



**SmartGen**  
ideas for power

## CMM365-2G

### CLOUD MONITORING COMMUNICATION MODULE

### USER MANUAL



**SMARTGEN (ZHENGZHOU) TECHNOLOGY CO., LTD.**

## CONTENT

1	OVERVIEW .....	4
2	PERFORMANCE AND CHARACTERISTICS .....	4
3	SPECIFICATION.....	5
4	PANEL AND TERMINAL DESCRIPTION.....	6
4.1	PANEL INDICATOR AND BUTTONS.....	6
4.2	GPRS.....	7
4.3	MASTER RS485 .....	7
4.4	SLAVE RS485.....	7
4.5	LINK .....	8
4.6	USB DEVICE .....	8
4.7	TERMINAL.....	9
5	PROGRAMMABLE PARAMETERS .....	10
5.1	CONTENTS AND SCOPES OF PARAMETERS .....	10
5.2	PC CONFIGURATION INTERFACE.....	14
6	SMS FUNCTION AND REMOTE CONTROL.....	15
6.1	SMS SHORT MESSAGE ALARM.....	15
6.2	GSM SHORT MESSAGE REMOTE CONTROL.....	15
7	SYSTEM DIAGRAM.....	16
8	CASE DIMENSION AND INSTALLATION .....	17
9	FAULT FINDING .....	18
10	ENCLOSE: PACKING LIST .....	19



Chinese trademark

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#### Software Version

Date	Version	Note
2016-11-14	1.0	Original release.
2017-07-31	1.1	Modified the wire connection on the mask, and changed rated pictures.

## 1 OVERVIEW

**CMM366-2G Cloud Monitoring Communication Module** is GPRS wireless network communication protocol switch module which can achieve genset (with SCI) connect to Internet. The module gains genset data via RS485 port, USB port, or LINK port of genset controller modules of international first-class brands including SmartGen, DeepSea, ComAp, etc. 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.

**CMM366-2G** module has already integrated protocols of mainstream genset control module. It 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.

This module has master and slave RS485 ports, in which master RS485 port connects with genset controllers and slave RS485 port connects with dynamic environment monitoring system.

## 2 PERFORMANCE AND CHARACTERISTICS

- 1) Connect to cloud server via GPRS wireless network , one to one monitoring;
- 2) With two kinds of ports for communication with genset control module: RS485 and LINK; can monitor great majority genset control modules of international first-class brands;
- 3) Widely power supply: DC (8~35)V, can direct use genset build-in battery;
- 4) With ARM-based 32-bit SCM, high integration of hardware and strong programming ability;
- 5) Include with GPS locate function to achieve gain location information and locate genset;
- 6) Take JSON network data communication protocol, upload real-time data variation and take compression algorithm to vastly reduce network flow at the same time;
- 7) Users can set up history data upload rest to upload monitoring data to server (history data can be analyzed);
- 8) When alarm occurs it can upload data to server immediately;
- 9) 2 auxiliary digital input ports which can receive external alarm signal;
- 10) 1 auxiliary relay output ports which can output various of alarm signal;
- 11) Master and slave RS485 ports; master RS485 port connects with genset controllers and slave RS485 port connects with dynamic environment monitoring system.
- 12) With SMS functions to control genset. All the alarm signals of genset can be sent to 5 preset telephone numbers as short messages, and users also can check genset status via SMS function.(only suit for HGM7000 series and HGM9000series controllers of SartGen)
- 13) Power and multiple communication status indicators on front panel that working status is clear at a glance;
- 14) Lamp test function;
- 15) Parameter adjust function: users can adjust parameters via USB port;
- 16) Take standard  $\pi$ -type 35mm guide-rail installation or screw-fixed installation that the module can be installed in the genset control box;
- 17) Modular design, self extinguishing ABS plastic shell, light weight, compact structure with easy installation.

### 3 SPECIFICATION

Items	Contents
Operating Voltage	DC 8.0V~35.0V, continuous power supply.
Power Consumption	Standby: ≤2W Working: ≤5W
Auxiliary Input	Volt Free Digital Input
Auxiliary Output	1A DC30V Volt free output
Master RS485	Non seclusion type
Slave RS485	Seclusion type
LINK	SmartGen exclusive port
USB Device	B-type USB mother port
GPRS Port	Standard SMB port (female), SMB port (male) for antenna.
Case Dimensions	73mmx105mmx35mm
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



Icon	Note
POWER	GreenLED Light: Power supply and cloud server connection normal indicator; RedLED Light: Common alarm indicator; RedLED Blink when without inserting SIM card.
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: CMM365-2G login with server unsuccessfully Light: Login with server successfully Blink: Real-time communication normal
LINK(Red)	Normally Extinguish: Disabled Normally Light: Communication fail Blink: Communication normal

Lamp test/Rest:

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, set up the parameters via PC software is recommended. Please operate cautiously.

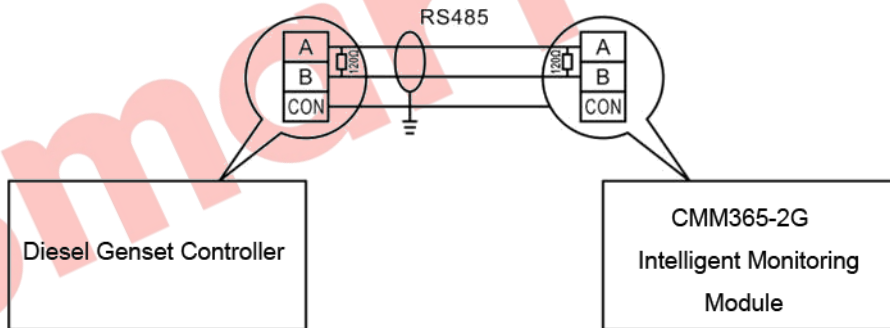
### 4.2 GPRS

Connect GPRS antenna to cloud monitoring module port.



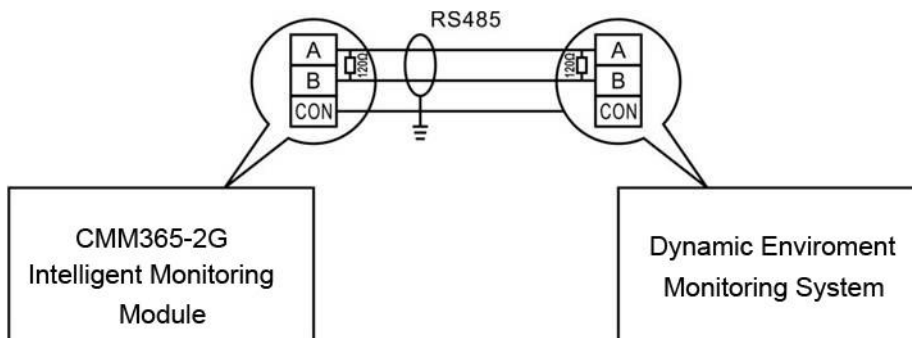
### 4.3 MASTER RS485

Achieving genset data information via RS485 port connects to Genset control module's RS485 port. Add 120Ω terminal resistance is recommended if fail to communicate. Shielding wire one end connects to SCR and the other one hang in the air. RS485 Connection Diagram is as follows,



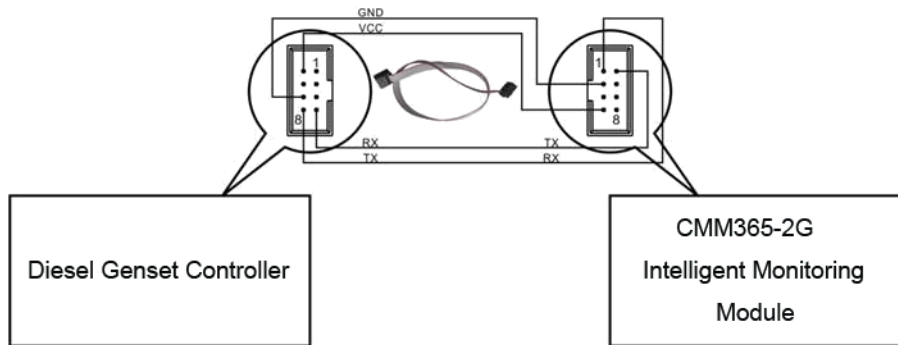
### 4.4 SLAVE RS485

Connect to RS485 port of dynamic environment monitoring system via slave RS485 port, then dynamic environment system will achieve genset data monitoring function.



#### 4.5 LINK

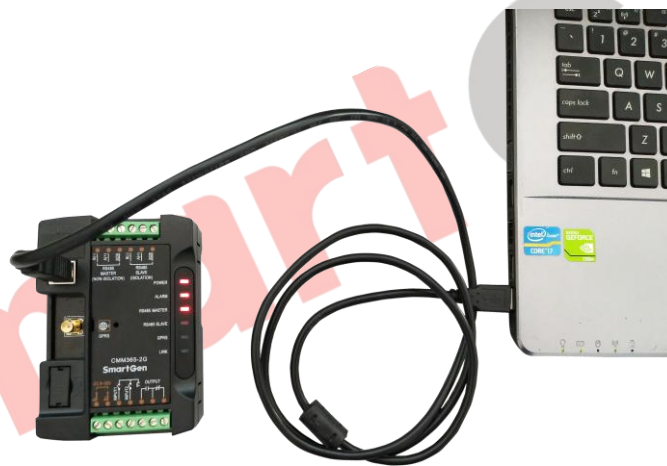
Achieving genset data information via LINK port connects to Genset control module's LINK port. RS485 Connection Diagram is as follows,



#### 4.6 USB DEVICE

Set up all the parameters and view CMM365-2G ID&Login password by CMM365 USB port connecting with PC USB port.

USB and PC connection diagram is follows,





#### 4.7 TERMINAL

No.	Function		Cable Size	Note
1	B-		1.0mm <sup>2</sup>	Connected with negative of starter battery.
2	B+		1.0mm <sup>2</sup>	Connected with positive of starter battery. 3A fuse is recommended.
3	Aux. Input 1		1.0mm <sup>2</sup>	Active when connect to B-.
4	Aux. Input 2		1.0mm <sup>2</sup>	Active when connect to B-.
5	Aux. Output	Normally Open	1.0mm <sup>2</sup>	Normally open outputs, rated 1A DC30V
6		Common	1.0mm <sup>2</sup>	
7		Normally Close	1.0mm <sup>2</sup>	
8	RS485 B(-)	MASTER	0.5mm <sup>2</sup>	Impedance-120Ω shielding wire is recommended, its single-end earthed.
9	RS485 A(+)		0.5mm <sup>2</sup>	
10	SCR		0.5mm <sup>2</sup>	
11	RS485 B(-)	SLAVE	0.5mm <sup>2</sup>	Impedance-120Ω shielding wire is recommended, its single-end earthed.
12	RS485 A(+)		0.5mm <sup>2</sup>	
13	SCR		0.5mm <sup>2</sup>	

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## 5 PROGRAMMABLE PARAMETERS

### 5.1 CONTENTS AND SCOPES OF PARAMETERS

#### Form1

No.	Items	Parameters	Defaults	Description
<b>Gateway</b>				
1	Website	(0-65535)		20 Chinese characters, letters or numbers
2	URL	(0-65535)	cm.smartgen.com.cn	40 characters
3	Server Port	(0-65535)	81	
4	Password	(0-65535)	123456	16 characters
<b>GSM</b>				
1	GSM Enabled	(0-1)	1	0:Disabled; 1:Enabled
2	GPRS Password	Reserved		
3	Message Center	Reserved		
4	PIN Enabled	(0-1)	0	0:Disabled; 1:Enabled
5	APN	(0-65535)	40characters	
6	SMS Enabled	(0-1)	0	
7	SMS Warning	(0-1)	0	
8	Phone Number Set	Max. 20 bits		Area code needed to be added before the phone number. E.g. China 8613666666666
<b>Cloud Server</b>				
1	Auto Gain Comm. Port	(0-1)	1	0:Disabled; 1:Enabled
2	ID	(1-254)	1	Module ID
3	Communication Port	(0-4)	2	0:Disabled; 1:LINK; 2:RS485; 3:RS232; 4:USB
4	Baud Rate	(0-2)	0	0:9600bit/s; 1:19200bit/s 2: 115200bit/s
5	Location Info	(0-1)	0	0: Disabled 1: Manual input location info
6	Longitude	(-180-180)°	0.000000	Location and elevation of genset control module.
7	Latitude	(-90-90)°	0.000000	
8	Altitude	(-9999.9-9999.9)	100.0	
9	Type	HGM6110	Detailed to See: <a href="#">Form4</a>	
10	Name	(0-65535)	Module Names(20 Chinese characters, letters or numbers)	
11	Debug Staff Name	20 Chinese characters, letters or numbers		
12	Telephone	20 Chinese characters, letters or numbers		
13	Installation Time	20 Chinese characters, letters or numbers		



14	History Data Rest	(0-3600)s	0	History data upload rest. <b>Note:</b> No upload when it is 0s
15	Time Zone	(-12-12)	8	Time Zone
16	Live Data Upload Interval	(1-20)s	5	Interval time of uploading real time data.
<b>Module Configuration Info</b>				
1	Type	(0-5)	0	0:AMF module 1:Single-unit self-starting module 2: Single-single parallel module 3:Mains-genset parallel module 4:Mains-bus parallel module 5:Bus-bus parallel module <b>Note:</b> The parameter will auto change according to genset type.
2	Rated Speed	(0-6000)r/min	1500	Rated Speed
3	AC Supply	(0-3)	0	0:3P4W;1:3P3W;2:2P3W;3:1P2W。
4	Rated Volt	(30-30000)V	230	Rated Volt
5	Rated Freq	(10-600)Hz	50	Rated Freq
6	Rated Current	(5-6000)A	500	Rated Current
7	Rated Power	(0-6000)kW	276	Rated Power
8	Custom Description 1	(0-65535)	Custom Description (20 Chinese characters, letters or numbers)	
9	Custom Description 2	(0-65535)	Custom Description (20 Chinese characters, letters or numbers)	
10	Custom Description 3	(0-65535)	Custom Description (20 Chinese characters, letters or numbers)	
11	Custom Description 4	(0-65535)	Custom Description (20 Chinese characters, letters or numbers)	
12	Custom Description 5	(0-65535)	Custom Description (20 Chinese characters, letters or numbers)	
<b>Digital Input</b>				
<b>Digital Input 1</b>				
1	Setting	(0-9)	0	Default: Not used
2	Type	(0-1)	0	0:Active when close 1:Active when open See: <a href="#">Form2</a>
3	Delay	(0-20.0)	0.0	Action delay
<b>Digital Input 2</b>				
3	Setting	(0-9)	1	Default: Lamp test
4	Type	(0-1)	0	0:Active when close 1:Active when open See: <a href="#">Form2</a>
5	Delay	(0-20.0)	0.0	Action delay
<b>Digital Output</b>				
1	Setting	(0-14)	0	Default: Not used See: <a href="#">Form3</a>



**Form2**

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.

**Form3**

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	RS485 communication fails.
4	Network Comm. Fail	Network communication fails.
5	LINK Comm. Fail	LINK communication fails.
6	RS232 Comm. Fail	RS232 communication fails.
7	Common Alarm	Output when there is an alarm.
8	Remote Control	When remote control command is sent via cloud server, output delay fixed as 20s.
9	Reserved	
10	Reserved	
11	Reserved	
12	Reserved	
13	Reserved	
14	Reserved	

**Form4**

Manufacturers	Type	Note
SmartGen	HGM6110	Single-unit self-starting module
	HGM6120	AMF module
	HGM7x10	Single-unit self-starting module
	HGM7x20	AMF module
	HGM410	Single-unit self-starting module
	HGM420	AMF module
	HGM9120	AMF module
	HGM9210	Single-unit self-starting module
	HGM9220	AMF module
	HGM9310	Single-unit self-starting module



	HGM9320	AMF module
	HGM9410	Single-unit self-starting module
	HGM9420	AMF module
	HGM9510	Single-single parallel module
	HGM9520	Mains-genset parallel module
	HGM9530	Single-single parallel module
	HGM9540	Mains-genset parallel module
	HGM9560	Mains-bus parallel module
	HGM9580	Bus-bus parallel module
	HGM9610	Single-unit self-starting module
	HGM9620	AMF module
	ZX9320	AMF module
	HSC940	Single-unit self-starting module
	TC1.0	AMF module
	TC2.0	AMF module
	TC3.0	Single-unit self-starting module
DeepSea	DSE7110MKII	Single-unit self-starting module
	DSE7120MKII	AMF module
	DSE7210	Single-unit self-starting module
	DSE7220	AMF module
	DSE7310	Single-unit self-starting module
	DSE7320	AMF module
	DSE7410	Single-unit self-starting module
	DSE7420	AMF module
	DSE7450	Single-unit self-starting module
	DSE8610	Single-single parallel module
	DSE8620	Mains-single parallel module
	ComAp	MRS10 II
MRS16 II		Single-unit self-starting module
AMF25 II		AMF module
IGNT		Single-single parallel module
Harsen	GU620A	Single-unit self-starting module
	GU621A	AMF module
	GU630A	Single-unit self-starting module
	GU631A	AMF module
	GU620A-00	Single-unit self-starting module
	GU621A-00	AMF module
	GU630A-00	Single-unit self-starting module
	GU631A-00	AMF module
	GU320A	Single-unit self-starting module
	GU320B	Single-unit self-starting module

## 5.2 PC CONFIGURATION INTERFACE

The USB port of CMM366-3G communication module connects PC port to configure the parameters.

### Gateway

Site Name	<input type="text"/>
Server Url	cm.smartgen.com.cn
Server Port	81 (0-65535)
Security Code	123456

### Gateway Configuration

#### Cloud Servers

Debugger Name	<input type="text"/>
Phone Number	<input type="text"/>
Installation Date	<input type="text"/>
Ethernet Set	Cloud
Time Zone	(GMT+08:00) Beijing, Chongqing, Hong Kong, U
Historic upload interval	0 s (0-3600s)
Live Data upload interval	5 s (1-20s)

Module Name	Config	<input type="checkbox"/> Obtain Port automatically			Module	<input type="checkbox"/> Location Info		
		Port	Baud	ID		Longitude	Latitude	Altitude
	Config	LINK	9600	1	HGM6110	0.000000	0.000000	100.0

### Cloud Server 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"/>

### Module Monitoring Interface

## 6 SMS FUNCTION AND REMOTE CONTROL

### 6.1 SMS SHORT MESSAGE ALARM

When controller detects alarm, it will send short message to phone automatically.

**▲NOTE:** SMS short message alarm function only suit for SmartGen HGM7000 series and HGM9000 series controllers.

**▲NOTE:** All alarms about shutdown, trip and stop and trip will be sent to the pre-set phone. Warnings are sent to the phone according to the pre-set.

### 6.2 GSM SHORT MESSAGE REMOTE CONTROL

Users send order message to the module, then controller will make actions according to this SMS order and pass back corresponding operations information. Controllers only execute the orders by pre-set.

SMS Orders List:

No.	SMS Orders	Pass Back Information	Description
1	SMS GENSET	GENSET ALARM	When genset is stopping alarm
		SYSTEM IN STOP MODE GENSET AT REST	At rest status in stop mode
		SYSTEM IN MANUAL MODE GENSET AT REST	At rest status in manual mode
		SYSTEM IN TEST MODE GENSET AT REST	At rest status in test mode
		SYSTEM IN AUTO MODE GENSET AT REST	At rest status in auto mode
		SYSTEM IN STOP MODE GENSET IS RUNNING	Running status in stop mode
		SYSTEM IN MANUAL MODE GENSET IS RUNNING	Running status in manual mode
		SYSTEM IN TEST MODE GENSET IS RUNNING	Running status in test mode
		SYSTEM IN AUTO MODE GENSET IS RUNNING	Running status in auto mode
2	SMS START	GENSET ALARM	Generator is shutdown alarm or trip alarm
		STOP MODE NOT START	Cannot start in stop mode
		SMS START OK	Start in manual/test mode
		AUTO MODE NOT START	Cannot start in auto mode
3	SMS STOP MODE	SMS STOP OK	Set as stop mode
4	SMS MANUAL MODE	SMS MANUAL MODE OK	Set as manual mode
5	SMS TEST MODE	SMS TEST MODE OK	Set as test mode

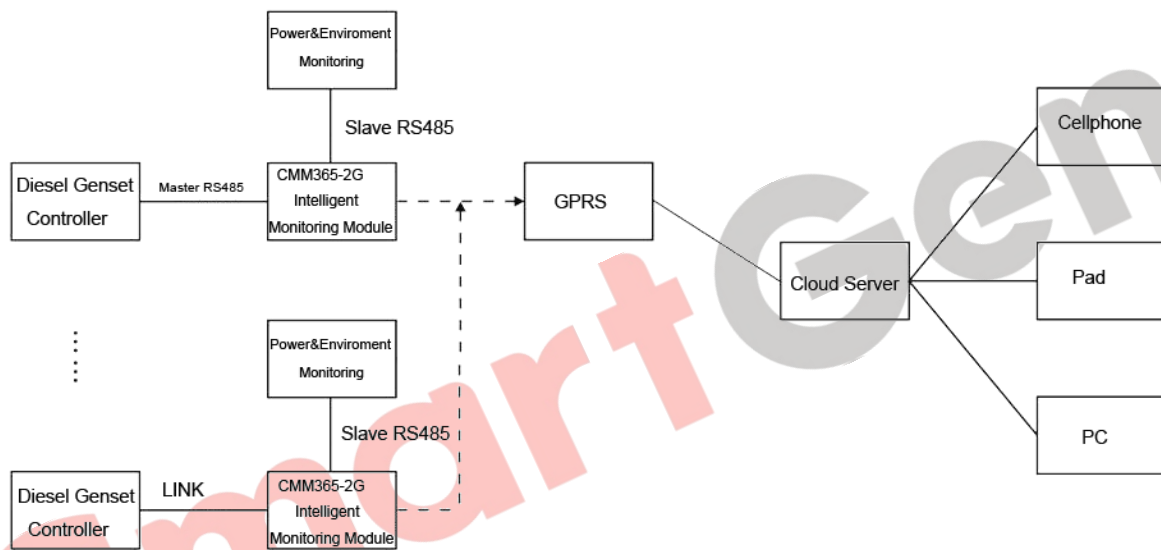
6	SMS AUTO MODE	SMS AUTO MODE OK	Set as auto mode
7	SMS DETAIL	Pass back information can be set via controller software.	Gets details information of genset.

**NOTE:** When sending orders, users need to follow SMS orders in above form and all the letters must be capital.

**NOTE:** Pass back information from SMS DETAIL including: working mode, mains voltage, generator voltage, load current, mains frequency, generator frequency, active power, apparent power, power factor, battery voltage, D+ voltage, water temperature, oil pressure, oil level, engine speed, total running time, genset status, and alarm status.

## 7 SYSTEM DIAGRAM

One set CMM366-3G module connects with one genset monitor module. It can be connected via RS485 port, LINK port.



MM365-2G System Diagram

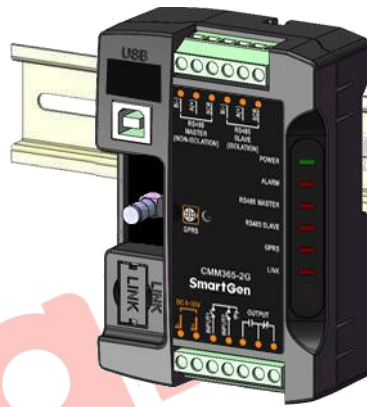


## 8 CASE DIMENSION AND INSTALLATION

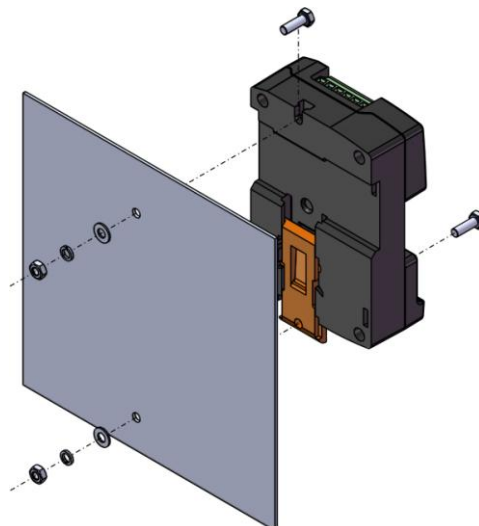
2 ways for installation: 35mm guide rail in box or screw (M4) installation as below:



CMM365-2G Case Dimension



CMM365-2G Guide Rail Installation



CMM365-2G Screw Installation

**9 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.

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**10 ENCLOSE: PACKING LIST**

No.	Name	Number	Remark
1	CMM365-2G	1	
2	Osculum Type GSM Antenna	1	
3	120Ω Matched Resistance	4	
4	Certification	1	
5	User Manual	1	

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