ClairGeo MP2

In-ground Installation Dual-mode Parking Detector

Overview

The ClairGeo-MP2 in-ground installation dual-mode packing detectors are designed for front-end data collection, real-time monitoring of parking space status, and utilizes highly sensitive magnetic resistance sensors and 24GHz millimeter-wave radar to detect vehicle information. It determines vehicle parking by detecting changes in the Earth's magnetic field and microwave pulse signals. The detection data is then sent to the intelligent parking management cloud platform, with communication support for LoRa, NB-IoT, and CAT.1 (LTE).

Key Features

High Accuracy

The ClairGeo-MP2 is a wireless anti-interference vehicle detection system with strong anti-interference capabilities and self-learning abilities. The detection data accuracy can reach 99%, fully meeting the requirements of parking space detection.

Wide Applicability

With powerful anti-interference capabilities and inherent automatic learning abilities, it is suitable for applications where small cars, trucks, large buses, and public transportation vehicles cause complex and intense disturbances to the Earth's magnetic field. This includes scenarios such as logistics parks, highway service areas, airports, and large bus stations.

Quick and Easy Installation

Each geomagnetic vehicle detector can be installed within 5-10 minutes. During the installation process, only a hole with a diameter of 112mm and a depth of 100mm needs to be drilled at the specified location. The detector is then placed in the hole with the front side facing up. There is no specific orientation requirement for the installation of the geomagnetic vehicle detector, and it is fixed in place by filling the hole with concrete.

Self-Calibration

In the event of a change in the geographical location of the geomagnetic vehicle detector, there is no need for manual intervention for calibration. The detector is equipped with a self-learning and self-calibration feature, reducing the cost of manual maintenance.



Remote Firmware Updates

Through the management center and using wireless networks, firmware updates for the front-end detectors can be performed remotely. This ensures that the front-end detectors are promptly updated with the latest firmware versions, maintaining the system's state-of-the-art functionality.

Long Detector Lifespan

In the absence of vehicle detection data, the communication module enters a sleep mode (i.e., low power mode). To distinguish between the absence of parked vehicles and a potential fault in the geomagnetic vehicle detector itself, the detector reports a health data message to the intelligent parking management cloud platform within a specified time, even if there is no vehicle detection data. This feature contributes to the long lifespan of the detector by ensuring proactive reporting of its operational status.

Specification

	ClairGeo-MP2LR	ClairGeo-MP2NB	ClairGeo-MP2CA
Detection Method	Geomagnetic + Microwave Dual Mode Sensor	Geomagnetic + Microwave Dual Mode Sensor	Geomagnetic + Microwave Dual Mode Sensor
Communication Method	LoRa 433MHz (868MHz, 915MHz customizable)	NB-IoT	LTE
Detection Accuracy	≥99%	≥99%	≥99%
Power Supply	38AH Industrial-Grade Lithium Battery (3.6V)	38AH Industrial-Grade Lithium Battery (3.6V)	38AH Industrial-Grade Lithium Battery (3.6V)
Transmit Power	20±3dBm	23±3dBm	23±2.7dBm
Receiver Sensitivity	-119dBm	-125dBm	
Platform Response Time	Not exceeding 1.5 seconds	Not exceeding 4 seconds	Not exceeding 4 seconds
Detect Vehicle Types	All motor vehicles	All motor vehicles	All motor vehicles
Coverage in Water Operations	Normal operation in water with a depth not exceeding 35cm	Normal operation in water with a depth not exceeding 35cm	Normal operation in water with a depth not exceeding 35cm
Communication Protocols		UDP,TCP,CoAP,LwM2M	UDP,TCP,CoAP,LwM2M, MQTT,HTTP,MIPL
Platform Support		Carrier platform, customer's own intelligent parking management cloud platform	Customer's own intelligent parking management cloud platform
Installation	Drill hole in-ground installation	Drill hole in-ground installation	Drill hole in-ground installation
Protection Rate	IP68, double-layer enclosure	IP68, double-layer enclosure	IP68, double-layer enclosure
Operating Temperature	-40 to 85°C, (-49 to 185°F)	-40 to 85°C (-49 to 185°F)	-40 to 85°C (-49 to 185°F)
Dimension	Diameter: 110mm (4.33inches) Height: 89mm (3.50inches)	Diameter: 110mm (4.33inches) Height: 89mm (3.50inches)	Diameter: 110mm (4.33inches) Height: 89mm (3.50inches)
Weight	0.5kg (1.10pounds)	0.5kg (1.10pounds)	0.5kg (1.10pounds)

ClairGeo MP3

In-ground Installation Triple-mode Parking Detector

Overview

The ClairGeo-MP3 geomagnetic vehicle detector is used for front-end data collection and real-time monitoring of parking space status. It employs a triple-mode detection approach with highly sensitive magneto-resistive sensors, 24GHz millimeter-wave radar, and photosensitive sensors to detect vehicle information. By detecting changes in the Earth's magnetic field, microwave pulse signals, and photosensitive resistance values, it determines the parking status of vehicles. The detected data is then sent to the intelligent parking management cloud platform, supporting communication via LoRa, NB-IoT, and CAT.1. When geomagnetic and radar detection is affected by heavy rain and water accumulation, the photosensitive sensor ensures that the three-mode detector maintains consistently good detection efficiency.

Key Features

High Accuracy

The ClairGeo-MP3 is a wireless anti-interference vehicle detection system with strong anti-interference capabilities and self-learning abilities. The detection data accuracy can reach 99.9%, fully meeting the requirements of parking space detection.

Wide Applicability

With powerful anti-interference capabilities and inherent automatic learning abilities, it is suitable for applications where small cars, trucks, large buses, and public transportation vehicles cause complex and intense disturbances to the Earth's magnetic field. This includes scenarios such as logistics parks, highway service areas, airports, and large bus stations.

Quick and Easy Installation

Each geomagnetic vehicle detector can be installed within 5-10 minutes. During the installation process, only a hole with a diameter of 112mm and a depth of 100mm needs to be drilled at the specified location. The detector is then placed in the hole with the front side facing up. There is no specific orientation requirement for the installation of the geomagnetic vehicle detector, and it is fixed in place by filling the hole with concrete.

Self-Calibration

In the event of a change in the geographical location of the geomagnetic vehicle detector, there is no need for manual intervention for calibration. The detector is equipped with a self-learning and self-calibration feature, reducing the cost of manual maintenance.



Remote Firmware Updates

Through the management center and using wireless networks, firmware updates for the front-end detectors can be performed remotely. This ensures that the front-end detectors are promptly updated with the latest firmware versions, maintaining the system's state-of-the-art functionality.

Long Detector Lifespan

In the absence of vehicle detection data, the communication module enters a sleep mode (i.e., low power mode). To distinguish between the absence of parked vehicles and a potential fault in the geomagnetic vehicle detector itself, the detector reports a health data message to the intelligent parking management cloud platform within a specified time, even if there is no vehicle detection data. This feature contributes to the long lifespan of the detector by ensuring proactive reporting of its operational status.

Specification

	ClairGeo-MP3LR	ClairGeo-MP3NB	ClairGeo-MP3CA
Detection Method	Geomagnetic + Microwave + Photosensitive Triple-Mode Detection	Geomagnetic + Microwave + Photosensitive Triple-Mode Detection	Geomagnetic + Microwave + Photosensitive Triple-Mode Detection
Communication Method	LoRa 433MHz (868MHz, 915MHz customizable)	NB-IoT	LTE
Detection Accuracy	≥99.9%	≥99.9%	≥99.9%
Power Supply	38AH Industrial-Grade Lithium Battery (3.6V)	38AH Industrial-Grade Lithium Battery (3.6V)	38AH Industrial-Grade Lithium Battery (3.6V)
Transmit Power	20±3dBm	23±3dBm	23±2.7dBm
Receiver Sensitivity	-119dBm	-127dBm±2dBm	
Platform Response Time	Not exceeding 1.5 seconds	Not exceeding 4 seconds	Not exceeding 4 seconds
Detect Vehicle Types	All motor vehicles	All motor vehicles	All motor vehicles
Coverage in Water Operations	Normal operation in water with a depth not exceeding 35cm	Normal operation in water with a depth not exceeding 35cm	Normal operation in water with a depth not exceeding 35cm
Communication Protocols		UDP,TCP,CoAP,LwM2M	UDP,TCP,CoAP,LwM2M, MQTT,HTTP,MIPL
Platform Support		Carrier platform, customer's own intelligent parking management cloud platform	Customer's own intelligent parking management cloud platform
Installation	Drill hole in-ground installation	Drill hole in-ground installation	Drill hole in-ground installation
Protection Rate	IP68, double-layer enclosure	IP68, double-layer enclosure	IP68, double-layer enclosure
Operating Temperature	-40 to 85°C, (-49 to 185°F)	-40 to 85°C (-49 to 185°F)	-40 to 85°C (-49 to 185°F)
Dimension	Diameter: 110mm (4.33inches) Height: 89mm (3.50inches)	Diameter: 110mm (4.33inches) Height: 89mm (3.50inches)	Diameter: 110mm (4.33inches) Height: 89mm (3.50inches)
Weight	0.5kg (1.10pounds)	0.5kg (1.10pounds)	0.5kg (1.10pounds)

ClairGeo MPS

Surface-mount Installation Parking Detector

Overview

The ClairGeo-MPS surface-mount installation packing detector is used for front-end data collection, real-time monitoring of parking space status, and utilizes highly sensitive magnetic resistance sensors and 24GHz millimeter-wave radar to detect vehicle information. It determines vehicle parking by detecting changes in the Earth's magnetic field and microwave pulse signals. It is based on LoRa wireless communication with a control gateway, sending real-time effective data to the intelligent parking management cloud platform.

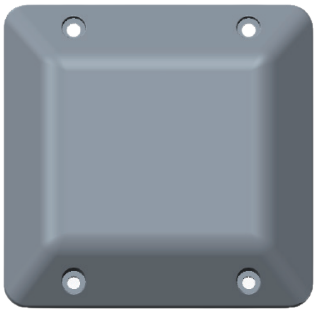
Key Features

High Accuracy

The ClairGeo-MPS is a wireless anti-interference vehicle detection system with powerful anti-interference capability and automatic self-learning ability. The detection data accuracy can reach 99%, fully meeting the needs of parking space detection.

Self-calibration

In the event of a geographical change in the geomagnetic vehicle detector, no manual intervention is required for calibration. It features self-learning and self-calibration functions, reducing manual maintenance costs.



Specification

Detection Method	Magnetic resistance sensor (5Hz sampling frequency) + Microwave detection technology dual sensor
Communication Method	LoRa wireless communication
Communication Advantages	Low-speed, long-range, flexible self-organizing network, meeting the requirements of various scenarios
Receiver Sensitivity	-119dBm
Transmit Power	20±3dBm
Battery Capacity	16AH Industrial-Grade Lithium Battery (3.6V)
Detection Accuracy	99%
Installation Method	Surface-mounted, secured with screws or strong adhesive
Enclosure Material	PC Casing
Dimension	152*152*28 (mm), 5.98*5.98*1.10 (inches)
Operating Temperature	-40 to 85°C, (-49 to 185°F)
Product Features	Accurate, adaptive, all-weather, anti-interference, high stability, accuracy ≥99.9%
Remote Maintenance	Supports remote wireless upgrades and configurations, with the upgrading process not affecting parking space data detection.

ClairGeo MPLRG

Accessory: LoRa Gateway

Overview

The ClairGeo-MPLRG LoRa gateway manages the MP2LR and MP3LR geomagnetic vehicle detectors based on LoRa wireless communication. It performs functions such as parsing, encrypting, sending, and storing data from the geomagnetic vehicle detector.

Key Features

High Stability

Utilizing LoRa anti-interference communication technology ensures communication quality between the detector and the receiver, with a packet loss rate less than 5‰.

Diverse Interfaces

Supporting various connection methods such as RS232, RS485, RJ45, 4G, etc., to meet the needs of different scenarios.

Versatile Power Supply

Supporting multiple power sources, including mains power (AC220V), lamppost (AC220V) power supply, with options for battery charging at night and discharging during the day, as well as solar power.



Remote Firmware Updates

Through the management platform in the central control center, remote firmware updates for the geomagnetic host can be performed, along with real-time monitoring of the geomagnetic host's operational status.

Specification

Wireless Communication	LoRa wireless communication
Power Supply	Grid power (AC220V), solar power, lamppost power supply (AC220V)
Transmit Power	20±3dBm
Receiver Sensitivity	-119dBm
Communication Method	2G/3G/4G, Ethernet
Communication Protocol	TCP/IP
Platform Response Time	Not exceeding 4 seconds
Installation	Adopting pole-mounted installation method, quick and easy to install.
Protection Rate	IP66
Operating Temperature	-40 to 85°C, (-49 to 185°F)
Dimension	280*186*85 (mm), 11.02*7.32*3.35 (inches)
Weight	3kg (6.61 pounds)

Ordering Information

	In-ground Installation	Surface-mount Installation	Dual-mode, supporting geomagnetic and radar	Triple-mode, supporting geomagnetic, radar, and photosensitive	LoRa*	NB-IoT	CAT.1
ClairGeo-MP2LR	√		√		√		
ClairGeo-MP2NB	√		√			√	
ClairGeo-MP2CA	√		√				√
ClairGeo-MP3LR	√			√	√		
ClairGeo-MP3NB	√			√		√	
ClairGeo-MP3CA	√			√			√
ClairGeo-MPS		√	√		√		

* Note: Detectors using LoRa need to be paired with a LoRa gateway MPLRG