SALUS CONTROLS

RT520, RT520TX, RT520RF

Quick Guide

Introduction

The RT520 and RT520RF are the latest additions to SALUS' tried and tested RT range of thermostat heating controls. With a new on-board load compensation feature, they offer the most cost effective fully compliant Boiler Plus solution on the market providing the homeowner with optimum efficiency and maximum heating control comfort. Available in both wired and wireless RF versions, the new RT520 series include all the features of the previous RT series with a larger more intuitive LCD display and a handy new suite of additional operational and efficiency functions.

Before use please read this manual carefully.

Product Compliance

This product complies with the essential requirements and other relevant provisions of the following EU Directives: EMC 2014/30/EU, LVD 2014/35/EU, RED 2014/53/EU and RoHS 2011/65/EU. Full text of the EU Declaration of Conformity is available on www.saluslegal.com

868.0-868.6MHz; <13dBm

Safety Information

Use in accordance to national and EU regulations. Use the device as intended, keeping it in dry condition. Product for indoor use only. Installation must be carried out by a qualified person in accordance to national and EU regulations.

Always ensure the AC mains power is switched off before installing or working on any components (this includes replacing the batteries). Use only AA 1.5 V alkaline batteries in the thermostat. Place the batteries into the battery slot located in the back of the thermostat. Do not use rechargeable batteries.

Technical Specification

	RT520 Thermostat	RT520TX Thermostat
Thermostat supply	2 x AA alkaline batteries	2 x AA alkaline batteries
Thermostat rating max	3 (1) A	-
OpenTherm terminals	A / B	-
Outputs	Voltage free NC / NO / COM terminals	-
Temperature range	5°C – 33.5°C	5°C – 33.5°C
Temperature accuracy	0.1°C or 0.5°C	0.1°C or 0.5°C
ErP control class	V	V
Radio frequency	-	868 MHz
Dimension [mm]	118 x 95 x 26 [mm]	118 x 95 x 26 [mm]

RXRT520 Receiver	
Receiver supply	230 V AC
Receiver rating max	16 (5) A
OpenTherm terminals	A / B
Outputs	Voltage free NO / COM terminals
Radio frequency	868 MHz
Dimension [mm]	96 x 96 x 26 [mm]

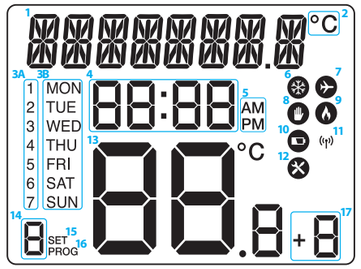
Button Functions

RT520 / RT520RF Thermostat

RXRT520 Receiver

1. MENU - enter the menu options, press and hold for 3 sec to return to main screen or to deactivate Boost Mode.
2. SELECT - confirm changes and enter menus.
3. DOWN - decrease the temperature and move through the menus.
4. UP - increase the temperature and move through menus.
5. BOOST - activate Boost Mode.
6. MANUAL - activate / deactivate Manual Mode.
7. ON - When in Manual Mode, ON will turn the boiler on.
8. OFF - When in Manual Mode, OFF will turn the boiler off.
9. AUTO - Receiver operates in automatic mode according to the thermostat.
10. MANUAL - Receiver output is controlled by the On/Off slide switch.

LCD Icon Description



1. Text Bar
2. Temperature Unit
3A. Day of the week (numeric)
3B. Day of the week (alphabetic)
4. Clock
5. AM / PM
6. Cooling Mode On
7. Holiday Mode On
8. Manual Mode On
9. Heating Mode On
10. Low battery status
11. Wireless connection with the receiver
12. Service Mode On
13. Temperature measured / set
14. Program number
15. Settings
16. Program indicator
17. Boost function

RT520 Thermostat Terminals Description

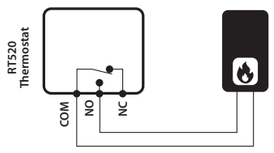
Terminal	Description
B / A	OpenTherm Communication Wire
NC	Switched Live OFF
NO	Switched Live ON
COM	Common Terminal

RXRT520 Receiver Terminals Description

Terminal	Description
B / A	OpenTherm Communication Wire
NO	Switch Terminal
COM	Common Switch Terminal
L; N	Supply (230 V AC)

RT520 Wiring Diagram

TPI, SPAN



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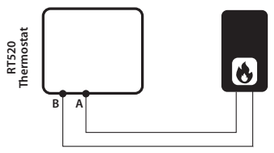
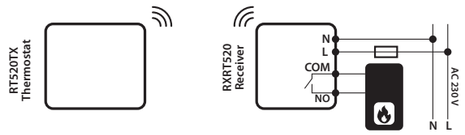


RT520TX Wiring Diagram

TPI, SPAN



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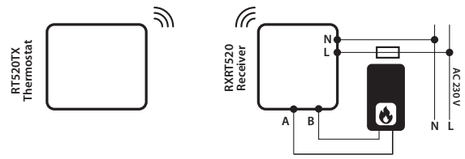

OpenTherm Power Up and Configuration

OpenTherm Modulating Control is a method of control used by modern heating systems. Instead of switching a boiler on and off at intervals, modulating control allows the amount of heat provided by the boiler to be controlled to match the varying demand from the thermostat. This means the customer has greater system efficiency, energy saving and room comfort from our heating controls.

Please make the receiver connections and power the receiver before inserting the batteries into the thermostat.

1

After inserting the batteries, the thermostat will power up.

2

Press SELECT.

3

Using UP or DOWN, choose your language and then press SELECT.

4

Using UP or DOWN, choose the time format.

5

Press SELECT to confirm.

6

Using UP or DOWN, set the hour and then press SELECT.

7

Using UP or DOWN, set the minutes and then press SELECT.

8

Using UP or DOWN, set the year and then press SELECT.

9

Using UP or DOWN, set the month and then press SELECT.

10

Using UP or DOWN, set the day and then press SELECT.

11

Using UP or DOWN, select the week format.

12

Press SELECT to confirm.

13

Using UP or DOWN, enable or disable DST (Daylight Saving Time).

14

Press SELECT to confirm.

15

Press SELECT.

16

Using UP or DOWN, select your temperature accuracy.

17

Press SELECT to confirm.

18

When OpenTherm is connected, the device software will automatically adjust to the OpenTherm settings.

OpenTherm - Hot Water

1

Press MENU.

2

Using UP or DOWN, navigate to Hot Water submenu and press SELECT.

3

Using UP or DOWN, adjust the temperature and then press SELECT.

4

The thermostat will return to the main screen. Press any button.

5

The text bar indicates that hot water is in operation.

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Issue Date: July 2021
V015

Standard Power Up and Configuration

1 Please follow steps 1 to 17 from section **OpenTherm Power Up and Configuration**.

NOTE: Using UP or DOWN, you can choose either TPI (step 2) or SPAN (step 6). Choosing one option excludes the other.

2

Press SELECT.

TPI (Time Proportional & Integral) is a self-learning, time-proportional algorithm. TPI type of regulation ensures economical system operation through more accurate temperature maintenance during controlling process and limits overload conditions. In addition to the exact and stable room temperature, the advantage of this system is the minimization of energy consumption and significant savings. RT520 offers 3 types of TPI control: 1. for radiator (6CPH); 2. for underfloor heating (3CPH); 3. for electric heating (9CPH).

3

4

5

Using UP or DOWN, select the TPI type you want to use.

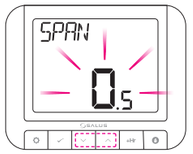
Press SELECT to confirm.

Span is the difference between the measured temperature and the set temperature.

6

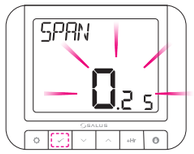
Press SELECT.

7



Using UP or DOWN, select the Span value.

8



Press SELECT to confirm.

Optimum Start is a selectable function which, depending on the ambient room temperature, will start the boiler operation at the optimum time to achieve the set-point temperature. It saves energy by only firing the boiler for the minimum required time.

9

Press SELECT.

10A

10B

Press SELECT.

11

Using UP or DOWN, select ON or OFF.

12

Press SELECT to confirm.

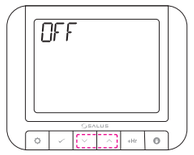
13A

13B

Press SELECT.

Optimum Stop calculates how long the house will take to cool down, then turns off the boiler at the earliest possible moment, this means the system is not running when it's not actually necessary. If there is a sudden heat loss during this period, then Optimum Stop will be overridden to regain comfort conditions.

14



Using UP or DOWN, select ON or OFF.

15

Press SELECT to confirm.

16

The thermostat will go to the main screen.

Programming - Automatic Mode

The schedule has 6 time intervals for which different temperatures can be adjusted. You can set 2, 3 or up to 6 temperatures per day. You must define all time periods. Here is an example of setting a certain time with a certain temperature.

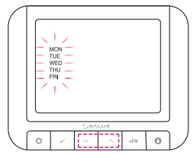
1

Press MENU.

2

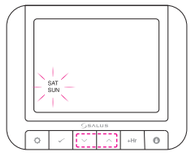
Press SELECT.

3A



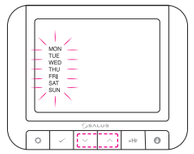
Using UP or DOWN, select the program type between: **5**

3B



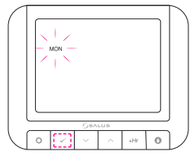
+2 (schedule for the working days and for the weekend);

4



All (set one schedule for the entire week)

5



Individual (set a daily schedule). Press SELECT to confirm.

6

Using UP or DOWN, set the hour and then press SELECT.

7

Using UP or DOWN, set the minutes and then press SELECT.

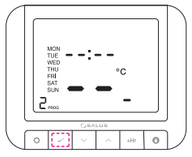
8

Using UP or DOWN, set the temperature and then press SELECT.

Repeat the process for all time periods.

If you do not want to use the 6 temperature intervals / day (ex: 1 eco, 2 comfort), please see below how to delete one or more intervals.

Press the UP arrow on the interval at which you want to remove the temperature, until lines appear



When lines appear, press SELECT to confirm the removal of that specific interval

TIME:	6 temp / day *- eco -*	2 temp / day *- comfort -*
06.00	21 °C	21 °C
10.00	14 °C	-
12.00	21 °C	-
14.00	14 °C	-
18.00	21 °C	-
21.00	14 °C	14 °C

This is an example for your weekly schedule. High temperature should be used for the ON times and low temperature for the OFF times.

Landlord Settings

Landlord settings is a pin code protected feature that allows the landlord to set a service reminder on the thermostat that will warn the tenant when the boiler is due its annual service.

1

Press MENU.

2

Using UP or DOWN, navigate to Landlord submenu and press SELECT.

3

Using UP or DOWN, enter the PIN code number. Press SELECT to confirm every digit.

4

Press SELECT.

5

Using UP or DOWN, select ON and press SELECT.

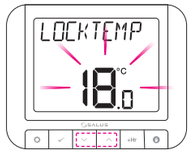
6

Using UP or DOWN, select the due date and then press SELECT.

7

Using UP or DOWN, select the warning period and then press SELECT.

8

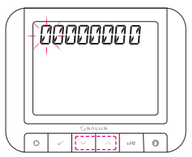


Using UP or DOWN, select the lock temperature and then press SELECT.

9

Press SELECT.

10



Using UP or DOWN, enter the phone number. Press SELECT to confirm every digit.

11

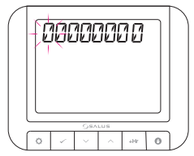
Now you can check your settings. If you want to make a change, press UP or DOWN on the relevant screen.

12

13

14

15



Once service mode has become active, the device will lock the set point temperature as set by the installer/landlord. To unlock this device, the landlord needs to be contacted and the boiler serviced.

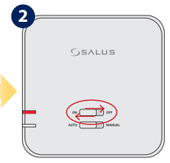
RT520TX Thermostat Pairing with the Receiver

If you are using the RT520RF pack, the pairing between the thermostat and the receiver is already done. During the pairing process, please make sure the thermostat and the receiver are at least 1 meter from each other.

If you bought the RT520TX and RXRT520 separately or if you want to re-pair thermostat with the receiver, make sure that the device is disconnected from the power supply and the switches on the receiver have been set to AUTO and ON. Then connect the receiver to the power supply and wait for the red LED to light steadily. Then switch to the OFF position and again to ON position quickly. The red flashing LED will confirm entering the pairing mode.

1

2



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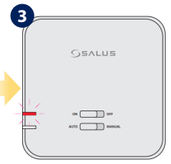


4

Press MENU.

5

Using UP or DOWN, navigate to Pairing submenu and press SELECT.

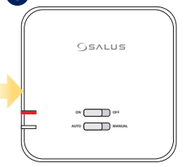
6

Using UP or DOWN, select PAIR and press SELECT.

7

The pairing process takes up to 10 minutes.

8



Once devices are successfully paired, LED on the receiver will go solid red.

9

After all, thermostat will go back to the main screen.

Test the Pairing Process

1

Press MENU.

2

Using UP or DOWN, navigate to Pairing submenu and press SELECT.

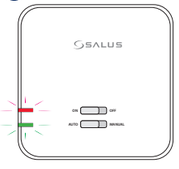
3

Using UP or DOWN, select TEST and press SELECT.

4

The testing process takes up to 10 minutes.

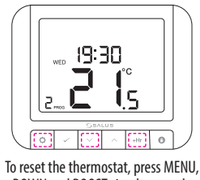
5



The red LED and the green LED on the receiver will begin to flash.

Factory Reset

1



To reset the thermostat, press MENU, DOWN and BOOST simultaneously for 5 seconds.

2

The device will be reset and will start up automatically.

Landlord settings will not be reset.