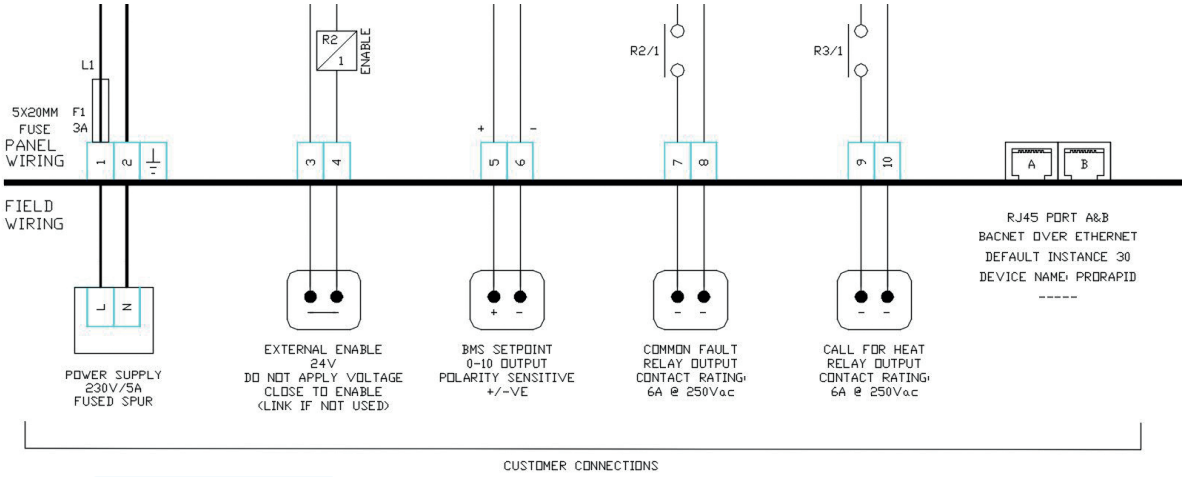
CHWS

ProRapid FW14

Controls Manual

1.1 Electrical Connections

Customer connections are located at the bottom of the panel, a Triangle panel key is cable tied to the overheat thermostat cable, use this to gain access.



Any penetrations for stuffing glands/copex should be made on the right-hand side of the enclosure.
4 indentations show where it is safe to drill.

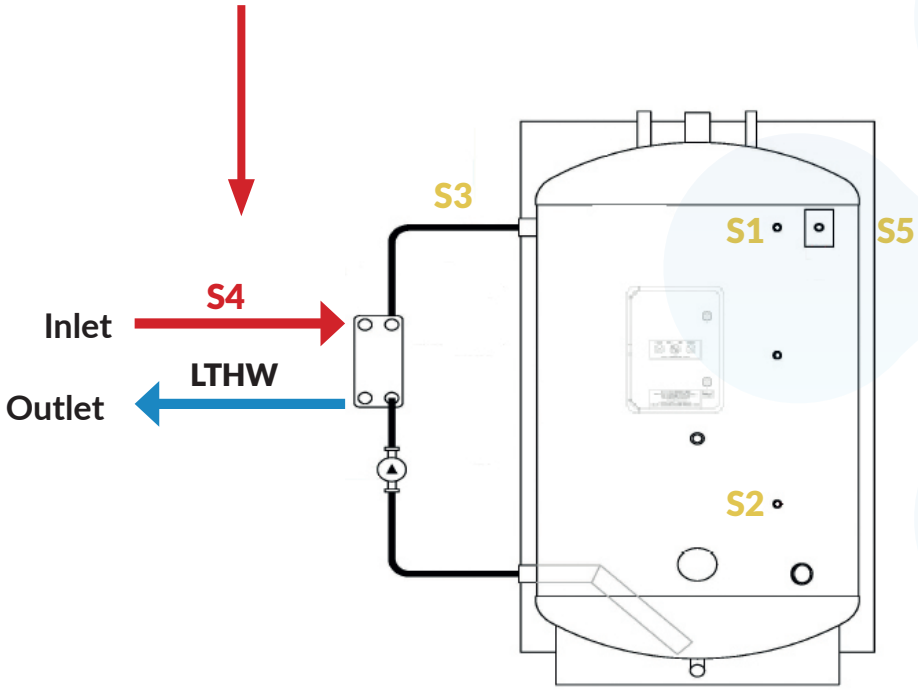
Terminals	Voltage	Description
1&2	230V/5A	5A Power Supply from suitable fused spur/isolator
3&4	Switched 24V Enable	Remote Enable, Link if not used
5&6	5(+ve) & 6(-ve) 0-10Vdc	Remote Setpoint, polarity sensitive 0.1V=1°C
7&8	250Vac/6A Max	Common Fault Relay Output
9&10	250Vac/6A Max	Heat Demand
Ethernet	2 ethernet ports are located at the top right of the panel, these can be used for BACnet Communications or a hub	

1.2 Electrical Connections

All sensors are prewired to the controller:

Sensor 1, Cylinder Top
Sensor 2, Cylinder Bottom
Sensor 3, Off Plate Heat Exchanger
Sensor 4, Incoming LTHW (See Note 1)
Sensor 5, Over Heat Thermostat

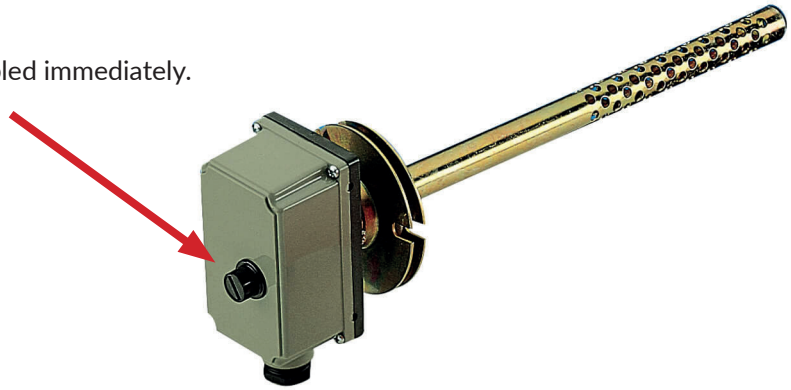
Important Note:
Sensor 4 needs to be clamped to the incoming LTHW pipe work with the jubilee clip provided, before the pipe work is lagged.



Overheat Thermostat:

The overheat thermostat is factory set to 80°C. If tripped it must be manually reset.*

*When tripped the loading pump is disabled immediately.



1.3 Powering Up

Once Powered up the white LED is illuminated to indicate power supply is healthy.

The Red LED is a common fault indication.

With the switch in OFF no hot water will be generated.

When the switch is On hot water will be generated as long as primary LTHW is available.

Prorapid Status LED and Off/On Switch

Fuse Chart:

Fuse:	Rating	Location
F1, Mains In	3A 20x5mm	Terminal 1
F2, Pump Out	1A 20x5mm	Terminal 18
2 Spare fuses included in the panel		

2.0 Logging on

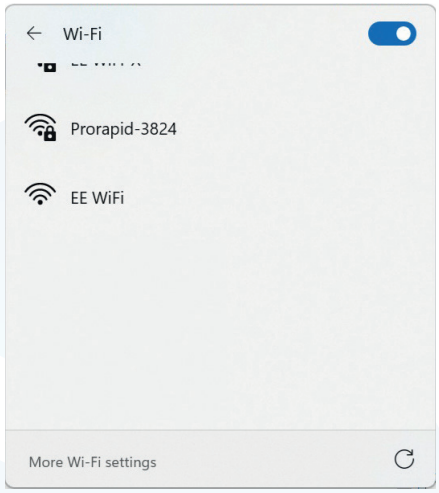
The Prorapid controls can be accessed by any web enabled device via Wi-Fi or wired connection (RJ45), PC/Tablet/Smartphone etc.

Once connected any web browser can be utilized to access the Dashboard thus view status and change settings if required.

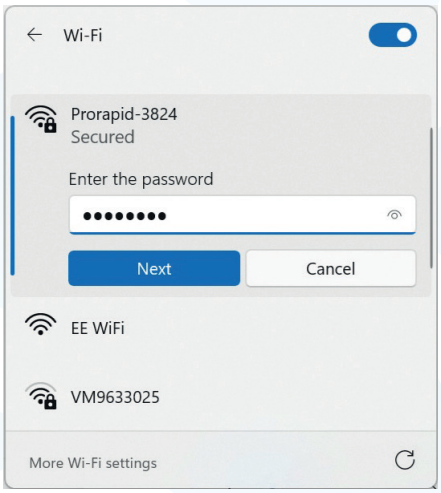
Prorapid Status Dashboard

2.2 Connect Via Wireless PC

1. To connect via wireless simply open the wireless settings of your device:



2. You will see the Prorapid SSID, PRORAPID-XXXX , where XXXX is the last 4 digits of the MAC address,
Thus making each SSID unique.



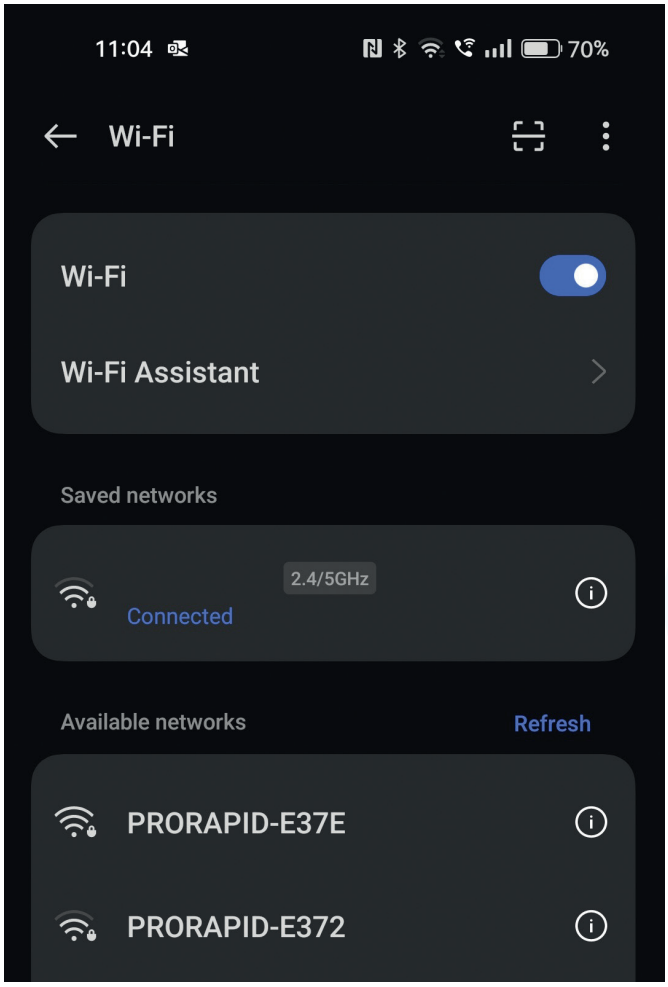
3. Enter the network security key:
chws1234

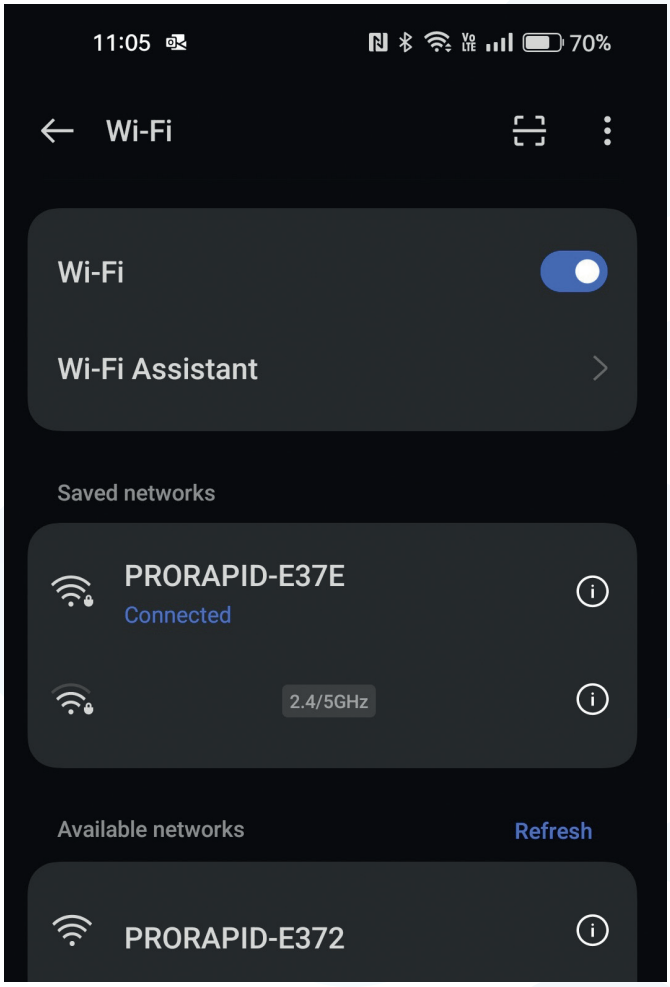
4. Once successfully connected open a web browser.

2.3 Connect Via Android Phone/Tablet Wireless

1. The process is exactly the same if using a smart phone/tablet.

Locate Settings/Wifi:





2. Select the required Prorapid, enter the network security key: chws1234

3. Once connected your device should remember the network.

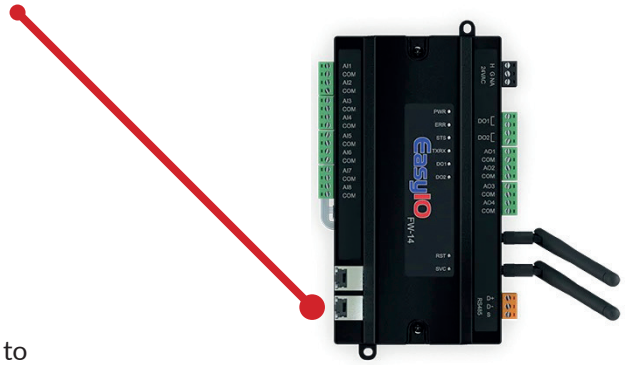
3.0 Connect Via RJ45 Lead

1, The controller has 2 ethernet ports on board which function as a normal unmanaged network switch.

They support 10/100 Mbps Half Duplex and Full Duplex.

They share the same IP Address, 192.168.10.30 (default).

Located in the top bottom left hand side of the controller.

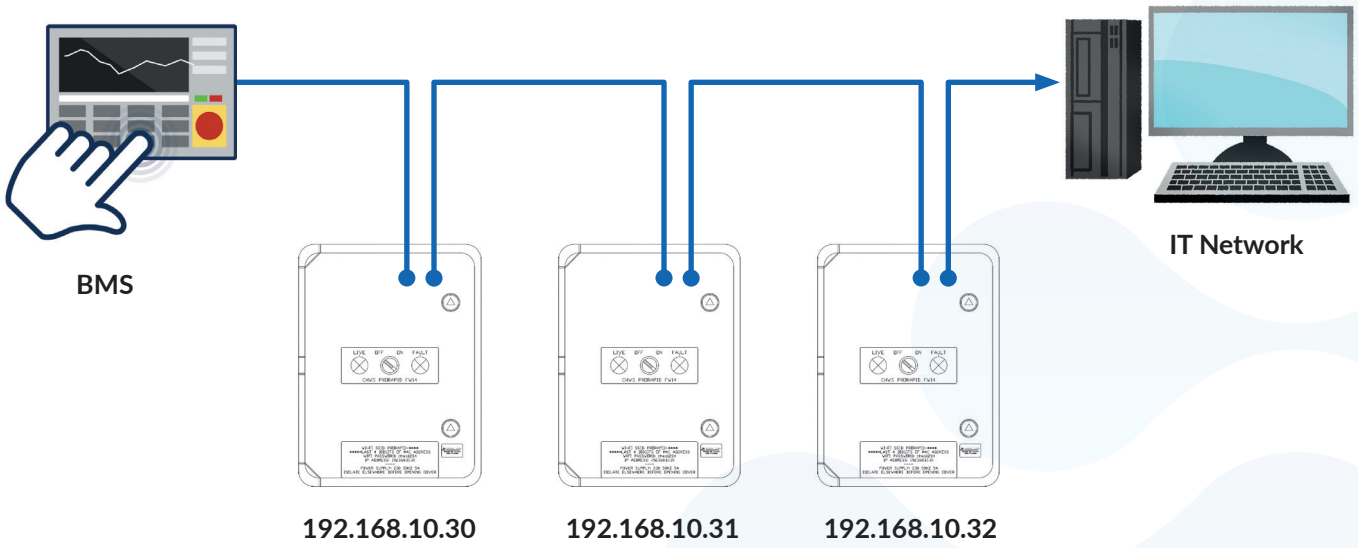


2, Your device will have to have a manually set IP Address to communicate with the controller or be set to Automatic (DCHP).

3, If an alternative IP Address is required a hard wired connection should be used to access the controller network settings. See Advanced Controls Guide.

3.1 Connect Via RJ45 Lead Networking

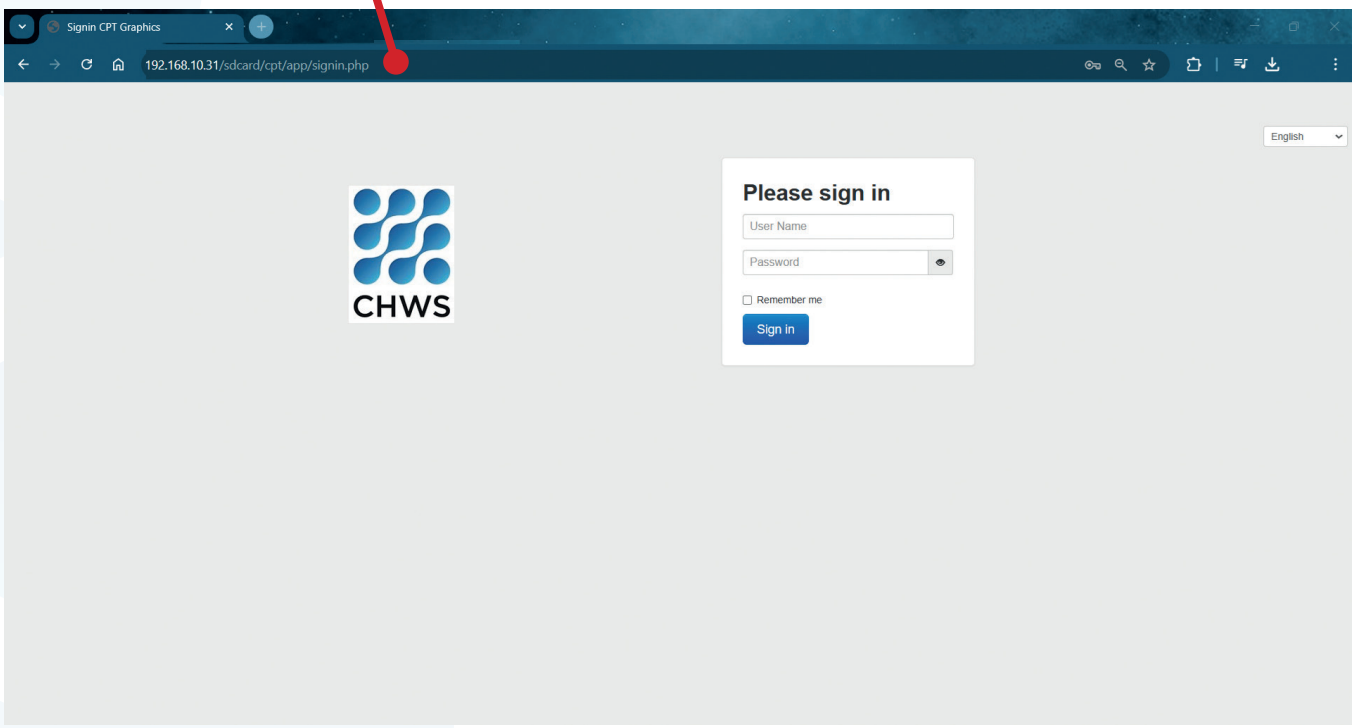
1, The controllers ethernet ports can be used to network multiple controllers or connect to a BMS or IT network.



Before connecting the controllers in a network, the IP addresses must be changed. See Advanced Controls Guide.

4.0 Logging On

Once Connected to the ProRapid Controller simply type the IP address (Default 192.168.10.30) into the Web browser:



4.1 Logging On

Usernames and Passwords are available depending upon access level required:

Level	User Name	Password	Manage Dashboard	Change Settings	View Dashboards
3	Manager	Prorapid2468+	✔	✔	✔
2	Operator	Prorapid5678!		✔	✔
1	Viewer	Prorapid1234!			✔

Usernames and Passwords can only be changed by accessing the Engineer Level, See “Advanced Settings”.
For security passwords must contain:

One Uppercase Letter
one lowercase letter
0ne Num8er
One special character!

5.0 Dashboard

The Prorapid Dashboard shows the current status of the hot water generator.
Actual view may vary depending upon screen size.
No values can be adjusted on this page.

Current Setpoint:

Average Hot Water Temperature:

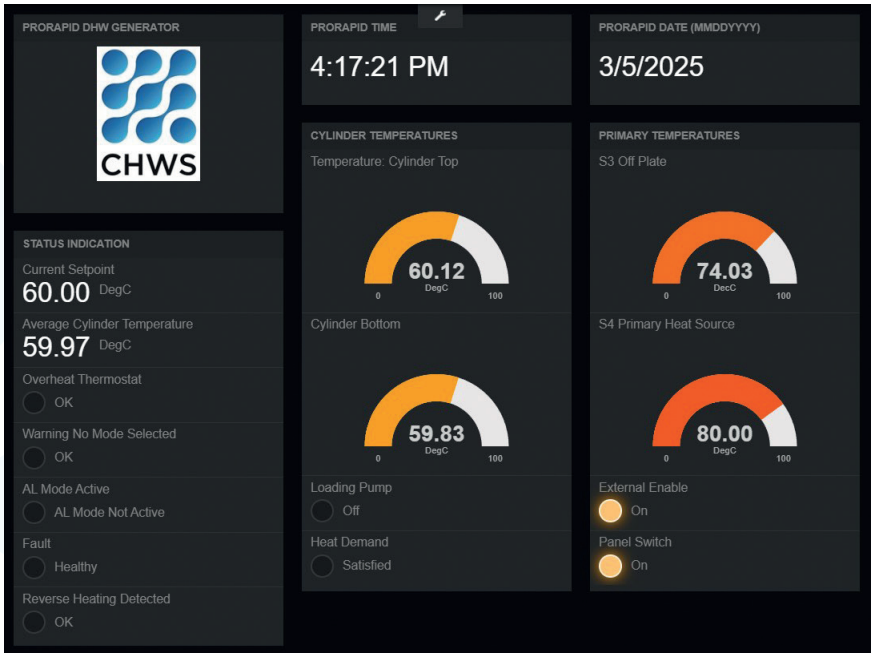
Overheat Thermostat Status:

Waring No Mode Selected:

AL Mode Activated:

Common Fault:

Reverse Heating Detected:



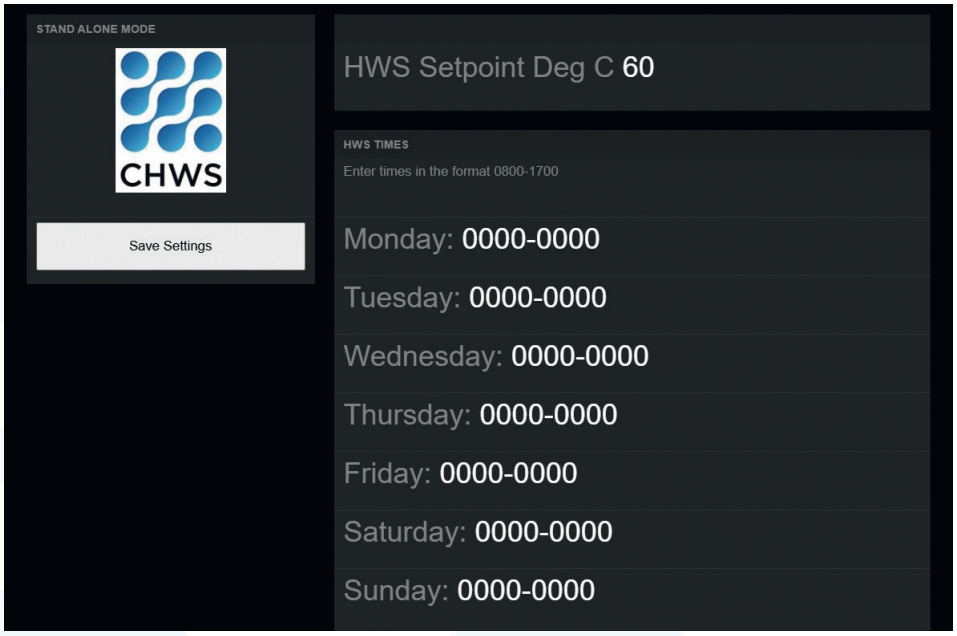
5.1 Dashboard

To access settings and modes locate and tap the + symbol in the bottom left hand corner: 

The side menu is opened on the left-hand side, giving a choice of options.

5.2 Dashboard, Standalone Mode

Enter the desired hot water set point and operating times for hot water generations:



Times must be entered in the format:
0700-1900

Which would be:
7am-7pm

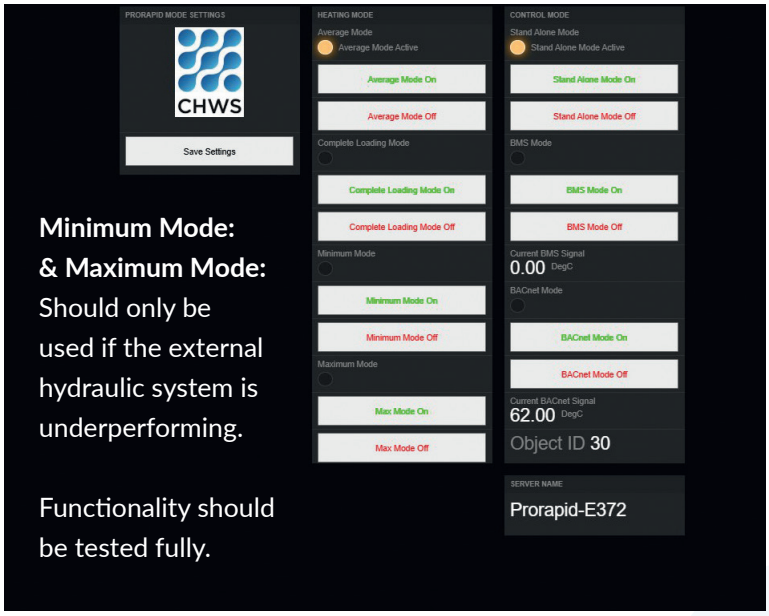
24 hour operation:
0000-0000

Stand alone mode will always override BMS or BACnet mode.

Click Save to store any changes.

5.3 Dashboard Mode Setting

Set the Heating Mode of the ProRapid, the Prorapid will not function if no mode is set:



Average Mode:
The Cylinder is heated until the average of S1 & S2 is reached (Default).

Complete Loading:
The Cylinder is heated until Sensors S1 and S2 are at setpoint.

Minimum Mode:
The Cylinder Is heated until the lowest of the 2 sensors reaches set point.

Maximum Mode:
The cylinder is heated until on sensor reaches setpoint.
Maximum mode can also be used to overcome a cylinder sensor failure.

Click Save to store any changes.

5.4 Dashboard Mode Setting

The modes are also in a hierarchy , so that highest mode on the page takes control.

Average mode overrides complete loading

Stand alone mode overrides BMS mode.

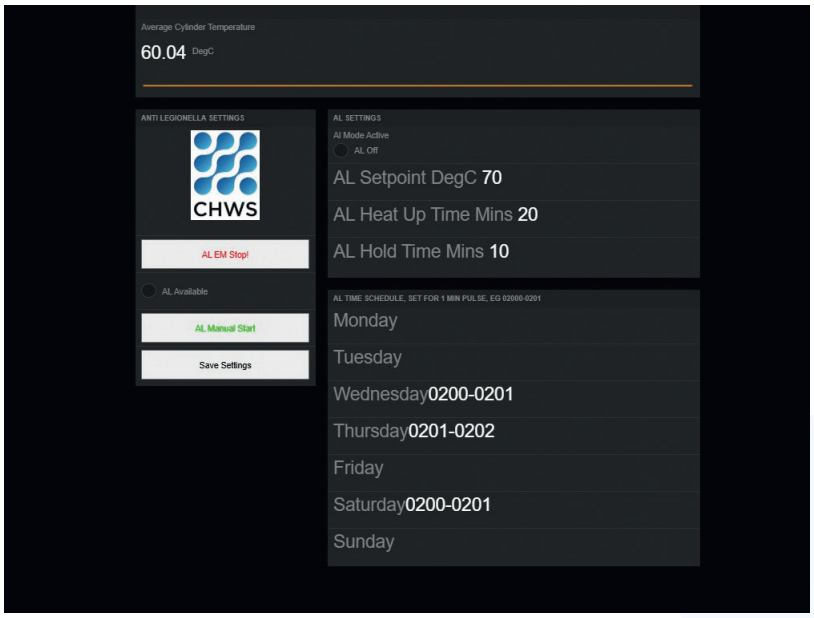
If multiple modes are set the highest one takes control.

The Prorapid will not function if no mode is set, and a fault will be generated.

6.0 Anti Legionella (AL) Setting

AL settings allow the cylinder to be heated to a higher temperature temporarily for sterilization.

Should the AL emergency stop button be used, the heat up and hold timers must be allowed to run down before another AL cycle can be started.



Times must be entered in the format:
0200-0201

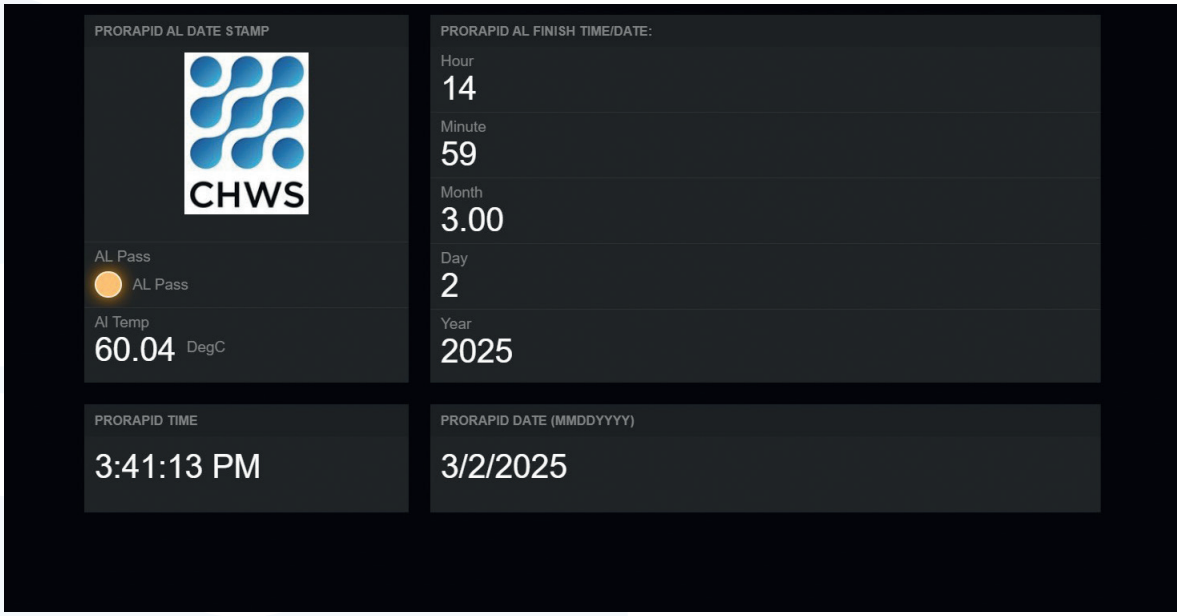
Which would be:
2am-2:01am

A one minute “Pulse” sets the AL routine off.

Setpoints and times will depend upon the primary LTHW temperature available.

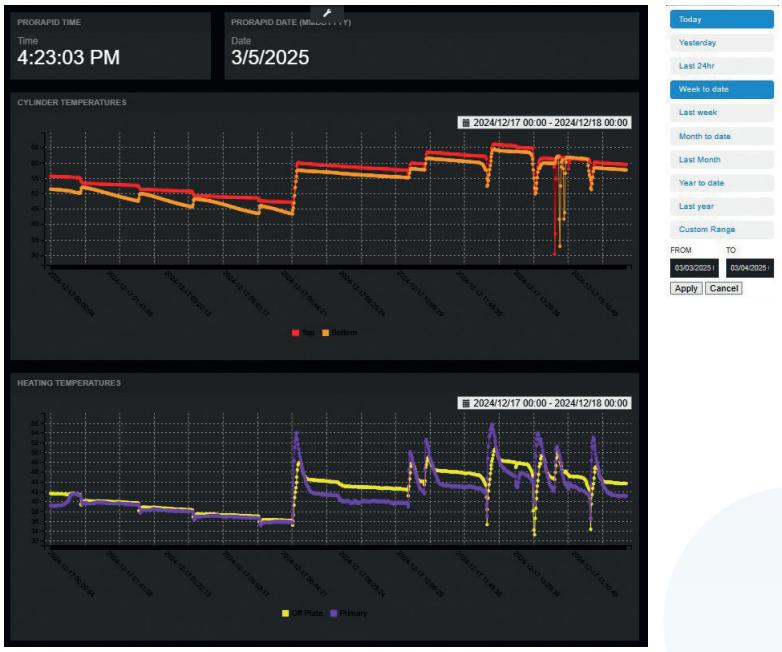
6.1 Anti Legionella (AL) Date Stamp

AL Date Stamp records the date, time and temperature of the AL cycle.
Pass/Fail is also recorded.



6.2 Anti Legionella (AL) Date Stamp

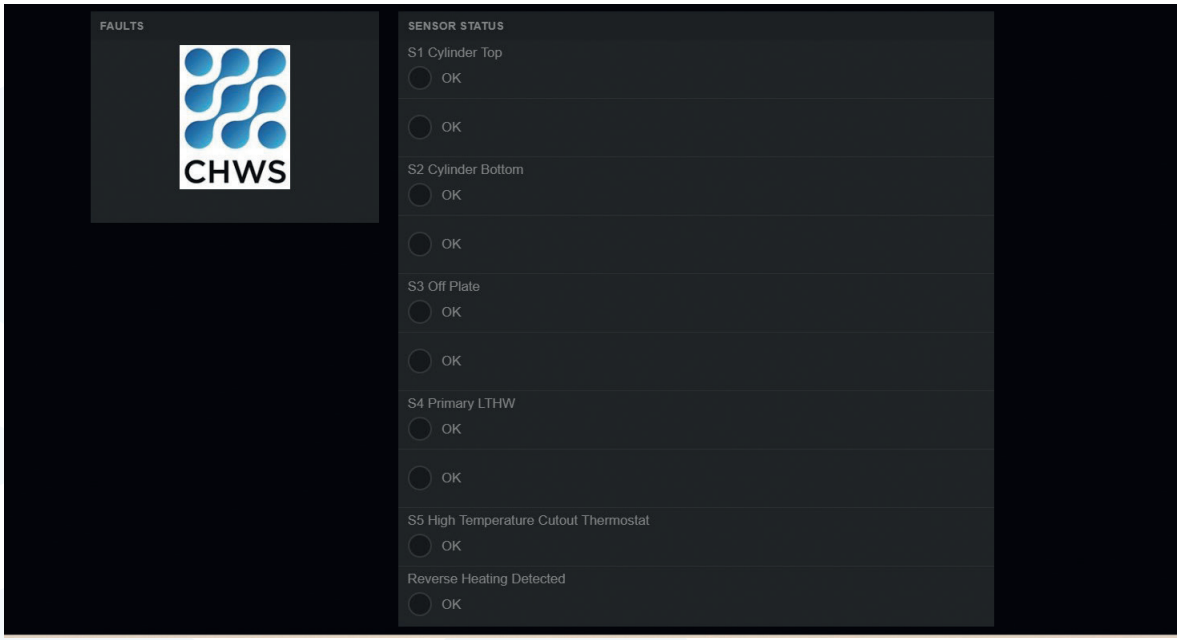
Sensor Values are recorded and displayed as graphs, up to 2 weeks of data can be stored



Click to change the date range

7.0 Fault Indication

Should the Common Fault be indicated on the status dashboard this page details the exact fault.



Sensors have a high and low fault indication.

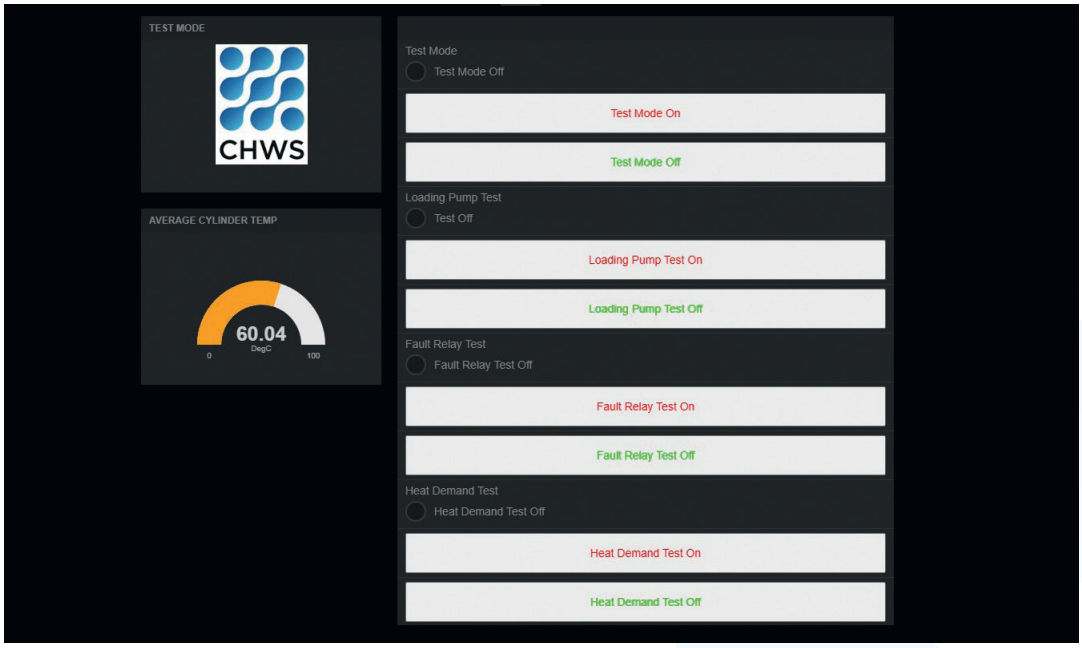
Fault condition is generated if sensor level is above or below a set level for a set time.

Cylinder Sensor Failure or any High Temperature Alarm will stop hot water production immediately!

High Limit Stat Fault shuts the power off to the loading pump and raises an alarm!

8.0 Test Mode

These should only be used to test the outputs function.

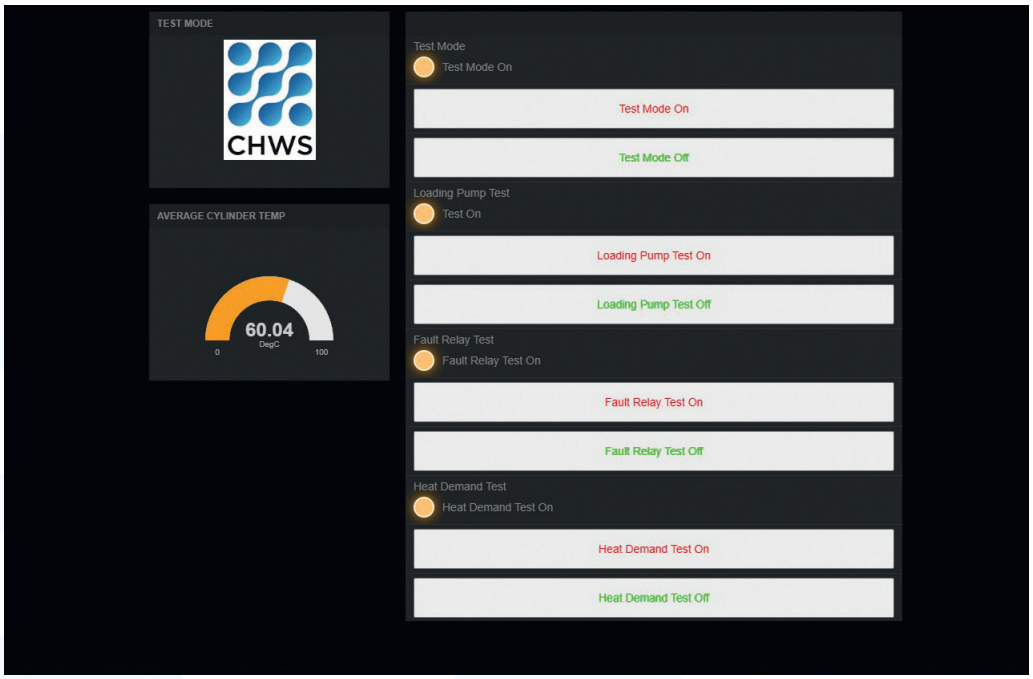


Test Mode has to be enabled for the individual buttons become active.

When test mode is disabled, all functions return to atomatic operation.

9.0 Test Mode

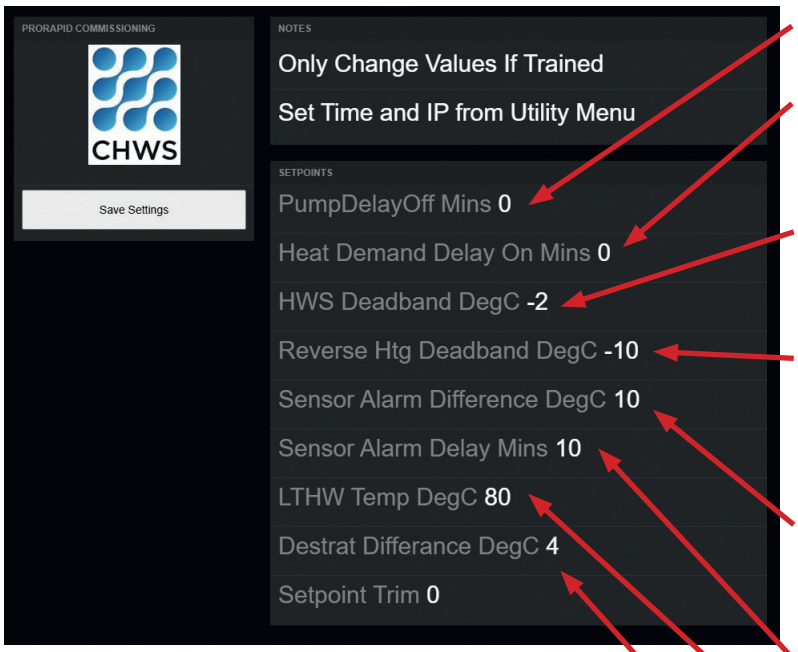
Test Mode Enabled.



Should there be a problem with HWS generation the loading pump and heat demand can be overridden to On.

But the primary LTHW temperature must be set at the desired HWS temperature.

10.0 Commissioning Settings



Time to delay the loading pump being disabled

Time to delay the heat source from being disabled

Degrees below set point HWS heating is reinitiated.

Difference in temperature between S4 and S3 at which temperature is transfer back to primary, unit shuts down.

Temperature above/below setpoint alarms are raised

Time delay for alarms to be raised

Primary LTHW Value

Difference in temperature between S1 and S2 at which temperature loading pump is activated to de-stratify.

CHWS LTD

71-72 Gazelle Road, Weston Industrial Estate, Weston-super-Mare, Somerset BS24 9ES / t. 01934 244770 / e. info@chwsltd.co.uk / www.chwsltd.co.uk