Rickard Wall Stat Extended Guide

OPERATING AND SETUP INSTRUCTIONS

Introduction

The Rickard Wall Stat provides the user with an interface to control the Set point of the environment it is installed in as well as monitor the current temperature. Using the MLM software, further functions can be enabled which are covered in this manual. The additional functions provide more detailed information of features that can assist commissioning and are not normally needed for the end user. All additional features displayed can be more easily adjusted and monitored using the MLM software.

Connection

The Wall Stat is supplied with an 8m cable fitted with RJ12 plugs that link the Wall Stat to a diffuser. The Wall Stat can be plugged into any diffuser in the zone to be controlled via a RJ12 socket on the interface board located on the back of the diffuser ceiling tile.

Installation

1. Installation of this product should be carried out by appropriately qualified persons.

2. Run supplied cable in wall and ceiling from Wall Stat location to diffuser interface board.

3. Mount the backing plate of the Wall Stat to the wall.

4. Connect cable to Wall Stat and clip to backing plate to complete installation.



Display	Description	Function
°C	Degrees Celsius	Control
°F	Degrees Fahrenheit	Control
88	Function Display	Control/General
88:88	Main Display	All
ℓ/s	Litre per second	Air volume
cfm	Cubic feet per min	Air volume
	Battery Low	Diagnostics
	Setup	Commissioning
SP	Set point	Control
	Cooling mode	Control
	Heating mode	Control
	Real time clock	Back-off timer
	Wireless connect	Connection
	Air flow detect/limit	Air volume
	Heater on	Control
	End-stop open/close	Control
	Moving towards close	Control
	Actuator not moving	Control
	Moving towards open	Control
%	Percentage display	Control

Start Up



On power up or if a reset command from the MLM application is being executed, the display will initially indicate the WS firmware revision number, with the function characters indicating **Ur**. The display shown here indicates version 2.05. After a few seconds the display will revert to the default temperature display and the diffuser will enter the initialization mode.

Initialising



The top and bottom end-stop bars will flash to indicate the diffuser is in initialization mode. During this phase, the diffuser is being driven to the maximum open position to reference the actuator position. The down arrow will display to indicate movement towards the open end-stop. Once the maximum open position has been reached, the diffuser will enter control mode. If at this point the diffuser zone grouping has been commissioned, the diffuser will enter the heating or cooling modes of operation. If the diffuser zone grouping has not been set up, with the default zone number still set to zero, the diffuser(s) will remain static in this initialize state. Note: Should the up and down arrows flash simultaneously, it indicates the actuator motor is in the over-current condition.

Temperature Display

The default display shows room temperature. The top left function display shows the temperature source:

Control temperature not selected – the display shows the space temperature measured by the wall-stat. No temperature is selected for control purposes.



Onboard Control temperature – the display shows onboard temperature, as measured inside the diffuser. This temperature is used for the room temperature control.



Remote Control temperature – the display shows temperature, as measured by the wall-stat. This temperature is used for the room temperature control.



Set point Selection



Set point selection is achieved by pressing either the up or down arrow button momentarily. The buzzer will sound once, the **SP** icon will switch on and the current set point value will show on the digital display. The default value is 22°C (71°F). The top left function digits will indicate respectively the source of the set point and which set point is active. If the function display shows **r1**, it indicates the 'remote set point' (wall-stat) is the temperature source and set point 1, i.e. 'normal control' is currently active. Should the function digits show **o2** it indicates an onboard-master controller (inside the diffuser) is where the set point is activated and the back-off set point is active at the current time. By pressing the up or down buttons the set point value will increment or decrement in 0.5 degree intervals. Please note only set point 1, for normal control can be edited by this function. Pressing the enter button (right bottom) will exit the set point function.

Step Through Menu

The user has the option to step through the diagnostic and manual control menu. Pressing the right top button (Function Select) for 5 seconds will activate this feature. The buzzer will sound once and the display will advance to the next function. To exit this mode, the user must press the Function Select button for 5 seconds before the buzzer will sound and the display will revert to the (default) space temperature value. The Step Through Menu will select the following functions:



Menu 1 - Change-over display

The top left function digits display **CO** to indicate the supply air (changeover) temperature is being displayed. If no supply air sensor is connected the display will indicate zero. Press the Function Select button to advance to the next display.



Menu 2 - Remote temperature display

The top left function displays **r** to indicate the remote (wall-stat) temperature is being displayed. This temperature is displayed regardless of temperature selection for control purposes. Press the Function Select button to advance to the next display.

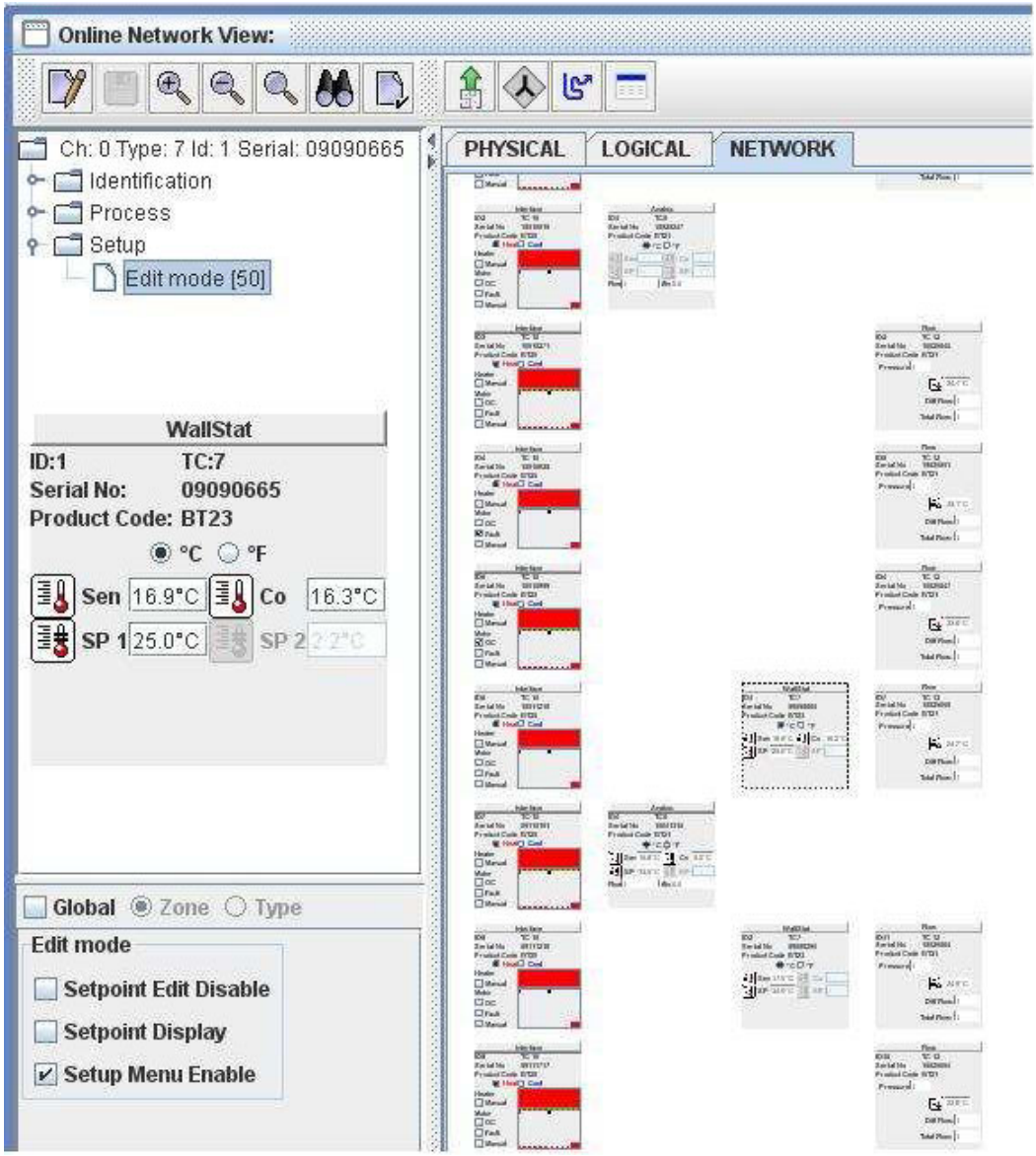


Menu 3 - Real time clock function

The watch icon will switch on to indicate the RTC function is selected. The current time, hh:mm will show. The top left function displays **dx**, with **x** being any digit between 1 and 7 to indicate the current day of the week. Monday is displayed as day 1. To edit the RTC, press the enter button and the minute display will flash. Select the current minute value with the up or down buttons. Press enter again and select the current hour. Enter again and select the current day. Pressing enter again will now exit the RTC edit function. The RTC facilitates the back-off control function for energy conservation. The back-off function is activated through the MLM Application by setting the SP2 value during commissioning. Press the Function Select button to exit this function and advance to the next display.

Additional Features - Edit Mode

The edit mode allows extended setup features through the wall-stat. The edit mode is enabled through the MLM Application by selecting the wall-stat box in the Network screen as indicated. Selecting the Setup Tab opens the Edit Mode select tick box:



Set point Edit Disable

This feature disables the set point from being altered on the wall-stat unit. The set point can still be edited through the MLM Application. This feature can only be activated through the MLM Application.

Set point Display

The default display on the wall-stat is for set point instead of the space (control) temperature display. This feature can only be activated through the MLM Application.

Setup Menu Enable

If this function is selected, the step-through menu enables the following setup sub-menu features. These features will follow directly after the Real-time-clock function indicated above. Please note that these setting will be applied to all the diffusers connected in a control zone, master or slave. The icon will show to indicate this sub-menu selection.

Sub menu 1 - Actuator Drive Control



The display will show the current control disk position in percentage, with the top left function display indicating **dr** for motor drive. To manually drive the disk, press the up/down arrows for the required position and press enter. The double bar icon will flash to indicate the motor is manually controlled. Verify the disk movement of all the diffusers in that control zone and the position display update. To advance to the next menu, press the Function button. The control will revert back to automatic mode.

Sub menu 2 – Control disk open end-stop



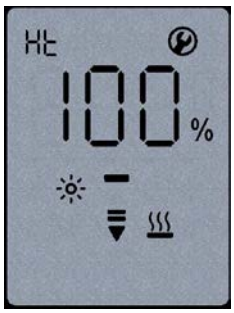
The display will show the open end-stop disk position in percentage, with the top left function display indicating **dr**. The down arrow and single bar will flash to indicate 'open end-stop' To change the open end-stop position, press the up/down arrows for the required position and press enter. The display will flash **---** until the new parameter is accepted by the system. Should the disk be outside the end-stop range it will manually drive the diffusers in that control zone into range. To advance to the next menu, press the Function button.

Sub menu 3 – Control disk close end-stop



The display will show the close end-stop disk position in percentage, with the top left function display indicating **dr**. The up arrow and bar will flash to indicate 'close end-stop'. To change the close end-stop position, press the up/down arrows for the required position and press enter. The display will flash **---** until the new parameter is accepted by the system. Should the disk be outside the end-stop range it will manually drive the diffusers in that control zone into range. To advance to the next menu, press the Function button.

Sub menu 4 – Heater output (HEATER NOT AVAILABLE)



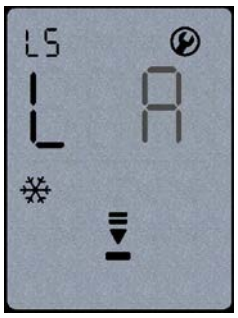
The display will show the current heater output in percentage, with the top left function display indicating **Ht**. To manually drive the heater output, press the up/down arrows for the required percentage output and press enter. The heater icon will flash to indicate the heater is manually controlled. The character display will indicate zero until the new value is accepted and the heater in that zone controlled to the new value. To advance to the next menu, press the Function select button. The control will revert back to automatic mode.

Sub menu 5 – Option 1, Manual Control Zone Setup



The following steps bind a diffuser to a control zone. The top left function display will indicate **LS** for Loop Select. Keep the enter button pressed until the unit beeps. The menu displays **L** and a zone number, normally **00** will flash. If the zone has been set up previously, that particular zone number will display instead of the **00**. Use the up/down arrow to select a zone number. On a new installation always start with zone **1**. Press enter and observe the **L** starting to flash. Go to the first diffuser in that zone and press the button on the Diffuser Controller board, normally situated on the trim disk. After a few seconds the wall-stat unit will beep and the flashing LED on the Diffuser Controller board will stay switched on momentarily – both to indicated the diffuser is set up for that control zone. Go to the next diffuser in that zone and press the button again and observe the same result. All the while the **L** indicator will flash and the zone number will be on permanently. Continue the process until all the diffusers in the control zone has been selected. Press the enter button and observe the **L** stationary and the zone number flashing. Using the up/down arrows, select the next zone number and press enter. Using the same procedure set up each diffuser in the control zone of interest. A maximum of fifteen control zones (one diffuser per zone) can be set up. By the same token a minimum of one zone containing from one to fifteen diffusers (slaves) can also be set up. Press enter again to exit the last zone setup. To advance to the next menu, press the Function button.

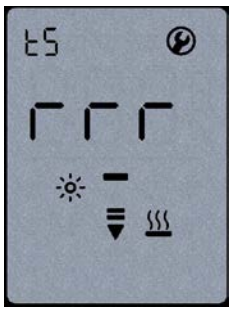
Sub menu 5 – Option 2, Auto Zone Setup



In the special instance where all the diffusers connected to a Power Supply are intended as Master Diffusers, the Auto Loop Select function can be used to bind each diffuser to a control zone. The top left function display will indicate **LS** for Loop Select. Keep the enter button pressed until the unit beeps. The menu display **L** and a zone number, normally **00** will flash. If the zone has been set up previously, that particular zone number will display instead of the **00**. Press the down arrow until the **A** character (for Auto) flashes. Press enter and observe the **L** starting to flash. Observe the loop number increasing to 5, then 9 and 13 as the control zones are being set up. With each increment the buzzer will sound. Once the process is complete, the **L** and **A** characters will be displayed as static. Each diffuser is now set up for a separate control zone. To advance to the next menu, press the Function button.

Note: Although it is possible to use a designated Wall Stat to set up a simple diffuser network, the additional features have to first be enabled using the MLM software and USB module. The Software and USB module however provide a much faster, simpler, and more user friendly interface for setting up diffuser networks and hence is the preferred setup technique. It allows complete control and monitoring of all diffusers, zones, and master plug-ins at a single point. Please refer to the Rickard MLM Software Manual for further information.

Sub menu 6 - Control input select



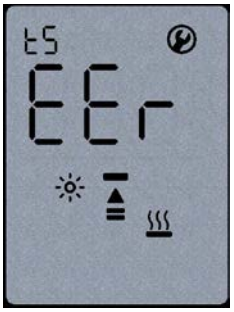
The next function is to select the set point, control and supply air temperatures for a particular control zone. To use this function the wall-stat must be connected to a diffuser in the control zone to be set-up. On a default system with only one wall-stat or one analogue module connected to a control zone this function is not required and best not used. The function display will indicate **tS**.

The character display will indicate the current status of the three control inputs as follows:



o - indicates 'on-board' for on-board master module
r - indicates 'remote' for wall-stat
- - indicates not selected

Keep the enter button pressed until the unit beeps. The first character will flash with the display indicating **t** for control temperature selection. Pressing the up/down arrows will toggle between remote or on-board temperature selections. Be sure to select a valid option, i.e. when selecting **r** there must be a wallstat connected to that particular control zone. Press enter and the character **S** will show to indicate set point selection. The up/down arrows will toggle this function. Press enter to select the supply air input, character **C**. The arrow buttons will toggle between **o**, **r** and **-** if supply air measurement is not required.



On pressing enter again the three characters will flash until the system has accepted the new setup. Should a capital **E** character be displayed, it indicates an **ERROR** as the setup could not be done on the device being selected. Typically the **o** was chosen for 'on-board' sensing or set point, but an on-board controller is not installed in that control zone. Repeat with the correct selection of parameters. Press the Function button to exit this function.

To exit the step through menu

The display will now display the set point(s) as described above. To exit the step through menu, the user must press the Function Select button one more time and the display will revert to the (default) room temperature value.

GOODS AND WARRANTY

1. When supplying goods to a consumer, the following mandated statement applies:
   "Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure."

2. The benefits of this warranty are in addition to any rights and remedies imposed by Australian State and Federal legislation that cannot be excluded. Nothing in this warranty is to be interpreted as excluding, restricting or modifying any State or Federal legislation applicable to the supply of goods and services which cannot be excluded, restricted or modified.

3. Subject to the conditions and limitation below, the Company warrants products of its manufacture to be free of defects in workmanship and/or materials at the time of delivery to the Buyer.

4. Any part, assembly or portion thereof found to be defective within one year from the date of commissioning or eighteen (18) months from date of shipment from our factory, whichever is the sooner, unless expressly stated otherwise in the Company's Publications or Literature, will be repaired or exchanged F.O.B factory.

5. The Company reserves the right to replace defective parts of the goods with parts and components of similar quality, grade and composition where an identical component is not available.

6. Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods.

7. Goods or parts that have been returned for repair (except where the repair is as a result of the Company's failure to comply with the statutory guarantees in the ACL) or warranty assessment are deemed to have been abandoned by the Buyer if not collected within 30 days after the Company has notified the Buyer in writing of the warranty assessment outcome or the completed repair.

8. The Company reserves the right to dispose or otherwise deal with an abandoned product or part at its discretion.

9. This warranty does not apply if:
   (i) the goods have not been paid for by the Buyer as per the credit terms provided; or
   (ii) the goods have not been installed in accordance with AS NZS 3000/2000 Australian/New Zealand Wiring rules; or
   (iii) the goods have been misused or neglected.

10. The Company assumes no responsibility under this warranty for the labour costs involved in the removal of defective parts, installation of new parts or service charges related thereto.

11. If a fault covered by this warranty occurs, the Buyer must first contact the Company at the contact address listed below.

12. Any warranty claim must be accompanied by:
    (i) proof of purchase;
    (ii) written details of the alleged defect; and
    (iii) appropriate documentation (such as installation and maintenance records etc).

13. The Company shall have the option of requiring the return of the defective part (transportation prepaid by the Buyer) to establish the claim.

14. The Company makes no warranties or representations other than set out in this clause 7.

15. The repair or exchange of the goods or part of the goods, is the absolute limit of the Company's liability under this express warranty.

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