Automatic Gen-Set Transfer Switching Controller

EAOM - 19

Features

Protection, control and metering
Automatic engine start / stop
and load transfer
Automatic shutdown on fault condition
LED status and fault indication
Simple push-button controlled operation
Manual, automatic and test mode control
Two user configurable inputs
Fully programmable

Monitors

Mains voltage (Phase-Phase, Phase-Neutral)
Alternator voltage and frequency
Battery voltage
Error indication
Program parameters

Fail Monitoring

Alternator voltage and frequency
Charging generator field current
Engine temperature
Oil pressure
Low battery voltage

Controls

Engine fuel supply or engine stopping
Starter motor
Automatic generator start
Load transfer on mains failure
Load transfer to mains
External alarm horn

The EAOM-19 controller unit offers automatic engine starting, stopping, transfer switching, protection, control and metering of generator sets. In the event of a mains supply failure, the unit automatically transfers the load from the mains to the generator. Microprocessor technology allows exact measurement, set point adjustment and timing functions with the parameters to be simply programmed and displayed from the front panel.

Specifications

Housing & Mounting	72mmx72mmx95mm (including connectors) DIN43700 plastic housing for panel mounting
Protection	NEMA4X (Ip65 at front panel, IP20 at rear side)
Operating / Storage Temperature	-25ºC to +70ºC / -40ºC to +85ºC
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
Battery Supply Voltage(⎓)	8-32 V⎓ max. Operating current is 240 mA
Battery Voltage Measurement	8-32V⎓, accuracy:1% FS, resolution : 0.1V
Generator Voltage Measurement	Selectable three phase or single phase, 4-wire connection for three phase, 2-wire connection for single phase gen-set 35-300VL-N∿RMS (@15.6-99.9 Hz). Accuracy: 1% FS. Resolution : 1V
Mains Voltage Measurement	35-300VL-N∿RMS (@15.6-99.9 Hz). Accuracy: 1% FS. Resolution : 1V
Generator Speed (frequency)	15.6 to 99.9 Hz. (@35-300 VL-N ∿) Accuracy: 0.25 % FS, Resolution: 0.1 Hz.
Cranking Dropouts	Battery voltage can be 0V⎓ for max. 100msn during cranking (battery voltage should be at least nominal voltage before cranking)
Charge Generator Excitation	220mA, max.4W
Contact Sensing Inputs	Oil Pressure Switch (NC) Temperature Switch (NO) Configurable Input-1 (NO) Configurable Input-2 (NO)
Relay Outputs	Start relay (1NO. 12A@32V ⎓) Fuel relay (1NO. 12A@32V ⎓) Horn relay (1NO. 12A@32V ⎓) Mains contactor relay (1NC. 5A@250V ∿) Generator contactor relay (1NO. 5A@250V ∿)
Display	4 Digits, 7 segments LED display showing : Mains voltage (Phase-Phase and Phase-Neutral) Alternator voltage Alternator frequency Battery voltage Program parameters
Failure Indicators	Engine start High temperature Low oil pressure Generator over frequency Generator voltage failure Charge generator failure Battery voltage failure Configurable input-1 Configurable input-2
Status Indicators	TEST mode LED PROG mode LED OFF mode LED AUTO mode LED Manual engine start LED Manual engine stop LED Mains contactor open LED Generator contactor open LED Mains contactor close LED Generator contactor close LED
Information Alarm	Stop Error Message (Fail to Engine Stopping)

Front View

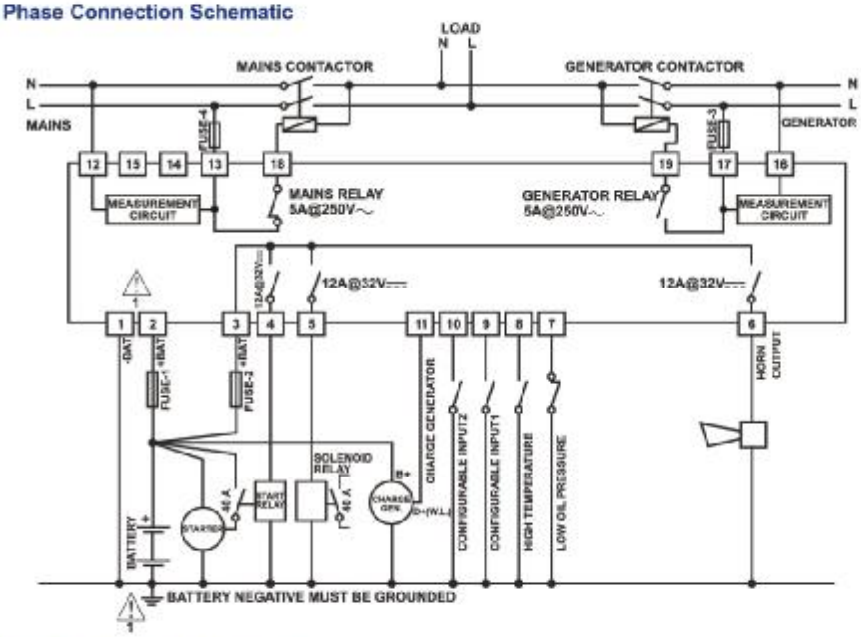
EAOM-19 Parameters List

No	Definition of Parameter	Min	Max	Default	Unit
P00	Mains Voltage Connection Level	60	600	320	V~
P01	Mains Voltage Disconnection Level	60	600	300	V~
P02	Mains Voltage Upper Limit	60	600	440	V~
P03	Alternator Voltage Lower Limit	60	600	320	V~
P04	Alternator Voltage Upper Limit	60	600	440	V~
P05	Speed Upper Limit	30.0	75.0	53.0	Hz
P06	Number of Starting Attempts	1	10	3	
P07	Engine Cooling Time(0=dis.cool process)	0	99	3	Minute
P08	Horn Duration	0	999	60	Second
P09	Mains Transition Delay	0	30	3	Minute
P10	Single / Three Phase Selection	1 / 3		3	
P11	Battery Voltage Lower Limit	7.2	24.0	8.0	V⎓
P12	Mains Change Over Delay	0.1	25.0	1.0	Second
P13	Stop / Fuel Solenoid Selection	Stop / Fuel		Fuel	
P14	Stop Magnet Energising Time	0	99	20	Second
P15	Engine started signal	0=No, 1=Yes			
	P21.0 Charge Generator	0/1		1	
	P21.1 Speed	0/1		0	
	P21.2 Alternator Voltage	0/1		1	
	P21.3 Oil Pressure	0/1		0	
P16	Starting Attempt Duration	5	99	5	Second
P17	Alternator voltage limit for crank disconnection	40	360	300	V~
P18	Speed Limit For Crank Disconnection	20.0	45.0	40.0	Hz
P19	Control On Delay	0	99	10	Second
P20	Alt. Voltage Fault Control Delay	0.0	10.0	5.0	Second
P21	Speed Fault Control Delay	0.0	10.0	5.0	Second
P22	Configurable Failure Input-1	0	6	0	
P23	Configurable Failure Input-2	0	6	0	
P24	Operator Password	0	9999	0	
P25	Technician Password	0	9999	0	

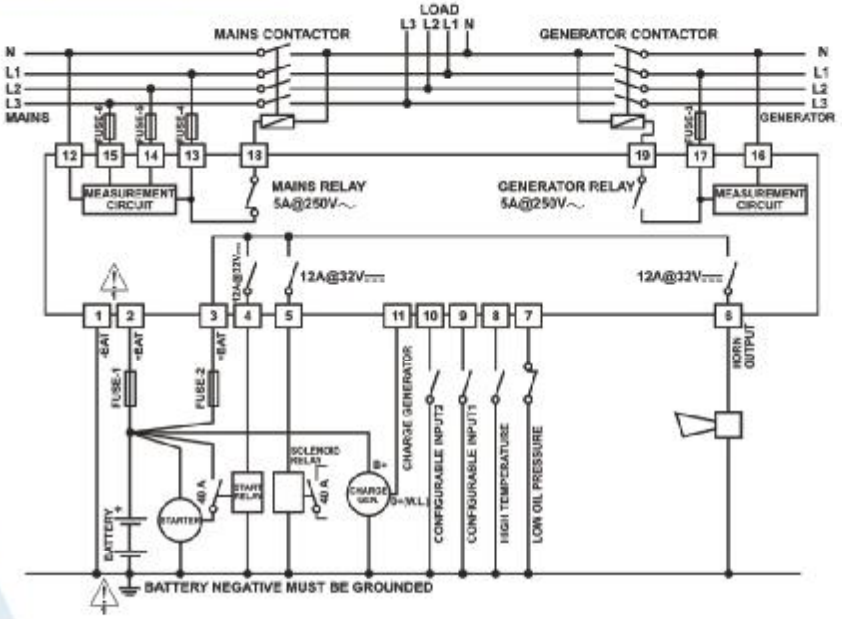
Operation

The EAOM-19 automatic transfer switch controller provides integrated generator set control, protection, metering and automatic load transfer. If a fault is detected, the engine will automatically shutdown and the failure will be indicated by a relevant fault LED and alarm horn. The unit detects failure of any phase of the mains supply and is able to start the generator and transfer the load. When the mains supply is restored within the pre-set limits, the load is transferred back to the mains supply and the generator is shutdown in a controlled manner. EAOM-19 offers manual, fully automatic operation and test mode which allows the generator to be run without taking the load. Mode of operation can be changed at any time without affecting the operational status of the generator or load connection.

Single Phase Connection Schematic



Three Phase Connection Schematic



Product Code

EAOM-19	Automatic Gen-Set Transfer Switching Controller 72mmx72mmx95mm Size