



## ELECTRIC HEATER

### RED LINE TITANIUM



## DIRECTIONS FOR INSTALLATION AND USE

P.S.A. March 1999

P.S.A. Boulevard de la Romanerie. BP 3041 49017 ANGERS cedex 01 FRANCE ++33 2 41 21 17 34

# SUMMARY

<b>1. GENERAL.....</b>	<b>2</b>
1.1 General terms of delivery.....	2
1.2 Voltage.....	2
1.3 Water treatment.....	2
<b>2. DESCRIPTION.....</b>	<b>2</b>
2.1 Presentation.....	2
2.2 Dimensions.....	2
<b>3. INSTALLATION OF THE UNIT.....</b>	<b>2</b>
<b>4. CONNECTIONS.....</b>	<b>3</b>
4.1 Hydraulic connections.....	3
4.2 Electric connections.....	4
<b>5. USE OF THE CONTROL DISPLAY.....</b>	<b>4</b>
5.1 Presentation.....	4
5.2 Setting of required temperature.....	4
<b>6. STARTING UP.....</b>	<b>5</b>
6.1 Before starting up, check.....	5
6.2 Starting up.....	5
6.3 Checking.....	5
6.4 Failure.....	5
6.5 Winter storage.....	5
<b>7 WARNING.....</b>	<b>5</b>
<b>8 ELECTRIC DIAGRAM.....</b>	<b>6</b>
<b>9 CE CERTIFICATION.....</b>	<b>6</b>

## **1. GENERAL**

### **1.1 General terms of delivery**

Any equipment, even CARRIAGE and PACKING FREE, travels at the consignee's risk. The consignee shall make reserves in writing on the carrier's delivery bill if he notes damage caused during the transport (confirmation to be sent to the carrier within 48 hours by registered mail and Acknowledgement of Receipt).

### **1.2 Voltage**

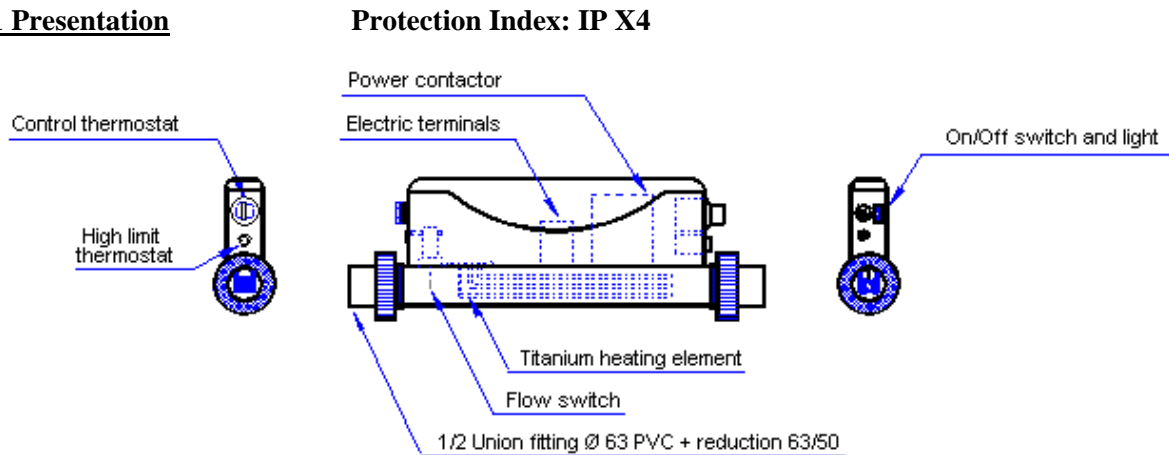
Prior to any operation, check that the voltage on the identification plate of the appliance corresponds to the mains voltage provided on site.

### **1.3 Water treatment**

In order to use our appliances in the best conditions, swimming pool water shall comply with the following values: free chlorine: max. 2.5 mg/l, total bromine: max. 5.5 mg/l, pH between 6.9 and 8.0. For any other treatment, the fitter and the user shall apply to the supplier of the planned disinfection process (chemical, electrochemical or electrophysical) for the compatibility with the materials of our appliances. In any case, treatment shall be installed downstream the heating equipment.

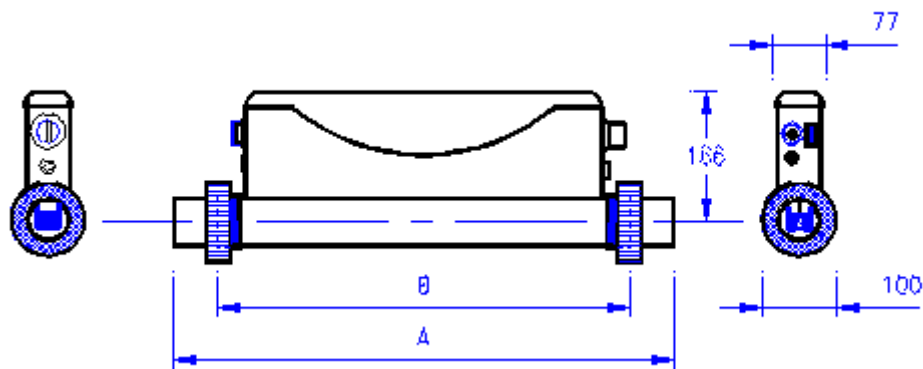
## **2. DESCRIPTION**

### **2.1 Presentation**



### **2.2 Dimensions**

(in mm)



B (mm) = 452 RED LINE 3 and 6 kW

B (mm) = 552 RED LINE 9 and 12 kW

A (mm) = 538 RED LINE 3 and 6 kW

A (mm) = 638 RED LINE 9 and 12 kW

## **3. INSTALLATION OF THE UNIT**

The appliance shall be installed in a technical facility close to the filter of the pool. It shall be horizontally fixed onto the wall, by means of 2 brackets (not provided), at the lowest level of the hydraulic circuit in order to make sure it is always full of water.

## 4. CONNECTIONS

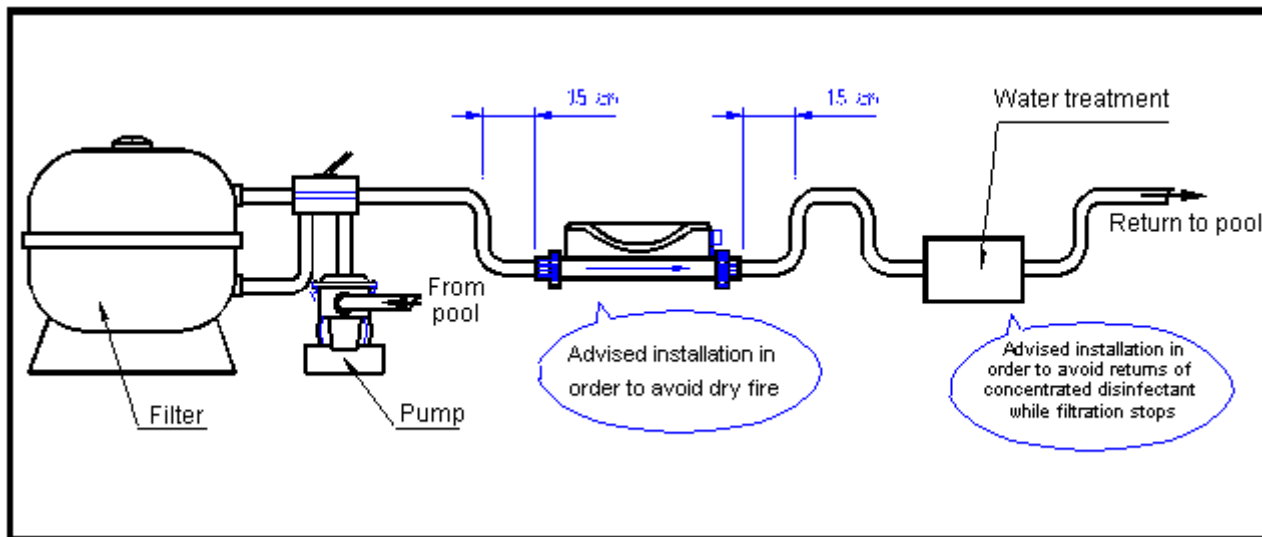
### 4.1 Hydraulic connections

The electric heater shall be connected in line to the return circuit downstream the filtration process, with a minimum flow rate of 5 m<sup>3</sup>/h up to 30 m<sup>3</sup>/h. If the flow rate is over 30 m<sup>3</sup>/h, the appliance shall be installed on a by-pass.

The appliance is delivered with 2 PVC union-socket Ø 63 fittings and 2 reductions 63/50.

**Caution:** make sure the appliance is installed the way it always contains water, even when the filtration is not running. Risk of dry fire otherwise.

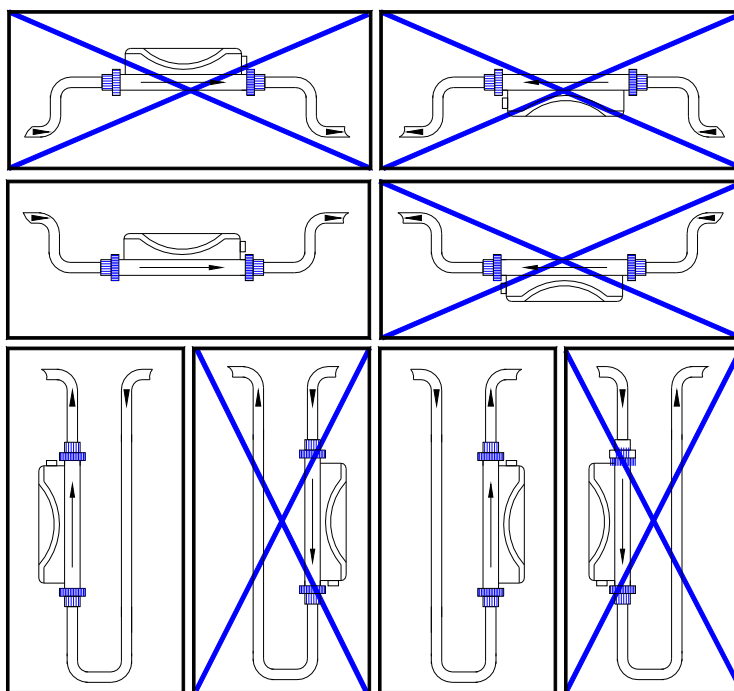
**Caution:** The appliance shall be installed upstream any disinfection process.



**Direction of circulation:** The direction of water circulation shall be accordingly to the arrow located on the housing of the appliance.

**Caution:** In event of **vertical** installation, direction of circulation shall be **from the bottom to the top**.

Test pressure: 4 bars    Service pressure: 2 bars



## 4.2 Electric connections

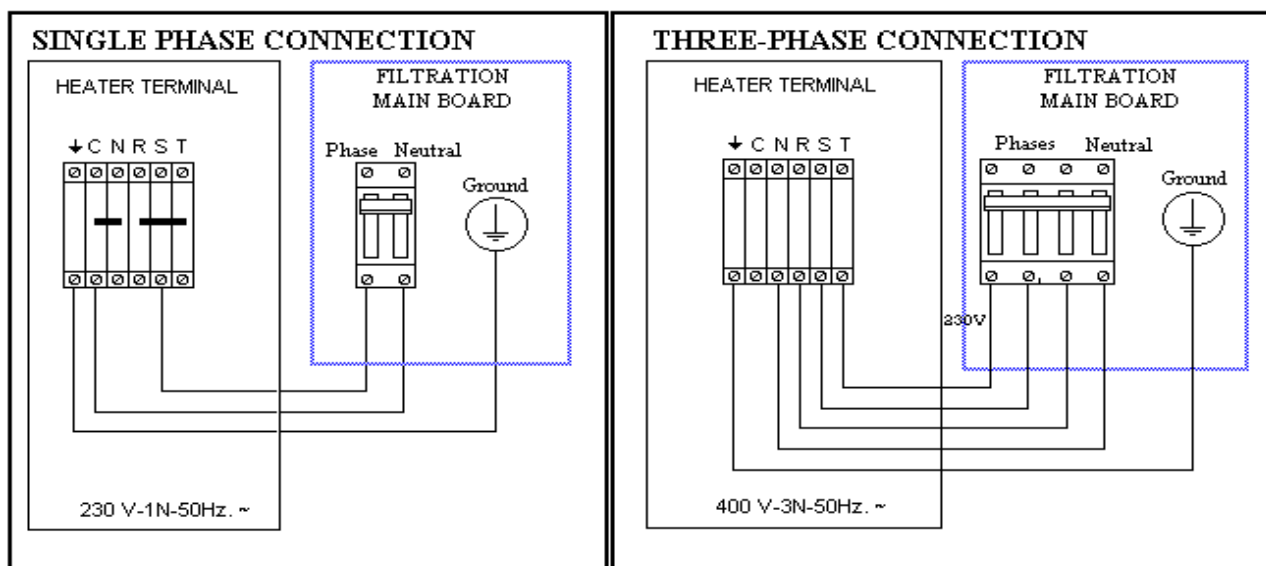
The power supply of the heater shall be insured by a cable as per indications below and protected by a differential 30mA circuit breaker, according to the national regulation.

3 to 9 kW models can be connected to single phased mains supply (230V/1N/50Hz) shunting terminals R S T and terminals C N by means of provided jumpers, or to three-phased (400V/3N/50Hz). 12 kW model shall only be connected to three-phased main supply (400V/3N/50Hz).

POWER	Current consumption (A)		Cable section mm <sup>2</sup>	
	Single phase 230V	Three phase 400V	Single phase 230V	Three phase 400V
3 kW	14	5	3 x 4	5 x 2.5
6 kW	27	9	3 x 6	5 x 2.5
9 kW	40	13	3 x 10	5 x 4
12 kW	-	18	-	5 x 4

### Notice:

- The acceptable tolerance of tension variation is  $\pm 10\%$  while working.
- Electric cables shall be fixed.



## 5. USE OF THE TEMPERATURE CONTROL

### 5.1 Presentation

The range of the control thermostat is from 16°C to 40°C ( $\pm 0.5^\circ\text{C}$ , continuous demand if the temperature of the pool is below 16°C).

### 5.2 Setting of the required temperature

Set the required temperature by rotating the knob to face the marks \* to 6.

\* : 16°C      1 : 20°C      2 : 24°C      3 : 28°C      4 : 32°C      5 : 36°C      6 : 40°C

## **6. STARTING UP**

### **6.1 Before starting up, check:**

- The hydraulic fittings are correctly tightened.
- There is no leak.
- The appliance is stable.
- The connections of the electric cables are correctly tightened. Incorrectly tightened cables may cause overheating of terminals.
- The appliance is correctly connected to the ground.
- No tools or objects have been forgotten inside the appliance.
- The water contained in the appliance is not frozen. In event of frost, the heater shall not operate.

### **6.2 Starting up**

- Run the filtration pump to make the pool water cross the heater.
- Purge the air from circuit and make sure no air remains in the appliance.
- Switch on the mains supply circuit breaker.
- Set the required temperature by means of the rotating knob of control thermostat.
- Press the ON/Off switch. If the appliance is on demand, light is on

When the temperature of the pool meets the required temperature, the light in the On/Off switch goes out and the heater stops automatically.

### **Caution**

- If on first setting, flow rate is lower than 5 m<sup>3</sup>/h, the heater won't work (flow switch remains open).
- If flow switch switches Off and On when the heater is working, make sure the flow rate through the appliance is regular and sufficient. Try to provide a minimum straight length of tube (at least 15 cm) between the appliance and an elbow to avoid any risk of turbulence that could disturb the flow switch.

### **6.3 Checking**

Make sure that the heater stops when:

- decreasing the required temperature on the control thermostat.
- filtration is switched off or closing a valve.

<b>Important:</b> Before any intervention, make sure the unit is switched off.
--

### **6.4 Failure**

In event of overheating, the heater is automatically stopped by high limit switch. Reset manually by pushing on the button (after removing the black cap).

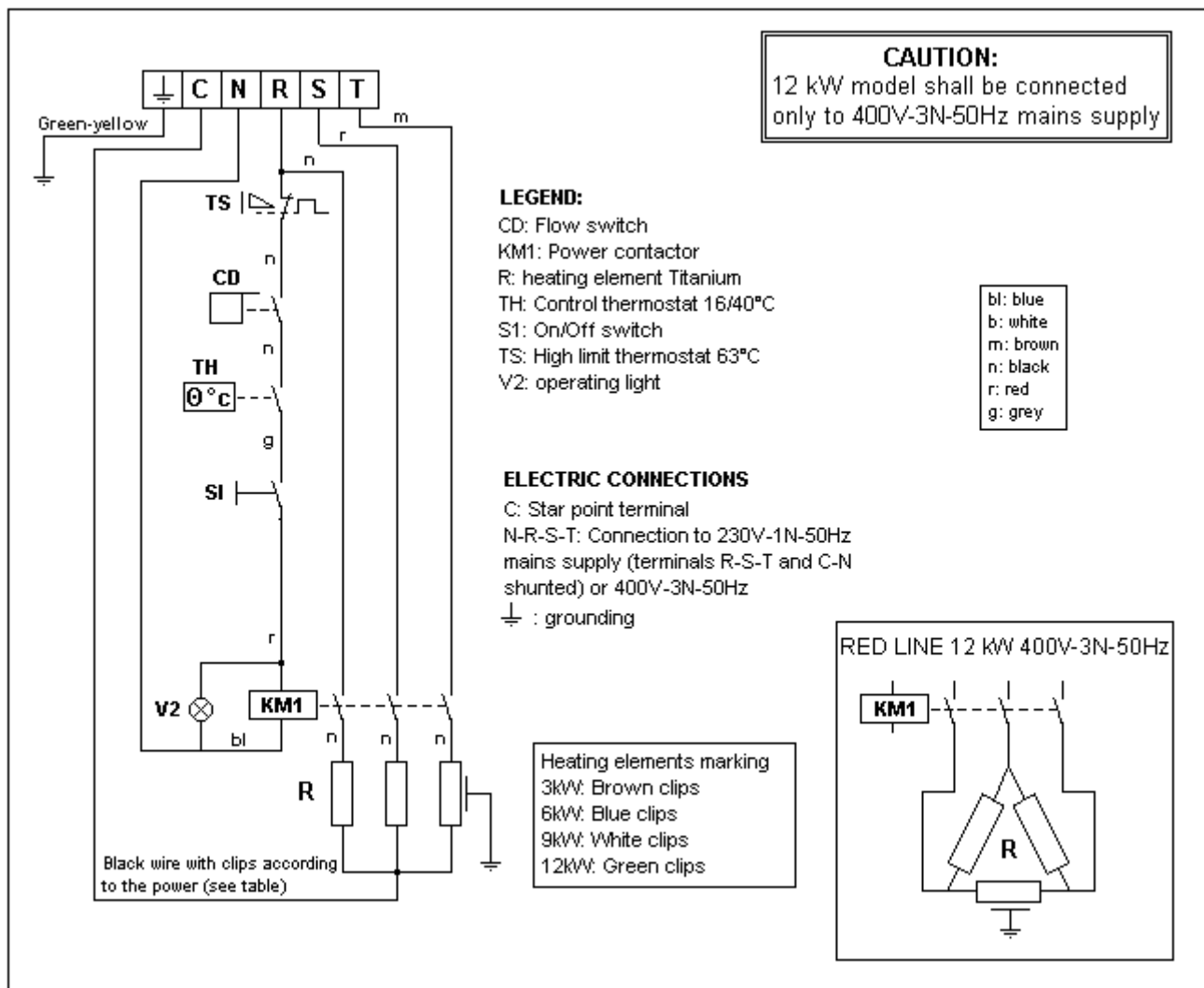
### **6.5 Winter storage**

- Switch off the appliance by pressing the On/Off switch.
- Switch off the power supply
- Drain the pool circuit by removing both connection union fittings in order to avoid the risk of freezing.  
**The guarantee will be cancelled in event of freezing of the appliance due to an improper winter storage.**

## **7. WARNING**

<b>MAKE SURE THE APPLIANCE IS DISCONNECTED FROM MAINS SUPPLY BEFORE ANY INTERVENTION.</b>
---

## 8. ELECTRIC DIAGRAM



**IMPORTANT!**  
**ELIMINATION OR SHUNTING OF ONE OF THE SAFETY OR REMOTE CONTROL ORGANS LEADS  
 AUTOMATICALLY TO THE CANCELLATION OF THE GUARANTEE**

## CE DECLARATION OF CONFORMITY

PSA declares that the herewith products or ranges

### **ELECTRIC HEATERS FOR POOLS RED LINE**

are in conformity with the provisions

☞ of the **ELECTROMAGNETIC COMPATIBILITY** directive 89/336/EEC, as amended 93/068/EEC. Controlled by AEMC Mesures laboratory - technical report N° P96045T.

The harmonized standards have been applied : EN 55014 - EN 55104

EN 55011

EN 55022

CEI 801-4

CEI 801-2

CEI 801-3

☞ of the **LOW VOLTAGE** directive 73/23/EEC.

The harmonized standards have been applied

EN 60335-2-35