

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
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
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37

Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97

Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

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Каталог продукции на оборудование для генераторных установок КОМПАНИИ **ELCOS**

CONTROL UNITS FOR AUTOMATIC GENERATOR SETS

Developed to equip automatic emergency panels.

They are intended to check the status of the generator set and the mains, simultaneously showing the most important mains, engine and generator parameters on an easy-to-read display, indicating whenever setpoints are exceeded and other faults occur.



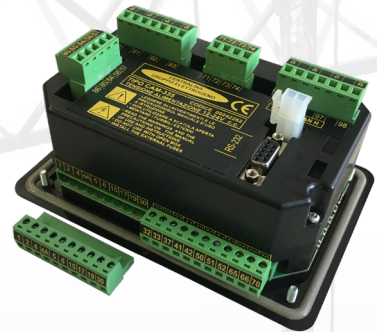
**CAM-684
CAM-685**



CAM-332



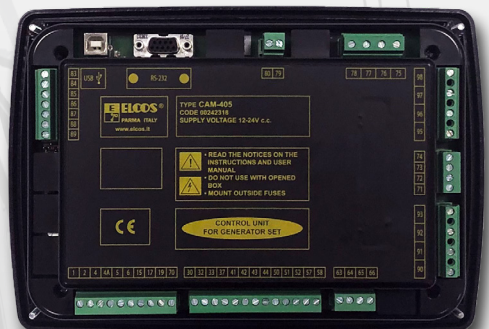
CAM-335



CAM-402



CAM-405



FUNCTIONS

	CAM-684	CAM-685	CAM-335 CAM-405	CAM-332 CAM-402
For petrol engines			●	●
For diesel engines	●	●	●	●
EJP function	●	●	●	●
Option of integrating 7 relays with various functions		●		
Three-phase mains voltmetric control	●	●	●	●
Three-phase generator voltmetric control	●	●	●	●
Glow plug management	●	●	●	●
On-board machine installation	●	●	●	●
Weekly self-test	●	●	●	●
Texts in 6 languages: Italian, English, French, German, Spanish and Portuguese	●	●	●	●
Programmable language			●	
Routine maintenance indicators	●	●	●	●
Remote management with the option of using a GSM modem	●	●	●	
Management of refuelling of working tank from storage tank	●	●	●	
Clock for programming generator set starting or stopping	●	●	●	●
Engine running detection also with PICK-UP	●	●	(CAM-405 only)	
Start/Stop on power demand	●	●	●	
Possibility of starting the generator when the battery charge is low	●	●	●	●
Check of the pinion engaged on the crown gear	●	●		
Fault log (including data from the last 50 faults)	●	●	●	●
Display of faults including with numeric code	●	●	●	●
Management of rental hours			●	
Option of associating inputs and outputs with different functions			●	
Option of password protected programming	●	●	●	

CENTRAL UNIT CONNECTIONS AND FUNCTIONS

CAM-684 CAM-685

REMOTE MANAGEMENT FROM A PERSONAL COMPUTER WITH REMOTE OPERATION SOFTWARE ZW-100

Dimensions (LxHxW) mm 290x200x62



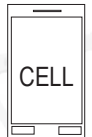
**CENTRAL UNIT
CAM-684
CAM-685**

CONNECTIONS:

- > Direct connection
- > GSM Modem
- > Standard analogue modem
- > Multipoint connection
- > Ethernet connection
- > Internet connection

GSM MODEM

Option of viewing the control unit instruments using a mobile phone, controlling starting and stopping and receiving an SMS notification message when the generator set alarm has been activated.



**BATTERY CHARGER
CBS-031 or 061**

By connecting the battery charger using the special serial cable (RS485), the central unit displays the following conditions:

- > Short circuiting, polarity inversion and battery cable disconnection.
- > Charging current and battery voltage.



TRADITIONAL ENGINE
or
ENGINE equipped with control unit for the electronic control of the injection system. CAN Bus Connection (SAE J1939).



**EXPANSION MODULE
MDE-088**

The expansion module manages 8 digital inputs and 8 digital outputs with the central unit through the RS485 connection. Up to 4 modules can be connected at the same time.

**CONTACTOR OR
POWERED SWITCH CONTROL**



MAINS



GENSET



REMOTE PANEL PRE-685

Remotely repeats the instruments and faults managed by the central unit.

CONNECTIONS AND FUNCTIONS OF CENTRAL UNIT CAM-335 CAM-405

REMOTE MANAGEMENT FROM A PERSONAL COMPUTER WITH REMOTE OPERATION SOFTWARE ZW-100

Display with touch screen

Dimensions (LxHxW) mm
157x109x74



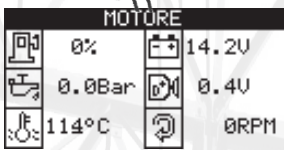
CENTRAL UNIT CAM-335

CONNECTIONS:

- > Direct connection
- > GSM Modem
- > Standard analogue modem
- > Multipoint connection
- > Ethernet connection

GSM MODEM

Option of viewing the control unit instruments using a mobile phone, controlling starting and stopping and receiving an SMS notification message when the generator set alarm has been activated.



example



The controls and reading of the parameters are facilitated by the use of the display with touch screen



EXPANSION MODULE MDE-088

The expansion module manages 8 digital inputs and 8 digital outputs with the central unit CAM-335 through the RS485 connection. Up to 4 modules can be connected at the same time.

Dimensions (LxHxW) mm 70x115x65

GSM MODEM

Option of viewing the control unit instruments using a mobile phone, controlling starting and stopping and receiving an SMS notification message when the generator set alarm has been activated.



TRADITIONAL ENGINE

or

ENGINE equipped with control unit for the electronic control of the injection system. CAN Bus Connection (SAE J1939).

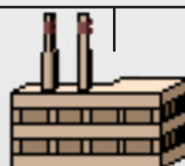
CONTACTOR OR POWERED SWITCH CONTROL



MAINS



GENSET



CONNECTIONS AND FUNCTIONS OF CENTRAL UNIT CAM-332 CAM-402

Dimensions (LxHxW) mm
157x109x74



RS485 Parameter programming using PC

**CENTRAL UNIT
CAM-332**



TRADITIONAL ENGINE
diesel or petrol

FLOAT

CONNECTION OF FLOOD PREVENTION FLOAT.

The generator starts when the float detects flooding during a mains power loss

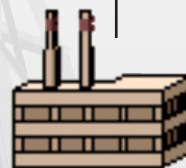
CONTACTOR OR POWERED SWITCH CONTROL



MAINS



GENSET



SWITCHING CONTROL UNIT

Developed to equip switching panels (contactors or powered switches).
Compatible with the CAM-109 and CAM-120/10 control units.

Dimensions (LxHxW) mm
157x109x74



ATS-150

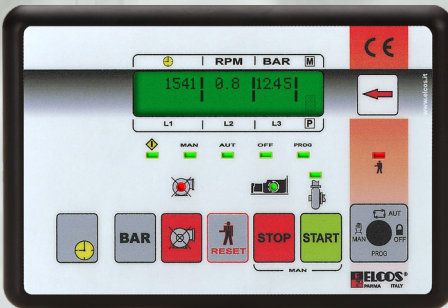
- > Three-phase mains voltmetric control and generator: minimum voltage, phase sequence, frequency, maximum voltage, absence of phase.
- > Buttons to start/stop engine and deviate the utility to the mains or generator.
- > Manual or automatic functions.

COMBINED PANEL AND CONTROL UNIT FOR OPERATING INDEPENDENT GENERATOR SET AND IRRIGATION PUMP

These perform the control and operation function of a generator set and an irrigation motor pump.

Dimensions (LxHxW) mm 157x109x74

CEM-120 type control unit



CEM-120 instruments See page 9





- > Pump water pressure check.
- > Switching off of pump water protection.
- > Automatic monitoring of faults with display messages.
- > Texts in 6 languages: Italian, English, French, German, Spanish and Portuguese.
- > Remote control (starting and stop).
- > Glow plug preheating management.
- > Clock for programming machine starting or stopping.
- > Routine maintenance indicator.
- > Programmable weekly self-test.
- > Available and fully programmable input for fault.
- > Possibility of starting the generator set in case of low battery charge.
- > Three-phase voltmetric control. Minimum and maximum voltage, asymmetry and incorrect phase sequence of the generator.
- > Fault log (including data from the last 100 faults).









TPA-200

supplied with
TPA-200 TYPE WATER PUMP ELECTRONIC PRESSURE SWITCH
(equipped with 3 m-long cable).
Pump water pressure check.

AUTOMATIC AND MANUAL CONTROL UNIT INSTRUMENTS

INSTRUMENTS	SPG-120/20 	CAM-109 	CAM-120/10 	CAM-684 CAM-685 
Dimensions (LxHxW)	144x96x49	157x109x52	157x109x74	290x200x62
Mains voltmeters				●
Generator voltmeters	● (Two-phase)	● (Single-phase)	●	●
Ammeters	● (generator)	● (1 generator ammeters)	● (generator)	● (mains/generator)
Frequency meter	●	●	●	● (mains/generator)
Wattmeter (total and per phase)		●	●	● (mains/generator)
Varmeter (total and per phase)		●	●	● (mains/generator)
Voltammeter (total and per phase)	● (total) (generator)	● (generator)	●	● (mains/generator)
Power factor indicator		●	●	● (mains/generator)
Kilowatt-hour meter (total)		●	●	● (mains/generator)
Partial hour-meter		●	●	●
Total hour-meter	●	●	●	●
Starting counter		●	●	●
Tachometer	●	●	●	●
Pick-up input				●
Battery voltmeter	●	●	●	●
Battery charger ammeter				● (with CBS battery charger)
Starting failure counter		●	●	●
Fuel level gauge	●	●	●	●
Water or oil thermometer	●		●	●
Oil pressure gauge	●		●	●
Pump water pressure gauge				
For diesel engines	●	●	●	●
For petrol engines		●		
CAN Bus (SAE J1939)			●	●
Serial port RS 232	●		●	●
Serial port RS 485			●	●
USB				●
GSM Modem (to be installed externally)			●	●
MODBus RTU Protocol			●	●

 <p>CAM-335</p>	 <p>CAM-332</p>	 <p>CAM-405</p>	 <p>CAM-402</p>	 <p>ATS-150 (switching control unit)</p>	 <p>CEM-120 (motor pump control unit)</p>
157x109x74	157x109x74	243x170x62	243x170x62	157x109x74	157x109x74
●	●	●	●	●	
●	●	●	●	●	●
● (mains/generator)	● (mains/generator)	● (mains/generator)	●		● (generator)
● (mains/generator)	● (mains/generator)	● (mains/generator)	●	● (mains/generator)	● (generator)
● (mains/generator)		● (mains/generator)			●
● (mains/generator)		● (mains/generator)			●
● (mains/generator)	● (mains/generator)	● (mains/generator)	●		●
● (mains/generator)		● (mains/generator)			●
● (mains/generator)		● (mains/generator)			●
●	●	●	●		●
●	●	●	●		●
●	●	●	●		●
●	●	●	●		●
		●			
●	●	●	●		●
●	●	●	●	●	●
●		●			●
●		●			●
●		●			●
●		●			●
●	●	●	●	●	●
●	●	●	●	●	●
●		●			●
●	●	●	●	●	●
●		●			●
●	●	●	●	●	●
●		●			●
●	●	●	●	●	●

CONTROL UNITS FOR INDEPENDENT GENERATOR SETS

Control units for manual generator sets, developed for automatic operation.

Option of coupling with the ATS-150 control unit or with the ATS-LEM and ATS-NEC panels.

They start and monitor the generator set, stopping it in the event of a fault.

They show the main generator set parameters on the display.

CAN Bus Connection (SAE J1939) with engines equipped with control units for the electronic control of the injection system.

Dimensions (LxHxW) mm 157x109x79



CAM-120/10

- > **Manual start/stop buttons.**
- > Three-phase voltmetric control. Minimum and maximum voltage, asymmetry and phase sequence of the generator.
- > Remote start input (request).
- > Available and fully programmable input for fault (times, polarities, stopping option and fault message).
- > Glow plug preheating management.
- > Option of starting the generator when the battery charge is low.
- > Clock for programming engine starting or stopping.
- > Weekly self-test.
- > Texts in 6 languages: Italian, English, French, German, Spanish and Portuguese.
- > Fault log (including data from the last 100 faults).
- > Routine maintenance indicator.

Dimensions (LxHxW) mm 157x109x52



CAM-109

- > **Manual start/stop buttons.**
- > Remote start input (request).
- > Option of starting the generator when the battery charge is low.
- > Available and fully programmable input for faults (times, polarities, stopping option and fault message).
- > Glow plug preheating management.
- > Clock for programming engine starting or stopping.
- > Weekly self-test.
- > Texts in 6 languages: Italian, English, French, German, Spanish and Portuguese.
- > Fault log (including data from the last 100 faults).
- > Routine maintenance indicator.

MULTI-INSTRUMENT WITH CONTROL AND PROTECTION DEVICE

Start-up with externally installed key

DEVELOPED TO PROTECT

generator sets with the option of notification or shut-down in the case of faults due to:

- > Too low oil pressure.
- > Overheating.
- > Battery charge failure (alternator belt breakage).
- > Minimum fuel level.
- > Low coolant level.
- > Generator overloading (does not replace the thermal-magnetic circuit breaker).
- > Generator overfrequency.
- > Generator underfrequency.
- > Generator undervoltage.
- > Battery overvoltage.
- > Battery undervoltage.

Dimensions (LxHxW) mm 144x96x54



SPG-120/20

Texts in 5 languages: ITALIAN, ENGLISH, FRENCH, GERMAN, SPANISH.

AUTOMATIC BATTERY CHARGERS FOR LEAD BATTERIES (12 or 24V)



	Dimensions (LxHxW) mm
CBS-010	70x115x65
CBS-031	97x119x63
CBS-061	123x119x83
CBA-030	136x93x125
CBA-060	168x135x138

CBS - 031 (3.5 A)
CBS - 061 (6 A)

THREE CHARGING LEVELS

- > **RAPID WITH CURRENT CONTROL**
- > **INTERMEDIATE** ——— WITH VOLTAGE CONTROL
- > **MAINTENANCE** ——— WITH VOLTAGE CONTROL

The battery charger signals the following conditions:

- > Short circuit
- > Polarity inversion
- > Battery cable disconnection

DIN rail hook mounting compliant with the DIN 41773 Standard

SERIAL COMMUNICATION PORT RS485

Serial output for the transmission of data on battery status to the control units CAM-684 and CAM-685

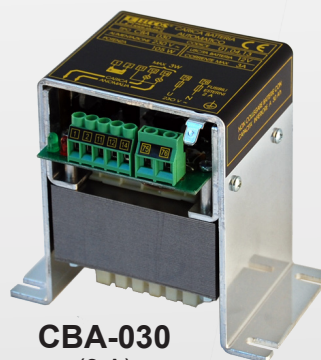
DATA SENT

- > Battery voltmeter
- > Charging current ammeter
- > Battery charge status



CBS-010 (1 A)

- > Rapid charging with current control
- > Intermediate and maintenance charging, with voltage control.
- > Remote signal option
- > Self-protection with cumulative signalling in the event of:
 - > Short circuit
 - > Polarity inversion
 - > Insufficient battery voltage



CBA-030 (3 A)



CBA-060 (6 A)

- > Also with DIN rail hook mounting option.
- > Battery charge status signals with LED (it is not possible to connect remote signals).

ELECTRIC HEATERS FOR DIESEL ENGINES

We recommend that the engine temperature be kept at appropriate values using electric heaters even when the engine is not running.
As a general rule, oil or water heaters are required when the ambient temperature drops below 21°C.

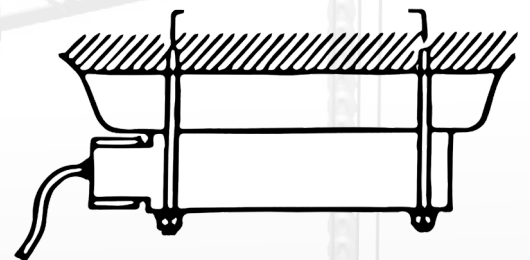
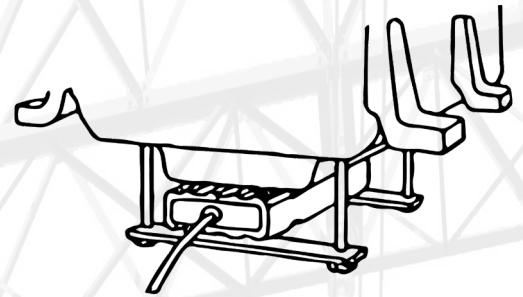
The benefits are:

- > Ability to provide full power quickly
- > Minimised engine wear
- > Minimised energy absorption by batteries
- > Minimised carbon deposits to ensure easier and more reliable ignition.

OIL HEATERS

For applications in contact with the oil sump

Once the heater is assembled in contact with the engine oil sump, it prevents the oil temperature from falling below a certain value. This value is maintained thanks to an internal thermostat.
Electrical connections are made easier thanks to a **3 metre long cable**.



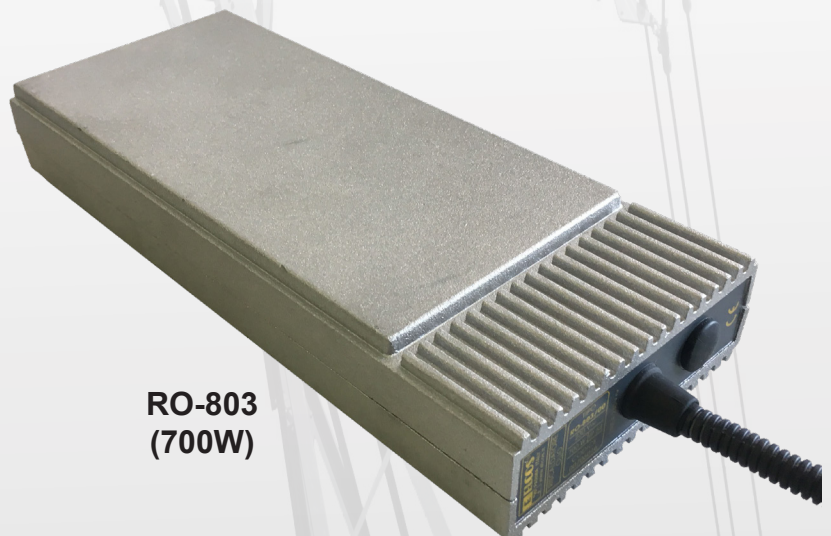
**RO-405
(350W)**



Protection class
IP54

Power supply voltage 230 VAC

**RO-803
(700W)**



WATER HEATERS

For water-cooled diesel engines

The heater prevents the cooling circuit temperature from falling below a certain value. This value is regulated by an internal thermostat. A second internal thermostat protects the appliance from any overheating. The water circulates using the thermosiphon principle.

The key features of our water heaters:

- > Direct assembly, without the use of brackets
- > Presence of a coolant drainage plug
- > Factory fitted 3-metre power feed cable

Special electro-coating applied to body that protects from glycol corrosion

Versions with GAS ½" thread

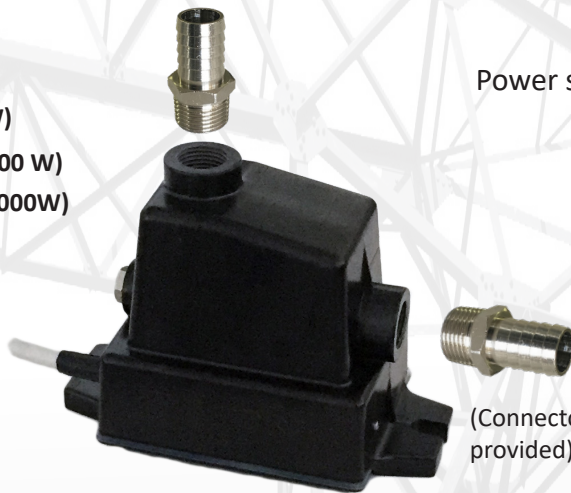
Type

RA-0511 (500 W)

RA-1011 (1000 W)

RA-0511/110 (500 W)

RA-1011/110 (1000W)



Protection class

IP54

Power supply voltage

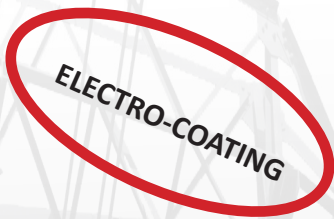
230 VAC (standard)

110 VAC version

type

RA- 0511/110

RA- 1011/110



Version with hose connectors for ø 16 internal hose

Type

RA-0500 (500 W)

RA-1000 (1000W)

RA-1500 (1500W)



Versions with GAS ½" thread

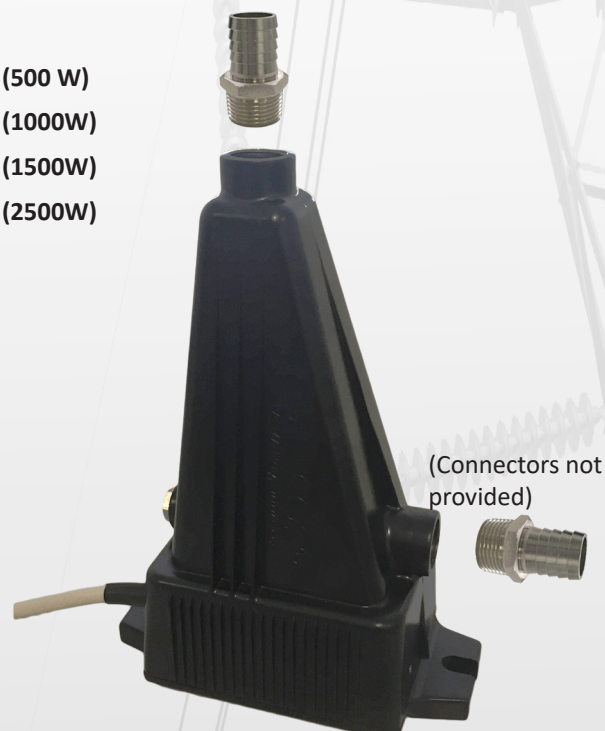
Type

RA-0501 (500 W)

RA-1001 (1000W)

RA-1501 (1500W)

RA-2501 (2500W)



ENGINE PROTECTION DEVICES

Start-up with externally installed key

The devices are manufactured in containers with reduced dimensions **completely embedded in polyurethane resin**

Front protection class

IP66

Rear (connections)

IP00



DIP-806



DIP-521

DEVELOPED TO PROTECT engines by stopping them in the event of fault due to:

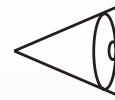
	DIP-806	DIP-804	DIP-521
Too-low oil pressure	●	●	●
Overheating	●	●	●
Inefficient battery charge alternator (belt breakage)	●	●	●
Fuel reserve (engine is not stopped)	●	●	
Low coolant level	●		
Overfrequency	●		

KEY FOR EMERGENCY MANUAL STARTING



Thanks to the key the following functions can be accomplished autonomously

- > Starting
- > Stopping
- > Switching of mains and generator contactors



MAINS/GENSET SWITCHING:

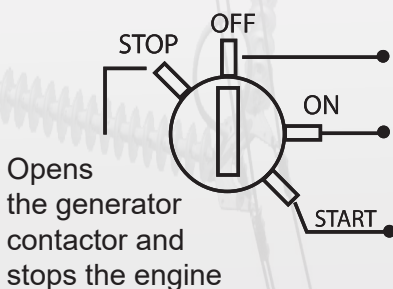
- > Use contactors only.
- > Not recommended for currents higher than 300 A.

Built to be connected in the panels and to control units for automatic generator sets

ADE-200/OS for electromagnets energised when running and de-energised when stopped

ADE-200/ON for electromagnets energised when stopped and de-energised when running

OPERATION



Normal control unit operation

Controls opening of the mains contactor. Sets closure of the generator contactor, which will close after start-up and with the presence of generator voltage

Generator start-up

DURING OPERATION THE GENERATOR SET PROTECTION DEVICES ARE NOT ACTIVE

PULL ELECTROMAGNETS FOR DIESEL ENGINE STOP

CONTINUOUS SERVICE



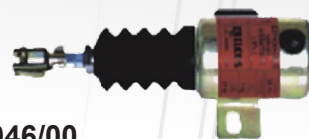
ESC-046/00



ESC-060/00

TYPE	STROKE mm	FORCE Kg	
		at stroke start	at stroke end
ESC-046/00	35	3	12
ESC-060/00	50	7.5	30
ESI-046/00	35	1	25
ESI-060/00	50	5	50

INTERMITTENT SERVICE



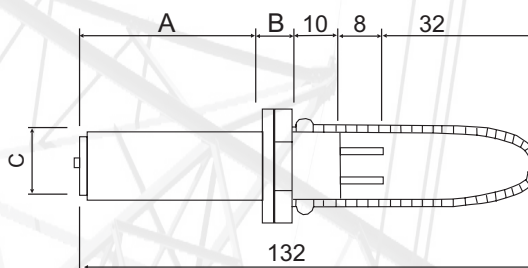
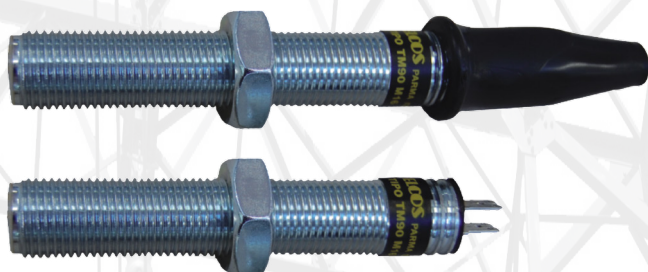
ESI-046/00



ESI-060/00

MAGNETIC TRANSDUCERS

SPEED SENSORS



PICK-UP
 M16X1.5
 M18X1.5
 5/8"-W18-UNF
 3/4"-W16-UNF

TYPE	A	B	C
TM90-M16	68	8	M16X1.5
TM90-M18	66	9	M18X1.5
TM90-5/8	67	8	5/8"W18-UNF
TM90-3/4	66	9	3/4"W16-UNF

RADIATOR COOLANT LEVEL PROBE



Indicates insufficient coolant level in the radiator



For expansion tank made of:
 PLASTIC: SOL - 010/00
 METAL: SOL - 015/00

RUNNING SPEED DETECTION DEVICES

VIA MAGNETIC TRANSDUCER

- MOS - 100/00 > Detects the running engine, simulates terminals W and D+ of a battery charge alternator
- DRV - 100 > Detects overspeed of a diesel engine

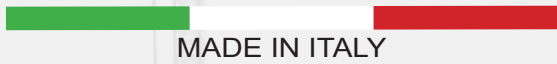
VIA BATTERY CHARGE ALTERNATOR

- DRS - 100 > Detects overspeed of a diesel engine



ELCOS puts forward 8 different control units for genset control panels

We can supply standard control panels with various shapes and sizes for wall, floor and on-board machine mounting.



Our catalogue contains a complete range of accessories for gensets:

- > Electric heaters for diesel engines
- > Electromagnets
- > Speed sensors
- > Automatic battery chargers

Key for emergency manual starting

Thanks to the key the following functions can be accomplished autonomously

- > Starting
- > Stopping
- > Switching of mains and generator contactors



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