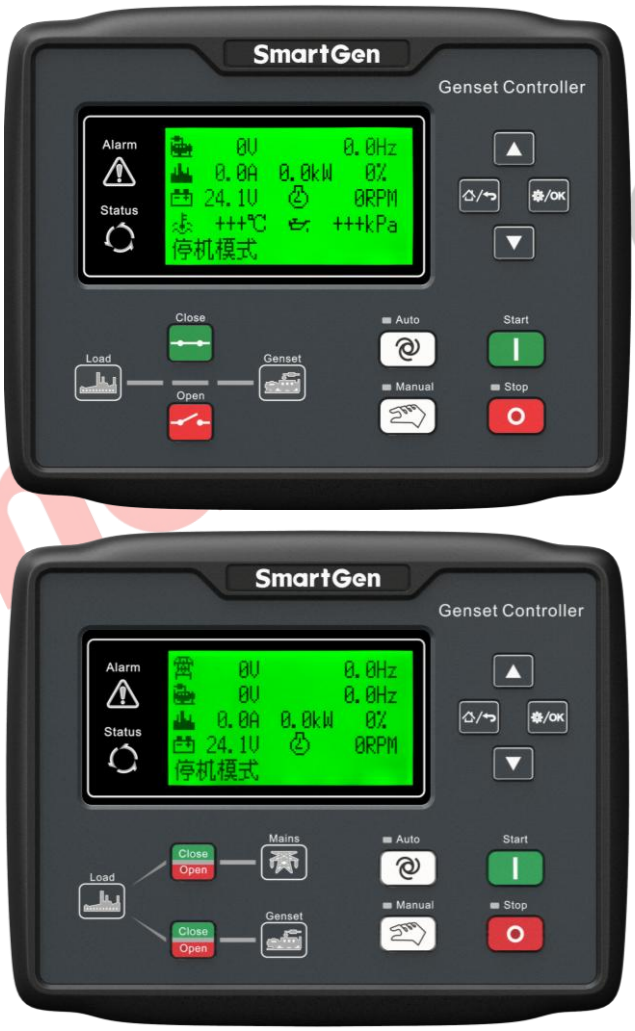
HGM6100N-RM

REMOTE CONTROL MODULE

USER MANUAL



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CONTENT

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English trademark

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Table 1 Software Version

Date	Version	Content
2019-08-06	1.0	Original release

1 OVERVIEW

HGM6100N-RM is remote monitoring module designed for HGM6100N series genset controllers. With RS485 port it can realize functions of remote start/stop, data measuring, and alarm display etc. it is applicable for single remote monitoring system. It can be in the monitoring mode, realizing only monitoring, not controlling, or it can be changed over to remote control mode by local module transfer, monitored and controlled remotely.

HGM6100N-RM remote monitoring module uses micro-processing technique and 132 x64 LCD display. 8 kinds of languages are optional (Simplified Chinese, English, Spanish, Russian, Portuguese, Turkish, Polish and French) and can be changed freely. It can be widely used in all types of automatic control system with compact structure, simple connections and high reliability.

2 PERFORMANCE AND CHARACTERISTICS

HGM6100N-RM has two types:
HGM6110N-RM: remote monitoring module for HGM6110N/6110CAN series controllers;
HGM6120N-RM: remote monitoring module for HGM6120N/6120CAN series controllers;
Main characteristics are as below:

- 132x64 LCD display with backlight, 8 selectable language interface (Simplified Chinese, English, Spanish, Russian, Portuguese, Turkish, Polish and French), push-button operation;
- Acrylic hard screen, better wear proof and scratch resistance property;
- Silica-gel panel and keys with strong adaptability in higher and lower temperature environments;
- RS485 communication port, which can achieve “three remote”(remote control, remote measurement and remote communication) functions via MODBUS protocol;
- Parameter setting function: allows users to modify the settings and at the same time they shall be stored in internal FLASH memory, so that the parameters won't be lost in case of power outage. All parameters can be set from the front panel, but also can be adjusted by RS485 interface via PC. All parameters of HGM6100N-RM must be configured as same as that of local module of HGM6100N controller;
- Wide power supply range: (8~35)V DC, accommodating to different starting battery volts;
- All parameters use digital modulation, getting rid of analog modulation of conventional potentiometer, improving wholesome reliability and stability;
- Maintenance function: maintenance type can be selected as date or running time; maintenance due actions can be set (warning or shutdown);
- Event Log, Real Time Clock, Scheduled Run/Not Run (start once monthly/weekly/daily; on/off load can be set) functions;
- Rubber gasket between the shell and controller screen with waterproof protection class IP55;
- Controller is fixed by fixing metal clips;
- Modular design, flame-retardant ABS shell, pluggable wiring terminals, embedded mounting, compact structure and easy installation.

3 SPECIFICATION

Table 2 Technical Parameters

Items	Contents
Working Voltage	DC8.0V to DC35.0V, continuous
Power Consumption	<3W(Standby mode: ≤2W)
Overall Dimensions	209 mm x 166 mm x 45mm
Panel Cutout	186mm x 141mm
Working Condition	Temperature: (-25~+70)ºC; Humidity: (20~93)%RH
Storage Condition	Temperature: (-30~+80)ºC
Protection Level	Front panel IP55
Insulation Intensity	Apply AC2.2kV voltage between high voltage terminal and low voltage terminal and the leakage current is not more than 3mA within 1min.
Weight	0.56kg

4 OPERATION

4.1 KEY DSCRIPTIONS

Table 3 Key Descriptions

Icon	Keys	Description
	Stop/ Reset	Under manual/auto mode, it can stop the running genset. In the state of genset alarm, it can reset the shutdown alarms. Under stop mode, press for over 3s, it can test whether panel indicators are normal (lamp test); In the process of stop, press it again and genset can be stopped quickly.
	Start	Under manual mode, press it and the static genset shall start; In the process of start, press it and genset status shall jump to next one.
	Manual	Press it and controller shall be put in the manual mode.
	Auto	Press it and controller shall be put in the auto mode.
	Close/Open	Under manual mode, press it and breaker close/open can be controlled. **NOTE:** It is only applicable for HGM6120N-RM Series.
	Close	Under manual mode, press it and breaker close can be controlled. **NOTE:** It is only applicable for HGM6110N-RM Series.
	Open	Under manual mode, press it and breaker open can be controlled. **NOTE:** It is only applicable for HGM6110-RM Series.
	Set/ Confirm	Press it and enter menu list interface; move cursor in parameter settings and confirm setting information.
	Up/ Increase	Scroll screen up; Move up cursor and increase value in setting menu.
	Down/ Decrease	Scroll screen down; Move down cursor and decrease value in setting menu.
	Home/Return	In main interface press it to return to the home page; In parameter setting menu press it to exit from parameter settings.

NOTE: if remote mode is active, all keys on the panel are functional; if not, only  keys are functional on the panel.

4.2 CONTROLLER PANEL

Fig. 1 HGM6110N-RM Front Panel Indicators

Fig. 2 HGM6120N-RM Front Panel Indicators

NOTE: Parts of Indicators Descriptions:

Alarm Indicator: slowly flashes for warning alarms; quickly flashes for shutdown alarms; light off for none alarms;

Status Indicator: Light off for standby status genset; flashes once in start/stop process; always light on for normal running.

4.3 REMOTE CONTROL MODE OPERATION

When remote control mode input is active on local module, the 4th line of LCD displays remote mode on both remote module and local module, which means remote control mode is active.

After remote mode is active, genset mode transfer and genset start/stop operations can be conducted.

NOTE: if alarms occur in start/stop process, corresponding alarm information will be synchronously displayed on the LCD of HGM6100N-RM.

5 CONNECTIONS

HGM6100N-RM lacks a mains voltage 3-phase input terminal comparing with HGM6120N-RM. HGM6120N-RM back panel is as below.

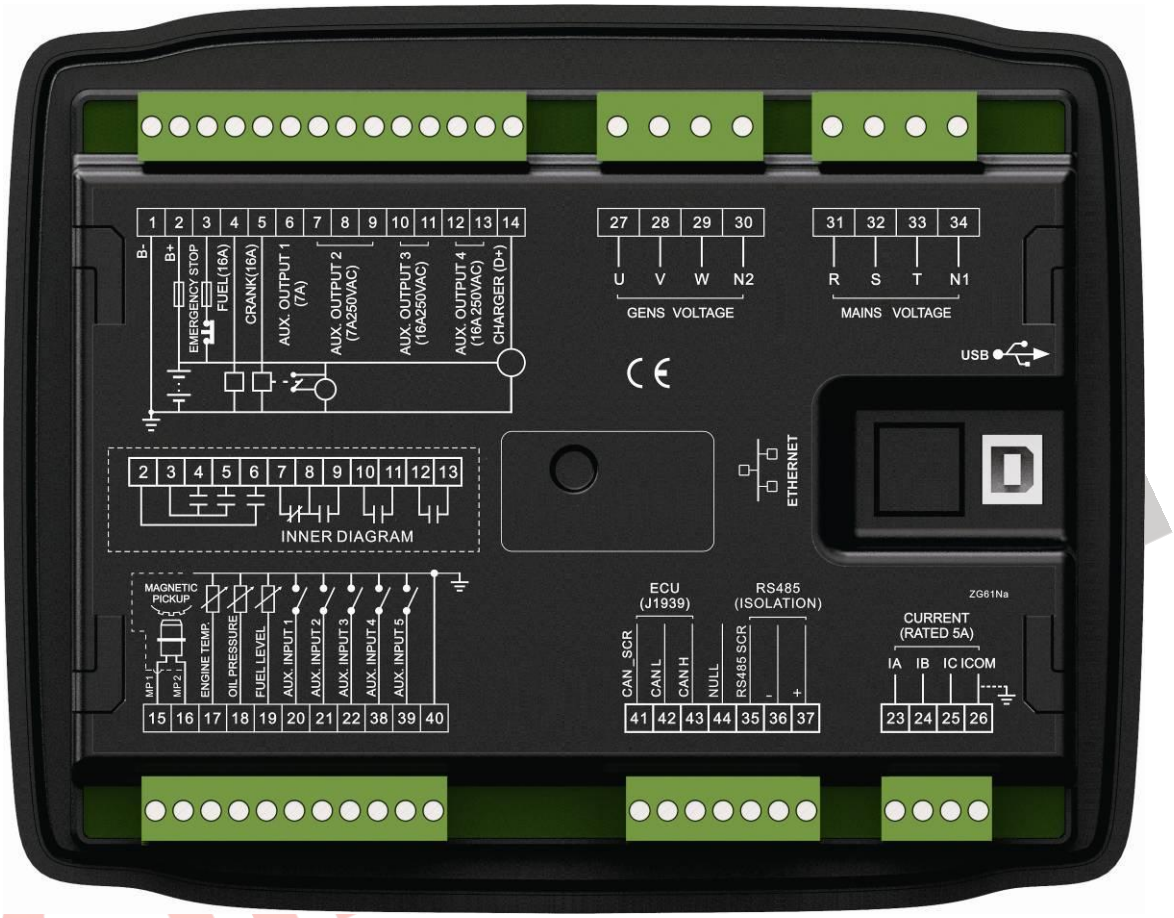

Fig. 3 Controller Back Panel

Table 4 Wiring Terminal Connection Descriptions

No.	Function	Cable Size	Description
1	DC input B-	2.5mm^2	Connected to negative of starter battery
2	DC input B+	2.5mm^2	Connected to positive of starter battery. If wire length is over 30m, double the wires in parallel. Max. 20A fuse is recommended.
3	Emergency Stop	2.5mm^2	**NOTE**: HGM6100N-RM doesn't have the functions.
4	Fuel	1.5mm^2	
5	Crank	1.5mm^2	
6	Aux. Output 1	1.5mm^2	
7	Aux. Output 2	1.5mm^2	
8			
9			
10	Aux. Output 3	2.5 mm^2	
11			
12	Aux. Output 4	2.5mm^2	

No.	Function	Cable Size	Description
13			
14	Charger (D+)	1.0mm^2	
15	Speed Sensor Input	0.5mm^2	
16	Speed Sensor Input; connected battery negative inside controller already		
17	Engine Temp.	1.0mm^2	
18	Oil Pressure	1.0mm^2	
19	Fuel Level	1.0mm^2	
20	Aux. Input 1	1.0mm^2	
21	Aux. Input 2	1.0mm^2	
22	Aux. Input 3	1.0mm^2	
23	IA	1.5mm^2	
24	IB	1.5mm^2	
25	IC	1.5mm^2	
26	ICOM	1.5mm^2	
27	U	1.0mm^2	
28	V	1.0mm^2	
29	W	1.0mm^2	
30	N2	1.0mm^2	
31	R	1.0mm^2	
32	S	1.0mm^2	
33	T	1.0mm^2	
34	N1	1.0mm^2	
35	RS485 SCR	/	Impedance 120Ω shielding wire is recommended; single end is ground connected.
36	RS485-	0.5mm^2	
37	RS485+	0.5mm^2	
38	Aux. Input 4	1.0mm^2	**NOTE**: HGM6100N-RM doesn't have the functions.
39	Aux. Input 5	1.0mm^2	
40	Sensor COM	1.0mm^2	
41	CAN SCR	0.5mm^2	
42	CAN L	0.5mm^2	
43	CAN H	0.5mm^2	
44	NULL		

NOTE: Back panel USB is parameter programming port, and controller can be configured via PC.

NOTE: Configured parameters of HGM6100N-RM shall be in accordance with that in the monitored HGM6100N controller.

6 TYPICAL APPLICATION

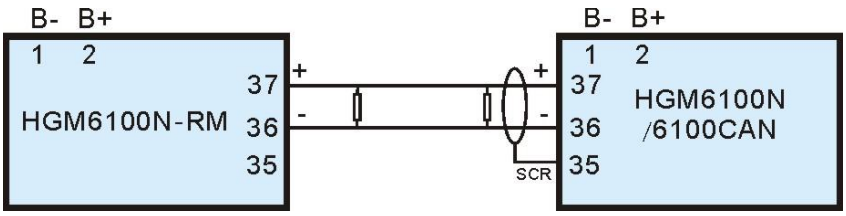

Fig. 4 HGM6100N-RM and **HGM6100N/CAN** Typical Application Diagram

7 INSTALLATION

7.1 FIXING CLIPS

- Controller design is panel installation method, and it is fixed by clips.
- Withdraw the fixing clip screw (turn anticlockwise) until it reaches proper position.
- Pull the fixing clip backwards (towards the back of the module) ensuring four clips are inside their allotted slots.
- Turn the fixing clip screws clockwise until they are fixed on controller panel.
- Care should be taken not to over tighten the screws of fixing clips.

7.2 OVERALL DIMENSION AND PANEL CUTOUT

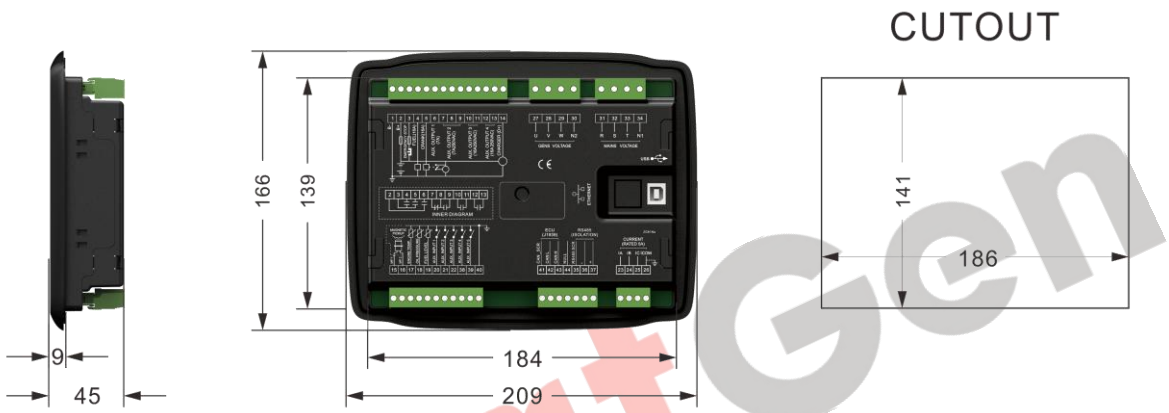

Fig. 5 Case Dimensions and Cutout

HGM6100N-RM controller can be applicable for (8~35) V DC battery voltage environment. Battery negative must be reliably connected to engine shell. The connection wire between controller power and battery negative and positive should not be less than 2.5mm^2. If a float charger is fitted, please connect output line of the charger with battery negative and positive directly, and then connect battery positive and negative to power input of controller separately, for the purpose of preventing charger disturbing the normal running of controller.

8 TROUBLESHOOTING

Table 5 Troubleshooting

Symptom	Measures
No response with power on	Check starter battery; Check controller wire connections; Check DC fuse.
Abnormal communication of controller	Check whether RS485 A and B are connected reversely; Adding 120Ω resistance is recommended between RS485 A and B.