DC20D MK2 configuration and instructions

Ver1.4

1. Panel and display

2. Keys description

KEYS	NAME	Main Function
	Stop Reset Revert	◆Can stop generator under manual/auto mode; ◆Can reset shutdown alarm ◆During stop procession, pressing this key again can stop generator immediately. ◆Pressing this key can cancel the setting and back to upper class under edition. ◆Parameters to be saved under value checking page.
	Manual	◆Pressing this key will set the module into manual mode. ◆Under display mode, parts of the page can move down. ◆Under edition mode, to move the digit or decrease the numbers.
	Auto	◆Pressing this key will set the module into auto mode. ◆Under display mode, parts of the page can move up. ◆Under edition mode, to move the digit or increase the numbers.
	Page Change	◆Change the display page. ◆Under display mode, Confirm the change under edition mode.

3. Parameter setting

◆ Enter the edition page

Please set the parameters according to below steps:

1）In the stop mode, please  and  simultaneously, then loose, Then system comes into menu setting.

2）Press  to shift up the parameters, press  to shift down the parameters, press  to get into parameter changing page.

3）Press  to add number, press  to reduce number, press  cancel. The value can be increased or decreased continuously when pressing the button continuously. Press  to confirm the value modification.

4）Under display mode，press  to exit and save data.

Note: the data can not be saved if the user didn't press STOP to confirm the setting.

◆ **Parameter setting**

No	Parameter	Range ***(default)***	Notes
0	CT rate	5-6000A/5A(***500A/5A***)	Used for setting genset CT primary current, secondary rated current 5A.
1	Flywheel teeth	0-300***(0)***	If the setting is 0, (RPM sensor Disabled), then RPM is resulted by Hz.
2	AUX. INPUT 1 (Functional of PIN 8)	0-Disable. ***1-Emergency stop.*** 2-Remote start switch. 3-Low oil pressure alarm switch. 4-High Coolant temperature alarm switch. 5-High oil temperature alarm switch. 6-Low fuel level warning switch. 7-Low water level alarm switch.	Choose the programmable input 1, only for switch value input
3	AUX. INPUT 2 (Functional of PIN 15)	0-Disable. 1-Emergency stop. 2-Remote start switch. 3-Low oil pressure alarm switch. 4-High Coolant temperature alarm switch. 5-High oil temperature alarm switch. 6-Low fuel level warning switch. 7-Low water level alarm switch. 8-9 Reserved. ***10- Oil pressure sensor VDO 0-10BAR.*** 11- Oil pressure sensor DATCON 10Bar 12- Oil pressure sensor 3015237 10Bar 13- Oil pressure sensor User-defined(PC to configure）	Choose programmable input 2, switch value input or sensor simulation value input are available; if the sensors of users are not in the list, please self-define the sensor's resistance by connecting with PC.
4	AUX. INPUT 3 (Functional of PIN 16)	0-Disable. 1-Emergency stop. 2-Remote start switch. 3-Low oil pressure alarm switch. 4-High Coolant temperature alarm switch. 5-High oil temperature alarm switch. 6-Low fuel level warning switch. 7-Low water level alarm switch. 8-9 Reserved. ***10- Coolant temperature sensor VD0 40℃—120℃.*** 11- Coolant temperature sensor Datcon High. 12- Coolant temperature sensor 3015238	Choose programmable input 3, switch value input or sensor simulation value input are available; if the sensors of users are not in the list, please self-define the sensor's resistance by connecting with PC.

		13- Coolant temperature sensor MEBAY-Mier. 14- Coolant temperature sensor User-defined (PC to configure）	
5	Action if oil pressure sensor disconnected	*0-* Disable ***1- Enable***	Action if oil pressure sensor disconnected.
6	Action if Coolant Temp. sensor disconnected	*0-* Disable ***1- Enable***	Action if Coolant temperature sensor disconnected.
7	AUX. OUTPUT 1(Functional of PIN 5)	0-6 ***(3. Public alarm output)***	**0. Disable.** **1. E.S.T. hold:** shutdown output, it is used for gens with stop solenoid. when the setting value of shutdown delay is over, then it is off. **2. Idle speed control:** used for speed controller, there is output under idle but no output under high speed. **3. Public alarm output:** when there is any alarm output, alarm locks till revert back. **4. Preheat:** preheat output before start. **5. Close generator;** **6. Choke control:** choke will be started after crank success and off after delay.
8	AUX. OUTPUT 2(Functional of PIN 6)	*0-6* ***(4. Preheat)***	
9	Manual crank times	1-30***(1 time)***	Crank times under mode and test mode.
10	Auto start crank times	1-30***(3 times)***	Crank times under auto mode.
11	Auto mode E.T.S. hold times	1-3 ***(2 times)***	The max E.T.S. hold on power shall be canceled once stop success under auto mode . The output interval time is " Fail to stop ".
12	Crank disconnect	**0.** RPM **1.** Hz ***2. RPM/Frequency*** **3.** RPM/Oil Pressure **4.** Frequency/Oil Pressure **5.** RPM/Freq./Oil Pressure	Either of the conditions can be acceptable as crank condition. But all of them should be meet together to regard as stop condition.
13	RPM disconnect	350-999RPM***(380RPM）***	When the engine RPM is over the condition value, then system regards it as crank success, motor escaped.
14	Frequency disconnect	10.0~40.0Hz ***(21.0Hz)***	When the gens frequency is over the condition value, then system regards it as crank success.
15	Oil pressure disconnect	0.1~10.0Bar ***(2.0Bar)***	When the engine oil pressure is over the condition value, then system regards it as crank success, motor escaped.
16	E.T.S. hold time	0~240s ***(10s)***	Stop solenoid on power time.
17	Start delay	0~240s ***(5s)***	The time during the genset starts after the remote start signal is valid.
18	Preheat time	0~240s ***(2s)***	The time needed to be preheat before the starter on power.
19	Cranking time	3~60s ***(10s)***	The time when the starter is on power.
20	Crank rest time	3~60s***(10s)***	If crank failure, the waiting time before the second test time.
21	Safety delay	1~60s ***(8s)***	Low oil pressure, high coolant temperature, under speed, under frequency, under voltage, charge failure are all invalid during this time except for emergency stop ,over speed and emergency stop.

22	Idle time	0~240s ***(5s)***	Idle running time when crank successfully and before engine stop.
23	Cooling time	0~999s ***(30s)***	After unloading, the time of cooling down by radiator before stop. during the delay, if the remote start signal is valid, then genset will come into rated running.
24	Fail to stop	10~60s ***(60s)***	If the RPM, frequency and oil pressure is 0 during the stop failure time, then the stop failure time is no needed.
25	Emergency delay	0-10s***(1s)***	Emergency, over speed and over frequency alarm delay.
26	Normal alarm delay	2-20s***(5s)***	The alarm delay except for Emergency, over speed and over frequency alarm.
27	Over current 【inverse time】	0.1-36.0 ***(36.0)***	This option will not take effect until the [D-Over phase current delay] is set to 0. The overcurrent delay is inverse time, and the formula is T=t/((IA/IT) -1)^2.
28	Oil pressure delay	0-3s ***(1s)***	When the crank condition contains oil pressure, if the oil pressure is higher than the preset value and continue for few seconds, then it is regarded as crank success.
29	Choke close delay	0~999s ***(10s)***	The choke close delay after crank success.
30	Gens AC system	0-2 Poles ***1-4 Poles*** 2-6 Poles 3-8 Poles	When the flywheel teeth is set as 0,the RPM will be resulted by frequency. Pole 2: 50Hz---3000RPM.Pole 4: 50Hz---1500RPM.Pole 6: 50Hz---1000RPM.Pole 8: 50Hz---750RPM
31	Low oil pressure alarm	0.1~10.0Bar***(1.0Bar)***	When the oil pressure is lower than the alarm value and comes into low oil pressure delay but still lower (normal alarm delay), then low oil pressure alarms. if the value is set as 0.1, then the low oil pressure alarm is disabled.
32	High coolant temperature alarm	50~150℃***(95℃)***	When the water temperature is higher than the alarm value and comes into high temperature delay but still higher (normal alarm delay), then high temperature alarms. if the value is set as 150, then the high temperature alarm is disabled.
33	Under battery voltage warning	0~28.0V ***(8.0V)***	When the battery input is lower than the warning value and comes into under battery voltage delay but still lower (normal alarm delay), then under battery voltage warns. **If the value is set as 0, when coming into parameters setting, then all the parameters can be set as defaults.**
34	Over freq alarm	50.0~70.0Hz ***(57.0Hz)***	When the RPM is higher than the alarm value and comes into over speed delay but still higher(emergency delay), then over speed alarms. if the value is set as 70.0, then the over speed alarm is disabled.
35	Under freq alarm	0~60.0Hz ***(30.0Hz)***	When the Freq is lower than the value and comes into under freq delay but still lower (emergency delay), then under frequency alarms. If the value is set as 0, then the alarm is disabled.
36	Over voltage alarm	100~500V ***(260V)***	When the voltage is higher than the value and comes into over voltage delay but still higher (normal alarm delay), then over voltage alarms. If the value is set as 500,

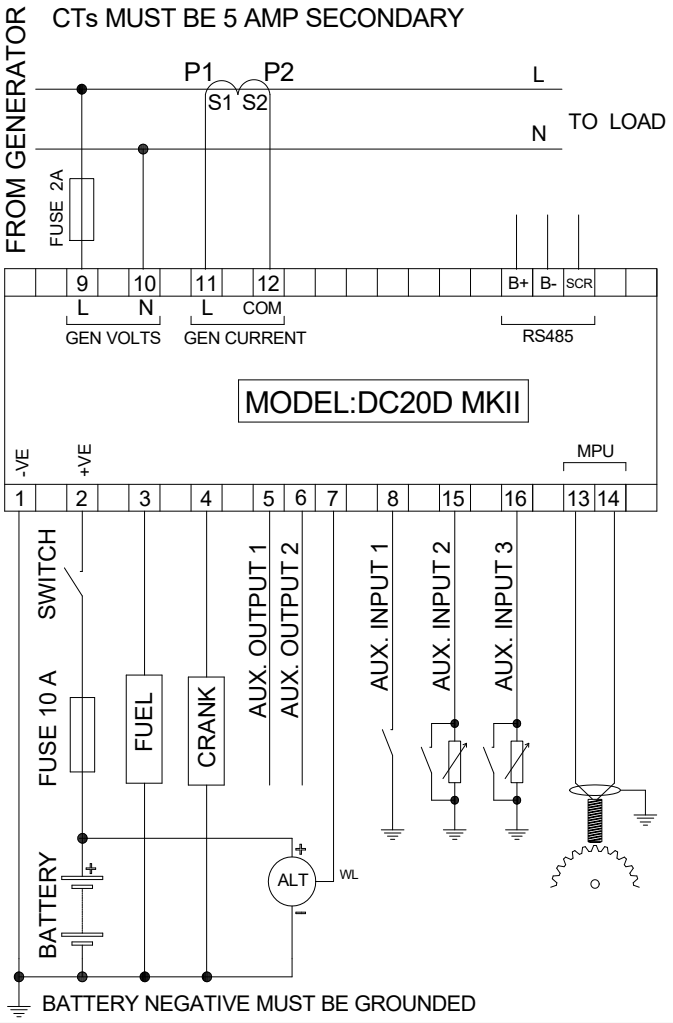
			then the alarm is disabled.
37	Under voltage alarm	50~380V ***(100V)***	When the voltage is lower than the value and comes into under voltage delay but still lower (normal alarm delay), then under voltage alarms. If the value is set as 0, then the alarm is disabled.
38	Under volts/ Under speed/ Under freq. in Manual Mode	0-Disable ***1-Enable***	Choose if you need to start these functions under manual mode
39	Primary Modes	***0-STOP*** 1-Manual 2-Auto 3-Auto save	The primary modes on power, easy for user operation. Note: auto record function can not record the mode with load.
A	Over speed alarm	0~4500RPM ***(1710RPM）***	When the RPM is higher than the alarm value and comes into over speed delay but still higher(emergency delay), then over speed alarms. if the value is set as 4500, then the over speed alarm is disabled.
B	Under speed alarm	0~4500RPM ***(1200RPM）***	When the RPM is lower than the alarm value and comes into under speed delay but still lower (normal alarm delay), then under speed alarms. if the value is set as 0, then the under speed alarm is disabled.
C	Over current alarm	1-2000A ***(500A)***	When the current is higher than the value and comes into over current delay but still higher (over current delay), then over current alarms. If the value is set as 2000, then the alarm is disabled.
D	Over phase current delay	0-3600.0s**(1296s)**	When this parameter is set to 0, the over current delay is the inverse time; if not, the over current delay is the time set for this parameter.
E	485 baud rate	0-4800 1-9600 ***2-19200*** 3-38400 4-57600 5-115200	RS485 communication baud rate selection.
F	485 CRC setting	0-CRC L_H ***1-CRC H_L***	Sequence selection of RS485 communication protocol CRC;

4. Alarm code

Code	Meaning	Code	Meaning
ALA.01	Emergency stop alarm	ALA.13	Pressure sensor disconnected alarm
ALA.02	Over speed alarm	ALA.14	Coolant temperature sensor disconnected alarm
ALA.03	Under speed alarm	ALA.15	Over frequency alarm
ALA.04	Low oil pressure alarm-sensor	ALA.16	Under frequency alarm
ALA.05	Low oil pressure alarm-switch	ALA.17	Over voltage alarm
ALA.06	High coolant temperature alarm-sensor	ALA.18	Under voltage alarm
ALA.07	High coolant Temperature alarm-switch	ALA.19	Over current alarm
ALA.08	High oil temperature alarm-switch	ALA.20	Start failure alarm
ALA.09	Low fuel level warning-switch	ALA.21	Stop failure alarm-RPM

ALA.10	Low coolant level alarm-switch	ALA.22	Stop failure alarm-Frequency
ALA.11	Speed lost alarm	ALA.23	Stop failure alarm-Oil pressure sensor
ALA.12	Low battery voltage warning	ALA.24	Stop failure alarm-Oil pressure switch

5. Typical diagram



DIMENSIONS	PANEL CUTOUT
78×78×55mm(3.1” ×3.1” ×1.65”)	67×67mm(2.65”×2.65”)

Warning:

Please don’t move battery during running status or it may cause the controller broken.

Notes: