TACTROL 3

USER MANUAL

V.7

CONTENTS PAGE

1.0 Introduction

TACTROL 3 is Priorclave's new generation user interface with crystal clear LCD display and simplistic setting functions. It is a microprocessor control system which has been specifically developed for laboratory autoclaves and an upgrade from the reliable TACTROL 2 system. Full setting security is managed with passcodes and the manual key switch which offers increased security for environments that need that added security.
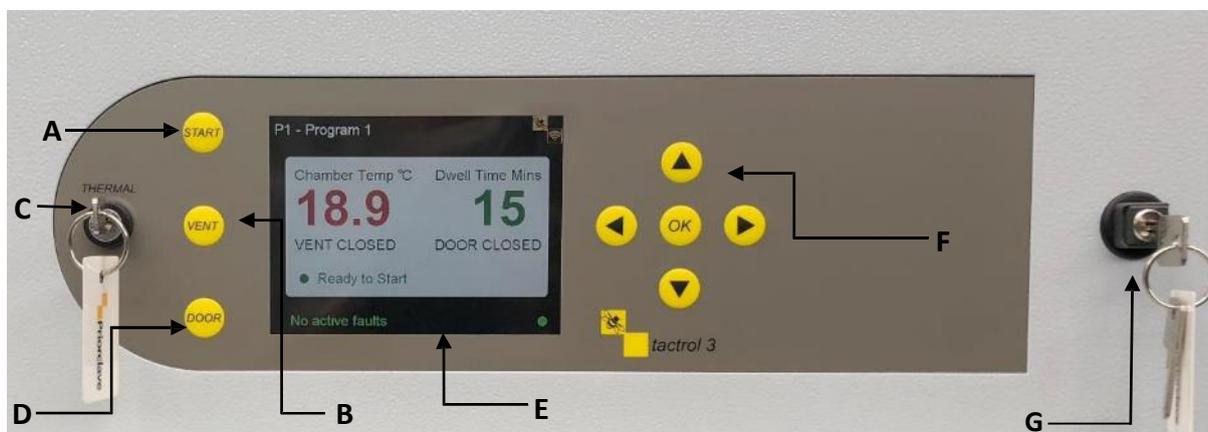
A: Start/Stop Button.

B: Vent button.

C: Thermal lock key.

D: Door button.

E: Display screen.

F: Up, Down, Left and Right arrows and **'**OK' selection button.

G: Setting Key switch

2.0 Access Codes

In order to gain access to the programs, ensure the setting key is in key position '2' or '3', if the key position is in 1 it will only allow the user to start/stop the machine and open the door.

When the key position is in '2' or '3' hold the 'OK' button and wait 4 seconds for the access code screen to appear. Enter the access code required for the access level you wish to access.

The access codes are set in 'Tactrol Tools' by the engineer.

▲   The arrow on the key switch facing upwards is position '1'

▶   The arrow on the Key switch 90°C to the right is position '2'

▼   The arrow turned 180°C is position '3'

Basic access authority

Access code 01

Allows basic operator control to Start/Stop the cycle and gain access to the door operation. This mode will not allow the user to use any other functions such as switching program cycles.
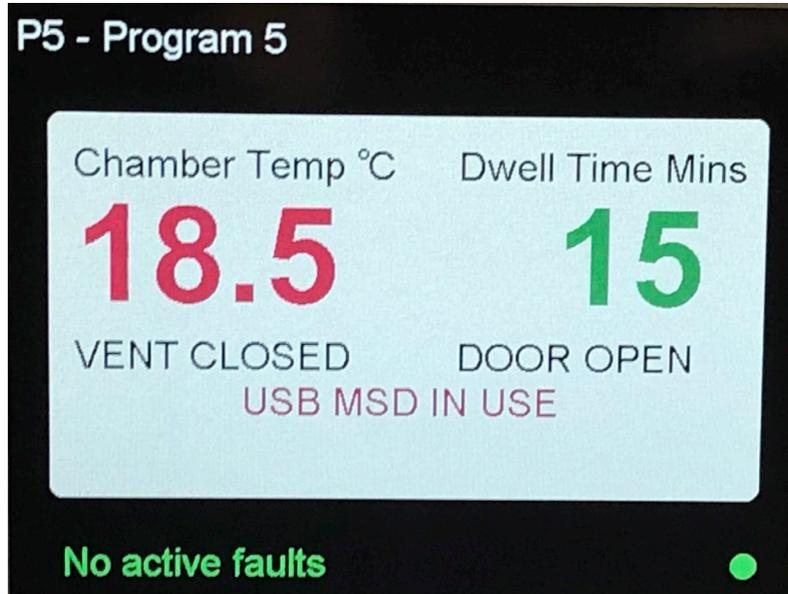
Access code 02

Allows user to Start/Stop the cycle and switch between programs. The user will NOT be allowed to change the settings within the programs.

Access code 03

Allows full access. The user will be able to Start/Stop the cycle, switch between programs and to change the settings within the programs.
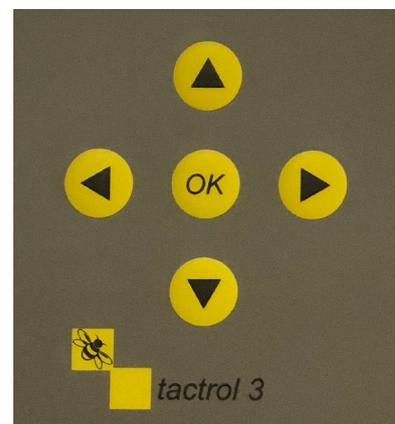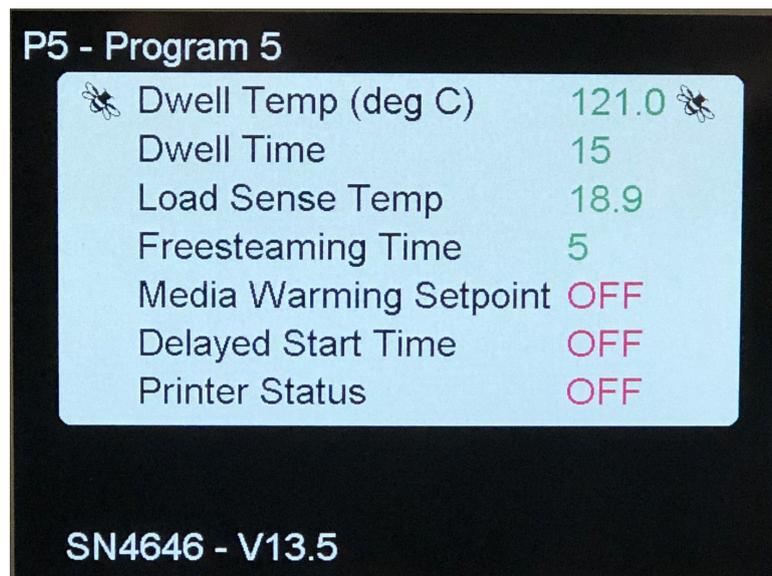
3.0 Setting up Tactrol

Step 1

Above shows the main screen once Autoclave is turned on.
Note: 'USB MSD IN USE' message only displayed once USB inserted. This message will disappear after 20 seconds.

Step 2

Above shows the quick view menu which is accessed by clicking 'OK' on pad shown in the picture above when in the 'home screen'.

This screen allows all the above settings to be changed when the key switch is in position 3. The bee
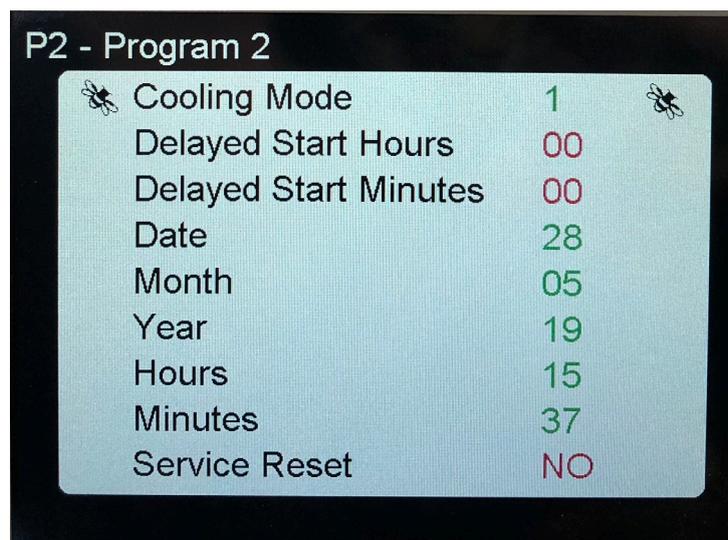
highlights the setting you are on and can scroll through by using the up and down arrows. To change the setting use the left and right arrows.
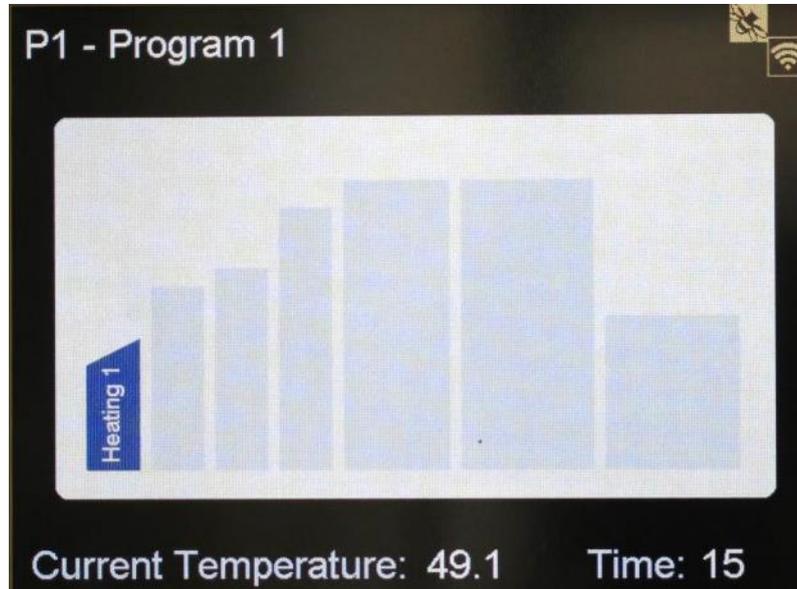
Step 3
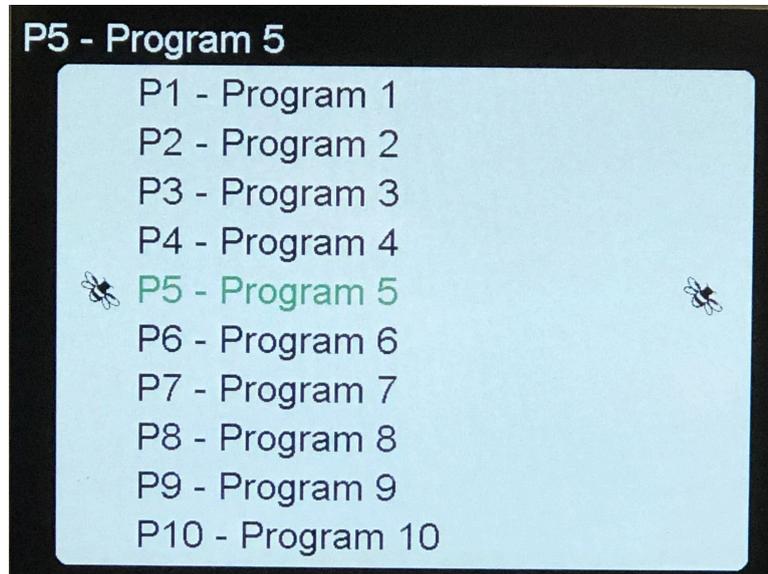
Above shows the program selection screen which is accessed by clicking 'OK' twice whilst in the home screen.

Step 4

This screen is accessed by Holding down 'ok' and entering the access code. These are the advance options that are only available when in 'full access' mode.

Step 5

The image above shows the graph of the cycle progress at heating 1 stage. To view this screen press the 'OK' button when on the main screen once the cycle has started.

Step 6
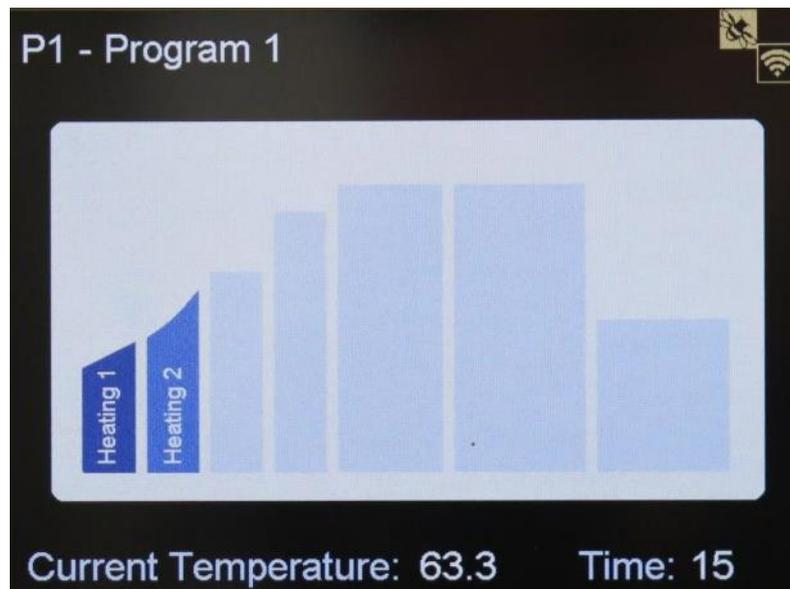
Graph of current cycle at heating 2 stage.

Step 7
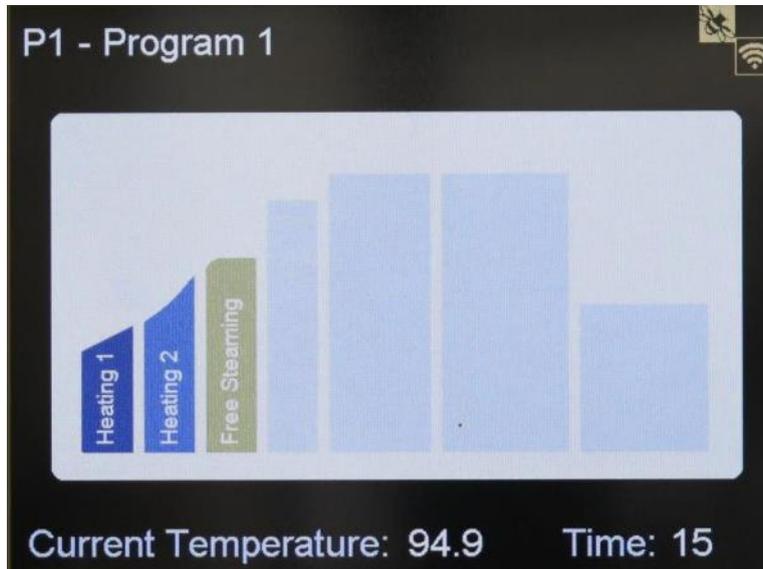
Graph of current cycle at freesteaming stage. (Note: Not shown if freesteam is disabled).

Step 8

Graph of current cycle at heating 3 stage.

Graph of current cycle during the dwell stage.

Step 10

Graph of current cycle at cooling 1 stage.

Step 10

Graph of current cycle at cooling 2 stage.

4.1 Warning Indicators and Fault Codes

Fault codes as stated earlier will be highlighted on the 'Overview' Screen at the bottom of the page.

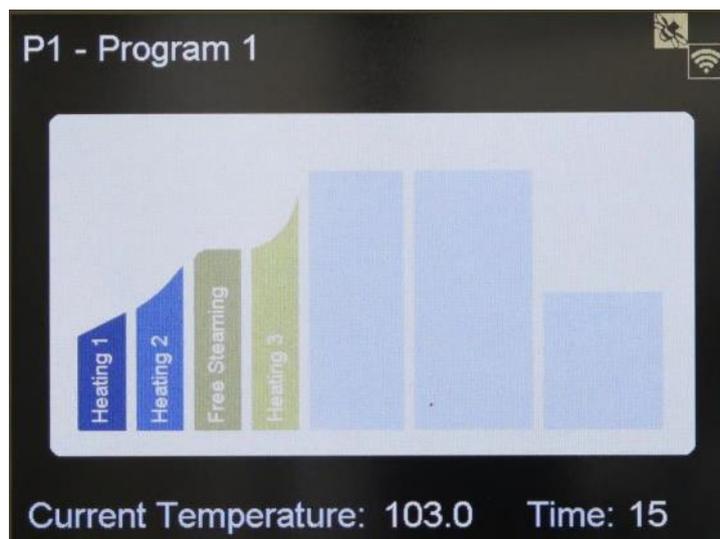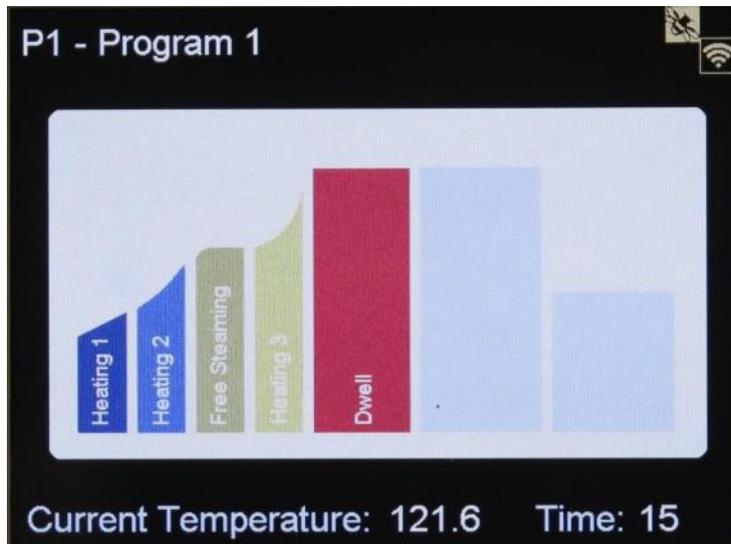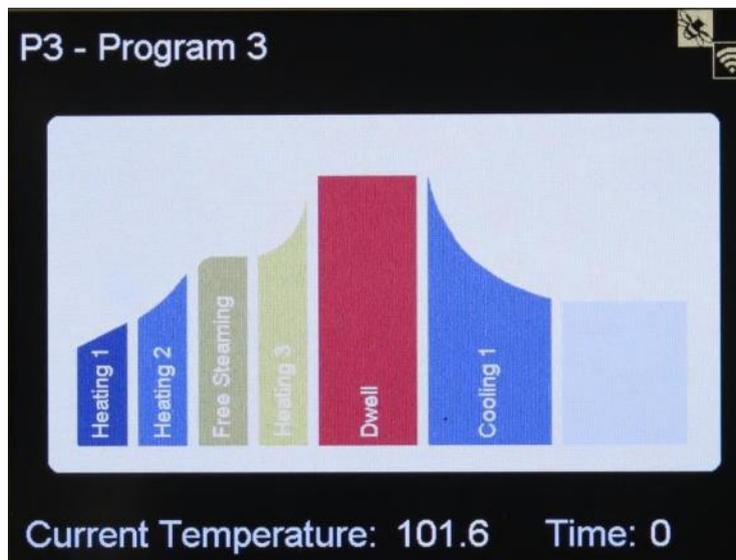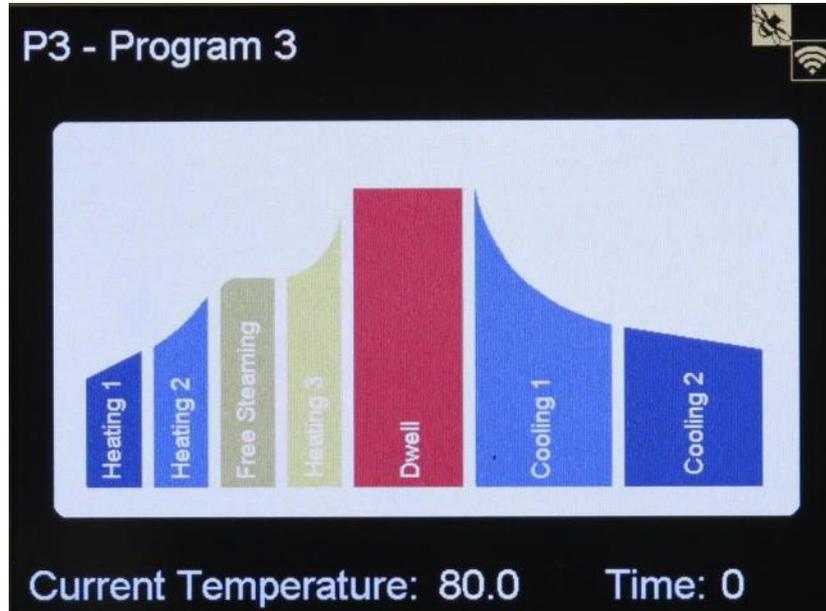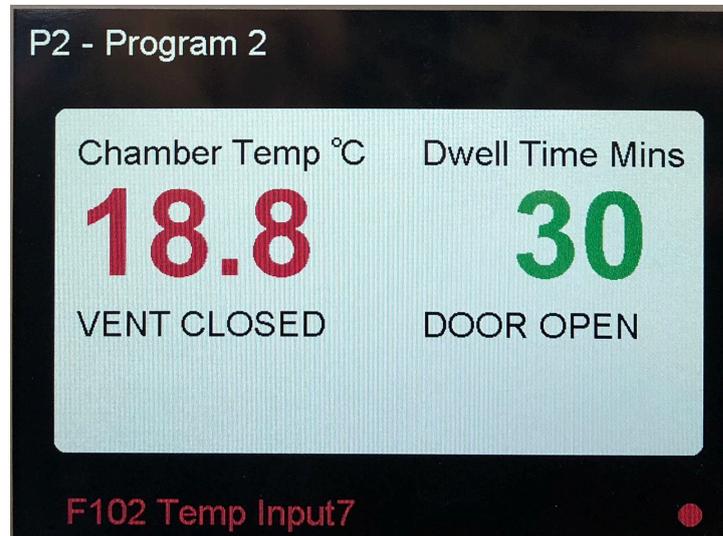The meaning of these warnings, why they appear, and what to do when they appear, is as follows.

F000   *Measuring System Error*

This is an internal temperature monitoring system via Analogue Input 06 (PRT).
It highlights that the Tactrol Program software has recognised a temperature issue.
Note: This fault will abort the cycle and NOT complete the sterilization process.

F001   *Load Sense Probe Failure*

This warning is activated in the event of the failure of the load sensing thermocouple. If the autoclave is fitted with load sensed process timing, this should be deselected to enable the autoclave to run without this feature. The thermocouple should be replaced as soon as possible.
Great care should be taken to ensure that loads which would ordinarily be autoclaved with load sensed process timing are adequately sterilised.

Fx02   *Thermocouple Input Fault*

This highlights a thermocouple problem, and pinpoints the following probes specifically:

- F102   Control Probe Fault
- F202   Display Probe Fault
- F302   Load Sense Probe Fault
- F402   Load Simulator Probe Fault
- F502   Jacket Probe Fault
- F702   Heater-Over Temp 1 Probe Fault
- F802   Heater-Over Temp 2 Probe Fault

Note: This fault will abort the cycle and NOT complete the sterilization process.

F003   *Overheat on Process Dwell*

This indicates that one of the sensing probes has exceeded the Overheat Abort Temperature. If fitted, the heater over-temperature protection may have sensed that the heating element became too hot. This is probably due to a low water condition, which was not sensed by the low water probe. The water level and the condition of the probe should be checked before attempting to use the autoclave again. If heater over temperature protection is not fitted then the overheat cut out will only operate under extreme conditions, such as a failure of the temperature control system or a probe becoming open circuit. The next attempt to run the autoclave should be closely observed and as the fault(s) are cancelled all the code(s) displayed should be noted. **Digital Output 24 will switch from ACTIVE to DEACTIVE.**

F004   *Low Water Level*

The water level has fallen below the minimum level and must be topped up before the autoclave can be run. The warning will automatically cancel when the door is opened and the water level is topped up. The low water condition may have caused a running cycle to abort, and the load may need to be autoclaved again.
Note: This fault code is not relevant on a steam heated machine. Should it occur on a steam heated machine then the configuration is incorrect or the mainboard has been corrupted. (On dual heated machines the code should only occur when electric heating is selected.)
Note: This fault will abort the cycle and NOT complete the sterilization process.
In addition, when an Integrated Steam Generator is fitted and utilises a temperature probe to indicate Overtemp F004 will be displayed in the event of Low Water within the ISG.

F005   *Temperature Fall during Process Cycle*

This indicates a temperature drop of 3 degrees (default) from the cycle dwell set-point during the dwell time period. The temperature can be selected via the Dwell abort offset temperature on the GENERAL Tab
Note: This fault will abort the cycle and NOT complete the sterilization process.

F006   *Power Fail*

This indicates that a power failure of some kind has occurred during the process cycle. Note: This fault will abort the cycle and NOT complete the sterilization process.

F007   *Vacuum Pre-cycle Pressure Loop Break*

The autoclave has not achieved the pre-set level of vacuum during the Pre-cycle vacuum stage during the pre-set time.
 Note: This fault will abort the cycle and NOT complete the sterilization process.

F008   *Heating stage timeout.*

The autoclave has not reached process temperature within the Pre-set time.
Note: This fault will abort the cycle and NOT complete the sterilization process.

F009   *Vacuum cooling*

Set-point not achieved. The autoclave has not achieved a low enough level of vacuum

during the post cycle vacuum stage (Vacuum Cooling or Drying Cycle).
Note: This fault will abort the cycle and NOT complete the sterilization process.

F010 *Air detector*

If fitted the air detector system has detected an over pressure condition symptomatic of excess air remaining in the load.
Note: This fault will abort the cycle and NOT complete the sterilization process.

F011 *Printer Timeout / Malfunction*

The control system has not received confirmation from the printer within its pre-set timeout.
Note: This fault code is not relevant unless the machine is fitted with a printer. Should it occur on a machine without a printer then the configuration is incorrect or the main board has been corrupted.
Note: This fault will abort the cycle and NOT complete the sterilization process

F012 *Door micro-switch fault*

If a door micro-switch opens during a cycle this fault code is displayed.

F013 *Jacket timeout*

If a jacket is fitted it has not reached the required temperature within the pre-set time. This would indicate a problem with steam supply, inlet or drain valve operation.

F014 *Jacket over temperature*

If a jacket is fitted the temperature has exceeded the pre-set alarm temperature.

F015 *Jacket under temperature*

If a jacket is fitted the temperature has fallen below the pre-set operating temperature band.

F016 *Water-fill timeout*

The upper level water probe level has not been reached within the allowed time for filling and the filling operation has been stopped. This function prevents continuous unsupervised operation of the water fill, which could lead to flooding.

F018 *Vessel Over temperature*

This shows that either the HOT 1 or HOT 2 probe has recorded a reading in excess of the Overheat Abort Temperature, indicating a probable low water level. Note – US Spec machines only.

F019 *ISG Overheat*

This means ISG overheat. If steam water fill is on and the ISG probe is over the ISG overheat temperature you will get this fault.

F020 *External digital fault*

This is triggered directly by activating an external input fault in digital inputs.

F021 *Over Pressure Fault*

Indicates over pressure if a transducer is fitted and is an On/Off tab and a variable value in program setting.

F022   *Condenser Fault*

The vent valve and drain valve are now operated via time delayed code when using the condenser. This fault code indicates malfunction within this system.

F023   *Door Micro-switch D/E Machines*

This indicates that the door micro switch at the unloading end is not made. This will only be released if the micro switch fails during the cycle.

5.0 Bee Live
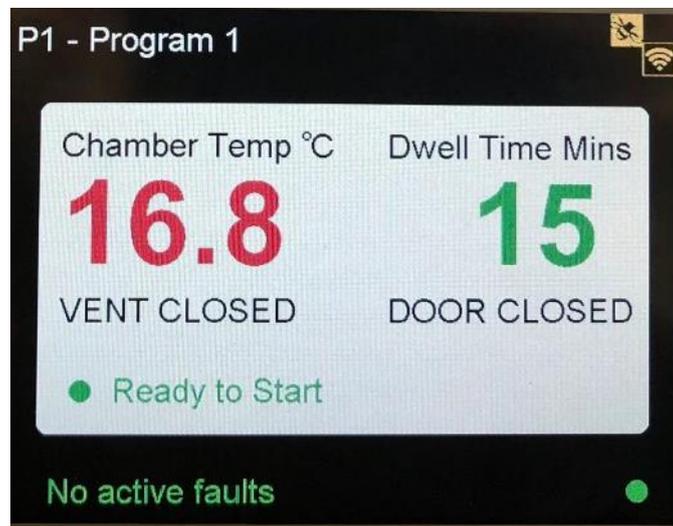
Bee Live is a Wi Fi compatible addition to the main board which allows the user to access the machine of interest and view its current state from a nearby location. Settings can be altered and updated remotely from your device such as; Smart phone, tablet, iPad, laptop etc.

If Bee Live is fitted to the machine the Bee Live logo will appear on the top right hand side of the screen in Tactrol 3 as shown above. This means the Wi-Fi board is ready for the operator to connect using their device of choice i.e. an IPhone.

If the logo does not appear in the top right hand side of the screen and the machine has Bee Live fitted, try restarting the machine.

Please refer to the Bee Live manual for further information.