

## MD15-FTL-315 Wireless Small Actuator

### Application

For thermostat valve bodies for direct mounting on commercially available radiator valves for room-specific temperature control in heating systems.

The actuator is controlled wirelessly based on the non-proprietary EnOcean wireless protocol.

The user manual of the RBW322-FTL-315 and the MD15-FTL-315 are valid related closely. Follow the instructions and explanations in both user manuals.



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Änderungen vorbehalten - Contents subject to change - Sous réserve de modifications - Reservado el derecho a modificación - Wijzigingen voorbehouden - Con riserva di modifiche - Innehåll som skall ändras - Změny vyhrazeny - Zmiany zastrzeżone - Возможны изменения - A változtatások jogát fenntartjuk - 保留未经通知而改动的权力

## General Information

### Information about the Manual

This manual contains information on the product MD15-FTL-315 and its operation. Each person who carries out work on this product must have read and understood this manual. If you have any questions that are not resolved by this manual, you can obtain further information from your service technician.

If the product is not used in accordance with this data sheet, the intended protection will be impaired.

Therefore, please observe the following items without fail:

- ▶ This manual is an integral part of the device. Please keep it in the immediate vicinity of the device.
- ▶ The manual must be retained throughout the entire service life of the device.
- ▶ The manual must be passed along to any subsequent owner or user.



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### NOTE

This manual describes the specific settings and functions of the MD15-FTL-315. In addition to these instructions, the product description of the MD15-FTL-315 wireless partner must also be observed.

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### Copyright

Reproduction (including excerpts), recovery or transfer of any content without a written declaration of the manufacturer is not allowed.

### Notes on Disposal

The product is considered waste from electrical and electronic equipment (electronic waste) and may not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

## Symbol Declaration

### Safety Instructions

Hazardous situations during installation, commissioning and operating the device are indicated by safety instructions. They are indicated by signal words which express the severity of the hazard.

#### **DANGER!**

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

#### **WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

#### **CAUTION**

Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

#### **NOTICE**

Warns against a possible hazardous situation that could lead to property and environmental damage.

### Notes

Supplementary information can be found in the notes:



#### **NOTE**

Indicates additional information and important details that can simplify working with the product.

### Enumeration Signs

There are two other signs which make this manual easier to use:

- Indicates a list point.
- ▶ Indicates an activity you have to do.

## Safety

### Safety Instructions

To minimize hazards to life and limb, the environment and the machine safety, please observe the following items:

- ▶ Read all safety instructions in this manual in order to prevent injuries and damage to the device or any equipment connected to it.
- ▶ To avoid potential hazards, only operate the product according to its intended use.
- ▶ Observe these notes as well as the safety instructions in the following sections of this manual.

### Intended Use

Together with the MD15-FTL-315, the RBW322-FTL-315 constitutes a functional unit for easy room temperature control.

The MD15-FTL-315 may only be used together with wireless partners that correspond to EnOcean Equipment Profiles EEP A5-20-01. This includes the RBW322-FTL-315.

Modifications to and retrofitting of the device could result in unforeseeable dangers and are thus prohibited.

Please also observe the following items:

- ▶ Do not operate the device under wet or moist ambient conditions.
- ▶ Do not operate the device in a potentially explosive atmosphere.
- ▶ Keep the product surface clean and dry.

### As an Operator, What May You Do?

You may only perform the following settings on the device:

- Maintenance and cleaning. (See "Maintenance and Cleaning" on page 5.)
- Replacing the battery. (See "Replacing batteries" on page 6.)
- Information about contacting customer service in case of operating and malfunction messages. (See "Operating and Malfunctioning Messages" on page 6.)



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### NOTE

Mounting, installation, commissioning and troubleshooting may only be performed by a service technician. Improper changes by the operator can lead to malfunction and impairment of the service technician.

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### Customer Service

For technical information or in the case of problems, please contact your service technician. You can find the contact information on the back of the manual.

## Equipment Description

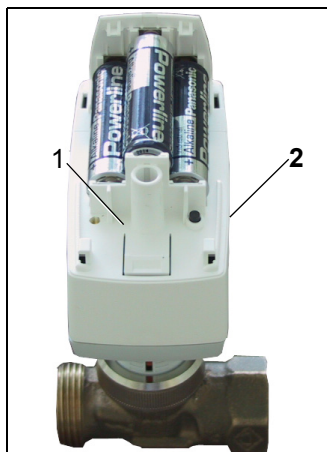
Along with the RBW322-FTL-315 units, the MD15-FTL-315 constitutes a functional unit for room temperature control.

Before both wireless partners can communicate with each other, the MD15-FTL-315 must be teached-in on the RBW322-FTL-315. This procedure only needs to be performed once. Generally, both wireless partners can be automatically synchronized with each other after a connection failure, e.g. as caused by malfunctions (See "System Malfunctions" on page 6.).

Control of the RBW322-FTL-315/MD15-FTL-315 controller set is assumed by the RBW322-FTL-315.

## Operation Elements

The RBW322-FTL-315 and MD15-FTL-315 operate automatically. Basic settings are performed on the RBW322-FTL-315 operator panel.



1	Status LED	The status LED flashes when the teach-in process is started or the turning valve block protection is switched on.
2	Push-button	Push-button to start the teach-in process.

## Maintenance and Cleaning

### Maintenance

For the MD15-FTL-315 no maintenance is required.

### Cleaning

- ▶ Clean the room control module with a lint-free and dry cloth.
- ▶ Do not use any aggressive cleaning agents.

## System Malfunctions

The room control module provides information about the current status of the RBW322-FTL-315/MD15-FTL-315 controller set and any occurring malfunctions. The messages are shown on the display. Therefore, observe the section "Operating and Malfunction Messages" in the chapter "System Malfunctions" of the RBW322-FTL-315 operating instructions.

## Operating and Malfunctioning Messages

Error messages can not be displayed independently. They are wirelessly transmitted to a room device or a reader.



### NOTE

If the wireless small actuator is operating in "self-controlled mode" with an external operator panel and the wireless path/wireless communication is interrupted, the status bit "emergency mode" (=self-controlled mode) is set (can be evaluated for service diagnostics).

After the malfunction has been rectified (details can be found in the documentation of the wireless partner), the wireless partner is automatically resynchronized.

## Battery monitoring

The battery capacity is continuously monitored. If the battery capacity is too low, a wireless signal is transmitted to the wireless partner and 2 acoustic signal tones are emitted in succession every 6 hours. If this message is activated, the remaining capacity of the batteries is < 10%.



### NOTE

Replace the batteries within the next 30 days when the capacity of the batteries is < 10%.

As the battery capacity decreases, the interval between the audible signals becomes shorter and the number of signal tones increases to 4 signal tones in succession every 3 hours, then 8 in succession every 2 hours.

If the remaining battery capacity is insufficient to maintain motorized operation, the actuator moves into the safety position of 50 %.

The wireless communication with the wireless partner still functions in this operating state.

## Replacing batteries

### NOTICE

#### Damage to the device due to an improper tool

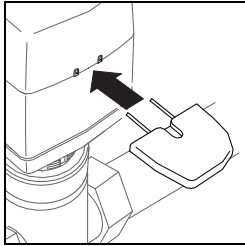
- Never use a pipe wrench to tighten or loosen the union nut.
- Only use the provided special wrench to open the housing.

Use of the wrong tool could cause damage (e.g. scratches, breakage of plastic parts) to the device or parts thereof.

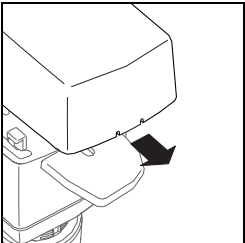


### NOTE

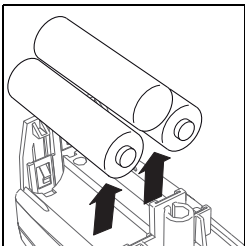
This product contains replaceable alkaline batteries. Please dispose of the old batteries according to local regulations.



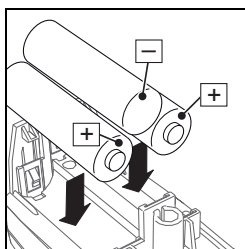
- ▶ Open the battery compartment cover using the special key supplied by inserting it into the intended place.



- ▶ Remove the cover.

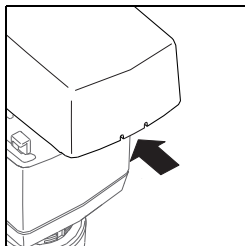


- ▶ Remove the batteries.



- ▶ Insert the batteries with the correct polarity.

After all batteries have been inserted into the battery compartment, an initialization run is performed automatically. The status LED flashes during the installation run.



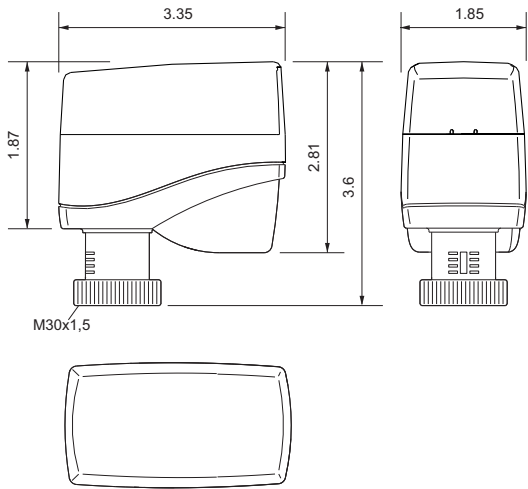
- ▶ Close the housing of the MD15-FTL-315 by snapping on the housing cover.

**Technical Specifications****Technical Data**

Nominal voltage	Battery-operated, 3 alkaline AA batteries (LR6 1.5 V 3,400 mAh)
Battery life	Approx. 3 years (depending on frequency and method of operation)
Measuring system	Integrated digital temperature sensor; 32 °F to 104 °; ± 32.9 ° at 77 °F
Interfaces	technoLink® wireless interface: <ul style="list-style-type: none"> <li>■ Radiogram: EnOcean radiogram</li> <li>■ EEP A5-20-01 (Battery Powered Actuator)</li> <li>■ Frequency: 315 MHz</li> <li>■ Operating range: Approx. 32.808 inch in buildings (depending on building structure)</li> <li>■ Duty cycle: &lt; 1 %</li> <li>■ Transmission and reception interval: every 10 minutes</li> </ul>
Motor switch-off	Actuator spindle: extending = load-dependant, retracting = path-dependant
Indicator	Status LED
Actuating noise	<31 dB (A)
Nominal stroke	Up to 0.118 inch
Travel time	0.59 inch/second
Positioning force	100 N (nominal)
Position indicator	Stroke range scale
Manual adjustment	Only when disconnected from the power supply Socket for hexagon key under the actuator cover, key socket 0.157 inch
Housing	RAL 9010 pure white, battery compartment cover with mechanical locking mechanism
Ambient temp.	32 °F to 392 °F
Degree of protection	IP40
Installation position	Anywhere from vertical to horizontal
Maintenance	Maintenance-free
Weight	6.35 oz

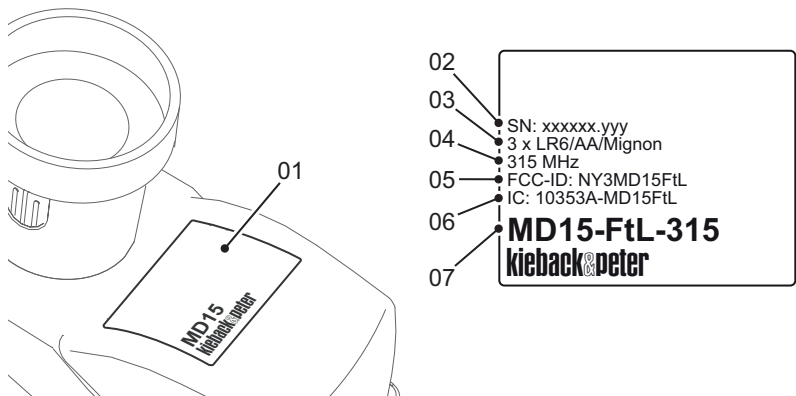


Dimensions



Type plate

The MD15-FTL-315 type plate is located on the back of the device.



1	MD15-FTL-315 type plate
2	Serial number
3	Energy
4	Frequency
5	Device approval number
6	Identifier of the integrated semiconductor switch
7	Device name

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## Accessories and Spare Parts

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### NOTE

Contact your Kieback&Peter representative if you have any questions regarding accessories or spare parts.

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Batteries: 3 alkaline AA batteries (LR6 1.5 V 3.400 mAh)

Special key to open the device

## Wireless Interface

The communication with the wireless partner is cyclical, bidirectional and includes intelligent reception/transmission management.

Upon the first reception of the wireless protocol the wireless small actuator automatically adapts its operation according to the method of control from the wireless partner (actuator mode or self-controlled mode).

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### NOTE

This product uses only EnOcean telegrams

When selecting a wireless partner, ensure that the wireless interface also works with the EnOcean telegram EEP A5-20-01 (Battery Powered Actuator).

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## Compliance Statement

This device complies with section 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 that may cause undesired operation.

Modifications not expressly approved by this company could void the user's authority to operate the equipment.

## Radio Frequency (RF) Signal

The wireless device is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limit for exposure to radio frequency (RF) energy set by the OET Bulletin 56 Supplement C in the USA and by the Ministry of Health (Canada), Safety Code 6 in Canada. These limits are part of comprehensive guidelines and established permitted levels of RF energy population. These guidelines are based on the safety standards previously set by international standard bodies. These standards include a substantial safety margin designed to assure the safety of all persons, regardless of their ages and health.

This device and its antenna may not be located too close to or operated in conjunction with any other antenna or transmitter.

This device is capable of compliance with localized specific absorption rate (SAR) for uncontrolled environment/general public exposure limits specific in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in IEEE Std. 1528-2003 December 2003.

**Class A Digital Device or Peripheral**

The RBW322-FTL-315 is a digital device that is marketed for use in a commercial, industrial or business environment, exclusive of a device which is marketed for use by the general public or intended to be used in the home.

The equipment has been tested and found to comply with the limits for **Class A digital device**, pursuant to section 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the function manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

**Declaration Concerning Antenna Specifications**

The device confirms to the FCC recommendations for internal antenna type described below:

Model No. of antenna:	N/A
Type of antenna:	integrated/onboard PCB-antenna, permanently attached
Gain of the antenna:	$\leq -10$ dBi
Frequency range:	315 MHz

**EnOcean Equipment Profiles EEP A5-20-01 (Battery Powered Actuator)**

## DATA BYTES

Transmit mode: Message from the actuator to the controller

DB\_3: Current Value value 0...100 %, linear n=0...100

DB\_2.BIT\_7: Service on

DB\_2.BIT\_6 Energy input enabled (not applicable)

DB\_2.BIT\_5<sup>2</sup> Energy Storage > xx% charged (not applicable)

DB\_2.BIT\_4 Battery capacity < 10%

DB\_2.BIT\_3<sup>2</sup> Contact, cover open

DB\_2.BIT\_2 Failure temperature sensor, out of range

DB\_2.BIT\_1 Detection, window open

DB\_2.BIT\_0 Actuator obstructed

DB\_1: Temperature 0...40°C, linear n=0...255

DB\_0.BIT\_7: Not used

DB\_0.BIT\_6 Not used

DB\_0.BIT\_5 Not used

DB\_0.BIT\_4 Not used

DB\_0.BIT\_3 LRN Bit 0b0 Teach-in telegram  
0b1 Data telegram

DB\_0.BIT\_2<sup>1</sup> Self-controlled mode 0b0 off  
0b1 on

DB\_0.BIT\_1 Not used

DB\_0.BIT\_0 Not used

Receive mode: Commands from the controller to the actuator

rx time = max. 1s

Note:

The data transfer from the wireless partner to the wireless small actuator must be completely finished within a maximum time window of 1 s.

DB\_3: Valve set point 0...100 %, linear n=0...100

Temperature set point 0...40°C, linear n= 0...255

DB\_2: Temperature actual from RCU = 0b0, Room controller-unit ...

DB\_1.BIT\_7: Run init sequence, only active in service mode

DB\_1.BIT\_6 Lift set, only active in service mode

DB\_1.BIT\_5 Valve open, only active in service mode

DB\_1.BIT\_4 Valve closed, only active in service mode

DB\_1.BIT\_3 Summer bit, reduction of energy consumption

DB_1.BIT_2	Set point selection DB_3 0b0 set point 0...100 %, 0b1 temperature set point 0...40°C
DB_1.BIT_1	Set point inverse
DB_1.BIT_0	Select function 0b0 RCU 0b1 service on

<sup>1</sup> Supported in version 2.32 and up

<sup>2</sup> Not supported in version 2.32 an up

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