DF6000 Applications Guide

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Menu Structure.

User Access Code.

Touch top left corner ‘Supervisor FRE Off’ and the number pad appears,
enter either ‘User code’ Fig 2 or the Engineer Code Fig 3

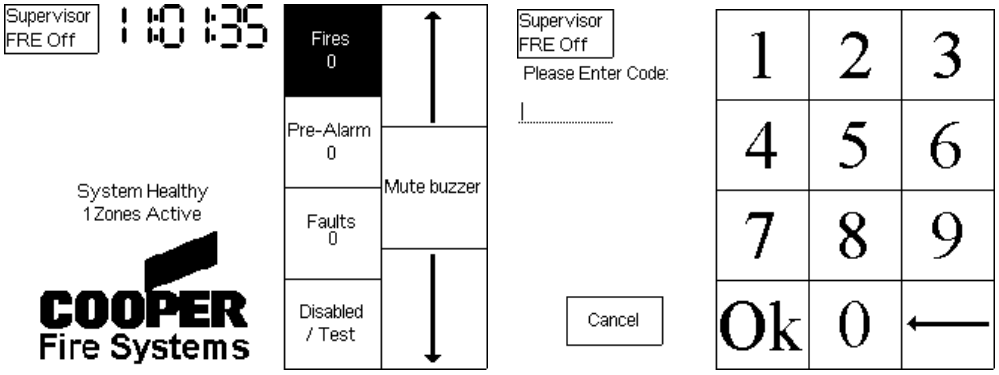


Fig 1

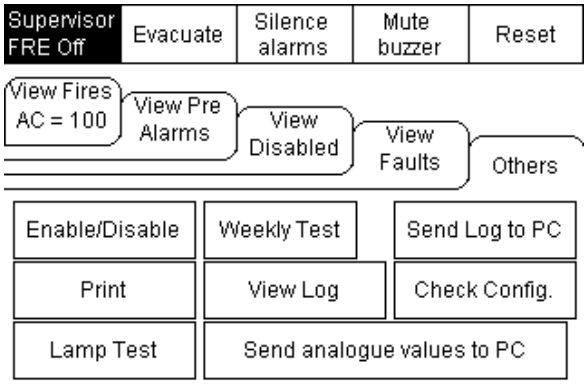


Fig 2

Engineers Menu

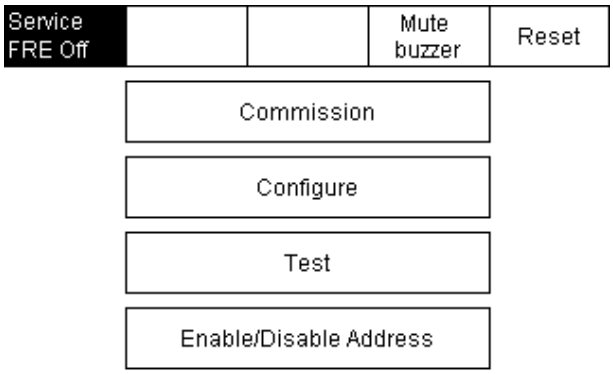


Fig 3

Loading and Totals

The general rules are that the panel is capable of supporting up to 200 devices per loop; this can be a combination of Detection, Callpoints, I/O units, Repeaters and Sounders.
The protocol and internal memory are constructed in such a way that there are certain loading rules which must be strictly enforced.

1. Maximum 200 devices per loop
2. Maximum 60 sounders/beacons/sounder beacons (set low) per loop.
3. Maximum 20 I/O units per loop which assumes each I/O uses 3 output channels;
4. Maximum 120 Output channels based on 2 + 3 above.

Certain devices have been constructed to circumvent these rules effectively 'fooling' the panel to offset some of the totals. The maximum 200 per loop CAN NOT be changed.

The totals for EN and UL are the same unless specified in the remarks column.

Device Type	Total per Loop	Replies as	Remarks
Detectors	200	Optical, Heat or Opto Heat	
Call points	200	Callpoint	
Sounder/Beacon/Sounder beacon	60	Sounder Beacon	Individuals all reply the same
MIO/ULCIO (single and 3 chan)	20	3 Chan I/O	MIO324S resets on silence
MCOM/ULMCOM	20	3 Chan I/O	
MCOMS/ULMCOMS	60	Sounder Beacon	Uses 1 sounder channel, ULMCOMS resets on silence
MCOM-FC	60(48)	Sounder/Beacon	Does not respond to EVAC
MCOM - R	20	3 Chan I/O	Not used for UL
MCIM (old version)/ULMCIM	20	3 Chan I/O	MCIM obsolete
MCIM-C/ULMCIM-C	200	Callpoint	MCIM-C obsolete
MCIM - NF	200	Non – Fire input	Obsolete
MCIM (new version)	200	Input	Not used for UL
Spur Isolator	200		Takes no address – does take a load.
EN / UL Zone/Shop unit Monitors (incl. Mini Module)	20	ZMU/SMU (Acts as an output device)	Loop loader allows 20 conventional detectors
4 Way Sounder controller	20	SCU	Uses I/O channels
Repeater/Mimic/CIOP/BS7273 Device	200	Repeater	Restricted by load (20) Note 1
Beam Detector	200	Beam Detector	Restricted by load (20) Note 1
4 – 20 mA	20	4 – 20mA	
Fan Controller	48 Chan's	Fan Controller	2xFC18 + 2xFC6
Tech I/O unit	20	I/O and Tech Input	Item takes 2 addresses
Addressable Remote Indicator	60	Sounder Beacon	
Gas Interface	N/A	Discontinued	For Australia market

Note 1 – The figure in brackets is a recommended total for these devices, there is currently no restriction placed in the Loop loader program.

Note 2 – Where total per loop is shown this is a maximum number or a maximum combination with other output devices

Zones.

Assigning devices to the relevant zones can be done either at the panel direct or by using site installer. The contractor should always provide the zone information, as this is part of the system design process and takes into account the fire compartment boundaries.
The panel has 96 zonal led's, if ringing patterns are required across a network then all zones must exist on all panels within the network.
eg. Panel 1 has zones 1 –10 in use, Panel 2 zones 11 – 20 in use, Panel 3 zones 21 – 30 in use.

On Later version Site Installer 2.5.28.6 and Display and Loop Software dated later than 04/2011 zone information is automatically transmitted across the network, so zonal cause and effect becomes much easier to achieve.

Access Codes.

There are four access codes for the DF6000

- User Code: This allows control of the silence, evacuate and reset functions and also enable/disable; replace device and check auto config functions. This code can be changed to a site-specific code.

- Engineer Code: This gives access to the engineer parts of the menu, which are used, for learning and programming the system.

- High Level Codes: These 2 codes give access to menu's which:
  1. Can be used to return the system to its factory settings, and to change the logo's on the display.
  2. Disable ALL Outputs.
  3. View all access codes and reset to default codes. (Changed on PH1 Display Software 3.3.51)

User Menu Functions

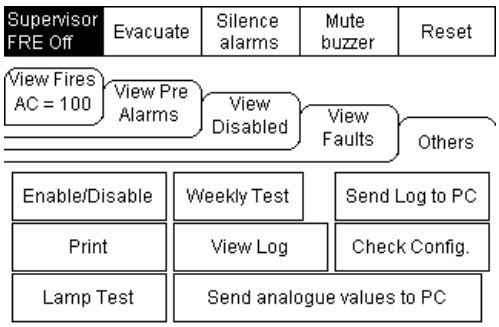


Fig 4

Check Auto Config.

This function has two purposes, the first is to check that when a database has been downloaded the transmitted data matches the device data on the loop and then it highlights any anomalies as device unknown or device type mismatches. It will also highlight any un-addressed (254) devices. Stating a 'New Device'
The second is to pinpoint any o/c or s/c faults on the loop. The panel achieves this by electronically disconnecting the return legs and interrogates the devices on the loop. If there is a break the panel will go to fault stating the first device it cannot see beyond the break. This same function also pinpoints short circuits in the same way, creating a fault beyond the point where an isolator has opened.

Disable/Enable Devices.

This menu allows the customer to disable and enable selected detectors, zones or I/O's.
Detectors and zones are self-explanatory, simply touch the Enabled/Disabled box against each zone or device.
The disable I/O menu however, allows the user to disable FRE, FPE, AUX relay, Fault output and panel Sounders 1 & 2.

When the panel is in Auto learn individual sounders CANNOT be disabled, the only method of disabling sounders is by using the 'Disable all outputs' function, or, download text into the panel, which will then allow the sounders to be disabled by zone or individually.

If a device is already 'in fire' the system will not allow the user to disable it. The zone that the device belongs in must be disabled; this function is still available if the panel is in fire.

If a complete zone is disabled, individual devices within that zone cannot be selected for re-enabling.

If the panel is part of a network then devices can be disabled across the network by using the 'Network disable/enable function'.
If a device or zone is disabled then that disablement must be shown across all panels within the network. (EN54 -13 and AS 1668)

Weekly Test.

This function allows the user to perform a weekly test single-handed, and will appear in the Log of events as a test.

Once this function has been selected the panel starts a four-minute timer, when a call point is activated within these four minutes the panel will operate the sounders and then silence and reset the system.
On a later version (dated 2015) the user is asked to do a manual reset, EN54 does not allow the panel to automatically reset.
If no call point is activated within the four minutes the weekly test mode will be cancelled.
During this test mode the relay outputs controlling plant and equipment shutdown will not operate, neither will the FRE nor FPE outputs.

FRE: Fire Routing Equipment typically used to operate a remote centre communicator.
FPE: Fire protecting Equipment typically used to control fire doors.

Note: If 'disable all outputs' is selected, weekly test or walk test will still make the sounders operate

Replace Device.

The replace device function is used to change faulty equipment without the need to change text or zone allocation.
The faulty component is changed and then the replace device function selected, the loop and address of the faulty device are inputted and the panel then scans the loop for address 254, when it receives a reply the previously inputted address information is programmed on to the new device.

This function cannot be used if a different type of device is being replaced, and a warning is issued to this effect. The 'Add/Delete' device function must then be used.

Note. In all instances of an output device replacement the panel must receive a Watchdog reset for the device to follow the programmed settings.

Delays.

A sounder delay is set up using site installer and is must be programmed on stage 1 of 'Device Outputs'. The maximum time is ten minutes and it can only be programmed in whole minutes.

When programming a delay on the panel sounder circuits the zones selected in the allocate devices box trigger the delay. Whereas on the loop powered sounders and the sounder controller unit the zones not selected will trigger the delay and the zones selected will operate the sounders immediately.
The above has been changed in V1.81.01 Display/V1.83.3 Loop so that the devices selected in the list will trigger the delay and the devices not selected will have no effect.

The delay trigger can be by address, zone, panel or globally.

When selecting the trigger to be by address all the addresses have to be on the same loop and the limit is sixteen.
When selecting the trigger to be by zone then the limit is sixteen zones (or on later software versions zone groups).

When triggering a delay on the panel sounders by zone the limit is reduced to 8 zones. If no zones are selected then the delay will be global.

When a delay has been set up (on a sounder or an I/O) the sounder fault and general disable led's will be illuminated permanently.
Alternatively on later hardware/software versions the 'Delay Active' led will be illuminated.

A delay can be set up on the Sounder control unit and 3 Chan I/O in the same way as a loop powered sounder, however, **only stage 1 of output 1 will accept the delay.**

The other 3 sounder circuits or 2 relay channels WILL NOT accept a delay.

The latest version of Sounder Controller (CSC354CPR) is fitted with a jumper to force the other sounder circuits to follow the programming of sounder circuit 1. (see page 52).

Double Knock.

Double knock operation is programmed on site installer and is used to prevent unnecessary evacuation of the site. Two fires are needed from the selected list before the output condition is satisfied and the output can operate

The operation can be done by address, zone or global. Later versions have included the opportunity to double knock WITHIN an individual zone (any zone 2 devices)

When selecting the trigger to be by address all the addresses have to be on the same loop and the limit is sixteen.
When selecting the trigger to be by zone, then the limit is sixteen zones, (or groups – see page 22) in each stage.
Selecting by zone means that two different zones will have to be in fire before the output condition is satisfied.
When selecting the trigger to be global then any two fires on that panel or network will satisfy the output condition.
If a Cascading timer is used (Release Feb 2015) any outputs using DN global will respond on the first cascade. If DN global is required use DN any zone group and choose all zones except the cascade timer zone.

NOTE If Double knock is set by zone – any 2 devices within the same zone will NOT satisfy the condition.

Coincidence (Dependency type C).

Coincidence is different from double knock in that two fires from the allocate device list are required to satisfy the output condition but one fire from outside the list will also satisfy the output condition.

This function is similar to double knock in the way that it is set up i.e. by address, by zone and has the same restrictions on the number of trigger devices.

NOTE If Coincidence is set by zone – any 2 devices within the same zone will NOT satisfy the condition.

Sounder Level Test.

This option allows for Db readings to be taken without causing too much disruption to the site occupants.
Selection of the sounder level test mode turn the sounders on for 15 seconds enabling a reading to be taken and then turn them off for 30 seconds allowing the engineer to move on to the next area.

One Man Walk Test.

This function is similar to the weekly test feature, this allows the engineer to test the complete system without having to continually return to the panel and reset it. Once all devices have been tested the 'Stop' button can then be operated and a manual reset initiated.

Test Device

This is not a true test of the device. Individual devices can be identified and wiring direction noted using this menu.
When a device is put into test the fire Led will illuminate a sounder will sound and a relay will switch.
Following an Autolearn test device can be used to indicate cable routes and in what sequence the panel has numbered the devices etc.
On v3.0 software Next/Previous has been added to enable the user to navigate this function more easily also the relay of an I/O device will change state.

Auto Learn.

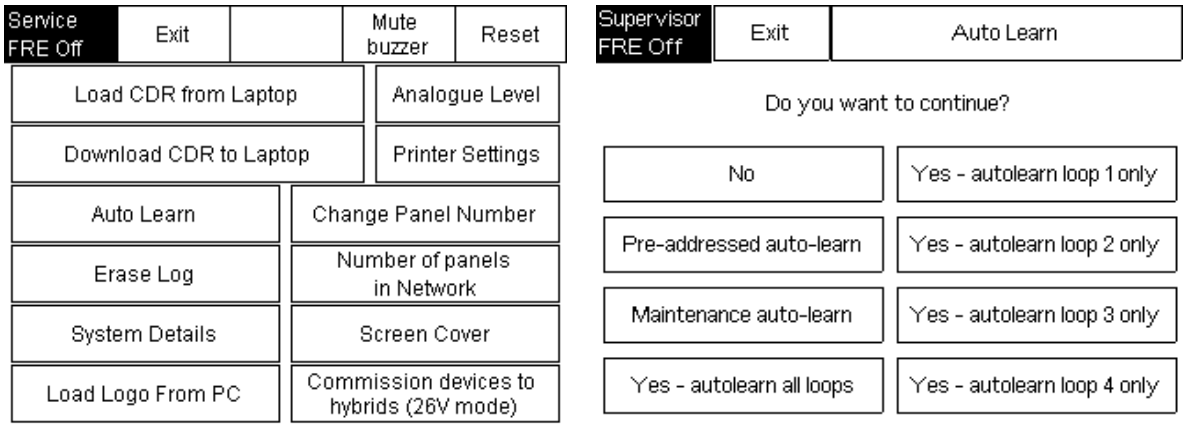


Fig 5

This is the process of addressing the devices on the loop. The process starts telling every device to open its Isolator. It then numbers the first device and tells this to close its isolator, the next device is interrogated and given the next number this continues until all devices are numbered in sequence.
On version software (v 3.0 introduced August 07), Autolearn by loop has been introduced. This allows a second loop to be learned without having to relearn Loop 1. (which only allows one attempt)
If a second loop controller is installed then the option to learn loops 3 & 4 individually is displayed.
Further enhancements now allow any loop to be autolearned as many times as required.

Pre-Addressed Autolearn has been added. This allows the engineer to Pre-Address the loop devices in any sequence using a hand held programmer. (CF800) Once the system is installed, pre-addressed autolearn only interrogates the devices without renumbering and saves the device list in memory.

Maintenance Autolearn is a recent addition from Display 3.3.50.44 dated 20/7/12 and loop version 3.2.4.51 which has been added to support many additions.
If a large number of devices are to be added at the same time an autolearn may be required. Clearly this is not acceptable on established systems therefore the maintenance autolearn has been developed. When this feature is initiated:

1. It supports holes.
2. It will address any devices with a 254 and place them into the next available address or at the end of the loop whichever is available.
3. It will leave the zoning and text information alone.
4. Most importantly it will not alter the cause and effect of the existing devices.

Analogue Level.

The analogue level reading is used to display the analogue value being sensed by the detector, this value is displayed in a numeric format and also in a graphical form. This reading is displayed in real time.
On v3.0 software Next/Previous buttons have been added to enable the user to scroll through the addresses more easily. The min/max values are erased on exiting the menu and resetting the panel.

Version 3.0 software also allows the analogue levels to be transmitted to the PC by Loop, this is achieved through the Site Installer program and user menu.

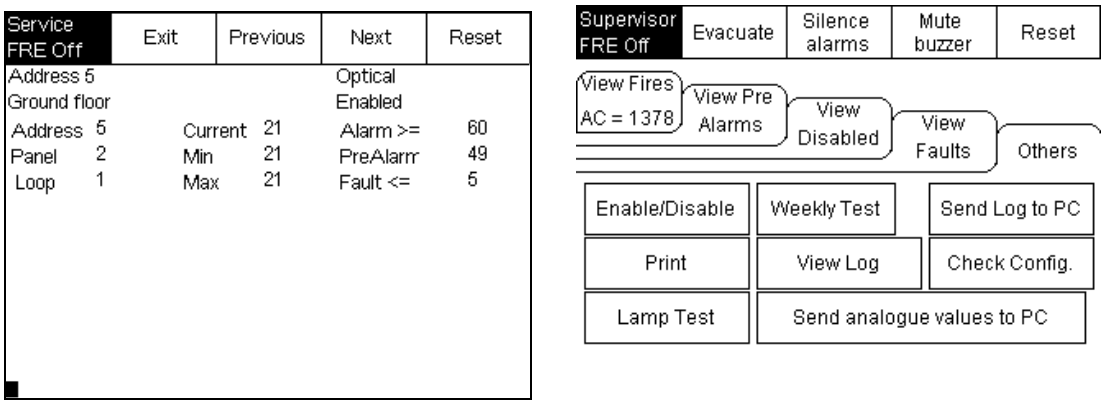


Fig 6

Printer Settings.

When the printer is fitted then there are two options for its operation: Auto and On Request.
When changing between the two, the panel needs to have a hard reset or power down/power up to see the change in the settings.
If the printer is replaced then a hard reset or power down should also be carried out to recognise the printer.

Programming I/O and Sounders & Sub- Menus.

There is a number of sub – menus within this screen.

1. Panel Outputs

The only sounder programming which can be changed on the panel is the sounder tone and the volume, if these settings are changed then the changes are applied to all the sounders on the system whereas if the settings are done on the site installer software then it is possible to individually configure the sounder tone and volume for each sounder.

These controls only apply to loop powered sounders so if there are a significant number on the loops be careful when setting medium or high. If all the loop sounders are set to these levels it is possible to overload the panel and cause the loop to current limit.

There are three volume settings; Low, Medium, High; and four tones: Pulsing, Continuous, Two Tone, Slow Whoop. If the sounder settings are not altered on the panel then they will default to two tone and low volume.
Because these settings apply to all the loop sounders, care must be taken to prevent overloading if medium and/or high were to be programmed.

The panel sounder circuits are limited in the way they can be programmed, the three stages available to the loop sounders are not available for the panel sounders. They should really only be used when the system is a one out all out configuration, if anything more complex is required then loop sounders are the best option. If conventional sounders are required, they need to be controlled by a sounder control unit.

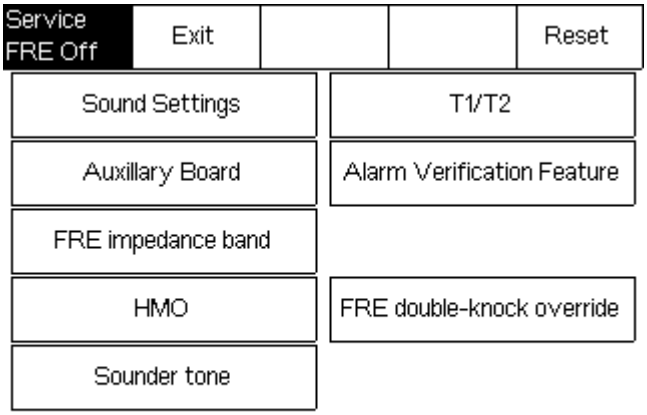


Fig 7

2. T1 & T2

Also contained within the above menu are T1 & T2, this feature to enables the user to acknowledge an alarm and investigate the cause before the building is evacuated. (see Fig 8)

T1 time delay is between 10secs and 3 min.
T2 time delay is between 1 – 10 mins.

If T1 is set to a delay this will delay the operation of ALL outputs or FRE only (selected in this menu) until T1 time expires.
The sounder programming will then revert to the site installer program minus any programmed delays.
When T2 is set and silence alarms are operated before T1 expires, the delay set on T2 will start.
When this time expires the outputs will revert back to the site installer program plus any programmed delays. **Both must be set if either is reqd.**

Both of these delays can be overridden by the operation of any second device (a double knock which could indicate fire spread), Callpoint or the input of an I/O. (this is also selectable within the T1/T2 menu).

If Day/Night mode is selected, the first fire during night mode overrides T1 such that the outputs will revert to site installer program minus any programmed delays.

If a Non Fire Input is used to set some cause and effect then this will also override T1/T2

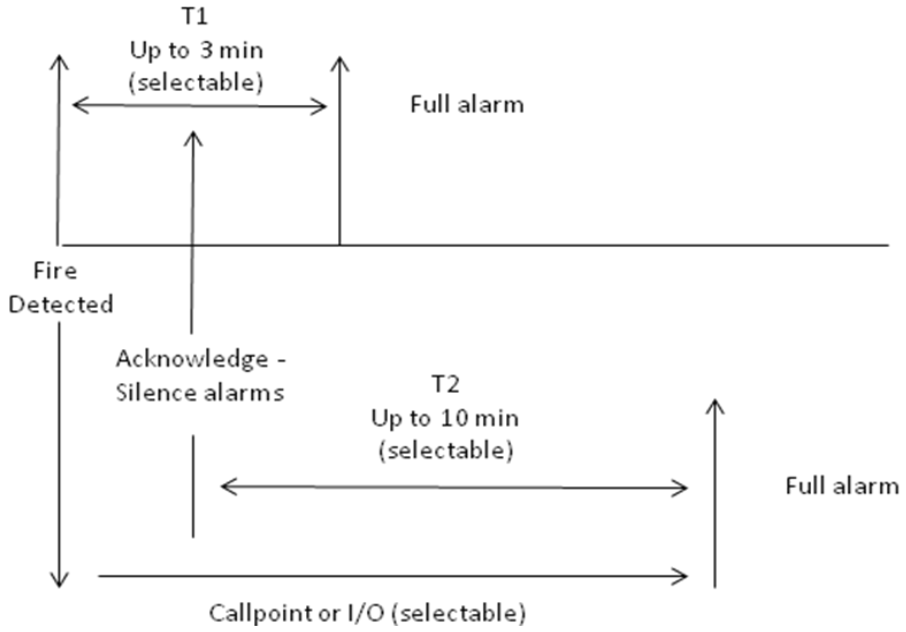


Fig 8

When the delays are running during an alarm condition, a countdown timer is displayed on the screen to indicate time remaining before operation of the outputs.

T1/T2 can also be switched on and off/on using the input side of an I/O or Callpoint programmed to disable devices within the Site Installer input programming. (see page 23).

If T1/T2 is required on a site where these delays need to be active during certain times and turned off at all other times, generally a member of staff would need to operate the callpoint or I/O.
However, within the T1/T2 menu is a feature called ‘Auto enable delays’. This feature enables the user to automatically set T1/T2 at the required times as a backup if the input is missed.
A more recent amendment (July 2011) has introduced an automatic disable feature to run alongside the auto enable feature. (see FIG 9)

Fig 9

The release dated July 2011 has also introduce extra features within the T1/T2 the first of which allows the user to select which internal outputs respond to the T1/T2 time delays (see FIG 10)

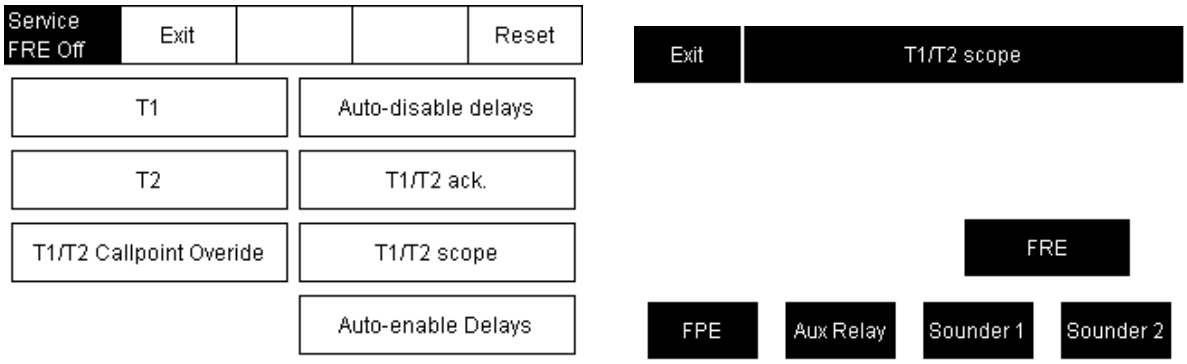


Fig 10

The second feature allows the user to select which external outputs should respond to the T1/T2 time delays. This feature is programmed through the device outputs dialog within the Site Installer program.
All external output devices are defaulted to follow the T1/T2 timer and are unchecked not to follow.

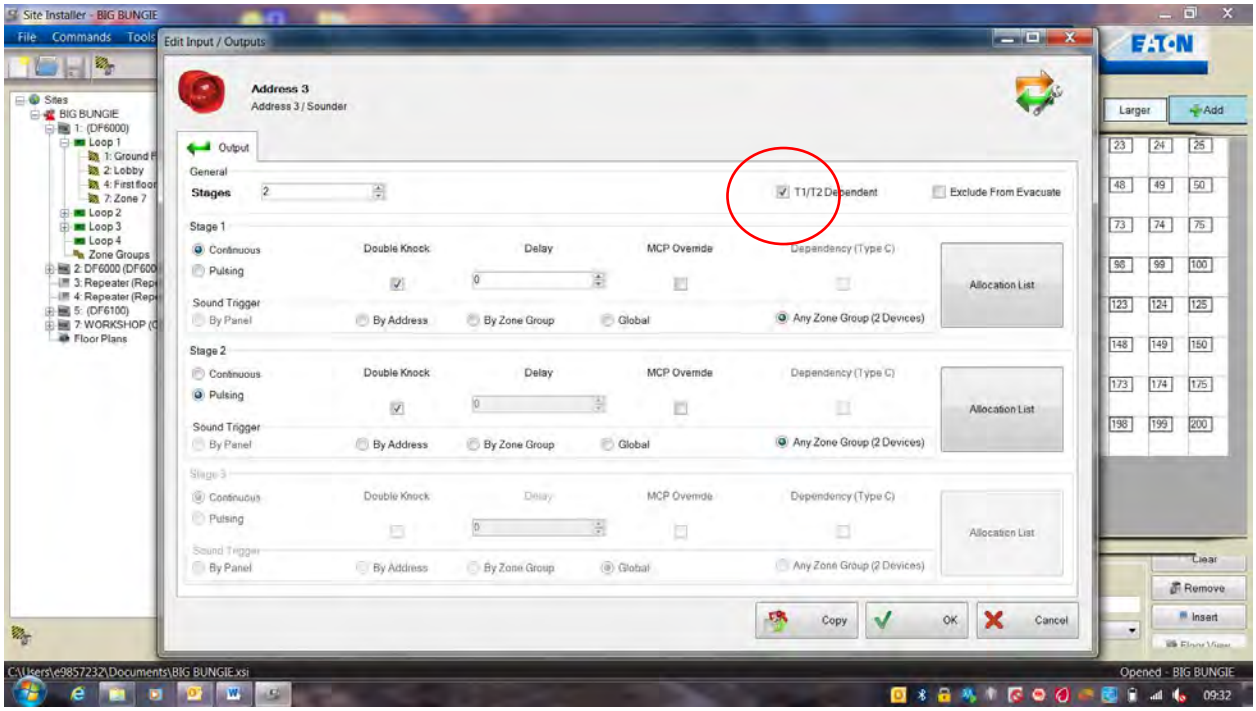


Fig 11

3. Alarm Verification Feature

When this is set any detector that enters a fire condition will show on the panel, but no sounder program will be activated, a 15 sec timer will start. At the end of the 15 secs, if the detector is still at alarm level the sounders will activate. If during this time the detector has dropped below the alarm level, then the panel will not go to alarm.

This is particularly useful to prevent false alarms from detectors where the smoke is from other sources other than a fire i.e. smoking in bedrooms.

On later version software the AVF length can be timed from standard or long delay (30 secs) and when in UL 864 9th edition mode a longer time (60 secs) has also been added. (see page 38)

A further option includes the addition of AVF on specific zones.

4. Auxiliary Board

Extra boards or additional features for other markets can be installed within the DF6000. These include Extinguisher and Fire brigade boards to enable the control of other services within buildings in Germany.
Australian Mode creates a re-configured display screen when class change is shorted. In this mode a key-switch device is installed on the front door of the DF6000 panel which can only be operated by the Australian fire brigade (this key-switch shorts the class change). Address or zone text for the alarm can be viewed on the screen depending on how the screen is configured. (See page 37)

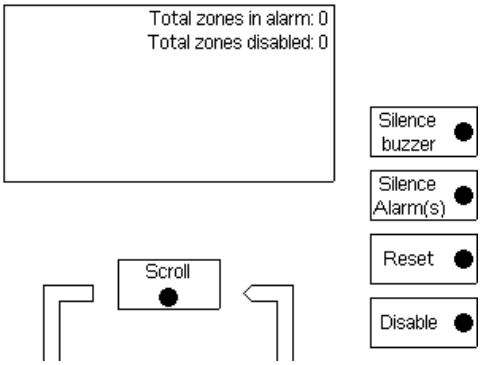


Fig 12

The re-configured screen gives the Fireman controls to; silence the alarms, mute buzzer and reset the panel without having access to the pass-code.

Swedish mode is very similar except that the panel must be in Swedish language for this feature to be operational.

5. HMO Mode

This feature has been added to accommodate BS 5839 Part 6 – Fire Alarm Installations in Dwellings.

BS 5839 part 1 does not cover private dwellings, however, a landlord is required under this to protect all common areas within his building, and generally this would be designed as L3 coverage with a detector and sounder in the lobby area of the flat.
Mains smoke detection would then be installed within the living accommodation to provide protection but preventing a false alarm in a flat evacuating the whole building.

This system is set up using a combination of the menus on the panel and the Site installer program.

Each sounder within a flat should be programmed to go continuous by the HMO zone or device addresses in the flats up to a maximum of 16.

The adjacent zones can then be programmed to go pulsing after a delay which will be the same as the reset timeout explained below.

There are 3 settings within the HMO menu;

1. **Class Change;** this is the controller of HMO mode, when class change is set to 'global alarm' the mode is on. In this instance, if there are any pulsing sounders adjacent to the zone in fire, then operation of class change will change them to continuous. Setting class change back to 'normal operation' on the screen HMO will be turned off.

2. **HMO Zones;** This button allows the operator to select the zones required to be in HMO mode.

3. **Reset Timeout**; Detectors within the HMO zone can be set on a delay from 1 to 5 minutes. Essentially this is an extended version of Alarm Verification (section 3 above), if smoke or heat puts a detector in fire, the panel and detector will indicate this, but will not activate any outputs unless specifically programmed to do so. If the smoke or heat clears within the timeout period, then the panel will reset. If smoke or heat remains until the timeout period has elapsed, then the programmed cause and effect will commence.

Note; Only Photoelectric Detectors and Heat detectors can be used with this mode Opto/Thermals will not operate until a change to the loop code version 3.2.4.41 dated Oct 11

6. Sounder Tone

Recent product introductions include an Australian Bell Tone electronic sounder for school applications. These operate as normal electronic sounders during an alarm situation but go to bell tone when class change is operated.
This feature is at odds with the HMO settings above, so the panel must be informed if these sounders are installed. Once installed within this menu HMO cannot be set.

7. FRE Double Knock Override

If FRE double knock is required in the panel programming, certain devices can be chosen to automatically override this setting if triggered.
Options within this menu include Optical, Opto/thermal, Heat detector, Callpoint and I/O unit.

Change Text.

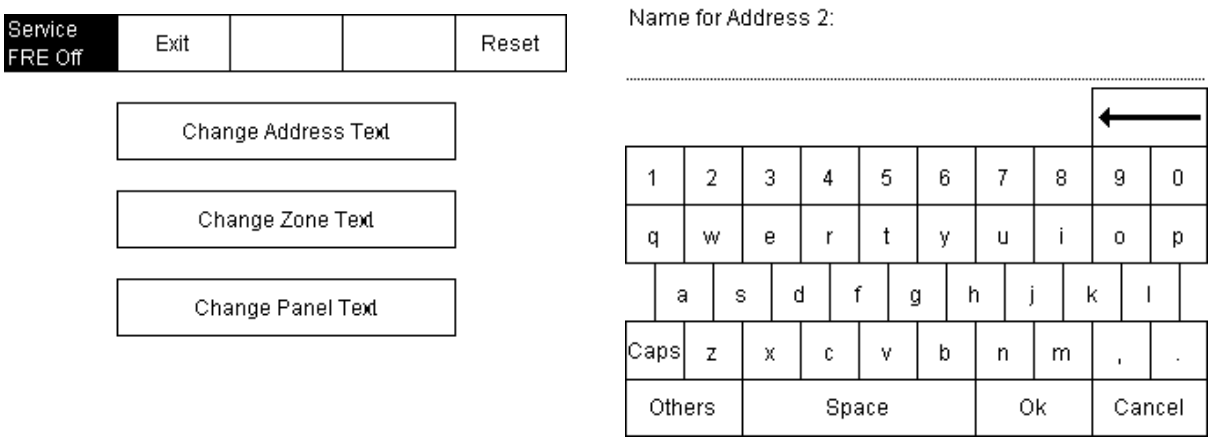


Fig 13

Zone/device text can be modified directly at the panel, once the change text option has been selected and either address, zone or panel text has been selected a list of the available zones/devices is displayed on the panel. A qwerty keyboard is the displayed on the screen and with the existing text above, typing on the keyboard then changes the text.
The address and zone text is limited to 25 characters which is the maximum that can be transmitted over the network. Both are also restricted in the Site Installer program.

Set Date/Time

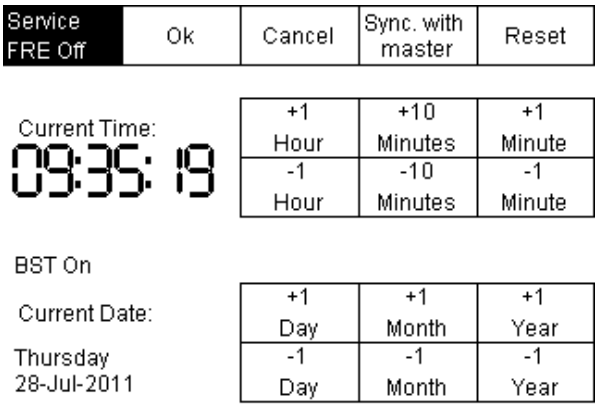


Fig 14

The ‘Set Date/Time feature is a relatively simple and self-explanatory method of setting the date and time.
However, if the panel is part of a multi-panel network, all of the clocks would need to be synchronised. An extra button ‘Synch with master’ has been added to automatically synchronise the time with the master panel, which in this case is always panel number 1.

Configure Zones

Following an Autolearn all devices are by default placed into Zone 1, Extra zones can then be added using the if the Site Installer is available then extra zones can be added and devices can be moved into the correct zone. If minor changes are required, then this can also be carried out directly at the panel using the configure zones menu.

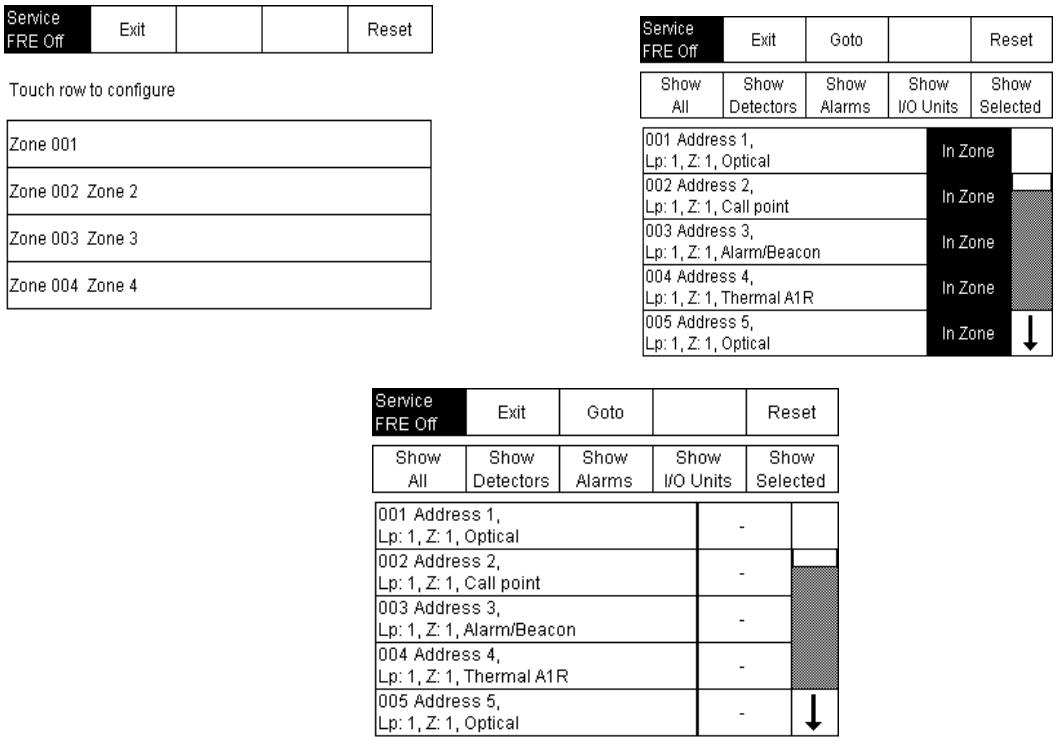


Fig 15

Input Programming.

Input devices are Detectors, Callpoints and the input side of an I/O unit which can be programmed on the Site Installer to carry out different functions, (If un-programmed the default is Fire).
The Device Inputs box is opened by ‘right clicking’ on the individual device and when the device options box opens then choose ‘Device Inputs’
This shows a device input box and subsequently how the panel is set to respond to each input option. Selections can be made to make the panel reset, silence, evacuate, pre-alarm, fault or fire.
Other options include the disabling of a pre-assigned group of addresses or zones (**up to 8 of either - see notes**), or initiating the Day/Night or Non-Latch functions.
On a later release of Software and Site installer (July 2011) more selection have been added to the input programming list to include – non-fire input, FRE only activate or Extinguisher only activate.

The input programming can also be used to turn on and off the feature T1/T2. When disable addresses is used on the input and the isolate list is selected, all of the devices on the loop are displayed together with a ‘Delay’ showing as the last device. This ‘Delay’ is T1/T2 which is disabled when the Callpoint or I/O is operated and reinstated when the input is removed.

Non-latch is a feature where the panel goes back to quiescent state when the Fire situation clears, this is particularly useful when interlinking with other panels.

MCIM input modules can be programmed to operate as a Technical input (version 3.3.56 (Jun2017)) to provide feedback for the outputs programmed on the Fan Controller device.

NOTES

1. **The addresses must be on the same loop as the input device, whereas the disabling of zones can be achieved across the panel.**
2. **The maximum number of Isolate lists allowed are 10 per loop i.e. 10 inputs set to Isolate**
3. **When disabling devices or zones the Non – latch button is not required.**
4. **Allow at least 30 – 40 secs from the end of a reset before returning the input to the quiescent condition.**

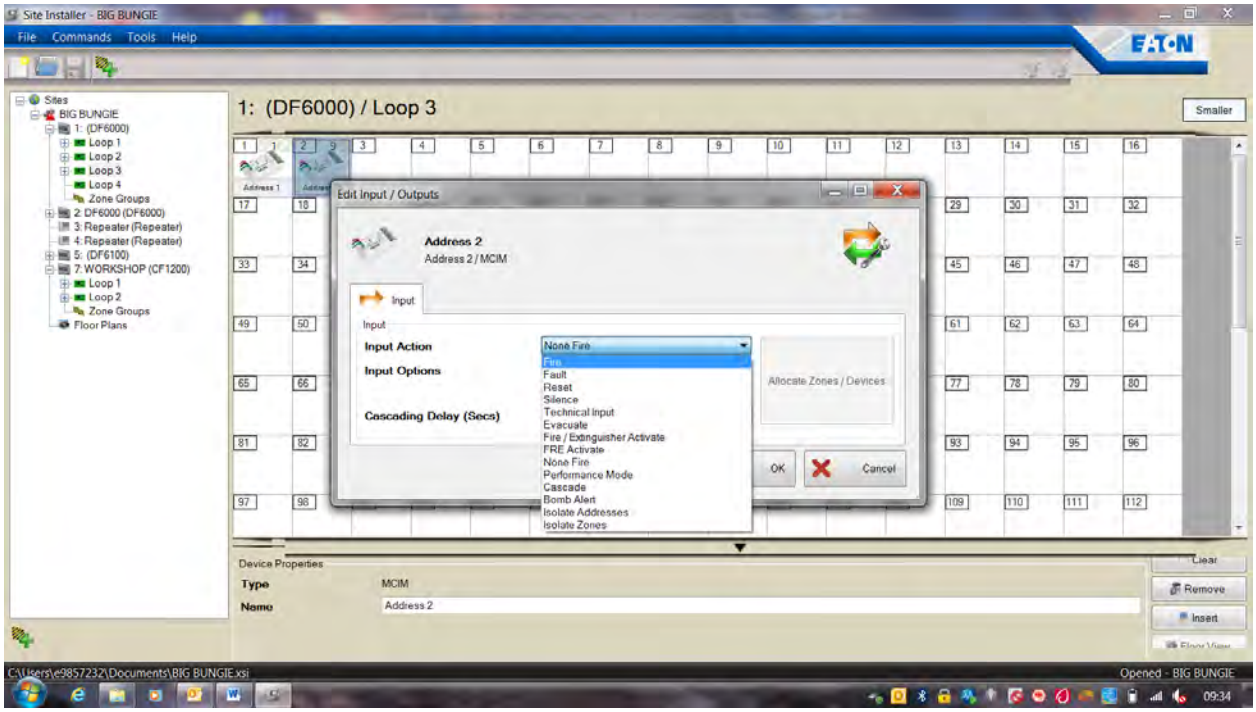


Fig 16

Input Programming General Rules

Function	Operational	Results	Comments
Fire	Yes	Fire Event on all panels, local and network	This is the default programming
Fault	Yes	General fault on all panels, local and network	
Reset	Yes	Performs a Soft reset on all panels, local and network	
Silence	Yes	Silences local and networked panels	Will also accept T1/T2
Technical Input	Yes	No indication on display, creates a log entry affects local and networked panels	Active from Jul 17 Provides feedback for FC6 and smoke management
Evacuate	Yes	Sends an Evacuation command – overrides most programming on local and network	
Fire/Extinguisher Activate	N/A	German mode only	
FRE Activate	N/A	German Mode only	
Non-Fire	Yes	No indication on display creates a log entry Local Panel Only	Local devices (loop card) can be programmed to respond to this input, by address (same loop) or by specified zone.
Performance Mode	N/A		
Cascade	N/A		
Custom Trigger	N/A		
FPE Feedback	N/A	German Mode only	
Isolate Addresses	Yes	No indication on screen – will initiate a disablement Led – total number of addresses to isolate from this address is 8	Non latch function not required
Isolate Zones	Yes	No indication on screen – will initiate a disablement Led – total number of zones to isolate from this address is 8	Non Latch function not required Does not work with zone grouping
Non Latch	Yes	When the fire condition is removed the panel local and network performs a soft reset	Used for interlinking
Day Night	Yes	When ticked for Day Night any other device on the same Loop controller will follow this signal. When in night mode a crescent moon icon appears adjacent to the top LH corner screen touch box, no further indication.	Devices affected by this function are Opto-Thermal smoke and Heat detectors.

Output Programming

Outputs are classed as Sounders/Beacons, I/O units, Sounder Control units and Shop Unit Monitors. The panel is capable of accepting 120 outputs per loop, (60 Sounders set low) and 20 I/O units (each I/O automatically takes three channels). Sounder Control and Shop units use sounder channels.

To set the device outputs right click the device, when the device options box appears choose 'Device Outputs'.
The output device can now be programmed to respond to a specific trigger – globally, by zone by address or by panel.

Each output can have three stages programmed – whatever is set in each stage that matches the input trigger the output will follow (there is no designated hierarchy).
However, if the trigger is 'Global' in any stage this will always take precedence unless double knock is also set.

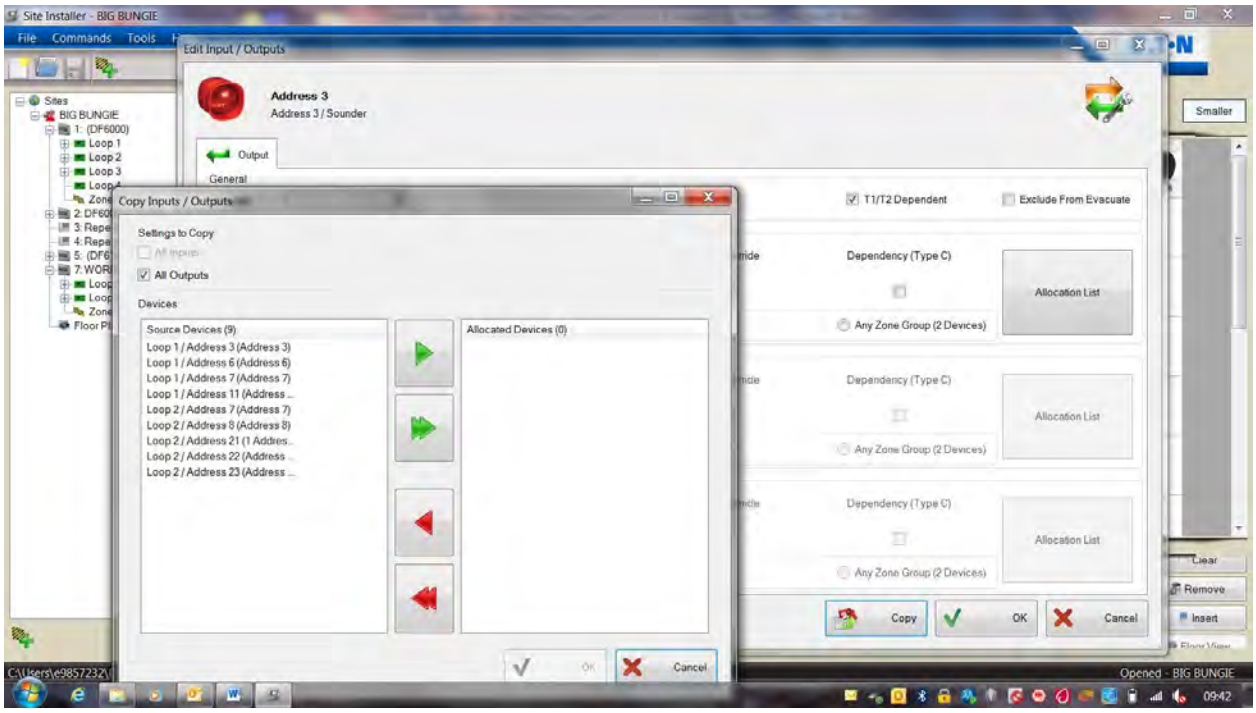


Fig 17

If the sounder programming is to be the same for every device, then hit 'apply these settings to other devices' or 'Copy' all of the sounders on the panel will be listed and hit 'OK' or 'apply to all' or 'apply to selected' can be hit.

NOTE

1. **A delay can only be programmed onto Output 1 stage 1 of any multi-output device such as a 3 chan I/O or a Sounder controller.**
2. **Double knock and delays need to be on separate stages.**

If the sounder trigger is by address, zone or panel then ‘allocate devices box can be used, the allocate devices box appears and the trigger source can then be selected.
For example, if this sounder is to operate only on a specific zone then that zone can be highlighted and moved to the right hand box (up to a max of 16 per stage) and hit ‘ok’.
If there are more than 16 zones that need to be programmed to control an output, then the other 2 stages can be used to increase the allocated zones.
For example;
Stage 1 can have zone 1-16, stage 2 can have zones 17-32 and stage 3 can have zones 33-48.

The sounder will now only operate when a device in the selected zone goes into fire

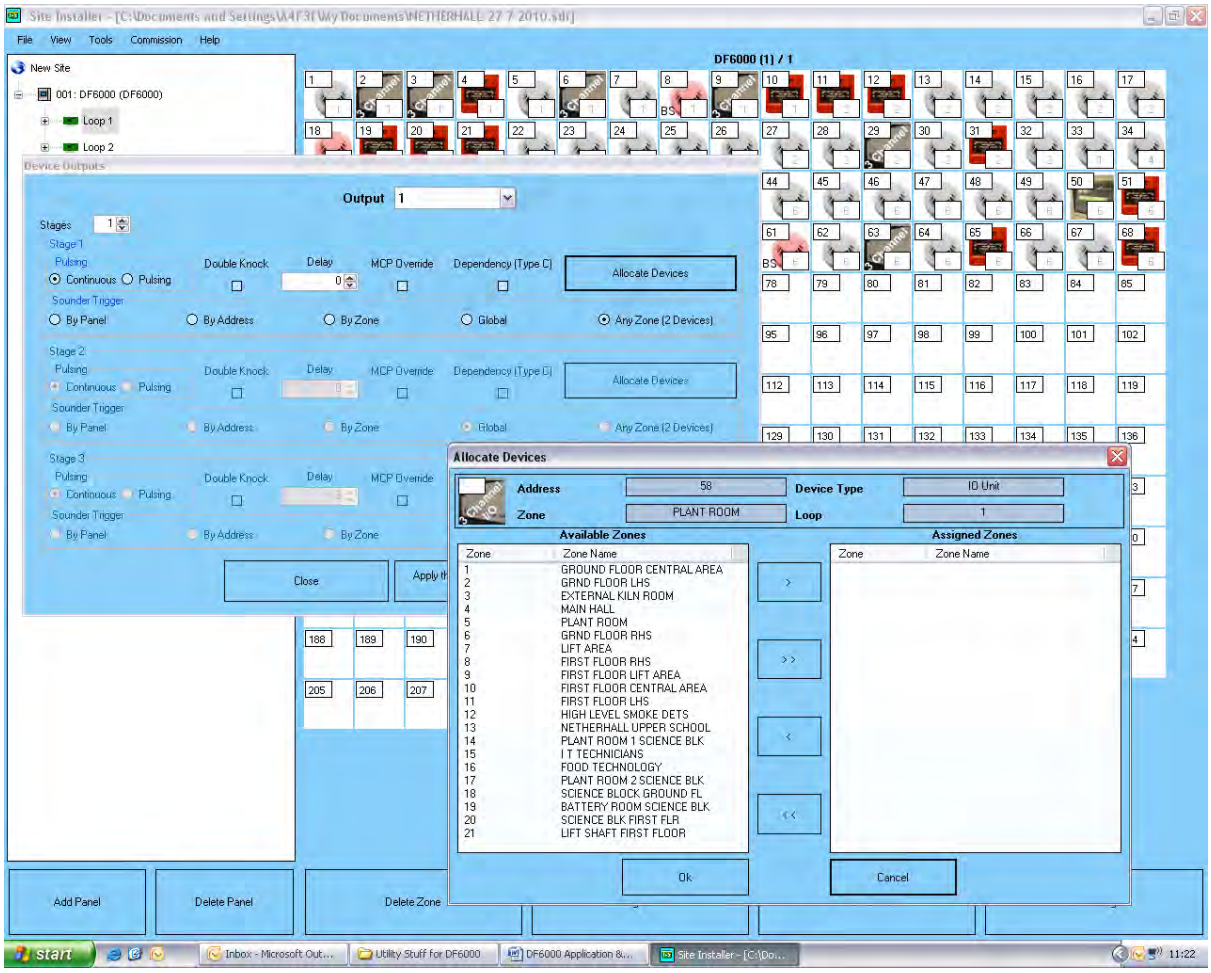


Fig 18

Another feature within the output programming is ‘Any zone 2 devices’ when this is selected and the allocate devices tab hit any zone can be placed in the right-hand section. This will effectively double knock the selected zone whereas that zone must have 2 devices in fire to initiate outputs.

Note ONLY 1 ZONE CAN BE PLACED IN THE ALLOCATION LIST. (older software shown above)

Zone Groups and DN any zone 2 devices

To further enhance the cause and effect programming options Zone groups have now been added into both Site installer and the latest release software (JUL 2011).
250 Zone groups have been added to the system so that when any output devices trigger source is by zone this now becomes by zone group.

Each zone group can contain up to 32 traditional zones and each output stage can be programmed by up to 16 zone groups.

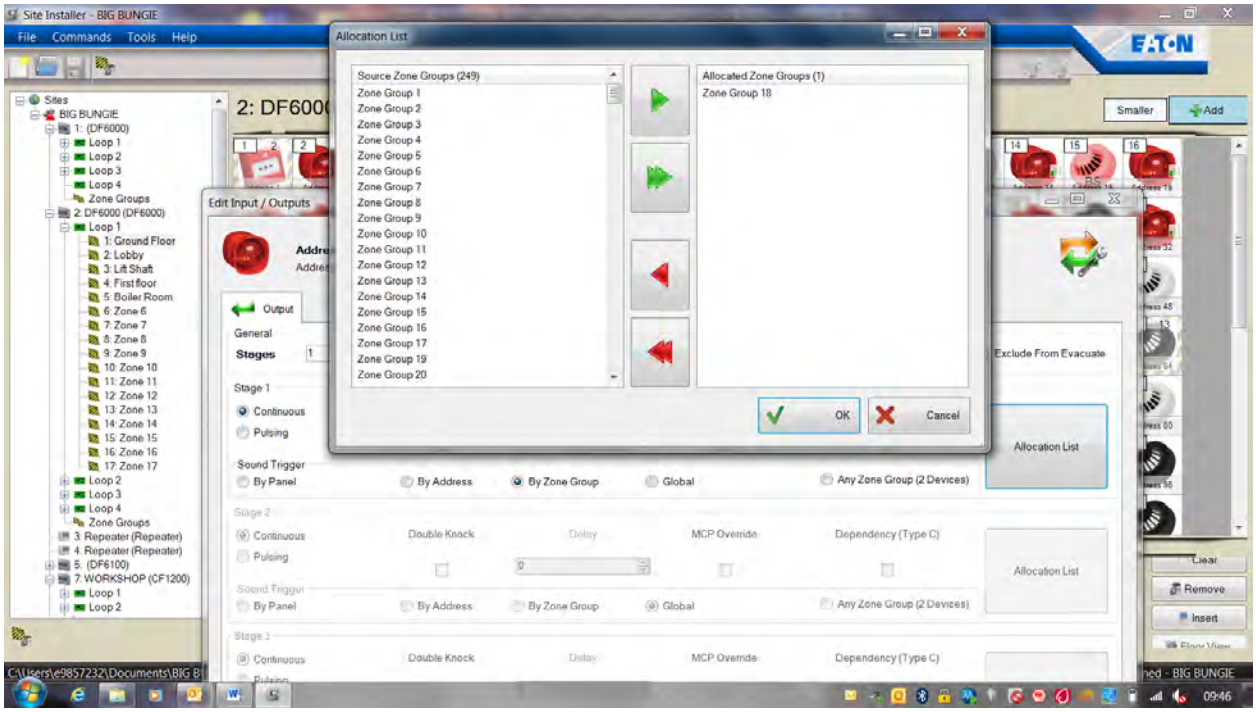


Fig 19

In fig 19 above the output is programmed to operate by zone group and zone groups 18 is selected as the trigger source.

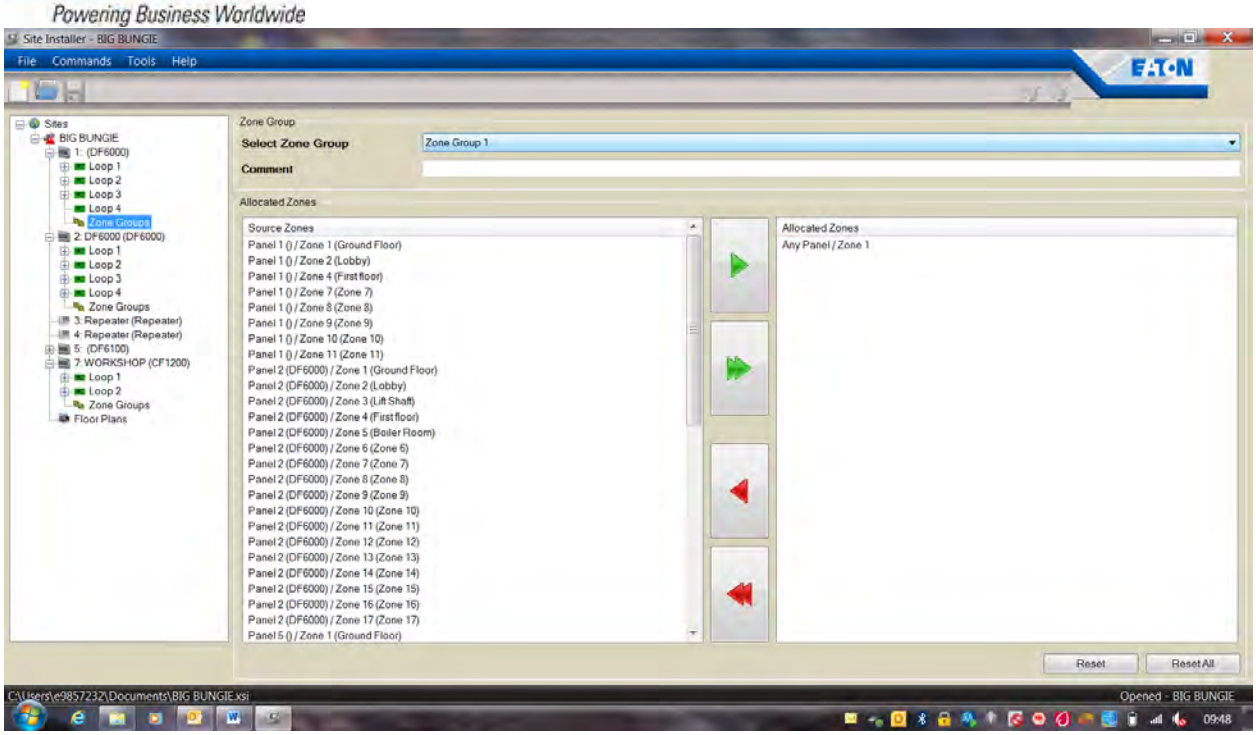


Fig 20

Fig 20 shows that zone group 1 has 1 zone allocated up to 32 zones can be allocated to this group.

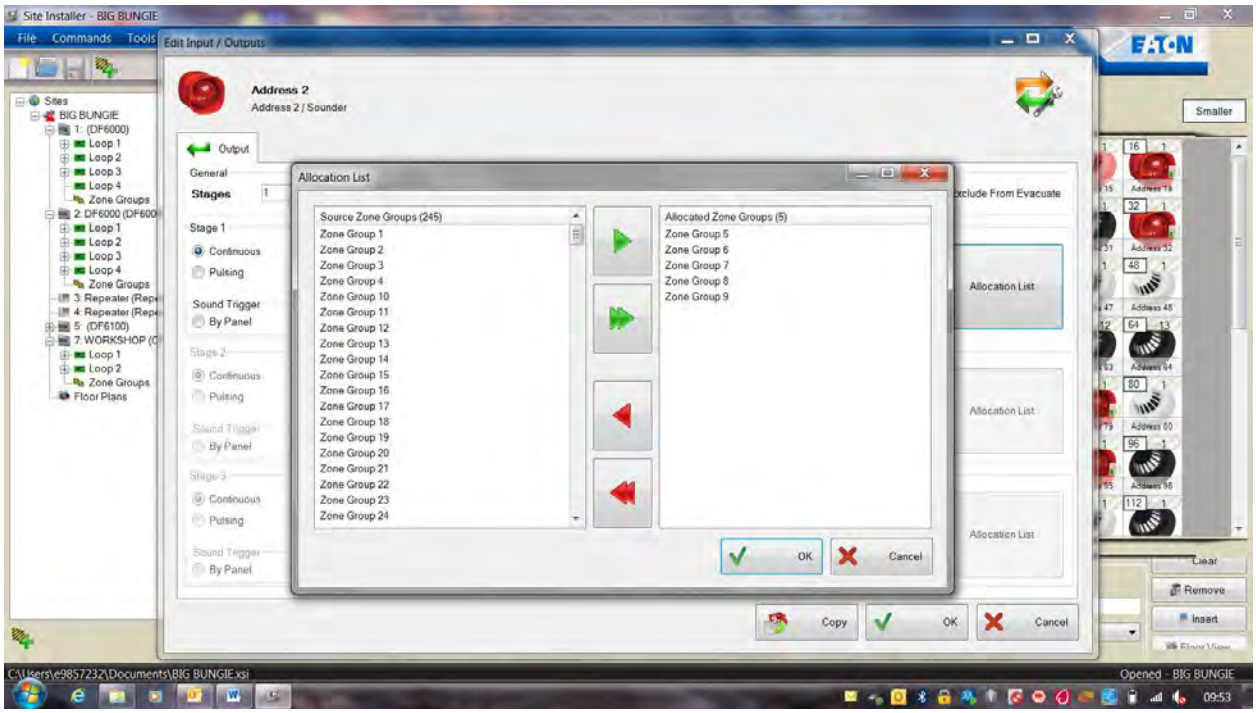


Fig 21

The double knock any zone 2 devices has been radically improved – in the previous version only one zone was allowed in the assigned zone groups.
In this latest version the number allowed has been increased to 16 zone groups and 32 zones within a zone group.
As a rule, two devices in the same zone satisfies the condition – but one device in 2 zones does not.

Alternatively, if NO zones are allocated in the right-hand box ALL zones on the system would require 2 devices in alarm to satisfy this condition.

Further recent additions to both Loop software and Site installer allows the programmer to select extra features on the output programming box

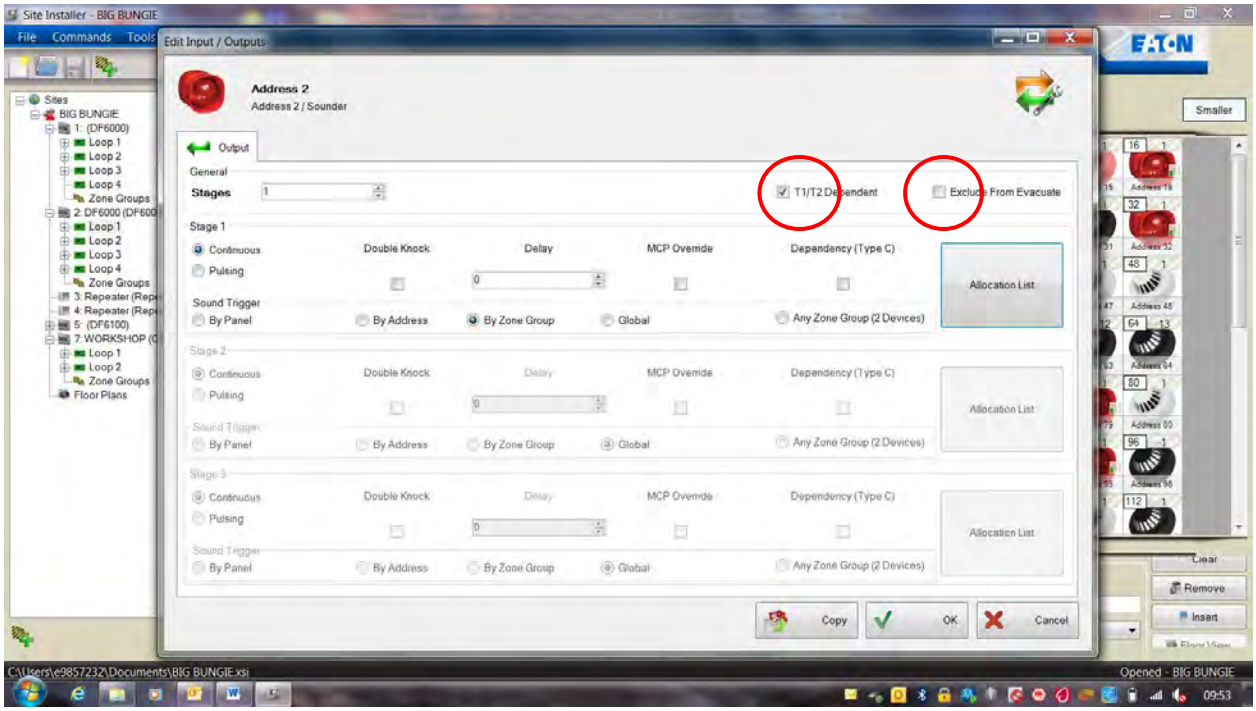


Fig 22

2 extra tick boxes have been provided; the first is used to tell the output device to follow any delays set in the T1/T2 menus on page 16.

If left unticked this device would follow the normal program – this is particularly useful on a beacon which is used to warn the operator of an alarm situation before T1/T2 has a chance to time out.

The second is used to exclude the particular output from an Evacuate command.
Evacuate command is used to override ALL output programming.

If, for example the system is part of a shopping precinct that send Evacuate commands to set the outputs, then any zonal controls may be overridden, this box can be used to maintain any cause and effects.

Sounder Settings

Globally, the sounder volume and tone can be set from the configuration menu described on page 15, this could potentially cause issues if ALL of the sounders on the system were set to high volume.

Generally, the sounders should achieve 65 dba or 5 dba above any likely background noise. The other requirement is to wake a sleeping person where the minimum sound is required to be 75 dba at the bedhead.
In this instance individual sounder volumes can be programmed through the site installer program to prevent the panel from becoming overloaded. This is achieved by a right click on the individual sounder and choose ‘sounder settings’.

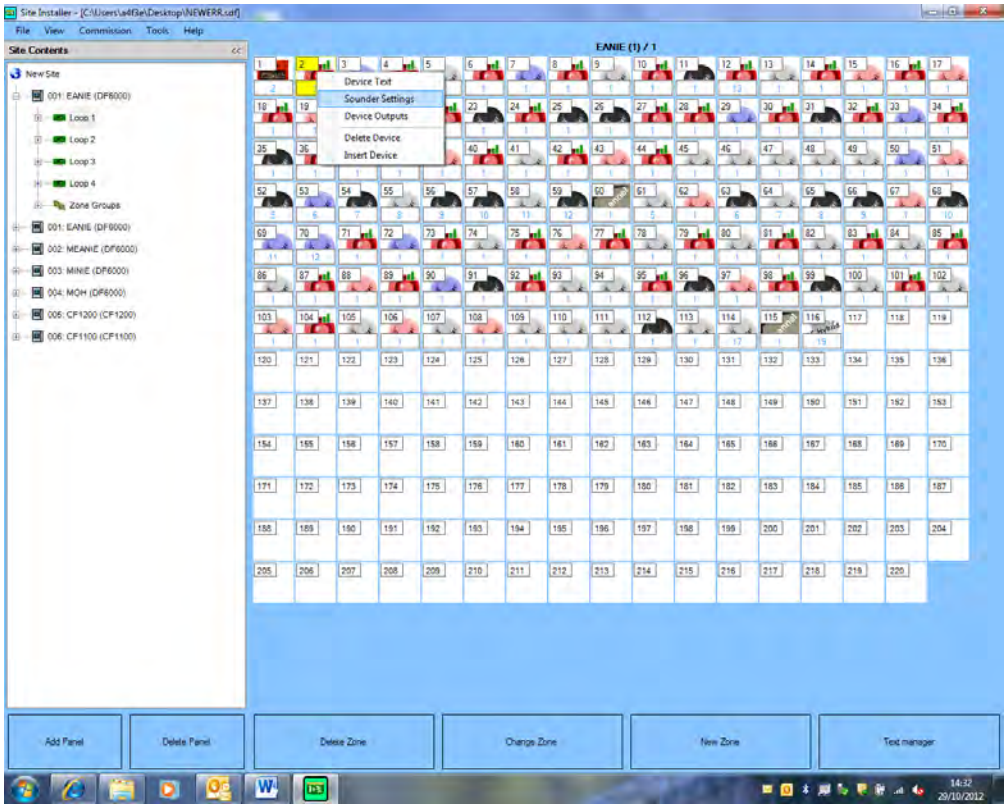


Fig 23

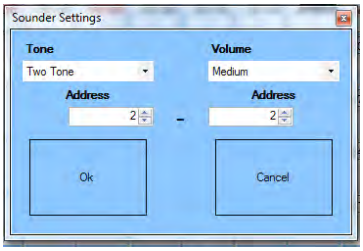


Fig 24

This sounder (address 2) can now bet set to any of the required settings available. If All of the sounders on this loop were required to be the same volume then choosing the address from 2 to 116 on this loop would ensure that all sounders in the range chosen would follow the settings in the boxes. This method can be done for all loops on the program. **NB The above examples are previous installer versions**

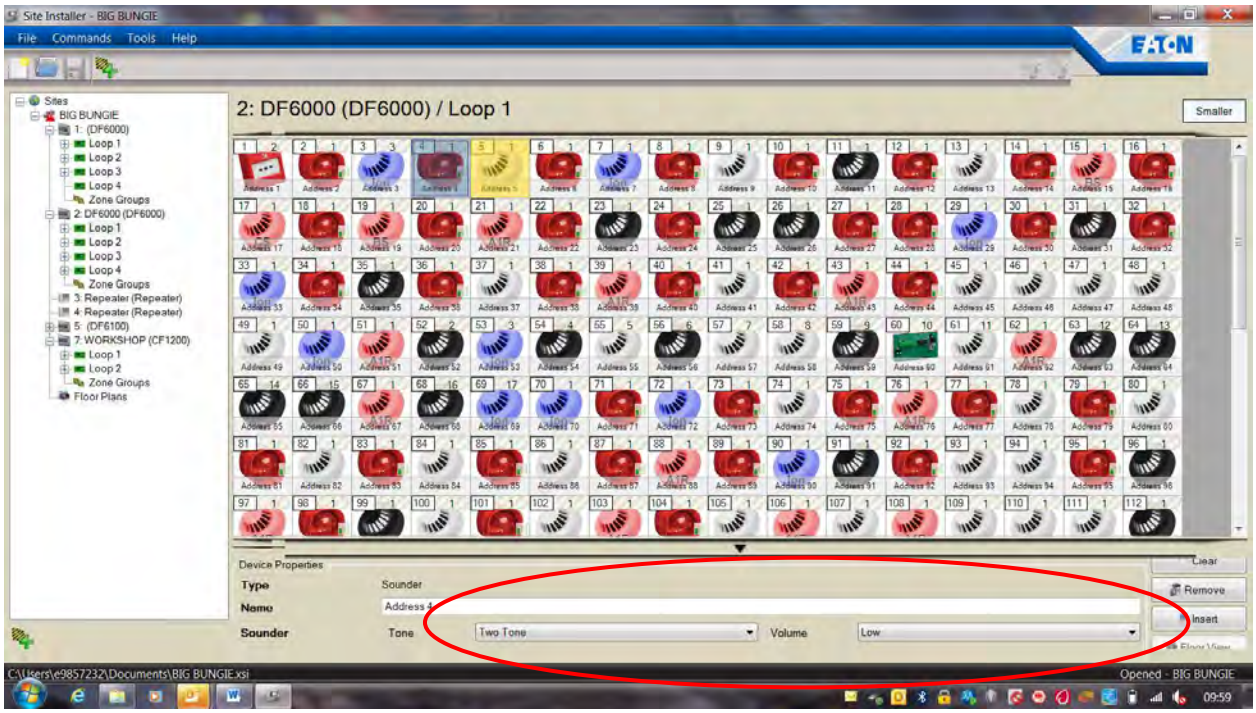


Fig 25

In the later software version site installer the sound settings are achieved by setting an individual sounder as shown and the using the settings indicated, once set right click the device and use the 'Copy Configuration'. Select which devices and settings are required to be copied and click 'OK'

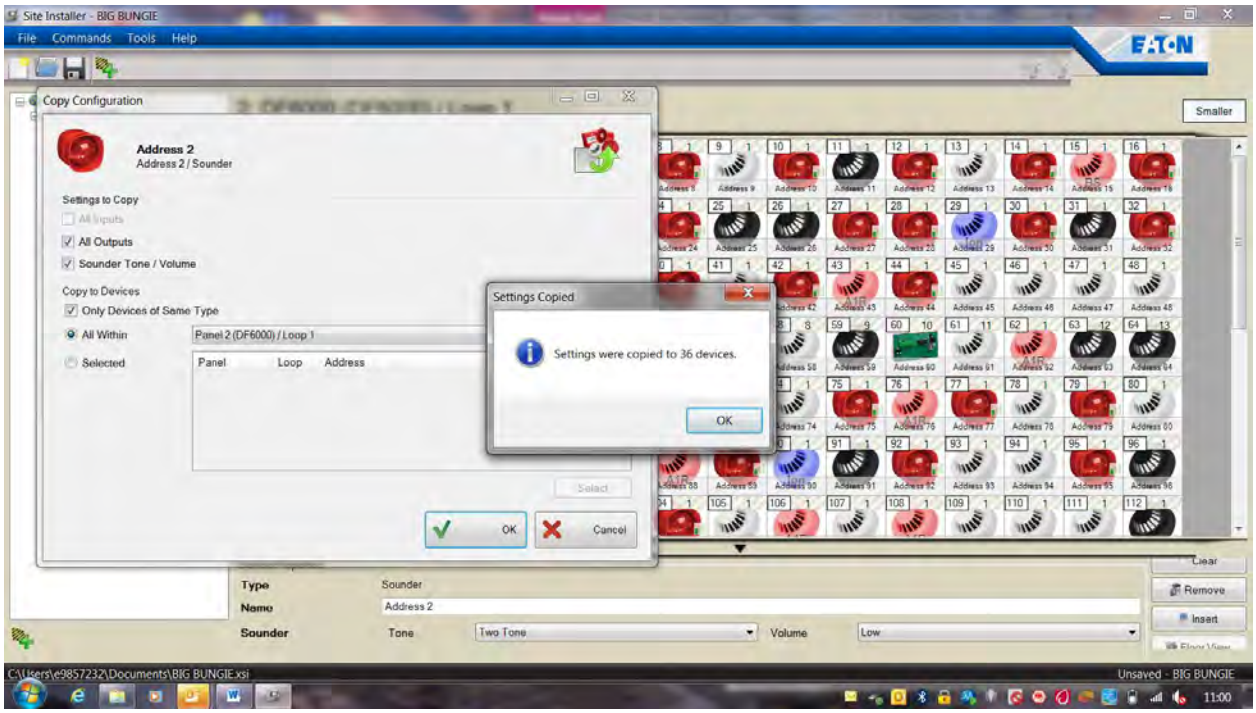


Fig 26

Add/Delete.

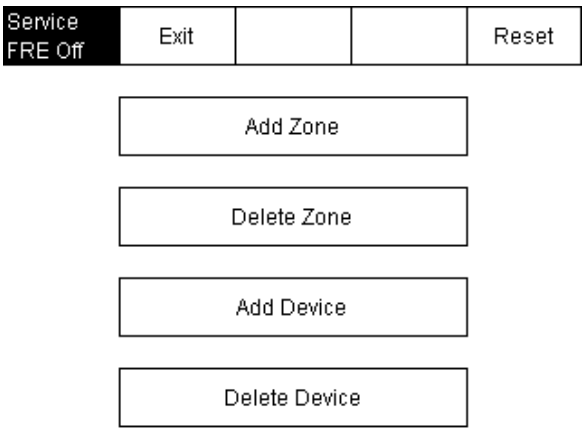


Fig 27

This function allows new devices/zones to be added to the system.

When a zone is added then the panel uses the next zone number and adds it to the zone list.

When a new device is added then the panel asks which loop the device is connected to and the scans the loop looking for a reply of 254, once this reply is received that device is allocated the next available address location, this process is then repeated for the next device to be added. It is not possible to add more than one device at a time as multiple replies of 254 would be received at the same time and the panel would try to address them all with the same location number.

Once a device has been added then it will be placed in zone 1, it then needs to be assigned to the correct zone and have text inserted.
Sounders and I/O units can be added but on the older software will not operate so these needed to be programmed by site installer. Version 2.4.25 addresses the issue.

Note. In all instances of an Add device the panel must receive a Watchdog reset for the device to follow the output programming.

When zones/devices are deleted then a list of available zones/devices is displayed and the one to be deleted is selected and then the panel removes that zone/device.
When a Zone is deleted all devices in that zone are also deleted (a warning is displayed on the panel to this effect).
If a device is deleted the panel returns the address number back to 254 enabling the device to be re-used

Delete/Add Device cannot be used on address 1 of loop 1, the panel must ALWAYS have a device at this point.

Configure Heat Detectors.

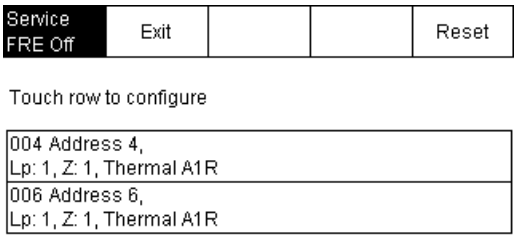


Fig 28

When a heat detector has been auto learnt on to a loop the default setting is rate of rise.

If a fixed temperature setting is required, then the detector must be changed via the panel menu before the database is downloaded from the laptop computer otherwise when a check config is carried out the there will be conflicts on all the heats that are set to fixed temperature on the laptop. If this occurs and is left unmodified then the heat detectors will operate as rate of rise and may produce unwanted alarms

Network programming.

When panels are networked together they each take a network address, this address is set up in the engineering part of the menu along with the total number of panels that are connected on the network. Panel 1 is automatically configured as the master such that if a network fault occurs the master and faulty panel only will display the 'Lon Network Error'.

When setting up a network for the first time after the network card is connected, the panel must have a hard reset or power cycle to enable the panel to search for and recognise that a card is present. For connection details see the 'Networking section'.

On the network all fires, faults pre-alarms etc. are transmitted to all panels. All user actions such as silence, reset and mute buzzer are also transmitted, so panel 1 could silence the alarms on all other connected panels.
It is possible to individually configure the panels not to receive silence, evacuate and reset operations from the network; this is particularly useful where the panels are installed in separate buildings such as Student accommodation.

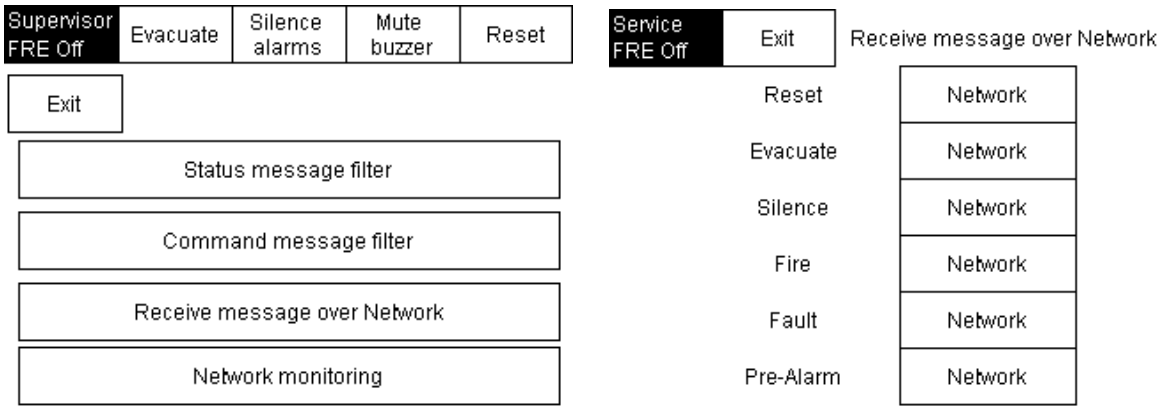


Fig 29

If the network is such that all messaging needs to be turned off, but certain panels need to communicate directly with each other this can be controlled using the network filtering system where individual panel messaging can be enabled/disabled across the network.
These features are found in 'Network' in the configuration menu.

Extra filtering has been added to enable the user to filter commands (reset, evacuate, silence, mute buzzer) and Status messaging (Fires & faults) across the network

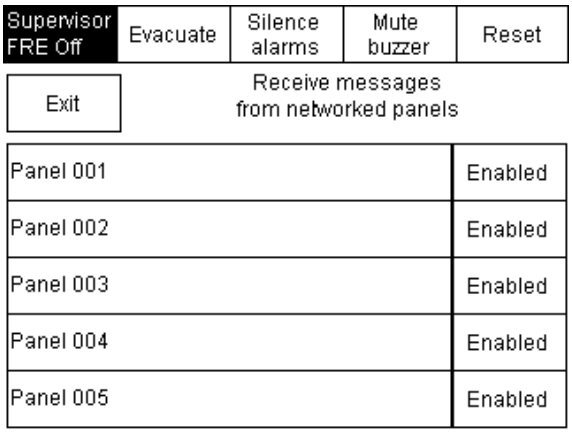


Fig 30

Day / Night Settings

This is a function in the panel programming that allows certain devices to change their characteristics dependant on the time of day. The devices that respond to this programming are the Heat detectors and Photo thermal.

To program day night mode on the panel you add an input device and then on the input programming menu you tick the day night box.
Then you go to either thermal or photo thermal detectors and on the input programming menu, you tick day night mode.
When you tick day / night on an input unit you are controlling when the panel goes into and out of day / night mode.
When you tick day / night on a detector you are instructing that specific detector to respond to day / night programming.

NOTES

1. **The input unit in question must be either an I/O unit or a Callpoint.**

2. **If a 3 Chan I/O unit is used only channel 1 can be used for this function (the other channels will put the panel to full fire.**

3. **The input unit must be on the same Loop Controller as the devices it is setting to Day/Night**

4. **As soon as a Photo thermal has a tick against Day/Night the detector becomes pure heat (A2S - Fixed Heat 60). Hence the Callpoint or I/O must be operated to return this device to dual mode.**

5. **A half-moon indication now appears on the screen between the supervisor button on the clock when day night is in operation.**

High Level Menus

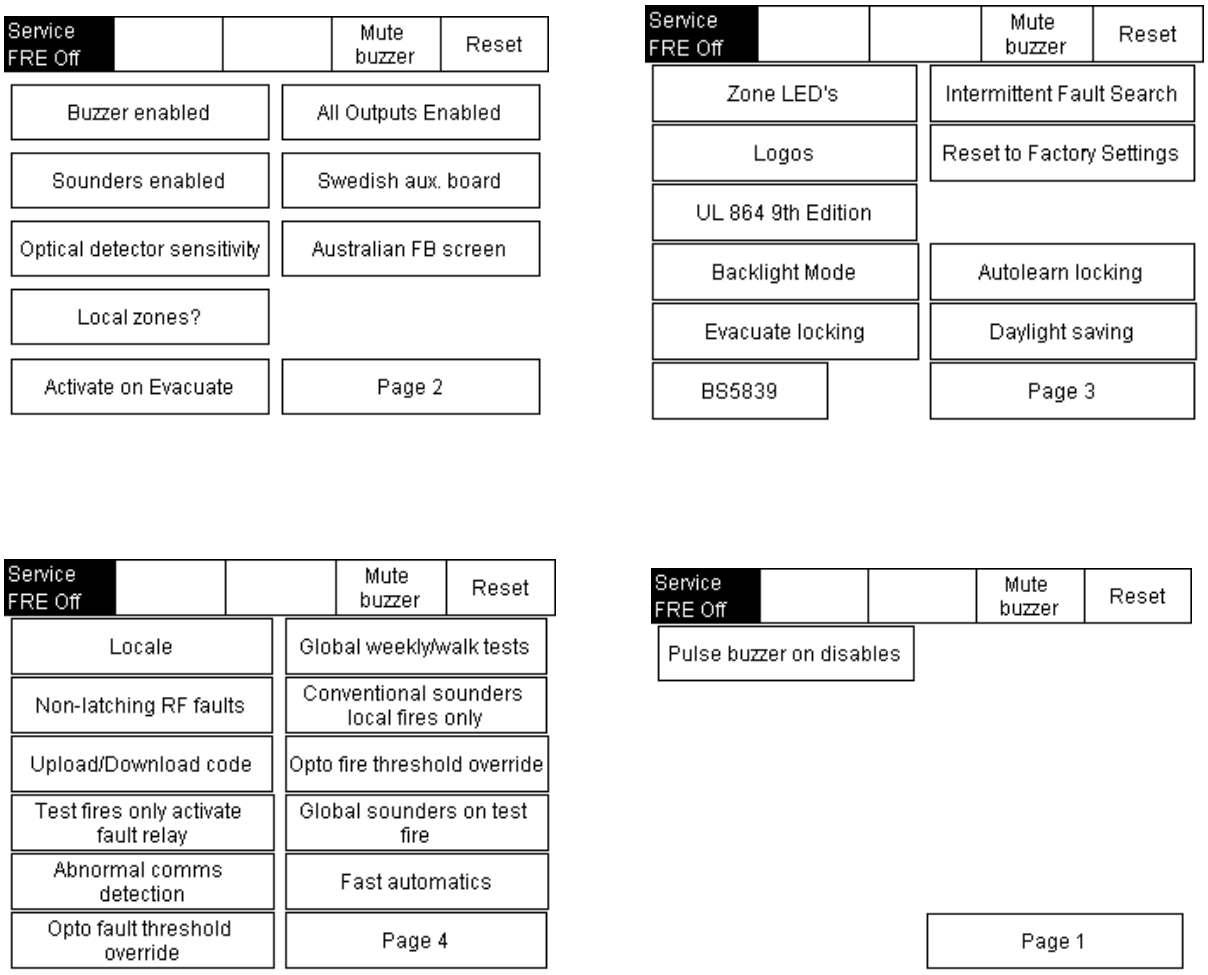


Fig 31

Disable all Outputs

This menu enables the engineer to carry out a full test without any outputs operating. This function cannot be used with Weekly or Walk test features.
The outputs can be switched on and off from this menu, if however, the outputs are inadvertently left disabled when the engineer leaves site, the user can re-enable the outputs from the enable/disable menu in 2214, or on later versions simply toggle the button in the high level menu.

On release version Jul 12 when all devices are enabled from the 130170 menu the panel will automatically 'Hard reset' to ensure All devices are enabled.

Optical Detector Sensitivity

The sensitivity of the Optical detectors can be reduced by up to 70% to prevent unwanted alarms in hot dusty environments such as the Far east and India. This feature is outside EN54 specs.

Buzzer Disabled/Enabled

The Buzzer can be permanently disabled using this feature, a disabled led will be displayed on the panel and when interrogating the disable devices in the user menu, this will be shown as one I/O disabled.

Intermittent Fault Search

When a device goes into fault the panel has polled the detector a number of times to confirm the fault (this is called integration), this can take up to 90 secs dependent on the length of the loop and number of devices installed.
This feature forces the panel to indicate a fault on the first poll, which means the fault will appear almost immediately.
This is particularly useful if a detector has an intermittent fault that would normally not be seen during the standard polling sequence.

Generally, this setting should be initiated at the commissioning stage.

Logos

This menu allows the engineer to change the Logo shown on the front screen of the panel
Customers can also download their own logo into the panel from the Commissioning menu
The logo must be configured as a Monochrome Bitmap (.BMP) 160 x 80 pixels.

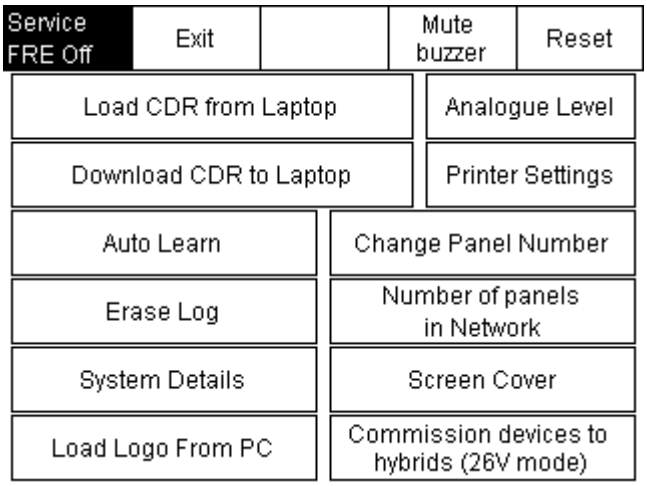


Fig 32

Non-Latching RF Faults.

With the addition of the Addressable and Conventional Radio Fire Hybrid panels and the ability to network Radio panels, extra features have been added into the menu structure to support these units. One of which is the ability to select Non-latching faults on the main panel.
Radio devices are highly susceptible to interference and blocked communications from various sources and as such could go ‘Missing’ for short periods. These periods would generate faults on the panel so could be classed as nuisance warnings therefore whilst still providing these warnings it would be unreasonable to expect the user to have to reset the panel every time, so the RF ‘Missing Address’ faults can now clear when the devices re-establish communications with the panel.
Tamper faults continue to ‘Latch’.

Reset to Factory Settings

This feature will restore the panel to its factory settings, which on a programmed system is catastrophic and not to be used lightly.
The panel will go into Autolearn – losing all programming. It will also re-calibrate the screen and put the default logo onto the screen.

Sounder 1 & Sounder 2

This menu allows the conventional sounder circuits to be set to continuous or pulsing, delayed or double knock

Terminology

When the panel goes into Fire the word FIRE or ALARM can be selected to display this as part of the indication on the screen.

Autolearn Locking

This feature has been added to prevent malicious or untrained personnel initiating an Autolearn once the system has been commissioned.

Evacuate Locking

Evacuate, once initiated from the panel menu or a programmed input, can operate ALL internal and external outputs connected to the loop. If the panel is controlling critical systems requiring a double knock scenario such as a Gas release system this could be immediately overridden by the evacuate command.
In these instances, evacuate would be considered inappropriate, therefore, evacuate can now be locked to prevent it overriding critical programming.

Activate on Evacuate

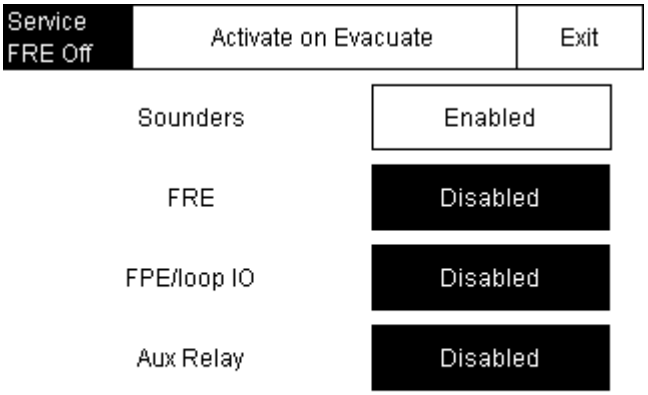


Fig 33

This feature allows the user to further filter what is required to operate when Evacuate is not locked.

Australian FB Screen

This enables the screen to show Zone or Address text when in Australian mode (see page 19)

UL 864 9th Edition

This is an additional feature to enable the panel to be operated in areas where UL is specified. Essentially the panel remains the same; however, there are a few differences in terminology and minor changes to internal software.

Disablements are now displayed as Supervisory warnings, Faults become Troubles.
Sounder circuits become Notification appliance circuits (NACS) and the Loops, Signal line circuits (SLC)
The Mute buzzer is 'acknowledge alarm' and as a UL requirement, the buzzer also re-starts after 8 hours if the panel is not reset.

The Callpoint is now a Pull Station.

Earth trouble (fault) now has a separate led indication as well as information on the touch screen and buzzer sounding.

T1/T2 remains the same feature but is now called 'Positive alarm sequence'.

Alarm Verification has been slightly enhanced to provide 3 time scales 15, 30 and 60 secs

Daylight Savings

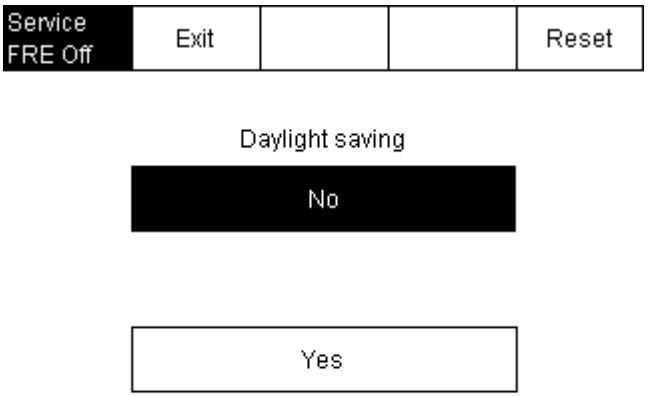


Fig 34

Daylight saving mode which would normally be set for the UK market can now be disabled in the high-level menu.

BS 5839 Button

This button has been added for when there is significant cause and effect programmed into the system, but the outputs need to meet BS5839 specification.

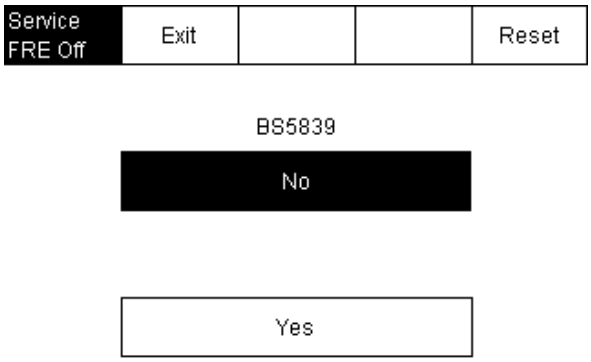


Fig 35

This means that when selected and a Callpoint is activated, the sounders will operate within the 3 seconds required by BS overriding any sounder cause and effect. However, the remaining cause and effect for output devices will only follow when the time to process this is available.

Local Zones?

Generally, UK networks use global zones where all 250 allowed zones for the whole network appear on all panels.

In this case if a shared zone on 2 panels were put into test then the zone would be in test on both panels.
Some European networks would not be configured in this way, so for these markets 'Local Zones' would be selected allowing 250 zones per panel.

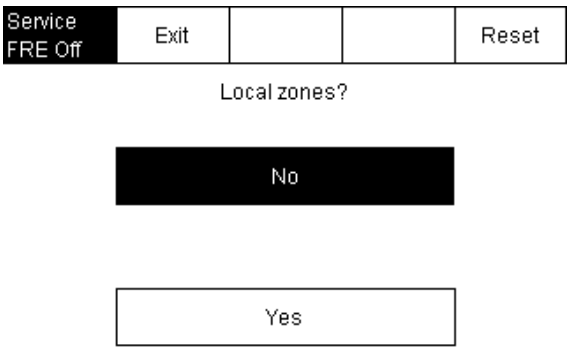


Fig 36

Test Fires Activate fault relay.

This feature was provided so that when connected to a shopping mall the main operator needed to know when a test was being carried out by individual shop units. During a weekly or walk test the fault relay will change state to warn the centre that a test was in progress rather than a true fire.

Abnormal COMM's Detection.

Abnormal comms has always been monitored within the loop code, however when any abnormal comms is generated by raised background current this will generate a fault on the panel. This is a requirement for EN54 part 13

Fast Automatics.

The introduction of a more robust response to electrical noise on the loop wiring has slightly slowed the response of smoke detectors on larger loops. Whilst still within the requirement of EN54, fast automatics have been introduced to provide an interrupt to speed up the response to an alarm condition.

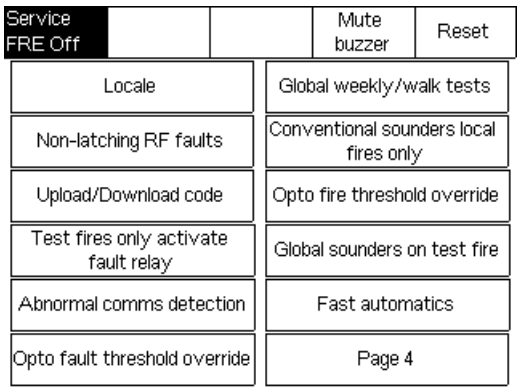


Fig 37

Opto Fire and Fault Threshold override.

The thresholds for fire and fault are defaulted to 60 and 10, these two buttons can be used to lower these thresholds down to 53 and 3 respectively.

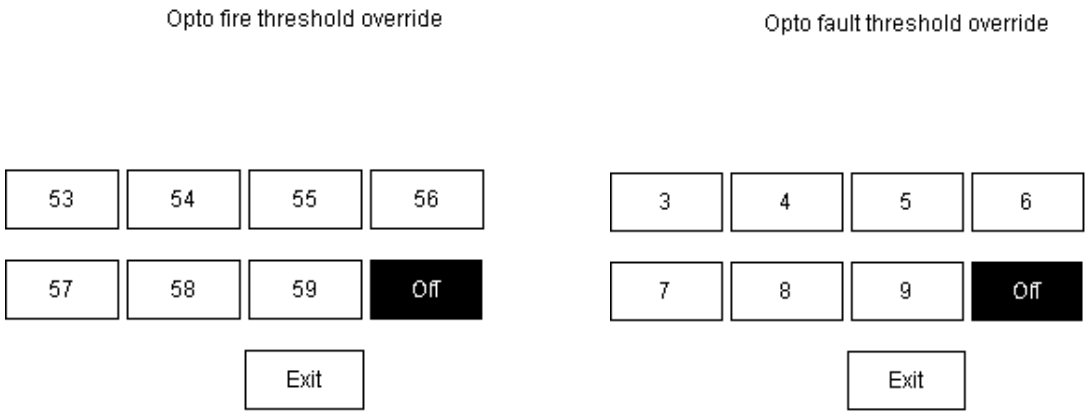


Fig 38

Global Weekly Walk tests

If the panel is part of a Network, the customer may require the weekly and walk tests to be transmitted across the network – this is defaulted to activate the local panel only.

This feature allows the customer to globally test the system.

Conventional Sounder Local fires

This was a special created for specific requirement.

Pulse Buzzer on Disables

In normal circumstances the buzzer will sound when any disablement is put onto the panel. This is a requirement of EN 54 and UL 894, however in certain countries, this is classed as a nuisance warning so the facility for disabling the buzzer on a disablement can be removed using this button.

Reset Screen

On a later version of software (Display v 3,3,53 dated 5/5/16), VDS require any faults to appear on the screen following any reset, so a delay screen has been included to allow time for any continuing faults to appear.

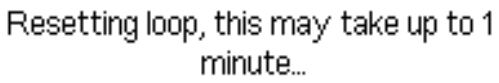


Fig 39

If this screen is not required then it can be turned off in the high level menu go to page 5 and choose ''Reset screen'' then yes/no as required.

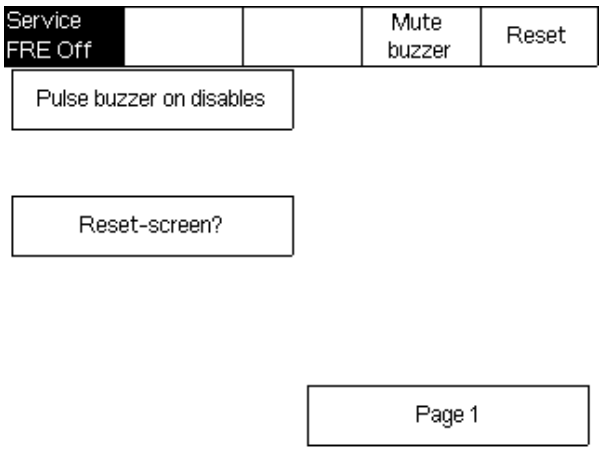


Fig 40

Networking

Introduction

Up to 63 Easicheck and 126 DF6000 panels can be networked together.
Each panel must have a Self-Addressing Network Card fitted to the main PCB.
Network Technology used is “LonWorks” (Protocol).

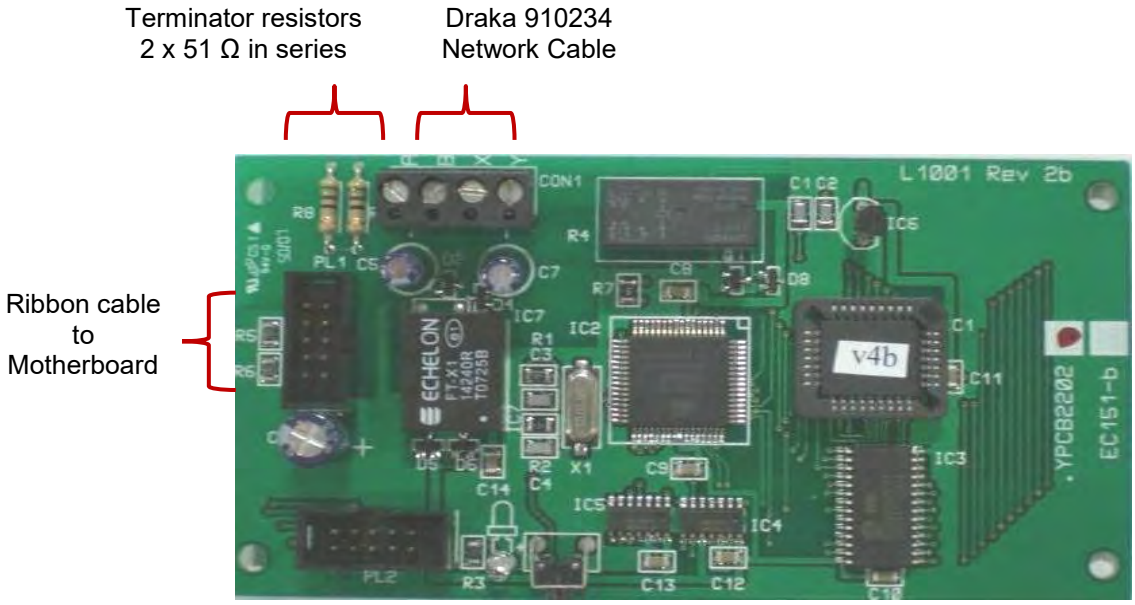


Fig 41

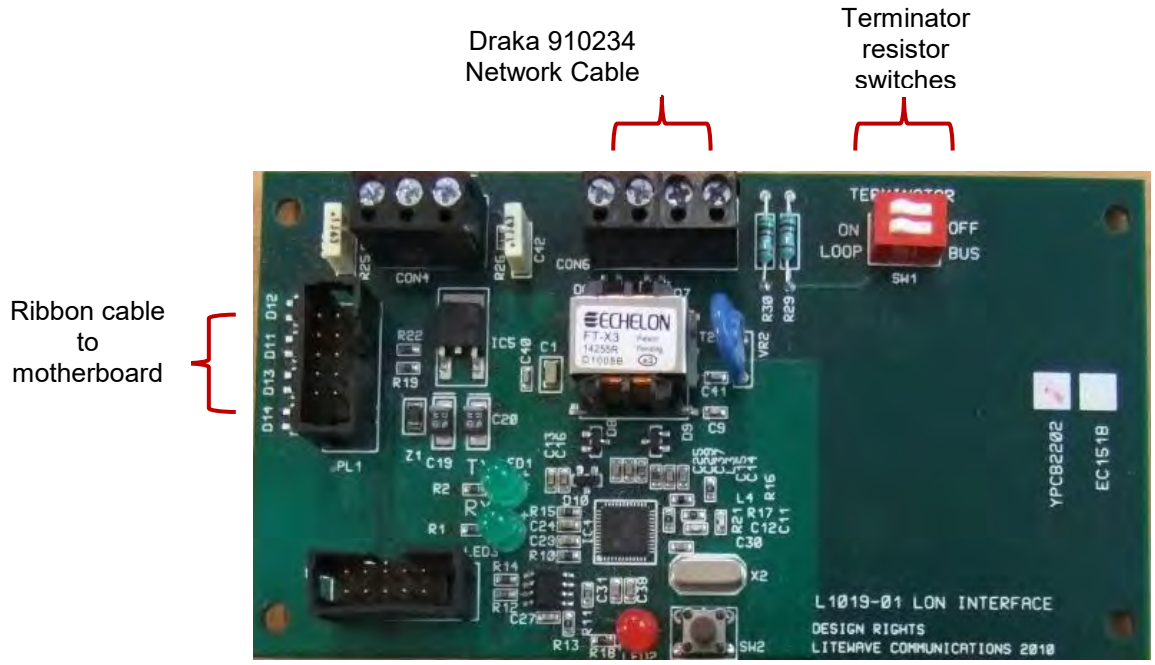


Fig 42

The network can be wired as either a Loop or a Radial. If Booster devices are used the system must be run as a Radial
The maximum cable length before Boosters are used is 1000m.

The Terminator resistors are fitted across the network to smooth out the signal. The network requires 51ohms across pos & neg when checked at any card on the network, this can be achieved by cutting off or soldering on resistors as required. (See Figs 39, 41, 42 & 43)

On the later version network card this process has been improved by selecting the switches provided on the PCB for loop topology or radial (bus) and terminator in or out.
NOTE Connection details on the terminal block are not polarity sensitive.

Cable Types

The recommended cable for the network connection between panels is an enhanced cable manufactured by Draka Cables (Pt No 910234). Screen continuity must be maintained throughout the entire network circuit including each junction point. This can be achieved in 2 ways,

1. Link the screens through using connector block at each node and drain the screen down to one point only, generally this method would be used in one building with older Network cards (fig 36).
2. Connect the screen to the terminal block on the Network card (fig 46) which has a capacitor/resistor filter circuit. Where the network passes between buildings, screen continuity should **not** be maintained from building to building. The screen should be connected to the earth of one panel in each building.

Where the total network length is greater than 1000m or Network errors are encountered then a booster device can be used. This means that the network must be wired as a radial and the terminator resistors set correctly (figs 41 & 42) The Booster works on a supply voltage of 9-35 v DC. This means that the Easicheck or DF6000 panel external 24v output can power this device.

The Booster has two modes of operation ‘Smart Switch mode’ and ‘Configured Router’, for all applications we use the former mode. In this mode the device automatically detects the bit-rates of the connected channel, copies the information detected on the network and forwards it to the next network card.

Configurations

Network configuration without Boosters - Radial

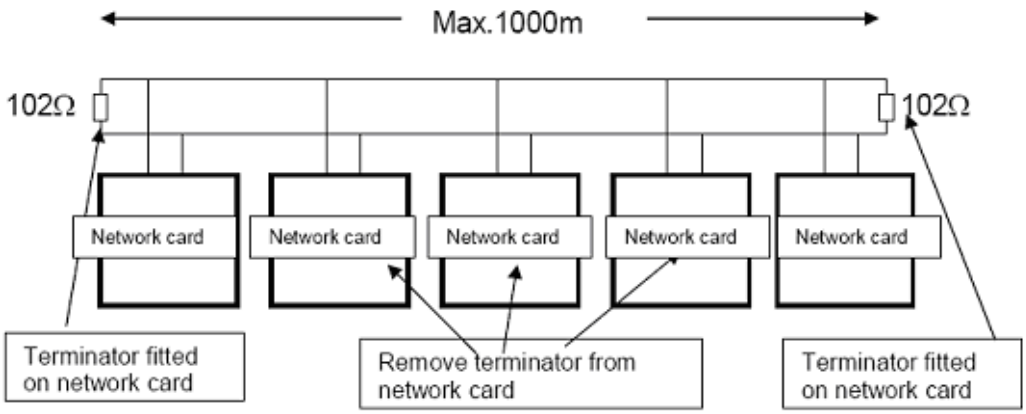


Fig 43

Lonworks Network Configuration – With Boosters

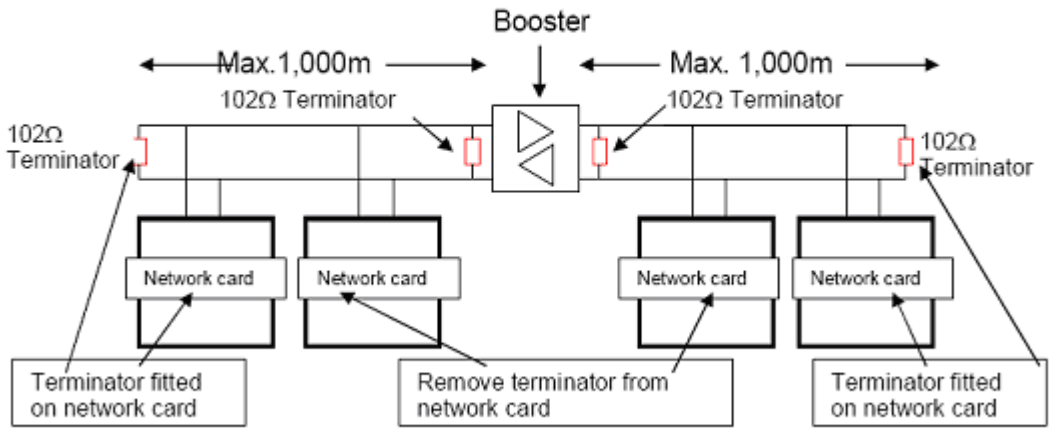


Fig 44

Network configuration without Boosters – Loop Topology

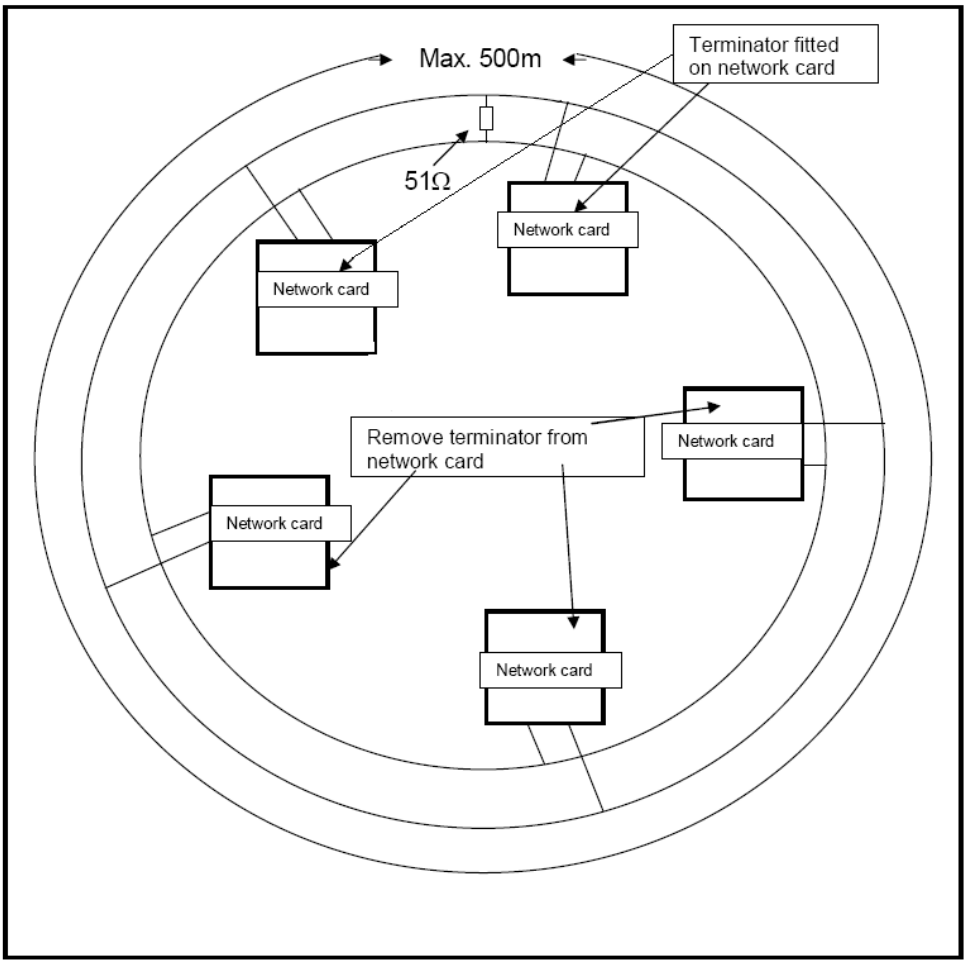


Fig 45

Network Card connection details, terminator resistors are set in the previous paragraphs.

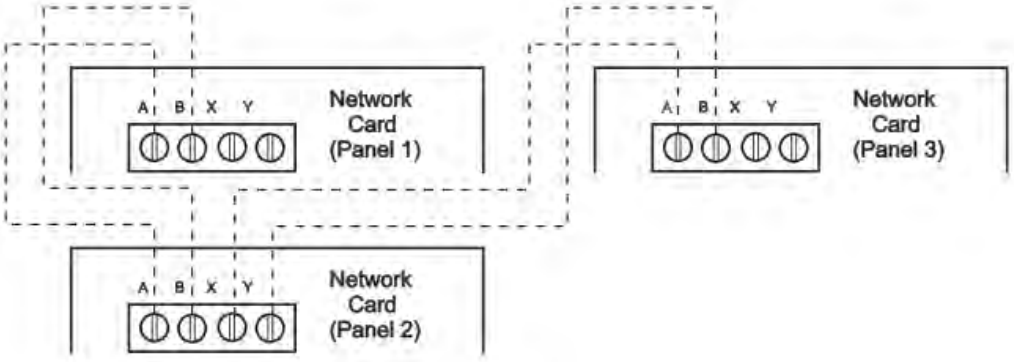


Fig 46

In certain circumstances where network security needs to be more robust, and all UL Panels, the network needs to have a back-up system should the network fail, in this instance a Dual redundant network card is provided. Essentially this device enables the connection of a second network on a card running in parallel with the existing network.
This system is configured in the same way as the normal network.

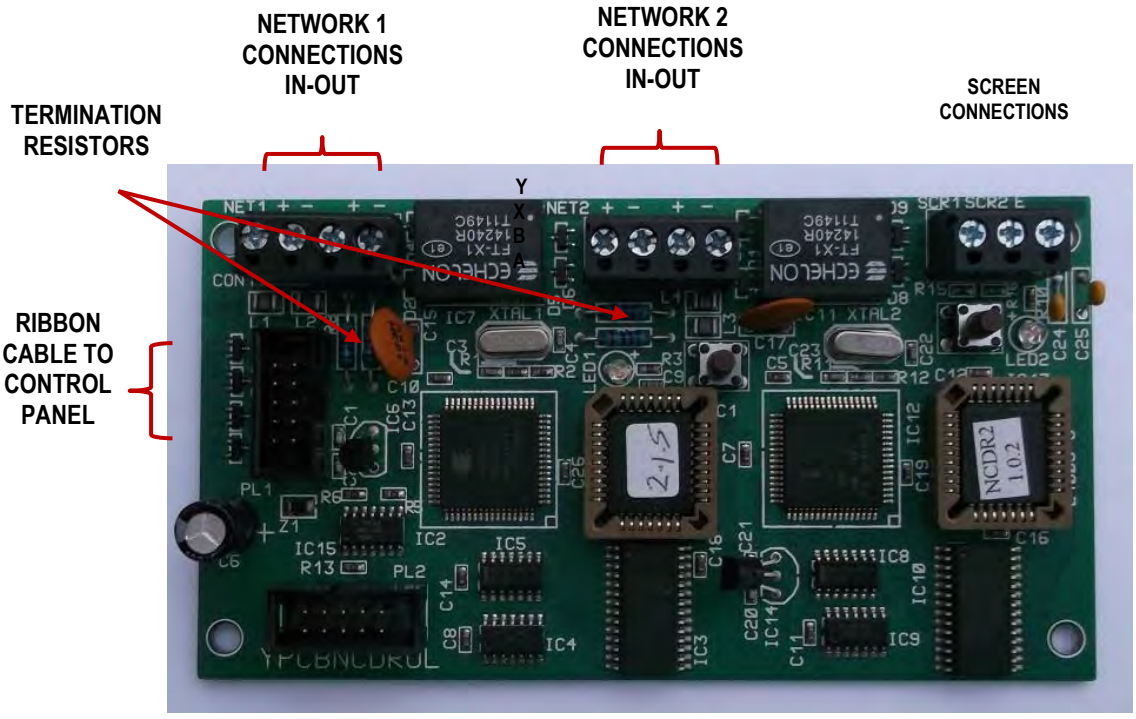


Fig 47

The latest network cards have a terminal block connecting to a Resistor/capacitor circuit to connect the screen to the correct earth point.

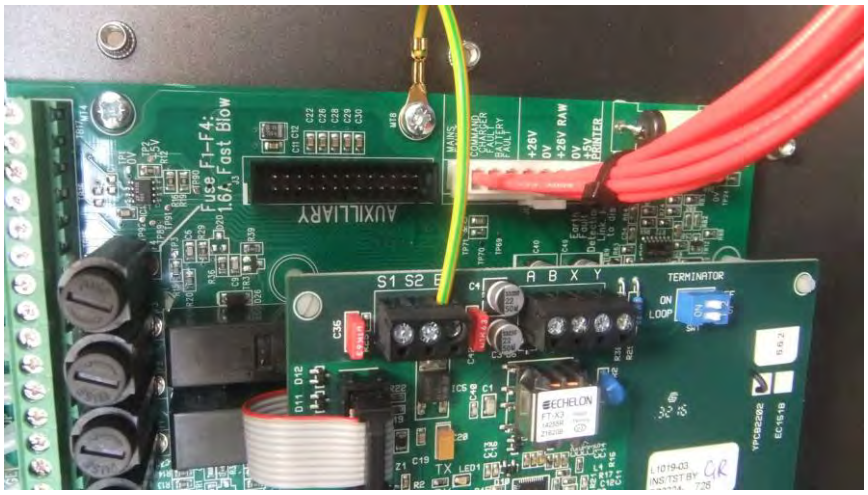


Fig 48

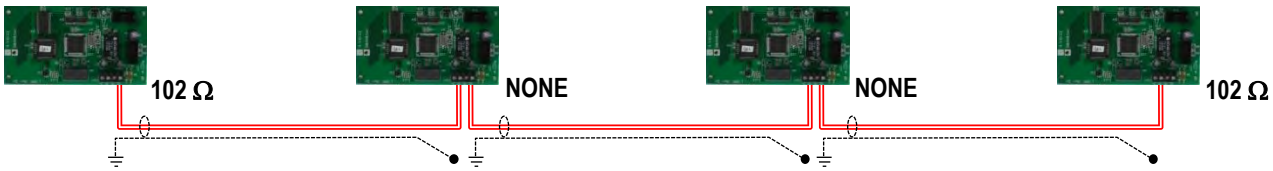


Fig 49 Single Card Layout

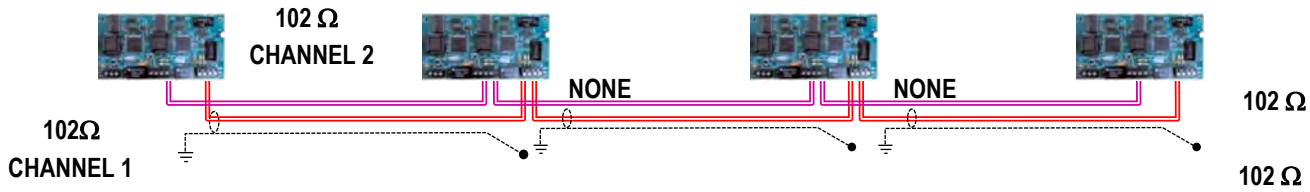


Fig 50 Dual Channel Card Layout

Ancillary Devices

Detection

Standard devices include Photoelectric, Ionisation (which will be obsolete by Dec 2007), Multimode heat and the replacement for the Ion, the Opto Thermal.

The heat detector defaults to RoR when the panel is in Auto learn, these must be set to the required value RoR, BS (fixed 60 deg) or CS (fixed 78 deg) before upload or download to the laptop.

The Opto Thermal has both an optical smoke chamber and a heat element that work in tandem such that the smoke half becomes more sensitive when heat is also present.
Each element will also work independently such that the heat is fixed temp 60 deg (A1S) and the optical has slightly reduced sensitivity (but remains within the tolerances laid down by EN54).

The Opto Thermal and heat detectors are capable of responding to Day/Night programming described on page 34

Call points

Call points are supplied as Surface, Flush mounted and IP 67 Weatherproof. Various accessories can be fitted such as the hinged protective cover, recessing bezel and resettable plastic element.

Generally, the inputs of this device are used primarily for Fire, but the Input programming in Site Installer gives the options of setting them to fire, fault, reset, silence, pre-alarm and evacuate.

A call point can also be used to initiate day night mode, isolate addresses or zones or be set to non-latching.

Sounders

Sounders, beacons, sounder beacons all appear on the DF6000 device list as alarm/beacons and a maximum of 60 are allowed per loop and set to low volume, the panel and site installer treats them all the same for programming purposes.
The site installer allows 3 stages for the device outputs and various options can be chosen at each stage. Delays can ONLY be used on stage 1. (There is NO hierarchy on the stages whichever setting fulfils the requirement the sounder/beacon will comply with that setting)
The settings i.e. sound or volume for the sounders can be done globally at the panel or individually on the site installer.

Input/output Devices

MIO1240 is a single input single output device. The output takes the form of a mains rated relay capable of switching up to 8A.
The Input spur is used to monitor a set of volt free contacts the end of line being 22k and a firing resistance of 5k6.
Programming of the output has the same features as the sounder outputs. The Input programming is the same as programming for the call point.

MIO324 is a 3 channel I/O (3 separate inputs & 3 separate outputs) that only takes 1 address. The outputs are three relays capable of switching 1A at 30v.
The 3 input spurs have the same function as the MIO1240, 22k end of line, 5k6 firing resistor.
Each channel is individually programmable both for inputs and outputs in the same way as the MIO1240.
Because this device only holds 1 address there is no way to apply text to the individual channels.
This unit contains the same restrictions concerning delays – which can ONLY be programmed on stage 1 of output 1

MIO324T/MIO324SST
This unit is identical in build to the MIO 324, but this has been designed to take 3 addresses (this can be expensive in terms of outputs because it replies as 3 x 3Chan I/O's), this means that text information can be allocated to each channel. It also allows each individual input and output to be disabled (by address). This has now been superceded by the MIO324SST (VDS variant) which has the same functionality but different end of lines (680 fire resistor and 3K3 end of line).

MIO324S
Once again, this unit is identical with the MIO 324 only taking 1 address. The programming is the same as the MIO 324. This unit was designed so that the relay outputs reset on silence rather than full reset.

MCOM
This unit is a Mini output unit providing switch contacts only, rated at 1A 30v. There is no input on this unit. This item replies as an I/O unit so takes 1 of the 20 I/O's allowed per loop.

MCOM/S & ULMCOM/S
Identical to the above but this unit is programmed to reply as a sounder, the relay contacts on the MCOM/S change state on reset, the UL version resets on silence. These units have been created to enable more than the 20 relay outputs per loop by sacrificing the total amount of sounders allowed.
Note – The MCOM/S unit must be programmed using site installer - the contacts DO NOT change state in Autolearn

ULMCIM, ULMCIM/C, MCIM/NF
These units are a Mini input unit capable of monitoring volt-free contacts in other fire panels, sprinkler flow switches etc. The ULMCIM replies as a I/O unit and therefore will take 1 of the 20 allowed per loop. End of line resistance is 22K the firing resistor being 5K6.

The ULMCIM/C is identical to the above this unit replies as a Callpoint (Pullstation) so accommodating up to 200 per loop. The response time of operation has also been modified to operate in the same way as a Callpoint, so this item will put a fire on the panel quicker than a standard input generated from an I/O unit.

The MCIM/NF (obsolete since 2012) is a Non-Fire input and is identical to the MCIM and MCIM/C. This has been programmed not to indicate a FIRE condition on the panel when in alarm.
Loop outputs can be programmed to respond to this device without the need to create a fire condition on the panel. The panel outputs DO NOT respond to this input.

MCIM (INPUT)
This device replies only as an Input and up to 200 can be installed per loop. It has been introduced to replace all of the above mini inputs except the UL range, (because of the UL approvals) and is programmed on Site installer for various functions as shown.

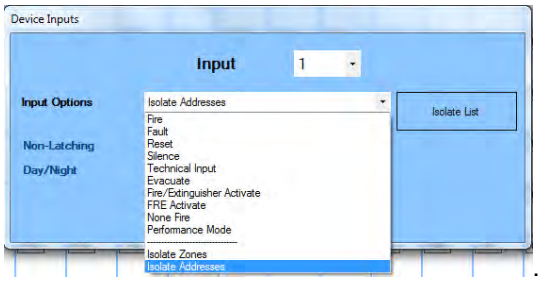


Fig 51

Zone Monitoring Units

MIU 871

This is a true Zone monitor with 2 inputs, one for a zone of conventional call points the second for a zone of conventional detectors (max 20). End of line for the call point zone is 6K8, end of line for the detection zone is the EOLM 1 (the JSB FXN 520 series can only be used on this zone).

MIU 872/ULMIU 872

This unit is a mini ZMU which can run up to 20 conventional detectors. This device has only 1 input for detection only. End of line is EOLM 1 for the EN version, 5K6 for the UL variant.

MIU 871/IS

Similar to the above but the detection zone has been programmed to accept a Zener barrier and zone of intrinsically safe detectors. End of line for this zone now becomes 5K1 and the diode in the detector base must be removed.

MSU 840 Shop Unit Monitor

Another zone monitor similar to the MIU 871, this unit also has 2 conventional sounder circuits fully monitored and an external power supply input which is also monitored, this must still be fitted even if the sounders are not used.

Fan Controller FC6/FC18

The FC6 Fan Controller is designed to satisfy the requirements of Australian standard AS1668 & can be connected to a Cooper analogue addressable fire alarm control panel by means of the comms Loop utilizing only one address, and 3 addresses for the FC18

There are 6 channels per Fan Controller capable of controlling & indicating 6 individual Fans.

Each channel is programmed to an output device and feedback input device in the loop (for example, MSU 840-C, MIU871cUK modules) to control & monitor the status of the Fan.
A new module has been created which provides 2 addresses the first to control the feedback the second to provide output and reset controls for the fan (see below

In Automatic mode the Fan is controlled by the DF6000 in the normal way through the site installer program. Feedback must be detected from the Technical input within 25 secs or a fault will appear on the FC6. In manual mode the Fan can be started and stopped using the Start/Stop buttons on the FC6, again once the start button has been operated then feedback must be received within 25 secs.

CFC 301 Technical I/O Unit

The CFC301 has been specifically designed to provide a switch output and feedback for the FC6/18. This unit takes 2 addresses the first having an ID of a Technical input and the second as a ZMU providing a switched output.
The different modes for compliance with the Australian standards can be set by configuring the end of line resistors on the input channels.
Generally, input 1 is used as the feedback for the Fan controller.

Note, FC6 and CFC must be on the same panel, if part of a network.

Smoke Control

From Jun17 radical software changes to the FC6/18 and the introduction of new modules MCOM-FC now allow the Fan controller to be used as a Smoke control/management device.

Rules.

1. Allowed up to 48 output channels per loop, which means 2 x FC18 and 2 x FC6

2. Each output channel will use 1 x MCOM-FC to provide volt free contact switching and 1 x MCIM programmed as a Technical Input(non-latching), to provide feedback of operation.

3. The MCOM-FC replies as a Sounder beacon, therefore up to 60 can be installed on each loop, **this also means that the number of loop sounders must be reduced accordingly**. The MCOM-FC is programmed NOT to respond to an Evacuation command.

4. MCOM-FC must not be programmed for Global operation, in site installer they must be programmed either by address (the FC) or by Zone, if on another loop or panel. Generally, a specific zone would contain the Fan controllers.

5. Control outputs and Feedback from the Technical Inputs can now be programmed across different loops and network panels.

6. The Feedback device (MCIM) can only provide feedback for 1 channel.

The FC is programmed by a right click on the icon and use ‘Edit Fan Controller’, use ‘Add Slave’ Then go to channel 1.
Ensure that channel is enabled (tickbox), then use the ‘Loop’ (tickbox) to specify the output device, and ‘Confirm’ (tickbox) to specify the feedback device. Ensure the stage 1 is set for continuous operation.
Once the channels are programmed as required then ALL of the affected panels and Fan controller need to be updated.
To program the Fan controller gain access to the rear of the device, connect laptop to the serial port hit the reset button, right click the Fan controller icon and choose ‘Send Configuration to panel’.

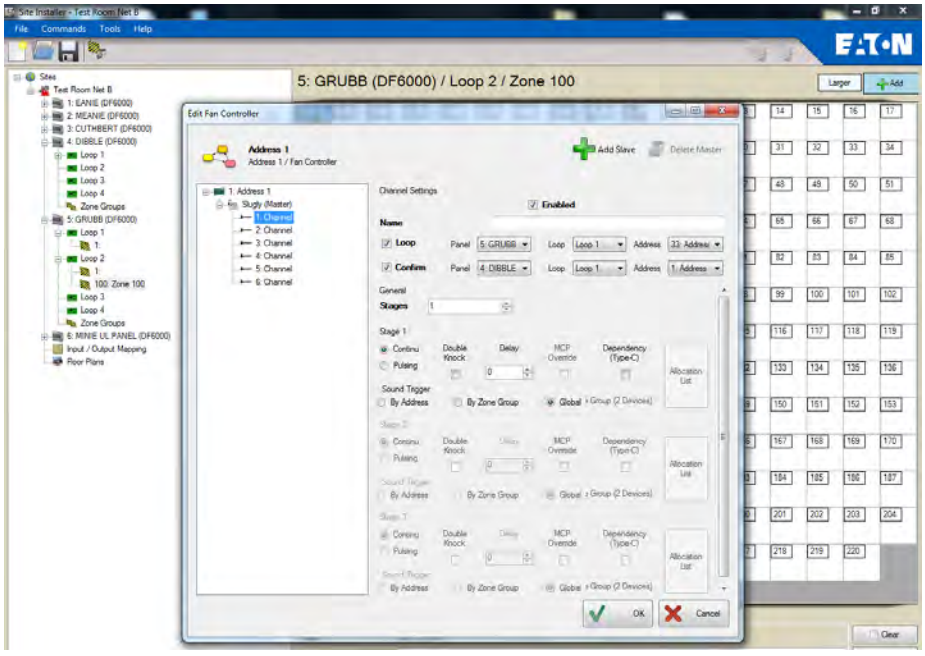


Fig 52

4 Way Sounder Control Unit (MPU 424/CSC354CPR)

The MPU 424 is designed to accept 4 conventional sounder circuits with a total rating of 3.2A spread equally over the 4 outputs. This unit takes 1 address on the DF6 system and has its own power supply and battery backup.
Version 2, CSC354CPR has been reduced to 1.6 A loading but is now an approved item
Each individual circuit can have the same programming as a single loop sounder output.

The only criteria being that a delay can ONLY be programmed on stage 1 of channel 1, however, version 2 has a jumper to force outputs 2,3 and 4 to follow output 1.

MARDF6

Because the loop output devices cannot be programmed for fault, the MARDF6 was designed to provide a fault relay with dry contacts for use with an Autodialler or Redcare that requires a fire and fault signal.
This unit connects across the FRE or FPE outputs and the Fault output. The internal 24v supply in the panel powers the unit.

Spur Isolator- MSI850

This unit is designed to accommodate a Spur of addressable devices but does not take an address itself. If the unit is installed at the outset the panel autolearns up to this device autolearns the spur and then carries on with the remainder of the loop. The spur isolator can also be added after the panel has been autolearned but any devices on the spur MUST be added ONE AT A TIME.

If all devices are run off a number of Spur isolators, then one single device MUST be fitted on the loop between the last isolator and the return run to the panel. (If this is not done then 'Short circuit far' will be displayed on the panel)
Spur Isolators must not be fitted adjacent on the loop a single device must separate them.

Beam Detector MAB50/100R

The reflective beam detector uses one address on the system. Initially the unit is auto learned and then aligned using the Dill switches on the rear of the unit.
The device mode switch is set to run mode by default and the detector will not learn to the panel if set to any other position.
Set the 3-position switch is set to position 1 'Prism target Mode' align to the prism using the thumbscrews. Once the prism has been correctly targeted the prism MUST be covered to ensure the device is not receiving reflections from other sources.
Set the switch to position 2 'Alignment Mode' and fine-tune the alignment using the thumbscrews.
Finally, once fully aligned, set the switch to position 3 'Run Mode' and reset the fire panel

Repeaters

Repeater panels can either be Loop connected taking one address in the number sequence, or connected via the network, in which case the repeater will be fitted with a Network card.
The loop repeater has functionality limited to sound/silence alarms or reset the system. The internal buzzer can now be muted from the main or a networked panel (added Aug 2010)

The supervisor access code (2214) can be disabled or changed using the engineer menu (2132).

The Loop repeater must have the same text downloaded into it as the main panel to which it is connected. The site installer needs to know what type of repeater is installed, which must be done prior to programming the device. This is done by a right click on the device icon and choosing the correct type of repeater device from the drop-down box. Fig 51.
The same download lead that is used to program the main panel is used for the repeater.

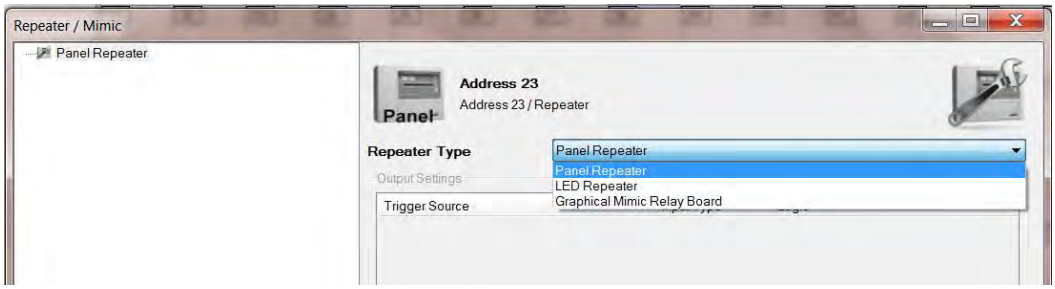


Fig 53

When ready to download right click the device again and choose ‘send repeater’

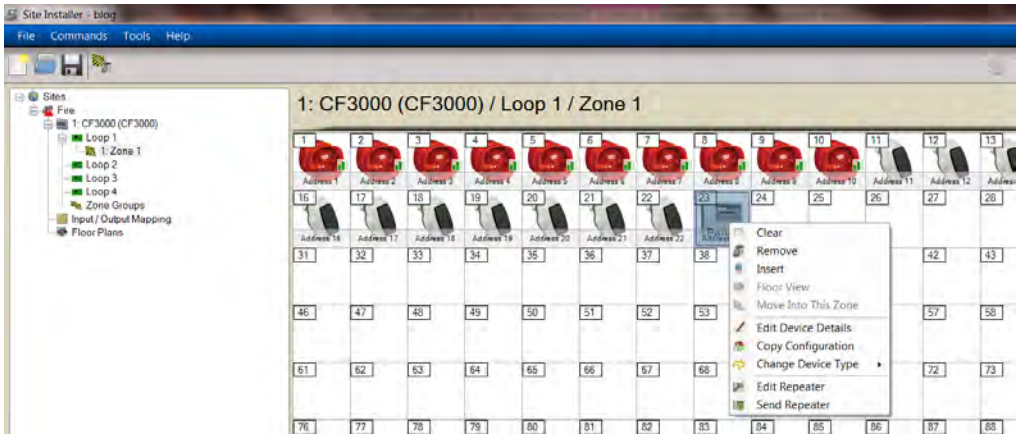


Fig 54

The Touch screen repeater is ONLY networkable but allows the user much more control such as disabling devices across the network. This panel also has a programmable input and Fire and Fault relays.

The 32 way Led and relay mimic boards reply as a repeater when Autolearned and also need to be configured correctly within Site installer.

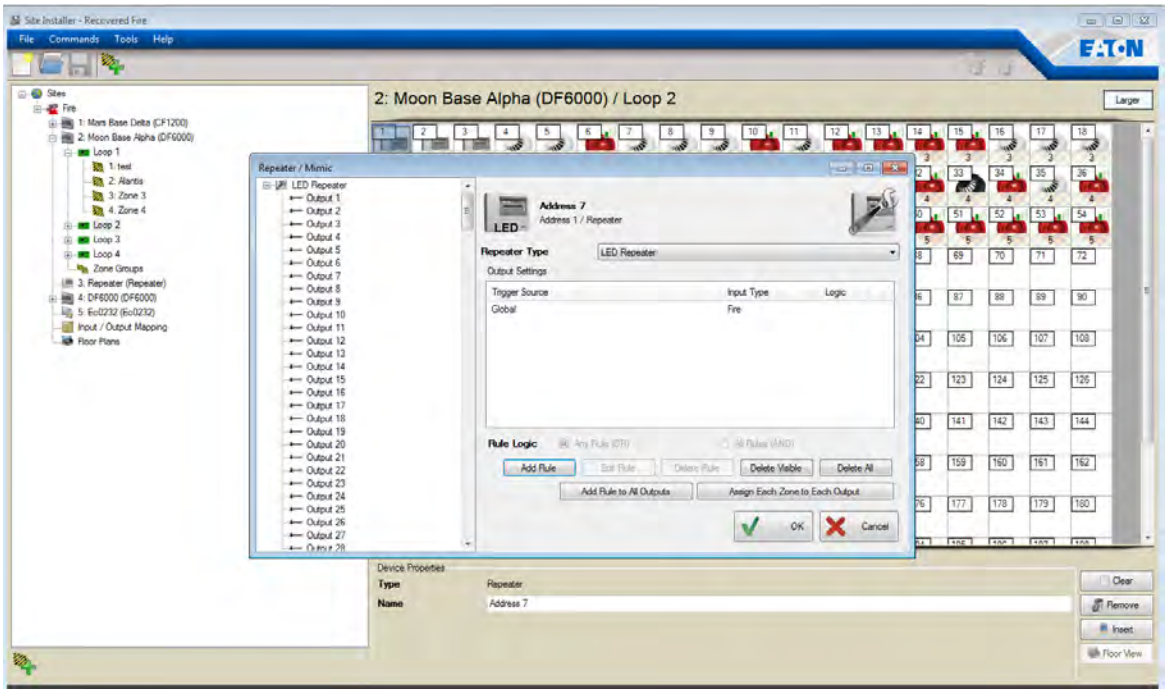


Fig 55

These mimics are configured as a master board and slaves to create up to a total 250 outputs.
The master board takes the loop address and a 24 v DC input, all slaves are connected to this via a ribbon cable .

The 250 outputs are configured within Site Installer by applying rules to each output.
The trigger source for the Led or relay can be a fire, fault, disablement or test condition on the panel or network from either a panel, zone or address. See Fig 54

The download procedure is now relatively simple;

1. Program the mimic in site installer as per the above diagram applying rules to individual outputs.
2. Move the Jumper on the board of the mimic to RS 485/232 as shown on the attached doc
3. Hit the Hard-reset button on the board.
4. Right click the repeater icon on the site installer and when the box appears choose ‘download rules to repeater’.

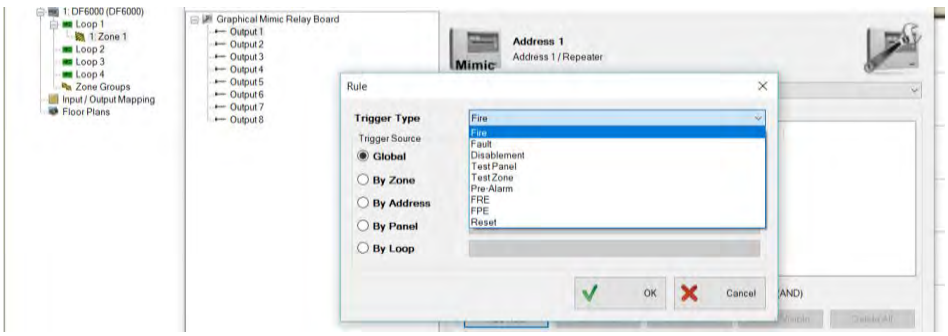


Fig 56

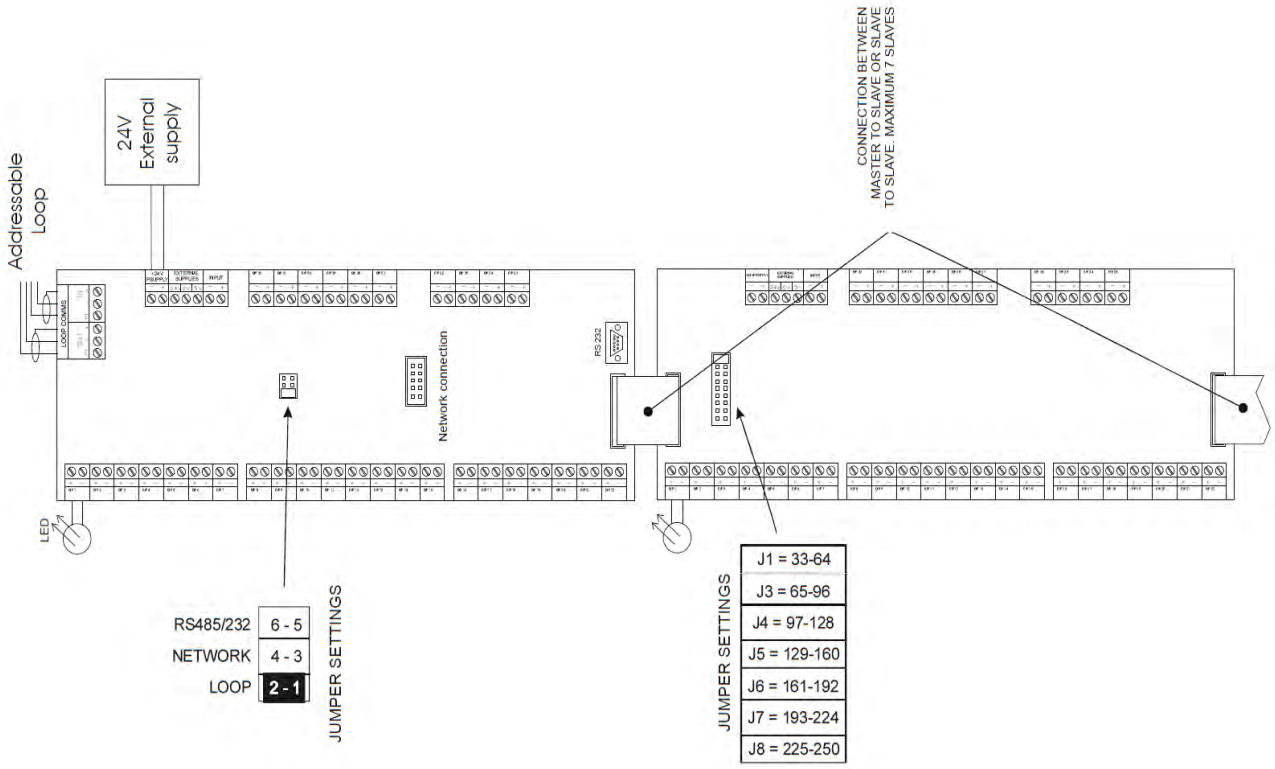

CONNECTION BETWEEN
MASTER TO SLAVE OR SLAVE
TO SLAVE. MAXIMUM 7 SLAVES
24V
External
supply
Addressable
Loop
Network connection
RS 232
LED
RS485/232 6 - 5
NETWORK 4 - 3
LOOP 2 - 1
JUMPER SETTINGS
J1 = 33-64
J3 = 65-96
J4 = 97-128
J5 = 129-160
J6 = 161-192
J7 = 193-224
J8 = 225-250
JUMPER SETTINGS

Fig 57

A third repeater called a Graphical Relay board has recently been added to the range – this device provides 8 outputs and 4 inputs.

The inputs are pre programmed reset, evacuate, silence and test.

The outputs can follow Fire are programmed in the same manner as the 32 way board.
Each output can have up to 16 ‘rules’ This unit takes one address on the numbering sequence and is powered by the loop.

Note. If this device is fitted on a Spur the relay functions will not operate correctly if there is a break on spur wiring.

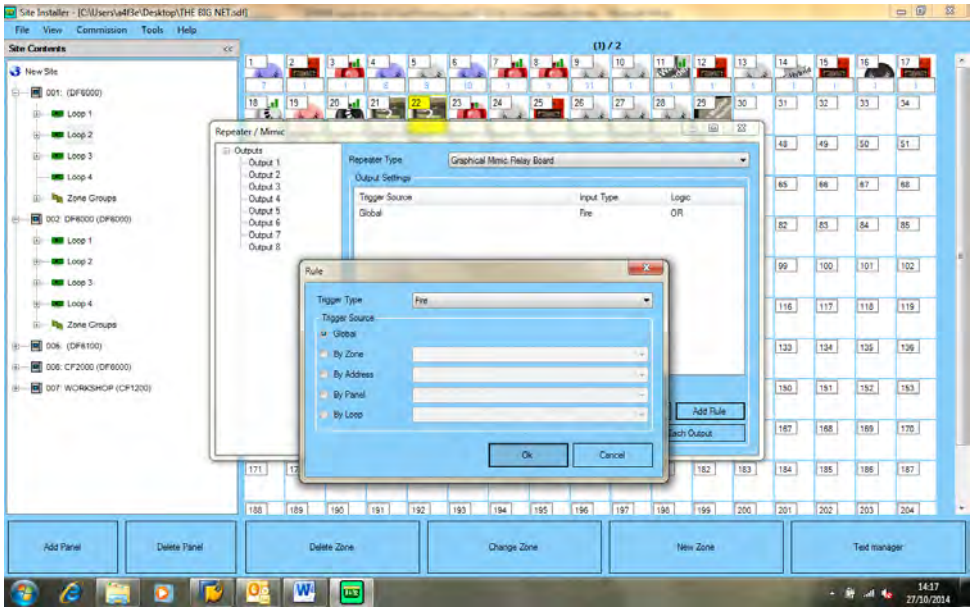


Fig 58

Recent changes to BS5839 have highlighted the need to follow other relevant regulation such as BS7273 in relation to attached equipment, for example door holders and magnets.

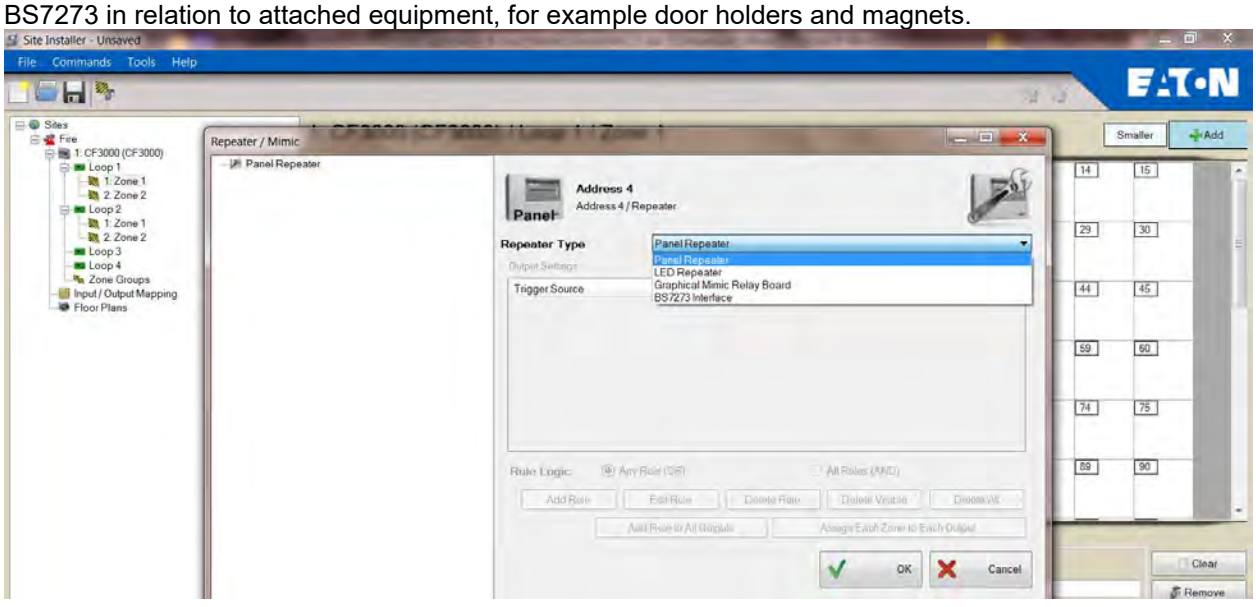


Fig 59

From Jun17 a new device which also replies as a repeater has been introduced to provide compliance to this regulation.

The BS 7273 interface is programmed in the same format as all previous repeaters. Right click the device icon and choose ‘Edit repeater’ from the drop box highlight ‘BS7273 interface’.

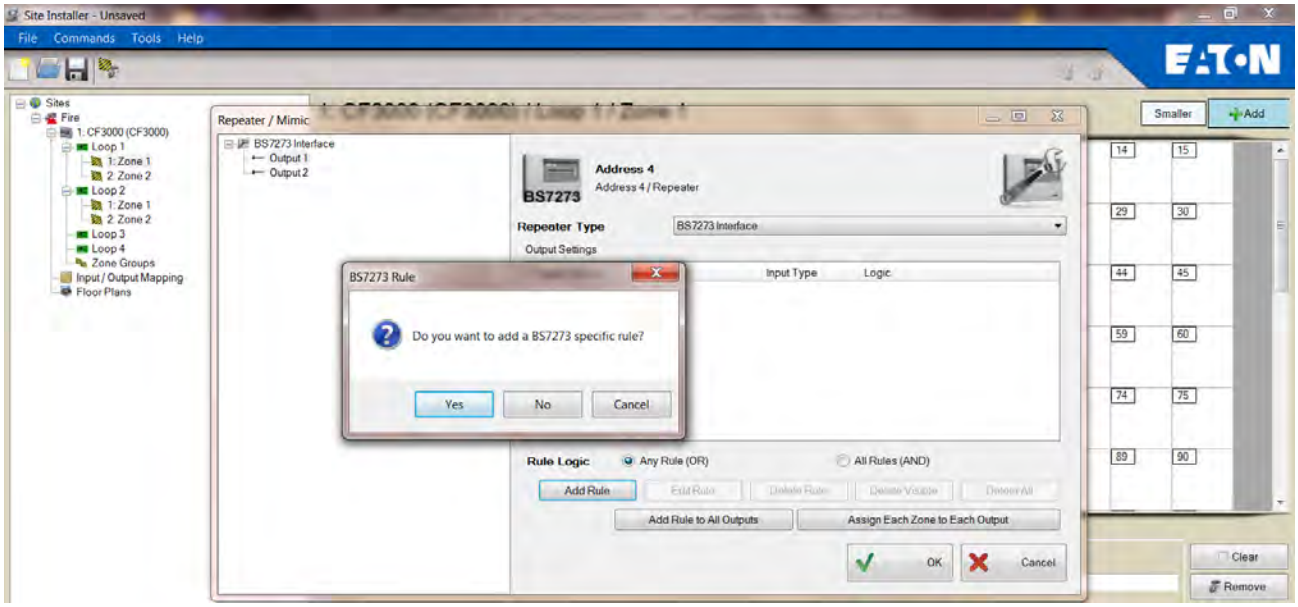


Fig 60

Two output stages are provided on this device with up to 5 rules each. Each rule, if selected for BS7273 specific, will have 3 condition sources, Fire , Fault and Disablement by default. Trigger sources by Zone, device or global can then be selected.

The BS7273 device has a loop in and out connection but is powered from and External 24vPSu. If the PSU has volt free contacts for Mains and Battery Faults then the BS7273 device has 2 input terminals with 6K8 EOL capable of monitoring the volt free contacts.

Getting Started & Fault Diagnosis

Powering the panel.

When the panel is powered up it will go through a boot up sequence and will test all the display LEDs. The touch screen should be illuminated and show the normal front screen. If that does not happen this section details common problems and methods of fixing the problem.

Panel takes a long time to start the boot up sequence after a watchdog reset (or power up).

On 4 loop panels (with 2 loop driver cards) there may sometimes be a long delay in watchdog. The following steps will speed up a reset.
Place a jumper link on a loop driver (2 pins near crystal).
The panel will reset, and the relay click will be heard 4-6 seconds later.
Remove the jumper link from the loop driver card.
IMPORTANT the jumper link must not be left on a panel once it is booted up.

Power LED not illuminated

If this happens, the display PCB is not getting power. The following steps should help identify where the fault is.
Always power down the panel before disconnecting and connecting any PCB wires or cables.

Refer to DF6000 Motherboard drawing

First confirm the PSU PCB is working correctly. Disconnect the red multiway connector from the PSU and mother board, check it's continuity.
Check the voltage on the battery connectors, this should be around 26V. If this is lower check the battery fuse – replace as necessary. If the fuse is OK, then the PSU PCB needs replacing.
Power up the PSU and carefully check the +26V and +26Vraw connectors are at around 26V, if they are power down the PSU and reconnect the PSU to the motherboard by the red connector.

Next confirm the motherboard is working. Disconnect the ribbon cable, loops etc. only leave the connection to the PSU. Find the test points on the Loop motherboard PCB check +26V, +26Vraw and also Vcc (should be 5V). If any are low check the PCB for any contamination shorting on the board. If this doesn't clear the problem, replace the motherboard.
Next connect the display ribbon cable only. Check the Vcc on the motherboard and the display board. If it is 5V on the motherboard only replace the ribbon cable. If both are low check the display for shorts.
Replace the micro board and display board separately to locate which is faulty.

Power LED on but touch screen is not illuminated

Connect a PC using panel comm. When the panel is reset debug code should be shown on panel comm, if it is the following should fix the problem.
Ensure the connector on the inverter is securely in position.
Ensure the micro board is securely connected to the display board.
There are two 5V regulators on the motherboard, check both Vcc and 5V backlight are at 5V, if not replace the motherboard, if they are replace the display board.
If the panel does not respond on panel comm, ensure the micro board is connected to the display PCB securely. Otherwise replace the micro and display PCBs.

Power LED and touch screen illuminated but no text visible

When the panel is powered down the touch screen needs a minute to reset. Power the panel down and disconnect the batteries for 90 seconds, then re power the panel. If this does not work connect panel comm and press the reset button. After a few seconds the PC should show debug code scrolling on the panel comm application. If it does not show debug text, ensure the micro board is securely in place.
If there is still no debug text the micro board or display PCB may need replacing. If debug text is shown on the PC the contrast may need adjusting on the micro board or either the micro board or the touch screen may need replacing.

Screen is visible, but touch screen does not respond to touch

Ensure the touch screen connector is in correctly.
Ensure the micro board is securely attached to the display board.
Send '7' from a PC to the panel to start the screen calibration routine.

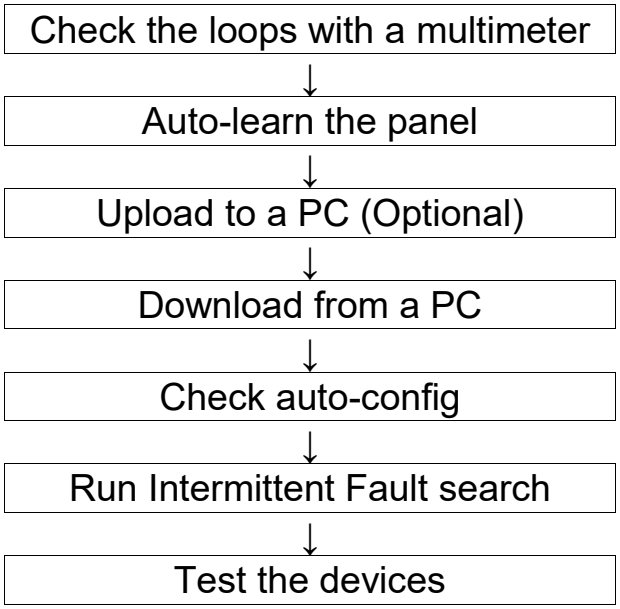
The touch screen works and is correctly calibrated, but I cannot get to the supervisor entry screen.

The panel may be in Swedish mode. If this is the case, then to get access to the menu system the class change input needs to be momentarily shorted.
The access code entry screen will now be accessible.
To disable Swedish mode on the panel, use the engineer level access code, select configure > program I/O's and sounders > Auxiliary board. Swedish mode will be selected, press not required then exit. The panel will now behave correctly.

The general disabled LED is illuminated

If this occurs something is disabled on the panel or a time delay has been programmed on the panel. To clear this use the 'enable all' button from the enable/disable menu in the supervisor access level. An alternative method, provided a delay has NOT been programmed then go to the enable disable menu and instead of enabling all devices, go to enable disable I/O, and then disable the delays.

Commissioning



Loop Checking with a multimeter

The first quick test that should be done on all the loops is to check the continuity of the loops using a multimeter.
The resistance should be measured start positive to end positive, start negative to end negative, and positive to negative at the start and end of each loop.
The resistance along the positive line should be less than 50 ohms. The resistance across the negative line should be 2k5 ohms for each device on the loop, e.g. 20 devices should measure 50k ohms.
The resistance across the loop positive to negative will be in the Mohm region.

Ensure the screen is continuous around the loop, this reading should be approx 10 ohms.
The screen should not be bonded to building earth.

Test the loops with the multimeter set to AC volts – this is to check that there is no induced voltage which could be caused by the cables being run too closely to a high voltage source.

This will show if anything drastic is wrong with the loop devices wired in backwards breaks etc. If there is a short at the end or start of the loop this will need to be fixed before powering the panel.

Auto-Learn Function

This is accessed through the engineer level access code. When the panel is auto-learned all the devices address information is set up from address 1 upwards from the start of each loop, previous addressing is lost. Once the panel has finished the auto-learn it will reset itself. After this is done reset the panel using the touch screen.

Problems

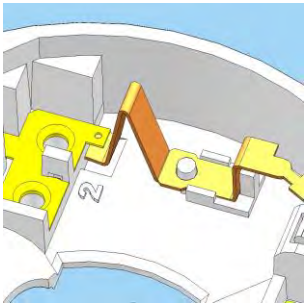
“Dual address”

The dual address should be displayed on the screen the panel sees this fault if two or more addresses are responding at the same time.
Other effects of the dual address could be the displaying of devices that have not been installed, the results of which could be a Beam detector, an SCU (sounder controller), a 4/20 mA interface or the worst case a Repeater Panel which causes a continual resetting of the main panel.
This is because the device ID’s of the 2 devices are added together thereby fooling the panel into believing those device types exist on the system.

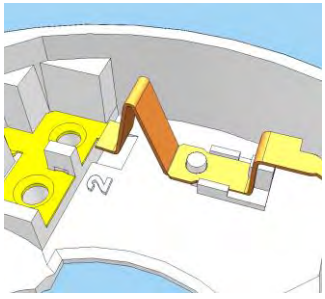
The most likely causes would be: -

Device wired incorrectly. See wiring diagram for the device

Base continuity switch not opening. The switch on the base can occasionally be pushed above the metal tab preventing the switch from opening. See diagrams below.



Correct



Incorrect

Fig 61

If this is the case the switch may need to be clicked under the tab, if this fails the base may need replacing.

Alternatively, on later versions of the detector base the spring has been rotated to provide a more logical operation. Certain instances of this base (up to May 2013) can cause a dual address because the tooling of the spring was found to be too acute, which allows the spring to break and then remake at the extent of its travel.
This modification was not carried out on the base sounder, sounder /beacon.

Fig 62

Detector not correctly inserted on base. If a detector is not fully inserted onto a base it is possible that the base switch will not be opened. The newer detectors and bases have a tab to show when the detector is fully inserted. See diagram below.

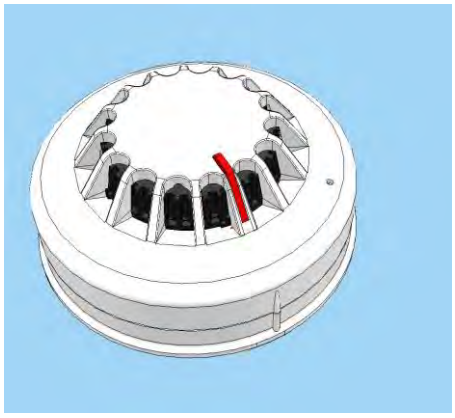


Fig 63

Base sounder device not wired correctly. When a detector is inserted onto a base sounder there is not much room behind the detector. If the cabling is not cleared from the base, see images below.

INCORRECT

CORRECT

Fig 64

The detector may be pushed away from the base preventing the switch opening or crushing a contact and thus not receiving power.

The panel goes into fire straight after auto-learn.

Dual addressing, causing the panel to interpret a response signal as a fire.
This will show itself if there is a dual address fault at the same address as the fire (it will take longer for the fault to show than the fire).

This is generated by adjacent devices one with a high analogue level dualling with a device with a low analogue level (generally a smoke detector and an I/O unit)

The panel constantly resets after auto-learn.

This is a specific dual-addressing fault. Certain combination of devices dual addressing may cause the panel to think they are a repeater and respond to the responses by constantly resetting.
The following steps should be done to remove this problem.

a. Remove the battery leads and Power down the panel

b. Wait at least 3 mins until all of the internal capacitors have fully discharged

c. Remove the loops cards or cables from the panel.

d. Re-apply the power, Mains first then battery - the panel will stop resetting.

e. Go to the delete device menu in the engineer menu and delete all the repeaters from the panel.

Locate the dual addressing devices (see below to locate a fault) and fix the problem.

Auto-learn the panel, it should no longer reset, if it does repeat the above and locate any further dual addressing problem.

If the panel is not in alarm or resetting constantly the other dual addresses can be located by using the test device in the engineering menu, go to the dual address number – test device and both devices will light the Led or sound the sounder etc.

“Open circuit” Positive/Negative.

This means after the auto-learn the panel has detected a break in the positive or negative line. The most likely causes would be: -

Device wired incorrectly. See wiring diagram.

Base switch opening but the detector not making contact. Ensure the base contacts are correctly screwed down, and none are damaged. Then ensure the detector is replaced correctly.

A negative break may also be caused by a short at a device in the middle of the loop that the loop device isolators have detected and dealt with. See short circuit middle below.

If the loop voltage drops (below 18 vDC) the devices may reset causing an open circuit negative. (There must not be more than 2Km of appropriate properly earthed cable used per loop.) If a faulty device is suspected it can be seen by linking the loop in the panel and disconnecting the far end of the loop, see diagram.

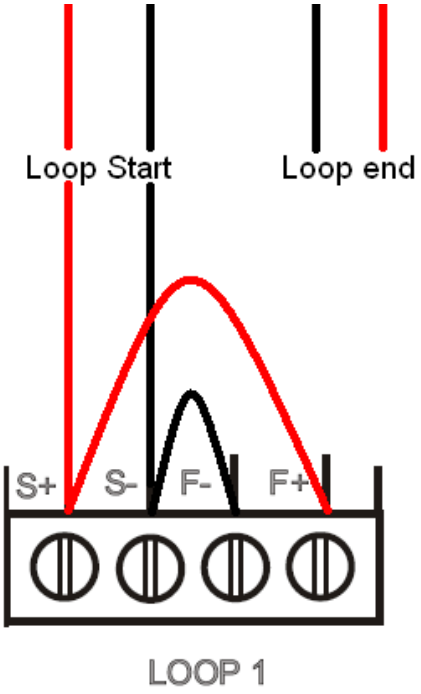


Fig 65

Measuring the voltage across the end of the loop for correct function this should be over 15V (usually over 18V). If the panel is left in this state, the end devices will go into fault. The faulty device should be one of the active devices.

“Short Circuit” start or end of a loop.

There is a short at the start or end of the mentioned loop. The fault can only be on the panel. The first/last device or the wiring in between the panel and the device. This prevents the loop driver from functioning and must be fixed in order to auto-learn the panel. Common causes would be: -

Either the first or last device is wired incorrectly.

The loop connections into the panel are wrong.

Something is shorting on the PCB.

No device between the last Spur Isolator and the panel

If the initial loop test didn't show a short across the loop power down the panel and remove the loop driver.
Measure the resistance across the loop using the appropriate terminals, If this is still in the Mohm region change the loop driver card. If this is short circuit recheck the loop by disconnecting the loop and measuring.
If this is Mohms change the motherboard.

“Short circuit middle”

Device wired incorrectly. See wiring diagram.

Device is drawing too much current. A faulty device may draw too much current and be detected as a short.
Replace the device.

“Fault at address”

There are several possible causes of faults at individual addresses, the panel may show more information (e.g. which channel for 3 channel IO) or may show analogue value for the fault:-

Device is missing, unlikely after an auto-learn as a missing device wouldn't have addressed. Incorrect earthing may cause this. This fault would have an analogue value of 0.

A repeater, sounder control unit have their own power supply if the PSU is not on and there is no battery, the device will show a fault, analogue value 0.

Detector low analogue value fault. If the detector shows analogue value of 1 the detector may need replacing or cleaning.

End of line resistors not correct. IO units, ZMUs etc. have end of line resistors. If they are not wired correctly the panel will show a fault at this address but will give specific information (ZMU detector zone etc.) about the fault.

“Earth Fault”

An earth fault may be associated with other faults or random fires.
This should be cleared before trying to sort out these other faults as it may be the root cause.
Power down the panel, disconnect all loops, sounders and relay connections. Ensure the panel is correctly earthed.
Check the +ve & -ve cables to screen/earth, ensure greater than 1 Mohm. Check that the screen is not tied to building earth.
Repower the panel if the fault remains with the cables disconnected, examine the Pcb’s for contaminants or shorts.

“Sounder 1 or 2 Fault”

This is a fault on one of the two conventional sounder channels. Common causes would be:-

One of the fuses has blown.

End of line resistor not fitted.

Sounder wired incorrectly. See wiring diagram.

Sounder circuit is shorted.

“FRE, FPE, Fault relay Fault”

These are the other panel outputs, faults on these could be:-

End of line resistor not fitted.

Output line is shorted.

The panel fails to auto-learn past a device

This may be seen with short or open circuit on the loop, the problem will probably be located at the last device detected or the next one along. See the above on open circuit positive/negative.
If there is no associated open circuit the device may be faulty, link out the device after the last one auto-learned and try again. If this fails link out the last device detected and auto learn again. If either device is causing the problem, replace it.
Once the faults have been removed from the panel and it shows system healthy after a reset go to the system details screen and check the numbers of devices on each loop is the same as what has been installed on each loop (spur isolators do not show on system details). If this number is less than expected the following may be the cause: -

If spur isolators are fitted the spurs may not be correctly installed. To check this do test device on what should be the last device on each spur (see locating a fault below), if the incorrect device LED is on work back along the spur with test device until a device is correctly identified. The problem may be that device or the next one along the spur, see open circuit negative/positive above.

If no spur isolators are present or the spurs are all working, ensure the site devices have all been connected to the loop.

Locating a fault on a loop

If the fault is a short circuit middle or an open circuit on the loop the check auto-config function can be used. This is in the supervisor level on the others section of the display. When this function is used the panel will go around the loop from the start until it cannot communicate with a device it will then show an open circuit at an address, this will help locate a short/open circuit in the middle of a loop. If check auto-config shows a fault at the end of the loop but no short or open can be found, the problem may be a resetting detector, see 'loop voltage drop' above in “Open circuit” Positive/Negative section above. Alternatively run the Intermittent fault search in the high-level menu.

If an address is suspected as being faulty or dual addressed the test device function can be used to locate the device. Test device is in the engineer level under testing. When a device is put into test its LED should light up, two will light up if both devices have the same address. If the tested device is a sounder, it will sound continuous. Sometimes the faulty device will not respond if this is the case test the device before the faulty one and the one after the faulty one to help locate the exact device.

Other Faults

Charger Fault

This will show if the charge current is too low. Possible causes for this are:-
The charger fuse has ruptured.
The batteries are disconnected.
The batteries are damaged.

Battery Fault

This will show if the charge voltage is too low. Measure the float voltage at the battery terminals, it should be around 26V depending on how charged the batteries are. This could be low if the batteries are damaged, replacing the batteries should clear the fault.

Mains Fault

If this is the only fault on the panel the LCD back light will be off. Touch the top left of the screen to light the screen. The panel will only run on batteries for one or three days depending on its configuration. When the mains returns the panel will need resetting to clear this fault. If the fault returns after a reset, check the mains input.

Error Codes

The following are a list of error codes that may appear during the boot sequence of the panel.

#define ERR_TEXT_LARGE 0	#define ERR_SEARCH_UNKNOWN_DB 25
#define ERR_TEXT_SMALL 1	#define ERR_SEARCH_UNKNOWN_CONDITION 26
#define ERR_LINE_LARGE 2	#define ERR_SCREEN_SMALL 27
#define ERR_LINE_SMALL 3	#define ERR_SCREEN_LARGE 28
#define ERR_PIXEL_LARGE 4	#define ERR_PRESET_LOAD 29
#define ERR_PIXEL_SMALL 5	#define ERR_PRESET_SAVE 30
#define ERR_RECT_LARGE 6	#define ERR_PANEL_LOW 31
#define ERR_RECT_SMALL 7	#define ERR_PANEL_HIGH 32
#define ERR_ARROW_SMALL 8	#define ERR_LOOP_LOW 33
#define ERR_ARROW_LARGE 9	#define ERR_LOOP_HIGH 34
#define ERR_ARROW_CODE 10	#define ERR_ADDR_HIGH 35
#define ERR_TEXT_BUFFER_OVERFLOW 11	#define ERR_ZONE_HIGH 36
#define ERR_BITBLT_LARGE 12	#define ERR_LOG_HIGH 37
#define ERR_BITBLT_SMALL 13	#define ERR_ZONE_LED_SMALL 38
#define ERR_TEXTOUT_LENGTH 14	#define ERR_ZONE_LED_LARGE 39
#define ERR_TEXTOUT_LARGE 15	#define ERR_LOOP_COMMAND 40
#define ERR_TEXTOUT_SMALL 16	#define ERR_ADDR_LOW 41
#define ERR_LINE_DOT_LARGE 17	#define ERR_UNK_LATCH 42
#define ERR_LINE_DOT_SMALL 18	#define ERR_UNK_DEVICE_TYPE 43
#define ERR_LOG_ADD_FAILED 19	#define ERR_DEV_ZONE 44
#define ERR_SEARCH_NO_HI 20	#define ERR_DEV_TYPE 45
#define ERR_SEARCH_NO_LO 21	#define ERR_LOOP_DRIVER_HIGH 46
#define ERR_SEARCH_FIRST_LAST 22	#define ERR_NO_LOOPS 47
#define ERR_SEARCH_0 23	#define MAX_ERROR 48
#define ERR_SEARCH_COL 24	

Programming Issues

Once Autolearned, the panel will work as a basic fire alarm provided there is no cause and effect required on the site.
The panel, however, can transfer this learned information to the Site Installer program on a laptop, where full zone and address text can be programmed together with different relay outputs, sounder settings etc. and any Input programming to fulfil any customer requirements.

NOTE Programming, when completed must be in conjunction with total numbers and settings laid down in the previous sections of this guide.

Once programmed, this information can then be returned to the panel.

A number of issues have been identified:

1. If the program will not go back into the panel, this is likely to be corrupted or incorrectly set up or the display micro (CDR) is corrupt. Power down the panel and remove the loop driver cards. Power the panel again and carry out an Autolearn (this effectively clears the CDR). Power down again and install the loop driver(s), re-power and try to reload the program. If this will still not download, then check the program or replace the micro.

2. If after successful download the panel goes into random fires – this is almost always due to an incorrect program. (or the wrong program for the site).

3. If after successful download, and during testing various sounders do not operate. This could be due to too many zones being programmed for each sounder stage (max allowed is 16).

4. If after successful download, and during testing sounder begin to stop operating. This could be due to the sounders being set to too high a volume and hence taking too much load. Check sounder settings and turn down the volume if necessary. If this is not the case check the hardware Revision number on the reverse of the Loop driver, ECN818 is the latest version that delivers better load performance than the previous(ECN651).

5. If after successful download the panel display no faults, but the front screen says, ‘System Healthy 0 Zones Active’, this is associated with a networked system. Following a download, the panel address and number of panels in the network can sometimes be returned to 1. Go into the commissioning menu and set up the network address and total number of panels in the network.

Program Updates

Loop Driver
Loop Driver software can be updated using a Cyclone Pro programming device; alternatively, to update the software the loop driver will need replacing.

Display
The display program can be updated using a utility program called Panel Prog or via the Site Installer program. This can only be carried out in this manner on the latest display software release; Display 3.02.03, Loop: 3.2.01 Dated 15 Aug 08. This is also available on the Single and 2 loop DF6100 and 61002, and CF1100/1200 panels.

Any update for the CF2000 can only be achieved on panels Dated later than Jan 2015 (software version 1.26.06) or later.

Alternatively, to update earlier versions of software the display micro will need replacing.

NOTE In all instances a download of the program will be required prior to any upgrade

The display program can be updated using the Panel Prog program and Hyperlink as follows;

1. Connect Laptop to the panel via the serial port.
2. Open HyperTerminal program and apply a name in the new connection box. Click OK
3. Select Com 1 in the 'connect to' box. Click OK
4. In the Comm 1 properties box set - 38400 baud, data bits 8, parity none, stop bits 1 and no flow control.
5. Data will now start scrolling down the screen area.

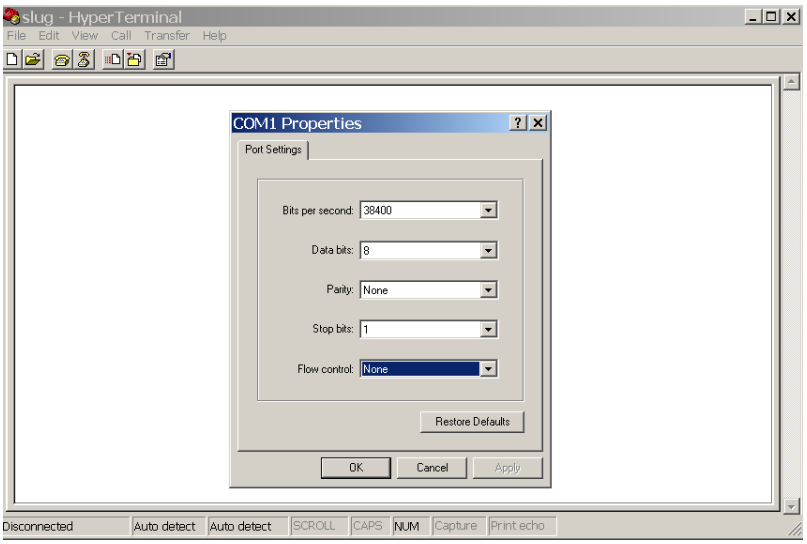


Fig 66

6. In HyperTerminal, press ctrl-x, and then 'y' immediately. This will erase the current program in the display micro.
7. Wait until the text "WAITING FOR PROGRAM" appears in HyperTerminal window.
8. Close HyperTerminal.

9. Run PanelProg.exe, and ensure the correct serial port is selected. (It normally defaults to **comm. 3)**

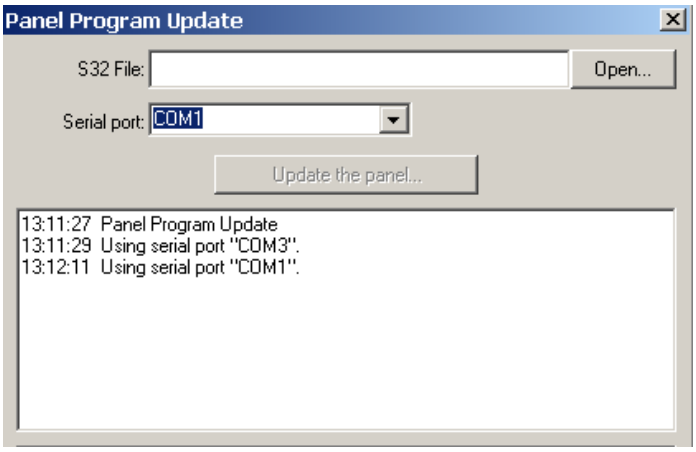


Fig 67

10. Load your.s32 file with the relevant program into PanelProg.exe. by clicking on the ‘open’ tab.
11. Click "update the panel".
12. It may initially give you a timeout error, if so, just click "update the panel" again. The whole process should take about 5 mins, it is important not to interrupt it.

Site Installer – Upload Firmware

The display software can now be updated using the later version Site Installer program (version 2.5.26 or higher).

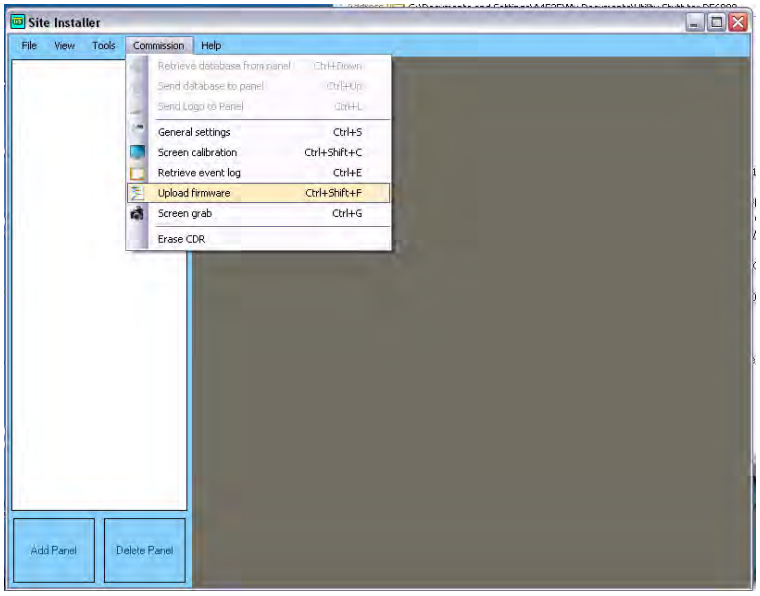


Fig 68

Click on ‘Commission’ ‘Upload Firmware and when the dialog box opens choose the required S32 file and click ’Open’.
The process is completely automatic – site installer deletes the old display and the sends the new file.
NOTE This will take up to 5 mins so please ensure during the transfer the laptop does NOT go into hibernate mode otherwise the display will become unrecoverable.

Following the transfer, the panel will run through a complete watchdog reset. At this point there may have been some changes to the existing settings within the menu structure such as applying or removing delays etc, so in **all** cases an ‘Erase CDR’ must be carried out after upgrade.

To achieve this remove the loop cables or loop cards (taking the appropriate precautions) and then choose ‘Erase CDR’. If the panel tries to do an Autolearn because of an empty or corrupt CDR at this point, no serious damage will occur because the loops are not connected.
Simply reconnect or refit the loop cards (taking the appropriate precautions) and upload the program back to the panel.

To carry out an upgrade on the CF2000 a recent download MUST be taken and saved before sending firmware. The Site installer function ‘Erase CDR’ is not functional on the CF2000.

Click on ‘Commission’ ‘Upload Firmware’ choose the CF2000 S32 file and click ‘Open’. Wait until the process has finished in the same manner as the above paragraphs, once complete reload the saved Site Installer file.

Panel Comm

Panel Comm is a useful little program that allows engineers to connect directly to the panel via the upload/download port.

This program is capable of communicating with the panel by way of sending commands to perform certain functions or receiving information also on command.

Once opened the program needs no configuration and information will be seen to be scrolling in the main display window, such as ‘Updating time on screen’ or ‘Lon data request’ if the panel is networked.

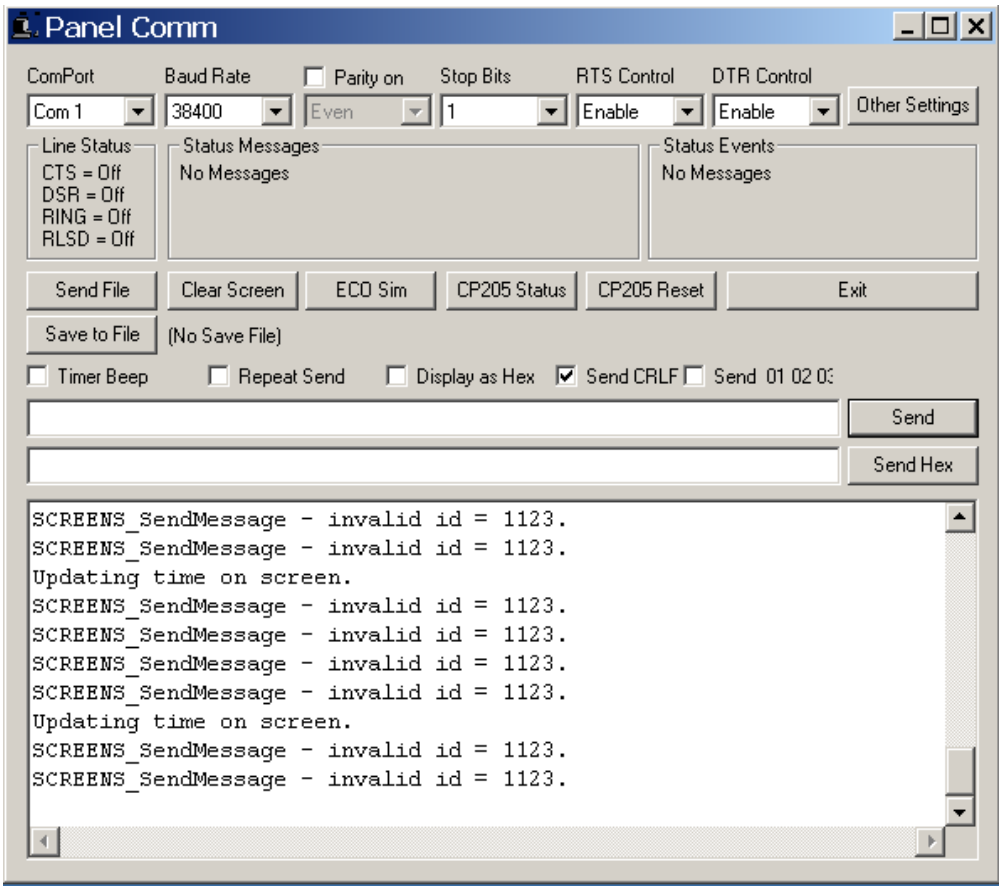


Fig 69

Commands can be sent to the panel by putting a code into the line adjacent to the ‘Send’ button and hitting ‘Send’.

The list of commands are;

Code	Function	Code	Function
1	English DF6000	2	Test Screen
3	Touch Screen Test	4	LED Test
5	(Spare)	6	List CDR
7	Calibrate Screen	8	Screen Dump
9	Watchdog Reset	A	Reverse video
B	French	C	Font test
D	Animation	E	Simulate Fire
F	Backlight on/off	G	Printer Test
H	Printer Status	I	LON Test
J	Debug mode on/off	K	Full Checksum
L	Shutdown/Activate	M	Erase CDR
N	Simulate Fault	O	Simulate Pre-alarm
Q	FRE Test	R	Rabbit Test
S	Sounder 1	T	(Spare)

Download Analogue levels and Log to PC

A recent update to the display software (v 3.3.1 or later - Jan 2009) allows the engineer to download the Analogue levels and history log to a PC using the HyperTerminal program.

This new feature is housed in the user menu. Proceed as follows to download the information to the Laptop:

1. Connect Laptop to the panel via the serial port.
2. Open HyperTerminal program and apply a name in the new connection box. Click OK
3. Select Com 1 in the 'connect to' box. Click OK
4. In the Comm 1 properties box set - 38400 baud, data bits 8, parity none, stop bits 1 and no flow control. Data will now start scrolling down the screen area.

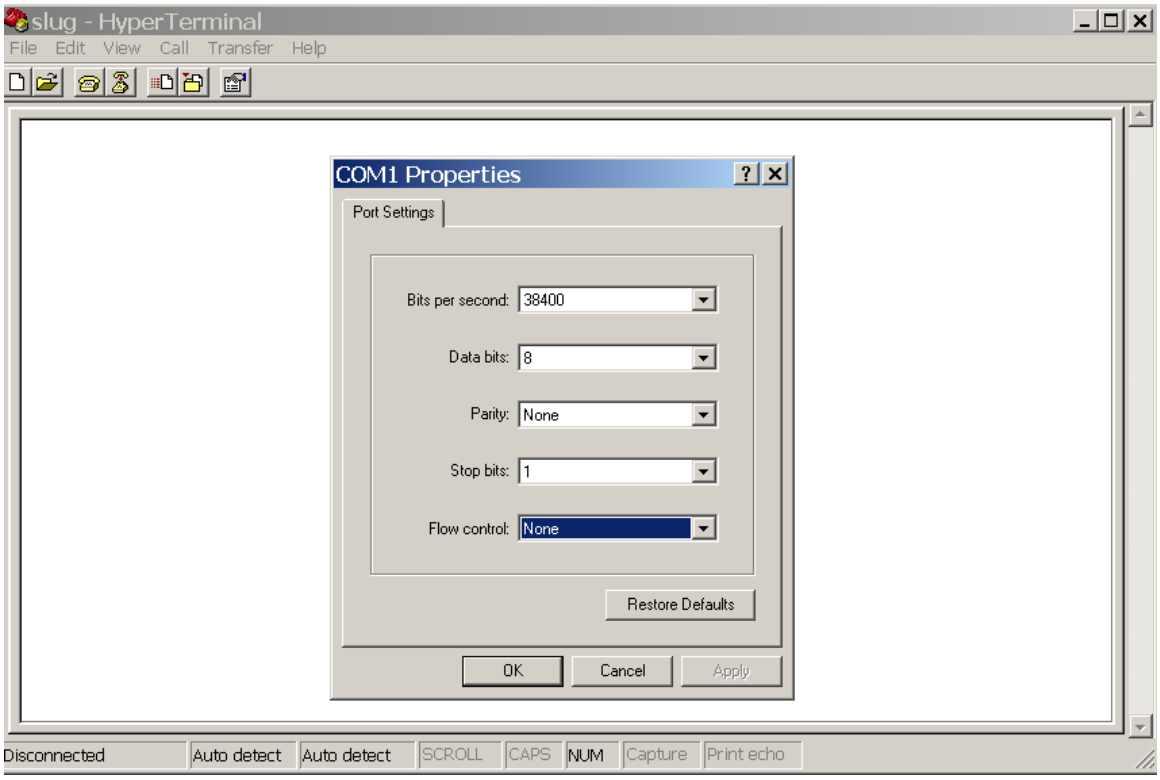


Fig 70

5. Select ‘Transfer’ and from the drop-down box choose ‘Receive file’

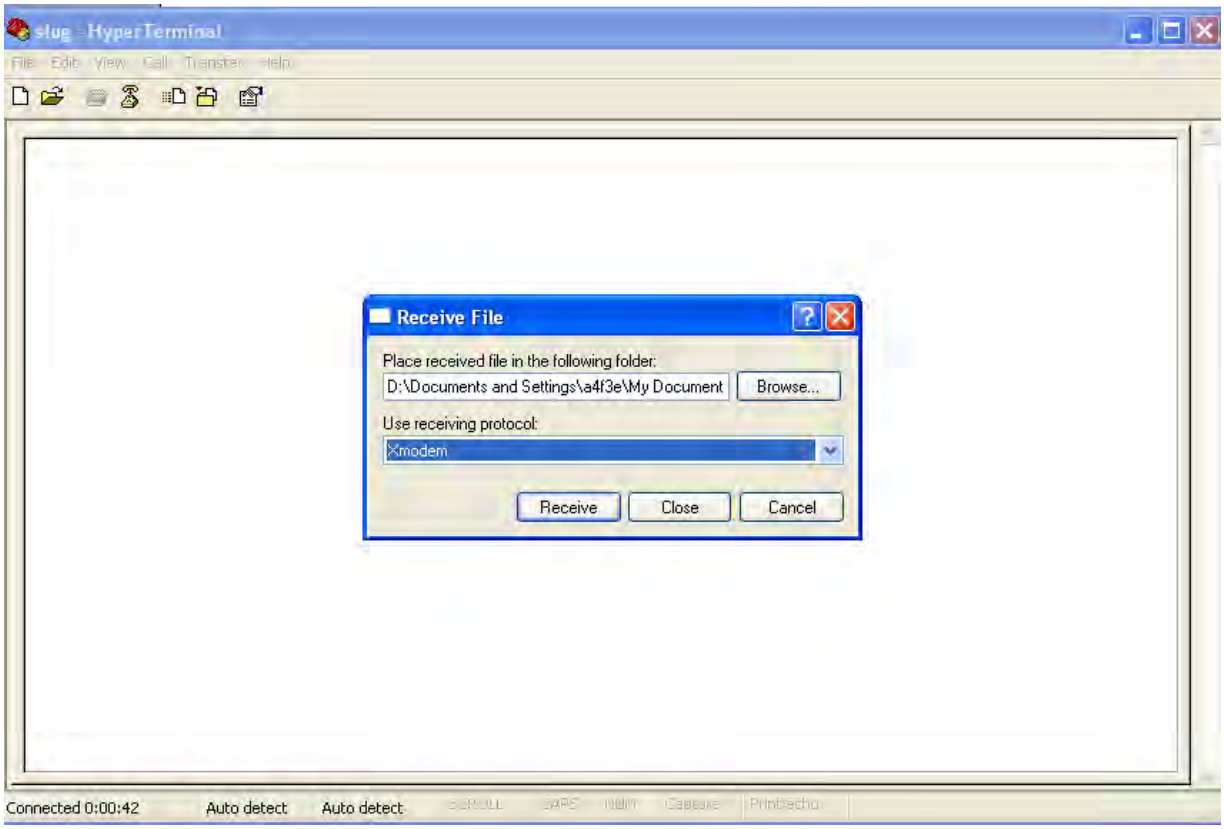


Fig 71

6. In the ‘Receive file’ box use the ‘Browse’ button to select where the file is to be saved – generally ‘My Documents’.

7. In ‘Use receiving protocol’ choose ‘Xmodem’ then hit ‘receive’.

8. When the ‘receive filename’ box appears give the file a name and click ‘OK’

9. Go to the panel and select ‘Send analogue value or Log to PC, choose a loop to be transmitted hit ‘OK’

10. Another box will appear showing the status of the download.

11. Once the file has been downloaded then this can be accessed for reading or printing by ‘right click’ on the file and ‘Open with’ Microsoft Word.

The ability to download the Log and Analogue levels to PC has been further enhanced by adding the facility to use Site Installer to achieve the same results.
2 Commands have been put into the user menu 2214 – 'Download log to PC' and 'download analogue values to PC'. Touch the required box and then 'send'. The screen will display 'waiting for PC'.

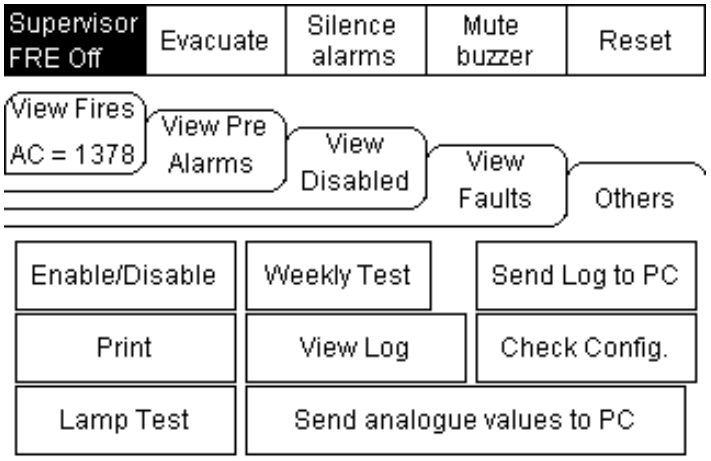


Fig 72

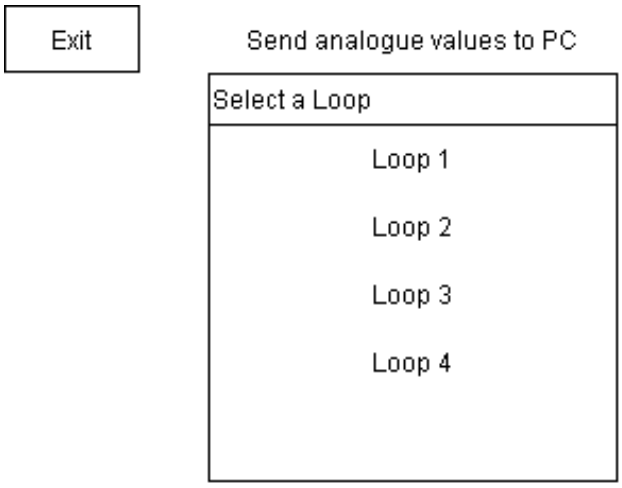


Fig 73

Choose ‘commissiom’ then ‘retrieve event log’. When ‘save log as’ dialog box appears give the file a name and where the file should be saved and hit save.

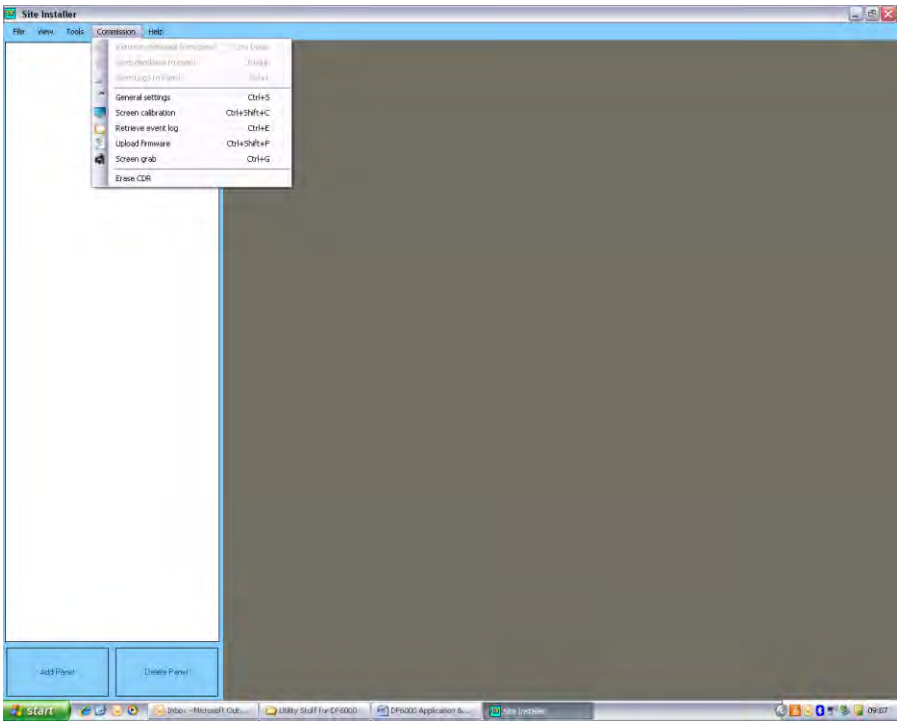


Fig 74

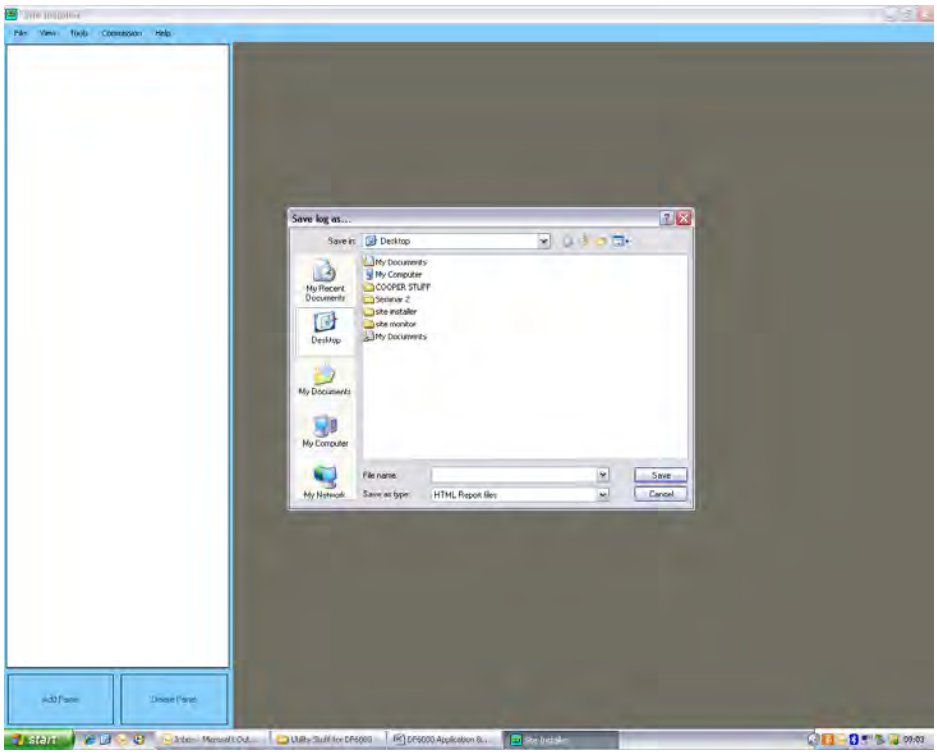


Fig 75

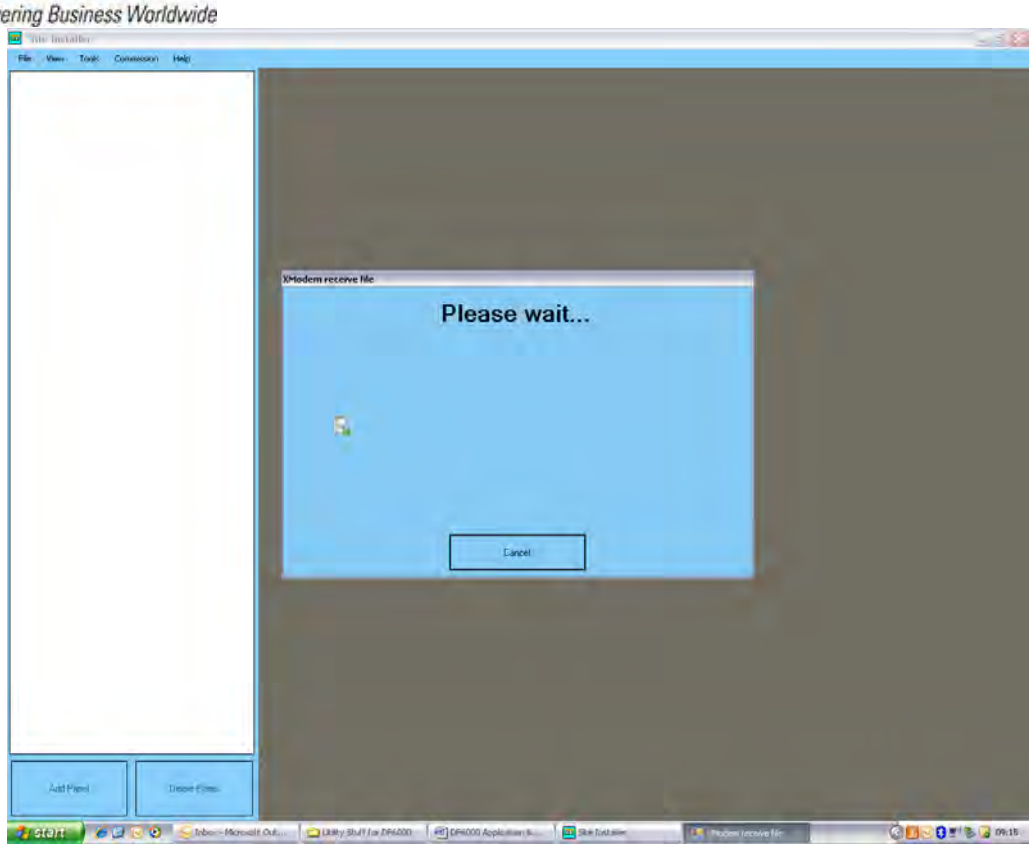


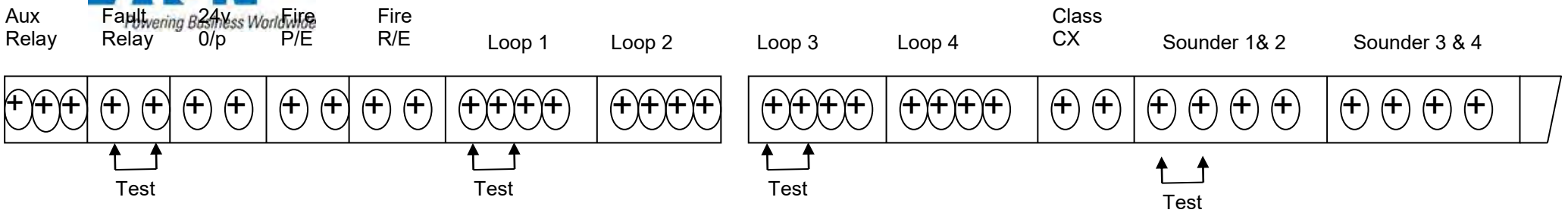
Fig 76

Once the file has been downloaded it will be saved as an HTML document available for E-Mailing.

CF1100/1200 CPD PSU

The CPD PSU is now fitted to CF11/12 and CF2000 panels. This PSU is required by the CPR regulations to monitor the state of the Battery by carrying out a minor discharge every 3 hours to ensure it will still last for the required standby period, followed by the 30 min alarm period.

Terminals	Normal State	Fault state
NC	Not connected	
0v		
26v Raw	Any 0v – 26v Raw Unregulated supply 27.54	
0v		
26v	Any 0v – 26v Regulated supply 27.38	
0v		
Battery Fault	Any 0v and Battery Fault 0.5v	Rises to 5v in Battery fault
Charger Fault	Any 0v and Charger fault 5 v	Falls to 0v in Charger fault
30v	Any 0v and 30v is 5v	Remains at 5v when in fault
Mains Fault	Any 0v and Mains fault 5v	Falls to 0v with mains fail
Battery charge	Across Batt +ve and –ve approx. 27.4v	



Voltages measured at main contacts with mains and battery connected.

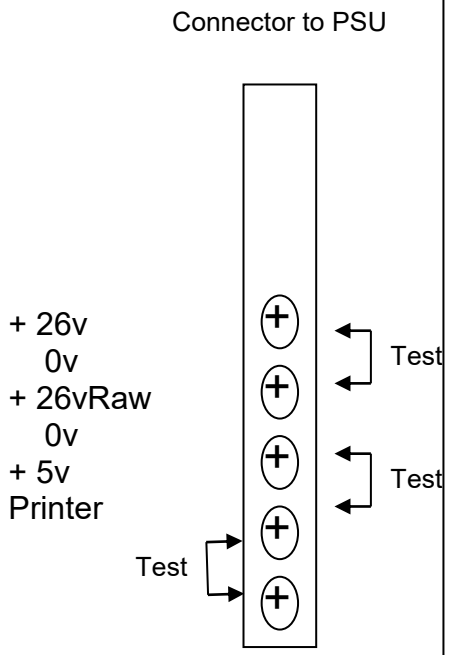
- Aux Relay : Dry contacts NO/C/NC
- Fault Relay Output : 13.6v no fault 0v when in fault
- 28v Output : 28.5v approx with no load
- Fire P/E & R/E : -0.6v no fire +28v when in fire
- Loops 1-4 : 0v unused, +22v normal, +24v in fire, +27v during autolearn.
- Sounder 1-4 : -0.6v monitor, +28v when in fire.

Voltages measured at vertical red connector with mains and battery connected.

- +26v to 0v : reads approx +27.8v
- +26v Raw to 0v : reads approx +28.15v
- +5v Printer to 0v : reads approx +5.5v

Voltages measured across battery leads using 6K resistor as load, mains connected.

- Factory set to give +27.5v



Amended: Sept 19

DF 6000 Motherboard (.ypcb2153)