CONTROL UNITS FOR IRRIGATION MOTOR PUMPS AND PUMP WATER PRESSURE CONTROL

TYPE CIM-131

INSTRUCTION AND USER MANUAL

- Operates the engine accelerator to keep the pressure of the system constant. (accelerator with 2 wires connected to the control unit)
- Controls the flow of water in the pipe.
- Electronic pressure switch to control the pump water pressure.
- Digital pump water pressure gauge.
- Clock for programming the starting and stopping of the motor pump.
- Delayed acceleration after starting.
- Delayed deceleration before stopping.
- Assembly also on the machine and in the open air.
- CANBus SAE J1939 connection.
- Frost protection.
- Pressure boost function.

MADE TO:

PROTECT
motor pump sets by stopping them in the event of:
- low oil pressure
- over-temperature
- belt breakage
- low coolant level
- low pump water pressure
- pump water overpressure
- overspeed
- A1 } available
- A2 }

DISPLAY
on the panel the functions of:
- hour-meter
- oil pressure gauge
- water or oil thermometer
- tachometer
- pump water pressure gauge
- timer
- fuel level gauge
- battery voltmeter
- pump protection exclusion
- battery and oil lights
- protections intervention
- emergency stop

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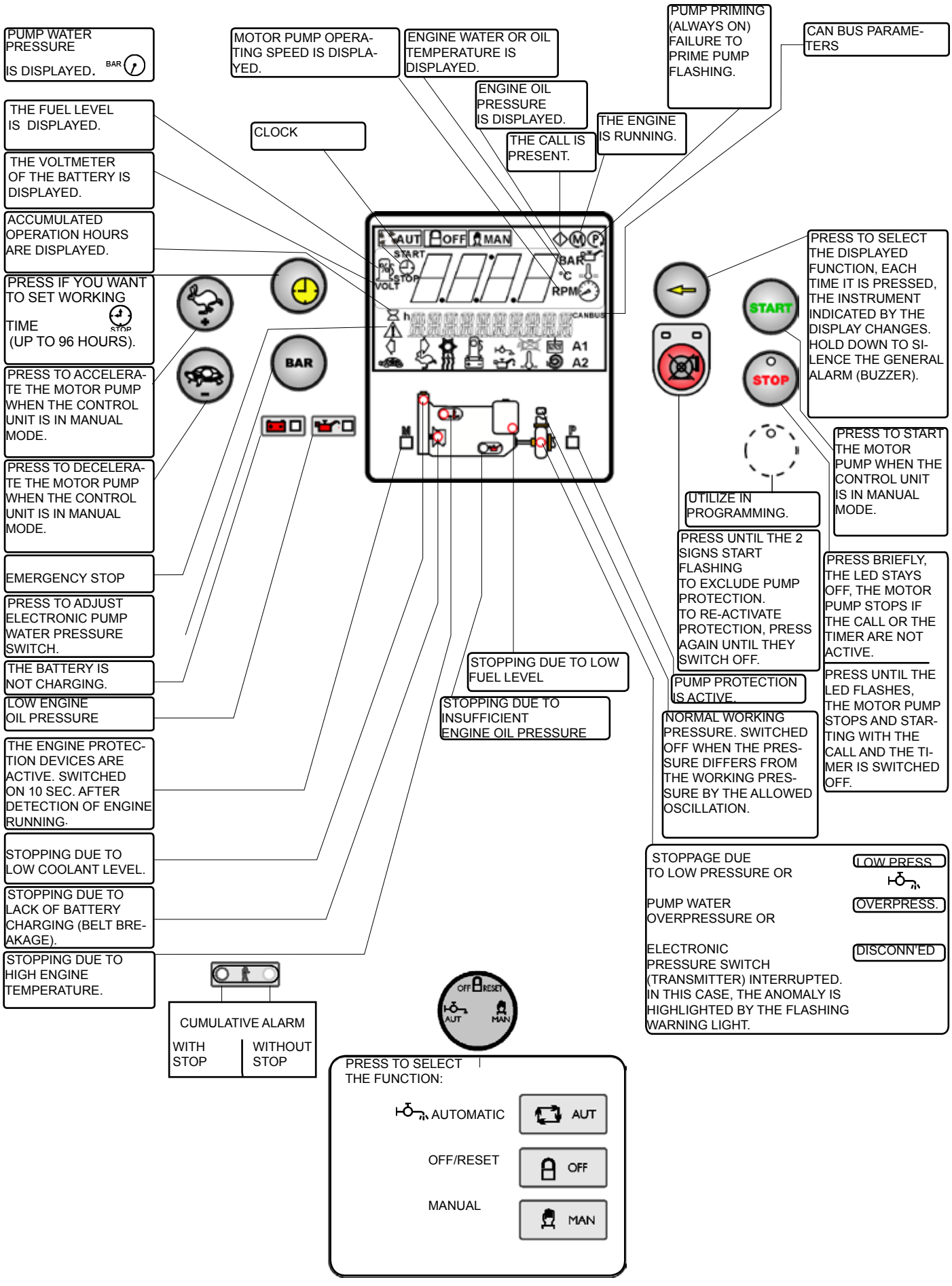
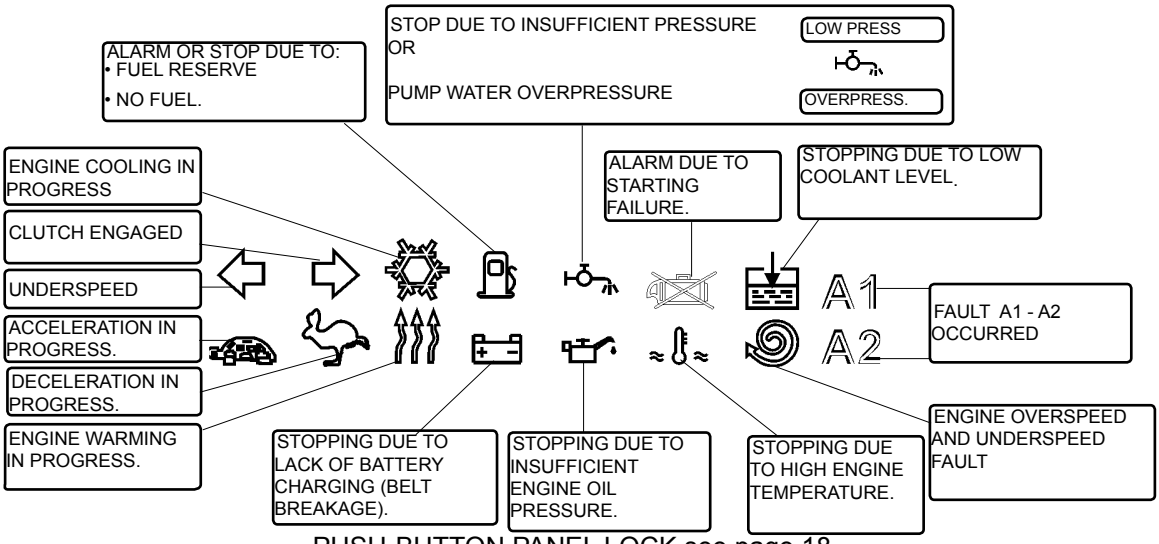
BRIEF INSTRUCTIONS

After starting, the motor pump protects itself automatically.





PUSH-BUTTON PANEL LOCK see page 18.

SWITCHING OFF OF PUMP PROTECTION DEVICES

Button  switches off the pump protection devices:

- failure to prime main pump
- failure to fill pipes
- insufficient pump water pressure
- pump water overpressure
- abnormal acceleration
- adjustment error

- switching off is obtained by holding it down for at least 3 consecutive seconds; the function is indicated by the two intermittent Indicators.
- this switching off is deleted by pressing the button again.

CONTENTS

WORKING PRESSURE CONTROL

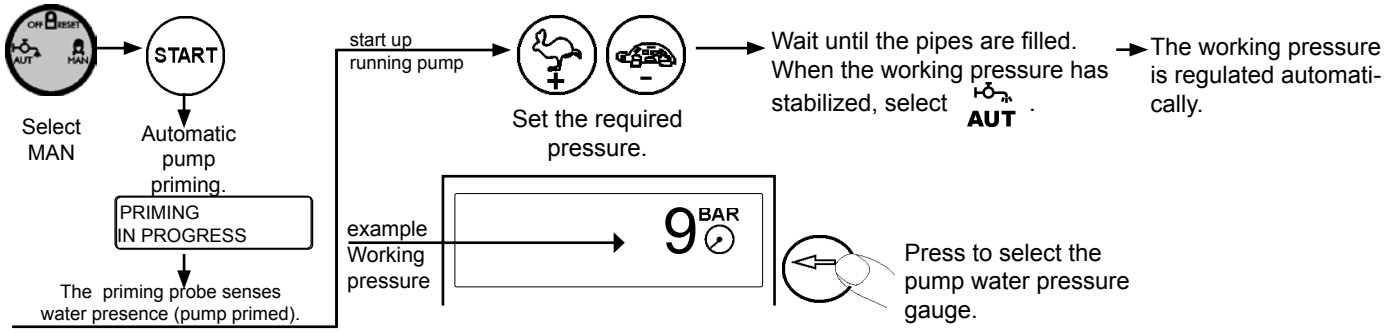
Factory Setting
The motor pump starts up if the motor pump is primed.

Select the MANUAL operating mode, start the motor pump with button START.

Set the required pressure with buttons + / − after 10 seconds BAR STORED is displayed.
Wait until the pipes are filled and the pressure has stabilized at the chosen value. After finishing setting, SELECT OPERATING MODE **AUT**, the pressure of the system will remain set at the chosen pressure.

The chosen pressure value can be corrected with the system under pressure, by pressing buttons + / −.
The working pressure setting is deleted, when the engine is stopped by selecting operating mode OFF/RESET.

SEQUENCE OF OPERATIONS



P Always on: pump primed.
Flashing: failure to prime.

PUMP PROTECTION

No adjusting is required.

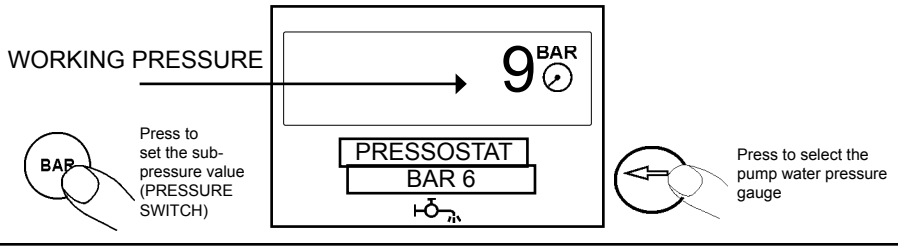
The pump protection is enabled when warning lights PUMP PROTECTION ACTIVE P and water pressure normal come on after the water pressure has remained stable for 2 consecutive minutes, in any case 10 minutes after the engine started.
Intervention of the protection (5 seconds after the pressure goes up or down by **two bars**) stops the engine and is shown on the display:

OVERPRESSURE
Pump water overpressure or

INSUFFICIENT PRESSURE
Insufficient pressure **(subpressure)**

However it is possible to change the **two bars** of pressure lowering (subpressure), by pressing button BAR.
This change is deleted, when the engine is stopped, by selecting the OFF/RESET operating mode.

OVERPRESSURE remains set to two bars, this value is added to the working pressure
(for example, working pressure 9 bars overpressure 11 bars)



FAILURE TO FILL PIPES FAULT

The acceleration starts with the engine running, with pump primed.

The motor pump reaches the redefined WORKING PRESSURE (see BARS STORED) within the TIME OF FAILURE TO FILL PIPES, set to 120 seconds. If air is present in the pipes, the acceleration will be alternated with pauses (of 15 seconds), if the pressure remains steady for 5 seconds. This situation will be repeated several times until the WORKING PRESSURE is reached. If the pressure is not reached within the FAILURE TO FILL PIPES time (120 sec.), FAILURE TO FILL PIPES is displayed on the display and the engine stops.

ABNORMAL ACCELERATION

(Pipe leakage controlled within the limits of the system).
As a result of a leakage, the engine tends to increase the revolutions to bring it back to WORKING PRESSURE. If the revolutions increase by 10% for a time longer than 120 seconds, ABNORMAL ACCELERATION is displayed on the display and the engine stops

OPERATION

To activate the control unit press the button.

FUNCTIONS SELECTION

The function selected with the key is shown by the associated warning light.

- •AUT Automatic pressure control.
- •OFF The engine cannot be started and if running it is stopped.
- •MAN Operation without automatic pressure control.

GLOW PLUGS PREHEATING
ACTIVATED BEFORE STARTING
(GLOW PLUG IS SHOWN ON THE DISPLAY)

The duration of the preheating action can be set, the preheating action ceases before the beginning of the starting process. The preheating control is disabled at the factory since it has been programmed to zero seconds.

THE STARTING OF THE MOTOR PUMP CAN BE OBTAINED IN THREE WAYS:

- CALL
- TIMER

The starting procedures are similar to each other.

Factory Setting
The motor pump starts up if the motor pump is primed.

•KEY 

STARTING WITH CALL

When the call contact closes and the DELAY AFTER CALL CLOSED has elapsed, the control unit controls the glow plugs (if preset) and then the starting. If preset, the motor pump stays on idle for the whole ENGINE WARMING , time, when this time has elapsed the motor pump reaches and maintains the preset working pressure. When the call contact opens once the STOP DELAY after CALL OPENING has elapsed, if preset the motor pump slowly decelerates, when the motor pump is on idle the ENGINE COOLING time starts.
When this time has elapsed the motor pump stops. During its operation the motor pump is protected from the faults controlled by the probes connected to the control unit.

STARTING WITH START BUTTON

To start, a pulse on the button is sufficient.

This takes place on closing of the CALL contact, or with Timer.
Before beginning the starting process, a buzzer is activated for 8 seconds, and after a 3-second pause the starting process begins. To facilitate startup, a special circuit emits a series of four, 5-second pulses, with a 5-second delay between each pulse.

STARTING FAILURE

Blocks the startup cycle if the pump has not started up after the fourth pulse.

DETECTION OF ENGINE RUNNING (M)

It is obtained with measurement of the voltage and frequency of the battery charging alternator. Disables the starter motor.

AUTOMATIC PUMP PRIMING (P) (ALWAYS ON)

The priming pump starts; when the priming probe senses the presence of water, the pump stops and after 15 seconds the engine starting begins.

PUMP PRIMING FAILURE (P) (FLASHING)

The priming probe does not sense the presence of water and a time higher than 240 seconds has elapsed.

OPERATION

CLUTCH

This is engaged on reaching a certain engine speed. This clutch disengages when the engine speed drops below the set value.

ENGINE WARMING

(factory-excluded)

After closing of the call contact or TIMER or SMS pump priming takes place, the engine stays on idle for the time necessary to allow warming of the engine. After this time has elapsed the engine slowly reaches the working pressure. During heating the protection devices are active.

ENGINE COOLING

On opening of the call contact or TIMER the engine slowly decelerates. When the engine is on idle the COOLING TIME starts, and after this time has elapsed the engine stops.

STOP

Stopping is obtained:

- Through intervention of the protection devices.
- Through end of work of the clock and of the timer .
- By pressing the emergency button (to be fitted externally).
- On opening of the call contact.
- At end of work through intervention of the underspeed or the flow switch.

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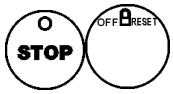
- On pressing buttons 

, the engine stops after slow deceleration.

Stopping can be obtained in two ways:

- With electromagnet de-energized with engine running and energized with it stopped, remaining in this condition for 15 sec. after detection of engine stopped.
  On pressing button OFF RESET the stopping electromagnet stays energized for 60 seconds.
- With electromagnet or electro-valve activated while the engine is running and deactivated when stopped. This condition is maintained even when the engine is stationary.

EMERGENCY STOP

This can be obtained in any operating condition, by installing one or more (latching) buttons. This is indicated by the optical indicator .

STOPPING WITH THE STOP AND OFF-RESET BUTTONS

• On pressing briefly, the led stays off, the motor pump stops if the call or the timer are not active.

• On pressing (3 seconds) until the LED flashes, the motor pump stops and starting by call and by timer are disabled, with the engine stopped the warning light remains flashing. The deletion of this switching off occurs on pressing the stop button (3 seconds) until the flashing warning light goes out.

Press until switching on of OFF.

The engine cannot be started in any way and if it is running it is stopped. Reactivates the protection devices and all the locked functions.

STOPPING FAILURE

This intervenes if the running engine signal is detected 60 seconds after the stop command.

STOPPING FAILURE will be read on the display.

BUZZER

The control unit has its own buzzer. Before starting automatically the motor pump activates the buzzer intermittently for 8 seconds, followed by a pause of 3 seconds (this function can be switched off). This buzzer also operates for the intervention of the protection devices listed on page 8-9. It is possible to place a buzzer externally to be connected to the relevant output.

OPERATION

TIMER

Always enabled, allows if necessary the motor pump to be operated for a settable time (maximum 96 hours), at the end of which it is stopped and on the display the end of work time indicator STOP comes on.

The work time is set by pressing the push-button  (lights up) until the desired value appears on the DISPLAY [ ] .

On releasing the push-button, the timer automatically starts working, continously displaying the remaining work time .

CANCELLING THE SET TIME

To zeroing the set time, tkeep the push-button  pressed until it reaches zero.

OIL AND BATTERY WARNING LIGHTS

Switched on with the automatic or manual function these switch off with the engine running with oil pressure and battery recharging system normal. Control unit in Stand by, warning light pulses .

END OF WORK

(Flow stopped)

When the engine revolutions fall by 10% and the WORKING PRESSURE stays constant for 120 seconds END OF WORK is displayed on the display and the engine stops.
If there is not this condition, a flow switch must be installed (End of work with flow switch see on page 9).

INSTRUMENTS

The control unit incorporates seven instruments that can be selected in sequence by pressing button .

h HOUR-METER - total hours of operation witht he engine running the signal h pulsates, to indicate the correct functioning of the HOUR-METER).

BAR PRESSURE GAUGE - Engine oil pressure
°C THERMOMETER - Engine oil and water temperature
} TRANSMITTERS MOUNTED ON THE ENGINE ON REQUEST
RPM TACHOMETER - Speed of motor pump
BAR PRESSURE GAUGE - Engine water pressure
% INDICATOR - Fuel level percentage
VOLTMETER - Battery voltage

MESSAGES AND CAN Bus INSTRUMENTS

Sent (SAE J1939 protocol Bus) from the engine equipped with control unit for electronic control of the injection system.

ANOMALY MESSAGES

The anomaly messages managed by the injection control unit are indicated on the display [SPN 1234-12] (example) CAN Bus.
Problems of connection [ANOMALY] CAN Bus to the CAN Bus.

CAN Bus INSTRUMENTS

TACHOMETER - OIL PRESSURE GAUGE - THERMOMETER

CUMULATIVE ALAR

LED (red) STEADY LIGHT: anomaly managed by the injection control unit **will cause the engine to stop**.
LED (red) FLASHING LIGHT: anomaly managed by the control unit CIM-131 **will cause the engine to stop.**
LED (yellow) STEADY LIGHT: anomaly managed by the injection control unit **will NOT cause the engine to stop.**
LED (yellow) FLASHING LIGHT: anomaly managed by the control unit CIM-131 **will NOT cause the engine to stop,** or indicates a preventive maintenance operation.
LED OFF ALL OK.

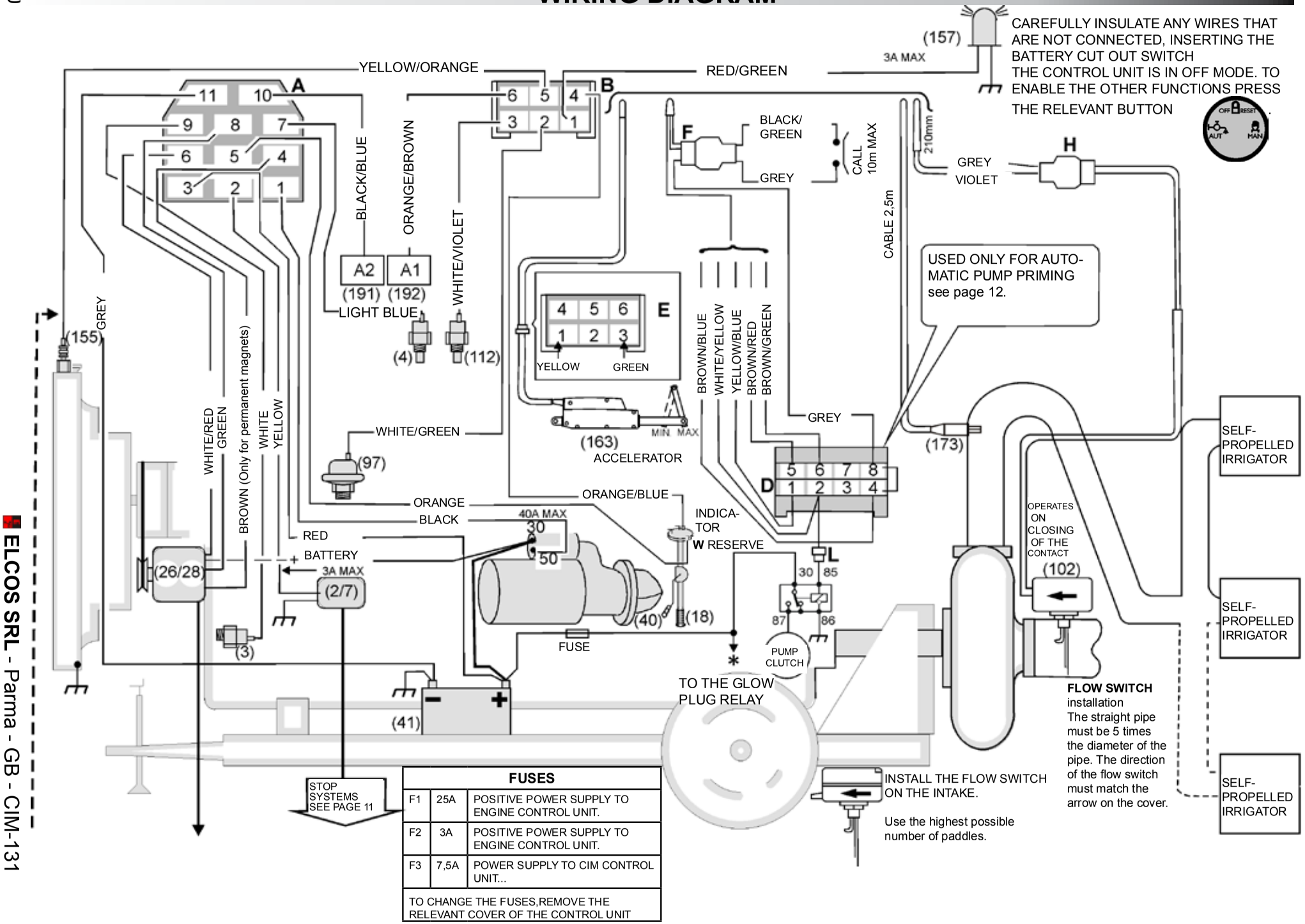
ENGINE AND PUMP PROTECTION DEVICES

The ENGINE PROTECTION DEVICES are enabled when indicator M comes on (10 seconds after detection of engine running (M)). The UNDERSPEED protection device is enabled 10 sec. after the set threshold is exceeded. The PUMP PROTECTION is enabled when P comes on after 2 consecutive minutes of sufficient water pressure, indicated by NORMAL PRESSURE indicator and in any case 10 minutes after the pump started. Intervention due to a fault enables the GENERAL ALARM.

DESCRIPTION OF FAULTS OR FUNCTIONS	INDICATION ON THE FRONT PANEL	MOTOR PUMP PROBE	INSTANT OF ACTIVATION (seconds)	INTERVENTION DELAY (seconds)	PROGRAMMED THRESHOLD (FACTORY SETTING)	STORES THE FUNCTION	DECELERATION	ENGINE COOLING	STOP	INTERVENTION OCCURS WHEN:
BATTERY UNDER-VOLTAGE	BATTERY UNDER-VOLTAGE	BATTERY	Always active	2	11 (12V) 22 (24V)	NOT	=	NOT	DOES NOT STOP	Battery voltage remains lower than the programmed threshold for the whole of the intervention delay time.
BATTERY OVER-VOLTAGE	BATTERY OVER-VOLTAGE			5	16 (12V) 32 (24V)	YES	SLOW	NOT		Battery voltage exceeds the programmed threshold for the whole of the intervention time.
OVER-HEATING DETECTED BY THERMOSTATIC SWITCH	OVER-HEATING	THERMOSTATIC SWITCH	With running engine	2	=	YES	SLOW	YES	WITH STOP	The temperature detected by the transmitter exceeds the set threshold.
FUEL RESERVE	FUEL RESERVE Flashing	FUEL FLOAT TERMINAL **T**	Always active	5	10%	NOT	=	NOT	DOES NOT STOP	The fuel level remains lower than the threshold for the whole of the intervention delay time.
NO FUEL	NO FUEL Always on	FUEL FLOAT TERMINAL **W**		5	=	YES	SLOW	YES	WITH STOP	
LOW OIL PRESSURE	LOW OIL PRESSURE	OIL PRESSURE SWITCH	10 after detection of running engine	2	=	YES	QUICK	NOT	WITH STOP	The pressure is lower than the threshold set by the pressure switch.
STOPPING FAILURE	STOPPING FAILURE	ELECTRO-VALVE OR ELECTRO-MAGNET	After the stop command	60	=	YES	=	NOT	DOES NOT STOP	The engine running signal is detected after the stop command and the intervention delay time has elapsed.
LOW RADIATOR FLUID LEVEL	LOW RADIATOR LEVEL	LEVEL PROBE	Always active	5	=	YES	SLOW	NOT	WITH STOP	The coolant falls below the electrode and the intervention delay has elapsed.
CHARGING ALTERNATOR FAULT (BELT BREAKAGE)	CHARGING ALTERNATOR FAULT	ALTERNATOR	10 after detection of running engine	5	=	YES	SLOW	NOT	WITH STOP	Alternator does not recharge the battery and the intervention delay time has elapsed.
STARTING FAILURE	STARTING FAILURE	BATTERY -Starting Motor	Always active	=	=	YES	QUICK	NOT	WITH STOP	The whole series of starting attempts is unable to start the engine.

DESCRIPTION OF FAULTS OR FUNCTIONS	INDICATION ON THE FRONT PANEL	MOTOR PUMP PROBE	INSTANT OF ACTIVATION (seconds)	INTERVENTION DELAY (seconds)	PROGRAMMED THRESHOLD (FACTORY SETTING)	STORES THE FUNCTION	DECELERATION	ENGINE COOLING	STOP	INTERVENTION OCCURS WHEN:
THE END OF WORK FUNCTION DUE TO FLOW SWITCH INTERVENTION	END OF WORK FLOW SWITCH ⇦	FLOW SWITCH	When the pump protection active P warning light comes on	20	=	NOT	SLOW	YES	WITH STOP	There is no water flow and the intervention delay has elapsed.
AVAILABLE FAULT INPUT A1	A1	=	Always active	5	=	YES	SLOW	YES	WITH STOP	The input is negative (-) and the intervention delay has elapsed.
AVAILABLE FAULT INPUT A2	A2		With running engine							
FAILURE TO PRIME MAIN PUMP	FAILURE TO PRIME (P) (flashing)	PUMP PRIMING LEVEL PROBE	With running engine	240	=	YES	=	NOT	WITH STOP	The priming probe does not sense water presence and the intervention delay has elapsed.
FAILURE TO FILL PIPES	FAILURE TO FILL	ELECTRONIC PRESSURE SWITCH		120	=	YES	SLOW	NOT	WITH STOP	The working pressure is not reached and the intervention delay has elapsed.
OVERSPEED	OVERSPEED	ALTERNATOR TERMINAL W	Always active	2	4000 RPM	YES	=	NOT	WITH STOP	The speed remains higher than the programmed threshold for the entire duration of the intervention delay.
INSUFFICIENT PUMP WATER PRESSURE	INSUFFICIENT WATER PRESSURE	ELECTRONIC PRESSURE SWITCH	After detection of working pressure and in any case 600" after the pump started	5	=	YES	SLOW	YES	WITH STOP	The pump water pressure remains lower for the entire duration of the intervention delay.
PUMP WATER OVERPRESSURE	PUMP OVERPRESSURE									The pump water pressure remains higher for the entire duration of the intervention delay.
ABNORMAL ACCELERATION	ABNORMAL ACCELERATION		With running engine	60	Allowed acceleration percentage 20%	YES	SLOW	NOT	WITH STOP	The speed remains higher than the programmed threshold for the entire duration of the intervention delay.
END OF WORK DUE TO UNDERSPEED INTERVENTION	UNDERSPEED END OF WORK ⇦	ALTERNATOR TERMINAL W	When the pump protection active warning light P comes on.	120	Allowed deceleration percentage 10%	NOT	SLOW	YES	WITH STOP	The speed drops below the programmed threshold and the working pressure remains constant for the entire duration of the intervention delay.
EMERGENCY STOP	EMERGENCY STOP ⚠	EMERGENCY BUTTON	Always active	=	=	YES	=	NOT	WITH STOP	Emergency button is pressed.
ADJUSTMENT ERROR	ADJUSTMENT ERROR	ALTERNATOR TERMINAL W	With running engine	120	=	YES	=	NOT	WITH STOP	The rotation speed of the engine has not changed after 120 seconds.
PUMP WATER PRESSURE TRANSMITTER	TPA DISCONNECTED	ELECTRONIC PRESSURE SWITCH	ALWAYS ACTIVE	60	=	YES	SLOW	NOT	WITH STOP	The pressure transmitter circuit is disconnected.

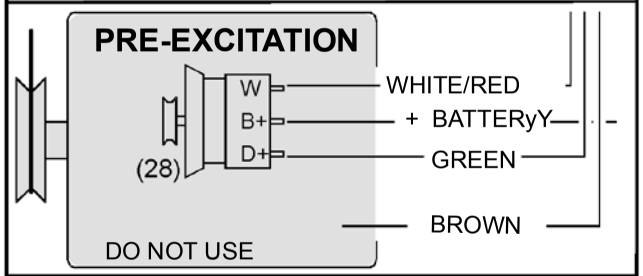
WIRING DIAGRAM



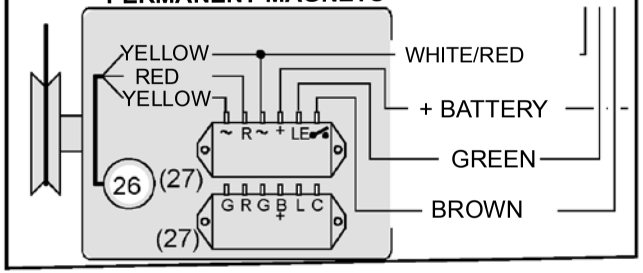
FUSES		
F1	25A	POSITIVE POWER SUPPLY TO ENGINE CONTROL UNIT.
F2	3A	POSITIVE POWER SUPPLY TO ENGINE CONTROL UNIT.
F3	7,5A	POWER SUPPLY TO CIM CONTROL UNIT...
TO CHANGE THE FUSES,REMOVE THE RELEVANT COVER OF THE CONTROL UNIT		

CHARGE ALTERNATOR:

PRE-EXCITATION



PERMANENT MAGNETS

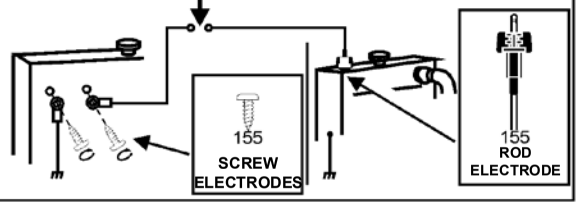


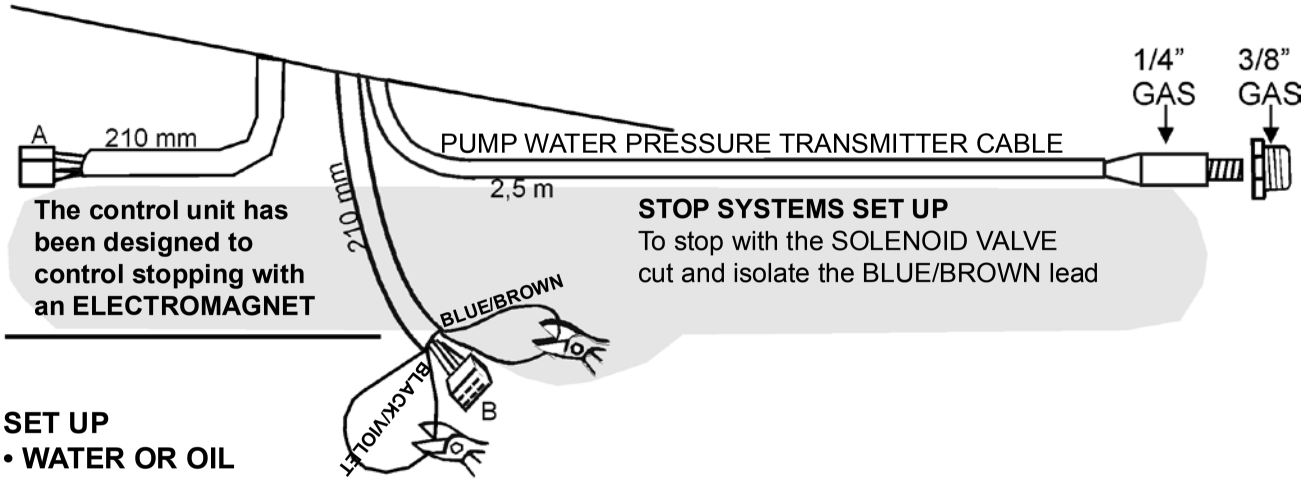
IF THE FUNCTION- LOW COOLING LIQUID LEVEL IS NOT USED CONNECT YELLOW/ORANGE WIRE TO EARTH

COOLANT LEVEL PROBE

FOR RADIATORS WITH PLASTIC EXPANSION TANK

FOR RADIATORS WITH METAL EXPANSION TANK





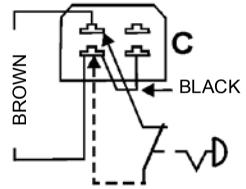
The control unit has been designed to control stopping with an ELECTROMAGNET

STOP SYSTEMS SET UP
To stop with the SOLENOID VALVE cut and isolate the BLUE/BROWN lead

SET UP
- **WATER OR OIL THERMOMETER**
- **OIL PRESSURE GAUGE**

To view the water/oil THERMOMETER and the oil PRESSURE GAUGE, connect the transmitters to the respective wires of the unit, then CUT and isolate the BLACK/VIOLET wire.

ELIMINATE THE BRIDGE WHEN CONNECTING THE EMERGENCY BUTTON



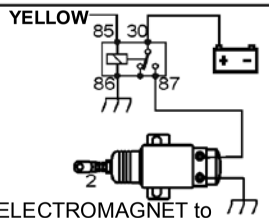
EMERGENCY STOP
THIS CAN BE OBTAINED WITH A LATCHING BUTTON. ON RELEASING THE EMERGENCY BUTTON, STARTING OR MOTION OF THE ENGINE IS STOPPED. TO RESET, RELEASE THE BUTTON, PRESS

AND SELECT OFF

STOP SYSTEMS

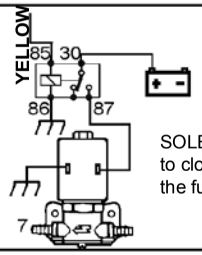
EXCITED IN STOP MODE

WARNING! : IT IS NOT POSSIBLE TO MOUNT THE EMERGENCY STOP BUTTON ON A STOP SYSTEM WITH ELECTROMAGNETS

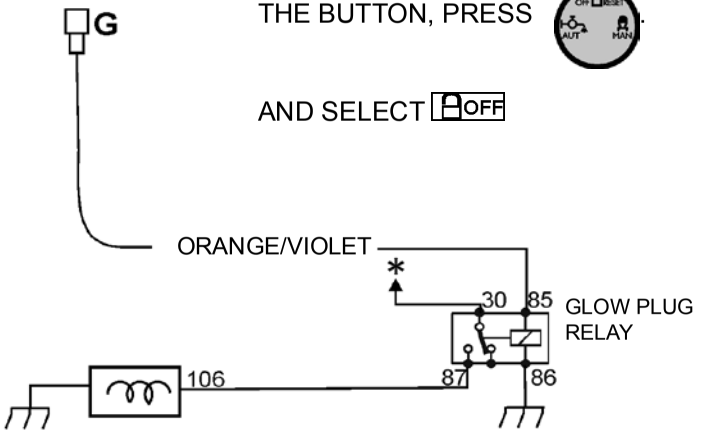


ELECTROMAGNET to activate the engine STOP lever.

EXCITED WHILE RUNNING



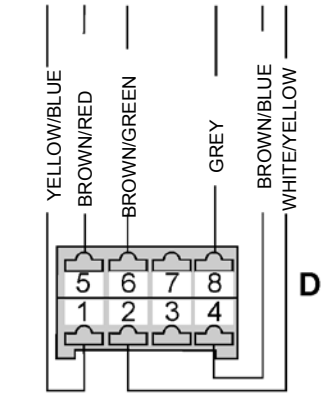
SOLENOID to close the fuel

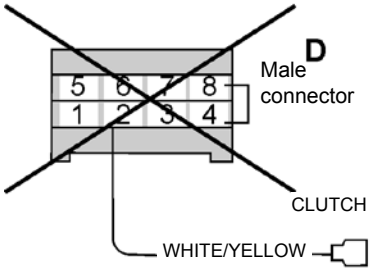


SETTING THE TACHOMETER see page 14

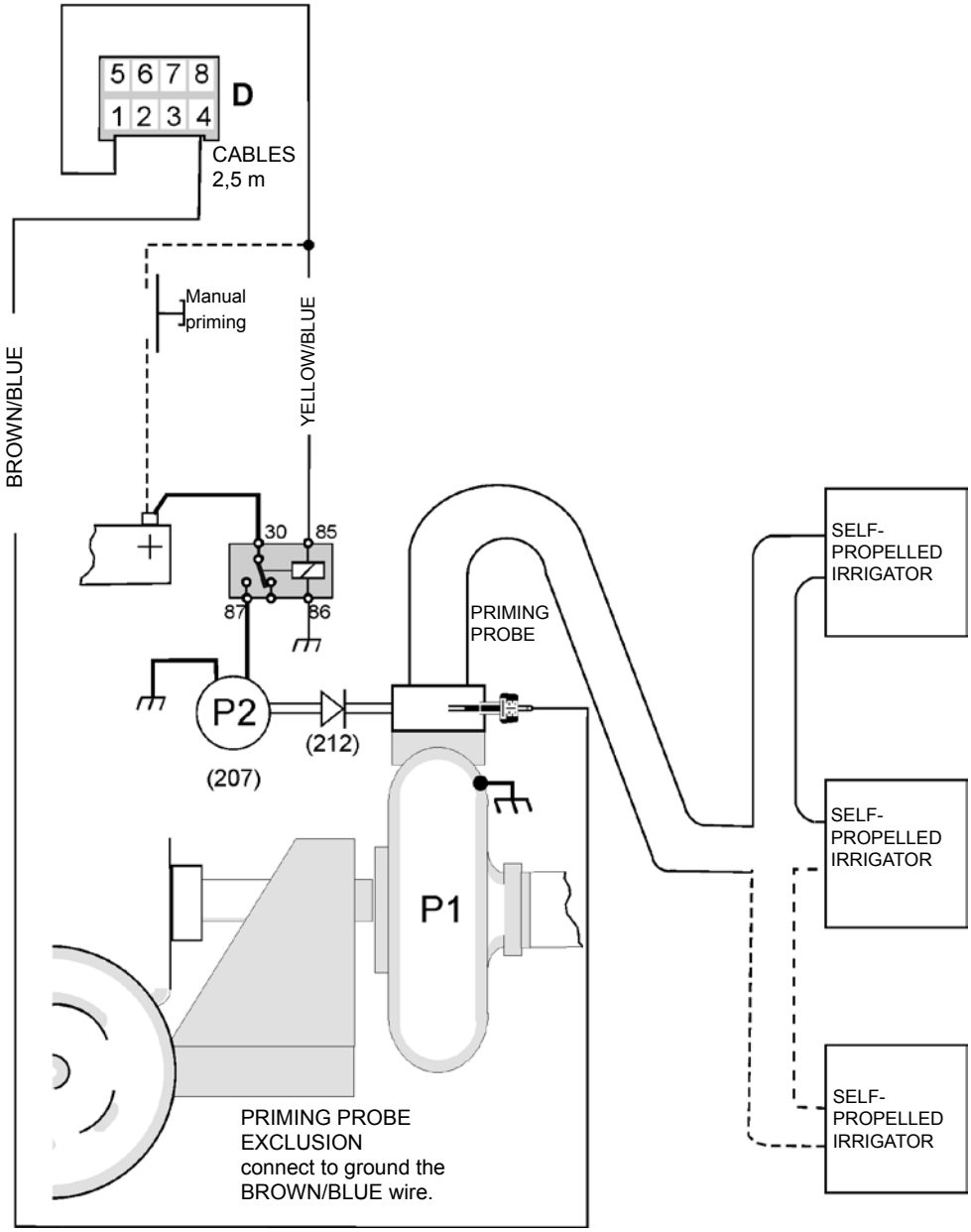
AUTOMATIC PUMP PRIMING CONNECTIONS

FEMALE
CONNECTOR





To connect
PUMP PRIMING, remove
the male connector,
insert the connector with
the wires brown/blue
yellow/blue.



OPERATION
AUTOMATIC PRIMING

The priming pump (P2) starts,
when the water reaches the priming
probe, lthe pump stops.

PRIMING FAILURE
The pump is stopped if the priming
probe does not sense the presence
of water within 240 sec..

ACCESSORIES

ON REQUEST

(2/7) ELECTROMAGNET OR ELECTRO-VALVE
(3) OIL PRESSURE SWITCH
(4) THERMOSTATIC SWITCH
(18) FUEL FLOAT FOR INDICATOR AND RESERVE
(97) OIL PRESSURE TRANSMITTER
(102) WATER FLOW SWITCH
(112) TEMPERATURE TRANSMITTER
(155) RADIATOR LIQUID LEVEL PROBE
(163) SPEED VARIATOR
(173) PUMP WATER PRESSURE TRANSMITTER (SUPPLIED)

(26) PERMANENT MAGNETS CHARGE ALTERNATOR
(27) ALTERNATOR REGULATOR
(28) PRE-EXCITATION CHARGE ALTERNATOR
(40) STARTING MOTOR
(41) BATTERY
(106) GLOW PLUGS
(157) VISUAL INDICATOR (GENERAL ALARM)
(191) A1 AVAILABLE FOR PROTECTION PROBE
(192) A2 AVAILABLE FOR PROTECTION PROBE
(207) PRIMING PUMP
(212) NON-RETURN PRIMING VALVE.

NOTICES

Only for starting and surveillance of the diesel motor pump and stops it if there are anomalies in the parts controlled by probes.
It has been designed to be installed also on the machine.

Warning:
adhere closely to the following advice

- Connect always following the wiring diagram shown on page 10-11.
- Each technical operation must take place on the motor pump unit with the engine stopped and with terminal 50 of the starter motor disconnected.
- Check that the line loading and the consumption of the connected equipment are compatible with the described technical characteristics.
- Install in such a way that there is always adequate heat disposal.
- Always install under other equipment which produces or spreads heat.
- Make sure that no copper conductor cuttings or other waste material fall inside the control unit.
- Never disconnect the battery terminals with the engine running.
- Never use a battery charger for the emergency start-up, this could damage the control unit.
- To protect the safety of persons and the equipment, before connecting an external battery charger, disconnect the electrical plant terminals from the battery poles.

THIS CONTROL UNIT IS NOT SUITABLE FOR OPERATING IN THE FOLLOWING CONDITIONS:

- Where the environmental temperature is outside the limits indicated in the Technical Data.
- Where the air pressure and temperature variations are so rapid as to produce exceptional condensation.
- Where there are high levels of pollution caused by dust, smoke, vapour, salts and corrosive or radioactive particles.
- Where there are high levels or heat from radiation caused by the sun, ovens or the like.
- Where attacks from mould or small animals are possible.
- Where there is the risk of fire or explosions.
- Where the control unit can receive strong vibrations or knocks.

ELECTROMAGNETIC COMPATIBILITY

This control unit functions correctly only if inserted in plants which conform with the CE marking standards; it meets the exemption requirements of the standard EN61326-1 but it cannot be excluded that malfunctions could occur in extreme cases due to particular situations.
The installer has the task of checking that the disturbance levels are within the requirements of the standards.

CONDUCTION AND MAINTENANCE

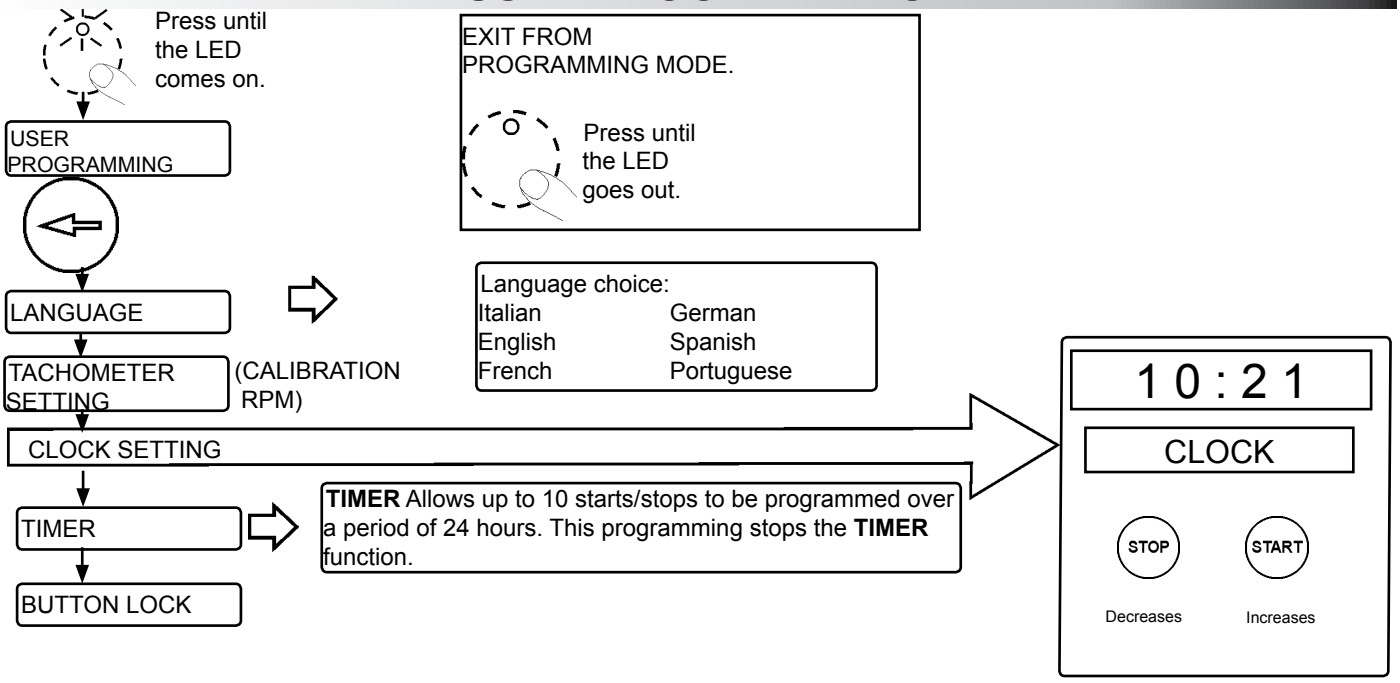
The following maintenance operations should be performed every week:

- check that the indicators function;
- check the batteries;
- check that the conductors are tight, check the condition of the terminals.

UNLESS WE MAKE A WRITTEN DECLARATION STATING THE CONTRARY, THIS CONTROL UNIT IS NOT SUITABLE FOR USE AS A CRITICAL COMPONENT IN EQUIPMENT OR PLANTS RESPONSIBLE FOR KEEPING PERSONS OR OTHER LIVING BEINGS ALIVE.

YOUR ELECTRICAL TECHNICIAN CAN ASK US ANYTHING ABOUT THIS CONTROL UNIT BY TELEPHONING ONE OF OUR TECHNICIANS

USER PROGRAMMING

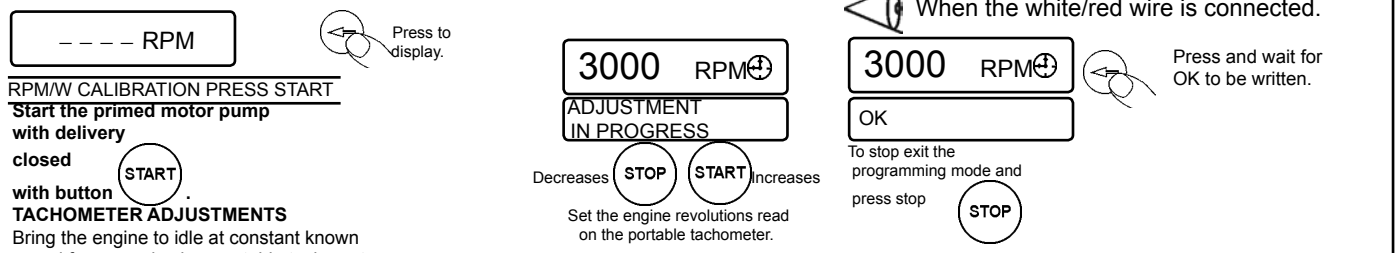


LANGUAGE CHOICE. The language set up is ITALIAN; the languages that can be selected are: ENGLISH - FRENCH - GERMAN - SPANISH - PORTUGUESE.

TACHOMETER ADJUSTMENT WITH CHARGING ALTERNATOR FREQUENCY W.

NECESSARY PROGRAMMING

When the white/red wire is connected.



CLOCK allows up to 10 STARTS/STOPS to be programmed over a period of 24 hours. Carry out setting operations with the engine stopped. The control unit accepts only complete programming settings: START 1 → STOP 1

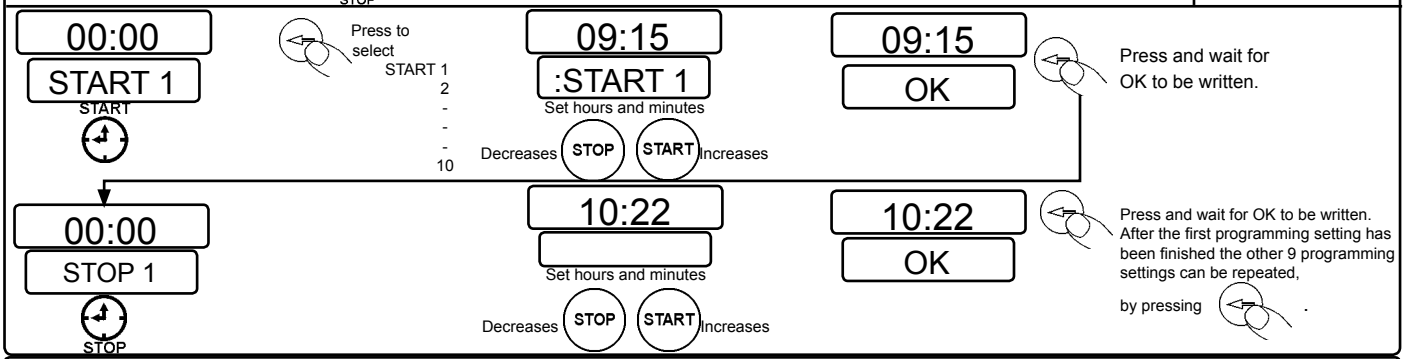
START 2 → STOP 2 and so on

If a start is programmed, but a stop is not programmed,

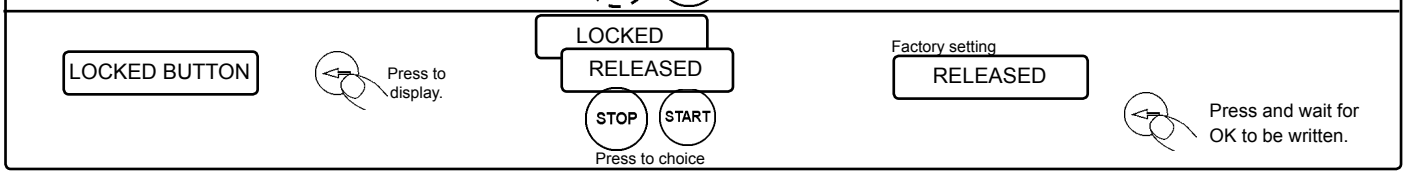
ERROR is written on the display. While running with the engine started by clock, indicator START stays on.

During stopping by clock, indicator STOP comes on and stays on until the next start.

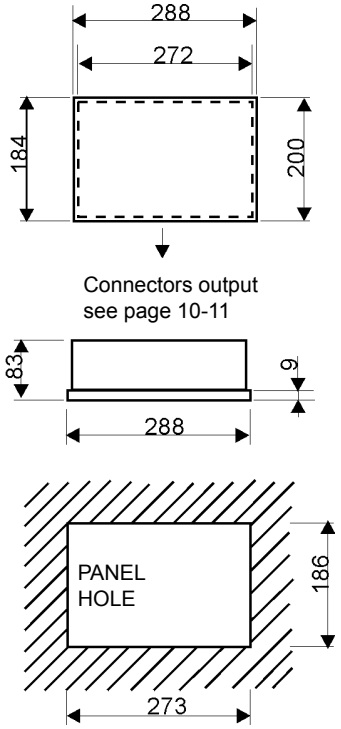
– – – –
Setting set to zero.



BUTTON LOCK. With the push-button panel locked, buttons remain active.



DIMENSIONS



TECHNICAL DATA

Battery power supply	12 Vdc 24 Vdc
Supply voltage	8÷ 32V
Consumption in standby	3.5mA at 12V
	2.5mA at 24V
Consumption with engine stationary	250mA at 12V
	150mA at 24V
Max. Consumption	850mA at 12V
	550mA at 24V
Max load of the output: • (stopping) yellow • (starting motor) black • (general alarm) red/green • (auxiliary) brown • priming pump yellow/blue • pump clutch white/yellow	 3A 40A 3A 3A 3A 3A
Temperature range	-10 ÷ +60 °C
Hour-meter	4 digits
Engine oil pressure gauge	0 ÷ 21 bar
Pump water pressure transmitter: • allowed max. pressure	 21 bar
Engine water and oil thermometers	+20 ÷ +145°C
Tachometer	4000 rpm
Timer	1’ ÷ 24 h
Serial communication parameters	9600 baud, 8 bit data,1 bit stop, even parity
Rechargeable batteries	2x1,2V type AAA
Installation conditions	for external use
Degree of protection box/connector	IP54/IP20
Control unit weight	2,2 kg
Weight with control unit mounted on the support	4,6 kg

ORDERING DATA

Type CIM-131 Codice 00211101

ACCESSORIES SUPPLIED

- PRE-WIRED CONNECTOR CODE 70804397
- PUMP WATER PRESSURE TRANSMITTER TYPE TPA-200 NIPPLE F1/4" GAS -M3/8"GAS CODE 40500251
- NUTS KIT CODE 40179906

ACCESSORIES ON REQUEST

Type	Code
- Support CIM	40493383
- Speed variator VAR-140 12V	00571543
- Flow switch FAP-100	00500312

BASE FITTING

CONFORMITY DECLARATION

CE

The company Elcos s.r.l. assumes full responsibility for declaring that the control unit:

type **CIM-131**

installed and used in the ways and for the purposes described in the user instruction manual complies with the essential requirements and other relevant provisions laid down by the following directives:

- 2004/108/CE related to the electromagnetic compatibility and that repeals the directive 89/336/CEE,

- 2011/65/UE on the restriction of the use of certain hazardous substances in electrical and electronic equipment,

because it is built and functions in accordance with the harmonized Standards: EN61326-1, EN61326/A1, EN61000-4-2, EN61000-4-4, EN61000-4-6, EN60529.

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President
Margini Enzo