



**EAOM-210 FL
AUTOMATIC TRANSFER & SWITCHING UNIT
FOR DIESEL/GAS GENERATORS
User Manual**

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Section 1 Introduction

The EAOM-210 FL provides for automatic transfer of a load from mains to generator in the event of a mains failure. Intended for unattended operation, it is able to detect failure of any phase of the mains and to start and switch over to a generator if the mains voltage goes outside pre-set limits. Both automatic and manual control is possible. A test mode is also available which allows the generator to be run without taking the load.

The unit monitors generator operation and gives warning of any faults that are detected. The unit monitors:

- Engine speed
- Engine Oil pressure
- Coolant temperature
- Fuel Level
- Battery voltage
- Charge generator voltage
- Engine run time
- Number of starts
- Next maintenance
- Mains volts (L1-N, L2-N, L3-N)
- Mains volts (L1-L2, L2-L3, L3-L1)
- Mains Hz
- Generator volts (L1-N, L2-N, L3-N)
- Generator volts (L1-L2, L2-L3, L3-L1)
- Generator Hz
- Generator kVA
- Generator kW
- Generator kVAr
- Generator pf
- Generator kVAh
- Generator kWh
- Generator kVArh
- Load Amps
- Earth current (IEA)

It controls:

- Engine fuel supply or engine stopping
- Starter motor
- Alarm horn
- Automatic generator start and load transfer on mains failure
- Mains Open, Mains Close, Generator Open and Generator Close contactors

EAOM-210 FL features a 128x64 Dot-matrix LCD display, including:

- Mains volts (L1-N, L2-N, L3-N)
- Mains volts (L1-L2, L2-L3, L3-L1)
- Mains Hz
- Generator volts (L1-N, L2-N, L3-N)
- Generator volts (L1-L2, L2-L3, L3-L1)

-
- Generator Hz
 - Generator kVA
 - Generator kW
 - Generator kVAr
 - Generator kVAh
 - Generator kWh
 - Generator kVArh
 - Generator pf
 - Engine Rpm
 - Load Amps (IL1, IL2, IL3, IT)
 - Earth current (IEA)
 - Engine Oil pressure
 - Coolant temperature
 - Fuel Level
 - Battery voltage
 - Charge generator voltage
 - Real Time
 - Engine run time
 - Next maintenance hour
 - Next maintenance month
 - Error messages (if available)
 - Event Logs
 - Program parameters

The unit is extensively programmable through the front panel, with password protection on two levels. Operational parameters can also be monitored and controlled from a PC via a built-in RS232 port.

If the engine fails to start on the first attempt, further attempts are made up to a programmed number of times or until successful.

If a fault is detected, the unit shuts down the engine and indicates the failure by flashing a relevant fault LED.

Emergency stop input provide for remote control of the engine.

The user configurable inputs 4 and 5 can be programmed to perform 26 different functions. Other four user configurable inputs can be programmed to perform 25 different functions.

Four user configurable relay outputs can be programmed for 93 different functions.

Section 2 Installation



Please read the following information before installing.

A visual inspection of this product for possible damage occurred during shipment is recommended before installation. It is your responsibility to ensure that qualified mechanical and electrical technicians install this product.



Before beginning installation of this product:

- Disconnect all electrical power to the machine.
- Make sure the machine cannot operate during installation.
- Follow all safety warnings of the machine manufacturer.
- Read and follow all installation instructions.

2.1 Unit Configuration

The unit can be programmed using the buttons and display on the front panel or EAOM-210 FL software. Refer to [Section 3 Definition Of Front Panel And Programming](#) for details.

2.2 Mechanical Installation

The unit is designed for panel mounting. Fixing is by four screw fixings. (See Figure 2.1)

1. Insert the unit in the panel cut-out from the front.
2. Insert the fixings in the slotted at the corners of the unit and tighten the fixing screws to secure the unit against the panel.



During the equipment is putted in hole on the metal panel while mechanical installation some metal burrs can cause injury on hands, you should be careful. Installation parts of equipment should be tighten properly. The equipment can be drop from mounting place reason of vibration if installation parts leave soft.

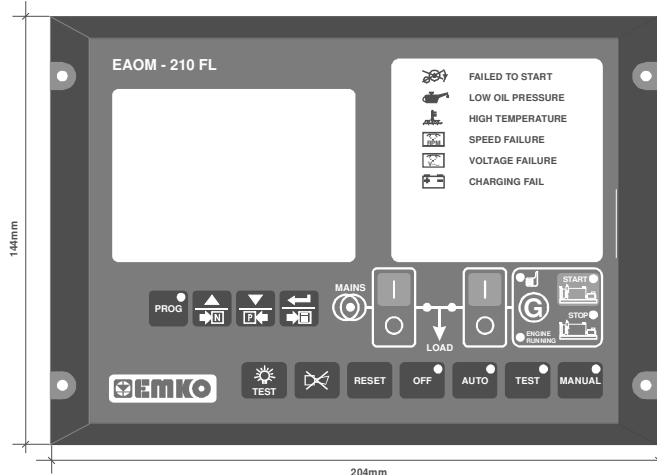


Figure 2.1 Front view.



Figure 2.2 Panel cut-out

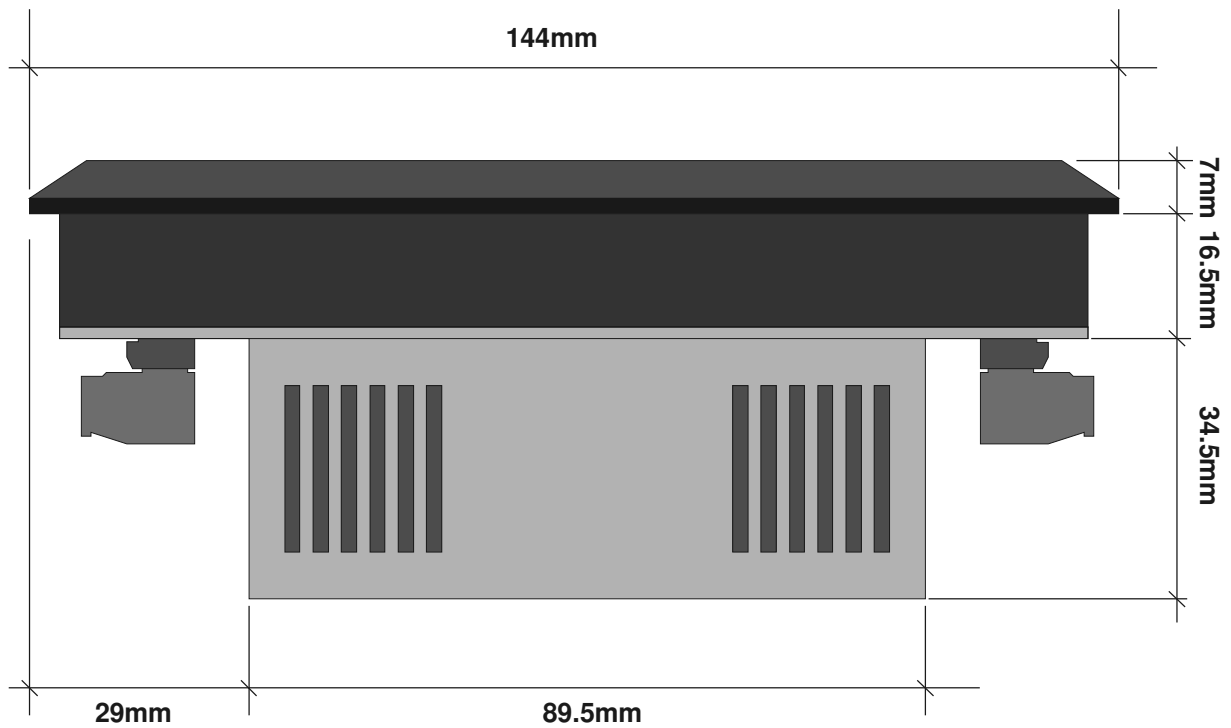


Figure 2.3 Side view.

2.3 Electrical Connections

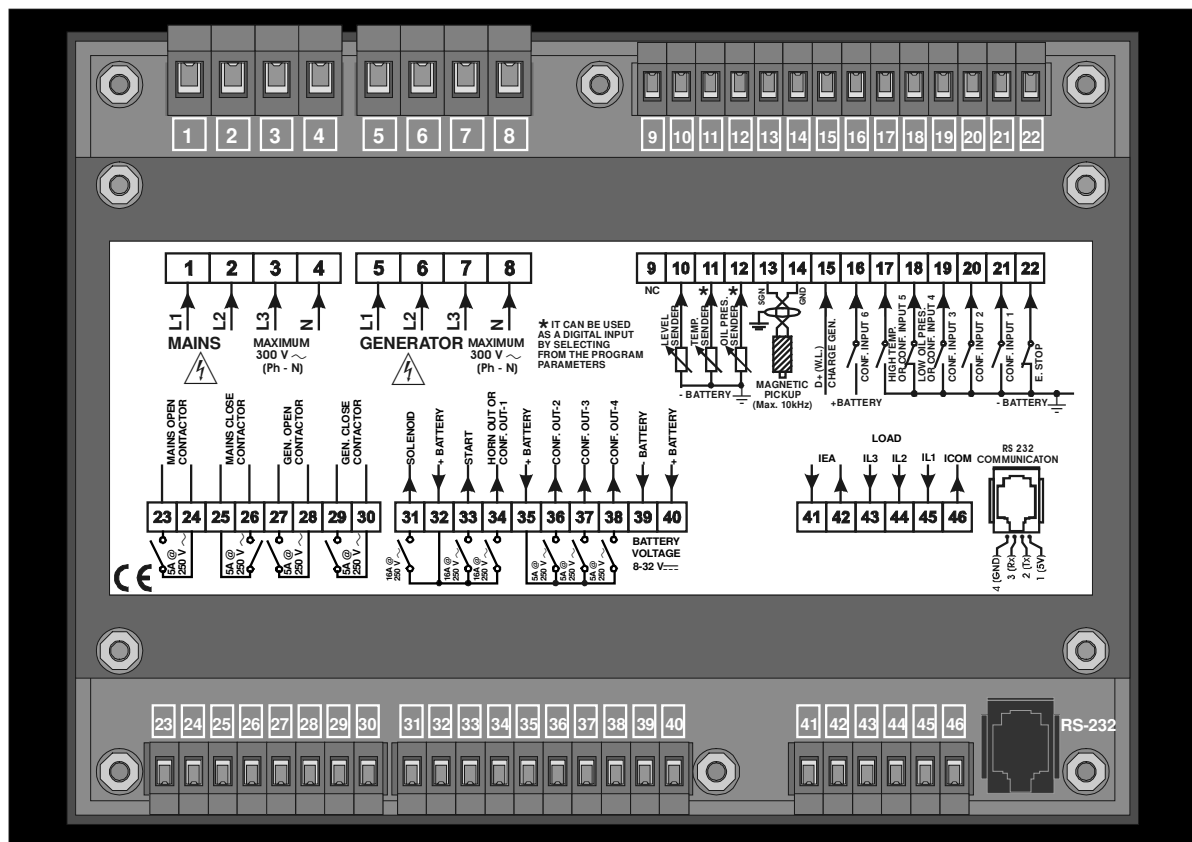


Figure 2.4 Rear view.



This equipment does not contain any parts and material related to users. Only qualified personnel and technician trained specially should work on this equipment. This equipment contains dangerous voltage inner circuits for human life . There is severe dangerous for human life on the case of unauthorised intervene.

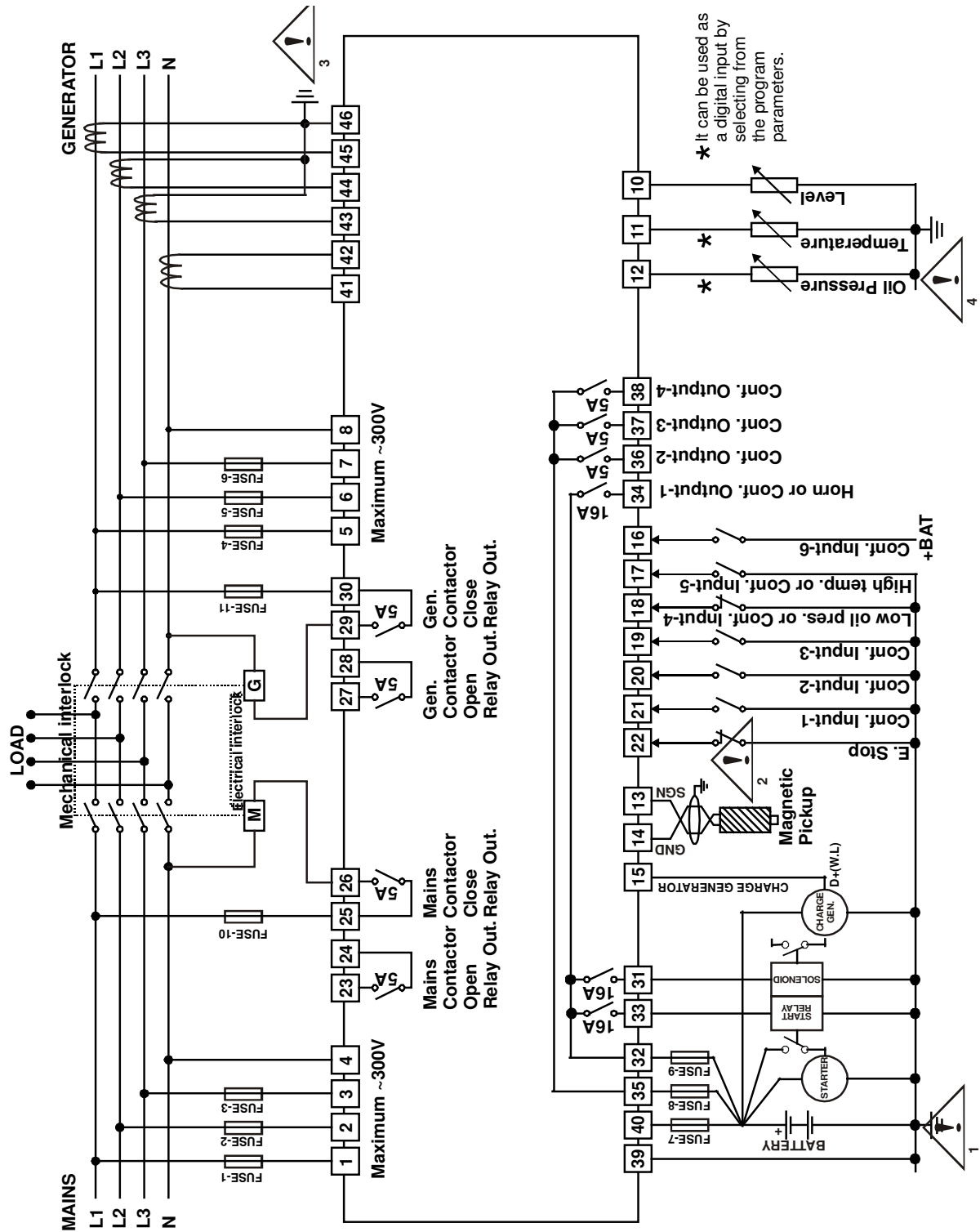



Figure 2.5 EAOM-210 FL three phase connections schematic.

FUSE-1, FUSE-2, FUSE-3, FUSE-4, FUSE-5, FUSE-6, FUSE-7 1 A. T

FUSE-8 should meet the current required by configurable output-2, 3, 4 - 15 A.T max

FUSE-9 should meet the current required by solenoids (Max. 16 A. T)

FUSE-10, FUSE-11 Max. 5A. T

1-  Connect the unit as shown in the appropriate diagram, Figure 2.5 . Be sure to connect the battery supply the right way round and battery negative should be grounded. The connectors can be unplugged from the rear of the unit to facilitate connection.

2-  Screened cable must be used for connecting the Magnetic Pickup, ensuring that the screen is grounded at one end ONLY.

Table 2.1 shows the connections and recommended cable sizes. Table 2.2 describes the functions of the connections.

Table 2.1 Unit wiring

Pin	Description	Cable Size (mm ²)	Notes
1	Mains voltage input (L1)	2,5	
2	Mains voltage input (L2)	2,5	3 phase applications only.
3	Mains voltage input (L3)	2,5	3 phase applications only.
4	Mains voltage neutral	2,5	
5	Alternator voltage input (L1)	2,5	
6	Alternator voltage input (L2)	2,5	3 phase applications only.
7	Alternator voltage input (L3)	2,5	3 phase applications only.
8	Alternator voltage neutral	2,5	
9	Not connected		
10	Fuel level sender	1	Connect to fuel level sender
11	Coolant temperature sender	1	Connect to Coolant temperature sender
12	Low oil pressure sender	1	Connect to Low oil pressure sender
13	Input from magnetic pick-up	1	Connect to magnetic pick-up device
14			
15	Input from charge generator	1	NC to "0" volt.
16	Configurable input-6	1	Switch to "BATTERY +".
17	High temperature or configurable input-5	1	Switch to "0" volt.
18	Low oil pressure or configurable input-4	1	Switch to "0" volt.
19	Configurable input-3	1	Switch to "0" volt.
20	Configurable input-2	1	Switch to "0" volt.
21	Configurable input-1	1	Switch to "0" volt.
22	Input from emergency stop	1	NC to "0" volt. When the switch is opened, the engine is stopped.
23	Mains Contactor Open Relay Output	2,5	
24	Mains Contactor Open Relay Output	2,5	
25	Mains Contactor Close Relay Output	2,5	
26	Mains Contactor Close Relay Output	2,5	
27	Gen. Contactor Open Relay Output	2,5	
28	Gen. Contactor Open Relay Output	2,5	
29	Gen. Contactor Close Relay Output	2,5	
30	Gen. Contactor Close Relay Output	2,5	
31	Output to fuel / stop solenoid	2,5	16 A. Max. DC supply from Pin 32
32	+Battery supply input	2,5	Supplies to Pin 31,33,34
33	Output to start	2,5	16 A. Max. DC supply from Pin 32
34	Horn or configurable relay output-1	2,5	16 A. Max. DC supply from Pin 32
35	+Battery supply input	2,5	Supplies to Pin 36,37,38
36	Configurable relay output-2	2,5	5 A. Max. DC supply from Pin 35

37	Configurable relay output-3	2,5	5 A. Max. DC supply from Pin 35
38	Configurable relay output-4	2,5	5 A. Max. DC supply from Pin 35
39	- Battery supply to EAOM-210 FL	2,5	Supplies to unit
40	+ Battery supply to EAOM-210 FL	2,5	Supplies to unit
41	CT Secondary for Earth current	2,5	Connect to secondary of Earth current monitoring CT
42	CT Secondary for Earth current	2,5	Connect to secondary of Earth current monitoring CT
43	CT Secondary for load L3	2,5	Connect to secondary of load L3 monitoring CT
44	CT Secondary for load L2	2,5	Connect to secondary of load L2 monitoring CT
45	CT Secondary for load L1	2,5	Connect to secondary of load L1 monitoring CT
46	Common for load L1, L2, L3	2,5	Connect to secondary of load common monitoring CT

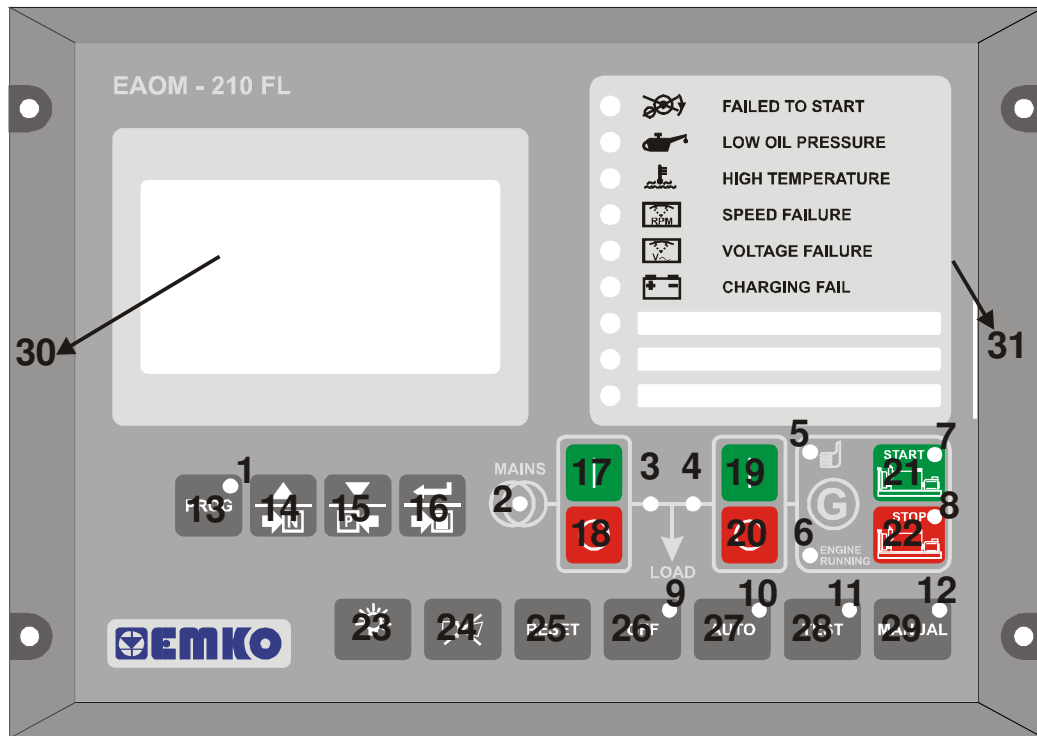
Table 2.2 Unit wiring description

Pin	Function	
1	L1	Mains voltage inputs. Used to detect failure for controlling automatic transfer of load to alternator. Pins 2 and 3 not used on single phase applications.
2	L2	
3	L3	
4	Mains voltage neutral	
5	L1	Alternator voltage inputs. Unit can be programmed to use frequency of alternator output to detect when engine has started. Pins 6 and 7 not used on single phase applications.
6	L2	
7	L3	
8	Alternator voltage neutral	
9	Not connected	
10	Fuel level sender	
11	Coolant temperature sender	
12	Low oil pressure sender	
13	Magnetic input +ve. An AC signal from the magnetic pick-up +ve for speed sensing.	
14	Magnetic input -ve. An AC signal from the magnetic pick-up -ve for speed sensing.	
15	Input from charge generator. Can be used to detect when engine has started.	
16	Configurable input-6. This is a negative switched configurable input, see Digital Configurable Input-6 Page Section for options available. It is possible to configure input to be a normally closed signal or a normally open signal.	
17	High Temperature or Configurable input-5. This is a negative switched. If Configurable input-5 is not selected as High Temperature, It is possible to configure input to be a normally closed signal or a normally open signal. See Digital Configurable Input-5 Page Section for options available.	
18	Low Oil Pressure or Configurable input-4. Normally closed contact. Switch to 0V. If Configurable input-4 is not selected as Low Oil Pressure, It is possible to configure input to be a normally closed signal or a normally open signal. See Digital Configurable Input-4 Page Section for options available.	
19	Configurable input-3. This is a negative switched configurable input, see Digital Configurable Input-3 Page Section for options available. It is possible to configure input to be a normally closed signal or a normally open signal.	
20	Configurable input-2. This is a negative switched configurable input, see Digital Configurable Input-2 Page Section for options available. It is possible to configure input to be a normally closed signal or a normally open signal.	
21	Configurable input-1. This is a negative switched configurable input, see Digital Configurable Input-1 Page Section for options available. It is possible to configure input to be a normally closed signal or a normally open signal.	
22	Input from emergency stop switch. Normally closed contact. Switch to 0V. when the switch is opened, the engine is stopped.	
23	Mains Contactor Open Relay Output. See Breakers Page Section for options available. Volts free contacts to 24.	
24	Mains Contactor Open Relay Output. See Breakers Page Section for options available. Volts free contacts to 24.	
25	Mains Contactor Close Relay Output. See Breakers Page Section for options available. Volts free contacts to 26.	
26	Mains Contactor Close Relay Output. See Breakers Page Section for options available. Volts free contacts to 25.	
27	Gen. Contactor Open Relay Output. See Breakers Page Section for options available. Volts free contacts to 28.	
28	Gen. Contactor Open Relay Output. See Breakers Page Section for options available. Volts free contacts to 27.	

29	Gen. Contactor Close Relay Output. See Breakers Page Section for options available. Volts free contacts to 30.
30	Gen. Contactor Close Relay Output. See Breakers Page Section for options available. Volts free contacts to 29.
31	Output to fuel / stop relay. DC supply from Pin 32. Controls fuel to engine or controls engine stopping.
32	+Battery supply input. Supplies to Pin 31,33,34
33	Output to start relay. DC supply from Pin 32. Controls starter motor.
34	Horn or configurable relay output-1. DC supply from Pin 32. See Configurable Output-1 Page Section for options available.
35	+Battery supply input. Supplies to Pin 36,37,38
36	Configurable relay output-2. DC supply from Pin 35. See Configurable Output-2 Page Section for options available.
37	Configurable relay output-3. DC supply from Pin 35. See Configurable Output-3 Page Section for options available.
38	Configurable relay output-4. DC supply from Pin 35. See Configurable Output-4 Page Section for options available.
39	- Battery input supplies EAOM-210 FL
40	+ Battery input supplies EAOM-210 FL
41	CT Secondary for Earth current (IEA).
42	CT Secondary for Earth current (IEA).
43	CT Secondary for load L3.
44	CT Secondary for load L2.
45	CT Secondary for load L1.
46	CT Secondary for load common.

Section 3 Definition Of Front Panel And Programming

3.1 Front Panel Description



Number	Comment:
1	The red LED illuminates only when the EAOM-210 FL in the Programming Mode.
2	The green LED indicates that Mains voltage and frequency is within limits and is ready to take over the load.
3	The LED shows that the load is connected to the mains. It's colour is green.
4	The LED shows that the load is supplied from the generator. It's colour is green.
5	The green LED indicates that Generator Voltage is within limits and is ready to take over the load.
6	The green LED indicates that the engine has started and is running.
7	In the MAN, AUTO and TEST modes, the green LED indicates that the engine is starting up or is running.
8	In the MAN, AUTO and TEST modes, the red LED indicates that the engine has stopping or stopped.
9	This red LED shows that the unit is in the OFF mode.
10	This red LED shows that the unit is in the AUTO mode.
11	This red LED shows that the unit is in the TEST mode.
12	This red LED shows that the unit is in the MANUAL mode.
13	When this button is pressed, the unit goes into its PROGRAMMING Mode and LED (1) illuminates.
14	This button is used for showing next working screen in normal operation. In Programming mode, it operates as an page changing function or increment function (increase value).

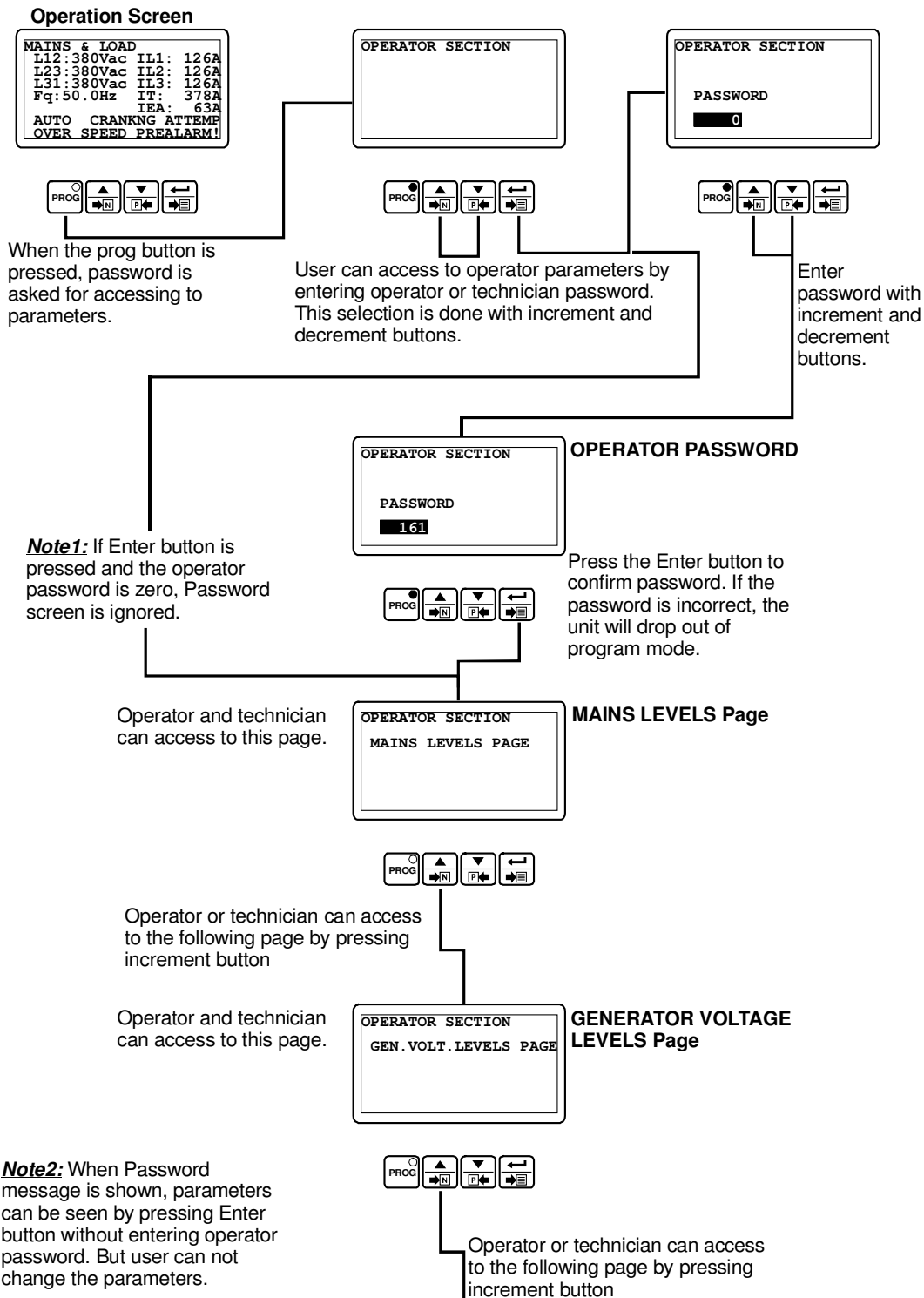
Number	Comment:
15	This button is used for showing previous working screen in normal operation. In Programming mode, it operates as an page changing function or decrement function (decrease value).
16	This button is used for rotating between Event Log screens in normal operation, and between programming parameters in programming mode.
17	This button closes the mains contactor, only operative when manual mode is selected.
18	This button opens the mains contactor, only operative when manual mode is selected.
19	This button closes the alternator contactor, only operative when manual mode is selected.
20	This button opens the alternator contactor, only operative when manual mode is selected.
21	The START button is used for starting the engine when the unit is in the Manual Mode.
22	The STOP button is used for stopping the engine when the unit is in the Manual Mode.
23	The LAMP TEST button illuminates all LED indicators.
24	This button will silence the alarm horn after a failure has been detected.
25	This button will reset the controller after a failure has been detected.
26	The OFF button is used for changing operating mode of the unit to the OFF Mode.
27	The AUTO button is used for changing operating mode of the unit to the AUTO Mode.
28	The TEST button is used for changing operating mode of the unit to the TEST Mode.
29	The MAN button is used for changing operating mode of the unit to the MANUAL Mode.
30	128x64 Dot matrix LCD Display. This is used for displaying the electrical measurements during normal operation (features explained in section 5.1.1.), and editing/inspecting programming parameters in program mode.
31	Failure Indicators. Detailed information available in section 5.1.2.

3.2 Programming Procedure

Many of the unit functions can be set by programming. Programming can be carried out only while the unit is in **OFF** mode. Press the OFF (26) button. If the engine is running, it will stop and the LED (9) lights on.

The parameters have been divided into groups according to their functions. Every group has a title and firstly user must determine the title (page) for accessing to the parameters. Refer to the parameters section for detailed information about parameters.

3.3 Accessing to the Operator Parameters

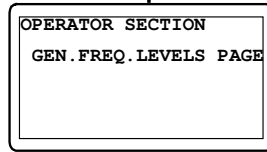


Operator and technician can access to this page

If the sensing options generator frequency parameter(Gen1) in Miscellaneous page(Gen) is disable, this page is ignored.

Operator or technician can access to the following page by pressing increment button

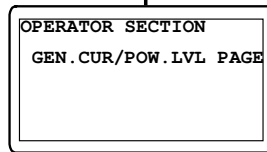
Operator and technician can access to this page



GENERATOR FEQUENCY LEVELS Page



Operator or technician can access to the former page by pressing decrement button



GENERATOR CURRENT/POWER LEVELS Page



Operator or technician can access to the former page by pressing decrement button

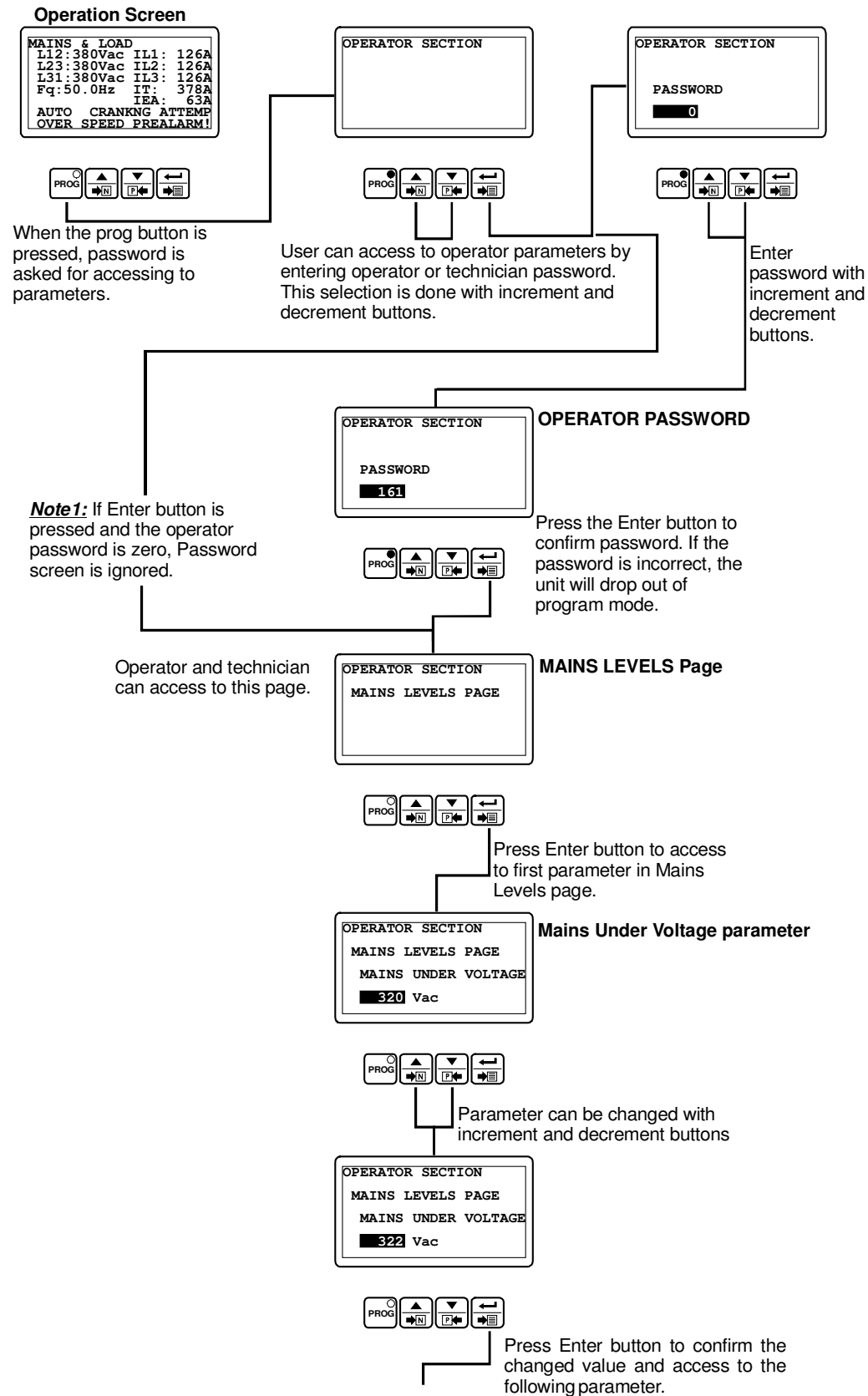
Press prog button to exit from Program Mode and turn to operation screen.

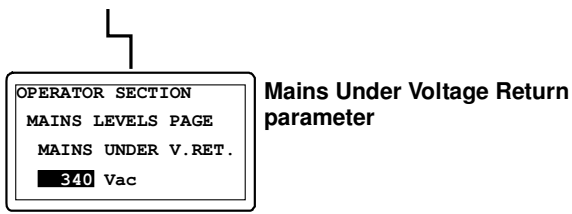
Continue to press increment and decrement buttons to change the page.

By pressing ENTER button, user can access to all parameters in related page.

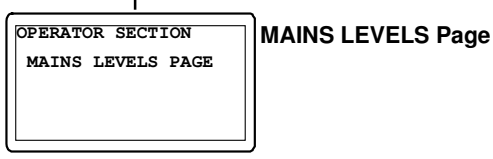
3.3.1 Changing and Saving Operator Parameter Values

Example-1 : To change Mains Under Voltage parameter in "MAINS LEVELS PAGE", user must access to "MAINS LEVELS PAGE" page firstly.



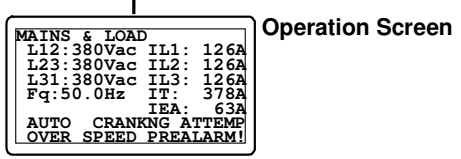


When Prog button is pressed, related page can be accessed.



If Prog button is pressed again, operation screen is shown.

Continue to press increment and decrement buttons to change the page.



3.4 Accessing to the Technician Parameters

Operation Screen

```

MAINS & LOAD
L12:380Vac IL1: 126A
L23:380Vac IL2: 126A
L31:380Vac IL3: 126A
Fq:50.0Hz IT: 378A
IEA: 63A
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
    
```



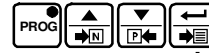
When the prog button is pressed, password is asked for accessing to parameters.

OPERATOR SECTION



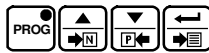
User can access to technician parameters by entering technician password. This selection is done with increment and decrement buttons.

TECHNICIAN SECTION



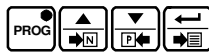
Press the Enter button.

TECHNICIAN SECTION
PASSWORD
0



Enter password with increment and decrement buttons.

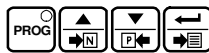
TECHNICIAN SECTION
PASSWORD
162



TECHNICIAN PASSWORD

Press the Enter button to confirm password. If the password is incorrect, the unit will drop out of program mode.

TECHNICIAN SECTION
GEN. CUR/POW. ACT. PAGE



GENERATOR CURRENT/POWER ACTIONS Page

Operator can not access to this page.

Note1: If Enter button is pressed and the technician password is zero, Password screen is ignored.

Technician can access to the following page by pressing increment button

TECHNICIAN SECTION
MISCELLANEOUS PAGE



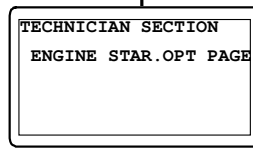
MISCELLANEOUS Page

Operator can not access to this page.

Note2: When Password message is shown, parameters can be seen by pressing Enter button without entering technician password. But user can not change the parameters.

Technician can access to the following page by pressing increment button

Operator can not access to this page.



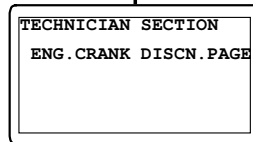
ENGINE STARTING OPTIONS Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



ENGINE CRANK DISCONNECT Page

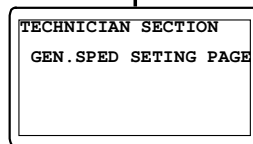
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the sensing options pick up parameter(Gen2) in Miscellaneous page(Gen) is disable, this page is ignored.



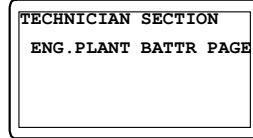
GENERATOR SPEED SETTINGS Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



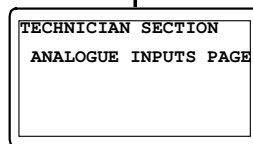
ENGINE PLANT BATTERY Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



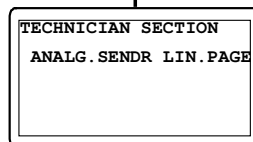
ANALOGUE INPUTS Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



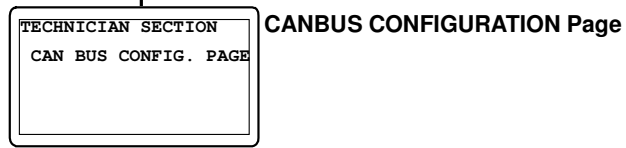
ANALOGUE SENDER LINEARISATIONS Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

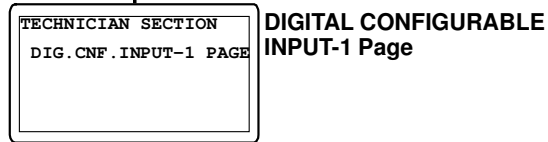


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

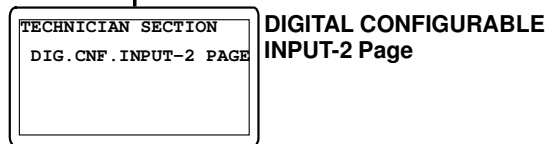


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

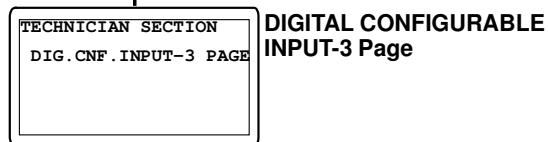


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

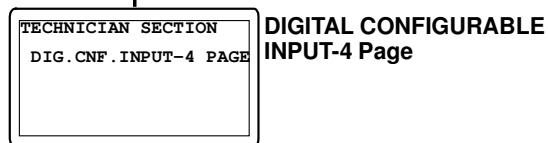


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

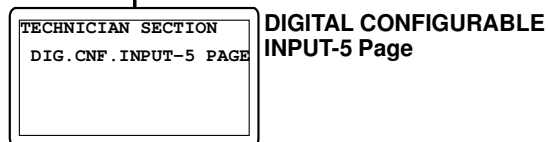


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

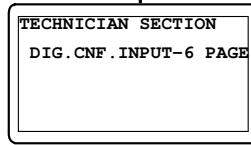


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



DIGITAL CONFIGURABLE INPUT-6 Page

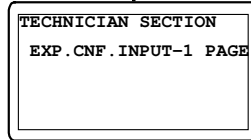
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE INPUT-1 Page

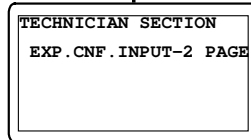
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE INPUT-2 Page

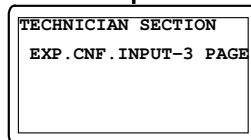
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE INPUT-3 Page

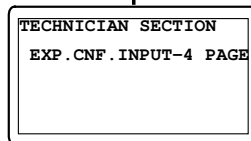
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE INPUT-4 Page

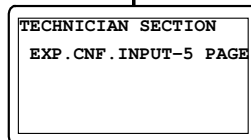
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

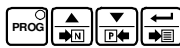
Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE INPUT-5 Page

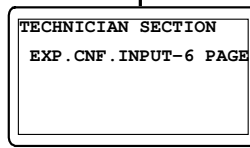
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE INPUT-6 Page

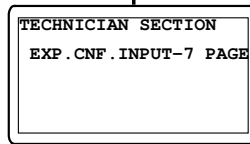
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE INPUT-7 Page

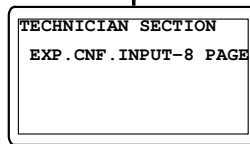
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



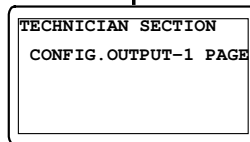
EXPANSION CONFIGURABLE INPUT-8 Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



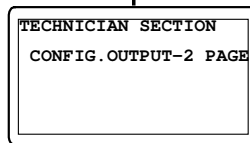
CONFIGURABLE OUTPUT-1 Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



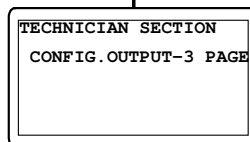
CONFIGURABLE OUTPUT-2 Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



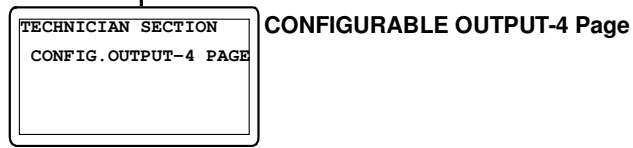
CONFIGURABLE OUTPUT-3 Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



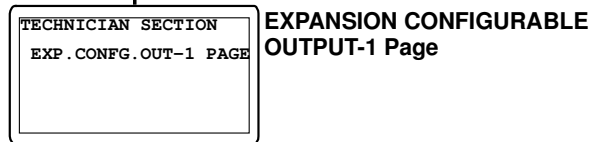
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



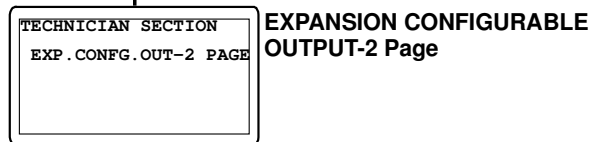
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



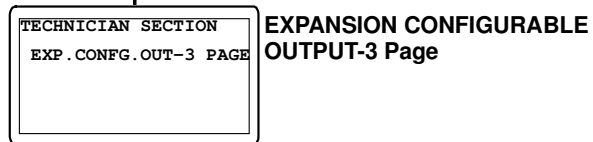
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



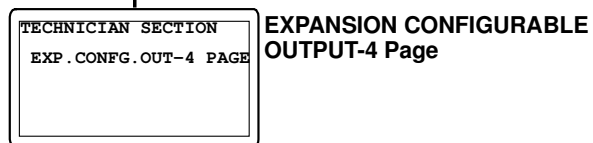
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



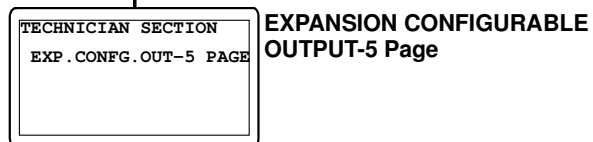
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



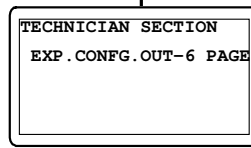
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE OUTPUT-6 Page

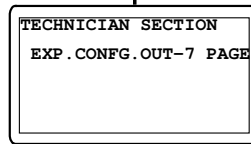
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



EXPANSION CONFIGURABLE OUTPUT-7 Page

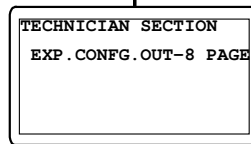
Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

If the Expansion Module Selection parameter in CanBus Configuration page is disable, this page is ignored.



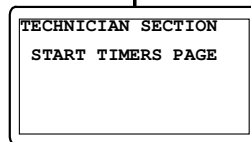
EXPANSION CONFIGURABLE OUTPUT-8 Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



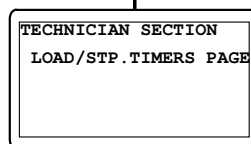
START TIMERS Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



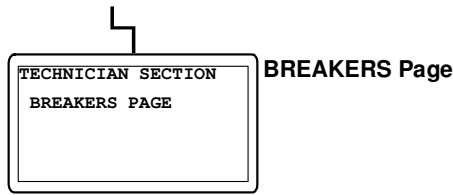
LOAD/STOPPING TIMERS Page

Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

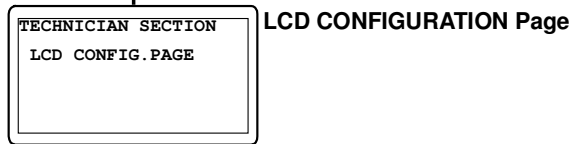


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

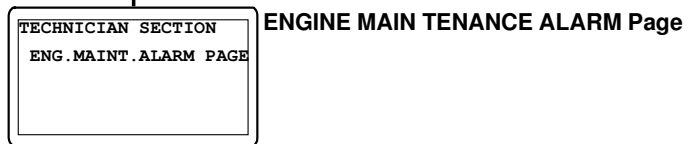


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

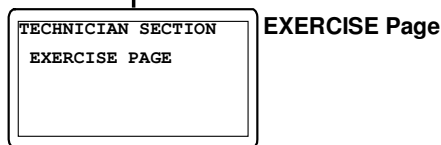


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

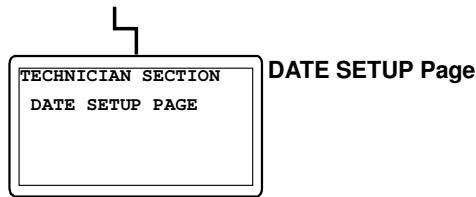


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.

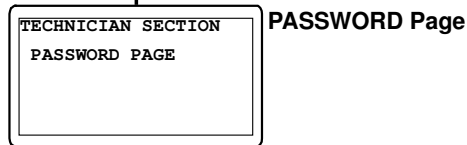


Technician can access to the following page by pressing increment button.



Technician can access to the former page by pressing decrement button.

Operator can not access to this page.



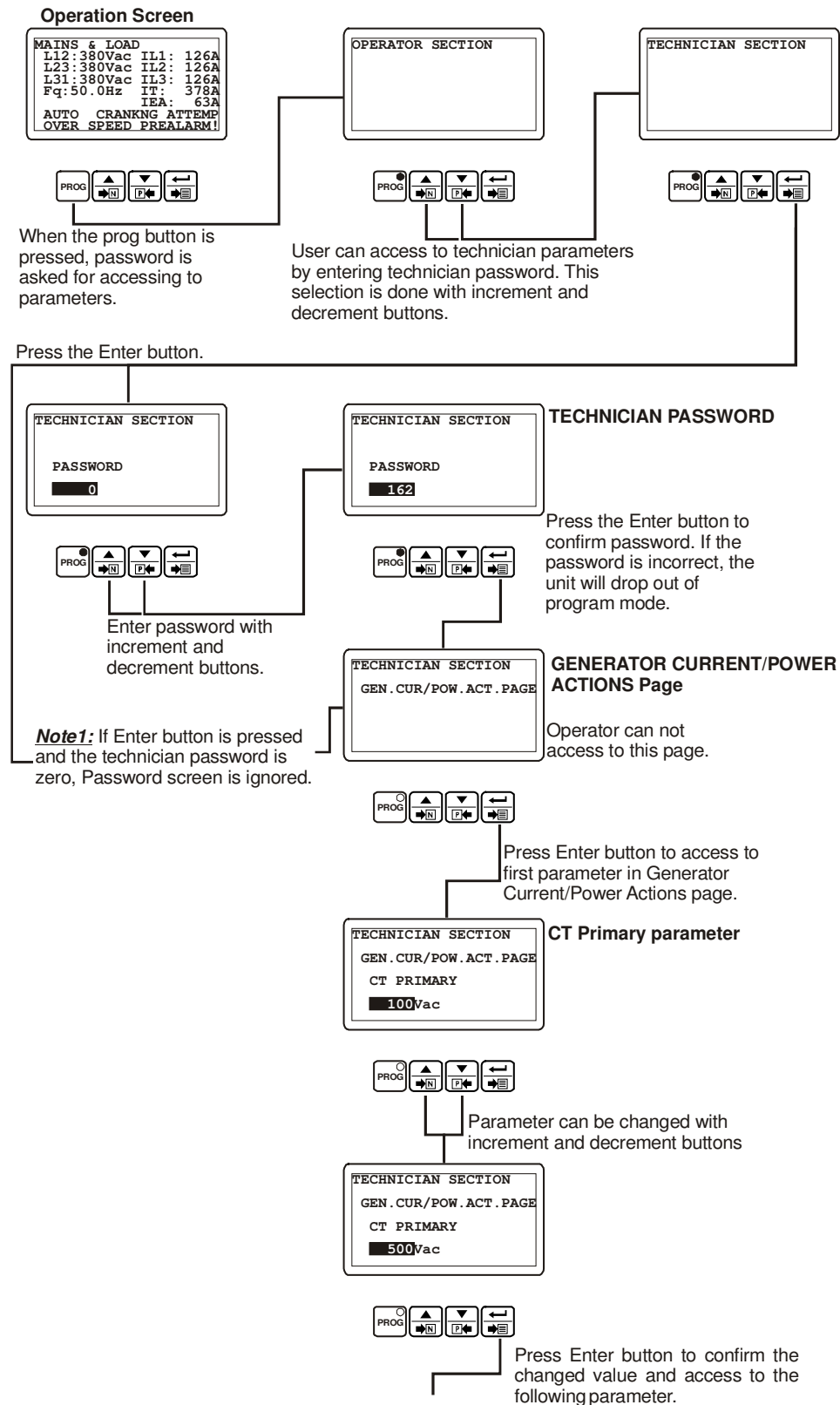
Press prog button to exit from Program Mode and turn to operation screen.

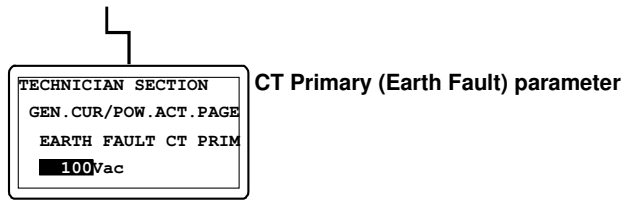
Continue to press increment and decrement buttons to change the page.

By pressing ENTER button, user can access to all parameters in related page.

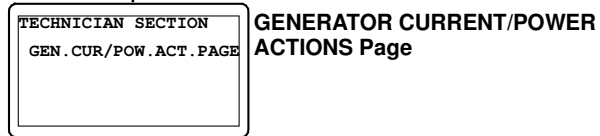
3.4.1 Changing and Saving Technician Parameter Values

Example-1 : To change CT Primary parameter in "GENERATOR CURRENT/POWER ACTIONS PAGE", user must access to "GEN.CUR/PW.ACT.PAGE" firstly.



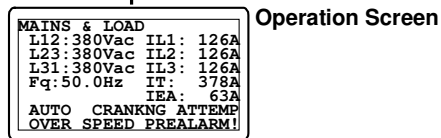


When Prog button is pressed, related page can be accessed.



If Prog button is pressed again, operation screen is shown.

Continue to press increment and decrement buttons to change the page.



3.5 Programmable function definitions

Operator parameters

(MAINS LEVELS PAGE) MAINS LEVELS page				
MAINS UNDER VOLTAGE	<i>Mains Under Voltage</i>	VAC	60 – 600	320
MAINS UNDER V.RET.	<i>Mains Under Voltage Return</i>	VAC	60 – 600	340
MAINS OVER VOLTAGE	<i>Mains Over Voltage</i>	VAC	60 – 600	440
MAINS OVER V.RETURN	<i>Mains Over Voltage Return</i>	VAC	60 – 600	420
MAINS UNDER FREQ.	<i>Mains Under Frequency</i>	Hz	20.0 – 75.0	45.0
MAINS UNDER F.RET.	<i>Mains Under Frequency Return</i>	Hz	20.0 – 75.0	48.0
MAINS OVER FREQ.	<i>Mains Over Frequency</i>	Hz	20.0 – 75.0	55.0
MAINS OVER F.RETURN	<i>Mains Over Frequency Return</i>	Hz	20.0 – 75.0	52.0

The unit uses these parameters to decide when to lit the “Mains Okey LED”.
In Automatic mode, the unit uses these parameters to switch the load between the mains supply and the alternator.

(GEN.VOLT.LEVELS PAGE) GENERATOR VOLTAGE LEVELS page				
GEN.UNDER VOLTAGE	<i>Generator Under Voltage</i>	VAC	(dis)60 – 600	320
GEN.UNDER V.PRE-ALR	<i>Generator Under Voltage Pre-Alarm</i>	VAC	(dis)60 – 600	340
GEN.LOADING VOLTAGE	<i>Generator Loading Voltage</i>	VAC	60 – 600	345
GEN.OVER V.PRE-ALR	<i>Generator Over Voltage Pre-Alarm</i>	VAC	(dis)60 – 600	420
GEN.OVER V.PR-A.RET	<i>Generator Over Voltage Pre-Alarm Return</i>	VAC	60 – 600	400
GEN.OVER VO.SHUTDWN	<i>Generator Over Voltage Shutdown</i>	VAC	60 – 600	440

The unit uses these parameters to decide when to display Voltage Failure and Voltage Error Messages. Also, the unit uses Generator Loading Voltage parameter to decide when to take the load.

(GEN.FREQ.LEVELS PAGE) GENERATOR FREQUENCY LEVELS page				
GEN.UNDER FREQUENCY	<i>Generator Under Frequency</i>	Hz	(dis)30.0 – 75.0	43.0
GEN.UNDER F.PRE-ALR	<i>Generator Under Frequency Pre-Alarm</i>	Hz	(dis)30.0 – 75.0	45.0
GEN.LOADING FREQ.	<i>Generator Loading Frequency</i>	Hz	30.0 – 75.0	46.0
GEN.OVER F.PRE-ALR	<i>Generator Over Frequency Pre-Alarm</i>	Hz	(dis)30.0 – 75.0	55.0
GEN.OVER F.PR-A.RET	<i>Generator Over Frq Pre-Alarm Return</i>	Hz	30.0 – 75.0	54.0
GEN.OVER FR.SHUTDWN	<i>Generator Over Frequency Shutdown</i>	Hz	(dis)30.0 – 75.0	58.0

The unit uses these parameters to decide when to display Speed Failure and Frequency Error Messages. Also, the unit uses Generator Loading Frequency parameter to decide when to take the load.

(GEN.CUR/POW.LVL.PAGE) GENERATOR CURRENT/POWER LEVELS page				
GEN.OVER CURRENT	<i>Generator Over Current</i>	A AC	0 – 9999	9999
GEN.SHORT CIRCUIT	<i>Generator Short Circuit</i>	A AC	0 – 9999	9999
GEN.EARTH FAULT	<i>Generator Earth Fault</i>	A AC	0 – 9999	100

Technician parameters

(GEN.CUR/POW.ACT.PAGE) GENERATOR CURRENT/POWER ACTIONS page

CT PRIMARY	<i>CT Primary</i>	A AC	0 – 9999	500
EARTH FAULT CT PRIM	<i>CT Primary (Earth Fault)</i>	A AC	0 – 9999	500
OVER CUR.ACTIONS	<i>Over Current Actions -Disable -Warning (Alarm Only, No Shutdown) -Electrical Trip (Alarm/Off Load Generator Followed By Shutdown After Cooling) -Shutdown (Alarm And Shutdown)</i>	-	0-3	dis
OVER CUR.ALARM TIME	<i>Over Current Alarm Time</i>	Sec	0 - 99	0
SHORT CIR.ACTIONS	<i>Short Circuit Actions -Disable -Warning (Alarm Only, No Shutdown) -Electrical Trip (Alarm/Off Load Generator Followed By Shutdown After Cooling) -Shutdown (Alarm And Shutdown)</i>	-	0-3	dis
SHORT CIR.ALARM TIME	<i>Short Circuit Alarm Time</i>	Sec	0 - 99	0
EARTH FAULT ACTIONS	<i>Earth Fault Actions -Disable -Warning (Alarm Only, No Shutdown) -Electrical Trip (Alarm/Off Load Generator Followed By Shutdown After Cooling) -Shutdown (Alarm And Shutdown)</i>	-	0-3	dis
EARTH FAU.ALARM TIME	<i>Earth Fault Alarm Time</i>	Sec	0 - 99	0
TOTAL ENERGY CLEAR	<i>Total Energy Clear</i>	-	No-YES	no
ACTIVE ENERGY CLEAR	<i>Active Energy Clear</i>	-	No-YES	no
REACTIVE ENERGY CLR	<i>Reactive Energy Clear</i>	-	No-YES	no

(MISCELLANEOUS PAGE) MISCELLANEOUS page

SENS.OPT.GEN.F.ENAB	<i>Sensing Options Generator Frq En/Dis</i>	-	ENAB DIS	ENAB
SNS.OP.PICKP ENA&FW	<i>Sensing Opt Pickup En/Dis & Flywheel</i>	-	(dis)0-1000	DIS
AC SYSTEM	<i>Ac System 0 =1phase 2wire, 1= 3phase 4wire 2= 3phase 4wire Series Delta</i>	-	0-2	1
FAST LOAD.FEAT.ENAB	<i>Fast Loading Feature En/Dis</i>	-	ENAB DIS	DIS
ALL WRN.ARE LTCH.EN	<i>All Warnings Are Latched En/Dis</i>	-	ENAB DIS	DIS
MAINS FAIL.DETEC.EN	<i>Mains Failure Detection En/Dis</i>	-	ENAB DIS	ENAB
LK.MA.FA.FO.MA.CN.E	<i>Look Mains Failure For Mains Cont. En/Dis</i>	-	ENAB DIS	DIS
GAS/DIESEL SELECT	<i>Engine Fuel (Gas/ Diesel) Selection</i>	-	GAS/ DIESEL	DIESEL
STOP/FUEL SELECTION	<i>Stop / Fuel Selection</i>	-	STOP/FUEL	FUEL
STOP SOLENOID TIME	<i>Stop Solenoid Time</i>	Sec	5 - 99	20
IGNITION DELAY	<i>Ignition Delay</i>	Sec	1 - 99	5
GAS VALVE DELAY	<i>Gas Valve Delay</i>	Sec	1 - 99	5
MIN.IGNITION SPEED	<i>Min Ignition Speed</i>	RPM	10 - 1500	200
NOMINAL FREQUENCY	<i>Nominal Alternator Frequency</i>	Hz	30.0 – 75.0	50.0
NOMINAL SPEED	<i>Nominal Speed</i>	RPM	500 - 5000	3000

SENSING OPTIONS GENERATOR FRQ EN/DIS:

ENABLE: Speed sensing will be derived from the generator output frequency.

DISABLE: Speed sensing not will be derived from the generator output frequency.

SENSING OPT. PICKUP EN/DIS & FLYWHEEL

DISABLE: Speed sensing will not be derived from the magnetic pickup.

1-1000: Speed sensing will be derived from the magnetic pickup and the number is flywheel teeth on the engine.

AC SYSTEM 3 PHASE 4 WIRE OR 1 PHASE 2 WIRE

0: AC system is 1 phase 2 wire.

1: AC system is 3 phase 4 wire.

2: AC system is 3 phase 4 wire series delta.

FAST LOADING FEATURE EN/DIS

ENABLE: The module will terminate the safety on timer once all monitored parameters have reached their normal settings. This feature is useful if the module is to be used as a standby controller as it allows the generator to start and go on load in the shortest possible time.

DISABLE: Normal operation, the safety on timer will be observed in full. This feature is useful if the module is to be used with some small engines where pre-mature termination of the delay timer can lead to overspeed alarms on start up.

ALL WARNINGS ARE LATCHED EN/DIS

Disable: Normal operation, the warnings and pre-alarms (except spare inputs, because they have their latching or non-latching selections) will automatically reset once the triggering condition has cleared.

Enable: Warnings and pre-alarms will be latched when triggered. To reset the alarm either an external reset must be applied to one of the inputs or the 'Reset' pushbutton operated, once the triggering condition has cleared.

MAINS FAILURE DETECTION EN/DIS

Disable: The module will not monitor the AC mains supply for failure. The AC mains instrumentation will still be active however.

Enable: The module will monitor the incoming AC mains supply. Should the supply go out side of limits the module will initiate its automatic mains failure sequence.

LOOK MAINS FAILURE FOR MAINS CONTACTOR EN/DIS

Disable: In the event of a mains failure the EAOM-210 FL will attempt to maintain the supply to the load for the incoming AC mains supply until the generator is available to go on load. In the event of a generator failure the module will default back to the incoming AC mains supply. This provides a 'fail-safe system', ensuring that in the event of a system failure the load will still be fed from the AC mains supply.

Enable: As soon as the module detects a mains failure the mains contactor or breaker relay will be opened to remove the supply from the load. This is to prevent damage to the load in case of single-phase failure, especially useful if the load is a 3-phase motor or pump. The supply to the load will then be fed from the gen-set once it is available. In the event of generator failure the module will open the generator relay and remove the supply to the load until either the mains supply is restored or the generator is restarted.

ENGINE FUEL (DIESEL /GAS) SELECTION

Diesel or Gas engine can be selected.

If diesel engine selected:

STOP/FUEL SELECTION

Selection for the engine has Fuel or Stop solenoid.

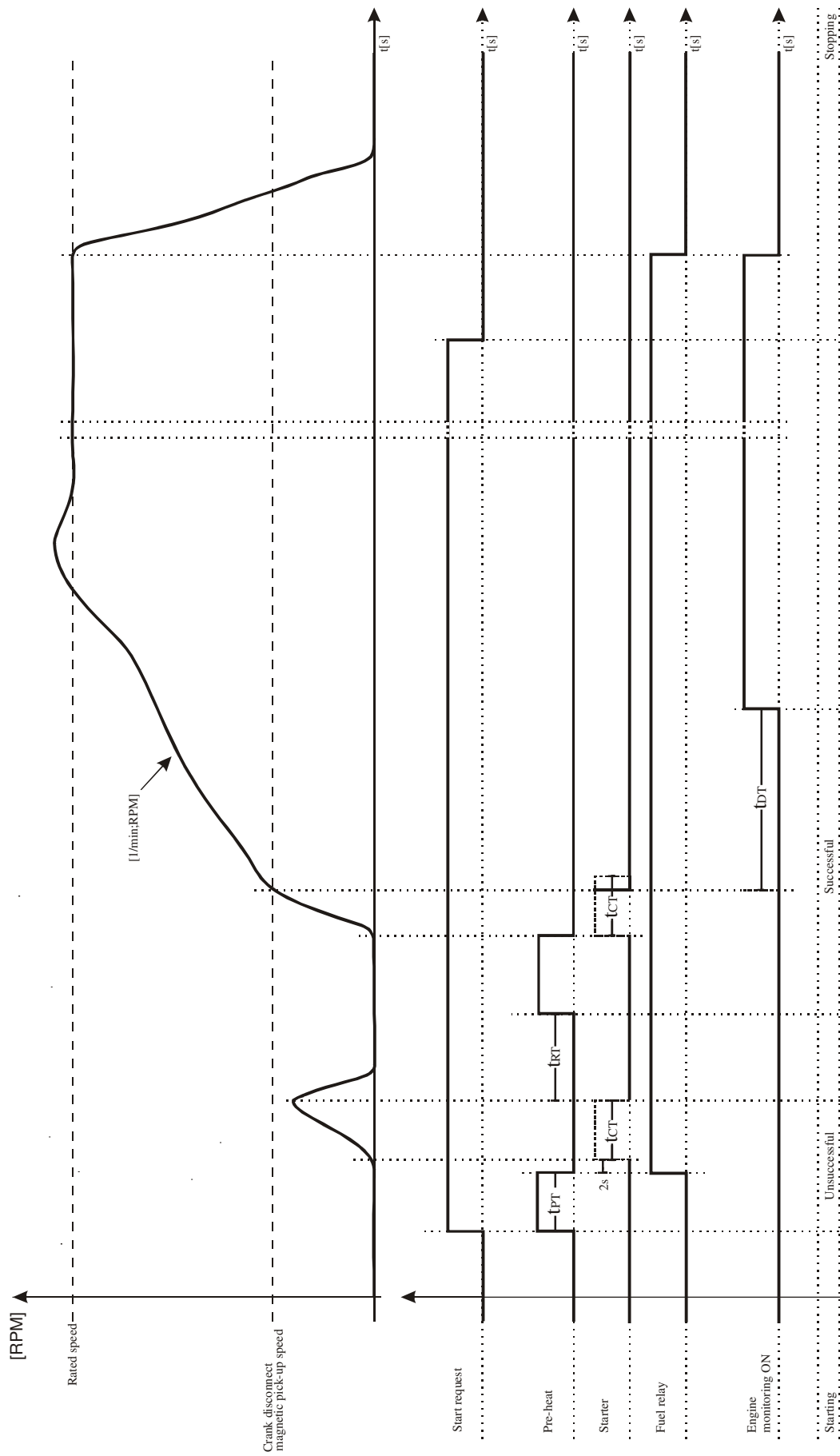
STOP SOLENOID TIME

This timer is used if the unit is configured to operate an Energise to stop engine. It dictates the duration that the Stop Solenoid output will remain active after the module has detected the engine has come to rest. If the Stop Solenoid output is not configured, this timer will still operate, preventing an immediate restart.

Example: Start/stop diagram for Diesel Engine.

The formula signs and indices mean:

TPT	Preheating time	[s]
TCT	Engagement time	[s]
TRT	Interval between 2 start attempts	[s]
TDT	Engine delayed monitoring	[s]



If gas engine selected:

IGNITION DELAY

With gas engines often a purging operation is desired before starting. With the engaging of the starter the ignition delay is started. If the 'min ignition speed' is reached after expiry of this time, the configurable relay output 'ignition' is set.

GAS VALVE DELAY

By setting the ignition relay the gas valve delay is started. After the expiry of the set time as long as the number of revolutions is higher than the minimum ignition speed, the gas valve is set. When the necessary engine shutdown process, gas valve is de-energised.

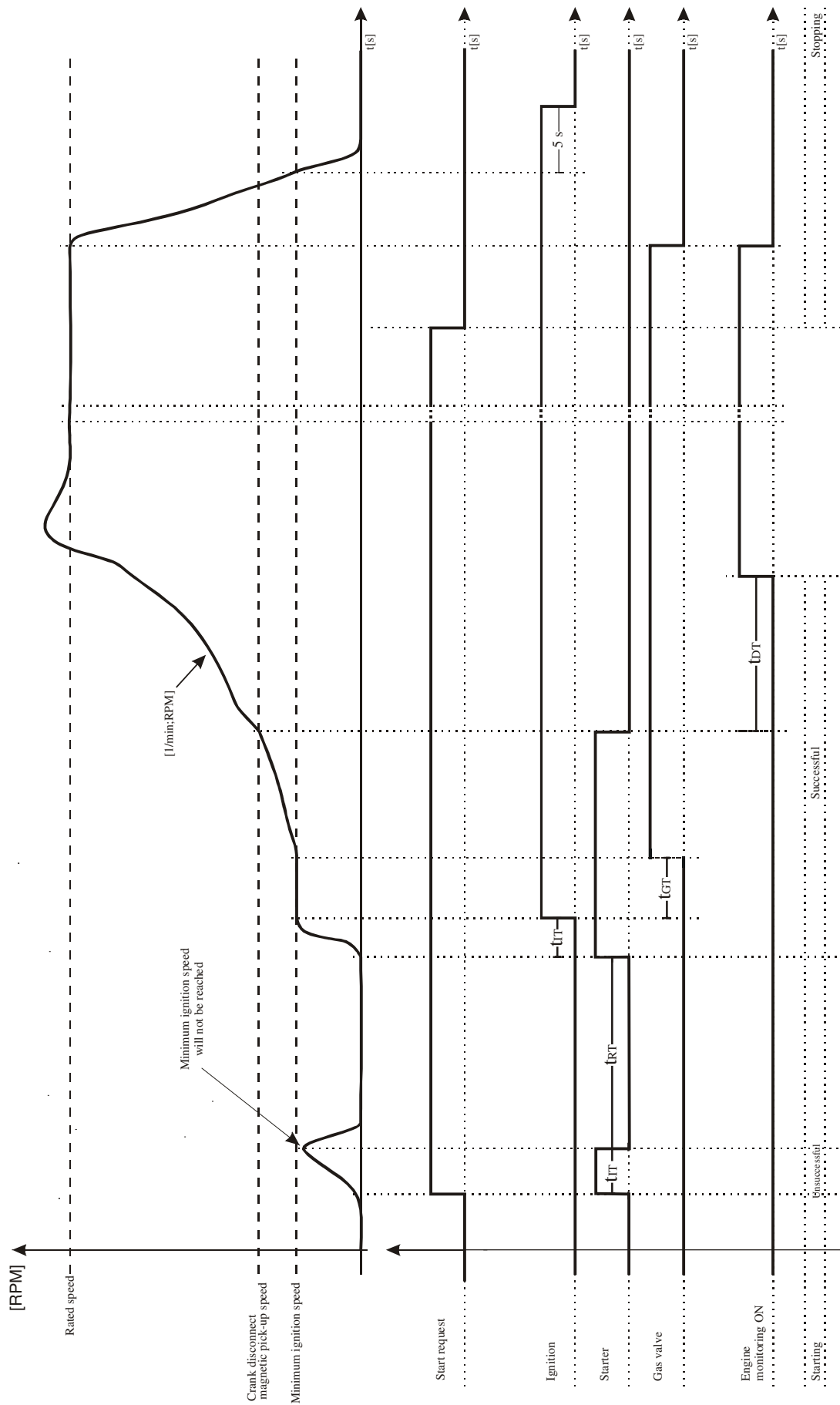
MIN IGNITION SPEED

After expiry of the ignition delay the number of revolutions set must be reached, so that the configurable relay output 'ignition' will be set.

Example: Start/stop diagram for Gas Engine.

The formula signs and indices mean:

TRT	Interval between 2 start attempts	[s]
TIT	Ignition delay	[s]
TGT	Gas valve delay	[s]
TDT	Engine delayed monitoring	[s]



(ENGINE STAR.OPT PAGE) ENGINE STARTING OPTIONS page				
AU.ALR.PRIOR STRT.E	<i>Audible Alarm Prior To Starting En/Dis</i>	-	ENAB DIS	DIS
NUMBR OF STR.ATTEMP	<i>Number Of Start Attempts</i>	-	1 – 10	3
CRANKING TIME	<i>Cranking Time</i>	SEC	5 – 99	5
CRANK REST TIME	<i>Crank Rest Time</i>	SEC	5 – 99	10
MUL.STR.ENG.ATEMP.E	<i>Multiple Start Engage Attempts E/D (Pick)</i>	-	ENAB DIS	DIS
ENGAGE ATTEMPT TIME	<i>Engage Attempt Time (Pickup)</i>	SEC	0.1 – 10.0	1.0
ENG.ATEMP.REST TIME	<i>Engage Attempt Rest Time (Pickup)</i>	SEC	0.1 – 10.0	1.0
PICK.SNSR FAIL DELY	<i>Pickup Sensor Fail Delay(Pickup)</i>	SEC	0.1 – 10.0	1.0

AUDIBLE ALARM PRIOR TO STARTING EN/DIS

ENABLE: The audible alarm will sound before the engine starts. The sounder will become active once the start delay is initialised, it will remain active until either the engine reaches crank disconnect speed or pre-heat timers are cancelled.

NUMBER OF START ATTEMPTS

This value is the number of times the module will attempt to start the generator. Should the generator start the module will not attempt further starts. If the generator does not start after the final attempt, the module will give a 'Fail to start' alarm.

CRANKING TIME

This is the maximum amount of time that the module will energise the starter motor for during starting attempts once the starter has engaged.

CRANK REST TIME

This is the amount of time the module will wait for between start attempts. This is to allow the starter motor to cool and the starter batteries to recover.

MULTIPLE START ENGAGE ATTEMPTS E/D

(Only available if using Magnetic pickup)

ENABLE: The module will monitor the flywheel to ensure that the starter motor has engaged. If it detects the starter has not meshed, it will de-energise the start relay and after a short delay it will attempt to re-engage the starter. This will be repeated until either the starter motor engages correctly or the number of engage attempts expires. Each start attempt can have a maximum number of attempts to engage the starter, this value is entered the box.
DISABLE: Normal operation, starter engagement with flywheel will not monitored.

ENGAGE ATTEMPT TIME

(Only available if using Magnetic pickup and multiple engage attempts)

This timer dictates the duration that the module will attempt to engage the starter motor during each engage attempt. If the magnetic pickup is not detecting movement of the flywheel when this timer expires the engage attempt will terminate. Once all engage attempts have been made the module will generate 'Fail to engage' alarm.

ENGAGE ATTEMPT REST TIME

(Only available if using Magnetic pickup and multiple engage attempts)

This timer dictates the duration that the module will wait between attempts to engage the starter.

PICKUP SENSOR FAIL DELAY

(Only available if using Magnetic pickup without multiple engage attempts)

This is only used if magnetic pickup speed sensing is selected. When cranking, the module must receive a speed signal within this time. If no signal is present the generator will be shutdown and Loss of Speed Sensing alarm given.

(ENG.CRANK DISCN.PAGE) ENGINE CRANK DISCONNECT page				
CRNK DISCN.ON GEN.F	<i>Crank Disconnect On Gen. Frequency</i>	Hz	25.0 – 75.0	30.0
CRNK DISCN.ON MAG.P	<i>Crank Disconnect On Magnetic Pickup</i>	RPM	500-6000	500
CRNK DISCN.ON GEN.V	<i>Crank Disconnect On Gen. Voltage</i>	VAC	(dis)60 – 600	300
CRNK DISC.ON CH.G.V	<i>Crank Disconnect On Charge Alt. Voltage</i>	VDC	(dis)6.0 – 30.0	6.1
CRNK DISCN.ON OIL P	<i>Crank Disconnect On Oil Pressure</i>	BAR	(dis)1.0-90.0	dis

(GEN.SPED SETING PAGE) GENERATOR SPEED SETTINGS page				
GEN.UNDER SPEED	<i>Generator Under Speed</i>	RPM	(dis)500 – 5000	500
GEN.UNDR SPED PRE-A	<i>Generator Under Speed Prealarm</i>	RPM	(dis) 500 – 5000	500
GEN.UNDR SP.PR-A.RT	<i>Generator Under Speed Prealarm Return</i>	RPM	500 – 5000	500
GEN.OVER SPED PRE-A	<i>Generator Over Speed Prealarm</i>	RPM	(dis) 500 – 5000	500
GEN.OVER SP.PR-A.RT	<i>Generator Over Speed Prealarm Return</i>	RPM	500 – 5000	500
GEN.OVER SP.SHUTDWN	<i>Generator Over Speed Shutdown</i>	RPM	(dis) 500 – 5000	500

(ENG.PLANT BATTR PAGE) ENGINE PLANT BATTERY page				
BAT.UNDER V.WARNING	<i>Battery Undervolts Warning</i>	VDC	(dis)6.0 – 30.0	10.0
BAT.UNDR V.WARN.RET	<i>Battery Undervolts Warning Return</i>	VDC	6.0 – 30.0	10.5
BAT.UNDER VOL.DELAY	<i>Batt Undervolts Volts Delay</i>	Sec	0 – 9.9	1.0
BAT.OVER V.WARNING	<i>Battery Overvolts Warning</i>	VDC	(dis)6.0 – 30.0	30.0
BAT.OVER V.WARN.RET	<i>Battery Overvolts Warning Return</i>	VDC	6.0 – 30.0	29.5
BAT.OVER VOL.DELAY	<i>Batt Overvolts Delay</i>	sec	0 – 9.9	1.0
CHARGE ALT.WARNING	<i>Charge Alternator Warning</i>	VDC	(dis)6.0 – 30.0	6.1

(ANALOGUE INPUTS PAGE) ANALOGUE INPUTS page				
OIL PRES.INPUT TYPE	<i>Oil Pressure Input Type</i>		Dis,nc,no,anlg	ANLG
OIL PRES.PRE-ALARM	<i>Oil Pressure Pre-Alarm</i>	BAR	(dis)0.0 – 99.9	1.2
OIL PRES.PRE-AL.RET	<i>Oil Pressure Pre-Alarm Return</i>	BAR	0.0 – 99.9	1.4
OIL PRES.SHUTDOWN	<i>Oil Pressure Shutdown</i>	BAR	0.0 – 99.9	1.0
TEMP.INPUT TYPE	<i>Temperature Input Type</i>		Dis,nc,no,anlg	ANLG
TEMP.PRE-ALARM	<i>Temperature Pre-Alarm</i>	C	(dis)0 - 300	90
TEMP.PRE-ALARM RET	<i>Temperature Pre-Alarm Return</i>	C	0 - 300	88
TEMP.SHUTDDOWN	<i>Temperature Shutdown</i>	C	0 - 300	95
LEVEL PRE-ALARM	<i>Level Pre-Alarm</i>	%	(dis)0 - 300	80
LEVEL PRE-ALARM RET	<i>Level Pre-Alarm Return</i>	%	0 - 300	90
LEVEL SHUTDOWN	<i>Level Shutdown</i>	%	(dis)0 - 300	70

OIL PRESSURE INPUT TYPE

This section is used to configure the Oil Pressure sender input.

dis: The Oil Pressure input will not be monitored.

1: digital & closed for low oil pressure : The Oil pressure input is fed from an engine mounted digital pressure switch. This switch returns a closed signal during low oil pressure conditions (and engine at rest), once oil pressure is established the switch will open.

2: digital & open for low oil pressure : The Oil pressure input is fed from an engine mounted digital pressure switch. This switch returns an open signal during low oil pressure conditions (and engine at rest), once oil pressure is established the switch will close.

3: analog : The Oil pressure input is connected to a resistive type engine mounted oil pressure transducer.

TEMPERATURE INPUT TYPE

This section is used to configure the Coolant Temperature sender input.

dis: The Coolant Temperature input will not be monitored.

1: digital & normally closed : The Coolant Temperature input is fed from an engine mounted digital temperature switch. This switch returns a closed signal during low temperature, should the temperature rise above the switch manufacturers trip point the switch contact will open.

2: digital & normally open : The Coolant Temperature input is fed from an engine mounted digital temperature switch. This switch returns an open signal during low temperature, should the temperature rise above the switch manufacturers trip point the switch contact will close.

3: analog : The Oil pressure input is connected to a resistive type engine mounted temperature transducer.

Note: If the Level Pre-alarm and Level Shutdown parameters are selected as disable, the Level showing is ignored.

(ANALG.SENDR LIN.PAGE) ANALOGUE SENDER LINEARISATIONS page				
OIL PRESS.SENDER 0	<i>Oil Pressure Sender 0</i>	R	0 -650	10
OIL PRESSURE 0	<i>Oil Pressure 0</i>	BAR	0 – 99.9	0.0
OIL PRESS.SENDER 1	<i>Oil Pressure Sender 1</i>	R	0 -650	62
OIL PRESSURE 1	<i>Oil Pressure 1</i>	BAR	0 –99.9	2.0
OIL PRESS.SENDER 2	<i>Oil Pressure Sender 2</i>	R	0 -650	111
OIL PRESSURE 2	<i>Oil Pressure 2</i>	BAR	0 –99.9	4.0
OIL PRESS.SENDER 3	<i>Oil Pressure Sender 3</i>	R	0 -650	156
OIL PRESSURE 3	<i>Oil Pressure 3</i>	BAR	0 –99.9	6.0
OIL PRESS.SENDER 4	<i>Oil Pressure Sender 4</i>	R	0 -650	205
OIL PRESSURE 4	<i>Oil Pressure 4</i>	BAR	0 –99.9	10.0
TEMP.SENDER 0	<i>Temperature Sender 0</i>	R	0 -650	360
TEMPERATURE 0	<i>Temperature 0</i>	C	0 -300	34
TEMP.SENDER 1	<i>Temperature Sender 1</i>	R	0 -650	145
TEMPERATURE 1	<i>Temperature 1</i>	C	0 -300	54
TEMP.SENDER 2	<i>Temperature Sender 2</i>	R	0 -650	50
TEMPERATURE 2	<i>Temperature 2</i>	C	0 -300	84
TEMP.SENDER 3	<i>Temperature Sender 3</i>	R	0 -650	43
TEMPERATURE 3	<i>Temperature 3</i>	C	0 -300	100
TEMP.SENDER 4	<i>Temperature Sender 4</i>	R	0 -650	10
TEMPERATURE 4	<i>Temperature 4</i>	C	0 -300	150
LEVEL SENDER 0	<i>Level Sender 0</i>	R	0 -650	10
LEVEL 0	<i>Level 0</i>	-	0 -300	0
LEVEL SENDER 1	<i>Level Sender 1</i>	R	0 -650	40
LEVEL 1	<i>Level 1</i>	-	0 -300	25
LEVEL SENDER 2	<i>Level Sender 2</i>	R	0 -650	80
LEVEL 2	<i>Level 2</i>	-	0 -300	50
LEVEL SENDER 3	<i>Level Sender 3</i>	R	0 -650	140
LEVEL 3	<i>Level 3</i>	-	0 -300	75
LEVEL SENDER 4	<i>Level Sender 4</i>	R	0 -650	185
LEVEL 4	<i>Level 4</i>	-	0 -300	100

(CANBUS CONFIG. PAGE) CANBUS CONFIGURATION page			
EXPANS. MODUL SELECT	<i>Expansion Module Selection</i>		Disable,Enable Disable

(DIG.CNF.INPUT-1 PAGE) DIGITAL CONFIGURABLE INPUT (1) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Status, Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		0 - 4	0
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>		0 - 2	2
SELECT FROM LIST	0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode		0 - 24	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(DIG.CNF.INPUT-2 PAGE) DIGITAL CONFIGURABLE INPUT (2) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Status, Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		0 - 4	0
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>		0 - 2	2
SELECT FROM LIST	0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode		0 - 24	3
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(DIG.CNF.INPUT-3 PAGE) DIGITAL CONFIGURABLE INPUT (3) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Status, Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		0 - 4	0
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>		0 - 2	2
SELECT FROM LIST	0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode		0 - 24	4
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(DIG.CNF.INPUT-4 PAGE) DIGITAL CONFIGURABLE INPUT (4) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	2
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>		0 - 2	2
SELECT FROM LIST	0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode 25 Low Oil Pressure		0 - 25	25
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	0

(DIG.CNF.INPUT-5 PAGE) DIGITAL CONFIGURABLE INPUT (5) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	2
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>		0 - 2	2
SELECT FROM LIST	0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode 25 High Temperature		0 - 25	25
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	0

(DIG.CNF.INPUT-6 PAGE) DIGITAL CONFIGURABLE INPUT (6) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>		0 - 2	2
SELECT FROM LIST	0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode		0 - 24	7
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(EXP.CNF.INPUT-1 PAGE) EXPANSION CONFIGURABLE INPUT (1) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>		0 - 1	0
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>		0 - 2	2
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator		1 - 21	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(EXP.CNF.INPUT-2 PAGE) EXPANSION CONFIGURABLE INPUT (2) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>		0 - 1	0
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>		0 - 2	2
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator		1 - 21	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(EXP.CNF.INPUT-3 PAGE) EXPANSION CONFIGURABLE INPUT (3) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>		0 - 1	0
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>		0 - 2	2
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator		1 - 21	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(EXP.CNF.INPUT-4 PAGE) EXPANSION CONFIGURABLE INPUT (4) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>		0 - 1	0
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>		0 - 2	2
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator		1 - 21	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(EXP.CNF.INPUT-5 PAGE) EXPANSION CONFIGURABLE INPUT (5) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>		0 - 1	0
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>		0 - 2	2
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator		1 - 21	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(EXP.CNF.INPUT-6 PAGE) EXPANSION CONFIGURABLE INPUT (6) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>		0 - 1	0
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>		0 - 2	2
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator		1 - 21	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(EXP.CNF.INPUT-7 PAGE) EXPANSION CONFIGURABLE INPUT (7) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>		0 - 1	0
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>		0 - 2	2
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator		1 - 21	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

(EXP.CNF.INPUT-8 PAGE) EXPANSION CONFIGURABLE INPUT (8) page				
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>		(dis)0 - 2	1
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>		0 - 1	0
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>		0 - 1	0
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>		1 - 4	1
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>		0 - 2	2
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator		1 - 21	2
INPUT TIME DELAY	<i>Input time delay</i>	SEC	0 - 250	5

CONFIGURABLE INPUTS SELECTIONS

0 REMOTE START/STOP

In AUTO mode, if one of the configurable inputs are selected as 0 (Remote Start), the module doesn't perform the mains failure control in order to start the generator. In AUTO mode, if one of the configurable inputs are selected as 0 (Remote Start) and this input is active, then the module will perform the start sequence. If the input is passive module will perform the stop sequence.

1 AUXILIARY MAINS FAIL

The Eaom-210 FI module will monitor the incoming single or three phase supply for Over Voltage, Under Voltage, Over Frequency or Under Frequency. It may be required to monitor a different mains supply or some aspect of the incoming mains not monitored by the Eaom-210 FI. If the devices providing this additional monitoring are connected to operate this input, the Eaom-210 FI will operate as if the incoming mains supply has fallen outside of limits, the generator will be instructed to start and take load. Removal of the input signal will cause the module to act if the mains has returned to within limits.

2 SIMULATE LAMP TEST BUTTON

This input mimics the operation of the 'Lamp Test' button and is used to provide a remotely located Lamp Test push button.

3 SIMULATE HORN RESET BUTTON

This input mimics the operation of the 'Horn Reset' button and is used to provide a remotely located Horn Reset push button.

4 SIMULATE ALARM RESET BUTTON

This input mimics the operation of the 'Alarm Reset' button and is used to provide a remotely located Alarm Reset push button.

5 SIMULATE OFF BUTTON

This input mimics the operation of the 'Off' button and is used to provide a remotely located Off mode push button.

6 SIMULATE AUTO BUTTON

This input mimics the operation of the 'Auto' button and is used to provide a remotely located Auto mode push button.

7 SIMULATE TEST BUTTON

This input mimics the operation of the 'Test' button and is used to provide a remotely located Test mode push button.

8 SIMULATE MANUAL BUTTON

This input mimics the operation of the 'Manual' button and is used to provide a remotely located Manual mode push button.

9 SIMULATE START BUTTON

This input mimics the operation of the 'Start' button and is used to provide a remotely located start push button.

10 SIMULATE STOP BUTTON

This input mimics the operation of the 'Stop' button and is used to provide a remotely located Stop push button.

11 GENERATOR CLOSED AUXILIARY

This input is used to provide feedback to allow the Eaom-210 FI to give true indication of the contactor or circuit breaker switching status. It should be connected to the generator load switching device auxiliary contact.

12 GENERATOR LOAD INHIBIT

This input is used to prevent the Eaom-210 FI from loading the generator. If the generator is already on load, activating this input will cause the Eaom-210 FI to unload the generator. Removing the input will allow the generator to be loaded again.

NOTE: This input only operates to control the generator-switching device if the Eaom-210 FI load switching logic is attempting load the generator. It will not control the generator-switching device when the mains is on load.

13 MAINS CLOSED AUXILIARY

This input is used to provide feedback to allow the Eaom-210 FI to give true indication of the contactor or circuit breaker switching status. It should be connected to the generator load switching device auxiliary contact.

14 MAINS LOAD INHIBIT

This input is used to prevent the Eaom-210 FI from loading the mains supply. If the mains supply is already on load, activating this input will cause the Eaom-210 FI to unload the mains supply. Removing the input will allow the mains to be loaded again.

NOTE: This input only operates to control the mains-switching device if the Eaom-210 FI load switching logic is attempting to load the mains. It will not control the mains-switching device when the generator is on load.

15 AUTO RESTORE INHIBIT

When module in the AUTO mode. In the event of a remote start / mains failure the generator will be instructed to start and take load. On removal of the remote start signal / mains return the module will continue to run the generator on load until this AUTO RESTORE INHIBIT input is removed. Once the input is removed the module will transfer the load back to the mains supply and follow a normal generator stop sequence. This input allows the module to be fitted as part of a system where the manual restoration to mains is controlled remotely or by an automated system.

16 AUTO START INHIBIT

This input is used to provide an over-ride function to prevent the Eaom-210 FI from starting the generator in the event of a remote start / mains out of limits condition occurring. If this input is active and a remote start signal / mains failure occurs the Eaom-210 FI will not give a start command to the generator. If this input signal is then removed, the Eaom-210 FI will operate as if a remote start / mains failure has occurred, starting and loading the generator. This function can be used to give an 'AND' function so that a generator will only be called to start if the mains fails and another condition exists which requires the generator to run. If the 'Auto Start Inhibit' signal become active once more it will be ignored until the module has returned the mains supply on load and shutdown.

17 PANEL LOCK

This input is used to provide security to the installation. If the panel lock input is active, the module will not respond to operation of the mode select or start buttons. This allows the module to be placed into a specific mode (such as Auto) and then secured. The operation of the module is not affected and the operator will still be able to view the various instrumentation pages etc.

NOTE: External control sources (i.e. Simulate Start Button) are not affected by the panel lock input and will continue to operate normally.

18 SCHEDULED RUNS INHIBITED

This input is used to prevent the generator from starting in the event of a programmed scheduled run occurring. While the input is active no scheduled runs will occur. If the input is active when a schedule run is called for, and is removed during the running period the generator will start and complete any remaining scheduled running time.

19 RESET MAINTENANCE ALARM

This input used to reset the maintenance alarm. When activated it will reset the maintenance counter to the pre-configured value (i.e. 250 hours). If the maintenance alarm is configured to monitor the monthly service interval this will also be reset to the pre-configured period. (i.e. 6 months).

20 TRANSFER TO GENERATOR/OPEN MAINS

This input is used to transfer the load to the generator when running in Manual mode.

21 TRANSFER TO MAINS/OPEN GENERATOR

This input is used to transfer the load to the mains supply when running in Manual mode.

22 REMOTE INHIBIT

In automatic mode, if any of the configurable inputs is configured as '16 Auto Start Inhibit' and this input is active, unit inhibits to work of the generator. In addition to this, if this input is active while the generator is working, unit stops the generator.

23 TEST ON LOAD

If this input is active when the unit is in test mode, load is transferred to the generator to do the test on load. If the input is not active, test is done without load.

24 GENERATOR IS SUPPLYING THE LOAD IN OFF MODE

If this input is active when the unit is in OFF mode, the power is calculated. If the input is not active, the power is not calculated.

25 LOW OIL PRESSURE (FOR CONFIGURABLE INPUT-4)

This input is used as the oil pressure failure input.

25 HIGH TEMPERATURE (FOR CONFIGURABLE INPUT-5)

This input is used as the temperature failure input.

(CONFIG.OUTPUT-1 PAGE) CONFIGURABLE OUTPUT (1) page

POLARITY	Polarity (Normally Open, Normally Closed)	0 - 1	0
	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTER START 33 ELECTRIC COOLING FAN AFTER STOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	55

(CONFIG.OUTPUT-2 PAGE) CONFIGURABLE OUTPUT (2) page

POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	0 - 1	0
	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTER START 33 ELECTRIC COOLING FAN AFTER STOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(CONFIG.OUTPUT-3 PAGE) CONFIGURABLE OUTPUT (3) page

POLARITY	Polarity (Normally Open, Normally Closed)	0 - 1	0
	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTER START 33 ELECTRIC COOLING FAN AFTER STOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(CONFIG.OUTPUT-4 PAGE) CONFIGURABLE OUTPUT (4) page

POLARITY	Polarity (Normally Open, Normally Closed)	0 - 1	0
	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTER START 33 ELECTRIC COOLING FAN AFTER STOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	32

(EXP.CONFIG.OUT-1 PAGE) EXPANSION CONFIGURABLE OUTPUT (1) page

POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	0 - 1	0
	0 NOT USED		
	1 AUDIBLE ALARM		
	2 ALARM RESET		
	3 AUTO START INHIBIT		
	4 AUXILIARY MAINS FAILURE		
	5 BATTERY HIGH VOLTAGE		
	6 BATTERY LOW VOLTAGE		
	7 CALLING FOR SCHEDULED RUN		
	8 CHARGE ALTERNATOR FAILURE		
	9 COMMON ALARM		
	10 COMMON ELECTRICAL TRIP ALARM		
	11 COMMON SHUTDOWN ALARM		
	12 COMMON WARNING ALARM		
	13 COOLANT TEMPERATURE HIGH PRE-ALARM		
	14 COOLANT TEMPERATURE HIGH SHUTDOWN		
	15 COOLING DOWN TIMER IN PROGRESS		
	16 DELAYED ALARMS ACTIVE		
	17 DIGITAL INPUT1 ACTIVE		
	18 DIGITAL INPUT2 ACTIVE		
	19 DIGITAL INPUT3 ACTIVE		
	20 DIGITAL INPUT4 ACTIVE		
	21 DIGITAL INPUT5 ACTIVE		
	22 DIGITAL INPUT6 ACTIVE		
	23 EXPANSION INPUT1 ACTIVE		
	24 EXPANSION INPUT2 ACTIVE		
	25 EXPANSION INPUT3 ACTIVE		
	26 EXPANSION INPUT4 ACTIVE		
	27 EXPANSION INPUT5 ACTIVE		
	28 EXPANSION INPUT6 ACTIVE		
	29 EXPANSION INPUT7 ACTIVE		
	30 EXPANSION INPUT8 ACTIVE		
	31 EARTH FAULT		
	32 ELECTRIC COOLING FAN AFTER START		
	33 ELECTRIC COOLING FAN AFTER STOP		
	34 EMERGENCY STOP		
	35 FAIL TO START ALARM		
	36 FAIL TO STOP ALARM		
	37 FUEL RELAY ENERGISED		
	38 GAS ENGINE IGNITION OUTPUT		
	39 GENERATOR AT REST		
	40 GENERATOR AVAILABLE		
	41 GENERATOR CLOSED AUXILIARY		
	42 GENERATOR FAILED TO CLOSE		
	43 GENERATOR FAILED TO OPEN		
	44 GENERATOR HIGH FREQUENCY PRE-ALARM		
	45 GENERATOR HIGH FREQUENCY SHUTDOWN		
	46 GENERATOR HIGH VOLTAGE PRE-ALARM		
	47 GENERATOR HIGH VOLTAGE SHUTDOWN		
	48 GENERATOR LOAD INHIBIT		
	49 GENERATOR LOW FREQUENCY PRE-ALARM		
	50 GENERATOR LOW FREQUENCY SHUTDOWN		
	51 GENERATOR LOW VOLTAGE PRE-ALARM		
	52 GENERATOR LOW VOLTAGE SHUTDOWN		
	53 RESERVED		
	54 GENERATOR STOPPING		
	55 HORN OUTPUT		
	56 LAMP TEST		
	57 LEVEL PREALARM		
	58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL		
	59 MAINTENANCE DUE ALARM		
	60 MAINS CLOSED AUXILIARY		
	61 MAINS FAILED TO CLOSE		
	62 MAINS FAILED TO OPEN		
	63 MAINS FAILURE		
	64 MAINS HIGH FREQUENCY		
	65 MAINS HIGH VOLTAGE		
	66 MAINS LOAD INHIBIT		
	67 MAINS LOW FREQUENCY		
	68 MAINS LOW VOLTAGE		
	69 NO LOADING COMMAND		
	70 OIL PRESSURE LOW PRE-ALARM		
	71 OIL PRESSURE LOW SHUTDOWN		
	72 OVER CURRENT		
	73 OVERSPEED PRE-ALARM		
	74 OVERSPEED SHUTDOWN		
	75 PANEL LOCK		
	76 PRE-HEAT(during preheat timer)		
	77 PRE-HEAT(until end of cranking)		
	78 PRE-HEAT(until end of warming)		
	79 PRE-HEAT(until end safety on)		
	80 REMOTE START PRESENT		
	81 REMOTE STOP DELAY IN PROGRESS		
	82 SHORT CIRCUIT		
	83 START RELAY ENERGISED		
	84 STARTING ALARM		
	85 STARTING ALARMS ARMED		
	86 STOP BUTTON PRESSED		
	87 SYSTEM IN AUTO MODE		
	88 SYSTEM IN MANUAL MODE		
	89 SYSTEM IN OFF MODE		
	90 SYSTEM IN TEST MODE		
	91 UNDERSPEED SHUTDOWN		
	92 UNDERSPEED PRE-ALARM		
	93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(EXP.CONFIG.OUT-2 PAGE) EXPANSION CONFIGURABLE OUTPUT (2) page

POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	0 - 1	0
	0 NOT USED		
	1 AUDIBLE ALARM		
	2 ALARM RESET		
	3 AUTO START INHIBIT		
	4 AUXILIARY MAINS FAILURE		
	5 BATTERY HIGH VOLTAGE		
	6 BATTERY LOW VOLTAGE		
	7 CALLING FOR SCHEDULED RUN		
	8 CHARGE ALTERNATOR FAILURE		
	9 COMMON ALARM		
	10 COMMON ELECTRICAL TRIP ALARM		
	11 COMMON SHUTDOWN ALARM		
	12 COMMON WARNING ALARM		
	13 COOLANT TEMPERATURE HIGH PRE-ALARM		
	14 COOLANT TEMPERATURE HIGH SHUTDOWN		
	15 COOLING DOWN TIMER IN PROGRESS		
	16 DELAYED ALARMS ACTIVE		
	17 DIGITAL INPUT1 ACTIVE		
	18 DIGITAL INPUT2 ACTIVE		
	19 DIGITAL INPUT3 ACTIVE		
	20 DIGITAL INPUT4 ACTIVE		
	21 DIGITAL INPUT5 ACTIVE		
	22 DIGITAL INPUT6 ACTIVE		
	23 EXPANSION INPUT1 ACTIVE		
	24 EXPANSION INPUT2 ACTIVE		
	25 EXPANSION INPUT3 ACTIVE		
	26 EXPANSION INPUT4 ACTIVE		
	27 EXPANSION INPUT5 ACTIVE		
	28 EXPANSION INPUT6 ACTIVE		
	29 EXPANSION INPUT7 ACTIVE		
	30 EXPANSION INPUT8 ACTIVE		
	31 EARTH FAULT		
	32 ELECTRIC COOLING FAN AFTER START		
	33 ELECTRIC COOLING FAN AFTER STOP		
	34 EMERGENCY STOP		
	35 FAIL TO START ALARM		
	36 FAIL TO STOP ALARM		
	37 FUEL RELAY ENERGISED		
	38 GAS ENGINE IGNITION OUTPUT		
	39 GENERATOR AT REST		
	40 GENERATOR AVAILABLE		
	41 GENERATOR CLOSED AUXILIARY		
	42 GENERATOR FAILED TO CLOSE		
	43 GENERATOR FAILED TO OPEN		
	44 GENERATOR HIGH FREQUENCY PRE-ALARM		
	45 GENERATOR HIGH FREQUENCY SHUTDOWN		
	46 GENERATOR HIGH VOLTAGE PRE-ALARM		
	47 GENERATOR HIGH VOLTAGE SHUTDOWN		
	48 GENERATOR LOAD INHIBIT		
	49 GENERATOR LOW FREQUENCY PRE-ALARM		
	50 GENERATOR LOW FREQUENCY SHUTDOWN		
	51 GENERATOR LOW VOLTAGE PRE-ALARM		
	52 GENERATOR LOW VOLTAGE SHUTDOWN		
	53 RESERVED		
	54 GENERATOR STOPPING		
	55 HORN OUTPUT		
	56 LAMP TEST		
	57 LEVEL PREALARM		
	58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL		
	59 MAINTENANCE DUE ALARM		
	60 MAINS CLOSED AUXILIARY		
	61 MAINS FAILED TO CLOSE		
	62 MAINS FAILED TO OPEN		
	63 MAINS FAILURE		
	64 MAINS HIGH FREQUENCY		
	65 MAINS HIGH VOLTAGE		
	66 MAINS LOAD INHIBIT		
	67 MAINS LOW FREQUENCY		
	68 MAINS LOW VOLTAGE		
	69 NO LOADING COMMAND		
	70 OIL PRESSURE LOW PRE-ALARM		
	71 OIL PRESSURE LOW SHUTDOWN		
	72 OVER CURRENT		
	73 OVERSPEED PRE-ALARM		
	74 OVERSPEED SHUTDOWN		
	75 PANEL LOCK		
	76 PRE-HEAT(during preheat timer)		
	77 PRE-HEAT(until end of cranking)		
	78 PRE-HEAT(until end of warming)		
	79 PRE-HEAT(until end safety on)		
	80 REMOTE START PRESENT		
	81 REMOTE STOP DELAY IN PROGRESS		
	82 SHORT CIRCUIT		
	83 START RELAY ENERGISED		
	84 STARTING ALARM		
	85 STARTING ALARMS ARMED		
	86 STOP BUTTON PRESSED		
	87 SYSTEM IN AUTO MODE		
	88 SYSTEM IN MANUAL MODE		
	89 SYSTEM IN OFF MODE		
	90 SYSTEM IN TEST MODE		
	91 UNDERSPEED SHUTDOWN		
	92 UNDERSPEED PRE-ALARM		
	93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(EXP.CONFIG.OUT-3 PAGE) EXPANSION CONFIGURABLE OUTPUT (3) page

POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	0 - 1	0
	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTER START 33 ELECTRIC COOLING FAN AFTER STOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(EXP.CONFIG.OUT-4 PAGE) EXPANSION CONFIGURABLE OUTPUT (4) page

POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	0 - 1	0
	0 NOT USED		
	1 AUDIBLE ALARM		
	2 ALARM RESET		
	3 AUTO START INHIBIT		
	4 AUXILIARY MAINS FAILURE		
	5 BATTERY HIGH VOLTAGE		
	6 BATTERY LOW VOLTAGE		
	7 CALLING FOR SCHEDULED RUN		
	8 CHARGE ALTERNATOR FAILURE		
	9 COMMON ALARM		
	10 COMMON ELECTRICAL TRIP ALARM		
	11 COMMON SHUTDOWN ALARM		
	12 COMMON WARNING ALARM		
	13 COOLANT TEMPERATURE HIGH PRE-ALARM		
	14 COOLANT TEMPERATURE HIGH SHUTDOWN		
	15 COOLING DOWN TIMER IN PROGRESS		
	16 DELAYED ALARMS ACTIVE		
	17 DIGITAL INPUT1 ACTIVE		
	18 DIGITAL INPUT2 ACTIVE		
	19 DIGITAL INPUT3 ACTIVE		
	20 DIGITAL INPUT4 ACTIVE		
	21 DIGITAL INPUT5 ACTIVE		
	22 DIGITAL INPUT6 ACTIVE		
	23 EXPANSION INPUT1 ACTIVE		
	24 EXPANSION INPUT2 ACTIVE		
	25 EXPANSION INPUT3 ACTIVE		
	26 EXPANSION INPUT4 ACTIVE		
	27 EXPANSION INPUT5 ACTIVE		
	28 EXPANSION INPUT6 ACTIVE		
	29 EXPANSION INPUT7 ACTIVE		
	30 EXPANSION INPUT8 ACTIVE		
	31 EARTH FAULT		
	32 ELECTRIC COOLING FAN AFTER START		
	33 ELECTRIC COOLING FAN AFTER STOP		
	34 EMERGENCY STOP		
	35 FAIL TO START ALARM		
	36 FAIL TO STOP ALARM		
	37 FUEL RELAY ENERGISED		
	38 GAS ENGINE IGNITION OUTPUT		
	39 GENERATOR AT REST		
	40 GENERATOR AVAILABLE		
	41 GENERATOR CLOSED AUXILIARY		
	42 GENERATOR FAILED TO CLOSE		
	43 GENERATOR FAILED TO OPEN		
	44 GENERATOR HIGH FREQUENCY PRE-ALARM		
	45 GENERATOR HIGH FREQUENCY SHUTDOWN		
	46 GENERATOR HIGH VOLTAGE PRE-ALARM		
	47 GENERATOR HIGH VOLTAGE SHUTDOWN		
	48 GENERATOR LOAD INHIBIT		
	49 GENERATOR LOW FREQUENCY PRE-ALARM		
	50 GENERATOR LOW FREQUENCY SHUTDOWN		
	51 GENERATOR LOW VOLTAGE PRE-ALARM		
	52 GENERATOR LOW VOLTAGE SHUTDOWN		
	53 RESERVED		
	54 GENERATOR STOPPING		
	55 HORN OUTPUT		
	56 LAMP TEST		
	57 LEVEL PREALARM		
	58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL		
	59 MAINTENANCE DUE ALARM		
	60 MAINS CLOSED AUXILIARY		
	61 MAINS FAILED TO CLOSE		
	62 MAINS FAILED TO OPEN		
	63 MAINS FAILURE		
	64 MAINS HIGH FREQUENCY		
	65 MAINS HIGH VOLTAGE		
	66 MAINS LOAD INHIBIT		
	67 MAINS LOW FREQUENCY		
	68 MAINS LOW VOLTAGE		
	69 NO LOADING COMMAND		
	70 OIL PRESSURE LOW PRE-ALARM		
	71 OIL PRESSURE LOW SHUTDOWN		
	72 OVER CURRENT		
	73 OVERSPEED PRE-ALARM		
	74 OVERSPEED SHUTDOWN		
	75 PANEL LOCK		
	76 PRE-HEAT(during preheat timer)		
	77 PRE-HEAT(until end of cranking)		
	78 PRE-HEAT(until end of warming)		
	79 PRE-HEAT(until end safety on)		
	80 REMOTE START PRESENT		
	81 REMOTE STOP DELAY IN PROGRESS		
	82 SHORT CIRCUIT		
	83 START RELAY ENERGISED		
	84 STARTING ALARM		
	85 STARTING ALARMS ARMED		
	86 STOP BUTTON PRESSED		
	87 SYSTEM IN AUTO MODE		
	88 SYSTEM IN MANUAL MODE		
	89 SYSTEM IN OFF MODE		
	90 SYSTEM IN TEST MODE		
	91 UNDERSPEED SHUTDOWN		
	92 UNDERSPEED PRE-ALARM		
	93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(EXP.CONFIG.OUT-5 PAGE) EXPANSION CONFIGURABLE OUTPUT (5) page

POLARITY	Polarity (Normally Open, Normally Closed)	0 - 1	0
	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTER START 33 ELECTRIC COOLING FAN AFTER STOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(EXP.CONFIG.OUT-6 PAGE) EXPANSION CONFIGURABLE OUTPUT (6) page

POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	0 - 1	0
	0 NOT USED		
	1 AUDIBLE ALARM		
	2 ALARM RESET		
	3 AUTO START INHIBIT		
	4 AUXILIARY MAINS FAILURE		
	5 BATTERY HIGH VOLTAGE		
	6 BATTERY LOW VOLTAGE		
	7 CALLING FOR SCHEDULED RUN		
	8 CHARGE ALTERNATOR FAILURE		
	9 COMMON ALARM		
	10 COMMON ELECTRICAL TRIP ALARM		
	11 COMMON SHUTDOWN ALARM		
	12 COMMON WARNING ALARM		
	13 COOLANT TEMPERATURE HIGH PRE-ALARM		
	14 COOLANT TEMPERATURE HIGH SHUTDOWN		
	15 COOLING DOWN TIMER IN PROGRESS		
	16 DELAYED ALARMS ACTIVE		
	17 DIGITAL INPUT1 ACTIVE		
	18 DIGITAL INPUT2 ACTIVE		
	19 DIGITAL INPUT3 ACTIVE		
	20 DIGITAL INPUT4 ACTIVE		
	21 DIGITAL INPUT5 ACTIVE		
	22 DIGITAL INPUT6 ACTIVE		
	23 EXPANSION INPUT1 ACTIVE		
	24 EXPANSION INPUT2 ACTIVE		
	25 EXPANSION INPUT3 ACTIVE		
	26 EXPANSION INPUT4 ACTIVE		
	27 EXPANSION INPUT5 ACTIVE		
	28 EXPANSION INPUT6 ACTIVE		
	29 EXPANSION INPUT7 ACTIVE		
	30 EXPANSION INPUT8 ACTIVE		
	31 EARTH FAULT		
	32 ELECTRIC COOLING FAN AFTER START		
	33 ELECTRIC COOLING FAN AFTER STOP		
	34 EMERGENCY STOP		
	35 FAIL TO START ALARM		
	36 FAIL TO STOP ALARM		
	37 FUEL RELAY ENERGISED		
	38 GAS ENGINE IGNITION OUTPUT		
	39 GENERATOR AT REST		
	40 GENERATOR AVAILABLE		
	41 GENERATOR CLOSED AUXILIARY		
	42 GENERATOR FAILED TO CLOSE		
	43 GENERATOR FAILED TO OPEN		
	44 GENERATOR HIGH FREQUENCY PRE-ALARM		
	45 GENERATOR HIGH FREQUENCY SHUTDOWN		
	46 GENERATOR HIGH VOLTAGE PRE-ALARM		
	47 GENERATOR HIGH VOLTAGE SHUTDOWN		
	48 GENERATOR LOAD INHIBIT		
	49 GENERATOR LOW FREQUENCY PRE-ALARM		
	50 GENERATOR LOW FREQUENCY SHUTDOWN		
	51 GENERATOR LOW VOLTAGE PRE-ALARM		
	52 GENERATOR LOW VOLTAGE SHUTDOWN		
	53 RESERVED		
	54 GENERATOR STOPPING		
	55 HORN OUTPUT		
	56 LAMP TEST		
	57 LEVEL PREALARM		
	58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL		
	59 MAINTENANCE DUE ALARM		
	60 MAINS CLOSED AUXILIARY		
	61 MAINS FAILED TO CLOSE		
	62 MAINS FAILED TO OPEN		
	63 MAINS FAILURE		
	64 MAINS HIGH FREQUENCY		
	65 MAINS HIGH VOLTAGE		
	66 MAINS LOAD INHIBIT		
	67 MAINS LOW FREQUENCY		
	68 MAINS LOW VOLTAGE		
	69 NO LOADING COMMAND		
	70 OIL PRESSURE LOW PRE-ALARM		
	71 OIL PRESSURE LOW SHUTDOWN		
	72 OVER CURRENT		
	73 OVERSPEED PRE-ALARM		
	74 OVERSPEED SHUTDOWN		
	75 PANEL LOCK		
	76 PRE-HEAT(during preheat timer)		
	77 PRE-HEAT(until end of cranking)		
	78 PRE-HEAT(until end of warming)		
	79 PRE-HEAT(until end safety on)		
	80 REMOTE START PRESENT		
	81 REMOTE STOP DELAY IN PROGRESS		
	82 SHORT CIRCUIT		
	83 START RELAY ENERGISED		
	84 STARTING ALARM		
	85 STARTING ALARMS ARMED		
	86 STOP BUTTON PRESSED		
	87 SYSTEM IN AUTO MODE		
	88 SYSTEM IN MANUAL MODE		
	89 SYSTEM IN OFF MODE		
	90 SYSTEM IN TEST MODE		
	91 UNDERSPEED SHUTDOWN		
	92 UNDERSPEED PRE-ALARM		
	93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(EXP.CONFIG.OUT-7 PAGE) EXPANSION CONFIGURABLE OUTPUT (7) page

POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	0 - 1	0
	0 NOT USED		
	1 AUDIBLE ALARM		
	2 ALARM RESET		
	3 AUTO START INHIBIT		
	4 AUXILIARY MAINS FAILURE		
	5 BATTERY HIGH VOLTAGE		
	6 BATTERY LOW VOLTAGE		
	7 CALLING FOR SCHEDULED RUN		
	8 CHARGE ALTERNATOR FAILURE		
	9 COMMON ALARM		
	10 COMMON ELECTRICAL TRIP ALARM		
	11 COMMON SHUTDOWN ALARM		
	12 COMMON WARNING ALARM		
	13 COOLANT TEMPERATURE HIGH PRE-ALARM		
	14 COOLANT TEMPERATURE HIGH SHUTDOWN		
	15 COOLING DOWN TIMER IN PROGRESS		
	16 DELAYED ALARMS ACTIVE		
	17 DIGITAL INPUT1 ACTIVE		
	18 DIGITAL INPUT2 ACTIVE		
	19 DIGITAL INPUT3 ACTIVE		
	20 DIGITAL INPUT4 ACTIVE		
	21 DIGITAL INPUT5 ACTIVE		
	22 DIGITAL INPUT6 ACTIVE		
	23 EXPANSION INPUT1 ACTIVE		
	24 EXPANSION INPUT2 ACTIVE		
	25 EXPANSION INPUT3 ACTIVE		
	26 EXPANSION INPUT4 ACTIVE		
	27 EXPANSION INPUT5 ACTIVE		
	28 EXPANSION INPUT6 ACTIVE		
	29 EXPANSION INPUT7 ACTIVE		
	30 EXPANSION INPUT8 ACTIVE		
	31 EARTH FAULT		
	32 ELECTRIC COOLING FAN AFTER START		
	33 ELECTRIC COOLING FAN AFTER STOP		
	34 EMERGENCY STOP		
	35 FAIL TO START ALARM		
	36 FAIL TO STOP ALARM		
	37 FUEL RELAY ENERGISED		
	38 GAS ENGINE IGNITION OUTPUT		
	39 GENERATOR AT REST		
	40 GENERATOR AVAILABLE		
	41 GENERATOR CLOSED AUXILIARY		
	42 GENERATOR FAILED TO CLOSE		
	43 GENERATOR FAILED TO OPEN		
	44 GENERATOR HIGH FREQUENCY PRE-ALARM		
	45 GENERATOR HIGH FREQUENCY SHUTDOWN		
	46 GENERATOR HIGH VOLTAGE PRE-ALARM		
	47 GENERATOR HIGH VOLTAGE SHUTDOWN		
	48 GENERATOR LOAD INHIBIT		
	49 GENERATOR LOW FREQUENCY PRE-ALARM		
	50 GENERATOR LOW FREQUENCY SHUTDOWN		
	51 GENERATOR LOW VOLTAGE PRE-ALARM		
	52 GENERATOR LOW VOLTAGE SHUTDOWN		
	53 RESERVED		
	54 GENERATOR STOPPING		
	55 HORN OUTPUT		
	56 LAMP TEST		
	57 LEVEL PREALARM		
	58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL		
	59 MAINTENANCE DUE ALARM		
	60 MAINS CLOSED AUXILIARY		
	61 MAINS FAILED TO CLOSE		
	62 MAINS FAILED TO OPEN		
	63 MAINS FAILURE		
	64 MAINS HIGH FREQUENCY		
	65 MAINS HIGH VOLTAGE		
	66 MAINS LOAD INHIBIT		
	67 MAINS LOW FREQUENCY		
	68 MAINS LOW VOLTAGE		
	69 NO LOADING COMMAND		
	70 OIL PRESSURE LOW PRE-ALARM		
	71 OIL PRESSURE LOW SHUTDOWN		
	72 OVER CURRENT		
	73 OVERSPEED PRE-ALARM		
	74 OVERSPEED SHUTDOWN		
	75 PANEL LOCK		
	76 PRE-HEAT(during preheat timer)		
	77 PRE-HEAT(until end of cranking)		
	78 PRE-HEAT(until end of warming)		
	79 PRE-HEAT(until end safety on)		
	80 REMOTE START PRESENT		
	81 REMOTE STOP DELAY IN PROGRESS		
	82 SHORT CIRCUIT		
	83 START RELAY ENERGISED		
	84 STARTING ALARM		
	85 STARTING ALARMS ARMED		
	86 STOP BUTTON PRESSED		
	87 SYSTEM IN AUTO MODE		
	88 SYSTEM IN MANUAL MODE		
	89 SYSTEM IN OFF MODE		
	90 SYSTEM IN TEST MODE		
	91 UNDERSPEED SHUTDOWN		
	92 UNDERSPEED PRE-ALARM		
	93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

(EXP.CONFIG.OUT-8 PAGE) EXPANSION CONFIGURABLE OUTPUT (8) page

POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	0 - 1	0
	0 NOT USED		
	1 AUDIBLE ALARM		
	2 ALARM RESET		
	3 AUTO START INHIBIT		
	4 AUXILIARY MAINS FAILURE		
	5 BATTERY HIGH VOLTAGE		
	6 BATTERY LOW VOLTAGE		
	7 CALLING FOR SCHEDULED RUN		
	8 CHARGE ALTERNATOR FAILURE		
	9 COMMON ALARM		
	10 COMMON ELECTRICAL TRIP ALARM		
	11 COMMON SHUTDOWN ALARM		
	12 COMMON WARNING ALARM		
	13 COOLANT TEMPERATURE HIGH PRE-ALARM		
	14 COOLANT TEMPERATURE HIGH SHUTDOWN		
	15 COOLING DOWN TIMER IN PROGRESS		
	16 DELAYED ALARMS ACTIVE		
	17 DIGITAL INPUT1 ACTIVE		
	18 DIGITAL INPUT2 ACTIVE		
	19 DIGITAL INPUT3 ACTIVE		
	20 DIGITAL INPUT4 ACTIVE		
	21 DIGITAL INPUT5 ACTIVE		
	22 DIGITAL INPUT6 ACTIVE		
	23 EXPANSION INPUT1 ACTIVE		
	24 EXPANSION INPUT2 ACTIVE		
	25 EXPANSION INPUT3 ACTIVE		
	26 EXPANSION INPUT4 ACTIVE		
	27 EXPANSION INPUT5 ACTIVE		
	28 EXPANSION INPUT6 ACTIVE		
	29 EXPANSION INPUT7 ACTIVE		
	30 EXPANSION INPUT8 ACTIVE		
	31 EARTH FAULT		
	32 ELECTRIC COOLING FAN AFTER START		
	33 ELECTRIC COOLING FAN AFTER STOP		
	34 EMERGENCY STOP		
	35 FAIL TO START ALARM		
	36 FAIL TO STOP ALARM		
	37 FUEL RELAY ENERGISED		
	38 GAS ENGINE IGNITION OUTPUT		
	39 GENERATOR AT REST		
	40 GENERATOR AVAILABLE		
	41 GENERATOR CLOSED AUXILIARY		
	42 GENERATOR FAILED TO CLOSE		
	43 GENERATOR FAILED TO OPEN		
	44 GENERATOR HIGH FREQUENCY PRE-ALARM		
	45 GENERATOR HIGH FREQUENCY SHUTDOWN		
	46 GENERATOR HIGH VOLTAGE PRE-ALARM		
	47 GENERATOR HIGH VOLTAGE SHUTDOWN		
	48 GENERATOR LOAD INHIBIT		
	49 GENERATOR LOW FREQUENCY PRE-ALARM		
	50 GENERATOR LOW FREQUENCY SHUTDOWN		
	51 GENERATOR LOW VOLTAGE PRE-ALARM		
	52 GENERATOR LOW VOLTAGE SHUTDOWN		
	53 RESERVED		
	54 GENERATOR STOPPING		
	55 HORN OUTPUT		
	56 LAMP TEST		
	57 LEVEL PREALARM		
	58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL		
	59 MAINTENANCE DUE ALARM		
	60 MAINS CLOSED AUXILIARY		
	61 MAINS FAILED TO CLOSE		
	62 MAINS FAILED TO OPEN		
	63 MAINS FAILURE		
	64 MAINS HIGH FREQUENCY		
	65 MAINS HIGH VOLTAGE		
	66 MAINS LOAD INHIBIT		
	67 MAINS LOW FREQUENCY		
	68 MAINS LOW VOLTAGE		
	69 NO LOADING COMMAND		
	70 OIL PRESSURE LOW PRE-ALARM		
	71 OIL PRESSURE LOW SHUTDOWN		
	72 OVER CURRENT		
	73 OVERSPEED PRE-ALARM		
	74 OVERSPEED SHUTDOWN		
	75 PANEL LOCK		
	76 PRE-HEAT(during preheat timer)		
	77 PRE-HEAT(until end of cranking)		
	78 PRE-HEAT(until end of warming)		
	79 PRE-HEAT(until end safety on)		
	80 REMOTE START PRESENT		
	81 REMOTE STOP DELAY IN PROGRESS		
	82 SHORT CIRCUIT		
	83 START RELAY ENERGISED		
	84 STARTING ALARM		
	85 STARTING ALARMS ARMED		
	86 STOP BUTTON PRESSED		
	87 SYSTEM IN AUTO MODE		
	88 SYSTEM IN MANUAL MODE		
	89 SYSTEM IN OFF MODE		
	90 SYSTEM IN TEST MODE		
	91 UNDERSPEED SHUTDOWN		
	92 UNDERSPEED PRE-ALARM		
	93 WAITING FOR GENERATOR		
FUNCTION		0 - 93	9

CONFIGURABLE OUTPUTS SELECTIONS

0 NOT USED

Output is not used

1 AUDIBLE ALARM

The output indicates that the internal sounder is operating. It may be use for external sounder.

2 ALARM RESET

The output indicates that an alarm reset being performed. Once the alarm reset has been completed, the output become inactive again. The output could be used to give an external reset signal to external systems.

3 AUTO START INHIBIT

This output indicates that a digital input that has been configured as 'auto start inhibit' is active.

4 AUXILIARY MAINS FAILURE

This output indicates that a digital input that has been configured as 'auxiliary mains failure' is active.

5 BATTERY HIGH VOLTAGE

This output indicates that a battery high voltage alarm has occurred.

6 BATTERY LOW VOLTAGE

This output indicates that a battery low voltage alarm has occurred.

7 CALLING FOR SCHEDULED RUN

This output indicates that a scheduled run has been called for. If the module is in the 'auto' and mains okey, the module will change mode to 'test' and the generator will run if no shutdown alarms are present.

8 CHARGE ALTERNATOR FAILURE

This output indicates that a charging alternator failure has occurred

9 COMMON ALARM

This output indicates that a warning, electrical trip or shutdown alarm has been activated.

10 COMMON ELECTRICAL TRIP ALARM

This output indicates that an electrical trip alarm has been activated. This output can only be reset by removal of the fault and by then pressing the RESET button.

11 COMMON SHUTDOWN ALARM

This output indicates that a shutdown alarm has been activated. This output can only be reset by removal of the fault and by then pressing the RESET button or by using an external 'alarm reset' input.

12 COMMON WARNING ALARM

This output indicates that a warning alarm has been activated. This output is normally self-resetting on removal of the fault.

13 COOLANT TEMPERATURE HIGH PRE-ALARM

This output indicates that a high engine coolant temperature warning (pre-alarm) has occurred.

14 COOLANT TEMPERATURE HIGH SHUTDOWN

This output indicates that a high engine coolant temperature shutdown has occurred.

15 COOLING DOWN TIMER IN PROGRESS

This output source will be active when the cooling off-load timer is running.

16 DELAYED ALARMS ACTIVE

The output indicates that the delayed alarms now enabled. Can be used to control external logic circuitry.

17 DIGITAL INPUT1 ACTIVE

This output indicates that digital input 1 is active.

18 DIGITAL INPUT2 ACTIVE

This output indicates that digital input 2 is active.

19 DIGITAL INPUT3 ACTIVE

This output indicates that digital input 3 is active.

20 DIGITAL INPUT4 ACTIVE

This output indicates that digital input 4 is active.

21 DIGITAL INPUT5 ACTIVE

This output indicates that digital input 5 is active.

22 DIGITAL INPUT6 ACTIVE

This output indicates that digital input 6 is active.

23 EXPNSION CONFIGURABLE INPUT1 ACTIVE

This output indicates that expansion configurable input 1 is active.

24 EXPNSION CONFIGURABLE INPUT2 ACTIVE

This output indicates that expansion configurable input 2 is active.

25 EXPNSION CONFIGURABLE INPUT3 ACTIVE

This output indicates that expansion configurable input 3 is active.

26 EXPNSION CONFIGURABLE INPUT4 ACTIVE

This output indicates that expansion configurable input 4 is active.

27 EXPNSION CONFIGURABLE INPUT5 ACTIVE

This output indicates that expansion configurable input 5 is active.

28 EXPNSION CONFIGURABLE INPUT6 ACTIVE

This output indicates that expansion configurable input 6 is active.

29 EXPNSION CONFIGURABLE INPUT7 ACTIVE

This output indicates that expansion configurable input 7 is active.

30 EXPNSION CONFIGURABLE INPUT8 ACTIVE

This output indicates that expansion configurable input 8 is active.

31 EARTH FAULT

This output indicates that the module has detected that an earth fault exists on the generator output.

32 ELECTRIC COOLING FAN AFTER START

This output should energise as soon as engine has started so the fan should be running when the engine is running. This output should continue to operate for Cooling Fan Time parameter after engine has stopped.

33 ELECTRIC COOLING FAN AFTER STOP

This output indicates that can be made to energise for Cooling Fan Time parameter after the engine shuts down (to run an electric cooling fan on the radiator).

34 EMERGENCY STOP

This output indicates that an emergency stop alarm has occurred.

35 FAIL TO START ALARM

This output indicates that the engine has not started after the specified number of attempts.

36 FAIL TO STOP ALARM

This output indicates that the generator has failed to stop within the selected time

37 FUEL RELAY ENERGISED

The output mimics the operation of the fuel relay. It can be used to control external logic circuitry.

38 GAS ENGINE IGNITION OUTPUT

With the engaging of the starter the ignition delay is started. If the 'minimum ignition speed' is reached after expiry of this time, the configurable relay output 'ignition' is set. When the necessary engine shutdown process, firstly gas valve is de-energised. Then ignition output is de-energised that after 5 seconds when the engine speed become lower than 'minimum ignition speed'.

39 GENERATOR AT REST

The output indicates that the generator is not running.

40 GENERATOR AVAILABLE

This output indicates when the generator is ready to accept load, i.e. after safety on and warm up timers have timed out.

41 GENERATOR CLOSED AUXILIARY

This output indicates that a digital input that has been configured as 'generator closed auxiliary' is active.

42 GENERATOR FAILED TO CLOSE

This output source has intended to be used to indicate a failure of the generator contactor or breaker. It can only be used if the module is configured to use 'generator closed auxiliary' feedback.

43 GENERATOR FAILED TO OPEN

This output source has intended to be used to indicate a failure of the generator contactor or breaker. It can only be used if the module is configured to use 'generator closed auxiliary' feedback.

44 GENERATOR HIGH FREQUENCY PRE-ALARM

This output indicates that a generator high frequency warning (pre-alarm) has occurred.

45 GENERATOR HIGH FREQUENCY SHUTDOWN

This output indicates that a generator high frequency shutdown has occurred.

46 GENERATOR HIGH VOLTAGE PRE-ALARM

This output indicates that a generator high voltage warning (pre-alarm) has occurred.

47 GENERATOR HIGH VOLTAGE SHUTDOWN

This output indicates that a generator high voltage shutdown has occurred.

48 GENERATOR LOAD INHIBIT

This output indicates that a digital input has been configured as 'generator load inhibit' is active.

49 GENERATOR LOW FREQUENCY PRE-ALARM

This output indicates that a generator low frequency warning (pre-alarm) has occurred.

50 GENERATOR LOW FREQUENCY SHUTDOWN

This output indicates that a generator low frequency shutdown has occurred.

51 GENERATOR LOW VOLTAGE PRE-ALARM

This output indicates that a generator low voltage warning (pre-alarm) has occurred.

52 GENERATOR LOW VOLTAGE SHUTDOWN

This output indicates that a generator low voltage shutdown has occurred.

53 RESERVED

54 GENERATOR STOPPING

This output source indicates that the engine has been instructed to stop but has not come to rest.

55 HORN OUTPUT

This output indicates that the horn alarm has occurred.

56 LAMP TEST

This output indicates that the module is performing a lamp test. Once the lamp test completed, the output will become inactive again. The output can be used to feed a lamp test on external modules or panel lamps.

57 LEVEL PREALARM

This output indicates that a level warning (pre-alarm) has occurred.

58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL

This output indicates that the magnetic pick up signal is not sufficient to be used by the module for speed monitoring. The alarm can only operate if the speed signal fails to appear during cranking. It is disabled if 'multiple attempts to engage' is selected. If the MPU fails during engine running this would result in an underspeed alarm.

59 MAINTENANCE DUE ALARM

This output indicates that the generator is now due for maintenance either because it has used all the available running hours or the periodic maintenance time has expired. To clear the output a maintenance reset must be performed.

60 MAINS CLOSED AUXILIARY

This output indicates that a digital input that has been configured as 'mains closed auxiliary' is active.

61 MAINS FAILED TO CLOSE

This output source has intended to be used to indicate a failure of the mains contactor or breaker. It can only be used if the module is configured to use 'mains closed auxiliary' feedback.

62 MAINS FAILED TO OPEN

This output source has intended to be used to indicate a failure of the mains contactor or breaker. It can only be used if the module is configured to use 'mains closed auxiliary' feedback.

63 MAINS FAILURE

This output indicates that the module has sensed that a failure of the incoming AC mains supply. This output will become active whenever the mains voltage or frequency goes out of limits, or if the auxiliary mains failure input active (if used) and the mains transient timer has expired.

64 MAINS HIGH FREQUENCY

This output indicates that the module has sensed that the incoming AC mains supply frequency has exceeded the frequency limit setting.

65 MAINS HIGH VOLTAGE

This output indicates that the module has sensed that the incoming AC mains supply voltage has exceeded the voltage limit setting.

66 MAINS LOAD INHIBIT

This output indicates that a digital input has been configured as 'mains load inhibit' is active.

67 MAINS LOW FREQUENCY

This output indicates that the module has sensed that the incoming AC mains supply frequency has fallen below the frequency setting.

68 MAINS LOW VOLTAGE

This output indicates that the module has sensed that the incoming AC mains supply voltage has fallen below the voltage limit setting.

69 NO LOADING COMMAND

This output indicates that the module is not calling of the generator contactor or breaker to be closed. Should the module close the generator contactor this output will become inactive.

70 OIL PRESSURE LOW PRE-ALARM

This output indicates that a low oil pressure warning (pre-alarm) has occurred.

71 OIL PRESSURE LOW SHUTDOWN

This output indicates that a low oil pressure shutdown has occurred.

72 OVER CURRENT ALARM

This output indicates that the over current trip level has been reached.

73 OVERSPEED PRE-ALARM

This output indicates that the over speed warning (pre-alarm) has occurred.

74 OVERSPEED SHUTDOWN

This output indicates that the over speed shutdown has occurred.

75 PANEL LOCK

This output indicates that the module 'panel lock' is active. If the panel lock input is active, the modul will not respond to operation of the Mode select or start buttons. This allows the module to be placed into a spesific mode (such as auto) and then secured.

76 PRE-HEAT(during preheat timer)

The output controls the pre-heater. Pre-heat output is available for the duration of pre-heat timer, which terminates prior to cranking.

77 PRE-HEAT(until end of cranking)

The output controls the pre-heater. As ' Pre-heat (during pre-heat timer)' mode but pre-heat is also available during cranking.

78 PRE-HEAT(until end of warming)

The output controls the pre-heater. As ' Pre-heat (until safety on)' but pre-heat continues to be available until the warm-up timer has elapsed.

79 PRE-HEAT(until end safety on)

The output controls the pre-heater. As ' Pre-heat (until end of cranking)' but pre-heat is also available while waiting for the delayed alarms to become active.

80 REMOTE START PRESENT

This output indicates that a digital input that has been configured as 'remote start' is active. This output could be used to pass the remote start signal on to elsewhere in the control system.

81 REMOTE STOP DELAY IN PROGRESS

This output source will be active to indicate that the return timer is running.

82 SHORT CIRCUIT

This output indicates that the module has detected a short circuit on the generator output.

83 START RELAY ENERGISED

The output mimics the operation of the start relay. Can be used to control external logic circuitry.

84 STARTING ALARM

This output is used to supply an external sounder with a signal that the engine is about to start. The output will be active during the start delay and pre-heat timer (if used).

85 STARTING ALARMS ARMED

The output indicates that the starting alarms are now enabled. It can be used to control external logic circuitry. Starting alarms are armed as soon as module commences starting of the engine and remain armed until the engine at rest.

86 STOP BUTTON PRESSED

This output indicates that the stop pushbutton being operated. Once the button is released the output will become inactive.

87 SYSTEM IN AUTO MODE

The output indicates that the module is in the Auto mode.

88 SYSTEM IN MANUAL MODE

The output indicates that the module is in the Manual mode.

89 SYSTEM IN OFF MODE

The output indicates that the module is in the Stop mode.

90 SYSTEM IN TEST MODE

The output indicates that the module is in the Test mode.

91 UNDERSPEED SHUTDOWN

This output indicates that an underspeed shutdown has occurred.

92 UNDERSPEED PRE-ALARM

This output indicates that an underspeed warning (pre-alarm) has occurred.

93 WAITING FOR GENERATOR

This output indicates that the engine has been instructed to start but has not yet become available. Once the generator becomes available this output will be in-active. (Available = generator frequency and voltage levels are above the 'loading' levels set in the configuration.)

(START TIMERS PAGE) START TIMERS page				
MAINS TRANS.DELAY	<i>Mains Transient Delay</i>	sec	0 - 9999	0
REMOTE START DELAY	<i>Remote Start Delay</i>	sec	0 - 3600	4
REMOTE STOP DELAY	<i>Remote Stop Delay</i>	sec	0 - 250	4
PRE-HEAT	<i>Pre-Heat</i>	Sec	0 – 250	3
PRE-HEAT BYPASS	<i>Pre-Heat Bypass</i>	Min	0 – 250	0
SAFETY ON DELAY	<i>Safety On Delay</i>	sec	0 - 99	8
HORN DURATION	<i>Horn Duration</i>	sec	(dis)0 - 999	60
CHRG.EXCITATION TIM	<i>Charge Excitation Time</i>	sec	0 – 99(cont.)	15
ELECTR.COOL.FAN TIM	<i>Cooling Fan Time</i>	sec	0 - 250	180
MAINS FAIL DELAY	<i>Mains Fail Delay</i>	sec	0.0 – 20.0	2.0

MAINS TRANSIENT DELAY

This timer dictates how long a mains anomaly must be present before the module will respond to it. This can be used to prevent nuisance tripping when switching loads etc.

REMOTE START DELAY

This timer dictates how long the module will wait after it has received a remote start signal before it will attempt to start. This prevent un-necessary starting on a fluctuating mains supply etc.

REMOTE STOP DELAY

This timer dictates how long the module will wait after it has received a remote stop signal before it will attempt to stop. This prevent un-necessary stopping on a fluctuating mains supply etc.

PRE-HEAT

This timer dictates the duration that the pre-heat output will be active before an attempt is made to start the engine. Once this timer is expired cranking will commence.

PRE-HEAT BYPASS

This feature allows the module to start a hot engine without performing an un-necessary pre-heat delay. The bypass timer is triggered by the generator starting and actually being loaded. If the generator started but does not achieve loading then the timer will not be triggered. The

bypass timer is initiated once the engine has come to rest. If any attempts to start are requested within the duration of the bypass timer the start sequence will bypass the pre-heat timer.

SAFETY ON DELAY

This timer dictates how long the module will ignore the Low Oil Pressure, High Engine Temperature, Underspeed, Undervolts and any other inputs configured as active from safety on. It allows the values such as oil pressure to rise to their operating values on starting without triggering an alarm. Once the timer has expired all alarm conditions are monitored again. If configured to use 'fast loading', should all the monitored conditions, such as oil pressure, come to expected state prior to the end of the safety on timer, the timer will be terminated prematurely ensuring maximum protection as soon as possible.

HORN DURATION

This timer dictates how long the horn will work after the last error detected. Once after this timer ended module will do horn reset.

CHARGE EXCITATION TIME

Charge excitation was selectable as momentary / continuous operation. This timer dictates how long the Charge excitation will active.

COOLING FAN TIME

This timer dictates how long the Cooling Fan will continue to operate.

MAINS FAIL DELAY

The unit uses this parameter to decide the mains fail.

(LOAD/STP.TIMERS PAGE) LOAD/STOPPING TIMERS page				
WARM UP TIME	<i>Warmup Timer</i>	Sec	0 - 250	3
RETURN DELAY	<i>Return Delay</i>	Sec	0 – 3600	5
COOLING TIME	<i>Cooling Timer</i>	Sec	0 – 9999	60
GEN.FR.ERR.CNT.TIME	<i>Generator Frequency Error Control Time</i>	Sec	0.0 – 10.0	1.0
GEN.VL.ERR.CNT.TIME	<i>Generator Voltage Error Control Time</i>	Sec	0.0 – 10.0	1.0
FAIL TO STOP TIME	<i>Fail To Stop Time</i>	Sec	15 – 99	30

WARMUP TIMER

This timer is initiated once the engine is up and running. It delays loading the generator until it has stabilised. Once this timer is expired the 'Close generator' signal will be given and the generator is available to be loaded.

RETURN DELAY

This timer dictates how long the module will wait before it will un-load the generator (back to the mains supply if AMF) and initialise it's run-on and shutdown cycle. This is ensure that the mains supply has stabilised before transferring the load back to mains.

COOLING TIMER

This is the time the generator is to run off-load once the load transfer signal has ceased. This gives the engine time to cool down before shutdown.

GENERATOR FREQUENCY ERROR CONTROL TIME

If firstly generator frequency is out of under and over set points this timer is initiated. If generator frequency is out of under and over set points when this timer expires a 'generator frequency error' alarm signal is generated.

GENERATOR VOLTAGE ERROR CONTROL TIME

If firstly generator voltage is out of under and over set points this timer is initiated. If generator voltage is out of under and over set points when this timer expires a 'generator voltage error' alarm signal is generated.

FAIL TO STOP TIME

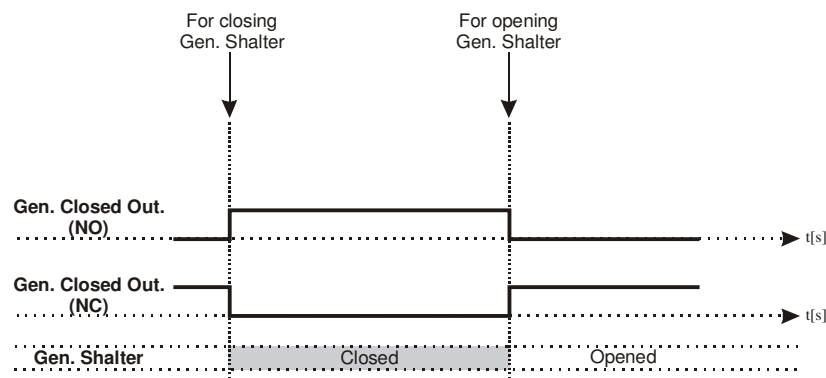
Once the module has given a shutdown signal to the engine it expects the engine to come to rest. It monitors the Oil pressure and speed sensing sources and if they still indicate engine movement when this timer expires a 'Fail To Stop' alarm signal is generated.

(BREAKERS PAGE) BREAKERS page				
HARDW.BREAKER SELCT	Hardware Breaker Selection		0 – 2	0
GEN.CLOS.BREK.C.TYP	Gen Close Breaker Contact Type	NO/NC	0 – 1	0
GEN.CLOS.BREK.R.TYP	Gen Close Breaker Relay Type	NOR/PULS	0 – 1	0
GEN.CLOSE TIMER	Gen Close Timer	Sec	1 – 250	5
GEN.OPEN.BREK.C.TYP	Gen Open Breaker Contact Type	NO/NC	0 – 1	0
GEN.OPEN.BREK.R.TYP	Gen Open Breaker Relay Type	NOR/PULS	0 – 1	0
GEN.OPEN TIMER	Gen Open Timer	Sec	1 – 250	5
MAIN CLS.BREK.C.TYP	Main Close Breaker Contact Type	NO/NC	0 – 1	0
MAIN CLS.BREK.R.TYP	Main Close Breaker Relay Type	NOR/PULS	0 – 1	0
MAINS CLOSE TIMER	Mains Close Timer	Sec	1 – 250	5
MAIN OPN.BREK.C.TYP	Main Open Breaker Contact Type	NO/NC	0 – 1	0
MAIN OPN.BREK.R.TYP	Main Open Breaker Relay Type	NOR/PULS	0 – 1	0
MAINS OPEN TIMER	Mains Open Timer	Sec	1 – 250	5
BREKR.CLOS.PULS.TIM	Breaker Close Pulse Time	Sec	0.0 – 10.0	0.5
BREKR.OPEN.PULS.TIM	Breaker Open Pulse Time	Sec	0.0 – 10.0	0.5
TRANSFER TIME	Transfer Time	Sec	0 - 250	2

HARDWARE BREAKER SELECTION

0- Mains and Gen schalters have only close drives and if close drive off schalter will open. Parameters; *GEN CLOSE BREAKER CONTACT TYPE*, *GEN CLOSE TIMER*(if gen closed input selected), *GEN OPEN TIMER*(if gen closed input selected), *MAIN CLOSE BREAKER CONTACT TYPE*, *MAINS CLOSE TIMER*(if mains closed input selected), *MAINS OPEN TIMER*(if mains closed input selected), *TRANSFER TIME*.

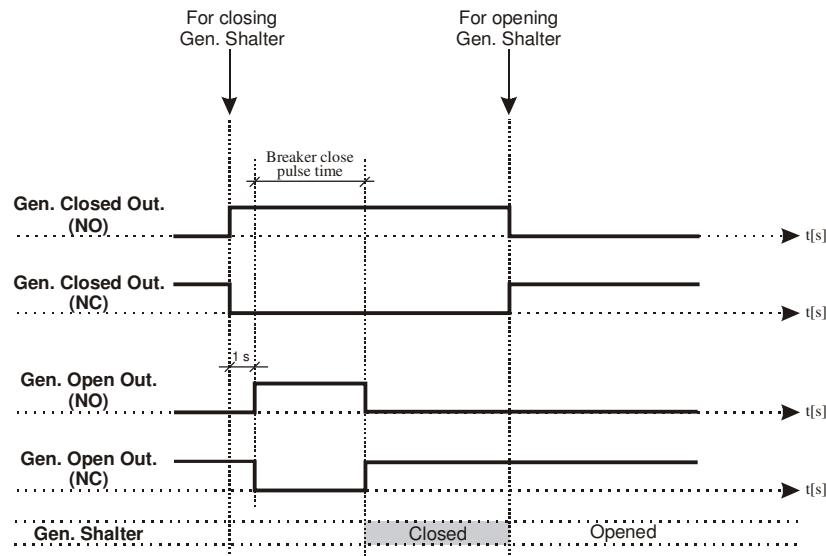
Example: If Hardware Breaker Selection parameter is selected as 0;



1- Mains and Gen schalters have only close drives, when want to schalter close, close breaker output on and after 1 sec. open breaker output on and after breaker close pulse time open breaker output will off. When want to schalter open close breaker output and open breaker output will off.

Parameters; *GEN CLOSE BREAKER CONTACT TYPE*, *GEN CLOSE TIMER*(if gen closed input selected), *GEN OPEN BREAKER CONTACT TYPE*, *GEN OPEN TIMER*(if gen closed input selected), *MAIN CLOSE BREAKER CONTACT TYPE*, *MAINS CLOSE TIMER*(if mains closed input selected), *MAIN OPEN BREAKER CONTACT TYPE*, *MAINS OPEN TIMER*(if mains closed input selected), *BREAKER CLOSE PULSE TIME*, *TRANSFER TIME*.

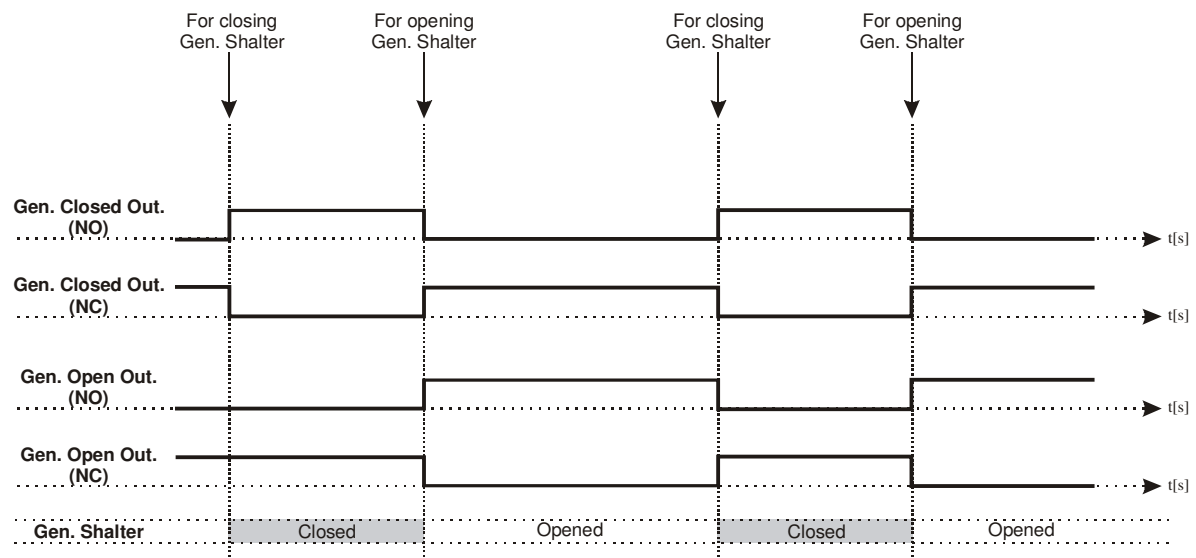
Example: If Hardware Breaker Selection parameter is selected as 1;



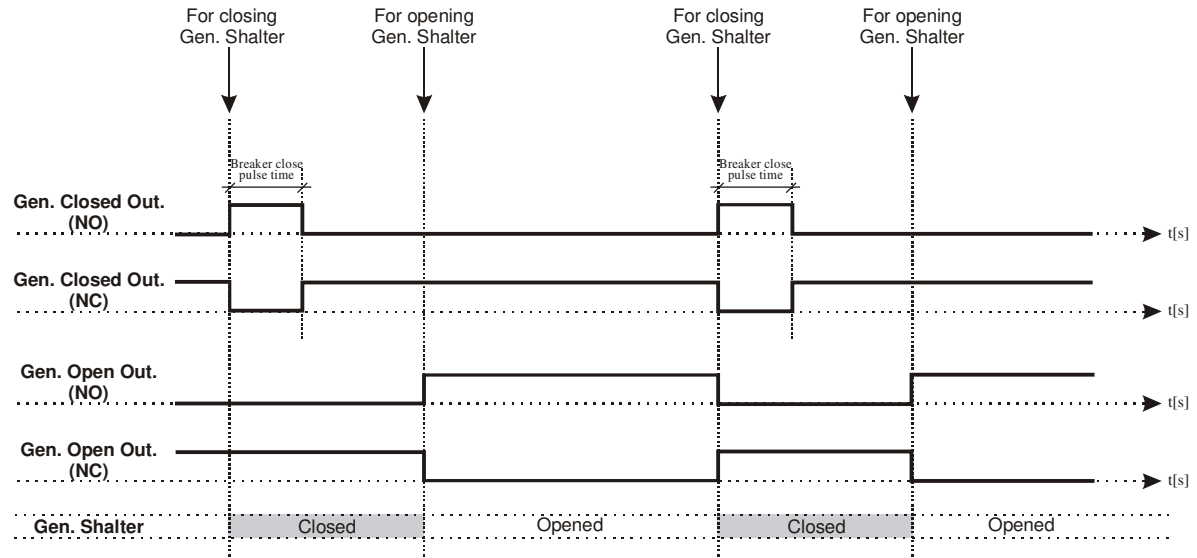
2- USER CONFIGURED: User can select all the schalter types.

Parameters; *GEN CLOSE BREAKER CONTACT TYPE*, *GEN CLOSE BREAKER RELAY TYPE*, *GEN CLOSE TIMER*(if gen closed input selected), *GEN OPEN BREAKER CONTACT TYPE*, *GEN OPEN BREAKER RELAY TYPE*, *GEN OPEN TIMER*(if gen closed input selected), *MAIN CLOSE BREAKER CONTACT TYPE*, *MAIN CLOSE BREAKER RELAY TYPE*, *MAINS CLOSE TIMER*(if mains closed input selected), *MAIN OPEN BREAKER CONTACT TYPE*, *MAIN OPEN BREAKER RELAY TYPE*, *MAINS OPEN TIMER*(if mains closed input selected), *BREAKER CLOSE PULSE TIME*(if Gen Close Breaker Relay Type or Main Close Breaker Relay Type parameter is selected as 1), *BREAKER OPEN PULSE TIME*(if Gen Open Breaker Relay Type or Main Open Breaker Relay Type parameter is selected as 1), *TRANSFER TIME*.

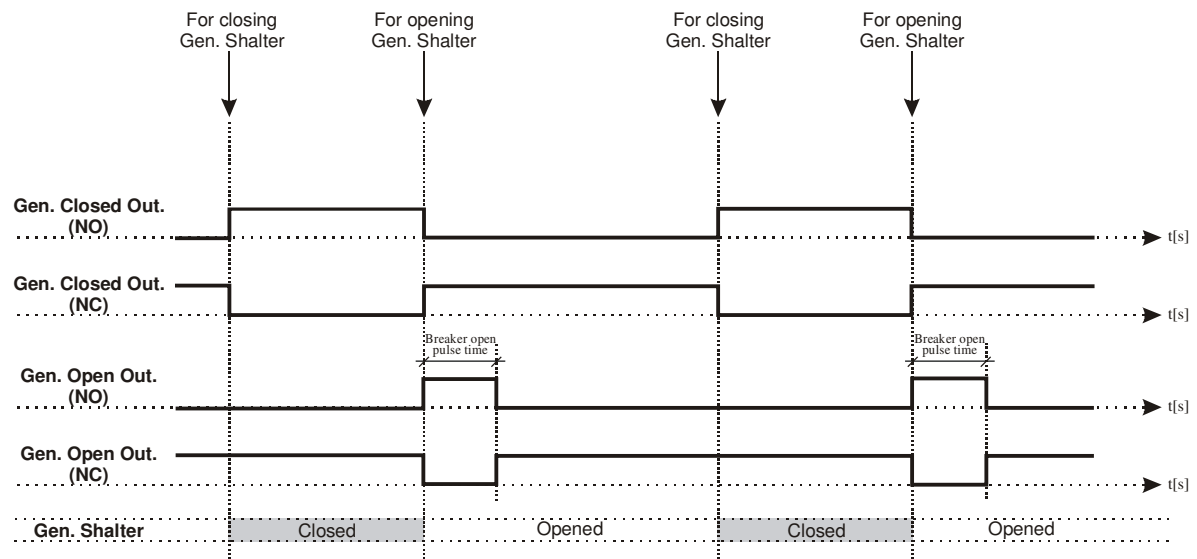
Example-1: If Hardware Breaker Selection parameter is selected as 2 (user configured), Gen. Close Breaker Relay Type parameter is selected as 0 (NOR) and Gen. Open Breaker Relay Type parameter is selected as 0 (NOR);



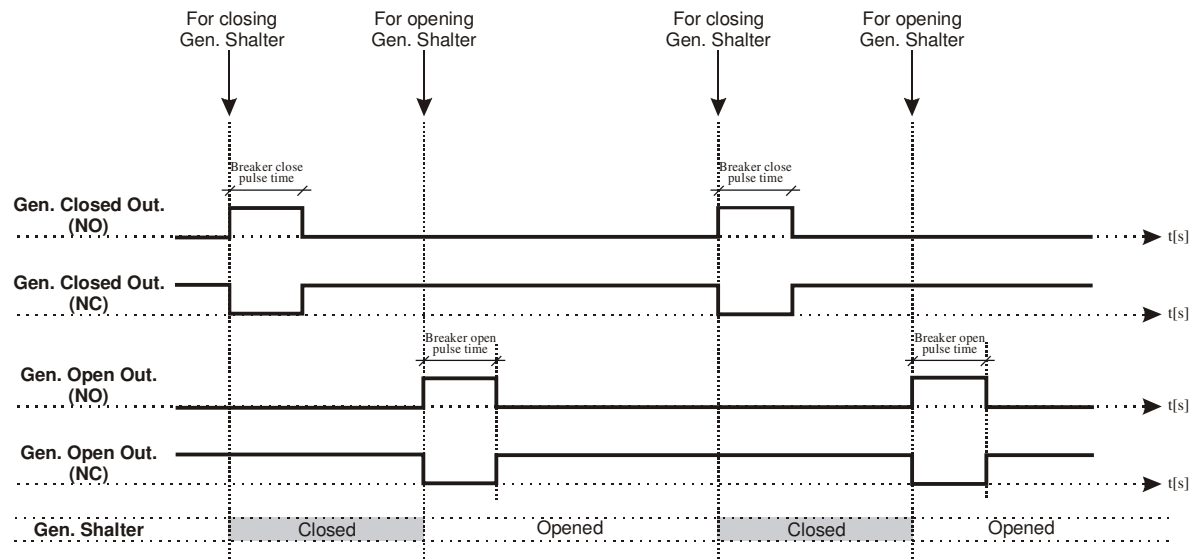
Example-2: If Hardware Breaker Selection parameter is selected as 2 (user configured), Gen. Close Breaker Relay Type parameter is selected as 1 (PULSE) and Gen. Open Breaker Relay Type parameter is selected as 0 (NOR);



Example-3: If Hardware Breaker Selection parameter is selected as 2 (user configured), Gen. Close Breaker Relay Type parameter is selected as 0 (NOR) and Gen. Open Breaker Relay Type parameter is selected as 1 (PULSE);



Example-4: If Hardware Breaker Selection parameter is selected as 2 (user configured), Gen. Close Breaker Relay Type parameter is selected as 1 (PULSE) and Gen. Open Breaker Relay Type parameter is selected as 1 (PULSE);



GEN. CLOSE TIMER

This is used to monitor the closure of the generator contactor or breaker. It will only operate if an auxiliary input is configured as 'Generator Closed Auxiliary' and connected to the auxiliary on the generator contactor or breaker. Once a generator closed signal is issued the 'gen close timer' is initiated. Should the 'Generator Closed Auxiliary' input become active the timer the 'gen close timer' is cancelled. If the timer expires and the 'Generator Closed Auxiliary' has not become active the module will issue a 'generator failed to close' alarm.

GEN. OPEN TIMER

This is used to monitor the opening of the generator contactor or breaker. It will only operate if an auxiliary input is configured as 'Generator Closed Auxiliary' and connected to the auxiliary on the generator contactor or breaker. Once a generator open signal is issued the 'gen open timer' is initiated. Should the 'Generator Closed Auxiliary' input become in-active the timer 'gen open timer' is cancelled. If the timer expires and the 'Generator Closed Auxiliary' has not become in-active the module will issue a 'generator failed to open' alarm.

MAINS CLOSE TIMER

This is used to monitor the closure of the mains contactor or breaker. It will only operate if an auxiliary input is configured as 'Mains Closed Auxiliary' and connected to the auxiliary on the mains contactor or breaker. Once a mains closed signal is issued the 'mains close timer' is initiated. Should the 'Mains Closed Auxiliary' input become active the timer the 'mains close timer' is cancelled. If the timer expires and the 'Mains Closed Auxiliary' has not become active the module will issue a 'mains failed to close' alarm.

MAINS OPEN TIMER

This is used to monitor the opening of the mains contactor or breaker. It will only operate if an auxiliary input is configured as 'Mains Closed Auxiliary' and connected to the auxiliary on the mains contactor or breaker. Once a mains open signal is issued the 'mains open timer' is initiated. Should the 'Mains Closed Auxiliary' input become in-active the timer the 'mains open timer' is cancelled. If the timer expires and the 'Mains closed auxiliary' has not become in-active the module will issue a 'mains failed to open' alarm.

BREAKER CLOSE PULSE TIME

This is used to determine the duration of the Mains and Generator close signals. This timer is only used if Pulsed outputs are configured to be used.

BREAKER OPEN PULSE TIME

This is used to determine the duration of the Mains and Generator close signals. This timer is only used if Pulsed outputs are configured to be used.

TRANSFER TIME

This is used to allow for fixed duration transfer breaks when switching from mains to generator and back. It can be used to ensure that the supply is removed from the load for fixed period of time to allow pumps/motors to come to rest etc.

(LCD CONFIG.PAGE) LCD CONFIGURATION page				
ERR.MESS SCROLL TIM	Scroll Time For Error Messages	Sec	0 - 99	4
DIGITAL CONTRAST	Digital Contrast		0 - 15	8
BACKLIGHT ON/OFF	Backlight On/Off		0 - 1	0

AUTO SCROLL TIMER

Error messages are displayed eighth line of LCD Display. If more than one error condition is present, each of them is displayed during time defined by Auto Scroll Timer parameter.

DIGITAL CONTRAST

It is used to change contrast of LCD Display.

BACKLIGHT ON/OFF

0- Backlight on. 1- Backlight off.

(ENG.MAINT.ALARM PAGE) ENGINE MAINTENANCE ALARM page				
RUNN.HOURS INTERVAL	Running Hours Interval	HOUR	(dis)0 - 9999	5000
MAINT.DATE INTERVAL	Maintenance Date Interval	MONTH	(dis)0 - 12	6
ENG.STP.WH.MANT.E/D	Force Engine Shutdown When Maintenance Is Due En/Dis	-	ENAB DIS	DIS
ENGIN.RUN.HOUR(LSB)	Engine Running Hour (Lsb)	-	0 - 255	0
ENGINE RUNNING HOUR	Engine Running Hour	-	0 - 255	0
ENGIN.RUN.HOUR(MSB)	Engine Running Hour(Msb)	-	0 - 14	0

(COMMUNICATION PAGE) COMMUNICATION page				
SLAVE ADDRESS	Slave Address		1 - 247	1
BAUD RATE	Baud Rate			
	0=1200			
	1=2400			
	2=4800		0 - 4	3
	3=9600			
	4=19200			
PARITY	Parity; 0= NONE, 1= ODD, 2= EVEN		0 - 2	0
STOP BIT	Stop Bit		0 - 1	0

(WR.CALENDR&EXER.PAGE) WORKING CALENDAR & EXERCISE page				
WORK.PERIOD ON MON.	<i>Working calendar working time on Monday</i>	min	(dis)0 - 1440	1440
WORK.START TIME MON	<i>Working calendar work start time on Monday</i>	hour-min	0.0 – 23.59	0.0
WORK.PERIOD ON TUE.	<i>Working calendar working time on Tuesday</i>	min	(dis)0 - 1440	1440
WORK.START TIME TUE	<i>Working calendar work start time on Tuesday</i>	hour-min	0.0 – 23.59	0.0
WORK.PERIOD ON WED.	<i>Working calendar working time on Wednesday</i>	min	(dis)0 - 1440	1440
WORK.START TIME WED	<i>Working calendar work start time on Wednesday</i>	hour-min	0.0 – 23.59	0.0
WORK.PERIOD ON THU.	<i>Working calendar working time on Thursday</i>	min	(dis)0 - 1440	1440
WORK.START TIME THU	<i>Working calendar work start time on Thursday</i>	hour-min	0.0 – 23.59	0.0
WORK.PERIOD ON FRI.	<i>Working calendar working time on Friday</i>	min	(dis)0 - 1440	1440
WORK.START TIME FRI	<i>Working calendar work start time on Friday</i>	hour-min	0.0 – 23.59	0.0
WORK.PERIOD ON SAT.	<i>Working calendar working time on Saturday</i>	min	(dis)0 - 1440	1440
WORK.START TIME SAT	<i>Working calendar work start time on Saturday</i>	hour-min	0.0 – 23.59	0.0
WORK.PERIOD ON SUN.	<i>Working calendar working time on Sunday</i>	min	(dis)0 - 1440	1440
WORK.START TIME SUN	<i>Working calendar work start time on Sunday</i>	Hour-min	0.0 – 23.59	0.0
EXER.WORKING PERIOD	<i>Generator exercise working time on related day</i>	min	(dis)0 - 99	DIS
EXER.WR.DAY OF WEEK	<i>Generator exercise working day of week</i>		1 – 7	1
EXER.WORK.START TIM	<i>Generator exercise work start time on related day</i>	hour-min	0.0 – 23.59	0.0

Please enter the days of the weekly workdays for Working Function. Example:

WORK.PERIOD ON MON. (dis)0 The working function is Mondays disabled.
(1440) The working function is enabled whole day.
(120) The working function is every Monday enabled for 120 minutes.

WORK.START TIME MON 12.20 The working function is every Monday started at 12.20 o'clock (if it is enabled)

WORK.PERIOD ON TUE. (dis)0 The working function is Tuesdays disabled.
(1440) The working function is enabled whole day.
(120) The working function is every Tuesday enabled for 120 minutes.

WORK.START TIME TUE 12.20 The working function is every Tuesday started at 12.20 o'clock (if it is enabled)

WORK.PERIOD ON WED. (dis)0 The working function is Wednesdays disabled.
(1440) The working function is enabled whole day.
(120) The working function is every Wednesday enabled for 120 minutes.

WORK.START TIME WED 12.20 The working function is every Wednesday started at 12.20 o'clock (if it is enabled)

WORK.PERIOD ON THU. (dis)0 The working function is Thursdays disabled.
(1440) The working function is enabled whole day.
(120) The working function is every Thursday enabled for 120 minutes.

WORK.START TIME THU 12.20 The working function is every Thursday started at 12.20 o'clock (if it is enabled)

WORK.PERIOD ON FRI. (dis)0 The working function is Fridays disabled.
 (1440) The working function is enabled whole day.
 (120) The working function is every Friday enabled for 120 minutes.

WORK.START TIME FRI 12.20 The working function is every Friday started at 12.20 o'clock (if it is enabled)

WORK.PERIOD ON SAT. (dis)0 The working function is Saturdays disabled.
 (1440) The working function is enabled whole day.
 (120) The working function is every Saturday enabled for 120 minutes.

WORK.START TIME SAT 12.20 The working function is every Saturday started at 12.20 o'clock (If it is enabled)

WORK.PERIOD ON SUN. (dis)0 The working function is Sundays disabled.
 (1440) The working function is enabled whole day.
 (120) The working function is every Sunday enabled for 120 minutes.

WORK.START TIME SUN 12.20 The working function is every Sunday started at 12.20 o'clock (If it is enabled)

Please enter the day of the week for Exercise Function. Example:

EXER.WORKING PERIOD (dis)0 The exercise function is disabled.
 (10) The exercise function is enabled for 10 minutes.

EXER.WR.DAY OF WEEK 1=Monday, 2=Tuesday, 3=Wednesday, 4=Thursday, 5=Friday, 6=Saturday, 7=Sunday.

EXER.WORK.START TIM 12.20 The exercise function is started at 12.20 o'clock (If it is enabled)

(DATE SETUP PAGE) DATE SETUP page

YEAR	YEAR		0 - 99	
MONTH	MONTH		1 - 12	
DATE	DATE		1 - 31	
DAY	DAY		1 - 7	
HOUR	HOUR		0 - 23	
MINUTE	MIN		0 - 59	
SECOND	SEC		0 - 59	

(PASSWORD PAGE) PASSWORD page


OPERATOR PASSWORD	OPERATOR PASSWORD		0 - 9999	0
TECHNICIAN PASSWORD	TECHNICIAN PASSWORD		0 - 9999	0

OPERATOR PASSWORD

Use this option to change the Operator password. This password allows access to operator parameters section.

TECHNICIAN PASSWORD

Use this option to change the Technician password. It allows access to both operator and technician parameters section.

	<p>To prevent to changing unit program parameters by unauthorised personnel don't allow to the learning operator and technician passwords by the others. In case of this situation, change passwords immediately.</p>
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3.6 Pc Interface

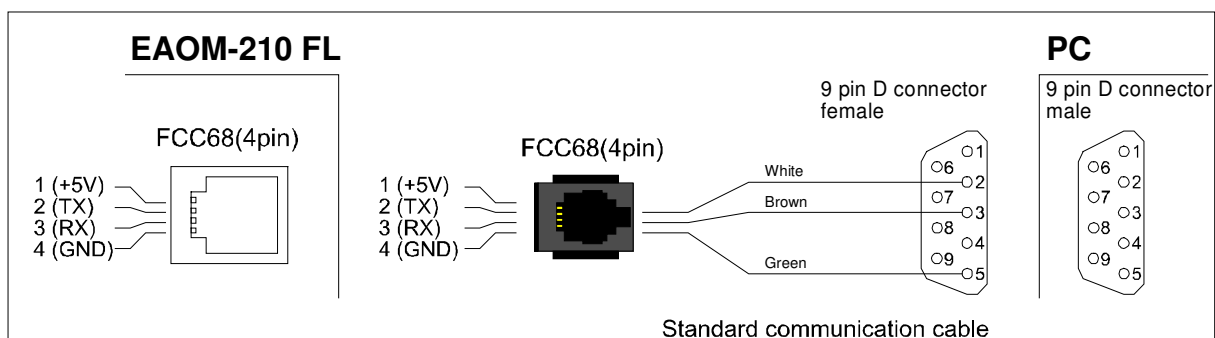
The PC interface kit (EAOM-210 FL/PCIK) comprises the following:
 9 pin D connector/FCC68(4 pin) connection lead with 2 meters cable
 EAOM-210 FL V00/SW Communication software (CD)

3.6.1 Technical Specifications

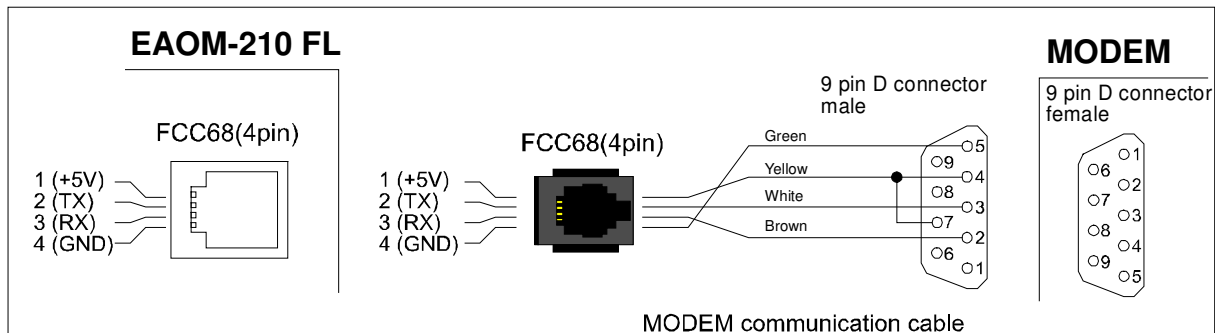
RS-232 serial communication with Modbus RTU protocol
 Baud Rate from 1200 to 19200
 8 data bits, Parity; None, Odd or Even, Stop Bit; 0 or 1
 Maximum allowable cable length is 10 meters

3.6.2 RS-232 Serial Interface, Programming The Device Over PC or Modem

3.6.2.1 Cable Connection Between RS-232 Terminal of the Device and PC



3.6.2.2 Cable Connection Between RS-232 Terminal of the Device and Modem



3.6.3 Installation Instruction

3.6.3.1 Minimum system requirements

Processor	:486 66MHz
Operating Systems	:Windows95/98, Windows NT
Ram	:16 Mbyte
Monitor	:14" SVGA (640x480 resolution)
Fixed Disk Free Space	:1 Mbyte
Disk Drive	:CD-ROM
Communication	:An RS232 communication port is needed to communicate with the EAOM-210 FL Unit

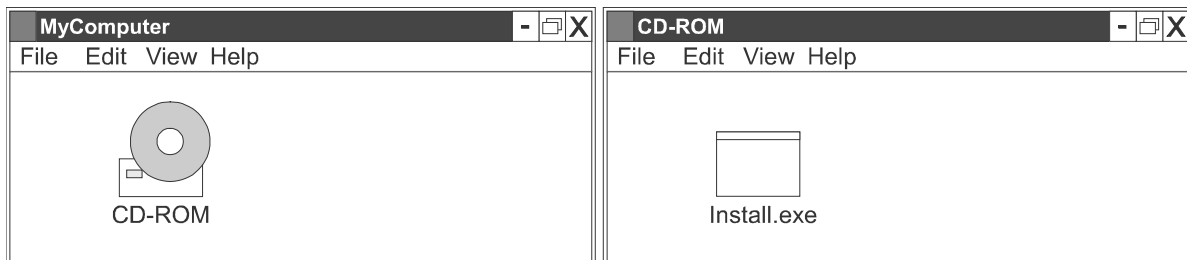
3.6.3.2 Installing EAOM-210 FL V00/SW

Insert the software CD into the CD-ROM drive on the PC
 Double click on MyComputer
 Then double click on CD-ROM drive

There will be a short delay while the CD-ROM is accessed, then the disk contents will be displayed.

Double click on “Install.exe”.

EAOM-210 FL V00/SW will be installed automatically on to your PC in its own folder(directory). It will also create “START MENU” items.

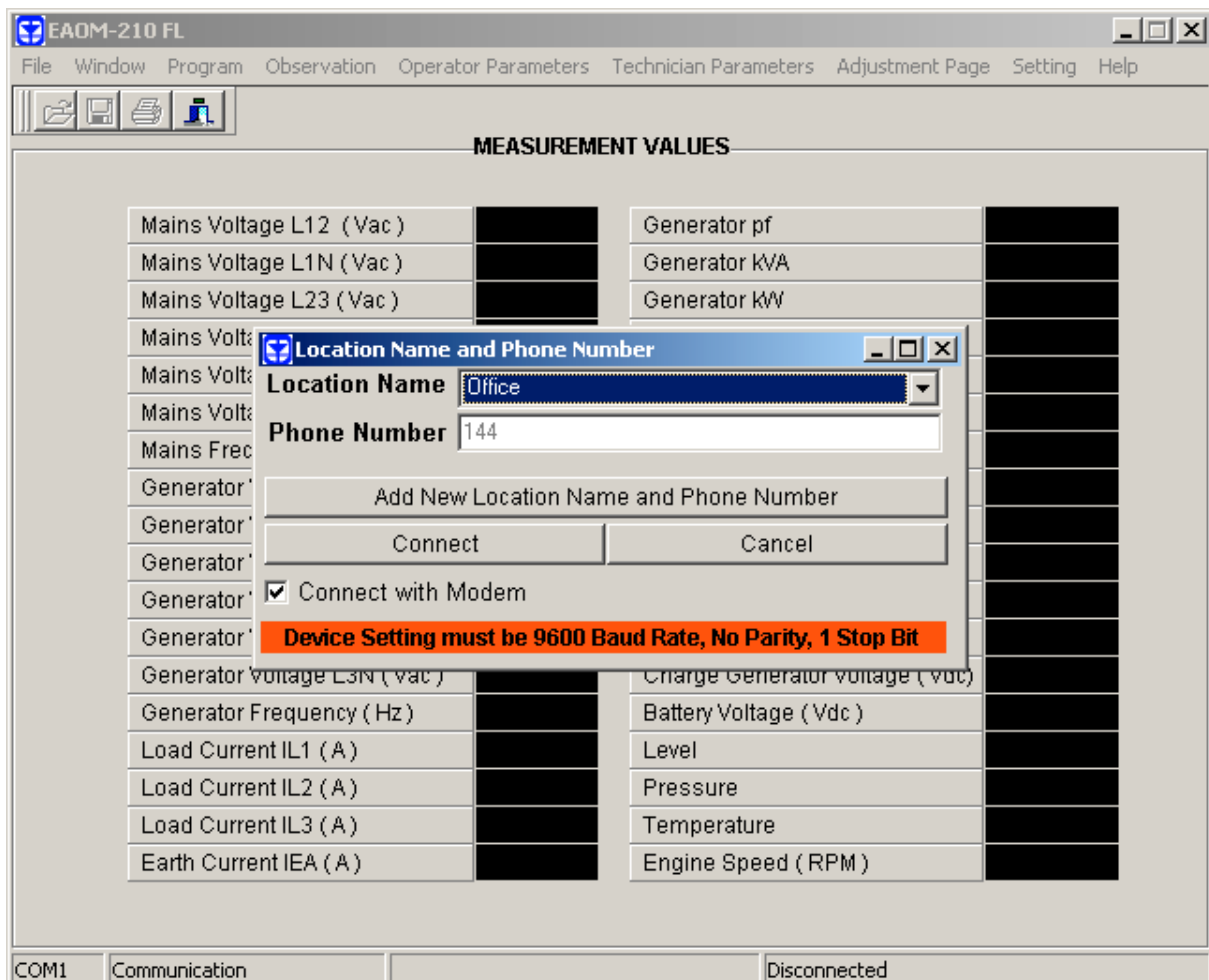


3.6.3.3 To Run EAOM-210 FL V00/SW communication software

Press the START icon

Then select Programs → EAOM-210 FL V00 SW(Folder) → EAOM-210 FL V00

Then click on EAOM-210 FL V00



When the program runs firstly, a window is shown to determine how the connection will be established: over modem or RS-232 communication port. This selection is made with the ‘Connect with Modem’ check box. If the comport settings are correct, when ‘Connect’ button is pressed, connection is established. With ‘Add New Phone Number’ button, user can access to the window below and save the location name and phone number for using to connect with modem.

Add New Phone Number

Location Name

Telephone Number
 (Use comma for delay)

Firstly, enter phone number and location name (It is used to remember where the phone number belongs) and press 'Ok' button for saving these values.

When the connection is established, main screen is shown;

EAOM-210 FL

File Window Program Observation Operator Parameters Technician Parameters Adjustment Page Setting Help

MEASUREMENT VALUES

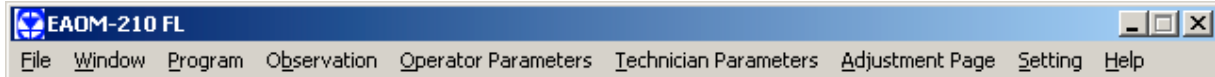
Mains Voltage L12 (Vac)	0	Generator pf	0.00
Mains Voltage L1N (Vac)	0	Generator kVA	0
Mains Voltage L23 (Vac)	0	Generator kW	0
Mains Voltage L2N (Vac)	0	Generator kVAh	0
Mains Voltage L31 (Vac)	0	Generator kVAh	0
Mains Voltage L3N (Vac)	0	Generator kWh	0
Mains Frequency (Hz)	0.0	Generator kWh	0
Generator Voltage L12 (Vac)	0	Next Maintenance Month	32
Generator Voltage L1N (Vac)	0	Next Maintenance Hour	5000
Generator Voltage L23 (Vac)	0	Working Time	918530
Generator Voltage L2N (Vac)	0	Day. Month. Year	01.06.2005
Generator Voltage L31 (Vac)	0	Time (Hour.Minute)	02.37
Generator Voltage L3N (Vac)	0	Charge Generator Voltage (Vdc)	0.0
Generator Frequency (Hz)	0.0	Battery Voltage (Vdc)	25.9
Load Current IL1 (A)	0	Level	0
Load Current IL2 (A)	0	Pressure	70.8
Load Current IL3 (A)	0	Temperature	40
Earth Current IEA (A)	0		

COM1 Communication Connected

3.6.4 Description

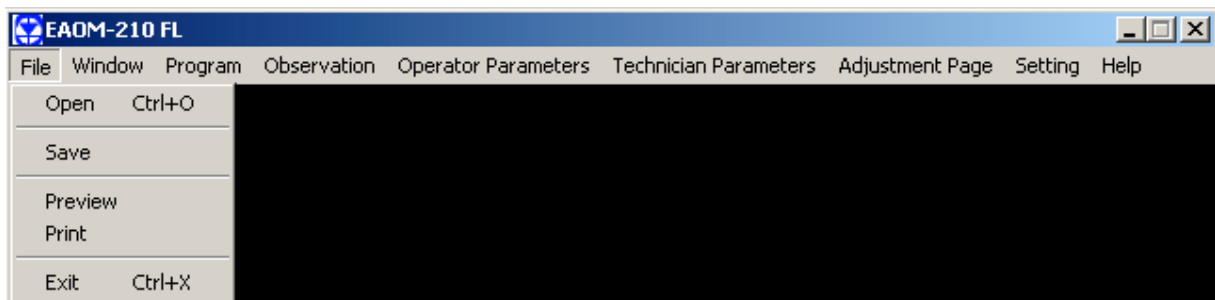
EAOM-210 FL unit communicates with PC by means of EAOM-210 FL/PCIK. With EAOM-210 FL V00/SW ,the EAOM-210 FL unit's parameters and status information can be reached over PC easily. Operator and Technician parameters can be viewed. Parameters are password protected.

3.6.4.1 Main Menu



File Menu

This menu allows the user to save configuration files to the disc, read from disc and write to disc.



Open :This menu allows the user to load the registered configuration files to PC.

For example: Click 'Open' in File menu. Choose configuration file which includes operator or technician parameters on Open Dialog Box. When user clicks 'Open' button on Open Dialog Box parameters will be transferred to PC window.

Save :This menu allows the user to save the parameters with a name defined by user.

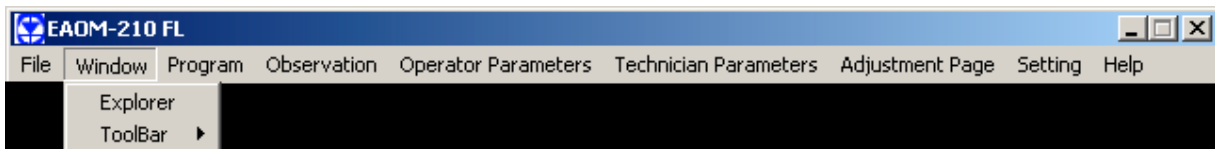
For example: Click 'Save' in File menu. After choosing where to save the file, enter the file name. When user clicks 'Save' button on Save Dialog Box, all parameters will be saved to the file that user determine.

Preview : This menu allows the user to preview the operator parameters, when the user to come into the Operator Parameters section. It allows the user to preview the technician parameters, when the user to come into the Technician Parameters section. It allows the user to preview the Event Logs, when the user to come into the Events section.

Print :This menu allows the user to print the parameters.

Exit :With this menu user can exit from the EAOM-210 FL V00/SW.

Window Menu

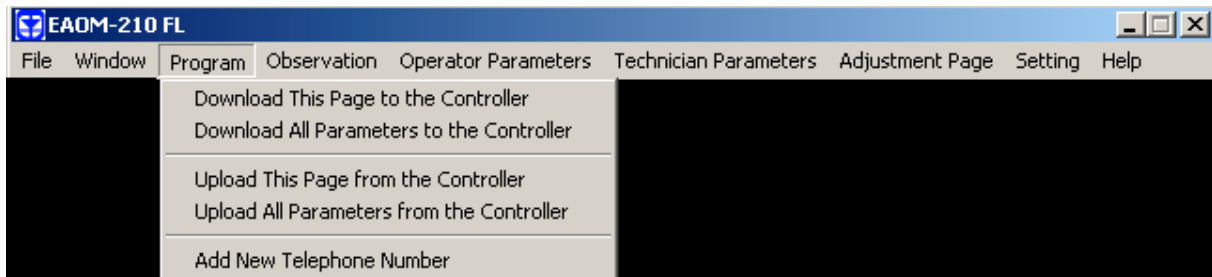


Explorer: This menu allows the user to reach quickly the Observation, Operator Parameters and Technician Parameters sections.

Toolbar: Toolbar on/off

Program Menu

This menu is active during the Operator or Technician Parameters Section is open. With this menu user can load parameters from EAOM-210 FL unit to PC or from PC to EAOM-210 FL unit.



Download :With this menu user can load parameters from PC to EAOM-210 FL.

For loading parameters from PC to EAOM-210 FL follow the steps below.

Download This Page to the Controller:

While the operator parameters window is showing, If user clicks “Download This Page to the Controller” in Program menu, only parameters in the related page is loaded from PC to device. While the technician parameters window is showing, If user clicks “Download This Page to the Controller” in Program menu, only parameters in the related page is loaded from PC to device.

Download All Parameters to the Controller:

While the operator parameters window is showing, If user clicks “Download All Parameters to the Controller” in Program menu, all of the operator parameters is loaded from PC to device. While the technician parameters window is showing, If user clicks “Download All Parameters to the Controller” in Program menu, all of the technician parameters is loaded from PC to device.

Upload :User can load the parameters that is stored on EAOM-210 FL unit to PC.

For loading parameters from EAOM-210 FL unit to PC follow the steps below.

Upload This Page from the Controller:

While the operator parameters window is showing, If user clicks “Upload This Page from the Controller” in Program menu, only parameters in the related page is loaded from device to PC. While the technician parameters window is showing, If user clicks “Upload This Page from the Controller” in Program menu, only parameters in the related page is loaded from device to PC.

Upload All Parameters from the Controller:

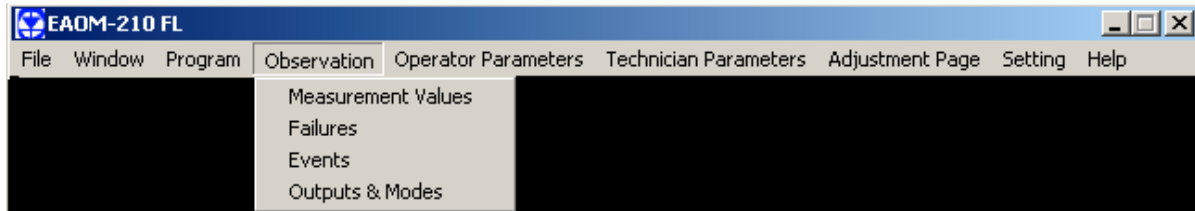
While the operator parameters window is showing, If user clicks “Upload All Parameters from the Controller” in Program menu, all of the operator parameters is loaded from device to PC. While the technician parameters window is showing, If user clicks “Upload All Parameters from the Controller” in Program menu, all of the technician parameters is loaded from device to PC.

Add New Phone Number:

User can be saved the phone number which is used for connecting with the modem.

Observation Menu

There are four sub-menus in this menu: Measurement Values, Failures, Events and Output & Modes.



Measurement Values:

The screenshot shows the 'MEASUREMENT VALUES' window in the EAOM-210 FL software. It displays a table of various electrical and generator parameters and their current values.

Parameter	Value	Parameter	Value
Mains Voltage L12 (Vac)	380	Generator pf	0.00
Mains Voltage L1N (Vac)	221	Generator kVA	0
Mains Voltage L23 (Vac)	379	Generator kW	0
Mains Voltage L2N (Vac)	219	Generator kVAr	0
Mains Voltage L31 (Vac)	381	Generator kVAh	0
Mains Voltage L3N (Vac)	219	Generator kWh	0
Mains Frequency (Hz)	49.9	Generator kVArh	0
Generator Voltage L12 (Vac)	378	Next Maintenance Month	6
Generator Voltage L1N (Vac)	219	Next Maintenance Hour	5000
Generator Voltage L23 (Vac)	379	Working Time	0
Generator Voltage L2N (Vac)	219	Day. Month. Year	13.12.2006
Generator Voltage L31 (Vac)	381	Time (Hour.Minute)	15.13
Generator Voltage L3N (Vac)	219	Charge Generator Voltage (Vdc)	0.0
Generator Frequency (Hz)	49.9	Battery Voltage (Vdc)	12.2
Load Current IL1 (A)	0	Level	0
Load Current IL2 (A)	0	Pressure	70.8
Load Current IL3 (A)	0	Temperature	40
Earth Current IEA (A)	0		

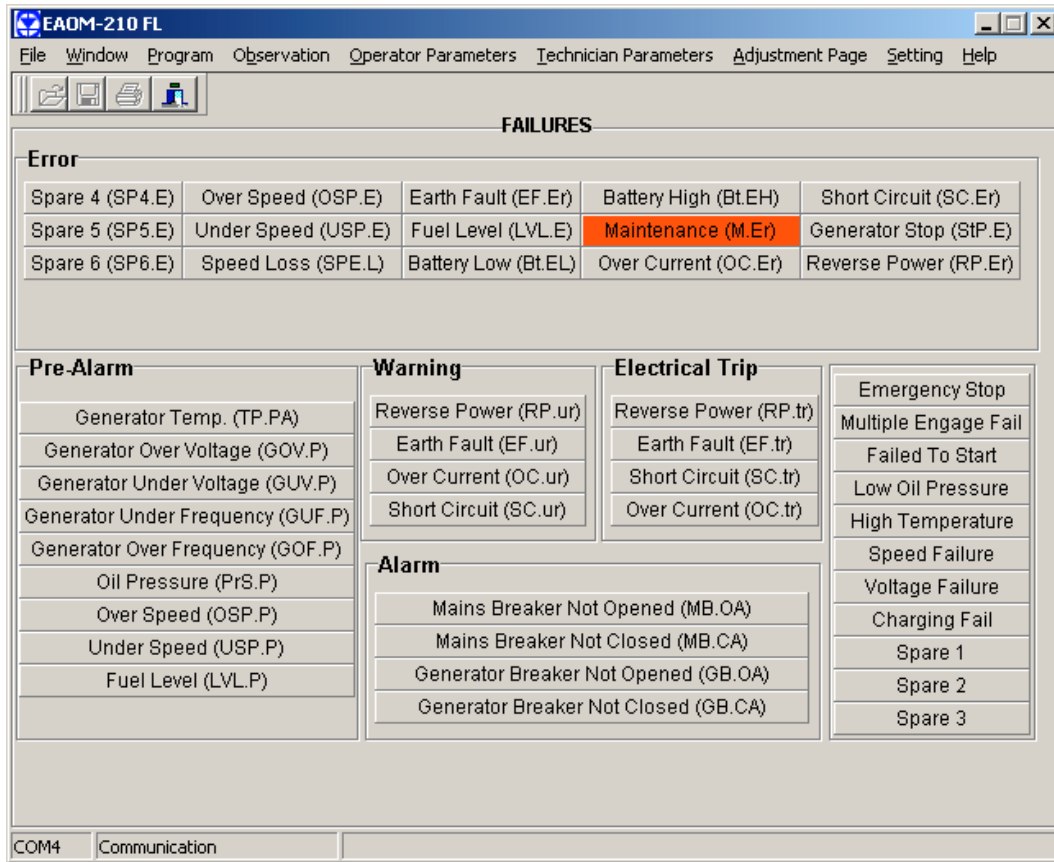
COM4 Communication

In this window the values listed below can be observed:

- Mains volts (L1-N, L2-N, L3-N)
- Mains volts (L1-L2, L2-L3, L3-L1)
- Mains Hz
- Generator volts (L1-N, L2-N, L3-N)
- Generator volts (L1-L2, L2-L3, L3-L1)
- Generator Hz
- Load amps (IL1, IL2, IL3)
- Earth current (IEA)
- Generator pf
- Generator kVA
- Generator kW
- Generator kVAr
- Generator kVAh
- Generator kWh

Generator kVAh
 Next maintenance
 Working time
 Real time
 Charge generator voltage
 Battery Voltage
 Level
 Pressure
 Temperature
 Engine speed (Rpm)

Failures:

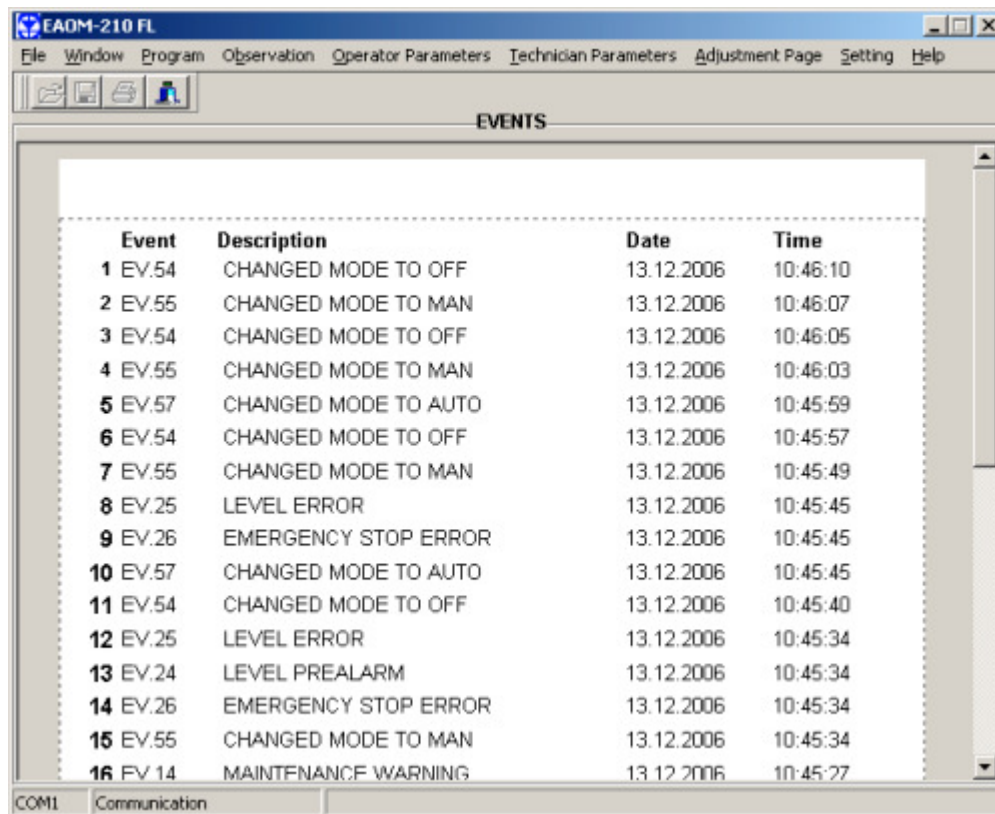


In this window the failures listed below can be observed:

- Failed to start
- Low oil pressure
- High temperature
- Voltage failure
- Speed failure
- Charging fail
- Spare 1
- Spare 2
- Spare 3

And the 39 different error messages (if Expansion Module is selected as disable) or the 47 different error messages (if Expansion Module is selected as enable).

Events:

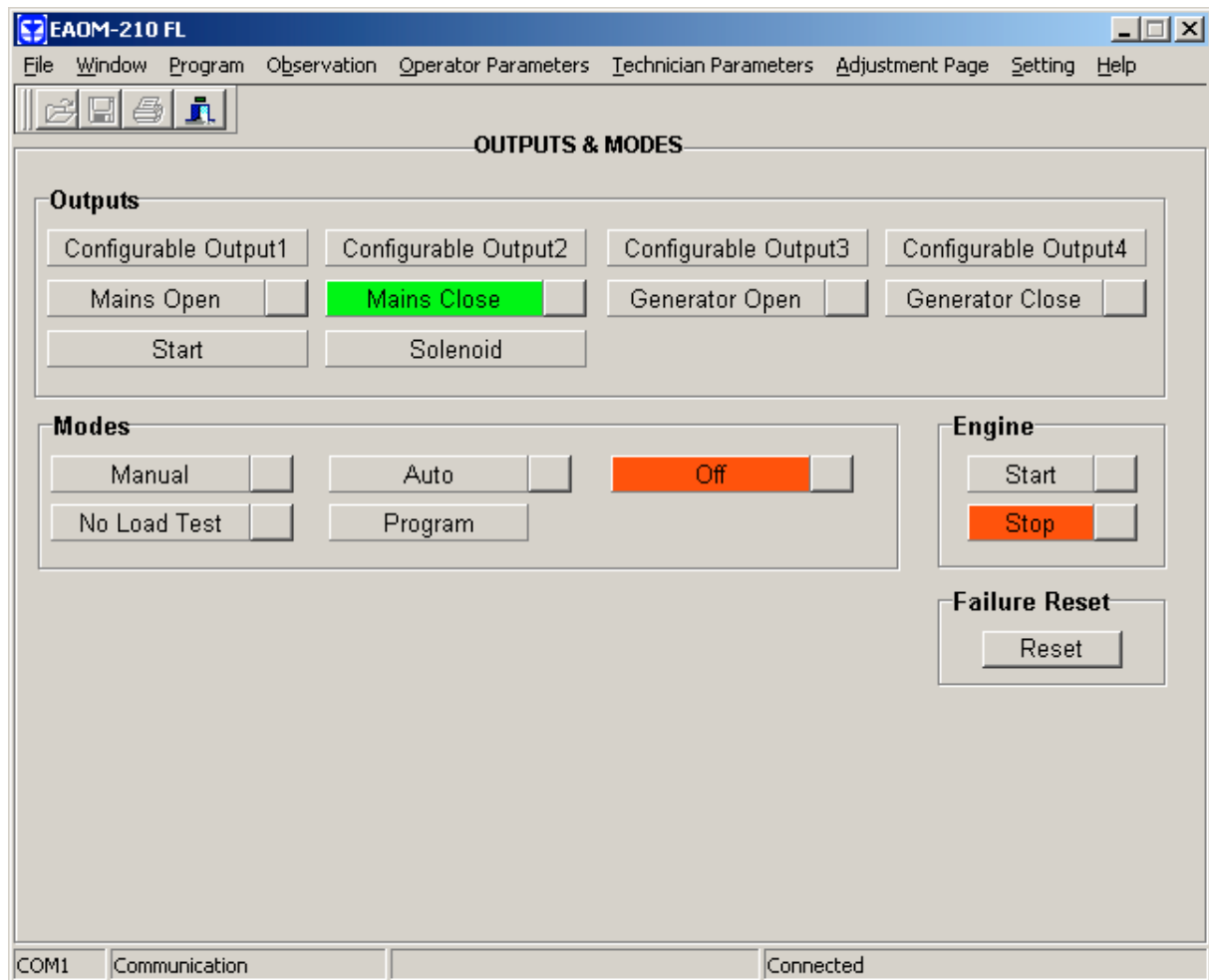


The screenshot shows a software window titled 'EAOM-210 FL' with a menu bar (File, Window, Program, Observation, Operator Parameters, Technician Parameters, Adjustment Page, Setting, Help) and a toolbar. The main area is titled 'EVENTS' and contains a table of event logs. The table has four columns: 'Event', 'Description', 'Date', and 'Time'. The events listed are numbered 1 through 16, with descriptions such as 'CHANGED MODE TO OFF', 'CHANGED MODE TO MAN', 'CHANGED MODE TO AUTO', 'LEVEL ERROR', 'EMERGENCY STOP ERROR', and 'MAINTENANCE WARNING'. The dates are all '13.12.2006' and the times range from '10:45:27' to '10:46:10'. At the bottom of the window, there is a status bar with 'COM1' and 'Communication'.

Event	Description	Date	Time
1	EV.54	CHANGED MODE TO OFF	13.12.2006 10:46:10
2	EV.55	CHANGED MODE TO MAN	13.12.2006 10:46:07
3	EV.54	CHANGED MODE TO OFF	13.12.2006 10:46:05
4	EV.55	CHANGED MODE TO MAN	13.12.2006 10:46:03
5	EV.57	CHANGED MODE TO AUTO	13.12.2006 10:45:59
6	EV.54	CHANGED MODE TO OFF	13.12.2006 10:45:57
7	EV.55	CHANGED MODE TO MAN	13.12.2006 10:45:49
8	EV.25	LEVEL ERROR	13.12.2006 10:45:45
9	EV.26	EMERGENCY STOP ERROR	13.12.2006 10:45:45
10	EV.57	CHANGED MODE TO AUTO	13.12.2006 10:45:45
11	EV.54	CHANGED MODE TO OFF	13.12.2006 10:45:40
12	EV.25	LEVEL ERROR	13.12.2006 10:45:34
13	EV.24	LEVEL PREALARM	13.12.2006 10:45:34
14	EV.26	EMERGENCY STOP ERROR	13.12.2006 10:45:34
15	EV.55	CHANGED MODE TO MAN	13.12.2006 10:45:34
16	FV.14	MAINTENANCE WARNING	13.12.2006 10:45:27

In this window the last 32 Event logs can be observed:

Outputs & Modes:



In this window the parameters listed below can be observed:

Outputs:

- Configurable Output1
- Configurable Output2
- Configurable Output3
- Configurable Output4
- Configurable Exp Output1(if Expansion Module is selected as enable).
- Configurable Exp Output2(if Expansion Module is selected as enable).
- Configurable Exp Output3(if Expansion Module is selected as enable).
- Configurable Exp Output4(if Expansion Module is selected as enable).
- Configurable Exp Output5(if Expansion Module is selected as enable).
- Configurable Exp Output6(if Expansion Module is selected as enable).
- Configurable Exp Output7(if Expansion Module is selected as enable).
- Configurable Exp Output8(if Expansion Module is selected as enable).
- Start
- Mains open and button for remote control
- Mains close and button for remote control
- Generator open and button for remote control
- Generator close and button for remote control
- Solenoid

Modes:

- Manual mode and button for remote control
- No Load Test mode and button for remote control
- Auto mode and button for remote control
- Program
- Off mode and button for remote control

Engine status:

- Start position and button for remote control
- Stop position and button for remote control

Failure Reset:

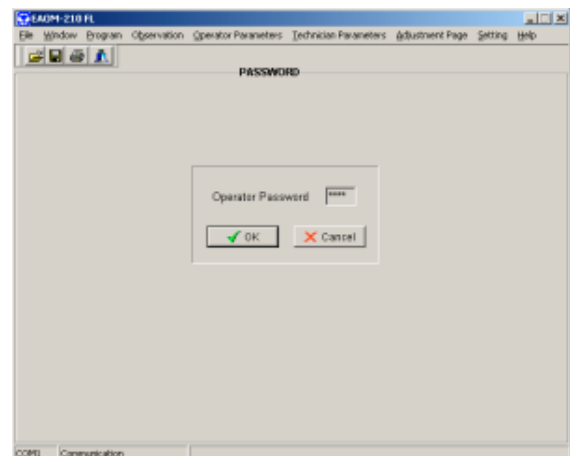
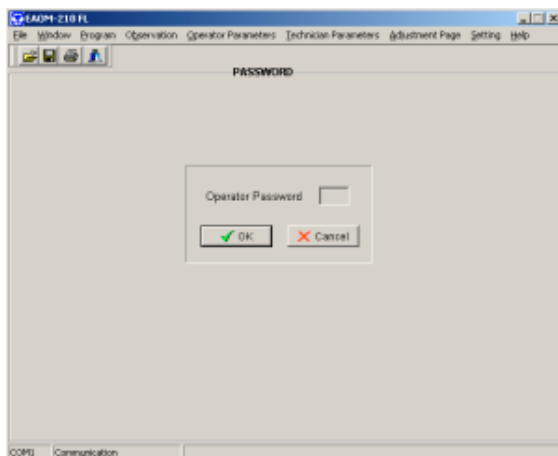
- Reset button for remote control

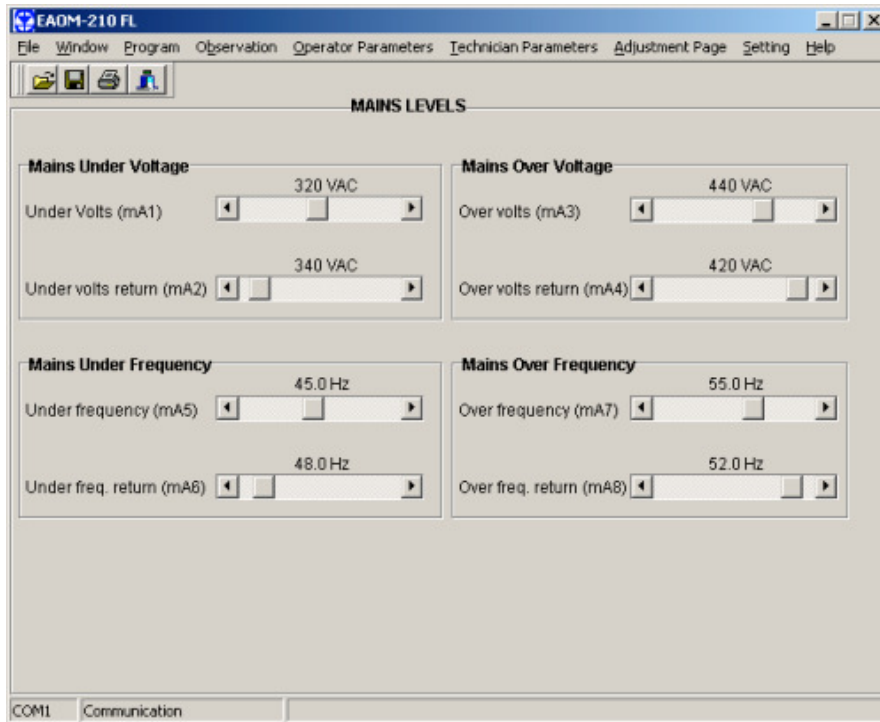
Operator Parameters Menu

Operator can reach the parameters in this menu. Parameters are password protected. When the operator password is entered, it is compared with operator password that is registered on EAOM-210 FL unit.

Entering To Operator Parameters Section

Click “Mains Level” in Operator Parameter menu. Then Operator Password is monitored. Enter the Operator Password and click OK button. If the password is correct, first page of the operator parameters (Mains Levels page) will be viewed.



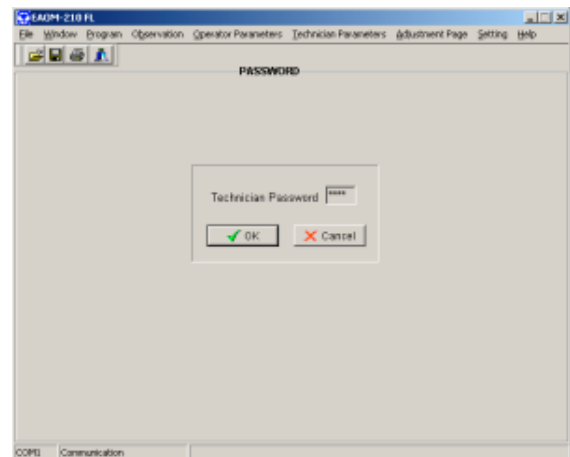
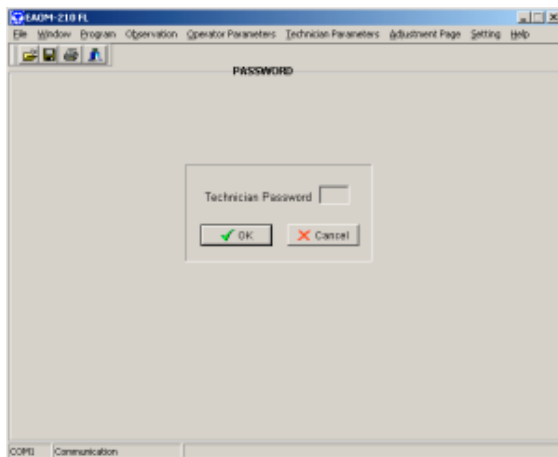


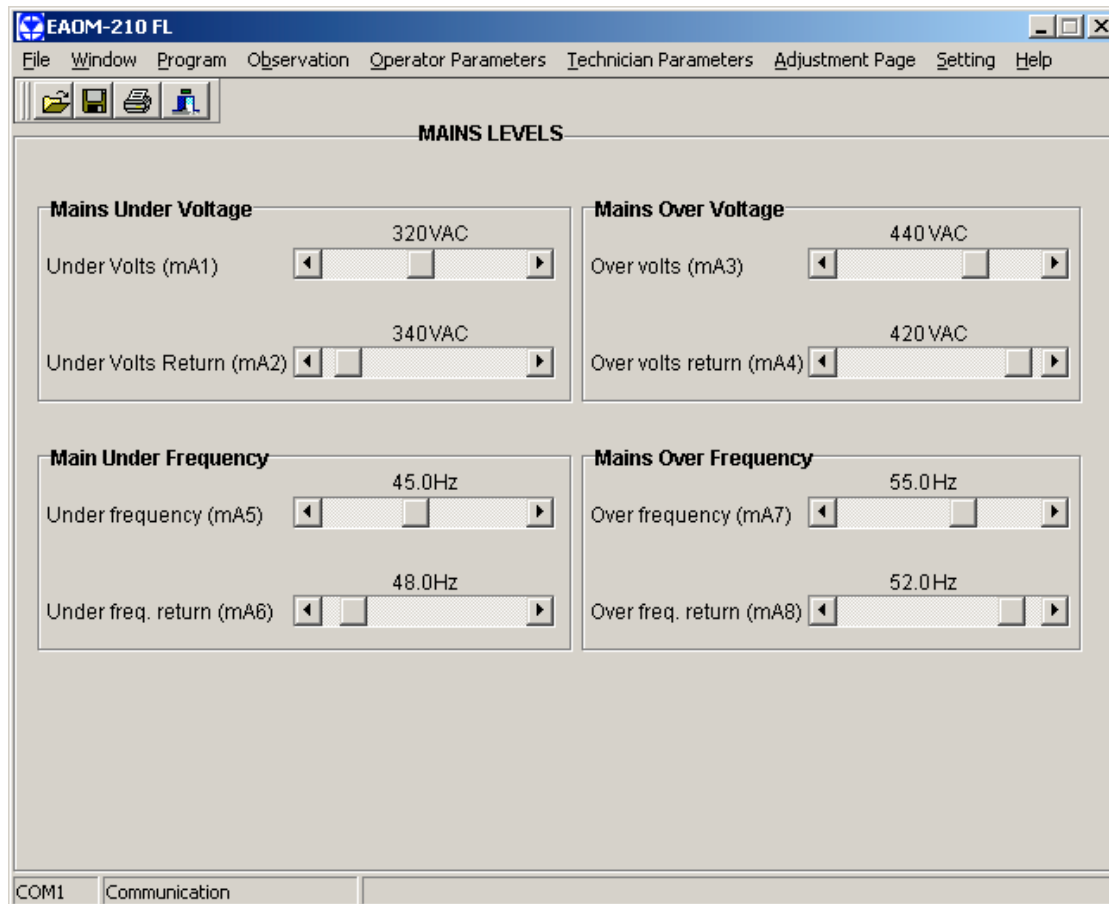
Technician Parameters Menu

All parameters can be viewed in this menu. Parameters are password protected. When the technician password is entered, it is compared with technician password that is registered on EAOM-210 FL unit.

Entering To Technician Parameters Section

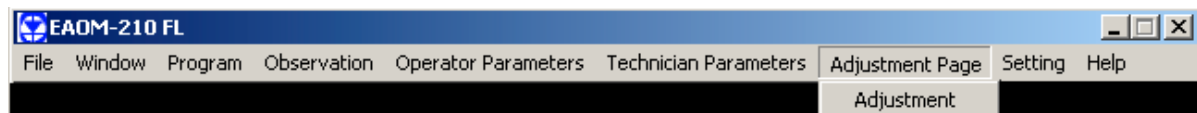
Click “Mains Level” in Technician Parameter menu. Then Technician Password is monitored. Enter the Technician Password and click OK button. If the password is correct, first page of the technician parameters (Mains Levels page) will be viewed.





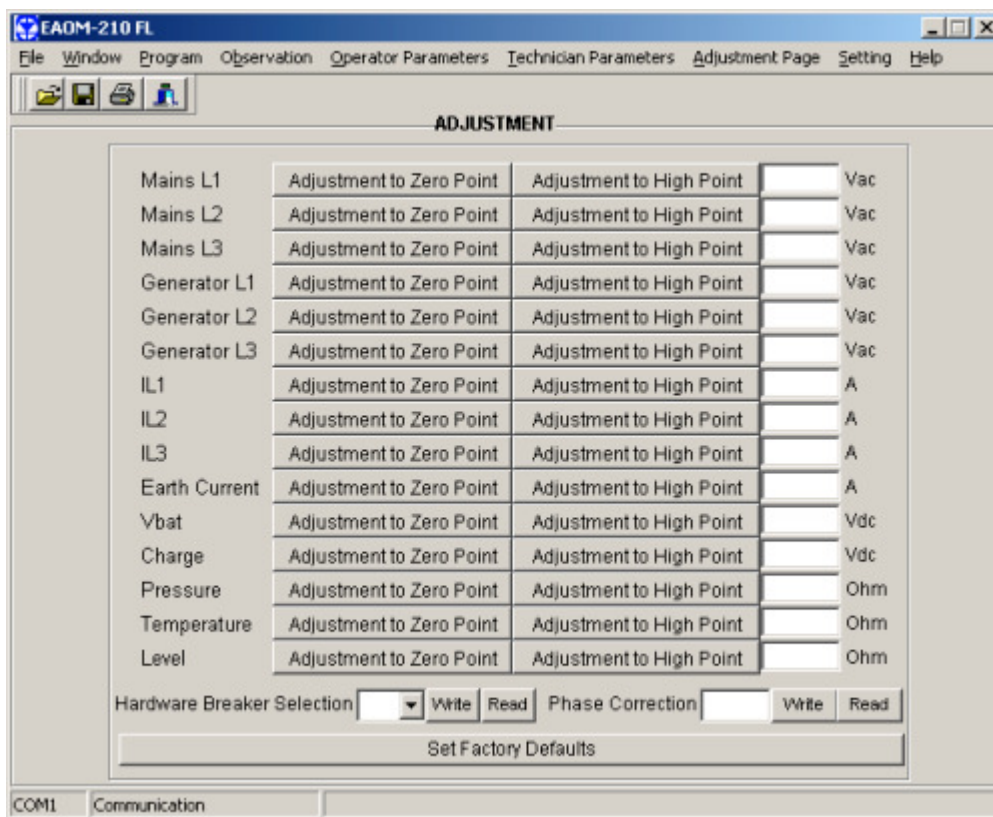
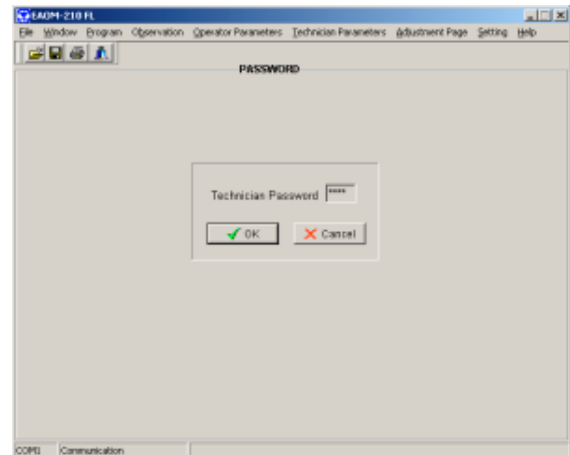
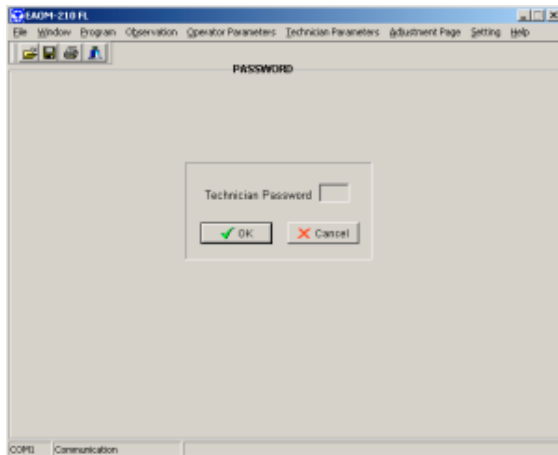
Adjustment Page (Calibration) Menu

There is one sub-menu in this menu: Adjustment.

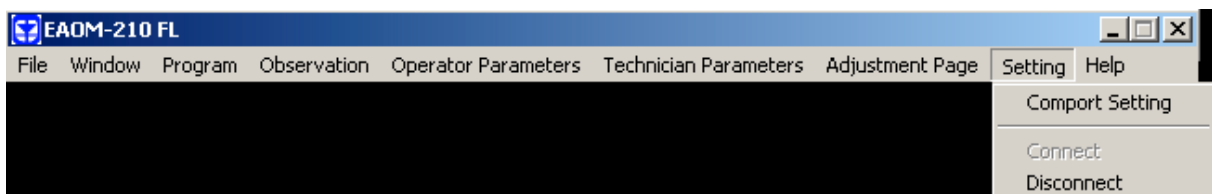


Adjustment (Calibration):

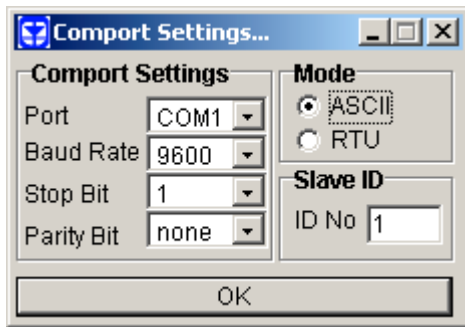
Click "Adjustment" in Adjustment Page menu. Then Technician Password is monitored. Enter the Technician Password and click OK button. If the password is correct, the ADJUSTMENT section will be viewed.



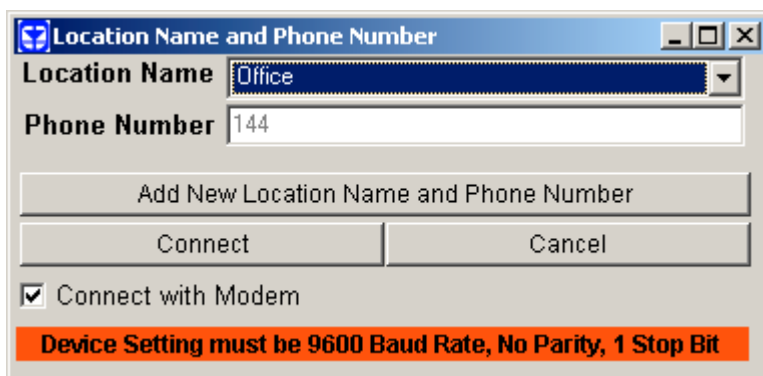
Setting Menu



Click “Comport Setting” in Setting menu. Then Comport Settings window is monitored. And then change Comport Settings, Slave ID parameters and click OK button.

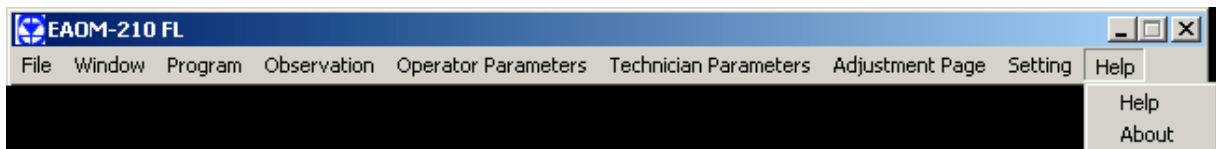


Connect: With this menu, the window below is observed. According to the ‘Connect with Modem’ check status, connection can be establish over RS-232 port or modem. If the comport settings are done correctly, when the ‘Connect’ button is pressed, connection is established.



Disconnect: If the connection is established over modem or RS-232 port, connection can be cut off with this selection.

Help Menu



Help: This menu allows the user to get information about mention to used the program and the menus in the program.

About: Click “About” in Help menu. It gives information about the PC software version and MCU software version to the user.

Section 4 Commissioning

These commissioning checks may interfere with the power supply to the load. Therefore they should not be carried out with a mission-critical load connected to the system.

4.1 Manual operation

1. Check that the unit is correctly wired and that the wiring is of a standard and rating compatible with the system.
 2. Check that the correct fuses are fitted.
 3. Program the unit as detailed in *Section 3 Definition Of Front Panel And Programming.*
 4. Take temporary steps to prevent the engine from starting . (for example, disable the fuel solenoid.)
 5. After a visual inspection to ensure it is safe to proceed, connect the battery supply.
 6. On the EAOM-210 FL, press the **Man** (29) button. The associated LED (12) should light.
 7. Press the **Engine Start** (21) button. At this moment the LED (7) lights on.
 8. Check that the engine start sequence commences. The starter motor should run for the programmed time period (cranking time) for the pre-set number of times (number of start attempts).
 9. Check that the **Failed to Start** LED flashes and the LED (7) lights off.
 10. Check the unit will change to the OFF mode and the LED (9) lights on.
 11. Restore the engine to operational state (reconnect the fuel solenoid).
 12. Press the **Man** (29) button. The LED (12) will light on.
 13. Press the **Engine Start** (21) button. The LED (7) will light on.
 14. Check the start sequence, as follows:
 - the starter motor runs
 - the engine starts
 - the starter motor disengages once the engine is running.
- If not, check that the engine is fully operational (fuel available etc.) and check the wiring and programming of the EAOM-210 FL.
15. Check that the engine runs up to its operating speed. If not and an alarm is present, check that the alarm is valid and then check the input wiring.
 16. Press the **Engine Stop** (22) button. At this moment the LED (8) will light on. The engine should stop. Allow time for the engine to come to rest.

4.2 Auto Operation

1. Check that the mains is connected to the unit and is present.
2. Check the mains voltage readings on the display.
3. At the EAOM-210 FL, press the **Auto** (27) button. The LED (10) on the button should light.
4. Switch off the mains supply to the unit. Check that the generator starts and, after a delay, the load is transferred to the generator.
5. Restore the mains supply to the unit. Check that, after a delay, the load is transferred back to the mains and the generator, after a further delay, shuts down.

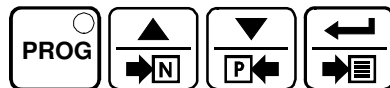
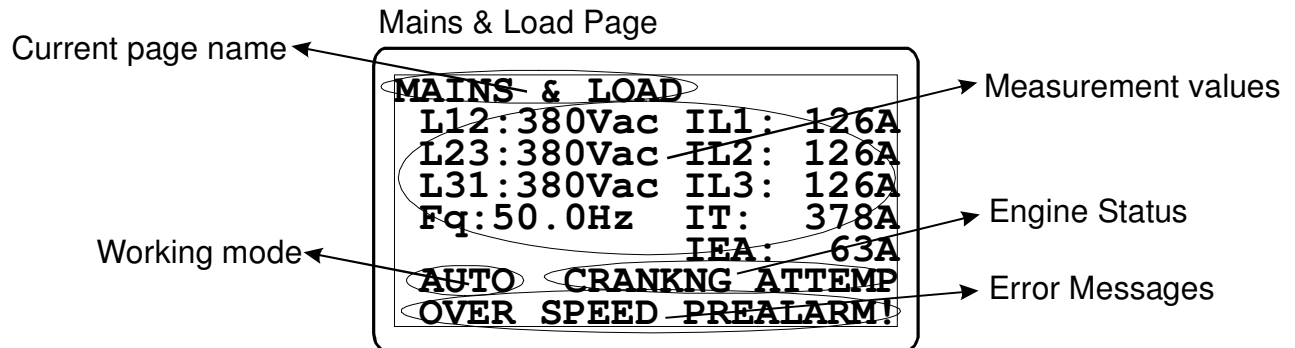
4.3 Test Mode Operation



1. Check that the mains is connected to the unit.
2. Press the **Test** (28) button. At this moment the LED (11) will light on.
3. Check that the generator starts and that the load is still connected to the mains.
4. Switch off the mains supply. Check that the contactors change over to connect the load to the generator. Check also that the **Auto** (10) LED is lit. The unit changes operating mode to AUTO Mode automatically.
5. Restore the mains supply. Check that the contactors reconnect the load to the mains supply.
6. Check that the generator shuts down with cool-down period.

Section 5 Operation

5.1 Controls and Indicators

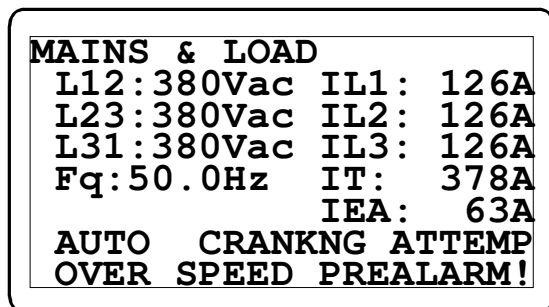
5.1.1 LCD Display Description:



128x64 Dot-matrix LCD display. It consists of 10 main working pages (screens). Every screen has got 8 lines. Seventh and eighth lines are common in all pages. Use the  and  buttons to select which working page (screen) is to be displayed. For details see [Example-1: Changing page with Next and Previous buttons.](#)

There are 10 working pages in the LCD display, as follows;

1- Mains & Load Page:



- L12 - Mains voltage L1-L2
- L23 - Mains voltage L2-L3
- L31 - Mains voltage L3-L1
- Fq - Mains frequency
- IL1 - Load current
- IL2 - Load current
- IL3 - Load current
- IT - Total current
- IEA - Earth current
- **AUTO** - Working mode
- **CRANKNG ATTEMP** - Engine cranking process is executing. (Engine status)

-
- **OVER SPEED PREALARM** - This message indicates that the over speed warning (pre-alarm) has occurred. (Error message). If more than one error condition is present, all of them is displayed sequentially in time defined by “Scroll Time For Error Messages” parameter. Possible error messages are:

BATTERY HIGH ERROR! : Battery High Error.
BATTERY LOW ERROR! : Battery Low Error.
CANBUS ERROR! : Can Bus Error.
EARTH FAULT ERROR! : Earth Fault Error
EARTH FAULT EL.TRIP! : Earth Fault Electrical Trip
EARTH FAULT WARNING! : Earth Fault Warning
EMERGENCY STOP ERR! : Emergency Stop.
EXPAN. SPARE-1 ERROR! : Expansion Spare 1 Error.
EXPAN. SPARE-2 ERROR! : Expansion Spare 2 Error.
EXPAN. SPARE-3 ERROR! : Expansion Spare 3 Error.
EXPAN. SPARE-4 ERROR! : Expansion Spare 4 Error.
EXPAN. SPARE-5 ERROR! : Expansion Spare 5 Error.
EXPAN. SPARE-6 ERROR! : Expansion Spare 6 Error.
EXPAN. SPARE-7 ERROR! : Expansion Spare 7 Error.
EXPAN. SPARE-8 ERROR! : Expansion Spare 8 Error.
GEN BR.NOT CLOS.ALR! : Generator Breaker Not Closed alarm
GEN BR.NOT OPEN.ALR! : Generator Breaker Not Opened alarm
GEN OVER FRQ.PREAL! : Generator Over Frequency Prealarm
GEN OVER VOL.PREAL! : Generator Over Voltage Prealarm
GEN UNDER FRQ.PREAL! : Generator Under Frequency Prealarm
GEN UNDER VOL.PREAL! : Generator Under Voltage Prealarm
GENERATOR STOP ERR! : Generator Stop Error.
LEVEL ERROR! : Fuel Level Error.
LEVEL PREALARM! : Fuel Level Prealarm.
MULTIPLE ENGAGE FAIL! : Multiple engage fail
MAINS BR.NOT CL.ALR! : Mains Breaker Not Closed alarm
MAINS BR.NOT OP.ALR! : Mains Breaker Not Opened alarm
MAINTENANCE ERROR! : Maintenance error
OVER CURRNT EL.TRIP! : Over Current Electrical Trip
OVER CURRENT ERROR! : Over Current Error
OVER CURRENT WARNNG! : Over Current Warning
OVER SPEED ERROR! : Over speed error
OVER SPEED PREALARM! : Over speed pre-alarm
PRESSURE PREALARM! : Oil Pressure Prealarm.
SHORT CIRCT EL.TRIP! : Short Circuit Electrical Trip
SHORT CIRCUIT ERROR! : Short Circuit Error
SHORT CIRCUIT WARNN! : Short Circuit Warning
SPARE-4 ERROR! : Spare 4 Error.
SPARE-5 ERROR! : Spare 5 Error.
SPARE-6 ERROR! : Spare 6 Error.
SPEED LOSS ERROR! : Speed loss error
TEMPERAT. PREALARM! : Generator Temperature Prealarm.
UNDER SPEED ERROR! : Under speed error
UNDER SPED PREALARM! : Under speed pre-alarm

2- Generator & Load Page:

```
GENERATOR & LOAD  
L12:380Vac IL1: 126A  
L23:380Vac IL2: 126A  
L31:380Vac IL3: 126A  
Fq:50.0Hz IT: 378A  
Sp:2000Rpm IEA: 63A  
AUTO CRANKNG ATTEMP  
OVER SPEED PREALARM!
```

- L12 - Generator voltage L1-L2
- L23 - Generator voltage L2-L3
- L31 - Generator voltage L3-L1
- Fq - Generator frequency (if enabled).
- Sp - Engine Rpm (if enabled).
- IL1 - Load current
- IL2 - Load current
- IL3 - Load current
- IT - Total current
- IEA - Earth current

3- Mains Page:

```
MAINS  
L1:220Vac L12:380Vac  
L2:220Vac L23:380Vac  
L3:220Vac L31:380Vac  
Fq:50.0Hz  
AUTO CRANKNG ATTEMP  
OVER SPEED PREALARM!
```

- L1 - Mains voltage L1-N
- L2 - Mains voltage L2-N
- L3 - Mains voltage L3-N
- Fq - Mains frequency
- L12 - Mains voltage L1-L2
- L23 - Mains voltage L2-L3
- L31 - Mains voltage L3-L1

4- Generator Page:

```
GENERATOR
L1:220Vac L12:380Vac
L2:220Vac L23:380Vac
L3:220Vac L31:380Vac
Fq:50.0Hz Sp:2000Rpm

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
```

- L1 - Generator voltage L1-N
- L2 - Generator voltage L2-N
- L3 - Generator voltage L3-N
- Fq - Generator frequency (if enabled).
- L12 - Generator voltage L1-L2
- L23 - Generator voltage L2-L3
- L31 - Generator voltage L3-L1
- Sp - Engine Rpm (if enabled).

5- Power Page:

```
POWER
kVA : 630
kW : 510
kVAr : 120
FACTOR:-0.84

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
```

- kVA - Generator power
- kW - Generator active power
- kVAr - Generator reactive power
- FACTOR - Generator power factor (pf)

6- Meter Page:

```
METER
kVAh : 37800
kWh : 30600
kVArh : 7200

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
```

- kVA - Generator energy
- kW - Generator active energy
- kVAr - Generator reactive energy

7- Load Page:

```
LOAD
CURRENT L1      : 126A
CURRENT L2      : 126A
CURRENT L3      : 126A
TOTAL CURRENT: 378A
EARTH CURRENT: 63A
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
```

- CURRENT L1 - Load Current
- CURRENT L2 - Load Current
- CURRENT L3 - Load Current
- TOTAL CURRENT - Total Current
- EARTH CURRENT - Earth Current

8- Analogue Page:

```
ANALOGUE
BATTERY VOL:18.0Vdc
CHR.GEN.VOL:18.0Vdc
OIL PRESS. : 40.3Bar
TEMPERATURE: 30°C
LEVEL      : 16%
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
```

- BATTERY VOL - Battery voltage
- CHR.GEN.VOL - Charge generator voltage
- OIL PRESS. - Engine Oil pressure (if enabled).
- TEMPERATURE - Coolant temperature (if enabled).
- LEVEL - Fuel Level

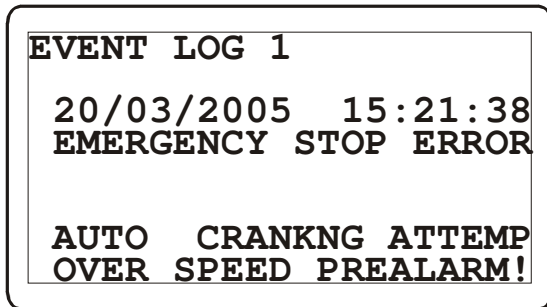
9- Miscellaneous Page:


```
DATE: 30/06/2005
TIME: 14:20:58
WORKING HOUR : 1
NEXT MAINT.HOUR:5000
NEXT MAINT.MONT: 6

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
```

- DATE - Real Date: Day, Month, Year.
- TIME - Real Time: Hour, minute, second.
- WORKING HOUR - Engine run time
- NEXT MAINT.HOUR - The remaining hour for maintenance
- NEXT MAINT.MONT - The remaining month for maintenance

10- Event Logs Page:



- **EMERGENCY STOP ERROR** - This message indicates that an emergency stop alarm has occurred. (Event history: 20/03/2005 date, 15:21:38 time). Events (from 1 to 32) can be displayed sequentially with the  button. Possible Event messages are:

BATTERY HIGH ERROR: Battery high voltage alarm
BATTERY LOW ERROR: Battery low voltage alarm
CAN BUS ERROR: Can Bus error
CHANGED MODE TO AUTO: Changed mode to auto
CHANGED MODE TO MAN: Changed mode to manual
CHANGED MODE TO OFF: Changed mode to off
CHANGED MODE TO TEST: Changed mode to test
CHARGE ALTERNTR FAIL: Charge alternator fail
EARTH FAULT ALARM: Earth fault alarm
EMERGENCY STOP ERROR: Emergency stop error
EXPAN.SPARE-1 ERROR: Expansion Spare-1 error
EXPAN.SPARE-2 ERROR: Expansion Spare-2 error
EXPAN.SPARE-3 ERROR: Expansion Spare-3 error
EXPAN.SPARE-4 ERROR: Expansion Spare-4 error
EXPAN.SPARE-5 ERROR: Expansion Spare-5 error
EXPAN.SPARE-6 ERROR: Expansion Spare-6 error
EXPAN.SPARE-7 ERROR: Expansion Spare-7 error
EXPAN.SPARE-8 ERROR: Expansion Spare-8 error
FAIL TO START ALARM: Generator fail to start
GEN BR.NOT CLOS.ALARM: Gen breaker close error
GEN BR.NOT OPEN.ALARM: Gen breaker open error
GEN UNDER FRQ.PREALR: Generator low frequency pre-alarm
GEN UNDER FRQ.SHTDWN: Generator low frequency shutdown
GEN UNDER VOL.PREALR: Generator low voltage pre-alarm
GEN UNDER VOL.SHTDWN: Generator low voltage shutdown
GEN OVER FRQ.PREALM: Generator high frequency pre-alarm
GEN OVER FRQ.SHUTDWN: Generator high frequency shutdown
GEN OVER VOL.PREALM: Generator high voltage pre-alarm
GEN OVER VOL.SHUTDWN: Generator high voltage shutdown
GENERATOR STOP ERROR: Generator fail to stop
LEVEL ERROR: Fuel level alarm
LEVEL PREALARM: Fuel level pre-alarm
MAINS BR.NOT CLS.ALAR: Mains breaker close error
MAINS BR.NOT OPN.ALAR: Mains breaker open error
MAINTENANCE ERROR: Generator maintenance error

MAINTENANCE WARNING: Generator maintenance warning
OIL PRESSURE PREALRM: Oil pressure pre-alarm
OIL PRESSURE SHUTDOWN: Oil pressure shutdown
OVER CURRENT ALARM: Over current alarm
OVER SPEED PREALARM: Generator high speed pre-alarm
OVER SPEED SHUTDOWN: Generator high speed shutdown
SHORT CIRCUIT ALARM: Short circuit alarm
SPARE-1 ERROR: Spare 1 error
SPARE-2 ERROR: Spare 2 error
SPARE-3 ERROR: Spare 3 error
SPARE-4 ERROR: Spare 4 error
SPARE-5 ERROR: Spare 5 error
SPARE-6 ERROR: Spare 6 error
SPEED LOSS ERROR: Magnetic pickup loss of speed error
TEMPER.HIGH PREALARM: High temperature pre-alarm
TEMPER.HIGH SHUTDOWN: High temperature shutdown
UNDER SPEED PREALARM: Generator low speed pre-alarm
UNDER SPEED SHUTDOWN: Generator low speed shutdown

Example-1: Changing page with Next and Previous buttons.

Mains & Load Page

```

MAINS & LOAD
L12:380Vac IL1: 126A
L23:380Vac IL2: 126A
L31:380Vac IL3: 126A
Fq:50.0Hz IT: 378A
IEA: 63A
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
    
```



Press the next button to view the next page.

Press the previous button to view the previous page.

Generator & Load Page

```

GENERATOR & LOAD
L12:380Vac IL1: 126A
L23:380Vac IL2: 126A
L31:380Vac IL3: 126A
Fq:50.0Hz IT: 378A
Sp:2000Rpm IEA: 63A
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
    
```

Event Log Page

```

EVENT LOG 1
20/03/2005 15:21:38
EMERGENCY STOP ERROR
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
    
```



Press the next button to view the next page.

Press the previous button to view the previous page.



Mains Page

```

MAINS
L1:220Vac L12:380Vac
L2:220Vac L23:380Vac
L3:220Vac L31:380Vac
Fq:50.0Hz
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
    
```

Mains & Load Page

```

MAINS & LOAD
L12:380Vac IL1: 126A
L23:380Vac IL2: 126A
L31:380Vac IL3: 126A
Fq:50.0Hz IT: 378A
IEA: 63A
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!
    
```



Press the next button to view the next page.

Press the previous button to view the previous page.



Generator Page

```

GENERATOR
L1:220Vac L12:380Vac
L2:220Vac L23:380Vac
L3:220Vac L31:380Vac
Fq:50.0Hz Sp:2000Rpm

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```

Generator & Load Page

```

GENERATOR & LOAD
L12:380Vac IL1: 126A
L23:380Vac IL2: 126A
L31:380Vac IL3: 126A
Fq:50.0Hz IT: 378A
Sp:2000Rpm IEA: 63A
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```



Press the next button to view the next page.



Press the previous button to view the previous page.

Power Page

```

POWER
kVA : 630
kW : 510
kVAr : 120
FACTOR:-0.84

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```

Mains Page

```

MAINS
L1:220Vac L12:380Vac
L2:220Vac L23:380Vac
L3:220Vac L31:380Vac
Fq:50.0Hz

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```



Press the next button to view the next page.



Press the previous button to view the previous page.

Meter Page

```

METER
kVAh : 37800
kWh : 30600
kVArh : 7200

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```

Generator Page

```

GENERATOR
L1:220Vac L12:380Vac
L2:220Vac L23:380Vac
L3:220Vac L31:380Vac
Fq:50.0Hz Sp:2000Rpm

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```



Press the next button to view the next page.



Press the previous button to view the previous page.

Load Page

```

LOAD
CURRENT L1 : 126A
CURRENT L2 : 126A
CURRENT L3 : 126A
TOTAL CURRENT: 378A
EARTH CURRENT: 63A
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```

Power Page

```

POWER
kVA : 630
kW : 510
kVAr : 120
FACTOR:-0.84
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```



Press the next button to view the next page.



Press the previous button to view the previous page.

Analog Page

```

ANALOGUE
BATTERY VOL:18.0Vdc
CHR.GEN.VOL:18.0Vdc
OIL PRESS. : 40.3Bar
TEMPERATURE: 30°C
LEVEL : 16%
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```

Meter Page

```

METER
kVAh : 37800
kWh : 30600
kVArh : 7200
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```



Press the next button to view the next page.



Press the previous button to view the previous page.

Miscellaneous Page

```

DATE: 30/06/2005
TIME: 14:20:58
WORKING HOUR : 1
NEXT MAINT.HOUR:5000
NEXT MAINT.MONT: 6
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```

Load Page

```

LOAD
CURRENT L1 : 126A
CURRENT L2 : 126A
CURRENT L3 : 126A
TOTAL CURRENT: 378A
EARTH CURRENT: 63A
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

```



Press the next button to view the next page.



Press the previous button to view the previous page.

Event Log 1 Page

EVENT LOG 1
20/03/2005 15:21:38
EMERGENCY STOP ERROR

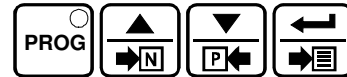
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

Analogue Page

ANALOGUE
BATTERY VOL:18.0Vdc
CHR.GEN.VOL:18.0Vdc
OIL PRESS. : 40.3Bar
TEMPERATURE: 30°C
LEVEL : 16%
AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!



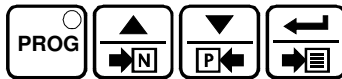
Press the page button to view the following Event Log page.



Event Log 2 Page

EVENT LOG 2
18/03/2005 17:42:53
SPARE-4 ERROR

AUTO CRANKNG ATTEMP
OVER SPEED PREALARM!

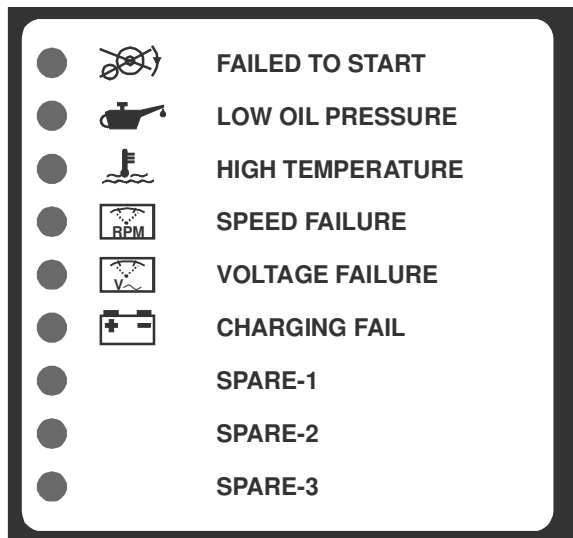


Press the next button to view the Mains & Load page.

Press the previous button to view the Miscellaneous page.

Press the page button to view the following Event Log page.

5.1.2 Failure Indicators Description:



Explanations:

- 1- **Failed to Start LED** : This LED flashes if the engine has not started after the programmed number of attempts. The unit must be reset, by pressing the Reset button, before a fresh attempt can be made.
- 2- **Low Oil Pressure Failure LED** : This LED flashes if the Oil Pressure Sender and the Low Oil Pressure Input (if conf. input-4 is selected as Low Oil pressure) on the engine indicate low oil pressure while the engine is running. If this fault occurs, the unit will stop the engine without any cool-down period.
- 3- **High Temperature Failure LED** : This LED flashes if the Temperature Sender and the High Temperature Input (if conf. input-5 is selected as High Temperature) on the engine indicates high temperature while the engine is running. If this fault occurs, the unit will stop the engine without any cool-down period.
- 4- **Over Speed Failure LED** : This LED flashes if the Alternator Frequency goes below the Generator Under Frequency parameter or above the Generator Over Frequency parameter. For a fault to be indicated, the speed must be outside these limits for longer than the period defined by the Generator Frequency Error Control Time parameter. This failure immediately stops the generating set, without any cool-down period.
- 5- **Voltage Failure LED** : This LED flashes if the Alternator output voltage is outside of the limits programmed into Generator Under Voltage parameter, and Generator Over Voltage parameter, For a time period longer than the Generator Voltage Error Control Time parameter. This failure immediately releases the generator contactor, and stops the generating set, without any cool-down period.
- 6- **Charge Generator Failure LED** : This LED flashes if the field current for the battery charge generator fails to fall to zero after the engine has started. A fault will not be indicated if the current falls within the period defined by the Safety On Delay parameter after the engine has started. This failure will not stop the generating set.
- 7- **Configurable Input-1 LED (SPARE 1)**: This LED indicate the status of the input Pin 21, and the controller can be programmed to perform 25 different functions when this input is asserted.

-
- 8- **Configurable Input-2 LED (SPARE 2):** This LED indicate the status of the input Pin 20, and the controller can be programmed to perform 25 different functions when this input is asserted.
 - 9- **Configurable Input-3 LED (SPARE 3):** This LED indicate the status of the input Pin 19, and the controller can be programmed to perform 25 different functions when this input is asserted.

5.2 Mode transition

The mode can be changed at any time. A change in mode will not effect the current state of the generator or load connection. For example; if the unit is in Auto mode with the generator running and the load running on the generator, changing the mode to Manual will not effect the operating state. Any changes between Auto, Manual and Test modes will not change the operating state.

5.3 Manual Start

1. Press the **Man** (29) button. The LED (12) will light on.
2. Press the **Engine Start** (21) button on the panel the LED (7) will light on. The engine should start. The sequence is as follows:
 - The starter motor runs
 - The engine starts

Once the engine is running,

- The LED (6) “Engine Running” is lit.
- The “Generator Ready” LED (5) is lit after “safety on delay” time period like as AUTO mode.
- It is not possible supply to load on the generator unless “Generator Ready” LED (5) is lit. (The contactor open / close button does not work)

3. Once LEDs have lit, press the **Mains contactor open** button (18) to disconnect the load from the mains supply. LED (3) should go off.
4. Press the **Generator contactor close** button (19) to connect the load to the generator supply. LED (4) should light.

5.4 Manual Stop

The LED (8) is lit and engine is stopped when the “Engine Stop” (22) button is pressed. When the “Engine Stop” button is pressed while the load connected to the alternator output (generator output) first alternator contactor is released then engine is stopped.

5.5 Auto Operation

Press the **Auto** (27) button to select Auto mode. The LED (10) in the corner of the button will light to indicate this mode has been selected.

In the event of a mains voltage failure, the unit will start up the generator and, once the generator is running and alternator voltage available, will transfer the load to the generator. When the mains is restored and stable, it will transfer the load back to the mains and, after a cool-down period, shut down the generator.

5.6 Test Operation

Press the **Test (28)** button to select Test mode the LED (11) will light on. This mode allows for testing of the generator off load. All alarm circuits will operate so that any faults will be reported. If a mains failure occurs while the unit is in Test mode, the unit will revert to Auto mode and will switch the load to the generator.

5.6.1 Exercise Function

Please enter the day of the week for Exercise Function. Example:

EXER.WORKING PERIOD	(dis)0	The exercise function is disabled.
	(10)	The exercise function is enabled for 10 minutes.
EXER.WR.DAY OF WEEK		1=Monday.
EXER.WORK.START TIM	12.20	The exercise function is every Monday started at 12.20 o'clock. (if it is enabled)

When the Real-Time clock reached to the Generator Exercise Work Start Time (12.20 o'clock) if the unit is in "AUTO MODE" and Mains is available the unit changes running mode to the "TEST MODE" automatically and starts the engine. The time period of engine running is counted and compared with value of Generator Exercise Working Period parameter (10 minutes). (If the engine does not run time is not counted). If the period is completed the unit changes run mode to "AUTO" automatically. When the unit is in the "TEST MODE" if the Mains is gone, the unit will change run mode to "AUTO MODE" automatically.

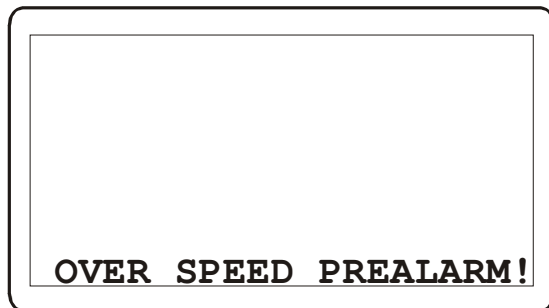
Section 6 Fault Finding

6.1 General

Indicators on the central section of the panel will flash if a fault is detected. For details *see Section 5.1.2 Failure Indicators Description*. Fault conditions latch so that further operation is prevented. If a failure is indicated, proceed as follows:

1. Find and fix the fault.
2. Press the **Failure Reset (25)** button to enable a restart.
3. Select the required mode of operation - Manual, Auto or Test.

6.2 Error Messages



In addition to the indicators on the centre panel, when a fault is occurred, it's error message is displayed in the eighth lines of current page. Seventh and eighth lines are common in all pages. If more than one error condition is present, all of them is displayed sequentially in time defined by "Scroll Time For Error Messages" parameter. All Error messages are:

- BATTERY HIGH ERROR!** : This message indicates that a battery high voltage alarm has occurred.
- BATTERY LOW ERROR!** : This message indicates that a battery low voltage alarm has occurred.
- CAN BUS ERROR!** : This message indicates that a Can Bus error has occurred.
- EARTH FAULT EL.TRIP!** : This message indicates that a earth fault electrical trip has occurred.
- EARTH FAULT ERROR!** : This message indicates that a earth fault shutdown has occurred.
- EARTH FAULT WARNING!** : This message indicates that a earth fault warning (pre-alarm) has occurred.
- EMERGENCY STOP ERR!** : This message indicates that an emergency stop alarm has occurred.
- EXPAN. SPARE-1 ERROR!** : This message indicates that an Expansion spare 1 alarm has occurred.
- EXPAN. SPARE-2 ERROR!** : This message indicates that an Expansion spare 2 alarm has occurred.
- EXPAN. SPARE-3 ERROR!** : This message indicates that an Expansion spare 3 alarm has occurred.
- EXPAN. SPARE-4 ERROR!** : This message indicates that an Expansion spare 4 alarm has occurred.

EXPAN. SPARE-5 ERROR! : This message indicates that an Expansion spare 5 alarm has occurred.

EXPAN. SPARE-6 ERROR! : This message indicates that an Expansion spare 6 alarm has occurred.

EXPAN. SPARE-7 ERROR! : This message indicates that an Expansion spare 7 alarm has occurred.

EXPAN. SPARE-8 ERROR! : This message indicates that an Expansion spare 8 alarm has occurred.

GEN BR.NOT CLOS.ALR! : This message indicates that a generator breaker not closed alarm has occurred.

GEN BR.NOT OPEN.ALR! : This message indicates that a generator breaker not opened alarm has occurred.

GEN OVER FRQ.PREAL! : This message indicates that a generator over frequency warning (pre-alarm) has occurred.

GEN OVER VOL.PREAL! : This message indicates that a generator over voltage warning (pre-alarm) has occurred.

GEN UNDER FRQ.PREAL! : This message indicates that a generator under frequency warning (pre-alarm) has occurred.

GEN UNDER VOL.PREAL! : This message indicates that a generator under voltage warning (pre-alarm) has occurred.

GENERATOR STOP ERR! : This message indicates that the generator has failed to stop within the selected time.

LEVEL ERROR! : This message indicates that the fuel level shutdown has occurred.

LEVEL PREALARM! : This message indicates that the fuel level warning (pre-alarm) has occurred.

MAINS BR.NOT CL.ALR! : This message indicates that a mains breaker not closed alarm has occurred.

MAINS BR.NOT OP.ALR! : This message indicates that a mains breaker not opened alarm has occurred.

MAINTENANCE ERROR! : This message indicates that the generator is now due for maintenance.

MULTIPLE ENGAGE FAIL! : This message indicates that the multiple engage fail has occurred.

OVER CURRNT EL.TRIP! : This message indicates that a over current electrical trip has occurred.

OVER CURRENT ERROR! : This message indicates that a over current shutdown has occurred.

OVER CURRENT WARNNG! : This message indicates that a over current warning (pre-alarm) has occurred.

OVER SPEED ERROR! : This message indicates that the over speed shutdown has occurred.

OVER SPEED PREALARM! : This message indicates that the over speed warning (pre-alarm) has occurred.

PRESSURE PREALARM! : This message indicates that a low oil pressure warning (pre-alarm) has occurred.

SHORT CIRCT EL.TRIP! : This message indicates that a short circuit electrical trip has occurred.

SHORT CIRCUIT ERROR! : This message indicates that a short circuit shutdown has occurred.

SHORT CIRCUIT WARNN! : This message indicates that a short circuit warning (pre-alarm) has occurred.

SPARE-4 ERROR! : This message indicates that a spare 4 alarm has occurred.

SPARE-5 ERROR! : This message indicates that a spare 5 alarm has occurred.

SPARE-6 ERROR! : This message indicates that a spare 6 alarm has occurred.

SPEED LOSS ERROR! : This message indicates that the magnetic pick-up sensor fail (speed loss error) has occurred.

TEMPERAT. PREALARM! : This message indicates that a high engine coolant temperature warning (pre-alarm) has occurred.

UNDER SPEED ERROR! : This message indicates that the under speed shutdown has occurred.

UNDER SPED PREALARM! : This message indicates that the under speed warning (pre-alarm) has occurred.

Table 6.1 Fault finding

Symptom	Possible remedy
Unit is inoperative.	Check the battery and wiring to the unit.
	Check the DC supply. (measure voltage between pins 39 and 40)
	Check the DC fuse.
Low oil pressure fault operates after engine has started.	Check engine oil level and pressure..
	Check oil pressure switch and sender and wiring.
	Check configured polarity (if applicable) is correct (i.e. Normally Open or Normally Closed) or that sender is compatible with the device.
High engine temperature Fault operates after engine has started.	Check engine temperature.
	Check temperature switch and sender and wiring.
	Check configured polarity (if applicable) is correct (i.e. Normally Open or Normally Closed) or that sender is compatible with the device.
Shutdown fault operates.	Check relevant switch and wiring of fault indicated on the panel.
	Check configuration of input.
Warning fault operates.	Check relevant switch and wiring of fault indicated on the panel.
	Check configuration of input.
Failed to Start fault. Engine failed to start after Pre-set number of Attempts.	Check fuel solenoid and wiring, fuel and battery. Reset the EAOM-210 FL and restart the engine.
	Check the signals that the EAOM-210 FL is using to determine if the engine has started. Refer to engine manual.
Starter motor inoperative.	Check wiring to starter solenoid.
	Check battery supply.
	Check battery supply is present on the Start output pin 33 of the EAOM-210 FL.



Disconnect the equipment totally from electricity in the best and correct way during mechanical and electrical maintenance. When this is not possible, the equipment must be in the "OFF" position for preventing any accident.

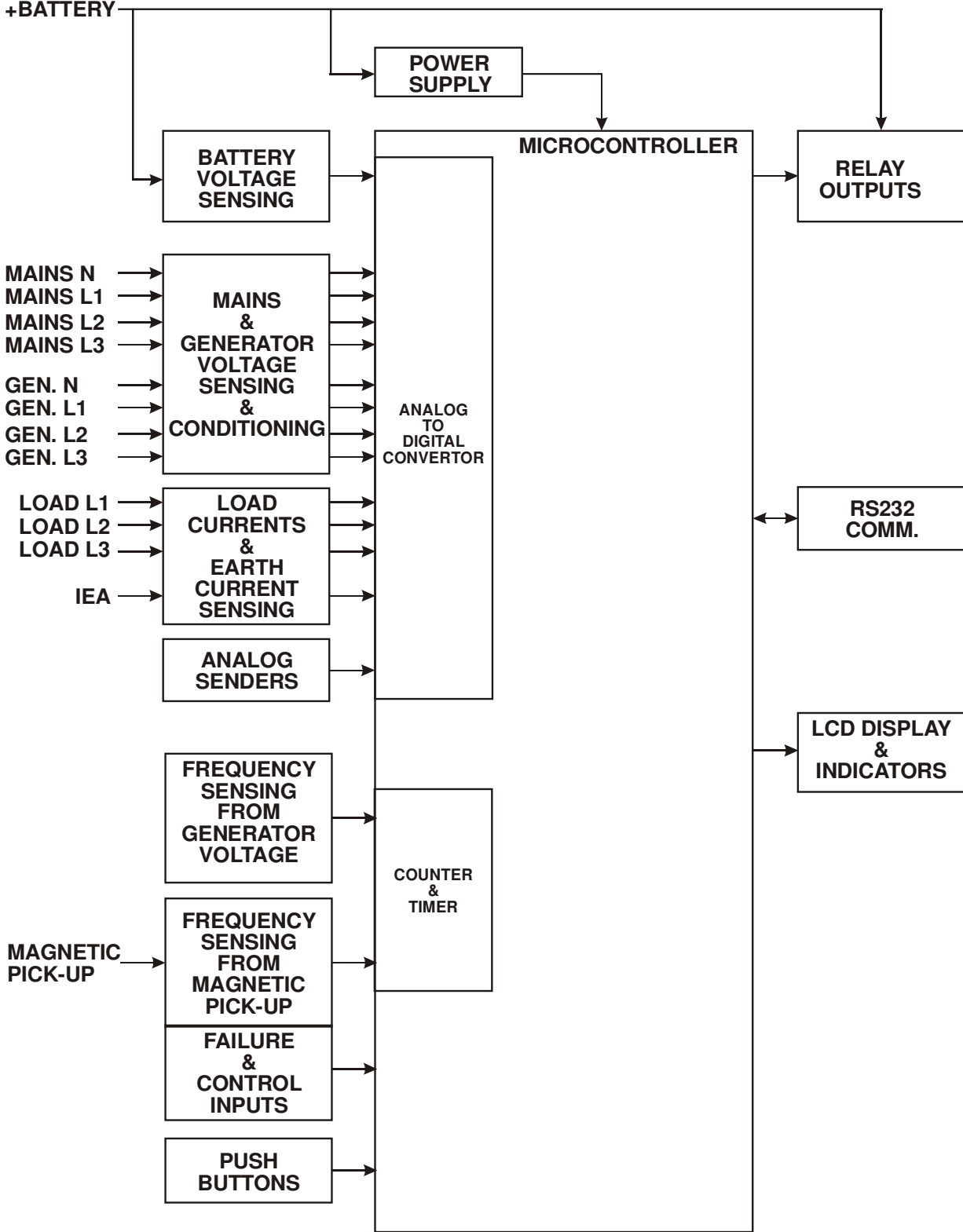
Section 7 Specifications & Ratings

Specification:	Description:
Equipment use	Electrical control equipment for generating sets
Housing & Mounting	144 mm x 204 mm x 37 mm. (including connectors) plastic housing for panel mounting.
Panel Cut-Out	138 mm x 186 mm.
Protection	IP54 at front panel, IP20 at rear side.
Weight	Approximately 0,76 Kg.
Environmental rating	Standard, indoor at an altitude of less then 2000 meters with non-condensing humidity.
Operating / Storage Temperature	0°C to +50°C / -25°C to +70°C
Operating / Storage Humidity	90 % max. (non-condensing)
Installation Over Voltage Category	II Appliances, portable equipment.
Pollution Degree	II, Normal office or workplace, non conductive pollution
Mode of Operation	Continuous
EMC	EN 61000-6-4, EMC Generic Emission Standard for industrial equipment
	EN 61000-6-2, EMC Generic Immunity Standard for industrial equipment
Electrical Safety	EN 61010-1, Safety Requirements for electrical equipment for measurement, control and laboratory use
DC Battery Supply Voltage	8 to 32 VDC max. operating current is 360 mA.
Cranking Dropouts	Battery voltage can be "0" VDC for max. 100 ms during cranking (battery voltage should be at least nominal voltage before cranking).
Battery Voltage Measurement	8 to 32 VDC, accuracy: 1 % FS, resolution: 0,1 V
Mains Voltage Measurement	Selectable three phase or single phase, 4 wire connection for three phase, 2 wire connection for single phase gen-set. 35 to 300 VAC Ph-N, 15.6 to 99.9 Hz. Accuracy: 1 % FS, Resolution: 1 V
Mains Frequency	15.6 to 99.9 Hz (min. 35 VAC Ph-N) Accuracy: 0,25 % FS, Resolution: 0,1 Hz.
Generator Voltage Measurement	Selectable three phase or single phase, 4 wire connection for three phase, 2 wire connection for single phase gen-set. 35 to 300 VAC Ph-N, 15.6 to 99.9 Hz. Accuracy: 1 % FS, Resolution: 1 V
Generator Speed	From magnetic pick-up: 35 to 10000 Hz (4 to 35 volts peak continuously.) Accuracy: 0,25 % FS
Generator Frequency	From alternator voltage: 15.6 to 99.9 Hz (min. 35 VAC Ph-N) Accuracy: 0,25 % FS, Resolution: 0,1 Hz.
CT secondary	5A.
Charge Generator Excitation	220mA, max 4W.

Specification:	Description:
LCD Display	128x64 Dot-matrix LCD display showin: Mains volts (L1-N, L2-N, L3-N) Mains volts (L1-L2, L2-L3, L3-L1) Mains Hz Generator volts (L1-N, L2-N, L3-N) Generator volts (L1-L2, L2-L3, L3-L1) Generator Hz Engine Rpm Generator kVA Generator kW Generator kVAh Generator kWh Generator kVArh Generator power factor (pf) Load amps (IL1, IL2, IL3) Earth current (IEA) Engine oil pressure Coolant temperature Fuel level Battery voltage Charge generator voltage Real time Engine run time Next maintenance hour Next maintenance month Event logs Working modes Engine status Error messages Program parameters
Failure Indicators	Failed to start Low oil pressure High temperature Speed failure Voltage failure Charging fail Spare 1 Spare 2 Spare 3
Status indicators	OFF mode LED TEST mode LED AUTOMATIC mode LED MANUAL mode LED Engine start LED Engine stop LED Engine running Main voltage available LED Generator ready LED Mains contactor LED Generator contactor LED
Communication interface	RS 232 serial communication with PC. CanBus communication with Expansion module.

Specification:	Description:
Contact sensing inputs	Emergency stop (NC)
	Configurable failure input-1 (NO or NC selectable)
	Configurable failure input-2 (NO or NC selectable)
	Configurable failure input-3 (NO or NC selectable)
	Low oil pressure or configurable failure input-4 (NO or NC selectable)
	High temperature or configurable failure input-5 (NO or NC selectable)
	Configurable failure input-6 (NO or NC selectable)
Relay outputs	Fuel relay output. 16A at DC supply voltage
	Start relay output. 16A at DC supply voltage
	Horn or configurable relay output-1. 16A at DC supply voltage
	Mains open relay output. 5A at DC supply voltage
	Mains close relay output. 5A at DC supply voltage
	Generator open relay output. 5A at DC supply voltage
	Generator close relay output. 5A at DC supply voltage
	Configurable relay output-2. 5A at DC supply voltage
	Configurable relay output-3. 5A at DC supply voltage
Configurable relay output-4. 5A at DC supply voltage	

Section 8 Block Diagram



User Defined Parameter:

List-1:

	Definition of Parameter	User Defined Value
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Operator parameters

(MAINS LEVELS PAGE) MAINS LEVELS page

MAINS UNDER VOLTAGE	<i>Mains Under Voltage</i>	
MAINS UNDER V.RET.	<i>Mains Under Voltage Return</i>	
MAINS OVER VOLTAGE	<i>Mains Over Voltage</i>	
MAINS OVER V.RETURN	<i>Mains Over Voltage Return</i>	
MAINS UNDER FREQ.	<i>Mains Under Frequency</i>	
MAINS UNDER F.RET.	<i>Mains Under Frequency Return</i>	
MAINS OVER FREQ.	<i>Mains Over Frequency</i>	
MAINS OVER F.RETURN	<i>Mains Over Frequency Return</i>	

(GEN.VOLT.LEVELS PAGE) GENERATOR VOLTAGE LEVELS page

GEN.UNDER VOLTAGE	<i>Generator Under Voltage</i>	
GEN.UNDER V.PRE-ALR	<i>Generator Under Voltage Pre-Alarm</i>	
GEN.LOADING VOLTAGE	<i>Generator Loading Voltage</i>	
GEN.OVER V.PRE-ALR	<i>Generator Over Voltage Pre-Alarm</i>	
GEN.OVER V.PR-A.RET	<i>Generator Over Voltage Pre-Alarm Return</i>	
GEN.OVER VO.SHUTDWN	<i>Generator Over Voltage Shutdown</i>	

(GEN.FREQ.LEVELS PAGE) GENERATOR FREQUENCY LEVELS page

GEN.UNDER FREQUENCY	<i>Generator Under Frequency</i>	
GEN.UNDER F.PRE-ALR	<i>Generator Under Frequency Pre-Alarm</i>	
GEN.LOADING FREQ.	<i>Generator Loading Frequency</i>	
GEN.OVER F.PRE-ALR	<i>Generator Over Frequency Pre-Alarm</i>	
GEN.OVER F.PR-A.RET	<i>Generator Over Frq Pre-Alarm Return</i>	
GEN.OVER FR.SHUTDWN	<i>Generator Over Frequency Shutdown</i>	

(GEN.CUR/POW.LVL.PAGE) GENERATOR CURRENT/POWER LEVELS page

GEN.OVER CURRENT	<i>Generator Over Current</i>	
GEN.SHORT CIRCUIT	<i>Generator Short Circuit</i>	
GEN.EARTH FAULT	<i>Generator Earth Fault</i>	

	Definition of Parameter	User Defined Value
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Technician parameters

(GEN.CUR/POW.ACT.PAGE) GENERATOR CURRENT/POWER ACTIONS page		
CT PRIMARY	CT Primary	
EARTH FAULT CT PRIM	CT Primary (Earth Fault)	
OVER CUR.ACTIONS	Over Current Actions -Disable -Warning (Alarm Only, No Shutdown) -Electrical Trip (Alarm/Off Load Generator Followed By Shutdown After Cooling) -Shutdown (Alarm And Shutdown)	
OVER CUR.ALARM TIME	Over Current Alarm Time	
SHORT CIR.ACTIONS	Short Circuit Actions -Disable -Warning (Alarm Only, No Shutdown) -Electrical Trip (Alarm/Off Load Generator Followed By Shutdown After Cooling) -Shutdown (Alarm And Shutdown)	
SHORT CIR.ALARM TIME	Short Circuit Alarm Time	
EARTH FAULT ACTIONS	Earth Fault Actions -Disable -Warning (Alarm Only, No Shutdown) -Electrical Trip (Alarm/Off Load Generator Followed By Shutdown After Cooling) -Shutdown (Alarm And Shutdown)	
EARTH FAU.ALARM TIME	Earth Fault Alarm Time	
TOTAL ENERGY CLEAR	Total Energy Clear	
ACTIVE ENERGY CLEAR	Active Energy Clear	
REACTIVE ENERGY CLR	Reactive Energy Clear	

(MISCELLANEOUS PAGE) MISCELLANEOUS page		
SENS.OPT.GEN.F.ENAB	Sensing Options Generator Frq En/Dis	
SNS.OP.PICKP ENA&FW	Sensing Opt Pickup En/Dis & Flywheel	
AC SYSTEM	Ac System 0 =1phase 2wire, 1= 3phase 4wire 2= 3phase 4wire Series Delta	
FAST LOAD.FEAT.ENAB	Fast Loading Feature En/Dis	
ALL WRN.ARE LTCH.EN	All Warnings Are Latched En/Dis	
MAINS FAIL.DETEC.EN	Mains Failure Detection En/Dis	
LK.MA.FA.FO.MA.CN.E	Look Mains Failure For Mains Cont. En/Dis	
GAS/DIESEL SELECT	Engine Fuel (Gas/ Diesel) Selection	
STOP/FUEL SELECTION	Stop / Fuel Selection	
STOP SOLENOID TIME	Stop Solenoid Time	
IGNITION DELAY	Ignition Delay	
GAS VALVE DELAY	Gas Valve Delay	
MIN.IGNITION SPEED	Min Ignition Speed	
NOMINAL FREQUENCY	Nominal Alternator Frequency	
NOMINAL SPEED	Nominal Speed	

	Definition of Parameter	User Defined Value
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(ENGINE STAR.OPT PAGE) ENGINE STARTING OPTIONS page

AU.ALR.PRIOR STRT.E	<i>Audible Alarm Prior To Starting En/Dis</i>	
NUMBR OF STR.ATEMP	<i>Number Of Start Attempts</i>	
CRANKING TIME	<i>Cranking Time</i>	
CRANK REST TIME	<i>Crank Rest Time</i>	
MUL.STR.ENG.ATEMP.E	<i>Multiple Start Engage Attempts E/D (Pick)</i>	
ENGAGE ATTEMPT TIME	<i>Engage Attempt Time (Pickup)</i>	
ENG.ATEMP.REST TIME	<i>Engage Attempt Rest Time (Pickup)</i>	
PICK.SNSR FAIL DELY	<i>Pickup Sensor Fail Delay(Pickup)</i>	

(ENG.CRANK DISCN.PAGE) ENGINE CRANK DISCONNECT page

CRNK DISCN.ON GEN.F	<i>Crank Disconnect On Gen. Frequency</i>	
CRNK DISCN.ON MAG.P	<i>Crank Disconnect On Magnetic Pickup</i>	
CRNK DISCN.ON GEN.V	<i>Crank Disconnect On Gen. Voltage</i>	
CRNK DISCN.ON CH.G.V	<i>Crank Disconnect On Charge Alt. Voltage</i>	
CRNK DISCN.ON OIL P	<i>Crank Disconnect On Oil Pressure</i>	

(GEN.SPED SETING PAGE) GENERATOR SPEED SETTINGS page

GEN.UNDER SPEED	<i>Generator Under Speed</i>	
GEN.UNDR SPED PRE-A	<i>Generator Under Speed Prealarm</i>	
GEN.UNDR SP.PR-A.RT	<i>Generator Under Speed Prealarm Return</i>	
GEN.OVER SPED PRE-A	<i>Generator Over Speed Prealarm</i>	
GEN.OVER SP.PR-A.RT	<i>Generator Over Speed Prealarm Return</i>	
GEN.OVER SP.SHUTDWN	<i>Generator Over Speed Shutdown</i>	

(ENG.PLANT BATTR PAGE) ENGINE PLANT BATTERY page

BAT.UNDER V.WARNING	<i>Battery Undervolts Warning</i>	
BAT.UNDR V.WARN.RET	<i>Battery Undervolts Warning Return</i>	
BAT.UNDER VOL.DELAY	<i>Batt Undervolts Volts Delay</i>	
BAT.OVER V.WARNING	<i>Battery Overvolts Warning</i>	
BAT.OVER V.WARN.RET	<i>Battery Overvolts Warning Return</i>	
BAT.OVER VOL.DELAY	<i>Batt Overvolts Delay</i>	
CHARGE ALT.WARNING	<i>Charge Alternator Warning</i>	

(ANALOGUE INPUTS PAGE) ANALOGUE INPUTS page

OIL PRES.INPUT TYPE	<i>Oil Pressure Input Type</i>	
OIL PRES.PRE-ALARM	<i>Oil Pressure Pre-Alarm</i>	
OIL PRES.PRE-AL.RET	<i>Oil Pressure Pre-Alarm Return</i>	
OIL PRES.SHUTDOWN	<i>Oil Pressure Shutdown</i>	
TEMP.INPUT TYPE	<i>Temperature Input Type</i>	
TEMP.PRE-ALARM	<i>Temperature Pre-Alarm</i>	
TEMP.PRE-ALARM RET	<i>Temperature Pre-Alarm Return</i>	
TEMP.SHUTDDOWN	<i>Temperature Shutdown</i>	
LEVEL PRE-ALARM	<i>Level Pre-Alarm</i>	
LEVEL PRE-ALARM RET	<i>Level Pre-Alarm Return</i>	
LEVEL SHUTDOWN	<i>Level Shutdown</i>	

	Definition of Parameter	User Defined Value
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(ANALG.SENDR LIN.PAGE) ANALOGUE SENDER LINEARISATIONS page		
OIL PRESS.SENDER 0	<i>Oil Pressure Sender 0</i>	
OIL PRESSURE 0	<i>Oil Pressure 0</i>	
OIL PRESS.SENDER 1	<i>Oil Pressure Sender 1</i>	
OIL PRESSURE 1	<i>Oil Pressure 1</i>	
OIL PRESS.SENDER 2	<i>Oil Pressure Sender 2</i>	
OIL PRESSURE 2	<i>Oil Pressure 2</i>	
OIL PRESS.SENDER 3	<i>Oil Pressure Sender 3</i>	
OIL PRESSURE 3	<i>Oil Pressure 3</i>	
OIL PRESS.SENDER 4	<i>Oil Pressure Sender 4</i>	
OIL PRESSURE 4	<i>Oil Pressure 4</i>	
TEMP.SENDER 0	<i>Temperature Sender 0</i>	
TEMPERATURE 0	<i>Temperature 0</i>	
TEMP.SENDER 1	<i>Temperature Sender 1</i>	
TEMPERATURE 1	<i>Temperature 1</i>	
TEMP.SENDER 2	<i>Temperature Sender 2</i>	
TEMPERATURE 2	<i>Temperature 2</i>	
TEMP.SENDER 3	<i>Temperature Sender 3</i>	
TEMPERATURE 3	<i>Temperature 3</i>	
TEMP.SENDER 4	<i>Temperature Sender 4</i>	
TEMPERATURE 4	<i>Temperature 4</i>	
LEVEL SENDER 0	<i>Level Sender 0</i>	
LEVEL 0	<i>Level 0</i>	
LEVEL SENDER 1	<i>Level Sender 1</i>	
LEVEL 1	<i>Level 1</i>	
LEVEL SENDER 2	<i>Level Sender 2</i>	
LEVEL 2	<i>Level 2</i>	
LEVEL SENDER 3	<i>Level Sender 3</i>	
LEVEL 3	<i>Level 3</i>	
LEVEL SENDER 4	<i>Level Sender 4</i>	
LEVEL 4	<i>Level 4</i>	

(CAN BUS CONFIG. PAGE) CAN BUS CONFIGURATION page		
EXPANS.MODUL SELECT	<i>Expansion module selection</i>	

	Definition of Parameter	User Defined Value
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(DIG.CNF.INPUT-1 PAGE) DIGITAL CONFIGURABLE INPUT (1) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication (Status, Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(DIG.CNF.INPUT-2 PAGE) DIGITAL CONFIGURABLE INPUT (2) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication (Status, Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>	
SELECT FROM LIST	<ul style="list-style-type: none"> 0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode 	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(DIG.CNF.INPUT-3 PAGE) DIGITAL CONFIGURABLE INPUT (3) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication (Status, Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>	
SELECT FROM LIST	<ul style="list-style-type: none"> 0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode 	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(DIG.CNF.INPUT-4 PAGE) DIGITAL CONFIGURABLE INPUT (4) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>	
SELECT FROM LIST	0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode 25 Low Oil Pressure	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(DIG.CNF.INPUT-5 PAGE) DIGITAL CONFIGURABLE INPUT (5) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>	
SELECT FROM LIST	0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode 25 High Temperature	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(DIG.CNF.INPUT-6 PAGE) DIGITAL CONFIGURABLE INPUT (6) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active) If Select From List</i>	
SELECT FROM LIST	<ul style="list-style-type: none"> 0 Remote Start 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator 22 Remote Inhibit 23 Test on Load 24 Generator is supplying the load in OFF mode 	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(EXP.CNF.INPUT-1 PAGE) EXPANSION CONFIGURABLE INPUT (1) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(EXP.CNF.INPUT-2 PAGE) EXPANSION CONFIGURABLE INPUT (2) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(EXP.CNF.INPUT-3 PAGE) EXPANSION CONFIGURABLE INPUT (3) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(EXP.CNF.INPUT-4 PAGE) EXPANSION CONFIGURABLE INPUT (4) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(EXP.CNF.INPUT-5 PAGE) EXPANSION CONFIGURABLE INPUT (5) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(EXP.CNF.INPUT-6 PAGE) EXPANSION CONFIGURABLE INPUT (6) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(EXP.CNF.INPUT-7 PAGE) EXPANSION CONFIGURABLE INPUT (7) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
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(EXP.CNF.INPUT-8 PAGE) EXPANSION CONFIGURABLE INPUT (8) page		
DIS,USERCNF.OR LIST	<i>Disable, User Configured Or Select From List</i>	
HARDWARE TYPE	<i>-Hardware type (0 = -Ve, 1 = +Ve)</i>	
POLARITY	<i>If User Configured -Polarity (Close To Activate, Open To Activate)</i>	
INDICATION	<i>If User Configured -Indication(Warning Non-Latching, Warning Latching, Electrical Trip, Shutdown)</i>	
ACTIVATION	<i>If User Configured -Activation (Active From Starting, Active From Safety On, Always Active)</i>	
SELECT FROM LIST	<i>If Select From List</i> 1 Auxiliary Mains Fail 2 Simulate Lamp Test Button 3 Simulate Horn Reset Button 4 Simulate Alarm Reset Button 5 Simulate Off Button 6 Simulate Auto Button 7 Simulate Test Button 8 Simulate Manual Button 9 Simulate Start Button 10 Simulate Stop Button 11 Generator Closed Auxiliary 12 Generator Load Inhibit 13 Mains Closed Auxiliary 14 Mains Load Inhibit 15 Auto Restore Inhibit 16 Auto Start Inhibit 17 Panel Lock 18 Scheduled Runs Inhibited 19 Reset Maintenance Alarm 20 Transfer To Generator/Open Mains 21 Transfer To Mains/Open Generator	
INPUT TIME DELAY	<i>Input time delay</i>	

	Definition of Parameter	User Defined Value
(CONFIG.OUTPUT-1 PAGE) CONFIGURABLE OUTPUT (1) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(CONFIG.OUTPUT-2 PAGE) CONFIGURABLE OUTPUT (2) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(CONFIG.OUTPUT-3 PAGE) CONFIGURABLE OUTPUT (3) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(CONFIG.OUTPUT-4 PAGE) CONFIGURABLE OUTPUT (4) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(EXP.CONFIG.OUT-1 PAGE) EXPANSION CONFIGURABLE OUTPUT (1) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(EXP.CONFIG.OUT-2 PAGE) EXPANSION CONFIGURABLE OUTPUT (2) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(EXP.CONFIG.OUT-3 PAGE) EXPANSION CONFIGURABLE OUTPUT (3) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(EXP.CONFIG.OUT-4 PAGE) EXPANSION CONFIGURABLE OUTPUT (4) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(EXP.CONFIG.OUT-5 PAGE) EXPANSION CONFIGURABLE OUTPUT (5) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(EXP.CONFIG.OUT-6 PAGE) EXPANSION CONFIGURABLE OUTPUT (6) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(EXP.CONFIG.OUT-7 PAGE) EXPANSION CONFIGURABLE OUTPUT (7) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(EXP.CONFIG.OUT-8 PAGE) EXPANSION CONFIGURABLE OUTPUT (8) page		
POLARITY	<i>Polarity (Normally Open, Normally Closed)</i>	
FUNCTION	0 NOT USED 1 AUDIBLE ALARM 2 ALARM RESET 3 AUTO START INHIBIT 4 AUXILIARY MAINS FAILURE 5 BATTERY HIGH VOLTAGE 6 BATTERY LOW VOLTAGE 7 CALLING FOR SCHEDULED RUN 8 CHARGE ALTERNATOR FAILURE 9 COMMON ALARM 10 COMMON ELECTRICAL TRIP ALARM 11 COMMON SHUTDOWN ALARM 12 COMMON WARNING ALARM 13 COOLANT TEMPERATURE HIGH PRE-ALARM 14 COOLANT TEMPERATURE HIGH SHUTDOWN 15 COOLING DOWN TIMER IN PROGRESS 16 DELAYED ALARMS ACTIVE 17 DIGITAL INPUT1 ACTIVE 18 DIGITAL INPUT2 ACTIVE 19 DIGITAL INPUT3 ACTIVE 20 DIGITAL INPUT4 ACTIVE 21 DIGITAL INPUT5 ACTIVE 22 DIGITAL INPUT6 ACTIVE 23 EXPANSION INPUT1 ACTIVE 24 EXPANSION INPUT2 ACTIVE 25 EXPANSION INPUT3 ACTIVE 26 EXPANSION INPUT4 ACTIVE 27 EXPANSION INPUT5 ACTIVE 28 EXPANSION INPUT6 ACTIVE 29 EXPANSION INPUT7 ACTIVE 30 EXPANSION INPUT8 ACTIVE 31 EARTH FAULT 32 ELECTRIC COOLING FAN AFTERSTART 33 ELECTRIC COOLING FAN AFTERSTOP 34 EMERGENCY STOP 35 FAIL TO START ALARM 36 FAIL TO STOP ALARM 37 FUEL RELAY ENERGISED 38 GAS ENGINE IGNITION OUTPUT 39 GENERATOR AT REST 40 GENERATOR AVAILABLE 41 GENERATOR CLOSED AUXILIARY 42 GENERATOR FAILED TO CLOSE 43 GENERATOR FAILED TO OPEN 44 GENERATOR HIGH FREQUENCY PRE-ALARM 45 GENERATOR HIGH FREQUENCY SHUTDOWN 46 GENERATOR HIGH VOLTAGE PRE-ALARM 47 GENERATOR HIGH VOLTAGE SHUTDOWN 48 GENERATOR LOAD INHIBIT 49 GENERATOR LOW FREQUENCY PRE-ALARM 50 GENERATOR LOW FREQUENCY SHUTDOWN 51 GENERATOR LOW VOLTAGE PRE-ALARM 52 GENERATOR LOW VOLTAGE SHUTDOWN 53 RESERVED 54 GENERATOR STOPPING 55 HORN OUTPUT 56 LAMP TEST 57 LEVEL PREALARM 58 LOSS OF MAGNETIC PICK-UP SPEED SIGNAL 59 MAINTENANCE DUE ALARM 60 MAINS CLOSED AUXILIARY 61 MAINS FAILED TO CLOSE 62 MAINS FAILED TO OPEN 63 MAINS FAILURE 64 MAINS HIGH FREQUENCY 65 MAINS HIGH VOLTAGE 66 MAINS LOAD INHIBIT 67 MAINS LOW FREQUENCY 68 MAINS LOW VOLTAGE 69 NO LOADING COMMAND 70 OIL PRESSURE LOW PRE-ALARM 71 OIL PRESSURE LOW SHUTDOWN 72 OVER CURRENT 73 OVERSPEED PRE-ALARM 74 OVERSPEED SHUTDOWN 75 PANEL LOCK 76 PRE-HEAT(during preheat timer) 77 PRE-HEAT(until end of cranking) 78 PRE-HEAT(until end of warming) 79 PRE-HEAT(until end safety on) 80 REMOTE START PRESENT 81 REMOTE STOP DELAY IN PROGRESS 82 SHORT CIRCUIT 83 START RELAY ENERGISED 84 STARTING ALARM 85 STARTING ALARMS ARMED 86 STOP BUTTON PRESSED 87 SYSTEM IN AUTO MODE 88 SYSTEM IN MANUAL MODE 89 SYSTEM IN OFF MODE 90 SYSTEM IN TEST MODE 91 UNDERSPEED SHUTDOWN 92 UNDERSPEED PRE-ALARM 93 WAITING FOR GENERATOR	

	Definition of Parameter	User Defined Value
(START TIMERS PAGE) START TIMERS page		
MAINS TRANS.DELAY	<i>Mains Transient Delay</i>	
REMOTE START DELAY	<i>Remote Start Delay</i>	
REMOTE STOP DELAY	<i>Remote Stop Delay</i>	
PRE-HEAT	<i>Pre-Heat</i>	
PRE-HEAT BYPASS	<i>Pre-Heat Bypass</i>	
SAFETY ON DELAY	<i>Safety On Delay</i>	
HORN DURATION	<i>Horn Duration</i>	
CHRG.EXCITATION TIM	<i>Charge Excitation Time</i>	
ELECTR.COOL.FAN TIM	<i>Cooling Fan Time</i>	
MAINS FAIL DELAY	<i>Mains Fail Delay</i>	

(LOAD/STP.TIMERS PAGE) LOAD/STOPPING TIMERS page		
WARM UP TIME	<i>Warmup Timer</i>	
RETURN DELAY	<i>Return Delay</i>	
COOLING TIME	<i>Cooling Timer</i>	
GEN.FR.ERR.CNT.TIME	<i>Generator Frequency Error Control Time</i>	
GEN.VL.ERR.CNT.TIME	<i>Generator Voltage Error Control Time</i>	
FAIL TO STOP TIME	<i>Fail To Stop Time</i>	

(BREAKERS PAGE) BREAKERS page		
HARDW.BREAKER SELCT	<i>Hardware Breaker Selection</i>	
GEN.CLOS.BREK.C.TYP	<i>Gen Close Breaker Contact Type</i>	
GEN.CLOS.BREK.R.TYP	<i>Gen Close Breaker Relay Type</i>	
GEN.CLOSE TIMER	<i>Gen Close Timer</i>	
GEN.OPEN.BREK.C.TYP	<i>Gen Open Breaker Contact Type</i>	
GEN.OPEN.BREK.R.TYP	<i>Gen Open Breaker Relay Type</i>	
GEN.OPEN TIMER	<i>Gen Open Timer</i>	
MAIN CLS.BREK.C.TYP	<i>Main Close Breaker Contact Type</i>	
MAIN CLS.BREK.R.TYP	<i>Main Close Breaker Relay Type</i>	
MAINS CLOSE TIMER	<i>Mains Close Timer</i>	
MAIN OPN.BREK.C.TYP	<i>Main Open Breaker Contact Type</i>	
MAIN OPN.BREK.R.TYP	<i>Main Open Breaker Relay Type</i>	
MAINS OPEN TIMER	<i>Mains Open Timer</i>	
BREKR.CLOS.PULS.TIM	<i>Breaker Close Pulse Time</i>	
BREKR.OPEN.PULS.TIM	<i>Breaker Open Pulse Time</i>	
TRANSFER TIME	<i>Transfer Time</i>	

(LCD CONFIG.PAGE) LCD CONFIGURATION page		
ERR.MESS SCROLL TIM	<i>Scroll Time For Error Messages</i>	
DIGITAL CONTRAST	<i>Digital Contrast</i>	
BACKLIGHT ON/OFF	<i>Backlight On/Off</i>	

(ENG.MAINT.ALARM PAGE) ENGINE MAINTENANCE ALARM page		
RUNN.HOURS INTERVAL	<i>Running Hours Interval</i>	
MAINT.DATE INTERVAL	<i>Maintenance Date Interval</i>	
ENG.STP.WH.MANT.E/D	<i>Force Engine Shutdown When Maintenance Is Due En/Dis</i>	
ENGIN.RUN.HOUR(LSB)	<i>Engine Running Hour (Lsb)</i>	
ENGINE RUNNING HOUR	<i>Engine Running Hour</i>	
ENGIN.RUN.HOUR(MSB)	<i>Engine Running Hour(Msb)</i>	

(COMMUNICATION PAGE) COMMUNICATION page		
SLAVE ADDRESS	<i>Slave Address</i>	
BAUD RATE	<i>Baud Rate 0=1200 1=2400 2=4800 3=9600 4=19200</i>	
PARITY	<i>Parity; 0= NONE, 1= ODD, 2= EVEN</i>	
STOP BIT	<i>Stop Bit</i>	

	Definition of Parameter	User Defined Value
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(WR.CALENDR&EXER.PAGE) WORKING CALENDAR & EXERCISE page		
WORK.PERIOD ON MON.	<i>Working calendar working time on Monday</i>	
WORK.START TIME MON	<i>Working calendar work start time on Monday</i>	
WORK.PERIOD ON TUE.	<i>Working calendar working time on Tuesday</i>	
WORK.START TIME TUE	<i>Working calendar work start time on Tuesday</i>	
WORK.PERIOD ON WED.	<i>Working calendar working time on Wednesday</i>	
WORK.START TIME WED	<i>Working calendar work start time on Wednesday</i>	
WORK.PERIOD ON THU.	<i>Working calendar working time on Thursday</i>	
WORK.START TIME THU	<i>Working calendar work start time on Thursday</i>	
WORK.PERIOD ON FRI.	<i>Working calendar working time on Friday</i>	
WORK.START TIME FRI	<i>Working calendar work start time on Friday</i>	
WORK.PERIOD ON SAT.	<i>Working calendar working time on Saturday</i>	
WORK.START TIME SAT	<i>Working calendar work start time on Saturday</i>	
WORK.PERIOD ON SUN.	<i>Working calendar working time on Sunday</i>	
WORK.START TIME SUN	<i>Working calendar work start time on Sunday</i>	
EXER.WORKING PERIOD	<i>Generator exercise working time on related day</i>	
EXER.WR.DAY OF WEEK	<i>Generator exercise working day of week</i>	
EXER.WORK.START TIM	<i>Generator exercise work start time on related day</i>	

(DATE SETUP PAGE) DATE SETUP page		
YEAR	<i>YEAR</i>	
MONTH	<i>MONTH</i>	
DATE	<i>DATE</i>	
DAY	<i>DAY</i>	
HOUR	<i>HOUR</i>	
MINUTE	<i>MIN</i>	
SECOND	<i>SEC</i>	

(PASSWORD PAGE) PASSWORD page		
OPERATOR PASSWORD	<i>OPERATOR PASSWORD</i>	
TECHNICIAN PASSWORD	<i>TECHNICIAN PASSWORD</i>	

Change Date : / /

Change Technician Name :