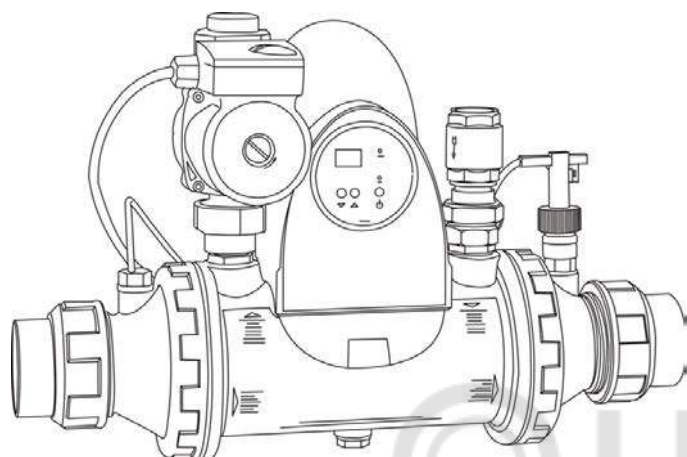
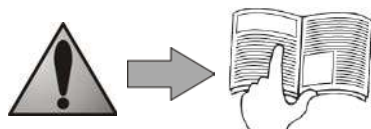
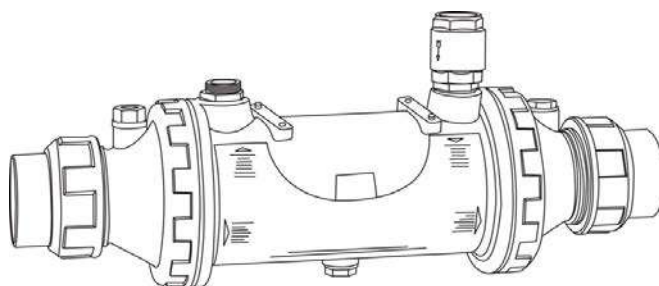
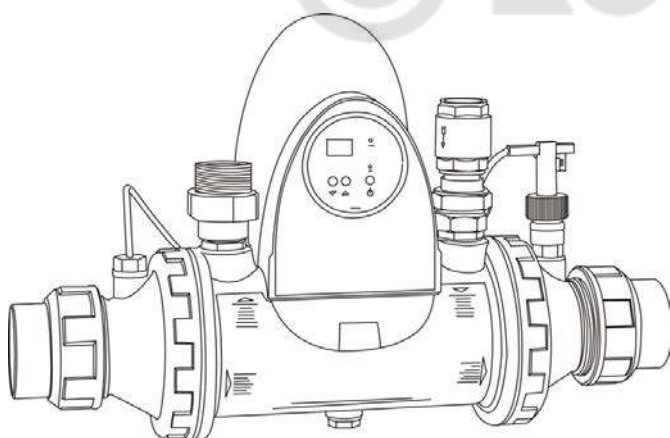


HEAT LINE



Instructions for installation and use
English

EN



- Read this manual carefully before installing, maintaining or repairing this device!
- The symbol  indicates important information that must be taken into account in order to avoid risk of personal injury and/or damage to the appliance.
- The symbol  indicates useful information.



Warnings

- Our products may be subject to change without notice as part of our continuous improvement policy.
- Exclusive use: pool water heating (must not be used for any other purpose).
- The device must be installed by a qualified technician according to the manufacturer's instructions and in compliance with local regulations. The installer is responsible for the correct installation of the device and for ensuring compliance with local regulations. The manufacturer shall not be held liable for any potential issues that may occur as a result of failure to comply with local standards pertaining to installation.
- This appliance must be handled by competent and qualified personnel (physically and mentally) who are familiar with the operating instructions (by reading the user guide). Persons who do not satisfy these requirements must not handle the device so as to avoid exposure to potentially dangerous parts.
- If the device malfunctions: do not attempt to repair the device yourself, call your installer.
- Before carrying out any operation on the machine, check that the power supply is cut and that the machine is tagged out,
- Prior to any operation, check that:
 - The voltage on the identification plate of the appliance corresponds to the main voltage available on site,
 - the socket and the power supplied are adapted to the power requirements of the appliance, and that they are grounded,
 - the electrical plug is adapted to the socket available.
- If any safety device is removed or shunted, the warranty will automatically be void. This will also apply if parts are replaced with parts acquired elsewhere than our stores.
- Incorrect installation may cause serious damage and/or personal injuries (possibly death).
- Keep the device out of the reach of children.



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Available in appendix at the end of the manual:

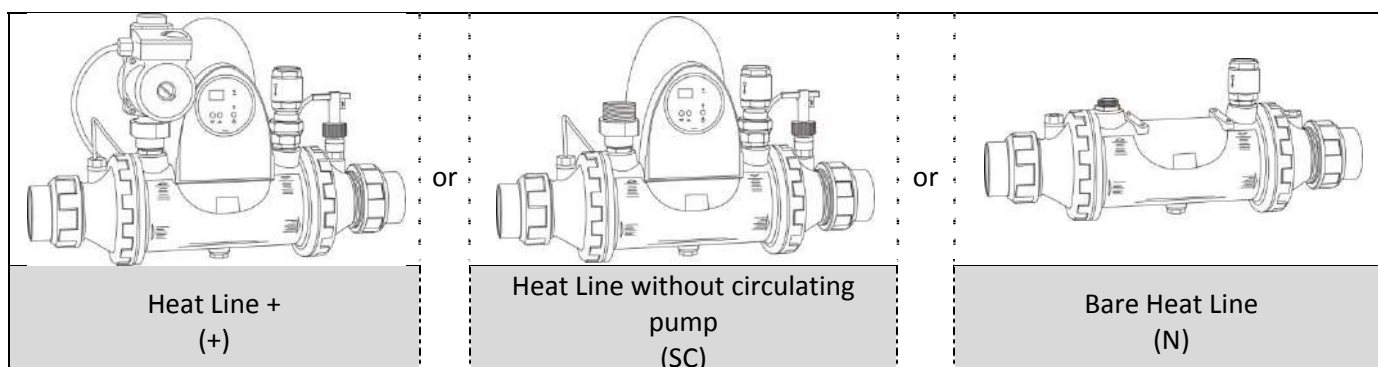
- wiring diagrams
- dimensions and description

1. Information before installation

1.1 General terms of delivery, storage and transport

Any equipment, even carriage and packing free, travels at the consignee's risk. The consignee shall make reservations in writing on the carrier's bill of lading if damage is detected, caused during transport (confirmation to be sent to the carrier within 48 hours by registered mail with acknowledgement of receipt).

1.2 Content



1.3 Operating conditions

Operating range:

- pool water temperature between 2 °C and 40 °C,
- primary circuit water temperature between 45 °C and 90 °C,
- primary circuit service pressure: 2 bar,
- primary circuit maximum pressure: 3 bar.

1.4 Technical specifications

Heat Line		Unit	20		40		70	
Primary		°C	90	45	90	45	90	45
Secondary		°C	26		26		26	
Power		kW	20	4	40	8	70	14
Flow rate	Primary	m³/h	0.9	0.7	1.7	1.4	3	2.4
	Secondary		10		15		20	
Head loss	Primary	mCE	0.15		0.2		0.3	
	Secondary		0.5		0.8		1	

- Heat Line + protection rating: **IP 44**

1.4.1 Heat Line + circulating pump characteristics

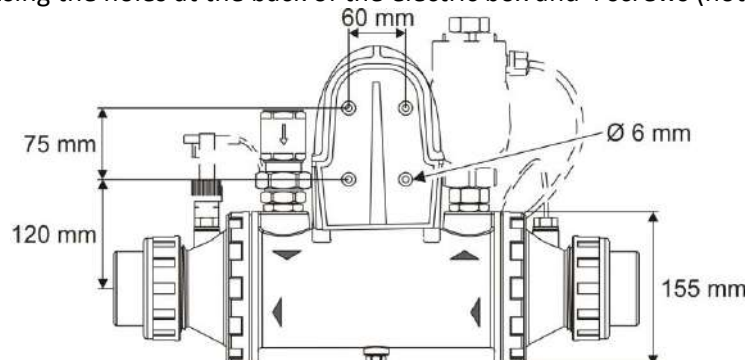
Heat Line +	circulating pump	centre-to-centre distance	input power	In	capacitor
			speed 3		
20-40-70	UPS 25/40	130 mm	45 W	0.2 A	1.5 µF V

2. Installation

2.1 Selecting an installation site

⚠ The appliance must be installed in a technical room ventilated, dry and without stored pool treatment products.

- An unobstructed space of at least 80 cm around the appliance is required to facilitate its installation and maintenance.
- Correctly tighten the hydraulic connections and check for leaks,
- The appliance must be secured horizontally to the wall of the technical compartment,
 - Heat Line + and SC: using the holes at the back of the electric box and 4 screws (not included),



- Heat Line N: using brackets (not included),
- **Install the appliance as close as possible to the heating source (boiler, heat pump, geothermal unit, solar heating unit, etc.).**
- **If the appliance cannot be installed next to the heating source:**
 - Provide piping of appropriate size for the primary and secondary circuits in relation to the water flow rate, head losses and distance, and ensure that they are properly insulated.
 - Install a more powerful circulating pump (contact us regarding its size and supply),
- **If the exchanger is located far from the filter:** The pipes of the pool system must be Ø50, or Ø63 if the system has an overall length in excess of 30 meters, and must be routed through a protective conduit if buried.
- Preferably, the exchanger should be installed at the low point so that it is always full of water.
- The water treatment system must be installed after the exchanger and at a low point to prevent chlorine from returning back into the exchanger.
- Check that the piping system is clean before making connections.
- The exchanger must not support the piping.

2.2 Hydraulic connections

⚠ Observe the hydraulic connection direction (refer to the indications on the tank of the heat exchanger) to optimise the exchange of calories (to reverse the flow direction on Heat Line + and SC, see §5.4) The water coming from the heating source must be at constant temperature.

- **heating system connection (a.k.a. primary) :**

- use insulated pipes;
- equipped with a safety valve (pressure set at 3 bar) and correctly dimensioned expansion chamber;
- the pipes must be equipped with automatic air bleeders at high points,



Branch connections on the primary circuit must be placed upstream from all valves or pumps.



Heat Line N: if the heating source is equipped with a circulating pump, an accumulator or relay logic must be provided to stop the circulating pump and the heating source.

- **connection of the pool system (a.k.a secondary) :**

- use Ø50 PVC pipes minimum,
- via a by-pass (recommended to simplify maintenance and mandatory if the water flow rate of the pool system is greater than 22 m³/h).



90° elbow fittings must not be installed directly at the exchanger outlet; leave at least 25 cm of straight pipe to prevent chatter of the flow controller armature.

Heat Line20-40-70	Primary connection	Secondary connection
Heat Line + and SC	Ø 26/34 female, screw type	PVC Ø50 or Ø63
Heat Line N	Ø 26/34 male, screw type	

A: Heat Line body

① water treatment

② pool system

③ heating system

V1-V2-V3: shut-off valves

V4: hot water inlet valve

V5: hot water outlet valve

 automatic bleeder

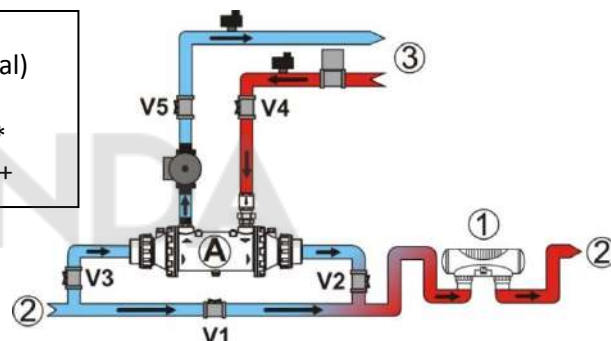


Solenoid valve (optional)



circulating pump *

* supplied with Heat Line +



2.3 Electrical connections (for Heat Line + and SC only)



Loose terminals may cause the supply terminal board to overheat, and will void the warranty.

The device must be connected to an earth electrode.

Risk of electric shock inside the appliance.

The appliance must only be connected by a qualified and experienced technician.

If the power cable is damaged or its length is too short, it must be replaced by a qualified technician.

All use of an extension cord or multisocket connection is prohibited.

Check the following before all operations:

- the voltage indicated on the unit corresponds to the mains voltage;
- the power outlet and the power supply network are appropriate for exchanger use and that they are equipped with an earth connection;
- the power plug is adapted to the power outlet.

- **Electrical protection:**

- either by a 5 A fuse disconnecter with, upline, a 30 mA differential circuit breaker (rating > 5 A),
- or by an independent 30 mA circuit breaker (rating: 5 A) upline,

• The single-phase electrical supply (230 V-50 Hz) of the exchanger must be provided through a protection and switching device (not supplied) complying with current standards and regulations in the country where it is installed.

• The electrical conduits must be secured.

• The electrical supply cable must not be exposed to elements that are sharp, hot or represent a crush hazard.

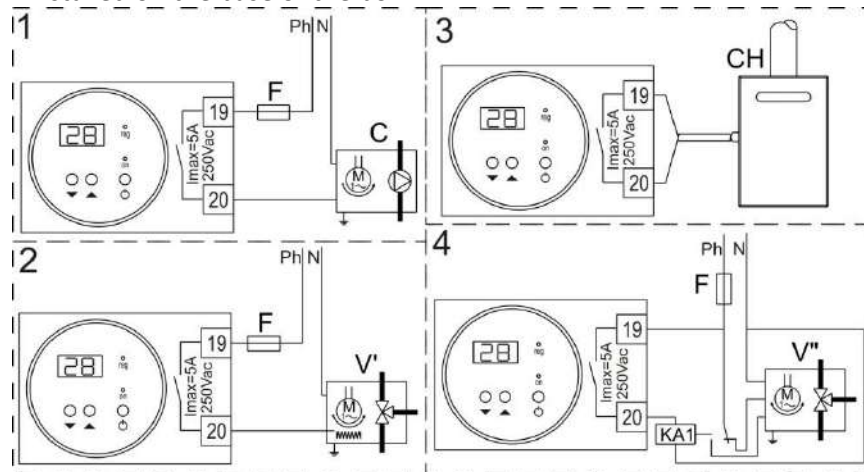
• Connect the power cable, supplied with the unit, to a power outlet in compliance with the country's current standards and regulations,

2.3.1 Connection of an external control to power the primary circuit (for Heat Line+ and SC only)

• Use a 3G1 cable (cross-section 1 mm²).

• This function is carried out via the non-polar dry contact “normally open at rest” (Imax 5 A at 250 VAC 50-60 Hz) available on the regulator terminals 19-20.

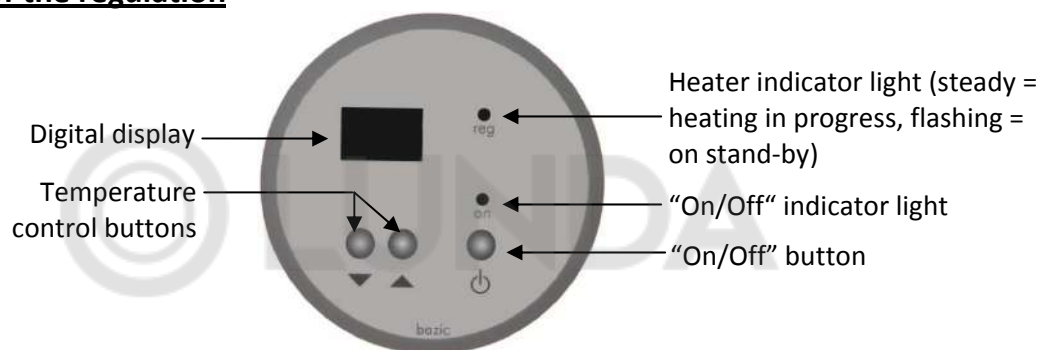
- The wire connected to terminals 19-20 must go through the additional discharge “grommet” (supplied) to be installed on the base of the box.



Ph: phase
N: neutral
F: fuse (5 A maximum)
C: complementary circulating pump
V': 3-way valve with mechanical return
CH: existing heating source
V'': motorized 3-way valve with two rotation directions
KA1: control relay
 The elements: C - CH - F - KA1 - V' - V'' are not supplied with this device.

3. Use

3.1 Presentation of the regulation



3.2 Starting the device

- ⚠ **•Never circulate water in the primary circuit without water circulating in the secondary circuit.**
- ⚠ **•The flow rate must be adjusted slowly to avoid hammering.**

i If the primary circuit circulating pump has not been in operation for a long time, check that it has not seized: with the circulating pump off, unscrew the pump's front panel (water may flow out), then use a screwdriver to turn the motor shaft.

- Fully open valves 2 and 3 and close valve 1 (see §2.2), if installed.
- Start the filtration pump.
- Check the pool water circulation in the exchanger.
- Fully open valves 4 and 5 (see §2.2),
- Check the filling and degassing of the heating circuit.
- Turn on control unit power, then start it.
- Adjust the setpoint temperature: display and modify the setpoint value by pressing either ▼ or ▲.

On Heat Line + and SC:

- Pressing and holding either of these two buttons allows rapid change of the setpoint value.
- The temperature is controlled degree by degree.
- The setpoint value adjustment range is between 2 °C and 40 °C.
- This maximum temperature may be lowered to protect the swimming pool liner (see §5.3).
- If the setpoint temperature is greater than the pool water temperature: the “reg” indicator light flashes for 15 seconds, then remains steady, the circulating pump should operate.
- If the water flow rate is too low (less than 1.1 m³/h), or if the filtration is stopped, the “reg” indicator light will flash and the water in the primary circuit will stop circulating.
- When the pool has reached the desired temperature, the “reg” indicator light goes out, and water in the primary circuit will stop circulating.

On Heat Line N: The control module (not included) must:

- reference the input temperature of the pool water in the unit;



- give the command to irrigate the primary circuit only if heating is requested and filtration is operational;
- stop irrigating the primary circuit once the pool has reached the desired temperature.

3.3 Checks to be carried out after operating for a few moments

- Check for leaks.
- Check that the circulating pump stops when:
 - the setpoint temperature is decreased or when the control is shut off;
 - filtration is switched off,
- Check that the exchanger is no longer irrigated by the heating circuit when the filtration is stopped, and when there is no request to heat the pool water.

3.4 Winter storage



Winter storage is essential due to the risk of body of the exchanger freezing and breaking. This situation is not covered by the warranty.

- Turn off control unit power.
- Shut off water circulation in the primary and secondary circuits.
- Drain the primary circuit (be careful of the water temperature, wait for it to cool down to avoid the risk of burns):
 - close shut-off valves 4 and 5 (see §2.2),
 - unscrew the drain plug,



Warning: only the plug's seal ensures water tightness. Replace it without using hemp! To ensure a watertight seal and avoid damaging the threads, do not overtighten the plug + seal assembly.

- Drain the secondary circuit:
 - close valves 2 and 3 (see §2.2),
 - unscrew the fittings to drain the exchanger;
 - when the exchanger is empty, lightly retighten the fittings, without creating a seal.

4. Maintenance

4.1 Maintenance instructions



It is recommended that the device be general serviced on a yearly basis to ensure proper operation, maintain performance levels and prevent some potential failures.

This is the responsibility of the user and must be performed by a qualified technician.

- Never disassemble the exchanger body.
- Make sure that the appliance's pipe fittings are property tightened.

Only for Heat Line + and SC:

- Check the electrical components.
- Check the ground connection.
- Check that the electric cable connections are properly tightened and that the electric box is clean.

4.2 Recycling



This symbol means that your device must not be thrown in the bin. The device must be collected by a selective system in view of re-use, recycling or similar. Any substances it may contain which are potentially dangerous to the environment shall be eliminated or neutralised.

Request information on recycling procedures from your retailer.

5. Resolution of problem

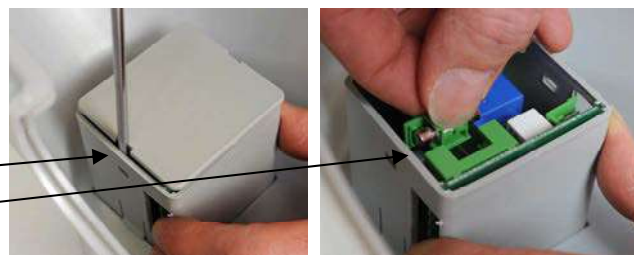
5.1 Malfunctions of the device

Dysfunction	Causes	solution
The display does not work	Power is not supplied to the appliance	The regulator fuse is blown (for replacement, see §5.2)
The appliance displays a flashing "E0"	The control sensor is out of service or disconnected	Appliance power off and locked out , reconnect or standard replacement of the sensor (the "E0" fault is automatically cleared)

Dysfunction	Causes	solution
The pool water is hotter than requested	The regulator is not operating correctly	check that the circulating pump stops when the setpoint temperature is reached
	Another circulating pump is pushing on the primary circuit	If this is the case, install a solenoid valve on the outgoing leg of the primary heating circuit controlled by terminals 19-20 (see §2.3.1)

5.2 Fuse replacement

- **IMPORTANT!** Disconnect **power to the appliance!**
- Remove the cover.
- Disconnect the regulator.
- Remove the regulator cover.
- Remove the fuse (T3, 15AH250V).

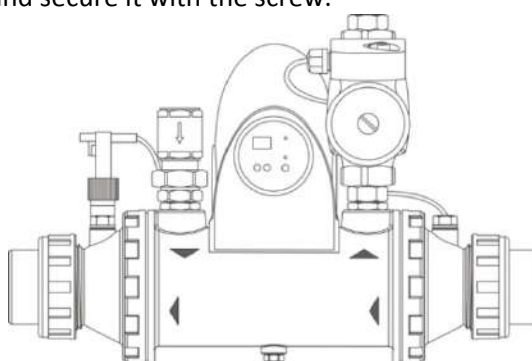


5.3 Modification of the maximum setpoint temperature

- Turn off the regulator (the “on” indicator light goes off, the pool water temperature is displayed).
- Simultaneously press and hold ▼ and ▲ for 5 seconds, “PA” is displayed.
- Press ⏻.
- Then enter the value “80” using the ▼ or ▲ keys (access code to the settings menu).
- Press ⏻ to confirm this code, “PA” is displayed.
- Simultaneously press and hold the ▼ and ▲ keys for 5 seconds.
- Press ▲ to scroll through each parameter until “r2” is displayed.
- Press ⏻, the current value of the parameter “r2” is displayed.
- Press ▼ or ▲ to modify the maximum setpoint value.
- Press ⏻ to confirm this new value.
- Simultaneously press and hold ▼ and ▲ for 5 seconds to return to the pool water temperature display.

5.4 Reversing the pool water circulation direction in the exchanger (Heat Line + and SC only)

- Remove the electric box cover.
- Disconnect the regulator's two connectors to remove the cover.
- Unscrew the 4 retaining screws from the electric box's support.
- Pivot the circulating pump 180°.
- Position, then secure the electric box support using the 4 retaining screws.
- Reconnect the two connectors to the regulator.
- Reposition the electric box cover and secure it with the screw.



5.5 FAQ

Where should my water treatment system be positioned with respect to the heating system?	The water treatment system (chlorinator, salt chlorinator, etc.) must be installed preferably downstream from the appliance (see installation §2.2), and must be compatible with the latter (check with the manufacturer)	
Is it possible to improve temperature performance?	protect the pool with a cover (floating cover, roller cover, etc.), to avoid heat loss	
	Check that filtration time is sufficient	during the heating phase, water flow must be continuous (24/24) to maintain the temperature throughout the season, allow for “automatic” flow of at least 12 hours/day (the longer automatic flow is used, the more time the appliance will have to function and to heat the water)

6. Product registration

Register your product using our website:

- you will be among the first to be informed of new Zodiac products and special offers,
- You can help us to constantly improve our product quality.

Australia – New Zealand	www.zodiac.com.au
South Africa	www.zodiac.co.za
Europe and rest of the world	www.zodiac-poolcare.com

7. Conformity certificate

Z.P.C.E. declares that the following products or ranges:

Special swimming pool heat exchanger: Heat Line + and SC 20-40-70

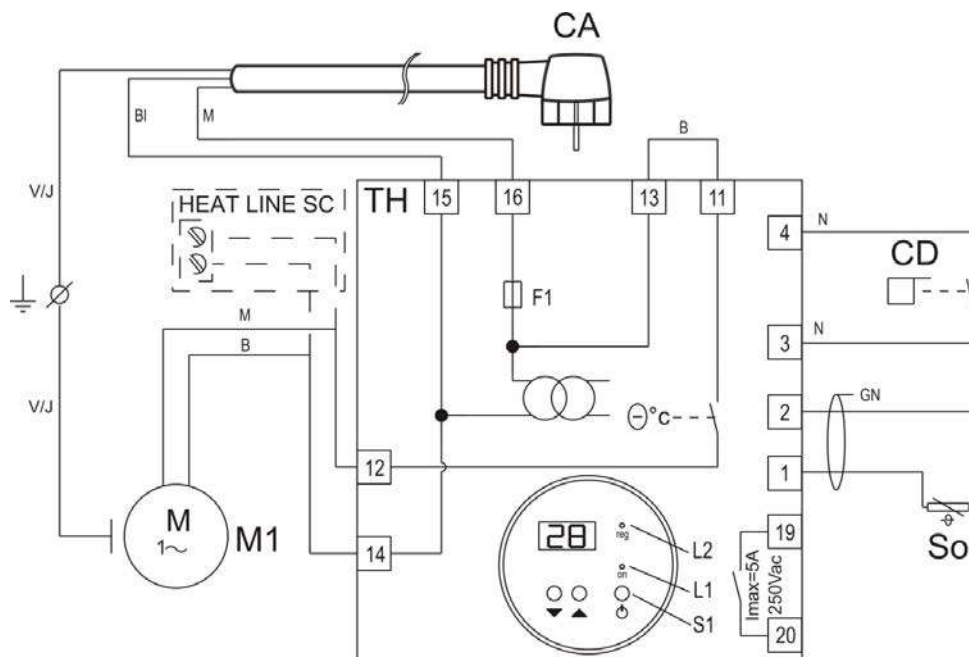
are in compliance with the provisions of:

- the ELECTROMAGNETIC COMPATIBILITY directive 89/336/EEC
- the LOW VOLTAGE directive 73/23/EEC



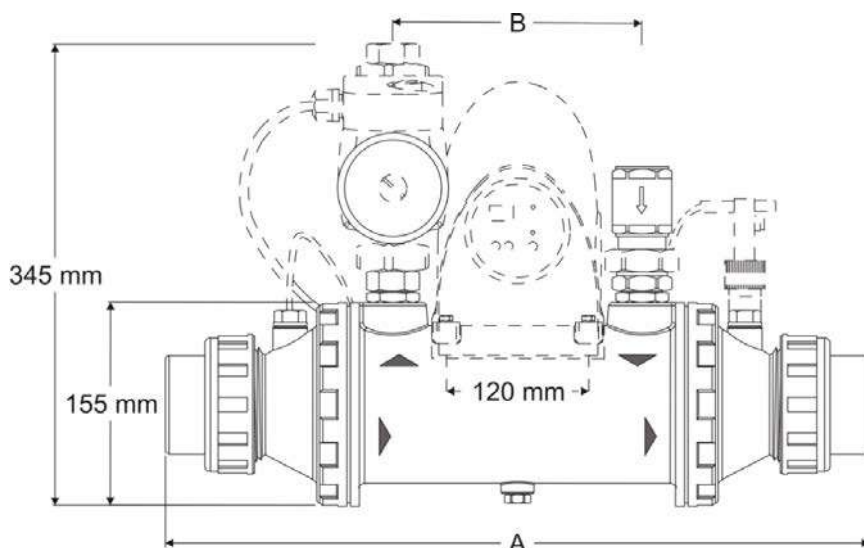
Wiring diagram

Heat Line + / Heat Line SC



CA	power supply cord: 2P+G 10/16A 3G1
TH	control thermostat with digital display
M1	circulating pump motor
F1	fuse 3.15 A-G
CD	flow controller
So	pool water control sensor (PTC)
GN	black conduit
L1	"on/off" LED
L2	flashing "reg" LED: timer active; steady: heating in progress
S1	"on/off" switch
19-20	"normally open" control dry contact
V-j	green-yellow
BI	blue
M	brown
B	white
N	black
	Ground

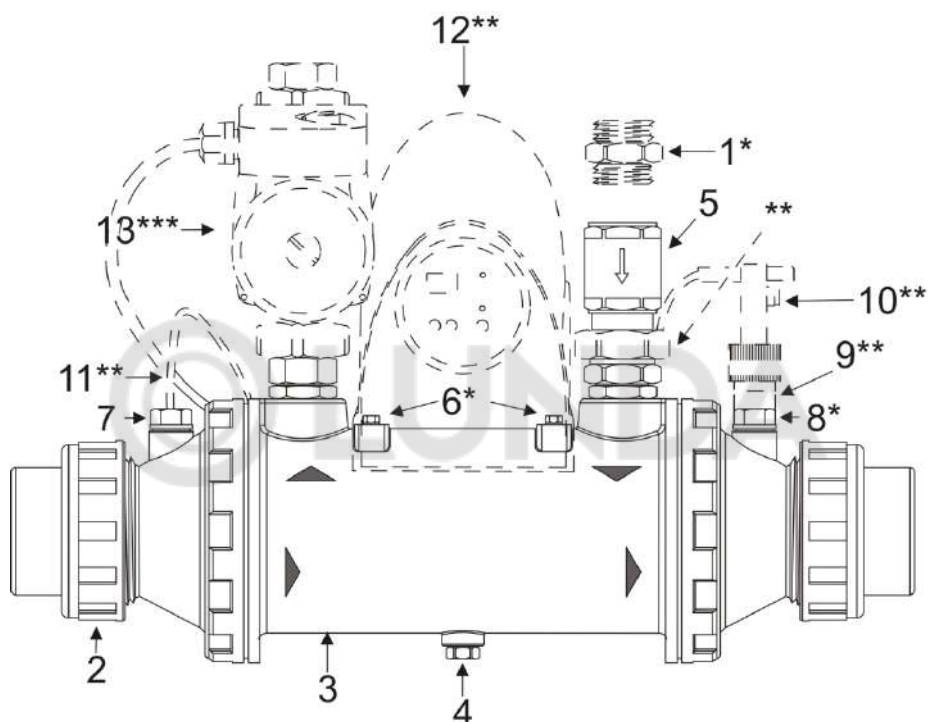
Dimensions



Heat Line	20-40	70
A	535	665
B	198	328

weight			
	Heat Line +	Heat Line SC	Heat Line N
20	6,5 Kg	4,2 Kg	3,1 Kg
40	7 Kg	4,7 Kg	3,2 Kg
70	7,5 Kg	5,2 Kg	4 Kg

Description



1*	Nipple, male/male Ø26/34
2	PVC ½ union fitting Ø63, to be glued
3	Multitube exchanger body
4	primary circuit drain plug
5	check valve
6*	Exchanger body fastener
7	thermowell
8*	plug
9**	Spacer
10**	Flow controller
11**	Control sensor
12**	Electric box
13***	circulating pump
*	For Heat Line N only
**	On Heat Line + and SC only
***	On Heat Line + only

Plaque signalétique – Product name plate

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Votre revendeur / your retailer

Pour plus de renseignements, merci de contacter votre revendeur.
For further information, please contact your retailer.