



PT ETI FIRE SYSTEMS
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TECHNICAL BULLETIN
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TECHNICAL BULLETIN
NEW PRODUCT RELEASE – FIRE WIRE

We are pleased to advise all ETI distributors that as part of our product development programme. We are releasing a new Fire Detection system that has major implications for the protection of Mobile Equipment to AS5062-2006.

OVERVIEW:

Because ETI has invested in continuous product development, we are now releasing a new fire detection system as an alternative to the types in common use now, being Rise of Pressure Sensors or Loss of Pressure sensor tube.

The Product is known as ETI Fire Wire.

This uses a special electric linear fire detection cable that, if exposed to extreme heat or fire, will notify the alarm of fire.

So by suspending this cable in areas identified as fire risks, it acts as an effective means of fire detection. In the event of a fire, the alarm will actuate the system by opening a solenoid valve.

This valve can be positioned on the LOP port of an LOP valve or on connected pipe work. When the Fire Wire detects fire, the solenoid is actuated to release pressure from the LOP actuation port and actuate the system in the normal way. As such this system can be adapted to normal designs with no real hardware changes to agent storage and agent distribution.

The alarm system however is a different system when using Fire Wire. Under Australian Standard AS5062 – 2006, there is a changed definition for this. These are summarized in the following paragraphs.

The panel has been designed also to incorporate an electric actuation button on the face of the alarm. This will also have a tamper seal lug to allow fitment of tamper seals.

This provides a simple and convenient method of actuating the system at the alarm panel. This would eliminate the need for a remote actuator at the driver's position and have lower cost implications.



PHOTO - THE STANDARD ETI FIRE WIRE ALARM

NOTES FOR DESIGNERS

- 1) You should keep a copy of this technical bulletin to supplement the current release 7 version of the ETI TECHNICAL MANUAL. Subsequent releases will include this material.
- 2) This product is listed for compliance to AS5062-2006 and will be posted on the ISB website by reference to this technical bulletin.

3) POWER SUPPLY CONSIDERATIONS

NORMAL RISE OF PRESSURE & LOSS OF PRESSURE SYSTEMS

FIRE SYSTEMS THAT RELY ON PNEUMATIC DETECTION AND ACTUATION

These ETI alarm panels are classified according to the requirements of AS5062-2006, as "System Status Indication Panels". These do not require a secondary power supply. Nevertheless, these still have very important functions. In normal service they provide the operator with a supervision system that reports faults. This would normally be a simple pressure monitoring function for the agent storage cylinder(s) to report a low pressure fault. In the case of the LOP systems this pressure switch is in effect also supervising the fire detection system which is pressurised.

SYSTEMS CONTROL AND INDICATING PANELS

FIRE ALARMS THAT RELY ON ELECTRICAL DETECTION AND ACTUATION

Systems that use electric detection such as Fire Wire or our optical system have panels classified as "System Control & Indication Panels". This range of



panels is made to IP55 and care should be taken to install in locations to prevent exposure to extreme or adverse conditions.

This panel needs due diligence paid to wiring up to a suitable backup battery source to ensure that the panel may still actuate when the normal power source is isolated.

Ref AS5062-2006 9.6.2.2 POWER SUPPLY

(a) The primary power supply shall be of sufficient capacity to independently provide power for all system functions when the equipment is running.

(b) The secondary power supply shall be capable of supplying sufficient power to operate all system functions required by this Standard after a standby period of 72 h. The secondary power supply shall be supervised and generate a fault condition when no longer able to meet this requirement.

Therefore since virtually all machines carry a battery that far exceeds the requirements, ETI simply provides a primary and secondary power supply cable input for the alarm. The intent is that the primary power supply may be from such a power source as controlled by the “on” position of the operator’s key. The secondary source should be wired to the permanent battery source. To meet the requirements of the 72 hours standby, ETI advises that a normal minimum of at least 10 Amp/Hrs of battery capacity at the approved voltage range be available to provide this backup. If for some reason there is less than this available, contact ETI technical for support. However it is expected that most machines have far in excess of this amount available. To meet the requirements of 9.6.2.2(b), when the alarm panel is operating only on the battery source, the green LED light will flash to indicate that the panel is operating on battery secondary source. If power is not available to the battery source when the primary source is isolated, then the ON LED will not illuminate. This is a fault condition because no light at the ON indication means no power is available to operate.

4) FIRE DETECTION & FAULT SUPERVISION

The alarm has three (3) connections for the Fire Wire. The fire wire consists of two small insulated cables with an outer uninsulated shield cable. These three cables are then insulated inside a clear outer cover. The fire wire insulation breaks down when exposed to excessive heat of fire. When one of the insulated cables contacts the shield cable this reports fire to the alarm panel. Because there are two cables, we have a double redundancy design where either detection cable can initiate the system. Testing has shown that in controlled rate of rise of temperature, that this cable reports fire at 160 Degree Celsius. When exposed to severe flame, reaction time from 20 degrees Celsius is approximately 12 seconds.



The ETI Fire Wire system provides an End of Line resistor arrangement fitted to the end of the Fire Wire cable. It is made from a three pin Deutsch style socket and plug. The plug incorporates a double resistor assembly. This allows current to flow through the two detector cables in normal condition to the common uninsulated shield cable. If either any one of the three cables is broken a fault condition will indicate at the alarm. This therefore makes the detection a “Supervised” system as defined in AS5062-2006. In the case of the cable being subject to abrasion, and coming in contact with the earthed body of the machine, it is anticipated that the uninsulated shield cable will come in contact in the first instance and this will also give a fault condition. If for any reason the insulated detector cables become earthed, this will cause the alarm to indicate a FIRE condition.

During a fault condition, the alarm is still designed to actuate from an electric actuation at the panel button, and in many instances may still work automatically. To position ETI Fire Wire ETI provides a split grommet with a P clamp. The positioning of these should be at spaces no greater than 500mm.



Photograph of Fire Wire with an end of line arrangement and clamping arrangement.

5) FIRE ALARM TESTING AND ISOLATING

The Fire Wire alarms, have one button operation like the system status panels used on LOP and ROP system. Likewise, holding the button down for 5 seconds will put the alarm through a test sequence. At the end this can be reset by a simple push of the button.

AS5062-2006 in 9.6.2.1 requires “**(iii) system isolate and reset function operable only through the use of tools, key or password**” and “**(iv) System isolated—Amber visual and intermittent audible**”.

To accommodate this; the ETI panel will isolate if the test button is held down for 10 seconds. In this condition the Green on light will change colour to Amber and the Fault lamp and audible alarm will also actuate. This can only



be reset by using the internal reset button after using a tool to open the alarm.

WARNING Caution has to be taken with isolation. If the alarm panel is in isolated condition this means that the alarm is now non functional and electric actuating release of the system is also isolated. If the fire system has been designed to use a remote pneumatic actuator, this would still be active. Consideration should be given to extra safety warnings, driver training and instruction manuals to avoid misunderstandings where an isolated alarm may not mean that the system is fully isolated.



ETI also offers an optional remote Electric Actuator. See enclosed Technical supplement. This is modeled to look similar to the LOP remote actuator. In that event with an all electric actuating system, an isolated condition at the alarm would reasonably mean that the whole actuating system is isolated.

6) VALVE ACTUATION FROM AN ELECTRIC CONTROL PANEL

For actuation of the valve, there is a choice of two solenoid release valves already shown in the technical manual. Both are ported 1/4" BSP Female. One is 12 Volt DC and the other is 24 Volt DC as required. This is positioned on the LOP port of any ETI Dual valve or LOP valve or on any part of an associated LOP actuation pipe work system.



ETI ACTUATING SOLENOID VALVE



A sintered filter must be fitted to the exhaust port of each solenoid valve to protect it from contamination. When more than one cylinder and valve is being used in a design a solenoid should be provided for each cylinder and fitted directly to or in close proximity to each valve. A normal maximum design of six cylinders is allowed under ETI design rules.

Yours sincerely

LEIGH WALDON
Technical Director

ENCLOSED

- 1) TABLE OF RELATED PART NUMBERS
- 2) TECHNICAL SUPPLIMENT DOCUMENT – 0411TS This document will be supplied with all Fire Wire Alarms to assist installers and maintenance staff.

NOTES ON AMMENDMENT A

- I. Pressure switch was deleted from fire wire kit as this is only needed when pneumatic remote actuators are used.
- II. Latching fault when all power including backup power is lost. This was done because it will be confusing to installers and maintenance people. To meet the standard, no green lamp is the indication of fault.
- III. Technical Supplement added for clarity on
- IV. installation and maintenance details.



The following part numbers allow the ordering of ETI Fire Wire System

PART	DESCRIPTION	UNIT SUPPLY	COMMENT
ALMASPN-FW	ALARM FIRE WIRE	1	PANEL ONLY
AWASKIT-FW	ALARM FIRE WIRE KIT	1	PANEL PLUS ALARM FITTINGS, DETECTIONCABLE AMD EOL ASSEMBLY
ALMASPMHC-FW	ALARM FIRE WIRE HC MODEL	1	PANEL ONLY
AWSKITHC-FW	ALARM FIRE WIRE KIT HC MODEL	1	PANEL PLUS ALARM FITTINGS, DETECTIONCABLE AMD EOL ASSEMBLY
FIREWIRE10EOL	FIRE WIRE	1	10M ASSEMBLY WITH EOL ASSEMBLY
FIREWIRE20EOL	FIRE WIRE	1	20M ASSEMBLY WITH EOL ASSEMBLY
SOLENOID12V SOLENOID24V	ACTUATING SOLENOID	1	CHOICE OF 12 OR 24 VOLT.
FILTERSIN06	SINTERED FILTER	1	ONE REQUIRED FOR EACH SOLENOID.
GROMMET02	GROMMET	1	FOR FIRE WIRE.
CLAMP-LD-20	P CLAMP LIGHT DUTY 20MM	1	SUITS GROMMET02.



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TECHNICAL SUPPLEMENT FOR THE INSTALLATION OF FIRE WIRE ALARM SYSTEMS



FOR KIT PART –AWASKIT-FW12 (12 VOLT)
–AWASKIT-FW24 (24 VOLT)

Document – 0411TS
Date ; 5 February 2012



PT ETI FIRE SYSTEMS

PARTS LIST FOR THIS KIT

PART	DESCRIPTION	QTY
ALMASWSRP FW	Alarm panel AS Wiring Spec FIRE WIRE	1
ALARMBOX	Carton For Alarm	1
APFLEX20	Flexible Conduit 20 mm	2
APZIPM	Zip Tie Medium 250 mm	10
APZIPS	Zip Tie Small 150 mm	10
APSPIR	Spiral Protector	2
APGROMMET22	Grommet 22 mm	1
NF0014	Elbow 90 deg (m/f)1/4"BSP	2
NF0034	Reducer 1/2" BSP M to 1/4" BSP F	1
NF0035	Nipple 1/4" BSPT	1
LOP004	Tube Fitting 6mm 90 deg 1/4 " BSPM	2
CHECKVALVE	Check valve	1
FILTERSIN 06	Sintered Filter 1/4" BSP	1
SENSLOP	Fire Sensor Tube	30 Cm
APCABLE2	Alarm Cable 2 x 0,75mm Red	7,65 mtr
ALMASPN FW	Alarm panel AS Comp FIRE WIRE	1
SOL 24 VOLT DC Assy	SOLENOID 24 VOLT DC Assembly (AWASKIT FW24)	1
SOL 12 VOLT DC Assy	SOLENOID 12 VOLT DC Assembly (AWASKIT FW12)	1
FIRE WIRE EOL Assy 10	FIRE WIRE CABLE SENSOR 10 Assembly	10 Mtr
CLAMP LD 20	P CLAMP 20 mm LD	8pcs
GROMMET02	GROMMET 2 mm	8 pcs
TMPSL	Tamper Seal	1
RESISTOR 1 K Ohm/2 WATT	EOL 1 K Ohm/2 Watt with Note	1



PT ETI FIRE SYSTEMS

DESCRIPTION

The ETI Fire Wire system uses a special electric linear fire detection cable that, if exposed to extreme heat or fire, will notify the alarm of fire.

So by suspending this cable in areas identified as fire risks, it acts as an effective means of fire detection. In the event of a fire, the alarm will actuate the system by opening a solenoid valve. This valve can be positioned on the LOP port of an LOP valve or on connected pipe work. When the Fire Wire detects fire, the solenoid is actuated to release pressure from the LOP actuation port and actuate the system in the normal way. As such this system can be adapted to normal designs with no real hardware changes to agent storage and agent distribution.

The alarm system however is a different system when using Fire Wire. Under Australian Standard AS5062 – 2006, there is a changed definition for this. It is not a “System Control and Indicating Panel”. Because it actuates the system electrically, it has a secondary power supply cable. This is to provide backup power when the machine is turned off. The panel has been designed also to incorporate an electric actuation button on the face of the alarm. This will also have a tamper seal lug to allow fitment of tamper seals.

This provides a simple and convenient method of actuating the system at the alarm panel. This would eliminate the need for a remote actuator at the driver’s position and have lower cost implications.

INSTALLATION NOTES

1) UNDERSTAND POWER SUPPLY CONSIDERATIONS

The Fire Wire Alarm PART- ALMASPN-FW IS A 12 – 24 Volt alarm that is nominally designed to work on 12 or 24 Volt systems. Fire Wire is a system that relies on electrical detection and actuation as such is classified as a “System Control & Indication Panels” to AS5062. This panel needs due diligence paid to wiring up to a suitable backup battery source to ensure that the panel may still actuate when the normal power source is isolated.

“Ref AS5062-2006 9.6.2.2 POWER SUPPLY

- (a) The primary power supply shall be of sufficient capacity to independently provide power for all system functions when the equipment is running.
- (b) The secondary power supply shall be capable of supplying sufficient power to operate all system functions required by this Standard after a standby period of 72 h. The secondary power supply shall be supervised



PT ETI FIRE SYSTEMS

and generate a fault condition when no longer able to meet this requirement.”

Therefore since virtually all machines carry a battery that far exceeds the requirements, ETI simply provides a primary and secondary power supply cable input for the alarm. The intent is that the primary power supply may be from such a power source as controlled by the “on” position of the operator’s key. The secondary source should be wired to the permanent battery source. To meet the requirements of the 72 hours standby, ETI advises that a normal minimum of at least 10 Amp/Hrs of battery capacity at the approved voltage range be available to provide this backup. If for some reason there is less than this available, contact ETI technical for support. However it is expected that most machines have far in excess of this amount available. To meet the requirements of 9.6.2.2(b), when the alarm panel is operating only on the battery source, the green LED light will flash to indicate that the panel is operating on battery secondary source. If power is not available to the battery source when the primary source is isolated, then the ON LED will not illuminate. This is a fault condition because no light at the ON indication means no power is available to operate.

2) REMOTE MANUAL ACTUATION. (Not Included in Kit)



Most installations require two remote manual actuation points. This is normally a manual actuation point at the driver’s position. For Fire Wire this is the actuation button on the face of the alarm. The second actuator may be a pneumatic type or an electric type. Sometimes pneumatic is chosen in case the machine is to have the battery isolated, in which case there is at least a manual actuator that does not rely on electrical power.

A separate pair of wiring inputs is provided for electric remote actuators. The cable to remote actuators is standard fire rates two core cable to PART- APCABLE2. This is a supervised system. This means that the remote electric actuator PART- REMOTELEC has an end of line resistor fitted internally (see photo). The alarm constantly monitors the integrity of the cable, the connections and the actuator by supervising a small controlled current, regulated by the resistor. If a cable is faulty, or the connector is not properly connected, that alarm will go to fault.



PT ETI FIRE SYSTEMS

MULTIPLE ELECTRIC ACTUATORS.

If more than one electric actuator is to be used, they must be connected in parallel on one circuit. Refer to the diagram on how to wire using the 4 pin Deutsch connector provided with the remote electric actuator. As the resistor is end of line, any additional remote actuators that are fitted in line between the last unit and the alarm, must have the end of line resistor removed. See the diagram. If these are not removed, the alarm will indicate fault and alarm functions may not work correctly.

3) RUNNING THE DETECTION CABLE.

The alarm has three (3) connections for the Fire Wire. The fire wire consists of two small insulated cables with an outer uninsulated shield cable. These three cables are then insulated inside a clear outer cover. The fire wire insulation breaks down when exposed to excessive heat of fire. When one of the insulated cables contacts the shield cable this reports fire to the alarm panel. Because there are two cables, we have a double redundancy design where either detection cable can initiate the system. Testing has shown that in controlled rate of rise of temperature, that this cable reports fire at 160 Degree Celsius. When exposed to severe flame, reaction time from 20 degrees Celsius is approximately 12 seconds.

The ETI Fire Wire system provides an End of Line resistor arrangement fitted to the end of the Fire Wire cable. It is made from a three pin Deutsch style socket and plug. The socket incorporates a double resistor assembly. This allows current to flow through the two detector cables in normal condition to the common uninsulated shield cable. If either any one of the three cables is broken a fault condition will indicate at the alarm. This therefore makes the detection a "Supervised" system as defined in AS5062-2006. In the case of the cable being subject to abrasion, and coming in contact with the earthed body of the machine, it is anticipated that the uninsulated shield cable will come in contact in the first instance and this will also give a fault condition. If for any reason the insulated detector cables become earthed, this will cause the alarm to indicate a FIRE condition.

During a fault condition, the alarm is still designed to actuate from an electric actuation at the panel button, and in many instances may still work automatically. To position ETI Fire Wire ETI provides a split grommet with a P clamp. The positioning of these should be at spaces no greater than 500mm.



PT ETI FIRE SYSTEMS

Deutsch 3 pin End Plug



Deutsch 3 pin End Socket with EOL arrangement



Photograph of Fire Wire with an end of line arrangement.

4) SETTING UP THE SOLENOID ACTUATOR

For actuation of the valve, there is a choice of two solenoid release valves already shown in the technical manual. Both are ported $\frac{1}{4}$ " BSP Female. One is 12 Volt DC and the other is 24 Volt DC as required. This is positioned on the LOP port of any ETI Dual valve or LOP valve or on any part of an associated LOP actuation pipe work system. A solenoid must be used on each and every agent valve if the system has more than one agent cylinder.



For Dual valves, an added benefit is used by piping the exhaust from the solenoid into the ROP port and thereby giving a double actuation effect. The enclosed diagram shows the connection set up for the solenoid actuator on dual valves. Note the different setups for whether using an ROP actuator, or an electric actuator..

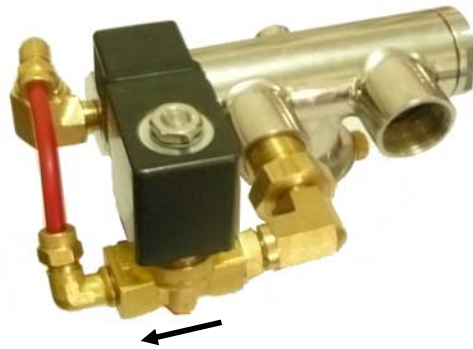
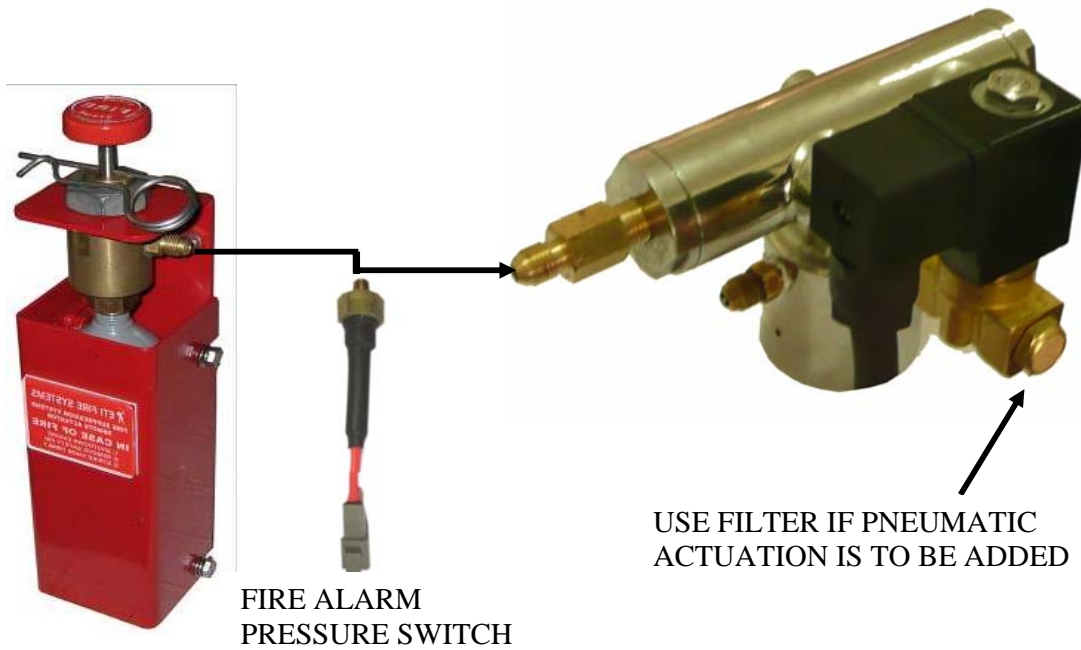


FIG A

Figure A shows a dual valve with the actuating solenoid if electric actuation only is to be used.



FIRE ALARM
PRESSURE SWITCH

USE FILTER IF PNEUMATIC
ACTUATION IS TO BE ADDED

FIG B

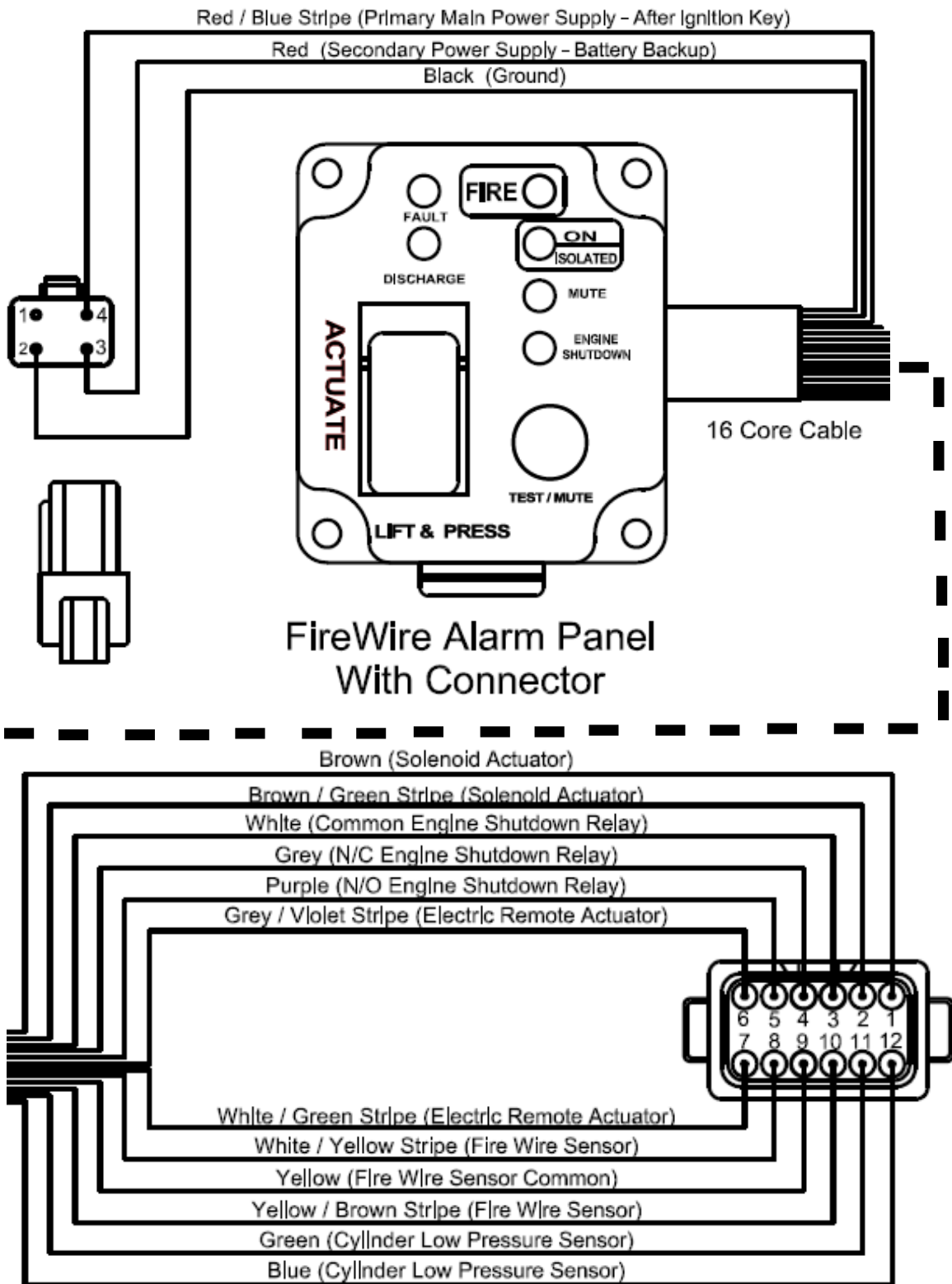
Figure B shows a dual valve with the actuating solenoid set up for a pneumatic ROP manual actuator. In this case the solenoid exhausts using a filter. There must also be an alarm notification switch to notify the alarm that a pneumatic alarm condition has been signalled.

If an LOP valve is used, the Solenoid should be connected to the LOP port at the top of the valve. The outlet port of the solenoid should be fitted with the sintered filter provided to prevent contamination of the solenoid valve. If multiple cylinders with LOP valves are used, a solenoid actuator must still be used for each valve and be fitted in close proximity to each cylinder.



PT ETI FIRE SYSTEMS

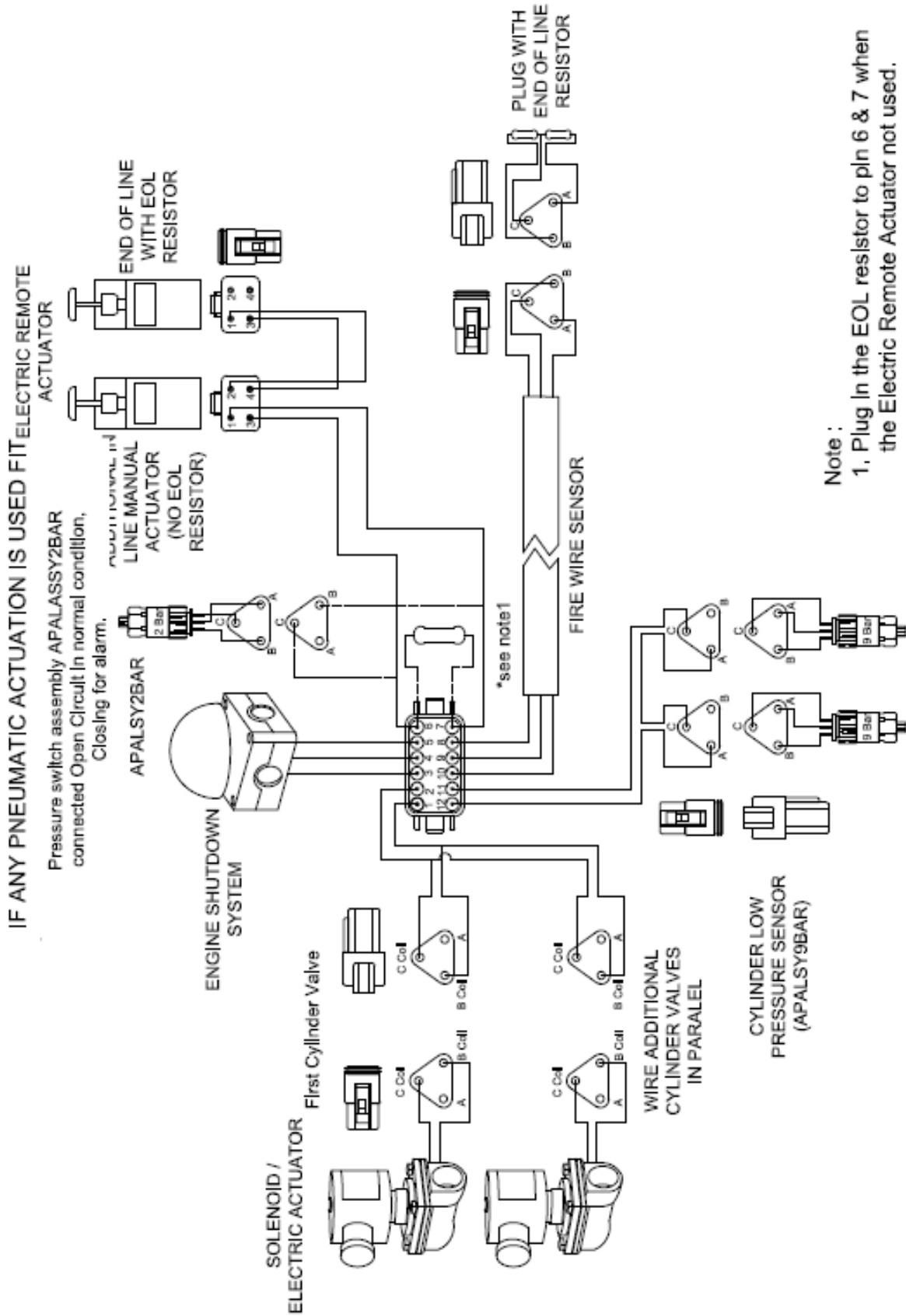
GENERAL WIRING ARRANGEMENT





IF ANY PNEUMATIC ACTUATION IS USED FIT ELECTRIC REMOTE ACTUATOR

Pressure switch assembly APALASSY2BAR connected Open Circuit in normal condition, Closing for alarm.





OPERATION & TESTING

ON: The GREEN 'ON' LED is continuously illuminated when the panel is powered from a 12 or 24 volt dc primary power supply. When the primary power supply is isolated, the Green LED will flash indicating that the system is operating on Battery Backup power supply from the secondary power source. In this condition, all functions will operate normally.

If remote electric actuators are used, these have a green LED which flashes at all times to indicate normal. No LED on a remote electric actuator is a fault condition.

FIRE ALARM Fire alarm may be initiated by a remote manual actuator or lifting the cover on the actuate button on the alarm panel and pressing the actuate button. For automatic fire detection, the fire wire detects excessive heat or fire and will notify the alarm system. During a "Fire Alarm", the RED 'FIRE ALARM' LED will latch and a continuous audible buzzer will be heard. Simultaneously, it will send a power signal to the actuating solenoid to release the fire agent, and it will commence an engine shutdown sequence with a time delay of six, twelve or twenty-four seconds. This is pre-selected by the internal timing jumper.

Engine Shutdown CANNOT be aborted but may be DELAYED by pressing the RED 'DELAY ENGINE SHUTDOWN' button, either momentarily or holding down as required. The selected delay period re-commences upon release of the button.

Approximately three seconds prior to engine shutdown, the continuous audible alarm indicator will change to a rapid intermittent signal to alert the operator that the shutdown delay period has almost expired. The delay button is also functional during the rapid alarm period.

At the completion of the engine shutdown delay period the panel's engine shutdown relay will activate and the RED 'ENGINE SHUTDOWN' LED will illuminate. The audible indication will now change to a post alarm indication which consists of an intermittent signal. An audible signal occurs at one second intervals.

This audible signal may be muted by using the red button. A momentary push of the button will mute the buzzer and illuminate the AMBER 'MUTED' LED. Each momentary push of the button will toggle the mute on or off. This will now be the only function that the button will have.



PT ETI FIRE SYSTEMS

OVERRIDING ENGINE SHUTDOWN

Pressing the override button and holding it down for 3 seconds after the fire alarm, will override the engine shutdown temporarily until the operator releases the switch. This is intended for emergency situations where the risks have been evaluated considering the risk of re-starting a fire before the fire system has been re-instated.

SYSTEM FAULT:

There are up to three general causes of fault on the alarm panel.

- 1) Upon loss of cylinder pressure (as set by the pressure switch) the cylinder low pressure switch contacts will open activating the panels AMBER 'SYSTEM FAULT' LED and intermittent audible indication. The SYSTEM FAULT condition will not activate the engine shutdown sequence or fire alarm. A low pressure fault may also be identified by the sounder giving a steady intermittent sound.
- 2) If there is a fault in the fire wire detection cable, this will cause the same indication. This also maybe easily checked by temporarily removing the End Of Line resistor cap on the detection line to test this function.
- 3) If electric remote actuators are used, a fault may indicate a problem in the wiring arrangement or End Of Line Resistor. Un-plugging the cable on the last electric actuator will also test this fault function.

Electrical faults as indicated in 2) & 3) can also be identified by the sounder giving two short beeps with a longer pause in between.

SYSTEM DISCHARGE This checks that discharge is occurring after a fire alarm. Upon detection of a fire alarm the RED 'FIRE ALARM' LED will illuminate together with continuous audible buzzing. If the system does actuate and discharges, this will be followed by detection of a cylinder low pressure condition which will quickly drop through 9 Bar as the system is discharging. When these two conditions occur together the panel interprets that the system is discharging and the discharge LED is illuminated.

TEST AND ISOLATE

The panel may be tested by pressing and holding the RED TEST SWITCH for approximately five seconds until the alarms activate. Release the switch when the test has commenced. During test, the FIRE ALARM, SYSTEM DISCHARGE and SYSTEM FAULT LEDS will all be illuminated together with a continuous audible indication. The test will also commence the engine shutdown time delay period at the end of which, the engine shutdown relay will energise and the ENGINE SHUTDOWN LED will illuminate.

During the test, the engine shutdown delay function may be tested (Refer to previous section).



PT ETI FIRE SYSTEMS

IMPORTANT. During a test as described above, **THE SYSTEM WILL NOT DISCHARGE** as this is only an alarm function test. If the a full alarm test with discharge is to be done, the actuate button should be used.

After a test procedure the panel may now be reset by momentarily pressing the **RED** test switch.

FIRE SYSTEM ISOLATING. It is possible to isolate the alarms system at the alarm panel. To do this, hold the test button down a full 10 seconds. This will go through the test function and at the completion, the green on LED will change colour to Amber and the fault LED will illuminate indicating that the fire system is isolated. The audible alarm will give the fault warning sound. The audible alarm may be muted, however the isolated condition can only be cancelled by the internal reset button. If electric manual actuators are fitted, the green LED will not illuminate on these during isolation.

WARNING ABOUT ISOLATION . When isolated, no electrical fire detection or actuation is operable. The customer shall have in place the appropriate risk management controls to consider this. If any form of pneumatic actuation is present, this is not isolated by an electrical isolation on this alarm panel, and would still be active unless some other mechanical means of isolation is implemented.

IMPORTANT NOTE

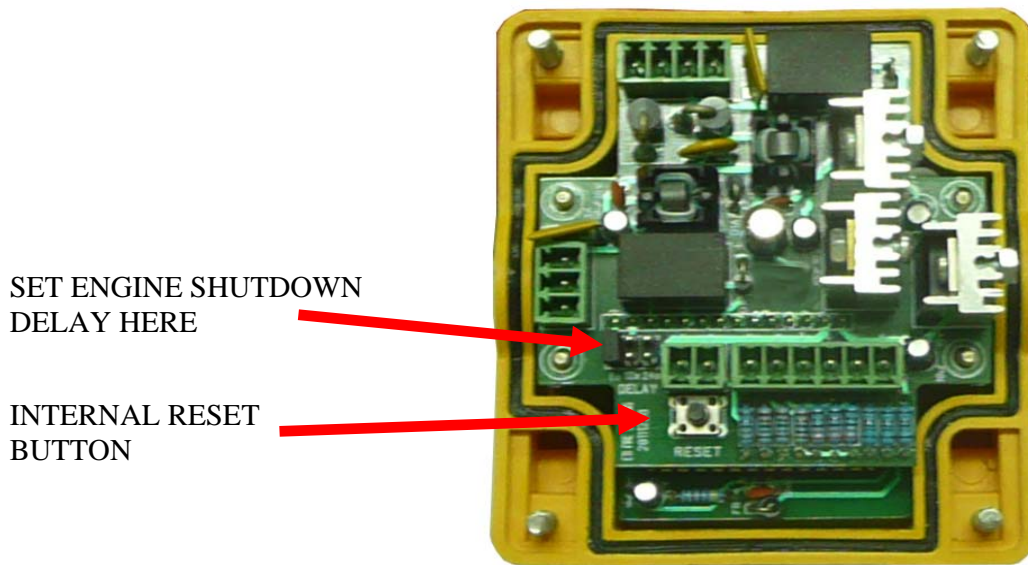
NOTE: A special feature of the ETI alarm is that it can be button re-set after testing. This eliminates the need for the technician to open the alarm to reset when testing the alarm. However, if fire has been detected, the engine shut down can only be re-set internally in accordance with the standard.

MUTE

Whenever there is an intermittent audible alarm (post alarm), the **RED MUTE BUTTON** will mute the audible buzzer and illuminate the **AMBER 'MUTED' LED**. The mute may be toggled on or off by momentarily pressing the mute button.

ENGINE SHUTDOWN DELAY

Selectable time delay settings of 6 seconds, 12 seconds or 24 seconds are located behind the enclosure lid. Unscrew the panel lid and move the labelled **DELAY** link to the required setting and ensure that the lid is re-fitted and sealed properly. Also, in compliance with AS 5062 after receiving a fire alarm the shutdown function will latch to prevent re-start of the machine until the fire system is serviced. A trained technician only must remove the face of the alarm and internally reset using the reset button.



INSTALLATION

MOUNTING PANEL

Remove the panel front cover and unplug the three connectors which are wired to the multi-core cable. Set aside the front assembly to a protected location until the housing has been mounted. Mount the housing in a suitable location utilizing the two outer mounting holes.

SETTINGS

Set the engine shutdown delay timing to the customer requirement by moving the DELAY link to one of three delay options (6, 12 or 24 seconds). The link will be factory pre-set to 6 seconds.

Reconnect the front cover assembly ensuring that the three connectors properly located and seated. Screw down the lid ensuring that the seal is properly seated.

IMPORTANT

Wire the panel multi-core cable to the vehicle system using either a Deutsch connectors or other termination method which meets the required cable termination specifications. The connector pins to the Deutsch connector should be crimped using the correct crimping tool, part number 35-466.

If the Panel housing is mounted directly on to, and making contact with, the vehicle earth, the multi-core cable screen may be left unterminated. However, if the housing is mounted onto an insulated or plastic surface, the multi-core cable screen should be terminated and screwed to the vehicle's chassis.

Wire the Panel's DC supply directly to the vehicle's battery and fit a 5 Amp fuse to the positive lead as close as possible to the battery terminal.