

Resource
Data Management

Mercury 3 and Intuitive Mercury Roof Top Unit Controller

Commissioning/User Guide
Revision 3.3



PR07X0-RTU

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The Mercury 3 and Intuitive Mercury Roof Top Unit

From Resource Data Management

Description

The Mercury Roof Top Unit (RTU) can be configured for heating and/or cooling applications. Control can be achieved from either temperature probe input 1 or by a percentage weighting of input 1 and input 2. There is a 7-day timer with two on and off times. The Mercury 3 RTU Controller has a number of energy saving features one of which allows a user to offset the heating and cooling differentials from a TDB program. For example when the building is unoccupied the differentials can be adjusted to reduce the required level of heating/cooling. A second energy reducing feature, activated from TDB, allows the user to turn the *fans off when heating/cooling demand has been satisfied. See [Remote Commands](#) for further details. The RTU has the option to invert relay operation to use either N/C or N/O contacts. Care MUST be taken to make sure these are set correctly before use as incorrect setting / wiring could have adverse effects.

* At least one relay output must be selected as a fan before the thermostat control will operate. This is a precautionary measure to prevent the user from enabling a heater without the appropriate fan(s) being selected as in some applications this could damage the heating equipment or cause a fire hazard.

The controller supports PT1000, NTC2K, 470R, 700R, 3K, 5K, 6K, NTC2K25, NTC10K (T1) or NTC10K (T2) temperature probes (note: probe types cannot be mixed)

Variants

Description	Part Number
Mercury Mk3 Roof Top Unit	PR0740-RTU
Intuitive Mercury Roof Top Unit	PR0750-RTU

Ordering Information

Mercury Mk3 Hardware

When ordering a Mercury Mk 3 controller the following ordering scheme can be used to purchase the desired hardware configuration.

PR0740 X RTU

X	Description
IP	Ethernet Comms
232	RS232 Comms

Example:

To order a Mercury MK3 Roof Top Unit with IP comms: **PR0740 – IP – RTU**

Intuitive Mercury Hardware

When ordering an Intuitive Mercury controller the following ordering scheme can be used to purchase the desired hardware configuration.

PR07X0 Y RTU Z

X	Description	Y	Description	Z	Description
5	Integral Display	Blank	Fused	Blank	RS232 Comms
6	Remote Display	NF	Non-Fused	IP	IP Comms

Example:

To order an Intuitive Mercury controller with an integral display, fused and IP comms: **PR0750 RTU IP**

Configuration

There is only one type of configuration in the Mercury RTU controller.



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Compatible Network Interfaces

Mercury and Intuitive Mercury controllers which do not have an IP interface built in are capable of connecting to either a TCP/IP local area network, an RS485 Genus compatible network, an RDM wireless mesh network or they can be used in standalone mode with no network output. To connect to a network, you must add the correct communications module. Connecting to any of these communication modules will automatically be detected on power up and will affect the 'Net' menu set up screens available to you. **Note** controllers with built in IP will be able to communicate to any IP switch, including the rear ports of the RDM Mercury Hub.

Description	Part Number
IP Futura (Single Mercury to IP Interface)	PR0016
IP Futura, DIN rail mounted	PR0016-DIN
IP Futura, DIN rail mounted with 2 x CAT 5 sockets	PR0016-DUALDIN
Intuitive Switch with 6 x RS232 ports, 4 x Ethernet Ports and a 4-20mA Pressure Transducer connection.	PR0758-6P4E-PHI
Intuitive Switch with 12 x RS232 ports and 4 x Ethernet Ports	PR0758-12P4E
Intuitive Switch with 12 x RS232 ports, 4 x Ethernet Ports and a 4-20mA Pressure Transducer connection.	PR0758-12P4E-PHI
Intuitive Switch with 16 x RS232 ports, 4 x Ethernet Ports and a 4-20mA Pressure Transducer connection.	PR0758-16P4E-PHI
Intuitive Switch with 16 x RS232 ports, 3 x Ethernet Ports and 1 x Fibre connection.	PR0757-16P3E-F
Intuitive Switch with 16 x RS232 ports, 3 x Ethernet Ports, 1 x Fibre connection and a 4-20mA Pressure Transducer connection.	PR0757-16P3E-F-PHI
Bluetooth RS232 Network Module	PR0630

The Intuitive Mercury Controller is supplied as standard with an internal RS232 network card, this allows connection to any of the above external network interfaces. An alternative network card is also available, this can be supplied factory fitted as an option or purchased separately as an interface kit.

Description	Part Number
Intuitive Internal IP Network Card Interface Kit	PR0770

Front Display Features

LED's: -

Valve (On when cooling)



Fans (On when fan is on)



Lights (Not Used)



Defrost (On when heating)



On-Line



Off No network attached
Flashing Attempting to Log on to network
Steady On-line

Service (Not used)



Alarm (On when in alarm state)



HACCP



Enter



Up



Down



Defrost

Note: Function keys illuminate when pressed, illumination is turned off 20 seconds after the key is used. Press and hold the defrost button to force a manual defrost.

Main Display



4 character LED display, used to display temperature and status messages.



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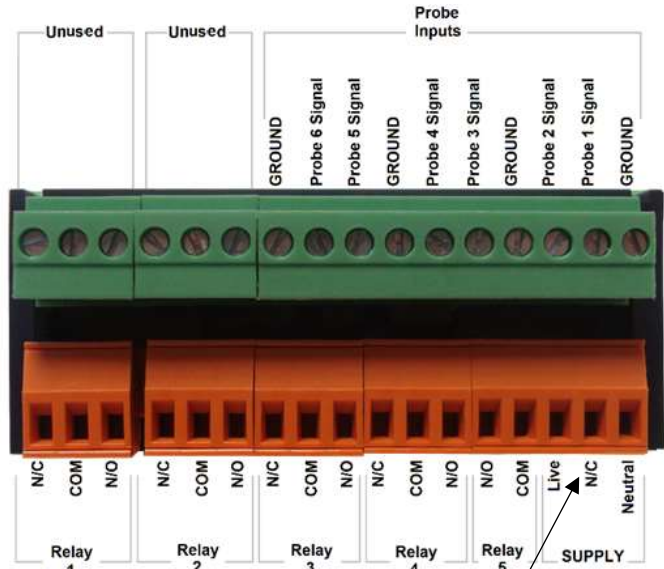
Connections

Mercury Mk3 I/O

Input and Output connections are made to the back of the controller, the RS232 communication port is on the side. The diagram shows the connection detail. Inputs and outputs are assigned according to the chosen configuration. See [Input/Output](#) tables for further details on connections.

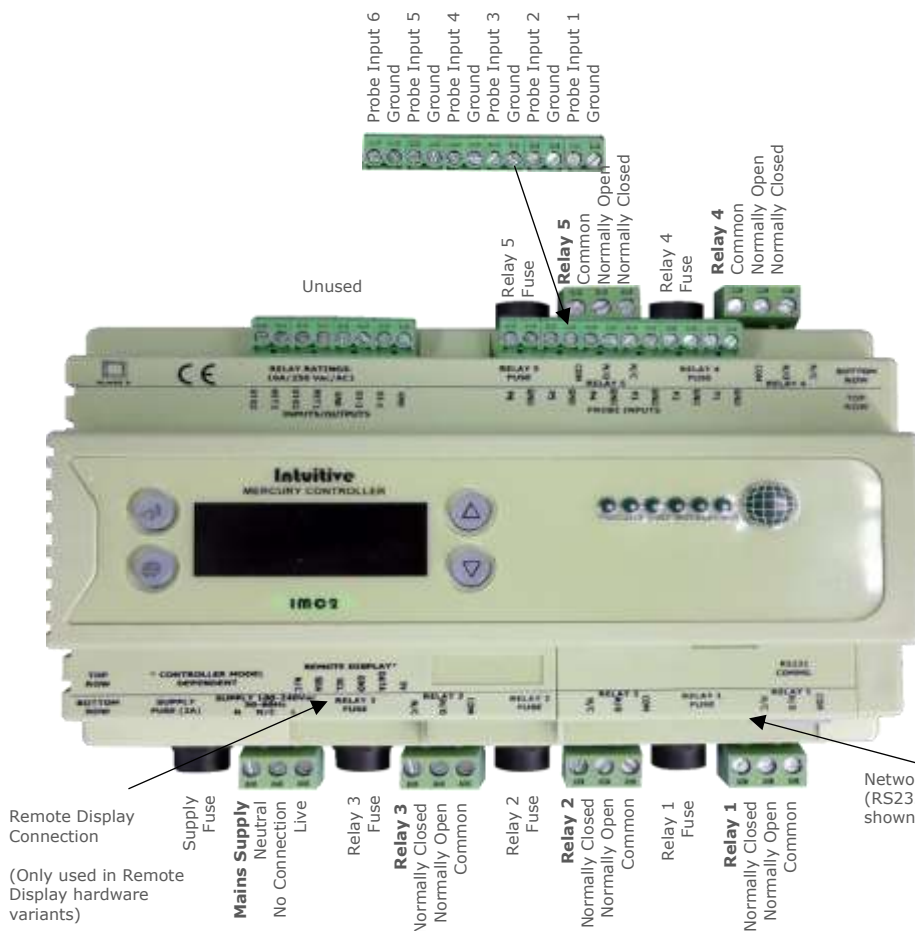


Do not connect an earth



Note: On the supply, N/C equates to 'No Connection'

Intuitive Mercury I/O



Network Expansion Options

RS232 Network Card (Default)



The Intuitive Mercury is supplied with an RS232 Network Card fitted as standard. Some example optional network cards are shown below

IP Network Card (PR0770)



Rotary Address Switches
Network Collision LED
Network Activity LED



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Input / Output allocation table

TYPE	Description	Alarm Action
Probe 1	Probe 1	Yes
Probe 2	Probe 2	Yes
Probe 3	Probe 3*	No
Probe 4	Probe 4*	No
Probe 5	Probe 5*	No
Probe 6	Probe 6*	No
Relay 1	Configurable	N/A
Relay 2	Configurable	N/A
Relay 3	Configurable	N/A
Relay 4	Configurable	N/A
Relay 5	Configurable	N/A

* Probes 3 to 6 are for monitoring purposes only.

Setting up the controller

Access to the controller can be achieved several ways

- Through the front mounted buttons
- Direct access by PC or palm top into the rear comms port. This requires a software package available on the RDM website
- Through the RDM Data Manager
- Across an IP network. (Current controller IP address required)

Setup through front buttons



To enter setup mode, hold the Enter and Down buttons together for approximately 3 seconds until the message "Ent" appears on the display. Now press the Enter button again to enter the function menu. IO will be displayed. Scroll up or down to go through the list.

Setup Function Menu (Common to all types)

Display	Option	Explained in Paragraph	Display	Option	Explained in Paragraph
IO	View Inputs / Outputs and States	Input / output table	nEt	Set/view network configuration	Network Configuration
PARA	Set/View Parameters	Set view parameters	SoFt	View software version	
Unit	Probe type and Celsius/Fahrenheit option	Set View Unit	OFSt	Probe Offset	Probe Offset
diSP	Display whole units or decimal	Display	rLy	Invert Relay Function	Invert Relays
tyPE	Set/View Controller Type	Set/view controller type	tEst*	Test Mode	See Note Below
rtc	Set/view Clock (rtc = Real Time Clock)	Real Time Clock	ESC	Exit Setup mode	ESC

***Note:** When first powered up the controller will have the 'tEst' option in the menu setup. This allows the user to toggle the relays for testing purposes. Upon entering the menu, the display will show r-01 (relay 1) to r-05 (relay 5), select the desired output and toggle the value from 0 to 1 (confirm by pressing enter) to switch the selected relay.

This option is only available for 30 seconds after power up. After this time, the menu setup will return to its standard options.



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Recommended set-up method

If you are not connecting to a network and want to set up the controller through the buttons we recommend you use the following order from the function menu.

rtc. Real time clock (This will automatically synchronise on network systems)

- a. Use the up or down buttons to scroll through the display until the display reads "rtc"
- b. Press enter. The display will show "t-1". press enter again
- c. Scroll hours up or down (0 – 23) press enter
- d. Use up button to select "t-2", press enter
- e. Scroll minutes up or down (0 – 59) press enter
- f. Repeat for t-3 (seconds 0 – 59)
- g. Repeat for t -4 (days up to 31)
- h. Repeat for t -5 (months up to 12)
- i. Repeat for t -6 (year up to 99)
- j. Use up button to display "ESC", press enter to display "rtc"

Timeclock is now set

type. Set/view controller type

The controller type is preset at the factory and cannot be changed.

Unit. Set/view temperature unit and Probe type

From the function menu scroll to select Unit
Press enter and the value will be displayed:

0 for PT1000 Celsius	10 for NTC2K25 Celsius
1 for PT1000 Fahrenheit	11 for NTC2K25 Fahrenheit
2 for NTC2K Celsius	12 for 5K Celsius
3 for NTC2K Fahrenheit	13 for 5K Fahrenheit
4 for 470R Celsius	14 for 6K Celsius
5 for 470R Fahrenheit	15 for 6K Fahrenheit
6 for 700R Celsius	16 for NTC10K T1 Celsius
7 for 700R Fahrenheit	17 for NTC10K T1 Fahrenheit
8 for 3K Celsius	18 for NTC10K T2 Celsius (USA NTC10K)
9 for 3K Fahrenheit	19 for NTC10K T2 Fahrenheit (USA NTC10K)

Use the up or down keys to select the units and press enter. This function is now complete.

Display

From the function menu scroll to and select diSP.

Press enter and one of the following values will be shown: -
0 controller display will show the whole number and tenths value of a temperature reading.
1 controller display will show temperatures as a whole number.

Display defaults to 0.

PArA. Set/view parameters (This can be achieved at the network front end)

- a. From the function menu scroll to select PArA
- b. Pressing Enter while PArA is displayed will enter the parameter menu. The first parameter option will be displayed as P-01. Pressing the Up or Down button will present the other parameter options P-02, P-03 etc. See the parameter list below to find what parameter number corresponds to which actual parameter. Pressing the Enter button will show the current value of the selected parameter. Press Up or Down to modify the value and press Enter again to save the value. The parameter list number will be displayed again. Two other options are present in the parameter menu – dFLt and ESC. Selecting ESC will exit setup mode. Selecting dFLt will reset all parameters back to the default values for the current type controller.



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Parameter Table for RTU

Number	Parameter	Range °C (°F)	Step	Units	Default
P-01	Set Point	-49 to 30 (-56.2 to 86)	0.1	°C (°F)	21.1 (70.0)
P-02	Set Up Limit	-49 to 30 (-56.2 to 86)	0.1	°C (°F)	24.4 (76.0)
P-03	Set Dn Limit	-49 to 30 (-56.2 to 86)	0.1	°C (°F)	17.8 (64.0)
P-04	Heat Diff 1	0 to 20 (0 to 36)	0.1	°C (°F)	1.1 (2.0)
P-05	Heat Diff 2	0 to 20 (0 to 36)	0.1	°C (°F)	2.2 (4.0)
P-06	Cool Diff 1	0 to 20 (0 to 36)	0.1	°C (°F)	1.1 (2.0)
P-07	Cool Diff 2	0 to 20 (0 to 36)	0.1	°C (°F)	2.2 (4.0)
P-08	Control Weight	0 to 100	1	%	50
P-09	Display Weight	0 to 100	1	%	50
P-30	Fans Control	0 = On, 1 = Pulsed	1		0
P-31	Fans Run On	00:00 to 99:00	01:00	mm:ss	20:00
P-32	Fan Pulse On	00:00 to 99:00	01:00	mm:ss	05:00
P-33	Fan Pulse Off	00:00 to 99:00	01:00	mm:ss	05:00
P-40	Heat Stg Dly	00:00 to 99:00	01:00	mm:ss	05:00
P-41	Cool Stg Dly	00:00 to 99:00	01:00	mm:ss	05:00
P-20	OT / UT Alm Dly	00:00 to 99:00	01:00	mm:ss	20:00
P-21	Under Temp Alm	-98 to 128 (-144 to 262)	0.1	°C (°F)	15.6 (60.0)
P-22	Over Temp Alm	-98 to 128 (-144 to 262)	0.1	°C (°F)	29.4 (85.0)
P-50	Probe 2	0 = Monitor 1 = Control	1		0
P-51	Alm Use Rmt Off	0 = Off 1 = On	1		0
P-54	Relay Mode 1*	0 = Unused, 1 = Heat 1, 2 = Heat 2, 3 = Cool 1, 4 = Cool 2, 5 = Fan, 6 = Timer, 7 = Alarm	1		5
P-55	Relay Mode 2*	0 = Unused, 1 = Heat 1, 2 = Heat 2, 3 = Cool 1, 4 = Cool 2, 5 = Fan, 6 = Timer, 7 = Alarm	1		3
P-56	Relay Mode 3*	0 = Unused, 1 = Heat 1, 2 = Heat 2, 3 = Cool 1, 4 = Cool 2, 5 = Fan, 6 = Timer, 7 = Alarm	1		4
P-57	Relay Mode 4*	0 = Unused, 1 = Heat 1, 2 = Heat 2, 3 = Cool 1, 4 = Cool 2, 5 = Fan, 6 = Timer, 7 = Alarm	1		1
P-58	Relay Mode 5*	0 = Unused, 1 = Heat 1, 2 = Heat 2, 3 = Cool 1, 4 = Cool 2, 5 = Fan, 6 = Timer, 7 = Alarm	1		2
P-70	Fan Mode	0 = Local, 1 = Remote, 2 = Man Off, 3 = Man On	1		0
P-71	Sunday On Time 1	00:00 to 23:59	00:01	hh:mm	08:00
P-72	Sunday Off Time 1	00:00 to 23:59	00:01	hh:mm	20:00
P-73	Sunday On Time 2	00:00 to 23:59	00:01	hh:mm	08:00
P-74	Sunday Off Time 2	00:00 to 23:59	00:01	hh:mm	20:00
P-75	Monday On Time 1	00:00 to 23:59	00:01	hh:mm	08:00
P-76	Monday Off Time 1	00:00 to 23:59	00:01	hh:mm	20:00
P-77	Monday On Time 2	00:00 to 23:59	00:01	hh:mm	08:00
P-78	Monday Off Time 2	00:00 to 23:59	00:01	hh:mm	20:00
P-79	Tuesday On Time 1	00:00 to 23:59	00:01	hh:mm	08:00
P-80	Tuesday Off Time 1	00:00 to 23:59	00:01	hh:mm	20:00
P-81	Tuesday On Time 2	00:00 to 23:59	00:01	hh:mm	08:00
P-82	Tuesday Off Time 2	00:00 to 23:59	00:01	hh:mm	20:00
P-83	Wednesday On Time 1	00:00 to 23:59	00:01	hh:mm	08:00
P-84	Wednesday Off Time 1	00:00 to 23:59	00:01	hh:mm	20:00
P-85	Wednesday On Time 2	00:00 to 23:59	00:01	hh:mm	08:00
P-86	Wednesday Off Time 2	00:00 to 23:59	00:01	hh:mm	20:00
P-87	Thursday On Time 1	00:00 to 23:59	00:01	hh:mm	08:00



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Number	Parameter	Range °C (°F)	Step	Units	Default
P-88	Thursday Off Time 1	00:00 to 23:59	00:01	hh:mm	20:00
P-89	Thursday On Time 2	00:00 to 23:59	00:01	hh:mm	08:00
P-90	Thursday Off Time 2	00:00 to 23:59	00:01	hh:mm	20:00
P-91	Friday On Time 1	00:00 to 23:59	00:01	hh:mm	08:00
P-92	Friday Off Time 1	00:00 to 23:59	00:01	hh:mm	20:00
P-93	Friday On Time 2	00:00 to 23:59	00:01	hh:mm	08:00
P-94	Friday Off Time 2	00:00 to 23:59	00:01	hh:mm	20:00
P-95	Saturday On Time 1	00:00 to 23:59	00:01	hh:mm	08:00
P-96	Saturday Off Time 1	00:00 to 23:59	00:01	hh:mm	20:00
P-97	Saturday On Time 2	00:00 to 23:59	00:01	hh:mm	08:00
P-98	Saturday Off Time 2	00:00 to 23:59	00:01	hh:mm	20:00
dFLt	Factory Defaults				

* At least one relay output must be selected as a fan before the thermostat control will operate. This is a precautionary measure to prevent the user from enabling a heater without the appropriate fan(s) being selected as in some applications this could damage the heating equipment or cause a fire hazard.

Parameter Descriptions

Number	Parameter	Description
P-01	Set Point	Thermostat target temperature. Point at which Heating or Cooling will switch off.
P-02	Set Up Limit	Maximum upper temperature limit the user can adjust the setpoint too via the quick key feature on the controller display. (Using the up and down button)
P-03	Set Down Limit	Maximum lower temperature limit the user can adjust the setpoint range via the quick key feature on the controller display. (Using the up and down button)
P-04	Heat Diff 1 (Below Set-Point)	Differential temperature below the set-point temperature. The first heating stage switches on when this temperature is reached.
P-05	Heat Diff 2 (Below Set-Point)	Differential temperature below the set-point temperature. The second heating stage switches on when this temperature is reached.
P-06	Cool Diff 1 (Above Set-Point)	Differential temperature above the set-point temperature. The first cooling stage switches on when this temperature is reached.
P-07	Cool Diff 2 (Above Set-Point)	Differential temperature below the set-point temperature. The second cooling stage switches on when this temperature is reached.
P-08	Control Weight	Percentage of Probe 1 temperature that is used to calculate the control temp. The remaining percentage will be used on Probe 2 temperature Example, P-08 set to 30% Control temp = 30% Probe 1 + 70% Probe 2 Note P-50 must be set to Control to use the weighted average. If P-50 set as Monitor then all of probe one used for control temperature.
P-09	Display Weight	As above only applied to the display temperature
P-30	Fans Control	Local selected at P-70 <ul style="list-style-type: none"> ➤ On - Always On when timer is on (P-71 to P-98) ➤ Pulsed - Pulsed on and off using parameters P-32 and P-33
P-31	Fans Run On	The period of time for which the fans remain on after Heating or Cooling has stopped or the thermostat has been turned off.
P-32	Fan Pulse On	The On period for the fans when Pulsed selected by P-30 (1)
P-33	Fan Pulse Off	The Off period for the fans when Pulsed selected by P-30 (1)
P-40	Heat Stage Delay	Time delay before heating stage 2 is turned on once below the setpoint. Please note the heating stage is turned on when either the delay time expires or the temperature drops below heating 2 diff setpoint whichever occurs first.
P-41	Cool Stage Delay	Time delay before cooling stage 2 is turned on once above the setpoint. Please note the cooling stage is turned on when either the delay time expires or the temperature rises above cooling 2 diff setpoint whichever occurs first.
P-20	OT / UT Alarm Delay	Delay applied before an alarm is signalled for over/under temperature alarm.
P-21	Under Temp Alarm	Under temperature alarm set point. This alarm uses the control temperature.
P-22	Over Temp Alarm	Over temperature alarm set point. This alarm uses the control temperature
P-50	Probe 2	Selects Probe 2 as a Monitor Probe only or Control using weighted average P-08 and P-09 along with Probe 1. Note if set as monitor no probe fault alarm is created for Probe 2. If set as control both probe 1 & 2 must fail before a probe fault is created.
P-51	Alm Use Rmt Off	If turned on the alarm setpoints will offset by the same value as the Remote Setpoint



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Number	Parameter	Description
		Command
P-54	Relay Mode 1	<ul style="list-style-type: none"> ➤ Unused – Relay has no operation ➤ Heating stage 1 – Operates in relation to heating diff 1 and the controller set-point. ➤ Heating stage 2 - Operates in relation to heating diff 2 and the controller set-point. ➤ Cooling stage 1 - Operates in relation to cooling diff 1 and the controller set-point. ➤ Cooling stage 2 - Operates in relation to cooling diff 2 and the controller set-point. ➤ Fan – Operation dependant on parameter “Fans Control”, “Run on” and “Fans Pulse” ➤ Timer – Relay operation follows the timer on/off status. ➤ Alarm – When enabled the alarm relay can be configured to either energise or de-energise on alarms.
P-55	Relay Mode 2	As above
P-56	Relay Mode 3	As above
P-57	Relay Mode 4	As above
P-58	Relay Mode 5	As above
P-70	Fan Mode	<ul style="list-style-type: none"> ➤ Local – Use parameter P-30 and timer parameters P-71 to P-98 ➤ Remote – Use Remote Commands from TDB Program. See Note : Remote Commands Fan Command ➤ Man Off – Never turn fans On ➤ Man On – Never turn fans Off
P-71	Sunday On Time 1	Timer : Sunday on time 1
P-72	Sunday Off Time 1	Timer : Sunday off time 1
P-73	Sunday On Time 2	Timer : Sunday on time 2
P-74	Sunday Off Time 2	Timer : Sunday off time 2
P-75	Monday On Time 1	Timer : Monday on time 1
P-76	Monday Off Time 1	Timer : Monday off time 1
P-77	Monday On Time 2	Timer : Monday on time 2
P-78	Monday Off Time 2	Timer : Monday off time 2
P-79	Tuesday On Time 1	Timer : Tuesday on time 1
P-80	Tuesday Off Time 1	Timer : Tuesday off time 1
P-81	Tuesday On Time 2	Timer : Tuesday on time 2
P-82	Tuesday Off Time 2	Timer : Tuesday off time 2
P-83	Wednesday On Time 1	Timer : Wednesday on time 1
P-84	Wednesday Off Time 1	Timer : Wednesday off time 1
P-85	Wednesday On Time 2	Timer : Wednesday on time 2
P-86	Wednesday Off Time 2	Timer : Wednesday off time 2
P-87	Thursday On Time 1	Timer : Thursday on time 1
P-88	Thursday Off Time 1	Timer : Thursday off time 1
P-89	Thursday On Time 2	Timer : Thursday on time 2
P-90	Thursday Off Time 2	Timer : Thursday off time 2
P-91	Friday On Time 1	Timer : Friday on time 1
P-92	Friday Off Time 1	Timer : Friday off time 1
P-93	Friday On Time 2	Timer : Friday on time 2
P-94	Friday Off Time 2	Timer : Friday off time 2
P-95	Saturday On Time 1	Timer : Saturday on time 1
P-96	Saturday Off Time 1	Timer : Saturday off time 1
P-97	Saturday On Time 2	Timer : Saturday on time 2
P-98	Saturday Off Time 2	Timer : Saturday off time 2
dFLt	Factory Defaults	Restores all of the parameters to their default values



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Network Configuration – RS232 comms

The final section to setup is the network address. In all instances, this must be done before the controller is connected to the site network.

When logging a Mercury 3 or Intuitive Mercury with an RS232 interface onto a network you must first connect the controller to a communications module, this is either a 485 Legacy, IP Futura or Mercury Switch. For Mercury 3's with the IP interface please refer to the [Network Configuration – IP comms](#) section for details of networking.

RS485 Legacy module / Intuitive Internal RS485 Network card

Using RS485, the controllers have an auto-initialise function, which will automatically log the device onto the site network. If the wrong address has been entered onto the network, you will have to reset the controller address by setting the address to 00-0, and then re-enter the correct address (you may have to deregister the wrong address from the home system as well).

Connecting an RS485 legacy Module or an Intuitive Internal RS485 network card to the controller will govern which set-up screens are made available in the '**Net**' menu. Both modules will support the "Genus" protocol only. Using RS485 will show the below;

Display	Option
485t	1: 485 Genus Network 2: Bluetooth (See Bluetooth Network module)
485A	485 Address/ Name
gAdd	Show underlying network address assigned to controller
rLog	Re-log the controller back onto the network
CLrA	Clear the address/name from the controller
ESC	Exit network menu. N.B. this option must be selected to save any changes made in this menu

The **485t** option shows a value representing the network type. This can only be set to '1':

Value	Network Type
1	Genus compatible (all versions)

Ensure option '1' is selected (for RS485).

The **485A** option shows a value representing the name of the controller in a Genus compatible network. For example, if the value shown in 485A is shown as "05-6". The controller would try to log onto a Genus compatible network using the name 'RC05-6'.

The **gAdd** option displays (in hexadecimal format) the underlying network address assigned to the controller when it was logged onto the network. Note: this is automatically assigned by the Data Manager.

The **rLog** option allows the controller to be logged back onto the network with its current name. The 'rLog' message will flash, waiting for confirmation. To confirm, press the Enter button to execute the command, Up or Down buttons to cancel.

The **CLrA** option will clear out the network address and name in the controller. The 'CLrA' message will flash for confirmation. Press the Enter button to execute the command, Up or Down buttons to cancel.

Fast Network Address Reset

To enter this mode, hold the Enter, Up and Down buttons together for approximately 3 seconds until the message CLrA appears on the display. CLrA is the first option in the menu consisting of the following options:

Display	Option
CLrA	Clear the address/name from the controller
ESC	Exit Setup mode

Pressing the Enter button to select the CLrA option will cause the 'CLrA' message to flash for confirmation, if the network type is set to Genus compatible. Press the Enter button to execute the command, Up or Down buttons to cancel. If the network type is not set to Genus compatible then the CLrA message will not flash and the ESC option can be used to exit the menu.



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

IP Futura module & Intuitive Internal IP Network card

In an IP system there are two options;

- IP-L
- IP-r

IP-L allows you to fix a static IP address into the controller, which you would use when you are connecting the controllers onto a customer's local area network. This would allow the customer to view each controller using a generic Internet browser.

IP-r allows you to give each controller on the system a unique number (using the rotary switches). This number is then allocated a dynamic IP address by the system's DHCP server (such as the RDM Data Manager).

IP-L

To configure the communication module or network card for IP-L, set all three rotary switches to zero. The module should then be connected to the controller. In the case of an Intuitive Mercury controller where the network card is already fitted, the controller should be powered off, all three rotary switches set to zero and the controller powered on.

- From the function menu you can now select 'nEt'.
- Press enter and the display will show "IP-L", press enter once more.
- You can now set the IP network settings by using the table below

Display	Option
IP-1	IP Address byte 1
IP-2	IP Address byte 2
IP-3	IP Address byte 3
IP-4	IP Address byte 4
nL	Network Mask Length
gt-1	Gateway Address byte 1
gt-2	Gateway Address byte 2
gt-3	Gateway Address byte 3
gt-4	Gateway Address byte 4
ESC	Exit network menu. N.B. this option must be selected to save any changes made in this menu

IP-r

To configure the communication module for IP-r, set the three rotary switches to give each controller a unique identifier. The module should then be connected to the controller and the network. The controller should then be powered on to connect to the network. In the case of an Intuitive Mercury controller where the network card is already fitted, the three rotary switches must be set when the controller is powered off, then power up before connecting to the network.

- From the function menu you can now select 'nEt'
- Press enter and the display will show "IP-r", press enter once more.
- You can now view (only) the address given by the DHCP server

Network Mask Length

To ease setup, a single network mask length value is used. If the address has been specified with a network mask value in dotted IP format e.g. 255.255.255.0 then the table below gives the conversion:

Mask	Length	Mask	Length	Mask	Length
		255.255.254.0	23	255.254.0.0	15
255.255.255.252	30	255.255.252.0	22	255.252.0.0	14
255.255.255.248	29	255.255.248.0	21	255.248.0.0	13
255.255.255.240	28	255.255.240.0	20	255.240.0.0	12
255.255.255.224	27	255.255.224.0	19	255.224.0.0	11
255.255.255.192	26	255.255.192.0	18	255.192.0.0	10
255.255.255.128	25	255.255.128.0	17	255.128.0.0	09
255.255.255.0	24	255.255.0.0	16	255.0.0.0	08



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

Mercury Switch

The method of logging on the Mercury 3 and Intuitive Mercury (RS232 comms) will be similar to that of the IP Futura however please refer to the Mercury Switch user guide, which can be obtained from the RDM website, for information regarding connecting a controller to a network.

Network Configuration – IP comms

Mercury 3 controllers with the IP interface as standard does not require any communications module and will already communicate on the IP network protocol.

When networking the Ethernet variant, the 'Net' menu will have the following menus:

Display	Option
IP-L / IP-r	Read/ Write Static IP address / Read Only DHCP IP address
Id	The 3 digit network address
AtyP	IP-r / IP-L selection
ESC	Exit Menu

Similar to the IP Futura / switch setup IP-L allows you to fix a static IP address into the controller and IP-r allows you to give each controller on the system a unique network number (using the Id).

- To firstly select between IP-L and IP-r navigate to 'AtyP'.

IP-r

Once IP-r is selected the controller must be given a unique 3 digit 'network address' that no other device on the network has (note if logging on to a Data Manager, this will be the device ID). Once the ID has been set connect the controller to the IP network for it then to be given an IP address by the DHCP server. To view the IP address given, within the Net menu, navigate to 'IP-r'.

IP-L

If IP-L has been selected from the 'AtyP' menu the IP address must be given to the controller by navigating to 'IP-L' within 'Net'. The following menu's will be available:

Display	Option
IP-1	IP Address byte 1
IP-2	IP Address byte 2
IP-3	IP Address byte 3
IP-4	IP Address byte 4
nL	Network Mask Length (see the network mask length table above)
gt-1	Gateway Address byte 1
gt-2	Gateway Address byte 2
gt-3	Gateway Address byte 3
gt-4	Gateway Address byte 4
ESC	Exit network menu. N.B. this option must be selected to save any changes made in this menu

Once the IP address has been entered, the controller can be connected to the IP network.



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

Bluetooth Network module

Connecting a Bluetooth Network Module to the controller will update the screens available under the 'Net' menu. They are detailed below:

Display	Option
485t	1: 485 Genus Network (See RS485 module/ Intuitive Internal RS485 Network card) 2: Bluetooth
485A	Bluetooth device name. As it will appear on DMTouch's device list (RC00-0 – RC99-9)
nI d	Select Bluetooth Network ID (0 - 4)
gAdd	Shows underlying network address assigned to controller
rLog	Re-log the controller back onto the network
ClrA	Clear the address/ name from the controller
ESC	Exit network menu. Note: this option must be selected to save any changes made in this menu.

- Ensure the 485t is set to '2' (Bluetooth)
- Provide a unique device alias under the 485A menu (e.g. 01-5)
- Select the Network ID. Please see the Bluetooth wireless mesh setup guide for more details.
- Press the 'ESC' to save

The green network LED will flash to show it is attempting to log on and go solid when connected.

Viewing

Apart from setting up the controller, you can also view the status of the inputs and outputs and controller states.

From the function menu, select "I/O", press enter. You can now scroll through the IO table as set out below

Input / Output Table

Number	IO	Range °C (°F)	Step	Units
I-01	Control temp	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
I-02	Display temp	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
I-10	Probe 1	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
I-11	Probe 2	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
I-12	Probe 3	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
I-13	Probe 4	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
I-14	Probe 5	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
I-15	Probe 6	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
O-01	Relay 1	0 (Off), 1 (On)		
O-02	Relay 2	0 (Off), 1 (On)		
O-03	Relay 3	0 (Off), 1 (On)		
O-04	Relay 4	0 (Off), 1 (On)		
O-05	Relay 5	0 (Off), 1 (On)		
O-06	Timer	0 (Off), 1 (On)		
O-07	Set Point	-98 to 128 °C (-144 to 262)	0.1	Deg °C (°F)
O-08	Remote Setpoint Offset	-18 °C to 18 °C	0.1	Deg °C (°F)
O-09	Diff Offset	0 °C - 18 °C	0.1	Deg °C (°F)
O-10	Local Offset	0 °C - 18 °C	0.1	Deg °C (°F)
O-09	Remote Fan	0 (Off), 1 (On)		
S-01	Control State	0=Stabilise, 1=Normal, 2=OT Alarm, 3=UT Alarm, 4=Probe Fault		
S-02	Fan State	0=Off, 1=Pulse On, 2=Pulse Off, 3=Run On		



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

Display Messages

The following alarms and messages can appear on the Mercury Mk3 display.

Display Message	System status
Ot AL	Over Temperature Alarm
Ut AL	Under Temperature Alarm
Prb Flt	Probe Fault

Network Alarms

The table below shows the text and associated type number that is sent to the system "front end". The type number is normally used to provide different alarm actions.

Alarm text	Type # (index)
Over Temperature	4
Under Temperature	5

Alarm text	Type # (index)
Probe 1	6
Probe 2	6

Normal Operation

During normal operation, the controller will show the display temperature, if there are no alarms. If there is a current alarm then an alarm message will be shown on the display and the alarm LED will come on. If the Control Stat is on a network and on-line, the green network LED will be on.



Faults

If a fault is detected, the Controller will indicate the fault on the display and the red alarm LED will come on

Network

The Network green LED flashes if the controller goes off-line or loses its given address.

Probe Offset

This feature allows each probe value to be modified by an "offset". Offset values are from -10°C (-18°F) to +10°C (+18°F) and on a channel basis. Example C1 = Probe 1.

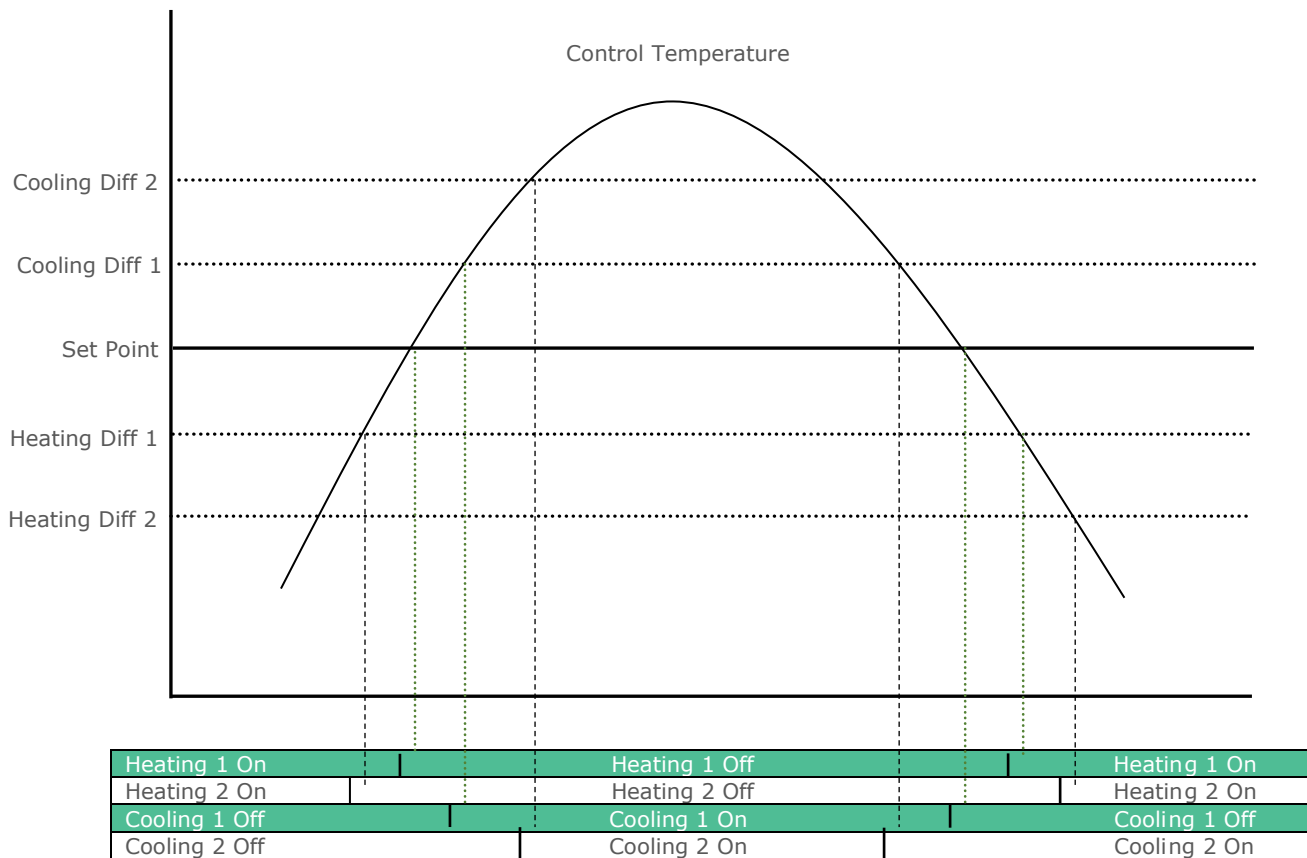
Set Point

Shows the current operating set point of the thermostat. If for example the set point has been adjusted via the controller display (up & down button press). Set point can be viewed from a front-end via the values page or Communicator software or from the controller IO (Output O-07).



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

Operation



The thermostat will operate to the above graph, the thermostat will require a fan to be running before it will operate. Heating and cooling stage 2 can be configured to come on at a pre-determined temperature or after a time delay.

During normal operation, the up and down keys can be used to adjust the current operating setpoint, limited by the upper and lower set-point settings. Press and hold both the up and down keys until the service icon, the spanner symbol, is displayed. The value shown on the screen is the current temperature setpoint, use the up or down button to adjust the setpoint. Hit the enter button when complete to save and exit. Note this will not change the parameter "Set Point" it will only allow the user to change the current operating setpoint. Once adjusted the stat will continue to control to this setpoint until the controller is either power cycled or the process is followed to adjust the operating setpoint back to the previous setpoint. If the current control setpoint has been adjusted via this process and the parameter "Set Point" is then adjusted then the offset will still remain and is added/subtracted to the new setpoint. e.g. Parameter "Set Point" is set to 16. The above process is used to adjust the operating setpoint to 18. The parameter "Set Point" is now changed to 17. The operating setpoint will now be 19 (set point 17 + 2 offset through up/down buttons).

The controller has 2 probe inputs that can be used together (weighted) to form the control temperature, or the controller can be configured to use Probe 1 only (Setting Probe 2 to be a Monitor Probe). Setting control weight to 100% would use only probe 1 for control. 0% would use only probe 2 for control. 50% would use an average of probe's 1 & 2.



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

Energy saving using Remote Setpoint Offset Command

An setpoint offset command can be sent from a TDB program operating on the Data Manager. This setpoint offset command affects all diffs (Heat Diff 1, Heat Diff 2, Cool Diff 1 and Cool Diff 2). Please see the following example: -

Parameters are set as the following: Remote Setpoint Offset can be viewed from a front-end via the values page or Communicator software or from the controller IO (Remote Offset O-08).

Heat Diff 1 P-04 = 2
Heat Diff 2 P-05 = 4
Cool Diff 1 P-06 = 2
Cool Diff 2 P-07 = 4

An analog output block in a Data Manager TDB program is used to send the value 2. The new operating diff parameters are now: -

Heat Diff 1 = 4 (From 2)
Heat Diff 2 = 6 (From 4)
Cool Diff 1 = 4 (From 2)
Cool Diff 2 = 6 (From 4)

Therefore with a Cut-In Set Point of 20 Degrees the first Cooling stage will come on at 24 degrees (From 22 Degrees). The first Heating stage will come on at 16 degrees (From 18 degrees)

Energy saving for Fan Operation

Fans Mode P-70 Set for Local (0)

Fan control uses Fan Control parameter P-30 and timer parameters P-71 to P-98 (On and Off times)

Fan control P-30 set for On (0): The fan(s) will run continuously when the controller is operational, even if the temperature is in the dead zone where no cooling or heating relays are on, and the timer is in the on state. When timer in the off state the fans will be off.

Fan control P-30 set for Pulsed (1): Fans will pulse on for period set in parameter P-32 and pulse off for period set in parameter P-33, whether in heating or cooling mode (i.e. Heating or Cooling will go Off/On with Fan), when the timer is in the on state. When timer in the off state the fans will be off.

Fans Mode P-70 Set for Remote (1)

Fan control uses commands sent from a TDB Program.

Commands sent from TDB to "Fan Command" using an "Analog Out" block.

Sending command "0" will send command "Off" and fans will never turn on.

Sending command "1" will send command "On" and fans will run continuously.

Sending command "2" will send command "AutoOn" and will put fans in energy saving mode. Fans will only run when cooling or heating is called for and will go off after a run-on period P-31 has expired.

Note: If set for Remote and controller goes off line control will revert back to Local operation after 10 minutes.

Note: If set for Remote commands from a TDB Program. If the TDB program is stopped for any reason or communication with the Data Manager TDB is lost, control will revert back to Local operation after 10 minutes.

Fans Mode P-70 Set for Man Off (2)

Fans will never run.

Fans Mode P-70 Set for Man On (3)

Fans will run continuously.

During the heating cycle, heating stage 1 will come on, then heating stage 2 will come on after a delay period or if the temperature reaches the set point (parameter: - Heating Stage Delay).

During the cooling cycle, cooling stage 1 will come on, then cooling stage 2 will come on after a delay period or if the temperature reaches the set point (parameter: - Cooling Stage Delay).

Note: - At least one relay output must be selected as a fan before the thermostat control will operate. This is a precautionary measure to prevent the user from enabling a heater without the appropriate fan(s) being selected as in some applications this could damage the heating equipment.



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

Relay Actions

Invert Relays

Each individual relay can be configured to use N/C or N/O contacts for operation. Individual relays can be inverted by selecting the required relay via the Mercury display (Navigate to the menu option **rLy** and select the relay output you wish to invert) For example: Select r-01 to select polarity of Relay 1. r-02 for Relay 2, etc.

NOTE: Correct configuration and wiring of relays **MUST** be set up before operation of controller.

Care should be taken when inverting the relay operation as incorrect wiring could have adverse results e.g. heaters running when they should be off.

Default Relay Status

Relay 1 N/C, Relay 2 N/O, Relay 3 N/O, Relay 4 N/O, Relay 5 N/O.

Default Relay Operation Status

Relay	Operation	Relay Contacts
Relay 1	Fan	N/C
Relay 2	Cooling Stage 1	N/O
Relay 3	Cooling Stage 2	N/O
Relay 4	Heating Stage 1	N/O
Relay 5	Heating Stage 2	N/O

If the order of operation of the relays is altered from above to any other combination then care must be taken to ensure the Relay Contacts are inverted to correct polarity for the operation of relay i.e. If Relay 3 was being used as another Fan instead of Cool 2 the relay would still be N/O and would have to be inverted if fan was required to be wired to N/C contacts.

If setting a Timer or Alarm relay use N/O relay Contacts

The alarm relay is De-Energised for no alarm. Use the NC and Common for "Loop break" on alarm or use the NO and Common for "Loop make" on alarm.

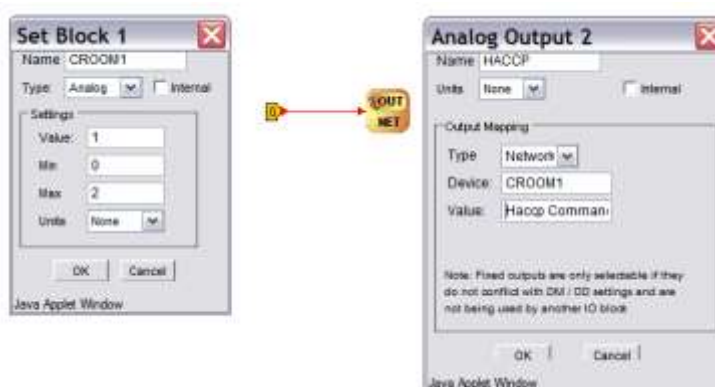
Remote Commands

Command	Value to send	Description
Haccp Command	0	HACCP LED OFF
	1	HACCP LED On
	2	HACCP LED Flashes
Button Command	0	Buttons backlights Off
	1	Buttons backlights On
	2	Buttons backlights On
Fan Command	0	Off - Never turn Fan On
	1	On - Never turn Fan Off
	2	Auto On - Turn fan off after Run On Period P-31 expires after heating / Cooling has been turned off
Diff Command	0.0 - 18.0	This value is added to the diff setpoints
Setpoint Command	+/- 18	This value is added to or subtracted from the setpoint

The following commands can be used by a Data Builder program:

Use an "Analogue Out" block configured to the controller name and in the value field type in the command you require. Use a "Setting block" as the input to the "Analogue Out" block to send the Value.

See Example on the right, which switches on the Haccp LED on CROOM1



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

Appendix 1: Webpage Appearance

It is possible to view the controller across an IP connection using one of the methods outlined in the [Network Configuration](#) section.

Rtu Controller

Mercury3a RTU 3.3

Time 16:13:51 25/08/23

Current Status

Control temp.	26.8	°C
Control State	Normal	

Current Alarms

None

Inputs & Outputs Parameters Alarms Logs Configure

The following screens are samples of how values and settings appear when viewed through a PC/Laptop connection.

The user has a choice of entering the following pages: - **Inputs & Outputs, Parameters, Alarms, Logs & Configure.**

Inputs & Outputs

Inputs & Outputs

Inputs			Outputs			States	
Control temp.	26.6	°C	Cool 1	Off		Control State	Normal
Display temp.	26.6	°C	Fan	On		Fan State	On
Probe 1	26.6	°C	Unused	Off			
Probe 2	26.1	°C	Unused	Off			
Probe 3	N/A	°C	Heat 1	Off			
Probe 4	N/A	°C	Timer	On			
Probe 5	N/A	°C	Set Point	28.0	°C		
Probe 6	N/A	°C	Setpoint Offset	5.0	°C		
			Diff Offset	1.0	°C		
			Local Offset	2.0	°C		
			Remote Fan	N/A			

This is view only screen and shows the states of the inputs and outputs.



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

Parameters

Parameters

Control
Alarms
Relays
Timer

Parameter Name	Value	Units
Set Point	21.0	°C
Set Up Limit	30.0	°C
Set Dn Limit	-49.0	°C
Heat Diff 1	2.0	°C
Heat Diff 2	2.0	°C
Cool Diff 1	2.0	°C
Cool Diff 2	2.0	°C
Control weight	50	%
Display weight	50	%
Fans Control	On	
Fans Run On	20:00	mm:ss
Fan Pulse On	05:00	mm:ss
Fan Pulse Off	30:00	mm:ss
Heat Stg Dly	01:00	mm:ss
Cool Stg Dly	01:00	mm:ss

This is a view only screen and shows the parameter settings.

Alarms

Alarms

Reason	Occurred	Cleared
Over temperature	15:50:26 25/08/23	15:50:45 25/08/23
Over temperature	17:15:05 23/08/23	16:48:40 24/08/23
Under temperature	16:30:16 23/08/23	16:32:43 23/08/23
Under temperature	11:12:07 22/08/23	10:48:45 23/08/23
Under temperature	10:52:29 22/08/23	10:59:49 22/08/23
Over temperature	10:50:57 22/08/23	10:52:29 22/08/23
Over temperature	10:50:11 22/08/23	10:50:21 22/08/23
Under temperature	10:48:44 22/08/23	10:48:54 22/08/23
Over temperature	10:48:07 22/08/23	10:48:39 22/08/23

This is a view only screen.

Logs

Logs

<<<
<<
<
3
>
>>
>>>

	16:19:40 25/08/23	16:19:45 25/08/23	16:19:50 25/08/23	16:19:55 25/08/23	16:20:00 25/08/23	16:20:05 25/08/23	16:20:10 25/08/23	16:20:15 25/08/23
Control temp.	26.0	25.9	25.9	25.9	26.0	26.0	26.0	26.0
Display temp.	26.0	25.9	25.9	25.9	26.0	26.0	26.0	26.0
Probe 1	26.0	25.9	25.9	25.9	26.0	26.0	26.0	26.0
Probe 2	25.7	25.7	25.7	25.7	25.7	25.7	25.7	25.7
Probe 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Probe 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Probe 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Probe 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Relay 1	Off	Off	Off	Off	Off	Off	Off	Off
Relay 2	On	On	On	On	On	On	On	On
Relay 3	Off	Off	Off	Off	Off	Off	Off	Off
Relay 4	Off	Off	Off	Off	Off	Off	Off	Off
Relay 5	Off	Off	Off	Off	Off	Off	Off	Off



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

This is a view only screen

Configure

Alternatively, click on the **Configure** button to access the setup menu.

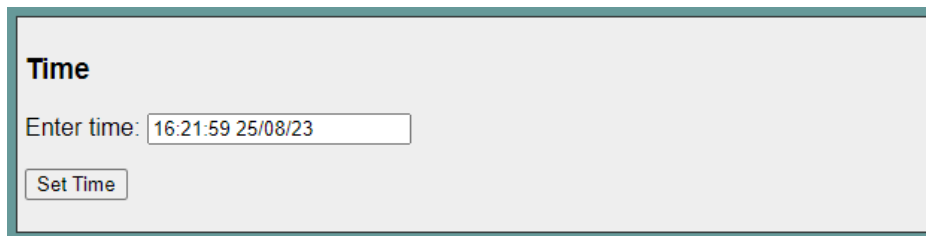
Note: login credentials required to access Configure menu are as follows;

Username: 'service'
Password: '1234'



This screen allows the user to configure the controller and set-up the following: - **Time, Parameters, Temperature Units, Display Units, , Name, Logging, Asset Information and Probe Offsets and Set Password**

Time Screen

A screenshot of the 'Time' screen. The title 'Time' is at the top left. Below it is a text input field with the label 'Enter time:' and the value '16:21:59 25/08/23'. Below the input field is a button labeled 'Set Time'.

Enter the time and date in the format displayed and press "Set Time" to update the controller. A screen showing the set time will be displayed, and then revert to the initial (Home) screen.



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

Parameter Screen

Set Parameters

Use Set Parameters button to save changes before changing section

Control Alarms Relays Timer

Parameter Name	Low	High	Default	Value	Units
Set Point	-49.0	30.0	21.1	<input type="text" value="21.0"/>	°C
Set Up Limit	-49.0	30.0	24.4	<input type="text" value="30.0"/>	°C
Set Dn Limit	-49.0	30.0	17.8	<input type="text" value="-49.0"/>	°C
Heat Diff 1	0.0	20.0	1.1	<input type="text" value="2.0"/>	°C
Heat Diff 2	0.0	20.0	2.2	<input type="text" value="2.0"/>	°C
Cool Diff 1	0.0	20.0	1.1	<input type="text" value="2.0"/>	°C
Cool Diff 2	0.0	20.0	2.2	<input type="text" value="2.0"/>	°C
Control weight	0	100	50	<input type="text" value="50"/>	%
Display weight	0	100	50	<input type="text" value="50"/>	%
Fans Control				<input type="text" value="On"/> ▼	
Fans Run On	00:00	99:00	20:00	<input type="text" value="20:00"/>	mm:ss
Fan Pulse On	00:00	99:00	05:00	<input type="text" value="05:00"/>	mm:ss
Fan Pulse Off	00:00	99:00	05:00	<input type="text" value="30:00"/>	mm:ss
Heat Stg Dly	00:00	99:00	05:00	<input type="text" value="01:00"/>	mm:ss
Cool Stg Dly	00:00	99:00	05:00	<input type="text" value="01:00"/>	mm:ss

This screen allows the parameters to be changed. Once the values are changed, the "Set Parameter" button must be clicked to set the parameters into the controller.

A screen will show the number of parameters and the number changed, then revert back to the Home screen.

Temperature Units

Temperature Units

▼

This screen allows the user to set the probe type for the controller and if it's in degrees Centigrade or Fahrenheit.

Display Units

Display Units

▼

This screen allows the user to set if the display on the controller will display only whole numbers (Whole) or whole numbers and tenths (Decimal).



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

Name

Name

Enter Name:

This screen allows the user to give the controller a name. Type in a name of your choice (upper or lower case alpha-numeric) up to 32 characters. Click "Set Name" to load into the controller. A screen will show the name has been set and then revert back to the Home screen. (The Home screen will also now show the controller name.)

Logging

Logging

Set 1		Set 2	
Log Interval	5s ▾	Log Interval	None ▾
Control temp.	<input checked="" type="checkbox"/>	Control temp.	<input checked="" type="checkbox"/>
Display temp.	<input checked="" type="checkbox"/>	Display temp.	<input checked="" type="checkbox"/>
Probe 1	<input checked="" type="checkbox"/>	Probe 1	<input checked="" type="checkbox"/>
Probe 2	<input checked="" type="checkbox"/>	Probe 2	<input checked="" type="checkbox"/>
Probe 3	<input checked="" type="checkbox"/>	Probe 3	<input type="checkbox"/>
Probe 4	<input checked="" type="checkbox"/>	Probe 4	<input type="checkbox"/>
Probe 5	<input checked="" type="checkbox"/>	Probe 5	<input type="checkbox"/>
Probe 6	<input checked="" type="checkbox"/>	Probe 6	<input type="checkbox"/>
Relay 1	<input checked="" type="checkbox"/>	Relay 1	<input type="checkbox"/>
Relay 2	<input checked="" type="checkbox"/>	Relay 2	<input type="checkbox"/>
Relay 3	<input checked="" type="checkbox"/>	Relay 3	<input type="checkbox"/>
Relay 4	<input checked="" type="checkbox"/>	Relay 4	<input type="checkbox"/>
Relay 5	<input checked="" type="checkbox"/>	Relay 5	<input type="checkbox"/>
Timer	<input checked="" type="checkbox"/>	Timer	<input checked="" type="checkbox"/>

This screen allows the user to set the logging features. There are two sets so that values can have different log intervals.

Set the interval required on set1 and set 2, tick the required values to be logged, then click "Set Values" to load into the controller.

A screen will display "Log configuration set" then revert back to the Home page.



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

Asset Information

Asset Information

Controller	
Model	PR0740 232 RTU
Serial No	RDM10111132
Date	25/08/23

**This information can be entered only once.
Ensure it is correct before pressing the Set button.**

This screen allows the user to set asset information into the controller.

Caution: This is a once only operation.

Click "Set Information" and follow the on screen instructions to set up your asset information.

Probe Offsets

Probe Offsets

Probe	Low	High	Value	Units
1	-10	10	0.0	°C
2	-10	10	0.0	°C
3	-10	10	0.0	°C
4	-10	10	0.0	°C
5	-10	10	0.0	°C
6	-10	10	0.0	°C

This screen allows the user to set a probe offset between to any of the six probes connected to the controller.

Invert Relays

Invert Relays

Relay	Value
1	On ▼
2	On ▼
3	Off ▼
4	Off ▼
5	Off ▼

This screen allows the user to invert the operation of the specified relay on the controller



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

Set Password

Set Password

DO NOT change the password if you are unsure of the effect it may have.
Note: RDM frontends running earlier versions of software may require the old default password.

Enter Password:

Re-enter Password:

This screen allows the user to change the password from the default '1234'. Please be aware that this could have an adverse effect on communications between a RDM frontend running an older software version. Please contact RDM Technical Support for more information.



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Specification

Mercury Mk3 Controller PR0740-RTU		Intuitive Mercury Controller PR07X0-RTU	
Power Requirements			
Supply Voltage Range	100 - 240 Vac ±10%	100 - 240 Vac ±10%	
Supply Frequency	50 - 60 Hz	50 - 60 Hz	
Maximum supply current	5.2 Amps (when relay 5 is fully loaded)	2 Amps	
Typical supply current	<1 Amp	<1 Amp	
General			
Operating temperature range	-10°C to 60°C (14°F to 140°F)	-10°C to +60°C	
Storage temperature range	-20°C to 65°C (-4°F to 149°F)	-20°C to +65°C	
Environmental	Indoor use at altitudes up to 2000m, pollution degree 1, installation category II. Voltage fluctuations not to exceed ±10% of nominal voltage.	Indoor use at altitudes up to 2000m, pollution degree 1, installation category II. Voltage fluctuations not to exceed ±10% of nominal voltage.	
Size	78mm (W) x 36mm (H) x 110mm (D)	157mm (W) x 67mm (H) x 120 (D)	
Approx Weight	170 grams	500 grams	
Safety	EN61010	EN61010	
EMC	EN61326; 2013	EN61326; 1997 +Amdt. A1; 1998	
Ventilation	There is no requirement for forced cooling ventilation	There is no requirement for forced cooling ventilation	
Class 2 Insulation	No protective Earth is required and none should be fitted	No protective Earth is required and none should be fitted	
Supply Fuse	The host equipment must provide a suitable external over-current protection device such as: - Fuse: 6.3A 240 Vac Antisurge (T) HRC conforming to IEC 60127	Built in fuse holder, fuse 2A 240Vac Anti-surge (T) HRC conforming to IEC60127, 32 x 6.3mm	
Or MCB	6A, 240 VAC Type C conforming to BS EN 60898	2A, 240 VAC Type C conforming to BS EN 60898. Note: device has integral 2A fuse	
Relay Fuse	Not Fitted	10A 240Vac Anti-surge (T) HRC conforming to IEC60127, 32 x 6.3mm	
Relay Specification			
Relay 1 - 4		Relays 1 - 5	
Max current	6A Resistive (CosØ = 1) 2A Inductive (CosØ = 04)	10A Resistive (CosØ = 1) 3A Inductive (CosØ = 0.4)	
Max voltage	250Vac, 30V dc	250Vac. 30V dc	
Relay Fuse	N/A	10A 240Vac Anti-surge (T) HRC conforming to IEC60127, 32 x 6.3mm	
Relay 5			
Max current	3A (non inductive), COSφ=0.4 2A (inductive load) 200,000 operations		
Max voltage	250Vac (Internal supply)		
For compliance with the LVD, relays 3, 4 and 5 commons must be at the same potential as the supply voltage			
Safety	Conforms to EN60730-1 based on UL 60950-1; UL 62368-1 as referenced to IEC60730-1		
Inputs			
Probe Input resistance	3.01K Ohms (for PTC or NTC type probes)	3.01K Ohms (for PTC or NTC type probes)	
Probe Input type	Selectable. See: Units	Selectable. See: Units	
Digital Inputs	Volt Free	Volt Free	
Comms			
Serial Variant	RS232 with flow control		
Ethernet Variant	IP comms		

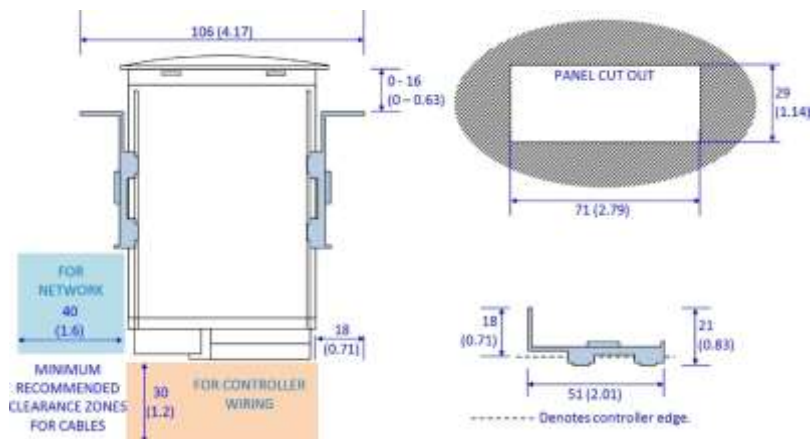


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Installation

Panel Cut-out and Clearances

Mercury Mk3 (Flush mount controller)



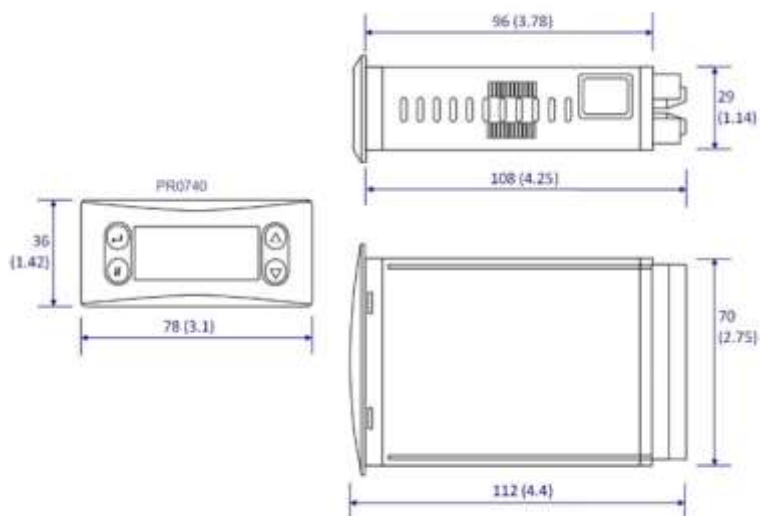
Fixing

The controller is fixed by sliding the 2 plastic retaining clips up to rear of the panel. These clips have a ratchet action and can be removed by holding in the clip sides and sliding back.

There is no requirement for forced cooling ventilation

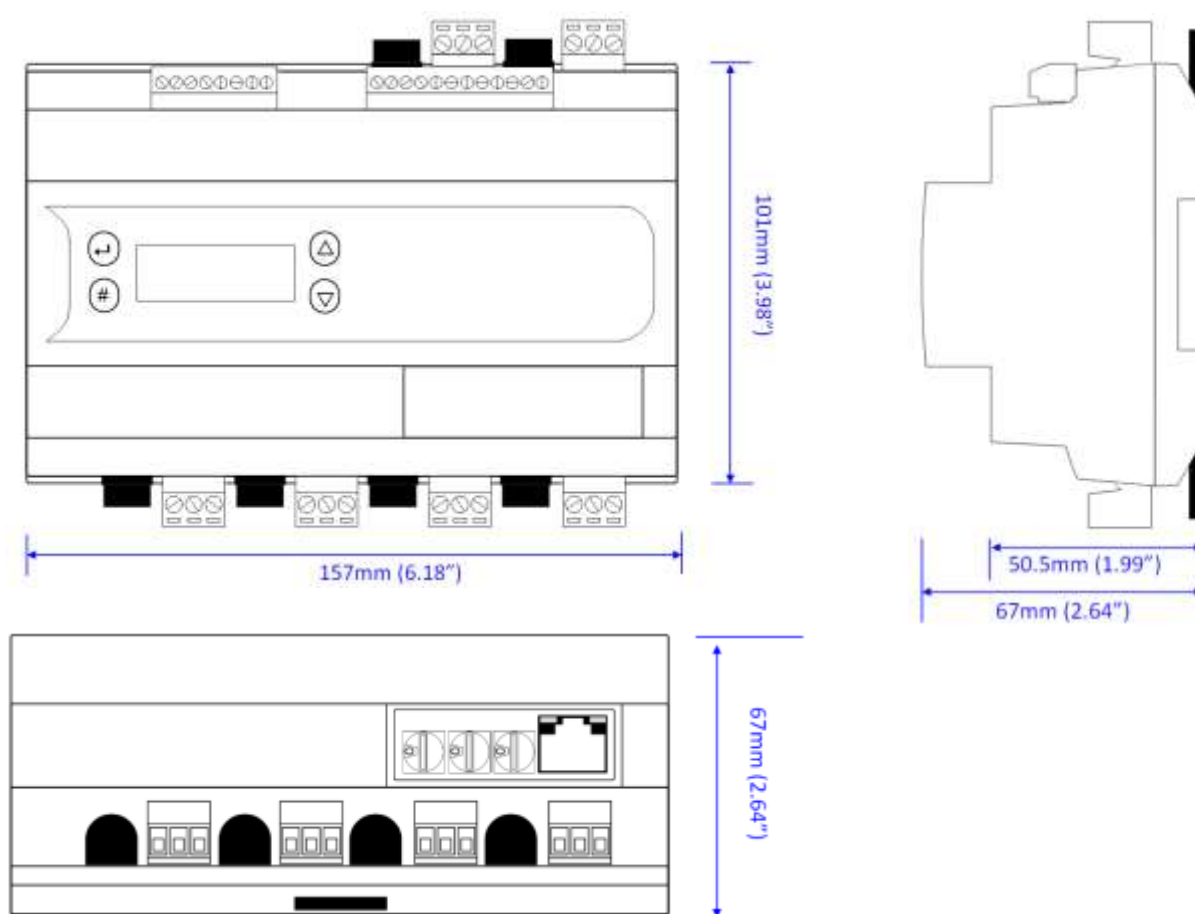
Dimensions

Mercury Mk3

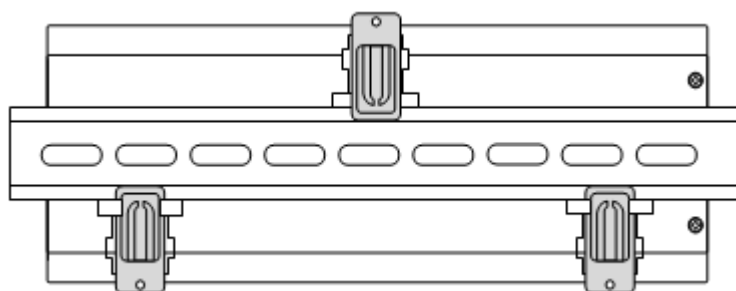


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Intuitive Mercury Controller



Intuitive Mercury Mounting Instructions



Three clips fix the Intuitive Mercury securely to DIN rail. Pull each clip until it "clicks" to remove the controller. Each clip has a mounting hole to provide an alternative fixing mechanisms to DIN mounting.

Cleaning

Do not wet the controller when cleaning. Clean the front by wiping with slightly dampened lint free cloth.

Warranty Information

www.resourcedm.com/terms-and-conditions/



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Disclaimer

The specifications of the product detailed in this document may change without notice. RDM Ltd shall not be liable for errors or omissions, for incidental or consequential damages, directly or indirectly, in connection with the furnishing, performance or misuse of this product or document.

Revision History

Revision	Date	Changes
3.0	28/08/2015	Introduction of Mercury 3 range.
3.0a	03/11/2015	Connections drawing updated.
3.0b	13/03/2017	New documentation format.
3.0c	17/05/2017	Operating temperature amended.
3.1	03/01/2017	Temperature Unit descriptions changed.
3.1a	31/05/2019	I/O table updated, Contact details updated.
3.1b	31/03/2020	Update to specification. Intuitive Mercury added to documentation.
3.1c	24/12/2020	Warranty information added.
3.3	06/09/2023	Remote Setpoint and Diff command added. Alm Use Rmt Off parameter added to alter alarm setpoints to alter in line with the remote Setpoint command. Ability to change the password from default added. Bluetooth support added.



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