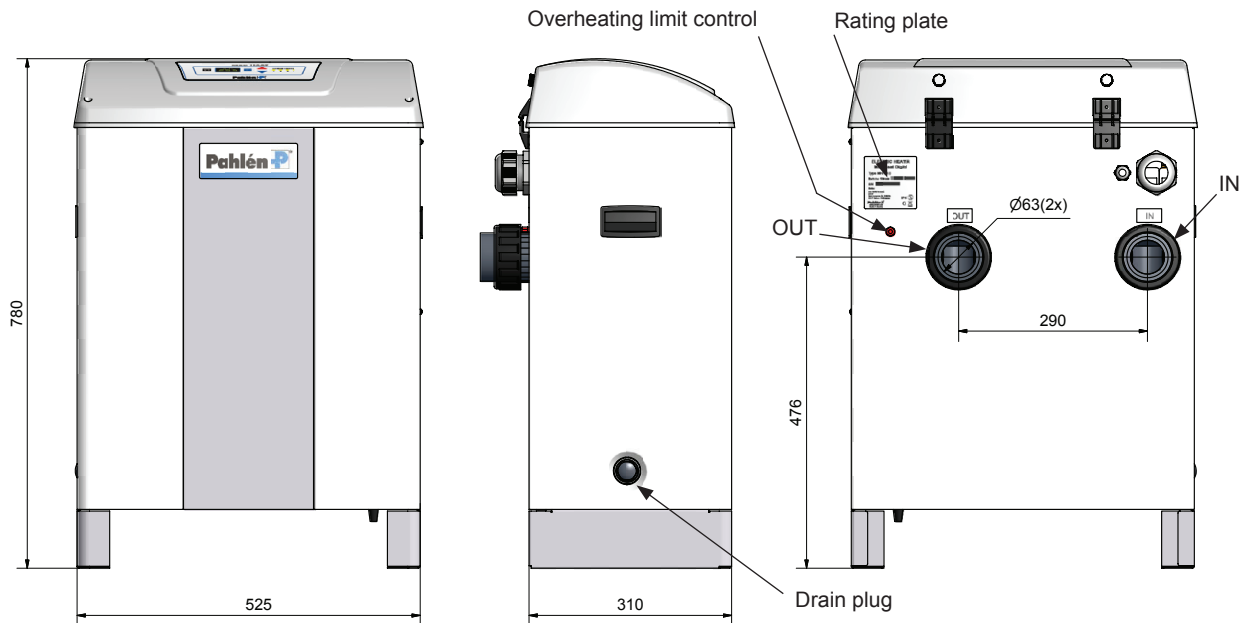


# Electric heater Maxi Heat Digital

Pahlén electric heater Maxi Heat with digital control is a compact and effective heater for swimming pools. It consists of a glass-fibre reinforced polypropylene tank containing resistance-type heating elements made of Incoloy 825 or titanium. If the pool water is aggressive, salt or in pools where a salt chlorinator is used, a heater with heating elements made of titanium is required.

An electronic thermostat controls the pool water temperature (max. +45°C) and four indicator lights show when the heating element is operating.

The heater is available in outputs from 18kW to 60kW for 230V, 16,2kW to 78kW for 380V or 400/415V. Check the rating plate placed on the back of the heater for relevant information.



## Safety

The heater must be installed in accordance with all local codes, ordinances and utility company requirements.

The heater must not be covered, enclosed in or placed near inflammable material or placed in direct sunlight.

Built-in safety controls in the heater are a flow switch and a manual reset overheating limit control to protect against overheating and element burn-out. The heater has also built-in automatic fuses. The heating element is controlled by an electronic thermostat to provide a safe and satisfactory swimming pool temperature.

Do not in any circumstances energize the heater until certain it's filled with water.

"Appliance is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction. Children being supervised not to play with appliance" (IEC 60335-1/A2)

## General info

Follow these instructions:

	<u>Incoloy</u>	<u>Titanium</u>
Chlorine content:	max 3 mg/l (ppm)	max 3 mg/l (ppm)
Chloride (salt) content:	max 150 mg/l	-
pH-value:	7,2 - 7,8	7,2 - 7,8
Alkalinity:	60-120 mg/l (ppm)	60-120 mg/l (ppm)
Calcium hardness:	200-1000 mg/l (ppm)	200-1000 mg/l (ppm)
Max pressure:	2 bar = 0,2MPa	2 bar = 0,2MPa
Minimum flow:	170 l/min	170 l/min
Maximum flow:	300 l/min	300 l/min

## Installation

Make the plumbing before the electric installation. Place the heater so that the service door (the opposite side to the one with the drain plug) and the top lid can be opened. Fasten the heater in the foundation by the four Ø13 holes in the base.

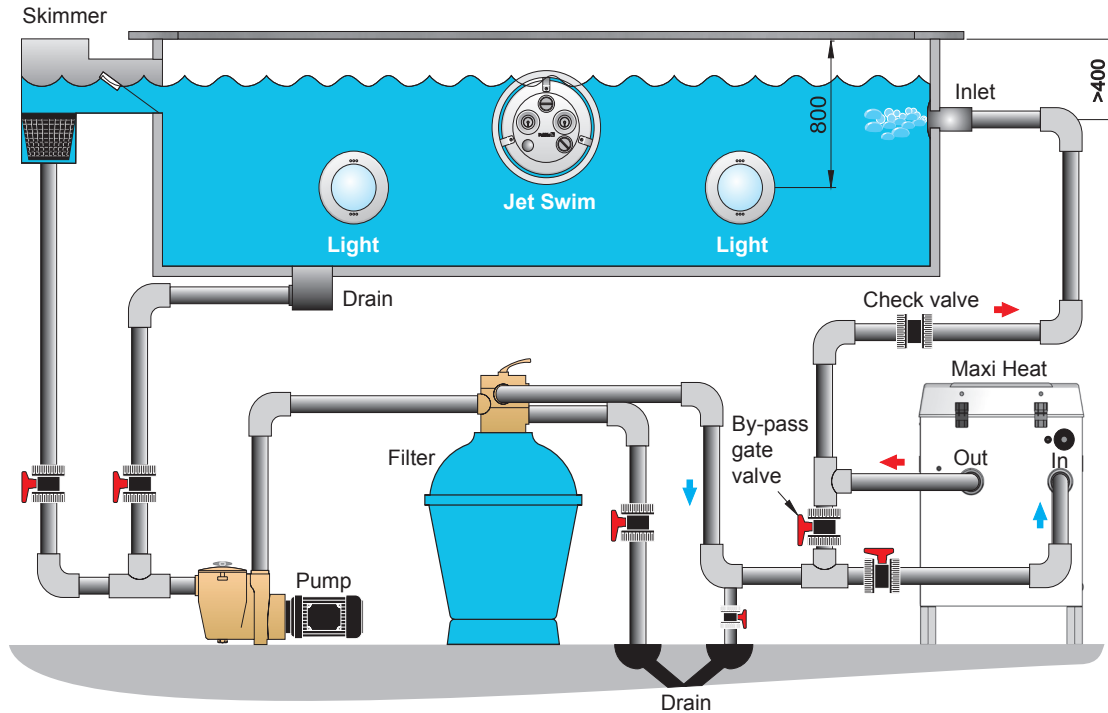
Recommended water flow through the heater is 170-300 l/min. If flow rates are higher than 300 l/min, a bypass should be installed and adjusted to obtain the recommended flow through the heater. A check valve and a drain valve should be installed ahead of the heater inlet to allow for heater maintenance without draining the swimming pool. Install unions to permit easy removal of the heater for inspection, cleaning and service.

## Pipe installation

Connect the heater into the pool system as shown in the diagram below. The outlet must not be connected to any tap or fitting other than those specified.

The heater is equipped with G2 $\frac{3}{4}$ " unions to be glued on PVC pipes with outer dimension Ø63 mm.

Note! Do not install a gate valve between the heater and the swimming pool (install a check valve instead).  
Dosage of chlorine, acid or similar, must always be done **after** the heater to avoid corrosion.



## Electric installation

All electric installations must be made by a qualified electrician according to the accompanied heater instructions.

The heater must be installed with a main supply on-off switch. We also recommend to install an earth fault relay.

Connect the heater as shown in the wiring diagram, see following pages 4 and 5. The heater shall be installed in such way that it cannot be activated if the circulation pump is not working (sufficient flow), i.e. the power supply to the contactor must be guided over the motor protection of the pump.

**Do not connect the heater to an improper source of electricity.**

Contact the local utility to obtain information about the correct power supply.

Voltage applied to the heater should not vary more than +5% to -10% to the model and rating plate specification.

For correct protection, follow this table

Part no	External fuse
1510018	32A
1510025, 1510030, 1510218	50A
1510036, 1510224	63A
1510045, 1510230	80A
1510060, 1510236	100A
1510072, 1510245	125A
1510248, 1510260	160A

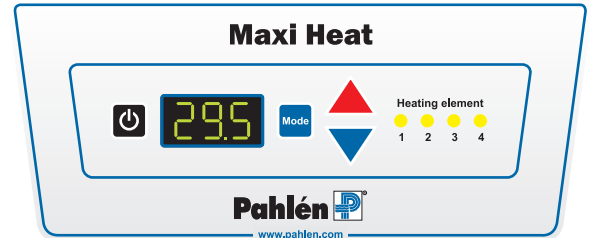
(Part no, see rating plate on the heater.)

## Start up

1. Check all electrical and plumbing installations and switch on the fuses.
2. Open all valves except the drain valves and fill the system with water.  
If the water level in the swimming pool is below the heater, fill the pool and, leaving the heater OFF, turn on the system pump to fill the system. If a bypass is installed in the system, open the bypass valve half-way. Make the final adjustment later.
3. Start the pump.
4. Energize the heater.

## Setting the temperature

1. Switch on the power to the heater.
2. Set the required pool temperature in °C by using the blue or red arrow key. Red = temp up, blue = temp down.
3. After 5 seconds the display shifts from showing the required temperature to show the actual pool temperature.  
The indicator lights on the control panel of the heater now show that the heating elements are operating.  
When correct pool temperature is reached, the heating elements shut off in intervals.



The heater remember the latest required temperature even if the power supply is switched off.

## Water flow/bypass adjustment

The water flow rate can be adjusted by use of an external bypass valve and a thermometer. The bypass valve is adjusted using the water temperature difference (rise) through the heater as indicated by the thermometer at the heater outlet.

1. Turn on the pump and allow it to run for 5 minutes, then read the water temperature on the thermometer.
2. Set the electronic thermostat to call for heat, run for 5 minutes and again read the temperature on the thermometer.

To prevent tampering and possible operational problems or damage to the heater, it is recommended that the bypass valve handle is removed.

## Maintenance

Note that the heater functions only when the circulation pump is running and the water is circulating. It will not heat when the filter pump is off or the temperature control is not calling for heat.

In hard water areas, lime can accumulate in the tank and on the heating element. Tank and element should be inspected periodically and scale removed when necessary.

If the water in the system stands still for a longer period, drain the heater. Always turn off the heater and disconnect the main fuses before draining the heater. Close both the inlet valve and bypass valve and open the drain plugg on the heater. The heater contains about 15 liters of water. If vacuum occurs, loosen the outlet connection a little to make sure of total draining of the heater.

If the swimming pool system is subject to sub-zero temperatures, turn off the power to the heater and the pump and drain the entire system. Open the drain plug, placed on the side of the heater. The system drain valve must be left open until it is time to start up the swimming pool again.

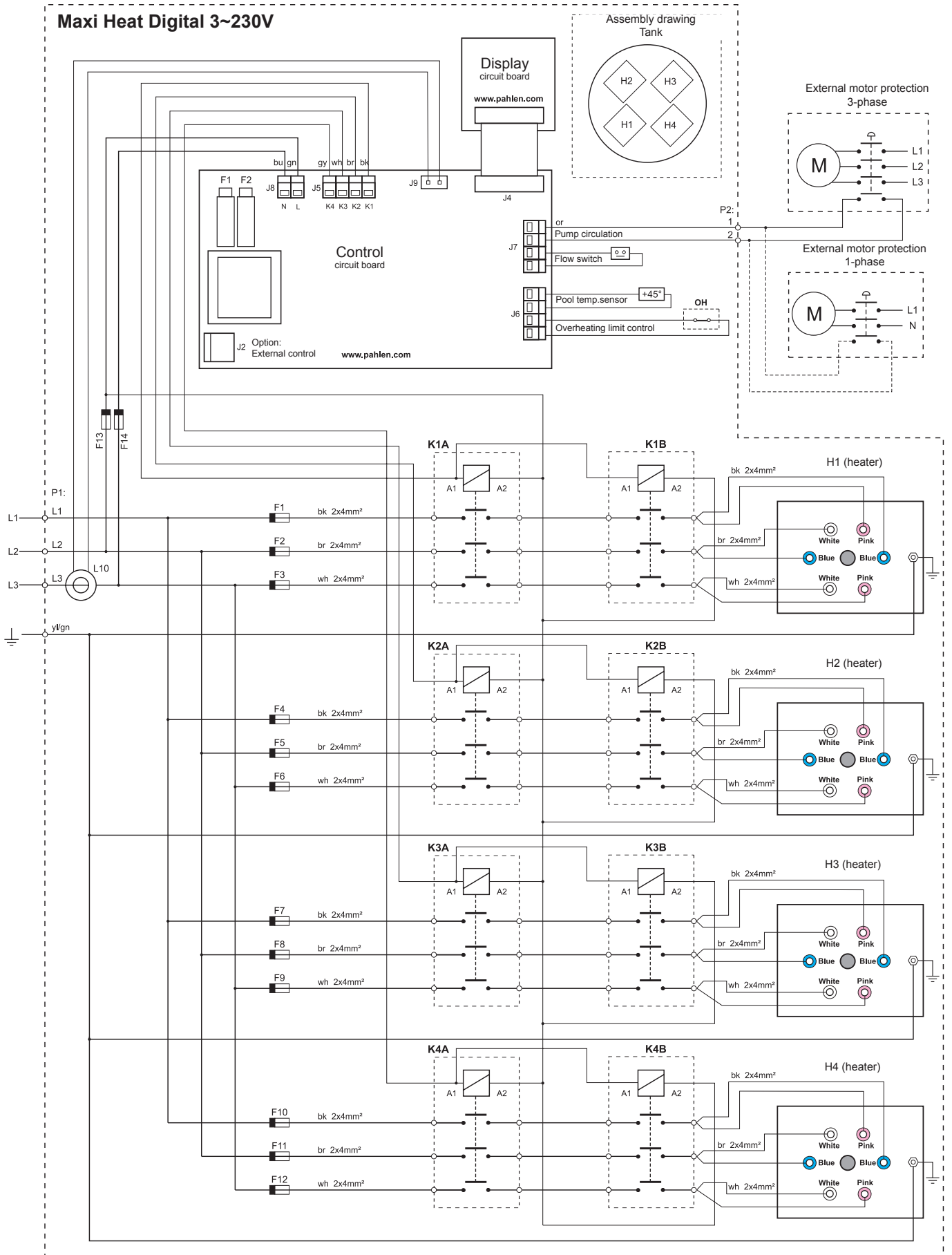
When back-washing and cleaning the filter, the power to the heater must be turned off.

## When technical problems occur

The display shows an error code. Contact your installer.

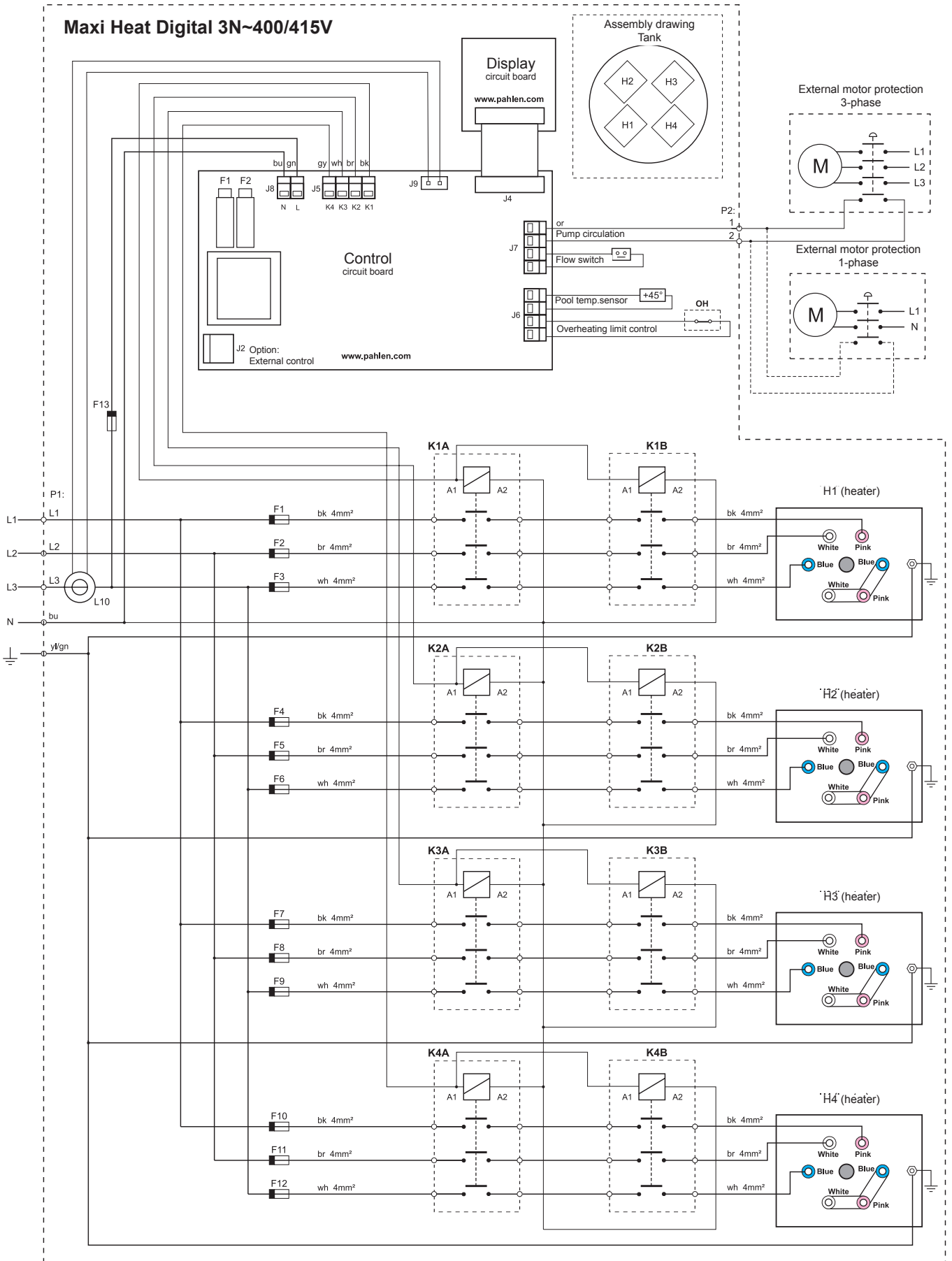
## Error codes

Code	Cause	Measure
E1	Flow switch	Control/increase water flow
E2	Pool water temperature sensor not connected/short circuit	Check connection. Replace sensor if it is out of order.
E6	Overheating limit control shut off	Warning! The unit is live up to the first contactor even if the overheating limit control has been released. Reset manually to restore heater operation by pressing the red knob under the red protective hub. If the overheating limit control continues to shut off the heater, have a qualified service technician determine the cause of the malfunction.
E7	Connector circuit broken	Check cables, circuit board and contactors.
E10	Circulation pump not active	Turn on circulation pump.
E11	One of the heating elements isn't working	On the control panel the twinkling diode shows wich of the heating element 1 to 4 is not working. (The heating elements that works will be started and those diodes will shine with a fixed light.) Check connections. Replace the defect heating element.
Hi	Water temperature higher than +45°C	Pool water must cool.



E10032-4  
100118 T.S

ENGLISH



E10031-2  
100118 T.S

ENGLISH