M9-DOS

Desk Occupancy Sensor

Description

Magnum First's Desk Occupancy Sensor (M9-DOS) offers the possibility of detecting the occupancy of a workplace or desk and transmitting this information wirelessly in accordance with the EnOcean radio standard. It is powered by an internal CR2032 battery. The service life is at least 5 years until the battery is replaced. It is mounted on the table surface using the enclosed double-sided adhesive pad. The EEP (EnOcean Equipment Profile) A5-07-01 is used. The evaluation is configured using the integrated service button and the green LED as feedback.

Technical data

Interfaces

Type	EnOcean
Quantity	1
Transmit/receive center frequency	868.3 MHz / ASK
Frequency range used	868.0 - 868.6 MHz
Maximum transmission power	Type. 6 dBm @ 868.300 MHz

Sensor: Vibration / Acceleration

Measuring range	± 2 g
Threshold value triggering	0.03 g

Sensor: Motion (PIR)

Angle of coverage	-5 ° / +85 °
Type. Mounting height	0.85 m

User interfaces

Service button	Yes, front side
Service LED	Yes, back

Housing

Housing	Plastic, PC, white

Power supply

Supply voltage	CR2032, +3 V DC
Power consumption	Type. 4 µA

Environmental conditions

Operating temperature	0 °C ... +60 °C
Storage temperature	-20 °C ... +70 °C
Air humidity	0..95% relative humidity, non-condensing
Protection class	IP20

Dimensions and weight

Weight	19 g
Dimensions	81 x 41 x 9 (+17) mm

Tests / approvals

CE	2014/53/EU RED Directive 2011/65/EU + Annex 2015/863/EU RoHS-3 Directive

All content subject to change

ver:020125

Device description

Power supply

The **M9-DOS** is powered by the CR2032 battery included in the scope of delivery. The current consumption is approx. 2 to 4 µA depending on the operating mode.

EnOcean

The integrated EnOcean transceiver enables unidirectional communication with actuators or a higher-level control system.

Service LED

The **M9-DOS** has a green LED on the back to indicate the status.

Service button

If the service button is pressed briefly (< 1 s), the **M9-DOS** sends a learning telegram and exits flight mode if it was previously active. Mode 3 = PIR + vibration is also activated.

How the M9-DOS works

Vibration / acceleration detection (mode 2 and mode 3)

The **M9-DOS** has a high-precision acceleration sensor with a preset trigger threshold of 0.03 g. If the threshold value is exceeded, the **M9-DOS** immediately sends the "Motion detected" message if configured accordingly.

Motion detection (PIR) (mode 1 and mode 3),

The **M9-DOS** detects movements below the desk by means of a motion detector / passive infrared sensor, which is directed vertically downwards.

The mounted cover shields one side of the sensor at a time. This allows the aisle side to be blanked out. The sensor is supplied with two shields for optional installation for shielding to the right or left.

Selecting the operating mode

The **M9-DOS** can be adapted to the respective application by selecting one of three operating modes:

Mode 1: **PIR**

The **M9-DOS** only activates the motion detector (PIR) and sends a message on this basis when motion is detected.
The **vibration sensor is not active** in this mode.

Mode 2: **Vibration**

The **M9-DOS** only activates the acceleration sensor and sends a message on this basis when a shock is detected.
The **motion sensor** (PIR) is **not active** in this mode.

Mode 3: **PIR + Vibration**

The **M9-DOS** activates both the acceleration sensor and the motion detector (PIR) and sends a detection message on this basis.
Both sensors are **active** in this mode.

The mode is selected via the service button as follows:

1x briefly within 3 seconds :- Mode 1 = PIR
- Service LED flashes 1x

2x briefly within 3 seconds: - Mode 2 = Vibration
- Service LED flashes 2x

3x briefly within 3 seconds: - Mode 3 = PIR + vibration (default)
- Service LED flashes 3x

1x briefly if currently in flight mode :- Mode 3 = PIR + vibration (default)
- Service LED flashes 3x

All content subject to change

Battery status

The M9-DOS sends its battery voltage within each data telegram.

Sending EnOcean radio telegrams

The message is continuously transmitted by the sensor as described above, provided it is not in flight mode.

Sending the learning telegram

The **M9-DOS** has a service button in the device. This is located on the front and can be operated with a paper clip, for example: If the button is pressed briefly within 1x, 2x or 3x for less than one second, a learning telegram for the EEP A5-07-01 is sent.

Important: Please note that this also switches the operating mode!

Flight mode

Entering flight mode

If the service button is pressed and held, the LED starts flashing after approx. 4 seconds. If the button is released again as soon as the LED stops flashing, the sensor switches to flight mode. The LED flashes again briefly as confirmation.
The **M9-DOS** also transmits a SIG telegram 0x0E (TX MODE OFF) as confirmation.

Exit flight mode

If the service button is pressed once briefly when a sensor is in flight mode, the LED flashes three times briefly to confirm that flight mode has been exited.

In addition, the **M9-DOS** sends a learning telegram and activates mode 3 = PIR and vibration by default.