



Resource
Data Management

Plant Controller Touchscreen Display

Installation/User Guide

Revision 2.0.4



PR0615

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The Plant Controller Touchscreen Display

From Resource Data Management

Overview

The RDM Plant Controller Touchscreen display is designed for use with the Mercury Plant and Intuitive Controller range and provides an intuitive user interface. The touchscreen display has a viewable area of 11cm, is full colour and has touch sensitive technology allowing user interaction. The display enables the user to view a Plant controller's current Input, Output, State, Parameter and Alarm conditions. It also allows the user to edit parameter settings and acknowledge alarms. The display has five user configurable Custom pages (TDB V1.21 and above) which allows key values to be highlighted. The data from the Custom page is provided in a number of formats such as a bar graph, a semi-circular gauge or as text. From the Custom page overrides can also be initiated and setpoints adjusted using the Slide icon.

The display has a built-in alarm sounder and dual colour LED Status indicator. The display utilises the password protection built into a Plant controller to prevent unauthorised changing of parameters and other key features. The slim-line characteristics of the display allow the unit to be surface mounted and the enclosure is supplied with a multifunction mounting bracket which provides a number of fixing solutions, one of which is a standard UK pattress box. The display is powered from the host Plant controller therefore no external power supply is required.

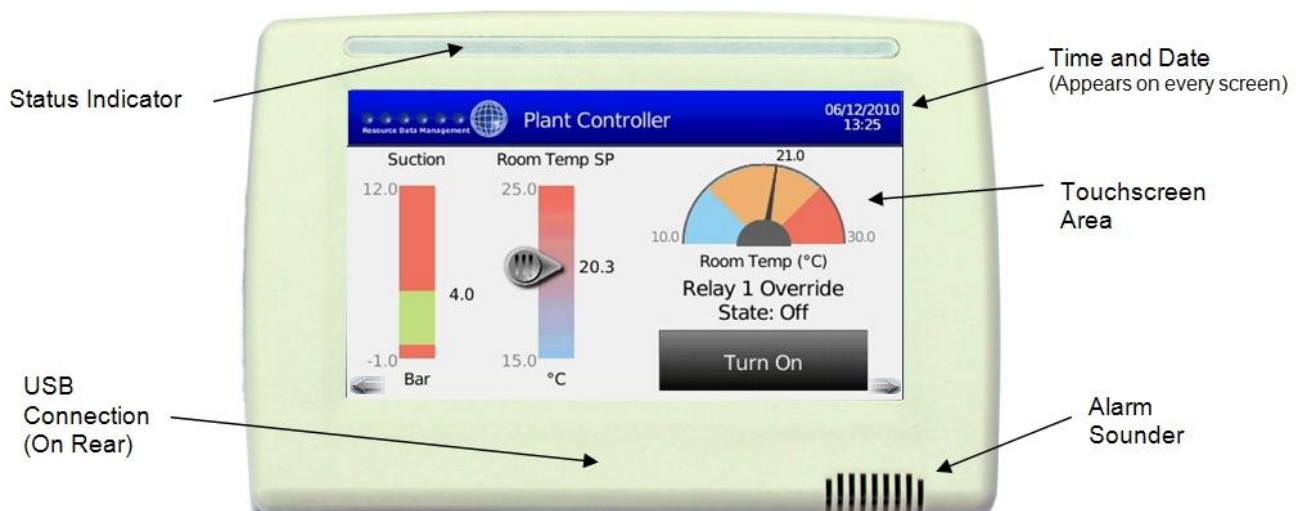
Compatibility

The display currently operates with the following software configurations: -

- PR0600-TDB - Plant controller running TDB application software V1.16 and above.
- PR0650-TDB - Intuitive Plant controller running TDB application software V1.16 and above.

NOTE: TDB Version 1.21 and above has five custom screens available, V1.16 - 1.20 has one custom screen available. The display itself also requires display software version 1.02 or higher to utilise the five custom displays.

Physical Attributes



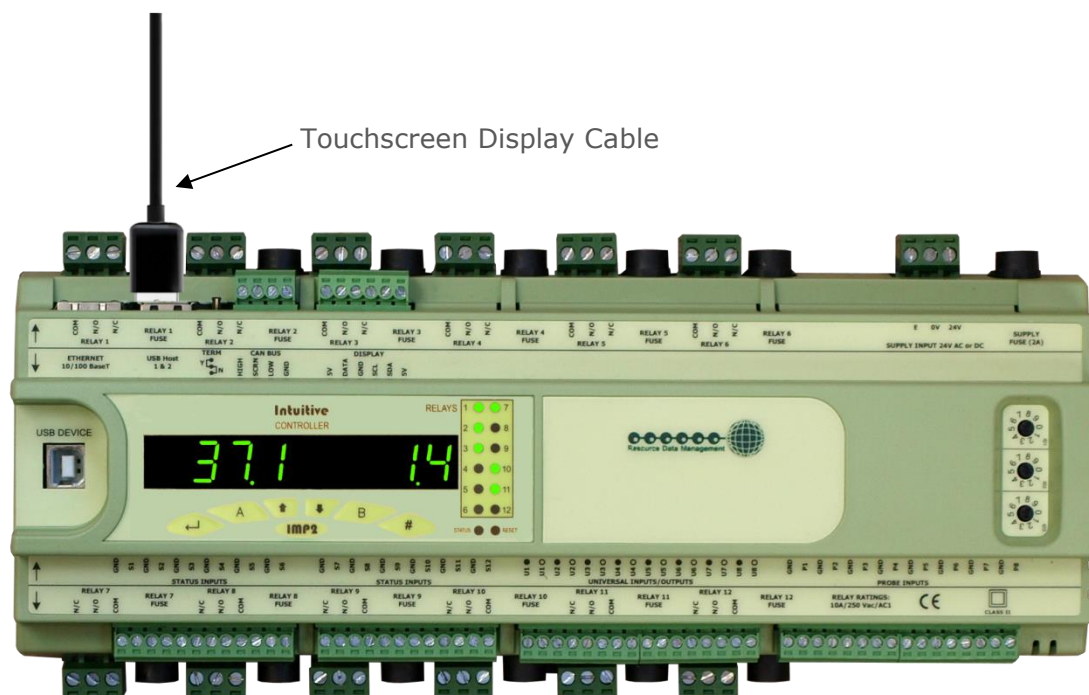
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Status Indicator During normal operating conditions the indicator is Blue. When an alarm is directed to the display the indicator flashes Red. Once the alarm is acknowledged the red status indicator remains permanently on until the alarm clears.

USB Connection See [USB Cable](#) section for further details.

Setting up the Display

Connection to a Plant Controller



The touchscreen display is connected to either of the USB A-type Host sockets (1&2) on the Plant controller. With the Plant controller powered and running connect the display. The following message will be shown on the display "Waiting for connect..." after a short delay this will be replaced with "Uploading screens..." a few moments later the display will refresh and the startup sequence is complete. At this point the display will show either the Home page or Custom page depending on the display's configuration. Note the display can also be connected before powering the Plant controller.

USB Cable

The Plant Touchscreen display is supplied with a 5M USB cable fitted and a secondary 1M USB cable in the box. This provides the end user with the flexibility to select the cable length which best meets their application requirements. Both cables have a USB A-type connector at one end, which connects to the Plant Controller and a USB Micro B-type connector at the other which connects to the display. The touchscreen display derives its power from the Plant Controller and does not require an external power supply. The maximum cable length is 5M when using a standard USB cable.



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Interacting With the Touchscreen

The touchscreen display has no physical buttons or switches, all user interaction is carried out by pressing areas on the touchscreen display such as virtual buttons or slides. The touchscreen should be operated using your finger and care should be taken not to exert too much pressure on the display as it could lead to damage. Objects such as pen nibs or screwdriver tips must not be used as this will damage the screen. Each press of the display is accompanied by a click from the sounder. On some pages where lines of text are shown, such as the parameter list, you can scroll down the page by running your finger from the bottom to the top of the list in the same manner as you would use a touchscreen equipped mobile telephone. During this motion your finger should remain in contact with the touch screen.

Typical Default Display Configuration

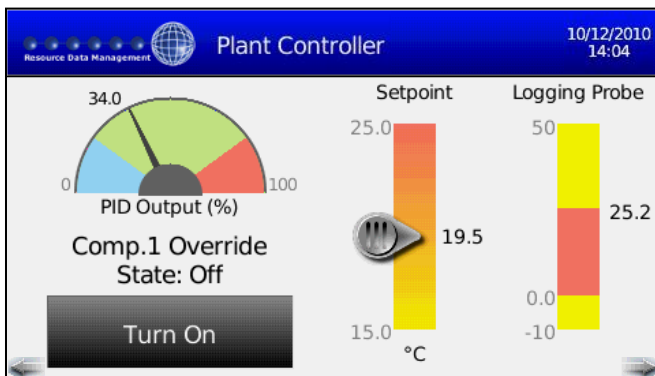
Home Page

Plant Controller			
Inputs	Suction Pressure	28	P.S.I.
Outputs	Comp.1 Fault	Off	
State	Comp.2 Fault	Off	
Params	Comp.3 Fault	Off	
Alarms	Comp.4 Fault	Off	
Setup	Plant Room Temp.	25.6	°C

When the display is first connected to a Plant controller and a Custom page has not been defined then the Home page will be displayed with the various menu options. By default, the list of Inputs will be displayed in the main area.

Tap the desired menu option to navigate to that screen.

Custom Page



When the display has a Custom page configured then this will be displayed by default when the display is first powered on or is awoken from power saving mode. Note after 3 minutes of inactivity the display will return to the Custom page.

Touch the blue bar at the top of the display to toggle between the Custom page and Home page.

Touch on or above the left- and right-hand arrows at the bottom corners of the screen to move to the next left or right page


(TDB versions 1.21 and Display versions 1.02 or higher)



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Home Page


Inputs

Resource Data Management  Plant Controller 10/12/2010 14:04			
Inputs	Suction Pressure	28	P.S.I.
Outputs	Comp.1 Fault	Off	
	Comp.2 Fault	Off	
	Comp.3 Fault	Off	
State	Comp.4 Fault	Off	
Params	Plant Room Temp.	25.6	°C
Alarms			
Setup			

From the Home page, touch the "Inputs" tab, a list of current inputs will be shown. If there are more than 10 inputs then you can scroll down the page by running your finger from the bottom to the top of the list, during this motion your finger should remain in contact with the touch screen.

This is accomplished in the same manner you would use a touchscreen equipped mobile telephone.

Outputs

Resource Data Management  Plant Controller 10/12/2010 14:04			
Inputs	Comp.1 Run	On	
Outputs	Comp.2 Run	On	
	Comp.3 Run	On	
	Comp.4 Run	On	
State	Alarm Relay	Off	
Params	PID Value	100.0	%
Alarms			
Setup			

From the home screen, touch the "Outputs" tab, a list of current outputs will be shown. Again, you can scroll down the page in the usual manner.

State

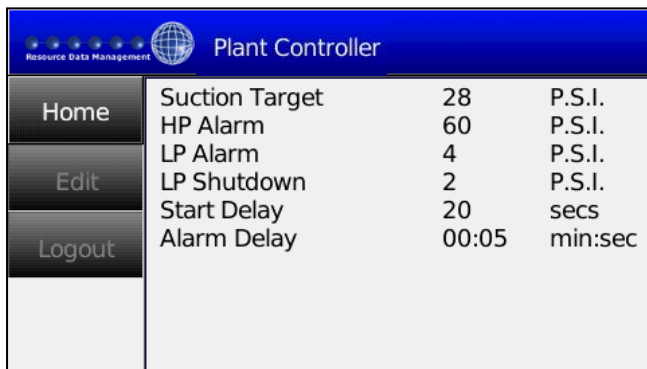
Resource Data Management  Plant Controller 10/12/2010 14:04		
Inputs	Control State	Normal
Outputs		
State		
Params		
Alarms		
Setup		

From the home page press the "State" tab, the controller's current control state, such as "Normal", "Alarm" or "Defrost", will be displayed



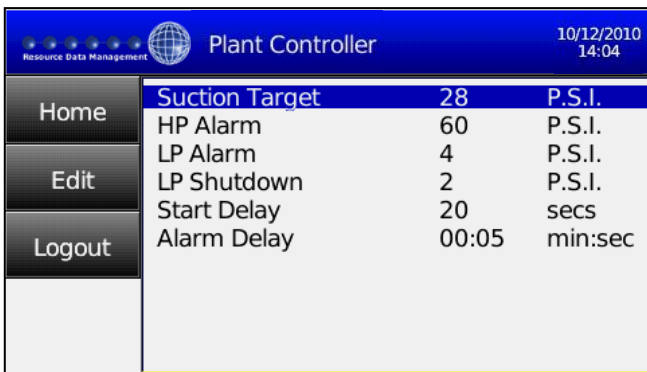
Please ensure all power is switched off before installing or maintaining this product.

Params (Parameters)



From the home page touch the "Params" tab, the controller's settable parameters will be displayed.

Changing a Parameter



In the "Params" page touch the parameter you wish to change. The parameter will become highlighted, in this example the "Suction Target" has been selected. Now touch the "Edit" tab. At this point the display will prompt the user for login credentials.



Type in a valid pin code and press the "Enter" tab.

Note: the pin code is set in the Mercury Plant Controller the display is connected to and cannot be altered using the Touchscreen Display.

The PIN is to prevent unauthorized changing of parameters.



Using the keypad, touch the "DEL" tab to delete the current value, then key in the value you wish to use and touch the "Set" tab. The display will configure the parameter and return to the Parameters page.



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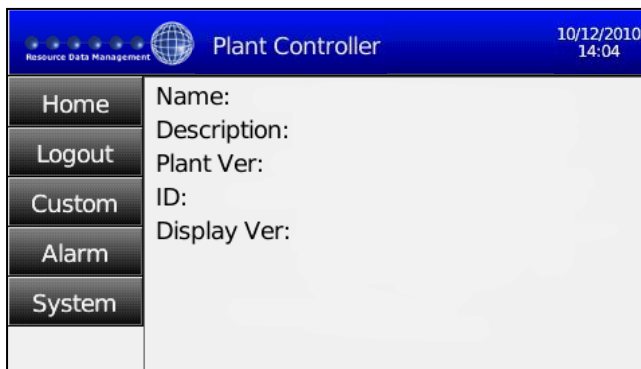
If the "Set" button is pressed without changing the previous parameter or a value which is out of range is entered then a message "Value set failed." will be displayed.

Alarms



From the home page select "Alarms". A list of all alarms the Plant controller can generate, together with their current condition, will be displayed.

Setup



From the home page select "Setup". A page similar to the one on the left will be shown. The name, description, ID and software version of the host plant controller will be shown as well as the display software version.

Home

Tapping home returns the user to the Home page.

Logout

When entering into the Custom, Alarm or System pages or when changing a parameter, the user is asked to login. Once logged in the Logout button can be used to log the current user out and prevent any unauthorised user from accessing the Custom, Alarm and System pages. If the Logout button is not pressed, any user will automatically be logged out after a predetermined time of inactivity on the display.



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Configuring a Custom Page

The "Custom" option allows the user to produce up to five customised screens, each comprising of up to four icons, each icon using one quarter of the display area. The main customised screen (if there is more than one) will become the default screen when the display is connected to a Plant controller. Note the Custom page configuration is stored in the Plant controller and not inside the display.

From the setup menu select "Custom", the following page will be displayed,



Select the custom page you wish to create.

(Once the custom page set up is complete, pages L1 and L2 will be displayed by scrolling to the left of the main page and R1 and R2 will be displayed by scrolling to the right of the main page.)

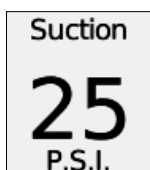


If the plant controller TDB software is pre V1.21 and/or the display software is pre V1.02 then only one custom page is available, the screen on the left will not be shown.

A blank custom set up page will be shown, custom icons can now be selected to populate the page as required.

There are six different types of icons which can be configured although only a maximum of four per page will be displayed at any one time, these types are as follows:

Value

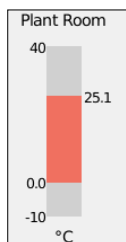


This will display a current value in text or numerical form such as a temperature, a relay status or an operating parameter.



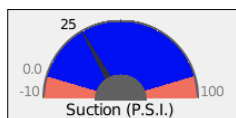
Please ensure all power is switched off before installing or maintaining this product.

Bar



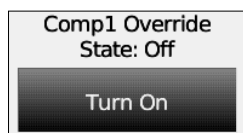
This will display an analogue value, such as temperature or pressure, in the form of a vertical bar graph.

Gauge



This will display an analogue value, such as temperature or pressure, in the form of a semicircular "gauge" or "dial".

Override



This will display a "button" which can be touched to override a particular function in the Plant controller, for example to manually force a relay on or off.

3 Way Override



This will display a "button" which can be touched to override a particular function in the Plant controller in 3 different ways, manually on, manually off or auto.

Slide



This will display a vertical "slider" which allows the user to increase or decrease a particular set point or value within the plant controller.

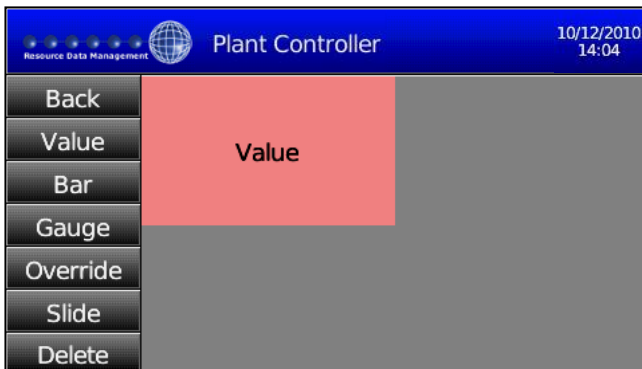


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Creating a Value Icon



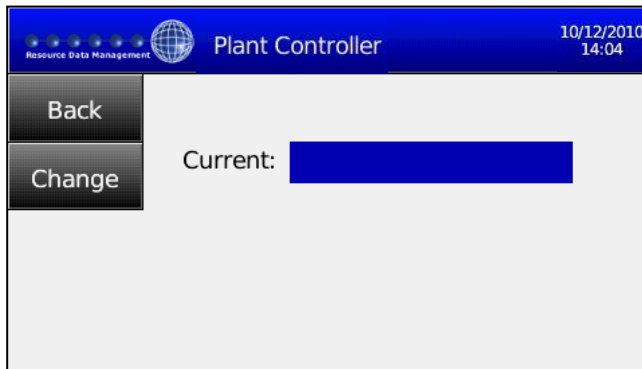
From the setup menu, select "Custom", you will be asked to login. Once logged in the blank screen on the left will be shown. This screen will only be blank if a custom screen has not been set up previously.



Touch the "Value" tab and drag it towards the blank area to the right.

Removing your finger from the screen will cause a "Value" box to be fixed into one of four positions.

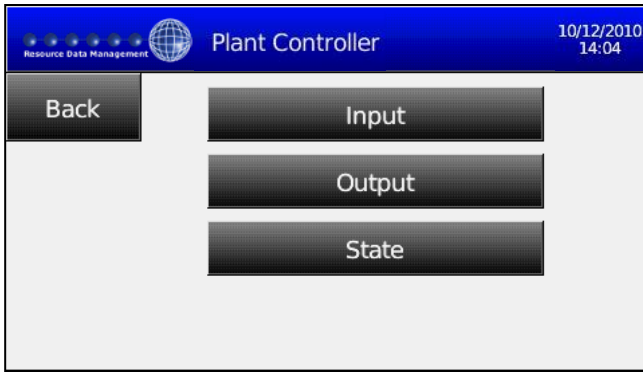
In the example, the box is in the top left position. The box can be dragged into any of the other three positions as long as they are empty. The position of the box relates to the position in the custom screen where the value will be displayed.



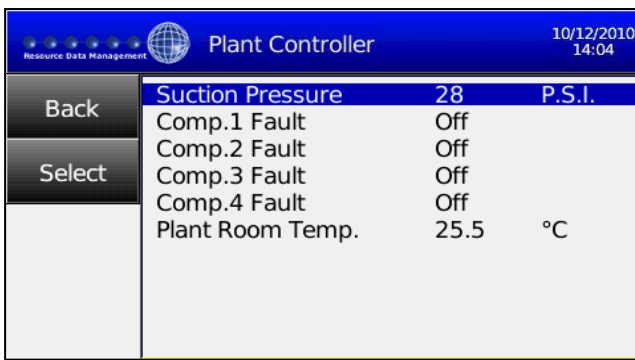
Touching the "Value" box will now bring up the screen on the left which allows the user to select which value to display. The "Current" box will be blank initially until a value is selected.



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Selecting "Change" will show the menu on the left which allows the type of value to be displayed, to be selected.



Selecting the "Input" option will show a list of all available inputs, as shown in the example. Touching one of the items will highlight it for selection, now touch the "Select" tab to confirm. The selected item will now be shown in the "Current" box.



At this point select the "Back" tab, the screen on the left will be shown. Select "Yes" to save the current value or "No" to return to the custom menu without saving.

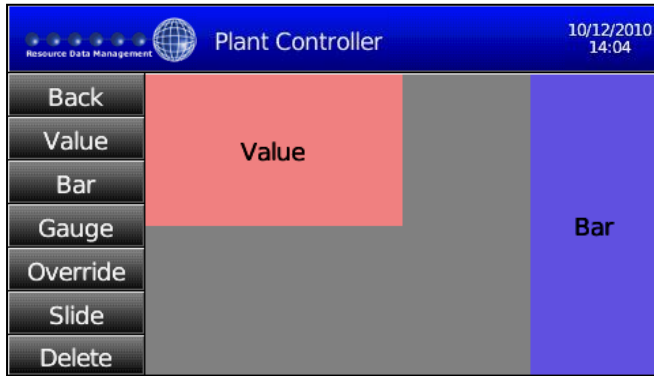


Touching the blue bar at the top of the screen will now show the main custom screen which has been created. The parameter's name and its current value will be displayed in the appropriate part of the display.



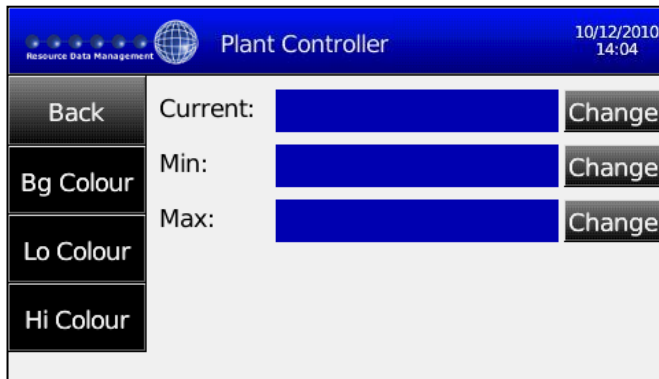
Please ensure all power is switched off before installing or maintaining this product.

Creating a Bar Graph Icon

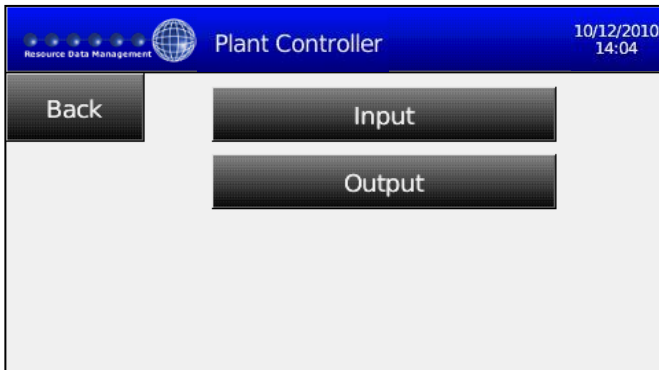


From the custom menu, touch the "Bar" tab and drag across to an unused area. Removing your finger from the touchscreen will place a "Bar" box in one quarter of the screen.

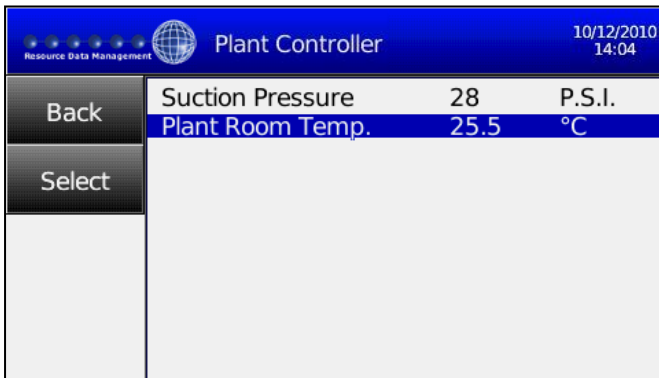
As shown on the left, the "Bar" box uses the entire height of the available area but only one quarter of the width. The "Value" box on the other hand, uses one half of the width and half of the height. For this reason, a "Bar" box cannot be placed underneath a "Value" box for example.



Touching the recently placed "Bar" box brings up the menu on the left. Selecting "Change" next to the "Current" field allows you to select the item you want to display as a bar graph.



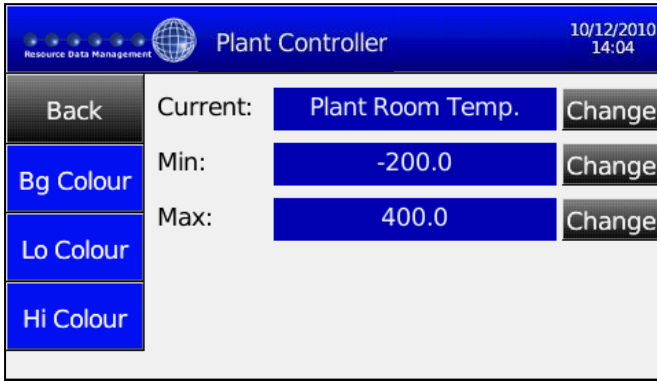
Selecting "Input" will show all the available input values, selecting "Output" will show all the available output values.



In this example, "Input" has been selected and "Plant Room Temp." highlighted. Touching the "Select" tab will confirm this value to be used.

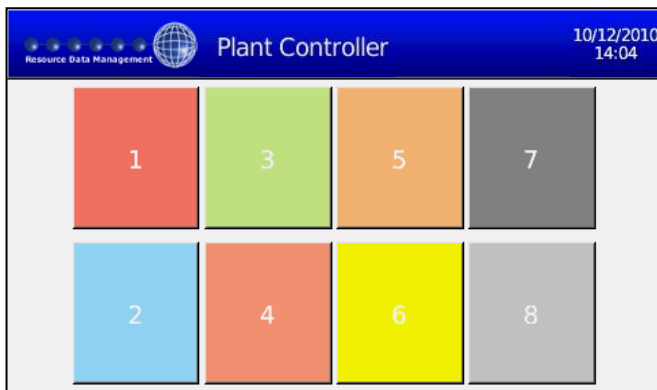


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The menu now shows the name of the selected value to be used in the "Current" field.

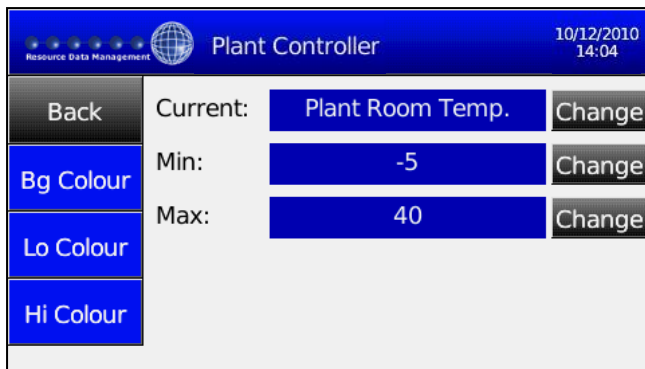
The bar graph can now be scaled to match the maximum and minimum limits of the value to be displayed. Selecting "Change" next to the "Min:" field allows the lower limit value of the bar to be selected.



There is also an option to select which colours are to be displayed on the bar. Selecting "Bg Colour", "Lo Colour" or "Hi Colour" will display a colour palette as shown on the left. Touch the colour you wish to use for that particular part of the Bar. 108378



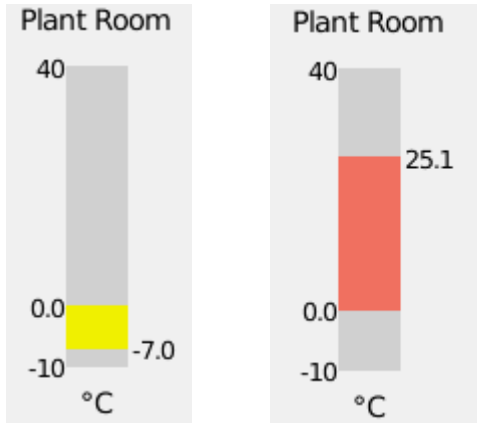
Now configure the minimum value, this should be below the lowest value you would ever expect to display on the bar graph and is dependent on the application. For example, under normal operating conditions you would never expect a plant room temperature to go below -5 degrees centigrade so you could choose this as your minimum value.



The maximum value can be set in the same way. This would be the highest value you would ever expect to display on the bar graph and is dependent on the application. For example, you would never expect a plant room temperature to go above 40 degrees centigrade under normal operating conditions so you could choose this as your maximum value.



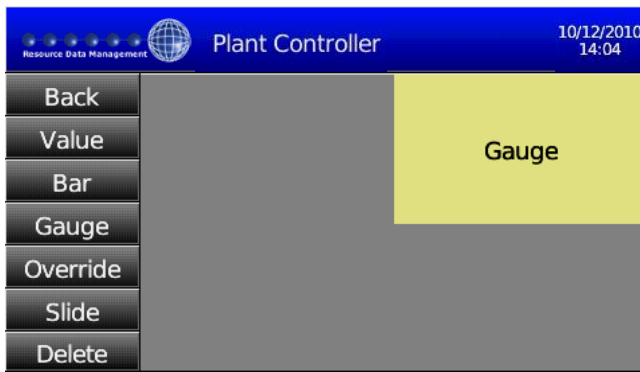
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“Bg Colour” Selects background colour, in this example it is grey.

“Lo Colour” Selects the colour of the bar when the value is below zero, in this example it is yellow.

Creating a Gauge Icon

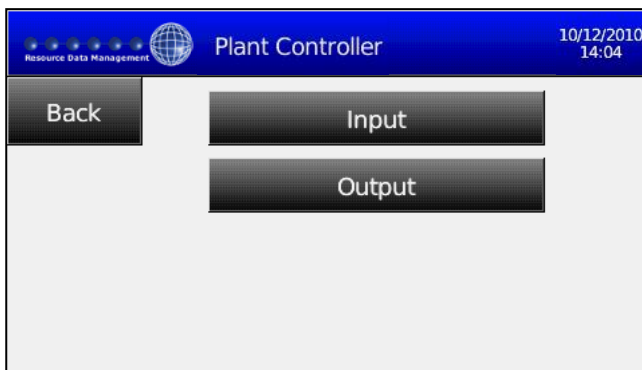


From the custom menu, touch the “Gauge” tab and drag across to an unused area. Removing your finger from the touchscreen will place a “Gauge” box in one quarter of the screen.

As shown on the left, the “Gauge” box uses half the height of the available area and half of the width. For this reason, a “Graph” box for example, cannot be placed below a “Gauge” box.



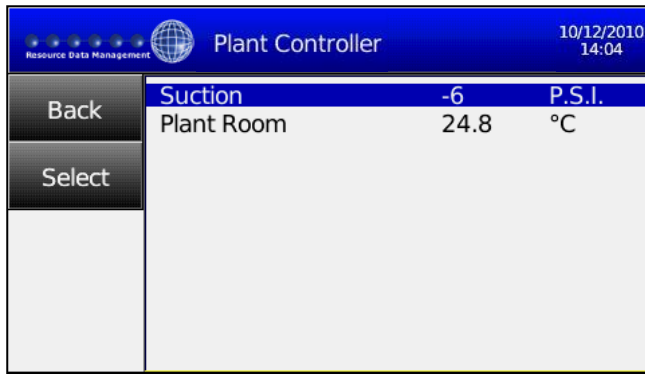
Touching the “Gauge” box brings up the menu on the left. Selecting “Change” next to the “Current” field allows you to select the parameter you want to display as a gauge.



Selecting “Input” will show all the available input values, selecting “Output” will show all the available output values.



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In this example, "Input" has been selected and "Suction." highlighted. Touching the "Select" tab will confirm this value to be used.

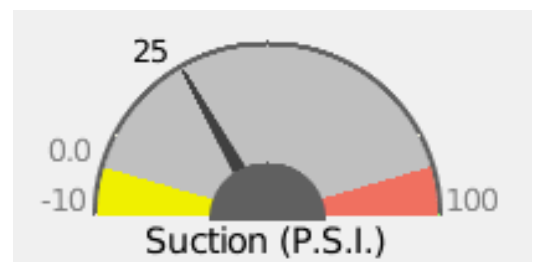


The menu now shows the name of the selected value to be used in the "Current" field.

The gauge can now be scaled to match the maximum and minimum limits of the value to be displayed. Selecting "Change" next to the "Min:" field allows the lower limit value of the gauge to be selected.

Similarly, selecting "Change" next to the "Max" field allows the upper limit of the gauge to be selected.

There is also an option to select a "Lo Band" value and a "Hi Band" value, this will create upper and lower regions of the gauge which can be a different colour and could be used to show when a value is entering a high or low condition.



In the above example, the "Max" value is set to 100 and the "Hi Band" set to 90. The "Hi Colour" is set as red so this gives a red band between 90 and 100 on the gauge.

The "Min" value is set to -10 and the "Lo Band" set to 0. The "Lo Colour" is set as yellow so this gives a yellow band between 0 and -10.

The "Bg Colour" is set as grey so this gives a grey background for the area of the gauge between the "High Band" and "Low Band" values.



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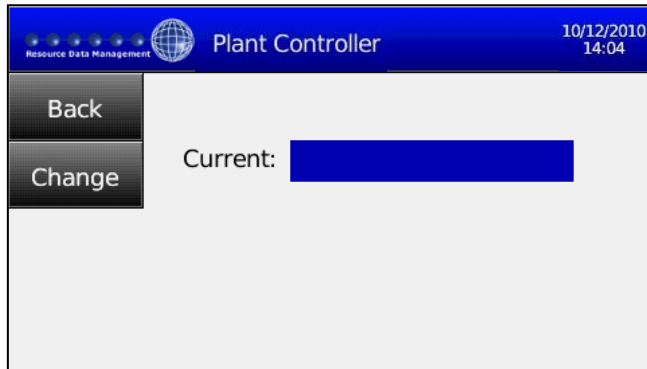
Creating an Override Icon



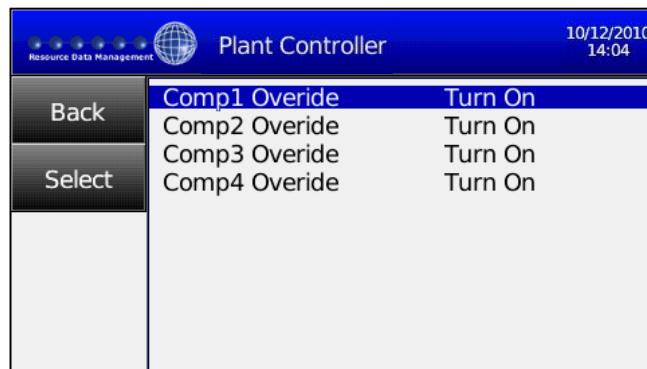
From the custom menu, touch the "Override" tab and drag across to an unused area. Removing your finger from the touchscreen will place a "Override" box in one quarter of the screen.

As shown on the left, the "Override" box uses half the height of the available area and half the width. For this reason, a "Graph" box for example, cannot be placed below an "Override" box.

Note: An Override icon can only be used with a Plant controller running TDB software with one or more "Display Override" or a "3 Way Override" blocks configured. Please refer to the TDB Plant Controller user document for further details.



Touching the "Override" box will display the screen on the left. The "Current" field will be blank unless an "Override" icon has already been setup, in which case the current value will be shown. Touching the "Change" tab will display a list of all the available Display Override blocks in the Plant TDB controller and their current status.



Touch the Display Override block you wish to use. In the example on the left Comp1 Override is currently selected. Touch the "Select" tab to confirm the choice. Touching the "Back" tab will display a "Save Changes?" screen with a "Yes" or "No" option. Touching the Home bar at the top of the screen will return to the home page without saving any changes.



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The Home page will now show the override Icon as shown in the example on the left. Touching the "Turn On" button will enable the override. In this case "Comp1", which is mapped to Relay 1 on the Plant TDB controller, will be turned on.



Once the previous step is complete the "Turn On" box will refresh to "Turn Off". Touching the "Turn Off" button will toggle the relay back on again and the "Turn Off" box will change to "Turn On" ready for the next override instance.

In this example the default descriptions have been used, such as "State: On" and "Turn Off". These descriptions can be altered by the user in the Display Override Block within the TDB program, to provide more relevant descriptions. Please refer to the TDB Plant Controller user document for further details.



If a 3-way override block is being used then there is an additional Auto function as well as the normal on and off function.

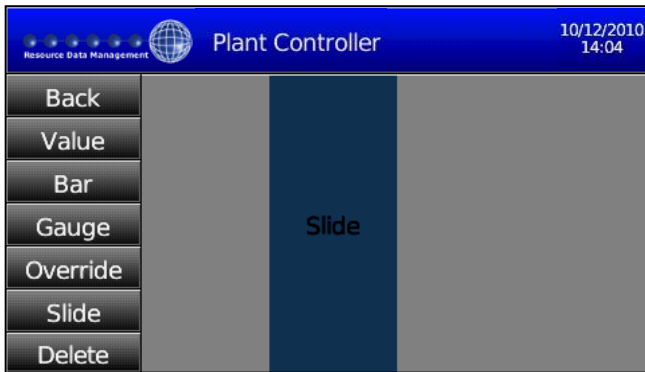
Each time the button is touched it will scroll through one of 3 stages, "Man On", "Man Off" and "Auto On/Off", these are default descriptions and can be changed as required in the TDB program.

When "Man On" is selected, the output will be forced on, "Man Off" will force it off. When Auto is selected it will show either "Auto On" or "Auto Off" depending on whether the block input in the TDB program is on or off at the time.



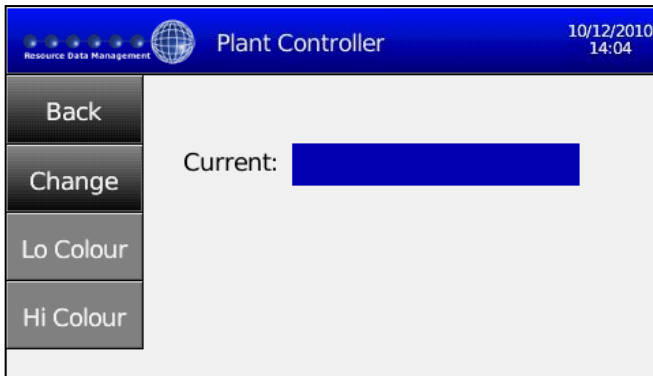
Please ensure all power is switched off before installing or maintaining this product.

Creating a Slide Icon



From the custom menu, touch the "Slide" tab and drag across to an unused area. Removing your finger from the touchscreen will place a "Slide" box in one quarter of the screen.

As shown on the left, the "Slide" box uses the full height of the available area and one quarter of the width. For this reason, a "Override" box for example, cannot be placed below a "Slide" box.



Note: A Slide icon can only be used with a Plant controller running TDB software with one or more "Display Slide" blocks configured. Please refer to the TDB Plant Controller user document for further details.

Touching the "Slide" box will display the menu on the left. The "Current" field will be blank unless a slide icon has already been selected.



Touching the "Change" tab will display a list of all available slide blocks in the Plant controller. Touching the slide block to be used will highlight it, touching "Select" will confirm.

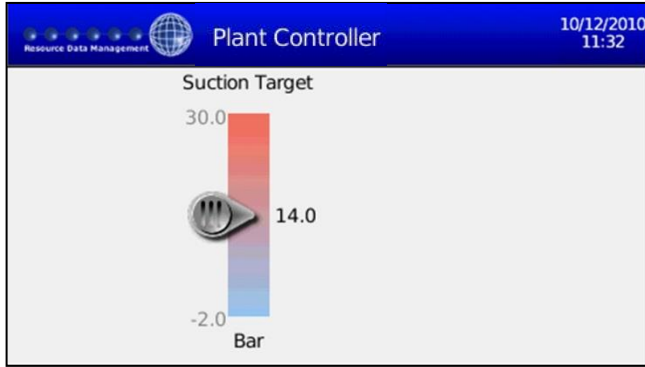
Touching the "Back" tab will display a "Save Changes?" screen with a "Yes" or "No" option. Touching the Home bar at the top of the screen will return to the home page without saving any changes.



The "Current" field will now show the selected slide block, in this example "Suction Target".



Please ensure all power is switched off before installing or maintaining this product.



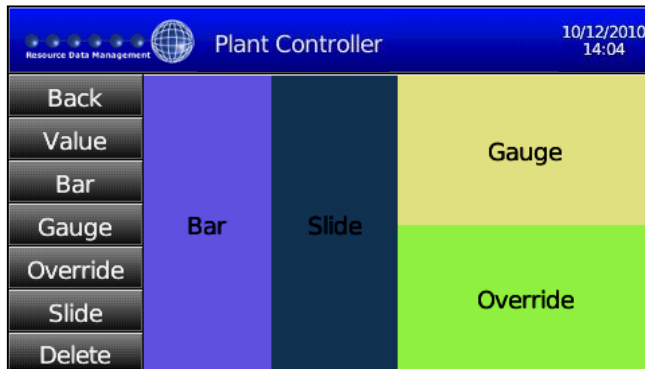
There is also an option to select "Lo Colour" and "Hi Colour". The "Hi Colour" tab selects the colour to be displayed at the top of the slide icon and the "Lo Colour" selects the colour at the bottom of the slide icon. The two colours will blend into each other giving a gradual change in colour from top to bottom. In the example on the left the "Hi Colour" is red and the "Lo Colour" is blue.

The values shown on the Slide Icon are determined by the setup of the Slide block in the TDB program running in the associated Plant controller. In the example above the "Set Value" parameter is set to 14, the "Offset Max" parameter is set to 16 and the "Offset Min" parameter is set to -2. This provides a Slide Icon on the touchscreen display with a centre point of 14, a lower limit of -2 and an upper limit of 30. Touching the pointer in the Slide Icon and dragging it up or down will change this setpoint within these defined limits.

Note: The "Offset Min" and "Offset Max" values should always be a positive number (V1.0 software only).

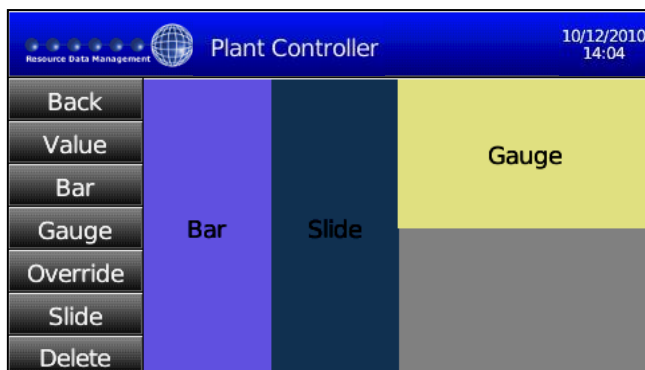
Note: If the set point value is changed in the controller using a PC this will override the value currently set on the slide on the touchscreen display. If the set point is changed using the "Parameters" menu on the touchscreen display, the slide setpoint will not change but the upper and lower limits on the slide will change accordingly allowing the slide to select the new setpoint.

Deleting an Icon from the Custom Display



The example on the left shows a complete custom display setup in the "Custom" menu, all four display segments are used.

To delete an icon, touch the appropriate box and drag it to the delete tab and release.

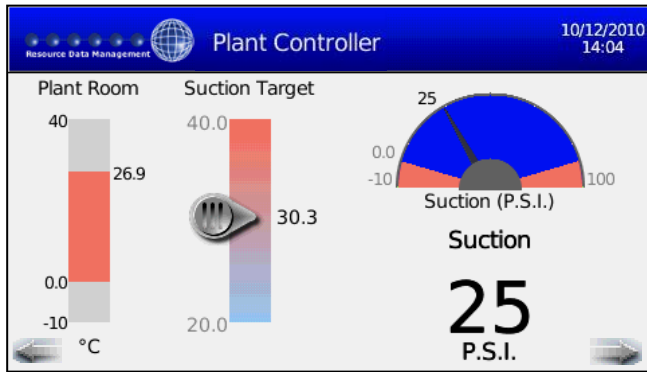


In the example on the left, the "Override" box has been dragged over to the "Delete" tab and has now been deleted.



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Viewing a Custom Display



Once the custom display(s) has been set up with the Icons required, touching the blue bar at the top of the display will switch between the Main Custom and Home pages. The configured Main Custom page will now be the default page when the plant controller is powered up or the touchscreen display is connected. An example of a completed custom display is shown on the left.

Touching the left and right arrows in the bottom corners will scroll to the next custom display if set up.

Alarm Handling

Accepting Alarms

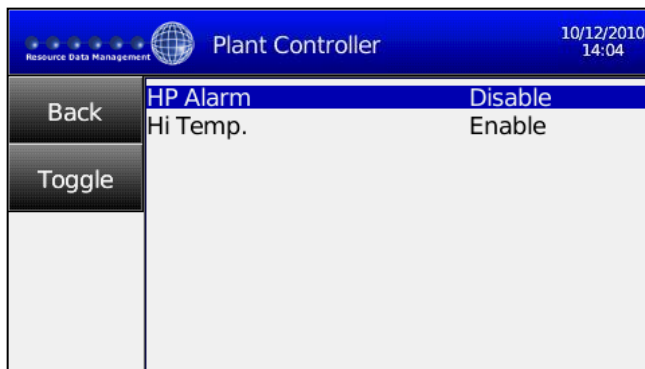


When an alarm is created by the Plant controller, an alarm message is shown on the touchscreen display. The status indicator on the display will change from static blue to flashing red and the alarm sounder in the display will be activated.

The alarm can be accepted by touching the "Accept" button on the display, this will acknowledge the alarm and silence the sounder. The status indicator will change to static red also. At this point the touchscreen will revert back to the home page.

The status indicator will remain red until the alarm has cleared.

Disabling Alarms



From the "Setup" menu, select the "Alarm" tab. This will display a list of all the possible alarms that can be generated. Touching a particular alarm will highlight it as shown on the left. Touching the "Toggle" tab will change the alarm status from "Enable" to "Disable".

If an alarm is set as "Disabled" then when generated it will not create an alarm message on the touchscreen display i.e. the alarm sounder will *not* be activated, the status indicator will *not* flash red and an alarm accept screen will *not* be shown. The alarm will, however, be shown in the "Alarms"

Note the above feature disables the alarm handling function within the display only. Alarm information will still be sent out on the Ethernet interface of the Plant controller i.e. to a Data Manager.



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System

Screen Off Time



From the "Setup" menu, selecting the "System" tab will show the screen on the left. Selecting the "Change" tab next to "Screen Off (mins):" will allow the time to be adjusted. This is the time period in minutes that the touchscreen backlight will stay on after it is last used. This feature significantly extends the life of the display and reduces energy usage.

Setting this value to "0" will leave the display backlight permanently on.

Note: Setting the Screen Off value to "0" will invalidate the warranty on this unit.

Changing the Time and Date



From the "Setup" menu, select the "System" tab. Selecting the "Change" tab next to "Date:" allows the date on the plant controller's time clock to be changed.

Delete the existing date using the "DEL" tab and enter the correct date in the format DD/MM/YYYY. Press the "Set" tab to set the new date.

The time of day can be altered in a similar way. The time should be entered in the format HH:MM.

It is advisable to power the plant controller off and on after making date or time changes.

The time and date settings are retained by the plant controller to which the display is connected. If the display is connected to a different Plant controller, the time and date on the display will reflect the time and date in that Plant controller.



Please ensure all power is switched off before installing or maintaining this product.

Alarm Sound



From the "Setup" menu, select the "System" tab. There is an option called "Alarm Sound" which can be changed from "Always" (default) to "Uncleared" by pressing the Toggle button. Pressing the Back button gives the option of saving the change of setting.

Alarm Sound set to "Always"

If an alarm occurs the alarm sounder will operate and the LED bar will flash red, the alarm sounder will continue to operate until the Accept button is pressed regardless if the alarm is still active or has cleared.

Alarm Sound set to "Uncleared"

If an alarm occurs the alarm sounder will operate and the LED bar will flash red, the alarm sounder will continue to operate until the Accept button is pressed **or** the alarm has cleared.

If the alarm is cleared but the accept button not pressed then the display will continue to show the alarm and accept button and the LED bar will flash red however the sounder will stop. Once the alarm is accepted the display will return to the normal non-alarm state and the LED bar will stop flashing and will revert to blue.

Note: Software v2.0.4 is only compatible with hardware built after 2019.



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Calibrating the Display

Display calibration is factory set and should not need to be adjusted under normal operating circumstances. If, however, the area of the display being touched does not match up to the graphic (for example, if the user has to touch slightly above the "Home" tab before it operates) then the display can be recalibrated.



From the "Setup" menu, selecting the "System" tab followed by the "Calibrate" tab will show the screen on the left. Select the "Continue" tab to proceed with the calibration, otherwise select "Cancel".



A cross will appear on the screen. Touch the cross at its centre, another cross will then appear in a different position. The process will be repeated three times with each cross in a different position. Once the calibration process is complete the touchscreen display will then restart and the calibration process will be complete.

Note: Care should be taken when calibrating the display as incorrect calibration may result in the display becoming unusable. Should this occur please use the "Calibrate Screen" option found in the Plant TDB controller webpage.



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Screen Wrap

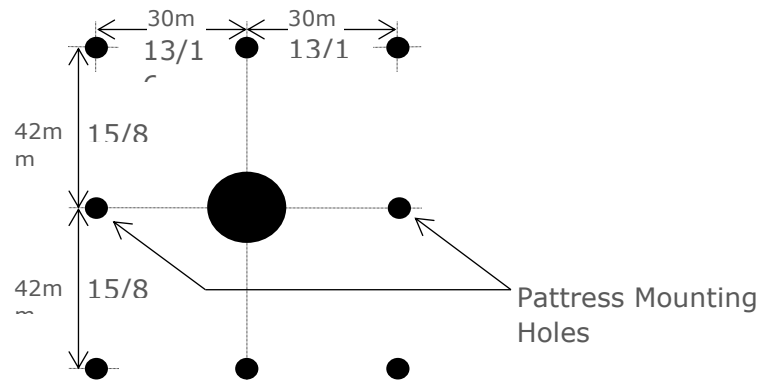


When using multiple screens, touching on or above the arrow in the bottom left or right-hand corner moves onto the next screen. When the L2 or R2 screen is reached one of the arrows will disappear as you cannot scroll any further. If screen wrap is turned on then the user can scroll continuously round all the screens, i.e. L2 will scroll to R2.

From the "Custom" page select "Setup", the screen on the left will be shown. Screen wrap can now be turned on or off as required.

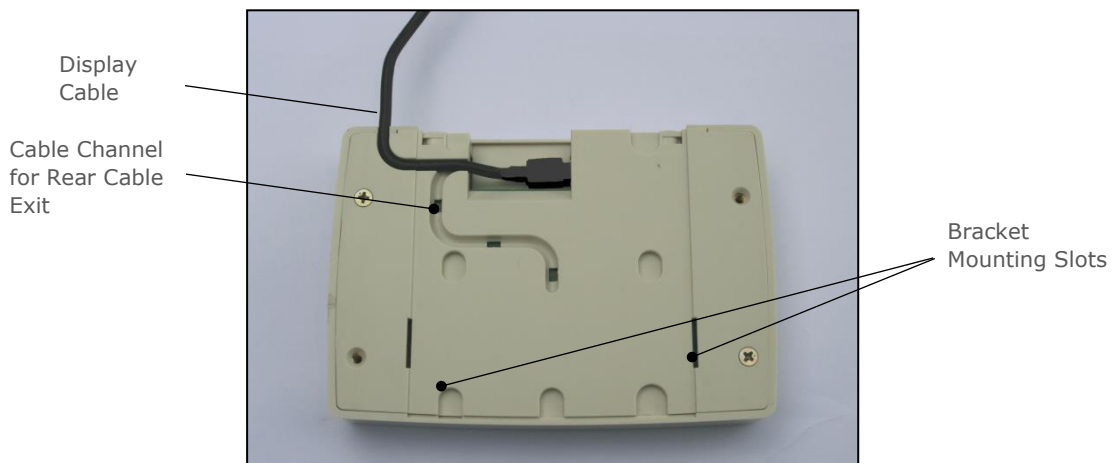
Mounting Instructions

The touchscreen display is supplied with a mounting bracket. The bracket is removed from the display by removing the two screws on the underside of the display and sliding the bracket downwards and then away from the display. The mounting plate can then be fitted to the desired surface using the mounting holes shown below. Two of the mounting



Fitting the Display to the Mounting Bracket

The back of the display has two recessed channels to route the cable through, one enables the cable to exit the display at the underside (for routing through conduit for example) and the other allows the cable to exit through the back. The image below shows the cable exiting through the underside. The cable can be unplugged at the display for ease of installation if required. Care should be taken with regards to plug orientation when re-connecting.



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The display should be positioned on the bracket so that the two mounting lugs on the bracket locate in the two slots in the back of the display. The display is then moved down so that the two screw holes at the bottom of the bracket meet up with the two threaded inserts at the bottom of the display. The two mounted screws are then fitted to secure the display onto the bracket.

Note In general use the USB Micro B-type connector should never have to be disconnected. If for any reason the cable is removed at the display end care must be taken to ensure it is not pulled in an upward motion.

Specification

Hardware	
USB	2.0
Power Requirements	Powered from host Plant controller, no external power supply required
Display	
Type	11cm (4.3") TFT Colour
Resolution (pixels)	480 x 272
Brightness (cd/m ²)	340 LED Backlight
Contrast Ratio	250:1
Viewing Angle	50°
Backlight	LED
Backlight Lifespan	50,000 hrs
Touchscreen	
Type	4 Wire Analogue Resistive
Resolution	Continuous
Light Transmission	Above 80%
Lifespan	>1 million Activations
Environmental	
Operating temperature range:	+5°C to +40°C
Operating Humidity:	80% maximum
Storage temperature range:	-20°C to +65°C
Environmental:	Indoor use at altitudes up to 2000m, Pollution Degree 1, Installation Cat II
Mechanical	
Size:	136mm (L) x 98mm (H) x 22mm (D)
Weight:	Display 170g, 345g with cable and mounting bracket
EMC:	EN 55022/A1: 2007 EN 55024/A2: 2003
Ventilation:	There is no requirement for forced cooling ventilation

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Revision History

Revision	Date	Changes
1.0	15/07/2010	1 st Issue
1.1	15/12/2010	Optional Screen Calibration feature introduced, Time & Date feature added (Plant Controller Time/Date settable from the display and viewable on each page). For use with Plant TDB V1.18 application software and above.
1.2	10/11/2011	New Look template added, Pictures updated, five custom screens added.
1.2a	06/02/2012	3-way override added, screen wrap added.
1.2B	24/02/2012	Current Issue
1.2C	8/11/2012	Page 9, Custom display is stored in controller NOT display
1.6	27/04/2017	Document in new format and revision number brought into line with software version.
2.0	09/05/2017	V2 Hardware
2.0.4	13/05/2024	Alarm Sounder setting Always or Uncleared added.



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