

Operating Instructions

EnOcean signal strength indicator

EPM 100 Type BB



EPM 100 is a mobile tool for measuring and indicating the received signal strength (RSSI) of EnOcean telegrams and disturbing radio activity at 868.3 MHz. It supports electrical installers during the planning phase and enables them to verify whether the installation of EnOcean transmitters and receivers is possible at the positions planned.





Getting started

1. Open the screw on the back side and insert a 9 V battery (use of accumulators is not recommended)
2. Switch on power by pressing the POWER button.
3. Generate an EnOcean telegram by operating e.g. a PTM 2XX based radio switch or by operating the learn button of a STM 1xx/250 based sensor
4. One of the first three Signal LEDs (1x red, 1x yellow, 1x green) shows the signal strength at 868.3 MHz
5. The fourth right yellow Telegram Valid LED shows if a valid telegram has been received

Switches and indicators

Symbol	Function
POWER	In ON position the EPM 100 is ready for operation. Auto power off: after 7 min <u>without reception of any EnOcean telegram</u> the EPM 100 is automatically switched off. In OFF position the EPM 100 is completely switched off.
BAT	The red BAT LED signalizes low battery voltage
MODE	Peak-hold time: After reception of an EnOcean telegram the RSSI signal is displayed for the selected peak-hold time (5s or 1min). If another telegram is received during this time the signal level of the latter is displayed and the peak-hold time starts again.
Signal LO HI	The signal indicator shows the measured strength in the 868.3 MHz frequency band, see "Meaning of indicators" table below.
Telegram Valid	The telegram LED indicates that a valid EnOcean telegram (at least two sub-telegrams) has been received. Please note: Only STM-telegrams with active LRN bit will be displayed, in order to filter out the periodically transmitted presence signals from sensors

Meaning of indicators

Signal LO HI Telegram Valid	Meaning
	Valid EnOcean telegram with good signal strength received. An installation at the chosen positions is recommended
	Valid EnOcean telegram with sufficient signal strength received. An installation at the chosen positions is possible for devices with external antenna. In case of an internal antenna the installation of a repeater is recommended.
	No radio signal, no telegram received. An installation at these positions at least without an additional repeater is not possible.
	No valid telegram. There is at least a disturber transmitter in the 868 MHz frequency band. It can impact the functionality of an EnOcean radio system. If one or more LEDs are continuously on, you should try to find the source of interference. Potential sources are e.g. radio head phones, RFID readers, other radio based sensors.

Application examples

Example 1 for 2 installers: Person 1 operates an EnOcean switch. Person 2 monitors the received field strength at the desired mounting position.

Example 2 for 1 installer: The EPM 100 is placed at the desired mounting position for the receiver. The EnOcean switch is also placed at the desired position. After pressing the button the installer can go back to the EPM 100 and see whether the radio signal was received or not.

Ranges between transmitters and receivers

The signal strength of radio signals decreases with increasing distance between transmitter and receiver. The transmission range depends on the materials used in the building.

The transmission range is reduced by:

- Mounting transmitter or receiver in the vicinity of metal parts or materials containing metal. The minimum distance should be 10 cm.
- Mounting transmitter or receiver on the floor or close to the floor
- Humidity in materials
- Devices transmitting RF signals such as computers, audio and video equipment, or electronic gear controls for lamps. A minimum distance of 0.5m should be kept.

For more detailed recommendations please refer to the application note "Reliable Range Planning" at www.enocean.com.

Do not dispose old devices in ordinary household waste! The device contains electrical components that must be disposed of as electronic scrap. The housing is made of recyclable plastic.