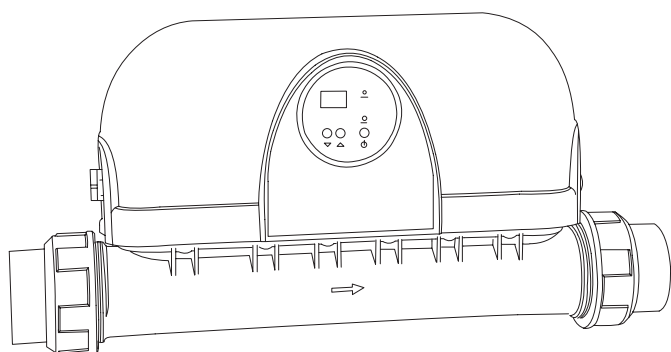


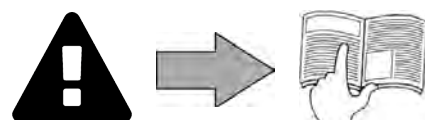
RED LINE

Installation and user manual - English
Electric heater
Translation of the original instructions in French

EN



More documents on:
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WARNINGS

GENERAL WARNINGS

- Failure to respect the warnings may cause serious damage to the pool equipment or cause serious injury, even death.
- Only a person qualified in the technical fields concerned (electricity, hydraulics or refrigeration) is authorised to perform this procedure. The qualified technician working on the appliance must use/wear personal protective equipment (such as safety goggles and protective gloves, etc.) in order to reduce the risk of injury occurring when working on the appliance.
- Before handling the machine, ensure that it is switched off and isolated.
- The appliance is intended to be used with pools for a specific purpose; it must not be used for any purpose other than that for which it was designed.
- This appliance is not intended for use by children.
- This appliance is not intended for use by individuals (including children, over the age of 8) lacking in experience or with impaired physical, sensory or mental capabilities, unless:
 - they receive supervision and are instructed on how to use the appliance by a person responsible for their safety; and
 - they understand the hazards involved.
- Children must be supervised to ensure that they do not play with the appliance.
- The appliance must be installed according to the manufacturer's instructions and in compliance with local standards in force. The installer is responsible for installing the appliance and for compliance with national installation regulations. Under no circumstances may the manufacturer be held liable in the event of failure to comply with applicable local installation standards.
- For any work other than the simple user maintenance described in this manual, the product should be referred to a qualified professional.
- Incorrect installation and/or use may cause serious damage to property or serious injuries (possibly causing death).
- All equipment, even postage and packing paid, travels at the risks and perils of the recipient. The latter shall issue reserves in writing on the carrier's delivery slip if damage is detected, caused during transport (confirmation to be sent to the carrier within 48 hours by registered letter). In the event that an appliance containing refrigerant has been turned on its side, mention your reservations in writing to the carrier.
- If the appliance suffers a malfunction, do not try to repair it yourself; instead contact a qualified technician.
- Refer to the warranty conditions for details of the permitted water balance values for operating the appliance.
- Deactivating, eliminating or by-passing any of the safety mechanisms integrated into the appliance shall automatically void the warranty, in addition to the use of spare parts manufactured by unauthorised third-party manufacturers.
- Do not spray insecticide or any other chemical (flammable or non-flammable) in the direction of the appliance, as this may damage the body and cause a fire.
- Do not touch the fan or moving parts and do not place a rod or your fingers in the vicinity of the moving parts during operation of the appliance. Moving parts can cause serious injury or even death.

WARNINGS ASSOCIATED WITH ELECTRICAL APPLIANCES

- The power supply to the appliance must be protected by a dedicated 30 mA residual current device, complying with the standards and regulations in force in the country in which it is installed.
- Do not use any extension lead when connecting the appliance; connect the appliance directly to a suitable power supply.
- Before carrying out any operations, check that:
 - The voltage indicated on the appliance information plate corresponds to the mains voltage.
 - The power grid must be adapted to the power requirements of the appliance, and is grounded.
 - The plug (where applicable) is suitable for the socket.
- In the event of abnormal operation or the release of odours from the appliance, turn it off immediately, unplug it from its power supply and contact a professional.
- Before servicing or performing maintenance on the appliance, check that it is powered off and completely disconnected from the power supply.
- Do not disconnect and reconnect the appliance to the power supply when in operation.
- Do not pull on the power cord to disconnect it from the power supply.
- If the power cord is damaged, it must be replaced by the manufacturer, an authorised representative or a repair facility only.
- Do not perform maintenance or servicing operations on the appliance with wet hands or if the appliance is wet.
- Before connecting the appliance to the power supply, check that the connection unit or socket to which the appliance will be connected is in good condition and shows no signs of damage or rust.
- For any component or sub-assembly containing a battery: do not recharge or dismantle the battery, or throw it into a fire. Do not expose it to high temperatures or direct sunlight.
- In stormy weather, unplug the appliance to prevent it from suffering lightning damage.
- Do not immerse the appliance in water (with the exception of cleaners) or mud.

Recycling



This symbol means that your appliance must not be thrown into a normal bin. It will be selectively collected for the purpose of reuse, recycling or transformation. If it contains any substances that may be harmful to the environment, these will be eliminated or neutralised. Contact your retailer for recycling information.



- Before handling the appliance, it is essential that you read this installation and user manual, as well as the "warnings and warranty" booklet delivered with the appliance. Failure to do so may result in material damage or serious or fatal injury and will void the warranty.
- Keep these instructions for future reference for operation and maintenance works.
- The distribution or modification of this document in any way is prohibited, without prior authorisation from Zodiac®.
- Zodiac® is constantly developing its products to improve their quality. The information contained herein may therefore be modified without notice.

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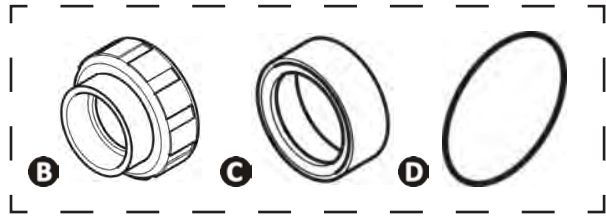
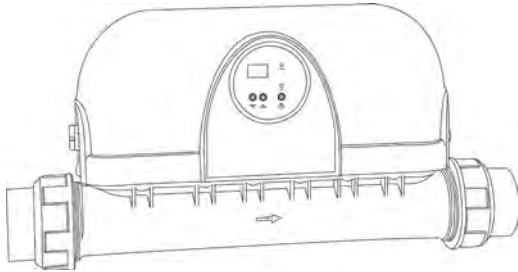
Tip: to make it easier to contact your retailer

- Write down your retailer's contact details to help you find them more easily and fill in the "product" information on the back of the manual; your retailer will ask you for this information.



1 Specifications

1.1 I Description



A

A	Red Line
B	Ø63 connector (x2)
C	Ø50 connector (x2)
D	Joint (x2)

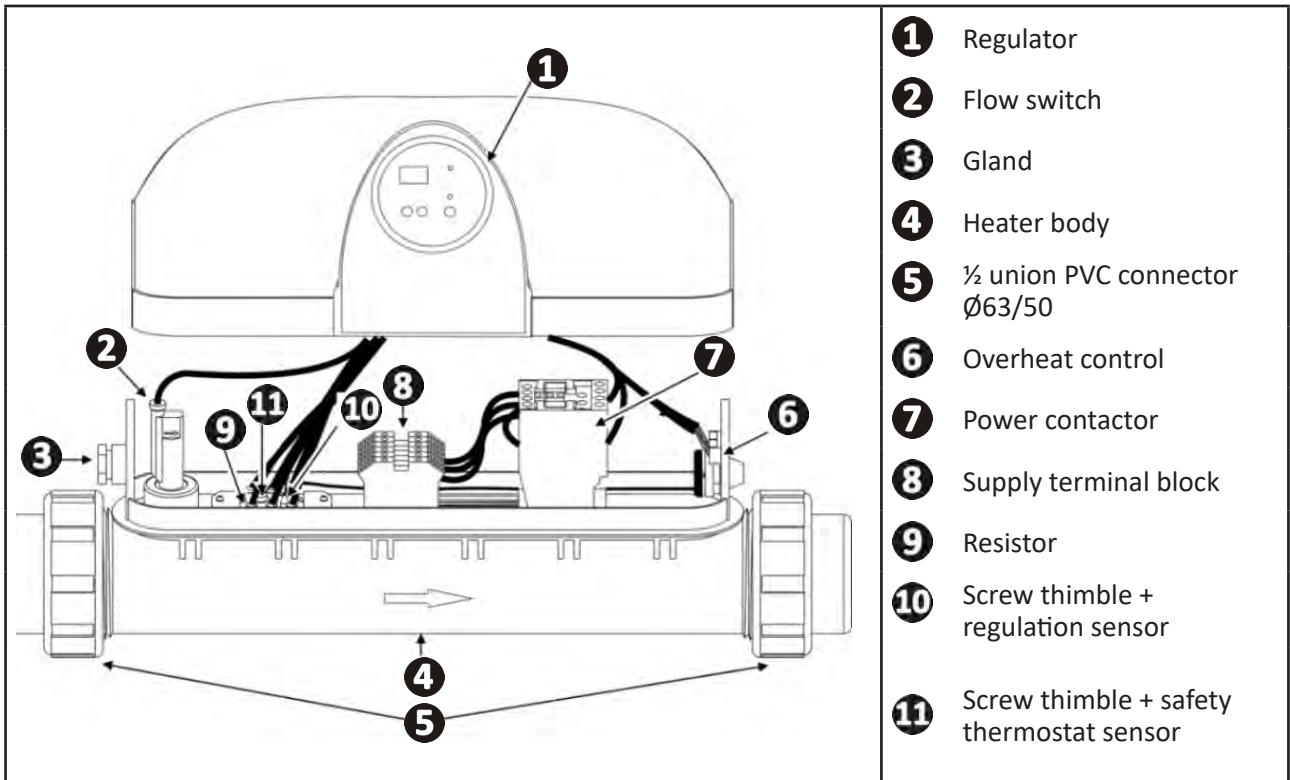
1.2 I Technical specifications

Red Line	Unit	3	6	9	12
Power*	kW	3	6	9	12
Power supply	230V single-phase	✓	✓	✓	
	400V three-phase	✓	✓	✓	✓

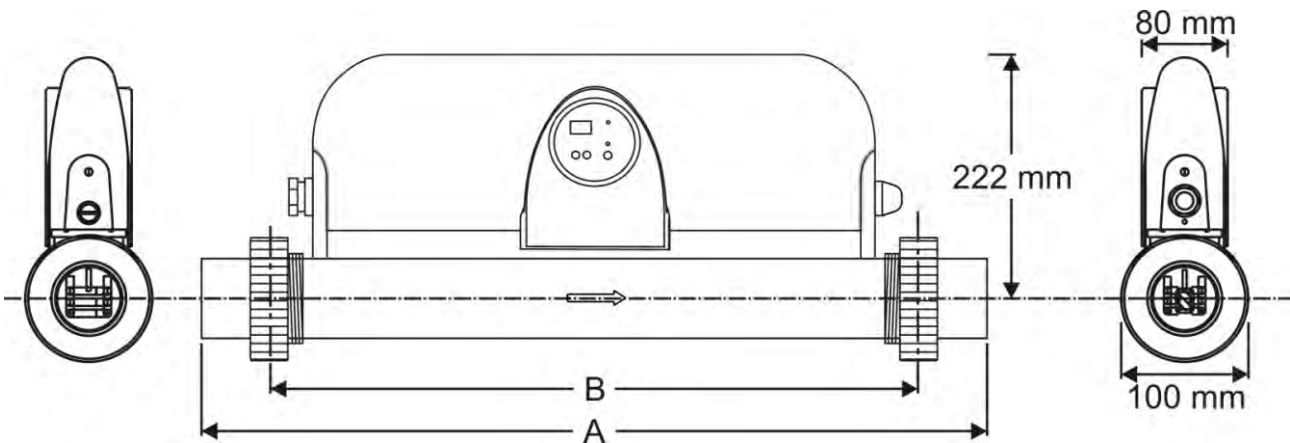
* with manufacturer tolerance ± 5%

- Protection index: IP 45
- Operating range: water temperature 2°C to 40°C

1.3 I Dimensions and marking



EN



Red Line		3	6	9	12
Weight	kg	3,5	3,5	4	4
A	mm	538	538	638	638
B	mm	452	452	552	552



2 Installation

2.1 I Selecting the location

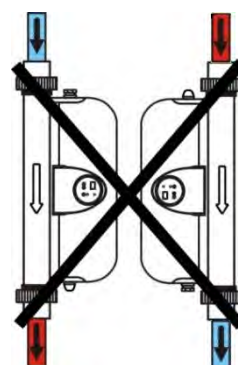


- The appliance must be installed in a dry ventilated plant room with no pool maintenance products stored nearby.
- 90° elbow fittings must not be installed directly at the heater inlet and outlet; leave at least 25 cm of straight pipe to prevent chatter of the flow switch armature.

- The appliance must be positioned horizontally or vertically and held by piping supported by brackets on either side of the heater,
- If the heater is installed in a vertical position, the direction of flow must occur upwards,
- Leave a free space around the appliance to facilitate its installation and maintenance,
- Preferably, the heater should be installed at the low point so that it is always full of water,
- The water treatment system must be installed at the low point after the heater to prevent chlorine from flowing back into the heater.



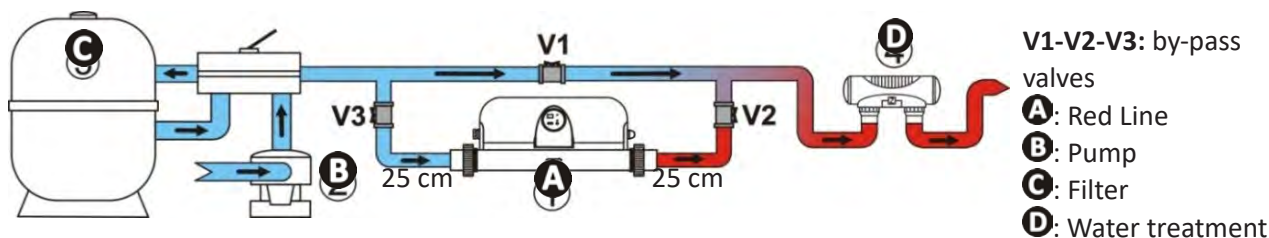
- Comply with the direction of installation. If this is not complied with (see diagram opposite), the flow switch will not be activated.



2.2 I Hydraulic connections



- An arrow on the heater body indicates the hydraulic connection direction to be implemented.



- The connection can be made using a PVC pressure pipe:
 - directly if the flow rate is less than 30m³/h,
 - via a by-pass if the flow rate is greater than 30m³/h,
 - on the pool's filtration circuit, after the filter **C** and before the water treatment system **D**.
- Check the correct clamping of the hydraulic connectors and that there are no leaks.



We recommend assembly with a by-pass since this facilitates appliance maintenance.

Red Line	Hydraulic circuit pressure		Connectors	Minimum water flow	Maximum water flow
	Test	Service			
3-6-9-12	4 bar	2 bar	Ø63 and Ø50	5 m ³ /h	30 m ³ /h

2.3 I Electrical connections

2.3.1 Voltage and protection

- The power supply to the heater must be provided through a protection and circuit breaking device (not supplied) complying with the standards and regulations in force in the country where it is installed,
- The electrical connection lines must be fixed,
- Use the gland to pass the power cord into the appliance.

Electrical protection: via a dedicated 30 mA residual-current circuit breaker (circuit breaker or switch)

Acceptable variation in voltage: $\pm 10\%$ (during operation)

2.3.2 Connections

- !**
- **Incorrectly tightened terminals may cause the terminal unit to heat up and invalidate the warranty.**
 - **The appliance must be connected to an earth socket.**
 - **Risk of electrical shock inside the appliance.**
 - **Only a qualified and experienced technician is authorised to carry out cabling in the appliance.**
 - **If the power cord is damaged, it must be replaced by a qualified technician.**

- The power cord must be insulated against any cutting or hot elements that may damage or crush it,
- Check that the power cord is firmly attached to the connection terminal board.

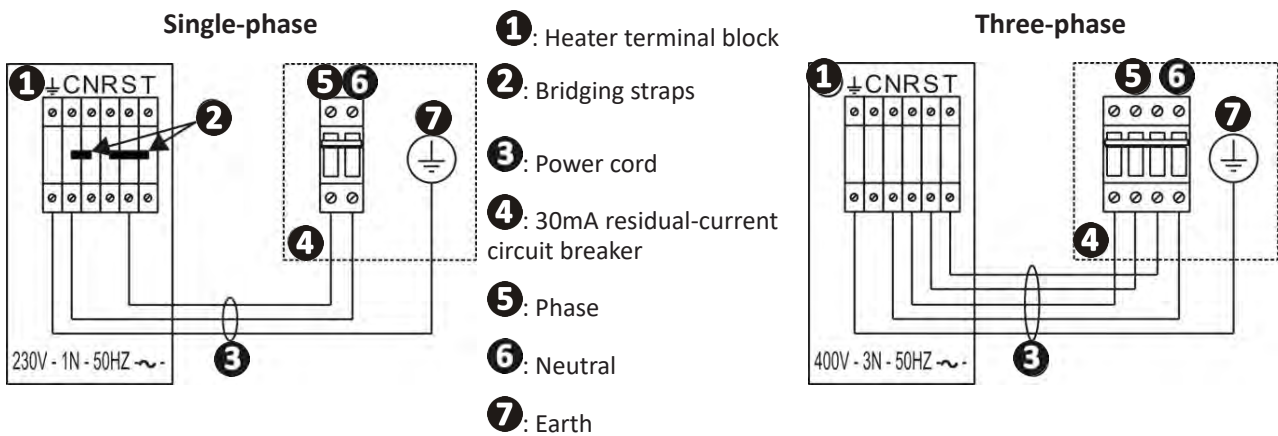


12 kW Red Line units are wired via three-phase systems only.

3, 6 and 9 kW Red Line units are pre-wired for supply via a single-phase system when leaving the factory.

To switch to a three-phase supply:

- Detach the label from the terminal block,
- Remove the 2 bridging straps (**2**),
- Reattach the label after pivoting it by 180° from its original position.



2.3.3 Cable sizes

- Power cord size: for cables of a maximum length of 20 metres (calculation basis: 5A/mm²), this must be checked and adapted depending on the installation conditions.

Red Line	Voltage	Bridging straps	Terminals	Power consumed	Cable size		Protection rating
				A	mm ²		A
3	230V/1N/50Hz	R-S-T	C-N	14	3x4	3G4	16
	400V/3N/50Hz	/	/	5	5x2.5	5G2.5	10
6	230V/1N/50Hz	R-S-T	C-N	27	3x6	3G6	32
	400V/3N/50Hz	/	/	9	5x2.5	5G2.5	16
9	230V/1N/50Hz	R-S-T	C-N	40	3x10	3G10	50
	400V/3N/50Hz	/	/	13	5x4	5G4	16
12	400V/3N/50Hz	/	/	18	5x4	5G4	20



3 Use

3.1 I Presentation of the regulation system



	Press and release	Press and hold
Keys	To confirm a value	"On/off"
	To browse and adjust values	To quickly scroll through the values

	Description	Steady	Flashing	Off	
Indicator lights	on	"On/Off" indicator light	Appliance switched on	/	Inactive
	reg	Heating indicator lights	Appliance currently heating	On hold Water flow rate too low (less than 5 m ³ /h) Filtration stopped Set point temperature greater than pool water temperature (the indicator flashes for 15 seconds then is lit steadily).	Pool at the desired temperature

3.2 I Starting the appliance

- Open all valves (V1, V2 and V3) (see §"2.2 I Hydraulic connections"),
- Start the filter pump,
- Gradually close the by-pass valve (V1),
- Check that the water flow rate is between 5 and 30 m³/h. If the flow rate exceeds 30 m³/h, adjust valve 1 (V1) to reach 30 m³/h maximum,
- Check that there is no air in the circuit,
- Connect the regulation system to the power supply and turn it on,
- Adjust the set point temperature: to display and change the set point value, press or .



- The temperature is regulated by degrees.
- The set point can be adjusted to between 2°C and 40°C.
- To check that the filtration time is long enough:
 - During the temperature rise phase, water circulation must be continuous (24 hours/day),
 - To maintain the temperature throughout the season, run "automatic" circulation for at least 12 hours/day (the longer this time, the more the operating range of the appliance will suffice for heating).

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

The heater must stop operating when:

- The temperature set point is lowered,
- The regulation system stops,
- Filtration stops.



4 Maintenance

4.1 I Winterising



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

- Switch off the regulation system,
- Stop water circulation,
- Drain the heater:
 - Close valves 2 and 3 (see § "2.2 I Hydraulic connections") where present,
 - Unscrew the connectors to drain the heater,
 - When the heater is empty, re-tighten the connectors a little, without creating a seal.

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4.2 I Maintenance instructions



It is recommended that the appliance undergo general upkeep on a yearly basis to ensure proper operation, maintain performance levels and prevent certain potential failures. These operations are carried out at the user's expense, by a qualified technician.

- Check the electrical mechanism,
- Check the ground connection,
- Check the tightening and connections of the electrical wires,
- Check the cleanliness of the switch box.



5 Troubleshooting



- If a problem occurs, before you contact your retailer, please carry out these few simple checks using the following tables.
- If the problem continues, contact your retailer.

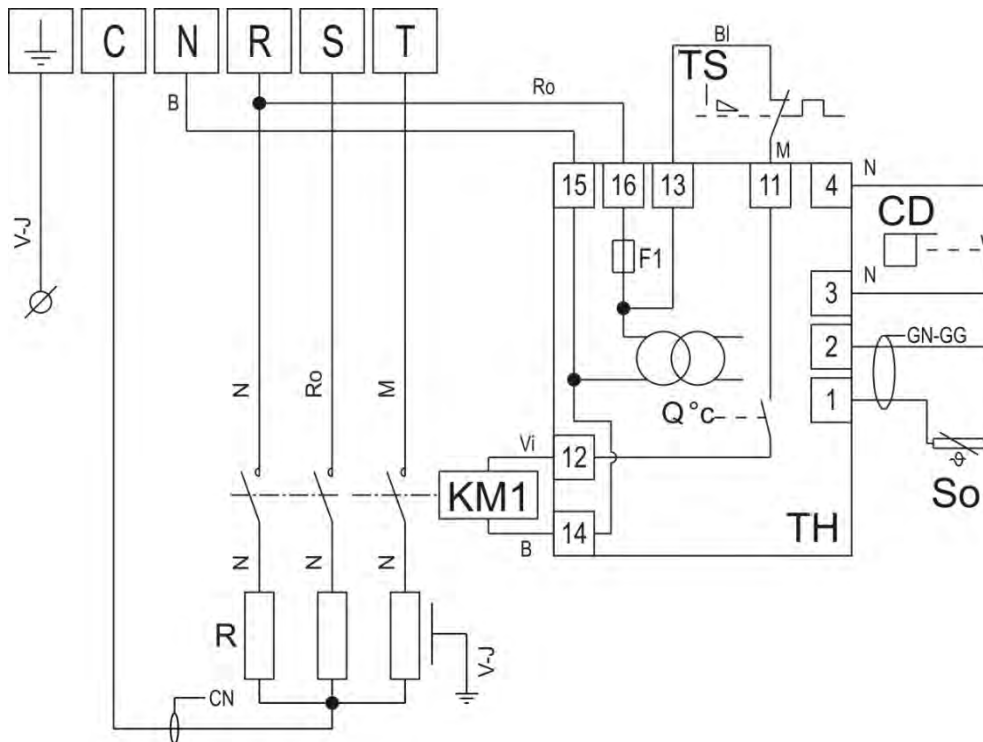
5.1 I Appliance behaviour

Message	Possible causes	Solutions
The display does not work	<ul style="list-style-type: none"> • The appliance is no longer supplied with electricity 	<ul style="list-style-type: none"> • Replace the regulator protection fuse
The appliance displays "EO" flashing	<ul style="list-style-type: none"> • The regulation sensor is out of service or disconnected 	<ul style="list-style-type: none"> • Appliance powered down and locked; reconnect or carry out a standard replacement for the sensor (the "EO" fault is acknowledged automatically)
The pool water is hotter than requested	<ul style="list-style-type: none"> • The regulator is not operating correctly 	<ul style="list-style-type: none"> • Check that the power contactor is not damaged
The "reg" indicator is flashing but the appliance is not heating	<ul style="list-style-type: none"> • The fail-safe overheating thermostat (TS) has been triggered 	<ul style="list-style-type: none"> • Reset the thermostat: <ul style="list-style-type: none"> - Remove the cap on the side of the appliance, - Press the centre button.
	<ul style="list-style-type: none"> • Non-compliant appliance installation 	<ul style="list-style-type: none"> • Contact a qualified technician

If the problem continues, contact your retailer.

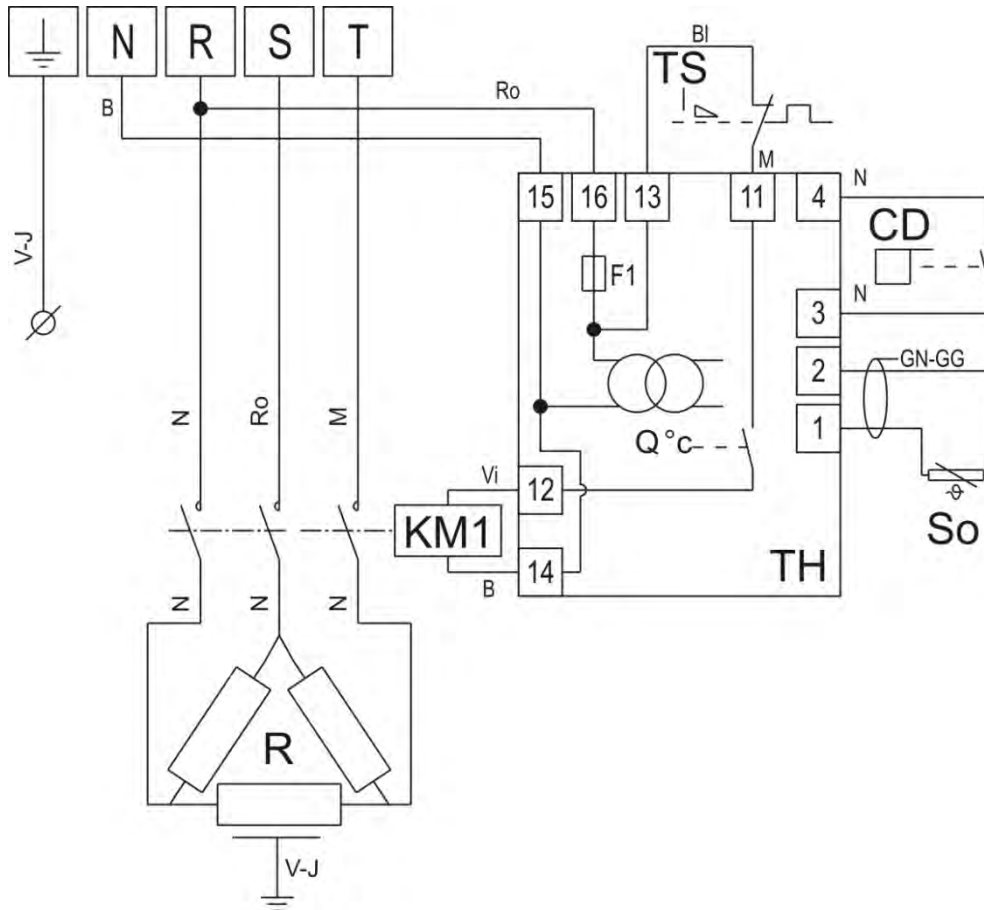
5.2 I Wiring diagram

5.2.1 Red Line 3-6-9 kW single-phase current and three-phase current



C-R	230V-1N-50Hz power supply
N-R-S-T	400V-3N-50Hz power supply
TH	Regulating thermostat with digital display
F1	3.15 A-T protection fuse
CD	Flow switch
So	Pool water regulation sensor (PTC)
R	Resistor (capacity engraved on the metal cup)
KM1	Power contactor
TS	Overheat control (triggered at 63 °C, manual reset)
GN-GG	Black cladding or grey cladding
CN	Black cable (coloured electrical bonding)
V-j	Green-yellow
B	Blue
M	Brown
Bl	White
N	Black
Ro	Red
Vi	Violet
⏚	Earth

5.2.2 Red Line 12 kW three-phase current



C-R	230V-1N-50Hz power supply
N-R-S-T	400V-3N-50Hz power supply
TH	Regulating thermostat with digital display
F1	3.15 A-T protection fuse
CD	Flow switch
So	Pool water regulation sensor (PTC)
R	Resistor (capacity engraved on the metal cup)
KM1	Power contactor
TS	Overheat control (triggered at 63 °C, manual reset)
GN-GG	Black cladding or grey cladding
CN	Black cable (coloured electrical bonding)
V-j	Green-yellow
B	Blue
M	Brown
Bl	White
N	Black
Ro	Red
Vi	Violet
⏚	Earth

Votre revendeur
Your retailer

Modèle appareil
Appliance model

Numéro de série
Serial number

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For more information, product registration and customer support:

www.zodiac.com

