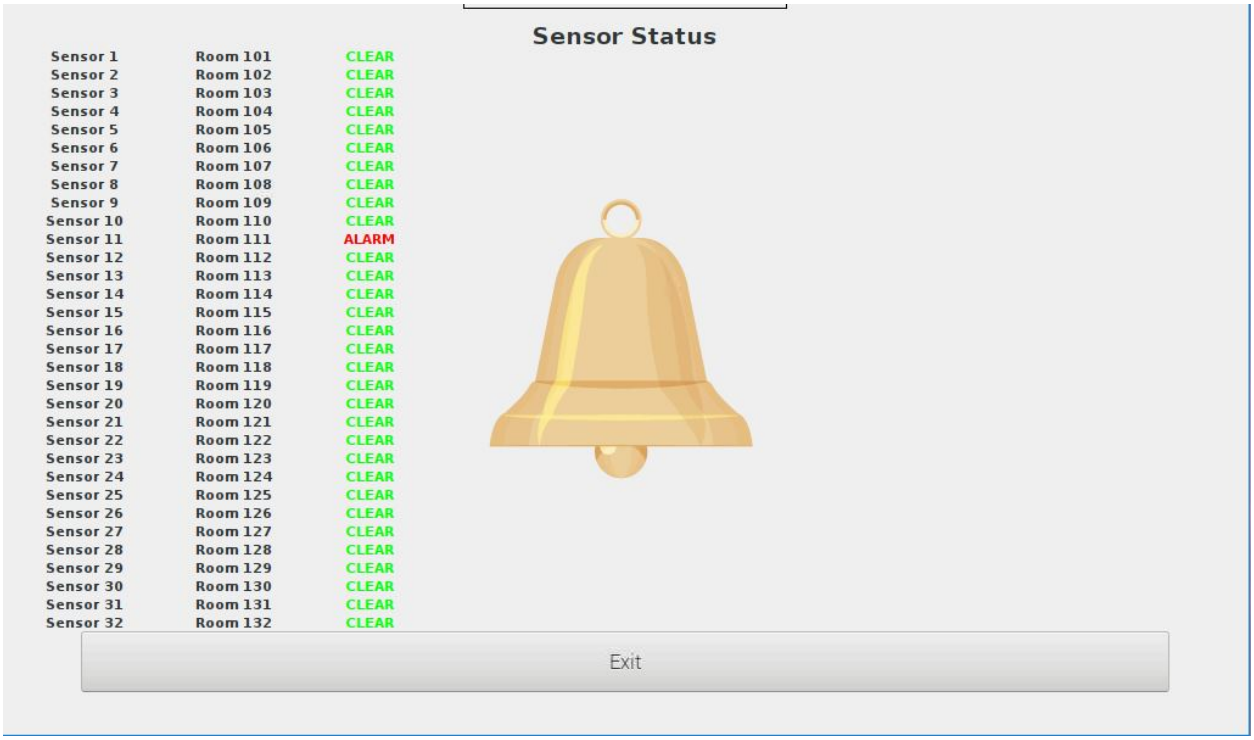

Figure 3 - Sensor Status Display

Pressing the **Exit** button will return to the Main Display page.

The alarm status will be automatically cleared when the TQ35 Central Alarm Panel has been silenced by pressing the **Silence Alarm** button and the TQ32 Area Alarm Panel has cleared all its alarms.

1.3 Fault Indication Overview

When any TQ32 Area Alarm Panel fails to communicate with the TQ35 Central Alarm Panel, the TQ35 Central Alarm Panel will indicate which TQ32 Area Alarm Panel is in fault by changing its alarm state from the green *"CLEAR"* to red flashing *"FAULT"* and the audible alarm will activate. Pressing the **Silence Alarm** button will stop the red flashing *"FAULT"* and change to red continuous *"FAULT"* and silence the audible alarm. The System Status indicator at the bottom right of the Touchscreen Display will change to display *"COMMS FAULT"*.

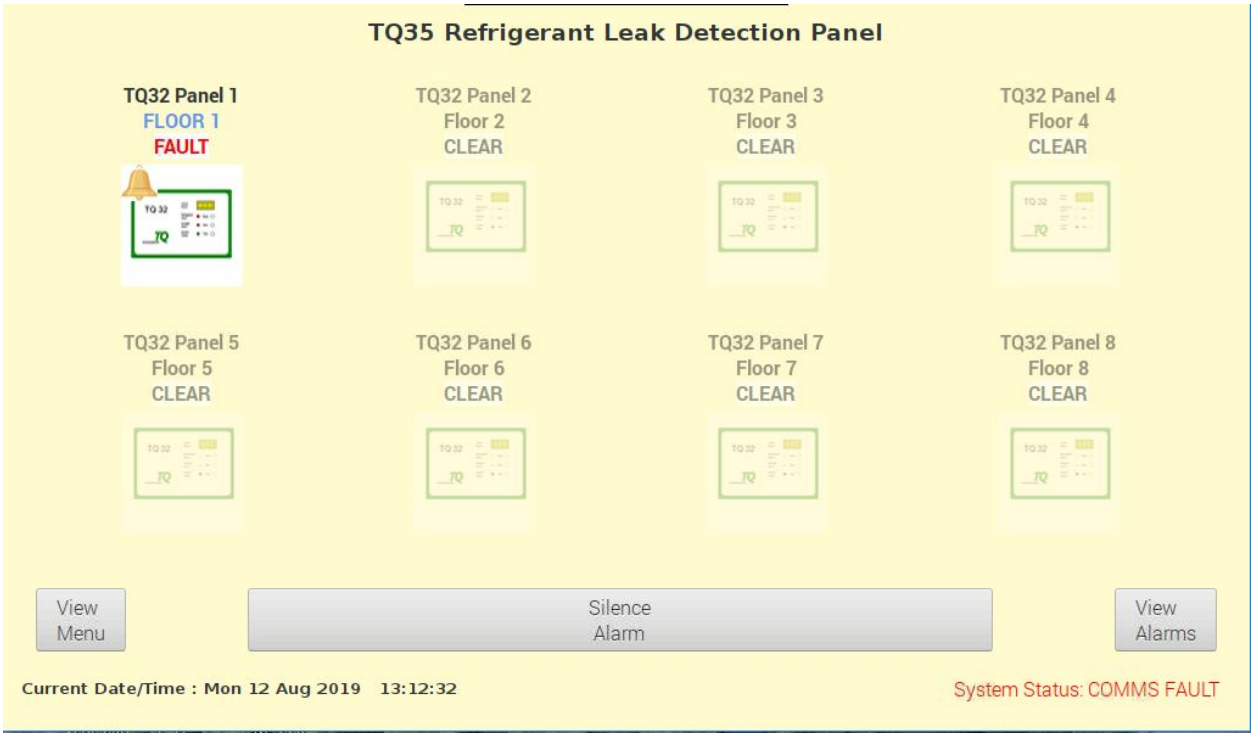

Figure 4 - Panel Comms Fault Display

The TQ35 Central Alarm Panel will clear the Fault condition when communications are restored with the corresponding TQ32 Area Alarm Panel.

1.4 Display Alarm Log

A log of the alarms may be viewed by pressing the **View Alarms** button. The **Next** and **Prev** buttons may be used to traverse the Alarm Log table. The Alarm Log table shows the date and time that the alarm occurred, the TQ32 Area Alarm Panel Number, the Sensor Number (if a gas alarm) and the Location (if a gas alarm) or Fault condition. The Alarm Log page can be closed by pressing the **Exit** button.

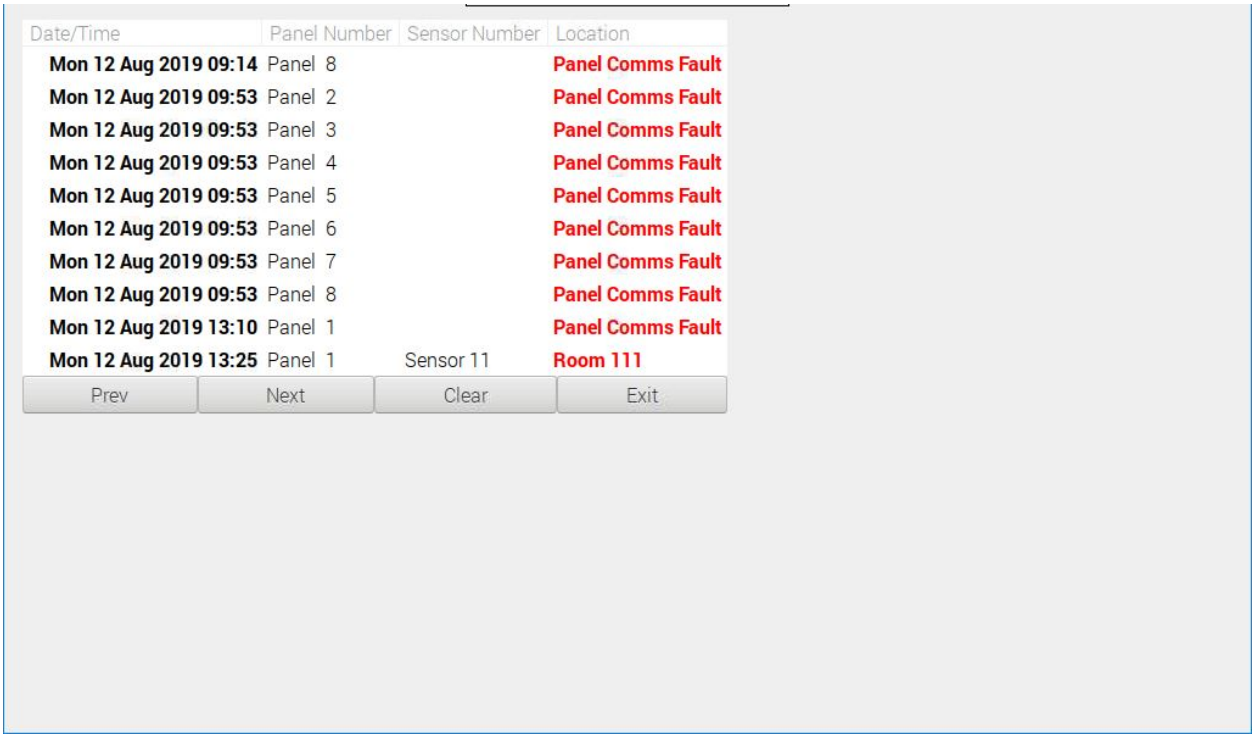

Figure 5 - Alarm Log Display

2.0 Installation

A typical installation schematic is shown below

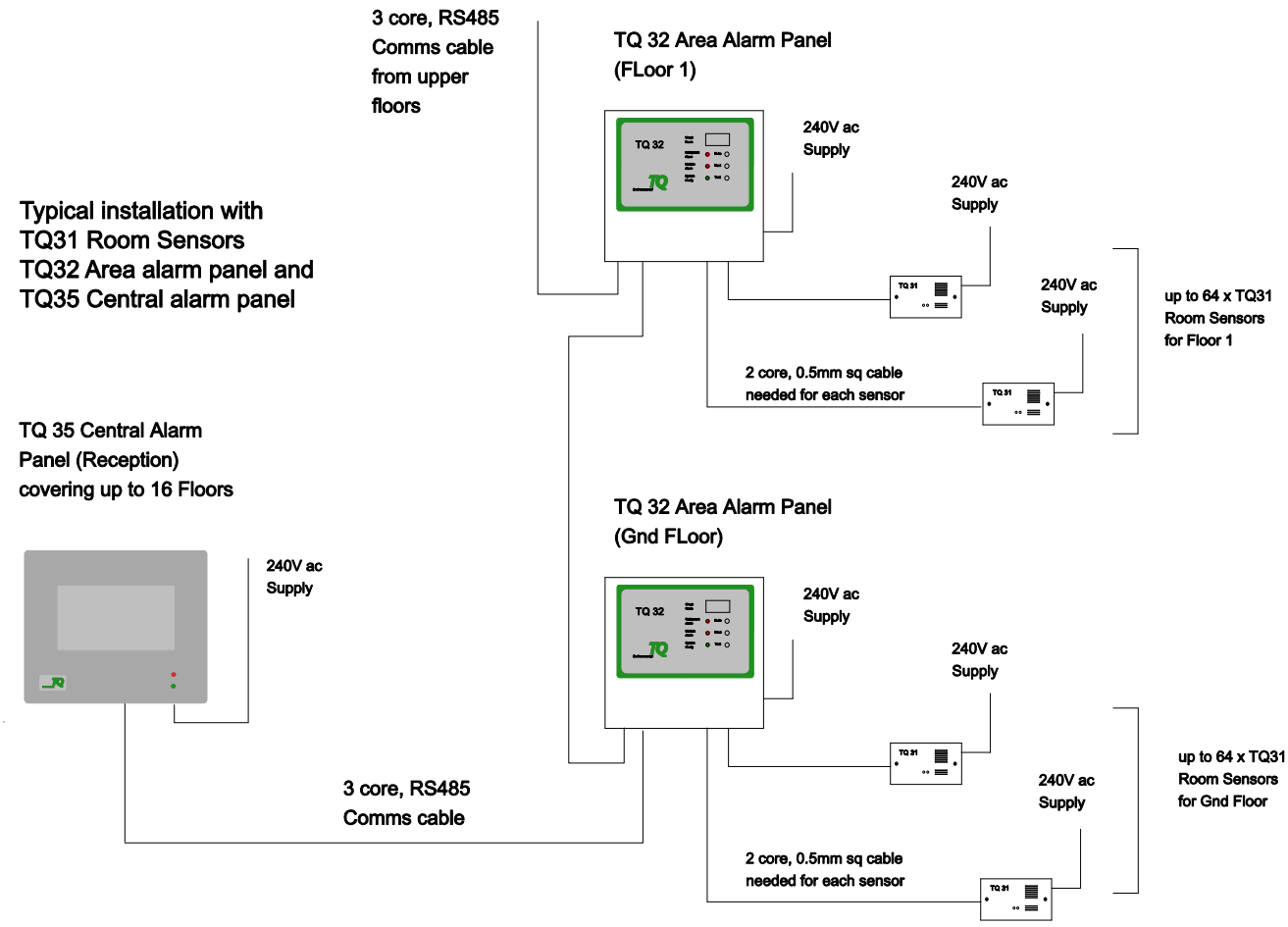

Figure 6 - Typical Installation

Typical system Power Requirements.

TQ31 Room Sensors.

- Each TQ31 Room sensor to be connected to the mains supply via electrical back box.
  240v ac 0.1A load
- Each TQ31 Room sensor to be connected to TQ32 Area Alarm Panel via 2 core, 0.5mm^2 cable.
  24v DC, alarm indication only, 0.1A DC

TQ32 Area Alarm Panels.

- Each TQ32 Area Alarm Panel to be connected to the mains supply via local fuse spur. 240v ac 0.5A load
- Each TQ32 Area Alarm Panel to be connected to TQ35 Central Alarm Panel via 3 core, RS485 cable.

TQ35 Central Alarm Panel.

- TQ35 Central Alarm Panel to be connected to the mains supply via local fuse spur. 240v ac 0.5A load

A 3 core RS485 cable needs to be run from the TQ32 Area Alarm Panels to the TQ35 Central Alarm Panel. **See page 14 for further cable and connection details**

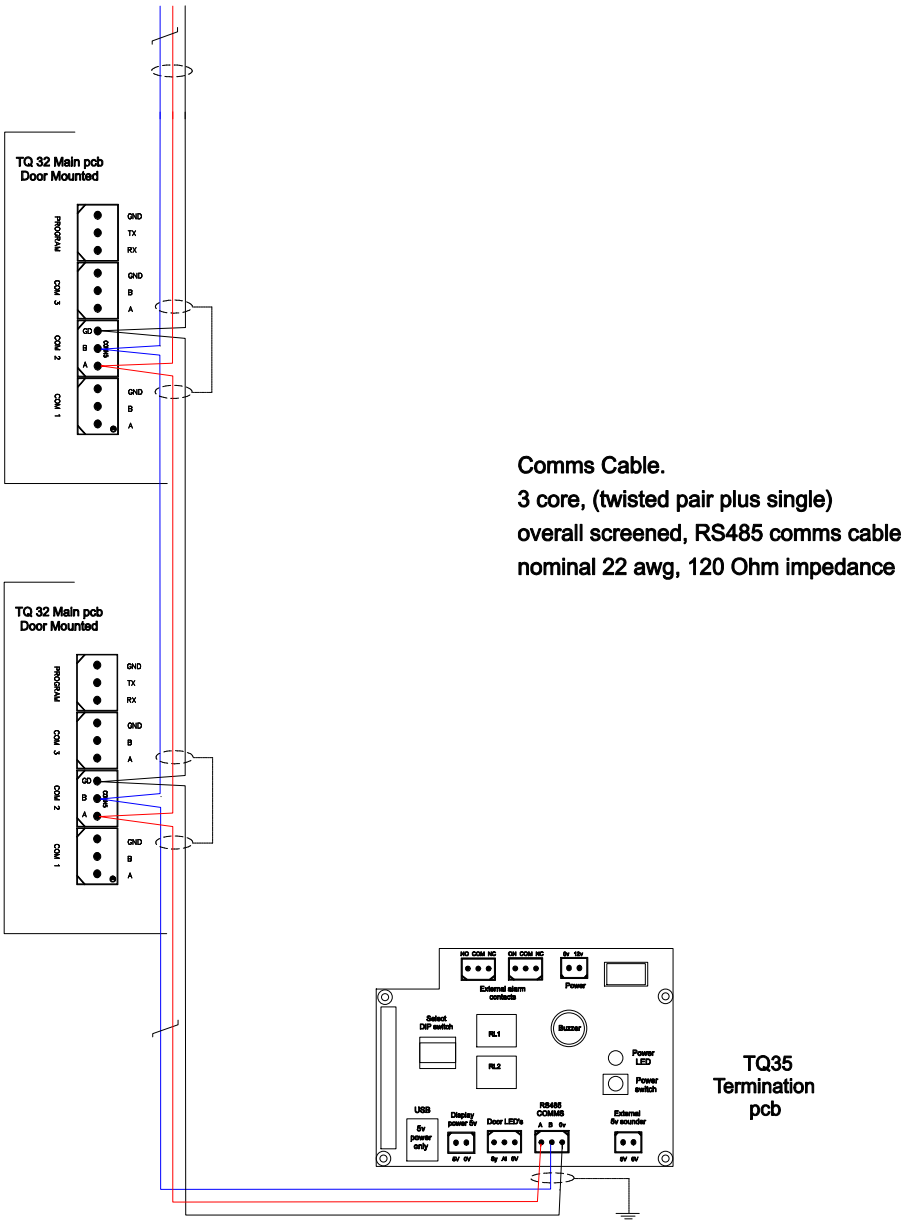

Figure 7 - RS485 Connection Schematic

2.1 Power Connection

WARNING 240VAC

Power for the TQ35 Central Alarm Panel is from a 100V-240V 50/60Hz AC supply. The green power LED will illuminate on the front panel when the system has performed boot-up and is running.

The power connection is via a fused terminal located at the bottom right hand side, inside the TQ35 Central Alarm Panel enclosure.

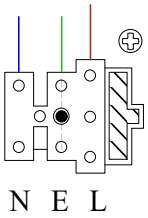

Figure 8 - Power Connection

2.2 TQ35 Connections

Connection to the TQ35 Central Alarm Panel are shown below.

Note: Communications Cable conforming to the RS485 Standard should be used for the installation of the TQ35 Central Alarm Panel and the TQ32 Area Alarm Panels. Specifically; 3 cores (1 twisted pair plus 1 single) screened with a cable Characteristic Impedance, *Z0*, of 120Ω.

3 cores are required (or 2 twisted pairs) with overall screen.
1 pair for “A and B” communications
1 x single (or 1 pair connected together) for 0V return.
Overall screen should be connected to ground at the control panel end.

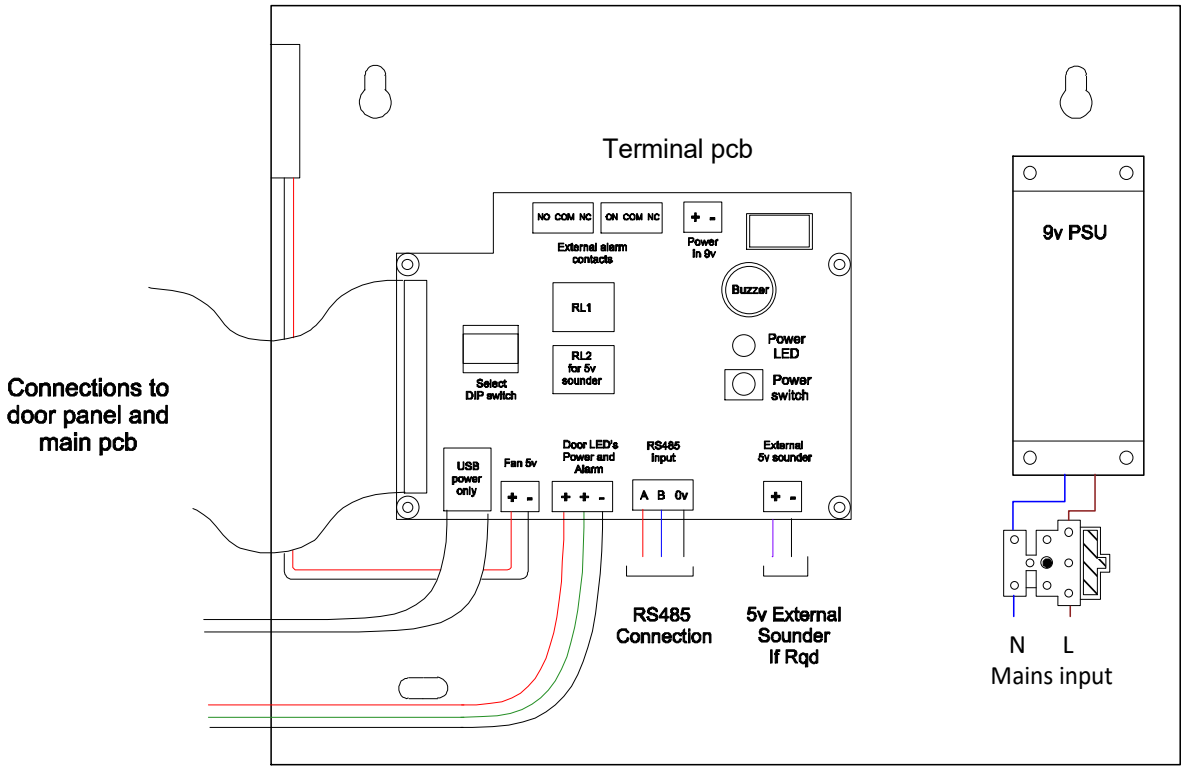

Figure 9 - TQ35 Wiring Connection

2.3 Relay Connections

Two Common Alarm 5V Relay contacts are available for remote indication on Connectors CONN3 and CONN4.
(Normally Closed) contact is on Pin 1, (Common) contact is on Pin 2, and (Normally Open) contact is on Pin 3.

These contacts operate on the alarm state of the TQ32 Area Alarm Panels.

A 5V External Sounder may be connected to CONN9 that will be activated in a similar fashion to the internal local sounder.

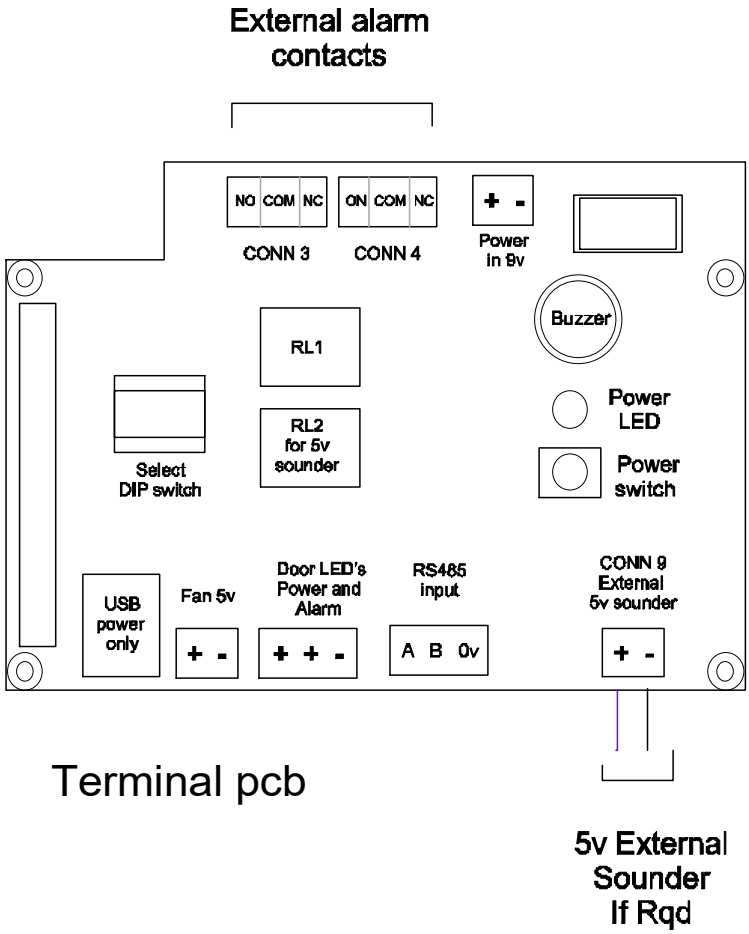

Figure 10 - Terminations

3.0 System Configuration

The TQ35 Central Alarm Panel has its' software and configuration files stored onto a microSD Card. The TQ35 Central Alarm Panel can be configured via the Touchscreen Display and an external USB Keyboard and optionally an external USB Mouse.

The TQ35 Central Alarm Panel can be configured by entering the Menu system. The Menu System may be entered by pressing the **View Menu** button. This will bring up a Password Dialogue.

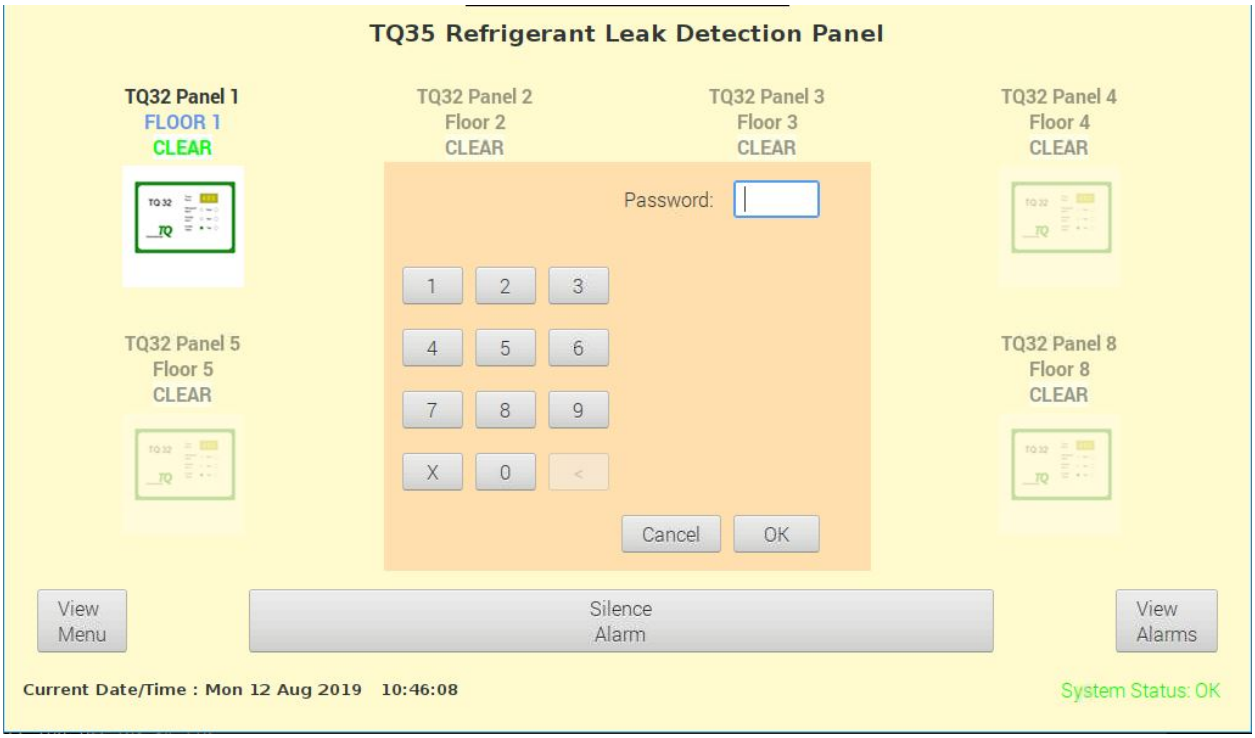

Figure 11 - Password Entry Dialogue

Note: The Password for the TQ35 Central Alarm Panel is "6197".

The user may enter the password via the on-screen number pad or the external USB keyboard. To erase the last entered number, the **X** button may be pressed.

If an incorrect password is entered the Password Dialogue will display "*access denied!*" and automatically close.

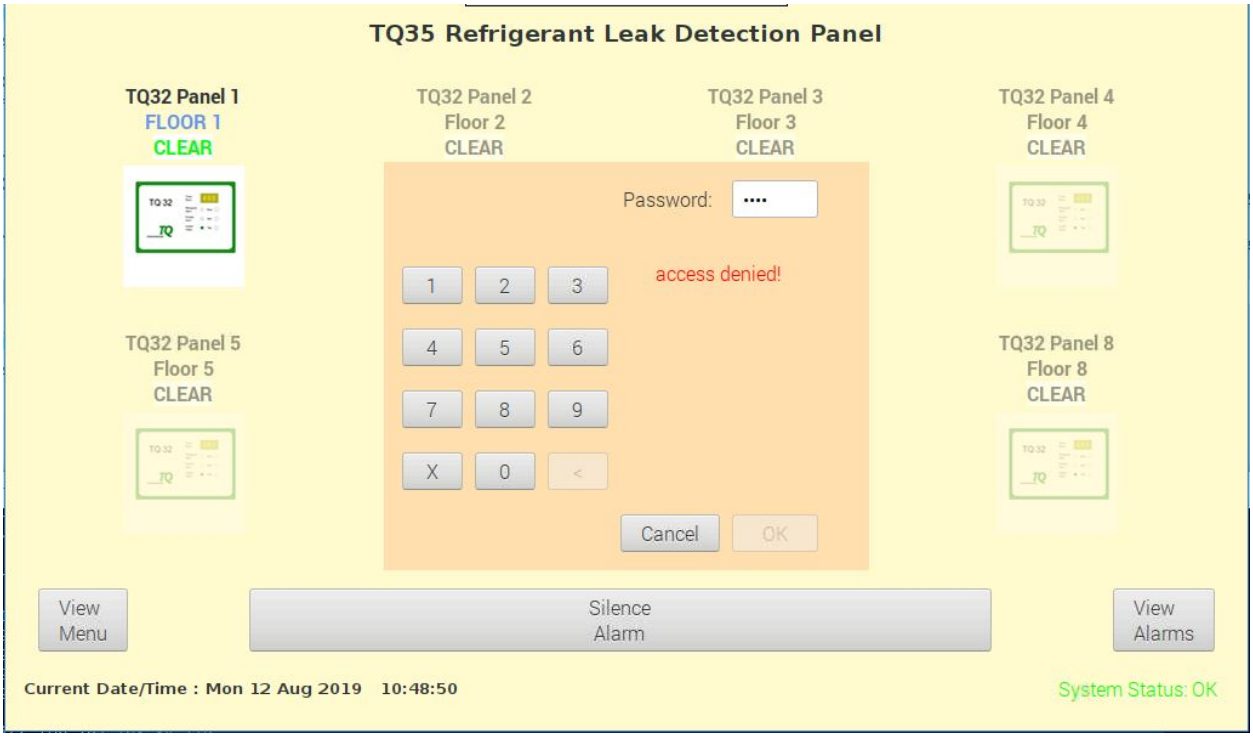

Figure 12 - Incorrect Password Dialogue

If a correct password is entered the Password Dialogue will display "*access granted!*" and load the Main Menu Page.

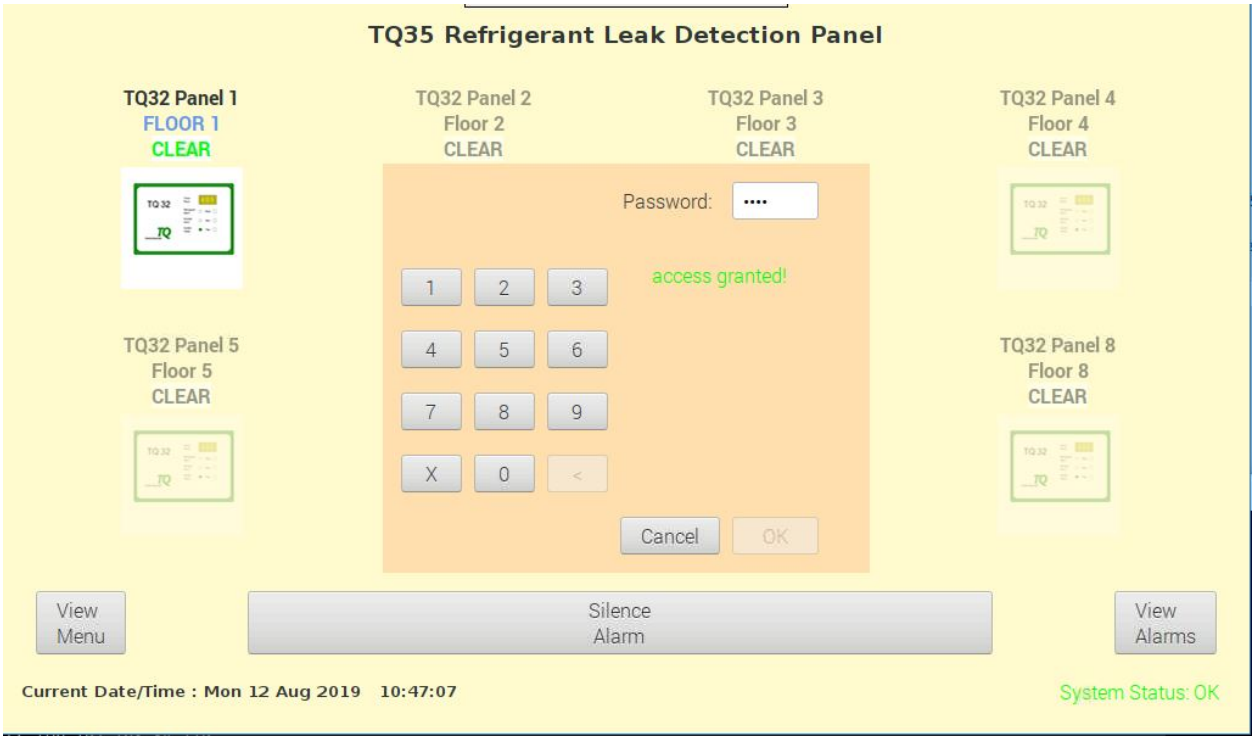

Figure 13 - Correct Password Dialogue

3.1 Main Menu

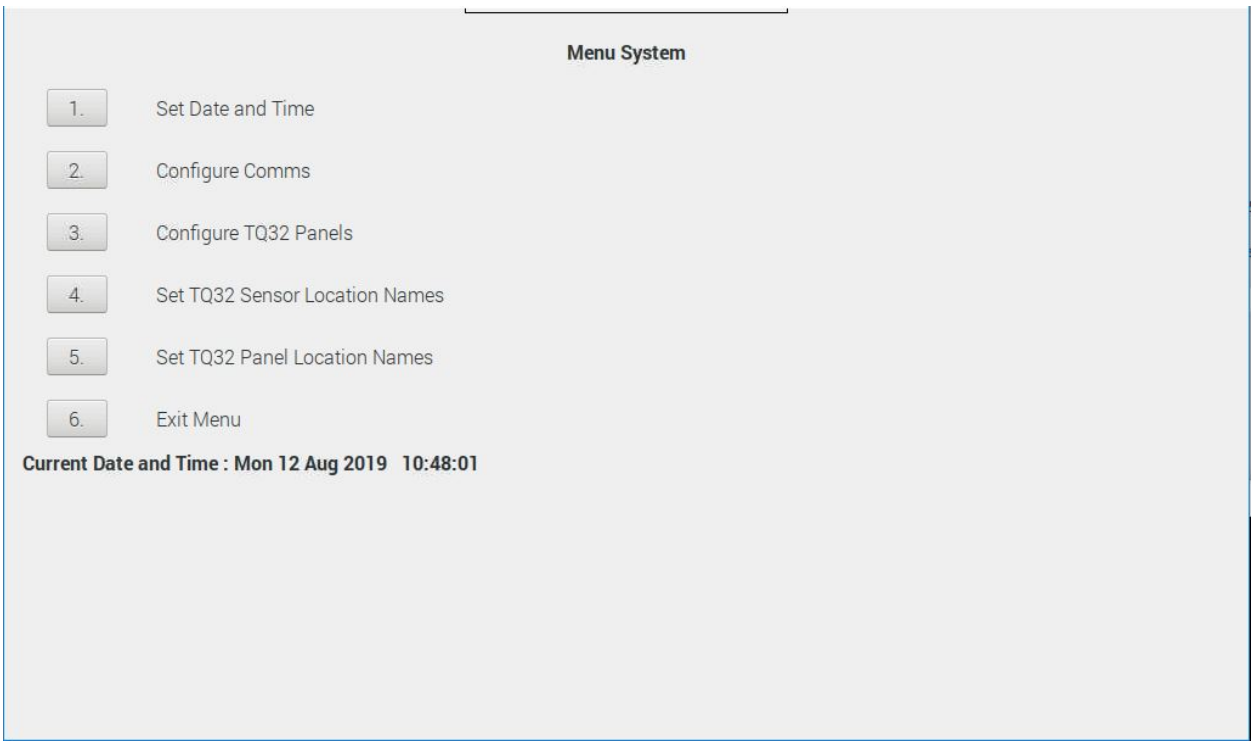

Figure 14 - Main Menu

This page will show the available options that can be selected by pressing the corresponding numbered buttons.

3.2 Set Date and Time

The Time may be altered by pressing the **+** and **–** buttons and the Date may be altered by manipulating the Calendar Dialogue. The Date and Time may be saved by pressing the **SET** button or cancelled by pressing the **CANCEL** button.

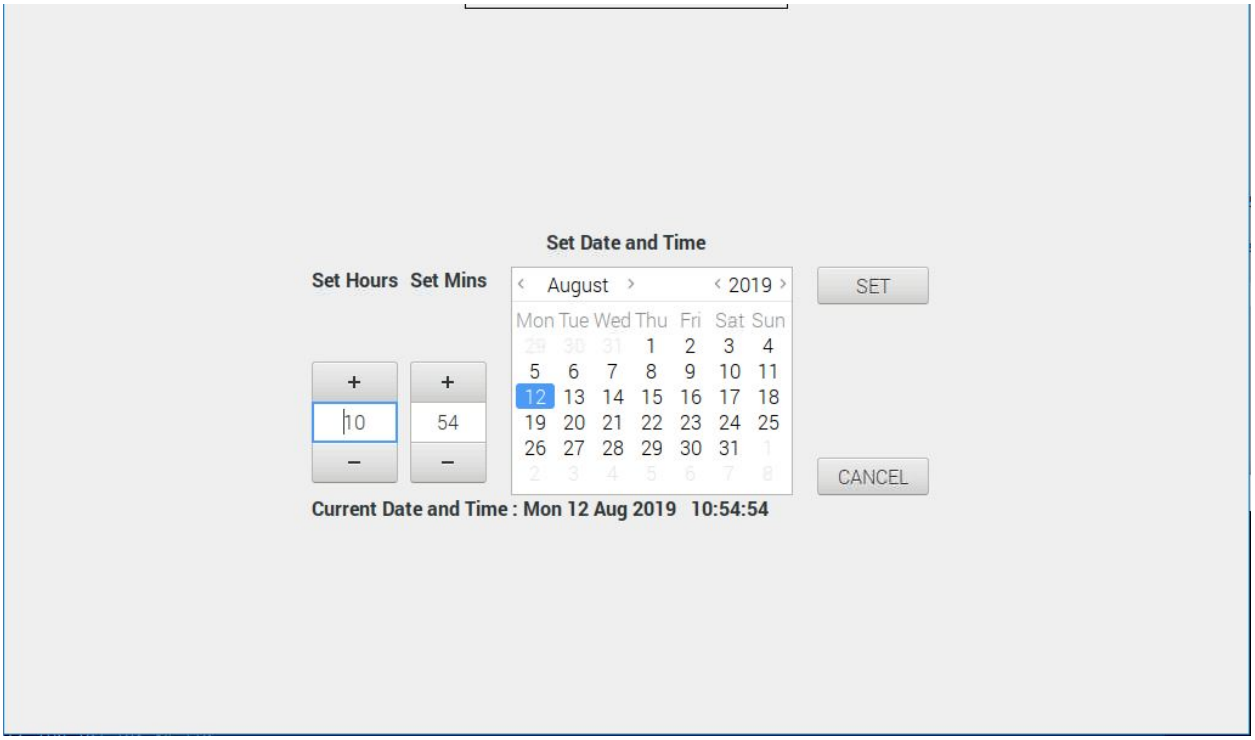

Figure 15 - Set Date and Time

3.3 Configure Communications

The RS485 communications channel to the TQ32 Area Alarm Panels may be configured by pressing or clicking on the appropriate radio buttons. The Communications Configuration may be saved by pressing the **SET** button or cancelled by pressing the **CANCEL** button.

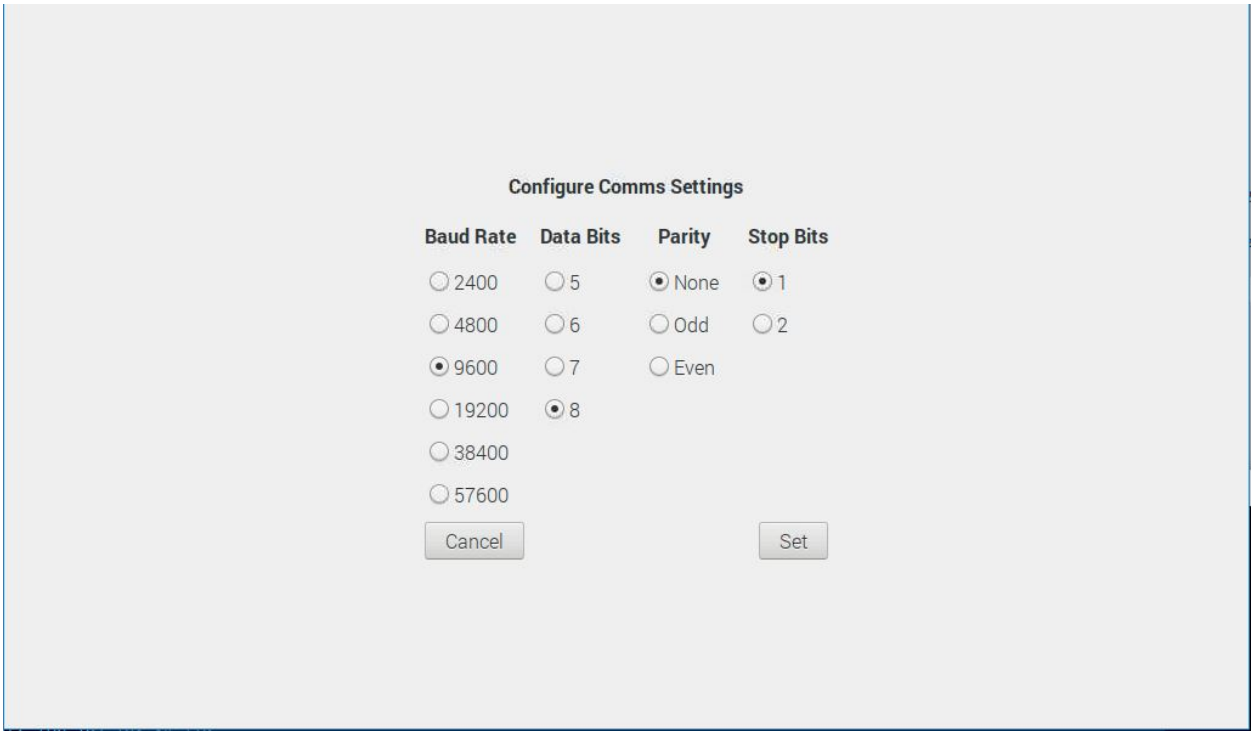

Figure 16 - Configure Communications

The above screen shot shows the default settings for TQ35 to TQ32 communication.
It will not be necessary to adjust these settings unless another TQ panel is used as a remote source.

3.4 Configure TQ32 Panels

The *Configure TQ32 Panels* menu option is used to set the number of TQ32 Area Alarm Panels, the number of Sensors for each TQ32 Area Alarm Panel and the Station Number for the TQ32 Area Alarm Panels. The TQ32 Panels Configuration may be saved by pressing the **SET** button or cancelled by pressing the **CANCEL** button.

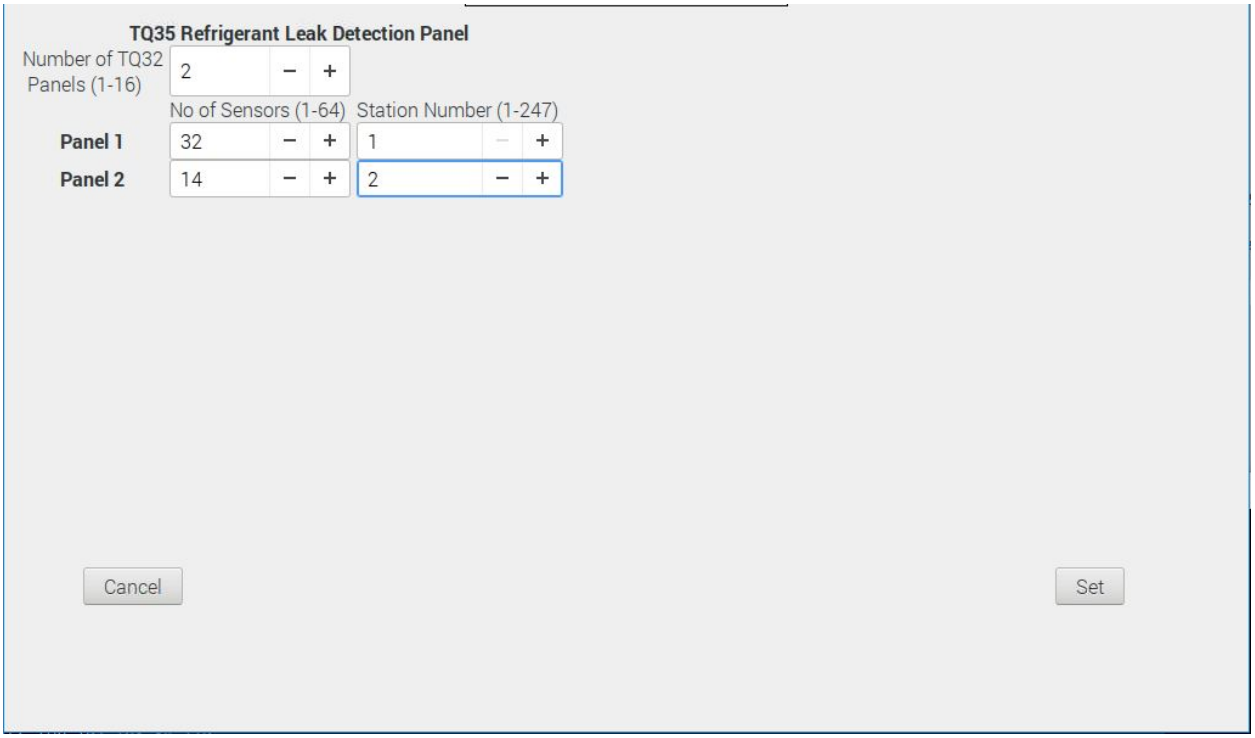

Figure 17 - Configure TQ32 Panels

3.5 Set TQ32 Sensor Location Names

The *Set TQ32 Sensor Location Names* menu option is used to set the selected TQ32 Area Alarm Panels' Sensor Names.

Use the **Select TQ32 Panel (1-16)** Spin Button to select the required TQ32 Area Alarm Panel to be edited. The Sensor Locations may be cycled by pressing the **PREV** and **NEXT** buttons.

The TQ32 Sensor Location Names may be saved by pressing the **SET** button or cancelled by pressing the **CANCEL** button.

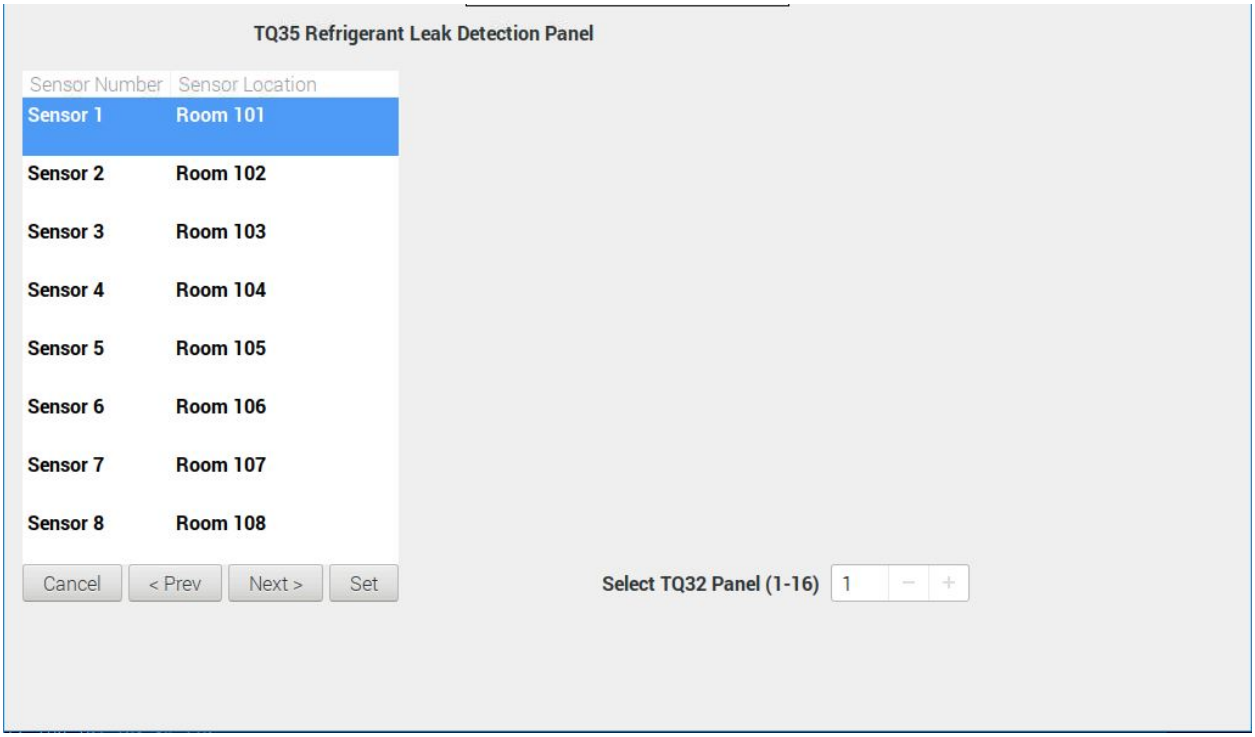

Figure 18 - Set TQ32 Sensor Location Names

Note: When the Sensor Location boxes have been edited it is important to press the ENTER key on the keyboard to guarantee the edited changes take effect, then press the SET Button to confirm the changes.

4.0 Technical Specification

Dimensions	Height 208 mm	Width 249mm	Depth 70mm
Weight	Approx. 1.35Kg		
Mounting	Wall Mounted		
Temperature Range	-10 ºC / +40 ºC Non-Condensing		
Humidity	Up to 95% Non-Condensing		
Input Supply Voltage	100V-240V 50/60Hz AC		
Power Consumption	Typ. < 1W		
Maximum Switching Current	2A		
Relays	2 x Voltage Free Contacts Non-Latched Normally Open/Closed Normally Energised/De-energised		
External Sounder	5V		
Indicators	Power On: Green LED Alarm: Red LED 7” Touchscreen		
Sounder	Magnetic Sounder		

Table 1 - Technical Specifications

TQ Environmental Ltd. Silkwood Court Wakefield West Yorkshire WF5 9TP United Kingdom