

NANO Range

Operating and Installation Instructions



**ELECTRIC AND
DIGITAL CONTROLLED
WATER HEATERS**

Revolutionary
temperature
control and
limiter

The most advanced way
saving energy and water

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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 NANO 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 $>1300 \Omega/\text{cm}^2$.

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 NANO in a “dry state”. The electrical power should remain switched off until the NANO 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 used where temperature limiters are required. For all personal hygiene applications please select one of the ELWA HOTRUN-VE models with built-in temperature limiters instead.

Accessories supplied with every ELWA NANO water heater: wall plugs and screws and two flexible hoses Watermark approved for hot and cold water connections.

The ELWA NANO electric instantaneous water heaters are designed for both point of use (most efficient and lowest water and energy consumption) and multipoint applications usually for kitchen sink(s) or laundries where hot water above 50°C is allowed to be used.

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 NANO that is limited by a flow restrictor in the cold water inlet Fitting, 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 NANO 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 NANO 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 besides the water heater (200mm) to open the front cover screws after installation. The NANO models 38 to 96 can be installed in an over-sink and under-sink position.
2. Fit the top screws allowing it to protrude approximately 2-3 mm. Slip the bracket onto the protruding screw(s).
3. Secure the water heater into position with the screw between the hot- and cold water connections before connecting the flexible hoses.

Water connections

1. The NANO 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 NANO 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, filter the water before passing the NANO water heater. The minimum supply pressure needs to be secured at all times or the NANO can fail to switch on.

The minimum flow rate to operate the NANO models depends on the model:

NANO MODEL :	38	48	60	75	96
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 needs to be limited to 600kPa. If it is not guaranteed the pressure will not exceed 600kPa a pressure limiter of 350kPa or 500kPa needs to be installed in the total cold water supply to the building or the area where the NANO will be

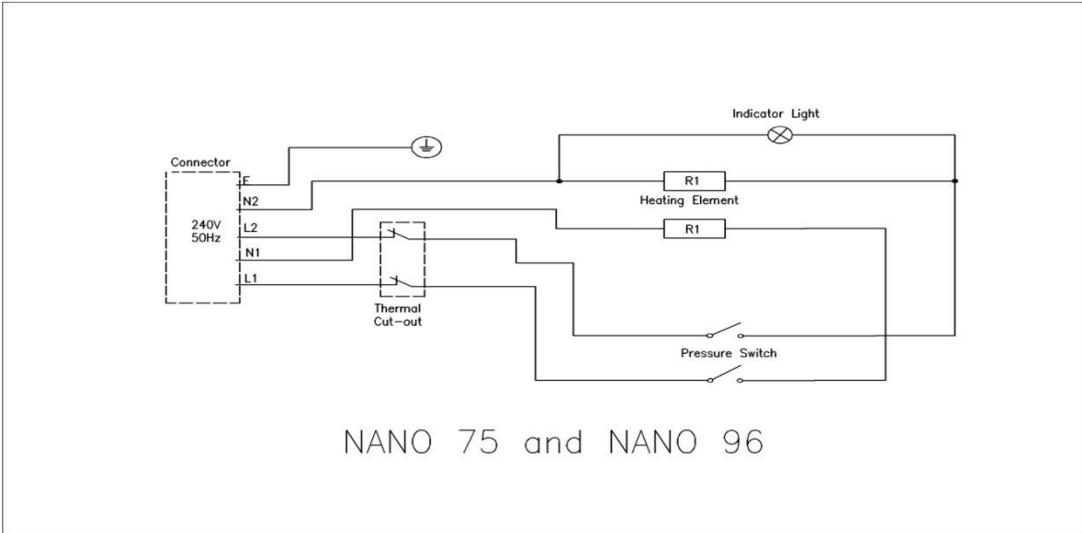
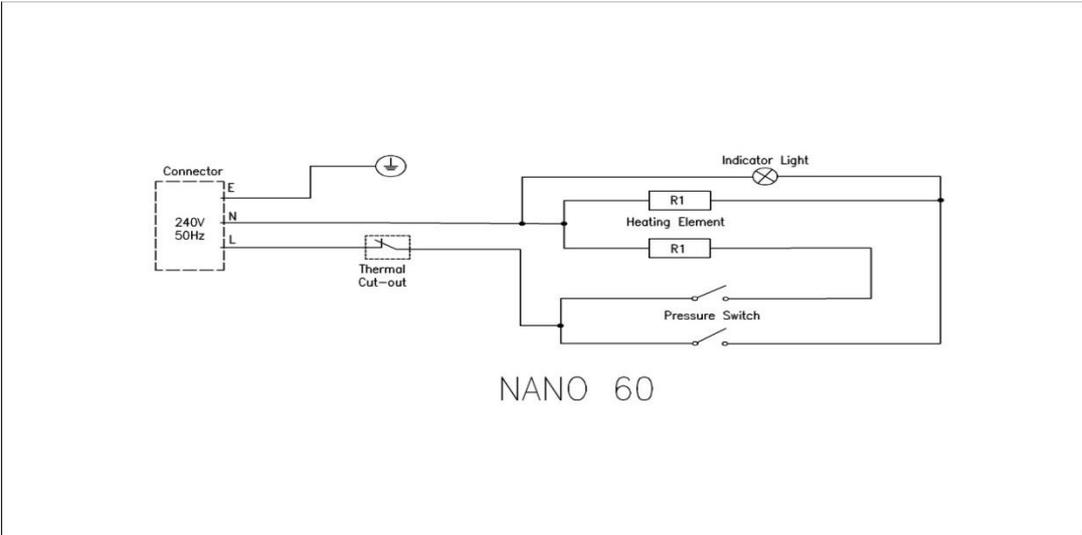
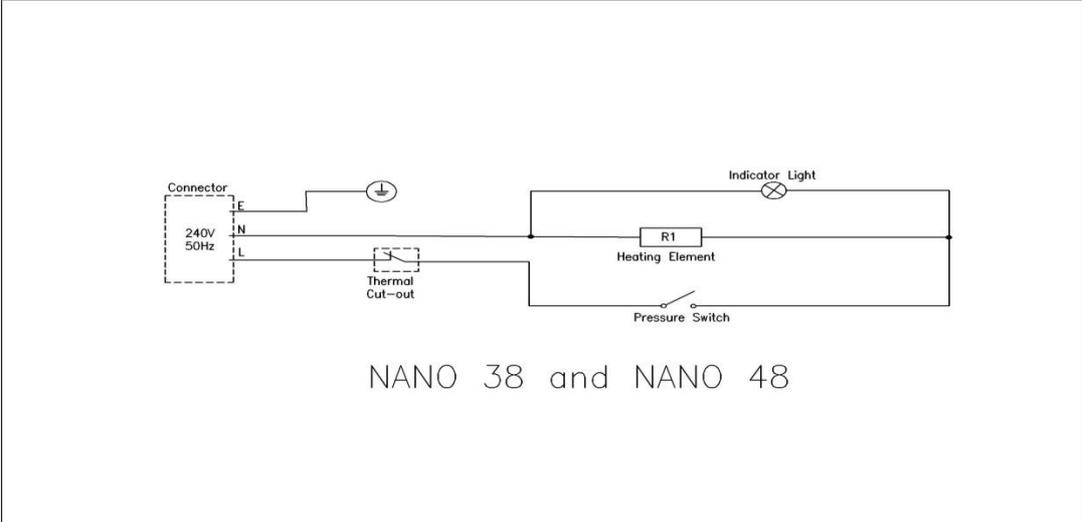
installed. Take water hammer of flick-mixers into consideration that can cause pressure boosts, when closing fast, of up to 200kPa on top of the inlet water pressure.

3. Make sure that any flow restrictors in aerators fitted on tap-outlets installed after the NANO are not too restrictive, kept clean and make sure these cause minimal back pressure to enable the NANO 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 NANO when mixing cold water to the hot water and cause the NANO 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 to the water pipe-work to the NANO water connectors **only with the flexible hoses that are supplied** with each NANO. All NANO 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 NANO fittings.
5. The inlet and outlet connections for cold and hot water can't be swapped. There is an arrow for inlet and outlet on the fitting and blue and red marking on the cover.
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 coil 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 NANO models are not suitable in situations where 50°C limited models for sanitary fixings for personal hygiene are required. The NANO water heaters are not suitable for installation with a TMV sometimes required by the plumbing code of Australia and New Zealand

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 NANO.
3. The NANO must 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 and the NANO is ready to use.

Electrical schematics



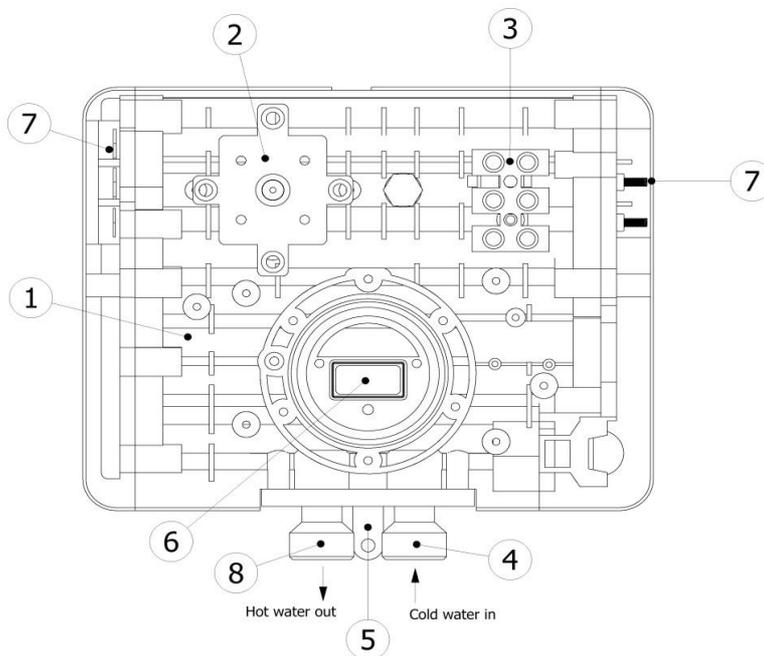
Maintenance

- Due to its advanced design the NANO 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

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.



- | | | | |
|----|--|----|------------------------------|
| 1. | Heat exchanger body | 5. | Wall bracket |
| 2. | Over pressure/over temperature safety switch | 6. | Pressure differential switch |
| 3. | Terminal block | 7. | Electric element(s) |
| 4. | Cold water inlet | 8. | Hot water outlet |

Trouble Shooting Examples

The NANO 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 NANO 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 NANO, causing lack of pressure differential over the NANO (back-pressure through the cold)
- Maximum temperature/overpressure cut-out switch is activated. This is most likely due to air in the NANO 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 from 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 NANO 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 NANO to enable you to reduce the flow and so increase the delivery temperature. Be aware not to reduce the flow too much, if the hot water outlet temperature is too high will trip the over-temperature safety switch.

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 NANO 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 NANO fitted in an upper floor situation of a building that is gravity fed, and the NANO 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 NANO 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 return and repair only. 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.

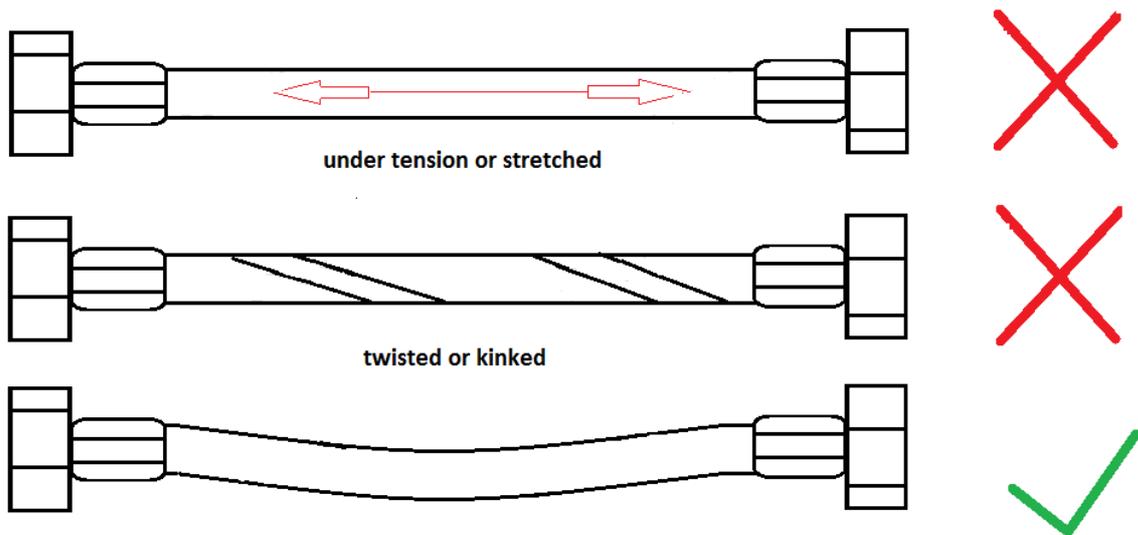
If you or your installer can't fix the problem, fill in a service request form on our web-site

<https://www.elwa.com.au/terms-warranty/>

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 type 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.
8. If the water heater leaks due to too high water pressure, this is not covered under warranty
9. If an element fails because there is air in the system, this is not covered under warranty

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.



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