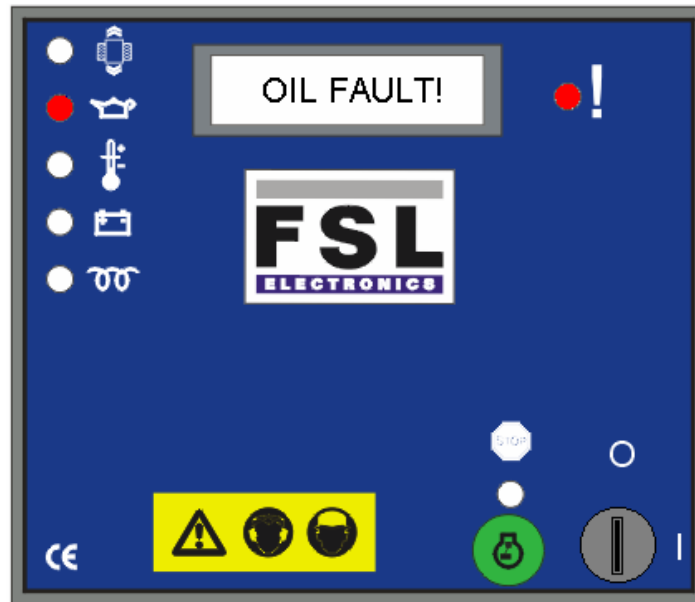


FSL ELECTRONICS

ENGINE CONTROLLER



- Low cost alternative to hard wired traditional panels.
- Extremely compact, attractive design.
- Simplified wiring and installation.
- Superior engine protection and shut down.
- Automatic pre-heat and start-up sequence.
- Tamper proof liquid crystal hour meter display and status indicator.
- Starter motor protection feature.
- Continual fault display after shut down.
- Optional diagnostic and fault history features available.
- Optional battery voltage monitor available



GENERAL OVERVIEW

The control panel is a compact electronic control panel for engine and machine control. This panel has many advanced functions that make it a sensible choice for engine control.

KEY FEATURES

5 engine sensor inputs.

3 additional specific machine inputs e.g. e-stop circuit, machine track enable.

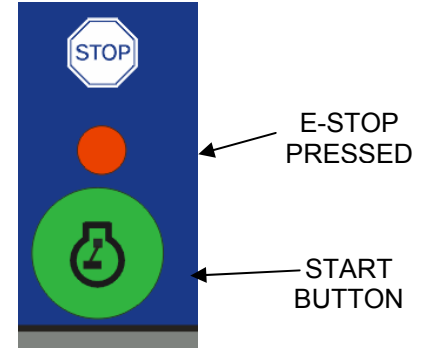
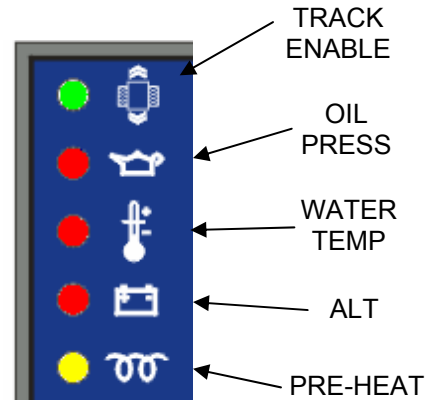
Automatic shutdown on critical fault alarm.

6 panel indicators including oil, water temperature, pre-heat, generic fault, e-stop pressed, alternator fault.

50 amp automotive relays for the toughest of jobs.

Individual fused relay outputs with standard blade automotive fuses.

LED indicators on all relay outputs.



SPECIFICATIONS

Inputs

Input No	Name	Description	Indication
1	WATER TEMP	Water temperature sensor	LED + LCD message
2	ALT	Alternator fault	LED + LCD message
3	TRACK EN	Track machine enabled	LED + LCD message
4	FUEL FILT	Fuel filter sensor fault	LCD message
5	AIR FAULT	Air filter fault	LCD message
6	TEMP	Over temperature sensor	LCD message
7	AUX1	Spare input	LCD message
8	AUX2	Spare input	LCD message
9	OIL FAULT	Low oil pressure sensor	LED + LCD message

Outputs

Output No	Name	Description	Indication	Rating
1	FUEL SOL1	Fuel solenoid	...	50A
2	FUEL SOL2	Fuel solenoid	...	50A
3	PRE-HEAT	Pre-heat relay	LED	50A
4	START	Starter solenoid relay	...	50A
5	OIL FAN	Oil cooler fan relay	...	50A
6	AUX 1	Spare	...	50A
7	SIREN	Siren output relay	...	16A
8	TRACK EN	Remote enable relay (track control)	LED	16A

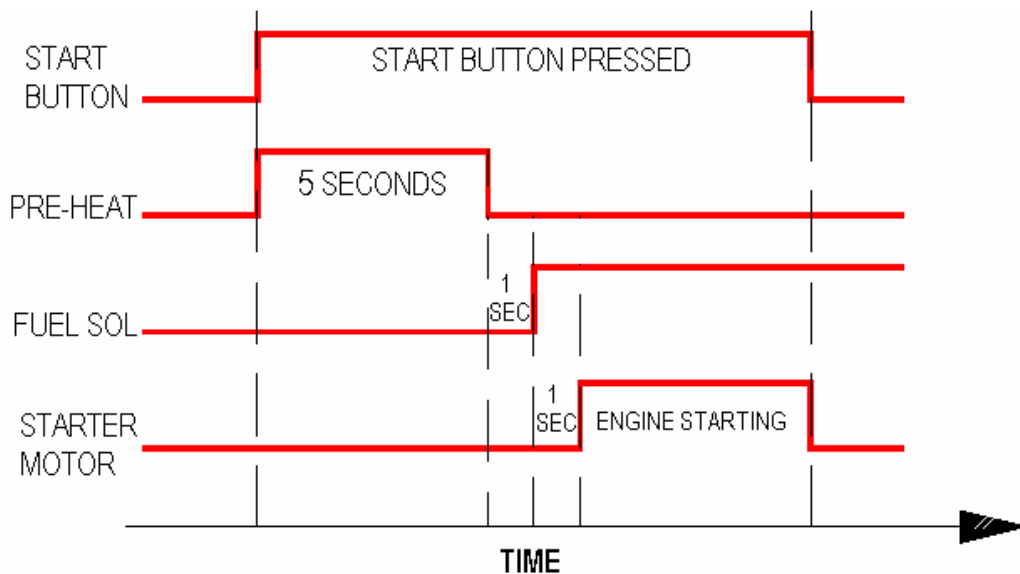


Control Philosophy

Start sequence

The unit is only powered on switching of the key switch to ON position.

The following time sequence is activated automatically on pressing AND HOLDING of the start button:



Diagnostic functions

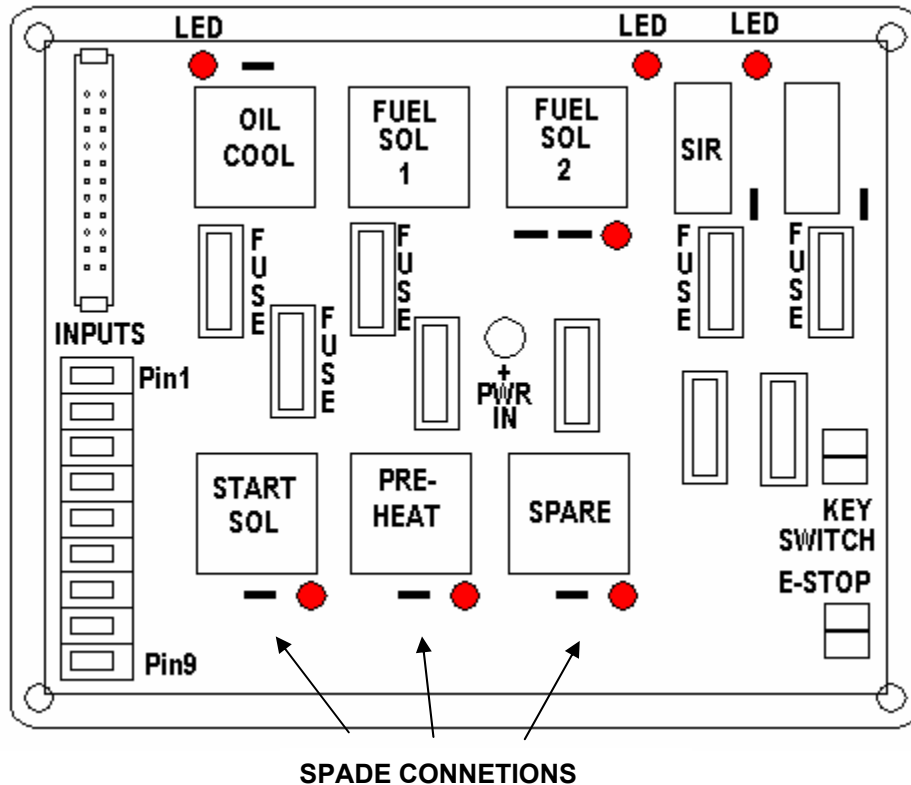
When the engine has started and the start button is released, the controller will wait for 5 seconds before reading from sensor inputs. This allows the engine adequate time to build oil pressure before reading from the sensor.

On activation of an engine fault, the controller will de-activate the fuel solenoid relays. These are wired in series for added protection in the event of a relay malfunction. The display will hold on the appropriate indicator for that fault until



the key switch is turned off.

RELAY BOARD & CONNECTIONS

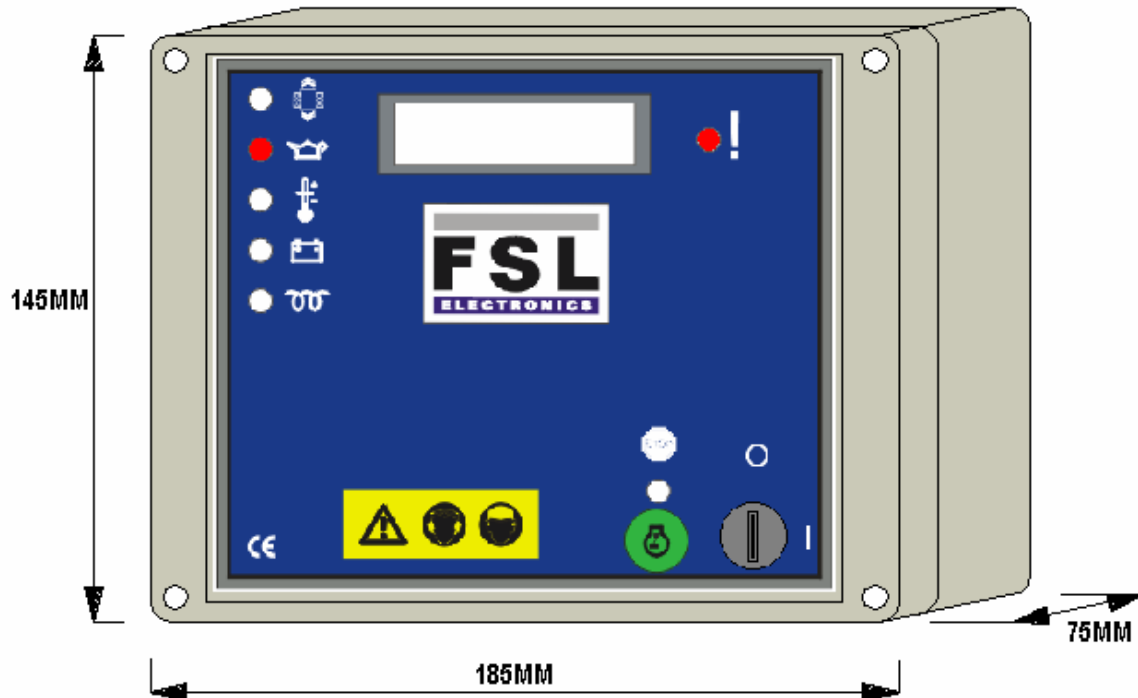


Note: LED indicators are lit when relay outputs are active.

Note: FSL recommend that an external isolator switch and fuse are fitted, to supply power to the panel. This would provide protection in the unlikely event of a relay malfunction or some other short circuit.



PANEL DIMENSIONS





Engine panel v1.0

Author P. Creighton

Approved J. Meenan