



# Calitec

HOT WATER SYSTEMS



## Manual - Model KP-50 – 300L

Version: March 2020

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## **Installation & Maintenance**

The installation of a Calitec Hot Water System is exclusively allowed by qualified tradesman.

It has to be done according to NZ building codes and local regulations. Do not install the unit by yourself (customer). Incomplete installation could cause injury due to fire or electric shock. Incorrect installation can also void the warranty.

It is a set-and-forget system with very little maintenance. Once your installer(s) are finished there is very little you have to do.

### **Maintenance of the outdoor unit:**

It is very important important that the air can flow unhampered through the outside unit. Keep it free from weeds and spider webs and don't block it off in any other way. A restricted or blocked air flow can result in a higher power consumption or failure of the unit.

It is also very important that the compressor unit is fitted level. Your installer will make sure that it is fitted correctly, but regularly check and make sure that it remains level. The lifetime of the compressor unit will be shortened with unlevelled operation.

Please inform your installer if you don't think it is level anymore.

### **Maintenance of the hot water cylinder:**

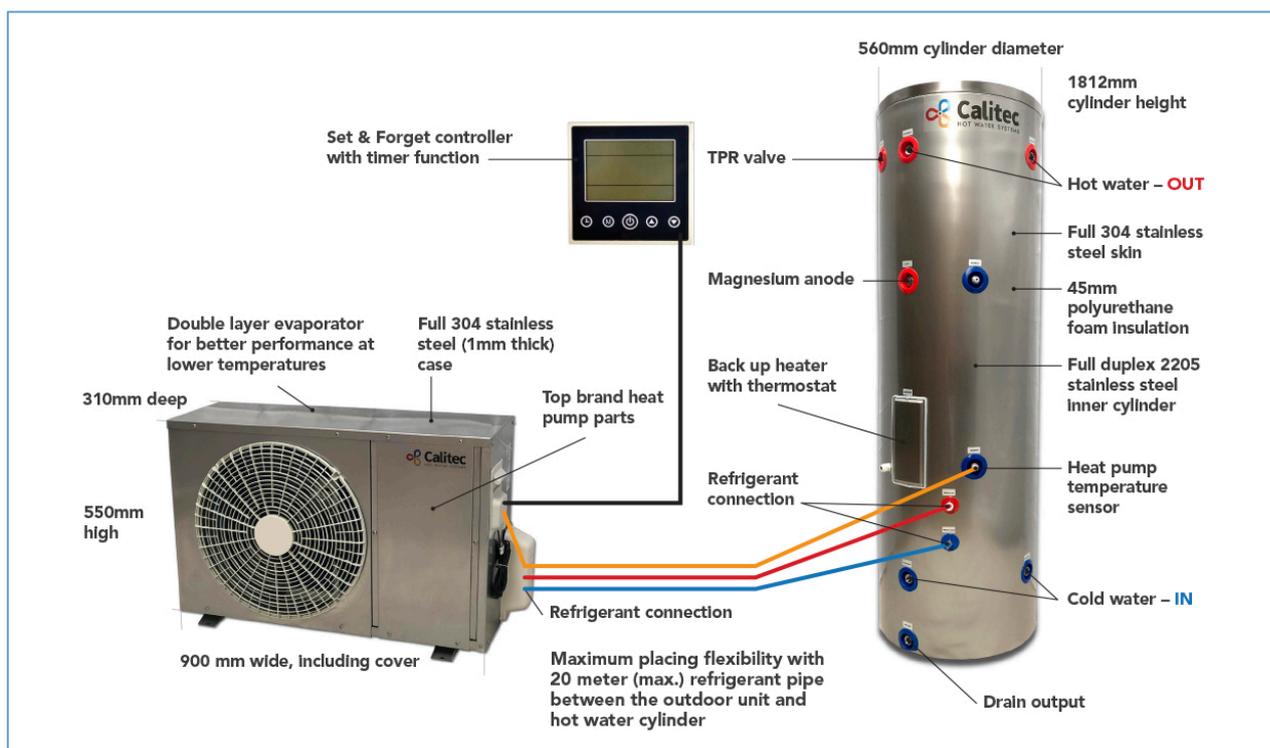
Mains pressure systems are fitted with a Pressure & Temperature Relief Valve (PTR Valve), once a month the release mechanism on the valve has to be activated to ensure its continuing function. When the release mechanism is jammed, the hot water pressure in your system could become too high causing all kinds of trouble.

## Hot Water Cylinder - Installation

The hot water cylinder can be used as a low water pressure cylinder or as a mains water pressure cylinder.

The installation must be carried out by a qualified plumber and installed according to local rules and regulations. **The hot water cylinder is to be considered as a normal hot water cylinder.** Only the heating part is different. The cylinder must be installed vertically.

The electric heater needs to be connected by a qualified electrician. The electric heater is strictly a back-up heater and should be switched off at normal operation of the heat pump hot water system.



## Outdoor Unit - Installation



The outdoor unit needs to be installed by a qualified heat pump split system installer/ refrigerant filler.

The best location for the outdoor unit is a place where:

- It is not exposed to strong winds.
- Airflow is good and dustless. At least 100mm space around the unit and 800mm space at the front.
- Neighbours are not annoyed by the operation sound.
- There is no risk of combustible gas leakage.
- The condensation water can flow to a drain or will be absorbed by the soil.
- Flooding water cannot reach the base of the unit.
- The outdoor unit should be fitted on feet on a level base or on a wall bracket.

Please avoid locations where trouble is liable to occur:

- Where flammable gas could leak.
- Where there is much machine oil.
- Salty places such as the seaside.
- Where sulphide gas is generated.

The refrigerant R410a, pre-charged in the outdoor unit, is suitable for 5 meter copper pipe. If the refrigerant pipes between the outdoor unit and the hot water cylinder exceeds 5 meter, please add 10g R410a refrigerant per extra meter of pipe. The maximum pipe length is 20 meters.

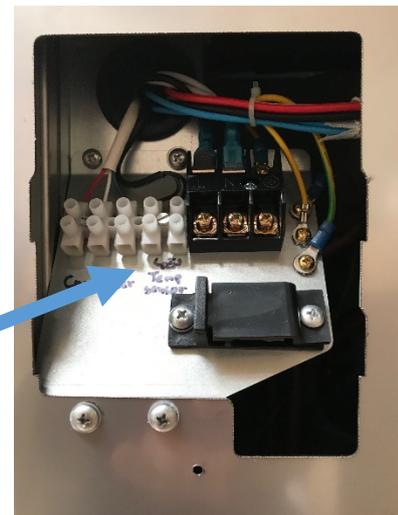
## Display Controller - Installation

The display controller is stored behind the front panel, together with the temperature sensor.



The controller needs to be connected to the outdoor unit with a 3 core cable (cable not supplied).

The sensor cable could be cut to the required length and connected on the same terminal block as the controller.

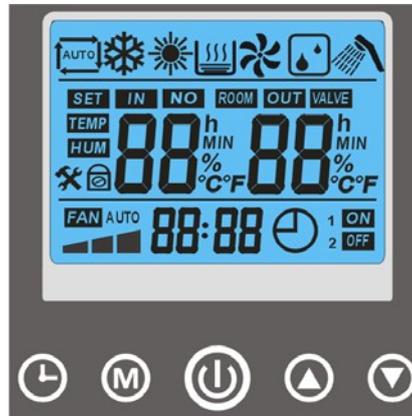


## First start up

- 1) Open the high and low pressure refrigerant valves.
- 2) Open water switch and fill the hot water cylinder with water.
- 3) Make sure that the cylinder is filled with water.
- 4) Make sure that the temperature sensor is in the lower temperature probe pocket of the cylinder.
- 5) Connect the power cable.
- 6) Turn the system on at the control panel.
- 7) The Controller is pre-set for Cylinder heating at 60°C. All you have to do is set the clock and if required, the timer (*see Clock setting & Timer setting page 11 & 12*).

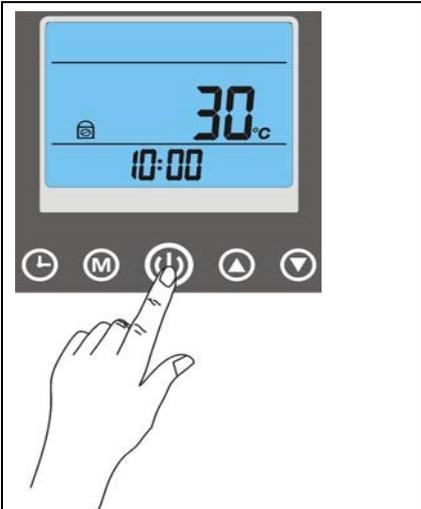
# Control panel

Description of display panel:



 ROOM COOL mode	 parameter setting
 ROOM HEAT mode	 key lock
 Cylinder HEAT mode	 timer on
 Defrost mode	 timer off
 first 88 is setting temperature, second 88 is current temperature	 setting temperature
 symbol for ROOM HEAT, ROOM COOL	 Clock adjust
 Clock/Timer/Parameter display	 Degrees Celsius

## Key Lock function

	<p>When  is on, key lock function is on. Press the  button for 6 seconds to release key lock.</p> <p>The key lock function will be back on after not touching any button for 30 seconds.</p>
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Mode select (note: PK-50 models have only Cylinder HEAT)

 <p>The display shows a water droplet icon at the top. Below it, 'SET' is on the left and '35' is on the right, both above '°C'. The left side shows '52' above '°C'. At the bottom is '10:00'. Below the display are five buttons: a clock icon, 'M', a power icon, an up arrow, and a down arrow.</p>	<p>Cylinder HEAT mode: Left side is set temperature, right side is actual water temperature. Press  or  to change the set temperature. Press  button to go to the next mode.</p>
 <p>The display shows a snowflake icon at the top. Below it, 'SET' is on the left and '20' is on the right, both above '°C'. The left side shows '10' above '°C'. At the bottom is '10:00'. Below the display are five buttons: a clock icon, 'M', a power icon, an up arrow, and a down arrow.</p>	<p>ROOM COOL mode: Not at this model. Press  button to go to the next mode.</p>
 <p>The display shows a sun and water droplet icon at the top. Below it, 'SET' is on the left and '35' is on the right, both above '°C'. The left side shows '52' above '°C'. At the bottom is '10:00'. Below the display are five buttons: a clock icon, 'M', a power icon, an up arrow, and a down arrow.</p>	<p>AUTO1 mode: Not at this model. Press  button to go to the next mode.</p>
 <p>The display shows a snowflake and water droplet icon at the top. Below it, 'SET' is on the left and '35' is on the right, both above '°C'. The left side shows '52' above '°C'. At the bottom is '10:00'. Below the display are five buttons: a clock icon, 'M', a power icon, an up arrow, and a down arrow.</p>	<p>AUTO2 mode: Not at this model. Press  button to go to the next mode.</p>

## Clock setting

	<p>Press  for 6 seconds and 'minute' </p> <p>and  will flash, Press  or </p> <p>to change minutes.</p> <p>Press  and the 'hour'  will flash,</p> <p>Press  or  to change hour.</p>
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## Timer setting:

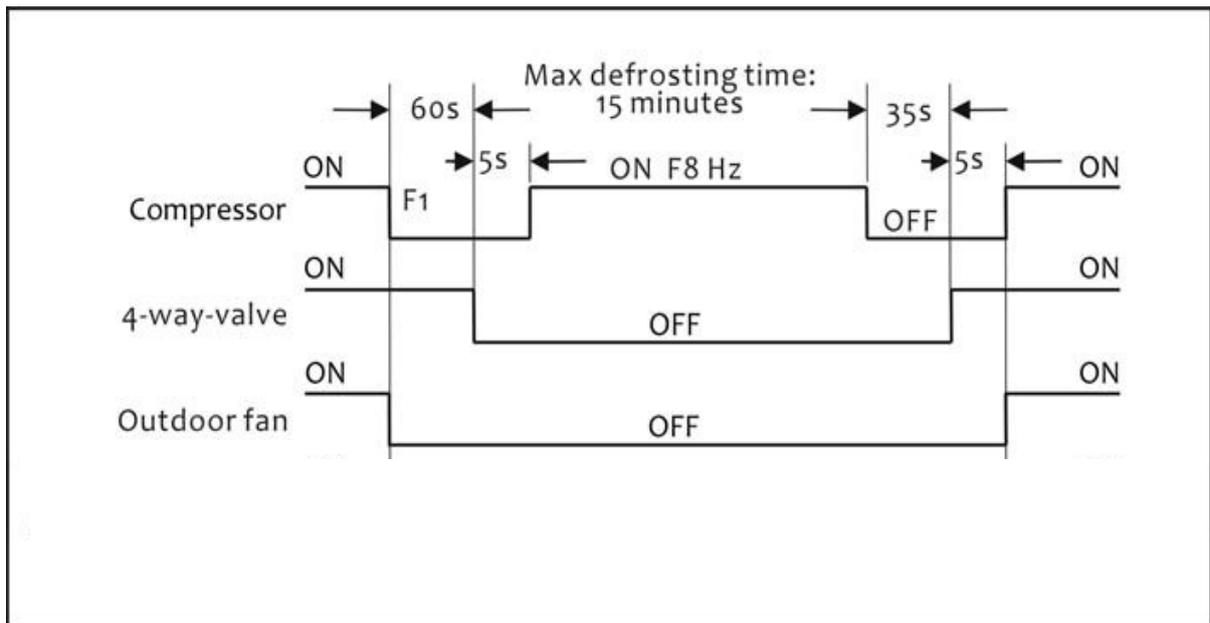
	<p>Press  and the 'minute'  and  flash.</p> <p>Press  or  to change minute of TIMER ON.</p> <p>Press  and the 'hour'  and  flash.</p> <p>Press  or  to change hour of TIMER ON.</p>
	<p>Press  and the 'minute'  and  flash.</p> <p>Press  or  to change minute of TIMER OFF.</p> <p>Press  and the 'hour'  and  flash.</p> <p>Press  or  to change hour of TIMER OFF.</p>
	<p>Press  to cancel TIMER ON, TIMER OFF.</p>

## Defrosting



When this symbol is lit, the outdoor unit is in defrosting mode. This is an automatic process to remove the ice from the evaporator. It takes about 17 minutes and the heat pump will resume working afterwards. Depending on the ambient temperature and humidity this could occur several times.

### Process of defrosting:



## Water quality requirements

PH Value	6.5 – 8.0
Electrical Conductivity	< 200 $\mu\text{V}/\text{cm}$ (25°C)
Total Hardness	< 50 ppm
Sulfone Ion	No
Chloride Ion	< 50 ppm
Ammonia Ion	No
Sulphate Ion	< 50 ppm
Silicon	< 30 ppm
Iron	< 0.3 ppm
Sodium	No
Calcium Ion	< 50 ppm

## Error messages

The outdoor unit is equipped with regulation and safety components; when a regulation component is defective or a safety sensor is activated, a message is posted like it's illustrated below. Call your installer for help.

E01	Cylinder water sensor	E10	Low pressure protection
E02	Ambient sensor	E11	Compressor over-heat protection
E03	Compressor exhaust sensor	E12	Anti-freeze protection in winter
E04	Evaporator sensor	E13	Water return sensor
E05	Compressor return sensor	E14	User water return sensor
E06	Water outlet sensor	E15	After EEV sensor
E07	Water-flow-switch	E16	Low ambient temperature protection
E08	Communication problem between controller and PCB	E17	Water temperature too high between inlet and outlet
E09	High pressure protection	E18	Phase-order protection

## Technical Sheet

<b>Model</b>			<b>KP-50/300L</b>
Power supply		v/ph/hz	220-240/1/50
Rated heating capacity		kW	4
Rated power input		kW	1
Maximum power input		kW	1.54
Water production		L/h	73
Refrigerant			R410A
Rated / Maximum current		A	4.5 / 8
Rated water temp. – heat pump heated		°C	60
Level against electric shock			I
Water-proof grade			IPX4
Heat pump unit	Net weight	kg	40
	Net size (L/W/H)	mm	900x310x550
Hot water cylinder	Net weight	kg	43
	Net size	mm	Ø 560X1812
	Water connection		G 3/4"
	TPR valve	kPa	850
Refrigerant connection pipes diameter		mm	Ø 6.35 & Ø 9.52
Operation temp. range		°C	-10 to +45
Noise		dB(A)	56

Test condition Heating: Ambient temp. (DB/WB): 20/15 °C, Water temp. (Initial/Final): 15/55 °C.

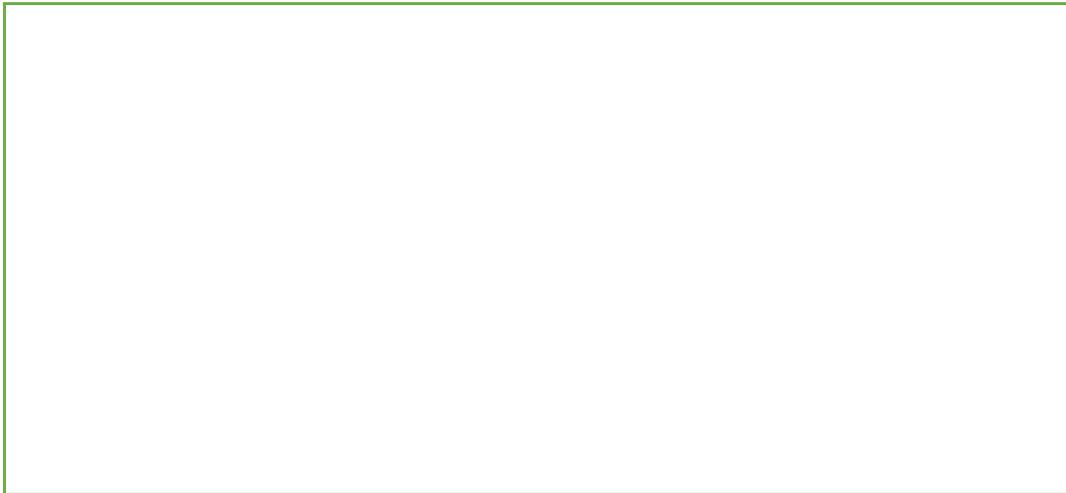
## Contact details

Calitec Hot Water Systems Limited [www.calitec.nz](http://www.calitec.nz)

ph. 0800 125 225

[info@calitec.nz](mailto:info@calitec.nz)

Your local installer:



## Warranty

Calitec Hot Water Systems are provided with a 5-year warranty on the outdoor unit and 20-year warranty on the stainless steel hot water cylinder, if installed through qualified installers.

Check out full Warranty Terms & Conditions of Calitec Hot Water Systems Ltd on [www.calitec.nz](http://www.calitec.nz) .

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