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Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
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Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
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Казань (843)206-01-48
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Технические характеристики на блоки управления для ручных или независимых генераторных установок SPG-120, CAM-109, CAM-120/10 компании ELCOS

INSTRUCTION AND USER MANUAL

MULTI-INSTRUMENT WITH CONTROL AND PROTECTION DEVICE FOR GENSET UNIT

TYPE **SPG-120/20**

MADE FOR:

PROTECT
genset units with the possibility of indicating

or stopping in case of fault for:

- low oil pressure
- overtemperature
- battery recharge failure (alternator belt breakage)
- minimum fuel level
- low cooling liquid level
- generator overloading (does not replace the thermomagnetic switch)
- generator overfrequency
- generator underfrequency
- generator undervoltage
- battery overvoltage
- battery undervoltage
- exceeding of programmed work time

DISPLAY

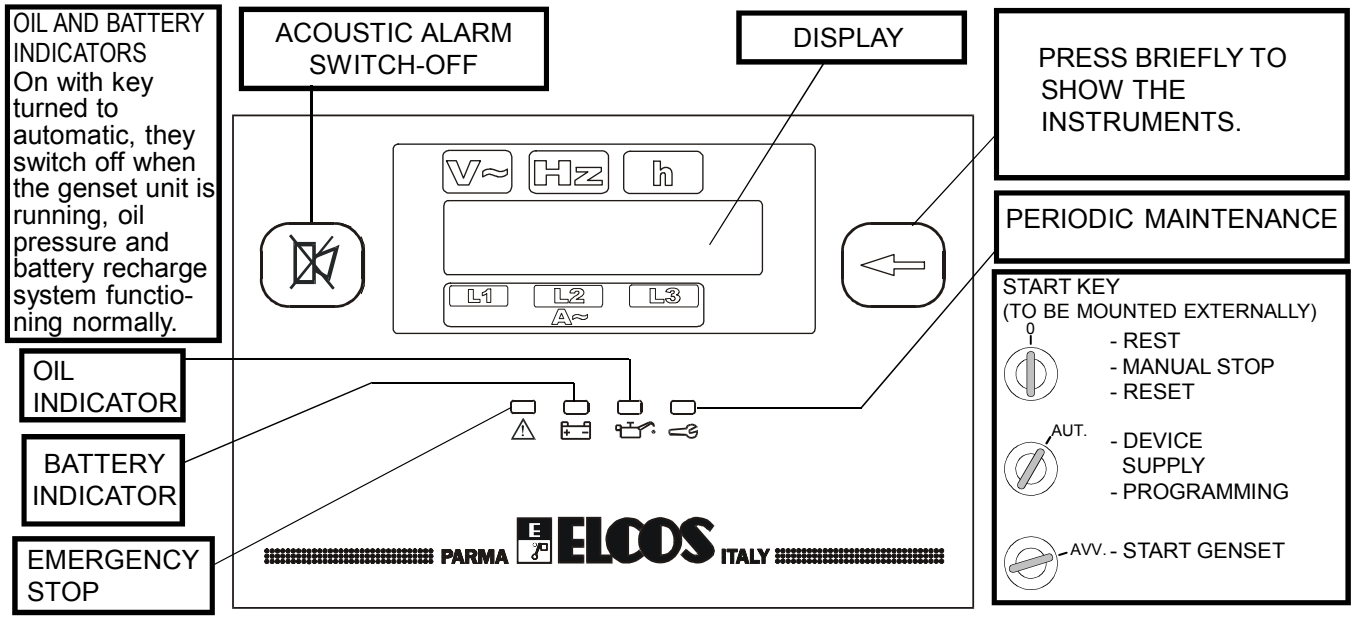
the following functions on the front:

- hour meter
- tachometer
- oil pressure gauge
- water or oil thermometer
- generator voltage
- generator current (3 ammeters)
- generator apparent power
- generator frequency
- battery voltage
- fuel level
- periodic maintenance indication
- oil and battery indicators
- protections intervention

- SMALL DIMENSIONS
- TEXT IN 5 LANGUAGES: ITALIAN, ENGLISH, FRENCH, GERMAN AND SPANISH
- SIMULTANEOUS READING OF 6 INSTRUMENTS
- MOUNTING ALSO ON THE MACHINE
- DEGREE OF PROTECTION ON THE FRONT IP64

INSTRUCTIONS IN BRIEF

SPG-120/10 surveys the most important parameters of the engine and of the generator of a single-phase or three-phase genset unit, showing them on the alphanumeric display and stopping the engine if there is an anomaly.



INSTRUMENTS

Shows on the alpha-numeric display the main parameters of the engine and the generator.

• THREE GENERATOR AMMETERS	Compatible with the amperometric transformers of type 30/5, 40/5, 50/5, 60/5, 80/5, 100/5, 150/5, 200/5, 250/5, 300/5, 400/5, 500/5, 600/5, 800/5, 1000/5, 1200/5, 1500/5, 2000/5. Maximum reading of 2000A or 110% of the base scale current of the chosen transformer.
• GENERATOR VOLTMETER	For single-phase or two-phase of nominal value up to 500 V~.
• GENERATOR FREQUENCY METER	From 0 Hz to 85 Hz for alternating voltages with amplitude greater than 30 V~.
• VOLTAMMETER	Displays apparent power up to 1500KVA
• FUEL LEVEL INDICATOR	Displays the percentage of fuel present in the tank.
• WATER OR OIL THERMOMETER	Displays engine oil and water temperatures up to 140°C
• OIL PRESSURE GAUGE	Displays engine oil pressure up to 6 bars
• BATTERY VOLTMETER	For voltages between 9 and 38 volt.
• HOUR METER	With five figures and a maximum reading of 59999. The hour meter numbers flash when it is necessary to perform the periodic maintenance operations planned by the manufacturer of the genset unit.
• TACHOMETER	Displays the number of engine revs up to 8500 rpm

SIMULTANEOUS READING OF THE INSTRUMENTS
WITH ENGINE RUNNING: GENSET VOLTMETER, FREQUENCY METER, and THREE AMMETERS,HOURMETER

TECHNICAL DATA

Battery power supply:	12Vdc and 24Vdc
Voltage supply:	8 ÷ 32V
Suitable for generators with nominal voltage of	220 ÷ 450Vac ±10%; frequency 50 ÷ 60Hz
Consumption with engine stationary:	19mA at 12V 13mA at 24V
Max circuit consumption	170mA at 12V 95mA at 24V
Nominal insulation voltage	
- Terminal board of mains:	380V
- Terminal board of genset:	450V
- Terminal board of battery:	32V
Maximum load on outputs	5 (stopping), 7 (general alarm): 3A
Degree of rear protection:	IP20
Degree of front protection:	IP 64
Temperature range:	–10 ÷ +50 ° C
Weight:	350gr
Dimensions	L144xH96xP49mm
Hole	88x136mm
Hour-meter:	5 digits
Battery voltmeter:	Max 38V, accuracy 2%
Generator voltmeter:	Max 450V, accuracy ±2%
Generator ammeters:	Max 2400A, accuracy ±2%
Frequency meter:	0-85 Hz, accuracy ±0,1 Hz
Tachometer	0-8500 RPM accuracy ±10 RPM
Voltammeter	Max 1500kVA, accuracy ±4%
Accuracy of oil pressure gauge, water thermometer, fuel level indicator	2%

OPERATION AND INSTRUCTION MANUAL

CONTROL UNIT FOR SELF-CONTAINED GENERATING SET TYPE CAM-120/10

It is used to control and operate the generator set: it also engages the generator contactor.

It is equipped with display to show the INSTRUMENTS:

- three ammeters
- three voltmeters
- frequency meter
- wattmeter (1)
- varmeter (1)
- voltammeter (1)
- cosphimeter
- kilowatt-hour

} GENERATOR

(1) TOTAL AND PAR PHASE

- fuel level gauge
- battery voltmeter
- water oil thermometer
- oil pressure gauge
- total hour meter
- partial hour meter
- starting counter
- starting failures counter
- tachometer

THIS HAS PROVISION FOR AUTOMATIC OPERATION. POSSIBILITY OF COMBINATION WITH THE SWITCHING CONTROL UNIT **ATS** TO OBTAIN POWER SWITCHING CONTROL.

- Automatic supervision of faults with messages on the display.
- Texts in 6 languages: Italian, English, French, German, Spanish and Portuguese.
- Remote control (starting and stop).
- Preheating glow plugs management.
- Clock to program starting or stopping the generating set.
- Preventive maintenance warning.
- Programmable weekly selftest.
- Available and fully programmable input for anomaly.
- Possibility of starting the generating set in case of low battery-charge.
- Three-phase voltmetric control. Minimum, maximum voltage, asymmetry and not correct phase sequence of the generator.
- Anomaly historical record (including data from the last 100 occurred anomalies)

MODES OF COMMUNICATION OF CAM-120/10

- CAN Bus Connection SAE J1939.
- Serial ports RS232 and RS485.
- GSM Modem (optional), possibility of displaying the control unit instruments with a mobile phone, operating the starting and stopping and notifying with an SMS message when the generating set is in alarm state.
- MOD Bus protocol.
- Remote operation with personal computer (optional):
  - Reading of the instruments shown on the display of the control unit.
  - Anomaly historical record.
  - Displaying of anomalies and operating status of the generating set.
  - Start stop controls.

TECHNICAL DATA	
Battery power supply	12 Vdc and 24 Vdc
Supply voltage	8 ÷ 32V
Self consumption with engine stopped (STAND BY)	4mA 12V 3mA 24V
Selfconsumption with engine stopped and modem connected (STAND BY)	85mA at 12V 45mA at 24V
Selfconsumption with stopped engine and pressed emergency button	190mA 12V 110mA 24V
Max consumption	265 mA 12V 150 mA 24V
Modem consumption	80 mA 12V 50 mA 24V
Suitable for generators with rated voltage of	220 ÷ 450Vac ±10%; frequency 50 ÷ 60Hz
Rated insulation voltage:	
• Terminal board of genset	500V
• Terminal board of battery	32V
Max load on the outputs	15 (starting) 3W, 17 (stopping) 7W, 19(key) 3W, 6 (glow plugs) 3W, 70 (general alarm) 3W.
Degree of rear protection	IP00
Degree of front protection	IP64
Temperature range	-20 ÷ +50°C
Weight	430 g
Dimensions (LxHxP) mm	157x109x74
Hole mm	88x137
Hour-meter	5 digits
Instruments accuracy: oil pressare gauge, water thermometer, fuel level	2%
Generator voltmeter	Max 476V, accuracy ±1% field of measurement 10 ÷ 253 Vac (phase-neutral) 18 ÷ 476 Vac (phase-phase)
Rated current of the generator ammeter	5 A
Generator ammeter	Max 2400A, accuracy ±1% field of measurement 0,02 (20ma) ÷ 6A
Frequency meter	accuracy ±0,1 Hz frequency field 45 ÷ 85Hz
Voltammeter and cosphimeter accuracy	± 2%
Wattmeter, varmeter and kilowatt-hour-meter accuracy	± 4%
Tachometer	Max 4000 RPM accuracy ± 10 RPM
Serial communication parameters	9600 baud, 8 bit data, 1 bit stop; EVEN parity

INSTRUCTION AND USER MANUAL

CONTROL UNIT FOR SELF-CONTAINED GENERATING SET FOR DIESEL OR PETROL ENGINE
TYPE CAM-109

It controls and commands a generating set.

It is equipped with display to show:

15 INSTRUMENTS

- ammeter
- voltmeter
- frequency meter
- wattmeter
- varmeter
- (1) voltammeter
- cosphimeter
- kilowatt-hour

GENERATOR

- fuel level gauge
- battery voltmeter
- total hour meter
- partial hour meter
- starting counter
- starting failures counter
- tachometer

(1) Only for single-phase systems.
Factory settings:
OFF

IT HAS PROVISION FOR AUTOMATIC OPERATION.
POSSIBILITY OF COMBINATION WITH
THE SWITCHING CONTROL UNIT **ATS**
TO OBTAIN POWER SWITCHING CONTROL.

- Automatic supervision of faults with messages on the display
- Texts in 6 languages: Italian, English, French, German, Spanish and Portuguese
- Remote control (starting and stop)
- Preheating glow plugs management
- Clock to program starting or stopping the generating set
- Preventive maintenance warning
- Programmable weekly selftest
- Available and fully programmable input for anomaly
- Possibility of starting the generating set in case of low battery-charge
- Anomaly historical record (including data from the last 100 anomalies)

TECHNICAL DATA	
Battery power supply	12 Vdc and 24 Vdc
Supply voltage	8 ÷ 32V
Self consumption with engine stopped	4 mA at 12V 4 mA at 24V
Selfconsumption with stopped engine and pressed emergency button	170 mA at 12V 100 mA at 24V
Max consumption	210 mA at 12V 145 mA at 24V
Suitable for generators with rated voltage of	220 ÷ 450Vac ±10%; frequency 50 ÷ 60Hz
Rated insulation voltage:	
• Terminal board of generator	285V
• Terminal board of battery	32V
Max load of the outputs	15 (starting) 3W,
	17 (stopping) 7W,
	19 (key) 3W,
	70 (general alarm) 3W.
Degree of rear protection	IP00
Degree of front protection	IP64
Temperature range	–20 ÷ + 50 ºC
Weight	415 g
Dimensions (LxHxP) mm	157x109x52
Hole mm	88x137
Hour-meter	5 digits
Generator voltmeter	Precision ±1% field of measurement 10 ÷ 300Vac
Rated current of the generator ammeter	5 A
Generator ammeter	Max 2400A, precision ±1% field of measurement 0,02 (20ma) ÷ 6A
Voltammeter and cosphimeter accuracy	± 2%
Wattmeter, varmeter and kilowatt-hour-meter accuracy	± 4%
Tachometer	Max 4000 RPM precision ± 10 RPM

ORDERING DATA

Type CAM - 109 code 00242284

ACCESSORIES SUPPLIED

KIT MU-CAM-109 code 40804471