



CONTROL UNITS FOR IRRIGATION MOTOR PUMPS



MADE IN ITALY



ELCOS® srl

EN MP-1021

CONTROL UNITS FOR COMMAND AND PRO



CEM-370
(page 4)



CEM-380
(page 5)



CEM-390
(page 6)



CEM-117
(page 7)



CEM-217
(page 7)

FAULTS CAUSING THE MOTOR PUMP TO STOP:

too-low oil pressure	•	•	•	•	•	
overheating	•	•	•	•	•	
alternator belt breakage	•	•	•	•	•	
battery overvoltage				•	•	
minimum fuel level	•	•	•	•	•	
low coolant level	•	•	•	•	•	
inadequate pump water pressure	•	•	•	•	•	
pump water overpressure	•	•	•	•	•	
pump water flow failure						
overspeed				•	•	
fault available	•	•	•	•	•	
low diesel pressure	•	•	•			

START SYSTEM:

key	•	•				
button			•	•	•	
remote				•	•	

REMOTE MANAGEMENT:

via SMS text message						
via ELCOS SMART CONTROL APP						

ENGINE RPM ADJUSTER

manual			•			
automatic						
system pressure maintenance function						
engine rpm maintenance function						

FUNCTIONS/INSTRUMENTS:

hour-meter	•	•	•	•	•	
oil pressure gauge			•	•	•	
engine water or oil thermometer			•	•	•	
tachometer	•	•	•	•	•	
96-hour digital timer	•	•	•	•	•	
fuel level (percentage)	•	•	•	•	•	
battery voltmeter	•	•	•	•	•	
pump protection disable	•	•	•	•	•	
glow plug preheating management	•	•	•	•	•	
oil and battery warnings	•	•	•			
protection triggers	•	•	•	•	•	
emergency stop to be installed externally	•	•	•	•	•	
water press. switch/gauge to be installed externally	•					
digital pump water pressure gauge		•	•	•	•	
electronic pump water pressure transmitter		•	•	•	•	

ANCHORING SYSTEMS

base assembly, with anti-vibration feet	•	•	•		•	
base assembly, with support on request	•	•	•		•	
panel assembly				•		
vertical assembly, with clamps	•	•	•		•	

STAGE V ENGINES

DETECTION OF IRRIGATION MOTOR PUMPS



CIM-130
CIM-131



CIM-136/4GW
CIM-137/4GW



CEM-250/10
(page 14)



CIM-250/10
(page 14)



CEM-256/10
(page 14)



CIM-256/10
(page 14)

[illegible]

CONTROL UNIT FOR IRRIGATION MOTOR PUMP CEM-370 TYPE

CONVENTIONAL PUMP WATER
PRESSURE SWITCH AND GAUGE
to be installed externally



Start/stop with key

Starts, monitors and protects the motor pump and stops it in case of a fault thanks to a solenoid valve or electromagnet.

Displays the main motor pump engine parameters.

ACCESSORIES AVAILABLE ON REQUEST

PUMP WATER PRESSURE SWITCH

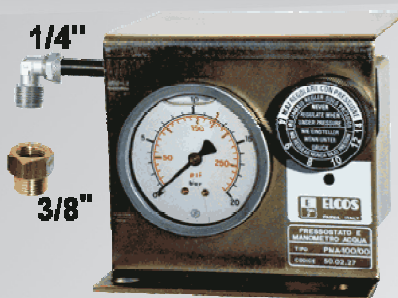


Type

PA-100/00 (4-14 bar)

PA-102/00 (2-5 bar)

PRESSURE SWITCH AND GAUGE PUMP WATER



Type

PMA-100/00 (4-14 bar)

PMA-102/00 (2-5 bar)



On request:

SUPPORT FOR
BASE
ASSEMBLY

CRU-003 type

CONTROL UNIT FOR IRRIGATION MOTOR PUMP CEM-380 TYPE



ELECTRONIC PRESSURE SWITCH with 3m-long cable (supplied standard)

Controls the system's working pressure (range 1–21 bar), doing away with the conventional electromechanical pressure switch.

Start/stop with key

Starts, monitors and protects the motor pump and stops it in case of a fault thanks to a solenoid valve or electromagnet.

Displays the main motor pump engine parameters.



On request:

**SUPPORT FOR
BASE
ASSEMBLY**

CRU-003 type

THE CONTROL UNIT IS EQUIPPED WITH A PRE-WIRED CONNECTOR
Connections are easy and straightforward thanks to the coloured wires

CONTROL UNIT FOR IRRIGATION MOTOR PUMP CEM-390 TYPE



ELECTRONIC PRESSURE SWITCH with 3m-long cable (supplied standard)

Controls the system's working pressure (range 1–21 bar), doing away with the conventional electromechanical pressure switch.



Enables manual adjustment of the engine rpm and automatic slow deceleration before stop, via a linear actuator.

VAR-140 type

Start/stop with button

Starts, monitors and protects the motor pump and stops it in case of a fault thanks to a solenoid valve or electromagnet.

Displays the main motor pump engine parameters, including engine water temperature and oil pressure.



On request:

SUPPORT FOR BASE ASSEMBLY

CRU-003 type

THE CONTROL UNIT IS EQUIPPED WITH A PRE-WIRED CONNECTOR
Connections are easy and straightforward thanks to the coloured wires

CONTROL UNITS FOR IRRIGATION MOTOR PUMP



CEM-217 TYPE

Start/stop with buttons

Starts, monitors and protects the motor pump and stops it in case of a fault thanks to a solenoid valve or electromagnet.

Displays the main motor pump engine parameters.

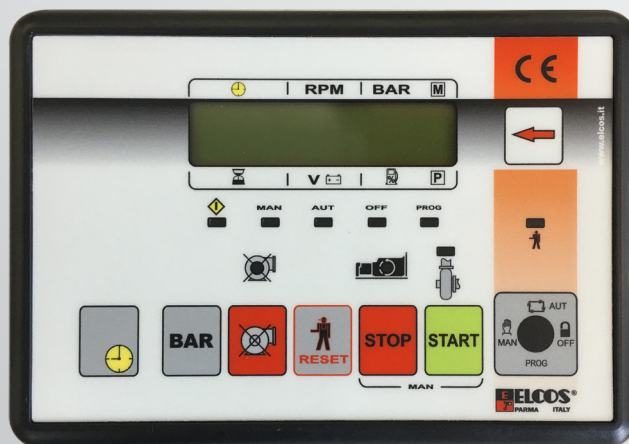
Remote commands

- > Start
- > Stop



ELECTRONIC PRESSURE SWITCH with 3m-long cable (supplied standard)

Controls the system's working pressure (range 1–21 bar), doing away with the conventional electromechanical pressure switch.



CEM-117 TYPE



On request:

**SUPPORT FOR
BASE
ASSEMBLY**

CRU-003 type

CONTROL UNITS FOR MOBILE IRRIGATION SYSTEMS

Complete with electronic transmitter (electronic pressure switch) and digital pump water pressure gauge. Start/stop with buttons.

They automatically monitor the motor pump with a simple start and, thanks to the digital instruments, they improve reading precision and reliability over time.

PANEL ASSEMBLY



CIM-130

CIM-131

CIM-132

Includes function that maintains engine rpm as the load on the pump varies

CAN BUS CONNECTION

Control units are available for engines equipped with electronic injection system control.



ELECTRONIC PRESSURE SWITCH with 3m-long cable (supplied standard)

Controls the system's working pressure (range 1–21 bar), doing away with the conventional electromechanical pressure switch.

STAGE III: FPT, JCB, JOHN DEERE

STAGE V: FPT, DEUTZ, KOEHLER, YANMAR

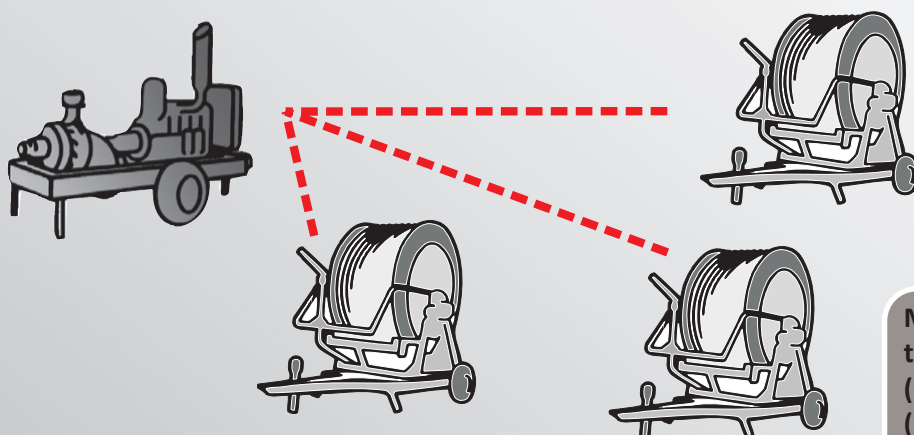


On request:

**SUPPORT FOR
BASE ASSEMBLY**

CRU-CIM type

Remote start option when start-up contact closes

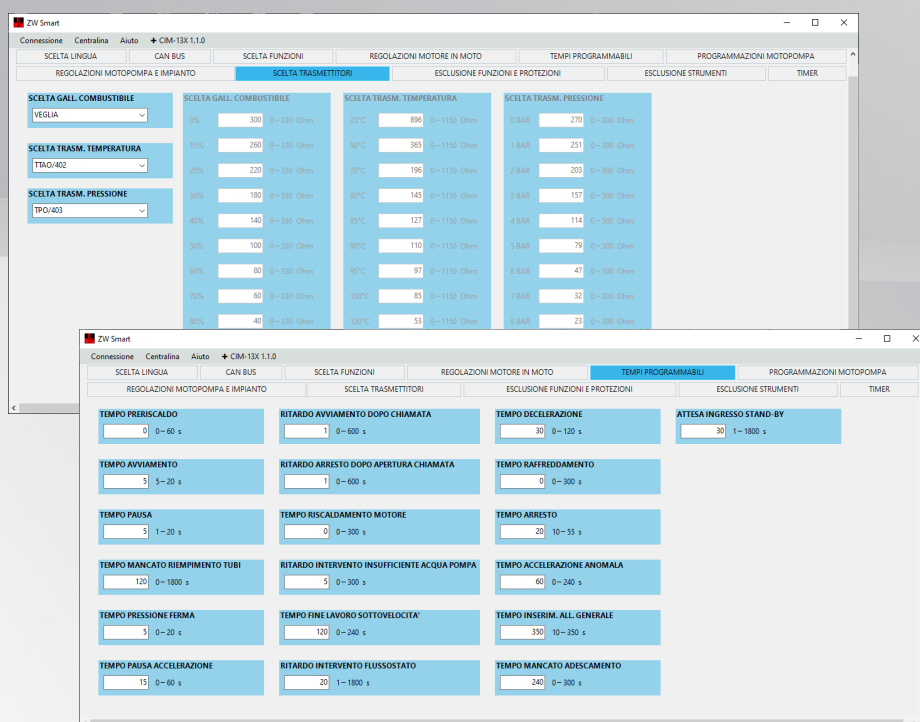


Motor pump accelerator control to maintain the system pressure (CIM-130, CIM-131) or engine rpm (CIM-132) constant.

CIM-132

- > Maintains diesel engine rpm constant as the load on the water pump varies.
- > Controls the accelerator fitted on the diesel engine (via 2-wire linear actuator)
- > Can be used on systems for:
 - water transfer
 - water boosting
 - drip irrigation with very low working pressure

ZW-SMART SOFTWARE



Control units from the CIM-13x series offer the option for connection to PC via **RS-232 serial cable** and programming from the PC using the ZW-SMART software, downloadable for free from the website **www.elcos.it**.

This is useful not only for faster programming but also for serial programming, because it is possible to save, upload or import specific configurations.

CONTROL UNITS FOR MOBILE IRRIGATION SYSTEMS

Complete with electronic transmitter (electronic pressure switch) and digital pump water pressure gauge. Start/stop with buttons.

They automatically monitor the motor pump with a simple start and, thanks to the digital instruments, they improve reading precision and reliability over time.

PANEL ASSEMBLY



CIM-136/4GW

CIM-137/4GW

CIM-138/4GW

Includes function that maintains engine rpm as the load on the pump varies

Complete with 4G/LTE modem to manage system via SMS text or ELCOS SMART CONTROL platform

CAN BUS CONNECTION

Control units are available for engines equipped with electronic injection system control.



ELECTRONIC PRESSURE SWITCH with 3m-long cable (supplied standard)

Controls the system's working pressure (range 1–21 bar), doing away with the conventional electromechanical pressure switch.

STAGE III: FPT, JCB, JOHN DEERE

STAGE V: FPT, DEUTZ, KOEHLER, YANMAR



On request:

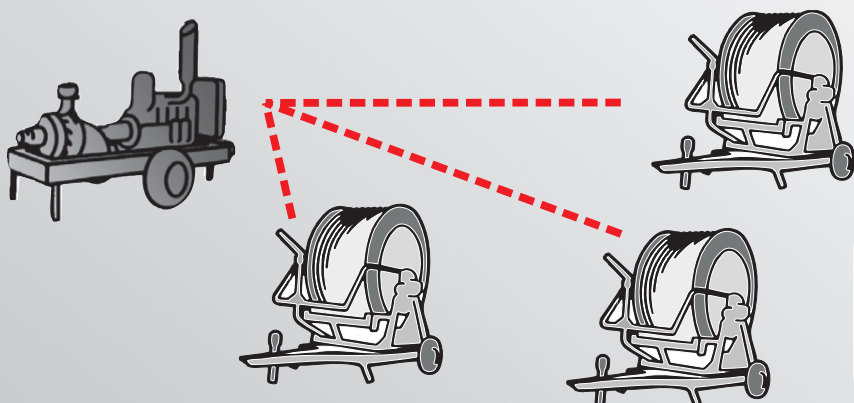
**SUPPORT FOR
BASE ASSEMBLY**

CRU-CIM type

USES YOUR MOBILE PHONE TO MANAGE THE SYSTEM

COMMANDS VIA TEXT MESSAGES

- > Motor pump control option
- > Issues a warning message when a motor pump alarm is triggered
- > Option of viewing the control unit's key instruments



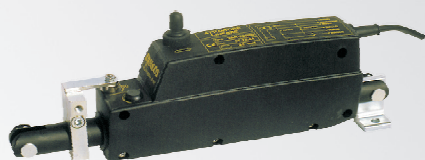
Motor pump accelerator control to maintain the system pressure (CIM-136, CIM-137) or engine rpm (CIM-138) constant.

CIM-138/4GW

- > Maintains diesel engine rpm constant as the load on the water pump varies.
- > Controls the accelerator fitted on the diesel engine (via 2-wire linear actuator).
- > Can be used on systems for:
 - water transfer
 - water boosting
 - drip irrigation with very low working pressure
- > Integrated GPRS modem. System can be managed via SMS text message or ELCOS SMART CONTROL platform.
- > The commands for remotely setting the water pressure are not available.

COMPATIBILITY TABLE

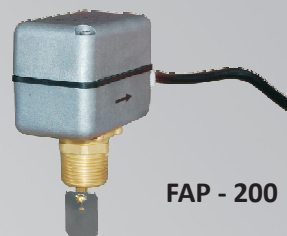
	CIM-130	CIM-131	CIM-132	CIM-136/4GW	CIM-137/4GW	CIM-138/4GW
VAR-202 12V 6-wire linear actuator	•			•		
VAR-140 12V 2-wire linear actuator		•	•		•	•
VAR-144 24V 2-wire linear actuator		•	•		•	•
FAP-200 FLOW SWITCH Signals when there is no flow through the pipeline	•	•	•	•	•	•
CRU-CIM support for base assembly	•	•	•	•	•	•
Stage III/V engine version	•			•		
ZW-SMART Software	•	•	•	•	•	•
SMS				•	•	•
APP ELCOS SMART CONTROL Multiplatform monitoring and telecontrol system				•	•	•



VAR - 202



VAR - 140



FAP - 200

REMOTE IRRIGATION SYSTEM MANAGEMENT



Browser version also available

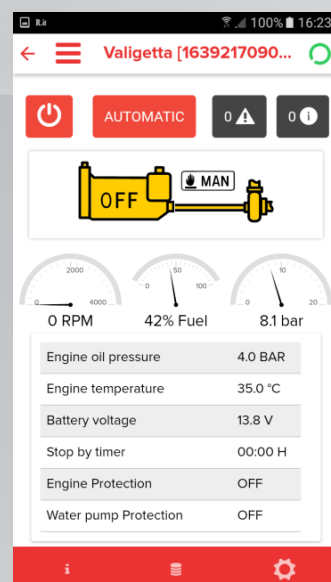
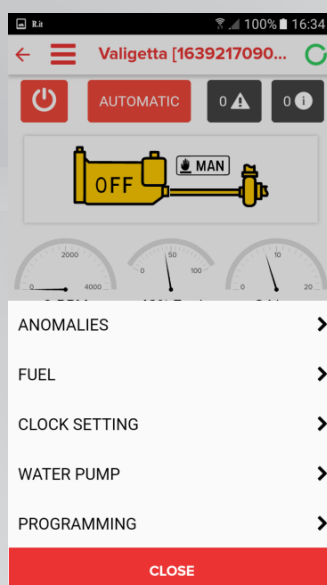
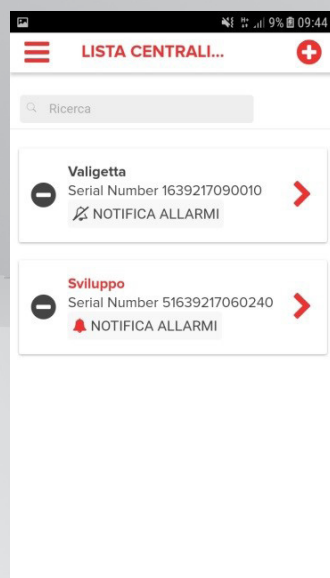
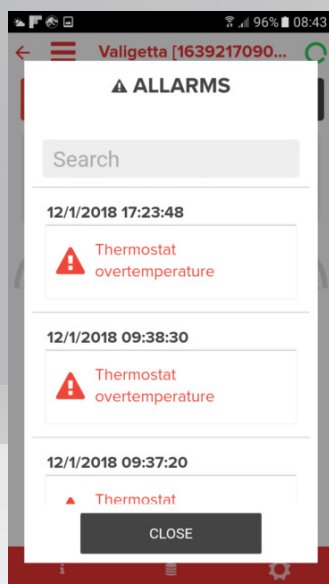


With the “**ELCOS SMART CONTROL**” platform you can remotely control and command multiple ELCOS devices at the same time, allowing you to efficiently monitor their use.

Compatible control units: CIM-136/4GW, CIM-137/4GW, CIM-138/4GW

FEATURES:

- > Remote control and supervision of multiple units from a single account, via APP (IOS or ANDROID) and WEB BROWSER
- > Confirmation of commands issued received
- > On/off command of single motor pump system
- > Operation mode selection (AUTOMATIC or MANUAL)
- > Controller-managed faults displayed in text form, even when the APP is off or in background in the form of notifications
- > Fault differentiation (yellow faults leave engine running, red faults stop engine)
- > Option to display complete fault log for the connected control unit
- > Multiple functions can be displayed in a single screen (operation, mode, status, engine overload protection enabled, pump overload protection enabled, RPM, fuel percentage, water pressure, engine temperature, engine oil pressure, battery voltage, timer)
- > Option to program the control unit clock with system start and stop times
- > Option to program fuel management, pressure setpoint, underpressure and overpressure differentials and to enable or disable pump overload protection.



CONTROL UNITS FOR IRRIGATION MOTOR PUMP

Start/stop with key

They start, monitor and protect the motor pump and stop it in case of a fault thanks to a solenoid valve or electromagnet.

They display the main motor pump engine parameters, including engine water temperature and oil pressure.

Built-in
internal high-gain
antenna



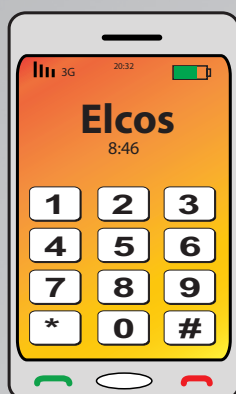
CEM-250/10

CEM-256/10



CIM-250/10

CIM-256/10



CEM-256/10

CIM-256/10

Complete with GSM telephone
alarm message

- > They issue a warning message when a motor pump alarm is triggered
- > Motor pump stop control option
- > Option of viewing the control unit's key instruments

PROTECTION DEVICES

EMBEDDED IN RESIN

IN CASE OF A FAULT, THE PROTECTION DEVICES STOP THE ENGINE THANKS TO AN ELECTROMAGNET OR SOLENOID VALVE



DIP-521/00

- > Low oil pressure
- > Overheating
- > Inefficient battery charge alternator (belt breakage)



DIM-807/00

- > Low coolant level
- > Inefficient battery charge alternator (belt breakage)
- > Low oil pressure
- > Overheating
- > Fuel reserve (no engine stop)
- > **Inadequate pump water pressure**
- > Timer trigger
- > Oil and battery warnings integrated into the device



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

Protection class

front **IP66**
rear **IP00**

CONTROL UNIT AND COMBINED PANELS FOR AUTONOMOUS GENERATING SET AND IRRIGATION PUMP

Controls and operates a generator set and irrigation motor pump.



CEM-120 TYPE

- > Pump water pressure control.
- > Pump water protection disable.
- > Automatic monitoring of faults with display messages.
- > Texts in 6 languages: Italian, English, French, German, Spanish and Portuguese.
- > Remote control (start/stop).
- > Glow plug preheating management.
- > Clock for machine start/stop programming.
- > Routine maintenance indicator.
- > Programmable weekly self-test.
- > Fully programmable inputs for available fault.
- > Possibility of starting the generating 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).

Complete with INSTRUMENT display:

- > pump water pressure gauge
- > three ammeters
- > three voltmeters
- > frequency meter
- > wattmeter (1)
- > varmeter (1)
- > voltammeter (1)
- > power factor indicator
- > kilowatt-hour meter
- > fuel level indicator
- > battery voltmeter

GENERATOR

- > water/oil thermometer
- > oil pressure gauge
- > total hour-meter
- > partial hour-meter
- > starting counter
- > starting failure counter
- > tachometer

(1) TOTAL AND PER PHASE

COMMUNICATION MODES

- > RS232 serial port.
- > 4G/LTE modem (optional), option of viewing control unit instruments using a mobile phone, controlling starting and stopping and receiving an SMS notification message when the machine alarm has been activated.

SUPPLIED STANDARD

ELECTRONIC PRESSURE SWITCH PRESSURE SWITCH - TPA-200 type


(Equipped with 3m-long cable)
Controls the pressure





Also built for outdoor installation onboard the machine.
Epoxy powder-coated galvanized sheet metal structure.



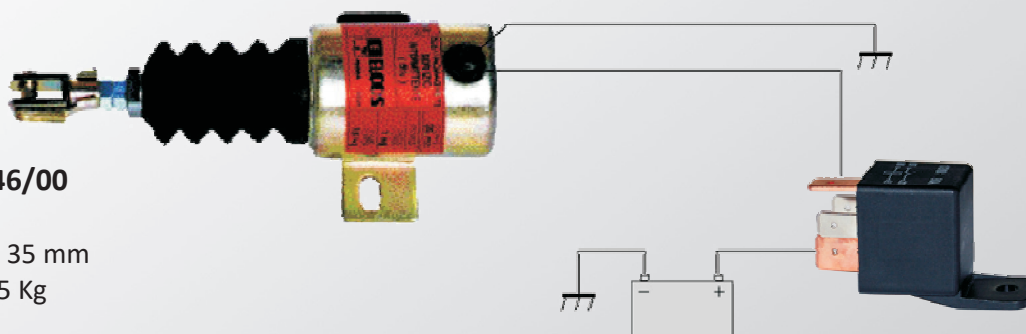
PANEL TYPE	Thermal-magnetic circuit breaker with differential module A	kVA		CONTACTOR CAPACITY A (AC1)	 V
		Standard	max		
GEP-120/11	16	10	11	32	12
GEP-120/17	25	15	17	32	
GEP-120/22	32	19	22	45	
GEP-120/28	40	25	28	60	

ACCESSORIES

STOP ELECTROMAGNETS

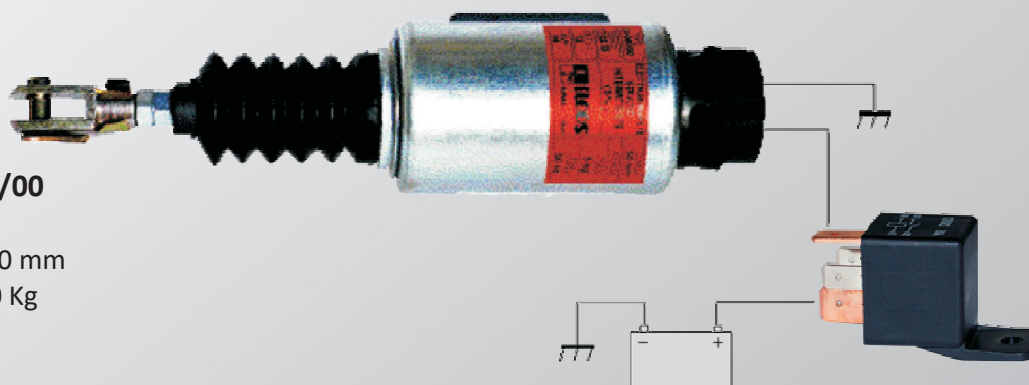
ESI-046/00

Stroke 35 mm
Force 5 Kg

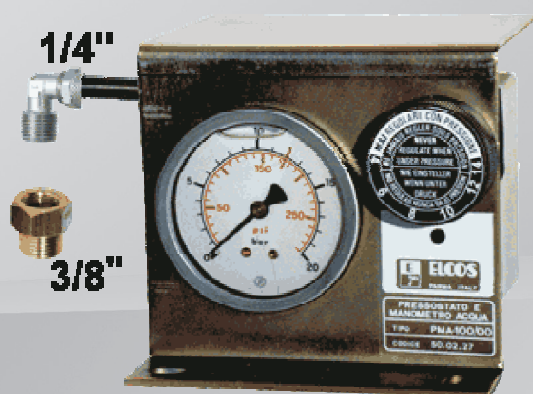


ESI-060/00

Stroke 50 mm
Force 10 Kg



PRESSURE SWITCH AND GAUGE PUMP WATER



PMA-100/00 (4-14 bar)
PMA-102/00 (2-5 bar)

PRESSURE SWITCH PUMP WATER



PA-100/00 (4-14 bar)
PA-102/00 (2-5 bar)

RADIATOR COOLANT LEVEL PROBE

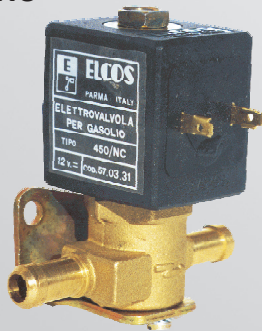


for expansion tank made of: PLASTIC:
E25
METAL: **AST - 015/00**

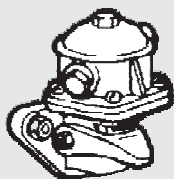
ACCESSORIES

STOP SOLENOID VALVES

450/NC



480/14

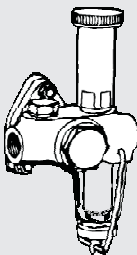


For engines with membrane fuel pump

455/NC



485/14



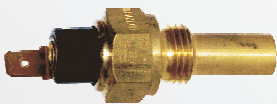
For engines with piston fuel pump

ENGINE THERMOSTATS

WATER OVERTEMPERATURE 97 - M14



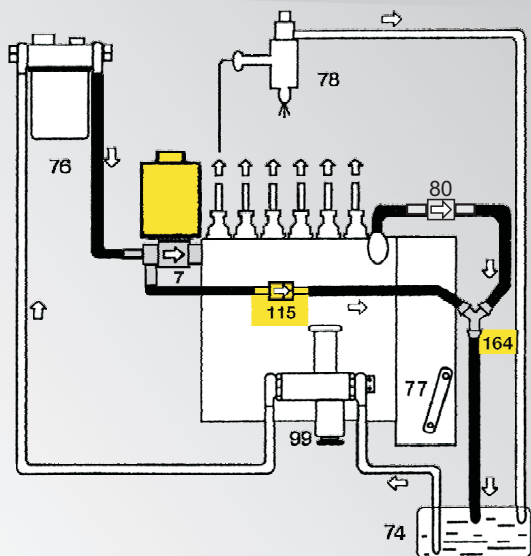
OIL OVERTEMPERATURE 130 - M14



REDUCING NIPPLES



Female	Male
14	16 x 1.5
14	18 x 1.5
14	20 x 1.5
14	22 x 1.5
14	3/8" BSP
14	3/8" NPTF
14	1/2" BSP
14	5/8" UNF



- (7) Electrovalve closed when not energized
- (74) Diesel tank
- (76) Diesel filter
- (77) Injection pump
- (78) Atomizer
- (80) Non-return valve (to be fitted if not included in pump)
- (99) Piston pump
- (115) Exhaust valve (supplied standard)
- (164) Y-fitting (supplied standard)

