

SmartGen

MAKING CONTROL SMARTER

CMM376-4G

CLOUD MONITORING COMMUNICATION MODULE

USER MANUAL



郑州众智科技股份有限公司
SMARTGEN(ZHENGZHOU) TECHNOLOGY CO.,LTD.

SmartGen Registered trademark

No. 28 Xuemei Street, Zhengzhou, Henan, China

Tel: +86-371-67988888/67981888/67992951/67981000 (overseas)

Fax: +86-371-67992952

Web: www.smartgen.com.cn www.smartgen.cn

Email: sales@smartgen.cn

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Table 1 Software Version

Date	Version	Note
2025-04-30	1.0	Original release.

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1 OVERVIEW

CMM376-4G Cloud Monitoring Communication Module is a 4G global-mode wireless network communication protocol conversion module, which can achieve genset (with SCI) connect to Internet. When the module logs into the cloud server, the cloud server will transmit the corresponding genset controller's communication protocol to the module. The module gains genset data via RS485 port and transmits the data to corresponding cloud server through 4G wireless network. Users can monitor the genset running status in real-time and query its operation records via mobile apps (IOS or Android) and computers.

The module features GPS satellite positioning and LBS base station positioning functions, enabling it to upload the acquired latitude, longitude and altitude information in real-time to the corresponding cloud server. Equipped with an internal battery, it can periodically wake up and upload positioning information to the cloud server, thereby realizing the module's positioning and movement trajectory tracking.

2 PERFORMANCE AND CHARACTERISTICS

- Connect to cloud server via 4G wireless network, one to one monitoring;
- Communicate with genset control module via RS485, which can monitor of the most first-class international genset controllers;
- Wide power supply: DC(8~35)V, can direct use genset build-in starting battery;
- The main control chip is ARM 32-bit low-power SCM, with high integration and strong programming capacity. When powered by the internal battery, power consumption is extremely low, ensuring the module can be woken up multiple times to upload positioning information even without an external power supply;
- Take JSON network data communication protocol, upload real-time data variation and take compression algorithm to vastly reduce network flow at the same time;
- When alarm occurs, it can upload data to server immediately;
- With historical data storage function, preventing data loss during network instability;
- Cloud-based firmware can be updated via the 4G network for convenient module maintenance;
- Users can configure parameters via USB port;
- Water-resistant design with protection against rain and humidity;
- Standard 35mm guide-rail mounting or screw-fixed installation that module can be installed in the genset controller box;
- Modular design, flame-retardant ABS+PC shell, lightweight, compact structure with easy installation.

3 SPECIFICATION

Table 2 Technical Parameters

Items	Contents
Operating Voltage	DC 8.0V~35.0V, continuous power supply.
Power Consumption	Standby: $\leq 0.66W$ Working: $\leq 3.5W$ Low Power Mode: $\leq 0.006W$
RS485 Interface	Isolated type
GPRS Interface	Standard IPEX port (female), IPEX port (male) for antenna.
GPS Interface	Standard IPEX port (female), IPEX port (male) for antenna.
Wireless Network	TDD-LTE/FDD-LTE
Case Dimensions	101mm×51mm×63mm(Length×Width×height)
Working Temperature	(-10~+55)°C
Working Humidity	(20~93)%RH
Storage Temperature	(0~+35)°C
IP Rating	IP65
Weight	0.25kg

4 PANEL AND TERMINAL DESCRIPTION

4.1 PANEL INDICATOR AND TOUCH KEYS

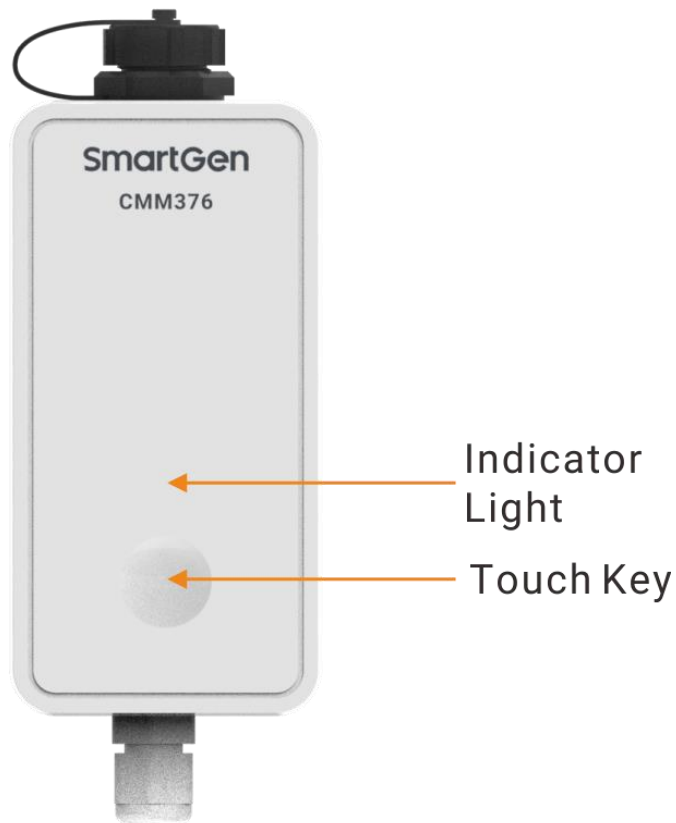


Fig.1- Indicator Light and Touch Key

When external power is supplied, press and hold the touch key on the shell shown in Fig.1 for 2s to enter the status inquiry mode. The status is indicated by three LED colors: green, red and yellow (details in Table 3). If a corresponding function is abnormal, the corresponding colored LED will flash; if the function is normal, the corresponding colored LED will remain steady (non-flashing). If all statuses are normal, a steady green LED acts as the indication. The LED status display will exit after a short press of the touch key or automatically after 2 minutes of no manual intervention.

Table 3 Indicator Description

Indication Content	Description
Green Light On	4G/GPRS real-time data communication is normal, GPS positioning is normal, and RS485 communication is normal.
Green Light Flashing	4G/GPRS communication is abnormal or registration with the server has failed.
Red Light Flashing	GPS/LBS positioning is abnormal.
Yellow Light Flashing	RS485 communication is abnormal.

4.2 RS485 INTERFACE

This module acquires data by connecting to the genset controller via RS485 interface. The RS485 connection diagram is shown in Fig. 2. A 120Ω resistor is already integrated inside the module.

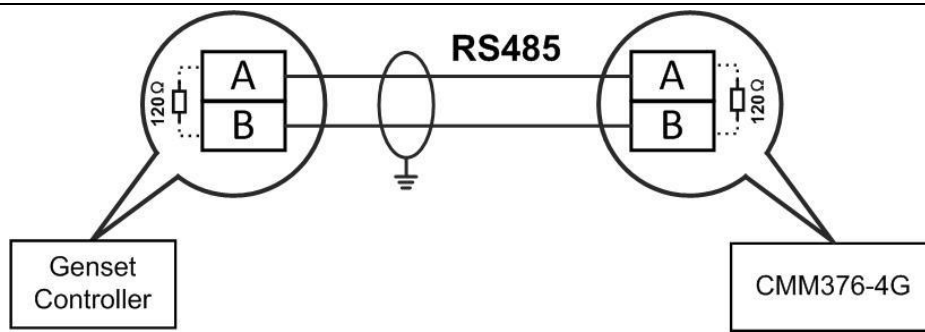


Fig.2- RS485 Connection

4.3 USB DEVICE INTERFACE

After connecting the module's USB Type-C interface to PC, parameter configuration can be performed using the supporting host software. Fig.3 illustrates an example of the gateway setup.

Gateway

Site Name	
Server URL	www.smartgencloudplus.com ▼
Server Port	21318 (0-65535)
Security Code	123456

Fig.3 - Gateway Setting

The PC software can also be used to view information such as module location, signal strength, and ID, as shown in Fig. 4.

Monitoring

Satellite Num.	0	RSSI	9 dBm	
Longitude	134.348213°	RSRP	-123 dBm	
Latitude	34.544126°	RSRQ	-8 dB	
Altitude	100 m	SINR	5 dB	

Module Info

Hardware Ver.	V 1.2	Issue Date	2025-03-05
Software Ver.	V 1.2	Module Time	2026-01-27 (2) 15:37:37
Module ID	203...0037	Print	Print Setup

Fig.4 - Module Monitoring and Information

4.4 SIM CARD REPLACEMENT

This module supports nationwide 4G wireless networks in China and uses a Nano SIM card (size: 12.3mm × 8.8mm). It allows for SIM card replacement. After replacing the SIM card, it is necessary to power off the module (both external and battery power) and then power it on again. The steps for replacing the SIM card are shown in Fig. 5.

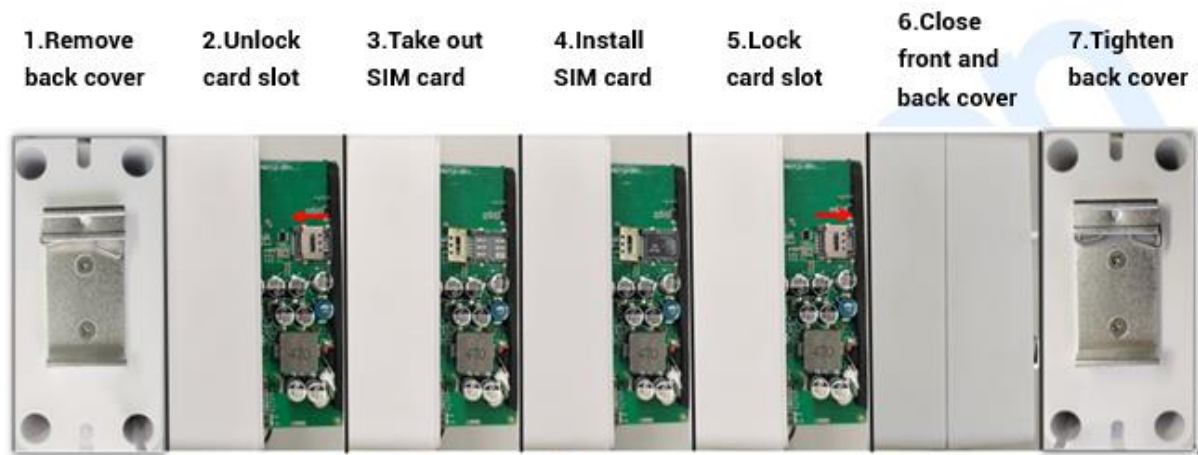


Fig.5 - SIM Card Replacement

4.5 TERMINAL

Table 4 Terminal Description

No.	Function	Cable Size	Note
1	B+ (Brown Wire)	0.5mm ²	Connected with positive of starter battery.
2	B- (Black Wire)	0.5mm ²	Connected with negative of starter battery.
3	RS485 B(-) (White Wire)	0.5mm ²	A 120Ω resistor is already integrated inside the module.
4	RS485 A(+)	0.5mm ²	
5	USB Type-C		USB communication interface.

5 LOW-POWER CONSUMPTION FUNCTION

The module has a built-in lithium battery. When external power is supplied, the battery can be charged. In the absence of external power, the module enters low-power mode, during which the RS485, GPRS/4G and touch-key functions are unavailable. It can wake up periodically according to the set wake-up interval (once waking, the yellow, green and red LED lights turn on in sequence). After waking, the module will connect to the cloud server and upload location information, then re-enter low-power mode. The wake-up interval can be set via the PC software or the cloud server. When the wake-up interval is set to 6 hours (factory default), a fully charged battery can operate for approximately 90 days (a full charge takes about 8 hours).

When external power is restored, the module wakes up immediately (the yellow, green and red LED lights turn on in sequence), and all functions become available normally.

6 CONFIGURATION OF PARAMETERS

The configuration parameter ranges and definitions for this module are specified in Table 5.

Table 5 Contents and Scopes of Parameters

No.	Items	Parameters	Defaults	Description
Gateway				
1	Site Name	Example: No.1 Genset		20 Chinese characters, letters or numbers
2	Server URL	Default: www.smartgencloudplus.com		40 characters
3	Server Port	(0-65535)	21318	
4	Security Code		123456	16 characters
GPS				
1	GPS Enable	(0-1)	1	0: Disable 1: Enable
2	Longitude	(-180-180)°	0	When GPS is enabled, this setting is unavailable.
3	Latitude	(-90-90)°	0	
4	Altitude	((-9999.9)-9999.9)m	100.0	
5	LBS Enable	(0-1)	0	LBS base station positioning enable setting (0: Disable; 1: Enable)
GSM				
1	GSM Enable	(0-1)	1	0:Disable ; 1:Enable
2	GPRS Password			20 characters
3	SMS Center Number			20 characters
4	PIN Enable	(0-1)	0	0:Disable; 1:Enable
5	PIN Code	(0-9999)	0	PIN code setting
6	APN			40 characters
7	China Telecom Single-4G Card Enable	(0-1)	0	Specific regions provide single-4G cards 0: Disable; 1: Enable
Cloud Server				
1	Debugging Personnel Name			20 characters
2	Contact Phone Number			20 characters
3	Installation Time			20 characters
4	Ethernet Setting		Cloud	Can be set to Cloud (Cloud Connection).
5	Time Zone		(UTC+08:00) Beijing, Chongqing...	
6	Historical Data Interval	(0-3600)s	0	
7	Low-Power	0h0min-24h0min	6h0min	This is the low-power wake-up

No.	Items	Parameters	Defaults	Description
	Wake-up Interval			interval when the module is powered by battery.

NOTE: The genset controller model, communication interface, baud rate, and communication ID for monitoring must be set via the cloud server. After finishing the settings, the module must be activated through the cloud server.

7 SYSTEM APPLICATION DIAGRAM

Fig. 6 shows the system application diagram of this module. One CMM376-4G module can only monitor one unit.

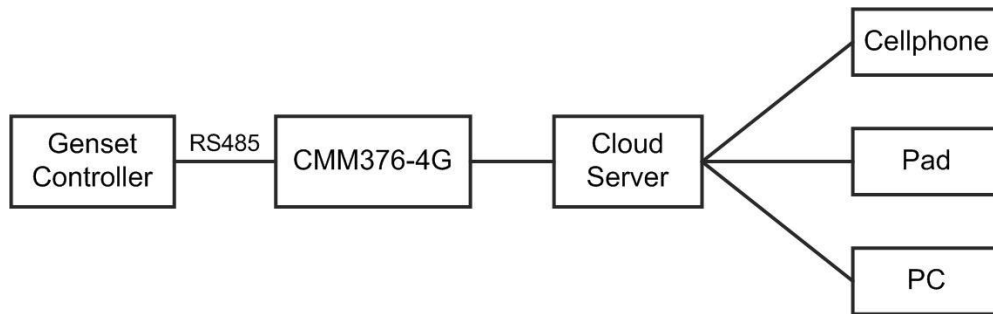


Fig.6 – CMM376-4G System Application Diagram

8 CASE DIMENSION AND INSTALLATION

The module can be installed either on a 35mm guide-rail inside the cabinet or by fixed mounting with screws (M4). The dimensions and mounting methods are shown below:

Unit: mm

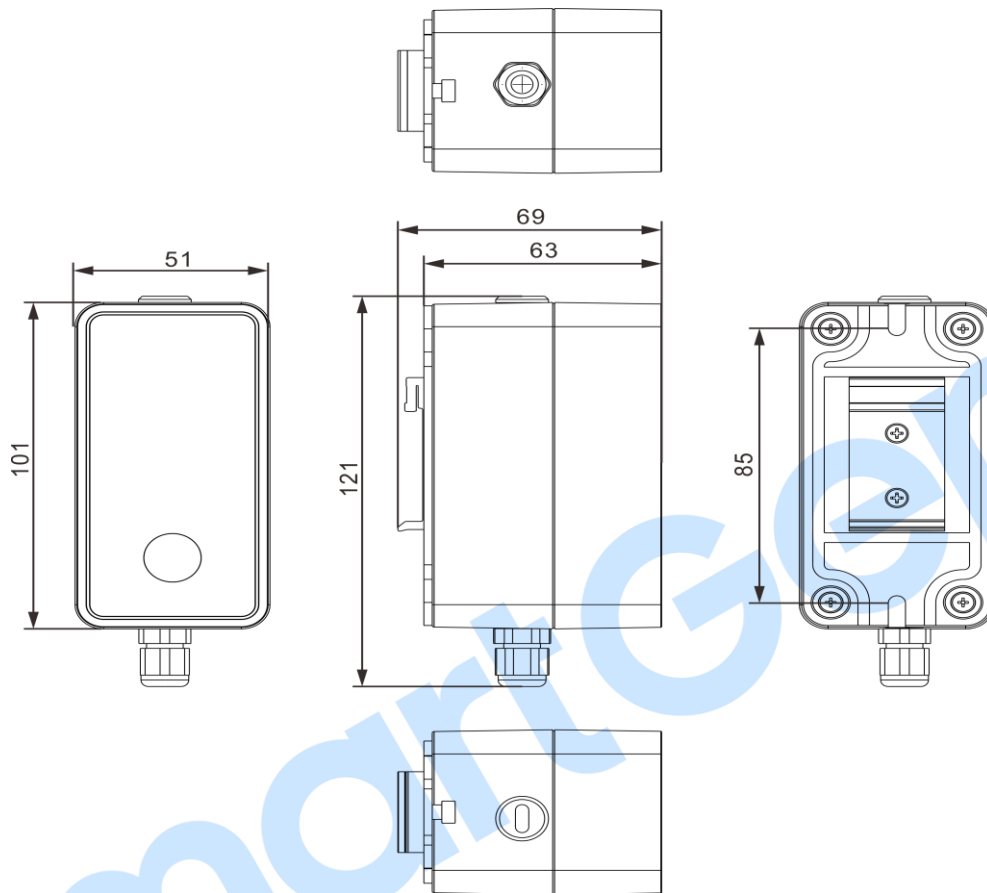


Fig. 7 – CMM376-4G Case Dimension

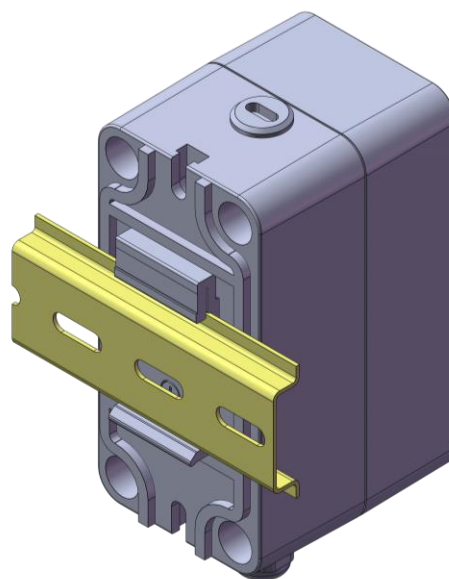


Fig. 8 – CMM376-4G Guide Rail Installation

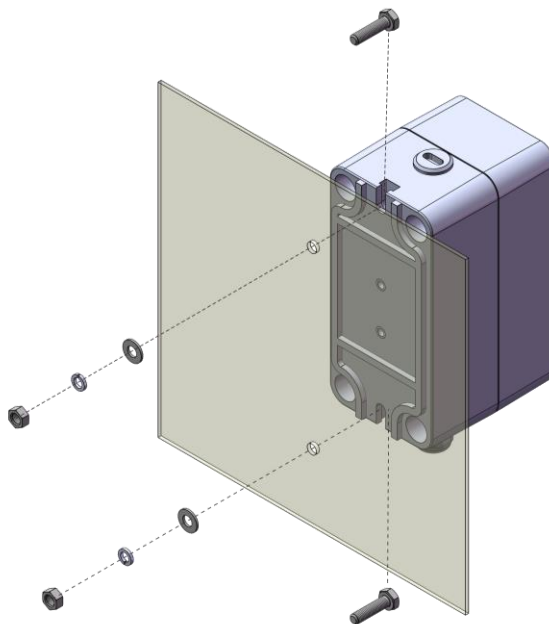


Fig. 9 – CMM376-4G Screw Installation

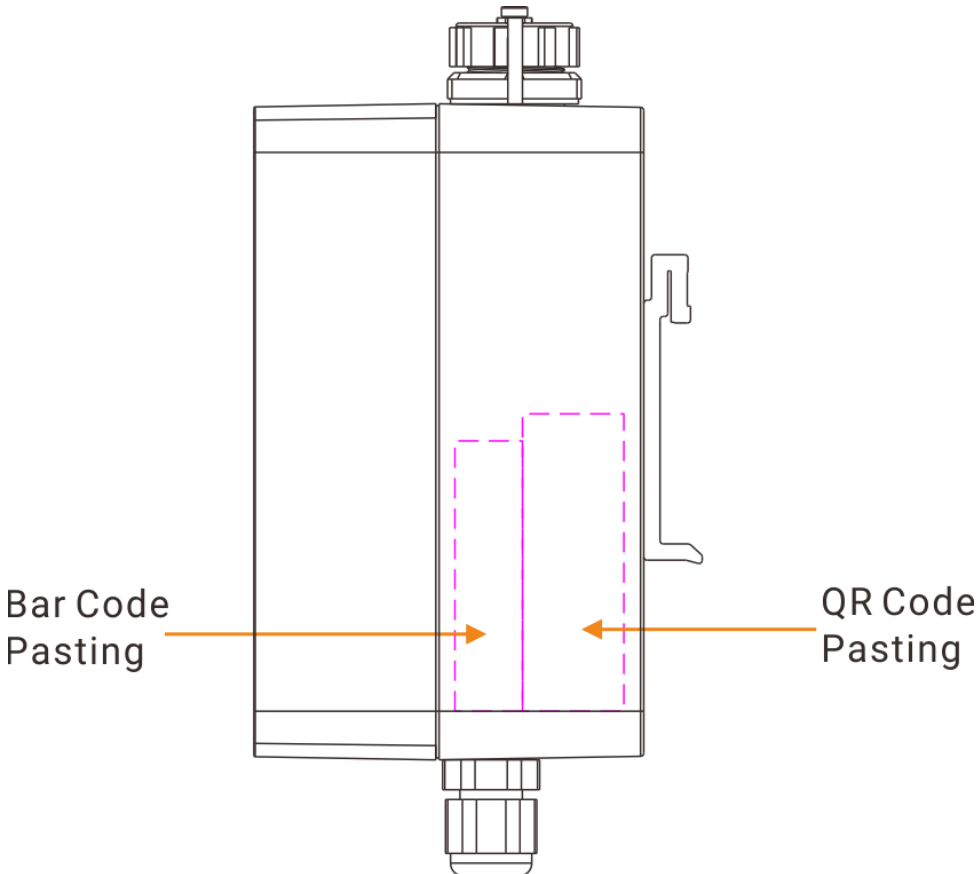


Fig. 10 – CMM376-4G Bar Code & QR Code Pasting Area



Fig. 11 – APP QR Code

- 1) Scan the QR code of Fig. 11 to download the Cloud Monitoring Platform APP, then install it on your phone/pad;
- 2) Open the Cloud Monitoring Platform APP, users must register for the first time. After registration, enter your account and password to log in to the APP;
- 3) For other related settings, refer to the "My → Getting Started Guide" for operations (as shown in Fig. 12, the APP display interface).

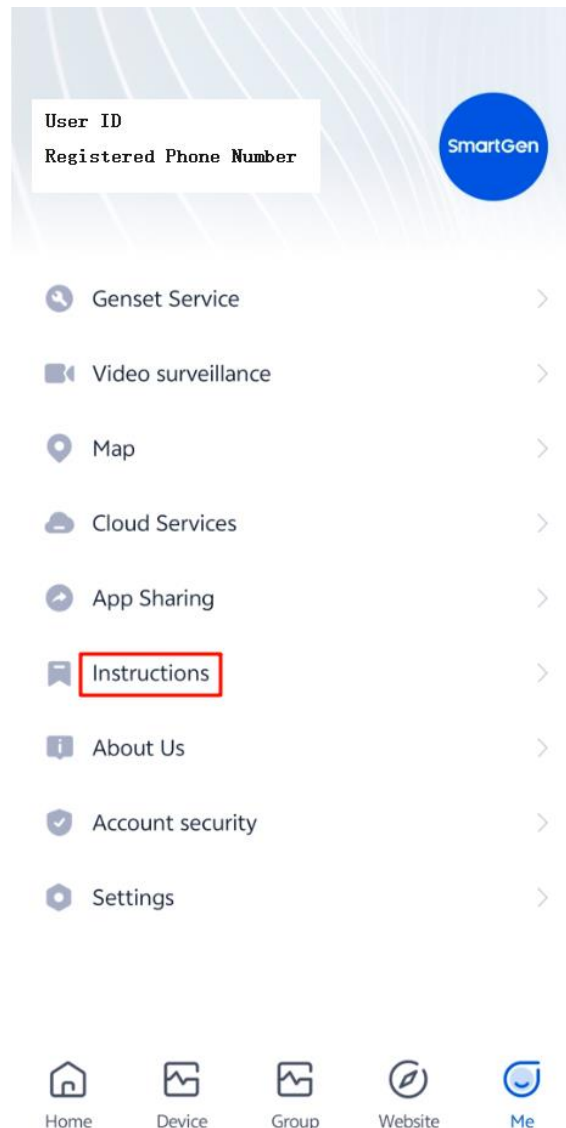


Fig. 12 – APP Display Interface

10 TROUBLESHOOTING**Table 6 Troubleshooting**

Symptoms	Possible Solutions
No response after pressing and holding the touch key with external power applied	Check the power supply voltage. Check the module wiring.
Module cannot wake up	Check the wake-up interval setting; Apply external power to the module.
Green indicator light flashing	Check if the SIM card is inserted; Check if the GPRS antenna is connected; Check the server URL and port number.
Red indicator light flashing	Check if GPS configuration parameters are enabled; Check if the GPS antenna is connected, or if the module is placed outdoors in an open area with the touch key side facing the sky; Check if LBS positioning is enabled and if the SIM card installed in the module has LBS positioning service activated.
Yellow indicator light flashing	Check the RS485 wiring; Check if the RS485 communication port is selected in the cloud server settings; Check if the baud rate, communication address, and stop bits (2 bits) settings of the controller match those of this module; Check if the A and B of RS485 are reversely connected.

11 PACKING LIST**Table 7 Packing List**

No.	Name	Qty.	Remarks
1	Cloud Monitoring Communication Module	1	CMM376-4G
2	Installation Instructions	1	