



# Parking Sensor

## Wireless sensors for detecting parking space occupancy

Wireless sensors detect and report parking space occupancy, thus enabling 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 the highest reliability if a parking space is occupied or available.

### KEY FEATURES

- ▶ Robust algorithm for parking space occupancy detection
- ▶ Two independent sensor principles: magnetometer and radar
- ▶ Up to 5 years battery lifetime



### PERFORMANCE PARAMETERS

- ▶ Model based optimized parking state detection algorithm development with millions of data points from real parking events
- ▶ 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.
- ▶ Adaptive algorithms ensure highest detection reliability during the whole sensor lifetime
- ▶ Self-learning calibration during the first five parking events
- ▶ Reporting of parking state changes within 35 seconds (typical)

### INSTALLATION AND MAINTENANCE

- ▶ Easy and fast installation: sensor is glued to different surfaces or screwed in the ground<sup>4</sup>
- ▶ No maintenance needed
- ▶ Exchangeable sensor core
- ▶ Low cost, low power, easily replicable sensor solution
- ▶ Sensor core exchangeable without removing the base from the ground

### COMMUNICATION

- ▶ Frequency Band: 868 MHz (LoRaWAN)
- ▶ Wireless device management
- ▶ Wireless software updates<sup>5</sup>

### OPERATING CONDITIONS

- ▶ Operating temperature range: -30 to +65°C
- ▶ Humidity range: 0 to 95%
- ▶ Resistant to mechanical influences<sup>1</sup>: snow-plough<sup>2</sup>, heavy goods vehicles (CV) (N1 - N3)<sup>3</sup> and high-pressure cleaning

### SENSOR SPECIFICATIONS

- ▶ Diameter 145.4 mm
- ▶ Max height 30.5 mm
- ▶ Weight 191 g
- ▶ Power supply Lithium battery
- ▶ Protection grade IP67/IPx9K

<sup>1</sup> According to product specifications

<sup>2</sup> Max. weight of 5,5 tons, shield: flexible flap towards ground, weight max. 1 ton, max. speed 20km/h

<sup>3</sup> Definition of Commercial Vehicles Categories: 2007/46/EC as last amended by 385/2009

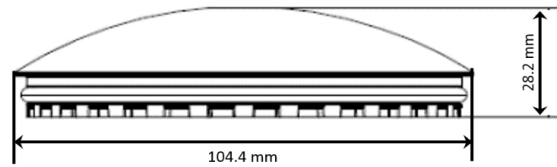
<sup>4</sup> Requires separate 2K-Epoxy based adhesive or screws anchor belts and sealing

<sup>5</sup> Requires the support of the LoRa network and depends on the infrastructure

# Sensor Core

## GENERAL DESCRIPTION

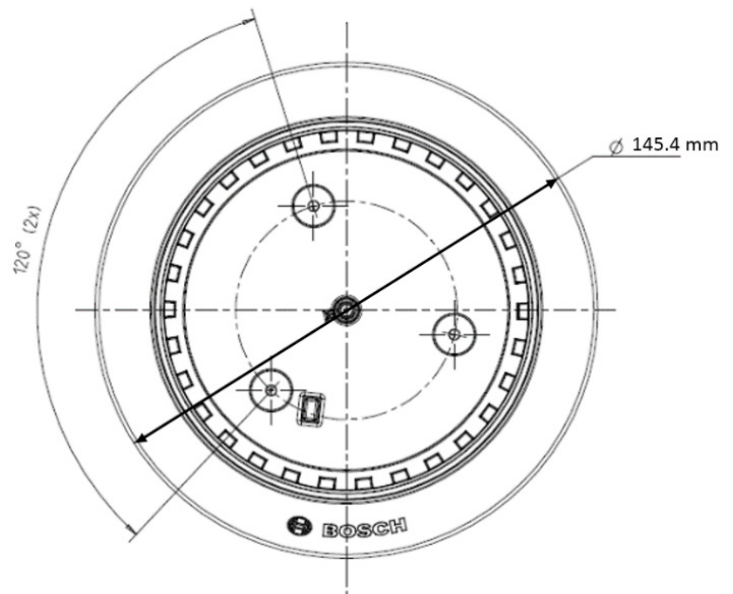
- ▶ Color RAL9005 / black  
RAL7011 / irongrey
- ▶ Weight 124 g
- ▶ Size height: 28.2 mm  
diameter: 104.4 mm
- ▶ Material PA6 GF35
- ▶ Description The Sensor-Core contains the sensing unit. It consists of a housing with integrated battery, electronics and O-rings.



# Sensor-Base (plasma treated)

## GENERAL DESCRIPTION

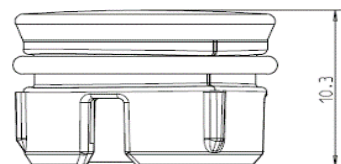
- ▶ Color RAL7011 / irongrey
- ▶ Weight 65 g
- ▶ Size height: 17.9mm  
diameter: 145.4mm
- ▶ Material PA6 GF35
- ▶ Description The Sensor-Base is the in the ground anchored unit of the parking sensor. It is the mount for the sensor core.



# Cover Cap

## GENERAL DESCRIPTION

- ▶ Color RAL9005 / black
- ▶ Weight 2g
- ▶ Size height: 10.3mm | diameter: 14.8 mm
- ▶ Material PA6 GF35
- ▶ Description The cap with O-ring is positioned on top of the sensor core to protect the screw.



## GET IN CONTACT WITH US!

**E-Mail:** [sensor.parking@bosch-connectivity.com](mailto:sensor.parking@bosch-connectivity.com)

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