WiiLSW - The Manhole Cover Sensor

Deploy real-time monitoring and protection against metal theft, vandalism, and unauthorized access of manholes with WiiHey's manhole cover sensor unit.

Features

- Detect open/closed status of a manhole cover;
- Easy to install, wireless communication and free maintenance;
- Cloud based platform with GIS (Geographic information system) dashboard;
- Automatic alarm and message notification support;
- Low false alarm rates;

Applications

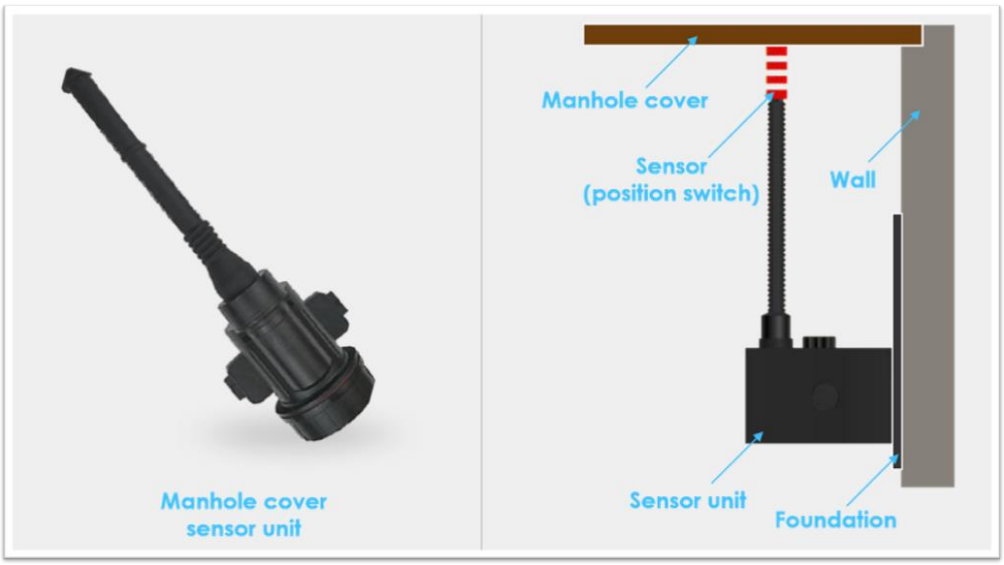
- For use in monitoring manholes, handholes, enclosures, or doors;
- Pick up on unauthorized activities where requires movement of a barrier to gain access to an asset;

Overview

WiiLSW is a positioning sensor in the WiiHey family designed for monitoring manholes and handholes. In addition, WiiHey's customization and adaptable sensors make a host of other monitoring solutions possible as well, e.g., cabinet doors or anywhere else movement of a barrier is necessary to gain access to an asset.

WiiLSW was designed to be extremely tamper-resistant, rugged, and sealed for use in damp environments. With the utilization of commercially available, off-the-shelf sensors, it is trying to be a zero-false-alarm solution. Since WiiLSW is wirelessly connected and battery powered, no hard wire is needed at the location of the sensor allowing it to be deployed where there is no power or cable available.

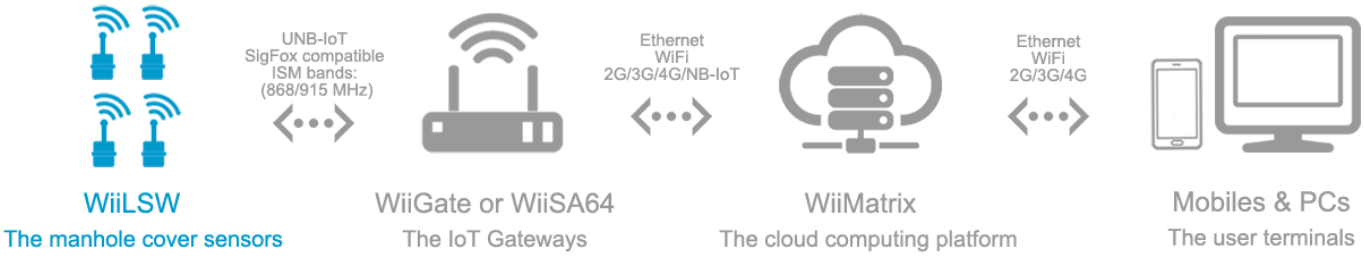
With the network system, the real-time manhole status data is transmitted from the sensor to a cloud database via LPWAN (Low Power Wide Area Network) technology. The sensor in combination with the cloud database will provide you with a web-based GIS dashboard platform to monitor and well plan the maintenance of your manhole assets.



Topology

WiiLSW supports two optional wireless communication methods -- UNB(Ultra Narrow Band) IoT technology and NB (Narrow Band)-IoT technology. Both technologies have transmission ranges of up to several kilometers in urban environments, with very low power consumption, data are then transmitted to cloud sever for further processing and delivery into the end-user's system.

Topology of UNB-IoT communication (SigFox compatible):

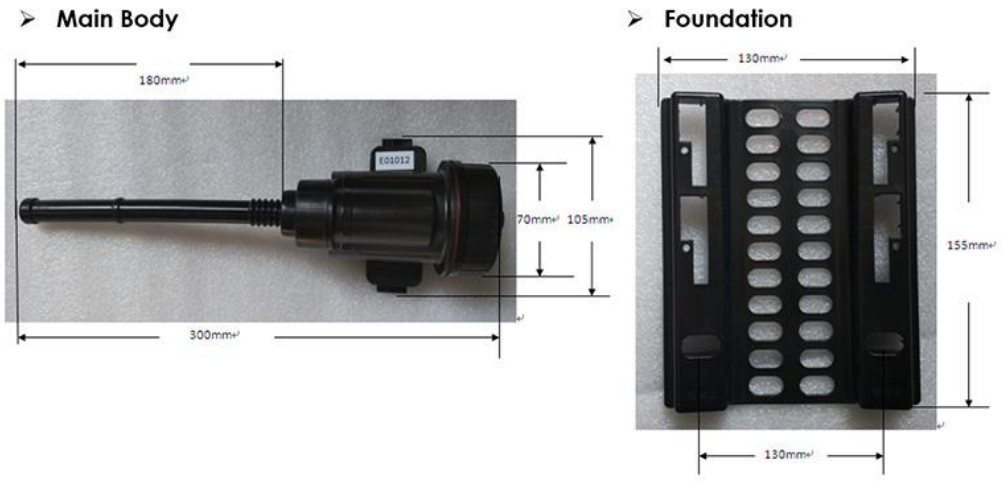


Topology of NB-IoT communication (GSM/GPRS compatible):

Tech Specifications

Open/Close Measurement	
Sensor	Reed sensor/positioning sensor/travel sensor
Minimum time required to trigger alerts	0.7 seconds;
Wireless Connectivity	
Radio	NB-IoT (Narrow Band-IoT) /GSM/GPRS UNB-IoT (Ultra Narrow Band-IoT): ISM bands (868/915 MHz) Support SigFox
Range	1-2 km
Power	
Power source	Built-in lithium battery
Battery life	5-7 years
Mechanical	
Dimensions	See figure below
Environmental	
Operating temp	-32°C to 85 °C
IP Rating	IP69

Dimensions of the WiiLSW sensor:



Gallery

Front view

Side view

Front view with foundation

Side view with foundation

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WiiLWS installation 2

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