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Box Contents

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ARV10RFM-3   Manual

Adapter   2 AA Batteries

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

Product Compliance & Safety Information

INTRODUCTION

The ARV10RFM-3 is a battery-powered, mini-size thermostatic radiator valve (TRV) controller using ZigBee wireless communication. Simply replace the existing, passive head on the standard radiator valve with the ARV10RFM-3 (referred to from now on as the unit). Use the unit with the AS20RF series of wireless thermostats and a Universal Gateway.

AS20RF Thermostat (Required)

SG888ZBWH (Required)

AX10RF (Optional)

Wiring Centre AKL08RF

⚠ **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.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.

ℹ 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 AS20RF.

ℹ Up to 6 units can be connected to a AS20RF

Checking the compatibility of your heating system

The SALUS ARV10RFM-3 is compatible with the majority of thermostatic radiator valves. Before fitting, please check your valve is suitable for use with the SALUS TRV.

❶ 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.

❷ Measure the thread diameter (must measure 30mm or 1.18in)

❸ Measure the pin length of the valve when it is in the open position. (must measure between 13-16mm or 0.51-0.62in)

Checking the compatibility of your heating system

If you can not see any thread on the valve and it looks like this picture, you may be able to use the RA adapter supplied.

ARV10 fits 30x1,5 mm or 1.18x0.05in thread.

Our RA adapter also fits this valve.

Once fitted the RA adapter should look like this.

ARV10RFM-3 Installation

If you are connecting to standard valve then the ARV10RFM-3 will screw directly to it, as shown below.
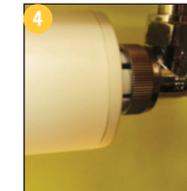
Installing the Unit

❶ Remove the battery door on the side of the unit.

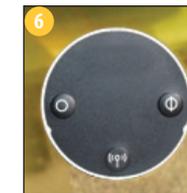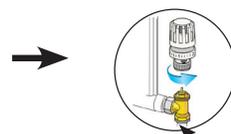❷ Insert the batteries, ensuring correct orientation.

❸ 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:

❹ Screw the units nut (finger tight) to the radiator valve and check that the LED is solid red.

❺ 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.

❻ The unit is now ready for pairing to the SALUS thermostat. You may now start the pairing process.

Preparing to Pair the Unit

① Press and hold the button on the Universal Gateway for five seconds. This puts the Universal Gateway in pairing mode. See your Universal Gateway 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 AX10RF 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

Press and hold the pairing button for 10 seconds. You can pair up to 6 units with one thermostat. Pair the units room by room.

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.
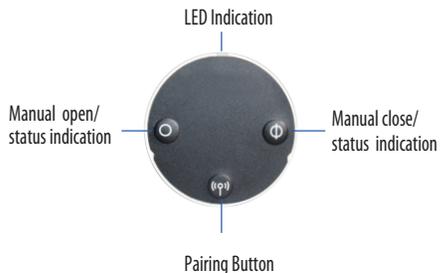
Leaving the Network

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

The red LED come on together for one second.

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

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 minute 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

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.

Using the Unit

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 40⁰C or 32-104⁰F.

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.
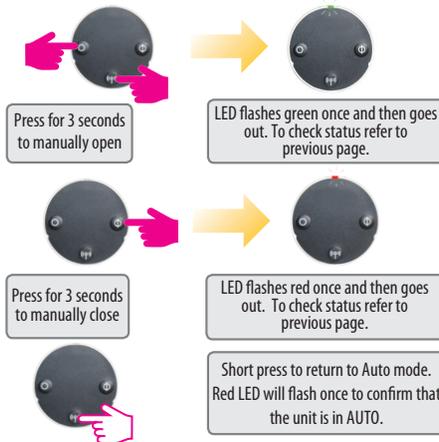
Button Usage

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 flasheson 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	
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.

Press for 3 seconds to manually open — LED flashes green once and then goes out. To check status refer to previous page.

Press for 3 seconds to manually close — 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	ARV10RFM-3
Type	Hydraulic Radiator Valve DC Motor M30 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 45ºC or 32 to 113ºF
Storage Temperature	-20 to 60ºC or -4 to 140ºF
Operating Humidity	5 to 95%RH
Protection	IP30
Size (mm or in)	H 88.6mm, W 51mm or H 3.48in , W 2in

Warranty

SALUS North America 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 North America 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: ....

www.salusna.com

Wireless Radiator Controller
Model: ARV10RFM-3

INSTRUCTION MANUAL