

Mx-RPW

Room Control Module (Built-In Occupancy Sensor)



Mx-RPW
Wireless Room Controller



Mx-MTB1
HVAC Control Board (at unit) (sold separately)

Application

Solar-powered, self-learning room sensor with LCD and smart communication management for measuring room temperature, independent generation of utilization time profiles and their continuous dynamic adjustment/optimization and for wireless transmission of measured values. Occupancy button for manually changing the comfort mode or economy mode status. In combination with the Mx-MTB transceiver, the Mx-RPW room sensor constitutes a functional unit for easy room temperature control. The Mx-RPW can also be used within additional building automation systems via appropriate gateways (Mx-EBOX, Mx-CBOX)

The following EnOcean Equipment Profiles (EEP) are supported: EEP D2-29-08 *

* You can find information about the protocol description on the EnOcean Technology website http://www.enocean-alliance.org/en/enocean_standard/

Safety Instructions

This data sheet contains information on installing and commissioning the product "Mx-RPW". Read this product description prior to installation, commissioning or operation. If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer. If the product is not used in accordance with this data sheet, intended use could be impaired. Unauthorized conversion and modifications to the device are not permitted for safety reasons and will result in the loss of all claims against the manufacturer. The applicable local regulations must be observed when installing and using the device.

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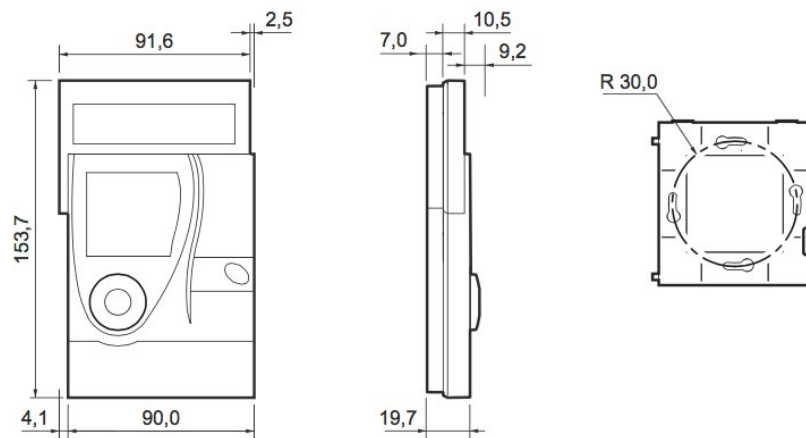
Technical Specifications

Part Numbers (Frequency Dependant)	M9-RPW (902 MHz - North America) M8-RPW (868 MHz - Europe and China) MJ-RPW (928 MHz - Japan)
Nominal Voltage	Dual power supply consisting of a solar cell and an internal energy storage unit with priority management Lithium battery (AA) AC 2.3 V; 0,08 W
Measured Quantity	Room temperature in homes or offices
Measuring System	Temperature sensor: - Integrated digital sensor Occupancy sensor: - Integrated PIR ("Passive infrared") sensor
Measuring Range	0 to 40°C or 32 to 104°F
Relative Measurement Precision	0.1 K
Display	LCD: - Room temperature/time, optionally - Status indicators
Controls	- Occupancy button: manually switch between comfort mode/ economy mode, fan speed and auto
Interfaces	EnOcean® wireless interface: - Radio telegram: EnOcean radio telegram, bidirectional - Duty cycle: < 1 % - Cyclic transmission/reception intervals
Communication Cycle	10 min
Transmission Power	< 10 mW
Illumination Strength	Min. 100 lux recommended
Operating Range	Radio: Approx. 30 m in buildings (depending on building structure) Occupancy Sensor: Approx. 10 m
Housing	Plastic housing, RAL 9010 (pure white), 7001 Other colors on request
Protections Class	III
Degree of Protection	IP30
Ambient Temperature	0 to 50°C or 32°F to 122°F
Ambient Humidity	During Operation: 20 to 85% rH, non-condensing; Out of Operation: 5 to 90% rH; non-condensing
Installation	Flexible mounting using screws or adhesive
Maintenance	Maintenance-Free
Weight	0.22 kg
Dimensions	WxHxD: 90 x 153.7 x 26.7 mm

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Dimensions



General Installation Instructions

It is not always possible to freely select the installation location of devices which communicate wirelessly, as radio data transmission is influenced to a greater or lesser extent by structural or spatial factors. In order to establish operational and reliable communication paths, the following aspects must be considered before and during planning:

- Structural factors restrict the transmission ranges which can be reached. Building materials and screening elements (e.g. suspended ceiling elements, installation shafts, fire doors, etc.) must be taken into consideration during planning.

CAUTION: Elevated humidity increases natural signal damping

NOTE: Recommendation: Plan radio paths horizontally on a single level with max. 30 m between the transmitting and receiving modules.

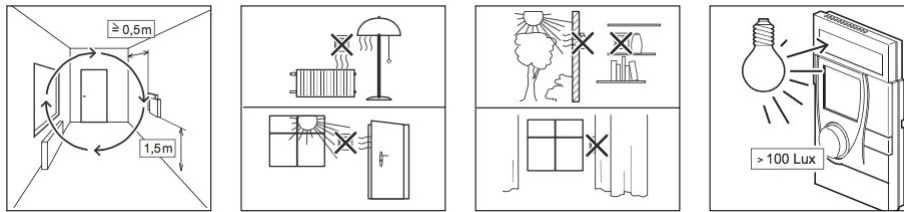
- Designed only for use in rooms.
- Observe minimum distances to potential sources of interference.
- Min. 0.5 m to high-frequency sources of interference (such as microwaves, transformers or computers)
- Min. 3.0 m to transmitters of other radio systems (such as a cordless telephone or headphones)
- Min. 0.1 m to metal and door frames
- Minimize the effect of wall thickness (for example partition walls or room dividers) by ensuring that the radio signal passes through the walls at as close to a right angle as possible.
- Do not select installation locations in the radio shadow of screening building parts/structures -> No direct reception possible.
- Where the device is installed at the limits of reliability, change the position of the transmitter/ receiver slightly if possible (reduce overlapping effects of radio waves).

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Product Description

- To quickly and accurately determine the room temperature, the room sensor should be mounted in a location where it is exposed to the air flow in the room.

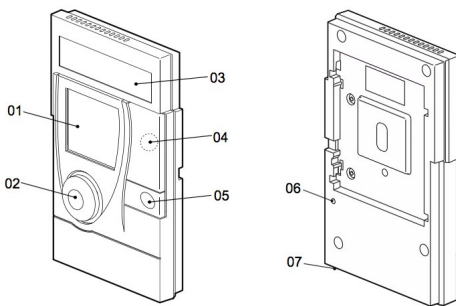


- As a result of the autonomous operation and wireless installation of Mx-RPW, the selected installation location can be changed and optimized at any time without additional effort.

The installation location must have sufficient lighting; using the device in unlit rooms (such as interior kitchens/bathrooms) shortens long-term functionality. The solar cell is optimized for indoor use and it works particularly efficiently with diffuse lighting.

CAUTION: Prolonged illumination at high intensities, e.g.

- Direct sunlight or
- Artificial light (such as halogen emitters) can cause damage to the solar cell.

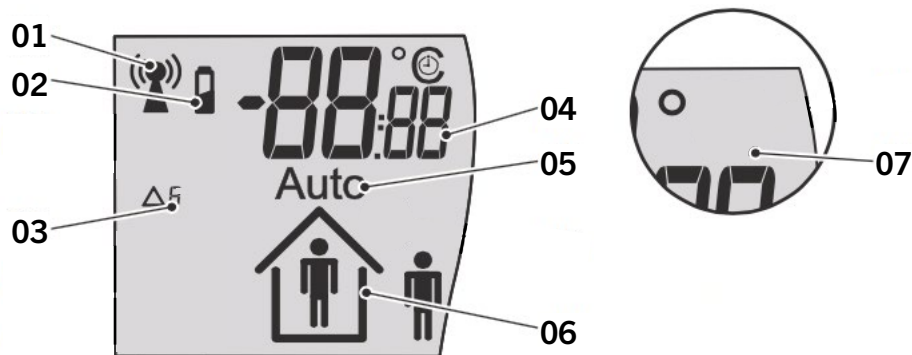


Item	Designation	Explanation
01	Display	Displays information regarding the current status
02	Occupancy Sensor	Detects presence / absence for the utilization time profile
03	Solar Cell	Generates energy for the room sensor
04	Magnetic Contact (below the housing)	Switches the display between room temperature / time
05	Occupancy Button	-Switching between comfort mode / economy mode - For switching the Mx-RPW ON/OFF (together with the setting button)
06	Setting Button	-Switches the room sensor on (together with the presence button) - Starts the login process - Resets the room controller to factory settings (res)
07	Service Connection (underside)	For authorized service technicians only

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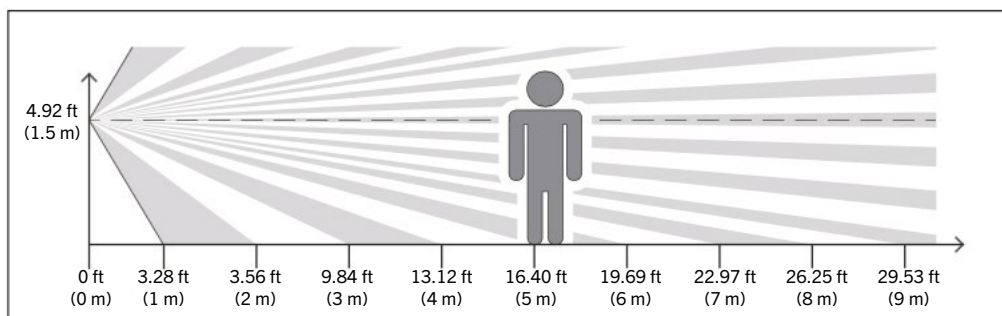
Indicators on the Display



Item	Icon / Display	Explanation
01	Antenna	Status of the radio connection
02	Battery	Room sensor energy storage unit charging state < 30%
03	Code	Status and malfunction messages
04	Information Field	Display of the room temperature, time (= initial display, can be configured) or messages
05	Auto	Learned utilization time profile is active
06	Occupancy	Occupancy sensor is active (test installation location), detected presence / absence and vacation mode
07	Degrees Celsius	The information field displays the temperature (°C)

Occupancy Sensor

The room sensor automatically detects presence with its occupancy sensor. Depending on the distance, the range of movement in the detection area is important. The further a person is away from the occupancy sensor, the greater the movement must be.



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Mounting

The room sensor can be stuck to smooth, flat surfaces using the wall mount and the adhesive pad supplied, or it can be screwed directly onto level surfaces. Screws and wall plugs are not included in the scope of delivery of the room sensor.

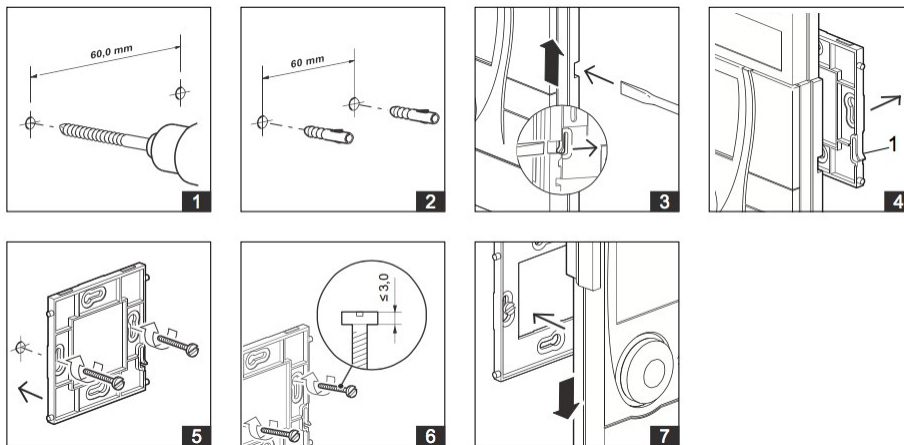
WARNING: Flush mounted cabling and piping at the installation location (electricity, gas, water)

Cabling and piping can be damaged by drilling. Check the installation location for flush mounted piping and cabling, or contact a specialist.

NOTE: Observe the orientation of the wall mount. The bar (1) must be on the right-hand, lower side when the device is installed.

Wall Mounting

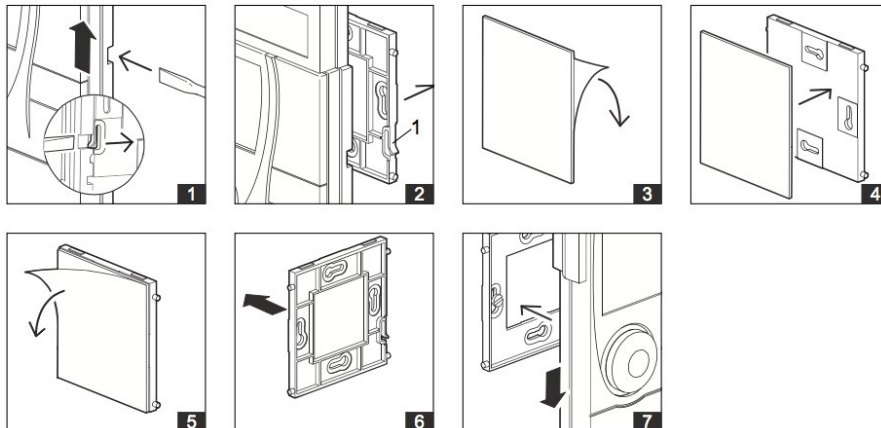
-Flexible screw mounting



Wall Mounting

-Flexible adhesive mounting with double-sided transparent adhesive strips

NOTE: For a permanent connection, remove any dust and grease from the adhesive surface on the wall mount and the wall.

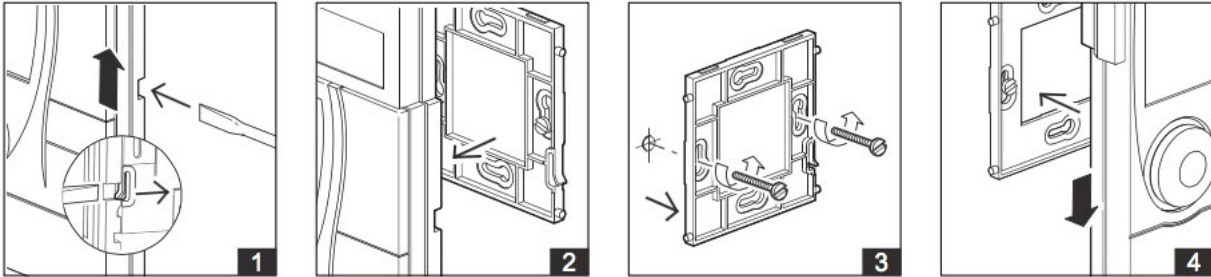


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Removal



View Software Version:



To display software version using a magnet (1)



Software version display

- Briefly press the magnet "Software version display" function.
Displays the software version of internal processor 1.



Displays the software version of the internal processor 2.

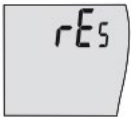
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Restoring defaults

The learned utilization time profile and the radio connections are deleted when defaults are restored.



- Press the "Setting button" for 5 seconds.
- Will reset Mx-RPW to factory settings

NOTE: After the reset is performed, the radio partners must be learned in again.

Radio connection:

The "Antenna" displays the current state of the radio connection to the radio partners. The status of the radio connection is monitored continuously. A message is displayed if the radio connection status changes.

NOTE: Communication is continued automatically once the radio connection between the room sensor and the Mx-MTB1 is functioning properly again. "Δ6" display icon disappears and the "Antenna" icon permanently appears. The "Δ6" display icon represents **NO COMMUNICATION** with the Mx-MTB1.

Energy storage unit

The "Battery" icon indicates the current stat of the room sensor energy storage unit. The room sensor continuously monitors the charge state of the energy storage unit. The "Battery" icon appears on the display if the charge state drops below 30%.

NOTE: Charge the energy storage unit by placing the Mx-RPW in a source of light for two hours (day light or artificial light, but not direct sun light).

AirConfig:

AirConfig and Mx-USB are required for Mx-MTB device configuration.

Airconfig can be downloaded at <http://download.magnum.net>