FSI PANEL - FAULT FINDING

NORMAL CONDITION



INDICATOR SHUTDOWN

When the System is in a operational condition the display panel will illuminate 2 green lights. This is indicating that all 3 detection circuits are reading the correct resistance of 9.5k-9.95k ohms (24volt system). Once the system goes into alarm it identifies as a closed circuit on a detection circuit. If the display panel identifies a open circuit or low voltage the panel will display a system fault

NOTE
A wiggle test may be required to check for intermittent faults

LOW VOLTAGE CONDITION



INDICATOR SHUTDOWN

Low voltage
This is a low voltage alarm caused by the supply voltage dropping between 16.5v – 8v.
Go to Step **A**



INDICATOR SHUTDOWN

Voltage failure
This is a low voltage failure alarm caused by the supply voltage dropping below 8v.
Go to Step **A**



INDICATOR SHUTDOWN

No voltage
This is a no voltage supply fault meaning there is no power supply to the control or display module
Go to Step **A**

ALARM CONDITION



INDICATOR SHUTDOWN

Thermal Probe Detector
This is a alarm condition meaning there is a closed circuit caused by the ambient temperature being above 163c
If the ambient temperature is below 163c then there may be a short circuit in the probe circuit or a probe may be faulty
Go to Step **B**



INDICATOR SHUTDOWN

Cylinder Discharge
This is a alarm condition meaning there is a closed circuit caused by the system discharging solution.
If no solution is coming out of the nozzles then there may be a short circuit in the discharge pressure switch circuit or a faulty discharge pressure switch
Go to Step **C**

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INDICATOR



SHUTDOWN

Cylinder Low Pressure

This is a alarm condition meaning there is a closed circuit caused by cylinder pressure being below its set pressure

- 1000kpa AFFF
- 1400kpa F3

If the cylinder pressure is above its set pressure on the gauge then there may be a short circuit in the low pressure circuit or a faulty low pressure switch or faulty gauge.

Go to Step **D**

SYSTEM FAULT



INDICATOR



SHUTDOWN

System Fault

This is a Fault condition meaning there is a open circuit in one of the detection circuits or a low voltage supply to the panel.



INDICATOR



SHUTDOWN

Thermal Probe Detector

This is a fault condition on the thermal probe circuit meaning there is a open circuit (broken wire,corroded terminal)

Go to Step **E**



INDICATOR



SHUTDOWN

Discharge Pressure Switch

This is a fault condition on the discharge pressure switch circuit meaning there is a open circuit (broken wire,corroded terminal)

Go to Step **G**



INDICATOR



SHUTDOWN

Low Pressure Switch

This is a fault condition on low pressure switch circuit meaning there is a open circuit (broken wire,corroded terminal)

Go to Step **F**

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POWER SUPPLY			
	FAULT CONDITION	**POSSIBLE CAUSE**	**CHECKS**
STEP A	No lights on display	No primary power supply Broken power supply wiring	1. Check for voltage supply at pins 1 + 2 and 1 + 4 in the control box (24volts) or (12volts) 2. Check for secure wiring at pins 14 to 20 3. Contact site auto electrician
	Power failure	Loose or corroded terminals	1. Check for loose or corroded terminals 2. Damaged power supply wire 3. Contact site auto electrician
	Low voltage	Low battery voltage	1. Check for voltage supply at pins 1 + 2 and 1 + 4 in the control box. (24volts) or (12volts) 2. Contact site auto electrician

ALARM CONDITIONS			
	ALARM CONDITION	**POSSIBLE CAUSE**	**CHECKS**
STEP B	Thermal Probe Alarm	1. System has been discharged 2. Faulty probes 3. Faulty connections within deutsch plugs 4. Faulty connections within probe 5. Faulty Radox wiring	1. Check for the installation of probes (if probes are not installed a terminating resistor must be fitted) 2. Check for system discharge 3. Disconnect EOL probe check for 9.5k to 9.95k Ω ohms 4. Check IL probes for continuity (if fitted) 5. Check for moisture inside of deutsch plug 6. Check for moisture build up within PME 7. Check for correct wiring configuration 8. Check for crushed or damaged Radox 9. Reset panel
STEP C	Discharge pressure alarm	1. System has been discharged 2. Faulty pressure switch 3. Faulty connections within deutsch plugs 4. Faulty PME connections 5. Faulty Radox wiring	1. Check for system discharge 2. Disconnect discharge pressure switch check for 9.5k to 9.95k Ω ohms 3. Check for moisture inside of deutsch plug 4. Check for moisture build up within PME 5. Check for correct wiring configuration 6. Check for crushed or damaged Radox 7. Reset panel
STEP D	Low Pressure alarm	1. Low cylinder pressure 2. Faulty pressure switch 3. Faulty connections within deutsch plugs 4. Faulty PME/SME connection 5. Faulty Radox wiring 6. Faulty gauge	1. Carry out leak test of actuation circuit. 2. Unplug low pressure switch check for 9.5k to 9.95k Ω ohms 3. Check 4 pin pressure switches for continuity (if fitted) 4. Check for moisture inside of deutsch plug 5. Check for moisture build up within PME/SME 6. Check for correct wiring configuration 7. Check for crushed or damaged Radox 8. Reset panel

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FAULT CONDITIONS			
	FAULT CONDITION	**POSSIBLE CAUSE**	**CHECKS**
STEP E	Thermal Probe fault	1. Faulty probes 2. Faulty connections within deutsch plugs 3. Faulty connections within probe 4. Faulty Radox wiring	1. Check for the installation of probes (if not fitted check terminating resistor) 2. Disconnect EOL probe check for 9.5k and 9.95k Ω ohms 3. Check IL probes for continuity (if fitted) 4. Check deutsch pins are inserted correctly 5. Disassemble deutsch plug to ensure pins are securely crimped 6. Check for corroded terminals 7. Check for broken wires inside PME 8. Check for correct wiring configuration 9. Check for crushed or damaged Radox 10. Reset panel
STEP F	Low Pressure fault	1. Faulty pressure switch 2. Faulty connections within deutsch plugs 3. Faulty PME/SME connections 4. Faulty Radox wiring	1. Unplug low pressure switch check for 9.5k to 9.95k Ω ohms 2. Check 4 pin pressure switches for continuity (if fitted) 3. Check deutsch pins are inserted correctly 4. Disassemble deutsch plugs to ensure pins are securely crimped 5. Check for broken wires inside PME/SME 6. Check for correct wiring configuration 7. Check for crushed or damaged Radox 8. Reset panel
STEP G	Discharge Pressure fault	1. Faulty pressure switch 2. Faulty connections within deutsch plugs 3. Faulty PME connections 4. Faulty Radox wiring	1. Disconnect discharge pressure switch check for 9.5k to 9.95k Ω ohms 2. Check deutsch pins are inserted correctly 3. Disassemble deutsch plug to ensure pins are securely crimped 4. Check for corroded terminals 5. Check for broken wires inside PME 6. Check for correct wiring configuration 7. Check for crushed or damaged Radox 8. Reset panel

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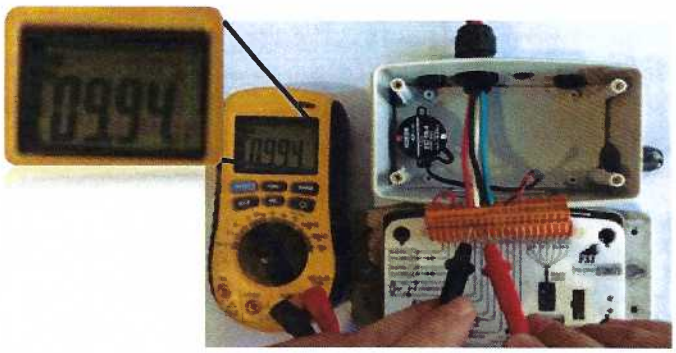
TESTING CIRCUITS

NORMAL CONDITION -) 9.5k to 9.95k Ω ohms
This is a typical reading that you will see when the circuit is in operational condition NO FAULTS.
It may vary between (24v) **9.5k to 9.95k Ω ohms**.
This is the same on all 3 detection circuits

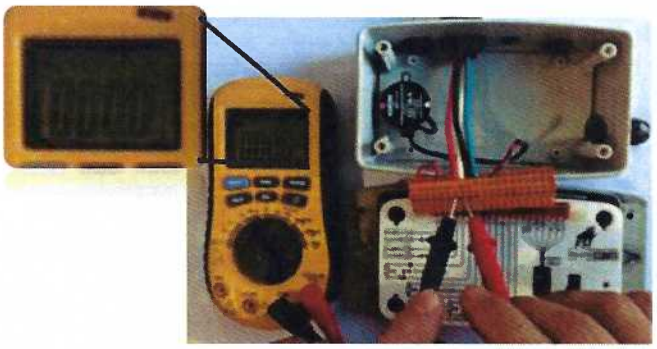
NOTE
Ensure that the orange terminal strip is unplugged before testing



OPEN CIRCUIT – O.L
This is a typical reading in an OPEN CIRCUIT meaning a plug is unplugged, broken wire, loose connector. This will come up with SYS FAULT and the related circuit (i.e. CYL LOW PRES if it is the cylinder pressure switch circuit) on the display.



CLOSED CIRCUIT – 000.0
This is a typical reading in a CLOSED-CIRCUIT situation. THESE ARE TYPICALLY ALARM CONDITIONS!
However, you can also have a closed-circuit condition when the wires are crushed or incorrectly connected



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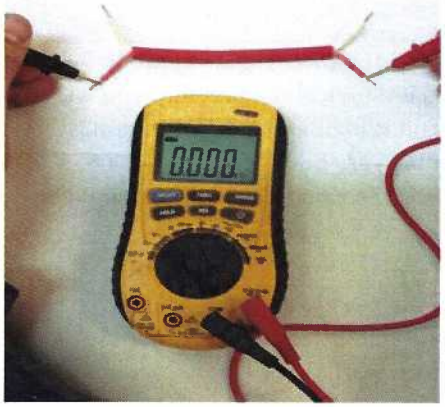
CONTINUITY TESTING

Continuity

Select ohms or audible buzzer function on the multi meter. Touch probe tips together to confirm continuity of the multi meter circuit. Touch probe tips to Radox core if the multi meter changes from 0.L to 0.000 then the continuity of the wire is good.
(some multi meters will display a different reading depending on make and model)



No-Continuity

Select ohms or audible buzzer on the multi meter. Touch probes tips together to confirm continuity of multi meter circuit, it should change from **0.L** to **0.000**. Then touch probe tips to Radox core if the multi meter does not change its reading then there may be a break in the wire.
(some multi meters will display a different reading depending on make and model)



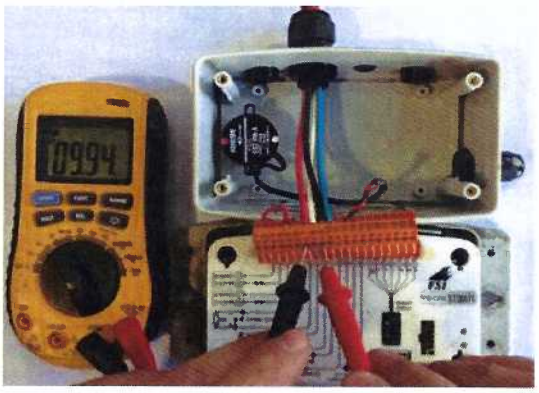
TESTING DETECTION CIRCUITS

1. Locate the white FSI control module
2. Remove the bolts securing control module to panelling
3. With small Philips screwdriver remove module from the cover
4. Unplug orange strip connector
5. Set multimeter to ohms Ω
6. Measure resistance across each circuit

5 & 6 Thermal Probes
7 & 8 Low pressure switch
9 & 10 Discharge pressure switch

9.5 – 9.95 ohms Ω = good circuit
O.L = open circuit (OC) (broken wire,corroded terminal)
0.00 = closed circuit (CC) (alarm condition)

NOTE if thermal probes are not installed a terminating resistor must be intsalled into the orange strip connector



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