SALUS®
CONTROLS

Wireless Radiator Controller
Models: TRV10RFM, TRV10RAM and TRV28RFM

INSTRUCTION MANUAL

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For the latest PFD Instruction Manual, go to
www.salus-controls.com

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INTRODUCTION

The device is battery-powered, mini-size thermostatic radiator valves (TRV) controlled using ZigBee wireless communication. Simply replace the existing, passive head on the standard radiator valve with the TRV28RFM, TRV10RFM and TRV10RAM (referred to from now on as the unit). Use the unit with the VS10RF or VS20RF series of wireless thermostats and a CO10RF wireless coordinator. The VS10RF or VS20RF wireless thermostats are VS10BRF, VS10WRF, VS20BRF, and VS20WRF, where B is the black model and W is the white model. You can optionally use the RX10RF wireless boiler receiver and other iT600 wireless products.

VS10RF / VS20RF Thermostat
(Required)

CO10RF
(Required)

RX10RF
(Optional)

SALUS Wiring Centre
KL08RF or KL10RF

Product Compliance & Safety Information

ⓘ   Product Compliance

SALUS Controls Plc hereby declares that the radio equipment type ZigBee is in compliance with Directives 1999/5/EC, 2014/53/EU, 2006/95/EC, 2004/108/EC, 2011/65/EU, 2009/125/EC and 93/68/EEC. The full text of the EU declaration of conformity is available at the following internet address: www.salus-controls.com/legal

⚠   Safety Information

Use in accordance with the regulations. The unit is to be used for the control of room temperature inside the house.

⚠   Installation

This accessory must be fitted by a competent person, and installation must comply with the guidance, standards and regulations applicable to the country or state where the product is installed. Failure to comply with the relevant standards could lead to prosecution.

System Overview

To achieve the best control from the unit and thermostat, we recommend they are used with the SALUS system receiver configured to RX1. The system receiver will turn the boiler on or off when requested by the thermostat. See your boiler receiver manual for more information about the RX1 configuration.

> ⓘ The unit is modulating, which means it opens or closes partially or 100% depending on the relationship between the actual room temperature and the required room temperature measured by the VS10/20RF.


> ⓘ Up to three units can be connected to a VS10RF/VS20RF

# Checking the compatibility of your heating system

The unit is compatible with the majority of thermostatic radiator valves. Before fitting, please check your valve is suitable for use with the SALUS TRV.

1

Remove the TRV head
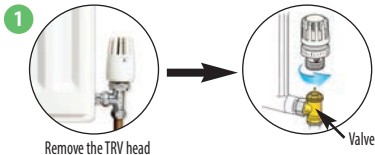
Valve

Note: If all the measurements are as stated on this page then the TRV will fit directly to your valve. Also if your valve is not suitable please consider changing your existing valves, contact your installer.

2
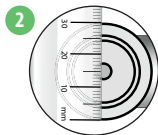
Measure the thread diameter (It must measure 30mm if you are fitting a TRV10RFM or 28mm if you are fitting a TRV28RFM valve)

3
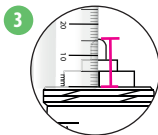
Measure the pin length of the valve when it is in the open position. (It must measure between 13-15mm for TRV10RFM and between 10-11mm for TRV28RFM.)

TRV28RFM Installation

Before installing the unit make sure you have added the metal washer on MMA or Herz M28 valves.

Metal washer

Herz valve

MMA valve

There is no need for a metal washer for the Comap M28 valve.

Comap valve

TRV10RFM Installation

If you are connecting to standard valve then the TRV10RFM will screw directly to it, as shown below.

Connecting to a Danfoss RA Valve

If you are connecting to a Danfoss RA valve (shown in this picture), you can use the RA adapter supplied when fitting a TRV10RFM. If you are fitting a TRV10RAM it will fit directly to the valve using the allen key supplied.

TRV10RFM Fitting

Push the RA adaptor onto the 30mm Danfoss RA valve

Tighten the adaptor using a screwdriver and then screw on the TRV10RFM.

TRV10RAM Fitting

Put the TRV10RAM onto the Danfoss RA valve.

Secure to the valve by tightening just 2 of the 4 screws.

Installing the Unit

Remove the battery door on the side of the unit.

Insert the batteries, ensuring correct orientation.

The LED on the unit flashes green then flashes red before changing to solid red. When it is solid red, place the unit over the radiator valve using the mounting ring if needed:

Screw the units nut (finger tight) to the radiator valve and check that the LED is solid red.
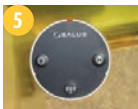
Press any button on the unit to adapt it to the radiator valve. Once all adaptation noise and LED activity has stopped, the unit is ready to pair with your wireless thermostat. See "LED Indications" on page 17 if the LED continues to flash.

The unit is now ready for pairing to the SALUS thermostat. You may now start the pairing process described on page 12.

Preparing to Pair the Unit

1 Press and hold the button on the CO10RF coordinator for five seconds. This puts the coordinator in pairing mode. See your CO10RF Coordinator manual for more information.

2 Ensure the wireless thermostat is powered up and ready for pairing. See your thermostat manual for more information.

3 If you are using the optional RX10RF wireless boiler receiver configured for remote boiler switching, ensure this has been powered up and the red LED has gone from flashing to steady. See your boiler receiver manual for more information.

Pairing the Unit

1

Press and hold the pairing button for 10 seconds. You can pair up to three units with one thermostat. Pair the units room by room.

2

Read page 38 to 40 of your wireless thermostat manual when the red LED on the unit starts to flash.

3 You have paired the unit to the thermostat when the unit LED goes off. Once paired, the unit operates in automatic mode and receives room temperatures from the thermostat.

Leaving the Network

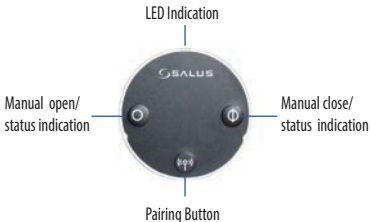Once paired to a thermostat, press and hold the pairing button on the unit for 10 seconds.

The red and green status LEDs come on together for one second.

Note: After you have deleted the unit from the wireless network, you must reinstall it using the instructions from page 11.

Using the Unit

LED Indication

Manual open/
status indication

Manual close/
status indication

Pairing Button

Using the Unit

Auto Lock Function

Auto lock function is disabled until you have gone through the pairing process. After pairing, the TRV will auto lock after 5 minutes if no buttons have been pressed.

Unlocking the Buttons

To unlock the buttons, press the pairing and close buttons together for 3 seconds.

Opening the Valve Manually

Press the open button for 3 seconds. The LED flashes green once and the valve opens.

Closing the Valve Manually

Press the close button for 3 seconds. The LED flashes red once and the valve closes.

Entering Fail Safe Mode

In fail safe mode, the unit opens the valve 25% for water flow to maintain room temperature.

To enter fail safe mode, press and hold the open and close buttons together for 3 seconds.

To exit fail safe mode, press the:

- Pairing button to put the unit in automatic mode
- Open button for 3 seconds to open the valve
- Close button for 3 seconds to close the valve

Using the Unit

Restoring Factory Default Settings

Press the pairing, open, and close buttons together for 10 seconds.

Protecting against Frost

When you have manually closed the valve, the unit automatically enables frost protection. Frost protection starts only when the temperature in the room drops below the frost temperature setpoint. The unit does all this automatically when connected to a thermostat and you don't have to do anything.

Detecting Open Windows

The unit checks the rate of temperature drop in the room in which it is located. If the drop is rapid, it assumes a window in the room has been opened. This only works if the unit is paired to the thermostat and is in automatic mode and the battery in the unit is not low. The unit does all this automatically when connected to a thermostat and you don't have to do anything. It works between 0 and 40°C.

Protecting against Lime Scale

Do not leave a valve open for a long time because this could cause a build up of lime scale. The unit has a lime-scale protection feature to prevent against this. The valve motor automatically starts once a week if no valve movement has been detected within a 14-day period. Lime-scale protection will continue to operate in automatic, manual open, and manual close modes and you don't have to do anything.

Auto Adaptation

Once the batteries are inserted into the unit, the red light will appear. If no keys are pressed it will auto adapt to the valve.

Button Usage

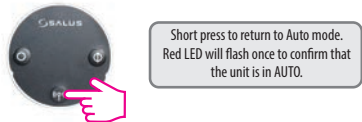| To do this…	Press the…
Leave the network	Pairing button for 10 seconds (when unit already in network)
Pair with thermostat	Pairing button for 10 seconds
Put unit in automatic mode	Short press Pairing button
Fully open the valve	Open button for 3 seconds
Fully close the valve	Close button for 3 seconds
Restore factory default settings	Open, pairing, and close buttons together for 3 seconds
Lock and unlock the buttons	Pairing and close buttons together for 3 seconds

LED Indications

When...		The LEDs...	Valve
Power switched on or after reset	Software Version indication	A sequence of red and green LEDs flashing displayed indicates the software version	
Unit adapting to valve		Red flashes then goes steady	
		Green flashes (or red flashes on failure to adapt)	
		Green steady	
		Green and red flash (or red flashes on failure to adapt)	
Unit has not joined network or has not paired to thermostat	Auto mode	Green and red flash alternately after short press on open or close button	25% open
	Manual open	Green flashes twice after short press on open or close button	100% open
	Manual close	Red flashes twice after short press on open or close button	0% open
Unit paired to thermostat and in auto mode		No LED	
Leaving network		Red and green on together for one second	
Identifying the network		Green flashes for up to 10 minutes	

LED Indications

When...		The LEDs...	Valve
Wireless link to thermostat lost	Auto mode	Green and red flash alternately after short press on open or close button	
	Manual open	Green flashes twice after short press on open or close button	100% open
	Manual close	Red flashes twice after short press on open or close button	0% open
Normal operation	Auto mode	Green flashes once after short press on open or close button	1 to 100% open
	Auto mode	Red flashes once after short press on open or close button	0% open
	Manual open	Green flashes twice after short press on open or close button	100% open
	Manual close	Red flashes twice after short press on open or close button	0% open
	Window open mode active	Green and red flash twice every 10 seconds	100% open
Battery low		Red flashes three times every 10 seconds (less if the battery is low)	25% open
Error installing		Green and red flash alternately	

Manual Override

To remove the unit from auto mode, follow the steps below. If the buttons are locked, unlock them by pressing the pairing and close buttons together for 3 seconds.

Long press to manually open unit.

LED flashes green once and then goes out. To check status refer to previous page.

Long press to manually close unit.

LED flashes red once and then goes out. To check status refer to previous page.

Short press to return to Auto mode. Red LED will flash once to confirm that the unit is in AUTO.
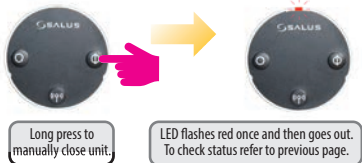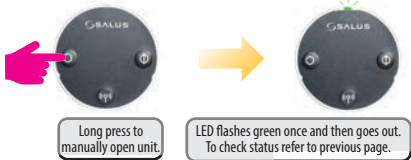
Technical Detail

Model	TRV10RFM / TRV28RFM / TRV10RAM
Type	Hydraulic Radiator Valve DC Motor M30 x 1.5 / M28 x 1.5
Input	Three push buttons: • Manual open/status indication • Manual close/status indication • Pairing
LED Indicator	Bi-Colour, Red/Green
Valve Adaptation	Automatic
Power Source	2x AA Batteries
Battery Life	14 Months (low battery indication)
Control Method	Modulating
Communication	2.4GHz ZigBee wireless
Operating Temperature	0 to 45°C
Storage Temperature	-20 to 60°C
Operating Humidity	5 to 95%RH
Protection	IP30
Size (mm)	H 88.6, W 51

Notes

Warranty

SALUS Controls warrants that this product will be free from any defect in materials or workmanship, and shall perform in accordance with its specification, for a period of five years from the date of installation. SALUS Controls sole liability for breach of this warranty will be (at its option) to repair or replace the defective product.

Customer Name: ....

Customer Address: ....

.... Post Code: ....

Tel No: ....

Email: ....

Engineers Company: ....

Tel No: ....

Email: ....

Instalation Date: ....

Engineers Name: ....

Engineers Signature: ....

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