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SmartGen HMC6000RM Remote Monitoring Controller User Manual

Contents

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OVERVIEW

HMC6000RM controller integrates digitization, intelligentization and network technology which is used for remote monitoring system of single unit to achieve automatic start/stop, data measurement, alarm protection and record checking. It fits with 132*64 LCD display, optional Chinese/English languages interface, and it is reliable and easy to use.

PERFORMANCE AND CHARACTERISTICS

- 32-bit ARM microprocessor, 132*64 liquid display, optional Chinese/English interface, push-button operation;
- Connect to HMC6000A/HMC6000A 2 module via CANBUS port to achieve remote start/stop control;
- With monitor mode which can achieve check data only but not control the engine.
- Modular design, self-extinguishing ABS plastic enclosure and embedded installation way; small size and compact structure with easy mounting.

TECHNICAL PARAMETERS

Parameter	Details
Working Voltage	DC8.0V to DC35.0V, uninterrupted power supply.
Power Consumption	<3W (Standby mode: ≤2W)
Case Dimension	197mm x 152mm x 47mm
Panel Cutout	186mm x 141mm
Working Temperature	(-25~70)ºC
Working Humidity	(20~93)%RH
Storage Temperature	(-25~70)ºC
Protection Level	IP55 Gasket
Insulation Intensity	Apply AC2.2kV voltage between high voltage terminal and low voltage terminal; The leakage current is not more than 3mA within 1min.
Weight	0.45kg

INTERFACE

MAIN INTERFACE
All data of HMC6000RM are read from local controller HMC6000A/HMC6000A 2 via CANBUS. Specific display content stays the same with local controller.

INFORMATION INTERFACE

After pressing Enter for 3s, the controller will enter into select interface of parameter setting and controller information.	Return Parameter Setting Controller Information	After selected controller information, press Enter to enter into controller information interface.
First Panel	Controller Information Software Version 2.0 Release Date 2016-02-10 2015.05.15 5 09:30:10	This panel will display software version, hardware version and controller time. Press to enter into second panel.
Second Panel	O:S F S H A 1 2 3 4 5 6 7 8 9 10 11 12 At Rest	This panel will display output port status, and gen set status. Press to enter into third panel.
Third Panel	I: E S S 1 2 0 F 3 4 5 6 At Rest	This panel will display input port status, and genset status. Press to enter into first panel.

OPERATION

KEY FUNCTION DESCRIPTION

Key	Function	Description
	Stop	Stop running generator in remote mode.
	Start	Start genset in remote mode.
	Mute	Alarm sound off.
	Dimmer+	Adjust backlight brighter, 6 kinds of lamp brightness levels.
	Dimmer-	Adjust backlight darker, 6 kinds of lamp brightness levels.
	Lamp Test	Press it will test panel LED indicators and display screen.
	Home	Return to the main screen.
	Event Log Shortcut	Quickly turn to alarm record page.
	Up/Increase	1. Screen scroll; 2. Up cursor and increase value in setting menu.
	Down/Decrease	1. Screen scroll; 2. Down cursor and decrease value in setting menu.
	Set/Confirm	1. Pressing and holding for more than 3s to enter the parameter configuration menu; 2. In settings menu confirms the set value.

CONTROLLER PANEL

REMOTE START/STOP OPERATION

INSTRUCTION
Configure any auxiliary input port of HMC6000A/HMC6000A 2 as remote start input. Remote start/stop can be done via remote controller when remote mode is active.

REMOTE START SEQUENCE

1. When "Remote Start" is active, "Start Delay" timer is initiated;
2. "Start Delay" countdown will be displayed on LCD;
3. When start delay is over, preheat relay energizes (if configured), "Preheat Delay XX s" information will be displayed on LCD;
4. After the above delay, the Fuel Relay is energized, and then one second later, the Start Relay is engaged. The engine is cranked for a pre-set time. If the engine fails to fire during this cranking attempt then the fuel relay and start relay are disengaged for the pre-set rest period; "Crank Rest Time" begins and wait for the next crank attempt;
5. Should this start sequence continue beyond the set number of attempts, the start sequence will be terminated, the first line of LCD display will be highlighted with black and 'Fail to Start fault' will be displayed;
6. In case of successful crank attempt, the "Safety On" timer is activated. As soon as this delay is over, "Start Idle" delay is initiated (if configured);
7. After the start idle, if the Rotate Speed, Temperature, Oil Pressure of controller are regular, the generator will enter into Normal Running status directly.

REMOTE STOP SEQUENCE

1. When the "Remote Stop" or "Stop Input" signal is effective, the Stop Delay is initiated.
2. Once this "Stop Delay" has expired, the "Stop Idle" is initiated. During "Stop Idle" Delay (if configured), idle relay is energized.
3. Once this "Stop Idle" has expired, the "ETS Solenoid Hold" begins. ETS relay is energized while fuel relay is de-energized.
4. Once this "ETS Solenoid Hold" has expired, the "Fail to Stop Delay" begins. Complete stop is detected automatically.
5. Generator is placed into its standby mode after its complete stop. Otherwise, fail to stop alarm is initiated and the corresponding alarm information is displayed on LCD (If generator is stop successfully after "fail to stop" alarm has initiated, it will enter standby mode).

PARAMETER SETTING

Enter into operating mode setting while pressing (Enter) for 3s after controller starts.
2 Operating modes:

- **0:** Monitoring mode: When HMC6000A/HMC6000A 2 is in remote mode, the controller can achieve either remote monitoring data and records or remote start/stop.
- **1:** Surveilling mode: When HMC6000A/HMC6000A 2 is in remote mode, the controller can achieve remote monitoring data and records but not remote start/stop.
  NOTE: HMC6000RM can auto-identify main controller type, language setting and CANBUS baud rate.

REAR PANEL

Fig.2 HMC6000RM Rear Panel

Icon	No.	Function	Cable Size	Description
	1.	DC input B-	1.0mm2	DC power supply negative input. Connected with negative of starter battery.
	2.	DC input B+	1.0mm2	DC power supply positive input. Connected with positive of starter battery.
	3.	NC		Not connected.
CANBUS (EXPANSION)	4.	CANL	0.5mm2	Used for connect to HMC6000A/HMC6000A 2 local monitor and control module. Using 120Ω shielding wire whose single end earthed is recommended.
	5.	CANH	0.5mm2	
	6.	SCR	0.5mm2	
LINK				Used for software update.

CANBUS (EXPANSION) BUS COMMUNICATION

HMC6000A/HMC6000A 2 can be connected to achieve remote monitoring via EXPANSION port, which can connect at most 16 HMC6000RMs via only 1 EXPANSION port to achieve monitoring and controlling simultaneously in several places.
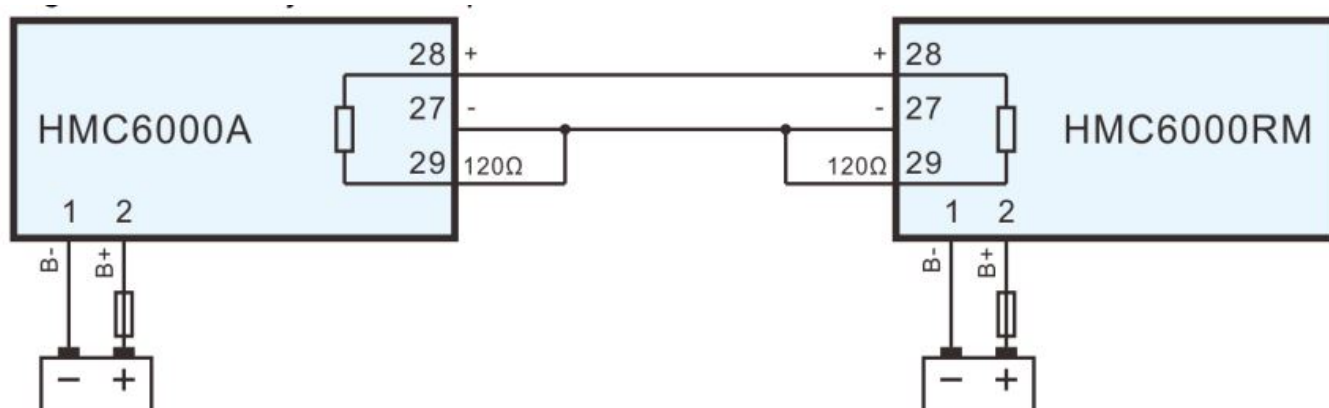

Fig.3 HMC6000RM Application Diagram

INSTALLATION

FIXING CLIPS
Controller is panel built-in design; it is fixed by clips when installed.

1. Withdraw the fixing clip screw (turn anticlockwise) until it reaches proper position.
2. Pull the fixing clip backwards (towards the back of the module) ensuring four clips are inside their allotted slots.
3. Turn the fixing clip screws clockwise until they are fixed on the panel.

NOTE: Care should be taken not to over tighten the screws of fixing clips.

Fig.4 Fixing Clips Installation
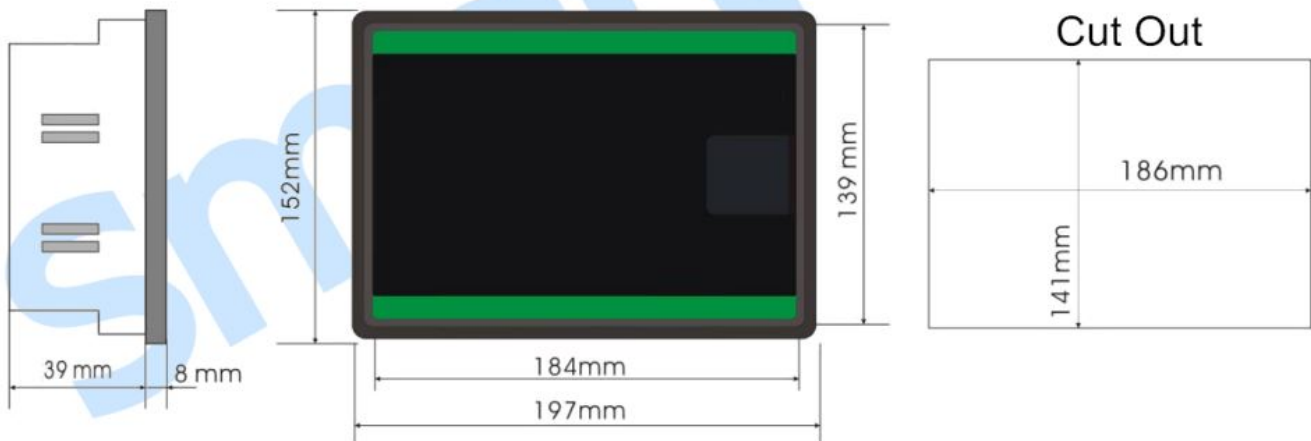
OVERALL DIMENSIONS AND CUTOUT

Fig.5 Overall Dimensions and Panel Cutout

Left side view: 39 mm, 8 mm
Front view: 152mm (height), 139 mm, 184mm, 197mm (widths)
Cut Out: 186mm, 141mm

TROUBLESHOOTING

Problem	Possible Solution
Controller no response with power.	Check starting batteries; Check controller connection wirings; Check DC fuse.
CANBUS communication failure	Check wiring; Check if CANBUS CANH and CANL wires are connected in the opposite way; Check if CANBUS CANH and CANL wires at both ends are connected in the opposite way; Putting a 120Ω resistor between CANBUS CANH and CANL is recommended.

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Version History

Date	Version	Content
2015-11-16	1.0	Original release.
2016-07-05	1.1	Add HMC6000RMD type.
2017-02-18	1.2	Modify working voltage range in the table of technical parameters.
2020-05-15	1.3	Modify local module type connect to HMC6000RM.
2022-10-14	1.4	Update company logo and manual format.

Sign Instruction

Sign	**Instruction**
NOTE	Highlights an essential element of a procedure to ensure correctness.
CAUTION	Indicates wrong operation may lead to impair apparatus.

Documents / Resources

SmartGen HMC6000RM REMOTE MONITORING CONTROLLER USER MANUAL	**SmartGen HMC6000RM Remote Monitoring Controller** [pdf] User Manual HMC6000RM Remote Monitoring Controller, HMC6000RM, Remote Monitoring Controller, Monitoring Controller, Controller

References

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