

EMCS - Wireless Magnet Contact Sensor (Stepcode DE and later)

EMCS is an energy-harvesting wireless magnet contact sensor for EnOcean systems. Powered by a solar cell, EMCS works absolutely maintenance-free. An integrated energy store allows operation for several days in total darkness. In dark surroundings, a coin cell battery can be retrofitted.



The small housing is easy to be mount on windows, on doorframes or on cabinets using the included double-sided adhesive pad or using the also included mounting plate. The ultra-slim magnet has a preassembled adhesive pad.

EMCS supervises an integrated reed contact and reports every status change immediately (open<>closed). In addition, a sign of life signal is send at regular intervals. EMCS provides the option to use Enhanced Security mode with encrypted communication and Rolling Code.

Type	Ordering Code
EMCSA	S3001-C320 (single packs)
	S3001-T320 (tray pack)
EMCSA-G	S3001-G320 (tray pack)
EMCSU	S3051-C320 (single pack)
EMCSJ	S3061-T420 (tray pack)

Primary power supply	Solar harvesting of indoor light (incandescent or fluorescent)
Backup power supply	Optional battery (CR1225 not included)
Radio standard / frequency / transmission power	EMCSA: EnOcean / 868.300 MHz / +6.4 dBm, EMCSU: EnOcean / 902.875 MHz / +99 dBμV/m, EMCSJ: EnOcean / 928.350 MHz / 0 dBm
Antenna / Transmission range	Internal helix antenna / 300m free field, typ. 30 m indoor
EnOcean Equipment Profile (EEP)	D5-00-01, SIGNAL 0x0E (Entering Transport Mode)
EnOcean module integrated	STM 320 (EMCSA), STM 320U (EMCSU), STM 420J (EMCSJ)
Supported security algorithms	VAES 128, CMAC, RLC counter
Reed contact	1 x internal (marking on housing side)
Start-up time with empty energy storage	typ. <2.5 min @ 400 lux, 25°C
Sustain condition for battery free operation	min. 400 lxh per day (signs-of-life only, 25°C)
Operation time in darkness	> 10 days (energy storage fully charged, signs-of-life only, 25° ⁽¹⁾)
Teach-in telegram trigger and indicator	Pushbutton and LED
Sign-of-life transmission	Contact status update every around 20...30 minutes
Dimensions of unit with mounting plate	79 x 23.8 x 18.6 mm
Dimensions of unit without mounting plate	76.2 x 22 x 15 mm
Dimensions of housing adhesive	50 x 18 x 0.8 mm
Dimensions of magnet (incl. adhesive)	20 x 10 x 1.5 mm
Housing color	White similar RAL9010 (EMCSx), Grey similar RAL7016 (EMCSA-G)
Operating conditions	-20...+60°C ⁽¹⁾ , 0...93% r.h., non-condensing, IP 40, indoor use only
Storage conditions	Recommended: +10...30 °C, <60% r.h., max. 36 months in transport mode ⁽²⁾
Approvals	EU: CE, RED (EMCSA), US/CA: FCC, ISED (EMCSU), JN: ARIB STD-T108 (EMCSJ)
Single unit packaging	50 single unit card boxes 32 x 32 x 99 mm (sensor unit, mounting plate, magnet, adhesive, instructions) stacked in transport card box 232 x 176 x 174 mm, total 2.0 kg
Tray packaging	56 units (sensor unit, mounting plate, magnet, adhesive, NO instructions) over 7 trays stacked in card box 232 x 176 x 174 mm, total 2.2 kg

Note 1: Following effects lead to shorter dark time operation: Long time exposure of the unit to temperatures higher 30°C will gradually degrade the energy storage performance over life time. Lower temperatures than 0°C will noticeable reduce capacity of energy store, but temporarily only.

Note 2: Recharge energy storage after 36 months in total darkness to maintain its performance.