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1 Introduction

1.1 General Information

The FP-08860 Siren & Shutdown Module provides a modular shutdown relay to be installed in conjunction with the FP-08450 or FP-08451 Fire Control Panel. The Siren & Shutdown Module allows for the fire control panel to shutdown or activate any necessary equipment when in an alarm condition. The Siren & Shutdown Module provides a volt free contact that can operate appropriately rated slave relays.

The module also includes a delay timer for the relay that can be set to suit for vehicle or site specific conditions.

1.2 AS5062 Vehicle and Mobile Plant Installations

Used where the risk assessment requires the engine to be shut down on alarm. Multiple Siren & Shutdown Modules can be connected together where multiple relay outputs are required in an install.

1.3 External Notification and Networking

Where equipment or a site requires networking to other equipment (e.g. a PLC) the shutdown relay module can be used to advise when the fire control panel is in an alarm condition.

1.4 Reset of Relay following Activation

The module takes power from the Siren output on the Panel so if Siren is silenced from the panel is reset then relay will go back to normal state.

2 Components List



FP-08860 Siren & Shutdown Module

Operates Siren and volt free contact for shutdown

1x DP-2010 - Deutsch Plug 2 Pin Female, c/w heatshrink

1x DP-3010 - Deutsch Plug 3 Pin Female, c/w heatshrink

3 Design Considerations

3.1 Siren/Strobes Output

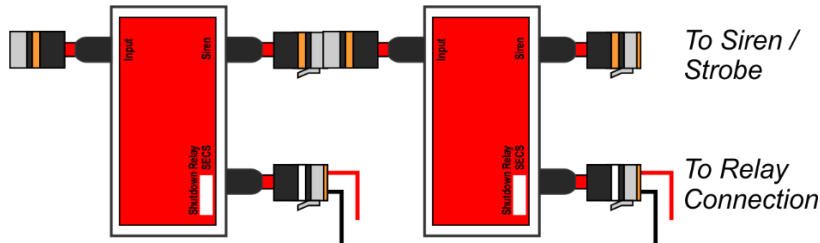
In a typical install, the maximum number of supported sirens/strobes that can be installed is limited by the control panel, check manual for limits. When installed, Siren/Strobes are to be visible and audible at all points around the risk area.

The siren/strobe output is a monitored circuit. Where a siren/strobe is not installed the supplied end-of-line diode (1N4004) **must** be installed on the siren output, otherwise the fire control panel will display a fault and the relay will not operate. If multiple modules are used siren/strobes should be connected to the last installed module in the circuit.

3.2 Relay Output

In a typical install, the maximum number of supported shutdown modules that can be installed is 5. However, these can be connected to additional slave relays where required.

Where multiple modules are used, the modules are to be connected using the siren/strobe output (marked orange) as below. There are no limitations to the individual programming of a module when multiple modules are connected together.



Direct connections of electrical equipment to the shutdown relay **must not** exceed the rating of the relay (see 11. Specifications), as this may damage the module and fire control panel.

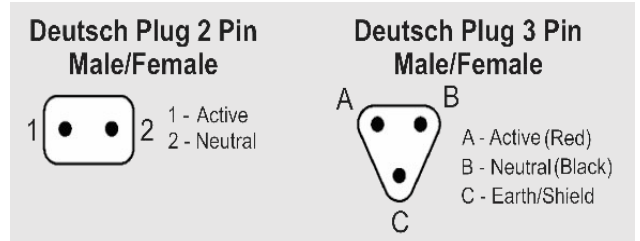
The relay may be set to normally open or normally closed (see 6. Programming) to suit equipment or site specific conditions.

3.3 Cabling Requirements

Cable Requirements - All cabling in the FirePro Installation **MUST** be done using 0.75mm shielded Fire Rated Cable. Care taken to ensure that all cables are isolated, and that RF shielding on cable is stripped back to ensure that there is not accidental grounding. Cables are colour coded for easy identification.

Extension Leads - Deutsch Plugs must be used to ensure water-proof connections are made throughout the installation.

Colour	Circuit
Red	Power Supply
Yellow 1	Activation
Yellow 2	Activation Delayed
Green 1	Detection 1
Green 2	Detection 2
Orange	Siren/Strobe
White	Relay Output



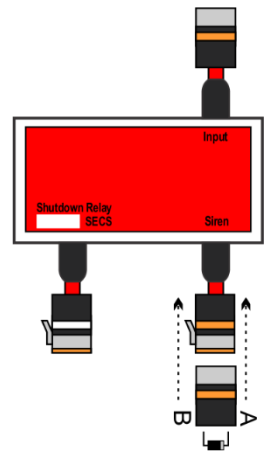
3.4 Mounting

For correct installation, the Siren & Shutdown Module must be mounted by four bolts or screws through the mounting holes in the flange on both sides of the Module. **No penetrations are to be made through the casing of the panel.**

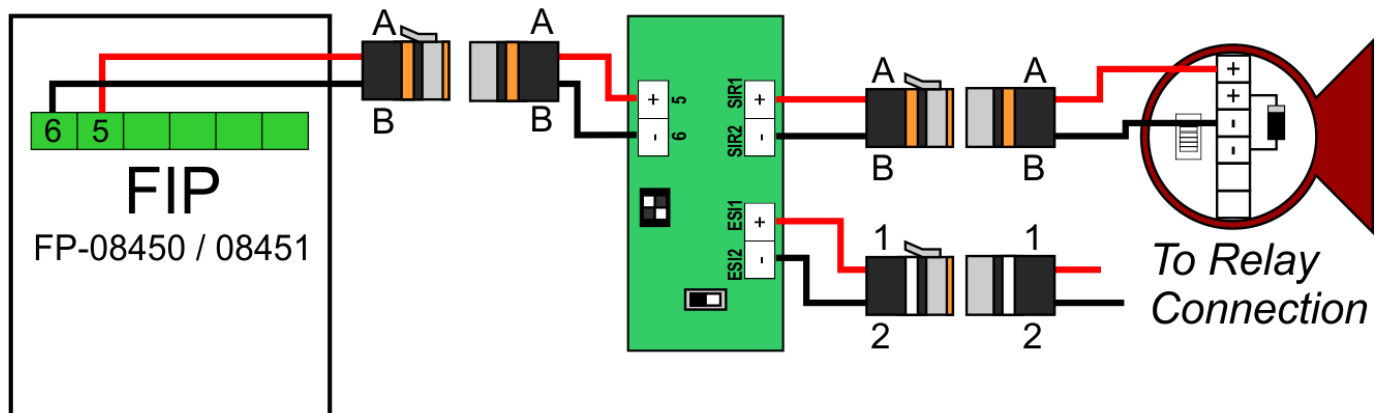
The Siren & Shutdown Module enclosure is rated IP65, so should be installed in a convenient location, away from where it may be affected by large amounts of water. The module does not need to be installed adjacent to the fire control panel.

4 Installation

1. The input cable from the FIP may be connected at any time. However, the FIP will remain in fault condition and the relay will not operate until all other steps are completed.
2. **If siren/strobe installed**, use an extension lead to connect the siren strobe to the "Siren" output on the module (marked orange). The supplied end-of-line diode should be installed in the unused positive/negative terminals of the last siren/strobe in the circuit. The diode is polarised, so the positive lead of the diode (marked with a grey band) should be terminated in the positive terminal of the siren/strobe, otherwise a fault will occur on the fire control panel.
3. **If not using a siren/strobe**, the end-of-line diode should be terminated into the supplied 3 pin Deutsch plug (note polarisation) and then connected to the "Siren" output on the module (marked orange). The end-of-line plug should then be covered in heat shrink, and the heat shrink crimped, to avoid ingress of water into the circuit.
4. The shutdown relay can now be connected. The shutdown relay connection is not polarised and should be terminated using the supplied 2 pin Deutsch plug. The Siren/Strobe or end-of-line diode **must** be connected for the relay to operate.
5. The Siren & Shutdown Module can be programmed to suit vehicle or site specific requirements.



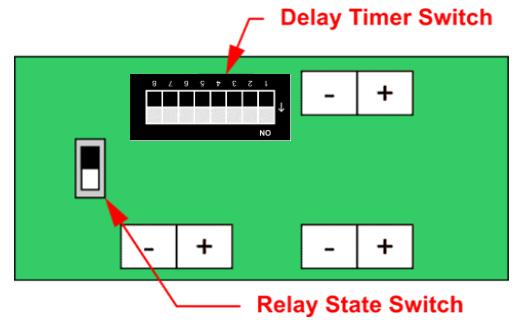
5 Wiring Diagram



6 Programming

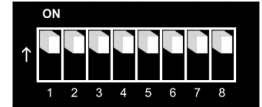
6.1 Programming Shutdown Delay - Module V3

The Delay Timer allows for the activation of the relay to be delayed after the panel has entered an alarm state. Where multiple modules are used, each module may have separate programming. The Siren/Strobe or end-of-line diode **must** be connected for the relay to operate.



Delay Timer Switch								
Switch Number	1	2	3	4	5	6	7	8
Delay Value	1 sec	2 sec	4 sec	8 sec	16 sec	32 sec	64 sec	128 sec

The delay time is programmed by setting the required switches to the "OFF" position. If multiple switches are used, the delay values are added together, allowing for any delay time between 1 to 255 seconds to be programmed.



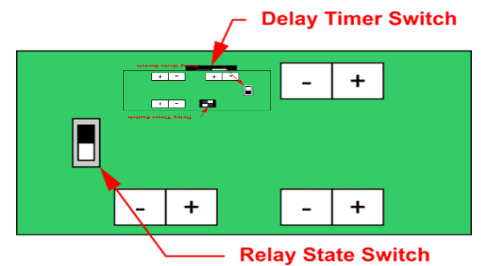
Example of common delay times:

Delay Time	Switch Positions	Delay Time	Switch Positions
2 seconds		60 seconds	
15 seconds		90 seconds	
20 seconds		120 seconds	
30 seconds		240 seconds	

Settings must be recorded in logbook and on in the space provided on the front of the module.

Programming Relay State - Module Version 3

The Relay State Switch allows for the relay to be set to either normally open or normally closed. Where multiple modules are used, each module may have separate programming.



Relay State Switch	Mode
	ON NORMALLY OPEN

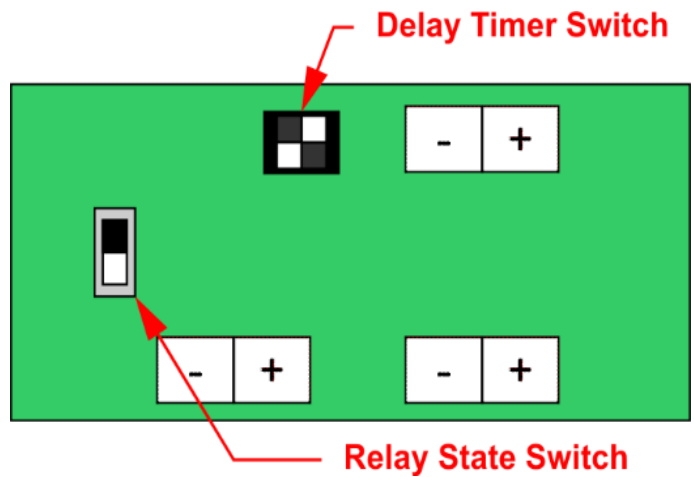
Relay State Switch	Mode
	OFF NORMALLY CLOSED

6.2 Programming Module Version 1 - 2.1

The Delay Timer Switch allows for the activation of the relay to be delayed for a period the fire control panel has entered an alarm state.

The Relay State Switch allows for the relay to be set to either normally open or normally closed.

There are no limitations to the individual programming of a module, when multiple modules are connected together.



The Siren/Strobe or end-of-line diode must be connected for the relay to operate.

Delay Timer Switch	Mode
	Switch 1 – ON Switch 2 - ON DELAY Set to 1 second
	Switch 1 – OFF Switch 2 - ON DELAY Set to 5 seconds
	Switch 1 – ON Switch 2 - OFF DELAY Set to 10 seconds
	Switch 1 – OFF Switch 2 - OFF DELAY Set to 15 seconds

Relay State Switch	Mode
	Switch - ON Relay set to NORMALLY OPEN
	Switch - OFF Relay set to NORMALLY CLOSED

Settings must be recorded in logbook and on in the space provided on the front of the module.

7 Commissioning

Commissioning should be performed when the siren and shutdown relays are connected, and fire control panel is not in an alarm/fault condition.

1. Isolate and disconnect the any installed FirePro aerosol generators. This should generate a fault on the fire control panel.
2. Connect a FirePro FP-08800 Universal Test Lamp.
3. Perform an activation test, by pressing and holding the buttons on the fire control panel or through the detection circuits.
4. Ensure that any sirens or strobes connected to the system are operational.
5. Test the shutdown relay by testing the state of the contacts or attempting to turn on the related equipment.
6. Disconnect the FirePro FP-08800 Universal Test Lamp and reconnect all installed FirePro aerosol generators.

8 Servicing and Maintenance

Inspection and servicing of the installed fire system should occur in accordance with the relevant Australian Standards. This should include a visual inspection of the enclosure to ensure the seals are intact.

Operation of any installed sirens/strobes and connected relays should be tested as outlined.

9 Operation

The Siren & Shutdown Module operates when the fire control panel in is an alarm condition or the fire system has been manually activated. When activated, the siren will operate immediately, and initiate the programmed time delay for the relay. When the time delay is completed, the relay will operate and shutdown any connected equipment.

Note: The siren and relay will remain active until the panel is isolated and reset.

10 Troubleshooting

Problem	Possible Cause	Solution
Siren/strobe not operating	Reversed or poor connection to module or to siren/strobe	Check connection and polarity of any extension cables. Ensure power is reaching siren by measuring voltage when in normal and alarm condition.
Relay not operating	Reversed or poor connection to module or to siren/strobe OR Reversed or poor connection to End-of-line diode	Check connection and polarity of any extension cables and End-of-line diode.
Equipment not operating	Incorrect setting for relay OR System has activated	Check if equipment requires N/O or N/C Check condition of fire system
Fault displayed on fire control panel (3 Beeps)	Reversed or poor connection to End-of-line diode OR Number of installed modules exceeds limit OR Power supply below 9.0vDC	Check connection and polarity of any extension cables and End-of-line diode.

For additional assistance contact your supplier.

11 Specifications

Dimensions	140L x 65W x 30D
Enclosure material	Die Cast Aluminium
Ingress Protection	IP65
Operating Temperature	-40 to 85°C
Operating voltage	12-30VDC
Output - Siren	Siren max 0.5A at 12 or 24VDC
Output - Relay	Relay max 30vDC 2A
Discharge end-of- line	Siren Only 1N4004 diode
Fault-sensing	Siren Only - wiring open-circuit
Max no. of Modules	5