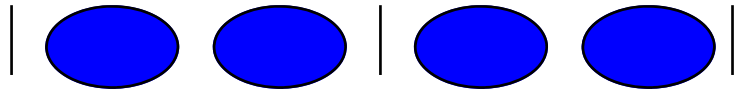


# Voyager and Discovery Quick Start Manual



This document has been designed to guide you through the BASIC installation and setup process for the Voyager and Discovery control panels. A full reference Installation and Commissioning manual is available on request, or can be downloaded from our web site at [www.controlequipment.co.uk](http://www.controlequipment.co.uk).



**WARNING: Please read this section completely before commencing installation.**

The control panel must be installed by competent engineers familiar with the installation of fire detection systems. In addition, it is recommended to refer to the following information:

- Current edition of the IEE wiring regulations.
- BS5839 Part 1 or the installation standards for the relevant country.
- Any specific site requirements.
- Apollo field device installation instructions.

The mains supply cable should be a minimum of 1mm<sup>2</sup> copper controlled by a 5A fuse.

An appropriate Double Pole disconnect device shall be provided as part of the building installation with a minimum contact gap of 3mm.

Prior to handling any part of the control panel, ensure that adequate precautions are taken against static damage to the sensitive electronic components on the control board. You should discharge any static electricity you may have accumulated by touching a convenient earthed object, e.g. an unpainted copper radiator pipe or the enclosure earth. You should repeat the process at regular intervals during the handling process, especially if you are required to walk over carpets.

Check that the panel has been mounted at least 2 metres away from pager systems or any other transmitting equipment.

Check that the equipment is correctly connected to a 230V AC supply and earthed. All installation work should be carried out in accordance with the recommendations of BS5839 Part 1 and the current edition of the IEE wiring regulations (BS7671: 1992) by suitably qualified and trained personnel.

Check that the control panel is located in a clean, dry position that is not subject to shock or vibration. The temperature must not drop below 0°C or exceed 40°C. The humidity should not exceed 95%.

**DANGER:** Batteries are electrically live at all times, take great care never to short circuit the battery terminals.

**WARNING:** Batteries are often heavy, take great care when lifting and transporting batteries. For weights above 24 kilos, lifting aids should be used.

**WARNING:** Do not attempt to remove battery lid or tamper with the battery internal workings. Electrolyte is a highly corrosive substance, and presents significant danger to yourself and to anything else it touches. In case of accidental skin or eye contact, flush the affected area with plenty of clean, fresh water and **SEEK IMMEDIATE MEDICAL ATTENTION**. VRLA batteries are “low maintenance” requiring no electrolyte top-up or measurement of specific gravity.

**WARNING:** If required, clean the case with a cloth that has been soaked or dampened with distilled water. Do not use organic solvents (such as petrol, paint thinner, benzene or mineral spirits) and other materials can substantially weaken the case.

**DANGER:** Do not incinerate batteries. If placed in a fire, the batteries may rupture, with the potential to release hazardous gases and electrolyte. VRLA batteries contain substances harmful to the environment.

Exhausted batteries must be recycled. Return them to the battery manufacturer or take them to your Council tip for appropriate disposal.

### **RS485 Data Communications (Analogue Panel Repeater & Network Communications)**

The analogue panels network, and repeaters, communicate using RS485 transmission. The cables used for these applications must be suitable for EAI RS-485 applications. The number of conductors depends on the application.

The cable chosen should be used exclusively for the data circuits. Screen continuity must be maintained throughout. The screen connection must be made at each panel in accordance with the details provided in the appropriate product manual.

Never use multicore cable or run data within the same sheath as PA or power cables.

A network should be wired as a complete ring.

Keep cable runs and devices at least 30cm away from fluorescent lights, 3 phase cables and heavy duty machinery.

Cable runs should be segregated from mains voltage by 30cm and when necessary, should cross power cables at 90 degrees.

Powerful radio transmission signals can affect data communications.

Ensure correct polarity is maintained throughout all wiring and each core is labelled.



**DANGER**  
Harmful fumes



## **Analogue Systems - Loops**

**NOTE: The detection loops carry communication data and therefore the wiring standard is very important.**

The cable chosen should be used exclusively for the loop circuits. A loop design calculation must be carried out at the design stage to identify the maximum practical loop length.

Functional earth continuity must be maintained throughout the loop. Both ends of the functional earth conductor must be connected to the functional earth bond connector in the panel.

The loop must be completely free of earth faults.

Never use multicore cable or run loops within the same sheath as PA or power cables.

The system should be wired as a complete loop but cable spurs are permitted within the limitations of BS 5839 part 1.

Keep cable runs and devices at least 30cm away from fluorescent lights, 3 phase cables and heavy duty machinery.

Ensure the supply to any device does not fall below 17 volts.

Cable runs should be segregated from mains voltage by 30cm and when necessary, should cross power cables at 90 degrees.

Powerful radio transmission signals can affect data communications.

Ensure correct polarity is maintained throughout all wiring and each core is labelled.

Clearly label each circuit e.g. loop 1 out, loop 1 in, alarm 1, door release, etc.

Isolators should be located for easy access.

Leave dust covers on detectors until the system is fully commissioned.

Be methodical when addressing devices. Where possible, number devices following the cable run. Label each device as it is numbered and mark the detection layout drawings as you go.

## **Alarm Circuit Wiring**

**NOTE: Volt drop must always be calculated.**

Minimum cable size 1.5mm<sup>2</sup>. The cable chosen should be used exclusively for alarm circuits.

Never run PA, power or data cables within the same sheath.

Cable spurs are not permitted.

Keep cable runs and field devices at least 30cm away from fluorescent lights, 3 phase power cables and heavy machinery.

Cable runs should be segregated from mains voltage by 30cm and when necessary, should cross power cables at 90 degrees.

Ensure correct polarity is maintained throughout all wiring.

All devices fitted must be polarised and suppressed.

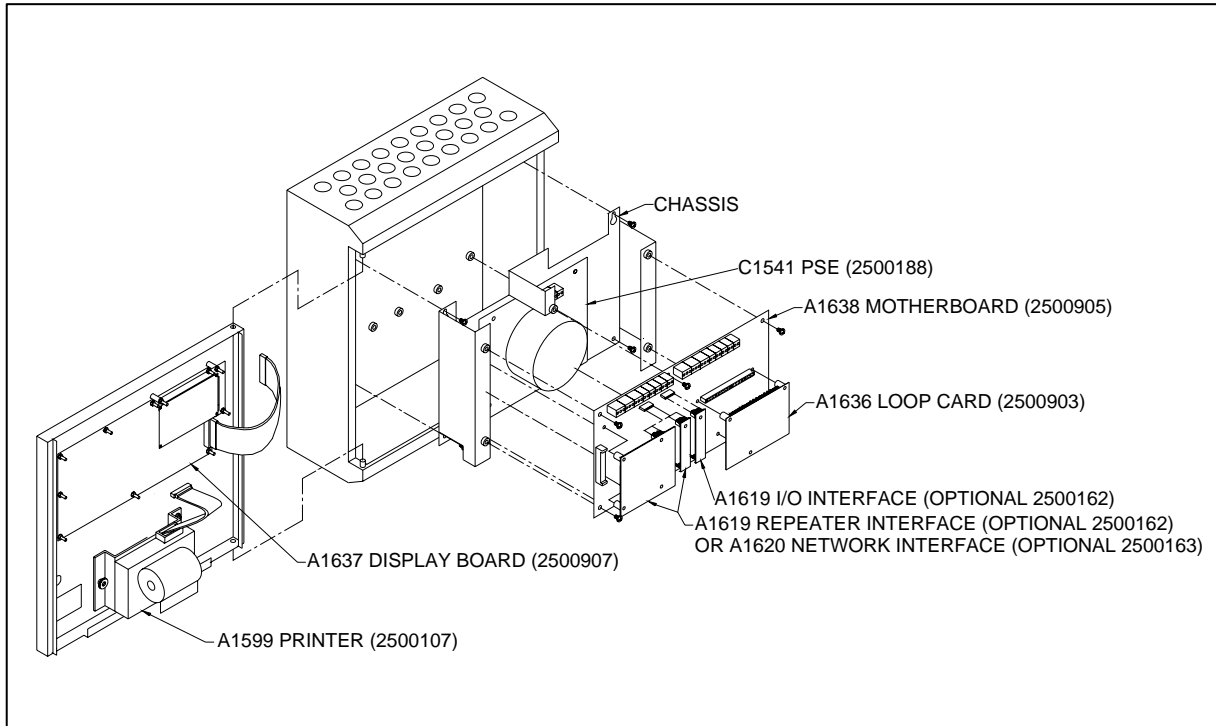
## **Pre-Commissioning Wiring Check**

1. The following assumes that the control panel has been installed in accordance with the installation procedure and is powered with only the "Power On" LED illuminated. Do not connect field wiring at this stage.
2. Ensure that there are no devices connected to the loop and alarm circuits but the cables are linked through at the device locations to achieve a continuous circuit.
3. Ensure that resistance of all cables to earth and between cores is more than 1M OHM.
4. Check the following:
  - i) Positive to earth resistance is greater than 1M OHM
  - ii) Negative to earth resistance is greater than 1M OHM
  - iii) Positive to negative resistance is greater than 1M OHM
5. Place a short circuit across the ends of the loop and alarm circuits. Measure the resistance across the positive and negative cables of each of the circuits and ensure that the value does not exceed the calculated value. Remember to remove the short circuits after the tests.
6. Correct polarity throughout all circuits must be maintained. Rectify any faults.
7. All bells, detector heads and call points should now be connected and alarm circuit end-of-line resistors fitted. Use the spare end-of-line resistors supplied and leave the EOL resistors in the panel terminals at this stage. Be very careful to maintain correct polarity at each device.

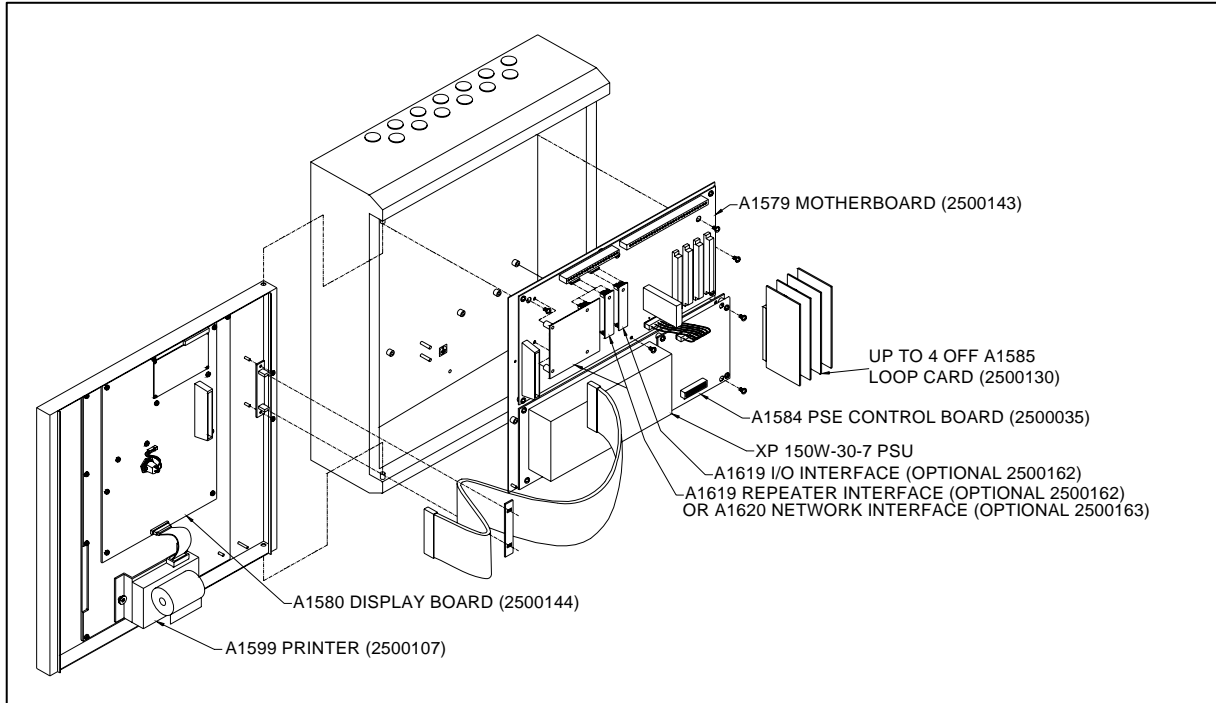
**The control panel should be powered up with the mains supply first followed by the connection of the batteries.**



### Voyager



### Discovery



Default Engineers Access Code : 8 8 1 2

Please ensure that the Access Controls Keyswitch is in the enabled position when using any of the controls on the display. Controls will not work if in the disabled state.



## How To Configure / Change Device Configuration Of A Loop

```
1=LOOP SETUP
2=INPUT/OUTPUT SETUP
3=GENERAL CONFIG
SELECT 1..3, <=EXIT
```

1. Enter the engineers menu by pressing ACCESS MENU and entering the access code using 5 and 6 to scroll the number up and down and enter to move the cursor across
2. Press 2 to select Engineers Functions, press 1 for Panel Set-up. The screen to the left will be displayed:

```
CONFIGURE LOOP
LOOP? 1
>=ENTER, <=BACK/EXIT
```

3. Press 1 for Loop Setup, press 1 for Loop Configuration, press 1 for Loop Contents, press 3 for Re-Configure Loop. The screen to the left will be displayed:

```
CONFIGURING LOOP 1
<=CANCEL
```

4. Enter the loop number using 5 and 6 to scroll the number up and down and press enter. A configuration message will be displayed while the loop is configuring:

Loop configuration takes around 30 seconds per loop. Pressing escape at any time will cancel the configuration process without overwriting the current loop configuration data. When the configuration process is complete a loop contents report will be generated. This indicates the types of devices on the loop.

```
LOOP 1:    009 MCP
           082 SENSORS
           012 MODULES
>=SAVE,   <=EXIT
```

5. Press enter to save the configuration data or escape to exit without overwriting the current loop configuration. Saving the loop configuration will require you to Enable the SSD Write Protect toggle switch located on the motherboard, once the information has been saved, you will then need to put the toggle switch back to the Disable position.

The **SSD Write Protect Switch** is located at the bottom of the motherboard in the centre on the Voyager Panels, and at the top left hand corner of the motherboard on the Discovery Panels.

Once you have saved or escaped the loop configuration, press Escape back to the time and date or fault message screen then press Reset.



## Zone Allocation / Group Allocation

The Discovery and Voyager have 32 programmable zones, which are used to represent a physical area. All loop devices can be programmed into one of these zones through the engineers menu. Activation of a fire or a fault on a device will cause operation of the fire or fault indicator associated with the zone. The panel alphanumeric display will also indicate the zone number. The panel has an insert fitted to the front door suitable for text descriptions of each zone location. The engineer can also print out all the zones with the devices allocated to the zones.

Loop devices that are not allocated to a zone will not sound the fire buzzer when they go into a fire condition. Points can be associated with groups for cause/effect programming. These are similar in concept to zones so that cause and effect can be defined on devices within a group. Each device may be in up to seven groups. Groups are numbered from 33 to 255.

**Note: Groups 252 to 255 are reserved for manual sensitivity override mode operation.**

## How To Edit The Allocation Of Devices To A Zone

```
1=LOOP SETUP
2=INPUT/OUTPUT SETUP
3=GENERAL CONFIG
SELECT 1..3, <=EXIT
```

1. Enter the engineers menu by pressing ACCESS MENU and entering the access code using 5 and 6 to scroll the number up and down.
2. Press 2 to select Engineers Functions, press 1 for Panel Set-up. The screen to the left will be displayed.

```
1=EDIT POINT ZONES
2=PRINT POINT ZONES
3=VIEW POINT ZONES
SELECT 1..3, <=EXIT
```

3. Press 1 for Loop Setup, press 2 for Zone Allocation. The screen to the left will be displayed:

```
EDIT ZONES
ENTER ZONE? 01
>=ENTER, <=BACK/EXIT
```

4. Press 1 to Edit Point Zone allocation:

```
EDIT ZONE 07
LOOP? 1
>=ENTER, <=BACK/EXIT
```

5. Enter the number of the zone to be edited using 5 and 6 to scroll the number up and down and press enter. The screen to the left will be displayed if zone 7 is entered:

```
EDIT ZONE 07
LOOP 01
POINT? 01
>=ENTER, <=BACK
```

6. Enter the loop number of the devices to be added or removed from the zone 5 and 6 to scroll the number up and down and press enter. The following screen is displayed if loop 1 is entered:

```
EDIT ZONE 07
LOOP 01
POINTS 015 TO 015
>=ENTER, <=BACK
```

7. Enter the first device in a range to be added or removed from the zone using 5 and 6 to scroll the number up and down. This example shows device 15:
8. Enter the last device to be added or removed from the zone. If a single device is to be edited then enter the same number as the first device.

```
EDIT ZONE 07
LOOP 01
POINTS 015 TO 022
1=ADD, 2=REM, <=EXIT
```

9. Press 1 to add the devices to the zone or 2 to remove the devices from the zone. If no changes are required press escape to exit. The menu will return to the zone allocation menu:



```
1=EDIT POINT ZONES
2=PRINT POINT ZONES
3=VIEW POINT ZONES
SELECT 1..3, <=EXIT
```

10. Pressing Exit will then prompt you to Enable the SSD Write Protect toggle switch located on the motherboard, once the information has been saved, you will then need to put the toggle switch back to the Disable position. **To add or edit further devices repeat the steps shown above.**

Once the edited data has been saved, press Escape back to the time and date or fault message screen then press Reset.

## How To Edit The Allocation Of Points To A Group

Allocating devices into control groups is the same process as allocating devices into zones, apart from you select Edit Point Groups instead of Edit Point Zones as detailed below

```
1=LOOP SETUP
2=INPUT/OUTPUT SETUP
3=GENERAL CONFIG
SELECT 1..3, <=EXIT
```

1. Enter the engineers menu by pressing ACCESS MENU and entering the access code using 5 and 6 to scroll the number up and down.
2. Press 2 to select Engineers Functions, press 1 for Panel Set-up. The screen to the left will be displayed.

```
1=EDIT POINT GROUPS
2=PRINT POINT GROUPS
3=VIEW POINT GROUPS
SELECT 1..3, <=EXIT
```

3. Press 1 for Loop Setup, press 3 for Loop Cause and Effect, Press 1 for Point Group Allocation. The following screen will be displayed:

4. Repeat the same procedures as for zones.

# REPEATERS



Voyager / Discovery repeaters duplicate the panel indications and user controls at a location remote from the main panel. Up to 14 repeaters can be connected to a single panel using an RS485 serial connection. The panel requires an A1619 Voyager / Discovery interface module (part number 2500162) or an A1620 Discovery network interface module (part number 2500163) to be fitted to the motherboard to communicate with repeaters.

**Note: The menu functions are not available at repeaters.**

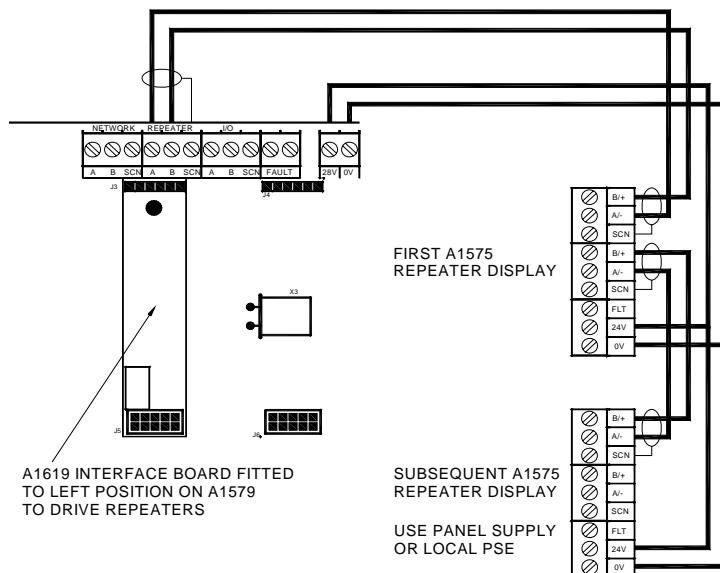
## Installation And Connection Of The A1619 Repeater Interface

### Warning: Observe anti-static precautions

1. Ensure that the main and standby supplies are disconnected.
2. Fit the A1619 repeater interface to headers J3 and J5 on the A1579 panel motherboard (J2 and J3 on A1638). The board should be held in place by a 12mm high plastic spacer.
3. Connect the repeater RS485 wiring as shown in Figure 3.

### Notes:

- a. Use only RS485 shielded data cable.
- b. Do not connect the cable shield to earth.
4. If the repeater is to be powered from the panel connect the 28V auxiliary output from the motherboard to the A1575 repeater display. This is also shown in Figure 1.



### Display Address Setting

Each repeater is given an individual address to enable the main panel to monitor its presence on the system. It is necessary to set the repeater address number at each repeater panel by means of the node address DIL switch and also to set the number of displays on the main panel via the engineers set up menu. Refer to Figure 2

**Figure 1 – Repeater connection diagram**

## How To Configure The Number Of Repeaters

```

NUMBER REPEATERS  00
1=UP,             2=DOWN
>=SAVE VALUE
<=EXIT
    
```

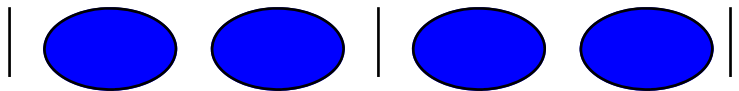
1. Enter the engineers menu by pressing ACCESS MENU and entering the access code using 5 and 6 to scroll the number up and down.
2. Press 2 to select Engineers Functions, press 1 for Panel Set-up, press 3 for General Configuration, press '>' for Next Page, press 1 for Number Repeaters.

The display will show the number of repeaters as shown above.

3. Press 1 or 2 to change the number of repeaters as required.

Press enter to save the changes to the data, or escape to exit without overwriting the current data. Saving the edited data will require you to Enable the SSD Write Protect toggle switch located on the motherboard, once the information has been saved, you will then need to put the toggle switch back to the Disable position.

Press Escape back to the time and date or fault message screen then press Reset.



Up to 31 A1535 (relay) and/or A1536 alarm programmable expansion boards may be connected to the Voyager / Discovery 1-8 loop panel. Two boards may be housed internally within the double-doored Discovery cabinet, the remainder require other enclosures. The A1535 board provides 8 programmable inputs (0V switched) and 8 programmable relay circuit outputs. The A1536 board provides 8 programmable inputs (0V switched) and 8 programmable alarm circuit outputs.

**Installation And Connection Of The A1619 Input/Output Interface**

**Warning: Observe anti-static precautions**

1. Ensure that the main and standby supplies are disconnected.
2. Fit the A1619 repeater interface to headers J4 and J6 on the A1579 panel motherboard (J5 and J6 on A1638). The board should be held in place by a 12mm high plastic spacer.
3. Connect the I/O interface RS485 wiring as shown in Figure 4.

**Notes:**

- a. Use only RS485 shielded data cable.
- b. Do not connect the cable shield to earth.
4. If the I/O board is to be powered from the panel connect the 28V auxiliary output from the motherboard to the expansion board power input. This is also shown in Figure 3

How To Edit The Expansion I/O Board Configuration

```
I/O BOARD TYPES
BOARD? 01
>=ENTER, <=BACK/EXIT
```

1. To change the expansion I/O board configuration enter the engineers menu by pressing ACCESS MENU and entering the access code using 5 and 6 to scroll the number up and down Press 2 to select Engineers Functions, Press 1 for Panel Set-up; press 2 for input/output set-up; press 1 for I/O board types.

The above screen will be displayed, change the address of the board to be configured using the menu up (5) and down (6) keys.

```
I/O BOARD TYPES
BD:01 CCT 001 TO 008
TP00:NONE
1=NEXT, 2=EDIT, <=EXIT
```

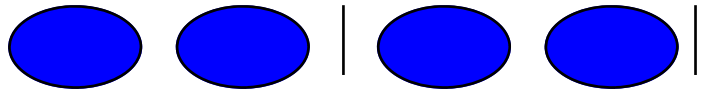
2. Press > to enter the board number or press < to escape without changing the board configuration. If the board number is entered the screen to the left is displayed: The display shows the board number, the corresponding output circuit numbers and the board type.

```
I/O BOARD TYPES
BD:01 CCT 001 TO 008
TP00:NONE
1=NEXT, 2=EDIT, <=EXIT
```

3. Select one of the following options:
  - i) Press 1 to move to the next board address or,
  - ii) Press 2 to edit the type of board at this board number and proceed to the next step or,
  - iii) Press < to exit without changing the board configuration.

4. Select the board type from the pages of board options. Press > to exit when the board type is selected. You will be prompted to enable site specific data when all changes have been made.
5. Program the cause/effect for all inputs and outputs as described in this manual.

Press Escape back to the time and date or fault message screen then press Reset.



## How To Edit Loop Output Cause And Effect

To edit the loop output cause/effect enter the engineers menu by pressing ACCESS MENU and entering the access code using 5 and 6 to scroll the number up and down. Press 2 to select Engineers Functions Press 1 to for Panel Set-up; press 1 for Loop Set-up; press 3 for Loop Cause Effect; press 2 for Edit Loop Output C/E

1. Enter the loop number of the device.
2. Enter the point number.
3. The cause/effect for output bit 0 for the device is displayed

```
CAUSES FOR 1:001 BT0
NO MORE CAUSES

>=OK, 3=NX, 4=+, <=EXIT
```

4. Either:
  - i) Press > to save the data and move to the next output bit for the same point and return to step 1. Saving the edited data will require you to Enable the SSD Write Protect toggle switch located on the motherboard, once the information has been saved, you will then need to put the toggle switch back to the Disable position.
  - ii) Press < to exit without saving changes to the current device.
  - iii) Press 3 to move to the next screen if more cause/effect is available. The display will show NO MORE CAUSES if no more data is available.
  - iv) Press 4 to add more causes. The display is as follows:

```
CAUSES FOR 1:001 BT0
1=GROUP CAUSE
2=COMMON CAUSE
SELECT 1..2, <=EXIT
```

5. Either Select option 1 to add a group cause, Enter the group number, then select one of the options below, or Select option 2 to add a common cause, then select one of the options below. Select the cause by moving between the menu pages with the > key and entering a number on the key pad.

Group cause options 1 FIRE TIL RESET, 1 FIRE TIL SILENCE, 2 FIRE TIL RESET, 2 FIRE TIL SILENCE (1 being single knock, 2 being double knock), ALERT, FAULT, INDICATION.

Common cause options FIRE TIL RESET, FIRE TIL SILENCE, ALERT, INDICATION, ALARMS SILENCED, RESET, EVACUATE, DISABLEMENT, BUZZER

6. Once the cause has been selected, press > to move to the next programmable output bit.
7. Repeat steps 4 and 5 until all causes have been added. When all causes have been added press > to move to the next output before pressing <.
8. Press < until you prompted to enable the SSD Write Protect switch, Saving the edited data will require you to Enable the SSD Write Protect toggle switch located on the motherboard, once the information has been saved, you will then need to put the toggle switch back to the Disable position.

Press Escape back to the time and date or fault message screen then press Reset.

## How To Edit The Expansion I/O Board Cause/effect

Each I/O board has 8 inputs and 8 outputs so board number 1 will have inputs 1 to 8 and outputs 1 to 8. On the A1536 alarm board, each output circuit has two channels associated with it, channel 0 and channel 1. If channel 0 is active then the output will be active continuously. If channel 1 is active, the output will pulse for 1s on, 1s off. If both channel 0 and channel 1 are active the output will be continuous. The A1535 relay board only uses channel 0. Outputs 1-248 are hardware outputs, while outputs 249-252 just start the respective software timers. The expansion I/O cause/effect is edited in exactly the same manner as the loop output cause/effect. The steps are as follows:

```
CAUSES FOR OP001 CH0
NO MORE CAUSES

>=OK, 3=NX, 4=+, <=EXIT
```

1. Enter the engineer's menu by pressing ACCESS MENU and entering the access code using 5 and 6 to scroll the number up and down.
2. Press 2 to select Engineers Functions, Press 1 to for Panel Set-up; press 2 for Input/output set-up; press 2 for Panel output c/e; press 2 for Remote Output C/E



3. Enter the number of the output circuit to be edited.
4. The cause/effect for the output circuit is displayed as shown above.
5. Either:
  - i) Press > to save the data and move to the next output bit for the same point and return to step 1. Saving the edited data will require you to Enable the SSD Write Protect toggle switch located on the motherboard, once the information has been saved, you will then need to put the toggle switch back to the Disable position.
  - ii) Press < to exit without saving changes to the current device.
  - iii) Press 3 to move to the next screen if more cause/effect is available. The display will show NO MORE CAUSES if no more data is available.
  - iv) Press 4 to add more causes. The display is as follows:

```
CAUSES FOR OP001 CHO
1=GROUP CAUSE
2=COMMON CAUSE
SELECT 1 . . 2 , <=EXIT
```

6. Either Select option 1 to add a group cause, Enter the group number, then select one of the options below, or Select option 2 to add a common cause, then select one of the options below. Select the cause by moving between the menu pages with the > key and entering a number on the key pad.

Group cause options 1 FIRE TIL RESET, 1 FIRE TIL SILENCE, 2 FIRE TIL RESET, 2 FIRE TIL SILENCE (1 being single knock, 2 being double knock), ALERT, FAULT, INDICATION.

Common cause options FIRE TIL RESET, FIRE TIL SILENCE, ALERT, INDICATION, ALARMS SILENCED, RESET, EVACUATE, DISABLEMENT, BUZZER

7. Once the cause has been selected, press > to move to the next programmable output bit or press 4 to add more causes.
8. Repeat steps 4 and 5 until all causes have been added. When all causes have been added press > to move to the next output before pressing <.
9. Press < until you are prompted to enable the SSD Write Protect switch, Saving the edited data will require you to Enable the SSD Write Protect toggle switch located on the motherboard, once the information has been saved, you will then need to put the toggle switch back to the Disable position.

Press Escape back to the time and date or fault message screen then press Reset.

### Address Setting Examples

#### Repeater Node DIL Switch Setting Examples Figure 2

| Decimal Value | S13 – 1 Bit 0 | S13 – 2 Bit 1 | S13 – 3 Bit 2 | S13 – 4 Bit 3 | Duplex Panel Assignment | Discovery/Voyager/Xplorer Panel Assignment |
|---------------|---------------|---------------|---------------|---------------|-------------------------|--|
| 0             | OFF           | OFF           | OFF           | OFF           | Not used                | Not used                                   |
| 1             | ON            | OFF           | OFF           | OFF           | Not used                | Repeater 1                                 |
| 2             | OFF           | ON            | OFF           | OFF           | Repeater 1              | Repeater 2                                 |
| 3             | ON            | ON            | OFF           | OFF           | Repeater 2              | Repeater 3                                 |
| 4             | OFF           | OFF           | ON            | OFF           | Repeater 3              | Repeater 4                                 |
| 5             | ON            | OFF           | ON            | OFF           | Repeater 4              | Repeater 5                                 |
| 6             | OFF           | ON            | ON            | OFF           | Repeater 5              | Repeater 6                                 |
| 7             | ON            | ON            | ON            | OFF           | Repeater 6              | Repeater 7                                 |
| 8             | OFF           | OFF           | OFF           | ON            | Repeater 7              | Repeater 8                                 |

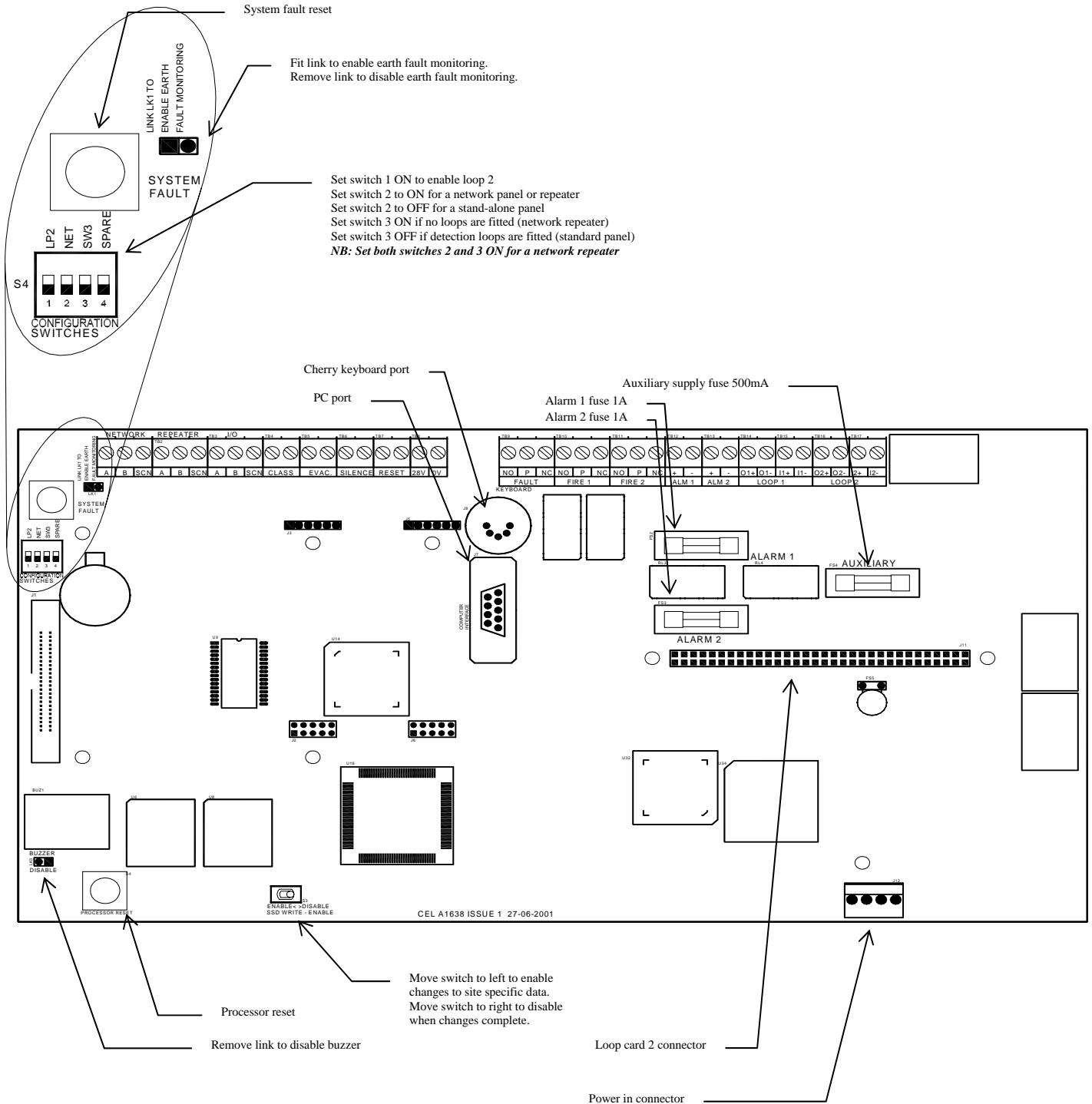
Repeaters 9 - 15 are addressed in the same way using the Dil Switch configuration.

#### A1535 and A1536 Node Addressing Examples Figure 3

| Node Address | Bit 4 | Bit 3 | Bit 2 | Bit 1 | Bit 0 | I/O Circuits |
|--------------|-------|-------|-------|-------|-------|--------------|
| 1            | Off   | Off   | Off   | Off   | On    | 1 to 8       |
| 2            | Off   | Off   | Off   | On    | Off   | 9 to 16      |
| 3            | Off   | Off   | Off   | On    | On    | 17 to 24     |
| 4            | Off   | Off   | On    | Off   | Off   | 25 to 32     |
| 5            | Off   | Off   | On    | Off   | On    | 33 to 40     |
| 6            | Off   | Off   | On    | On    | Off   | 41 to 48     |
| 7            | Off   | Off   | On    | On    | On    | 49 to 56     |
| 8            | Off   | On    | Off   | Off   | Off   | 57 to 64     |

Boards 9 - 31 are addressed in the same way using the Dil Switch configuration.

# TYPICAL BOARD LAYOUT



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