



ILC Srl

ILCMAX

ILCMAX series electric pump for grease / oil
Use in centralized lubrication systems

Translation of original instructions



CE

All ILC products must only be used for their intended purposes, as specified in this brochure and in all instructions. If the product is supplied together with user instructions, the user is required to read them and comply with them. Not all lubricants are suitable for centralised lubrication systems. ILC lubrication systems or relative components cannot be used together with gas, liquid gas, pressurised gas in solution and liquids with vapour pressure exceeding normal atmospheric pressure (1013 bar) by more than 0.5 bar, maximum temperature permitted +80° C.

Any type of dangerous materials, namely those classified as such by European Community Directive (EC) 67/548/EEC, Article 2 (2), can only be used in ILC centralised lubrication systems or relative components upon consultation with ILC and after having received written approval from the company.

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SMEERTECHNIEK ROTTERDAM



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REV13062023

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1. Introduction

This use and maintenance manual refers to the **ILC-MAX** pump. Using this pump makes it possible to distribute grease or oil in lubrication systems. The pump that this manual refers to must be used by qualified personnel with basic hydraulic and electrical knowledge. This use and maintenance manual contains important information to protect the health and safety of personnel who intend to use this equipment. This manual must be read carefully and kept in good conditions so that it is always available to operators who intend to reference it.

2. General Description

ILC-MAX is available in grease, oil and soft grease versions, with **12/24 V DC** or **24/115/230 V AC** motors: the grease version is equipped with a spatulator and minimum level flap; the oil version is equipped with a float level; the soft grease version with a spatulator and capacitive sensor. The transparent plastic tank has a capacity of **2/4/8 KG** for grease and **2/4/8 L** for oil, the metal tank has a capacity of **5 kg** for grease and **5 L** for oil.

The pumps can operate at a maximum pressure of 250 bar with a maximum flow rate output of 2.88 cc/minute.

An electronic control timer can be integrated into the casing and can be programmed to automatically run the pump with variable "work time" and "pause time".

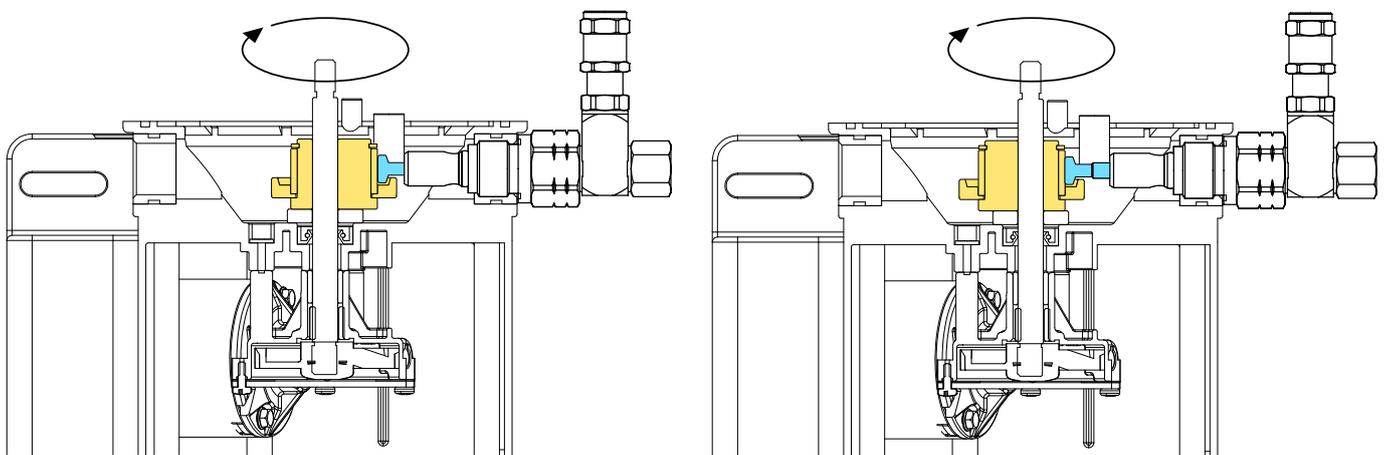
2.1 Features

ILC-MAX pumps are designed for intermittent or continuous operation to provide regularly scheduled lubrication cycles.

An electric gearmotor turns an **internal cam** that can drive **up to three pumping elements**. For a higher flow rate, the three outlets of the pumping elements can be combined into a single outlet.

The sealing areas are sealed with specially moulded gaskets and o-rings. Each pumping element has a safety valve to protect the system from overpressure.

The gearmotor also drives a spatulator inside the pump tank to stir the grease and ensure that it is never missing at the pump suction point. The system is guaranteed for greases with a consistency up to NLGI 2 and oils ISOVG 68 at operating temperature.



3. Applications



Movement
Earth



Industry



Agriculture



Machinery
Construction



Automotive

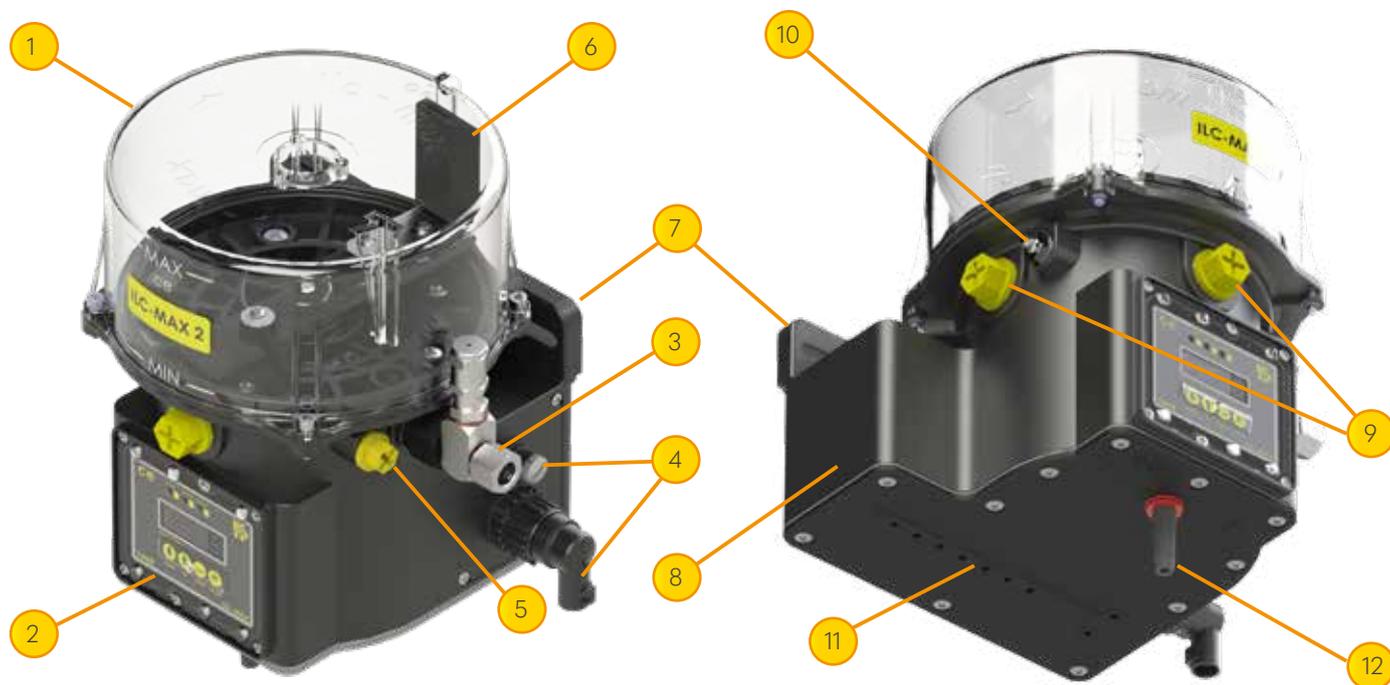
4. Technical data

Number of pumps	from 1 to 3
Fixed pumping flow rate (revolution)	0.16 cc
Variable pumping flow rate (revolution)	0.01 - 0.16 cc
RPM	22 rpm (12/24 V DC) 30 rpm (24/115/230 V AC)
Fixed pumping flow rate (at 0 bar / min)	3,52 cc (12/24 V DC) 4.80 cc (24/115/230 V AC)
Variable pumping flow rate range (at 0 bar)	0.22 - 3.52 cc (12/24 V DC) 0.30 - 4.80 cc (24/115/230 V AC)
Maximum back pressure	250 bar (3625 psi) ±10%
Operating temperature	from -20 °C to +80 °C (depending on temperature, suitable lubricants are required)
Output connection	1/4" Gas
Tank	Grease 2/4/8 Kg (plastic) - 5 Kg (metal) Oil 2/4/8 L (plastic) - 5 L (metal)
Permitted lubricants	Grease up to NLGI2 maximum consistency Mineral Oils 50 to 1500 cSt (at 40° C)
Minimum level switch	1 to 140 V AC - 200 V DC 10 W NO (Grease 2/4/8 L) 1 to 140 V AC - 200 V DC 10 W NO (Oil 2/4/8 L) 5A - 250 V AC / 0.4 A - 125 V DC - NC or NO contact (Grease 5 Kg) 1.5 A 250 V AC - 200 V DC 50 W - NC or NO contact (Oil 5 L)
RPM control	1 to 140 V AC - 200 V DC 10 W NO (2/4/8 KG Grease)

4.1 Internal timer technical data

Supply voltage	12 V DC - 24 V DC
Selectable working modes	Pause time hours-minutes-pulses (external) / work time minutes-seconds Work in pump rotations / Work in external pulses
Controls	Minimum electric level Motor rotation Extra-cycle reset button Dry contact for remote alarm Progressive distributor cycle

5. Main components



- | | | | |
|---|--------------------------------------|----|------------------------------|
| 1 | Tank | 7 | Assembly bracket |
| 2 | Integrated timer | 8 | Pump body |
| 3 | Fixed flow rate pumping element | 9 | Pumping element housing caps |
| 4 | Power supply connection (TYCO+M12x1) | 10 | Tank inlet grease nipple |
| 5 | Cap 1/4" G | 11 | DPX preparation |
| 6 | Spatulator | 12 | Condensate drain |

6. Unpacking and Installation

6.1 Unpacking

Remove the pump and check that it has not been damaged during transport and storage. The packaging material has no special disposal precautions as it is in no way dangerous or polluting. Refer to local regulations for disposal.

6.2 Installation

All pumps must be secured in a vertical position with two bolts, nuts and washers through the integrated assembly bracket of the pump body. Provide space above the unit for any tank disassembly. Leave at least 100 mm of peripheral space in relation to other equipment or obstacles. In the case of filling with a cartridge pump, provide the necessary distances depending on the overall dimensions.

Assemble the pump at "eye level" so as to prevent possible impacts. Do not install the pump submerged in liquids and/or in particularly aggressive environments. Do not install the pump in environments where there are explosive or inflammable mixtures. Install the pump away from heat sources that may disturb operation.

All rigid pipes, flexible hoses and fittings must be compatible with the lubricant, the operating pressure and the surrounding environment. Make sure pipes and cables are appropriately secured and protected from impacts.

**Caution!**

All electrical connections must be set up by qualified personnel and all requirements of local regulations must be followed. Refer to the electrical connection diagram for correct wiring.

**Caution!**

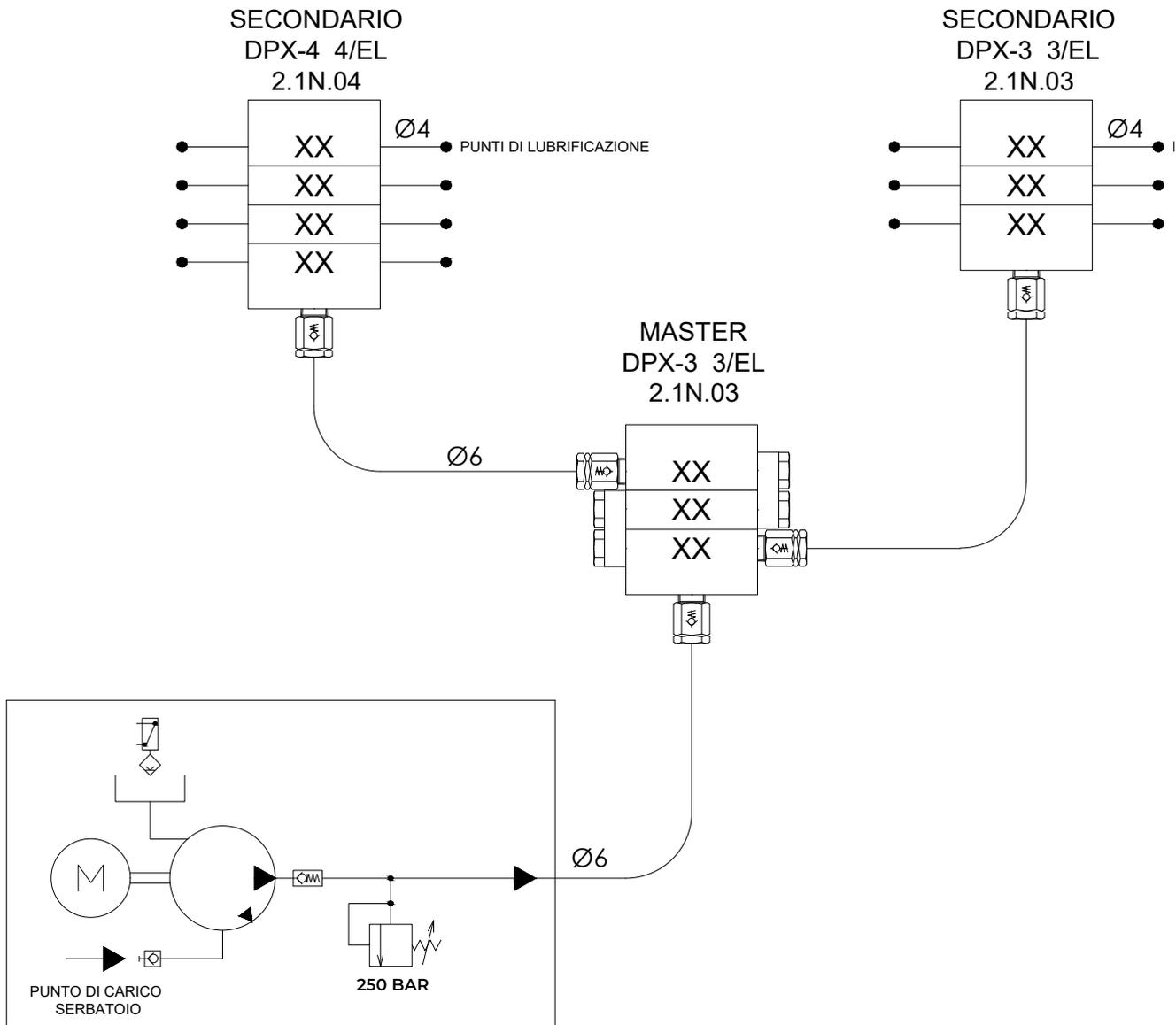
The unit must be protected by a thermal-magnetic switch with a trip threshold based on the absorptions documented on the data sheet or pump label.

7. Commissioning

ILC-MAX pumps can be filled with manual or pneumatic grease pumps via the specific grease nipple located on the side of the tank. It is very important for this operation to be done in a clean environment and for the lubricant going into the tank to have no impurities whatsoever.



8. Hydraulic diagram



9. Internal timer



The ILC-MAX pump timer is housed inside the structure near the gearmotor and can be accessed by removing the transparent protective door.

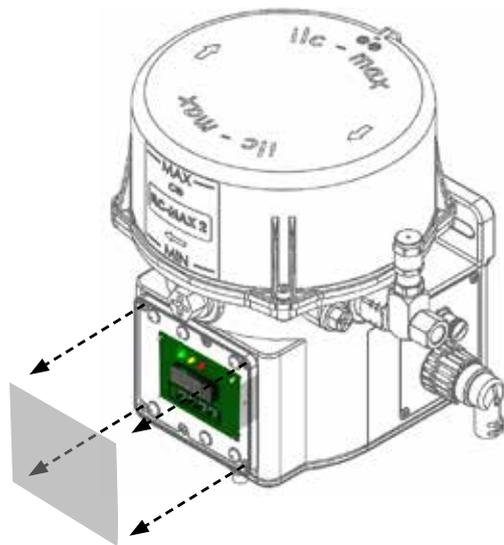
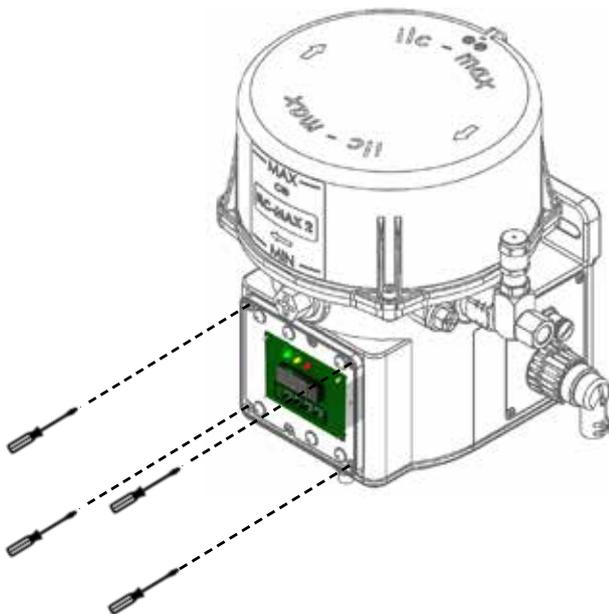
Its transparency makes it possible to view the two LEDs indicating pump running and cycle level alarm. Once the protection has been removed, it is possible to set the times and functions in the desired mode as well as operate the manual button.

Supply voltage

12 V DC - 24 V DC

9.1 Access to the internal timer

To access the internal timer and to be able to proceed with programming, remove the transparent cover by unscrewing the four screws as shown in the figure.



10. Timer operating mode

10.1 Operating Mode

In operating mode, the board controls the pump by alternating work cycles with pause cycles. The duration of the work stage can be configured as time or motor rotation, while the duration of the pause can be counted in time or in number of pulses, which the board reads via the dedicated input.

Key	Function
⬇️	Circularly scrolls the menus upwards
⬆️	Circularly scrolls the menus downwards
↵	Enters programming mode if pressed for 3+ seconds
Ⓜ️	Immediately starts an extra work cycle for the set time Resets all alarms

10.2 Programming Mode

Programming mode is accessed by holding the **↵** key for 3s. This mode allows the user to access and change all the setting parameters of the board and alarms.

Caution! In order to memorise the programming of all entered changes, hold the **Enter key for at least 5 seconds** after the changes have been made. Following this, the pump will automatically run a cycle.

Key	Function
⬇️	Circularly scrolls the parameters upwards Decreases the value of a parameter
⬆️	Circularly scrolls the parameters downwards Increases the value of a parameter
↵	If held for 5+ seconds, saves changes and switches to Operating mode
Ⓜ️	Accesses the parameter edit / validates a set parameter and goes back to the overall parameter list.

10.3 Reduced Menu / Full Menu

The timer parameter E-CM (the first in the menu) allows you to decide whether to programme the pump via a reduced menu or a full menu. The reduced menu gives the possibility to adjust only the pause/work modes and times.

The full menu, in addition to allowing us to adjust modes and times of work breaks, enables submenus for setting all additional functions.

The timer is set by default to reduced menu (E-CM->CM-b). Step-by-step instructions with reduced menu are in Chapter 11, and those for the full menu in Chapter 12.

The table opposite shows which parameters are present as the E-CM mode changes.

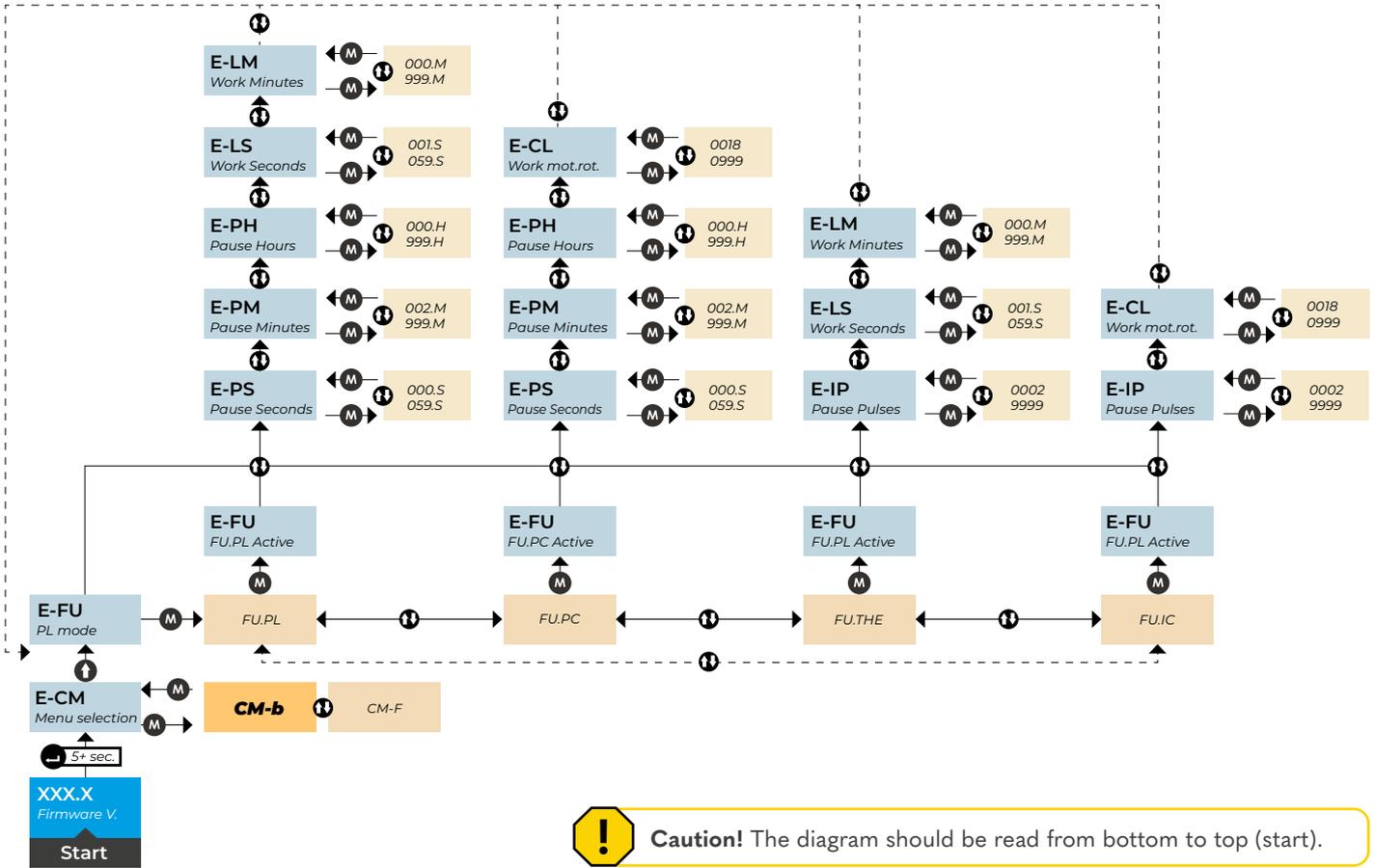
	Reduced menu (CM-b)				Full menu (CM-F)			
E-CM	yes				yes			
E-FU	FU.PL	FU.PC	FU.THE	FU.IC	FU.PL	FU.PC	FU.THE	FU.IC
E-PS	yes	yes	no	no	yes	yes	no	no
E-PM	yes	yes	no	no	yes	yes	no	no
E-PH	yes	yes	no	no	yes	yes	no	no
E-IP	no	no	yes	yes	no	no	yes	yes
E-LS	yes	no	yes	no	yes	no	yes	no
E-LM	yes	no	yes	no	yes	no	yes	no
E-CL	no	yes	no	yes	no	yes	no	yes
E-AE	no				yes			
E-PL	no				yes			
E-AC	no				yes			
E-AP	no				yes			
E-AL	no				yes			
E-AM	no				yes			
E-AU	no				yes			
E-bP	no				yes			
E-rt	no				yes			
E-CC	no				yes			

Following operator inactivity in the edit menu, the board exits the menu after 2 minutes, resuming the work phase, all changed values will be lost and the previously saved values will be retained.

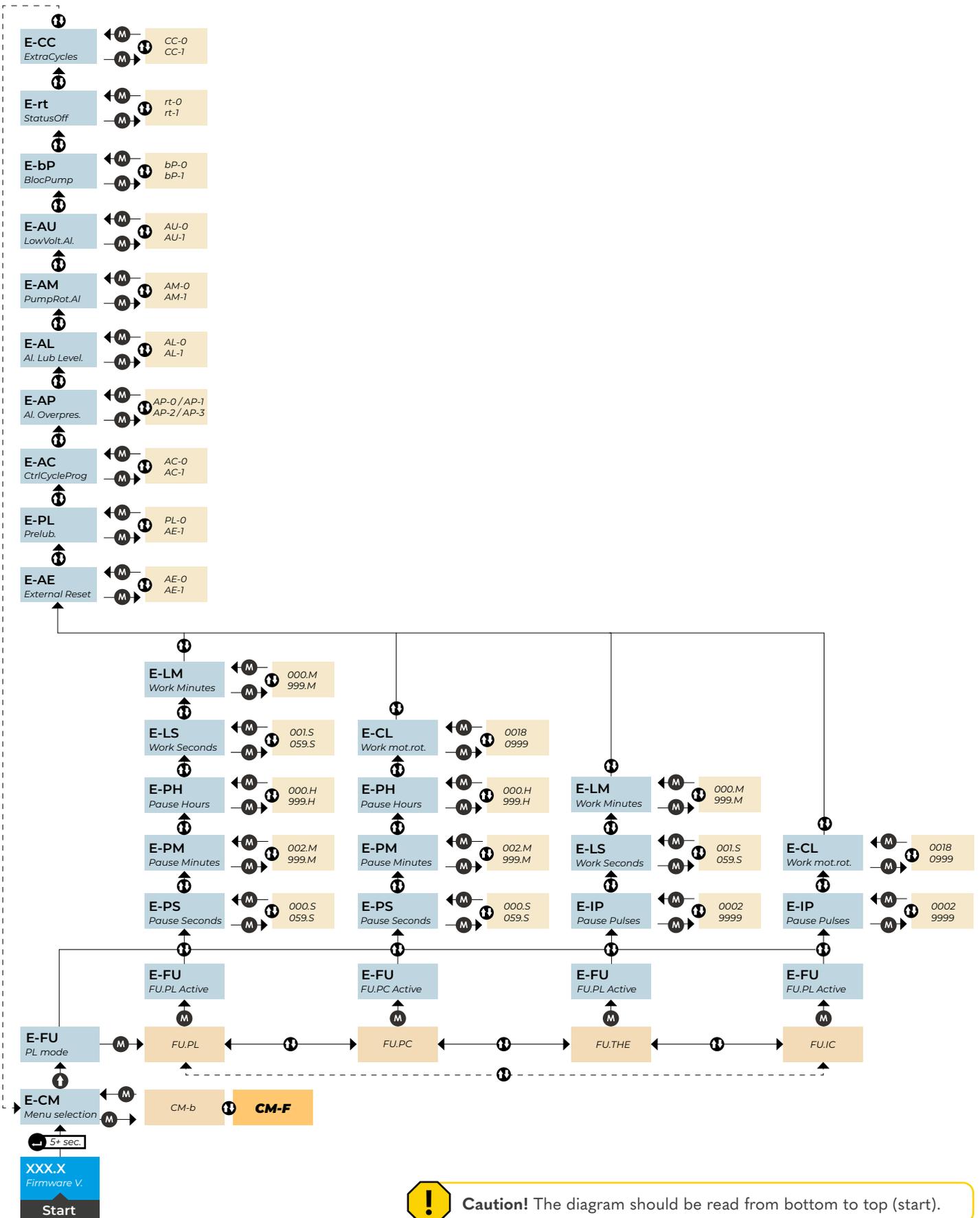
10.1 List of parameters

<p>E-CM</p>	<p>Choice of pump programming via a reduced or full menu</p>	<p>E-PL</p>	<p>Enables/disables pre-lubrication.</p>
<p>E-FU</p>	<p>Selection of the pause/work logic to be used. Four different configurations are available.</p>	<p>E-AC</p>	<p>Enables/disables cycle control relative to the progressive distributor sensor.</p>
<p>E-PS</p>	<p>Pause time adjustment from 1 to 59 seconds.</p>	<p>E-AP</p>	<p>Enables/disables the overpressure alarm.</p>
<p>E-PM</p>	<p>Pause time adjustment from 2 to 999 minutes.</p>	<p>E-AL</p>	<p>Enables/disables the minimum lubricant level alarm.</p>
<p>E-PH</p>	<p>Pause time adjustment from 0 to 999 hours.</p>	<p>E-AM</p>	<p>Enables/disables the pump motor rotation alarm.</p>
<p>E-IP</p>	<p>Adjusting pause pulses</p>	<p>E-AU</p>	<p>Enables/disables the low voltage alarm.</p>
<p>E-LS</p>	<p>Work time adjustment from 1 to 59 seconds.</p>	<p>E-bP</p>	<p>Enables/disables the level alarm type.</p>
<p>E-LM</p>	<p>Work time adjustment from 0 to 999 minutes.</p>	<p>E-rt</p>	<p>Enables/disables alarm status storage when the pump is switched off.</p>
<p>E-CL</p>	<p>Work adjustment in number of motor rotations.</p>	<p>E-CC</p>	<p>Sets the number of extra lubrication cycles after a sensor signal failure installed on the progressive distributor.</p>
<p>E-AE</p>	<p>Enables/disables external reset.</p>		

10.1 Reduced menu functions



10.1 Full menu functions



11. Step-by-step board setting - Reduced menu

11.1 Set Board with Reduced Menu

The display in initial state shows the software version.

To start programming, press **M** for 3 seconds.
E-CM appears and the three LEDs flash.

Press **M**.
Select CM-b using **↑** **↓**.
Press **M**.

E-CM appears.
The Timer is now in Reduced Menu mode.



After selecting the reduced menu with E-CM, choose from one of four working logics:

- 11.2 Pause in time - Work in time (p. 15)**
- 11.3 Pause in Time - Work in Number of Motor Rotations (p. 17)**
- 11.4 Pause in pulses - Work in time (p. 18)**
- 11.5 Pause in pulses - Work in Number of Motor Rotations (p. 19)**

11.2 Selecting Pause in time Mode - Work in Time [FU.PL]

Press **↑**. E-FU appears



Press **M**.
Select FU.PL using **↑** **↓**
Press **M**



Back to E-FU.
The Timer menu will present additional parameters
[E-PS] Pause in seconds, [E-PM] Pause in minutes, [E-PH] Pause in hours, [E-LS] Work in seconds, [E-LM] Work in minutes.



11.2.1 [FU.PL] Setting the pause time in hours / minutes / seconds

Press **↑**. E-PS (seconds adjustment) appears.



Press **M**.
Adjust the pause time from 0 to 59 seconds using the arrows **↑** **↓**
Press **M** to confirm



Press **↑**. E-PM (minute adjustment) appears.



Press **M**.
Adjust the pause time from 2 to 999 minutes using the arrows **↑** **↓**
Press **M** to confirm



Press **↑**. E-PH (hour adjustment) appears.



Press **M**.
Adjust the pause time from 0 to 999 hours using the arrows **↑** **↓**
Press **M** to confirm



Caution!

The minimum pause time cannot be set to less than two minutes.

When adjusting times, the values assigned to hours/minutes/seconds must be added together to obtain the actual pause time (e.g. PH= 3 hours, PM= 4 minutes, PS=3 seconds, total pause time 3 hours 4 minutes and 3 seconds).

11.2.2 [FU.PL] Adjustment of the Working time in minutes / seconds

Press . E-LS (seconds adjustment) appears.

Press .

Adjust the working time from 1 to 59 seconds using the arrows  

Press  to confirm

Press . E-LM (minute adjustment) appears.

Press .

Adjust the working time from 0 to 999 minutes using the arrows  

Press  to confirm



Caution!

When adjusting times, the values assigned to minutes/seconds must be added together to obtain the actual working time (LM= 4 minutes, LS=3 seconds, total working time 4 minutes and 3 seconds).

11.3 Selecting Mode Pause in Time - Work in Number of Motor Rotations [FU.PC]

Press **↑**. E-FU appears



Press **M**.
 Select FU.PC using **↑** **↓**
 Press **M**



Back to E-FU.
 The Timer menu will present additional parameters
[E-PS] Pause in seconds, [E-PM] Pause in minutes, [E-PH] Pause in hours, [E-CL] Work in motor rotations (min. 18).



11.3.1 [FU.PC] Adjusting the pause time in hours / minutes / seconds

To set the pause time, see Chapter 11.2.1

11.3.2 [FU.PC] Setting the Work Time in Number of Motor Rotations

Press **↑** three times. E-CL (motor rotation number adjustment) appears.



Press **M**.
 Adjust the number of rotations to be used by varying from 18 to 999 using the arrows **↑** **↓**
 Press **M** to confirm



E-CL appears.



11.4 Selecting Mode Pause in Pulses - Work in Minutes/Seconds [FU.IL]

Press **↑**. E-FU appears



Press **M**.
 Select FU.IL using **↑** **↓**
 Press **M**



Back to E-FU.
 The Timer menu will present additional parameters
[E-IP] Pause pulses, [E-LS] Work in seconds, [E-LM] Work in minutes



11.4.1 [FU.IL] Adjustment of the pause time in pulses

Press **↑** 3 times until E-IP (pulse number adjustment) appears.



Press **M**.
 Adjust the working time from 2 to 9999 seconds using the arrows **↑** **↓**
 Press **M** to confirm



E-IP appears.



11.4.2 [FU.IL] Adjustment of the Working time in minutes / seconds

To set the pause time, see Chapter **11.2.2**

11.5 Selecting Mode Pause in pulses - Work in Number of Motor Rotations [FU.IC]

Press . E-FU appears

Press .
 Select FU.IC using  
 Press 

Back to E-FU.
 The Timer menu will present additional parameters
[E-IP] Pause pulses, [E-CL] Work in motor rotations (min. 18).



11.5.1 [FU.IC] Adjusting the pause time in external pulses

To set the pause time, see Chapter **11.4.1**

11.5.2 [FU.IC] Setting the Work Time in Number of Motor Rotations

To set the working time, see Chapter **11.3.2**

12. Step-by-step board setting - Full menu

12.1 Board setting with full menu [CM-F]

The display in initial state shows the software version.

To start programming, press **M** for 3 seconds.
E-CM appears and the three LEDs flash.

Press **M**.
Select CM-F using **↑** **↓**.
Press **M**.

E-CM appears.
The Timer is now in Full Menu mode.



After selecting the full menu with E-CM, choose from one of four working logics:

- 12.2 Pause in time - Work in time (p.)**
- 12.3 Pause in time - Work in number of motor rotations (p.)**
- 12.4 Pause in pulses - Work in time (p.)**
- 12.5 Pause in pulses - Work in number of motor rotations (p.)**

12.2 Selecting Pause in time Mode - Work in Time [FU.PL]

Press **↑**. E-FU appears



Press **M**.
 Select FU.PL using **↑** **↓**
 Press **M**



Back to E-FU.
 The Timer menu will present additional parameters
[E-PS] Pause in seconds, [E-PM] Pause in minutes, [E-PH] Pause in hours, [E-LS] Work in seconds, [E-LM] Work in minutes.



12.2.1 [FU.PL] Setting the pause time in hours / minutes / seconds

Press **↑**. E-PS (seconds adjustment) appears.



Press **M**.
 Adjust the pause time from 0 to 59 seconds using the arrows **↑** **↓**
 Press **M** to confirm



Press **↑**. E-PM (minute adjustment) appears.



Press **M**.
 Adjust the pause time from 2 to 999 minutes using the arrows **↑** **↓**
 Press **M** to confirm



Press **↑**. E-PH (hour adjustment) appears.



Press **M**.
 Adjust the pause time from 0 to 999 hours using the arrows **↑** **↓**
 Press **M** to confirm



Caution!

The minimum pause time cannot be set to less than two minutes.

when adjusting times, the values assigned to hours/minutes/seconds must be added together to obtain the actual pause time (e.g. PH= 3 hours, PM= 4 minutes, PS=3 seconds, total pause time 3 hours 4 minutes and 3 seconds).

12.2.2 [FU.PL] Adjustment of the Working time in minutes / seconds

Press . E-LS (seconds adjustment) appears.

Press .

Adjust the working time from 1 to 59 seconds using the arrows  

Press  to confirm

Press . E-LM (minute adjustment) appears.

Press .

Adjust the working time from 0 to 999 minutes using the arrows  

Press  to confirm



12.3 Selecting Mode Pause in Time - Work in Number of Motor Rotations [FU.PC]

Press **↑**. E-FU appears



Press **M**.
 Select FU.PC using **↑** **↓**
 Press **M**



Back to E-FU.
 The Timer menu will present additional parameters
[E-PS] Pause in seconds, [E-PM] Pause in minutes, [E-PH] Pause in hours, [E-CL] Work in motor rotations (min. 18).



12.3.1 [FU.PC] Adjusting the pause time in hours / minutes / seconds

To set the pause time, see Chapter 12.2.1

12.3.2 [FU.PC] Setting the Work Time in Number of Motor Rotations

Press **↑** three times. E-CL (motor rotation number adjustment) appears.



Press **M**.
 Adjust the number of rotations to be used by varying from 18 to 999 using the arrows **↑** **↓**
 Press **M** to confirm



E-CL appears.



12.4 Selecting Mode Pause in Pulses - Work in Minutes/Seconds [FU.IL]

Press **↑**. E-FU appears



Press **M**.
 Select FU.IL using **↑** **↓**
 Press **M**



Back to E-FU.
 The Timer menu will present additional parameters
[E-IP] Pause pulses, [E-LS] Work in seconds, [E-LM] Work in minutes



12.4.1 [FU.IL] Adjustment of the pause time in pulses

Press **↑**. E-IP (pulse number adjustment) appears.



Press **M**.
 Adjust the working time from 2 to 9999 seconds using the arrows **↑** **↓**
 Press **M** to confirm



E-IP appears.



12.4.2 [FU.IL] Adjustment of the Working time in minutes / seconds

To set the pause time, see Chapter **12.2.2**

12.5 Selecting Mode Pause in pulses - Work in Number of Motor Rotations [FU.IC]

Press **↑**. E-FU appears

Press **M**.
 Select FU.IC using **↑** **↓**
 Press **M**

Back to E-FU.
 The Timer menu will present additional parameters
[E-IP] Pause pulses, [E-CL] Work in motor rotations (min. 18).



12.5.1 [FU.IC] Adjusting the pause time in external pulses

To set the pause time, see Chapter **12.4.1**

12.5.2 [FU.IC] Setting the Work Time in Number of Motor Rotations

To set the working time, see Chapter **12.3.2**

12.6 External Reset [E-AE]

Press **↑** until E-AE appears on the display.

Press **M**.

Select using **↑** **↓**

AE=0 external reset disabled.

AE=1 external reset enabled.

Press **M** to confirm.



12.7 Pre-lubrication [E-PL]

Press **↑** until E-PL appears on the display.

Press **M**.

Select 0 or 1 using **↑** **↓**

PL=0 the pump restarts from the stop point.

PL=1 the pump runs a work cycle.

Press **M** to confirm.



12.8 Progressive Distributor Sensor Cycle Control [E-AC]

Press **↑** until E-AC appears on the display.

Press **M**.

Select 0 or 1 using **↑** **↓**

AC=0 Cycle control not enabled.

AC=1 Cycle control enabled.

Press **M** to confirm.

In the event of a cycle alarm due to a lack of signal from the proximity sensor, the timer will try a number of times equal to the value set in parameter E-CC. Should these further attempts also fail, the message appears on the right and the pump stops working.

To reset delete the cause and press **M**.



Caution!

The cycle alarm cannot be used at the same time as the overpressure alarm: the two alarms would exclude each other

12.9 Overpressure Alarm [E-AP]

Press **↑** until **E-AP** appears on the display.

Press **M**. Select 0 or 3 using **↑** **↓**

AP=0 Cycle control not enabled.

AP=1 Do not use (Enabled with NC/NO contact - with initial status check).

AP=2 Do not use (Enabled NO contact - closes in the presence of overpressure).

AP=3 Overpressure control enabled (Opens contact when overpressure is present).

Press **M** to confirm.

In the event of a cycle alarm due to the sensor contact opening, the pump goes into lockout.

To reset delete the cause and press **M**.



Caution!

The overpressure alarm cannot be used at the same time as the cycle alarm: the two alarms would exclude each other.

12.10 Low Lubricant Level Alarm [E-AL]

Press **↑** until **E-AL** appears in the display.

Press **M**.

Select 0 or 1 using **↑** **↓**

AL=0 Lubricant level control not enabled.

AL=1 Lubricant level control enabled.

Press **M** to confirm.

E-AL appears on the display.



12.11 Pump Rotation Alarm [E-AM]

Press until **E-AM** appears in the display.

Press .

Select 0 or 1 using .

AM=0 Motor rotation control not enabled.

AM=1 Motor rotation control enabled.

Press to confirm.



12.12 Low Voltage Alarm [E-AU]

Press until **E-AU** appears in the display.

Press .

Select 0 or 1 using .

AU=0 Voltage control not enabled.

AU=1 Voltage control enabled.

Press to confirm.

Should the voltage fall below 9 V, 1.1AU will be displayed. Should the voltage drop further, the timer switches off.



12.13 Pump block in level alarm selection [E-bP]

Press until **E-bP** appears in the display.

Press . Select 0 or 1 using .

bP=0 The level alarm does not block the pump. The board goes into alarm during Work and maintains the alarm status even during the pause time, then resets at the beginning of the new work phase.

bP=1 The pump goes into lockout when the level alarm arrives.

Press to confirm.



12.14 Alarm Status Storage at Timer switch-off [E-rt]

Press until **E-rt** appears in the display.

Press .

Select 0 or 1 using .

rt=0 When switched off, the alarm is reset.

rt=1 If, during switch-off, the system is in alarm, it returns to alarm the next time it is switched on.

Press to confirm.



12.15 Pump Rotation Alarm [E-CC]

Press **↑** until **E-CC** appears in the display.

Press **M**.

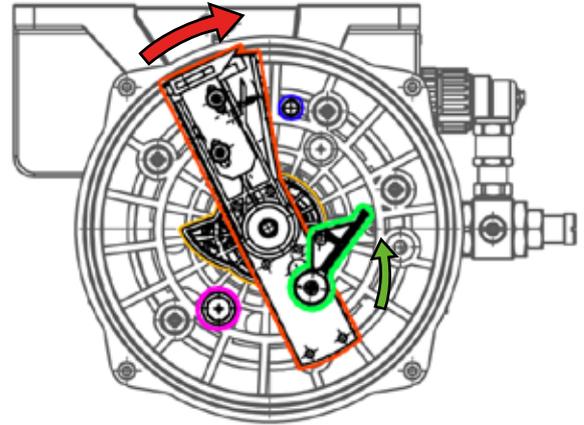
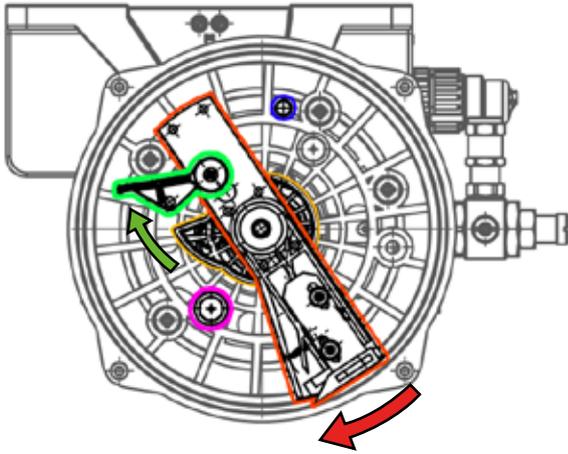
The default value (2) appears. Select a value from 0 to 10 using **↑** **↓**.

Press **M** to confirm.



When programming is complete, press **M** 5 seconds to store the programme

12.5 Minimum Level Operation for Grease



The minimum level sensor is integrated at the bottom of the tank. A floating magnet mounted on the spatulator remains in the inner circumference when the tank is full and the spatulator rotates.

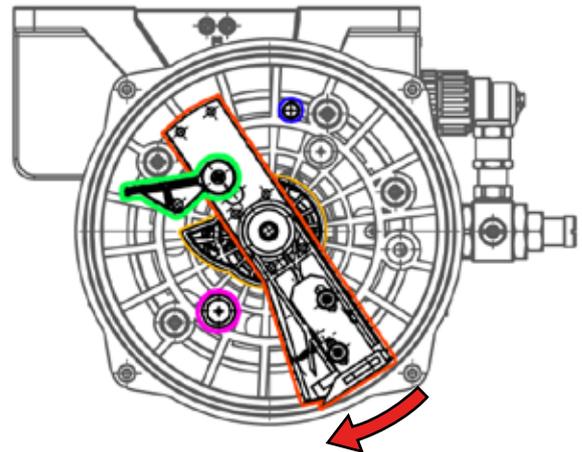
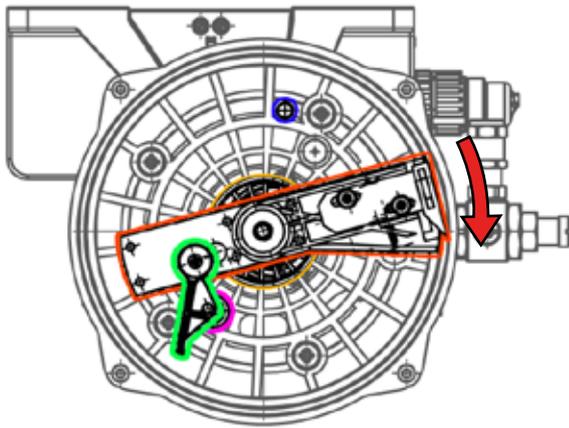
Tank full



- spatulator
- level reed sensor
- magnet flap
- rotation reed sensor

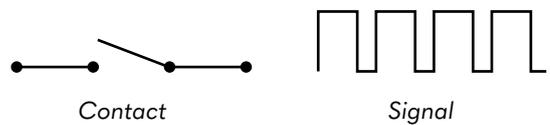
Caution!

The flap (green) works in the presence of grease with the minimum consistency NLGI 1 at room temperature.

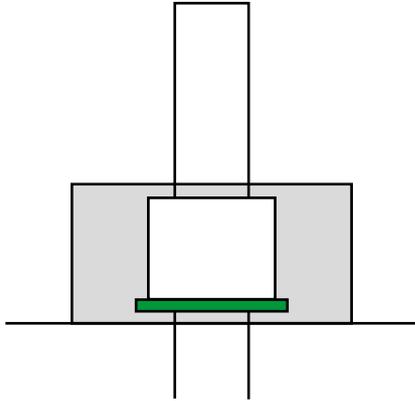


Empty tank

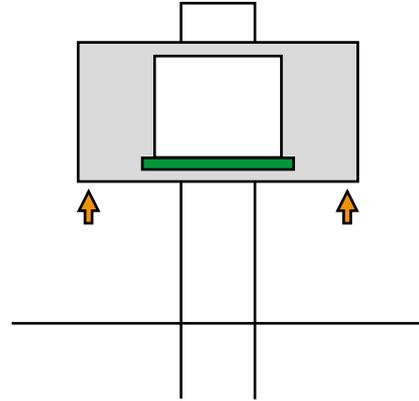
When there is no grease, the magnet rotates in the outer circumference, passing over the level sensor. This creates an impulse (the contact opens and then closes) with each rotation.



12.6 Minimum Level Operation for Oil (standard - with and without timer)

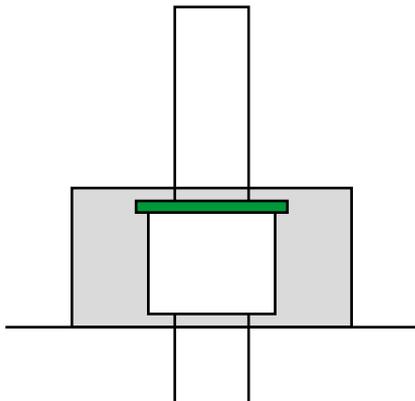


With empty tank, contact open (NO)

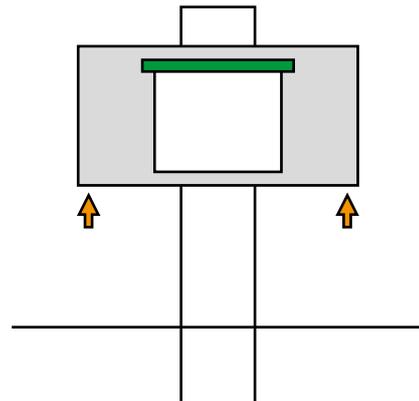


With full tank, contact closed

12.7 Minimum Level Operation for Oil (on request - only without timer)



With empty tank, contact closed (NC)



With full tank, contact open

13. Electrical Connections

Electric connection is the user's responsibility, who must identify the power supply, minimum level alarm and/or cycle alarm connection. Connect the machine to the power line as shown on the pump near the connector. The power cable must have a cross-section that is appropriate for machine absorption and must conform to the provisions in force. Both electrical connections are located on the left side of the pump.

13.1 Power Supply Electrical Connector

The ILC-MAX pump is supplied complete with a seven-pin electrical connector **A91.111327**, which powers the pump and manages any alarm and level signals. A total of twenty-one rubbers are included, seven per type, for different cable diameters and/or unused contacts.

On request, the connector can be ordered complete with a 3-wire or 7-wire cable (1 mm²) in 3 different lengths (5, 10, 15 m).



3 wires	7 wires	Cable
40.CBL.3.05	40.CBL.7.05	5 m
40.CBL.3.10	40.CBL.7.10	10 m
40.CBL.3.15	40.CBL.7.15	15 m

Part No.	Rubbers
A91.111315	For 1.2 to 2.1 mm ² cable
A91.111314	For 2.2 to 3 mm ² cable
A91.111314	Closing cap

13.2 Control Elements Connections

A second connector, for the management of a progressive feeder cycle control (if foreseen in the system), can be installed in versions equipped with an internal timer. Also for this connector, the connector complete with cable can be ordered on request.



Optional 90° Male Connector
A91.111352

Connector with cable	Cable
40.CDC.4.05	5 m
40.CDC.4.10	10 m
40.CDC.4.15	15 m

Proximity Sensor	Thread
40.052.7	M8x1
49.052.9	M12x1

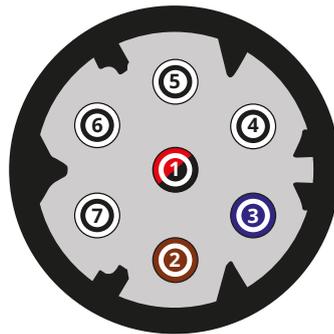
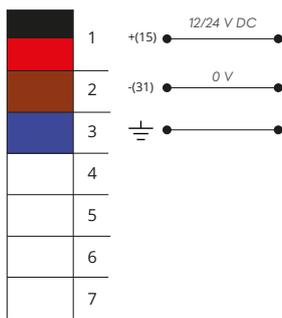
only for version with internal timer.

14. General connection conditions

Applications	Nominal Voltage	Absorption (dependent on load)	Absorption (maximum)	Starting current (maximum)	Pre-connected fuse (maximum)
Vehicles	24 V AC/DC	1.25 A	< 2.5 A	4.5 A	3 A
	12 V DC	2.4 A	< 5 A	9 A	5 A
Industrial	24 V AC/DC	1.25 A	< 2.5 A	4.5 A	4 A
	12 V DC	2.4 A	< 5 A	9 A	6 A
Other	115 V AC	0.25 A	< 0.5 A	1 A	1 A
	230 V AC	0.125 A	< 0.25 A	1 A	1 A

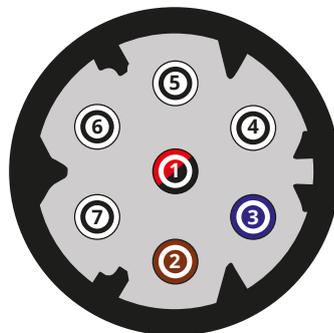
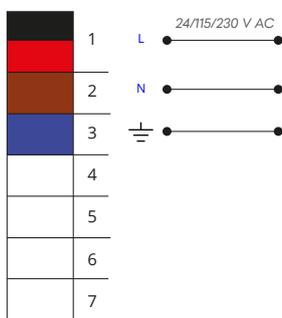
15. Electrical connections without timer

15.1 12-24 V DC 3 cables



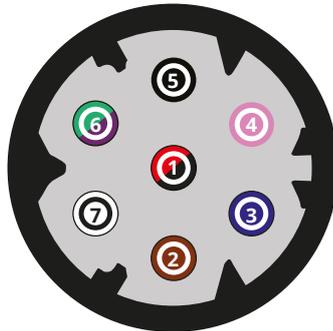
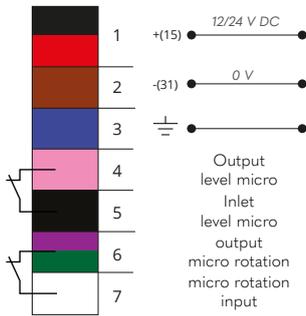
1 = red / black
2 = brown
3 = blue

15.2 24/115/230 V AC 3 cables



1 = red / black
2 = brown
3 = blue

15.3 12/24 V 7 cables



- 1 = red / black
- 2 = brown
- 3 = blue
- 4 = pink
- 5 = black
- 6 = green / purple
- 7 = white

The contact between 4 and 5 is closed. When the tank is empty, there will be a pulse per revolution, which can be controlled by an external PLC, to signal a lack of lubricant alarm.

The contact between 6 and 7 opens with each revolution. When the pulses are interrupted for more than 20", the external PLC must signal the rotation alarm.

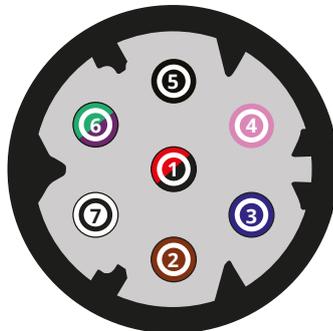
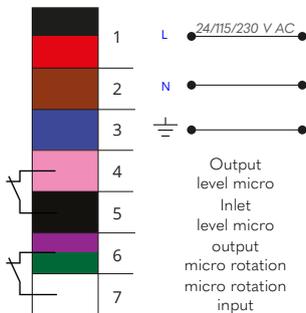
Sensor Electrical Data (DC or peak AC)

Voltage	Absorb. Min.	Absorb. Max
0 to 175 V AC/DC	0,5 A	1,0 A

Caution!

The power supply voltage of the sensors (4-5 and 6-7) must not exceed the values given in the table.

15.4 24/115/230 V AC 7 cables



- 1 = red / black
- 2 = brown
- 3 = blue
- 4 = pink
- 5 = black
- 6 = green / purple
- 7 = white

The contact between 4 and 5 is closed. When the tank is empty, there will be a pulse per revolution, which can be controlled by an external PLC, to signal a lack of lubricant alarm.

The contact between 6 and 7 opens with each revolution. When the pulses are interrupted for more than 20", the external PLC must signal the rotation alarm.

Sensor Electrical Data (DC or peak AC)

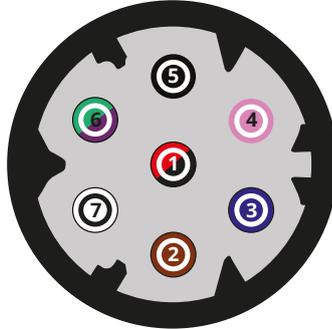
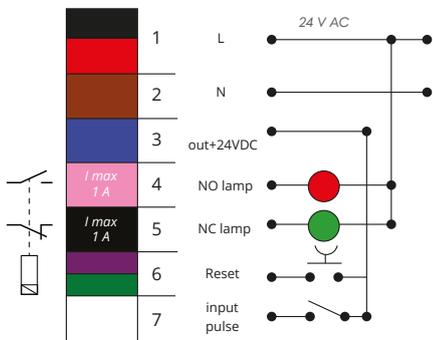
Voltage	Absorb. Min.	Absorb. Max
0 to 175 V AC/DC	0,5 A	1,0 A

Caution!

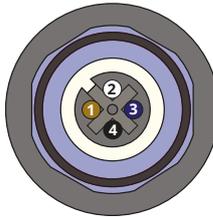
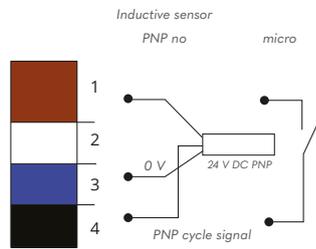
The power supply voltage of the sensors (4-5 and 6-7) must not exceed the values given in the table.

16. Electrical connections with timer

16.1 24 V AC



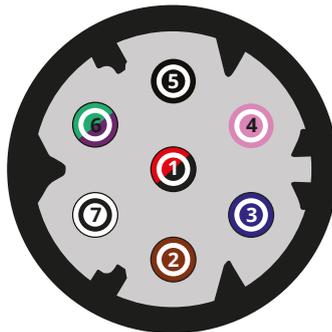
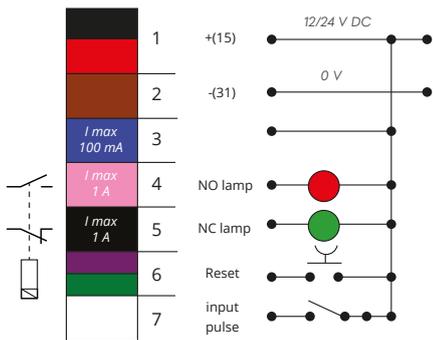
- 1 = red / black
- 2 = brown
- 3 = blue
- 4 = pink
- 5 = black
- 6 = green / purple
- 7 = white



- 1 = brown
- 2 = white
- 3 = blue
- 4 = black

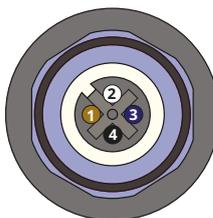
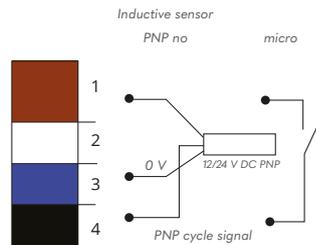
Follow this diagram to connect a control positioned on the progressive distributor or at the pump outlet.

16.2 12 / 24 V DC



- 1 = red / black
- 2 = brown
- 3 = blue
- 4 = pink
- 5 = black
- 6 = green / purple
- 7 = white

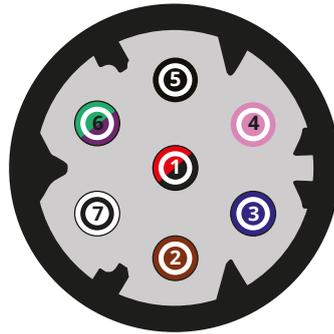
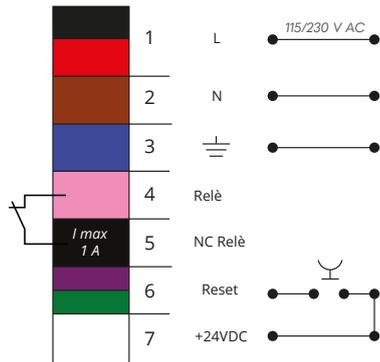
The lamp connected to contact 3 lights up permanently for the working time or when the reset button is pressed and flashes when we have an alarm



- 1 = brown
- 2 = white
- 3 = blue
- 4 = black

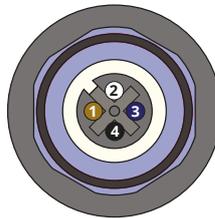
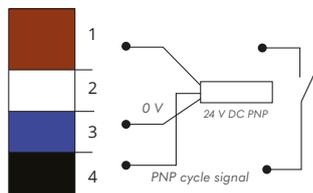
Follow this diagram to connect a control positioned on the progressive distributor or at the pump outlet.

16.3 115/230 V AC



- 1 = red / black
- 2 = brown
- 3 = blue
- 4 = pink
- 5 = black
- 6 = green / purple
- 7 = white

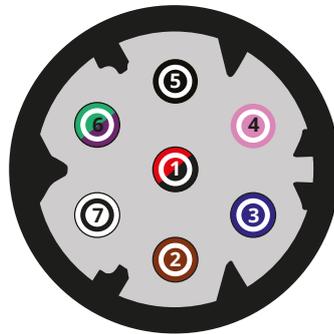
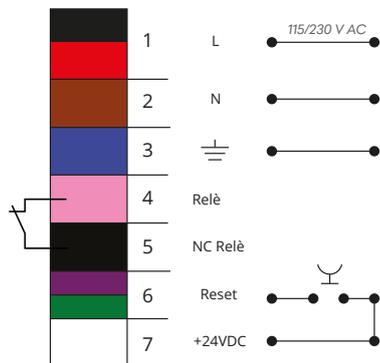
Inductive sensor
PNP no micro



- 1 = brown
- 2 = white
- 3 = blue
- 4 = black

Follow this diagram to connect a control positioned on the progressive distributor or at the pump outlet.

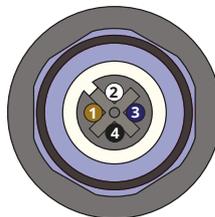
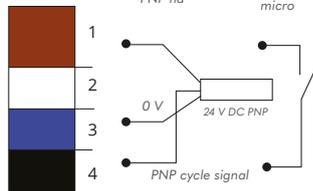
16.4 115/230 V AC (pulse rest time and control on progressive distributor)



- 1 = red / black
- 2 = brown
- 3 = blue
- 4 = pink
- 5 = black
- 6 = green / purple
- 7 = white

Distributor Control CN1

Proximity sensor
PNP na micro

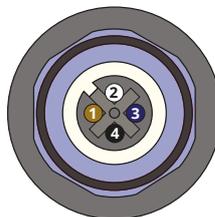
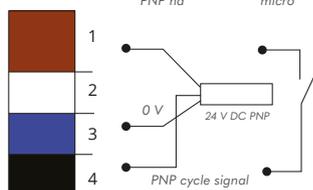


- 1 = brown
- 2 = white
- 3 = blue
- 4 = black

Follow this diagram to connect a control positioned on the progressive distributor or at the pump outlet.

External Pulse Control CN2

Proximity sensor
PNP na micro

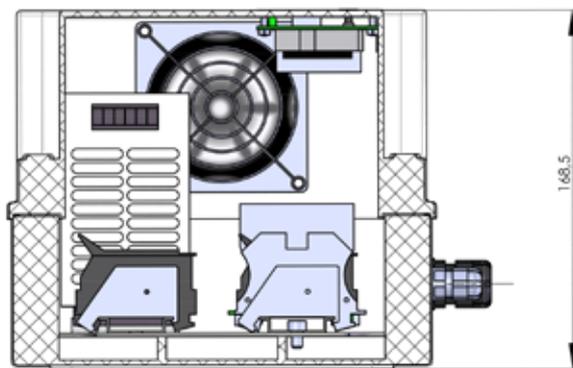
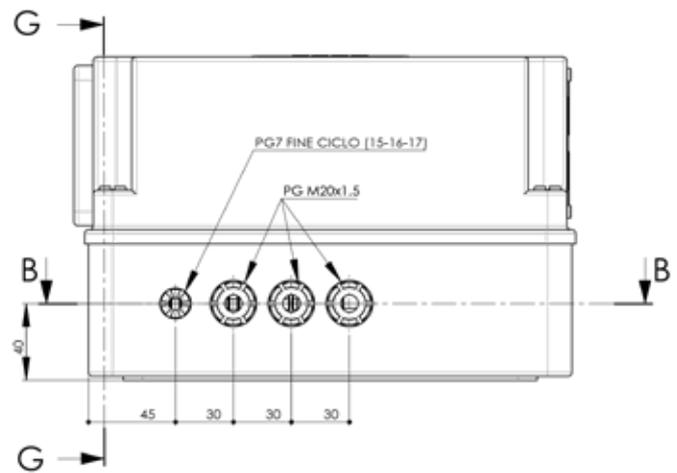
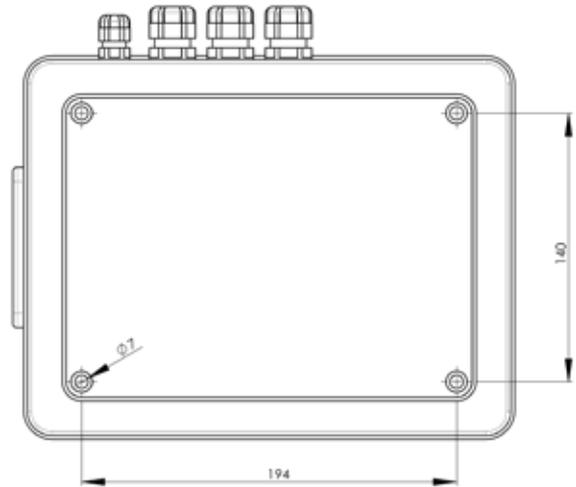


- 1 = brown
- 2 = white
- 3 = blue
- 4 = black

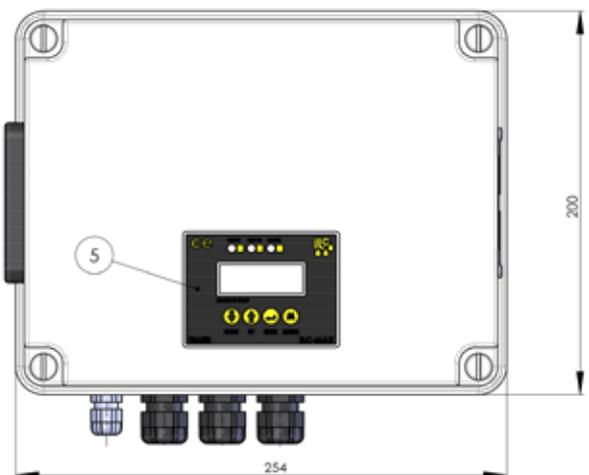
Follow this diagram to connect a control positioned on the progressive distributor or at the pump outlet.

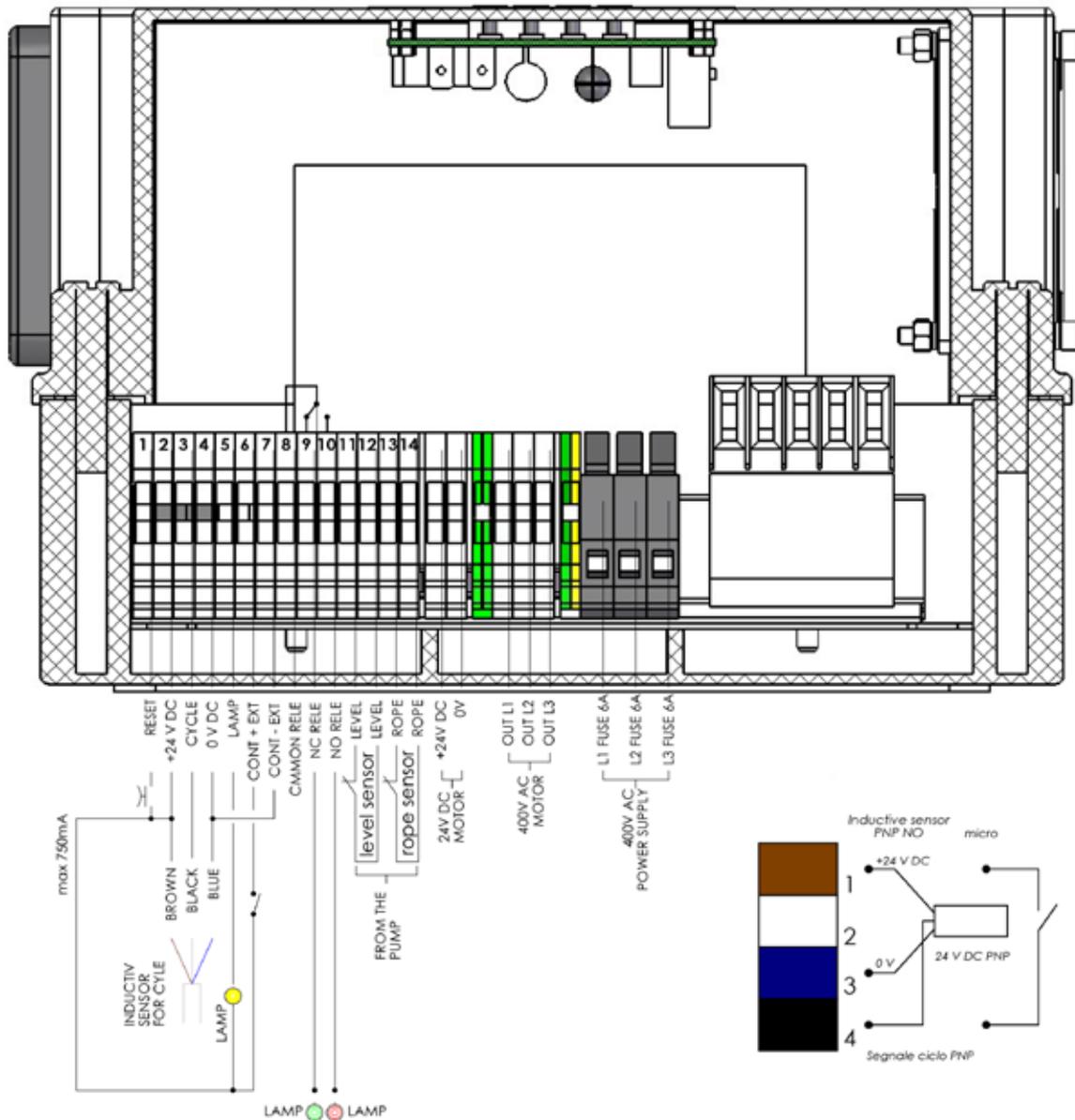
17. External Timer

17.1 40.BCT.400



SEZIONE G-G

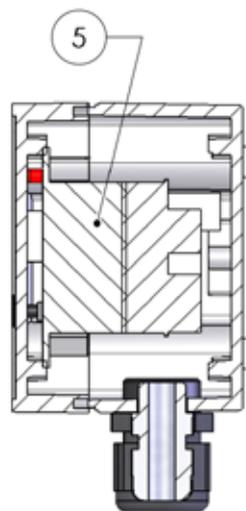
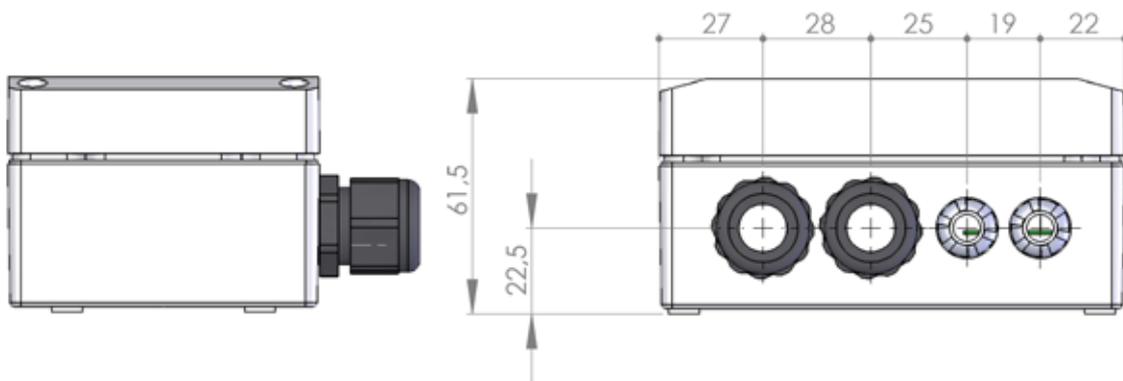
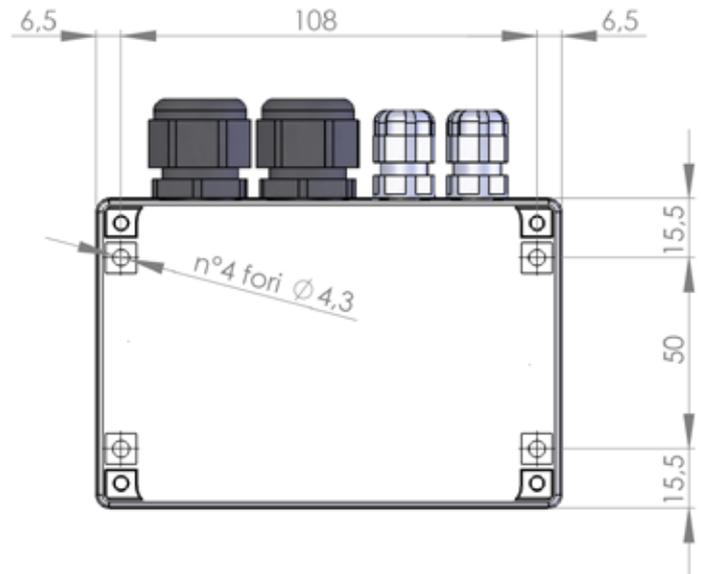




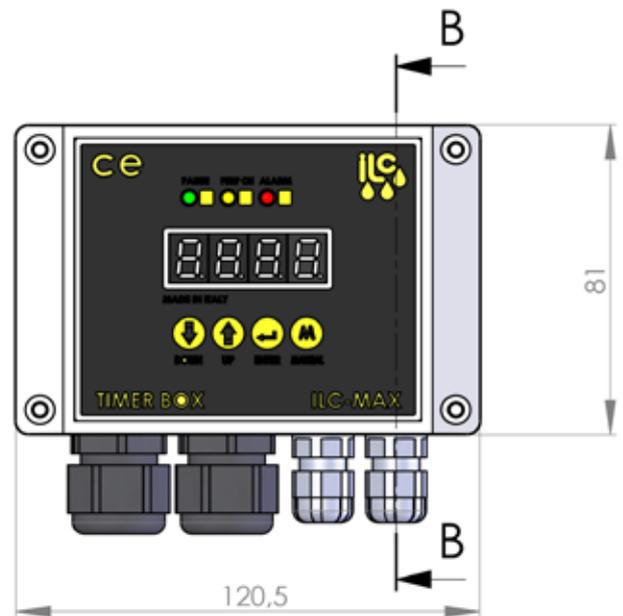
Caution!
 The rated voltage of fuses and circuit breakers must be greater than or equal to the maximum system power supply voltage. The AC power supply to the drive must be adequately protected against overloading.

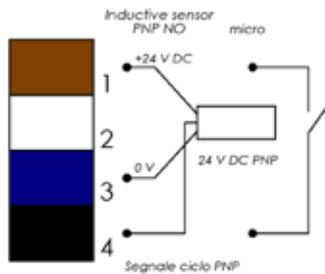
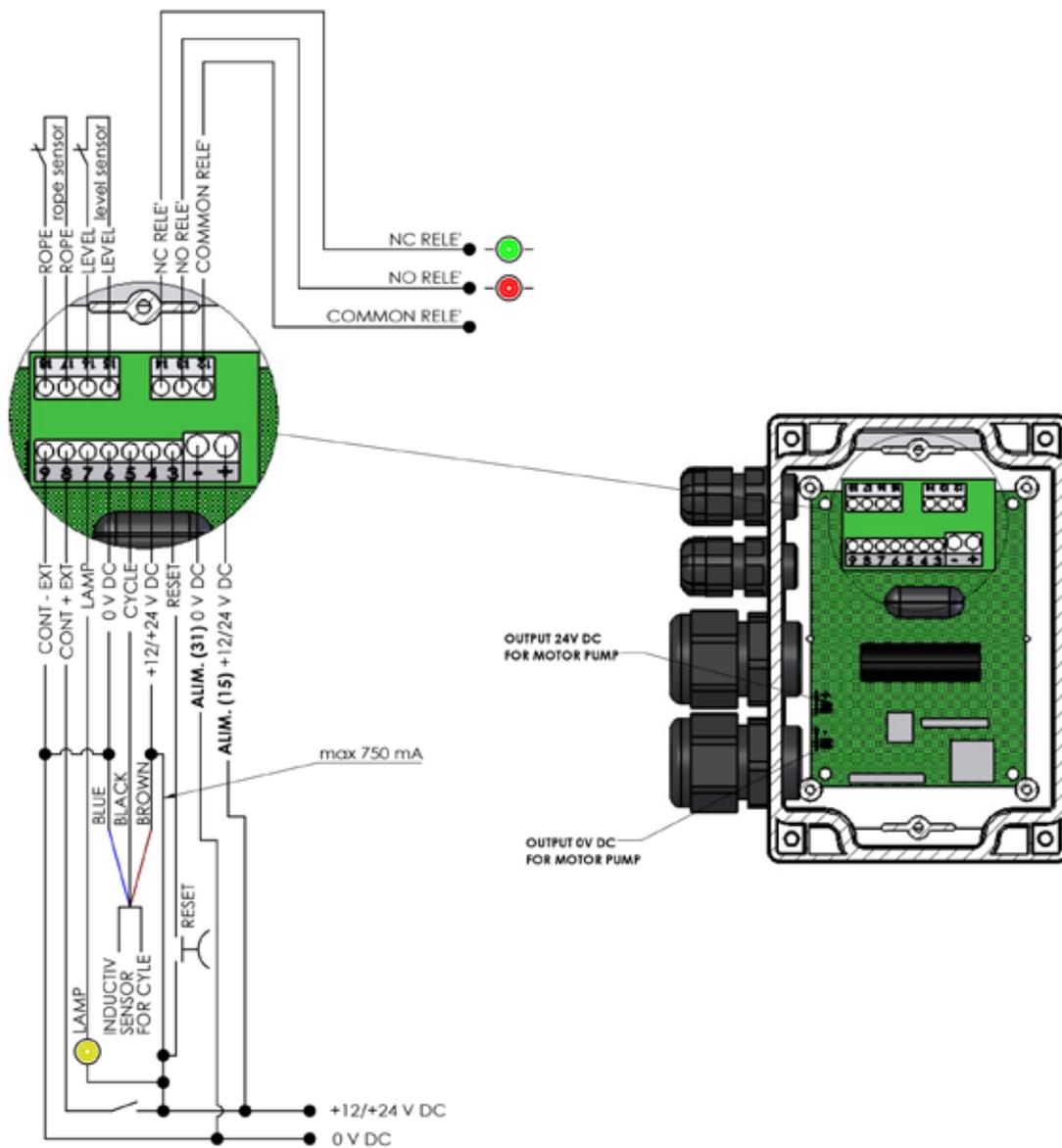
- 
Lamp = general alarm
 (the lamp lights steadily for the working time or when the "reset" button is pressed and flashes in the event of an alarm)
- 
NC relay = general alarm
 (contact changes state in the presence of an alarm)
- 
NO relay = general alarm
 (contact changes state in the presence of an alarm)

17.2 40.BCT.AT.DC



SEZIONE B-B





Lamp = general alarm

(the lamp lights steadily for the working time or when the "reset" button is pressed and flashes in the event of an alarm)



NC relay = general alarm

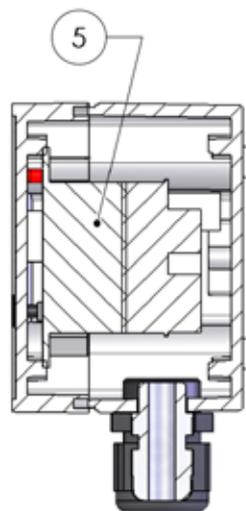
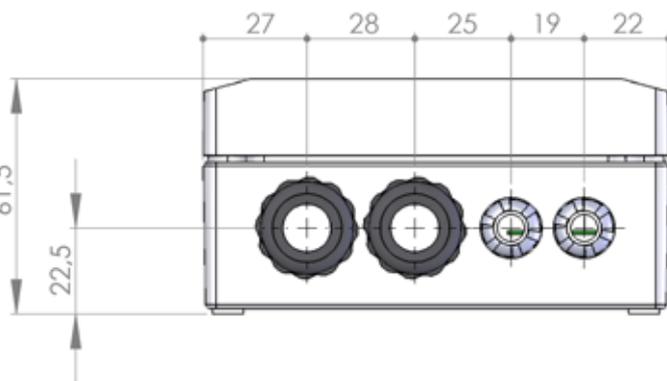
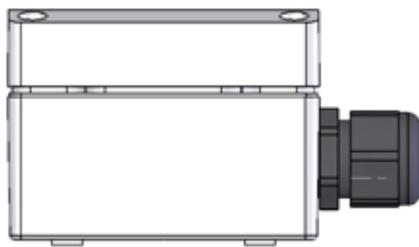
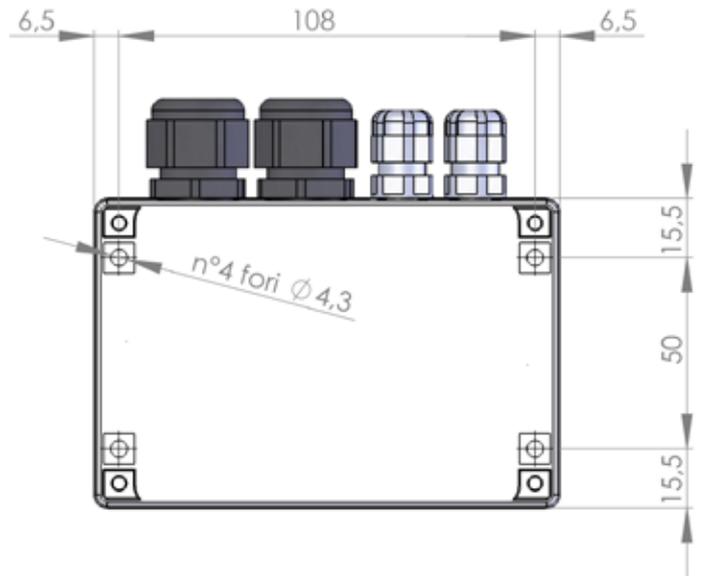
(contact changes state in the presence of an alarm)



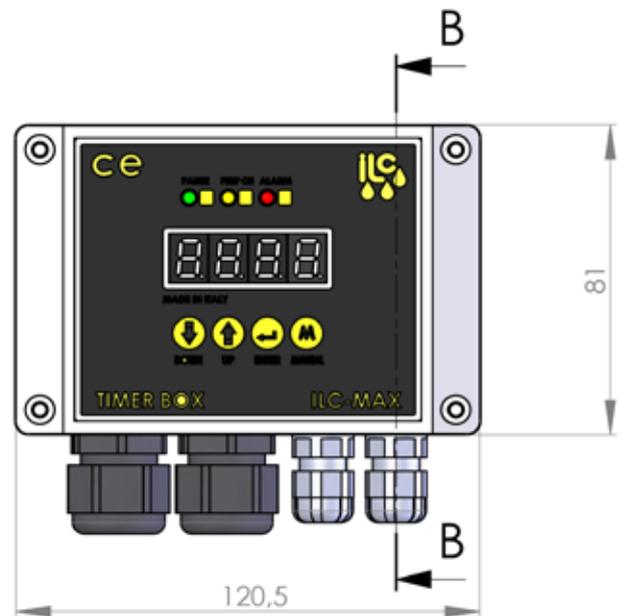
NO relay = general alarm

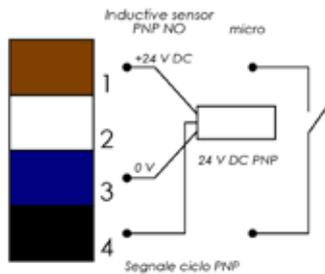
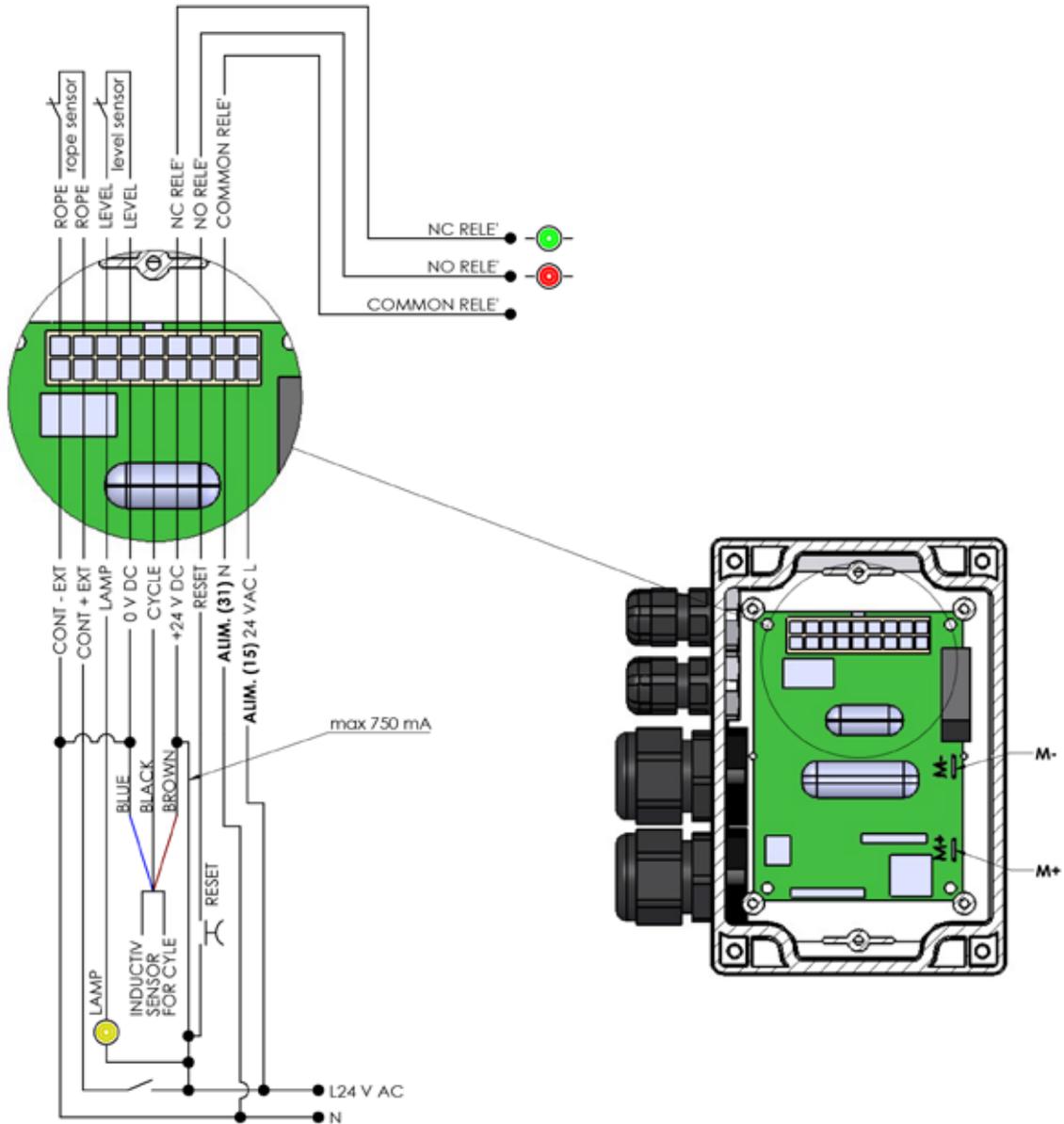
(contact changes state in the presence of an alarm)

17.3 40.BCT.AT.AC



SEZIONE B-B





Lamp = general alarm

(the lamp lights steadily for the working time or when the "reset" button is pressed and flashes in the event of an alarm)



NC relay = general alarm

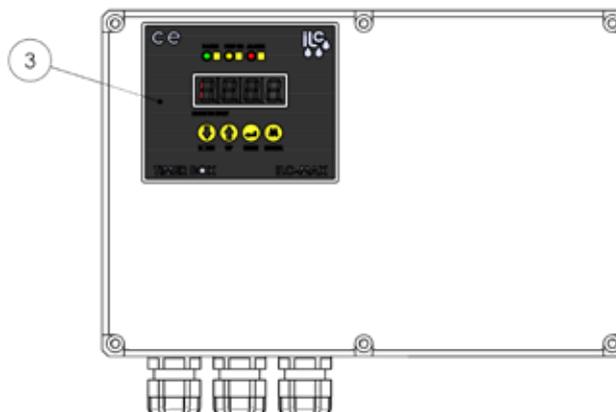
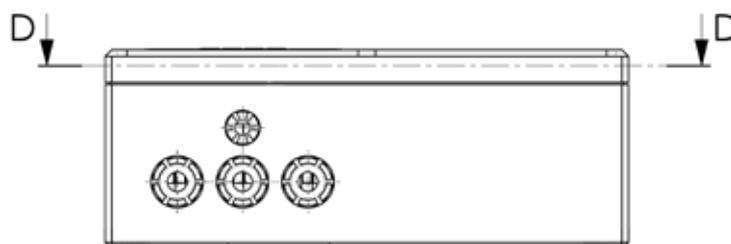
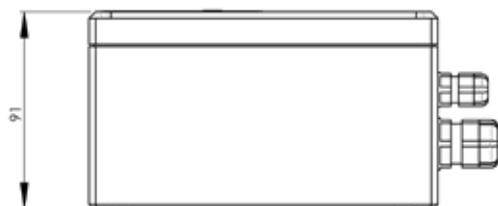
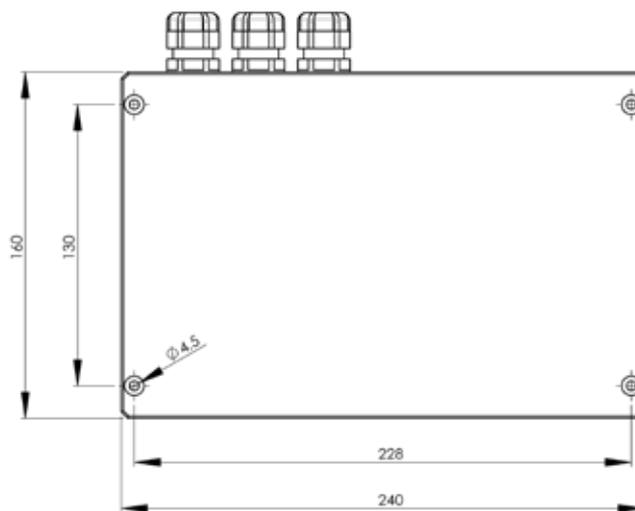
(contact changes state in the presence of an alarm)

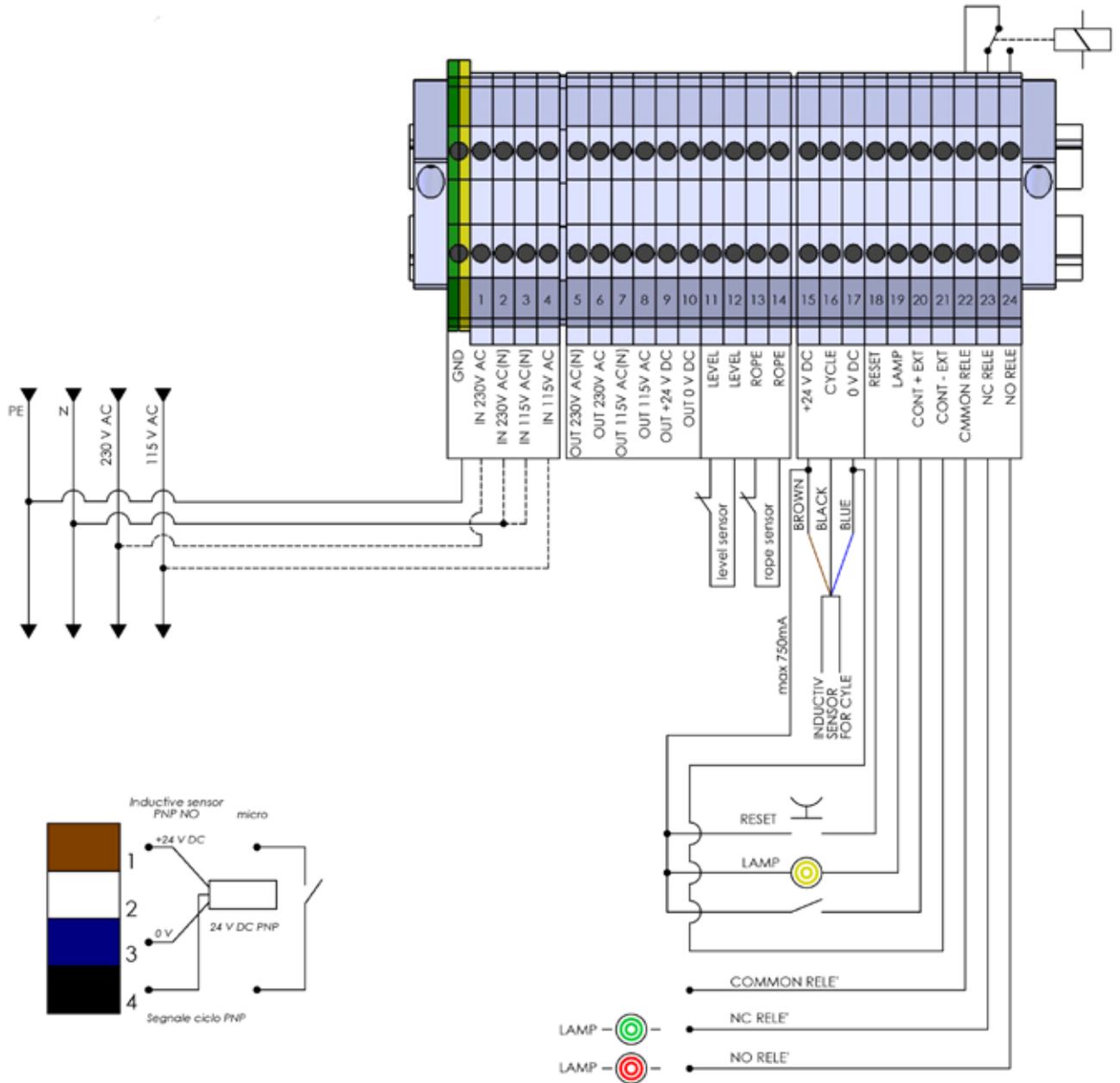


NO relay = general alarm

(contact changes state in the presence of an alarm)

17.4 40.BCT.BT.AC





Caution!
 The rated voltage of fuses and circuit breakers must be greater than or equal to the maximum system power supply voltage. The AC power supply to the drive must be adequately protected against overloading.

Voltage

The input voltage can be 230 V AC or alternatively 115 V AC: with 230 V AC input, the output voltage is 230 V AC, with 115 V AC input, the output voltage is 115 V AC. In both cases, a 24 V DC output is available.



Lamp = general alarm

(the lamp lights steadily for the working time or when the "reset" button is pressed and flashes in the event of an alarm)



NC relay = general alarm

(contact changes state in the presence of an alarm)



NO relay = general alarm

(contact changes state in the presence of an alarm)

18. General scheduled maintenance

Premature wear of pumping elements and other moving parts is caused by contaminated and dirty lubricants. Failure of the progressive distributors which, as a consequence, do not send lubricant to the points, is caused by the presence of air in the distribution network or by contaminated lubricant. The unit does not require special maintenance if you avoid using contaminated lubricant and injecting air into the circuit. Before performing any operation, make sure you have disconnected the power supply.

Table 15.1 lists the periodic checks, the frequency and the operations that the maintenance technician will have to do to ensure system efficiency over time. The unit is designed and built so as to require minimal servicing.

Diagnostic tables 15.2 and 15.3 (page 16) highlight the main faults, their causes and solutions. If the problem cannot be solved after consulting it, contact the technical office at ILC.

18.1 Periodic checks

Check	Frequency	Intervention
Entire unit	500 hours (depending on work environment)	Always keep the body and the entire structure clean
Distribution	1000 hours	Check piping and fittings and anchoring of the machine
Lubricant	Depending on system grease consumption	Check the level (for pumps without the electric indicator) and the condition of the lubricant in the tank, paying attention to any unusual decomposition or hardening that would compromise pump and progressive metering device operation.
Load filter	Every filling	If there is one, check the condition of the internal filtering element.

18.2 Diagnostics table

Anomaly	Potential causes	Potential solutions
1. The pump motor does not work.	1.1 No voltage. 1.2 The electronic board does not work. 1.3 The motor does not work. 1.4 Working temperatures too low for the type of lubricant used.	1.1 Check the power supply system. 1.2 Replace the electronic board. 1.3 Replace the motor. 1.4 Replace the lubricant with a suitable model that can be pumped at low temperatures
2. The pump works but lubricant does not reach the final points.	2.1 Incorrect cycle time setting. 2.2 Unsuitable lubricant used 2.3 Pumping element intake clogged. 2.4 The pumping element piston is worn. 2.5 Pumping element delivery valve obstructed-dirty. 2.6 Disconnected piping. 2.7 Working temperatures too low for the type of grease used.	2.1 Reprogram the cycle time. 2.2 Empty the tank and refill it with suitable lubricant. 2.3 Disassemble the pumping element and clean the intake conduits. 2.4 Replace the pumping element. 2.5 Clean the delivery valve and, if necessary, replace it. Replace the pumping element. 2.6 Check the condition of the piping and the related connections to the fittings. Replace worn piping. 2.7 Replace the lubricant with one that is suitable to be pumped at low temperatures.
3. The pump starts the work phase but stops it immediately.	3.1 Defective motor or elevated output absorption.	3.1 Let it cool down for a few minutes and then try again. If the problem persists, replace the motor.

17.3 Timer diagnostics table

Anomaly	Potential causes	Potential solutions
1. The timer does not work	1.1 No voltage. 1.2 Loose or incorrect connections 1.3 Defective timer.	1.1 Check the power supply system. 1.2 Check the power supply connection in the 7-pole external connector. Check the connector timer internal connection. 1.3 Replace the timer.

18.3 Alarm diagnostics table

When the display shows **BLOC** and the red light switches on, the pump is in lockout. Pressing **↓** shows the code for the alarm event on the display, while pressing **M** starts an extra cycle and resets the alarms.

Key	Function
↓	Shows alarm event code
M	Immediately starts an extra work cycle for the set time Resets all alarms

Display	Event description	Potential solutions
1.1AL	<p>Minimum level alarm, tank empty.</p> <ol style="list-style-type: none"> Steady Red Light (E-bp=1): 1.1AL remains steady for 2 seconds then the pump goes into BLOC. Press ↓ to display event 1.1AL. Intermittent Red Light (E-bp=0) 1.1AL remains steady until the end of the pause time, resets during work, the board monitors the level sensor again during work, and if the reading logic still shows the level alarm, it resets the alarm. The pump does not block. 	<p>Tank filling.</p> <p>Press M, the pump restarts with a work cycle.</p>
1.1AU	<p>Low voltage alarm. It intervenes when the voltage drops below 9 volts.</p> <ol style="list-style-type: none"> BLOC appears and Steady red light (if E-rt=1 and pump paused): When the Circuit Board is re-powered, alarm 1.1AU is enabled and the pump does not restart during the work phase. If the pump is working, it switches off. (E-rt=0) Caution! The pump switches off and when switched on again, the alarm is not present. 	<p>Restoration of correct board power supply.</p> <p>Press M, the pump restarts with a work cycle.</p>
1.1AP	<p>Overpressure alarm. The working pressure of the line is not within the correct parameters.</p> <ol style="list-style-type: none"> BLOC and the steady red light appear. Press ↓ to display event 1.1AP 	<p>Restoring correct working pressure.</p> <p>Press M, the pump restarts with a work cycle.</p>
1.1AM	<p>Motor rotation alarm. Motor revs drop below 9 rpm.</p> <ol style="list-style-type: none"> Steady red light (E-AM=1). BLOC appears on the display. Press ↓ to display event 1.1AM 	<ol style="list-style-type: none"> Check input voltage and amperage. Check that the line does not have a blockage or the motor does not have a mechanical blockage. Press M, the pump restarts with a work cycle.

Display	Event description	Potential solutions
1.1AC	<p>Alarm of the proximity sensor installed on the progressive valve. During the work phase, the signal from the cycle sensor is monitored.</p> <ol style="list-style-type: none"> 1. Red light Intermittent and 1.1AC on display: the board is not receiving a signal from the sensor at the end of the work cycle. The motor stops for 2s and retries the number of work cycles set in E-CC. 2. Steady Red light and display in BLOC: once the attempts with sensor failure have been reached, the pump goes into lockout. 3. Press  to display event 1.1AC. 	<p>Check the proximity sensor or the operation of the progressive distributor. The line is blocked.</p> <p>Press , the pump restarts with a work cycle.</p>
1.1AE	<p>External reset button short-circuit.</p> <p>1.1AE appears on the display and Red light flashes: the pump does not block.</p>	<p>Check input signals at external reset PIN.</p> <p>Press , the pump restarts with a work cycle.</p>

19. Transport

I.L.C. Srl products are packaged to market standard according to the regulations in force in the country of destination. Proceed with caution during transport. The product must be protected against impact. There are no restrictions for transportation by land, air or sea.

**Caution!**

Do not spill or throw away the product

19.1 Delivery

After receiving the shipment, it is necessary to check the integrity of the products based on the accompanying documents. Packaging materials must be kept until any discrepancies have been clarified.

19.2 Storage

For I.L.C. products. The following storage conditions apply:

19.2.1 Storage of lubrication units

- Environmental conditions: dry and dust-free environment, storage in a well-ventilated and dry location
- Storage period: max. 24 months
- Admissible air humidity: <65%
- Storage temperature: -20°C to +80° C°
- Light: avoid direct exposure to sunlight or UV rays, isolate heat sources located in the vicinity

19.2.2 Storage of electronic and electrical equipment

- Environmental conditions: dry and dust-free environment, storage in a well-ventilated and dry location
- Storage period: max. 24 months
- Admissible air humidity: <65%
- Storage temperature: -20° C to +80° C
- Light: avoid direct exposure to sunlight or UV rays, isolate heat sources located in the vicinity

19.2.3 General notes for storage

- Dust-protected storage by covering the devices with plastic film is recommended
- Protection against floor humidity by storing on shelves or on wooden structures
- Before storage, it is recommended to protect the polished metal surfaces, specifically the friction components and the assembly surfaces, by treating them with a long-term anticorrosion product
- Approx. every 6 months: check for corrosion. If signs of corrosion are visible, it is recommended to eliminate them immediately and treat again with the anticorrosive agent
- The drives must be protected against mechanical damage

20. Operation

20.1 General information

The pump operates automatically. However, the flow of the lubricant inside the piping must be checked periodically. The filling level of lubricant in the reservoir, being installed, must be visually checked periodically. If an excessively low lubricant level is detected, it must be topped up to the maximum marking as described in the "Commissioning" chapter.

The information provided by the manufacturer of the machinery and of the lubricants must be strictly complied with.



Caution!

Only fill clean lubricant using a suitable device. The use of contaminated lubricants may cause very severe system malfunctions. The lubricant reservoir must be filled avoiding the formation of bubbles.



Caution!

Do not mix different types of lubricants, as damage may occur, resulting in expensive cleaning operations of the product/central lubrication system. To avoid confusion, it is recommended to apply a note on the reservoir identifying what lubricant was used.

20.2 Commissioning

Before commissioning the product, it is recommended to check all electrical and hydraulic connections and, if applicable, the pneumatic connections.

The lubricant must be supplied without bubbles. For this purpose, fill the reservoir with clean lubricant. Then, run the pump until the lubricant comes out of all lubrication points without bubbles.

The purge cycle of the central lubrication system is carried out by opening the ends of the main pipe, so that lubricant comes out from this point without bubbles.

The inclusion of air in the lubricant greatly affects system operation, with potential damage due to the lack of lubrication of moving parts.

20.3 Lubricants

The pump is designed to work with NLGI-2 maximum grade lubricants at operating temperature. Use lubricants that are compatible with NBR gaskets. Below is a table comparing NLGI (National Lubricating Grease Institute) and ASTM (American Society for Testing and Materials) lubricant classifications, limited to the values concerning ILC-MAX pumps.

For further information about the technical features and the necessary safety measures, refer to the Product Safety sheet (Directive 93/112/EEC) regarding the type of lubricant chosen and supplied by the manufacturer.

NL GI	ASTM
00	400 - 430
0	355 - 385
1	310 - 340
2	265 - 295



Caution!

Do not mix different types of grease. We suggest putting an identification plate on the pump that shows the type of lubricant to use.

21. Decommissioning

21.1 Temporary decommissioning

Temporary decommissioning of the product described occurs by disconnecting the electrical, pneumatic and/or hydraulic power supply connections.

For extended product decommissioning, please refer to the information in the "Transport and storage" chapter in these assembly instructions.

For product recommissioning, please refer to the information in the "General information" and "Commissioning" chapter in these assembly instructions.

21.2 Definitive decommissioning

For definitive product decommissioning, the regional legal regulations and the laws on the disposal of contaminated operating equipment must be strictly complied with.

**Caution!**

Lubricants may pollute the soil and groundwater. Therefore, it is recommended to properly use and dispose of the lubricants. Regional regulations and laws regarding disposal of lubricants must be complied with.

22.3 Disposal

During maintenance or demolition of the machine, do not release polluting parts into the environment. Refer to local regulations for correct waste disposal. When dismantling the pump, the identification plate and every other document must be destroyed.

22. Precautions for use

You must carefully read the warnings about the risks that come with using a lubricant pump. The operator must know how it functions and clearly understand the hazards of pumping pressurised lubricants.

22.1 It is recommended to

- Check the chemical compatibility of the materials that the pump is built with, with the fluid to be pumped. A wrong choice may cause, in addition to damage to the pumps and pipes, serious risks for people (leakage of irritating and harmful products to health) and for the environment.
- Never exceed the maximum operating pressure value allowed by the pump and by the components connected to it. In case of doubt, refer to the data on the machine plate.
- Only use original spare parts.
- Should it be necessary to replace components with others, make sure that they are suitable for operating at the maximum operating pressure of the pump.
- Never attempt to stop or divert any leaks with your hands or other parts of your body.
- Note: Personnel must use protective devices, clothing and tools that comply with the regulations in force in relation to the location and to the use of the pump both during operation and maintenance operations.

22.2 Flammability

The lubricant used in lubrication circuits is not a normally flammable liquid. However, it is crucial to adopt all precautions possible to prevent it from coming into contact with very hot parts or open flames.

22.3 Pressure

Before every operation, make sure there is no residual pressure in any branch of the lubricant circuit, which could cause oil to spray when disassembling fittings or components.

After long periods of inactivity, check the tightness of all the parts subject to pressure. Do not subject the fittings, pipes and pressurised parts to violent impact. Damaged flexible hoses or fittings are DANGEROUS, replace them. We recommend only using original spare parts.

22.4 Noise

Under normal operating conditions, the noise emission does not exceed a value of 70 dB "A" at a distance of 1 metre (39.3 inch) from the pump.

Use of the pump with NLGI00 consistency greases must be evaluated on a case by case basis, due to the extreme difference in the pour properties of the compound, depending both on the viscosity of the base oil but also on the soaps and additives used.

For further information about the technical features and the necessary safety measures, refer to the Product Safety sheet (Directive 93/112/EEC) regarding the type of lubricant chosen and supplied by the manufacturer.

22.5 Interventions

Do not perform any operations on the machine before having disconnected it from the electrical mains and making sure no one can reconnect it during the operation. All the installed equipment (electrical and electronic) must be disconnected from the earth line.

23. User instructions

Conformity to essential safety requirements and to the provisions in the machinery directive has been checked by filling out the prepared checklists contained in the technical file.

23.1 Lists used

- Risk assessment (UNI EN ISO 14121-1).
- Conformity to essential safety requirements (Machinery Directive –EC 06/42).

23.2 Risks not eliminated, but considered acceptable

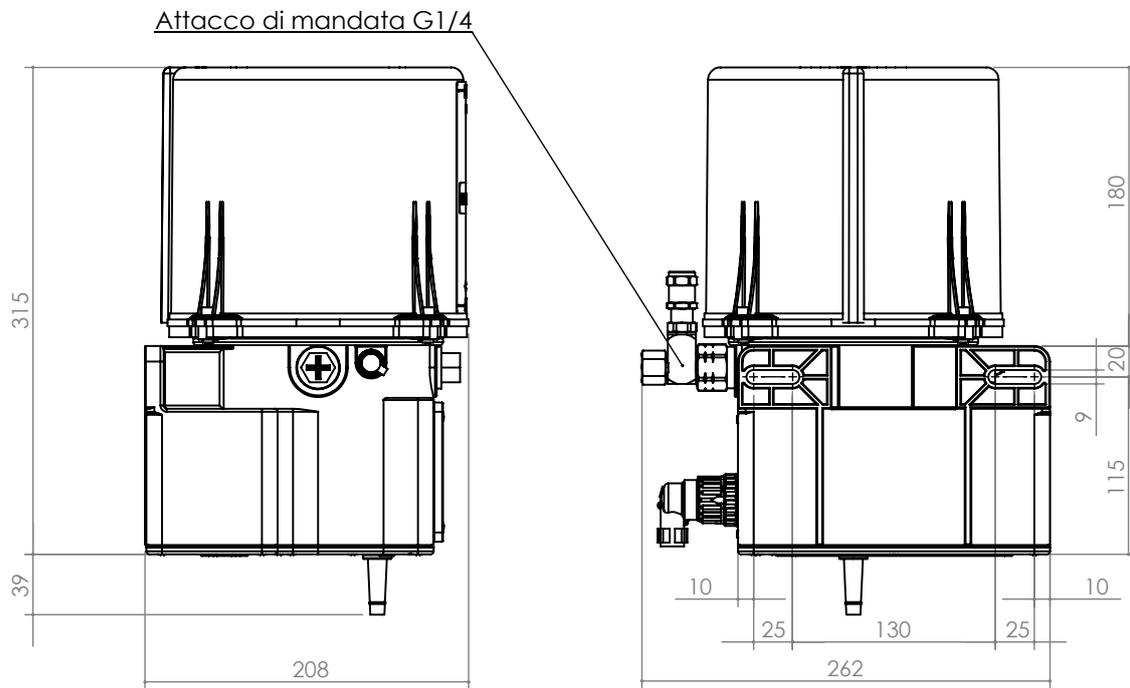
- Electrocutation: this can only occur in the event of serious user carelessness.
- Use of unsuitable lubricant: the types of fluids that are not compatible with correct pump operation are listed below.*
- Contact with harmful fluids.

23.3 Inadmissible fluids

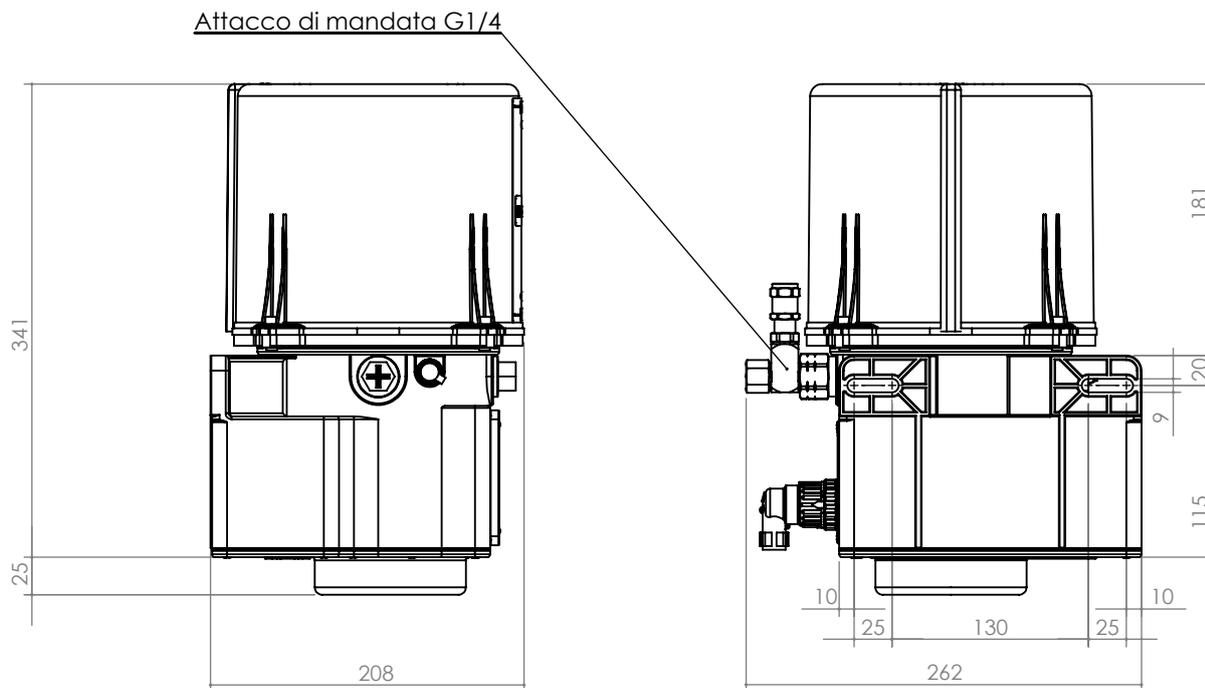
Liquids	Hazards
1. Lubricants with abrasive additives	Wear of the internal pump components
2. Lubricants with silicone additives	Pump seizing
3. Petrol - solvents - inflammable liquids	Fire - explosion - damaged gaskets
4. Corrosive products	Pump corrosion - injury to persons
5. Water	Pump oxidation
6. Food products	Contamination of said products

* For more detailed information on product compatibility with particular fluids, contact the I.L.C. Technical Office.

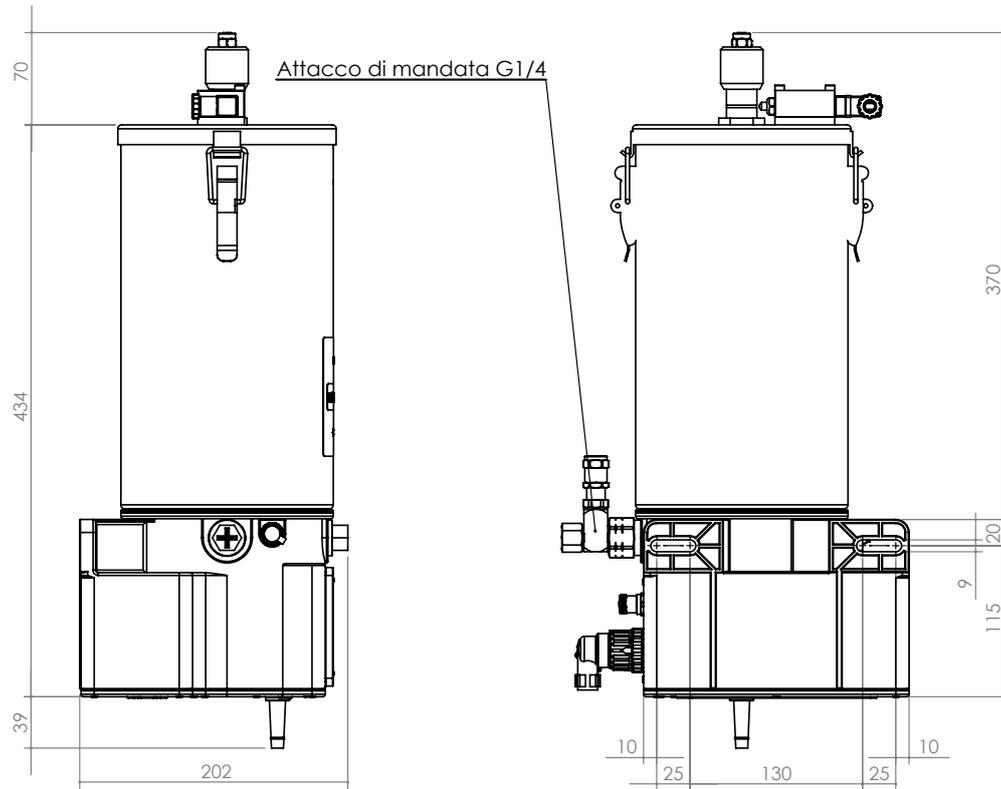
24.3 Grease 4 kg (12/24 V AC - 24 V DC)



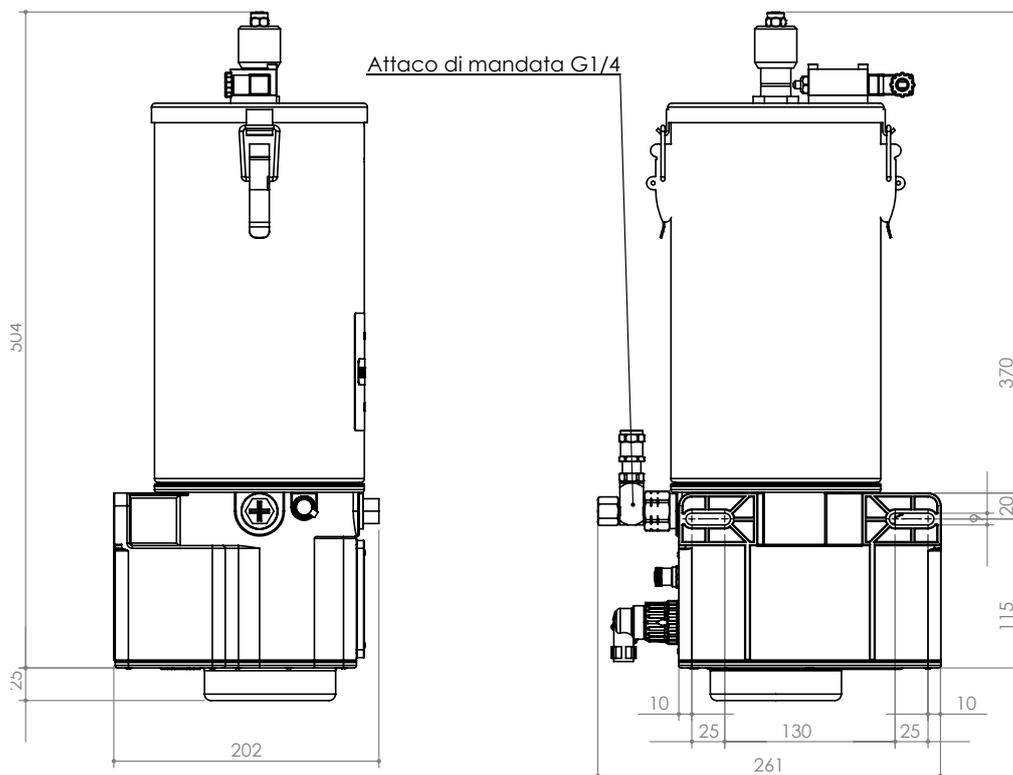
24.4 Grease 4 kg (115/230 V AC)



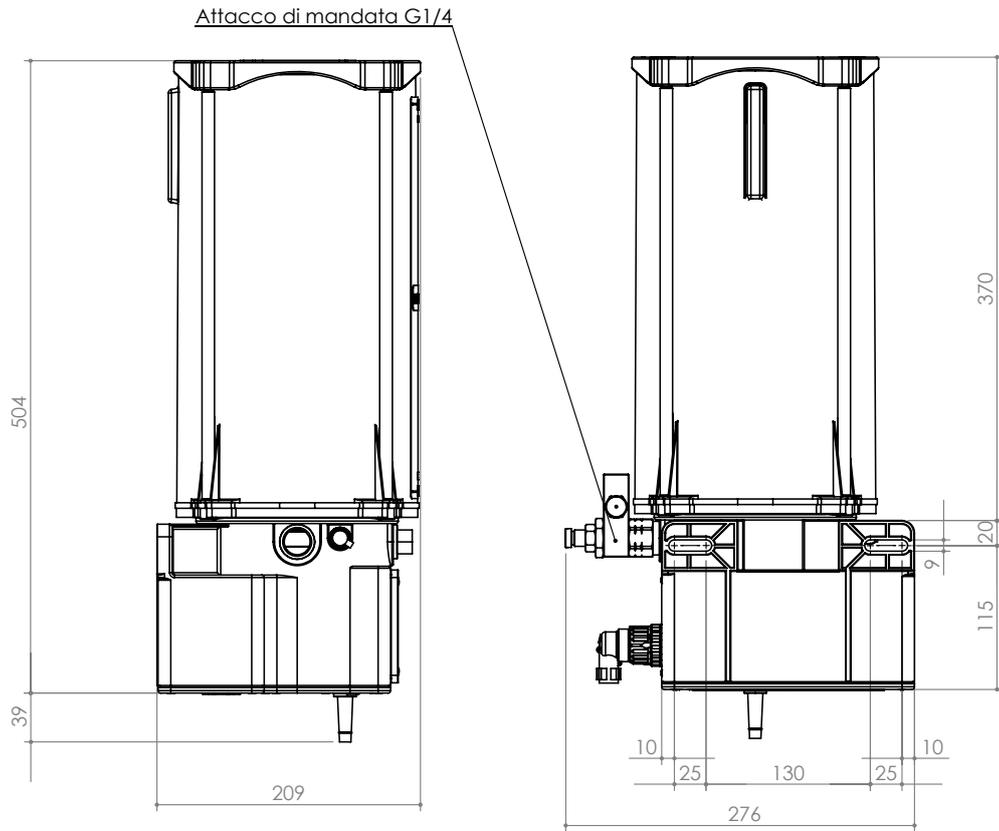
24.5 Grease 5 kg (12/24 V AC - 24 V DC)



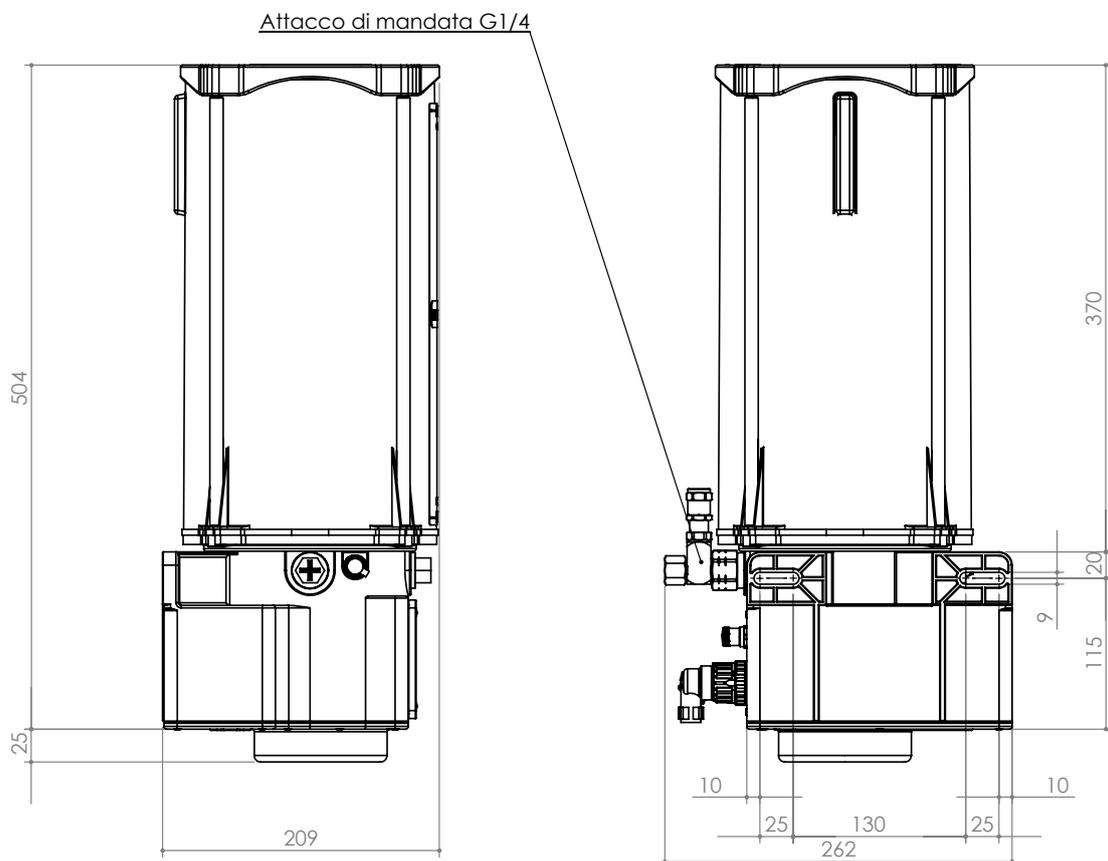
24.6 Grease 5 kg (115/230 V AC)



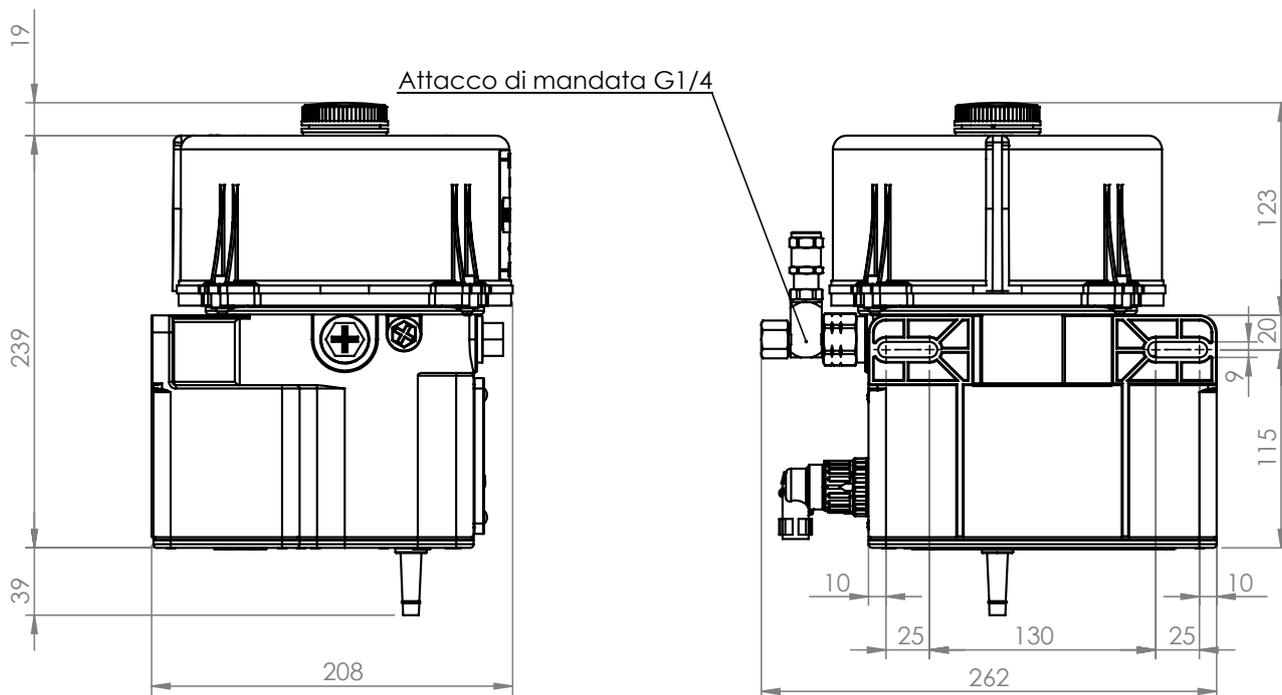
24.7 Grease 8 kg (12/24 V AC - 24 V DC)



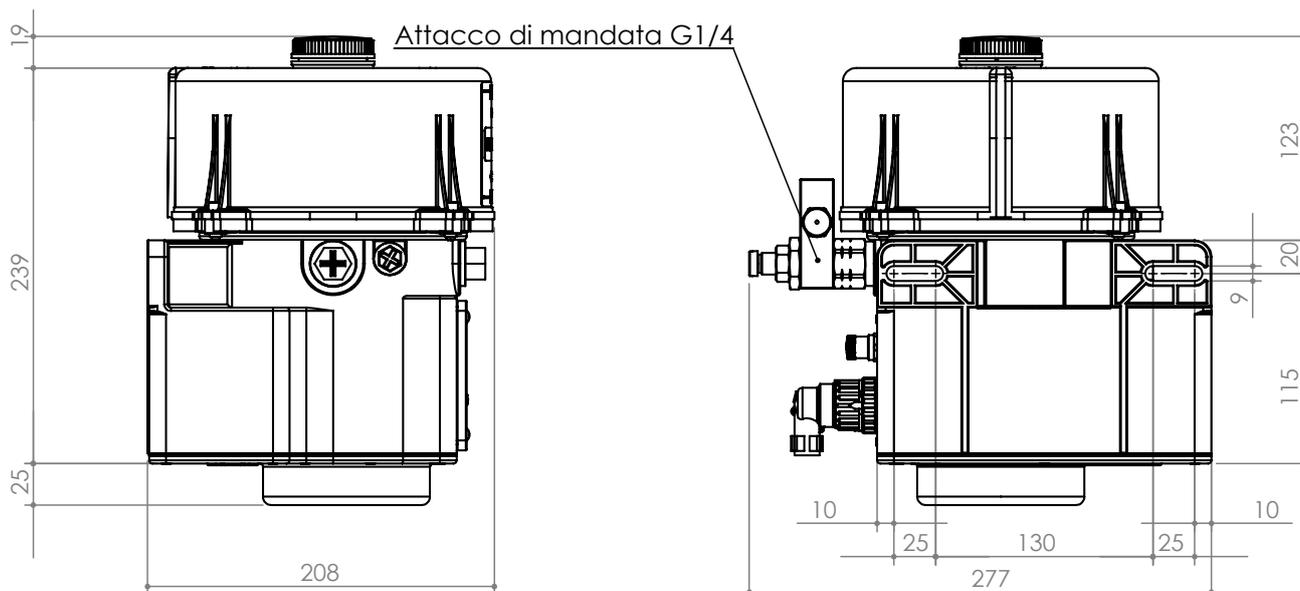
24.8 Grease 5 kg (115/230 V AC)



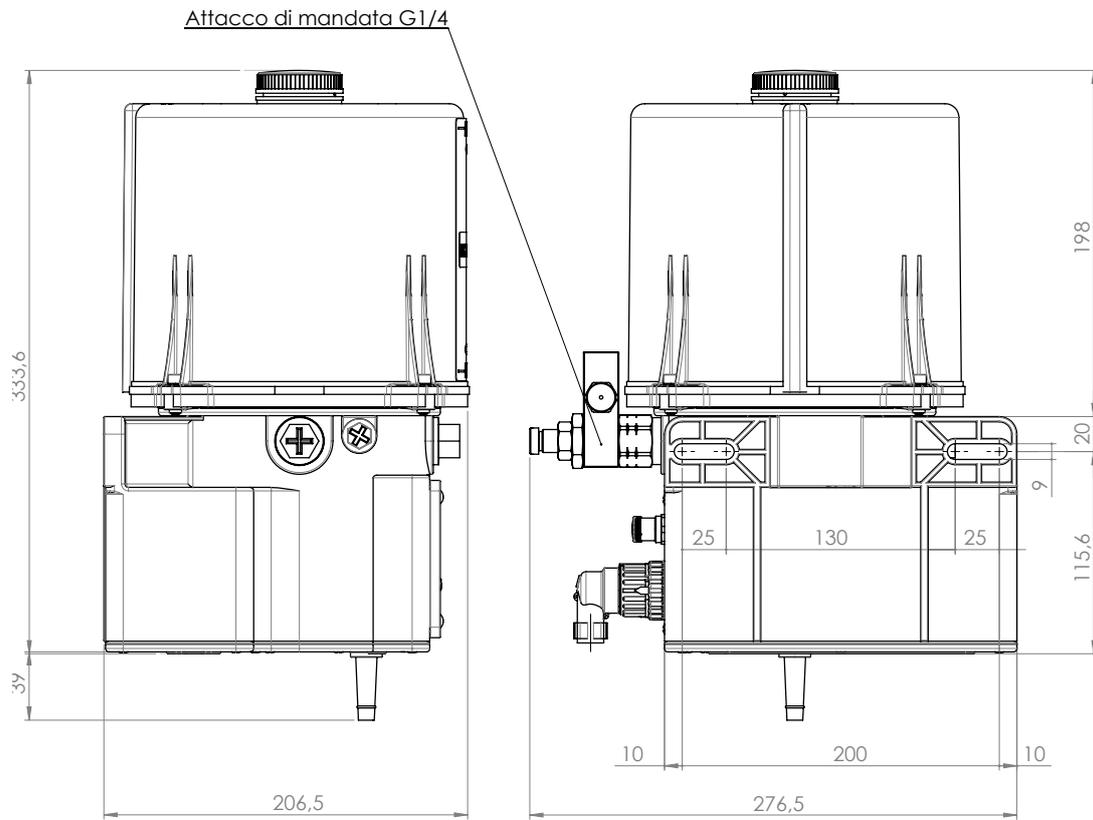
24.9 Oil 2 L (12/24 V AC - 24 V DC)



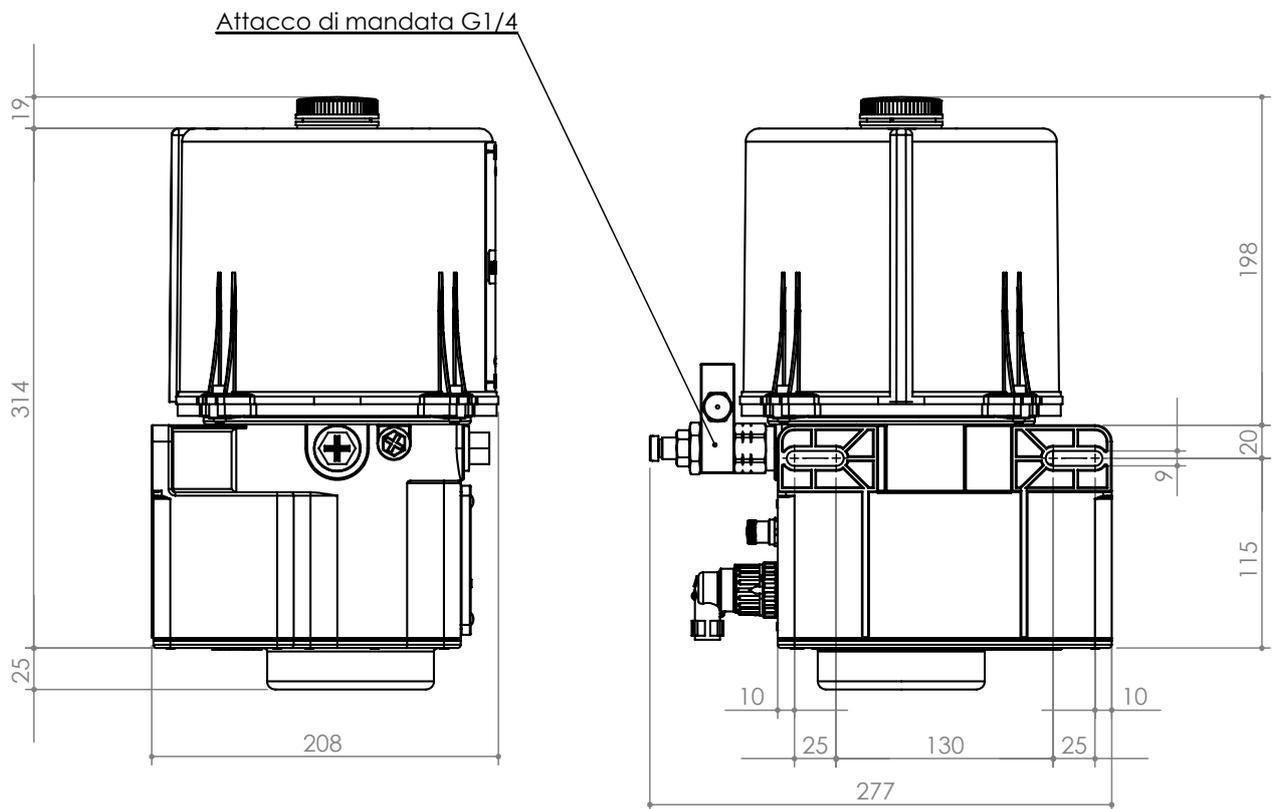
24.10 Oil 2 L (115/230 V AC)



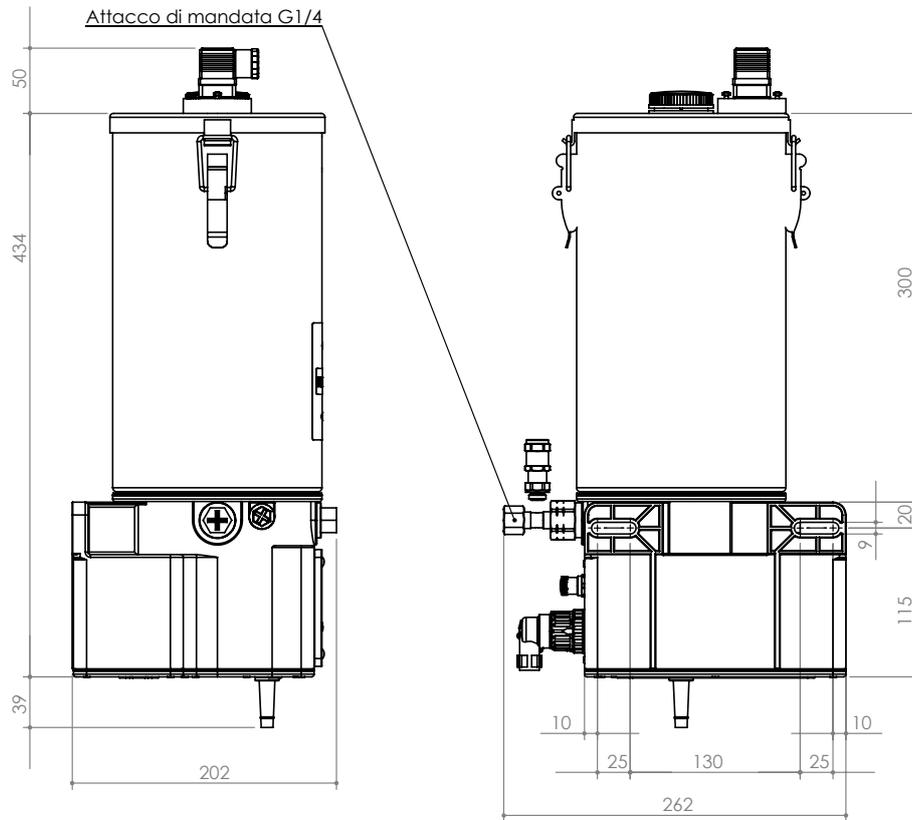
24.11 Oil 4 L (12/24 V AC - 24 V DC)



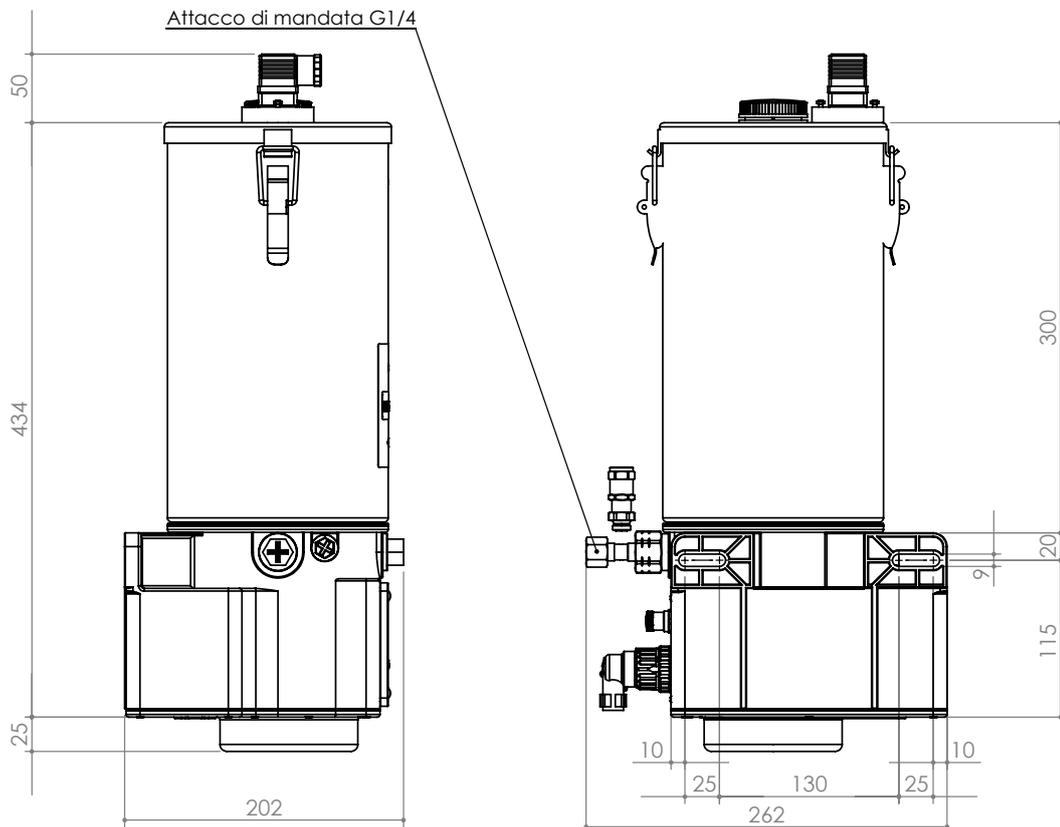
24.12 Oil 4 L (115/230 V AC)



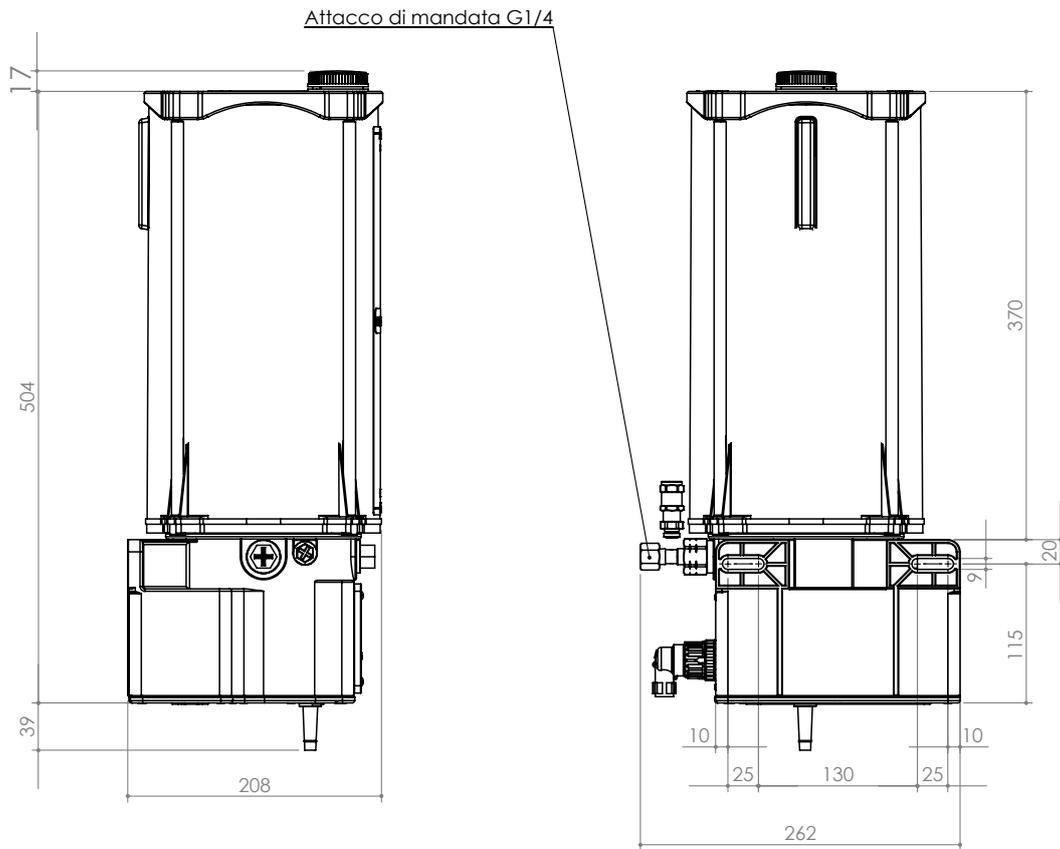
24.13 Oil 5 L (12/24 V AC - 24 V DC)



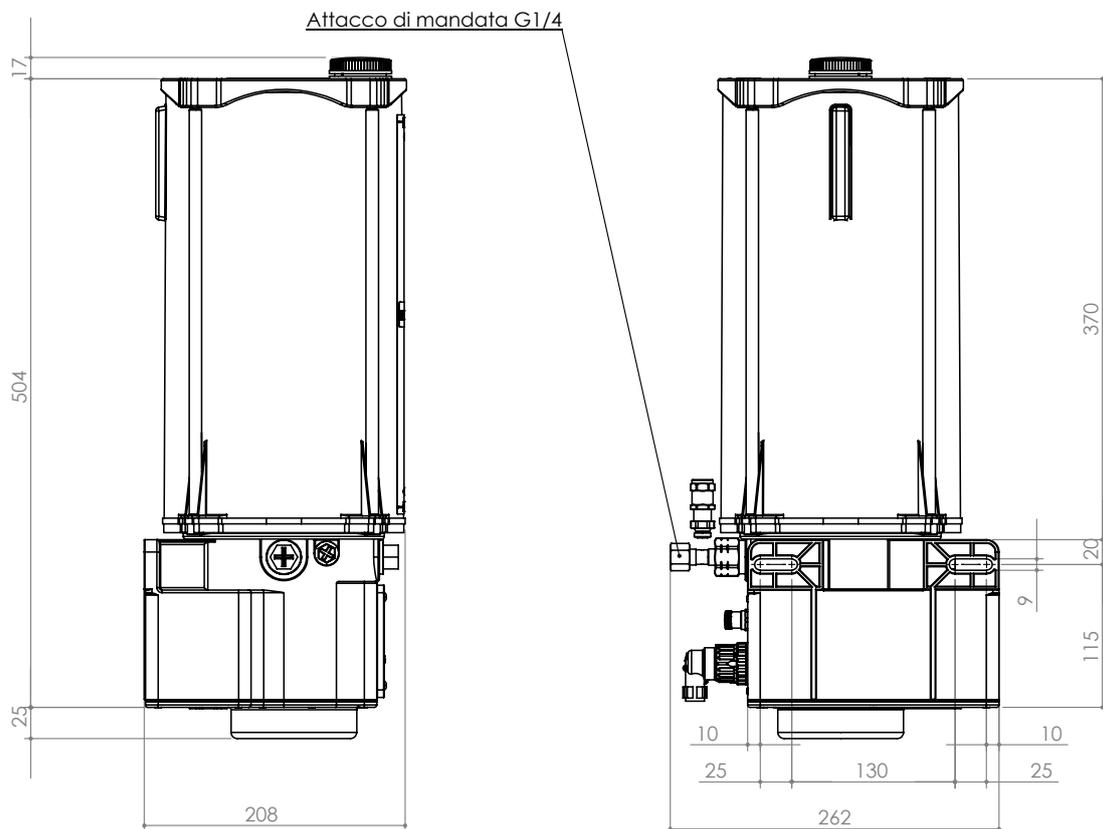
24.14 Oil 5 L (115/230 V AC)



24.15 Grease 8 kg / Oil 8 L (12/24 V AC - 24 V DC)



24.16 Grease 8 kg / Oil 8 L (115/230 V AC)



25. ILC order code configurator



A (Tank)		B (Voltage)		C (Pumping element)	
2 kg transparent	2	12 V DC	12DC	Fixed Flow Rate	F
4 kg transparent	4	24 V DC	24DC	Adjustable Flow Rate	R
8 kg transparent	8	24 V AC	24AC		
5 kg metal	5	115 V AC	115V		
		230 V AC	230V		

D (Timer)		E (Lubricant)	
With timer	CT	Grease consistency NGLI 1 and 2	G
Without timer	ST	Oil consistency 50-1500 cSt	O
		Soft grease consistency 0, 00 and 000	SG

All pumps are supplied complete with electric lubricant level control. The 2, 4 and 8 kg grease pumps are supplied complete with electric motor rotation control. The models with timer include the TYCO 7-pole connector and M12x1 4-contact connector; models without timer include only the TYCO 7-pole connector.

25.1 DPX Preparation

ILC MAX is set up to be assembled with a 3 to 9 element DPX mounted directly below the body of the pump (1). This must be agreed with ILC S.r.l., which will provide the customer with a special code.

To assemble a DPX progressive distributor yourself, order kit 40.KRT.001 (2) (connection pipe complete with fittings).

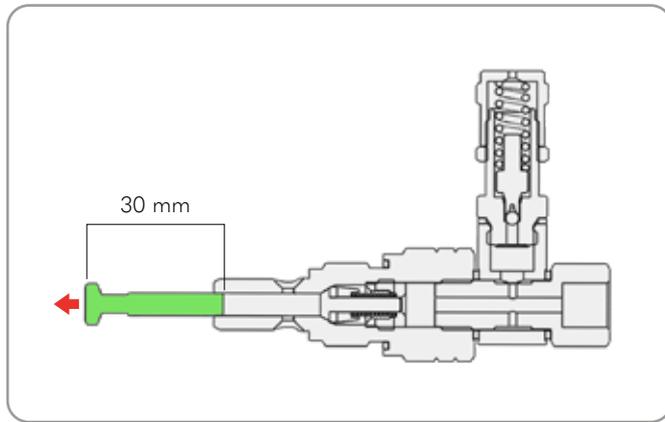
To order DPX progressive distributors, please refer to the relevant catalogue on the ILC s.r.l. website at www.ilclube.com/progressive-lubrication-ilc.



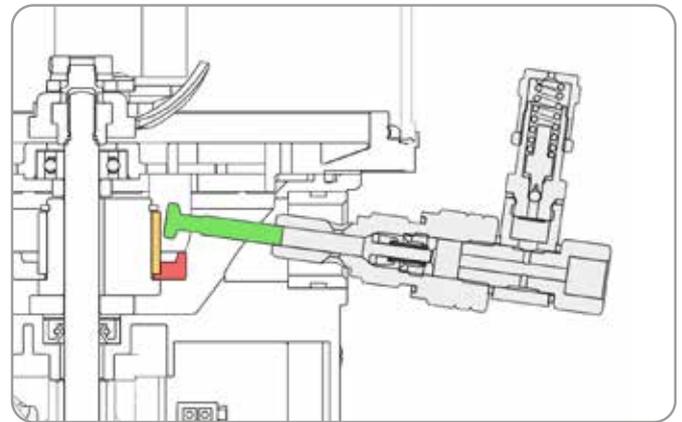
26. Pumping elements

26.1 Installation and pumping element removal

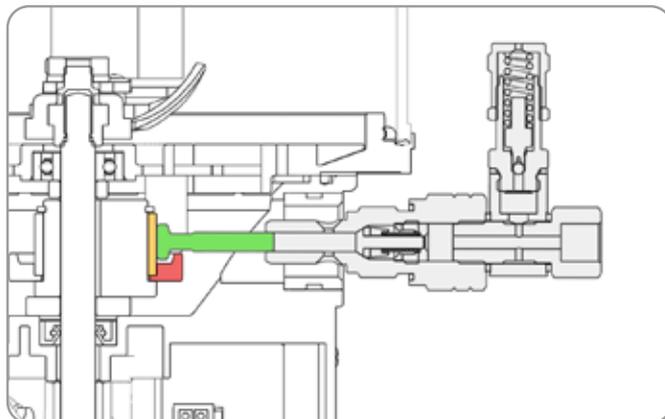
To install a pump, remove the cap from the seat at the position where you wish to insert the element and follow the procedure below. When removing the pumping element, retrace the steps backwards.



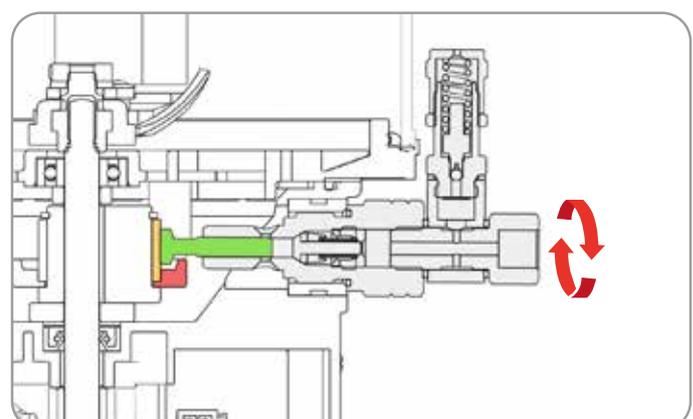
Extend the **stem (green)** of the pumping element for at least **30 mm**.



Insert the **inclined** pumping element so that it **passes the cam tooth (red)**.



bring it to a horizontal position to **engage the stem (green) to the cam (red)**.



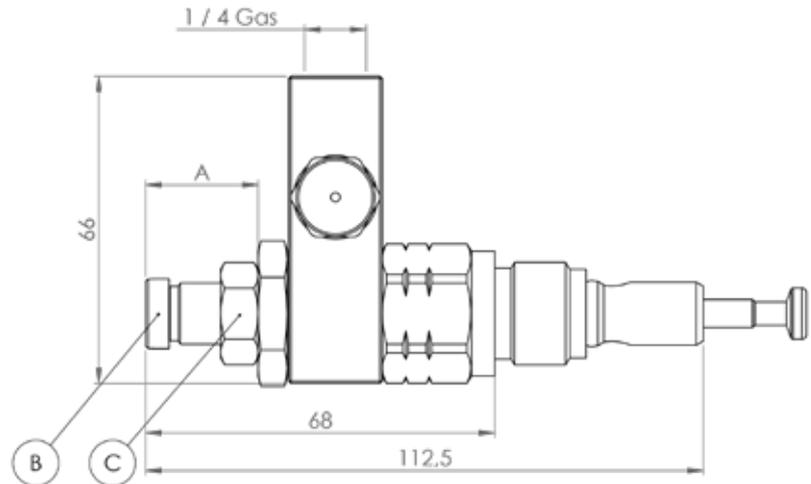
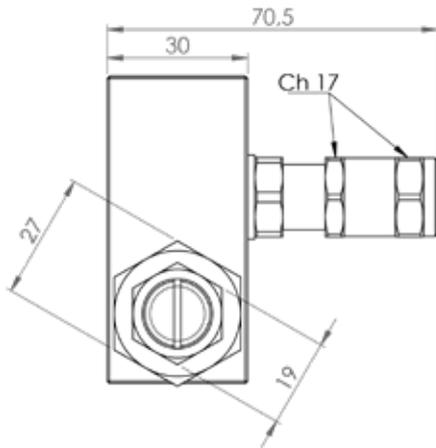
Only then screw it in as **far** as it will go (**yellow**). **Tightening torque 21 Nm**.

Caution: when removing or installing an element, it is essential **to tilt the pumping element** so that the stem does not separate from it, falling inside the pump body and damaging the pump during operation.

26.2 Adjustable pumping element

To vary the nominal pump flow rate, you must loosen the counter nut (Pos. C) and rotate the adjustment screw (Pos. B) clockwise to reduce, or anticlockwise to increase, the amount of lubricant. Once you have set the desired value, it is extremely important to tighten the counter nut again (Pos. C).

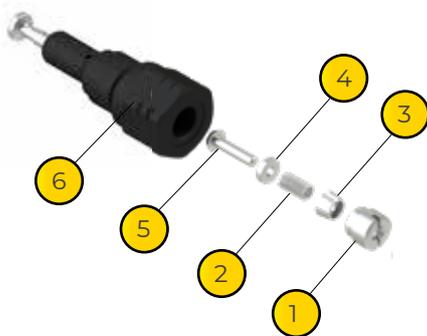
A	Flow rate mm ³ /Cycle	Percentage
23,6	120	100%
22,4	90	75%
21,2	60	50%
20,1	30	25%
19,4	10	5%
17,5	0	0%



27. Pumping element maintenance

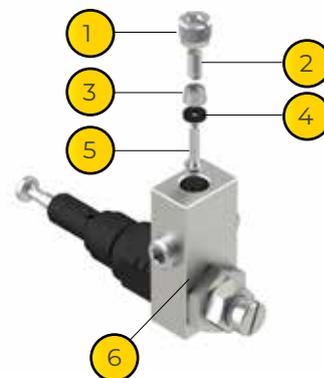
27.1 Fixed flow rate pumping element

Remove the locking screw (1) and take out the assembly consisting of spring (2), spring holder (3), seal (4) and piston (5). Thoroughly clean all parts and the discharge valve seat (6). Please note that if you do not have the replacement gasket (4), you can turn it by 180° and refit it.



27.2 Adjustable flow rate pumping element

Remove the locking screw (1) and take out the assembly consisting of spring (2), spring holder (3), seal (4) and piston (5). Thoroughly clean all parts and the discharge valve seat (6). Please note that if you do not have the replacement gasket (4), you can turn it by 180° and refit it.



Caution

If the gasket has already been turned once in its lifetime, it must be changed.

28. Grease Spare Parts



Pos	Part No.	Item
1	A70.093501.24	ILC-MAX pump body sub-unit for grease 24V DC/AC
	A70.093501.12	ILC-MAX pump body sub-unit for grease 12V DC/AC
2	A70.093531	Lower cover unit ILC-MAX 12/24V DC/AC
3	A70.093532.115	Lower cover unit ILC-MAX 115V AC
	A70.093532.230	Lower cover unit ILC-MAX 230V AC
4	A70.093534	Tank sub-unit for grease 2kg ILC-MAX
5	A70.093536	Tank sub-unit for grease 4kg ILC-MAX
6	A70.093538	Tank sub-unit for grease 5kg ILC-MAX
7	A70.093911	Tank sub-unit for grease 8kg ILC-MAX
8	40.CCT.DC.00	ILC-MAX internal board with DC TIMER (12 V DC / 24 V DC timer)
	40.CCT.AC.00	ILC-MAX internal board with AC TIMER (24/115/230 V AC timer)
	40.CST.DC.00	ILC-MAX internal board without DC TIMER (12 V DC / 24 V DC timer)
	40.CST.AC.00	ILC-MAX internal board without AC TIMER (24/115/230 V AC timer)
9	40.PWR.74.BT.DC	7+4-pole BT-DC electrical connection (12 V DC / 24 V DC timer)
	40.PWR.74.BT.AC	7+4-pole BT-AC electrical connection (24 V AC timer)
	40.PWR.74.AT.AC	7+4-pole AT-AC electrical connection (115/230 V AC timer)
	40.PWR.70	7+0 pole electrical connection without TIMER (all voltages)
10	40.CPT.00	TIMER protection cover
11	90.900.0	Fixed flow rate pumping element for PEG-N electric pump
12	90.900.3	PEG-N electric pump adjustable pumping unit

29. Oil Spare Parts



Pos	Part No.	Item
1	A70.093502.24	ILC-MAX pump body sub-unit for grease 24V DC/AC
	A70.093502.12	ILC-MAX pump body sub-unit for grease 12V DC/AC
2	A70.093531	Lower cover unit ILC-MAX 12/24V DC/AC
3	A70.093532.115	Lower cover unit ILC-MAX 115V AC
	A70.093532.230	Lower cover unit ILC-MAX 230V AC
4	40.CCT.DC.00	ILC-MAX internal board with DC TIMER (12 V DC / 24 V DC timer)
	40.CCT.AC.00	ILC-MAX internal board with AC TIMER (24/115/230 V AC timer)
	40.CST.DC.00	ILC-MAX internal board without DC TIMER (12 V DC / 24 V DC timer)
	40.CST.AC.00	ILC-MAX internal board without AC TIMER (24/115/230 V AC timer)
5	40.PWR.74.BT.DC	7+4-pole BT-DC electrical connection (12 V DC / 24 V DC timer)
	40.PWR.74.BT.AC	7+4-pole BT-AC electrical connection (24 V AC timer)
	40.PWR.74.AT.AC	7+4-pole AT-AC electrical connection (115/230 V AC timer)
	40.PWR.70	7+0 pole electrical connection without TIMER (all voltages)
6	40.CPT.00	TIMER protection cover
7	A70.093533	Tank sub-unit for oil 2 L ILC-MAX
8	A70.093535	Tank sub-unit for oil 4 L ILC-MAX
9	A70.093537	Tank sub-unit for oil 5 kg ILC-MAX
10	A70.093914	Tank sub-unit for oil 8 kg ILC-MAX
11	90.900.0	Fixed flow rate pumping element for PEG-N electric pump
12	90.900.3	PEG-N electric pump adjustable pumping unit

30. Download pump certificate

For all ILC pumps, the pump test certificate can be downloaded by scanning the QR code on the pump label. Follow the steps below to download the certificate.

1. Scan the QR code on the pump label using your smartphone.
2. On the "Result" page Press the "Go to website" button
3. In the mask, enter the Serial Number, found on the pump label, and press "Search Model".
4. The PDF is displayed and available for download.



1
2
3
4

ILC-MAX

PART NUMBER : 40.2.24DC.FCT.O

MAX DISCHARGE : 3,52 cc/min PUMP ELEMENT

PRESSURE MAX : 250 BAR

LUBRICANTS : GREASE MAX NLGI 2

RESERVOIR : 2 KG

VOLTAGE : 12-24 V DC

CURRENT : 5 A MAX BAR

SERIAL No. : 44-210000279856-001

http://www.downloadcertificate.it

www.ilclube.com
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Result

http://www.downloadcertificate.it

Go to website

LUBRICATION SYSTEMS

Serial Number ✖

44-210000279856-001

Cerca Modello

ILC - MAX Test Certificate

Modello	ILC - MAX
Serial Number	44-210000279856-001
Part Number	40.2.24DC.FCT.O
Max Discharge	3,52 cc/min PUMP ELEMENT
Pressure Max	250 BAR
Lubricants	GREASE MAX NLGI 2
Reservoir	2 KG
Voltage	12-24 V DC
Current	5 A MAX BAR
Serial No.	44-210000279856-001

31. Warranty

All ILC products come with a warranty of 24 months from the date of delivery for construction and material defects.

Should the equipment malfunction, you must notify us of the defect, providing us with the code, the serial number (expressed as in fig.1), the delivery and installation dates and the conditions in which the product in question is used.

Once we receive this information, at our sole discretion we will decide whether to: provide technical support; direct you to the nearest support centre; give you a number authorising the return for repair.

When we receive the equipment and based on accurate analyses, ILC reserves the right to choose whether to repair or replace the product. Should the warranty still be valid, we will see to repairing or replacing the product at our expense. If the product is not found to be defective, ILC will decide at its discretion whether or not to charge the expenses (logistics).

This warranty lapses if the product shows

- damage or cracks due to improper use
- negligence
- normal wear
- chemical corrosion
- signs of installation that is non-compliant with the explicitly stated instructions and use that is contrary to the manufacturer's recommendations.
- tampering

Modifications, tampering with or alterations to the equipment or parts of it without authorisation by ILC S.r.l. relieve ILC from all liability and from warranty obligations. Parts subject to normal wear and non-durable parts are not covered by the warranty. Anything that is not expressly stated, as well as damage, injury or costs resulting from product defects are considered excluded from the warranty.

The warranty validity conditions are considered implicitly accepted at the time of purchase. Any varying modifications to this warranty shall only be considered valid upon written authorisation from ILC.

ILC declines all liability for damages to persons and property due to the failure to observe the requirements in this manual. Any modifications to parts making up the system or using the system or its parts for different purposes without written authorisation from ILC relieves ILC from all liability for damages to persons and/or property and from any warranty obligations.

32. Machine identification

On the front of the pump reservoir there is a yellow label (fig.1) which shows the product code and its basic characteristics.

ILC-MAX

PART NUMBER : 40.2.24DC.FCT.O

MAX DISCHARGE : 3,52 cc/min PUMP ELEMENT

PRESSURE MAX : 250 BAR

LUBRICANTS : GREASE MAX NLGI 2

RESERVOIR : 2 KG

VOLTAGE : 12-24 V DC

CURRENT : 5 A MAX BAR

SERIAL No. : 44-210000279856-001

ilc

CE

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fig.1

DICHIARAZIONE DI CONFORMITÀ / DECLARATION OF COMPLIANCE WITH STANDARDS / DECLARATION DE CONFORMITE / KONFORMITÄTSERKLÄRUNG DES STANDARDS / DECLARACIÓN DE CONFORMIDAD/ DECLARAÇÃO DE CONFORMIDADE

La società ILC srl, con sede legale in Gorla Minore (VA), Via Garibaldi 149 - ILC srl, registered office in Gorla Minore (VA), Via Garibaldi 149 - ILC srl. au Siège Social à Gorla Minore (VA), Via Garibaldi 149 / ILC srl Gorla Minore (VA), Sitz in Via Garibaldi 149 - La sociedad ILC srl., con sede legal en Gorla Minore (VA), Via Garibaldi 149 - A ILC srl, com sede em Gorla Minore (VA), Via Garibaldi 149

DICHIARA / CERTIFIES / CERTIFIE / ZERTIFIZIERT / DASS / DECLARA / CERTIFICA

che il prodotto denominato/that the product called/ le produit appelé/ das Produkt mit dem Namen/ el producto que se llama/ o produto chamado:

Descrizione/ Description/ Description Beschreibung/ Descripción/ Descrição	PISTON ELECTRIC PUMP
Nome Commerciale/ Product Name/ Dénomination Handelsname/ Denominación/ Denominação	ILC-MAX ELECTRIC PUMP
Versioni/ Versions/ Versions/ Versionen/ Versiones/ Versões	ALL VERSIONS
Codici/Part Number/Codes/Teile Nummer/Codigos/Codigos	40.X.XXXX.XXX.X
IT	è conforme alle condizioni previste dalle Direttive CEE
EN	has been constructed in conformity with the Directives of the Council of the European Community on the standardization of the legislations of member states
FR	a été construit en conformité des Directives du Conseil des Communautés Européennes
DE	Entsprechend den Richtlinien des Rates Der Europäischen Union, für die Standardisierung der Legislative der Mitgliedsstaaten, konstruiert wurde
ES	cumple con las condiciones establecidas por las directivas comunitarias/ foi construído em conformidade com as diretivas do Conselho das Comunidades Europeias
PT	foi construido em conformidade com as diretivas do Conselho das Comunidades Europeias
	<ul style="list-style-type: none">• 2006/42/CE Direttiva macchine /Machinery Directive/ Directive machines/ Maschinenrichtlinien/Maquinaria / Directiva Máquinas;• 2014/30/UE Compatibilità elettromagnetica/ Electromagnetic compatibility/ Compatibilité électromagnétique/ Elektromagnetische Verträglichkeit/ Compatibilidad electromagnética/ Compatibilidad eletromagnética• 2014/35/UE Bassa tensione / Low Voltage Directive / Directive Basse Tension/ Niederspannungsrichtlinien/ Directiva de baja tensión/ Directiva de Baixa Tensão;• RoHS 2011 / 65 / EU.

La persona autorizzata a costituire il Fascicolo Tecnico presso ILC srl
The person authorized to compile the Technical File care ILC srl
La personne autorisée à constituer le dossier technique à CIT srl
Die Person, die berechtigt, die technischen Unterlagen bei ILC srl zu kompilieren
La persona autorizada para configurar el Archivo Técnico en ILC srl
A pessoa autorizada a configurar o Arquivo Técnico na ILC srl

Gorla Minore 10/01/2022

Eng. Stefano Ghiringhelli

Firmatario autorizzato/Authorized signatory/
Signataire autorisé/Zeichnungsberechtigter/
Sgnatario autorizado/ Sgnatário autorizado

The Legal Representative
Maurizio Morelli



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