SmartGen

MAKING CONTROL SMARTER

CMM365-4G

CLOUD MONITORING COMMUNICATION MODULE

USER MANUAL

郑州众智科技股份有限公司

SMARTGEN(ZHENGZHOU)TECHNOLOGY CO.,LTD.

SmartGen众智 **Chinese trademark**

SmartGen **English trademark**

SmartGen — make your generator ***smart***
SmartGen Technology Co., Ltd.
No.28 Jinsuo Road, Zhengzhou, Henan Province, China
Tel: +86-371-67988888/67981888/67992951
+86-371-67981000(overseas)
Fax: +86-371-67992952
Web: www.smartgen.com.cn/
www.smartgen.cn/
Email: sales@smartgen.cn

Table 1 – Software Version

Date	Version	Note
2021-11-30	1.0	Original release.

CONTENT

1 OVERVIEW

CMM365-4G Cloud Monitoring Communication Module is 4G wireless network communication protocol conversion module of all-modes, which can achieve genset (with SCI) connection with Internet. After logging into cloud server, module will receive corresponding genset controller communication protocol from cloud server. Cloud monitoring module can obtain genset data information via RS485 port and send the information to related could server via 4G wireless network. Users can monitor genset running status at real time and check genset running records by mobile APP (IOS or Android), or PC etc. terminal device.

It has GPS and BD positioning function, which can upload the obtained longitude and latitude, altitude information at real time to the corresponding cloud server.

2 PERFORMANCE AND CHARACTERISTICS

- Connect to cloud server via 4G wireless network, one cloud monitoring module for one genset;
- With port for communication with genset control module: RS485, which can monitor most genset control modules of leading brands internationally;
- Wide power supply: DC (8~35)V, which can directly use engine starting battery;
- GPS and BD positioning function for obtaining genset location information to realize genset positioning;
- Apply network data communication protocol of JSON format, upload the genset data changes at real time, meanwhile compression algorithm is applied, which greatly reduces network flow;
- Upload data to server immediately when genset has alarms;
- Module panel has power and multiple communication status indicators; clearly display module working status;
- Parameter setting function: users can do parameter setting by module RS485 port;
- Modular structure design, flame retardant ABS enclosure, light weight, compact structure with easy installation.

3 SPECIFICATION

Table 2 – Technical Parameters

Items	Contents
Operating Voltage	DC(8.0~35.0)V, continuous power supply.
Power Consumption	Standby: ≤2W; Working: ≤2W.
RS485 Port	Non-isolated, half-duplex, 9600 baud rate, max communication distance 1,000m.
Vibration	5Hz~8Hz, amplitude=17mm; 8Hz~100Hz, a=4g; 100Hz~500Hz, a=2g.
Shock	50g, 11ms, half-sine, three consecutive shocks are applied in each of the three mutually perpendicular directions, for a total of 18 times. IEC 60068-2-27
Bump	25g, 16ms, half-sine; IEC 60255-21-2.
GPRS Port	Standard SMA port (female), SMA port (male) for antenna.
GPS Port	Standard SMA port (female), SMA port (male) for antenna, active antenna.
Wireless Network	LTE-TDD/LTE-FDD
Case Dimensions	86mmx61mmx36mm
Working Temperature	(-25~+70)°C
Working Humidity	(20~93)%RH
Storage Temperature	(-25~+70)°C
Conforming Standard	GB/T 37089 Reciprocating internal combustion engine driven alternating current generating sets controller.
Weight	0.1kg

4 PANEL AND TERMINAL DESCRIPTION

4.1 PANEL INDICATOR AND KEYS

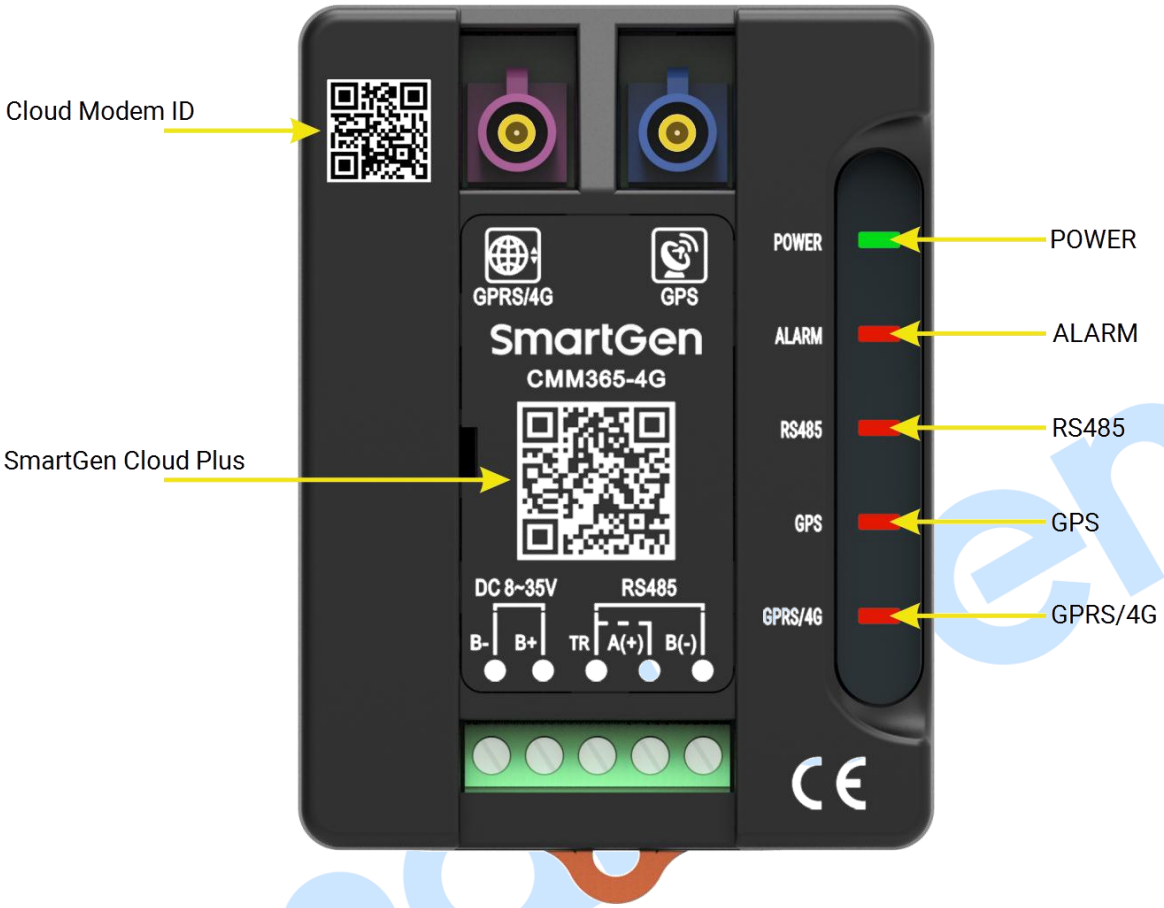

Fig.1 – Panel Indicator

Table 3 – Indicators Description

Icon	Note
POWER (Green)	LED Light Green: Normal power supply indication.
ALARM (Red)	LED Light Red: Common alarm indication.
RS485 (Red)	Normally On: Communication failure; Flash: Communication normal.
GPS (Red)	Normally Off: GPS is disabled; Normally On: GPS not obtain satellite signal; Flash: GPS obtains satellite signal.
GPRS/4G (Red)	Off: CMM365-4G module fails to register with server; On: Register with server successfully; Flash: Real-time data communication normal.

NOTE: The last 15 digits of the cloud modem ID is the IMEI number of chip.

4.2 GPRS ANTENNA PORT

Connect GPRS antenna to GRRS/4G port.
Antenna port: 50Ω/SMA female.

4.3 GPS ANTENNA PORT

After GPS is enabled, connect GPS antenna to CMM365-4G.

Antenna port: 50Ω/SMA female, active antenna.

NOTE: GPS antenna needs to be placed to open outdoors, otherwise location information may be inaccurate.

Fig.2 – CMM365-4G Antenna Connection

NOTE: GPRS antenna and GPS antenna cannot be connected reversely.

4.4 SIM CARD INSTALLATION

Insert 4G SIM card. CMM365-4G will connect to server via wireless mobile network.

NOTE: This module supports 4G wireless network of all modes. Standard SIM card is applied (size: 25mmx15mm). When GPS indicator and GPRS indicator flash at the same time, it means SIM card is not inserted or SIM card is in bad contact.

After removing the head cover, the installation steps are as below:

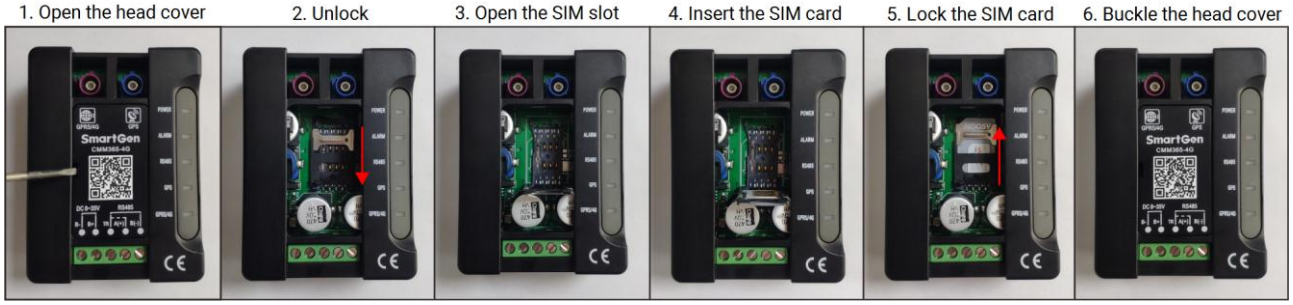

Fig.3 – SIM Card Installation Diagram

4.5 RS485 PORT

Receive genset data information by connecting RS485 port with genset controller RS485 port. 120Ω terminal resistor is recommonded to use if communication fails, short connect A(+) and TR terminal.

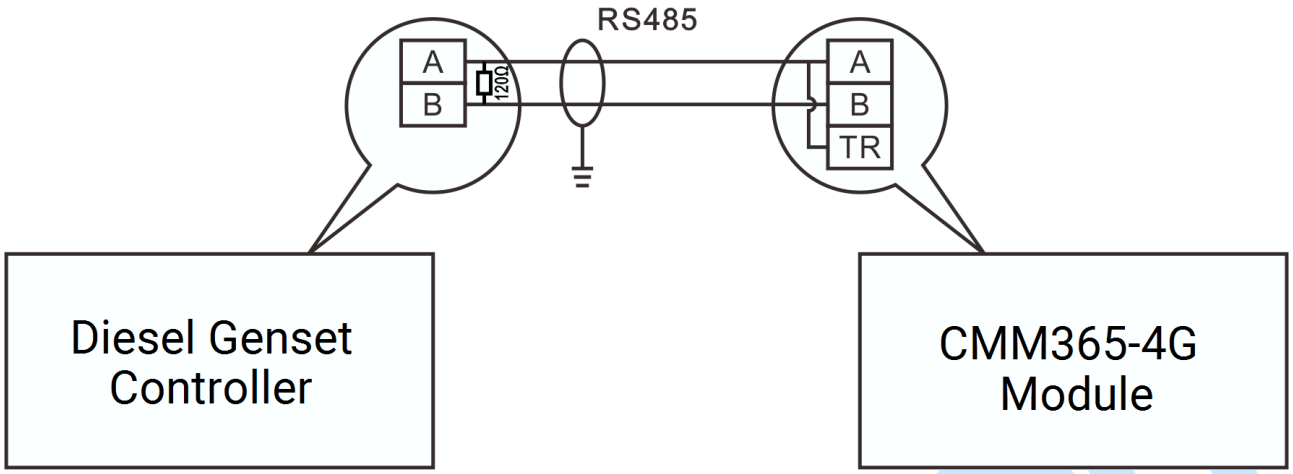

Fig.4 – RS485 Connection Diagram

It is connected to PC USB port through RS485 port and SG72A transfer, all parameters can be configured and CMM365-4G module ID & login password can be viewed.

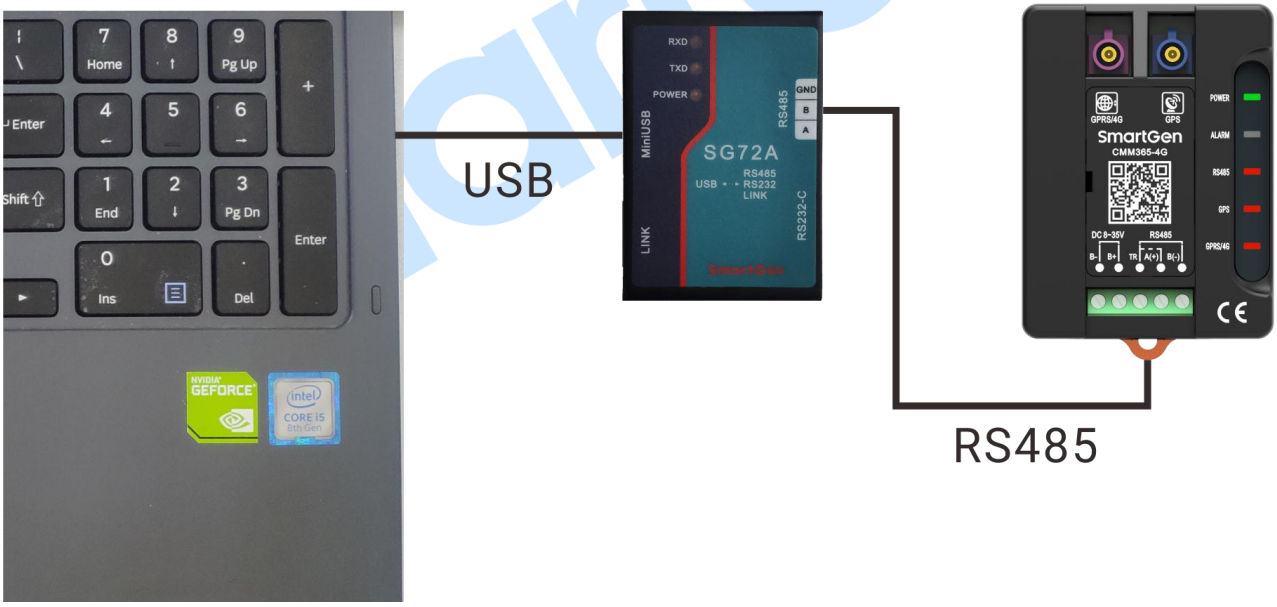

Fig.5 – RS485 and PC Connection Diagram

4.6 TERMINALS

Fig.6 – Terminal Diagram

Table 4 – Terminals Description

No.	Function	Cable Size	Remark
1	B-	1.0mm^2	Connected with negative of starter battery.
2	B+	1.0mm^2	Connected with positive of starter battery. 3A fuse is recommended.
3	RS485 (TR)	0.5mm^2	Terminal matching resistor wiring terminal.
4	RS485 A(+)	0.5mm^2	120Ω shielding line is recommended to use with single end grounded.
5	RS485 B(-)	0.5mm^2	

NOTE: RS485(TR) and A(+) short connection is equvalent to bus parallel with a 120Ω matching resistor.

5 PROGRAMMABLE PARAMETERS

5.1 CONTENTS AND SCOPES OF PARAMETERS

Table 5 – Parameter Contents and Scopes

No.	Items	Parameters	Defaults	Description
Gateway				
1	Site Name			20 Chinese characters, letters or numbers.
2	Server URL		www.smartgencloudplus.com	40 characters
3	Server Port	(0-65535)	21318	
4	Module Password		123456	16 characters
GPS				
1	GPS Enable	(0-1)	1	0: Manual Input 1: GPS Location
2	Longitude	((-180)-180)°	113.554879	GPS location, altitude information.
3	Latitude	((-90)-90)°	34.802335	
4	Altitude	((-9999.9)-9999.9)m	100.0	

NOTE: Monitored genset controller model needs to be set on the platform, and cloud monitoring module needs to be re-powered after setting.

5.2 PC CONFIGURATION INTERFACE

Connecting the RS485 port of CMM365-4G communication module with PC to configure the parameters.

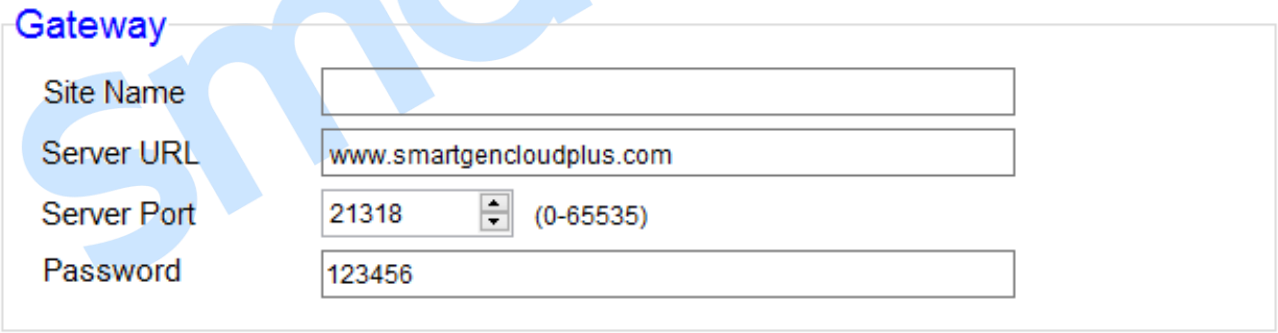

Fig.7 – Gateway Configuration

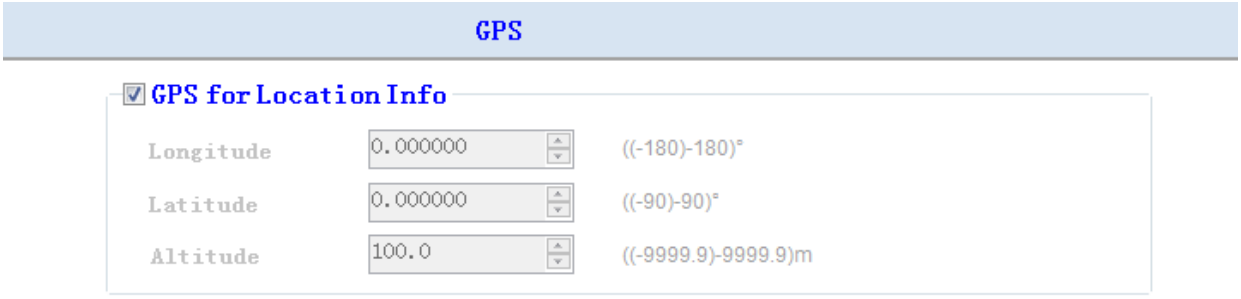

Fig.8 – GPS Configuration

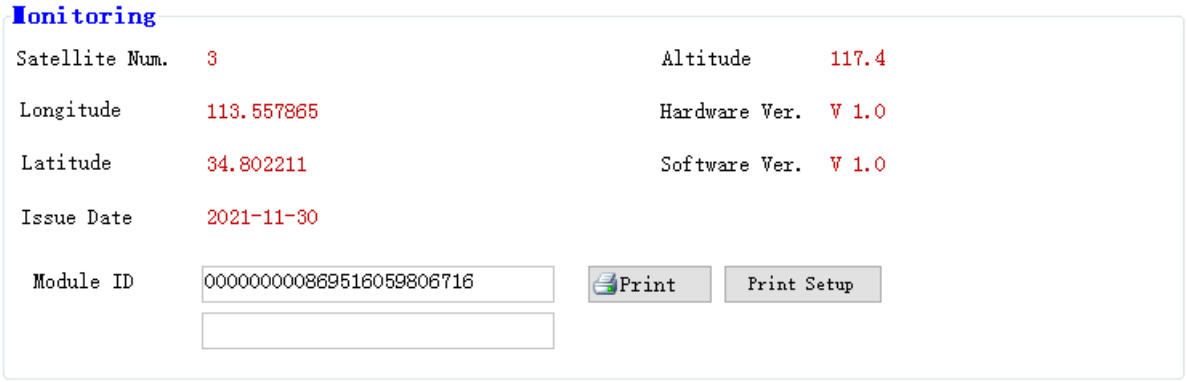

Fig.9 – Module Monitoring Interface

NOTE: If need to read or set cloud modem configuration, the upper computer needs to be connected within 30s after cloud modem is powered on, at time time, it enters .configuration mode. The cloud modem enters normal mode adter closing upper computer or disconnecting.

6 SYSTEM APPLICATION DIAGRAM

One CMM365-4G module connects with one genset monitoring module. It can be connected via RS485 port.

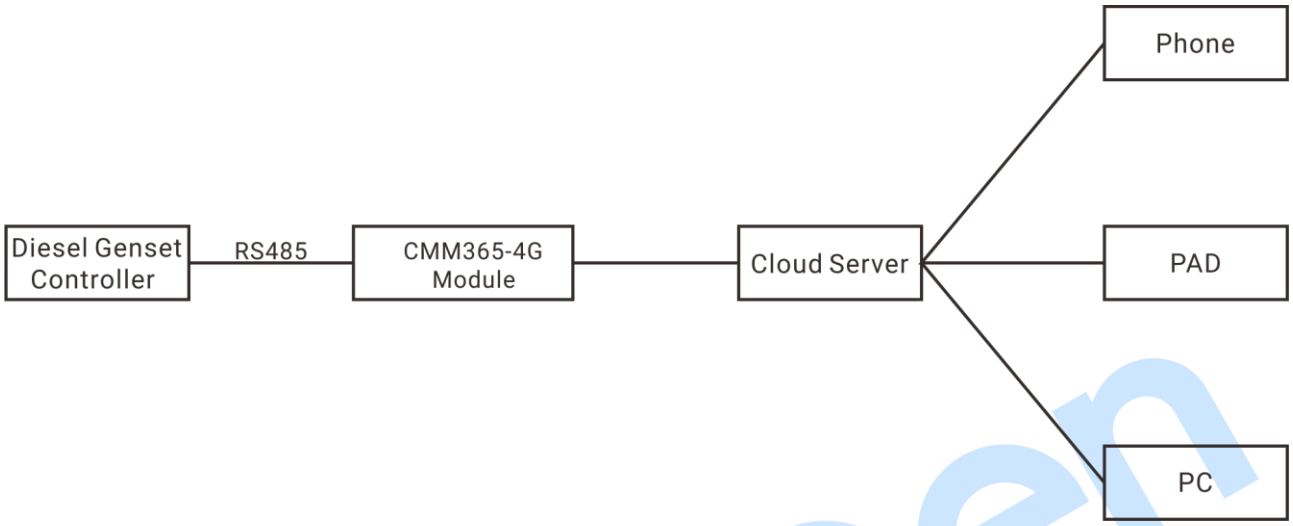

Fig.10 – CMM365-4G System Application Diagram

7 CASE DIMENSION AND INSTALLATION

35mm guide rail cabinet installation or screw-fixed (M4) installation can be applied. Case dimensions are as below:

Unit: mm

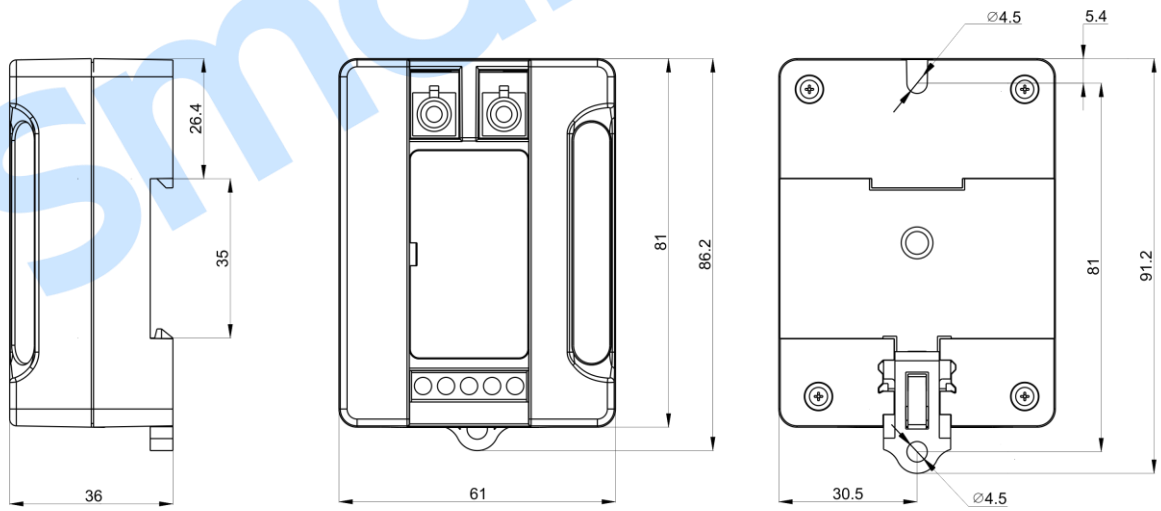

Fig.11 – CMM365-4G Case Dimension

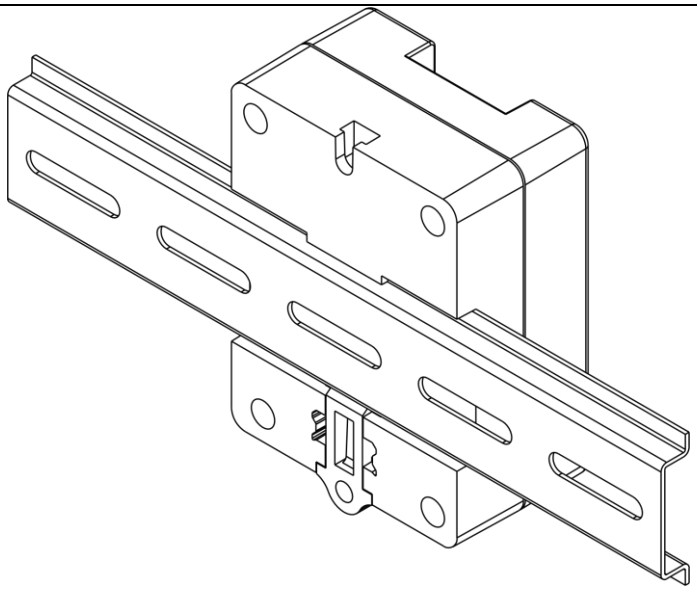

Fig.12 – CMM365-4G Guide Rail Installation

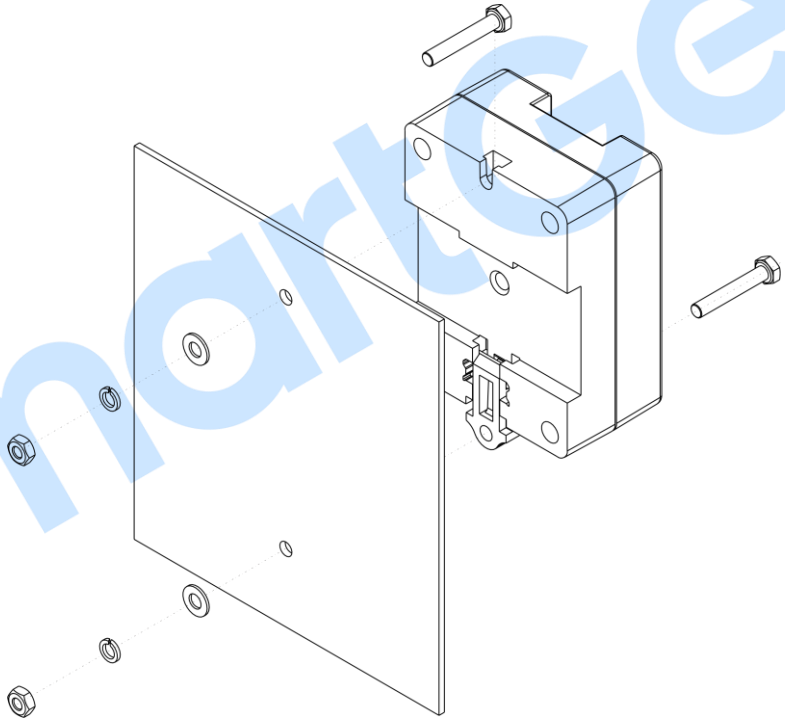

Fig.13 – CMM365-4G Screw Installation

8 FAULT FINDING

Table 6 – Fault Finding

Symptoms	Possible Solutions
Module No Response with Power	Check power voltage; Check module wiring connections.
GPRS/4G Indicator Off	Check SIM card is inserted or not; Check GPRS antenna is connected or not.
GPS Not Gain Location	Check GPS parameters are enabled or not; Check GPS antenna is connected or not and placed outdoor or not.
RS485 Comm. Abnormal	Check wiring connections; Check RS485's connections of A and B is reversely connected or not.

9 PACKING LIST

Table 7 – Packing List

No.	Name	Quantity	Remark
1	CMM365-4G	1	
2	GSM Magnetic Antenna	1	
3	External GPS Antenna	1	
4	Certificate	1	
5	User Manual	1	