

POD

Parking Occupancy Detector for Individual Parking Spaces



ADEC's parking occupancy detector monitors individual parking spaces outdoors, detects changes in the occupancy of the parking space and forwards this information to any parking guidance system which in turn updates the guidance displays. The detector is designed for use with the BS2-P base station, which also allows for custom data collectors to easily gather occupancy information via serial interface.

Typical Applications

The parking detector & data aggregator system has been developed specifically for outdoor parking space where detectors cannot be mounted overhead yet high-accuracy detection is required. Typical settings include

- Any urban and downtown car parking spaces
- Street parking
- Theme car park parking lots
- Campus parking lots
- Any other outdoor parking area with marked parking spaces

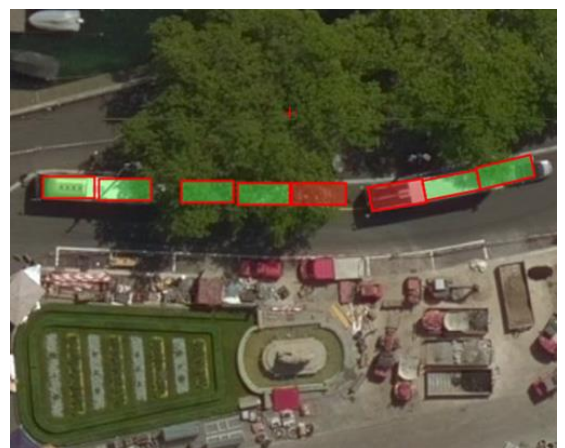
Principle of Operation

The two-tier system comprises of small detectors shaped like a hockey-puck that are inserted into the pavement of the parking space. Each detector has ample battery-power built-in for seven or more years of reliable detection and status transmission. Occupancy status updates are sent via built-in radio to a data aggregator-transmitter, such as the BS2-PS, that is equipped with a GSM modem. This transmitter immediately forwards any occupancy-changes from all the detectors in its range of <250 m (<820 ft.), to the ADEC web server from where it can be viewed, or third-party parking guidance systems can easily and securely retrieve occupancy status information via its web-API the safe & secure using HTTPS protocol. Any parking lot equipped with the ADEC parking occupancy detection system can easily be integrated into any parking guidance system that supports third-party sources via web.

Features

- **Highly accurate occupancy detection outdoors**
Multi sensor-technology system delivers unparalleled detection performance
- **Optional mounting bracket**
Industry-only solution that offers separate mounting bracket for installation / commissioning
- **Small form-factor, robust design**
Properly installed, detector is immune against adverse conditions, such as snow-plows etc.
- **Wireless**
Battery powered - no need for cabling etc.
- **Long life-expectancy**
High-capacity batteries combined with power-sipping circuit design for nominal battery life of 7 years
- **Secure Internet Storage & Access**
Specifically designed for integration into the *Internet-of-things* (IoT) via ADEC web server for easy occupancy status retrieval to any third-party system, such as parking guidance apps etc.

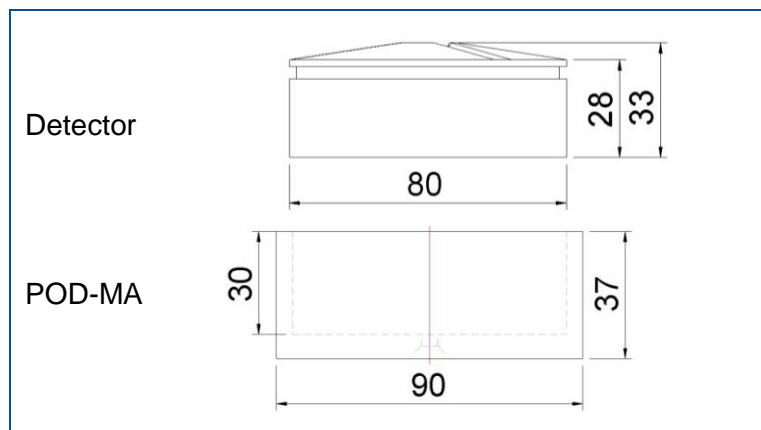
Typical Application



Technical Specification

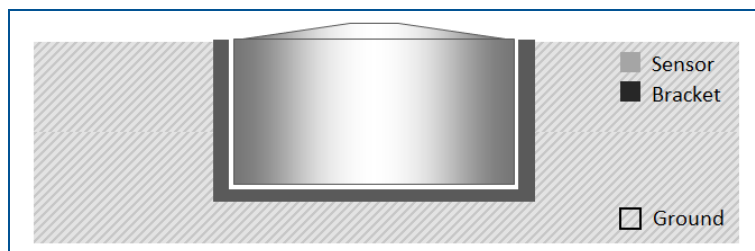
Electrical	
Supply	Batteries for nominal 7 years of operation
Detection delay	~ 5 seconds
Communication	RF in license-free band (e.g. 866 MHz) Range: 1000 m (LOS), 250 m (typ.)
Mechanical	
Dimensions	see drawing
Housing	Weather-proof plastic enclosure
Weight	app. 150 g (without bracket)
Detection	
Multi sensor detector	For unparalleled detection performance
Accuracy	> 99 %
Environment	
Operating Temperature	-40° to +70°C (-40° to +160°F)
Humidity	100 % (continuous submersion)
IP protection	IP 68 (continuous submersion)

Mechanical Dimensions [mm]



Mounting

The multi-technology, disk-shaped detectors are embedded into the pavement of the parking space. The receiver BS2 (base station) is mounted on a streetlight pole or similar structure from where all detectors under surveillance are 250 meters (820 ft.) or closer.



Important:

Data is based on samples and believed to be representative. Design and specification changes reserved without prior notice. For more specific information on the products, their installation and application please refer to the installation manual or contact the manufacturer.

Accessories

Mounting Accessory

Mounting support for easy installation of the detector in the pavement. Detector is screwed into mounting support for quick and easy replacement.



POD-MA: **14110**

Surface Mounting Accessory

Mounting support for easy installation of the detector on top of the pavement. Detector is screwed onto mounting support for quick and easy replacement.



POD-SMA: **14115**

BS2-PS Solar-Powered IoT Gateway

Fully self-contained station integrating 2G/3G modem, RF radio for PODs, batteries and PV panel incl. charger. Browser-based or Windows-software based setup



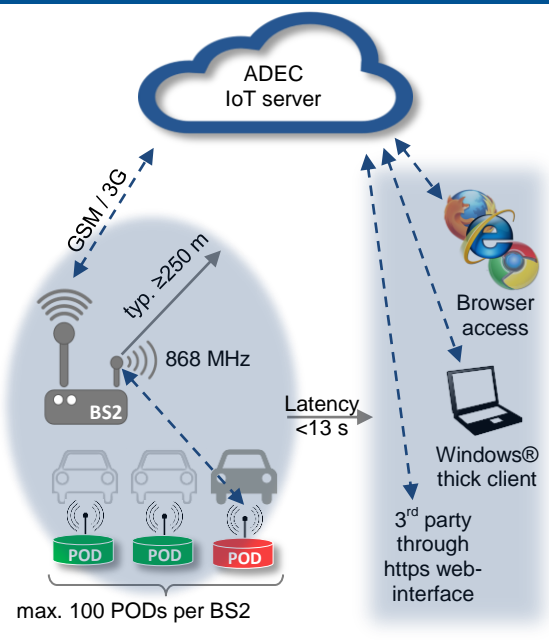
BS2-PS: **11304**

ADEC Web Server / IoT Service

M2M data plan: **11312**

ADEC web server: **11310**

System Overview



Model Overview

Model	Description	Part #
POD	Parking occupancy detector	10100