

## Continuous Flow Electric Water Heater

“hot water just got smarter”



Molecular heat technology



Centisecond technology



No risk of scalding



Can be installed at point-of-use



Easy to install

## INSTALLATION & OPERATION MANUAL

### CFEWH SERIES 2 – Three Phase (415VAC/380VAC)

[www.microheat.com.au](http://www.microheat.com.au)



E1109-0066-1



N29465

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## Introduction - CFEWH

This Installation Manual covers the Premium models of the MicroHeat Continuous Flow Electric Water Heater [CFEWH] SERIES 2-15, SERIES 2-18, SERIES 2-21, SERIES 2-24, SERIES 2-27 and SERIES 2-30.

### VOLTAGE

The CFEWH is Three Phase (380VAC) 415VAC LIVE/GROUND.

### CFEWH SERIES 2-15 / 2-18 / 2-21 / 2-24 / 2-27 / 2-30



#### Premium CFEWH

CFEWH SERIES 2 --- P

The Exterior Cover includes a display showing Output Water Temperature and Flow Rate

Temperature settable model from 20°C up to 50°C or configured to allow temperature to be set up to 65°C



#### SAFETY WARNING

Please ensure you read through the Installation Checklist on Page 5 before commencing the installation of any CFEWH unit.

This equipment requires three phase 415 VAC. To avoid electric shock, this equipment must only be opened and installed by a qualified electrician or plumber.

## Key Benefits

### The key benefits of the CFEWH are:

#### Decreased infrastructure costs

- The CFEWH will not allow heated water temperatures to exceed 50°C, even at low flow rates. This eliminates the requirement for the installation of tempering valves or thermostatic mixing valves, unless otherwise specified as per AS/NZS 3500 Section 4.
- Point of use installation significantly reduces requirement for hot water reticulation infrastructure.

#### Small Footprint

- Facilitates point of use installation.
- Easy to install.

#### Decreased operating costs – and minimal water wastage

- Always operates at “optimum” power.
- Switch-on flow rate is as low as 1.5ltr/min.
- No requirement to heat water in anticipation of use.
- Stable hot water temperatures are delivered.
- Reduced water consumption due to reduced draw off.
- Hot water reticulation energy losses significantly reduced.
- Virtually maintenance-free: no scaling or element burn out.

Electric Instantaneous Water Heater (EIWH) <b>vs.</b> MicroHeat CFEWH	HOT WATER SERVICE	
	EIWH	CFEWH
Electrical Supply	Three Phase	Three Phase
“Optimised” Energy	NO	YES
Switch-on Flow Rate	2.6LPM	1.5LPM
Optimised TANDEM Capability	NO	YES

## “Optimised” Energy

### “Optimised” Energy

Is the ability to heat water more efficiently – delivering reduction in the consumption of both energy and water.

#### Reduced energy consumption

- Lower flow rate = less water volume to be heated, this reduces energy consumption.
- Lower temperature change required = less energy consumption.

#### Reduced water consumption

- Hot water temperature stability = less water consumption.
- The lower the flow rate = less water consumption.

Of course, the ideal situation would be for EIWH appliances to have some degree of “**optimised**” energy – however, **most do not incorporate this.**

Significantly, the **100% “optimised” energy** capability of the CFEWH results in far less than the full rated power being consumed.

## Pre-Installation - Checklist

### Installation Checklist

Please read through this section before commencing installation, to ensure you are familiar with the component parts and the fitting procedure.

*This unit must be installed by:*

**A Licensed Electrician**, ensuring installation conforms to all current electrical wiring standards.

**A Licensed Plumber**, ensuring installation conforms to all current plumbing standards.

*The CFEWH 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.

MicroHeat 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 the use of this appliance to heat any liquid other than potable water within the conductivity range specified in this manual. Refer to the Reference section – page (8).

**IP Rating** – The unit is rated as IP44. The appliance must be installed inside a dwelling or construction and should not be exposed to splashing water, rain or any circumstance that will allow water to enter the outside cover.

**Maximum Rated Operating Water Pressure** – The maximum operating water pressure is 1 MPa / 10 bar / 150 PSI.

**Ambient Temperature** – The unit is intended for internal installation and should not be installed in an environment where there is a possibility of the ambient temperature dropping below 5°C.

**Water Resistivity** – To ensure optimal operation, the resistivity of the incoming cold water supply should not be less than 1.25kΩ-cm, and should not be greater than 12.5kΩ-cm. If the unit is operated with water conductivities outside of this range, it will not function as specified.



#### **WARNING**

In accordance with AS/NZS 3500.4:2018, this appliance will not deliver temperatures exceeding 50°C. Water temperatures greater than 50°C can cause scalding. Care should be taken with children and people with limited sensory, physical, and/or mental capability. See AS/NZS 3500.4:2018 Section 1.11.2 (a).

Compliance with AS/NZS 3498 Section 7.2.1 obviates the need to fit a temperature limiting device if this water heater is installed in any location other than the locations clearly stipulated in AS/NZS 3500.4:2018 Section 1.11.2 (a), where the installation of thermostatic mixing valves is required



#### **IMPORTANT**

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.



#### **IMPORTANT**

Where the ambient temperatures are likely to approach freezing – ie: less than 5°C – the unit must be drained of water to prevent frozen water damage occurring.

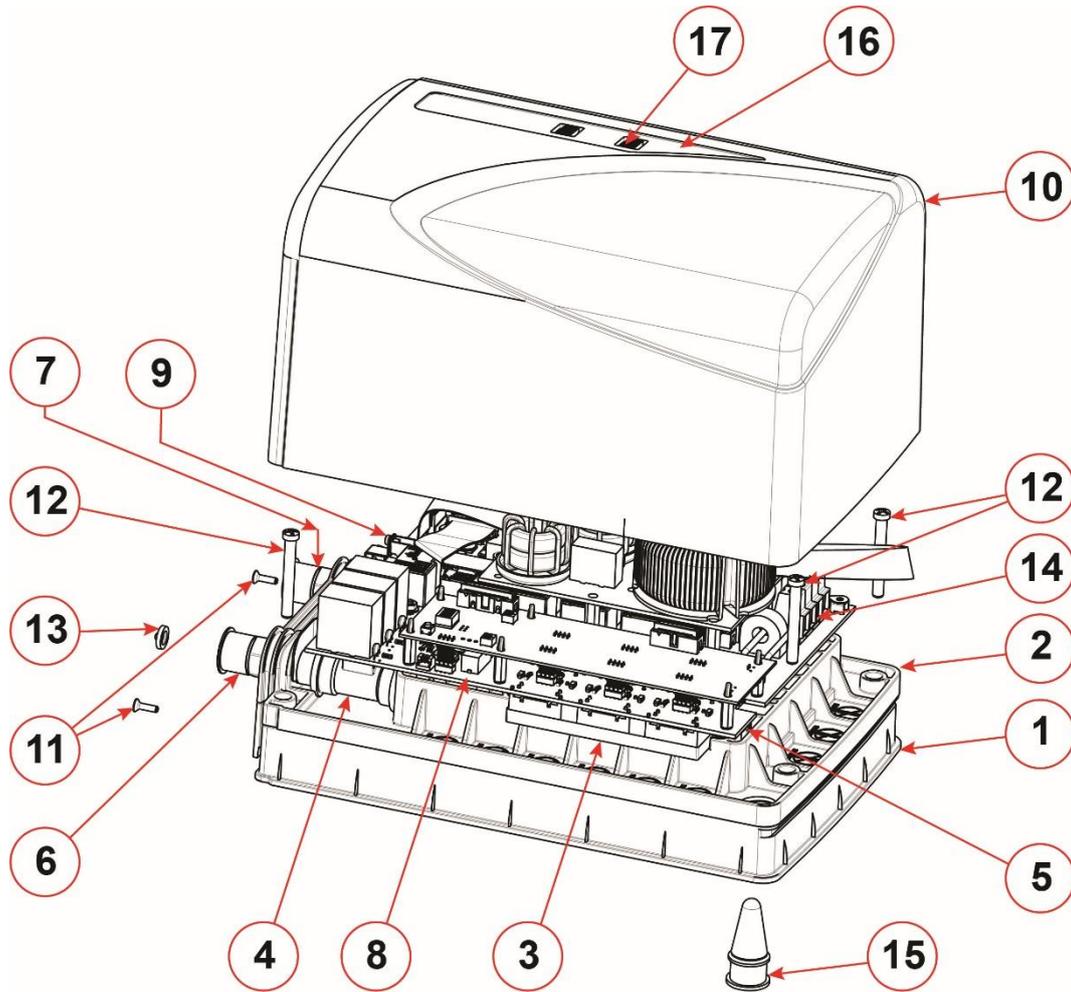
Failure to comply with the installation and operating instructions or improper use voids the warranty.

## Pre-Installation – Component Guide

### Component Guide

This is an at-a-view guide to the 11 steps required to install the unit.

It will allow you to become familiar 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 NUMBER	ITEM	PART NUMBER	ITEM
1	CFEWH Chassis	12	CFEWH Wall Mounting Screws (Not included in the packaging).
2	CFEWH Top Cover	13	CFEWH Inlet Filter
3	CFEWH Heat Sink	14	PCB Terminal Block
4	CFEWH Flow Rate Sensor	15	Electric Mains Supply Cable Gland
5	CFEWH Temperature Sensor, Receptacle, Cable and Plug Assembly	16	RED/GREEN LED – CFEWH (GREEN Ready/RED Error)
6	CFEWH ½" BSP Inlet Water Connection	17	Flow Rate/Temperature Setting Display
7	CFEWH ½" BSP Outlet Water Connection	18	Display PCB, Cable and Plug*
8	CFEWH PCBA 3 Phase	19	Display PCB *
9	CFEWH Earth Locking Mechanism	20	Reset Button*
10	SERIES 2 – CFEWH Exterior Cover (Premium)	*Shown on page (12)	
11	Pan Phillips Head Self Tapping Screw x 2 – Exterior Cover Screws Included in the packaging – provided separately in the small satchel		

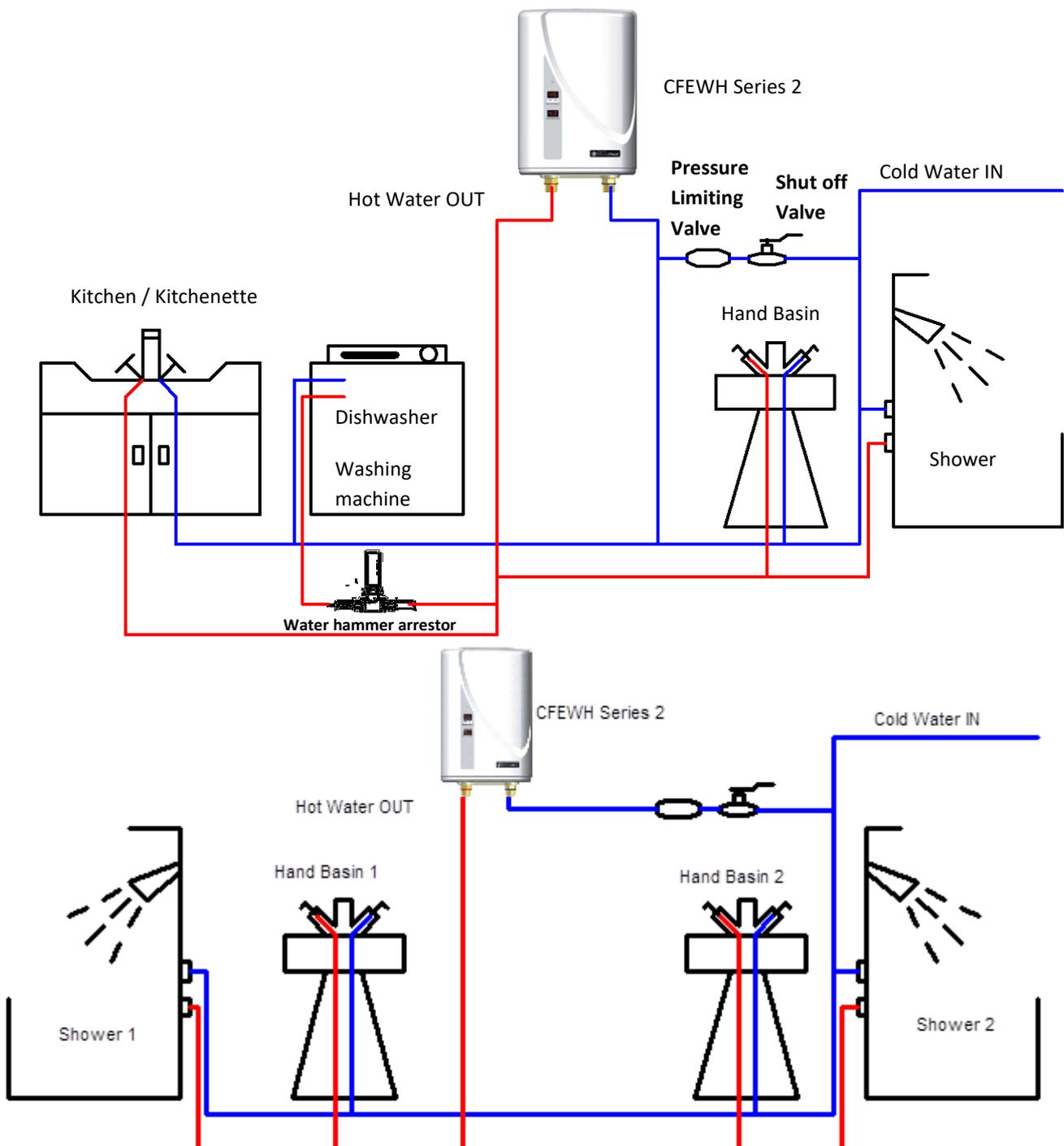
## CFEWH Installation Options

These options show how the unit can be installed into varying operational environments, covering bathroom, kitchen and laundry.

**NOTE:** When the CFEWH is connected to a Washing machine / Dishwasher etc. with automatic on/off controlled inlet valve, a **water hammer arrestor must be mounted at the outlet of the CFEWH** to reduce the water hammer effect during the automatic turning off of the water inlet valve of these appliances.

Please note that the location and installation of the unit is not limited to the options shown here.

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



## CFEWH Specifications

All specifications, stated operational flow rates and output water temperatures are valid within the range of water conductivity:

<b>Standard CFEWH</b>	80µS/cm to 800µS/cm + 15% at 20°C / 12.5kΩ-cm to 1.25kΩ-cm +15% at 20°C
<b>High Conductivity CFEWH</b>	250µS/cm to 2,500µS/cm + 15% at 20°C / 4.0kΩ-cm to 0.40kΩ-cm +15% at 20°C

NOTE: Water conductivity may be less than 80µS/cm. Reduce flow rate to achieve comfortable water temperature. Water conductivity greater than 800µS/cm + 15% will generate an error condition. In this circumstance, the appliance will shut down safely without damage.

Technical Specifications	THREE PHASE
	CFEWH
	SERIES 2-15 / 2-18 / 2-21 / 2-24 / 2-27 / 2-30
<b>Electrical Connection – In accordance with AS/NZ 3000 electrical regulations</b>	
Power supply	Three Phase
Rated Power (kW) options	15, 18, 21, 24, 27, 30 kW
Voltage (VAC)	415 V
Rated AMPS	21, 25, 29, 33, 38, 42 A (Hard wired circuits)
Frequency (Hz)	50 / 60
<b>Unit Parameters</b>	
Max. temp settable option °C	50 or 65°C
Switch on Flow Rate	1.5 LPM
System Type	Continuous Flow Electric Water Heater (CFEWH)– Hot water market segment – Electric Instantaneous / Tankless
Max. Operating Line Pressure	10 bar / 1 MPa
Min. Operating Line Pressure	1.5 bar / 0.15 MPa
Dimensions	H 315mm x W 210mm x D 170mm
Heating Method	Optimised Direct Energy Transfer – Full Digital controlled water heating
Nominal capacity ml	382 ml
<b>Standards</b>	
Water Regulation	AS/NZS 3498, AS/NZS 4020, AS/NZS 3500*
Electrical Safety	AS/NZS 60335.2.35 / IEC 60335.2.35/ AS/NZS 3000:2018
EMC	CE/C-Tick

\* In accordance with AS/NZS 3500.4:2018 Section 1.11.2 (b) and Section 1.11.3 (b). No tempering or thermostatic mixing valves are required for personal hygiene sanitary fixtures other than stipulated in Section 1.11.3 (b).

## CFEWH SERIES 2 Hot Water Output Temperatures / Flow Rate Tables

The incoming water temperature will vary during Summer and Winter. The following tables show the potential maximum hot water flow rates at various inbound water temperatures, for each of the Models available.

### OUTPUT WATER TEMPERATURE 50°C

Incoming water temp.	Litres per minute with incoming water temp.					
	Series 2 15	Series 2 18	Series 2 21	Series 2 24	Series 2 27	Series 2 30
	415 V 15 kW	415 V 18 kW	415 V 21 kW	415 V 24 kW	415 V 27 kW	415 V 30 kW
10°C	5.4	6.4	7.5	8.6	9.7	10.7
15°C	6.1	7.4	8.6	9.8	11.1	12.3
20°C	7.2	8.6	10	11.5	12.9	14.3
25°C	8.6	10.3	12	13.8	15.5	17.2
30°C	10.7	12.9	15	17.2	19.3	21.0

## CFEWH Installation Procedure

1. To remove the CFEWH Exterior Cover find a clean flat surface and place the unit on its back. Using both your thumbs and forefingers, grip the Exterior Cover firmly along the bottom of the unit, and push the cover slowly up to separate it from the Body of the unit. See Figure 1.



Figure 1 - CFEWH Removal of Exterior Cover

2. Carefully remove the Display PCB/LED plug and cable connecting either the Display PCB or Indicator LED on the outside of the Exterior Cover to the PCBA. See Figure 2.

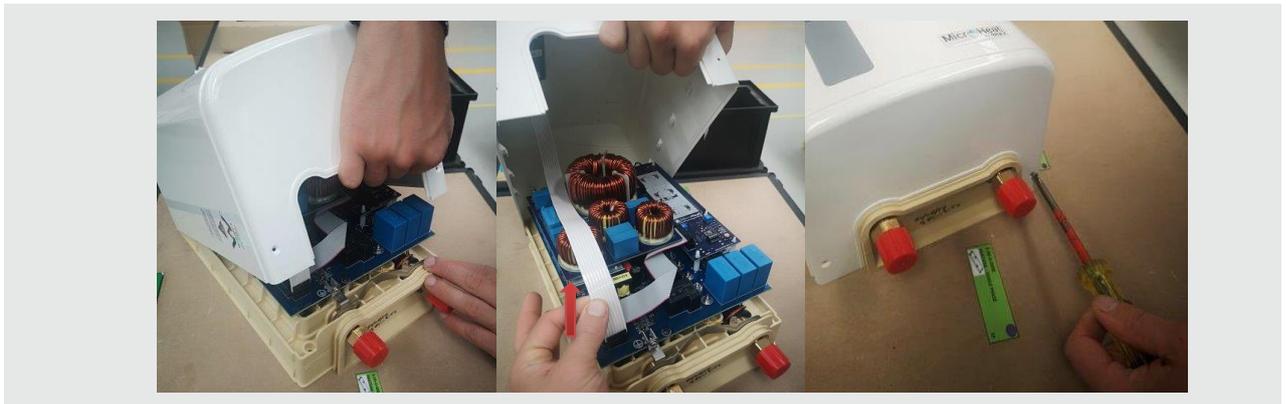


Figure 2 – Display PCB/LED Cable Disconnection & Cover Screw Replacement

3. Mount the unit onto the wall. Refer back page (23) of Manual for mounting screw-hole position template and page (19) for product dimensions.
  4. Ensure the Circuit Breaker and the Isolation Switch (if installed) supplying the 415VAC electrical mains to the CFEWH are turned **OFF**.
  5. The electricity supply cable must be brought through the electric gland, and then connected to the terminal block (14) – see page (12), **Error! Reference source not found.** The cable enters from the rear of the appliance.
  6. Carefully replace the plug and cable connecting the Display PCB/LED indicator to the PCBA.
  7. Connect the Water Pressure Limiting Valve (5.0 bar/72.5 psi/500 kpa) and Shutoff Valve.
  8. Connect the water supply via the shutoff valve and pressure limiting valve to the unit to the Inlet Water Connection (**BLUE**).
- NOTE:** Flush the cold water line before connecting to the unit.
9. Connect the hot water from the Outlet Water Connection (**RED**).
  10. Run water through the unit without power to ensure there are no leaks.
  11. Switch ON the Circuit Breaker and Isolation Switch supplying the electric mains power to the unit and check if the unit is turned ON.

*If the LED is slow flashing **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 of the point of use water outlet. The LED will illuminate as fast flashing **GREEN**.*

**CFEWH Mounting & Installation**

**Mounting to the Wall**

The unit should be mounted onto a solid internal wall, or in an internal cupboard or space, preferably in the vertical position using the 4 x Mounting Screws (12) placed within the Mounting Screw Hole Locations as shown in Figure 3. Refer back page for screw-hole template and page (19) for CFEWH dimensions.

The maximum screw head diameter is **8mm**. A screw head larger than 8mm will damage the mounting boss and crack the body. **THIS WILL VOID THE WARRANTY.**

The mounting method used to fix the unit to a vertical wall must be capable of continuously supporting a minimum weight of 10kg.

When mounting the unit onto a rough surface (ie: a brick wall or similar), a backing board should be mounted to the wall first. The unit can then be mounted onto the backing board. This will allow the Exterior Cover (10) to be properly fitted to the unit.

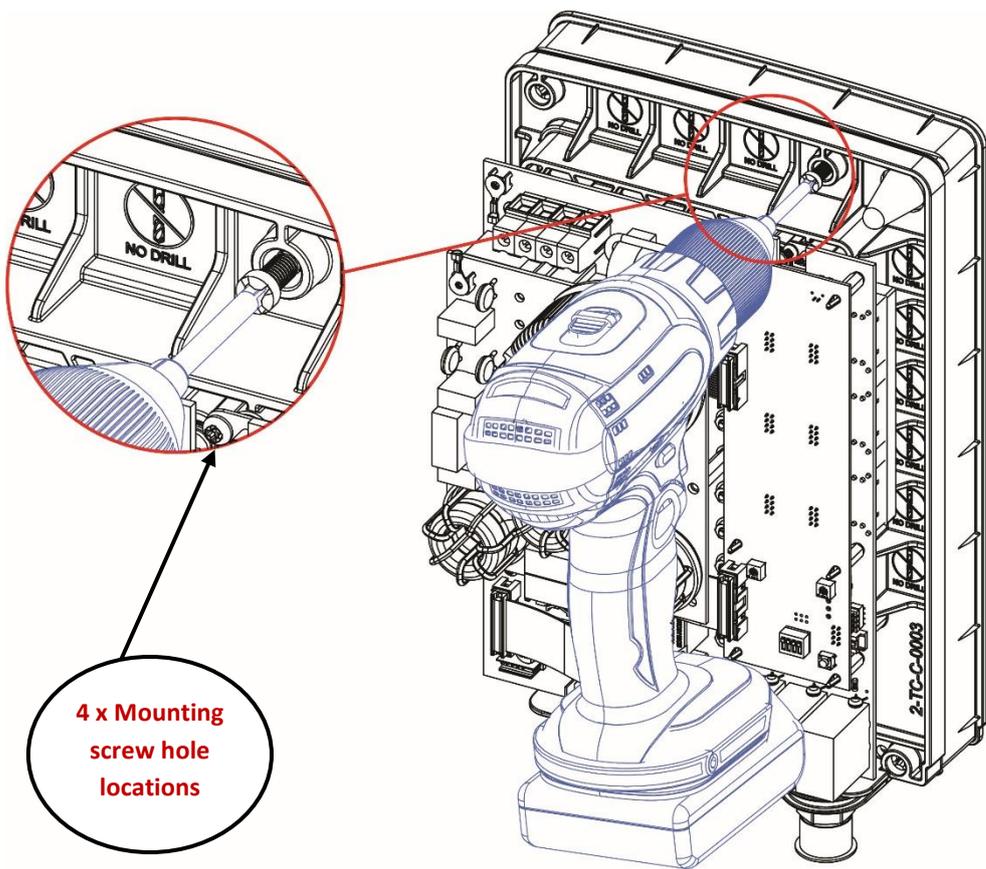


Figure 3 - Mounting Screw Location

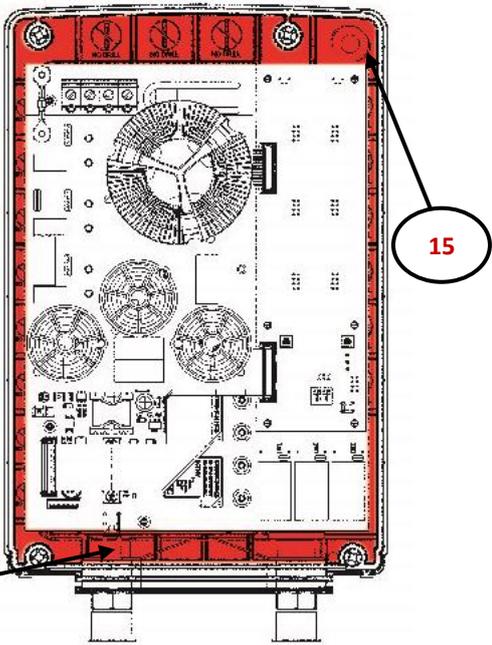
**IMPORTANT**

⚠ When mounting the unit to a wall, it is important to note that no holes are drilled within the area shown below in **RED**.

The Cable gland Fitting hole (15) must not be drilled out.

Holes drilled within this area or the sides of the unit, or opening out the Cable gland Fitting hole, will render the unit inoperable and irreparable.

***This will void the warranty.***



**Red Area - No Drilling**

## CFEWH Plumbing & Electrical Installation

### PLUMBING CONNECTION

#### Water Inlet Pressure Limiting Valve and Shutoff Valve Connection

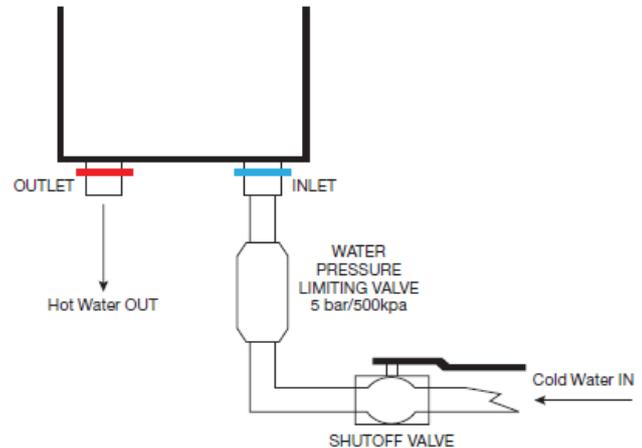
The unit is a closed outlet water heater and is intended to operate at the pressure of the water mains, where the flow of water is controlled by one or more faucets/valves in the **outlet line**.

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

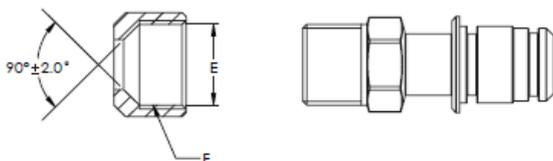
However, it is **mandatory** for a water pressure limiting valve and a shutoff valve to be connected in series with the unit's cold water inlet connection (6).

- The unit maximum rated operating line pressure is 1 MPa / 10 bar /145 PSI.
- The unit 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 inline 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 type valve.
- **If the water heater is supplying a Dishwasher / Washing machine, a water hammer arrestor must be installed on the outlet side of the water heater.**

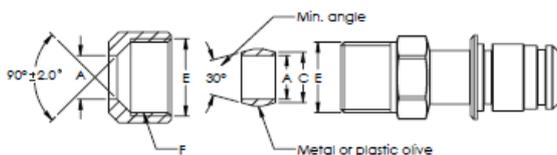
CFEWH Series 2 plumbing connection



#### Braided Hose with seal



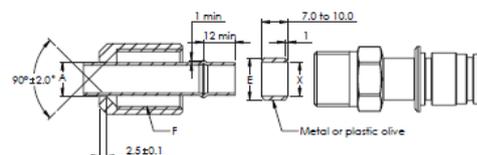
#### Braided Hose without seal



#### Acceptable inlet/outlet connections

The Inlet (6) and Outlet (7) water connections are both ½" BSP SERIES GB. There are three options for inlet/outlet connections with this unit:

#### Straight Copper Tube



#### IMPORTANT

MicroHeat nor its Distributors will be liable for any damages through 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.

**CFEWH Electrical Installation**

**ELECTRICAL CONNECTION**

The CFEWH Series 2-X - 380/415/480VAC (xA per phase)\* must be connected to Three Phase 380/415/480VAC Electrical Mains Supply. The appliance must be connected to the mains supply with fixed wiring. An appropriate mains isolation switch should be incorporated in-line with the fixed wiring electrical supply.

**3 Phase Electrical Connection**

**! IMPORTANT**

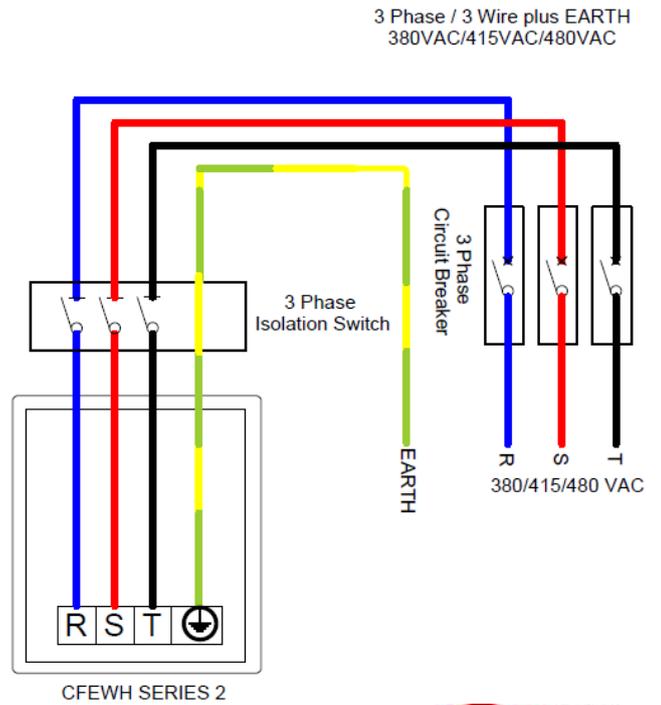
This unit is classified as a **Class I** Bare Element Water Heater. The appliance must be correctly connected to the mains earth.

In order to prevent a hazardous circumstance occurring due to the inadvertent resetting of the thermal cut out, the electrical supply to this appliance must not be supplied through an external switching device, such as a timer – nor can it be connected to a circuit that is regularly switched on and off by the electricity supply utility.

**AS/NZS 3000:2018  
MICROHEAT CFEWH SERIES 2  
COMPLIANT WITH AS/NZS 60335.2.35 ELECTRICAL  
SAFETY**

**RCD DEVICE IS NOT REQUIRED**

**If an RCD is installed – this must be  
Super Immune (TYPE A-SI) Three Phase RCCB to  
prevent any nuisance tripping during normal  
operation.**



Bring the Three Phase cable supply through the Electric Mains Supply Cable Gland (15) as shown.

In accordance with the wiring rules, AS/NZS 3000:2018 and IEC 61000-3-11, the CFEWH is intended for use where the service current capacity of 100A per phase is supplied from a distribution network having a nominal voltage of 400/230 VAC.

**\* Power Rating / Amperage Table**

<b>Three Phase 380/415/480VAC Power Rating/Amperage</b>			
Power Rating (kW)	380VAC Amperage (A)	415VAC Amperage (A)	480VAC Amperage (A)
15	23	21	18
18	27	25	22
21	32	29	25
24	36	33	29
27	41	38	32
30	46	42	36

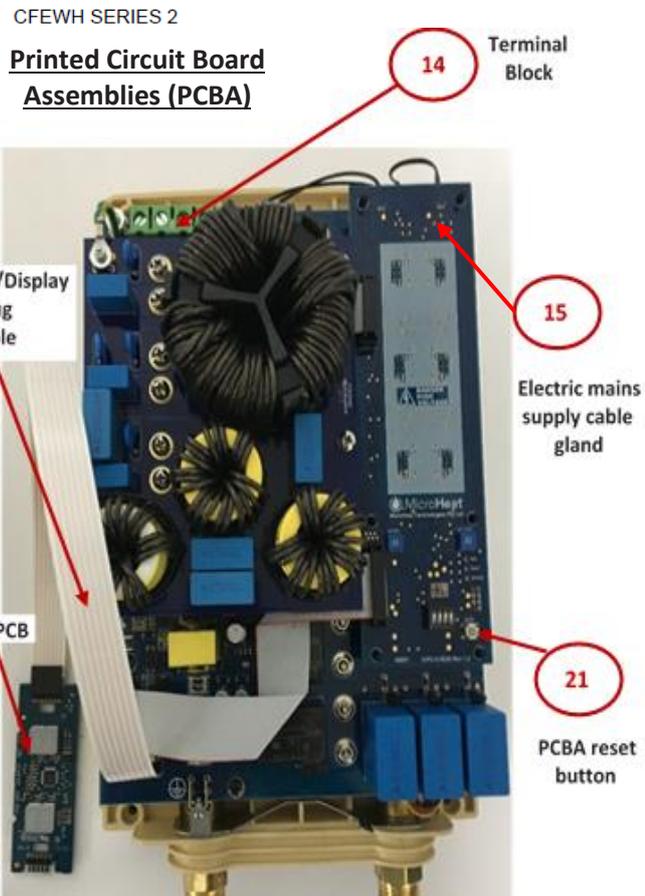


Figure 4 - CFEWH Series 2 PCBA Assemblies

## Maximum Electrical Demand Calculation

### Section C2.1 After Diversity Maximum Demand <sup>1</sup>

As indicated in Clause 2.5 (and explained in Paragraph B3.2), the current in a circuit must not exceed the current rating of the circuit protective device – and this, in turn, must not exceed the current-carrying capacity of the circuit conductors.

For circuits supplying a single item of equipment, the circuit current is simply the nominal load current of the equipment (eg: a 10000W 230/400V three-phase heater has a full per-phase load current of 14.5A). The circuit conductors and the protective device must have a current carrying capacity of not less than 16A (nearest standard rating).

Where more than one item of equipment is connected, the circuit current could be simply assessed as the sum of the individual equipment load currents. While this would provide a safe and conservative solution, it does not take account of the normal operating conditions during which all equipment is not operating simultaneously at full load or for long periods (eg: submains to a distribution board associated with numerous socket outlet circuits). Under such conditions, the circuit current is estimated using diversity factors and is often described as the ‘after diversity maximum demand’.

As stated (in Clause 2.2.2), maximum demand current can be determined by one of four methods – calculation, assessment, measurement or limitation. The following paragraphs of the Appendix C provide information and examples regarding the application of the calculation method for determining maximum demand current in consumers’ mains and submains only.

### Section C2.3 Domestic Installations C2.3.1 Method<sup>2</sup>

Table C1 provides an allocation of load for different types of equipment connected to consumers’ mains or submains in a single or multiple domestic installations. The load current is calculated for each equipment load group in the installation or affected part thereof, and these contributions are added together to achieve the maximum demand current. The accompanying notes provide clarification of certain provisions and the examples demonstrate how the calculation is made.

**TABLE C1  
MAXIMUM DEMAND – SINGLE AND MULTIPLE DOMESTIC ELECTRICAL INSTALLATIONS**

1	2	3	4	5
Load group	Single domestic electrical installation or individual living unit per phase <sup>a</sup>	Blocks of living units <sup>a,b,c</sup>		
		2 to 5 living units per phase	6 to 20 living units per phase	21 or more living units per phase
Loading associated with individual units				
C. Ranges, cooking appliances, laundry equipment or socket-outlets rated at more than 10 A for the connection thereof <sup>h</sup>	50% connected load	15 A	2.8 A per living unit	
D. Fixed space heating or airconditioning equipment, saunas or socket-outlets rated at more than 10 A for the connection thereof <sup>h,k</sup>	75% connected load	75% connected load	75% connected load	
E. Instantaneous water heaters <sup>l</sup>	33.3% connected load	6 A per living unit		100 A + 0.8 A per living unit

<sup>1</sup> AS/NZS 3000:2018 Electrical\_installations

<sup>2</sup> AS/NZS 3000:2018 Electrical\_installations

## Preparation for use

### After installation, this two-step procedure must be followed.

The unit must be primed – this is required only once – nominally at installation.

(Priming is **only** required when the electricity supply to the unit has been turned off/removed from the unit – for example, after a power failure or an isolation switch OFF condition).

Priming is required to set the unit up environmentally to ensure that the heating ramp-up time from start during normal operation will be as short as possible, without incurring power overshoot.

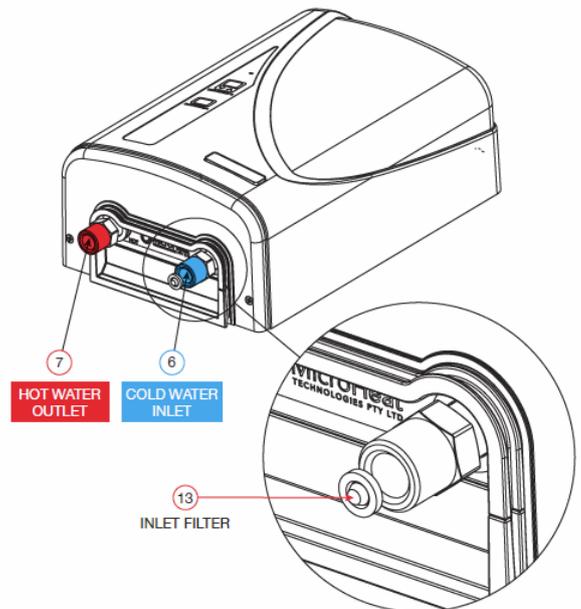
Once primed, the unit will ramp-up to the optimised power required at the time without overshoot.

*Note: Power overshoot typically results from the maximum power input required to get a heat exchanger up to working temperature as quickly as possible.*

**However, the unit does not incorporate a heat exchanger, thus initial power 'kick' is not required 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 1 to 2 minutes.
- After flushing remove the Inlet Filter (13) from the cold water inlet, clean any debris due to installation and flushing and refit.



### STEP 2: Prime

- Turn the electricity supply on – check for the LED (16) slow flashing **GREEN**. The unit is now in stand-by mode.
- Turn on the hot water faucet to a flow rate greater than 1.5ltr/min (the unit will start heating – check for LED (16) fast flashing **GREEN**), and allow the unit to run for about 3 minutes.

#### **NOTE: Priming mode**

Depending on the initial flow rate during priming, the unit will not start heating until approximately 1.2 Liters of water has cycled through the unit. This is to ensure that any air in the system has been flushed. Heating will have started once the LED (16) is fast flashing **GREEN**. This will happen whenever the electrical mains power is turned off to the system and ensures optimum performance.

**The unit is now primed and ready for use.**

## CFEWH Operation

### CFEWH Premium Model

The unit will automatically begin operating when you turn on a hot water tap, and water is flowing faster than 1.5 litres a minute. The heated water temperature can be varied or set manually by using the *Decrease & Increase Push Buttons*. Temperature can be set between a minimum of 20°C and the maximum factory set temperature of either 50°C, **OR** other Specified Maximum Setting that may be <50°C or >50°C.

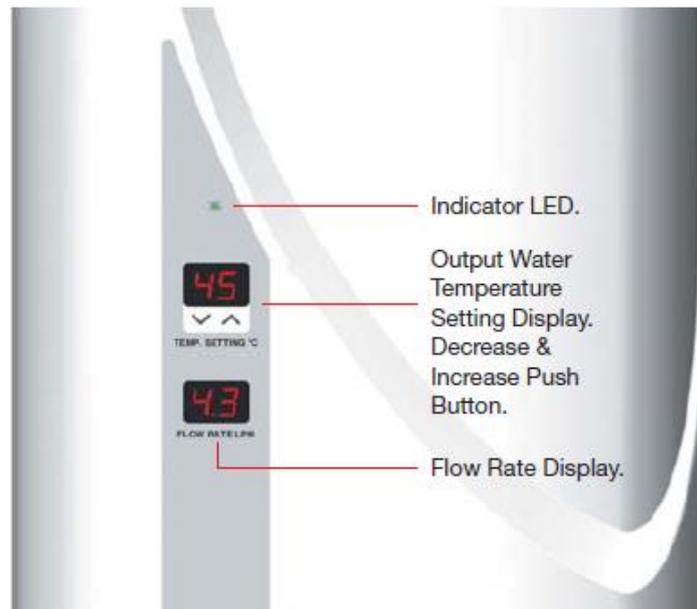


Figure 5 - CFEWH Premium Model / Settings & Display

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 that can be displayed is 99 LPM. See Figure 5.

### CFEWH Premium - LED Indicator Light

The LED indicator on the Exterior Cover indicates the operational status of the unit.

#### LED indicator not illuminated:

No electricity is being supplied to the unit.

- **Slow flashing GREEN:**  
Standby mode, waiting for water to be turned on.
- **Fast flashing GREEN:**  
The unit is operating and water is being heated.
- **Flashing RED and then 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:**  
Mechanical Lockout Error

**Call MicroHeat 1300 981 325 and arrange for a MicroHeat Service Technician to rectify the problem.**

**For a list of Error codes refer page (17).**

## CFEWH Operation (contd)

### Error Display

If the unit experiences some type of malfunction, the LED indicator will also display an error code. You will see **Er** appear in the TEMP SETTING window and then an alpha-numerical code in the WATER FLOW RATE window. For example – this shows error code **A6**. See Figure 6.

### Mechanical Lockout Error

When this occurs, the Indicator LED will flash **RED** continuously and an **Error Code** will be displayed. This number should be given to MicroHeat when the service call is made.

For a list of error codes refer page (17).

Normal operation cannot be resumed by switching the appliance OFF and ON. Manual Intervention Procedure is required – see page (17).

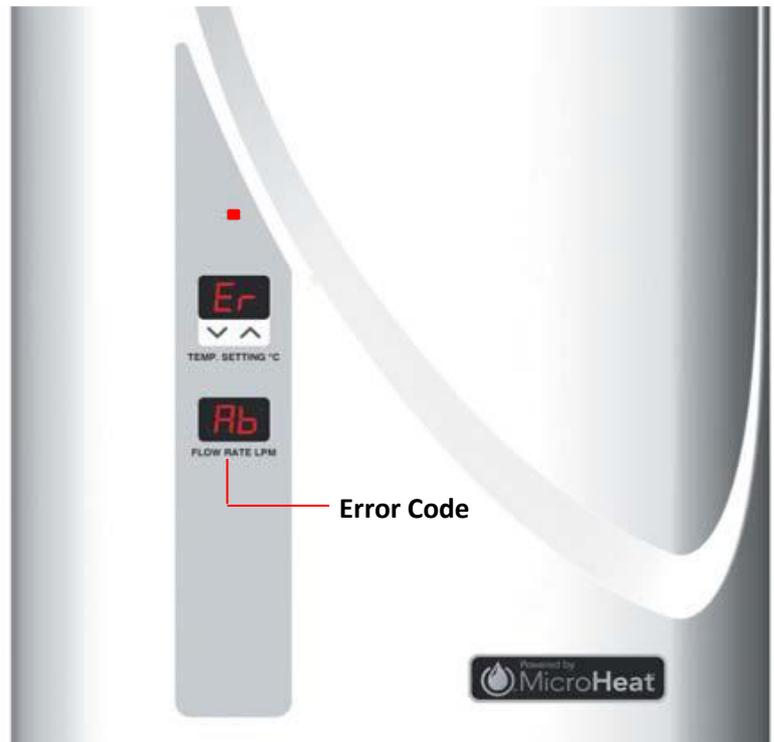


Figure 6 - CFEWH Premium Error Code Display

### Optimized Energy Usage

The amount of electrical energy (power) applied to heat the water is not allowed to exceed the rating of the CFEWH. In the case of the CFEWH Series 2 this will be limited to a maximum of 30kW (or other below 30kW). The CFEWH is digitally controlled, and incorporates an “Optimised Direct Energy Transfer” feature that will only apply the amount of energy required to maintain the water temperature as set. If flow rate for example is decreased, the applied power also decreases. If flow rate is increased, the applied power is increased.

However, flow rate can be increased to a level that requires the applied power to *exceed* the CFEWH stated power rating limitation in order to deliver water at the set temperature. Since the rated power cannot be exceeded, hot water will be delivered at a temperature that is less than what has been set.

The “Optimised Energy Usage” feature informs the consumer that this high flow rate circumstance has occurred by causing the FLOW RATE LPM display (see Figure 5) to flash. The resolve to get water temperature back to the set value is to simply reduce the flow rate until the FLOW RATE LPM display stops flashing.

## Diagnostics and Error Descriptions

### Diagnostics and Error Descriptions

Error Description (Cause)	Error Code	Error Type	LED Display
Not powered	N/A	No error	No color
Normal operation standby	00	No error	Slow Flashing <b>GREEN</b>
Normal operation – heating	01	No error	Fast Flashing <b>GREEN</b>
Water conductivity too low		No error	<b>ORANGE</b>
In Priming Mode		No error	<b>ORANGE</b>
Operating temperature too low	A4	Blocking / Resolving	Flashing <b>RED</b>
Operating temperature too high	A5	Blocking / Resolving	Flashing <b>RED</b>
Outlet water temperature 5°C above set point	A6	Blocking / Resolving	Flashing <b>RED</b>
Inlet cold water input sensor open circuit	A7	Blocking / Resolving	Flashing <b>RED</b>
Inlet cold water input sensor short circuit	A8	Blocking / Resolving	Flashing <b>RED</b>
Outlet water temperature sensor open circuit	A9	Blocking / Resolving	Flashing <b>RED</b>
Outlet water temperature sensor short circuit	AA	Blocking / Resolving	Flashing <b>RED</b>
AC Mains electrical supply failure	Ac	Blocking / Resolving	Flashing <b>RED</b>
High temperature limit exceeded >70°C	FA	Mechanical Lockout	<b>RED</b>
Conductivity too high	Fb	Mechanical Lockout	<b>RED</b>
Earth Leakage Detection	Fc	Mechanical Lockout	<b>RED</b>
CPU Watch Dog Timer Error	Fd	Mechanical Lockout	<b>RED</b>
Temperature Controller Error (A6 Error >5 times in one operation)	FE	Mechanical Lockout	<b>RED</b>
Unknown Failure	FF	Mechanical Lockout	<b>RED</b>

### Manual Intervention

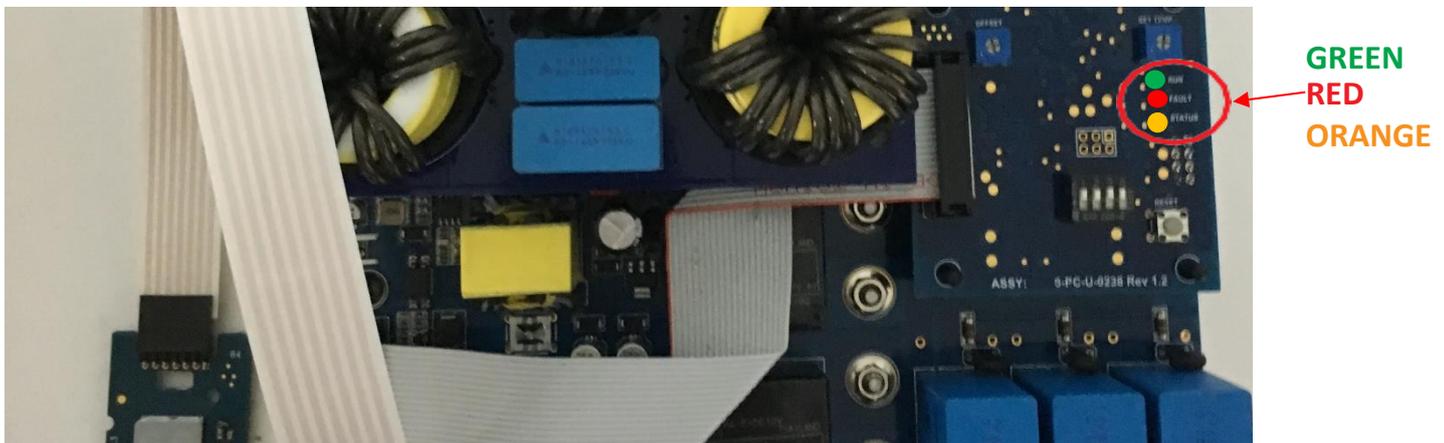
**IMPORTANT** – The Manual Intervention procedure must only be performed by a trained professional.

The problem may be resolved by resetting the unit by pressing the PCBA RESET Button (21).

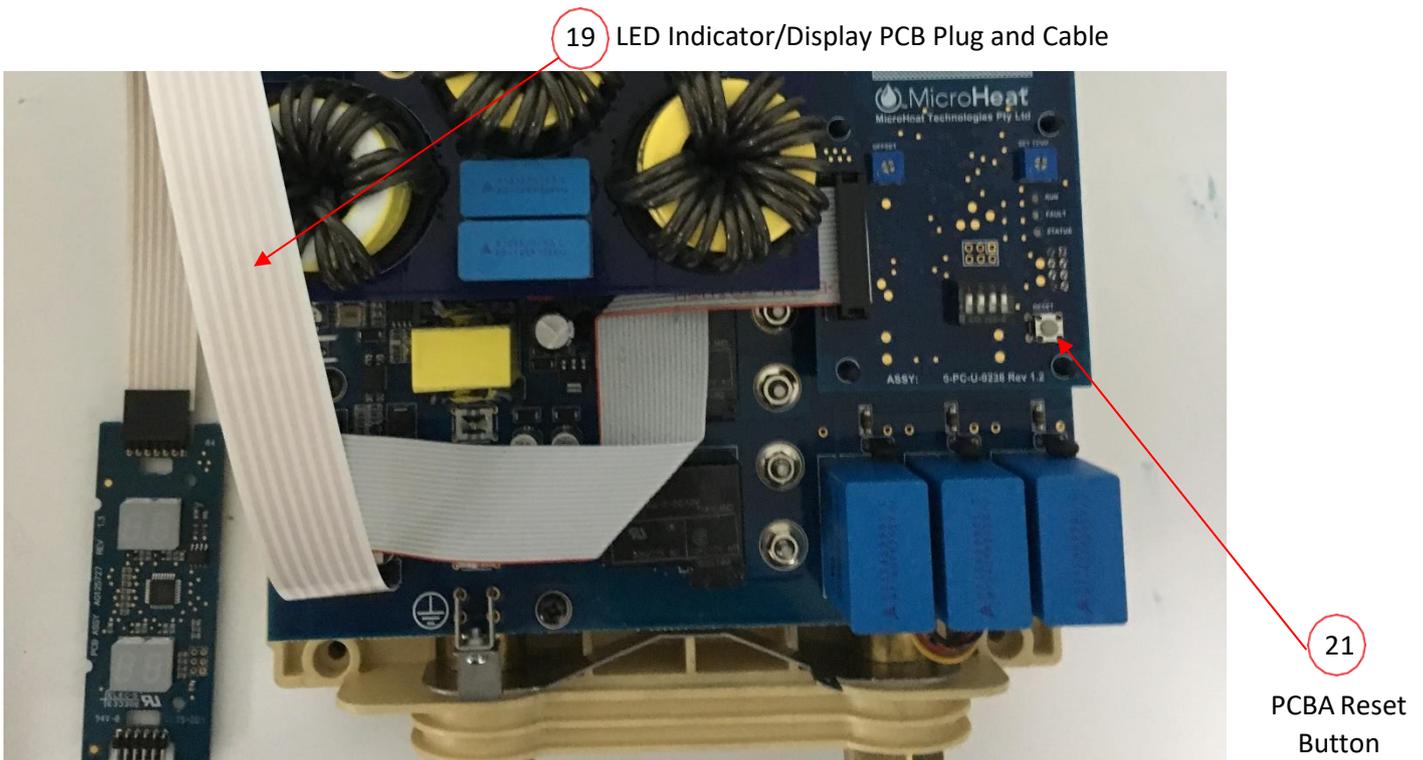
This can be done by following these steps:

1. Remove the Exterior Cover and unplug the connecting cable (19) 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. Depress the PCBA RESET Button (21) mounted on the PCBA (8).



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.



**IMPORTANT**

- If the **RED** LED remains either flashing or illuminated, an error condition is still present. There are **NO** user serviceable parts inside the housing, so no further action can be taken.
- Call for a qualified Service Technician/Installer to attend.

3. Reconnect the Connecting Cable (19) and replace the Exterior Cover.

**Maintenance**

The unit is 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 scale and dirt that may build up in the Inlet Filter (13), the faucet or in the shower head.



**IMPORTANT**

Other than the Inlet Filter (13), the unit does not contain any user-serviceable parts. In case of malfunction, a trained service agent, licensed plumber or electrician is required.



## MicroHeat Warranty

### WARRANTY FOR MICROHEAT TECHNOLOGIES PTY LTD CONTINUOUS FLOW ELECTRIC HOT WATER HEATER (CFEWH) SERIES.

For the MicroHeat Technologies Pty Ltd Continuous Flow Electric Water Heater SERIES (“CFEWH”), MicroHeat will repair or, if necessary, at its sole discretion, replace the CFEWH, which falls within the Warranty Periods and Territory specified below, subject to the warranty conditions and the warranty exclusions.

Warranty Period within Australia, New Zealand and Papua New Guinea is 3 years from the date of purchase by the consumer as defined by the Competition and Consumer Act 2010 (Cth).

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. 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 CFEWH appliances.
2. The CFEWH must be installed in accordance with the MicroHeat CFEWH Installation Instructions, to be supplied with the CFEWH water heater, and in accordance with all relevant statutory and local requirements of the Country or State in which the CFEWH is installed.
3. Where a failed component or CFEWH is replaced under warranty, the balance of the original warranty period will remain effective. The replaced part or CFEWH does not carry a new warranty.
4. Where a failed component or CFEWH is replaced or repaired under warranty, MicroHeat will incur all associated costs. However, where the CFEWH is installed outside the boundaries of a metropolitan area to be defined by MicroHeat or further than 35 km from an Accredited Service Agent, the cost of transport, insurance and travelling costs between the nearest MicroHeat Accredited Service Agent’s premises and the installed site shall be the owner’s responsibility.
5. Where the CFEWH 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 CFEWH and therefore does not cover any plumbing or electrical parts supplied by others and not an integral part of the CFEWH, 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 CFEWH must be sized to supply the hot water in accordance with the guidelines in the MicroHeat CFEWH literature.

### PROCEDURE FOR HONOURING WARRANTY

1. To initiate a claim for a warranty against defects, the consumer shall contact:  
**MicroHeat Technologies Pty Ltd**  
20 Pickering Road  
MULGRAVE VIC 3170  
AUSTRALIA  
Phone: +61 1300 981 325
2. The process will then follow the MicroHeat 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 MicroHeat warranty. However, the following exclusions may cause the MicroHeat warranty to become void and may incur a service charge and/or cost of parts:

1. Accidental damage to the CFEWH 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 CFEWH other than by a MicroHeat Accredited Service Agent, the MicroHeat Service Department or a repairer not approved by MicroHeat.
2. Where it is found there is nothing wrong with the CFEWH 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 CFEWH or CFEWH 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, MicroHeat may then charge the consumer a nominal service charge if inspection reveals no fault with the CFEWH unit or its installation.
3. Where the CFEWH or CFEWH 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 CFEWH water heater.
4. Where the CFEWH is located in a position that does not comply with the MicroHeat CFEWH 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 CFEWH to a serviceable position.
5. Repair and/or replacement of the CFEWH 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 CFEWH 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.

Subject to any rights you have under Australian 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.

**MicroHeat Contact Details**



**For Technical Support before and after  
Installation**

**Phone: 1300 981 325**

**Email: [info@microheat.com.au](mailto:info@microheat.com.au)**

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**MicroHeat Technologies Pty Ltd**

**20 Pickering Road  
MULGRAVE VIC 3170  
AUSTRALIA**

**[www.microheat.com.au](http://www.microheat.com.au)**

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**CFEWH Mounting Template**



**UP**

**8MM X 65MM  
(Minimum length)  
SCREWS**

**CFEWH  
MOUNTING  
TEMPLATE**

