


Data in these instructions is for use on the controller and provides brief operation guidelines, for greater details please refer to the standard operation Manual

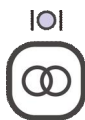
I、 Controller size:


Module Dimensions	Panel Cutout
W264mm×H198mm×D41.5mm	W220mm×H160mm


II、 Parameter setting method:

1、 Primary key


- 


Used to opening and closing for power generation in manual mode
- 


Used to opening and closing for Mains in manual mode
- 


Generator start button/LED
- 

Shutdown / Reset / LED

- 

AUTO Mode Button / LED
- 


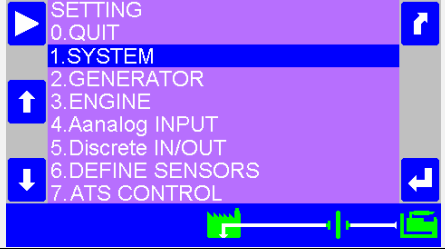



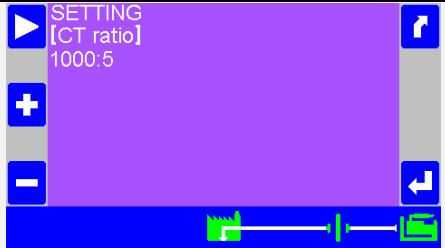




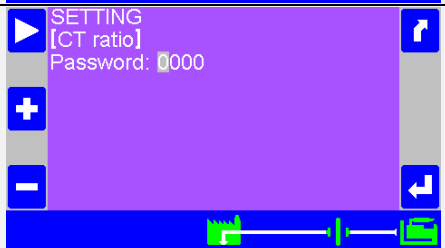
MAN Mode Button / LED
- 







TEST Mode Button / LED
- 

Scroll Button /Parameter settings enter and exit Button

2、 Setting method:

FOR EXAMPLE: (SETTING CT RATIO AT 500: 5, THEN CT SHOULD BE CONFIGURED AS 500)

Operation	Description
Press and hold  2sec, enter into parameters setting menu, then LCD displays	
Press  once, press  6 times again, then press  once, LCD displays:	
Press  or  prompted enter password, the modify password is: 1111, press  or  button to modify:	

<p>Press “” or “” to change parameters, this time modified to 500, LCD then display:</p>	
<p>Press “” to confirm, then press “” button to return, or press and hold “” 2sec quit settings mode.</p>	

III、 Parameters Setting:

1、 SYSTEM

NO.	Items	Preset	NO.	Items	Preset
1.1	Language	0	1.14	I4 type	Not used
1.2	Password		1.15	Display brightness	5
1.3	Pressure unit	0	1.16	Saving brightness	1
1.4	Temperature unit	0	1.17	Auto scroll time	Not used
1.5	Comm. address	1	1.18	Starting alarm	0
1.6	Startup mode	0	1.19	Mutual standby	Not used
1.7	CT ratio	1000:5	1.20	Mutual-S time	Not used
1.8	PT ratio	1.0:1	1.21	CB close pulse	Continuous
1.9	Rated voltage	230 V	1.22	Reset to MAN	0
1.10	Rated current	1000 A	1.23	Clear event log	
1.11	Rated active power	500 kW	1.24	Default settings	
1.12	Rated reactive power	400 Kvar	1.25	Firmware Update	
1.13	Voltage type	1			

2、 GENERATOR

NO.	Items	Preset	NO.	Items	Preset
2.1	GEN V-monitor type	1	2.14	GEN-KW over 2	120%
2.2	GEN-V under 1	90%	2.15	Reverse Power 1	-5%
2.3	GEN-V under 2	85%	2.16	Reverse Power 2	-10%
2.4	GEN-V over 1	115%	2.17	Phase rotation	CW
2.5	GEN-V over 2	120%	2.18	Lagging PF	+0.90
2.6	GEN-Hz under 1	48.0Hz	2.19	Leading PF	-0.90
2.7	GEN-Hz under 2	45.0Hz	2.20	GCB close	NO
2.8	GEN-Hz over 1	55.0Hz	2.21	GCB open	NO
2.9	GEN-Hz over 2	57.0Hz	2.22	GEN. loading Volt	90%
2.10	GEN-I over 1	110%	2.23	GEN. loading Hz	48.0Hz
2.11	GEN-I over 2	115%	2.24	GEN. on delay	5S
2.12	Ground fault	10%	2.25	Test mode	Unload
2.13	GEN-KW over 1	110%	2.26	Soft unload time	1S

3、ENGINE

NO.	Items	Preset	NO.	Items	Preset
3.1	Engine type	1	3.24	Pre-heat mode	1
3.2	ECU type	4	3.25	Pre-heat time	3 S
3.3	Engine rated speed	1500 RPM	3.26	Safety-on delay	10 S
3.4	MPU input	NO	3.27	Cool down mode	Idle
3.5	Fly wheel teeth	120	3.28	Cool down time	300S
3.6	Set pickup now	/	3.29	Stop time	20S
3.7	Pair of poles	2	3.30	EX. Crank permit	NO
3.8	Fuel mode	N.C	3.31	Charge failure	8.0 V
3.9	Start delay	10S	3.32	Pickup signal	2
3.10	Crank attempts	3	3.33	Overspeed level1	1600 RPM
3.11	Critical C-attempt	6 times	3.34	Overspeed level2	1710 RPM
3.12	Crank time	5S	3.35	Underspeed level1	1440RPM
3.13	Crank time add	Not used	3.36	Underspeed level2	1350 RPM
3.14	Crank pause time	15S	3.37	Start failure	6
3.15	Ignition speed	200 RPM	3.38	Stop failure	3
3.16	Ignition start DLY	5S	3.39	Batt. Overvolt	35.0 V
3.17	Gas valve on DLY	5S	3.40	Batt. Undervolt	8.0 V
3.18	Crank cutout RPM	300 RPM	3.41	Maintenance hours	1000
3.19	Crank cutout volt	85%	3.42	Maintenance days	2
3.20	Crank cutout ALT-V	Not used	3.43	ECU Data fail	2
3.21	Crank cutout Oil-P	2.2	3.44	ECU Warning	2
3.22	Crank cutout P-DLY	Not used	3.45	ECU Shutdown	6
3.23	Idle time	Not used	3.46	Water in fuel	2

4、Analog INPUT

NO.	Items	Preset	NO.	Items	Preset
4.1	P-sensor type	4	4.31	Cooler1 off level	70℃
4.2	Oil-P low level1	1.4Bar	4.32	AUX sensor2 use	2
4.3	Oil-P low level2	1.1Bar	4.33	AUX sensor2 type	15
4.4	T-sensor type	3	4.34	AUX2 low P level1	1.4Bar
4.5	High temp. level1	92℃	4.35	AUX2 low P level2	1.1Bar
4.6	High temp. level2	100℃	4.36	AUX2 high P level1	7.0Bar
4.7	Heater on level	50℃	4.37	AUX2 high P level2	8.0Bar
4.8	Heater off level	60℃	4.38	AUX2 low T level1	60℃
4.9	Cooler on level	80℃	4.39	AUX2 low T level2	50℃
4.10	Cooler off level	70℃	4.40	AUX2 high T level1	90℃
4.11	Fuel sensor1 type	3	4.41	AUX2 high T level2	100℃
4.12	Low fuel level1	20%	4.42	Heater2 on level	50℃
4.13	Low fuel level 2	10%	4.43	Heater2 off level	60℃
4.14	High fuel level1	90%	4.44	Cooler2 on level	80℃
4.15	High fuel level2	100%	4.45	Cooler2 off level	70℃
4.16	Fuel pump ON	20%	4.46	AUX sensor3 use	2
4.17	Fuel pump OFF	70%	4.47	AUX sensor3 type	15
4.18	AUX sensor1 use	1	4.48	AUX3 low P level1	1.4Bar
4.19	AUX sensor1 type	4	4.49	AUX3 low P level2	1.1Bar
4.20	AUX1 low P level1	1.4Bar	4.50	AUX3 high P level1	7.0Bar
4.21	AUX1 low P level2	1.1Bar	4.51	AUX3 high P level2	8.0Bar
4.22	AUX1 high P level1	7.0Bar	4.52	AUX3 low T level1	60℃
4.23	AUX1 high P level2	8.0Bar	4.53	AUX3 low T level2	50℃
4.24	AUX1 low T level1	60℃	4.54	AUX3 high T level1	90℃
4.25	AUX1 low T level2	50℃	4.55	AUX3 high T level2	100℃
4.26	AUX1 high T level1	90℃	4.56	Heater3 on level	50℃
4.27	AUX1 high T level2	100℃	4.57	Heater3 off level	60℃
4.28	Heater1 on level	50℃	4.58	Cooler3 on level	80℃
4.29	Heater1 off level	60℃	4.59	Cooler3 off level	70℃
4.30	Cooler1 on level	80℃			

5、 Discrete IN/OUT

NO.	Items	Preset	NO.	Items	Preset
5.1	D-Input 1 config	6	5.13	Relay 1 Config	2
5.2	D-Input 2 config	2	5.14	Relay 2 Config	1
5.3	D-Input 3 config	3	5.15	Relay 3 Config	Not used
5.4	D-Input 4 config	4	5.16	Relay 4 Config	Not used
5.5	D-Input 5 config	1	5.17	Relay 5 Config	Not used
5.6	D-Input 6 config	1	5.18	Relay 6 Config	Not used
5.7	D-Input 7 config	1	5.19	Relay 7 Config	Not used
5.8	D-Input 8 config	1	5.20	Relay 8 Config	Not used
5.9	D-Input 9 config	1	5.21	Relay 9 Config	Not used
5.10	D-Input 10 config	1	5.22	Relay 10 Config	Not used
5.11	D-Input 11 config	1	5.23	Relay 11 Config	Not used
5.12	D-Input 12 config	1	5.24	Relay 12 Config	Not used

7、 ATS CONTROL

NO.	Items	Preset	NO.	Items	Preset
7.1	M V-monitor type	1	7.14	MCB open	5S
7.2	M V low alarm	90%	7.15	Current type	0
7.3	M V low Return	95%	7.16	Prohibit return	0
7.4	M V High alarm	115%	7.17	M fail G to load	0
7.5	M V High Return	110%	7.18	M KW over alarm	120%
7.6	M Hz low alarm	45.0Hz	7.19	M KW o-ALM.delay	5S
7.7	M Hz low Return	48.5Hz	7.20	M KW o-ALM.ACT.	0
7.8	M Hz High ALM	57.0Hz	7.21	M A over alarm	115%
7.9	M Hz High Return	52.0Hz	7.22	M A o-ALM.delay	5S
7.10	M alarm delay	5S	7.23	M A o-ALM.ACT.	0
7.11	M on delay	5S	7.24	M normal type	0
7.12	Transfer time	0S	7.25	AMF mode	1
7.13	MCB close	5S			

8、 SCHEDULER

NO.	Items	Preset	NO.	Items	Preset
8.1	DATE/ TIME		8.13	2nd Scheduler mode	Unload
8.2	Scheduler period	1	8.14	2nd Start time	HH:MM
8.3	1st Scheduler mode	Unload	8.15	2nd Run duration	60
8.4	1st Start time	HH:MM	8.16	2nd MON active	0
8.5	1st Run duration	60	8.17	2nd TUE active	0
8.6	1st MON active	0	8.18	2nd WED active	0
8.7	1st TUE active	0	8.19	2nd THU active	0
8.8	1st WED active	0	8.20	2nd FRI active	0
8.9	1st THU active	0	8.21	2nd SAT active	0
8.10	1st FRI active	0	8.22	2nd SUN active	0
8.11	1st SAT active	0	8.23	Data log period	Not used
8.12	1st SUN active	0			

10、 SPEED CONTROL

NO.	Items	Preset	NO.	Items	Preset
10.1	Proportional gain	10.0	10.5	Time pulse minimum	0.2
10.2	Integral gain	1.0	10.6	Raise rate	5
10.3	Derivative ratio	1.0	10.7	Lower rate	5
10.4	Deadband	0.2			

11、 Send SMS

NO.	Items	Preset	NO.	Items	Preset
11.1	Telephone 1 NO.	Not used	11.11	F-pump ON SMS	0
11.2	Telephone 2 NO.	Not used	11.12	F-pump OFF SMS	0
11.3	Telephone 3 NO.	Not used	11.13	Shutdown alarm SMS	1
11.4	Power up SMS	0	11.14	Warn SMS	1
11.5	Engine start SMS	0	11.15	Maintenance SMS	0
11.6	Engine stop SMS	0	11.16	Alarms SMS count	3
11.7	Mains failure SMS	0	11.17	Alarms SMS period	5
11.8	Mains return SMS	0	11.18	Warn SMS count	3
11.9	Warn reset SMS	0	11.19	Warn SMS period	5
11.10	Alarm reset SMS	0			

Menu descriptions:

I Voltage input type

Code	Define Voltage type	Code	Define Voltage type	Code	Define Voltage type
1	"Y" 3P4W	2	"△" 3P4W	3	3P3W
4	2P3W	5	1P2W		

I Sensor type definition

Code	Temperature sensor Type	Oil sensor type
1	Close for HET switch (low level is active)	Close for LOP (low level is active)
2	Open for HET switch (high level is active)	Open for LOP (high level is active)
3	VDO120℃	VDO 5 bar
4	VDO150℃	VDO 10 bar
5	Datcon	Datcon 7 bar
6	Murphy	Murphy 7 bar
7	Pt100	Note: 7-13 is defined and a custom project, details please refer to the instruction for use.
8	Note: 8-14 is defined and a custom project, details please refer to the instruction for use.	
14		0-5V
15	0-5V	4-20mA
16	4-20mA	
17	PT100-850	Only in AIN2 / AIN3 Port input
18	K- Galvanic	
19	J- Galvanic	

I D-input definition

Code	Config output type	Code	Config output type	Code	Config output type	Code	Config output type
0	Not used	8	GEN closed auxiliary	16	Alarm mute	24	Stop button
1	User configured	9	Low fuel switch	17	Alarm reset	25	Start button
2	Oil pressure switch	10	Lamp test	18	Prohibit return	26	Reserve
3	Temp. high switch	11	Lower speed limit	19	Mutual standby	27	Reserve
4	Emergency stop	12	Raise speed limit	20	Panel lock	28	Reserve
5	Remote start off load	13	Air-flap Closed	21	Activate AUTO mode	29	Reserve
6	Remote start with	14	Pre-heat temp. switch	22	Activate MAN mode	30	Reserve
7	Mains closed auxiliary	15	Critical mode	23	Activate TEST mode	31	Inhibit Genset
						32-41	User configured

I Relay output definition

Code	Config output type	Code	Config output type	Code	Config output type	Code	Config output type
0	Not used	31	Underspeed level1	62	Loss of pickup	93	AUX2 low level1
1	Crank	32	Underspeed level2	63	Scheduled run	94	AUX2 low level2
2	Fuel	33	Overspeed level1	64	Blinds control	95	AUX2 high level1
3	Gas valve	34	Overspeed level2	65	Cooler control	96	AUX2 high level2
4	Ignition	35	Oil-P low level1	66	Cooler1 control	97	ECU water in fuel
5	Shutdown alarm	36	Oil-P low level2	67	Cooler2 control	98	D-Input 1 alarm
6	Warning	37	High temp. level1	68	Heater control	99	D-Input 2 alarm
7	Idle	38	High temp. level2	69	Heater1 control	100	D-Input 3 alarm
8	Preheat output	39	Fuel low level1	70	Heater2 control	101	D-Input 4 alarm
9	Speed raise	40	Fuel low level2	71	GCB open	102	D-Input 5 alarm
10	Speed lower	41	GEN-V under 1	72	MCB open	103	D-Input 6 alarm
11	Fuel pump control	42	GEN-V under 2	73	Mains V low alarm	104	D-Input 7 alarm
12	Genset running	43	GEN-V over 1	74	Mains V high alarm	105	D-Input 8 alarm
13	Auto mode	44	GEN-V over 2	75	Mains Hz low alarm	106	D-Input 9 alarm
14	Test mode	45	GEN-Hz under 1	76	Mains Hz high alarm	107	D-Input 10 alarm
15	Man mode	46	GEN-Hz under 2	77	Mains alarm	108	D-Input 11 alarm
16	Maintenance	47	GEN-Hz over 1	78	Mains overload	109	Reserve
17	MCB fail to close	48	GEN-Hz over 2	79	Mains overcurrent	110	Reserve
18	GCB fail to close	49	GEN-I over 1	80	Soft unload	111	Reserve
19	Fail to start	50	GEN-I over 2	81	Off load	112	Reserve
20	Fail to stop	51	GEN-KW over 1	82	Cooler3 control	113	Reserve
21	Mains	52	GEN-KW over 2	83	Heater3 control	114	Mains power supply
22	GEN close/open	53	Idle 1	84	Emergency stop	115	AUX3 low level1
23	Audible alarm	54	Idle 2	85	Reserve	116	AUX3 low level2
24	Cooling down	55	Reserve	86	Reserve	117	AUX3 high level1
25	CAN data fail	56	Reserve	87	Reserve	118	AUX3 high level2
26	ECU warming	57	Reserve	88	D-Input 12 alarm	119	Fuel high level1
27	ECU alarm	58	Reserve	89	AUX1 low level1	120	Fuel high level2
28	Charge failure	59	Reserve	90	AUX1 low level2		
29	Batt over volt	60	Mutual standby	91	AUX1 high level1		
30	Batt under volt	61	Oil-P sensor open	92	AUX1 high level2		

IV、 Typical Wiring Diagram:

