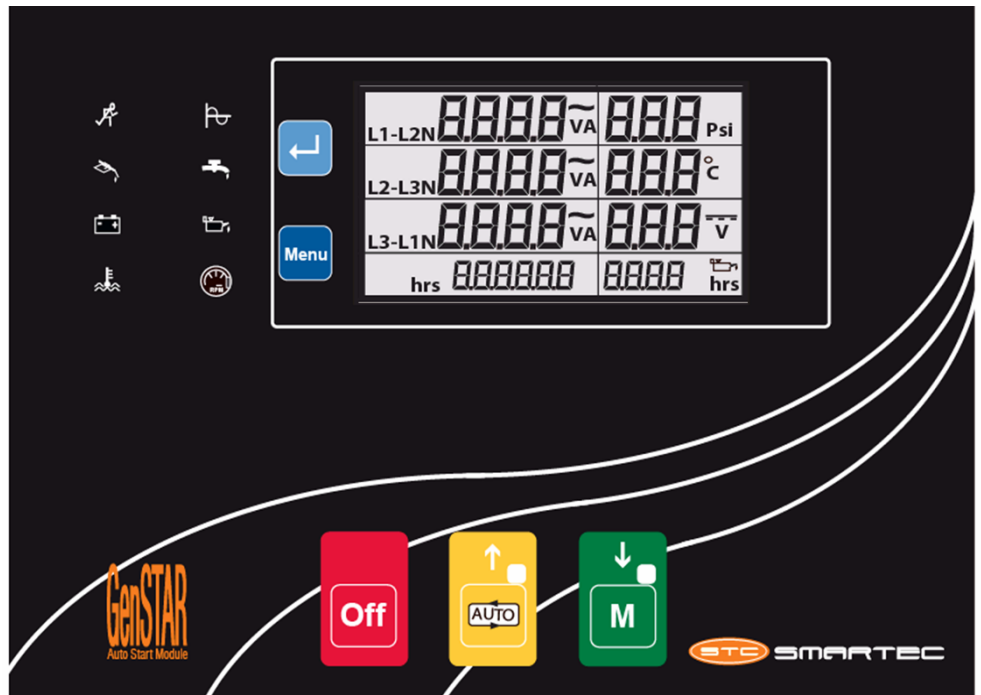




GENSTAR AUTOSTART

DESCRIPTION

The **GENSTAR** is an auto start generator controller that can control one generator. It includes a large LCD display, 5 control push buttons, 10 indicator LEDs. It displays all information needed to analyze the system. It monitors internal protections and external fault inputs. It can display all current and voltage measurements for the main power.



GENERAL FEATURES & technical specifications

- **3 phases Galvanize isolated (3750V)**
- **AC measurement sampling rate = 200KHz**
- Complete instrumentation display for the generator
- Automatic or manual start possibility
- Communication interface RS-232
- Plug-in terminal
- Complete documents for the installation & setup
- Temperature and oil pressure sender selected
- Large LCD display with backlight, functional at -30°C
- Operating temperature from -20°C to 70°C
- 5 programmable digital [contact] inputs
- 5 analog inputs for pressure, temperature, coolant, Dynamo and fuel level monitoring
- 5 programmable outputs
- Predefined sender models or manual configuration allowed
- Information on status, alarms and events
- Fast setup on site by the controller keypad or by using a Windows software
- Powerful software available for programming, Controlling and monitoring.
- Transistor short circuit protected outputs.
- Three phase current control range: 0 – 5A (CT input)
- Selectable protections alarm/shutdown
- RMS voltage and frequency measurement
- Individual Phase Information
- Generator voltage:75-300 V-AC (Ph-N)
- Generator frequency:10-100Hz
- DC supply range:6.0 to 33.0 V-DC.
- Standby current : ~ 80mA
- Charge excitation current: 54mA @ 12V-DC
- Analog input range: 0-5000 ohms
- Storage temp.: -30°C (-22°F) to 80°C (176°F)
- Maximum humidity: 95% non-condensing
- Dimensions: 5634 x 7400 (LxW mils)
- Panel cut-out dimensions: 6,004 x 8,169 (LxW inch)
- Starter dropouts: 0V for 100ms
- 200 errors log
- Battery voltage True RMS measuring alarm and shutdown.
- Engine hour counter.
- Oil hour counter flashing when oil hours expired.
- Over Current alarm.
- Over / Under Voltage alarm and shut down
- Over/ Under frequency alarm and shutdown.
- Oil Reset Password.
- Custom Features available.
- Selectable Engine Heater output and timer
- Dedicated General alarm output
- Main Password protection.

DIGITAL INPUTS

The unit has 5 configurable digital inputs

- (11) Remote start enable
- (12) Oil switch
- (10) Fault1
- (9) Temp switch
- (13) Fault2

ANALOG INPUTS

5 analog inputs are provided for the following functions:

- (6) Engine/water temperature
- (7) Oil pressure
- (15) Fuel level
- (14) Coolant
- (8) Dynamo

OUTPUTS

The unit provides 5 programmable short-circuit protected Outputs for controlling the generator set and alarm information:

- (3) Starter
- (7) Valve
- (4) Load contractor
- (5) General alarm
- (6) Spare: pump fuel, alarm2, engine-heater and excitation valve

REMOTE PROGRAMMING AND CONTROL

The unit can be connected to a PC using RS-232 serial Ports.

INDICATOR LED's



: Run



: Over volt / under volt



: Fault 1, 2



: Water



: Battery/ dynamo



: Oil



: Temperature



: Frequency

INSTRUMENTATION

Ac metering:

- Voltage 3-phase (L-L & L-N)
- Current per phase
- Frequency

DC metering:

- Battery volts
- Engine hours run
- Oil hour meter
- Engine temperature (in °C)
- Oil pressure (PSI)

PROTECTION & SHUT DOWN

- Battery voltage (alarm & shut down)
- Under / over volts (alarm & shut down)
- Under / over frequency (alarm & shut down)
- Over / under current (alarm & shut down)
- Overload (alarm & shut down)
- Low/high oil pressure (alarm & shut down)
- high engine temperature (alarm & shut down)
- AUX Fault1(alarm and shut down)
- Low fuel level (alarm and shutdown)
- Coolant level (alarm and shutdown)
- Aux Fault2 (alarm & shut down)

DISPLAYING INSTRUMENTATION

All 4 pages display:

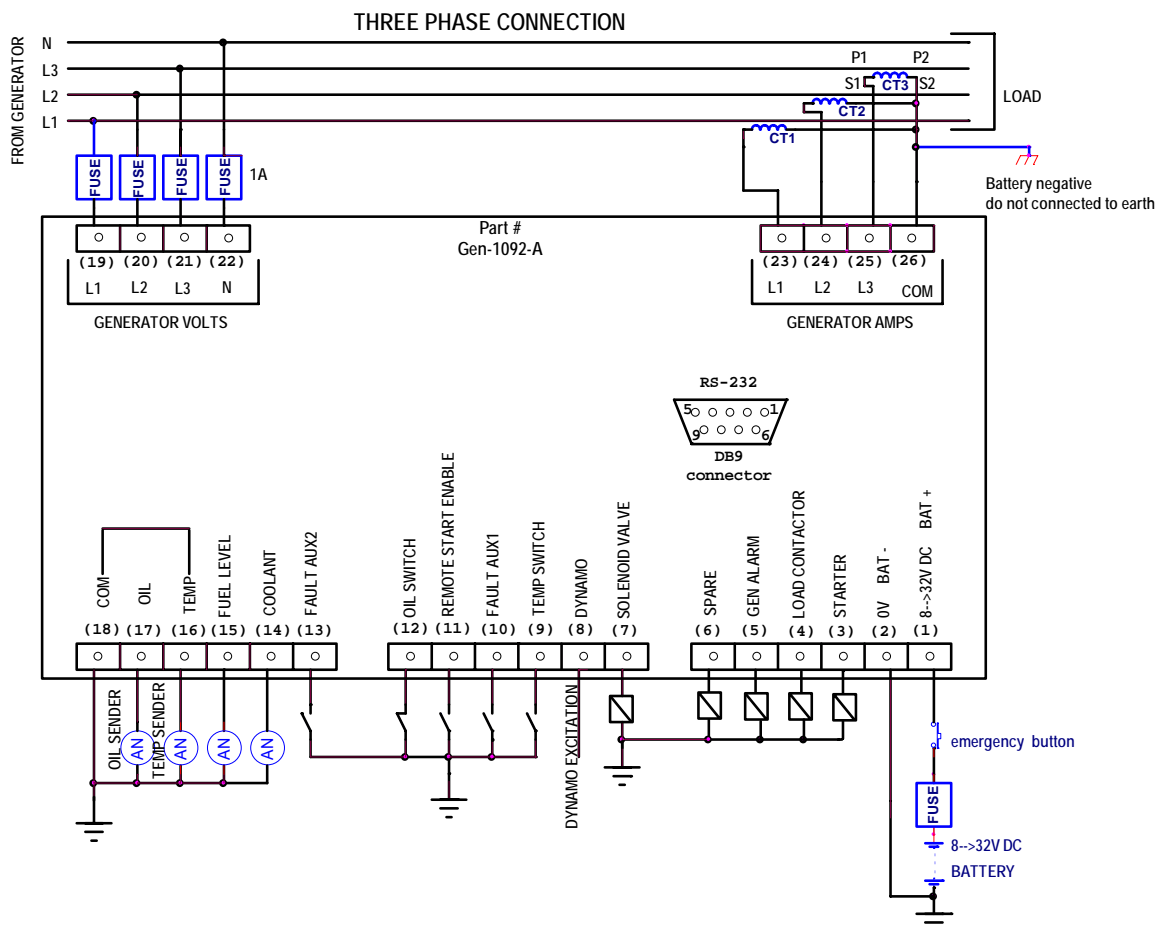
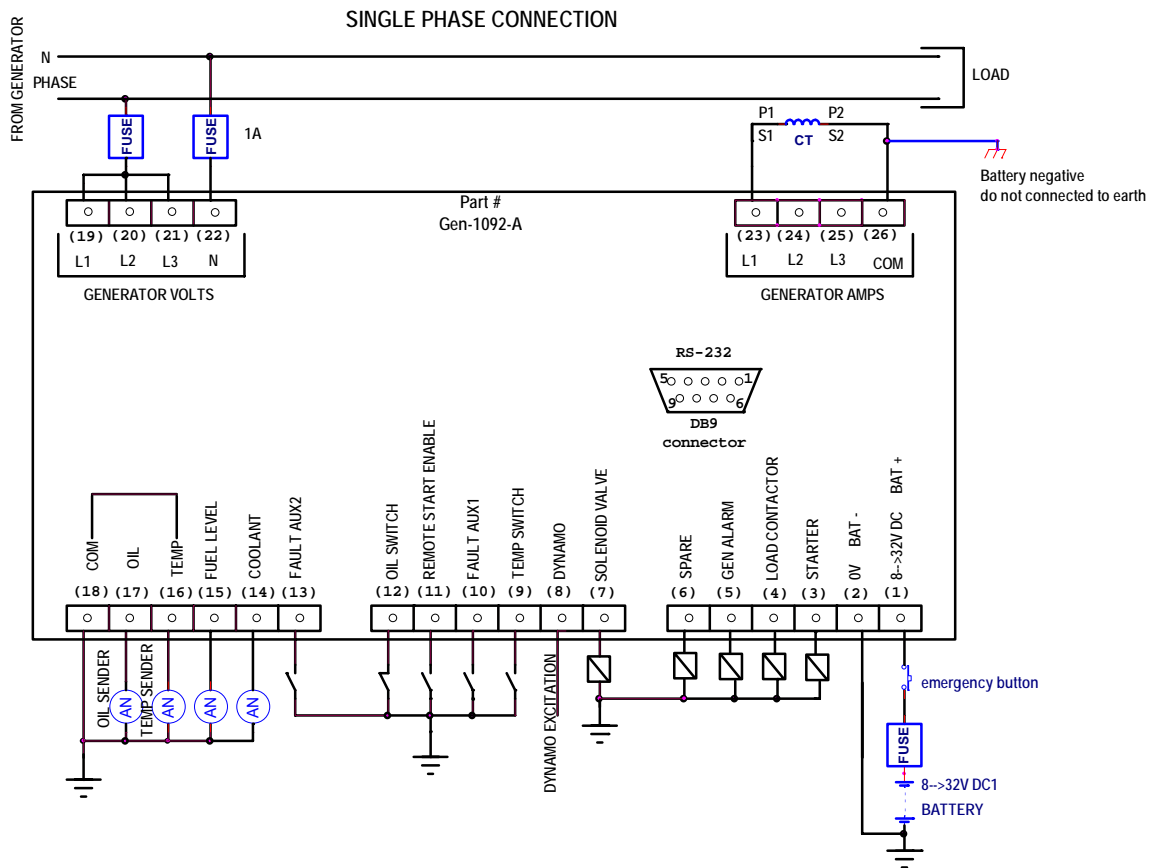
- The oil pressure in PSI
- The engine temperature in °C
- The DC voltage
- The oil hours
- The engine hour

In addition:

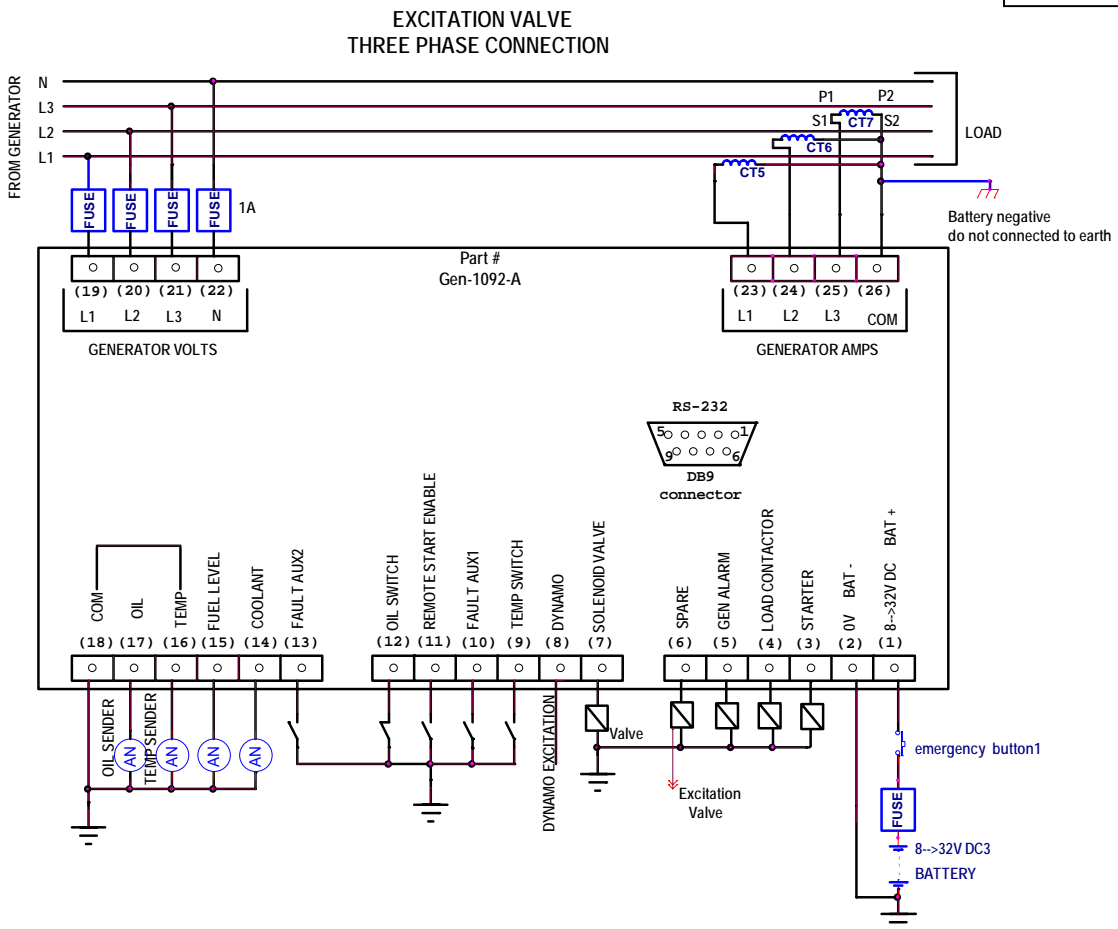
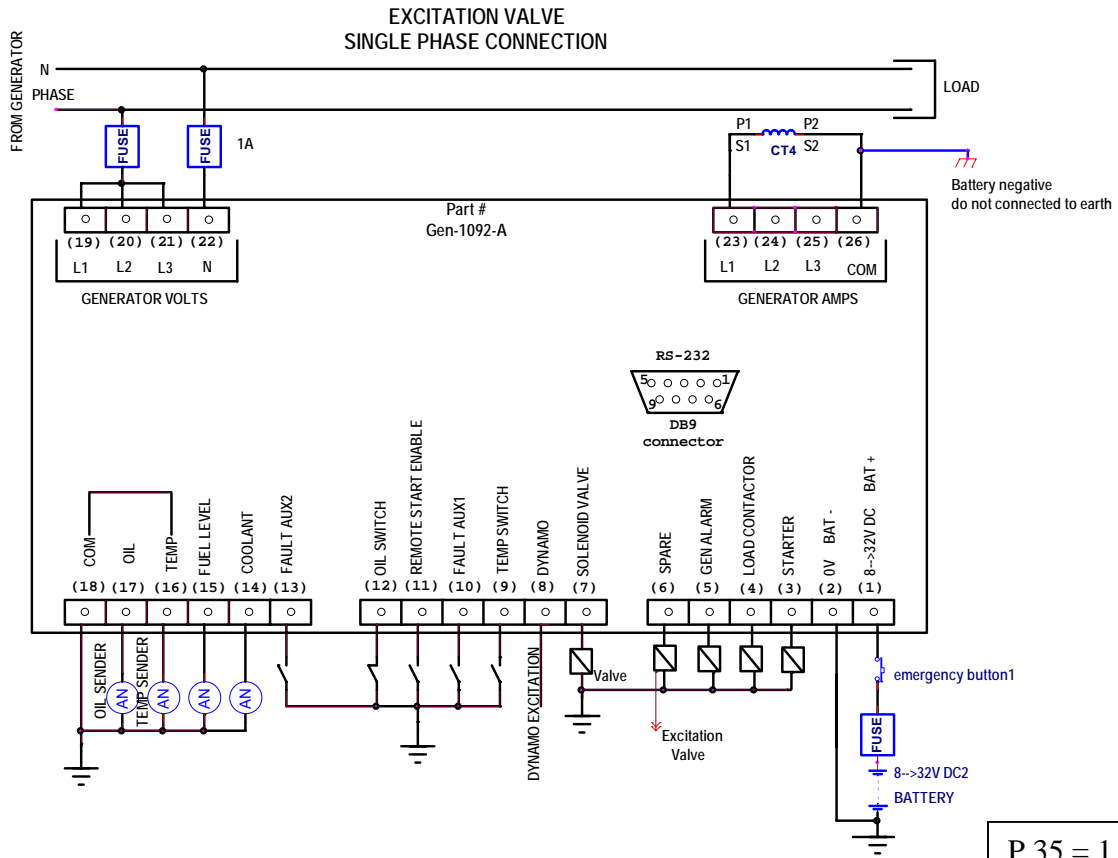
1. Page 1 displays the 3-phase voltages in V: L1-N, L2-N and L3-N
2. Page 2 displays the 3 phase currents in A: L1-N, L2-N and L3-N.
3. Page 3 displays the phase 1 voltage L1-N (V), the phase 2 current L2 – N (A) & the frequency (Hz).
4. Page 4 displays the composed 3-phase voltages: L1- L2- L2-L3 and L3-L1 (V).

To go to the next page, click on the Menu key

- If oil sender or oil switch is not used then it must be connected to 0 V.
- If coolant is not used then it must be connected to 0 V or disable by P25.
- To reset oil hour counter, you must press Enter & Menu buttons at the Same time then release, or you can reset by setting P01=P34



❖ For best performance you must use current transformer with 2VA or higher



ACCESSING THE ACCESSING THE PARAMETER MENU

- To access the parameter menu, click on the Menu key for 5 secs.
- On the left of the LCD screen, the symbol of the parameter to change is displayed. On the right, the value is displayed. To scroll up in the parameter menu, click on the Auto (increment) key. To scroll down, click on the M (decrement) key.
- To change a parameter's value, click on the enter key. The value to change will be flashing. To increment the value, click on the Auto (increment) key. To decrement it, click on the M (decrement) key. To confirm the value, click on the enter key.
- To exit from the menu and to save parameters, click on the menu key for 5 secs.

The symbols of the parameters, their description, the default values & the units are listed in the table below:

Symbol	Menu Description	Default	Unit																								
P00	Password	000	-																								
P01	Oil Reset Password	000	-																								
P02	Temp Sender Select	0= (VDO 120) 1= (Datcon Hi) 2= (Datcon Lo) 3= (Murphy) 4= (Cummins) 5= (PT 100) 11→ 100 VDO curve adjust - 101→ 200 VDO curve adjust +	-																								
P03	Pressure Sender Select	0= (VDO 10 Bar) 1= (VDO 5 Bar) 2= (Datcon 5 Bar) 3= (Datcon 10 Bar) 4= (Datcon 7 Bar) 5= (Murphy) 11→ 100 VDO curve adjust - 101→ 200 VDO curve adjust +	-																								
P04	CT Current Ratio	100	-																								
P05*	Over Current Alarm	0	0 = disable; Ampere*5																								
P06	Starter Time	005	Sec																								
P07	Retry Delay	005	Sec																								
P08	Initial Delay	006	Sec																								
P09	Start Attempt	004	-																								
P10*	Alarm Select	<table border="1"> <tr> <td>128</td> <td>64</td> <td>32</td> <td>16</td> <td>8</td> <td>4</td> <td>2</td> <td>1</td> </tr> <tr> <td>B8</td> <td>B7</td> <td>B6</td> <td>B5</td> <td>B4</td> <td>B3</td> <td>B2</td> <td>B1</td> </tr> <tr> <td>GAS</td> <td>RPM</td> <td>OUV</td> <td>FTS</td> <td>WTR</td> <td>BAT</td> <td>OIL</td> <td>HEAT</td> </tr> </table> <p>- If P10 =0 all fault will trigger alarm1 - If P10 is bit selected will force the fault bit to be output alarm to the spare (6) output, and other bits to alarm1. - EX1.P10= 16 will trigger alarm on FTS on spare(6)output.(ALARM 2) - Ex2.P10 = 16+ 2=18 will trigger alarm on FTS or OIL (ALARM 2)</p>	128	64	32	16	8	4	2	1	B8	B7	B6	B5	B4	B3	B2	B1	GAS	RPM	OUV	FTS	WTR	BAT	OIL	HEAT	0 = disable selected alarm
128	64	32	16	8	4	2	1																				
B8	B7	B6	B5	B4	B3	B2	B1																				
GAS	RPM	OUV	FTS	WTR	BAT	OIL	HEAT																				
P11	Warm-up Delay	007	Sec																								
P12	Load Shut Delay	009	Sec																								
P13	Cool Time Delay	090	Sec																								
P14	Oil Delay	003	Sec																								
P15	Under Frequency	045	Hz																								
P16	Over Frequency	055	Hz																								
P17	Over Freq Delay	005	Sec																								
P18	Under Freq Delay	005	Sec																								
P19*	Initial Fault Delay	009 > P11	Sec																								
P20	Under Volt Delay	005	Sec																								
P21	Over Volt Delay	005	Sec																								
P22	Under Volt	190	Volt																								
P23	Over Volt	245	Volt																								
P24	Oil Hours	000	Hours; 0 = disable																								
P25	Coolant Threshold	000	0 = disable Multiple of 10mV DC																								
P26	Dynamo Threshold	009	Volt Dc																								
P27	Dynamo Delay	013	Sec																								
P28	Coolant Delay	012	Sec																								
P29	Temp Sw Delay	008	Sec																								
P30	Aux Delay	000	Sec; 0 = emergency stop																								
P31	Alarm Time Out	0	Sec; 0 = disable																								
P32	Under Pressure	150 1.50	Psi if P41=0 Bar if P41=1																								
P33	Over Temperature	103	°C																								
P34	Oil Hour Password	9	0 is not preferred																								
P35	Engine Heater / Excitation Valve(see page:4)	0	0=Disable, 1=excitation valve 2 → 255: Engine Heater																								
P36	Over Current Delay	10	sec																								
P37	Oil check on startup	0	0 = Disable , 1=Enable																								
P38	Oil switch-Oil sender	0	0 = Switch And Sender 1 = Switch OR Sender 2=Switch only																								
P39	Temp Switch-Sender	0	0 = Switch And Sender 2 = Switch only																								
P40	Main Password	0	0=disable																								
P41	Pressure Unit / Monophase	1	0 = oil pressure in Psi / 3 Phase 1 = oil pressure in Bar / 3 Phase 4 = Oil Pressure in bar / monophase																								
P42*	Exercise stand by Hrs	0	Multiple of 6 Hrs																								
P43	Run exercise minutes	0	1 → 255 min																								

*P42 Ex.: Value = 12 → 12x6hrs = 72 hrs be stand by.

*P05: desired value = P05x5 Ex.: if over current = 100, P05=20

*P19 must be > P11