



SmartGen
ideas for power

CMM365A-2G
CLOUD MONITORING COMMUNICATION MODULE
USER MANUAL



SMARTGEN (ZHENGZHOU) TECHNOLOGY CO., LTD.



Chinese trademark

SmartGen English trademark

SmartGen — make your generator *smart*

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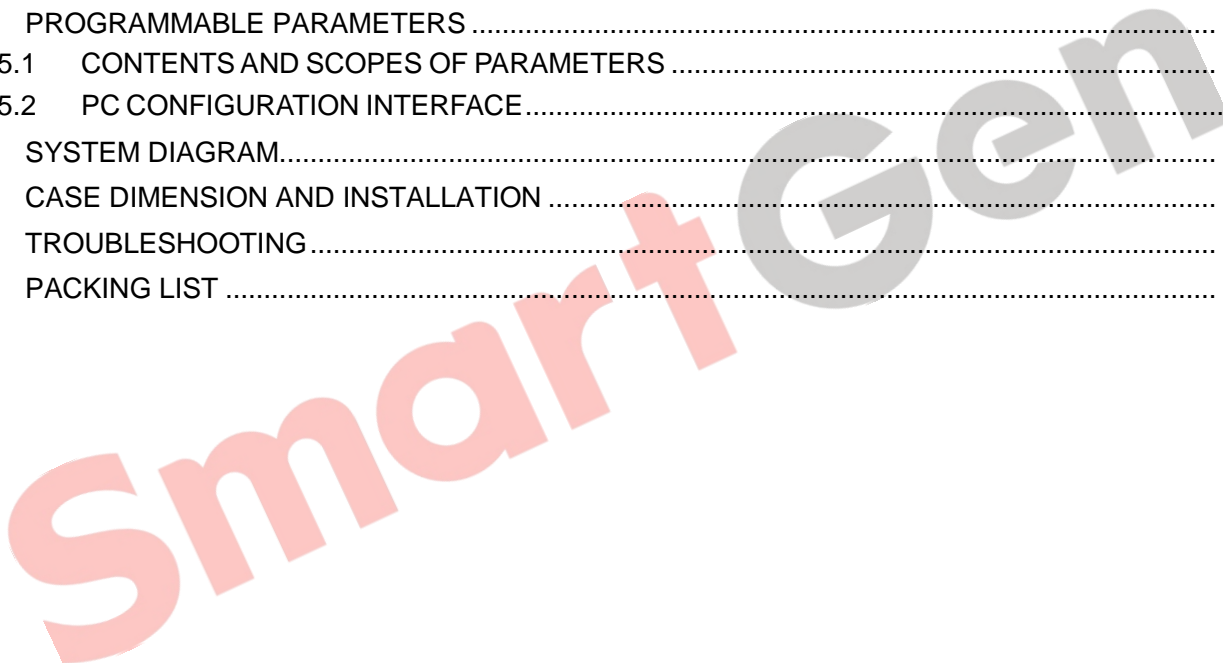
Table 1 - Software Version

Date	Version	Note
2017-12-25	1.0	Original release.



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1 OVERVIEW

CMM365A-2G Cloud Monitoring Communication Module is GPRS wireless network communication protocol switch module which can achieve genset (with SCI) connect to Internet. After logging into cloud server, module will receive corresponding genset controller communication protocol from cloud server. And the module gains genset data via RS485 port, or LINK port. Then the module transmits the data to corresponding cloud server via GPRS wireless network for achieving user's real-time monitoring to running status and searching of running records via APP (IOS or Android) and PC terminal devices.

CMM365A-2G module not only can achieve genset monitoring but also can insert some digital alarm input/output signal to achieve monitoring of generator room entrance guard, guard against theft and fire facilities.

CMM365A-2G module has two RS485 interfaces (master RS485 interface and slave RS485 interface). Master RS485 interface is used for connecting genset controller and slave RS485 interface is used for connecting dynamic environment monitoring system.

2 PERFORMANCE AND CHARACTERISTICS

- Connect to cloud server via GPRS wireless network, one to one monitoring;
- Two ports for communication with genset control module: RS485, and LINK; can monitor great majority genset control modules of international first-class brands;
- Widely power supply: DC (8~35)V, can direct use genset build-in battery;
- With ARM-based 32-bit SCM, high integration of hardware and strong programming ability;
- Include with GPS locate function to achieve gain location information and locate genset;
- 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;
- 2 auxiliary digital input ports which can receive external alarm signal;
- 1 auxiliary relay output ports which can output various of alarm signal;
- With two RS485 interfaces (master RS485 interface and slave RS485 interface). Master RS485 interface is used for connecting genset controller and slave RS485 interface is used for connecting dynamic environment monitoring system.
- Power and multiple communication status indicators on front panel that working status is clear at a glance;
- Lamp test function;
- Parameter adjust function: users can adjust parameters via USB port;
- Take standard π -type 35mm guide-rail installation or screw-fixed installation that the module can be installed in the genset control box;
- Modular design, self extinguishing ABS plastic shell, light weight, compact structure with easy installation.

3 SPECIFICATION

Table 2 – Technical Data

Items	Contents
Operating Voltage	DC 8.0V~35.0V, continuous power supply
Power Consumption	Standby: ≤2W Working: ≤5W
Digital Input	Volt free digital Input
Relay Output	1A DC30V Volts free output
Master RS485	Nonisolated type
Slave RS485	Isolated type
LINK	SmartGen exclusive port
USB Device	B-type USB female port
GPRS Port	Standard SMB port (female), SMB port (male) for antenna.
Case Dimensions	72.5mmx105mmx34mm
Working Conditions	Temperature: (-25~+70)°C Humidity: (20~93)%RH
Storage Condition	Temperature: (-25~+70)°C
Weight	0.15kg

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4 PANEL AND TERMINAL DESCRIPTION

4.1 PANEL INDICATOR AND BUTTONS

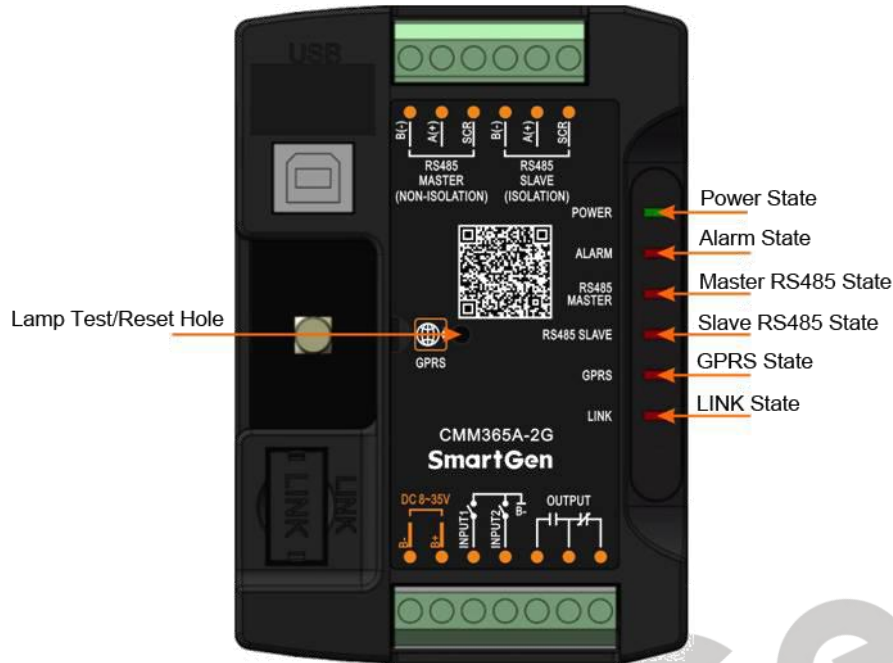


Fig.1 Front Panel Indicators

Table 3 – Indicators Description

Icon	Note
POWER	GreenLED Light: Power supply normal indicator and correct connect with cloud server; RedLED Light: Common alarm indicator; If SIM card is not inserted, red LED starts blink.
ALARM(RED)	Normally Light: Common alarm indicator.
RS485 MASTER(Red)	Normally Extinguish: RS485 disabled; Normally Light: Communication fail; Blink: Communication normal.
RS485 SLAVE(Red)	Normally Extinguish: not communication; Blink: Communication normal.
GPRS(Red)	Extinguish: CMM365A-2G fail to login on the server; Light: Registered successfully; Blink: Real data communication normal.
LINK(Red)	Normally Extinguish: Disabled; Normally Light: Communication fail; Blink: Communication normal.

Lamp test/Reset:

Press this button for 1s, all the LEDs are illuminated; press for 10s, reset the module to default and all the LEDs blink for 3 times.

▲ NOTE: After reset the module, parameters need to re-configured via PC software . Please operate cautiously.

4.2 GPRS

Connect GPRS antenna to CMM365-2G antenna port.



Fig.2 – GPRS Antenna Connection Schematic Diagram

4.3 MASTER RS485

Connect master RS485 interface to CMM365A-2G. RS485 interface to achieve genset data information.

If communication is abnormal, 120Ω terminal resistance is recommended. One end of shield wire hangs in the air and the other one connects with SCR.

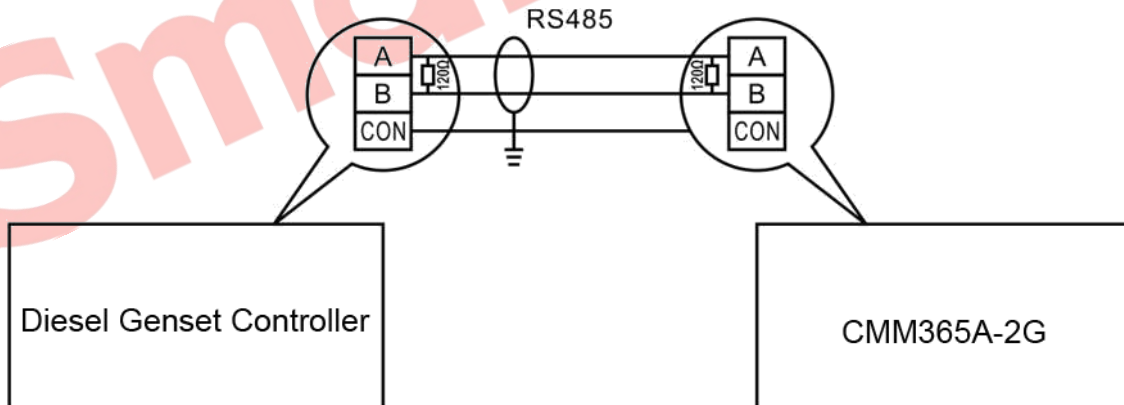


Fig.3 – Master RS485 Connection Schematic Diagram

4.4 SLAVE RS485

Connect slave RS485 interface to the RS485 interface of dynamic environment monitoring system to achieve monitoring genset data function via MODBUS protocol.

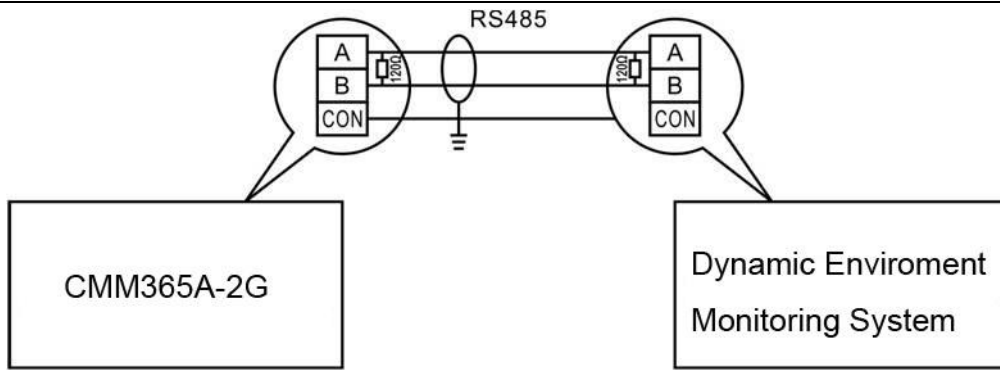


Fig. 4 – Slave RS485 Connection Schematic Diagram

4.5 LINK

Receive genset data information by connecting module LINK port with Genset Controller LINK port.

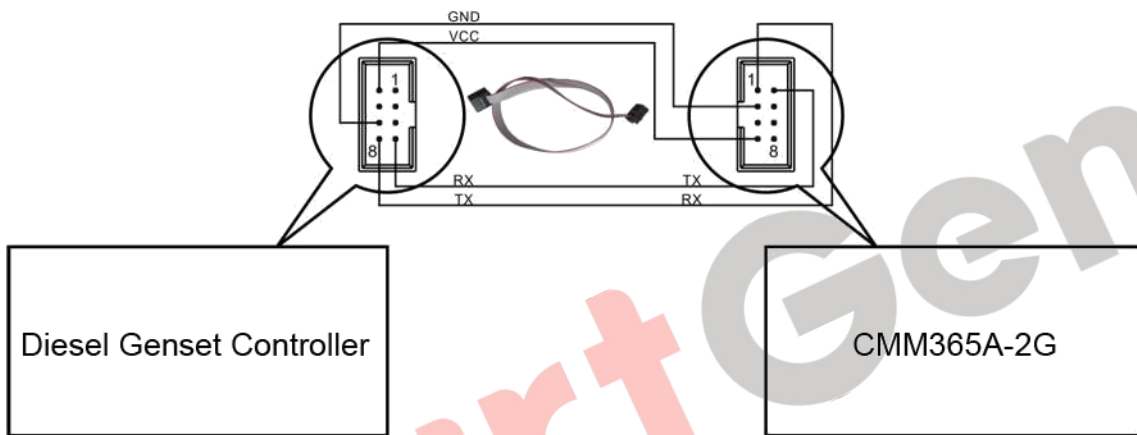


Fig. 5 – LINK Connection Schematic Diagram

4.6 USB DEVICE

Configure all the parameters and view CMM365A-2G ID&Login password by connecting USB port with USB disk of PC software.



Fig.6 – USB Connect PC Device

4.7 TERMINAL

Table 4 – Terminals Description

No.	Function		Cable Size	Note
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	Digital. Input 1		1.0mm ²	Active when connect to B-.
4	Digital Input 2		1.0mm ²	Active when connect to B-.
5	Relay Outputs	Normally Open	1.0mm ²	Normally open output 1A DC30V
6		Common	1.0mm ²	
7		Normally Close	1.0mm ²	
8	RS485 B(-)	MASTER	0.5mm ²	Impedance-120Ω shielding wire is recommended, its single-end earthed.
9	RS485 A(+)		0.5mm ²	
10	SCR		0.5mm ²	
11	RS485 B(-)	SLAVE	0.5mm ²	Impedance-120Ω shielding wire is recommended, its single-end earthed.
12	RS485 A(+)		0.5mm ²	
13	SCR		0.5mm ²	

5 PROGRAMMABLE PARAMETERS

5.1 CONTENTS AND SCOPES OF PARAMETERS

Table 5 – Parameter Content & Scope

No.	Item	Range	Default	Description
Gateway				
1	Site Name	(0-65535)		20 Chinese characters/letters/digits
2	Server URL	(0-65535)	www.monitoryun.com	40 characters
3	Server Port	(0-65535)	91	
4	Security Code	(0-65535)	123456	16 characters
GSM				
1	GSM Enable	(0-1)	1	0: Disabled; 1:Enabled
2	GPRS Password	Reserved		
3	SMS Center Number	Reserved		
4	PIN Enable	(0-1)	0	0: Disabled; 1:Enabled
5	APN	(0-65535)	40 characters	
GPS				
1	GPS Enable	(0-1)	1	0: Manual Input 1: GPS Location
2	Longitude	((-180)-180)°	0.000000	GPS location, altitude information
3	Latitude	((-90)-90)°	0.000000	
4	Altitude	((-9999.9)-9999.9)m	100.0	
Digital Input				
Digital Input 1				
1	Setting	(0-9)	0	Default: Not used
2	Type	(0-1)	0	0: Close to Activate 1: Open to Activate See: <i>Table 6 – Digital Input Ports Content</i>
3	Delay	(0-20.0)	0.0	Action delay
Digital Input 2				
1	Setting	(0-9)	1	Default: Lamp test
2	Type	(0-1)	0	0: Close to Activate 1: Open to Activate See: <i>Table 6 – Digital Input Ports Content</i>
3	Delay	(0-20.0)	0.0	Action delay
Relay Output				
1	Setting	(0-14)	0	Default: Not used See: <i>Table 7 – Relay Output Ports Content</i>

▲ NOTE: Configuration of monitoring genset controller model, communication port, communication baud rate, and communication ID need to be set on the (www.smartgencloud.com) platform, and



monitoring module need to restart up after all parameters been set.

Table 6 – Digital Input Ports Content

No.	Item	Description
0	Not Used	Not used.
1	Lamp Test	All the indicators are illuminated when input is active.
2	Remote Control Inhibited	Cloud start/stop control is prohibited when input is active.
3	Access Alarm Input	Access alarm is uploaded to server when input is active.
4	Fire Alarm Input	Fire alarm is uploaded to server when input is active.
5	Alarm Input	External alarm is uploaded to server when input is active.
6	Reserved	
7	Reserved	
8	Reserved	
9	Factory Test Mode	It is only used for factory hardware port test when active.

Table 7 – Relay Output Ports Content

No.	Item	Description
0	Not used	Output port won't output when this item is selected.
1	Digital Input 1 Active	Output when auxiliary input 1 is active.
2	Digital Input 2 Active	Output when auxiliary input 2 is active.
3	RS485 Comm. Fail	Output when RS485 communication fails.
4	Network Comm. Fail	Output when Network communication fails.
5	LINK Comm. Fail	Output when LINK communication fails.
6	RS232 Comm. Fail	Output when RS232 communication fails.
7	Common Alarm	Output when there is an alarm.
8	Remote Control Output	Send remote control commands via cloud platform with fixed output delay 20s.
9	Reserved	
10	Reserved	
11	Reserved	
12	Reserved	
13	Reserved	
14	Reserved	

5.2 PC CONFIGURATION INTERFACE

Connecting the USB port of CMM365A-2G communication module with PC USB port to configure the parameters.

Gateway

Site Name	<input type="text"/>
Server Url	<input type="text" value="www.monitoryun.com"/>
Server Port	<input type="text" value="91"/> (0-65535)
Security Code	<input type="text" value="123456"/>

Fig. 7 - Gateway Configuration

Monitoring




Satellite Num.	0	Altitude	0
Longitude	0.000000	Hardware Ver.	V 1.2
Latitude	0.000000	Software Ver.	V 1.0
Input 1		Issue Date	2016-05-26
Input 2		Module Time	2016-08-15(1) 16:30:16
Output 1			
Module ID	<input type="text" value="383033313334510900560037"/>	<input type="button" value="Print"/>	<input type="button" value="Print Setup"/>
	<input type="text"/>		

Figure 8 - Module Monitoring Interface



6 SYSTEM DIAGRAM

One CMM365A-2G module connects with one genset monitor module. It can be connected via RS485 port and LINK port.

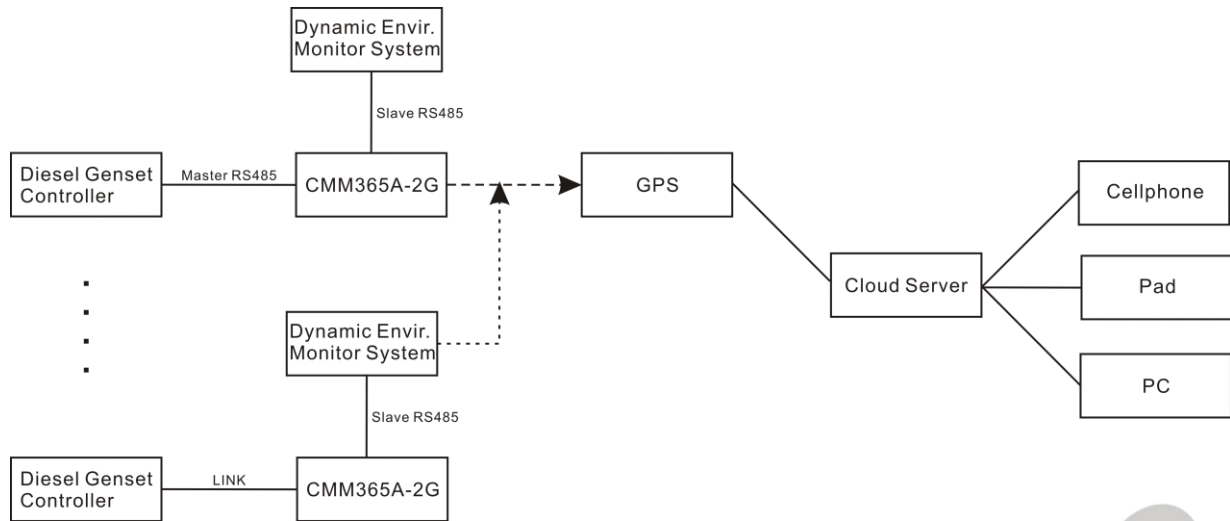


Fig.9 - CMM365A-2G System Diagram

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7 CASE DIMENSION AND INSTALLATION

2 ways for installation: 35mm guide rail in box or screw (M4) installation as below:

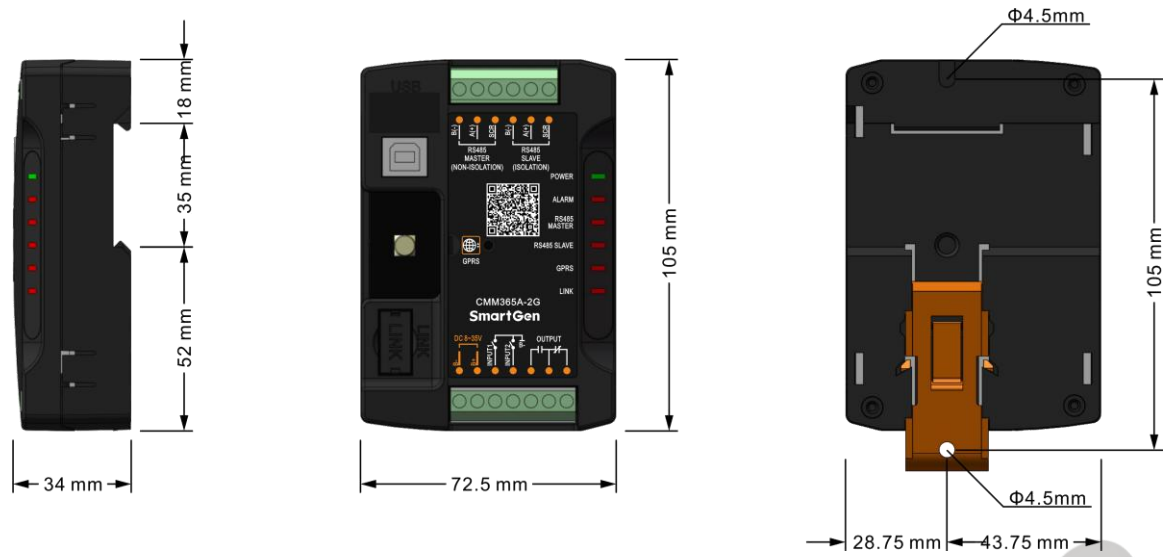


Fig.10 - CMM365A-2G Case Dimension

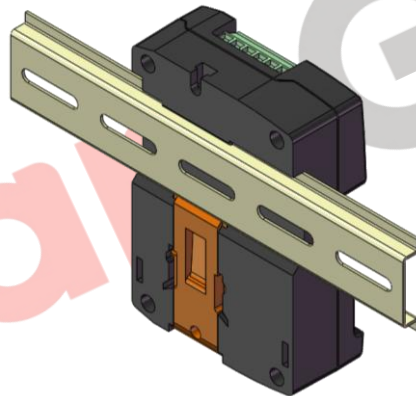


Fig.11 - CMM365A-2G Guide Rail Installation

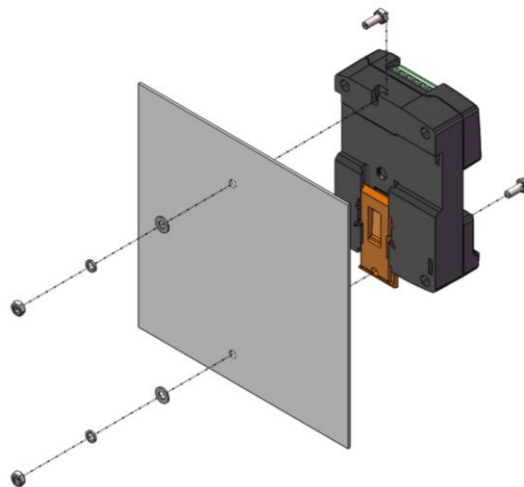


Fig.12 - CMM365A-2G Screw Installation

8 TROUBLESHOOTING

Table 8 – Fault Finding

Symptoms	Possible Solutions
Controller no response with power.	Check power voltage; Check controller connection wirings.
GPRS Indicator Not Light	Check SIM card is inserted or not; Check GPRS antenna is connected or not.
RS485 Communication Abnormal	Check connections; Check RS485 port is enabled or not; Check settings of genset ID and baud rate are correct or not. Check RS485's connections of A and B is reverse connect or not.
LINK Communication Abnormal	Check connections; Check LINK port is enabled or not; Check settings of genset ID and baud rate are correct or not.

9 PACKING LIST

Table 9 – Packing List

No.	Name	Quantity	Remark
1	CMM365A-2G	1	
2	Osculum type GSM antenna	1	
3	120Ω matched resistor	4	
4	Certification	1	
5	User manual	1	