FireStop Fire Control Panel (FCP)
Fire Detection and Alarm System
Installation Manual

USCG APPROVED
161.02/54/0

Introduction

The FireStop Fire Control Panel (FCP) is a low voltage fire detection and control system designed for use in the marine and other transport markets.

The FCP integrates fire extinguisher alarm, fire detection in a modular design that can be expanded to meet the requirements of a wide range of applications. This product is intended to be installed in accordance with NFPA72.

The FCP consists of four main hardware components:

131-501 - CONTROL UNIT

The Microprocessor Control Unit is the heart of the integrated system.
There are two inputs for monitoring the Sea-Fire extinguisher. When used in conjunction with an 'H' Series extinguisher, the unit can monitor Discharge as well as Low Pressure.
All primary inputs are monitored for open and short circuit.
Vibration-Damper Bushings (Qty. 4) are supplied with the FCP for vibration level reduction.
NOTE: The 131-501 Control Unit is for indoor use only and is not to be mounted within the bridge or deck areas.

TECHNICAL SPECIFICATION

Mechanical:
Dimensions (mm): 255(W) x 180(H) x 61(D)
Weight: 1kg
Enclosure material: Polycarbonate plastic
Cable entries: 4 x 20mm cable glands
Max wire size: 2.5mm sq.
Vibration-Damper Bushings (supplied)
Ingress Protection: IP66*
*proper installing of cabling through glands is required for water-tight seal.

Electrical:
Supply voltage: 24 VDC ± 4V
(1 Main & 1 Backup)

Inputs:
Detection circuits x 2
Silence Enable/Disable

Outputs:
NAC Alarm Output: 2 amp max*
Vent solenoid: 2 amps for 5 seconds on system discharge
Adapter Panel Reset Relay: QTY. 1 rated @16 Amps
*NAC Alarm output may only be used if notification appliances are not connected to NAC Alarm output of 131-933 Display Panel

Recommended fuse: 5 Amps, each supply due to fault monitoring requirements.

131-933 - DISPLAY PANEL

TECHNICAL SPECIFICATION

Mechanical:
Dimensions (mm): 2(W)x92(H)x13(D)
Weight: 129g
Material: ABS plastic with Polyester Overlay
Max wire size: 2.5mm sq.
Ingress Protection: IP64*
*when mounted onto closed surface and supplied gasket and hardware is used.

Electrical:
Connects to Control Panel via CAT5 patch cable

Outputs:
NAC Alarm Output: 2 amp max*
*NAC Alarm output may only be used if notification appliances are not connected to NAC Alarm output of 131-501 Control Panel due to fault monitoring requirements.

This display is used if there are only two Detection Zones on the system, Engine and Accommodation Zone, or if there is a requirement for multiple displays throughout the vessel such as; Bridge, Crew Cabin, Machinery Space, etc. This display gives status indication of all alarms and allows for system control.

Up to four (4) ZIP's and Displays can be connected to the system by cascading them using CAT 5 patch cables.

NOTE: The 131-933 Display is for indoor use only.

131-520 - ADAPTER UNIT

TECHNICAL SPECIFICATION

Mechanical:
Dimensions (mm):130(W)x130(H)x61(D)
Weight: 330g
Enclosure material: ABS plastic
Cable entries: 2x20mm glands
Max wire size: 2.5mm sq.
Ingress Protection: IP66*
*proper installing of cabling through glands is required for water-tight seal.

Electrical:
Supply voltage: 24 VDC ± 4V (from FCP Relay 8)
Recommended in-line fuse: 2 Amps

Inputs:
Detection circuits x 5 (4 if connected to ZIP)

Outputs:
Alarm Status Output: 2 x RJ45 sockets for connection to ZIP

The Adapter Unit is used to expand the number of Detection Zones. Each adapter unit expands the system by a further 4 zones. Up to 4 of these units can be connected to increase the number of Zones to 16. RJ45 sockets output the detector status to the Zone Identification Panel.

NOTE: The 131-520 Adapter Unit is for indoor use only and is not to be mounted within the bridge or deck areas.

131-529 - ZONE IDENTIFICATION PANEL (Gray)
131-548 - ZONE IDENTIFICATION PANEL (Black)

The Zone Identification Panel (ZIP) provides the user with system status and control. It has two tactile buttons available to reset or silence the system.
In the event of an alarm, a Zone LED will light and the internal piezo buzzer will sound.
The ZIP is customizable to be able to accommodate user defined Zone legends.
The ZIP's are connected to the Adapter panels and the Control Panel via CAT5 cable. Up to four (4) ZIP's and Displays can be connected to the system by cascading them using CAT 5 patch cables.

TECHNICAL SPECIFICATION

Mechanical:
Dimensions (mm): 205(W) x 135(H) x 3(D)
Weight: 183g
Material: F4 PCB and Polyester overlay
Ingress Protection: IP64*
*when mounted onto closed surface and supplied hardware and commercially available silicone sealant is used.

Electrical:
Connects to Adapter Panels via CAT5 patch cable
Connects to Control Panel via CAT5 patch cable

Inputs:
2 x RJ45 sockets for connection to Control Panel
4 x RJ45 sockets for connection to Adapter Panels
Outputs:
Buzzer: 85db @10cm from component side of panel

NOTE: The 131-529 and 131-548 Zone Identification Panels are for indoor use only.

OPERATION

Normal monitoring mode:

During normal operation, the FireStop Fire Control Panel (FCP) monitors the fire detectors, the fire extinguisher for pressure and discharge, and monitors for faults.

During normal operation the green Power LED will remain lit.

Machinery shutdown

Machinery shutdown is not available for this system (PN: 131-501).

Fire detection

When used with just the 131-501 and the 131-933, the FCP has two detection zones, Accommodation and Engine Room.

Engine room - When an Engine room detector is active, the fire alarm will sound and the red Engine Room LED will flash on the Display Panel.

Accommodation - When an Accommodation detector is active, the fire alarm will sound and the red Accommodation LED will flash on the Display Panel.

Two detectors can be fitted on each zone (Fig. 1). The detector located farthest from the FCP shall have a 47K Ohm End-of Line (EOL) resistor installed.

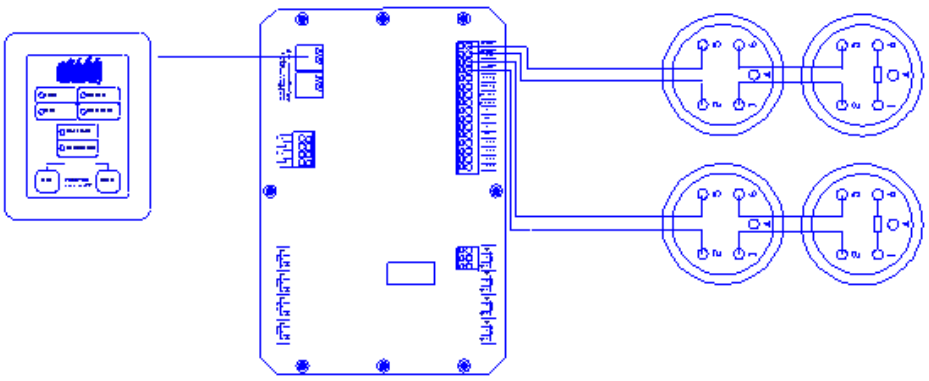


Fig. 1

Fire detection in more than 2 zones

If the Zone Identification Panel (131-529 or 131-548) is added to the system then the FCP becomes capable of monitoring up to 16 zones.

The Adapter Unit (131-520) is used for 4 zones. Therefore, 4 of Adapter Units would be required for a 16 zone system. A schematic for this is shown in Fig.2. Adapter Unit (131-520) can support up to 2 detectors per zone. The detector located farthest from the Adapter Unit shall have a 47K Ohm End-of Line (EOL) resistor installed.

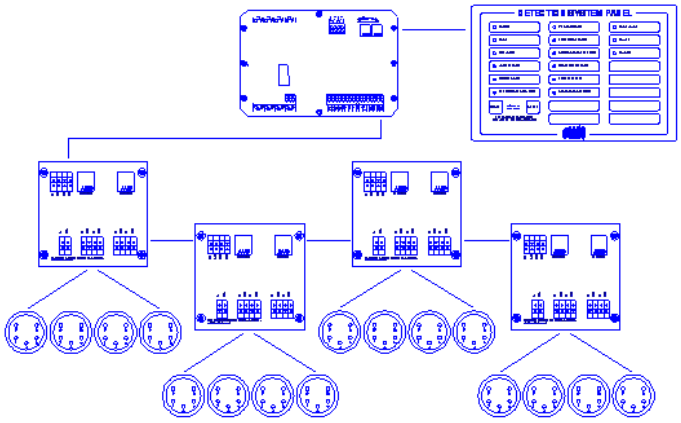


Fig. 2

Silencing and Resetting Fire Alarm:

In the event of a detector activating or pull station pulled, a pulsing alarm will sound and a red LED will flash on the Display Panel and the ZIP Panel (if fitted).

The alarm can be silenced by positioning the Silence Enable Key Switch, PN: 131-909 to the “ENABLE ON” position and pressing the “SILENCE” button on the Display Panel and returning the Silence Enable Key Switch to the “ENABLE OFF” position. The key of the Silence Enable Key Switch may only be removed in the “ENABLE OFF” position. LED indicators, “SILENCED” and “SILENCE SWITCH ACTIVE”, are located on the Display and ZIP Panels that light when the Silence Enable Key Switch is in the “ENABLE ON” position and the “SILENCE” button is pressed.

NOTE: If the Silence Enable Key Switch is left in the “ENABLE ON” position for more than 30 seconds, the “SILENCE SWITCH ACTIVE” LED will blink and the sounders will sound periodically until the Silence Enable Key Switch is set to “ENABLE OFF” and “RESET” is pressed.

To reset the system, press the “RESET” button on the Display Panel.

NOTE: A successful detector reset will only happen if it is clear of heat or smoke and the pull station is reset. If the detector is not clear the pull station is not reset, the alarm will sound again. Detectors will only reset when it is clear of smoke or the heat and are below the alarm threshold. Detectors may require removal from the base and re-installing to fully reset.

System fault monitoring:

The display panel gives an audible and visual indication for short and open circuit on the following lines:

Power supply (absence of either of the 2 power supply inputs). Supervised.
Detector circuits. Supervised.
NACs (Notification Appliance Circuits). Supervised.

If a fault develops, the fault light will flash on the display panel and an alarm will sound every 10 seconds. If the fault is with the power, detector, discharge or Low Pressure circuit then the corresponding light will flash on the display panel as well. If the fault is with an accommodation detector then the location of the fault will be shown by a flashing LED on the ZIP Panel (if fitted). Check component wiring and press reset to clear the fault. NOTE: If the Silence Enable Key Switch is left in the "ENABLE ON" position for more than 30 seconds, the "SILENCE SWITCH ACTIVE" LED will blink and the sounders will sound periodically until the Silence Enable Key Switch is set to "ENABLE OFF" and "RESET" is pressed.

INSTALLATION:
HARDWARE

Display Panel - 131-933
Select an accessible location at the helm station for installation of the 131-933 Display Panel. Using the gasket supplied as a template, drill the four fixing holes and the 45mm central hole for the RJ45 sockets.
It is recommended that the Display Panel is placed loosely next to the Control Panel during the wiring installation. As each component is fitted, the Display Panel will confirm that the installation is correct by remaining fault free. After successful installation, the Display Panel can be secured in the correct location with the fastening kit supplied.
Do not over tighten the fixing studs or the securing nuts. **NOTE:** The 131-933 Display is for indoor use only. Supervised.

Control Unit - 131-501
The 131-501 Control Panel should be installed in a convenient location accessible to the ignition wiring and power. NOTE: The 131-501 Control Panel is for indoor use only and may not be installed on the vessel's bridge or the deck. Remove the lid from the enclosure. Secure the box to a suitable bulkhead with screws through the mounting holes. Vibration-Damper Bushings (Qty. 4) are supplied with the FCP for vibration level reduction. Attach on bottom of the box at the 4 screw hole locations allowing the Vibration-Damper Bushings to sandwich between the box and the panel.

Adapter Unit - 131-520
The 131-520 Adapter panel should be installed in a convenient location where the connections from the detectors can be made. NOTE: The 131-520 Adapter Unit is for indoor use only and may not be installed on the vessel's bridge or the deck. Remove the lid from the enclosure. Secure the box to a suitable bulkhead with screws through the mounting holes.

Silence Enable Switch - 131-909
The 131-909 Silence Enable Switch Panel should be installed in a convenient location near the primary Display or the primary ZIP. The 131-909 Silence Enable Switch Panel is for indoor use only.

Zone Identification Panel - 131-529 (Gray) or 131-548 (Black)
Use template provided to mark position for the four fixing holes. Mark area to be removed and cut out. Apply, marine grade silicon based caulk to mating surface. Remove excess. Do not over tighten fixing hardware.

To prevent damage to the RJ45 connectors, provide strain relief. A fixing stud is located in the panel to attach the supplied tie wrap. Gather the CAT5 patch cables that are connected to the rear of the ZIP Panel. Use the cable tie and the central fixing stud to provide cable strain relief similar as shown in Figure 3.
NOTE: The 131-529 and 131-548 Displays are for indoor use only.

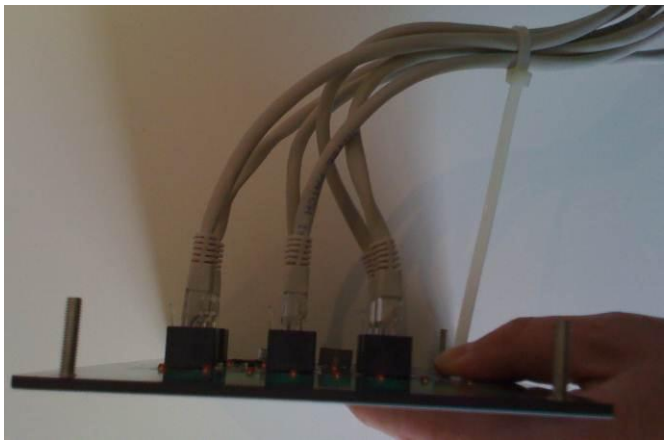


Figure 3

ELECTRICAL CONNECTIONS:

As a minimum, use No.16 AWG (SAE J3788 & J1128) copper wire conforming to the ABYC standards for marine use on all wiring applications. Fig. 4 shows a typical wiring schematic.

Hardware
Start by connecting the hardware units together.
Connect the Display Panel (131-933) to the Control Unit (131-501) by using the CAT5 patch cable provided. The RJ45 sockets are connected in parallel, so either socket may be used. If multiple displays are being used, then daisy chain the panels from the unused RJ45 socket. Install supplied Ferrite Beads (124-216) onto each Cat5 Cable approximately 6 inches away from the Control Unit (131-501).
The ZIP Panel (131-529 or 131-548) should be connected from the RJ45 socket marked J5 or J4, on the rear of the ZIP Panel, to one of the RJ45 sockets on the Display Panel (131-933) or the Control Unit (131-501).
There are two parallel RJ45 sockets on the Adapter Unit (131-520), connect from one of these sockets to the appropriate RJ45 socket, marked P1 to P4 on the ZIP Panel. The circuit board may need to be removed from the Adapter Unit (131-520) to fit the end of the RJ45 plug through the cable glands and onto the circuit board.

131-933 - DISPLAY UNIT
Attach a CAT5 patch cable to the 131-933 Display and connect the other end to an available RJ45 connector, J3 or X3, of the 131-501 Control Panel. If the 131-529 or 131-548 Zone Identification Panel is used, plug the other end of the patch cable to the available RJ45 connector (J4 or J5). There is a sounder output on the rear of the Display Panel. See Fig.6.

131-501 - CONTROL UNIT

Power:

There are two automatic changeover power inputs for the Control Unit. The power is to be taken from two independent battery banks. One battery bank for Main Power and one battery bank for Backup Power. The FireStop FCP can be powered by 24 VDC. Connect the Main Power positive (+) to the left-most 12-28VDC terminal, the Main Power return (-) to the left-most GND terminal. Connect the Backup Power positive (+) to the right-most 12-28VDC terminal, the Backup Power return (-) to the right-most GND terminal.

It is recommended that a 2 amp circuit breaker or fuse is fitted at the main power supply panel (or battery) as well as from the backup power supply panel (or battery). The battery bank's maximum current shall be fuse protected of no more than 5 Amps RMS and the voltage shall be +24VDC +/- 4 VDC at a frequency of 0Hz (DC). The power supply inputs are supervised.

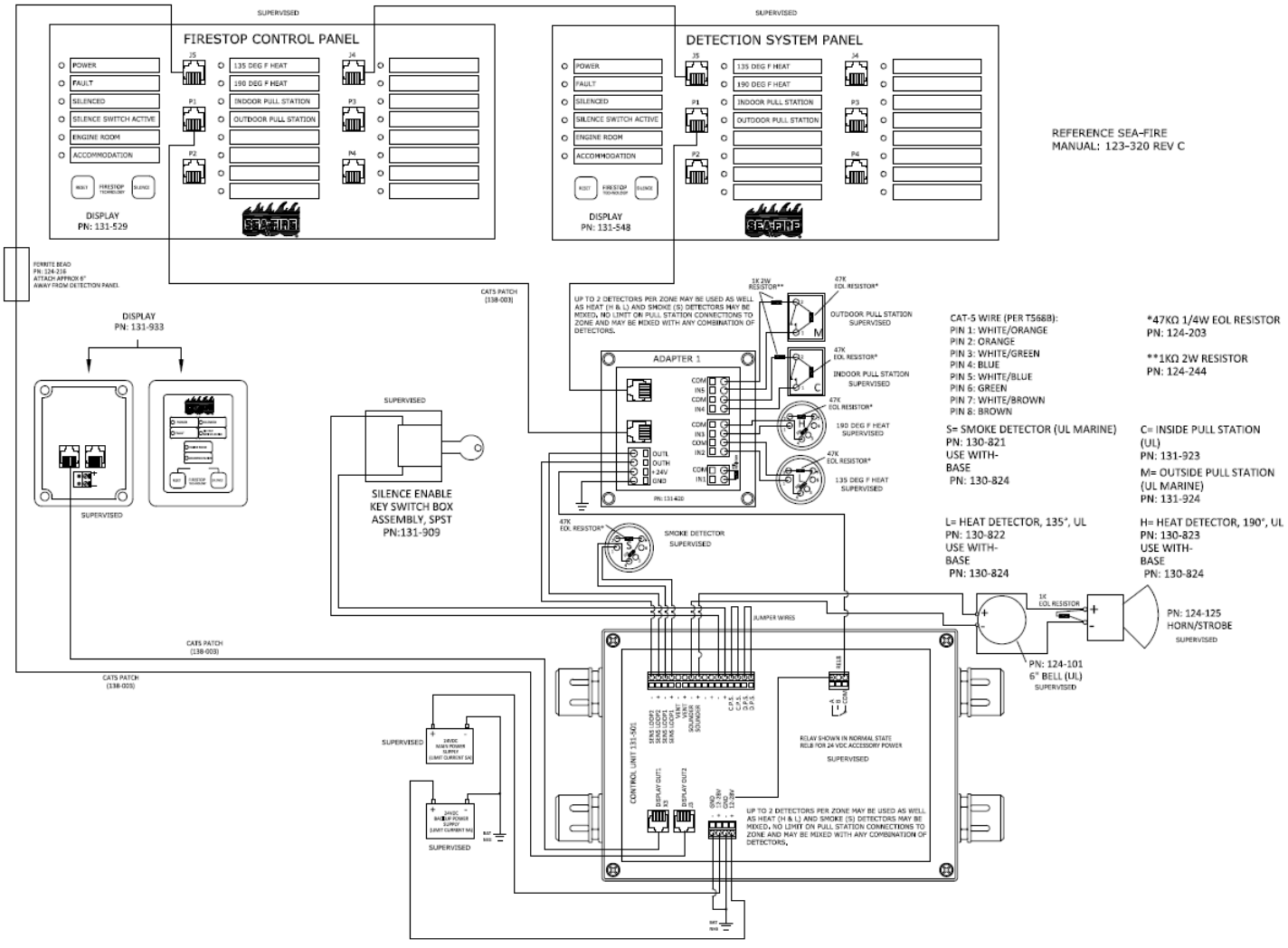


Fig. 4
Typical Wiring Schematic

Sounder Output:

Connect the sounder to the inputs on the Control Unit. Observe correct polarity. The sounder should have a maximum rating of 200mA. There are additional sounder outputs on the rear of the Display Panel (131-933) as shown in Fig 5. Observe correct polarity. NOTE: The NAC Alarm output may only be connected to either a 131-501 Control Panel OR to a 131-933 Display Panel due to fault monitoring requirements. A 1K Ohm EOL resistor must be placed at the notification appliance farthest away from the NAC Alarm output (Supervised). The Sounder's maximum current shall be less than 1 Amps RMS and the voltage shall be +24VDC +/- 4 VDC at a frequency of 0Hz (DC).

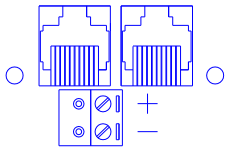


Fig. 5
Sounder Connection on Rear of Display Panel (131-933)

Detectors - Connection to 131-501 Control Panel - 2 zones with 2 detectors

The Control Panel has two detection zones, Accommodation and Engine. Each of these zones will support up to two detectors. An unlimited number of Manual Call Points can be fitted in parallel on each zone. A 47k resistor should be fitted to the last detector or Manual Call Point on each zone. Observe correct polarity for connection to the detectors. (See Fig 1.). The detector line impedance is 5 Ohms maximum. The detector's maximum current shall be less than 0.15 Amps RMS and the voltage shall be +24VDC +/- 4 VDC at a frequency of 0Hz (DC).

Detectors - Connection to 131-501 Control Panel via 131-520 Adapter Panel - 4 zones with multiple detectors

If there is a requirement for 2 zone fire detection, Engine and Accommodation, but with multiple detectors, then the schematic in Fig. 2 should be followed.
A 47k resistor should be fitted to the last detector or Manual Call Point on each zone. The detector line impedance is 5 Ohms maximum. The detector's maximum current shall be less than 0.15 Amps RMS when active and the voltage shall be +24VDC +/- 4 VDC at a frequency of 0Hz (DC).

Notification Appliance Circuits (NAC)
The Notification Appliances (listed in Table 1) are to be connected to the 'SOUNDER +' and 'SOUNDER –' terminals located on the 131-501 board or the 131-933 Sounder '+' and '–' terminals. NOTE: The NAC Alarm output may only be connected to either a 131-501 Control Panel OR to a 131-933 Display Panel due to fault monitoring requirements. A 1K Ohm EOL resistor must be placed at the notification appliance farthest away from the NAC Alarm output (Supervised). The maximum current shall be less than 2 Amps RMS for a total of all sounders connected to the Control Panel or 1 Amp for all sounders connected to the Display Panel and the voltage shall be +24VDC +/- 4 VDC at a frequency of 0Hz (DC). The maximum line impedance shall be 10 Ohms. Synchronized notification appliances are not permitted.

PULL STATIONS

An unlimited number of pull stations can be fitted to a detection zone or wired in parallel with detector(s).

A 47k resistor should be fitted to the last detector or Pull Station on each zone and a 1K Ohm, 2Watt resistor must be connected in series with each Pull Station and shown in Fig. 4. The Pull Station's maximum current shall be less than 0.15 Amps RMS and the voltage shall be +24VDC +/- 1 VDC at a frequency of 0Hz (DC).

Refer to Table 1 for compatible detectors, pull stations and accessories. Contact Sea-Fire (+1 410 687-5500) for additional application specific information.

Silence Enable Switch - 131-909

Remove the cover, route a wire through the cable gland and connect one of the key lock switch inputs. Route the other end of the wire to the 131-501, through the cable gland and to J2, pin 5 (+). Route another wire through the cable gland and connect it to the other ley lock switch input. Route the other end of the wire to the 131-501, through the cable gland and to J2, pin 6 (-). Re-install the covers and seal the cable glands accordingly.

131-520 - ADAPTER PANEL

Power

The Adapter Panel requires an input voltage of 24 VDC ± 4 V. If multiple panels are being used then each unit should be powered. The positive power should be run from the COM terminal of relay 8 of the Control Panel (131-501). See Fig. 4.

Connection to 131-501 Control Unit

The Adapter Panel should be connected to the required zone of the 131-501 Control Unit. Observe correct polarity. See Fig. 4.

Up to 2 detectors can be fitted to each terminal on the Adapter Panel. There is no requirement to fit end of line resistors on a detector that is fitted to the Adapter Panel. If two detectors are fitted to an individual zone on the Adapter Panel, then only the first detector in line will be monitored for fault.

A 47k resistor must be fitted across any unused detection terminal.

Connecting Multiple Adapter Panels

An unlimited number of Adapter Panels can be daisy chained together. See Figure 4 for correct wiring.

Connection to Zone Identification Panel

The RJ45 sockets marked P1 to P4 are used to connect to one of the RJ45 sockets on the Adapter Panel. Each Adapter Panel connected to the ZIP Panel control a group of 4 LED's. Therefore, to monitor 16 zones, a total of 4 Adapter Panels will be required. The second RJ45 socket is wired in parallel, and can be used to repeat zone information to a second ZIP Panel.

131-529 (Gray) / 131-548 (Black)- ZONE IDENTIFICATION PANEL

The ZIP Panel is used when there is a requirement to locate the individual detector that is active. Up to 16 zones can be monitored on the ZIP Panel. See Figure 3.

The left hand columns of the LEDs are the same as the 131-933 Display Panel and work in parallel with all Display Panels fitted to the system. The RJ45 sockets marked J5 and J4 (these are wired in parallel) should be used to control the left hand column of LED's and can be connected to one of the RJ45 sockets on the 131-501 Control Unit or the 131-933 Display Panel. See Figure 4. Any combination of up to 4 panels can be fitted to each system (131-933, 131-529 or 131-548).

POST INSTALLATION TEST PROCEDURE

The following steps should be carried out to ensure that the FCP has been installed correctly:

When power is supplied to the FCP, the display Panels will perform a boot up routine where the LED's will flash in sequence. Provided that there are no faults or alarm conditions then only the green power LED will remain on.

DETECTORS and PULL STATIONS

All detectors and pull stations shall be tested for correct operation in accordance to the applicable approval agencies, laws and directives.

When a detector or pull station is activated, the alarm will pulse and the LED indicating the zone of the detector will illuminate. To reset the detector, press reset on the display panel. Detectors will only reset when it is clear of smoke or the heat and are below the alarm threshold. Detectors may require removal and re-installing to fully reset. Pull Stations must be reset by repositioning the pull handle and replacing the break-rod.

To test the detector fault monitoring circuit, in turn, remove the detector heads. The Fault LED and the red zone location LED of the removed detector will both flash and the alarm will sound once every 10 seconds. Reconnect the wire and press the Reset button to cancel the fault.

Refer to Table 1 for compatible detectors, pull stations and accessories. Contact Sea-Fire (+1 410 687-5500) for additional application specific information.

POWER

Remove one of the power inputs. The Fault and the Power LED will both flash and the alarm will sound once every 10 seconds. Reconnect the power input and press Reset to cancel the fault.

MAINTENANCE PROCEDURES

It is recommended that a periodic maintenance checks be performed annually to verify full operation of the installed system. Use the following as a general guideline referencing the Post Installation Test Procedure:

1. Verify panel for any fault indications. Refer to Troubleshooting Guide to determine/correct issues.
2. Verify voltage at the Power Main and Power Backup inputs to be within 24VDC +/- 4VDC. Diagnose Power Systems or wiring if out of range.
3. Activate all detectors and pull stations systematically and verify notification appliances are operating and display indications are correct. Diagnose as necessary if problem occurs.
4. Record maintenance check or test information on the maintenance/test Report Form as required. Please include name

Note: Copy this instruction page, frame and place adjacent to the 131-501 FireStop Control Panel for ready reference.

SERVICE REPRESENTATIVE CONTACT INFORMATION

NAME	
ADDRESS	
TELEPHONE NO.	

Table 1- FireStop Accessory Information							
Sea-Fire PN	**Description**	**MFR**	**MFR's PN**	**FM Approved (Yes/No)**	**UL Listed (Yes/No)**	**UL Marine Listed (Yes/No)**	**Indoor Use only**
Detection							
130-821	SMOKE DETECTOR, PHOTOELECTRIC Class B, Style A	HOCHIKI	SLV-24M	No	Yes S1383	Yes S1383	
130-822	HEAT DETECTOR, 135 DEG F Class B, Style A	HOCHIKI	DCD-135	Yes	Yes S2966	No	
130-823	HEAT DETECTOR, 190 DEG F Class B, Style A	HOCHIKI	DCD-190	Yes	Yes S2966	No	
130-824	BASE, FOR 130-821, 130-822 AND 130-823	HOCHIKI	NS4-100	Yes	Yes S2966	Yes* S1383	
Notification							
124-125	HORN STROBE 12/24V Class B, Style W	SYSTEM SENSOR	P2R	No	Yes S4011	No	X
124-101	BELL – 6" 24V Class B, Style W	POTTER	MBA-6-24	Yes	Yes S3247	No	X
124-914	HORN STROBE 12/24V, OUTDOOR Class B, Style W	SYSTEM SENSOR	P2RK	Yes	Yes S4011 S3593	No	
Pull Station							
131-923	PULL STATION, MANUAL, UL, FM-GENERIC	SIGNAL COMMUNICATIONS	SG-42SK2	Yes	Yes S5654	No	X
131-924	PULL STATION, MANUAL, EXPLOSION PROOF, UL MARINE, FM- GENERIC	SIGNAL COMMUNICATIONS	SGX-32SK2	Yes	Yes E192508	Yes E192508	
131-925	COVER, PULL STATION, MANUAL, UL	SIGNAL COMMUNICATIONS	ST-FRC-01	Yes	Yes S5654	No	X
131-926	BACKBOX, WEATHER PROOF, PULL STATION, MANUAL, UL	SIGNAL COMMUNICATIONS	SGB-32C	Yes	Yes S5654	No	X
131-927	WEATHERPROOF OPTION FOR COVER, PULL STATION, MANUAL, UL	SIGNAL COMMUNICATIONS	ST-WPK01	Yes	Yes S5654	No	X
131-928	BACKPLATE KIT OPTION FOR COVER, PULL STATION, MANUAL, UL	SIGNAL COMMUNICATIONS	ST-BKP01	Yes	Yes S5654	No	X
131-929	EXTENDER KIT OPTION FOR COVER, PULL STATION, MANUAL, UL	SIGNAL COMMUNICATIONS	ST-XTR01	Yes	Yes S5654	No	X
131-930	BREAK-RODS, 12PK SPARES, PULL STATION	SIGNAL COMMUNICATIONS	SG-GR01	N/A	N/A	N/A	
131-931	BACKBOX, STD, PULL STATION, MANUAL, UL	SIGNAL COMMUNICATIONS	SGB-32S	Yes	Yes S5654	No	X

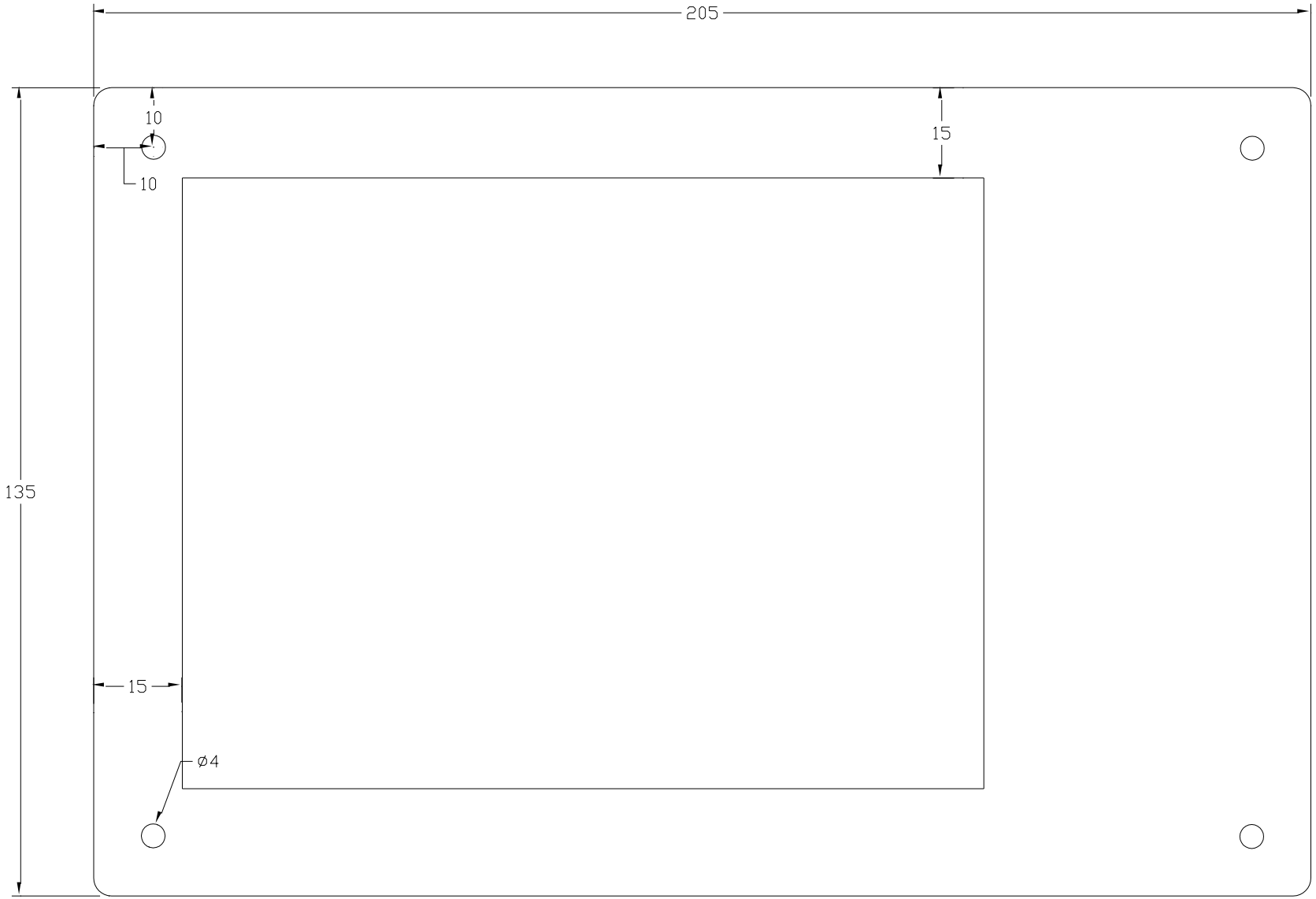
*UL Marine Listed as compatible with SLV-24M

Trouble Shooting Guide

Operating Mode	Status	Action
Green Power light on	FCP is in Standby mode and is monitoring inputs	No action required
Pulsing alarm and red LED flashing	A detector on the accommodation or engine loop is active	Fire could have started. Follow fire plan
Steady alarm and red discharge LED illuminated	Sea-fire engine room extinguisher has discharged	Call Sea-fire for service – +1 410 687-5500
Detector does not reset	Not clear of smoke and heat	Remove from base and re-install. \Call Sea-fire for service – +1 410 687-5500
Fault LED and Low Pressure LED flashing Alarm 1 second every 10 seconds	Extinguisher in forward electrical cabinet discharged or low pressure	Call Sea-fire for service – +1 410 687-5500
Fault Mode	**Status**	**Action**
Fault LED and Power LED flashing Alarm 1 second every 10 seconds	One of the two power supplies to the FCP has been interrupted	Check power supply connections Check voltage in greater than 12 VDC Press reset to clear fault
Fault LED and Low Pressure LED flashing Alarm 1 second every 10 seconds	Extinguisher cylinder pressure is low	Call Sea-fire for service – +1 410 687-5500 Fault cannot be cleared until cylinder has been refilled
Fault LED and Discharge LED is flashing Alarm 1 second every 10 seconds	Wiring fault on discharge pressure switch line	Check wiring connections at Control Unit and Discharge Pressure switch Ensure that 47K EOL resistor is in place at Discharge Pressure switch Press Reset to clear fault
Fault LED and red Engine LED flashing Alarm 1 second every 10 seconds	Wiring fault on Engine detector loop	Check Engine detector loop wiring connections at Control Unit Check wiring on Engine loop detectors Check that detector heads have not been removed Press Reset to clear fault
Fault LED and red Accommodation LED flashing (and Zone on ZIP) Alarm 1 second every 10 seconds	Wiring fault on Accommodation detector loop	Check Accommodation detector loop wiring connections at Control Unit Check wiring on Accommodation loop detectors Check that detector heads have not been removed Press Reset to clear fault
Fault LED and red Silenced LED flashing .Alarm 1 second every 10 seconds	Wiring fault on NAC loop	Check NAC loop wiring connections at Control Unit Check wiring on NAC loop Sounders/Strobes Check that Sounders/Strobes have not been removed Press Reset to clear fault
Silence Switch Active LED flashing (no other LEDs flashing) Alarm pulses continuously after 30 seconds	Silence Enable Switch in 'ON' position. Alarm pulses if left in 'ON' position more than 30 seconds.	If before 30 seconds, switch silence Enable to 'OFF' position. If after 30 Seconds. Switch silence Enable to 'OFF' position and press Reset to clear fault.
ALL Status LED cycle around display	Communication from FCP to Display not functioning	Verify CAT5 cable connector seating. Replace CAT5 PATCH cable. Call Sea-fire for service –

		+1 410 687-5500

131-529 ZIP Panel Cut Out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