



SmartGen
ideas for power

HGM9510

GENSET PARALLEL (WITH GENSET) UNIT

USER MANUAL



SMARTGEN (ZHENGZHOU) TECHNOLOGY CO.,LTD.

2 MODULES COMPARISON

		HGM 9210	HGM 9220	HGM 9310	HGM 9320	HGM 9410	HGM 9420	HGM 9610	HGM 9620	HGM 9510	HGM 9520
LCD	Dimension	3.7"						4.3"			
	pixel	132 x 64						480 x 272			
AMF			•		•		•		•		•
BUS Monitoring										•	
Parallel connection										•	•
Expansion module								•	•		
Input Port		7	7	7	7	7	7	8	8	7	7
Output Port		8	8	8	8	8	8	8	8	8	8
Sensor Number		5	5	5	5	5	5	5	5	5	5
Neutral (Earth) current								•	•		
Schedule function		•	•	•	•	•	•	•	•	•	•
ETHERNET								•	•		
RS485				•	•	•	•	•	•	•	•
GSM				•	•	•	•	•	•		
J1939						•	•	•	•	•	•
USB		•	•	•	•	•	•	•	•	•	•
LINK		•	•								
Real-time clock		•	•	•	•	•	•	•	•	•	•
Event log		•	•	•	•	•	•	•	•	•	•
Micro SD card								•	•		

▲ NOTE:

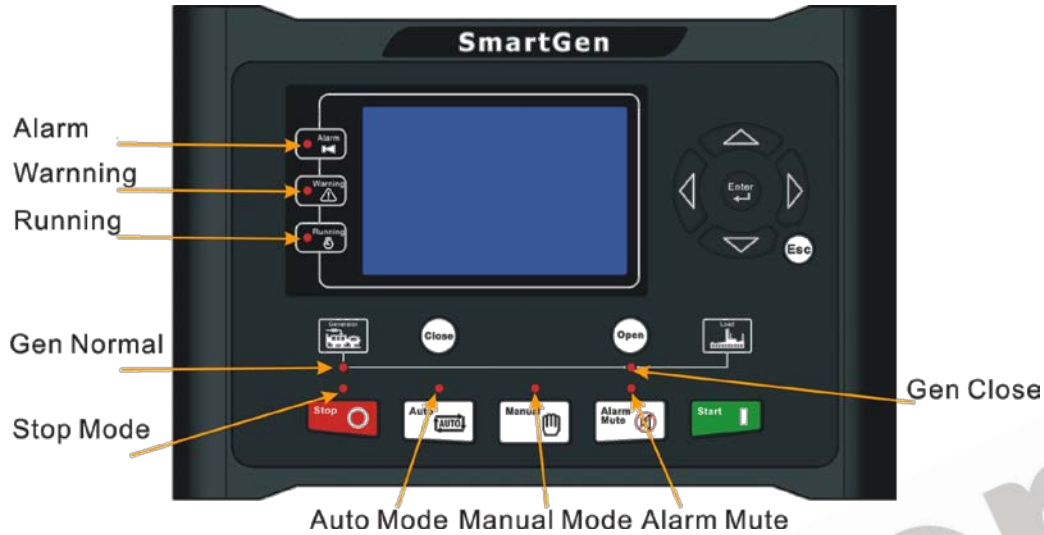
- (1) Two of the outputs are fixed: start output and fuel output.
- (2) HGM9510's analog sensors are composed by 3 fixed sensors (temperature, pressure, level) and 2 configurable sensors.

▲ NOTE: The features of HGM9210/HGM9220/HGM9310/HGM9320/HGM9410/

HGM9420/HGM9520/HGM9610/HGM9620 controllers mentioned in this document may change, please check the corresponding user manual for accurate information.

5 OPERATION

5.1 INDICATOR LIGHT



NOTE: Selected light indicators description:

Warning indicator and Alarm indicator:



Alarm Type	Warning Indicator	Alarm Indicator
Warning	Slow flashing	Slow flashing
Trip Alarm	Slow flashing	Slow flashing
Shutdown Alarm	Off	Fast flashing
Trip and Stop Alarm	Off	Fast flashing

Running indicator: illuminated from crank disconnect to ETS while off during other periods.

Generator normal light: It is light on when generator is normal; flashing when generator state is abnormal; off when there is no generator power.

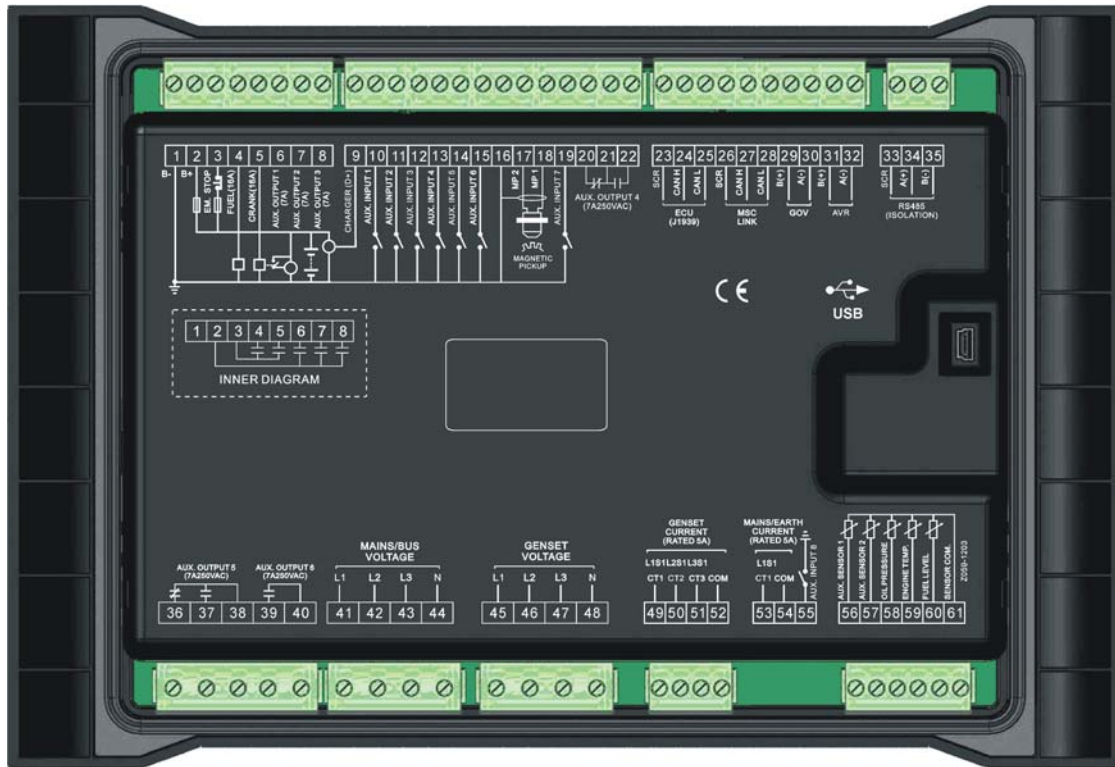
5.2 PUSHBUTTONS

Icon	Button	Description
	Stop	Stop running generator in Auto/Manual mode; Lamp test (press at least 3 seconds); Reset alarm in stop mode; During stopping process, press this button again to stop generator immediately.
	Start	Start genset in Manual mode.
	Manual Mode	Press this key and controller enters in Manual mode.
	Auto Mode	Press this key and controller enters in Auto mode.
	Mute/Reset Alarm	Alarming sound off; If trip alarm occurs, pressing the button at least 3 seconds can reset this alarm.
	Close	Close breaker in manual mode.
	Open	Open breaker in manual mode.
	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.
	Left	1) Screen scroll; 2) Left move cursor in setting menu.
	Right	1) Screen scroll; 2) Right move cursor in setting menu.
	Set/Confirm	Select viewing area.
	Exit	1) Return to main menu; 2) Return to previous menu in setting menu.

NOTE: Press  and  simultaneously in manual mode will force generator to crank. Successful start will not be judged according to crank disconnect conditions, operator will have to crank the starter motor manually; when operator decides that the engine has fired, he/she should release the button and start output will be deactivated, safety on delay will be initiated.

7 WIRING CONNECTION

HGM9510 controller's rear as following:

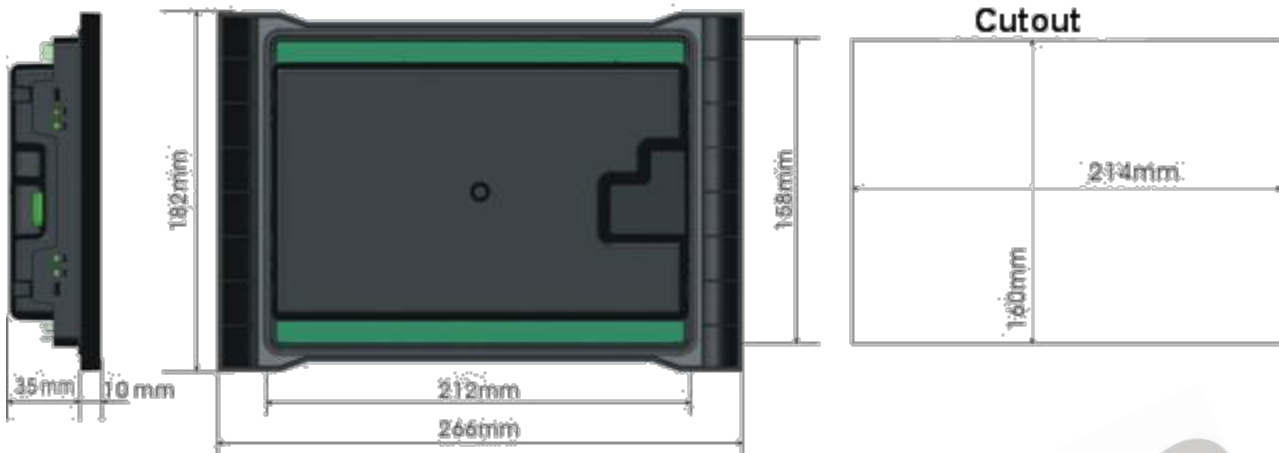


Description of terminal connection:

NO.	Functions	Cable Size	Remark	
1	B-	2.5mm ²	Connected with negative of starter battery.	
2	B+	2.5mm ²	Connected with positive of starter battery. If wire length is over 30m, better to double wires in parallel. Max. 20A fuse is recommended.	
3	Emergency stop	2.5mm ²	Connected with B+ via emergency stop button.	
4	Fuel relay	1.5mm ²	B+ is supplied by 3 points, rated 16A	
5	Crank	1.5mm ²	B+ is supplied by 3 points, rated 16A	Connected to starter coil Details see form 2
6	Aux. output 1	1.5mm ²	B+ is supplied by 2 points, rated 7A	
7	Aux. output 2	1.5mm ²	B+ is supplied by 2 points, rated 7A	
8	Aux. output 3	1.5mm ²	B+ is supplied by 2 points, rated 7A	
9	Charger (D+)	1.0mm ²	Connected with charger's D+ (WL) terminals. Be hanging in the air If there is no this terminal.	
10	Aux. input 1	1.0mm ²	Ground connected is active (B-)	Details see form 3
11	Aux. input 2	1.0mm ²	Ground connected is active (B-)	
12	Aux. input 3	1.0mm ²	Ground connected is active (B-)	
13	Aux. input 4	1.0mm ²	Ground connected is active (B-)	
14	Aux. input 5	1.0mm ²	Ground connected is active (B-)	
15	Aux. input 6	1.0mm ²	Ground connected is active (B-)	
16	Magnetic Pickup	0.5mm ²	Connected with Speed sensor, shielding line is	

15 INSTALLATION

Controller is panel built-in design; it is fixed by clips when installed. The controller's overall dimensions and cutout dimensions for panel, please refers to as following,



1) Battery Voltage Input

NOTE: HGM9510 controller can suit for widely range of battery voltage (8~35) VDC. Negative of battery must be connected with the shell of starter stable. The wire's diameter must be over 2.5mm^2 and which is connected to B+ and B- of controller power. If floating charge configured, please firstly connect output wires of charger to battery's positive and negative directly, then, connect wires from battery's positive and negative to controller's positive and negative input ports in order to prevent charge disturbing the controller's normal working.

2) Speed Sensor Input

NOTE: Speed sensor is the magnetic equipment which be installed in starter and for detecting teeth of flywheel. Its connection wires to controller should apply for 2 cores shielding line. The shielding layer should connect to No. 16 terminal in controller while another side is hanging in air. The else two signal wires are connected to No.17 and No.18 terminals in controller. The output voltage of speed sensor should be within AC(1~24)V (effective value) during the full speed. AC12V is recommended (in rated speed). When install the speed sensor, let the sensor is spun to contacting flywheel first, then, port out 1/3 lap, and lock the nuts of sensor at last.

3) Output And Expand Relays

CAUTION: All outputs of controller are relay contact output type. If need to expand the relays, please add freewheel diode to both ends of expand relay's coils (when coils of relay has DC current) or, increase resistance-capacitance return circuit (when coils of relay has AC current), in order to prevent disturbance to controller or others equipment.

4) AC Input

Current input of controller must be connected to outside current transformer. And the current transformer's secondary side current must be 5A. At the same time, the phases of current