Parking Lot Sensor | PLS

Wireless sensors for detecting parking space occupancy

Wireless sensors detect and report parking space occupancy, thus enabling active parking lot management features, such as search, navigation and reservation.
The easy retrofit solution for off-street parking is installed in minutes. It was designed for detecting with high reliability if a parking space is occupied or available.

TWO INDEPENDENT SENSOR PRINCIPLES

Magnetometer   Radar

Cover Cap and Screw

Sensor Core (TPS110)

Sensor Base

(also available in different colours[1])

OPERATING CONDITIONS

Reference	Range
Operating temperature range	- 30... + 65 °C
Humidity range	0...95 %
Resistant to mechanical influences[2]: snow-plough[3], heavy goods vehicles (CV) (N1 - N3)[4] and high-pressure cleaning	

TARGET MARKETS AND CERTIFICATIONS

PLS Variant	
TPS110 EU	European Union (CE)
	Singapore (IMDA)
TPS110 JP	Japan (MIC)
	Australia (ACMA)
	Singapore (IMDA)
TPS110 IN	India (WPC/ETA)

COMMUNICATION

PLS Variant	LoRa Frequencies	Transmitting Power
TPS110 EU	863-865/868-868.6/869.4-869.65 MHz (EU868)	max. 14 dBm ERP
TPS110 JP	920-923.4 MHz (AS923)	max. 14 dBm ERP
TPS110 IN	865-867 MHz (IN865)	max. 14 dBm ERP
Radar frequency: 2.4-2.4835 GHz; transmission power max. -28 dBm EIRP		

1 The actual colour tone may differ from that shown on the data sheet. The exact colour designations can be found on page two
2 According to product specifications
3 Max. weight of 5,5 tons, shield: flexible flap towards ground, weight max. 1 ton, max. speed 20 km/h
4 Definition of Commercial Vehicles Categories: 2007/46/EC as last amended by 385/2009

DEVICE SPECIFICATION

Reference	Specification
Weight	191 g
Power supply	Lithium battery (Li-SOCI2, 3.6V, 1200 mAh)
Battery lifetime	Up to 5 years
IP class	IP67/IPx9K

Installation and Maintenance

Installation	Sensor to glue to different surfaces / screw in the ground[5]
Maintenance	No maintenance needed
Replacement	Core exchangeable without removing the base from the ground

Performance Parameters

▶ Model based optimized parking state detection algorithm development with millions of data points from real parking events, adaptive algorithm ensure high detection reliability during the whole sensor lifetime

▶ 96% average parking state change detection performance proven in field-tests with more than 2000 sensors and more than 46 different car types in real parking environments

▶ Self-learning calibration during the first five parking events

▶ Reporting of parking state changes within 35 sec. (typical)

COMPONENTS

DRAWING / DIMENSIONS

Cover Cap

Color	RAL9005 / black
Weight	2 g
Material	PA6 GF35
Description	The cap with O-ring is positioned on top of the sensor core to protect the screw.

Sensor Core (TPS110)

Color	RAL9005 / black; RAL7011 / irongrey
Weight	124 g
Material	PA6 GF35
Description	The Sensor-Core contains the sensing unit. It consists of housing, integrated battery, electronics, o-rings. The core will be installed into the base.

Sensor Base

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Color	Standard: RAL7011 (irongrey); further colours: RAL030.50.60 (Bosch red); RAL250, 60, 40 (D2) (Bosch Light Blue); RAL1023 (Traffic Yellow); RAL120.70.75 (D2) (Bosch Light Green)[6]
Weight	65 g
Material	PA6 GF35 (plasma treated on the bottom side)
Description	The Sensor Base is the part, that is mounted on the ground.

PARKING LOT SENSOR - INSTALLED STATE

5 Requires separate 2K PUR based adhesive or screws anchor belts and sealing
6 Standard: RAL7011, other colours on request
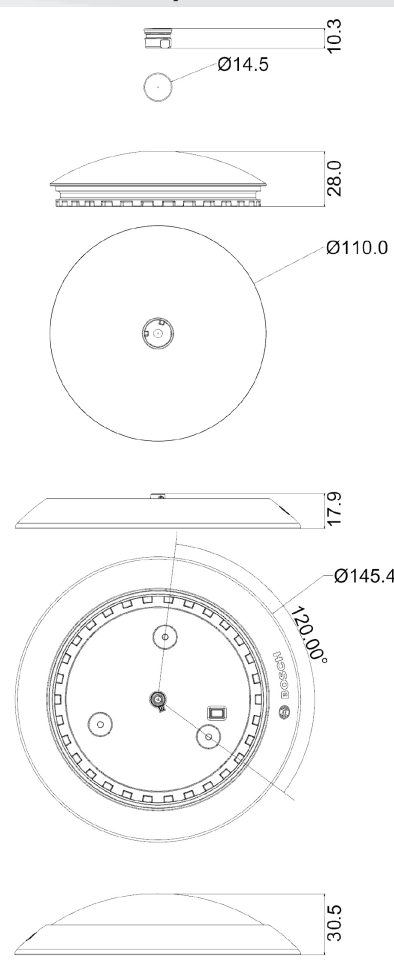
GET IN CONTACT WITH US!

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