

Magnet Switch Sensor

Featuring LoRaWAN®

EM300-MCS



EM300-MCS is a compact magnet switch sensor for detecting open/close status of objects (such as doors or windows) and transmitting alarm using LoRaWAN® technology. With this low power consumption technology, EM300-MCS can work up to 5 years with 4000 mAh battery. Combining with Milesight LoRaWAN® gateway and Milesight IoT Cloud solution, users can manage all sensor data and remotely and visually and receive alarms via mobile App.

EM300-MCS also integrates temperature and humidity sensors, which has a great use for applications such as home and office automation, factories monitoring, etc.

♦ Features

- High sensitivity with door and window security detection
- > Embedded with temperature and humidity sensors for environment monitoring
- Ultra-wide-distance transmission up to line of sight of 10km
- > IP67 UV-resistant and waterproof enclosure for harsh environment applications
- > Built-in 4000 mAh replaceable battery and works for 5 years without replacement
- Equipped with NFC for easily configuration
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud solution

Specifications

Wireless Transmission Technology LoRaWAN® Frequency CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923 Tx Power 16dBm(868)/20dBm(915)/19dBm(470) Sensitivity -137dBm @300bps Mode OTAA/ABP Class A Measurement Door Magnet Detection Distance 20-30 mm Cable Length 1.5 m Temperature Range -30°C to + 70°C Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL₂ battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature	◆ opecifications	
Frequency CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923 Tx Power 16dBm(868)/20dBm(915)/19dBm(470) Sensitivity -137dBm @300bps Mode OTAA/ABP Class A Measurement Door Magnet Detection Distance 20-30 mm Cable Length 1.5 m Temperature Range -30°C to + 70°C Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Wireless Transmission	
Tx Power 16dBm(868)/20dBm(915)/19dBm(470) Sensitivity -137dBm @300bps Mode OTAA/ABP Class A Measurement Door Magnet Detection Distance 20-30 mm Cable Length 1.5 m Temperature Range -30°C to + 70°C Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Technology	LoRaWAN®
Sensitivity -137dBm @300bps Mode OTAA/ABP Class A Measurement Dor Magnet Detection Distance 20-30 mm Cable Length 1.5 m Temperature Range -30°C to + 70°C Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL ₂ battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magne	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923
Mode OTAA/ABP Class A Measurement Door Magnet Detection Distance 20-30 mm Cable Length 1.5 m Temperature Range -30°C to + 70°C Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in) <	Tx Power	16dBm(868)/20dBm(915)/19dBm(470)
Measurement Door Magnet Detection Distance 20-30 mm Cable Length 1.5 m Temperature Range -30°C to + 70°C Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Sensitivity	-137dBm @300bps
Door Magnet Detection Distance 20-30 mm Cable Length 1.5 m Temperature Range -30°C to + 70°C Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Mode	OTAA/ABP Class A
Detection Distance 20-30 mm Cable Length 1.5 m Temperature Range -30°C to + 70°C Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Dimension Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Measurement	
Temperature Range	Door Magnet	
Range -30°C to +70°C Accuracy 0°C to +70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Detection Distance	20-30 mm
Range -30°C to +70°C Accuracy 0°C to +70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Cable Length	1.5 m
Accuracy 0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C) Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Temperature	
Resolution 0.1°C Humidity Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Range	-30°C to + 70°C
Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Accuracy	0°C to + 70°C (+/- 0.3°C), -30°C to 0°C (+/- 0.6°C)
Range 0% to 100% RH Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Resolution	0.1°C
Accuracy 10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%) Resolution 0.5% RH Operation Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Humidity	
Resolution0.5% RHOperationPower On & OffNFC, Power Button (Internal)ConfigurationNFC Configuration via Mobile AppPhysical CharacteristicsPower Supply1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries)Battery Life*>5 years (10 min interval and alarm once every day, SF10)Operating Temperature-30°C to +70°CRelative Humidity0% to 100% (non-condensing)Ingress ProtectionIP67DimensionTransceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Range	0% to 100% RH
OperationPower On & OffNFC, Power Button (Internal)ConfigurationNFC Configuration via Mobile AppPhysical CharacteristicsPower Supply1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries)Battery Life*>5 years (10 min interval and alarm once every day, SF10)Operating Temperature-30°C to +70°CRelative Humidity0% to 100% (non-condensing)Ingress ProtectionIP67DimensionTransceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Accuracy	10% to 90% RH (+/- 3%), below 10% and above 90% RH (+/- 5%)
Power On & Off NFC, Power Button (Internal) Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Resolution	0.5% RH
Configuration NFC Configuration via Mobile App Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL2 battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Dimension Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Operation	
Physical Characteristics Power Supply 1 × 4000 mAh ER18505 Li-SOCL ₂ battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Power On & Off	NFC, Power Button (Internal)
Power Supply 1 × 4000 mAh ER18505 Li-SOCL ₂ battery (extendable to 2 batteries) Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Configuration	NFC Configuration via Mobile App
Battery Life* >5 years (10 min interval and alarm once every day, SF10) Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Physical Characteristics	
Operating Temperature -30°C to +70°C Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Power Supply	1×4000 mAh ER18505 Li-SOCL ₂ battery (extendable to 2 batteries)
Relative Humidity 0% to 100% (non-condensing) Ingress Protection IP67 Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)	Battery Life*	>5 years (10 min interval and alarm once every day, SF10)
Ingress Protection IP67 Transceiver: $105.6 \times 85.3 \times 27 \text{ mm} (4.16 \times 3.36 \times 1.06 \text{ in})$ Magnet: $32 \times 15 \times 8 \text{ mm} (1.25 \times 0.59 \times 0.31 \text{ in})$	Operating Temperature	-30°C to +70°C
Dimension Transceiver: $105.6 \times 85.3 \times 27 \text{ mm } (4.16 \times 3.36 \times 1.06 \text{ in})$ Magnet: $32 \times 15 \times 8 \text{ mm } (1.25 \times 0.59 \times 0.31 \text{ in})$	Relative Humidity	0% to 100% (non-condensing)
Dimension Magnet: $32 \times 15 \times 8$ mm $(1.25 \times 0.59 \times 0.31 \text{ in})$	Ingress Protection	IP67
Magnet: $32 \times 15 \times 8 \text{ mm} (1.25 \times 0.59 \times 0.31 \text{ in})$	Dimension	Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in)
Installation Wall Mounting		Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)
	Installation	Wall Mounting

^{*} Tested under laboratory conditions and for guideline purposes only.













Support email: iot.support@milesight.com