ELWA® ENERGY SAVERS

HOTRUN-VE Range

Operating and Installation Instructions

ELECTRIC AND DIGITAL CONTROLLED WATER HEATERS

Revolutionary temperature control and limiter

The most advanced way saving energy and water

Contents

AS/NZS 3498
40034

Approvals:
IEC/AS/NZS 60335.2.35, Electrical safety, Certificate number 11422CA
AS/NZS 3498 and AS/NZS 3500, Watermark, Certificate number 40034

General information

Thank you for choosing an ELWA digital controlled instantaneous water heater.

To ensure your own safety and that of others you need to read these installation and operating instructions before using this water heater for the first time.
Please keep the instructions and other documentation close to the unit for future reference
Failure to observe this instruction may lead to damage to the water heater.

This product should not be disposed of. ELWA water heaters can always be serviced or repaired if needed.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources.

Plumbing and electrical installation work, commissioning and maintenance of this appliance should only be undertaken by a qualified tradesperson. Correct and reliable operation of this unit will only be ensured if original ELWA accessories are used.

This water heater must be connected to a reliable earth connection at all times.
The electrical resistance of the water must be at least >1300 Ω/cm².
Your water supply-company can inform you about the electrical resistance (specific resistance) of the water in your area. The water heater should not be installed in an area exposed to the risk of freezing.

Do not operate a HOTRUN in a "dry state". The electrical power should remain switched off until the HOTRUN is completely filled with water and all air is released from the system!

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons with an original approved cord in order to avoid a hazard.

This water heater is manufactured in accordance with applicable safety standards and has been tested by the relevant authorities. It has been certified to comply with AU and EU standards and the IEC declaration of electromagnetic conformity.
The exact technical specifications of every water heater is shown on the label of the water heater

This appliance is not intended to be programmed by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Accessories supplied with every ELWA HOTRUN water heater: wall plugs and screws, two flexible hoses Watermark approved for hot and cold water connections, three white blanking grommets

The ELWA HOTRUN electric instantaneous water heaters are designed for both point of use (most efficient and lowest water and energy consumption) and multipoint applications, such as hand wash basin/shower/kitchen sink(s), in fact all places where instant hot water is required.

The heating of the water is started instantly when sufficient flow is detected by opening a tap or valve connected to the hot water outlet.

The outlet water temperature depends on the following factors:

- The flow rate through the HOTRUN that is limited by a flow restrictor in the cold water inlet fitting (or when removed can be controlled by a flow valve on the cold water inlet side)
- How far the hot water tap is actually opened (or the incoming flow into the HOTRUN restricted)
- The temperature of incoming cold water
- The mixing of hot- and cold water

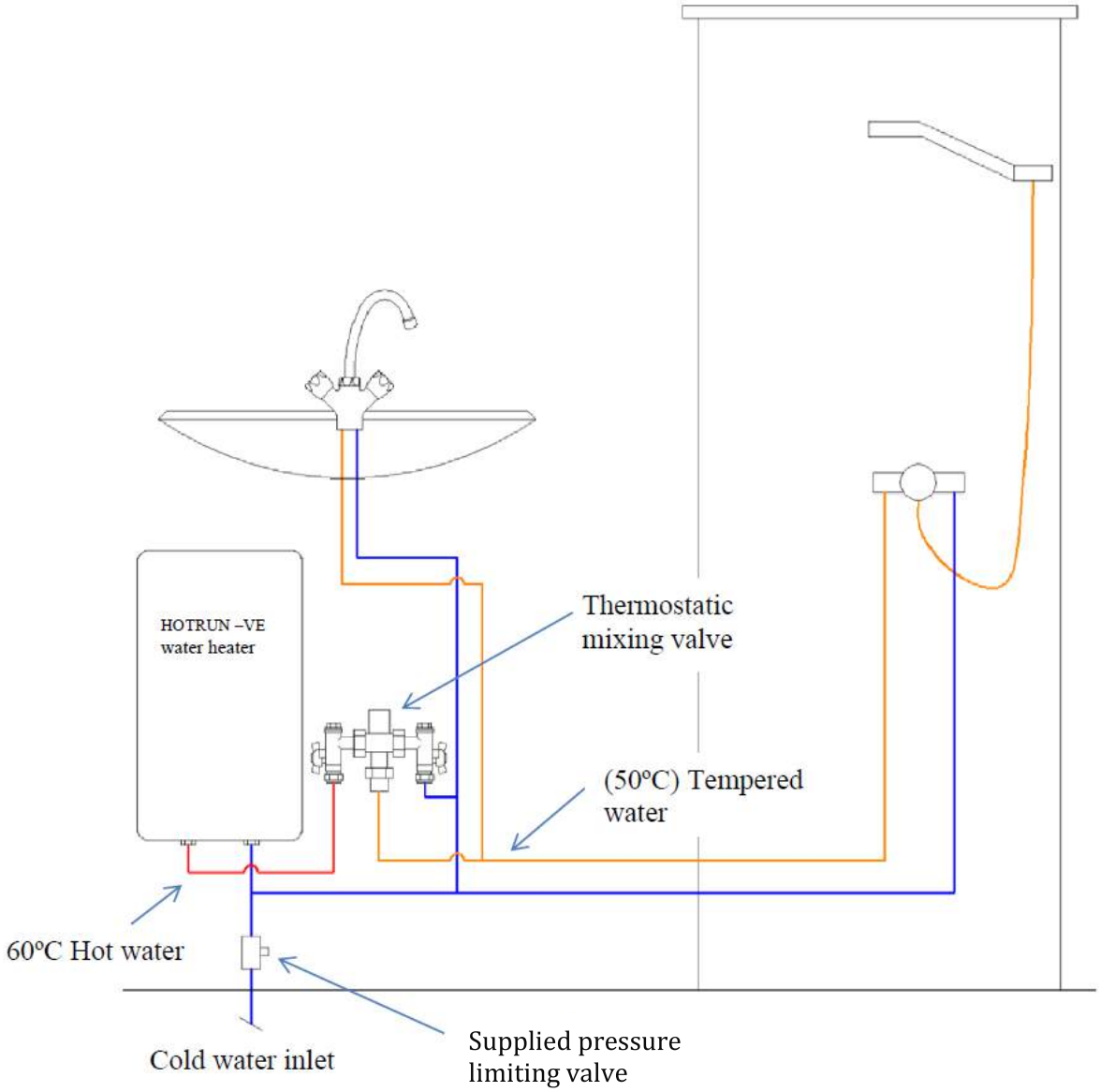
The hot water temperature can rise while reducing the flow rate. By closing the hot water tap or when the flow drops below a minimum flow rate, the heating of the water will stop automatically. The capacity/performance of the HOTRUN depends on its electrical capacity (kWatt rating).

A temperature rise of 25°C to 30°C can be expected with the standard flow restrictor in the cold water inlet fitting. An inlet temperature of 25 °C can increase the performance by 50% compared to an inlet temperature of 12°C.

Mounting instructions

1. Mark the position of the plugs or screws according to the positional template, allowing enough space below and above the water heater (200mm) to open the front cover screws after installation. The HOTRUN models 38 to 96 can be installed in an over-sink and under-sink position. As standard, the water heater is supplied for under-sink installation. To mount in an over-sink position rotate the key-hole bracket on the back plate and the front cover 180°. The models 120 to 240 can only be installed in over-sink position.
2. Mount the unit using the screws supplied using the positional template.
3. Fit the top screw(s) allowing it to protrude approximately 2-3 mm. Slide the bracket onto the protruding screw(s).
4. Secure the water heater into position with the screw between the hot and cold water connections

Installation of TMV



Water connections

1. The HOTRUN-VE range of products need a cold water supply pressure of at least 60kPa. This 60kPa pressure must remain under full flow conditions. When connecting the HOTRUN to a low pressure tank/rainwater system without pressure pump, it is unlikely to switch on in a reliable manner. If unit is supplied by rain water, water must be filtered before passing the HOTRUN water heater. The minimum supply pressure needs to be secured at all times or the HOTRUN can fail to switch on.

   The minimum flow rate to operate the HOTRUN-VE models depends on the model:

HOTRUN MODEL :	**38VE**	**48VE**	**60VE**	**75VE**	**96VE**
Min start-up flow rate:	1.5 l/min	1.8 l/min	2.2 l/min	2.9 l/min	3.8 l/min
Standard delivery flow rate:	2.0 l/min	3.0 l/min	4.0 l/min	5.0 l/min	6.0 l/min

2. The maximum inlet water pressure must not exceed 350kPa. The pressure limiter should be preset to 250kPa and should not be adjusted. **The pressure limiter needs to be installed in the total cold water supply to the building or the area where the HOTRUN will be installed.** Take water hammer of flick-mixers into consideration that can cause pressure boosts, when closing fast, of up to 200kPa on top of the inlet water pressure.
3. Make sure that any flow restrictors in shower heads and aerators in tap outlets installed after the HOTRUN are not too restrictive, kept clean and make sure these cause minimal back-pressure to enable the HOTRUN to switch on and off. The outlet back-pressure needs to be less than the cold water inlet supply pressure, as the cold water can be pushed back to the HOTRUN when mixing cold water to the hot water and cause the HOTRUN to switch off. Sometimes a pressure limiter in the total cold water supply needs to be installed to secure proper performance at all times.
4. Connect the incoming & outgoing water pipe-work to the HOTRUN water connectors **only** with the supplied flexible hoses that are supplied with each HOTRUN, unless the water connections come in from the back through the wall. All HOTRUN fittings and flexible hoses are Watermark approved and have a flat sealing connection. By using the supplied flexible hoses you will avoid excessive tension on the HOTRUN fittings. Damaging internal copper pipework during installation is not covered by warranty.
5. The incoming and outgoing water connections for cold and hot water can't be swapped. The fitting with the blue marking is for the cold water inlet and the one with the red marking is for the hot water outlet.
6. Always use a ½″ BSP (100% bore) ball valve on the cold water supply for service purposes.
7. **Important: After installation open the water tap to flush the device to release all air from the Heat Exchanger and check all connections. Failing to do so shortens the**

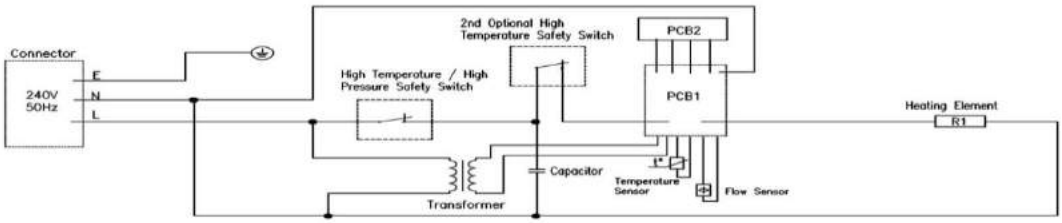
life-span of the electric elements. Replacement of elements burning out during installation is not covered by warranty.

8. There is no need to install an overpressure relief valve.
9. The HOTRUN-VE range water heaters can be programmed to any temperature limit required. At the time this manual was written only the 50°C limited models for sanitary fixings for personal hygiene are exempted from the requirement of installing a TMV by the plumbing code of Australia and as is required by AS3498 for testing and approval of water heaters in Australia and New Zealand. New legislation is underway to cover this exemption for all other temperatures.
10. Any set temperature between 35°C and 60°C, as temperature limit, can be programmed into the water heater by ELWA. This setting can not to be changed by the end user after installation. Ask for assistance from an ELWA technician if you need to change the temperature limiter programming.
11. Each water heater is supplied for installation with exposed water and electrical connections. However, water and electrical connections can also come in from the wall through the back plate of the water heater (see template for positioning all connections prior to fitting the unit to the wall). To do so, remove the inlet and outlet water connections and use the supplied blanking grommets to close of the two holes. Allow for 2 elbows, 1/2" BSP male/female, to connect water to the nuts on the internal copper pipes.
12. The front cover of the model 38 to 96 can be rotated 180° to suit under-sink or over-sink installation and enable the end user to read the temperatures in the display. The metal key-hole bracket on the back plate can be rotated 180° for this purpose.

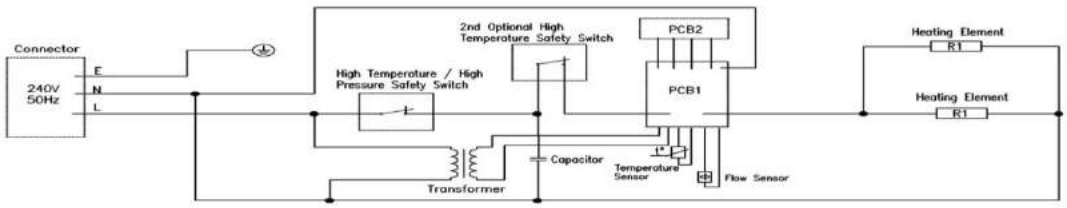
Electrical connection

1. Local wiring rules and guidelines must be adhered to.
2. It is necessary to provide a dedicated circuit direct from the switchboard to each HOTRUN.
3. The HOTRUN has to be connected to an isolator switch to be positioned next to the water heater.
4. Check insulation resistance and proper earth continuity.
5. **Fill the unit with water, and only then, switch the power on.**
   Attention: Avoid overheating. Fill the unit completely with water before turning on the mains power supply. For that purpose:
   Open the tap and wait until the water flows out from the spout without any air bubbles.
   Close the tap.
   Switch-on the mains supply, Activate the HOTRUN on the control panel with on/off push-button and the HOTRUN is ready to use.

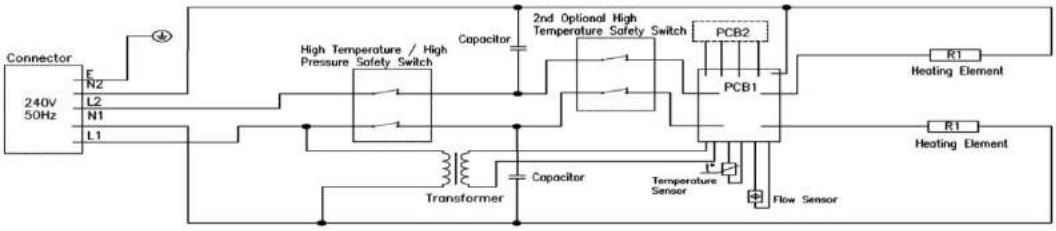
Electrical schematics



HOTRUN 38VE and HOTRUN 48VE

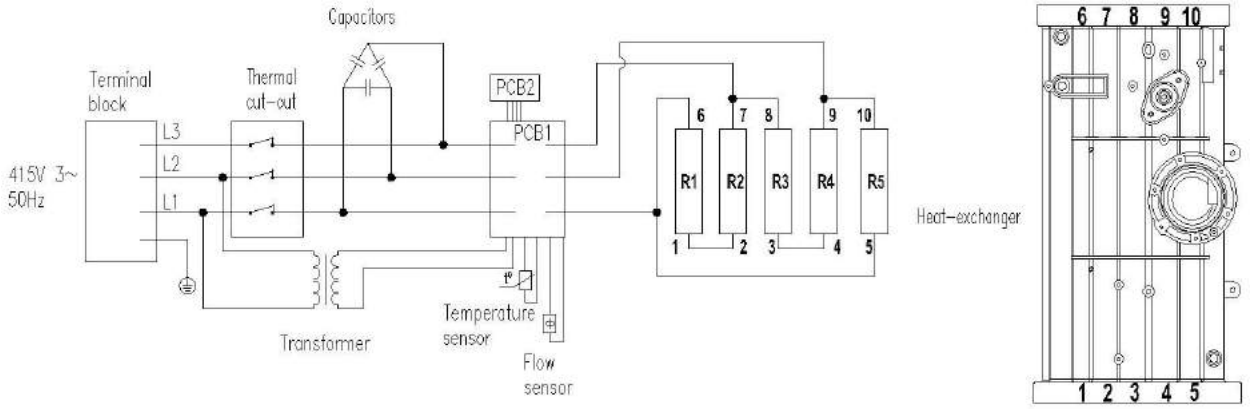


HOTRUN 60VE

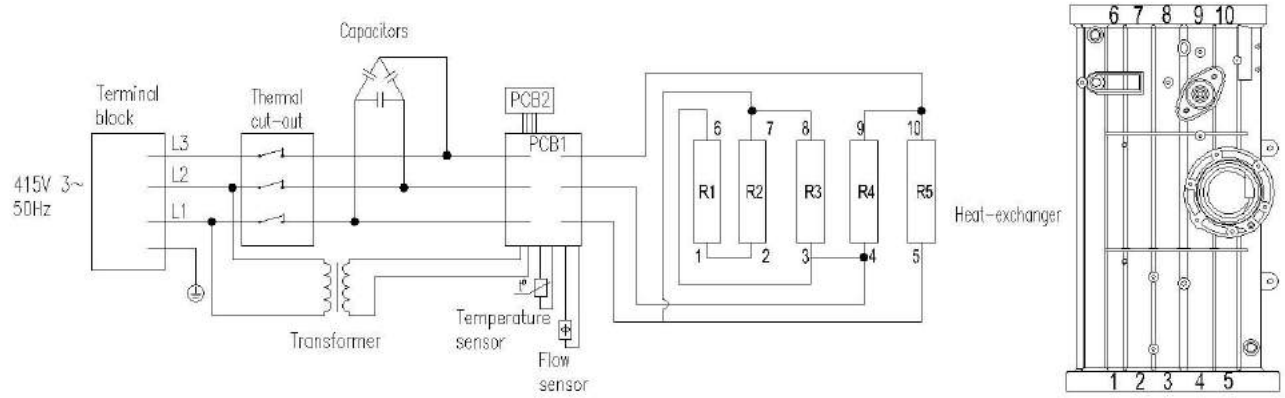


HOTRUN 75VE and HOTRUN 96VE

12/15kW

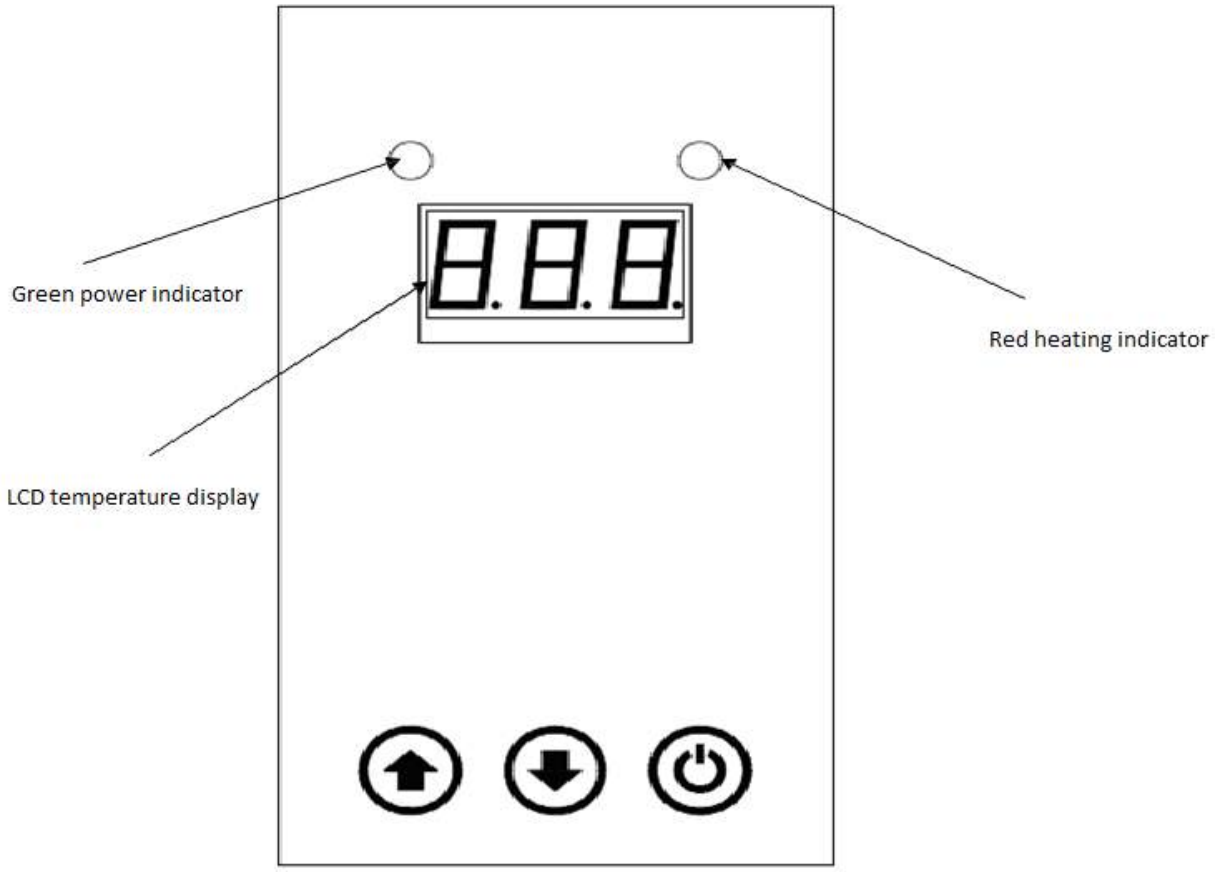


18/21/24kW



Operation Of The Control Panel

The green light is the power indicator; the red light is a heating indicator.
The LCD display shows the setting or actual water temperature at all times, except during programming. When activated, it will show the delivery temperature of the water-flow.



Press (↑ or ↓) the key to set the temperature required. To change 1 degree push the buttons for a short time, a beep confirms every step. To quickly adjust the temperature in 5 degree steps hold the button pushed in. The red indicator will flash while you set temperature, the display show the required temperature flashing before reaching set temperature. On initial start-up the temperature setting will be the maximum delivery temperature programmed and needs to be set to the required temperature again. The temperature setting can range from 35°C to 60°C. If there is not enough water flowing through the water heater it will not turn on, the display shows LF (Low Flow). If the temperature drops below 3°C, the screen will display LL and if over 80°C, it will display OT. If the inlet water temperature it too high the display will show HH, the water heater will lock itself out and an alarm will beep.

Legionella Cleaning Cycle

A service technician can program a HOTRUN-VE model to run through a Legionella Cleaning Cycle. The purpose of the Legionella Cleaning Cycle is to provide a thermal disinfection of fixtures downstream of the HOTRUN water heater. A cycle will run for >10 minutes at a temperature of >60°C as per the current Australian Health Ministers' Regulations and directions given to ELWA in every State of Australia. ELWA can organise this service for all customers who have a HOTRUN-VE model installed with models produced from 2015 onwards. During the

Legionella cleaning cycle the display shows the count-down time of the cycle (600 seconds) until completion, and then remembers all its previous settings for normal operation.

Maintenance

- Due to its advanced design the HOTRUN does not require any maintenance.
- To clean cover, use damp cloth only.
- Scouring and dissolving agents are not suitable.
- Regularly remove debris or scale building up in shower heads and in tap-aerators.

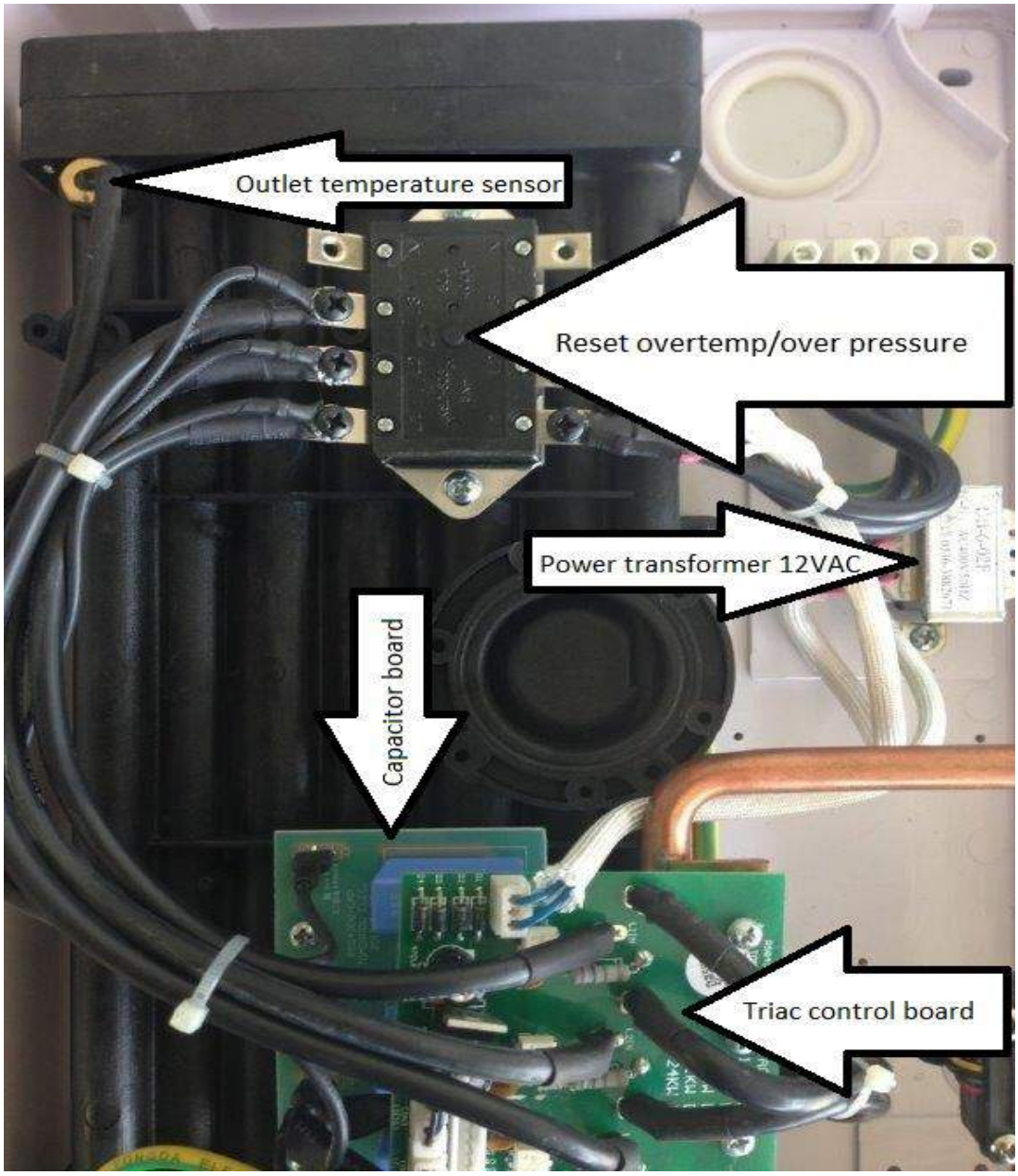
Troubleshooting

Fault Code	**Most likely cause**
F1	Temperature sensor not connected or faulty (reconnect or replace temperature sensor)
F0	Temperature sensor short circuit (replace temperature sensor)
HH	Too high inlet or outlet temperature >75°C ± 5°C
LL	Inlet water temperature too low < 3°C
LF	Inlet water flow too low (can come up for a few seconds during normal start-up)
OT	Over Temperature/Over Pressure safety switch tripped (reset button)

Initial checks

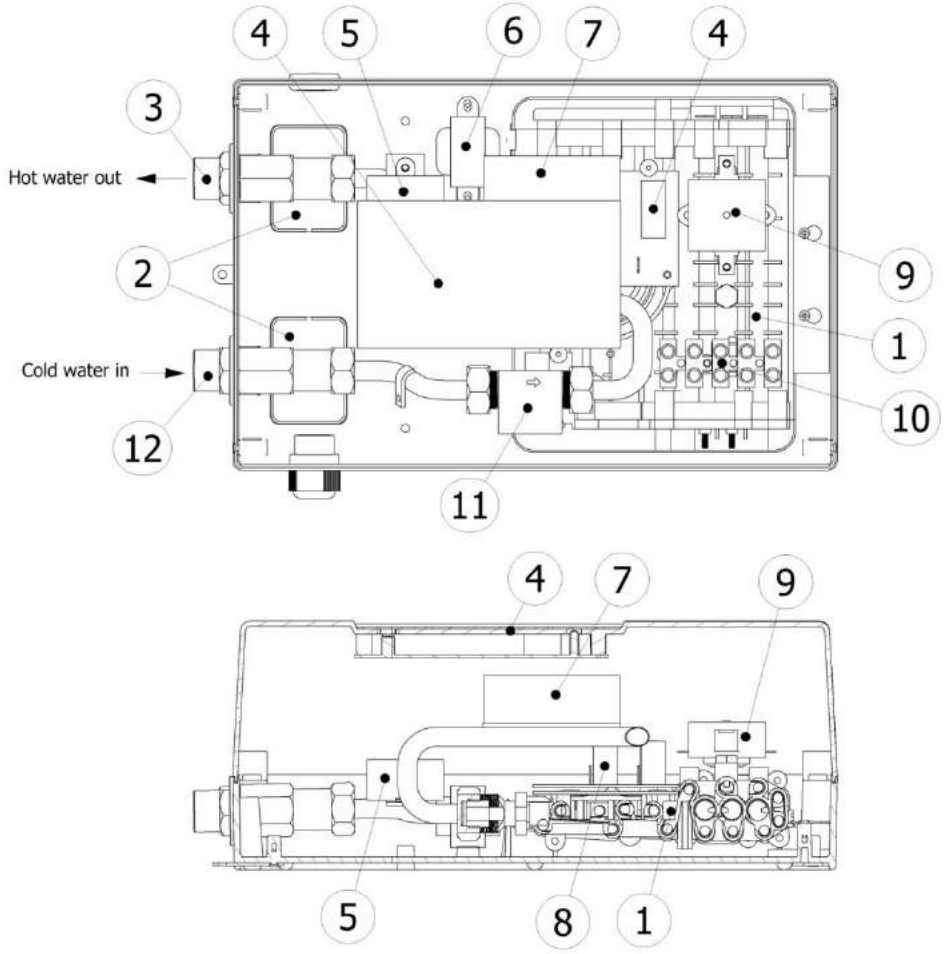
- Adequate supply and pressure of the water (min. 60kPa).
- Make sure the cold water inlet and the hot water outlet are not connected in reverse.
- The main switch or circuit breaker is switched on.
- The fuse / circuit breaker is not blown / triggered.
- Flow rate from the tap needs to be higher than the minimal flow-rate of the model installed to activate the heating elements.

3-phase models:



Heat-exchanger of the 3-phase models 120VE – 240VE

1-and 2-phase models



1. Electric element(s)
2. Rear entry break-outs
3. Hot water outlet
4. Temperature controller
5. Over-temperature safety switch (optional)
6. Transformer
7. Triac power control-board
8. Capacitor PCB
9. Over pressure/over temperature safety switch
10. Terminal block
11. Inlet water temperature & flow sensor
12. Cold water inlet

Trouble Shooting Examples

The HOTRUN does not switch on when opening the tap fully.

Causes

- This problem is usually caused by lack of water flow problems. Ensure the pressure on the cold water supply is over 60kPa, while the HOTRUN is in use and the flow rate is sufficient to turn the heating elements on.
- Too much back pressure in tap-outlets or shower heads after the HOTRUN, causing lack of pressure differential over the HOTRUN (back-pressure through the cold)
- Maximum temperature/overpressure cut-out switch is activated. This if most likely due to air in the HOTRUN not cleared before switching on the electrical supply, or the mains incoming water pressure is too high.

Remedy

- Fix the water pressure problems; remove any flow restrictions fixtures such as shower-heads and tap outlets.
- Switch the electric power supply off; make sure there is no power on any of the terminals
- Check continuity over the safety switch terminals. If there is no continuity over the contacts, push the reset button on the safety switch.
- Seek electrical assistance to check power supply on all phases and continuity all the way to the electric elements, and to measure element resistance.

The water that is coming out of the HOTRUN is not warm enough.

Cause

- The incoming water is very cold (below 12°C) and/or the total flow is too high.

Remedy

- A flow restrictor can be installed or an inline (additional) ball valve in the cold water supply to the HOTRUN can enable the user to reduce the flow and so increase the temperature to the maximum temperature programmed in the temperature limiter.

The heating of water stops when trying to mix cold water to get the required outlet temperature

Causes

- Aerator/restrictor in nozzle of outlet causing too much back pressure
- Incorrectly balanced flow restrictor in the supply line, pressure limiter installed in the wrong place not reducing the pressure of the cold water to the taps
- Pressure and/or flow in the cold supply line is less than the required minimum pressure for the HOTRUN to switch on.

Remedy

- Remove the restrictions in the tap-aerator or shower-head.
- Check all other taps or restrictors built into the supply line are not affecting the flow or reducing the pressure too much.

A HOTRUN fitted in an upper floor situation of a building that is gravity fed, the HOTRUN doesn't switch on.

Cause

- The pressure is less than 60 kPa. The pressure of water under gravity is 9 kPa per metre, this equates to approximately 30 kPa per floor plus the height of the roof tank.

Remedy

- Remove all restrictors in the tap or aerator and use 'star' inserts in spout instead of aerator. Allowing full flow will often help in low pressure situations. Additionally if needed the flow-controller that is fitted in the cold water inlet fitting of the HOTRUN can be removed.

If the tests above indicate a fault then contact ELWA Technical Support

Warranty

On the provision that the installation instructions have been followed, ELWA gives a warranty of twelve months onsite service in Australia and/or 2 years return and repair service. The warranty starts at the date of purchase as per the invoice.

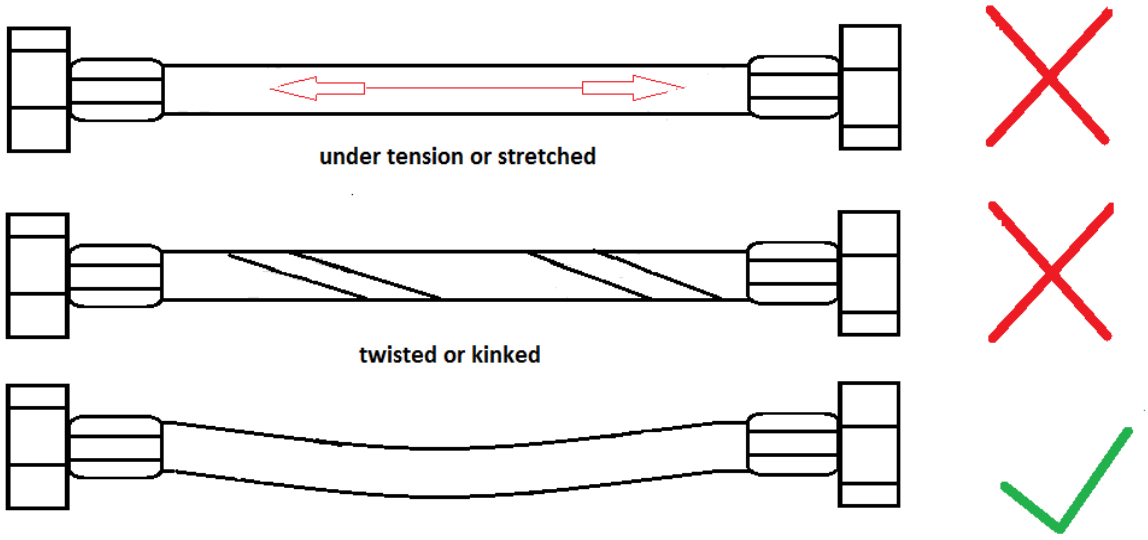
If despite our extensive products control complaints arise, you should inform your installer first to make sure the power and water supply to the water heater are fine.
Your installer can call the ELWA service department when on site if any questions arise.
Before you contact the installer, we advise you to read the directions for use.
You can avoid needless discomfort and possible costs.
You can also read our service manual (online on www.elwa.com.au)
If you or your installer can't fix the problem fill in a service request form on our website www.elwa.com.au/customerservice

Warranty terms:

1. The warranty is valid only on presenting an original invoice, mentioning the date of purchase, the name of the supplier/installer and the model number of the heater.
2. ELWA may void the warranty if the invoice is not legible.
3. If the barcode or serial number is missing, the warranty will be voided.
4. The warranty will be voided from the moment the appliance has been tampered with or has been modified in any way.

5. Damage caused as a result of improper use, or faulty installations are not covered by this warranty.
6. Incorrect installation or maintenance issues such as blocked filters in aerators or flow restrictors and too low or too high water supply pressure are not warrantable items and may result in a charge from ELWA or the contractor responsible for the service call out service.
7. Warranty can be voided if the supplied flexible hoses are not used for exposed water connections or when too much force was used on the water connections and that has damaged the copper pipes inside the water heater.

Flexible connections



Hose must be tightened during assembly without tension and without twists

This manual has been made with care.
ELWA remains the right to adjust products in the future for various reasons.

ELWA Pty Ltd
Adelaide
Australia
New Zealand
Phone: +61(0) 8 8353 4040
www.elwa.com.au

ELWA Ltd
Auckland
New Zealand

ELWA BV
Amsterdam
The Netherlands
Phone: +31 (0)20 436 1224
www.elwa.nl

Ref.02/201606