

thermo Sphere

HEATING | WATER
MICRO ELECTRIC BOILER



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Warranty terms & conditions for ThermoSphere Micro Electric Boilers

For the ThermoSphere Micro Electric Boiler (TSMEB), Thermogroup Ltd will repair or, if necessary, at its sole discretion, replace the TSMEB, which falls within the Warranty Periods and Territory specified below, subject to the warranty conditions and the warranty exclusions. Warranty Period within the United Kingdom is 3 years from the date of purchase by the consumer as defined by the Competition and Consumer Act 2010.

Our goods come with guarantees that cannot be excluded under the UK Consumer Law. You are entitled to a replacement or refund for a major failure. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. It is the responsibility of the consumer to provide proof of purchase within the Territory.

WARRANTY CONDITIONS

1. This warranty is applicable only for TSMEB appliances.
2. The TSMEB must be installed in accordance with the ThermoSphere TSMEB Installation Instructions, to be supplied with the TSMEB water heater, and in accordance with all relevant statutory and local requirements of the Territory in which the TSMEB is installed.
3. Where a failed component or TSMEB is replaced under warranty, the balance of the original warranty period will remain effective. The replaced part or TSMEB does not carry a new warranty.
4. Where a failed component or TSMEB is replaced or repaired under warranty, ThermoSphere will incur costs associated with shipping and repair at its sole discretion, if the unit is installed within the UK. If the unit is outside the UK, the associated costs are the responsibility of the owner.
5. Where the TSMEB is installed in a position that does not allow safe, ready access, the cost of accessing the site safely, including the cost of additional materials handling and/or safety equipment, shall be the owner's responsibility.
6. The warranty only applies to the TSMEB and therefore does not cover any plumbing or electrical parts supplied by others and not an integral part of the TSMEB, e.g. pressure limiting valve; tempering valves; isolation valves; shut off valves; electrical switches; electrical cabling; pumps or fuse.
7. The benefits of this warranty are in addition to other rights and remedies of the consumer under laws in relation to the goods and services to which the warranty relates.
8. The TSMEB must be sized to supply the hot water in accordance with the guidelines in the ThermoSphere TSMEB literature.

PROCEDURE FOR HONOURING WARRANTY

1. To initiate a claim for a warranty against defects, the consumer shall contact: Thermogroup Ltd T/A ThermoSphere, Bridge House, Pattenden Lane, Marden, Kent, TN12 9QJ, United Kingdom. hello@thermosphere.com. 0800 0195899.
2. The process will then follow the ThermoSphere Product Warranty Flow Chart to assess whether the product is under warranty.

WARRANTY EXCLUSIONS

Repair and replacement work will be carried out as set out in the ThermoSphere warranty. However, the following exclusions may cause the ThermoSphere warranty to become void and may incur a service charge and/or cost of parts:

1. Accidental damage to the TSMEB or any component, including: Acts of God; failure due to misuse, abuse, fire or flood damage; incorrect installation; damage as the result of transportation, removal or storage; attempts to repair the TSMEB other than by a ThermoSphere Accredited Service Agent, the ThermoSphere Service Department or a repairer not approved by ThermoSphere.
2. Where it is found there is nothing wrong with the TSMEB water heater; where the complaint is related to circumstances where there is no flow of hot water due to faulty plumbing; where water leaks are related to plumbing and not the TSMEB or TSMEB components; where there is a failure of electricity or water supplies; where the supply of electricity or water does not comply with relevant standards, codes or acts, ThermoSphere may then charge the consumer a nominal service charge if inspection reveals no fault with the TSMEB unit or its installation.
3. Where the TSMEB or TSMEB component has failed directly or indirectly as a result of excessive water pressure in excess of 10bar; incorrect pressure limiting valves; incorrect tempering valve settings; temperature input in excess of 85°C and/or excessive thermal input; blocked outlet; corrosive atmosphere; foreign matter in the water supply; or ice formation in the pipe work to or from the TSMEB water heater.
4. Where the TSMEB is located in a position that does not comply with the ThermoSphere TSMEB Installation Instructions or relevant statutory requirements, causing the need for major dismantling or removal of cupboards, doors or walls, or use of special equipment to bring the TSMEB to a serviceable position.
5. Repair and/or replacement of the TSMEB due to the effects of either corrosive water or water with a high chloride or low pH level caused by unnatural circumstances or when the TSMEB has been connected to a water supply with water conductivity levels that are outside the range of water conductivity outlined in the Installation Instruction Manual.
6. Subject to any rights you have under UK Consumer Law or other statutory provisions to the contrary, this warranty excludes any and all claims for damage to furniture, carpets, walls, foundations or any other consequential loss either directly or indirectly due to leakage from the water heater, or due to leakage from fittings and/or pipe work of metal, plastic or other materials caused by water temperature, workmanship or other.

Installation checklist

Please read through this guide before commencing installation, to ensure you are familiar with the component parts the fitting procedure and all of the general do's and don'ts.

This unit must be installed by:

- A professional electrician, ensuring installation conforms to all current electrical wiring standards.
- A professional plumber, ensuring installation conforms to all current plumbing standards.

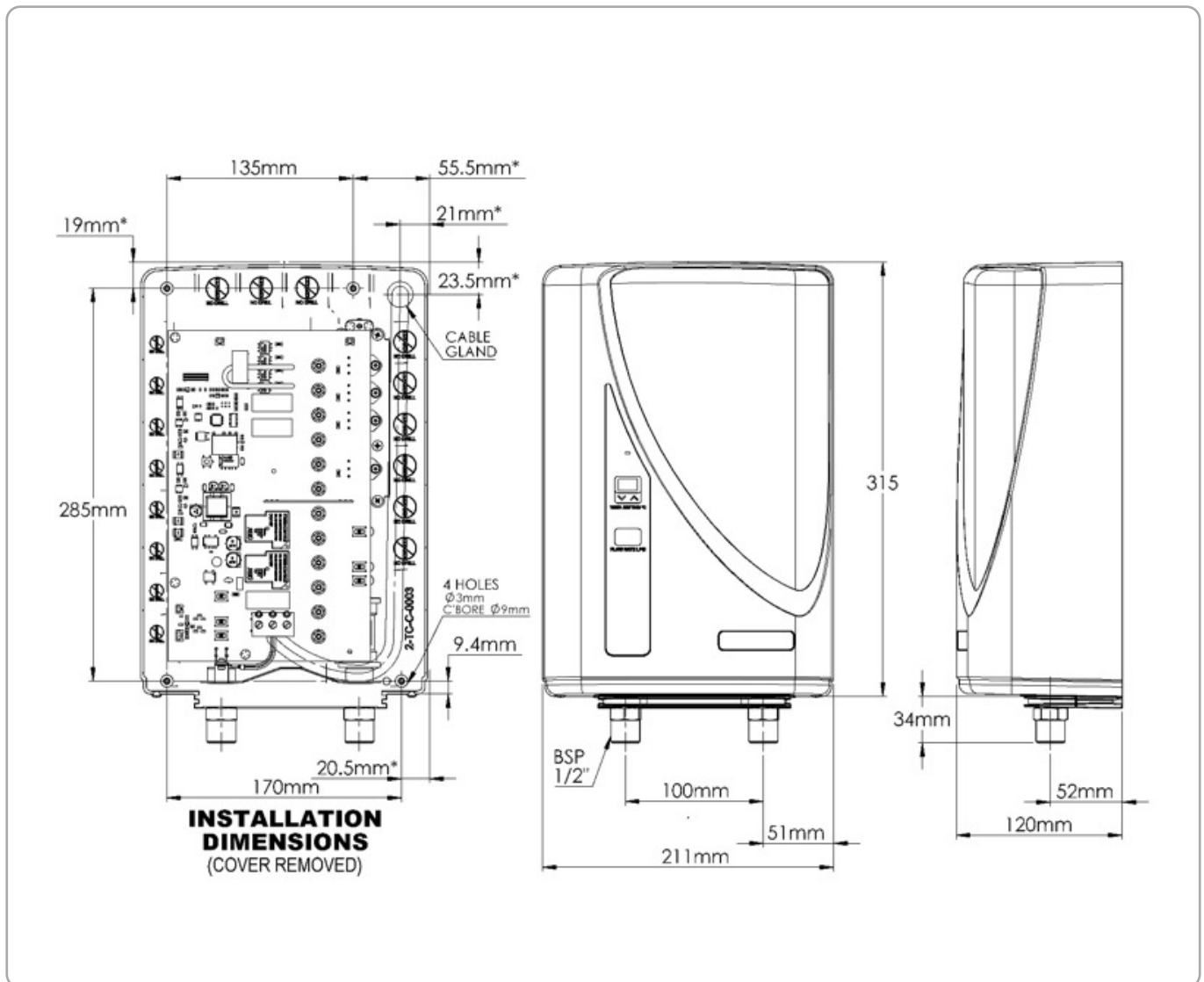
ThermoSphere Micro Electric Boilers (TSMEBs) should preferably be installed in a vertical position on an internal wall, or in an internal cupboard or space.

If the safety rules or the instructions outlined in this manual are not followed correctly, the unit may not operate properly and could cause damage to property, serious bodily injury and/or death.

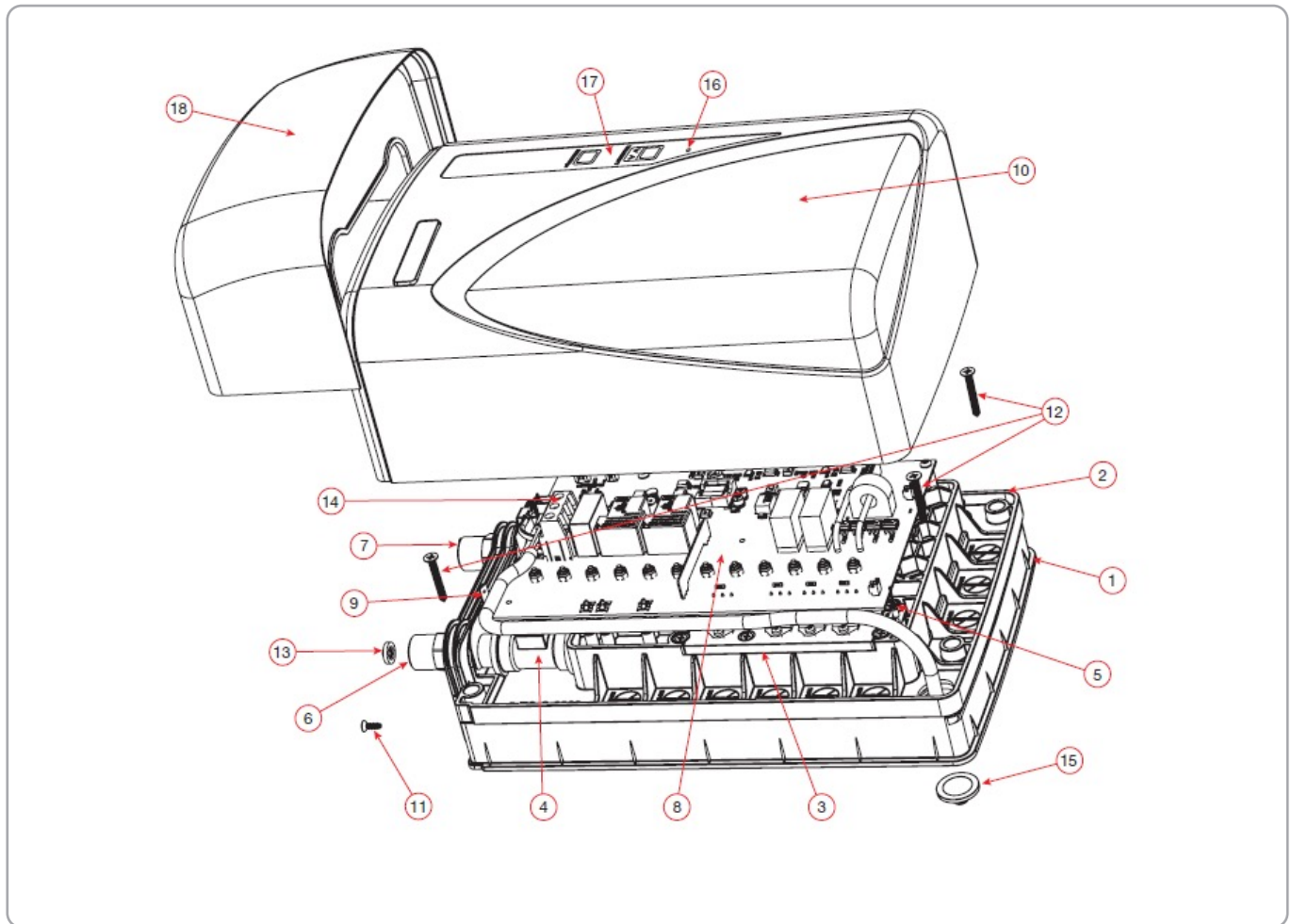
ThermoSphere nor its Distributors will be liable for any damages due to failure to comply with the installation and operating instructions outlined in this manual or through improper use.

Improper use includes, but is not limited to, the use of this appliance to heat any liquid other than potable water within the conductivity range specified in this manual. Refer to the general specification on page 9.

Dimensions



Component guide



This is a guide to all of the components and parts that make up a ThermoSphere Micro Electric Boiler. It will familiarise you with the component parts of the unit and will assist you during the installation process. Full details for wall mounting, electrical and plumbing installation are provided in the following sections.

PART No	ITEM	PART No	ITEM
1	TSMEB Chassis	12	TSMEB Wall Mounting Screws 8mm head maximum(Not included in the packaging).
2	TSMEB Top Cover	13	TSMEB Inlet Filter
3	TSMEB Heat Sink	14	PCB Terminal Block
4	TSMEB Flow Rate Sensor	15	Electric Mains Supply Cable Gland
5	TSMEB Temperature Sensor, Receptacle, Cable and Plug Assembly	16	RED/GREEN LED – TSMEB (GREEN Ready / RED Error)
6	TSMEB ½” BSP Inlet Water Connection	17	Flow Rate/Temperature Setting Display
7	TSMEB ½” BSP Outlet Water Connection	18	Extension Cover (Optional)
8	TSMEB PCBA V6.2	19	Display PCB, Cable and Plug*
9	TSMEB Earth Locking Mechanism	20	Display PCB *
10	SERIES 1 – TSMEB Exterior Cover (Premium)	21	Reset Button*
11	Pan Phillips Head Self Tapping Screw x 2 – Exterior Cover Screws Included in the packaging – provided separately in the small satchel		*Shown on page 14

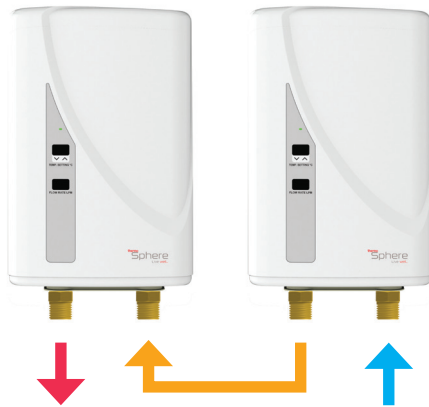
Introduction to single and tandem systems



Single unit installation

2.8 to 5.5 Litres per minute @25°C increase

In a single unit installation the TSMEB delivers a water increase of 25°C at flow rates of between 2.8 to 5.5 litres per minute, depending on the output of the unit installed.



Tandem unit installation

5.6 to 11.0 Litres per minute @25°C increase

In a tandem installation the 2 TSMEBs deliver a water increase of 25°C at flow rates of between 5.6 to 11 litres per minute, depending on the output of the unit installed.

Key information on single installations

Model	Power (kW)	Supply (A)	Supply cable	Flow L/m @ +25°C increase
TSMEB-4	4.8	20	2.5	2.8
TSMEB-6	6.0	25	4.0	3.4
TSMEB-7	7.2	30	4.0	4.1
TSMEB-8	8.4	35	6.0	4.8
TSMEB-9	9.6	40	6.0	5.5

Key information on tandem installations

Model	Power (kW)	Supply (A)	Total Supply (A)	Supply cable	Flow L/m @ +25°C increase
TSMEB-4 (x2)	4.8 ea	20 (x2)	40	2.5	5.6
TSMEB-6 (x2)	6.0 ea	25 (x2)	50	4.0	6.8
TSMEB-7 (x2)	7.2 ea	30 (x2)	60	4.0	8.2
TSMEB-8 (x2)	8.4 ea	35 (x2)	70	6.0	9.6
TSMEB-9 (x2)	9.6 ea	40 (x2)	80	6.0	11.0

Important information and warnings!



In accordance with HSE recommendations the TSMEB is designed to deliver water up to maximum temperature of 50°C. Water temperatures above 50°C can cause scalding, Care should be taken with children and vulnerable people.



Failure to comply with the installation and operating instructions or improper use voids the warranty. Never remove the unit cover unless the electricity is turned off at the isolation switch or switchboard. To reduce the risk of electric shock or injury to persons or property, please follow the installation instructions carefully.



Where the ambient temperatures are likely to drop below 5°C the unit must be drained of water to prevent frozen water damage occurring. Failure to comply with the installation and operating instructions or improper use voids the warranty.

Installation options

The suggested installation options show how ThermoSphere Micro Electric Boilers, either single or tandem units, can be fitted in bathrooms, kitchens, to heat pump systems and as a hot water supply to appliances or underfloor heating. Please note that the location and installation of the unit is not limited to the options shown here.

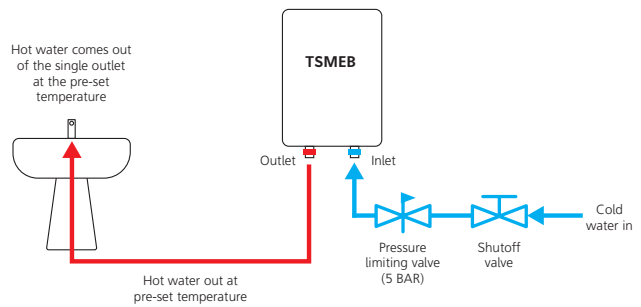
NOTE: When the TSMEB is connected to a washing machine or dishwasher with automatic on/off controlled inlet valve, a water hammer arrestor must be mounted at the outlet of the TSMEB. This reduces the water hammer effect during the automatic turning off of the water inlet valve of these appliances.

The TSMEB should preferably be installed in a vertical position on an internal wall, or in an internal cupboard or space.

Direct point of use

The most efficient way to install an TSMEB is as a direct hot water feed at the point of use. This removes the need to run cold water pipes and install mixer taps, as the water comes out of the tap at the desired temperature.

This type of installation reduces both plumbing materials and labour. It also eliminates wasted water and wasted energy by delivering water at the correct temperature within seconds.

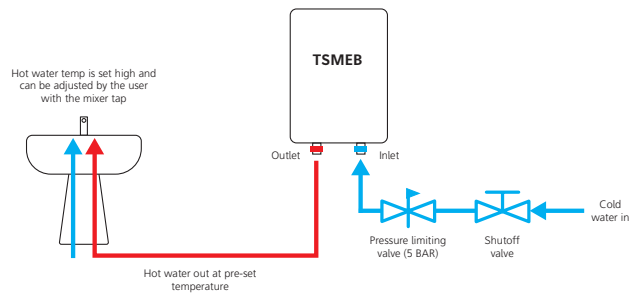


Point of use with cold feeds or mixer taps

TSMEBs can be installed to supply hot water to the hot outlets or mixer taps in a bathroom.

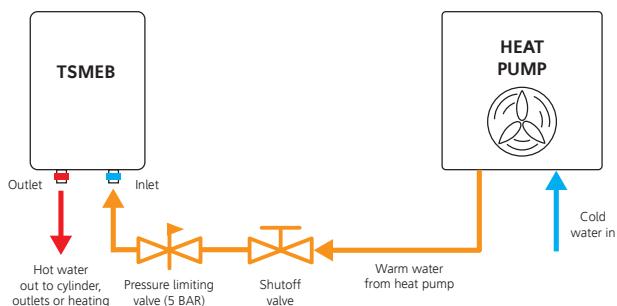
The TSMEB is connected to the hot outlets and cold water is connected to the cold outlets.

The user then mixes the hot and cold water as required.



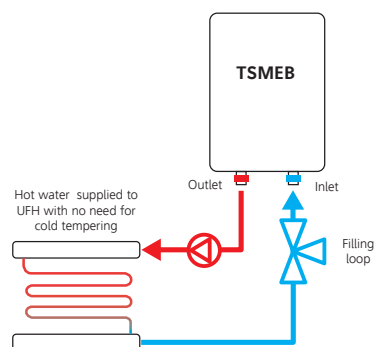
In-line Heat pump backup heater

TSMEBs can be installed as an in-line backup heater or give heat pump systems an extra boost in very cold weather.



Underfloor heating hot water supply

TSMEBs can be installed as the hot water source for wet electric underfloor heating systems.



Specifications

General specifications

Switch on flow rate	1.5 litres per minute
Temperature selection	20 - 50°C in 1°C increments.
System type	Micro electric boiler - Continuous flow electric water heater
Maximum rated operating pressure	10 bar / 1 MPa / 150 PSI. 5 bar pressure limiting valve required at inlet side
Minimum operating pressure	1.5 bar / 0.15 MPa. Can be operated from mains or pump supply.
Water conductivity range	12.5 kΩ-cm to 1.2 kΩ-cm +15% at 20°C
Dimensions	Length 315 mm x Width 210 mm x Depth 120 mm (A4 footprint)
Heating method	Optimised Direct Energy Transfer - Digitally controlled water heating
Nominal capacity	385 ml (single unit installation). 2 x 385 ml (tandem installation)
IP Rating	IP44. Appliance must be installed inside only.
Ambient temperatures	5°C +. Drain unit if the ambient temperature is likely to drop below 5°C
Standards	CE
Warranty	3 years



Electrical specifications

Model	TSMEB-4		TSMEB-6		TSMEB-7		TSMEB-8		TSMEB-9	
Install type	Single	Tandem	Single	Tandem	Single	Tandem	Single	Tandem	Single	Tandem
Rated power (kW)	4.8	9.6 (2 x 4.8)	6	12 (2 x 6)	7.2	14.4 (2 x 7.2)	8.4	16.8 (2 x 8.4)	9.6	19.2 (2 x 9.6)
Flow rate (LPM) (@25°C temp increase)	2.8	5.6	3.4	6.8	4.1	8.2	4.8	9.6	5.5	11.0
Voltage (V)	240	240	240	240	240	240	240	240	240	240
Power supply (A)	20	2 x 20	25	2 x 25	30	2 x 30	35	2 x 35	40	2 x 40
Supply cable (mm ²) (Method 100 - In contact with plasterboard, ceiling or joists, covered by thermal insulation not exceeding 100mm)	2.5	2.5	4	4	4	4	6	6	6	6
Supply cable (mm ²) (Method 103 - Surrounded by thermal insulation including in a stud wall with thermal insulation with cable not touching the wall)	4	4	6	6	6	6	10	10	10	10
Frequency (Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60

Flow rates

Flow rates												
		Temperature increase required (°C)	TSMEB-5		TSMEB-6		TSMEB-7		TSMEB-8		TSMEB-9	
Install type			Single	Tandem	Single	Tandem	Single	Tandem	Single	Tandem	Single	Tandem
Max flow rate (Litres per minute) based on temperature increase	15°C		4.6	9.2	5.7	11.4	6.9	13.8	8	16	9.2	17
	25°C		2.8	5.6	3.4	6.8	4.1	8.2	4.8	9.6	5.5	11
	35°C		2	4	2.5	5	2.9	5.8	3.4	6.8	3.9	7.8
	45°C		1.5	3	1.9	3.8	2.3	4.6	2.7	5.4	3.1	6.2

Important information and warnings!

-  The incoming water temperature will vary during summer and winter. This may affect the available hot water flow rate. If the water appears to be luke warm, simply reduce the flow rate out of the outlet until the water reaches the desired temperature.
-  Water conductivity may be less than 1.25 kΩ-cm. Reduce the flow rate to achieve comfortable water temperature. Water conductivity greater than 12.5 kΩ + 15% will generate an error. In this circumstance, the appliance will shut down safely without damage.

Optimised energy usage

The table below shows the flow rate in litres per minute (LPM), related to deliverable output water temperature (°C) and optimised electrical energy usage (kW). The table shows you the results that can be achieved by varying the water flow and temperature.

The optimum operational capability of the unit is shown in **GREEN**.

Flow rates and energy use with input water at 5°C									
Warm water flow rate (Litres per min.)	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	
Deliverable output water temperature (°C)	50.0	50.0	50.0	50.0	42.0	39.5	35.5	32.5	
Optimised energy usage (kW)	4.7	6.3	7.8	9.4	9.5	9.6	9.6	9.6	

Flow rates and energy use with input water at 10°C									
Warm water flow rate (Litres per min.)	1.5	2.0	2.5	3.0	4.0	4.35	4.5	5.0	
Deliverable output water temperature (°C)	50.0	50.0	50.0	50.0	45.0	42.0	40.5	37.5	
Optimised energy usage (kW)	4.2	5.6	7.0	8.4	9.6	9.6	9.6	9.6	

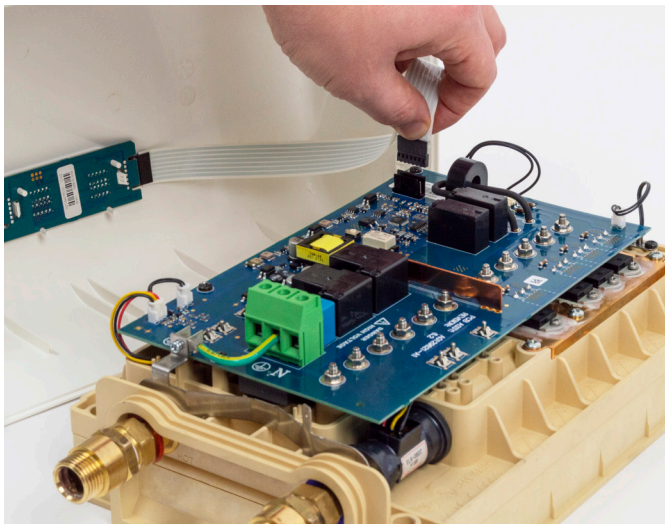
Installation procedure



1. To remove the TSMEB cover, find a clean flat surface and place the unit on its back. Remove the 2 screws from the base of the unit with a cross head screwdriver.



2. Using both your thumbs and forefingers, grip the cover firmly along the bottom of the unit, and push the cover slowly up to separate it from the body of the unit.



3. Carefully remove the display PCB/LED plug from the PCBA.
4. Mount the unit onto the wall. Refer to page 23 of this manual for the mounting hole template and page 5 for product dimensions.
5. The electricity supply cable must be brought through the electric gland from the rear of the appliance. Connect the supply L/N/E to the correct terminals.
6. Ensure the RCBO and the isolation switch supplying the 240VAC electrical mains to the TSMEB are turned **OFF**.
7. Carefully replace the plug and cable connecting the display PCB/LED indicator to the PCBA.

8. Connect a water pressure limiting valve (maximum 5.0 bar/72.5 psi/500 kpa) and shutoff valve.
9. Connect the water supply via the shutoff valve and pressure limiting valve to the inlet water connection (**BLUE**).
NOTE: Flush the cold water line before connecting to the unit.
10. Connect the hot water from the outlet water connection (**RED**).
11. Run water through the unit without power to ensure there are no leaks.
12. Switch ON the circuit breaker and isolation switch supplying the electric mains power to the unit and check if the unit turns ON.

If the LED is slowly blinking **GREEN**, the unit is in standby mode and is ready for use.

Turning hot water on will initiate the heating process and hot water should exit from the point of use water outlet. When the TSMEB is operating the LED will illuminate as fast blinking **GREEN**.

Mounting to the wall

The unit should be mounted vertically onto a solid internal wall, or in an internal cupboard or space. Use the 4 x mounting screws in the mounting screw hole locations as shown.

Use the screw hole template on page 23 of this guide to easily mark out your fixing holes.

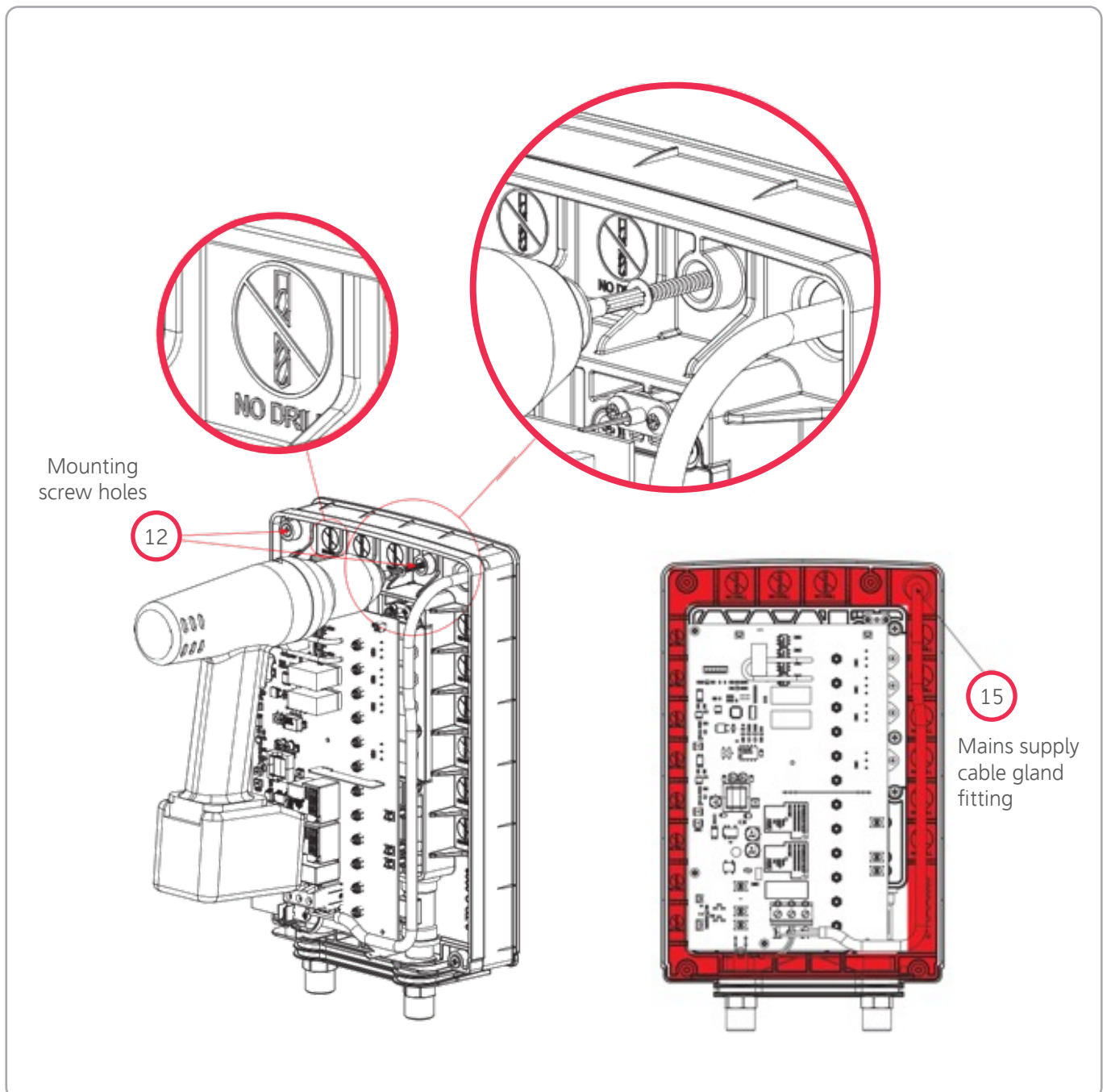
The maximum screw head diameter is 8mm. A screw head larger than 8mm will damage the mounting boss and crack the body.

No holes are to be drilled within the area shown below in **RED** and the mains supply cable gland fitting hole must not be drilled out. Any holes drilled within these areas, the sides of the unit, or opening out the cable gland fitting hole, will render the unit inoperable and irreparable and will void the product warranty.

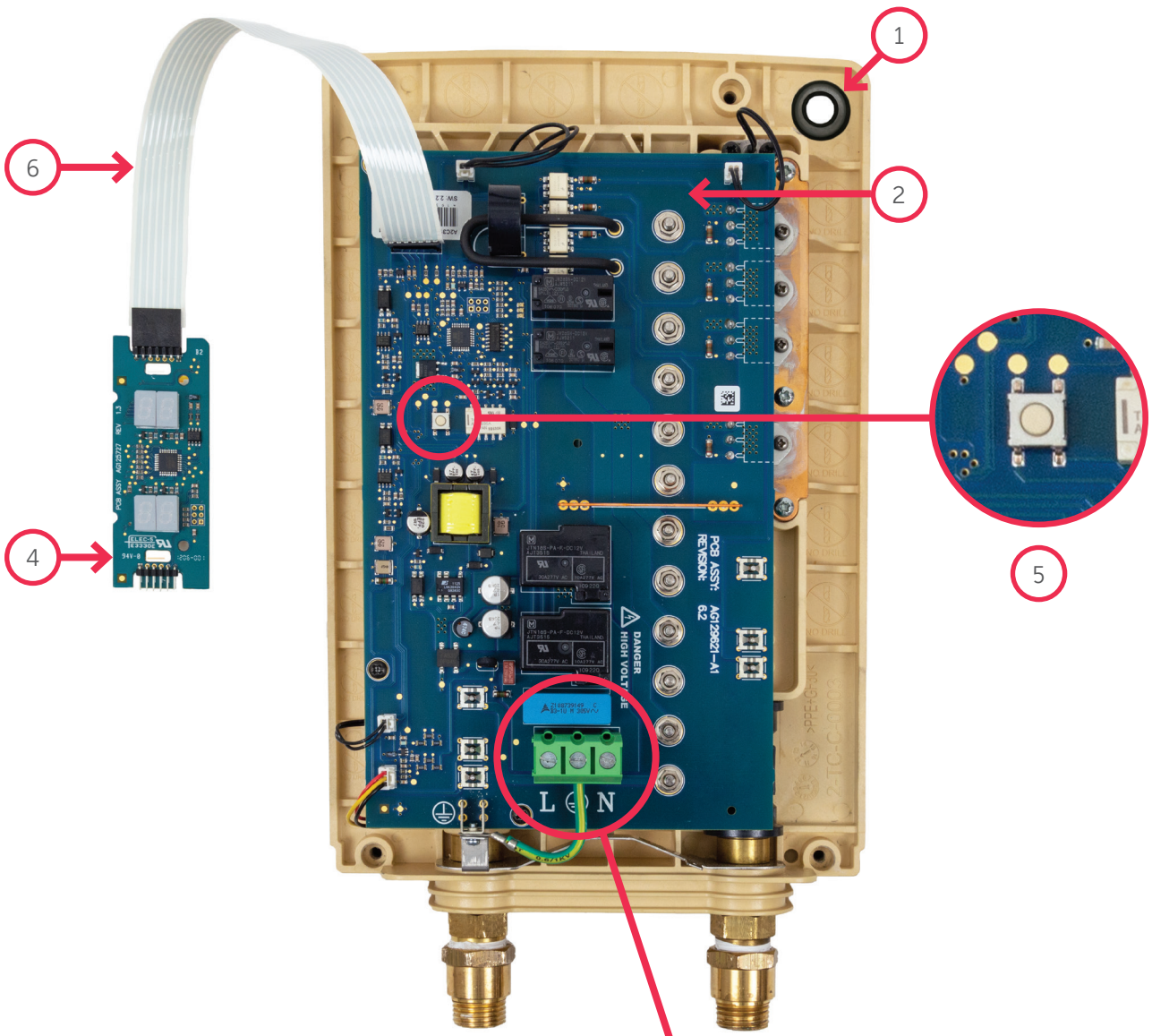
ANY DAMAGE TO THE CASING, BODY, GLAND OR MOUNTING BOSS WILL VOID THE WARRANTY.

Make sure your wall and mounting method can continuously support a minimum weight of 10 kg.

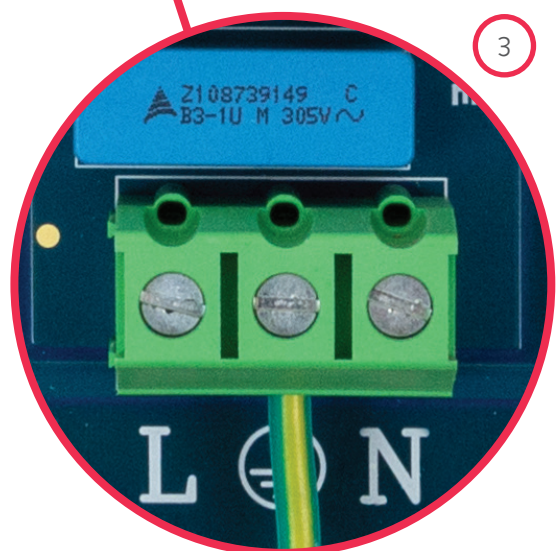
When mounting the unit onto a rough surface (ie: a brick wall or similar), a backing board should be mounted to the wall. The unit can then be mounted onto the backing board. This will allow the cover to be properly fitted to the unit.



Electrical terminals and connections



- 1 Electric supply cable gland
- 2 Printed circuit board assembly (PCBA)
- 3 Terminal block
- 4 Display PCB
- 5 PCBA reset button
- 6 Display PCB plug and cable



Wiring diagrams for single unit installations

Single unit wiring

All ThermoSphere Micro Electric Boilers must be fitted with their own correctly sized RCBO and an isolation switch in-line with the fixed wiring to the electrical supply.

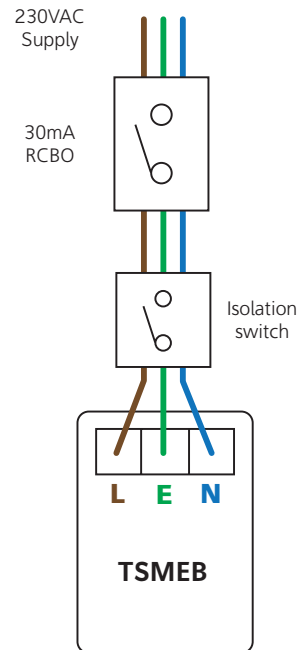
Bring the Live, Neutral and Earth from the supply through the cable gland.

The Live, Neutral and Earth electrical supply connections must be permanently and correctly connected to the terminals on the PCBA as shown.

It is the installer's responsibility to ensure that the 230V supply circuit can support the total maximum load of the installed system and that the supply cable, RCBO and any switches are adequately sized for the output of the installed TSMEBs.

All wiring connections are polarity dependent.

Incorrect wiring will cause an earth leakage detection (Error code FC).



Electrical connections for tandem unit installations

Tandem unit wiring

With tandem installations, both units must be fitted with their own respective RCBO and an isolation switch in-line with the fixed wiring to each electrical supply.

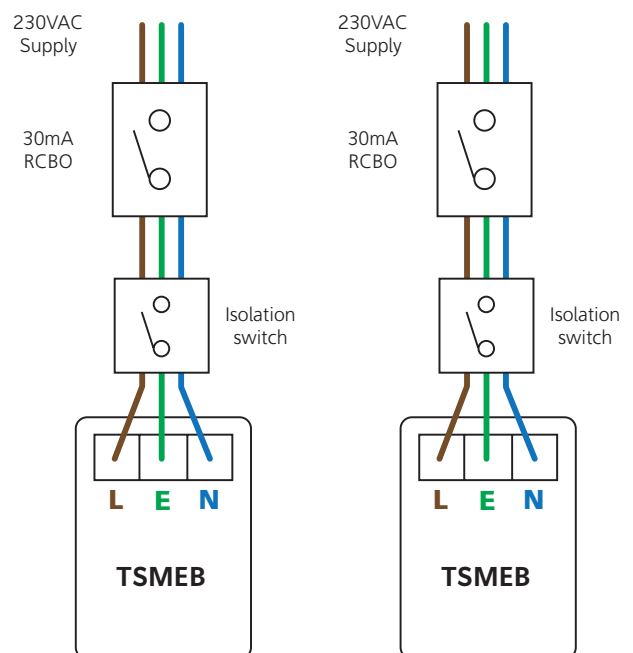
It is the installer's responsibility to ensure that the 230V supply circuit can support the total maximum load of the installed system and that the supply cable, RCBO and any switches are adequately sized for the output of the TSMEBs.

Bring the Live, Neutral and Earth from the supply through the cable gland of each unit.

The Live, Neutral and Earth electrical supply connections must be permanently and correctly connected to the terminals on the PCBA as shown.

All wiring connections are polarity dependent.

Incorrect wiring will cause an earth leakage detection (Error code FC).



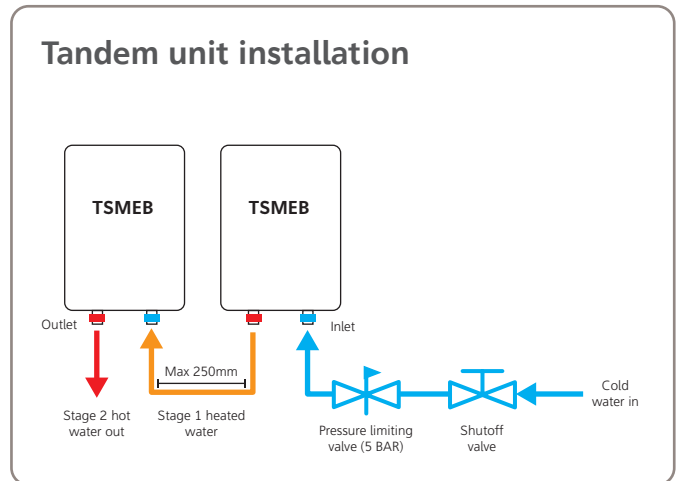
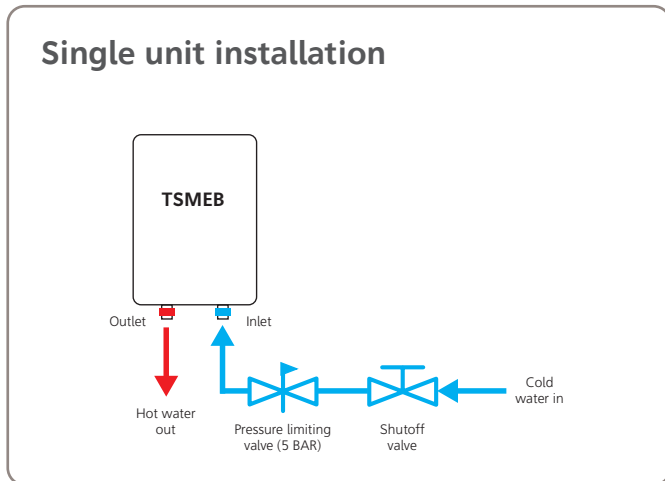
Plumbing connections

The unit is a closed outlet water heater and is intended to operate at the pressure of the water mains, where the flow of water is controlled by one or more taps or valves in the outlet line.

The unit can be installed into any type of commercial or residential construction as per the current local Plumbing Standards.

It is mandatory for a water pressure limiting valve and a shutoff valve to be connected in series with the unit's cold water inlet connection.

- The maximum rated operating line pressure is 1 MPA / 10 bar / 145 PSI.
- The minimum operating pressure is atmospheric pressure.
- The installation of a pressure limiting valve (a mandatory requirement) ensures that excess water pressure applied, as result of water hammer and/or other circumstances, does not stress the appliance unduly.
- The in-line water pressure limiting valve must be rated at 5.0 BAR / 72.5 PSI / 500 KPA.
- The shutoff valve installed must not be a non-return valve.
- If the water heater is supplying a dishwasher or washing machine, a water hammer arrestor must be installed on the outlet side of the water heater.

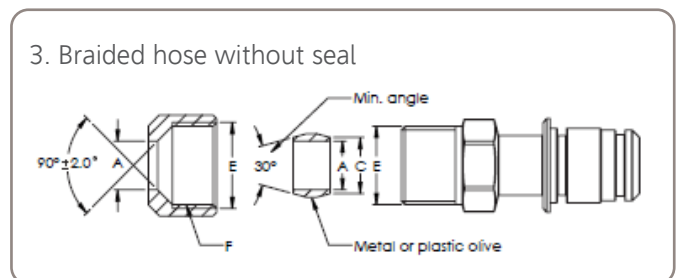
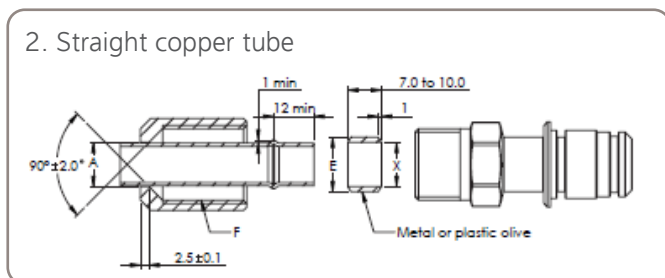
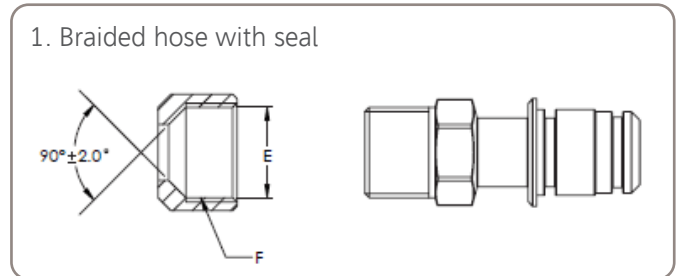


Important information and warnings!

ThermoSphere nor its Distributors will be liable for any damages caused by failure to comply with the installation and operating instructions outlined in this manual – specifically in this instance where the specified water pressure limiting valve and shutoff valve type, as indicated, must be installed with this unit. If the unit is supplying a dishwasher or washing machine a water hammer arrestor must be installed at the outlet side of the unit, failure to do so will void warranty.

Water inlet and outlet connections

The inlet and outlet water connections are both 1/2" BSP SERIES GB. There are three options for inlet/outlet connections with this unit:



Preparation for use

This process must be followed after installation and prior to first use

ThermoSphere Micro Electric Boilers must be primed after installation and before the first use.

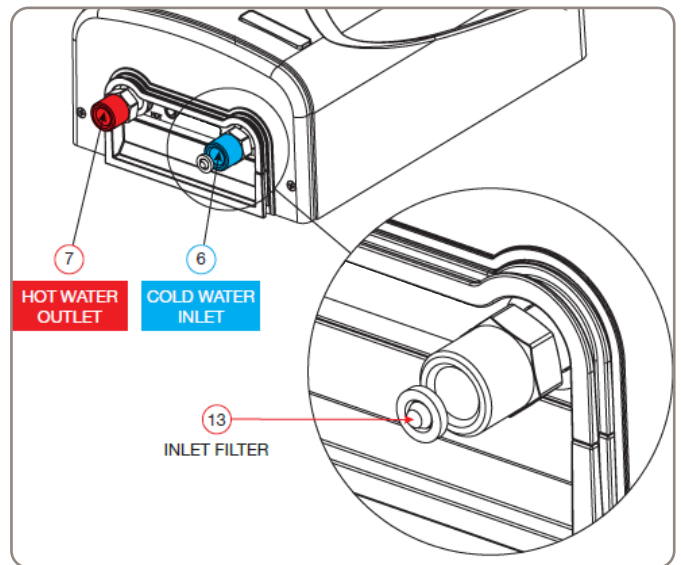
Priming is also required after the electricity supply to the unit has been turned off or removed, for example after a power failure or isolation of the electrical supply.

Priming is required to set the unit up for optimal heating ramp-up time and maximum efficiency. A correctly primed TSMEB will ramp up to the optimised power required as efficiently as possible without overshoot.

Note: Power overshoot typically occurs in instantaneous water heaters as a result of the maximum output required to get a heat exchanger up to working temperature as quickly as possible. However, as TSMEBs do not have a heat exchanger the risk of overshoot is greatly reduced because it does not require a power “kick” at start up.

Step 1: Flush

- Flushing is required to clear the unit of plumbing debris that may have collected in the piping during installation.
- This is done with the electric power supply turned off
- Flush water through the unit.
- Flushing should be allowed to continue for at least 2 minutes.
- After flushing remove the inlet filter from the cold water inlet, clean any debris due to installation and flushing and refit.



Step 2: Prime

- Turn the electricity supply on and check the LED is slow flashing **GREEN**. The unit is now in stand-by mode.
- Turn on the hot water outlet to a flow rate greater than 1.5 ltr/min. The unit will start heating.
- Check the LED is fast flashing **GREEN** and allow the unit to run for at least 3 minutes before closing the outlet.

Automatic air purging during priming

Depending on the initial flow rate during priming, the unit may not start heating until approximately 1.2 Litres of water has cycled through the unit. This is to ensure that any air in the system has been purged.

You know heating has started as soon as the LED starts fast flashing **GREEN**. This automatic air purging and priming will happen whenever the electrical mains power is turned off, to ensure optimum performance.

Your ThermoSphere Micro Electric Boiler is now ready for use!

Operating instructions

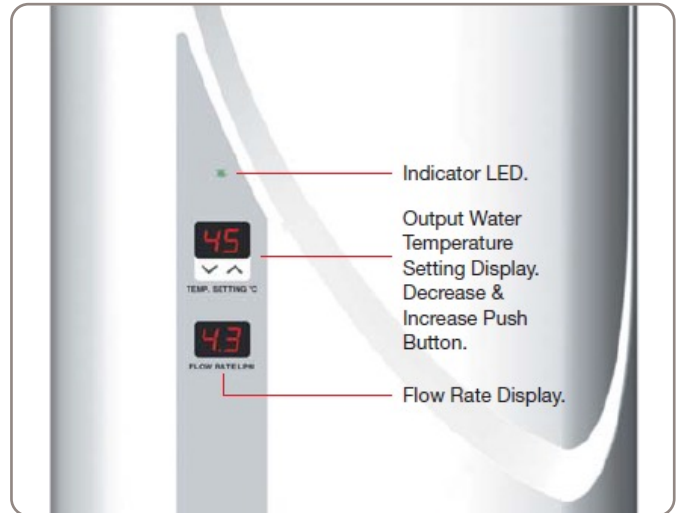
Your ThermoSphere Micro Electric Boiler will automatically begin operating when you turn on a hot water tap, and water is flowing faster than 1.5 litres per minute.

The heated water temperature can be set manually by using the decrease and increase push buttons.

Temperature can be set between a minimum of 20°C and the maximum of 50°C.

The display also shows water flow rate in litres per minute (LPM).

The minimum flow rate that can be displayed is 0.1 LPM and the maximum displayed is 99 LPM.





LED indicators


The LED indicator on the cover indicates the operational status of the unit.

 **Slow flashing GREEN**
Standby mode. Waiting for water to be turned on.

 **Fast flashing GREEN**
Unit is operating and water is being heated.

 **Solid GREEN**
The inbound temperature of the water exceeds the set temperature. No heating required.

 **Flashing alternate RED and GREEN**
The unit is self-diagnosing an error that it will attempt to resolve.
When the error has been resolved, the LED will return to slow or fast flashing **GREEN**.

 **Flashing RED continuously**
Irresolvable error and mechanical lockout. Unit will no longer operate until the error is cleared. See error codes on page 19.
This cannot be resolved by switching the unit off and on again. Manual intervention is required.
If this occurs you should call ThermoSphere to tell us the error code and we will arrange for a service technician to help resolve the problem either remotely or via a site visit if required.

Repair should not be attempted by anyone without consent from ThermoSphere as this will void the warranty.



Error codes

If the unit experiences some type of malfunction, the LED indicator will also display an error code.

You will see Er appear in the temperature setting window and then an alpha-numerical code in the flow rate window.

For example the image above shows error code A6 which means the outlet water is 5°C above the set temperature.

Diagnostics, error codes and descriptions

Error code	LED display	Error description (cause)	Error type
N/A	OFF	No power	No error
00	Slow flashing GREEN	Standby (normal operation)	No error
01	Fast flashing GREEN	Heating (normal operation)	No error
N/A	Solid ORANGE	Water conductivity too low	No error
N/A	Solid ORANGE	In priming mode	No error
A4	Flashing RED	Operating temperature too low	Blocking / Resolving
A5	Flashing RED	Operating temperature too high	Blocking / Resolving
A6	Flashing RED	Outlet water temperature 5°C above set point	Blocking / Resolving
A7	Flashing RED	Inlet cold water input sensor open circuit	Blocking / Resolving
A8	Flashing RED	Inlet cold water input sensor short circuit	Blocking / Resolving
A9	Flashing RED	Outlet cold water input sensor open circuit	Blocking / Resolving
AA	Flashing RED	Outlet cold water input sensor short circuit	Blocking / Resolving
Ac	Flashing RED	AC mains electrical supply failure	Blocking / Resolving
FA	Solid RED	High temperature limit exceeded >70°C	Mechanical lockout
Fb	Solid RED	Water conductivity too high	Mechanical lockout
Fc	Solid RED	Earth leakage detection	Mechanical lockout
Fd	Solid RED	CPU watch dog timer error	Mechanical lockout
FE	Solid RED	Temperature control error (A6 >5 times)	Mechanical lockout
FF	Solid RED	Unkown failure	Mechanical lockout

Maintenance

ThermoSphere Micro Electric Boilers are designed to provide long and reliable service. Actual life expectancy will vary with water quality and use. The unit itself does not require any regular maintenance.

However, to ensure consistent water flow, it is recommended to periodically remove any scale and dirt that may build up in the inlet filter, the tap or in the shower head.

Important information and warnings!

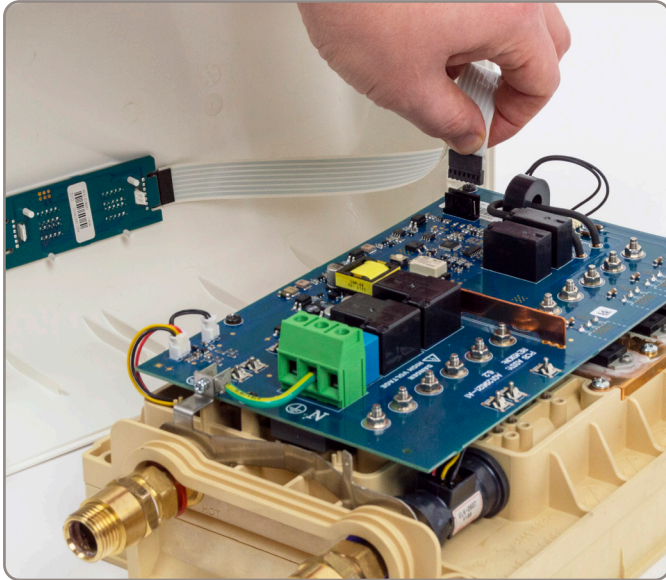


Other than the inlet filter, there are no user serviceable parts inside a ThermoSphere Micro Electric Boiler. In case of an irresolvable or error or mechanical lockout please call ThermoSphere and tell us the error code. We will arrange for a support technician to try to resolve the issue remotely or via a site visit.

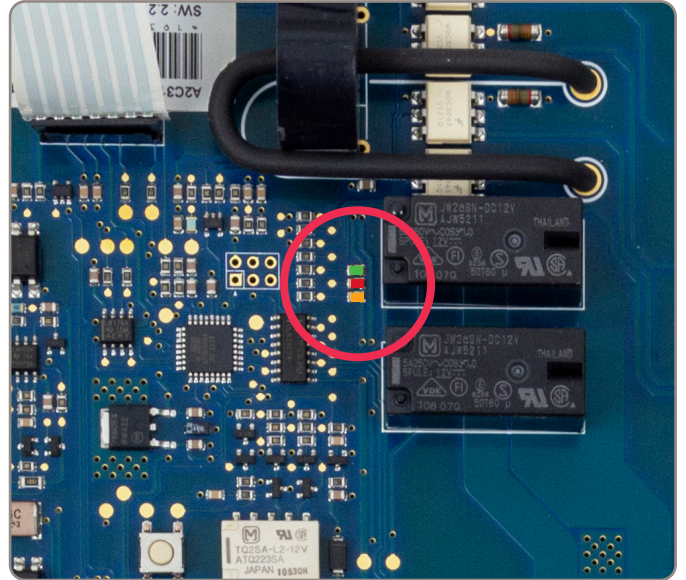
Manual intervention

IMPORTANT! Manual intervention procedure must only be done by an authorised professional service engineer as the unit must have a LIVE supply to reset.

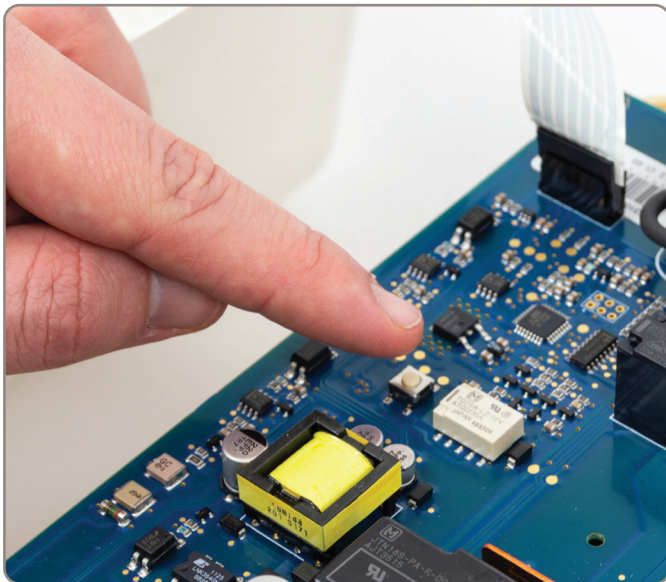
Some problems can be resolved by resetting the unit. This can be done by following the steps below:



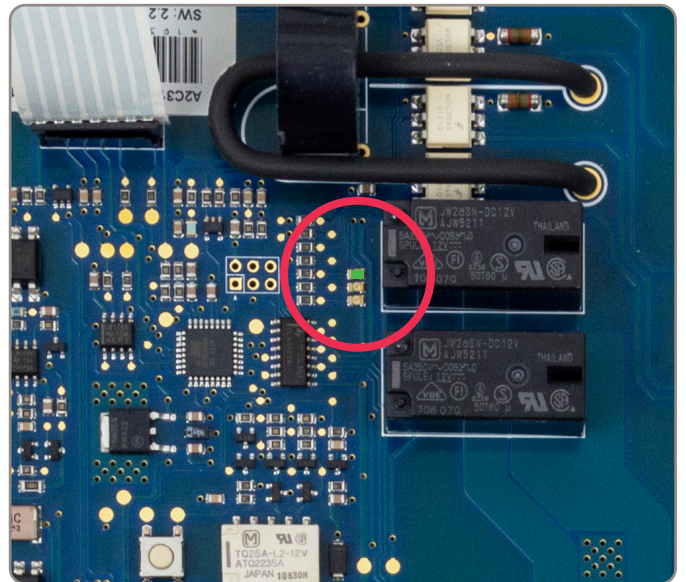
1. Remove the cover and unplug the connecting cable from the PCB.



The three LED indicators on the PCB will be illuminated when the unit is in standby, running or in error mode.



2. Press the PCBA reset button.



If the error has been successfully reset the **GREEN** LED on the PCB will start to flash slowly, indicating the unit is now in standby mode. You can now reconnect the display PCB cable and replace the exterior cover.

Important information and warnings!




If the **RED** LED remains either flashing or illuminated and error condition is still present. There are **NO** user serviceable parts, other than the inlet filter, inside the housing so no further action can be taken. Call for a qualified service electrician to attend site and attempt repair.

Product registration

To the installer:

Please fill in both the installer details and product details tables below to ensure that the home or property owner has all the information they need to register the product and also get technical help from ThermoSphere should the need arise.

Important information and warnings!

 The installer must complete the information on this page and hand a copy to the home owner to keep for their records. The home owner will require this information in order to register the product and to make a warranty claim should the need arise. Proof of purchase is also required for warranty claims.

Installer details
Name:
Company:
Email:
Phone:
Address:
Postcode:
Date of installation:
Proof of purchase: Yes / No
Signature:

To the home/property owner:

Use this information to register your product online at thermosphere.com.

Ensuring you have all of the information on this page will help with any technical support that you may need, or a warranty claim should the need arise.



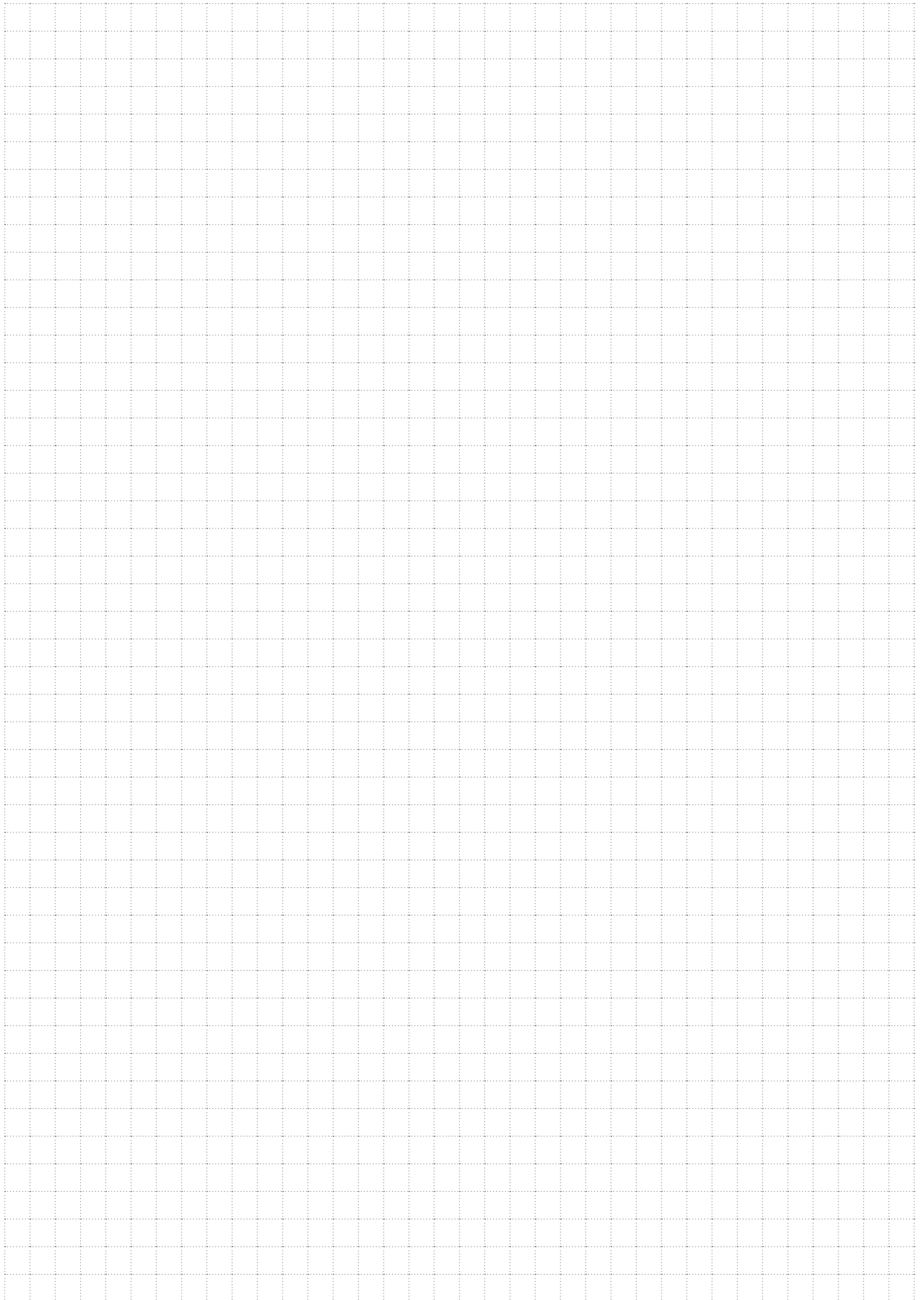
Scan the QR code or visit:

www.thermosphere.com/water-heating/micro-electric-boilers/register

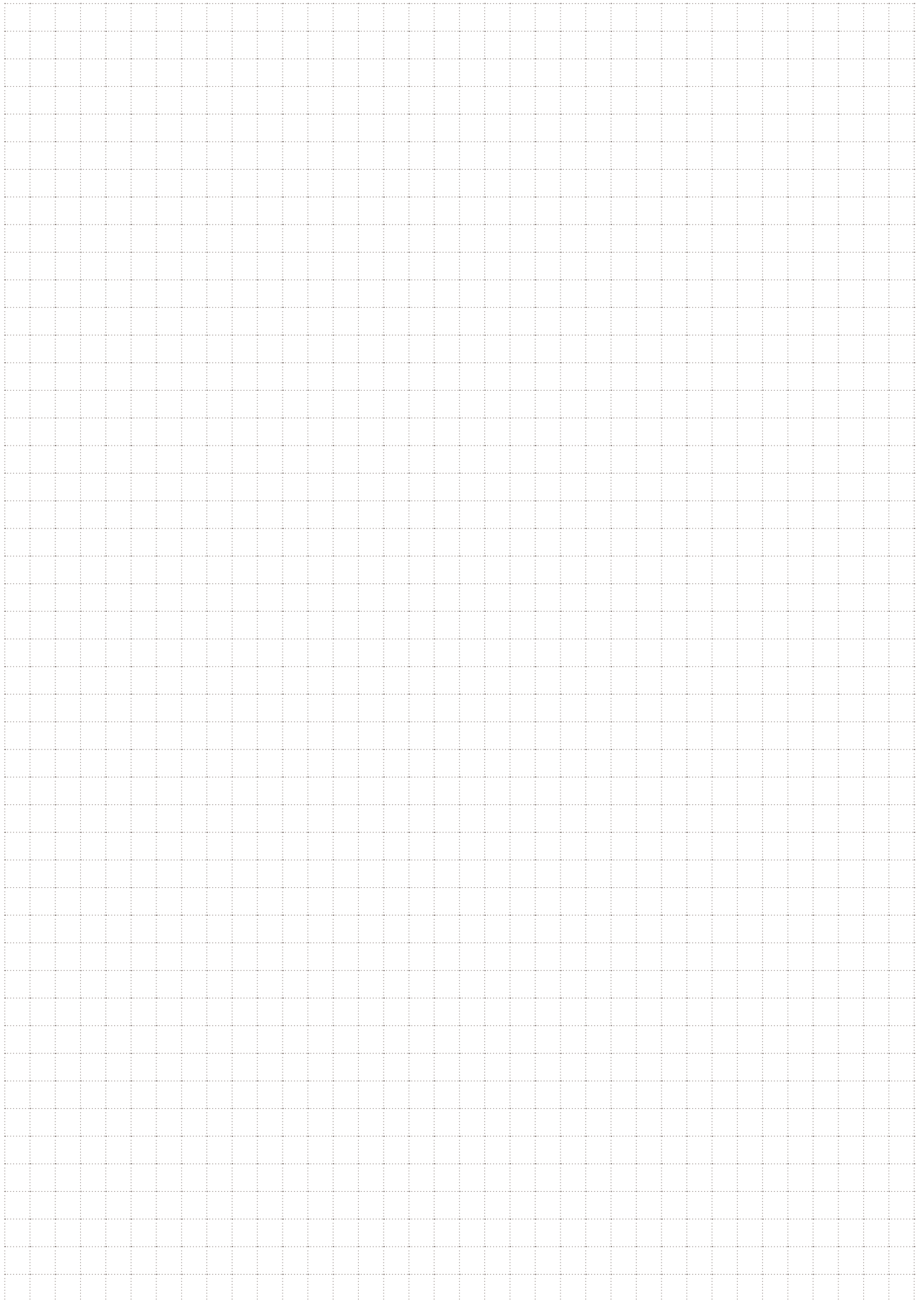
Product details

Part no	Serial no	Supply circuit max current (Amps)	Supply cable diameter (mm)	No. of taps/showers supplied	Incoming water temp (°C)	Set water temp. (°C)	System flushed and primed?	Single or Tandem install?
The stock no of the product. You can find this on the label under the unit.	The serial no of the product. You can find this on the label under the unit.	What is the max current of the RCBO in Amps?	What is the diameter of the cable in the supply circuit?	How many taps, showers or other outlets are supplied?	Use a thermometer to measure the temp of the water going into the unit.	What is the water temperature set on the control panel on the front of the unit?	Has the product been flushed and primed before leaving site?	Is it a single or tandem unit installation?
							Yes / No	Single / Tandem
							Yes / No	Single / Tandem
							Yes / No	Single / Tandem

Notes



Notes



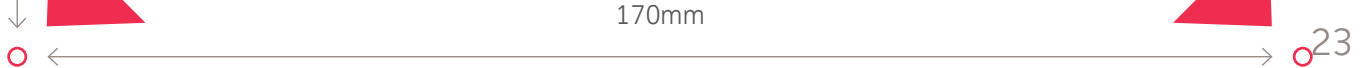


135mm



285mm

Installation hole marking template



170mm



23

thermo
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