



**SmartGen**  
ideas for power

## CMM366-3G

### 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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#### Software Version

Version	Date	Note
1.0	2016-01-19	Original release.

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## 1 OVERVIEW

**CMM366-3G 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, LINK port or RS232 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.

**CMM366-3G** 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, which has GPS locate function, can upload gained longitude, latitude and elevation to corresponding cloud server.

## 2 PERFORMANCE AND CHARACTERISTICS

- 1) Connect to cloud server via WCDMA 3G&GPRS 2G, one to one monitoring;
- 2) Multiple ports for communication with genset control module: RS485, RS232, LINK and USB (Host); 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) Power and multiple communication status indicators on front panel that working status is clear at a glance;
- 12) Lamp test function;
- 13) Parameter adjust function: users can adjust parameters via USB port;
- 14) Take standard  $\pi$ -type 35mm guide-rail installation or screw-fixed installation that the module can be installed in the genset control box;
- 15) Modular design, self extinguishing ABS plastic shell, light weight, compact structure with easy installation.

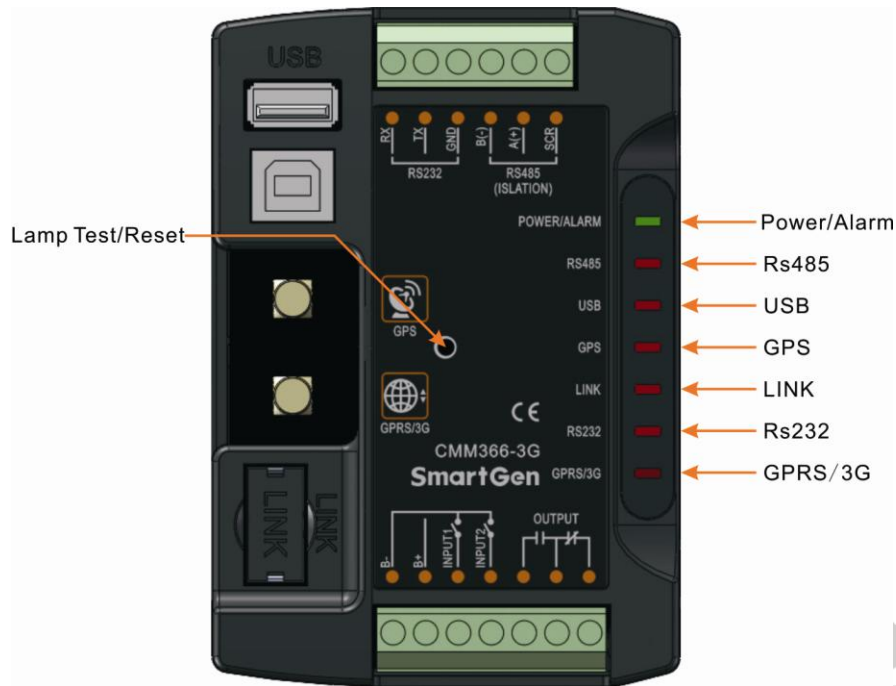
### 3 SPECIFICATION

Items	Contents
Operating Voltage	DC 8.0V~35.0V, continuous power supply.
Power Consumption	Standby: ≤2W Working: ≤5W
Auxiliary Input	Digital Input, connect (B-) is active.
Auxiliary Output	1A DC30V Volts free output
USB Host	A-type USB mother port
RS485	Seclusion type
RS232	General type
LINK	SmartGen exclusive port
USB Device	B-type USB mother port
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	WCDMA 3G GPRS 2G
Case Dimensions	73mmx105mmx33mm
Working Conditions	Temperature: (-30~+70)°C Humidity: (20~93)%RH
Storage Condition	Temperature: (-40~+80)°C
Weight	0.15kg

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## 4 PANEL AND TERMINAL DESCRIPTION

### 4.1 PANEL INDICATOR AND BUTTONS



Icon	Note
POWER/ALARM	GreenLED Light: Power supply normal indicator RedLED Light: Common alarm indicator
RS485(Red)	Normally Extinguish: RS485 disabled Normally Light: Communication fail Blink: Communication normal
USB(Red)	Normally Extinguish: USB(Host) disabled Normally Light: Communication fail Blink: Communication normal
GPS(Red)	Normally Extinguish: GPS disabled Normally Light: GPS not gained satellite signal Blink: GPS gained satellite signal
LINK(Red)	Normally Extinguish: Disabled Normally Light: Communication fail Blink: Communication normal
RS232(Red)	Normally Extinguish: RS232 disabled Normally Light: Communication fail Blink: Communication normal
GPRS/3G(Red)	Extinguish: CMM366-3G login with server unsuccessfully Light: Login with server successfully Blink: Real-time 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

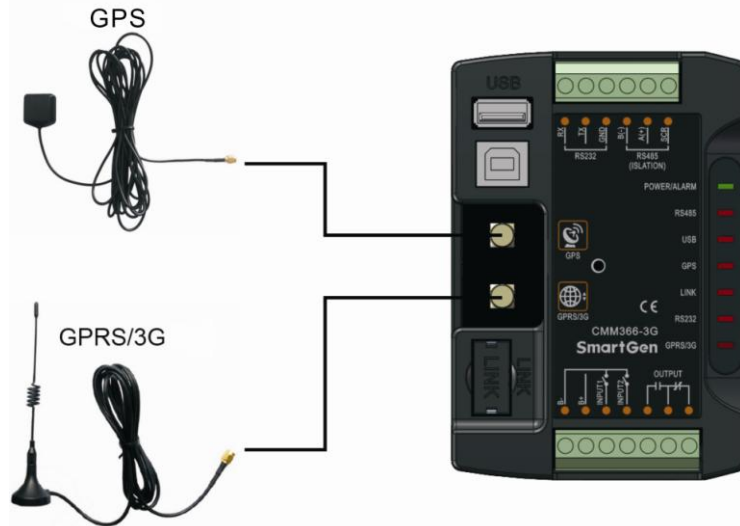
Connect GPRS antenna to GRPR/3G port.  
Antenna: 50Ω/SMA female.

### 4.3 GPS

GPS enabled, connect GPS antenna to CMM366-3G.

**▲Note:** GPS antenna needs to be placed to open outdoors, otherwise location information may not accurate or cannot be gained.

Antenna: 50Ω/SMA female, active antenna.



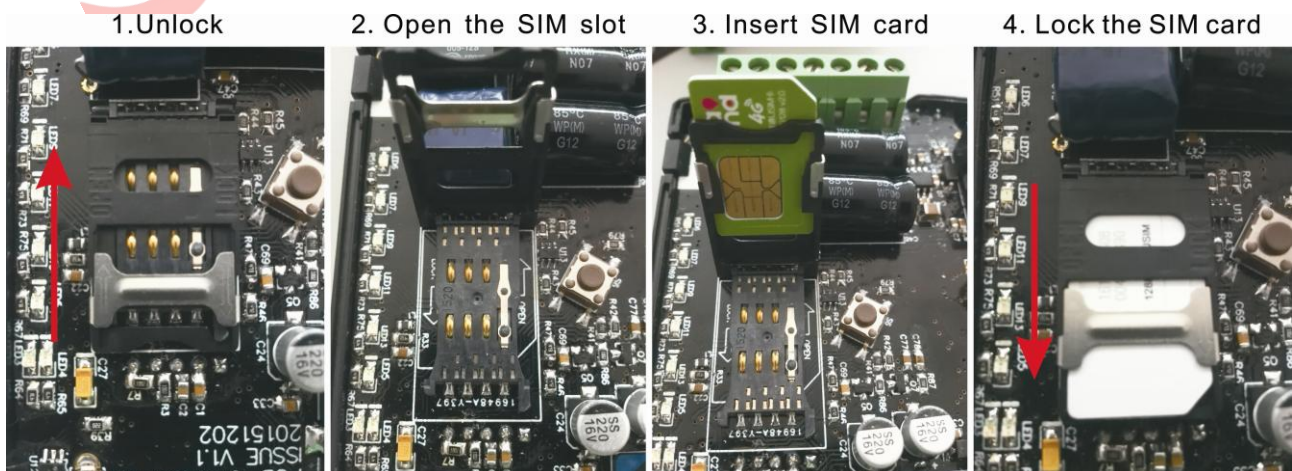
**▲Note:** GPRS antenna and GPS antenna cannot be connected reversely.

### 4.4 SIM INSTALLATION

Insert 3G or 2G SIM card. CMM366-3G will connect to servers via GPRS network.

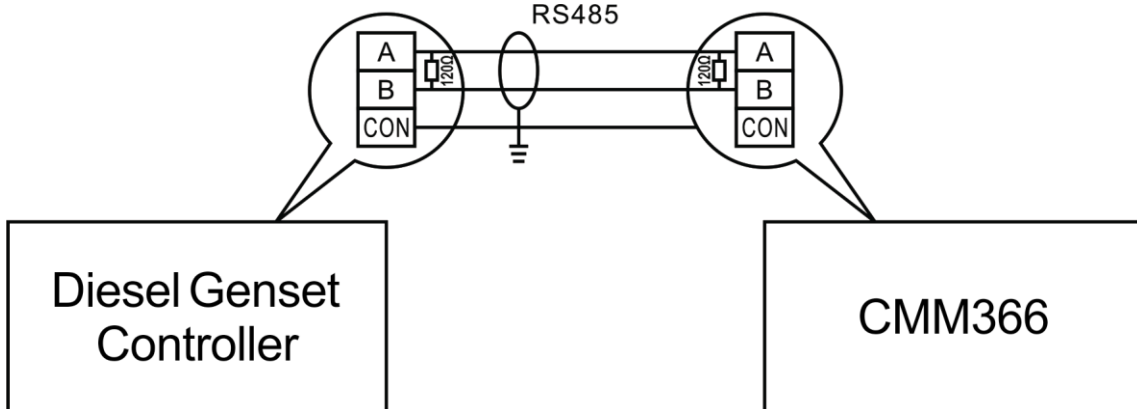
**▲Note:** WCDMA 3G network, all 2G network are supported. Use standard SIM card (25mmX15mm); If GPS indicator and GPRS indicator blink in the same time, which means SIM card hasn't been inserted or bad contacts.

After detached 4 screws in the shell, the installation steps are as below:



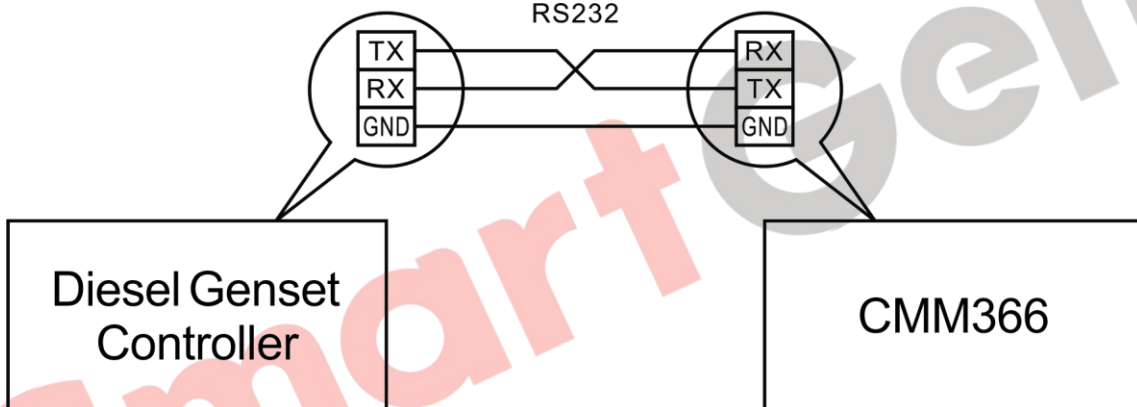
### 4.5 RS485

Receive genset data information by CMM366 RS485 port connecting with Genset Controller RS485 port. 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.



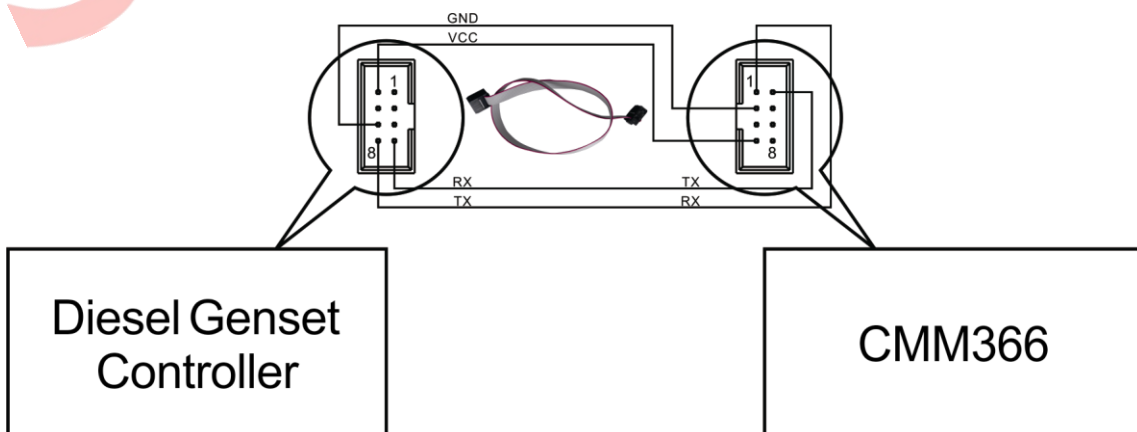
### 4.6 RS232

Receive genset data information by CMM366 RS232 port connecting with Genset Controller RS232 port.



### 4.7 LINK

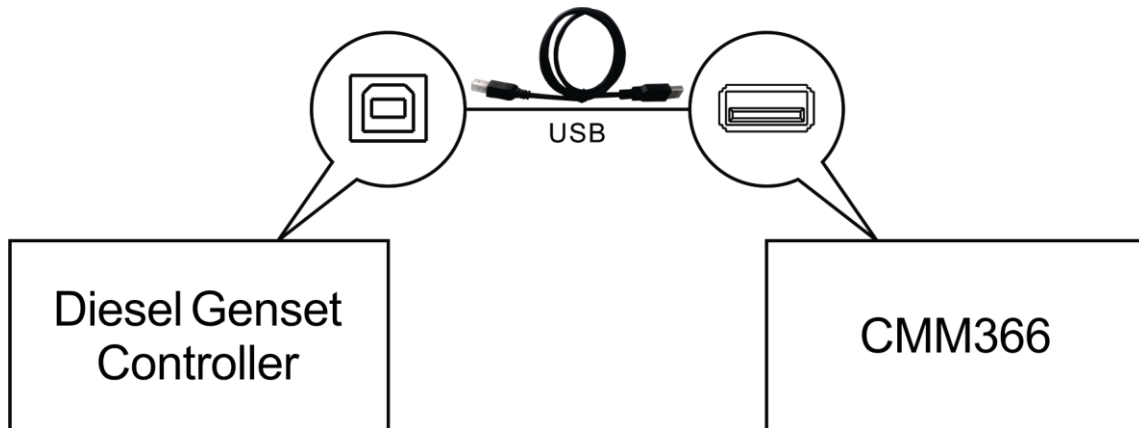
Receive genset data information by CMM366 LINK port connecting with Genset Controller LINK port.





### 4.8 USB HOST

Receive genset data information by CMM366 A-type USB mother port connecting with Genset Controller USB port.



### 4.9 USB DEVICE

Set up all the parameters and view CMM366-3G ID&Login password by CMM366 USB port connecting with PC USB port.



#### 4.10 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	Normally open outputs, rated 1A DC30V
6		Common	
7		Normally Close	
8	RS485 B(-)	0.5mm <sup>2</sup>	Impedance-120Ω shielding wire is recommended, its single-end earthed.
9	RS485 A(+)	0.5mm <sup>2</sup>	
10	RS485 (SCR)	0.5mm <sup>2</sup>	
11	RS232 RX	0.5mm <sup>2</sup>	RS232
12	RS232 TX	0.5mm <sup>2</sup>	
13	RS232 GND	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
Gateway				
1	Website	(0-65535)		20 Chinese characters, letters or numbers
2	URL	(0-65535)	monitor.smartgen.com.cn	40 characters
3	Server Port	(0-65535)	81	
4	Password	(0-65535)	123456	16 characters
GPS				
1	GPS Enabled	(0-1)	0	0: Disabled 1: Manual Input
2	Longitude	(-180-180)°	0.000000	GPS location, altitude
3	Latitude	(-90-90)°	0.000000	
4	Altitude	(-9999.9-9999.9)	100.0	
GSM				
1	GSM Enabled	(0-1)	1	0:Disabled; 1:Enabled
2	GPRS Password	Reserved		
3	Message Center	Reserved		
Cloud Server				
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:Reserved
5	Location Info	(0-1)	0	0: Manual input location info 1: Use GPS to gain location
6	Longitude	(-180-180)°	0.000000	Manually set module location and elevation.
7	Latitude	(-90-90)°	0.000000	
8	Altitude	(-9999.9-9999.9)	100.0	
9	Type	(0-65535)	6000	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



Module Configuration Info				
1	Type	(0-5)	1	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)	
Digital Input				
Digital Input 1				
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
Digital Input 2				
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
Digital Output				
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	Reserved	
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	
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-genset parallel module
	ComAp	MRS10 II
MRS16 II		Single-unit self-starting module
AMF25 II		AMF module
Harsen	GU620A	Single-unit self-starting module
	GU621A	AMF module
	GU630A	Single-unit self-starting module
	GU631A	AMF 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	monitor.smartgen.com.cn
Server Port	81 <input type="button" value="v"/> (0-65535)
Security Code	123456

Gateway Configuration

### Cloud Servers

Debugger Name	<input type="text"/>
Phone Number	<input type="text"/>
Installation Date	<input type="text"/>
Time zone	(GMT+08:00) Beijing, Chongqing, Hong Kong, U <input type="button" value="v"/>
Historic upload interval	<input type="text" value="0"/> s <input type="button" value="v"/> 0s (0-3600)s

Module Name	Config	Obtain Port automatically			Module	Get Location from GPS		Altitude
		Port	Baud	ID		Longitude	Latitude	
<input type="text"/>	<input type="button" value="Config"/>	RS485 <input type="button" value="v"/>	9600 <input type="button" value="v"/>	1 <input type="button" value="v"/>	HGM6110 <input type="button" value="v"/>	0.000000 <input type="button" value="v"/>	0.000000 <input type="button" value="v"/>	100.0 <input type="button" value="v"/>

Cloud Server Configuration

### Monitoring

Satellite Num.	0	Altitude	100
Longitude	113.571129	Hardware Ver.	V 1.2
Latitude	34.806438	Software Ver.	V 1.3
Input 1	<input type="checkbox"/>	Issue Date	2016-01-19
Input 2	<input type="checkbox"/>	Module Time	2016-01-27(3) 15:27:56
Output 1	<input checked="" type="checkbox"/>		
Module ID	<input type="text" value="383033313334510900230035"/>	<input type="button" value="Print"/>	<input type="button" value="Print Preview"/>

Module Monitoring Interface

## 6 SYSTEM DIAGRAM

1 CMM366-3G module connects with 1 genset monitor module. It can be connected via RS485 port, LINK port, RS232 port or USB port.

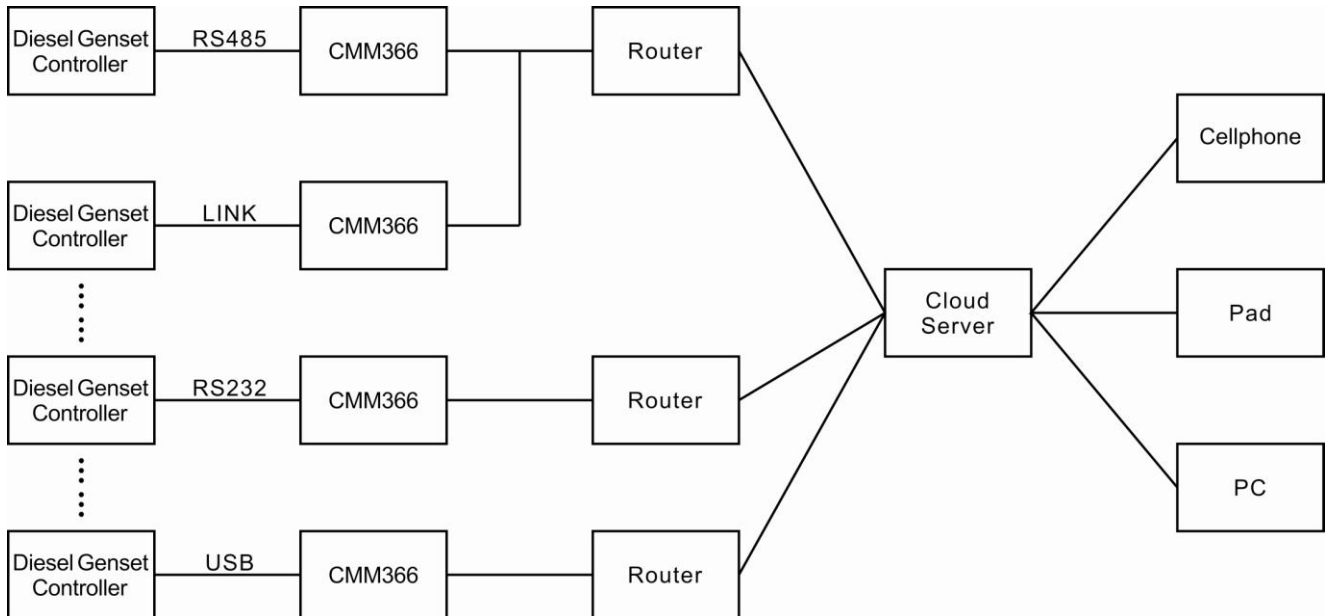


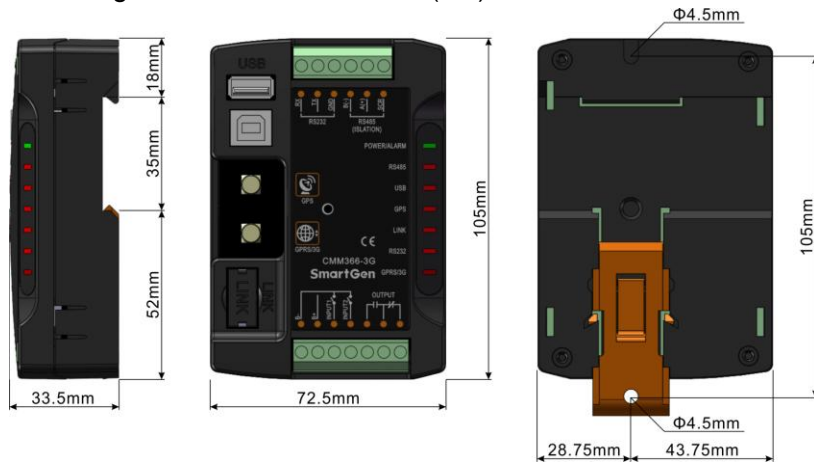
图1 CMM366-3G System Diagram



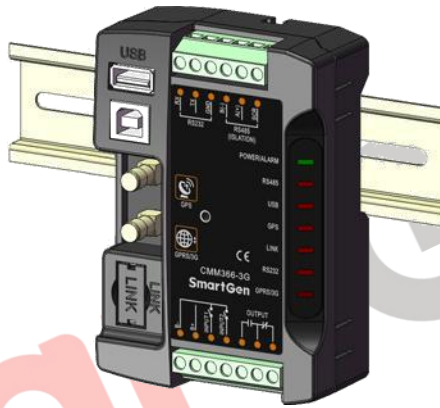


## 7 CASE DIMENSION AND INSTALLATION

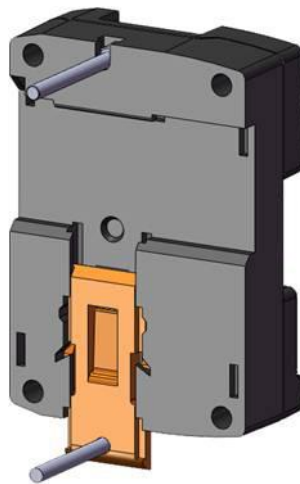
2 ways for installation: 35mm guide rail in box or screw (M4) installation as below:



CMM366-3G Case Dimension



CMM366-3G Guide Rail Installation



CMM366-3G Screw Installation

## 8 FAULT FINDING

Symptoms		Possible Solutions
Controller no response with power.		Check power voltage; Check controller connection wirings.
Network Indicator Not Light		Check SIM card is inserted or not; Check GPRS antenna is connected or not.
GPS Not Gained Location		Check GPS parameters are enabled or not; Check GPS antenna is connected or not and placed outdoor or not.
RS485 Abnormal	Communication	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.
RS232 Abnormal	Communication	Check connections; Check RS232 port is enabled or not; Check settings of genset ID and baud rate are correct or not.
LINK Abnormal	Communication	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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