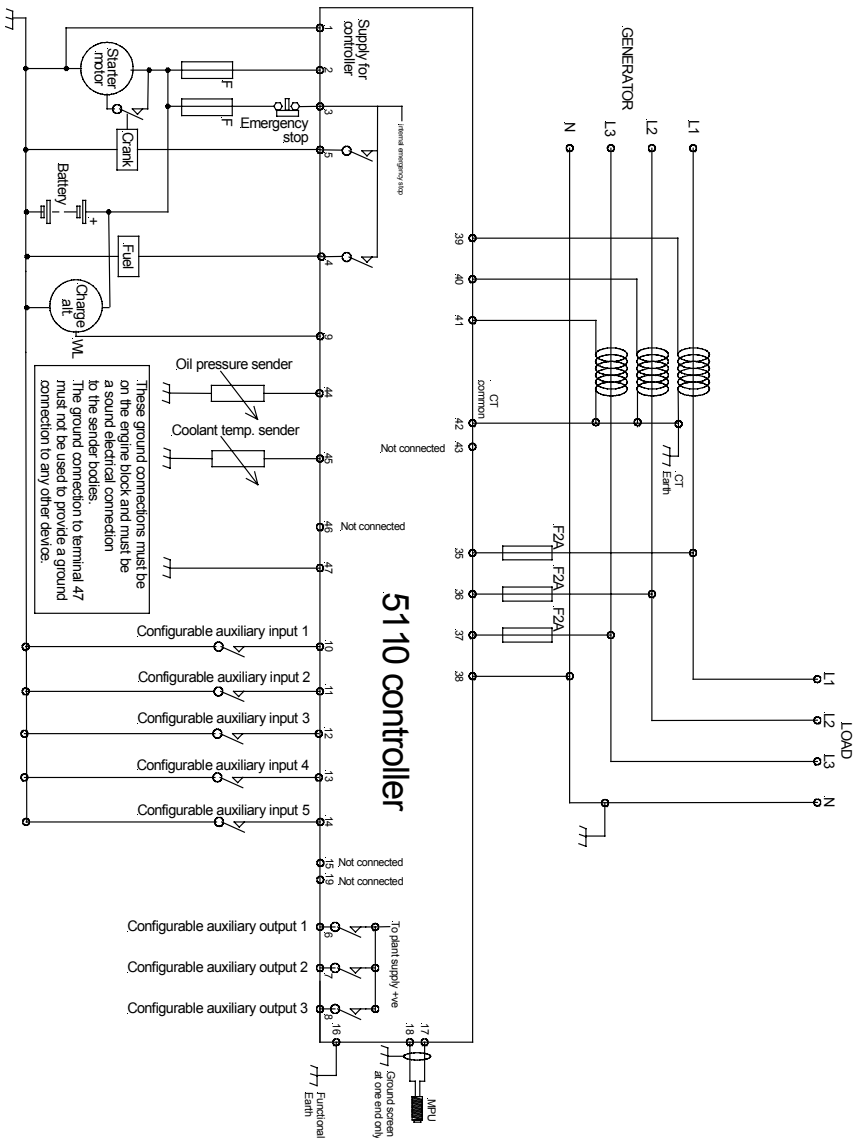


DIMENSIONS

Module Dimensions - 240mm x 172mm x 57mm (9.5" x 6.8" x 2.3")
 Panel cutout - 220mm x 160mm (8.7" x 6.3")

TYPICAL WIRING DIAGRAM



5110 controller

These ground connections must be on the same block and must be a sound electrical connection to the sender bodies. The ground connection to terminal 47 must not be used to provide a ground connection to any other device.

Not connected

Not connected

Not connected

Not connected

Not connected

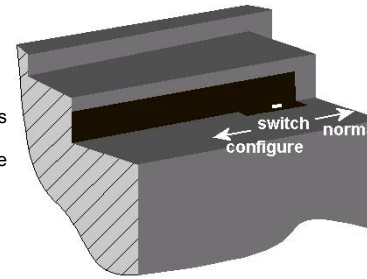
Not connected



Model 5110 Configuration and installation instructions

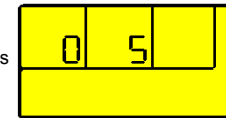
ACCESSING THE CONFIGURATION EDITOR

Operate the Configuration mode switch into the "configure" position. (This recessed switch is located on the rear of the module in the top right corner when viewing the module from the back.)



The LED indicator beside the ✓ button will flash to show that the module is now in configuration mode.

The first configurable parameter is displayed. In this example, the Start delay timer (parameter 0). Its currently set to 5s.

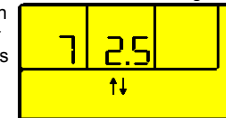


EDITING AN ANALOGUE VALUE

Enter the front panel configuration editor as described above. Press the ✓ button to enter adjust mode.

When in adjust mode (indicated by the flashing ↑↓ icons in the module display), pressing the + or - buttons will change the selected parameter to the desired value. Press the ✓ button to 'save' the value. The ↑↓ icons will stop flashing to confirm that it has been saved.

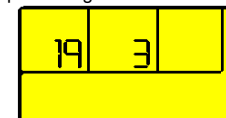
To select the next parameter to edit, press the + button. Continuing to press the + / - buttons will cycle through the adjustable parameters in the order shown in the following lists. The parameter being displayed in this example is the cooling timer (parameter 7). It's current value is 2.5mins (2mins 30secs)



EDITING A 'LIST' VALUE

Some configuration parameters have a list of options to select from. These include input and output settings.

This example shows the setting for oil pressure transducer (parameter 19). It's current setting is 3 ('VDO 0-10bar' from the list shown opposite).



NOTE:- When in adjust mode (indicated by the flashing ↑↓ icons in the module display), pressing the 0 (stop mode) button will cancel any changes made to the current parameter, reverting to the last 'saved' value. This also exits adjust mode.

NOTE:- To exit the front panel configuration editor at any time, move the Configuration mode switch back into the "normal" position. Ensure you save any changes you have made by pressing the ✓ button first if necessary.

TIMERS & ANALOGUE SETTINGS

Parameter	Type	Default	Max
0 - Start delay	Timer	5s	60s
1 - Preheat	Timer	0s	60s
2 - Crank attempt	Timer	10s	60s
3 - Crank rest	Timer	10s	60s
4 - Safety delay	Timer	8s	60s
5 - Warming up	Timer	0s	60s
6 - Return delay	Timer	30s	60m
7 - Cooling run	Timer	60s	60m
8 - E.T.S. solenoid hold	Timer	0s	60s
9 - Low Oil Pressure	Trip	15PSI	150PSI
10 - High Temperature	Trip	95°C	150°C
11 - Under Speed	Trip	1250RPM	3600RPM
12 - Over Speed	Trip	1750RPM	5000RPM
13 - Underfrequency	Trip	40Hz	60Hz
14 - Overfrequency	Trip	57Hz	72Hz
15 - Charge Alt Failure	Warning	8V DC	25V DC
16 - Flywheel teeth	Value	0	300
17 - CT Primary	Value	500A	6000A

NOTE:- Setting a timer to zero (0) will disable it. Timer settings increment from 0 to 60s in steps of 1s and from 1 minute to the maximum value in steps of 30 seconds (0.5 minutes) (where applicable)

NOTE:- Setting Flywheel teeth to zero (0) will disable magnetic pickup speed sensing. In this instance, engine speed is derived from the alternator output frequency.

NOTE:- CT values increment from 10-100 in steps of 10A, and from 100 to 6000A in steps of 50A. CT secondary must be 5A.

LIST ITEM SETTINGS

Factory default settings are in **bold italicised** text.

Parameter	Selections
18 - Alternator poles	0,2,4,6,8
19 - Oil Pressure transducer	0 - Switch close to 1 - Switch open to activate 3 - VDO 0-10bar 4 - Datcon 0-5bar 5 - Datcon 0-10bar
20 - Coolant temp transducer	0 - Switch close to 1 - Switch open to activate 2 - VDO 0-120°C 3 - Datcon High
21 - Fast loading enabled	0 - No 1 - Yes
22 - AC system	1 - 1 phase 2 wire 3 - 3 phases 4 wires
23 - Oil pressure display units	0 - Bar/PSI 1 - kPa

Deep Sea Electronics Plc.
 Highfield House, Hunmanby Industrial Estate,
 North Yorkshire. YO14 0PH. ENGLAND
 Tel +44 (0)1723 890099.
 Fax +44 (0)1723 893303.
 Email - sales@deepseapl.com
 web - www.deepseapl.com

Deep Sea Electronics inc.
 5301 E. State St. - Suite 202
 Rockford, Illinois 61108. U.S.A.
 Phone +1 (815) 316-8706
 Fax +1 (815) 316-8708
 Email - dsesales@deepseausa.com
 Web - www.deepseausa.com

CONFIGURABLE OUTPUTS

Factory default settings are in **bold italicised** text.

Parameter	Selection
24 - Output 1	0 - Unused
	1 - Preheat mode 0
	2 - Air flap
	3 - Load transfer
	4 - Energise to stop
	5 - Engine running
	6 - Shutdown alarm
	7 - System in auto
	8 - Auxiliary input 1 active
	9 - Auxiliary input 2 active
	10 - Auxiliary input 3 active
	11 - Auxiliary input 4 active
	12 - Auxiliary input 5 active
	13 - Preheat mode 1
	14 - Preheat mode 2
	15 - Preheat mode 3
	16 - Warning alarm
17 - Common alarm	
25 - Output 2	0 - Unused
	1 - Preheat mode 0
	2 - Air flap
	3 - Load transfer
	4 - Energise to stop
	5 - Engine running
	6 - Shutdown alarm
	7 - System in auto
	8 - Auxiliary input 1 active
	9 - Auxiliary input 2 active
	10 - Auxiliary input 3 active
	11 - Auxiliary input 4 active
	12 - Auxiliary input 5 active
	13 - Preheat mode 1
	14 - Preheat mode 2
	15 - Preheat mode 3
	16 - Warning alarm
17 - Common alarm	
26 - Output 3	0 - Unused
	1 - Preheat mode 0
	2 - Air flap
	3 - Load transfer
	4 - Energise to stop
	5 - Engine running
	6 - Shutdown alarm
	7 - System in auto
	8 - Auxiliary input 1 active
	9 - Auxiliary input 2 active
	10 - Auxiliary input 3 active
	11 - Auxiliary input 4 active
	12 - Auxiliary input 5 active
	13 - Preheat mode 1
	14 - Preheat mode 2
	15 - Preheat mode 3
	16 - Warning alarm
17 - Common alarm	

LCD INDICATORS

Factory default settings are in **bold italicised** text.

Parameter	Selection
27 - LCD 1	0 - Unused
	1 - Preheat mode 0
	2 - Air flap
	3 - Load transfer
	4 - Energise to stop
	5 - Engine running
	6 - Shutdown alarm
	7 - System in auto
	8 - Auxiliary input 1 active
	9 - Auxiliary input 2 active
	10 - Auxiliary input 3 active
	11 - Auxiliary input 4 active
	12 - Auxiliary input 5 active
	13 - Preheat mode 1
	14 - Preheat mode 2
	15 - Preheat mode 3
	16 - Warning alarm
17 - Common alarm	
28 - LCD 2	0 - Unused
	1 - Preheat mode 0
	2 - Air flap
	3 - Load transfer
	4 - Energise to stop
	5 - Engine running
	6 - Shutdown alarm
	7 - System in auto
	8 - Auxiliary input 1 active
	9 - Auxiliary input 2 active
	10 - Auxiliary input 3 active
	11 - Auxiliary input 4 active
	12 - Auxiliary input 5 active
	13 - Preheat mode 1
	14 - Preheat mode 2
	15 - Preheat mode 3
	16 - Warning alarm
17 - Common alarm	

LCD INDICATORS (CONTINUED)

Factory default settings are in **bold italicised** text.

Parameter	Selection
29 - LCD 3	0 - Unused
	1 - Preheat mode 0
	2 - Air flap
	3 - Load transfer
	4 - Energise to stop
	5 - Engine running
	6 - Shutdown alarm
	7 - System in auto
	8 - Auxiliary input 1 active
	9 - Auxiliary input 2 active
	10 - Auxiliary input 3 active
	11 - Auxiliary input 4 active
	12 - Auxiliary input 5 active
	13 - Preheat mode 1
	14 - Preheat mode 2
	15 - Preheat mode 3
	16 - Warning alarm
17 - Common alarm	
30 - LCD 4	0 - Unused
	1 - Preheat mode 0
	2 - Air flap
	3 - Load transfer
	4 - Energise to stop
	5 - Engine running
	6 - Shutdown alarm
	7 - System in auto
	8 - Auxiliary input 1 active
	9 - Auxiliary input 2 active
	10 - Auxiliary input 3 active
	11 - Auxiliary input 4 active
	12 - Auxiliary input 5 active
	13 - Preheat mode 1
	14 - Preheat mode 2
	15 - Preheat mode 3
	16 - Warning alarm
17 - Common alarm	

CONFIGURABLE INPUTS

Factory default settings are in **bold italicised** text.

Parameter	Selection
31 - Input 1	0 - Delayed, Warning, close to activate
	1 - Delayed, Warning, open to activate
	2 - Immediate, Warning, close to activate
	3 - Immediate, Warning, open to activate
	4 - Delayed, Shutdown, close to activate
	5 - Delayed, Shutdown, open to activate
	6 - Immediate, Shutdown, close to activate
	7 - Immediate, Shutdown, open to activate
	8 - Remote Start, close to activate
9 - Remote Start, open to activate	
32 - Input 2	0 - Delayed, Warning, close to activate
	1 - Delayed, Warning, open to activate
	2 - Immediate, Warning, close to activate
	3 - Immediate, Warning, open to activate
	4 - Delayed, Shutdown, close to activate
	5 - Delayed, Shutdown, open to activate
	6 - Immediate, Shutdown, close to activate
	7 - Immediate, Shutdown, open to activate
	8 - Electrical trip, close to activate
9 - Electrical trip, open to activate	
33 - Input 3	0 - Warning, Delayed, close to activate
	1 - Warning, Delayed, open to activate
	2 - Warning, Immediate, close to activate
	3 - Warning, Immediate, open to activate
	4 - Shutdown, Delayed, close to activate
	5 - Shutdown, Delayed, open to activate
	6 - Shutdown, Immediate, close to activate
	7 - Immediate, Shutdown, open to activate
	8 - Lamp test, close to activate
9 - Lamp test, open to activate	
34 - Input 4	0 - Delayed, Warning, close to activate
	1 - Delayed, Warning, open to activate
	2 - Immediate, Warning, close to activate
	3 - Immediate, Warning, open to activate
	4 - Delayed, Shutdown, close to activate
	5 - Delayed, Shutdown, open to activate
	6 - Immediate, Shutdown, close to activate
7 - Immediate, Shutdown, open to activate	
35 - Input 5	0 - Delayed, Warning, close to activate
	1 - Delayed, Warning, open to activate
	2 - Immediate, Warning, close to activate
	3 - Immediate, Warning, open to activate
	4 - Delayed, Shutdown, close to activate
	5 - Delayed, Shutdown, open to activate
	6 - Immediate, Shutdown, close to activate
7 - Immediate, Shutdown, open to activate	



NOTE:- The 'preheat modes' selectable for configurable outputs and LCD indicators perform the following actions :

- Preheat mode 0 - Preheat during preheat timer, ceasing at end of preheat timer.
- Preheat mode 1 - Preheat during preheat timer and continue until engine stops cranking.
- Preheat mode 2 - Preheat during preheat timer and continue until the safety delay timer has expired.
- Preheat mode 3 - Preheat during preheat timer and continue until the warming timer has expired.

In addition, in all preheat modes, preheat takes place during the crank rest timer between crank cycles.