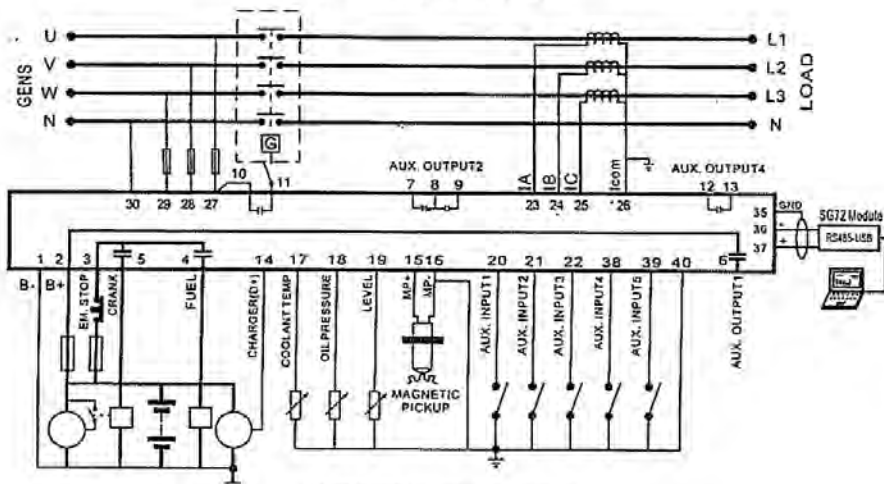
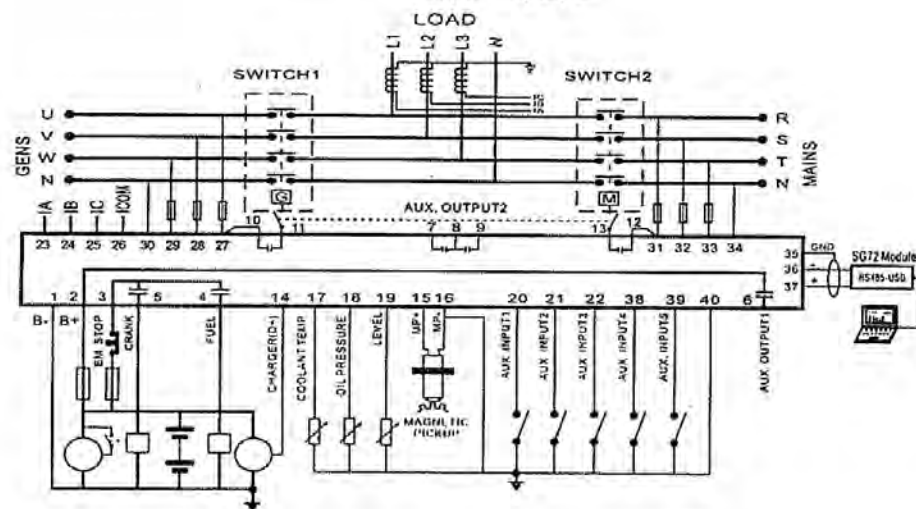


HGM6110KC typical wiring diagram



HGM6120KC typical wiring diagram



The contents are intended for quick guidance and supplement to the user who is using HGM6100K controller. Please read the standard manual for more details.

HGM6100K controller has four variants as shown:

Type	Description
HGM6110K/6110KC	Automatic Start Module, it controls generator to start/stop by remote start signal;
HGM6120K/6120KC	Based on HGM6110K/6110KC and add mains AC monitoring, mains/gens automatic switching control functions (AMF).

Note1: HGM6110KC/6120KC with RS485 interface, HGM6110K/6120K without RS485 interface.

Note2: HGM6110KC/6120KC is taken as an example to describe in this manual.

1 KEY FUNCTION DESCRIPTION

	Stop/ Reset	Can stop generator under Manual/Auto mode; Can reset shutdown alarm; press this key at least 3 seconds to test panel indicators are OK or not (lamb test); During stopping process, press this key again can stop generator immediately.
	Start	Start genset under Manual or Auto mode.
	Manual	Pressing this key will set the module as Manual mode.
	Auto	Pressing this key will set the module as Auto mode.
	Running with load	Controller is under manual testing mode. Under this mode, gen-set will run automatically with load when gens normal. (HGM6110KC without)
	Set/ Confirm	Enter into Set menu after pressing this key, can shift cursor to confirm.
	Page Up/Increase	Screen scroll; Shift cursor and increase values.
	Page Down/Decrease	Screen scroll; Shift cursor and decrease values.

2 PARAMETER EDITING

After controller powered on, press  to enter into the parameters setting menu, the menu item as shown:

- 1) Press  key to enter the menu interface after controller started, choose

Parameter Setting Fig1 as shown;

- Fig1
1. Parameter Setting
 2. Information
 3. Language

- 2) Press  key to enter parameter configuration password confirm interface, Fig 2 as shown;

(when 1234 is input, part of the parameters can be set; when 0318 is input, all the parameters can be set.)

Fig2

Input password

0000

- 3) Press  key or  key to increase or decrease values; Press  key to shift bit and confirm setting;
- 4) If password is correct ,enter into parameter interface: Press  key or  key to choose parameter items; Press  key to enter into current parameter setting menu;

- 5) If parameter within the range, the setting can be saved in internal FLASH of controller. If out of range, it can't be saved.

Note: Pressing  key at any time can exit the editor and return to main menu.

3 PARAMETER RANGE AND DEFINATION

No.	Parameter	Range	Default	Description
1	Mains volt normal delay	(0-3600)s	10	Mains transient delay, suited for ATS (automatic transfer switch).
2	Mains volt abnormal delay	(0-3600)s	5	

No.	Parameter	Range	Default	Description
3	Mains under volt	(30-360)V	184	When mains voltage is under the point, mains under voltage active. When the point is 30, mains under voltage disabled.
4	Mains over volt	(30-360)V	276	When mains voltage is over the point, mains over voltage active. When the point is 360V, mains over voltage disabled.
5	Transfer switch interval	(0-99.9)s	1.0	It's the delay from mains open to generator closed or from generator open to mains closed.
6	Start delay	(0-3600)s	1	It's the delay from mains failure or remote start signal active, to start generator.
7	Stop delay	(0-3600)s	1	It's the delay from mains normal, or remote start signal inactive to stop generator.
8	Start times	(1-10)times	3	When engine start not success, maximum cranking times. When setting crank times up, controller send out fail to start signal.
9	Preheat timer	(0-300)s	0	Power the preheat plug before engine started with power.
10	Crank time	(3-60)s	8	The time used to pre-power the starter.
11	Crank interval	(3-60)s	10	Time for waiting second powering if failed to start first time.
12	Safety run timer	(1-60)s	10	Alarms of Low OP, high temp, under speed/freq/volt, charge failure, are inactive
13	Start idle timer	(0-3600)s	0	Idle running time when started
14	Warm up timer	(0-3600)s	10	Time for warming up before close breaker
15	High temp. Cooling timer	(3-3600)s	10	Time for cooling before stopping
16	Stop idle timer	(0-3600)s	0	Genset's idle running time during stopping
17	ETS solenoid hold	(0-120)s	20	It's the delay for energizing to stop.
18	Genset at rest delay	(0-120)s	0	If "ETS solenoid hold" set as 0, it is the time from end of idle delay to gen-set at rest; if not 0, it is from end of ETS solenoid delay to gen-set at rest
19	Switch closed time	(0-10)s	5.0	Mains or generator switch closing pulse width, when it is 0, output is continuous.
20	Flywheel teeth	(10-300)	118	Number of flywheel teeth, can check disconnection condition and engine speed.
21	Gens abnormal delay	(0-20.0)s	10.0	Over or under volt alarm delay
22	Gens over volt stop	(30-360)V	264	When gens voltage is over the point, generator over voltage is active. When the point is 360V, generator over voltage is disabled.
23	Gens under volt stop	(30-360)V	196	When generator voltage is under the point, generator under voltage is active. When the point is 30V, generator under voltage is disabled.
24	Under speed stop	(0-6000)RPM	1200	When the engine speed is under the point for 10 seconds, shutdown alarm signal is sent out.
25	Over speed stop	(0-6000)RPM	1710	When the engine speed is over the point for 2 seconds, shutdown alarm signal is sent out.
26	Gens under freq stop	(0-75.0)Hz	45.0	When generator freq is lower than the point for 10 seconds, shutdown alarm signal is sent out.
27	Gens over freq stop	(0-75.0)Hz	57.0	When generator freq is over the point and holds for 2 seconds, generator over frequency is active.
28	High temp. stop	(80-140)°C	98	When engine temperature sensor value is over this point and remains for 2 seconds, send out shutdown alarm. When the value is 140, warning alarm won't be sent. (It's suited for engine temperature sensor only.)
29	Low oil pres. stop	(0-400)kPa	103	When engine oil pressure sensor value is under this point and remains for 2 seconds, send out shutdown alarm. When the value is 0, send out warning alarm. (It's suited for OP sensor only.)
30	Low fuel level	(0-100)%	10	When fuel level sensor value is under this point and remain for 10 seconds, send out warning alarm.
31	Loss of speed delay	(0-20.0)s	5.0	When speed is 0 and remain for the delay, send out shutdown alarm. When the delay is 0, send out warning alarm.
32	Charge failure	(0-30)V	6.0	During generator is running, when charge alternator WL/D+ voltage is under this point and remain for 5 seconds, generator will warning alarm.
33	Battery over volt	(12-40)V	33.0	When generator battery voltage is over the point and holds for 20 seconds, battery over voltage signal is active. It's a warning alarm.

No.	Parameter	Range	Default	Description
34	Battery under volt	(4-30)V	8.0	When generator battery voltage is under the point and holds for 20 seconds, battery under voltage signal is active. It's a warning alarm.
35	CT rate	(5-6000)/5	500	Current transformer rate
36	Full load current	(5-6000)A	500	Mains or generator set maximum rated current
37	Over current percent	(50-130)%	120	When the load current is over the point, the over current delay is initiated.
38	Over current delay	(0-3600)s	1296	When load current is over the point, send out over current signal. When the delay is 0, warn only not shutdown.
39	Fuel pump open threshold	(0-100)%	25	When the fuel level lower than the set value for 10 seconds, the output signal to open fuel pump.
40	Fuel pump off threshold	(0-100)%	80	When the fuel level higher than the set value for 10 seconds, the output fuel pump off signal.
41	Digit output 1	(0-17)	2	Energized to stop
42	Digit output 2	(0-17)	3	Idle control
43	Digit output 3	(0-17)	5	Gens closed
44	Digit output 4	(0-17)	6	Mains closed
45	Aux. input 1	(0-15)	1	High temperature input
46	Aux. input 1 valid	(0-1)	0	Factory default : close
47	Aux. input 1 delay	(0-20.0)s	2.0	
48	Aux. input 2	(0-15)	2	Low oil pressure input
49	Aux. input 2 valid	(0-1)	0	Factory default is: close
50	Aux. input 2 delay	(0-20.0)s	2.0	
51	Aux. input 3	(0-15)	10	Remote start input
52	Aux. input 3 valid	(0-1)	0	Factory default : close
53	Aux. input 3 delay	(0-20.0)s	2.0	
54	Aux. input 4	(0-15)	11	Low fuel level warn
55	Aux. input 4 valid	(0-1)	0	Factory default : close
56	Aux. input 4 delay	(0-20.0)s	2.0	Communication address of the module
57	Aux. input 5	(0-15)	12	Low coolant level warn
58	Aux. input 5 valid	(0-1)	0	Factory default : close
59	Aux. input 5 delay	(0-20.0)s	2.0	
60	Module power on	(0-2)	0	0: Stop mode; 1: Manual mode; 2: Auto mode
61	Module address	(1-254)	1	
62	Password set	(0-9999)	1234	
63	Crank disconnect	(0-5)	2	Condition of disconnecting starter (power generating, magnetic sensor, oil pressure)
64	Speed after started	(0-6000)RPM	360	When engine speed is over this point, starter will disconnect.
65	Freq after started	(10-30)Hz	14	When generator frequency is over this point, starter will disconnect.
66	OP after started	(0-400)kPa	200	When engine oil pressure is over this point, starter will disconnect.
67	High temp. prohibit select	(0-1)	0	Default, when temperature is higher, alarm to shutdown.
68	Low OP prohibit select	(0-1)	0	Default, when oil pressure is lower, alarm to shutdown.
69	Single/3phases input select	(0-2)	0	0: 3P4W 1: 2P3W 2: 1P2W
70	Temp. sensor select	(0-9)	08	SGX
71	Pres. sensor select	(0-9)	08	SGX
72	Liquid level sensor select	(0-5)	03	SGD
73	Number of poles	(2-32)	04	Number of magnetic poles, used for calculating rotating speed of generator without speed sensor.

4 CONTROLLER DIMENSION

Overall Dimensions	Panel Cutout
209mm x 153mm x 55mm	186mm x 141mm