

PRODUCT SPECIFICATION

Thermostatic Radiator Valves (matteroverthread)

WDM-TRV031



CHANGE OF HISTORY

REV	Description of Change	Date	Author
1.0	NEW ISSUE	Mar. 12 2023	Nigle PAN

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Scope

This document represents the characteristics and parameters of the TRV. It covers the mechanical, electronic performance, features required for the design.

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1 PRODUCTS INTRODUCTION

Thermostatic radiator valve is used for adjusting hot water based on the room's temperature. A TRV is fitted to the water heating system to control a room's temperature by modulating the hot water flow.

With the new matteroverthead technology, the TRV can be connected with other devices through wireless thread protocol based on the standard of matter from CSA.

It requires NO Hubs, No Clouds, No manufacture Apps, and free to connect Apple HomeKit, Google Assistant and amazon Alexa, and other MATTER systems.



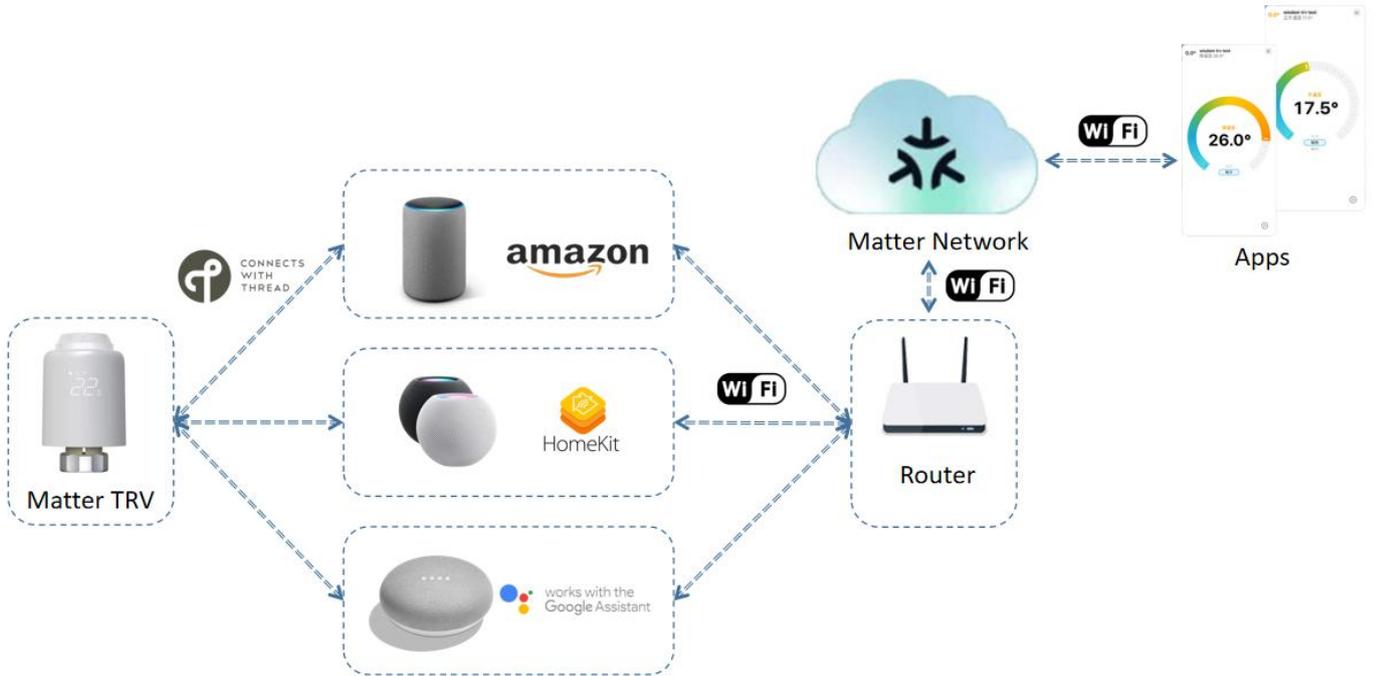
Designed for heating and central air conditioning temperature control in residential, shopping malls and hotels.



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1.1 Context Diagram



2 PRODUCT AND ACCESSORIES

2.1 PRODUCT



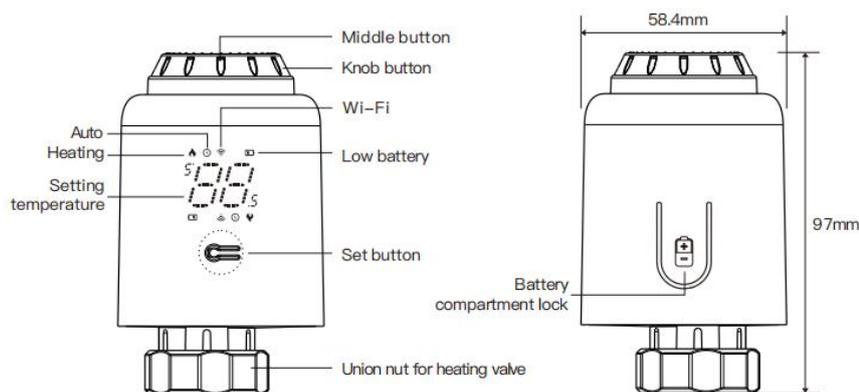
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2.2 Accessories

TRV			User Manual		
For Danfoss RA valves	For Danfoss RAV valves	For Danfoss RAVL valves	For Caleffi valves	For Giacomini valves	For M28 valves
Adapters					

2.3 Displays



2.4 Operation in APPS

Directly connect to Apple HomeKit, Google Assistant, Amazon Alexa and other matter systems.

2.5 Voice control in AI speakers

- After waking up the speaker, you can say:

Amazon Alexa : Alexa,

- * Set the DEVICENAME to 26 degree
- * Drop the DEVICENAME by 1 degree
- * Raise the DEVICENAME by 1 degree
- * Make the DEVICENAME warmer
- * Turn on the DEVICENAME child lock
- * Turn off the DEVICENAME child lock
- * What temperature is the DEVICENAME set to
- * What is battery on the DEVICENAME

Google Assistant : OK google,

- * Set the DEVICENAME to 23 degree
- * Turn on the DEVICENAME child lock
- * Turn off the DEVICENAME child lock
- * IS my DEVICENAME child lock on?
- * Turn on child lock for the DEVICENAME
- * Turn off child lock for the DEVICENAME
- * Set the DEVICENAME to auto
- * Set the DEVICENAME to manual

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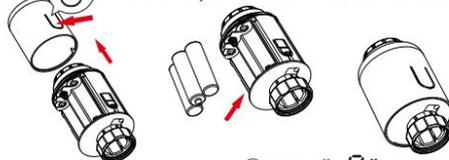
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2.6 Trouble Resolves

Error code	Problem	Solution
F0	Temperature sensor abnormality	Contact after-sales staff
F1	Slow valve operation	Check the installation and heating valve
F2	The stroke is too long	Check the fastening of TRV
F3	The stroke is too short	Check the heating valve
F4	Running out of battery	Replace batteries immediately
Battery symbol ()	Low battery	Replace batteries within 3 days

2.7 Installations for TRV

① Press the battery compartment lock, remove the cover, and insert the batteries.

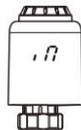


*Attention:

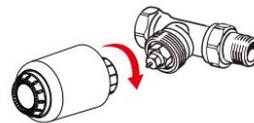
While inserting the batteries, please make sure the polarity of battery (+/-) is aligned.



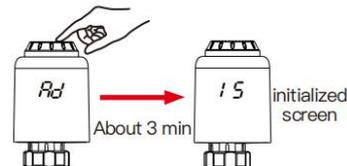
② Initialize, the mandrel pulls back, then “i” is displayed and blinking on the screen.



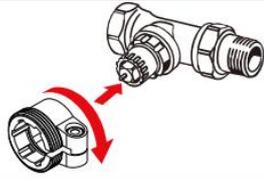
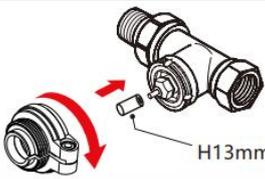
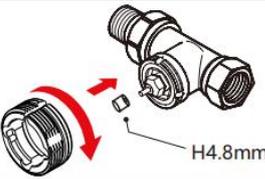
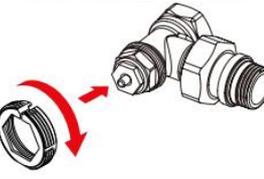
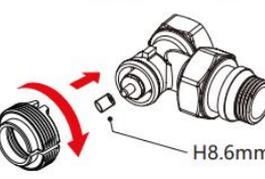
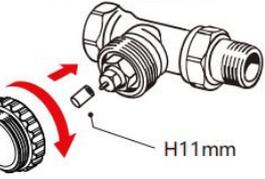
③ When “i” stop blinking, install the TRV union nut with M30*1.5 thread for heating valve, and then tighten the nut.



④ Press the middle button and then “Ad” start blinking, the device enter valve-adjusting process. After several minutes, the process is completed when initialized screen is displayed.



2.8 Installation for adaptor

For Danfoss RA valves	For Danfoss RAV valves	For Danfoss RAVL valves
		
For Caleffi valves	For Giacomini valves	For M28 valves
		

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2.9 User interface for working modes

TBD

2.10 Colors / Finishing

Detail specification of colour, finishing and textures are referring to their drawings. Below information is a generic description and outlining their outlook in terms of color and finishing

- white

2.11 Marking on the product

Detail specification of marking in terms of fonts, symbols, location are referring to their drawing. Below information is a generic requirement and outlining their marking and the format they shown on product.

Item	Content
Trademark	TBD
Country of origin	Made in China
Manufacturing date	YYYYWxx-xx
MAC address & Install code	QR code

Table 4 Marking Contents

2.12 Material

The housing all products are plastic. Detail please refer to their drawings. The used material for the housing must be break-proof and color steady if possible (high UV-protection).

- Recommend material of housing parts: Makrolon 2407, PC

3 GENERAL CHARACTERISTICS

Power supply	3xAA batteries (not included)
IP Rating	IP20, indoor only
Control Accuracy:	0.5°C
Temperature Sensor	NTC (10k) 1%
Default Setting Temperature range	5-35°C
Maximum Stroke	4.3mm
Thread Specification	M30*1.5MM

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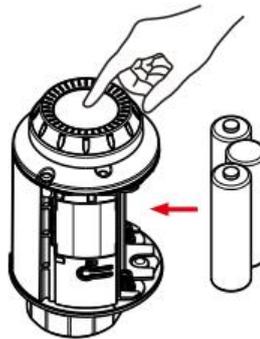
IP Rating	IP20, indoor only
RF standard	2.4GHz, IEEE 802.15.4, Thread standard, Matter protocol
RF effective range (Thread)	Indoor line-of sight range >60 meters
RF solution platform (Thread)	Silicon Labs, EFR32MG24
MAX RF Tx power	<10dBm
Operating Ambient Temperature	0~50°C
Environmental	RoHS compliance
Certification	CE
Dimension (W*H*D)	58.4MM*97MM*58.4MM
Weight	220 g

4 CONFIGURATION PROCEDURES

TRV will try to join network by local button operation.

→ Factory rest / Rejoin

Long press the middle button until  is displayed on the screen and blinking for 3 seconds, the device will be restored to factory reset and start to rejoin the network.



5 PACKAGING

5.1 Transportation and handling

The unit packaging shall protect the units during normal factory, warehouse and field handling and transportation.

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5.2 Carton Box

Costuming design from Customer.

5.3 Gift Box



Files: Thread_Thermostat_WDM-TRV031_die-cut_V1.0_74x65x138mm.pdf

5.4 User Manual



Files: Thread_Thermostat_WDM-TRV031_User manual_V1.0.pdf

5.5 Labels

All labels (product labels, product carton labels, outer carton labels) needed to be prepared according to SE guidelines and according to the QR code specifications.

6 WARRANTY

The product shall be supplied with a 1 year warranty.

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