ERiC DRiVE®
AC MOTOR SPEED CONTROLLER
DC/AC PURE SINEWAVE INVERTER

利佳興業股份有限公司
RICH ELECTRIC CO.,LTD.
TEL:886-6-3840088 FAX:886-6-3840083
E-Mail：richelec-2@hibox.hinet.net

30KW/380VAC/300~450VDC

Grid-Connected Bidirectional Inverter

USER MANUAL

e 9
03 6169
e 9
03 6170

ISO 9001
No:119764

CE Mark
Safety Approved

C-Tick Mark
Safety Approved

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一、 Specification

MODEL		SDC-30K
Rating	Rated Output Capacity KW	30KWA
	Rated Output Current (DC) A	80A
	Rated Input Current (AC) A	85A
	Rated Output Voltage	300-450VDC
Input Power Supply	Voltage/Frequency	380V to 460 VAC at 50/60 Hz
	Allowable Voltage Fluctuation	+10% to -15%
	Allowable Frequency Fluctuation	±3Hz/300ms
Control Characteristics	Control Method	Sine wave PWM method
	Input Power Factor	0.95 or more
	Output Voltage Accuracy	±10%
	Overload Capacity	150% of rated current per minute
Constant Setting		Using the digital operator
Protective Function	Instantaneous Overcurrent	Stops at approx. 200% of the input current
	Overload	Stops after 1 minute at 150% of rated current
	Undervoltage (Output)	Stops at approx. 200 VDC or less
	Undervoltage (input)	Stops at approx. 300 VAC or less
	Overvoltage	Stops at approx. 500VAC or less
	Fin Overheat	Protected by thermistor
	Ground Fault	Protected by electronic circult
	Power Frequency Error	Stops at fluctuation of more than ±3 Hz of rated input frequency
Environmental Conditions	Location	Indoors(Protected from corrosive gases and dust)
	Ambient Temperature	-10℃ to +55℃
	Humidity	90% RH or less (no condensation)
	Vibration	9.8m/s^2 at less then 20 Hz, up to1.96m/s^2 at 20 Hz to 50Hz

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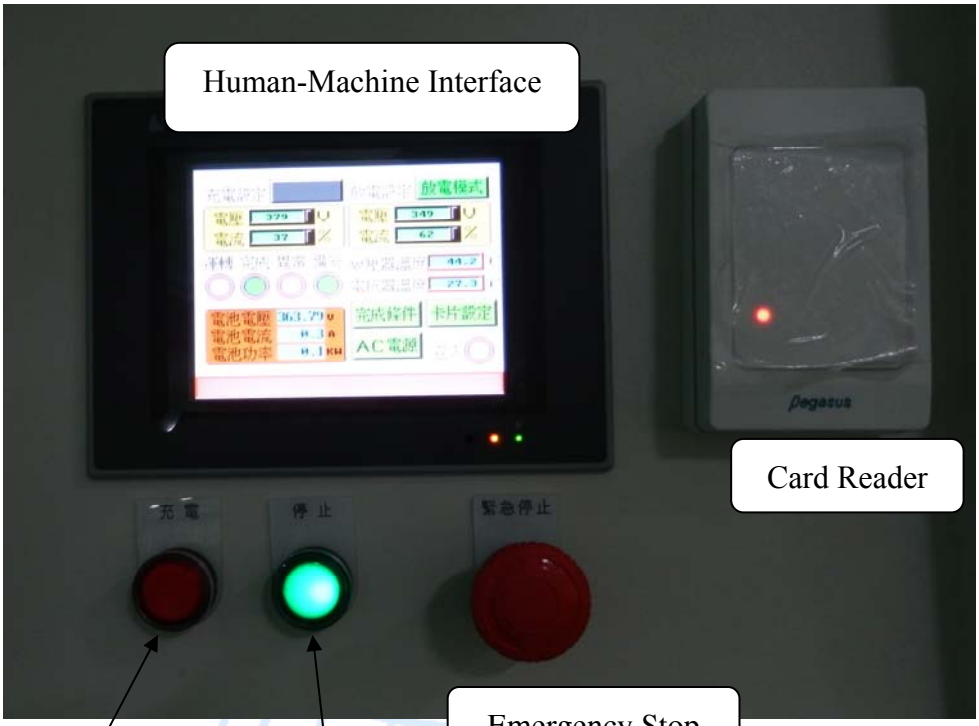
Front Panel



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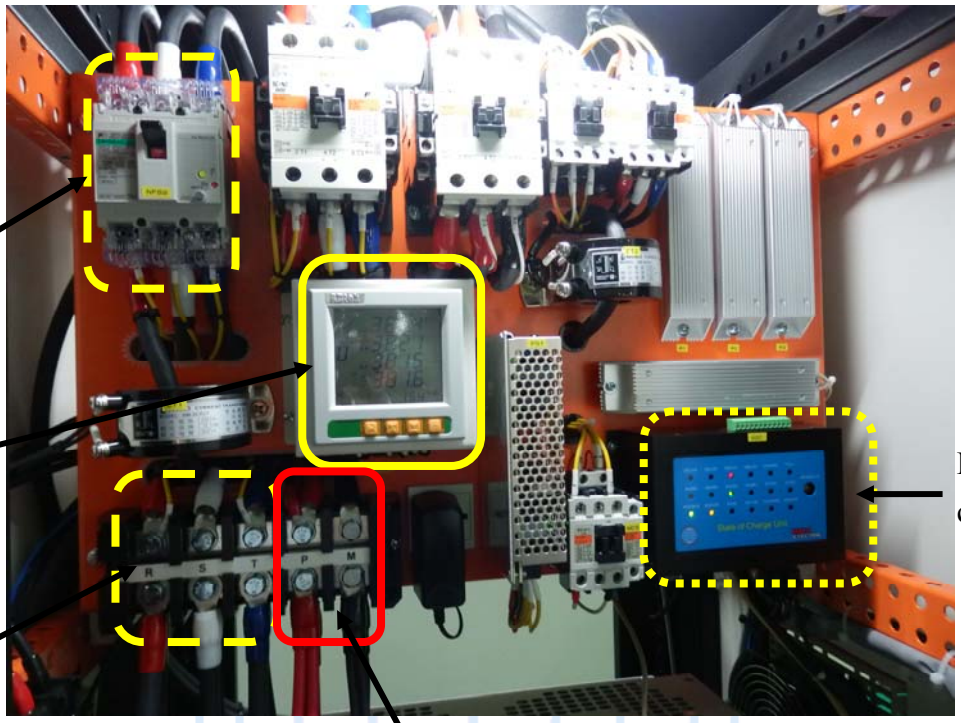
Interior Layout-Upper Part



(α)
Main Power
Breaker

3-Phase AC
Power Meter

(β)
3-Phase 380V
Input Power
Terminal

DC voltage/
current detector

(γ)
Battery Terminal

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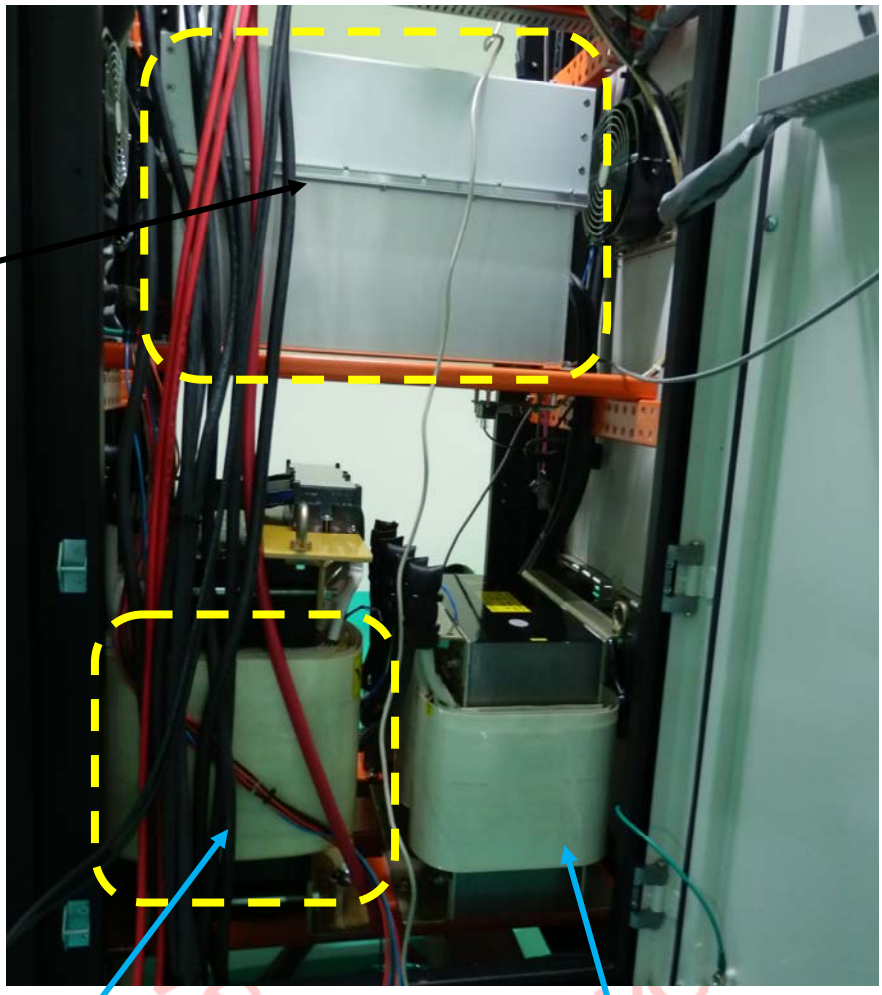
Interior Layout-Lower Part



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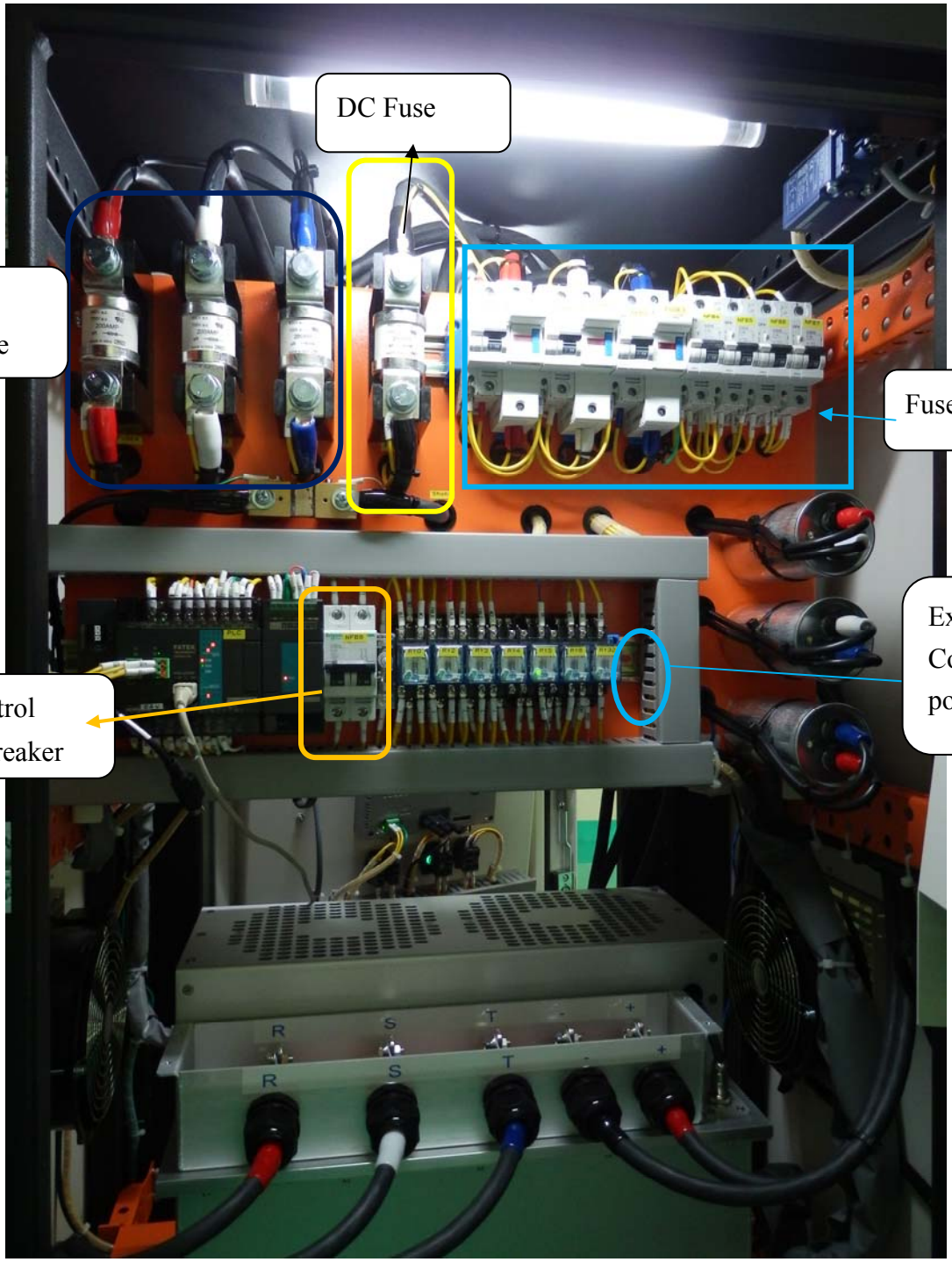
Rear Panel-Upper Part



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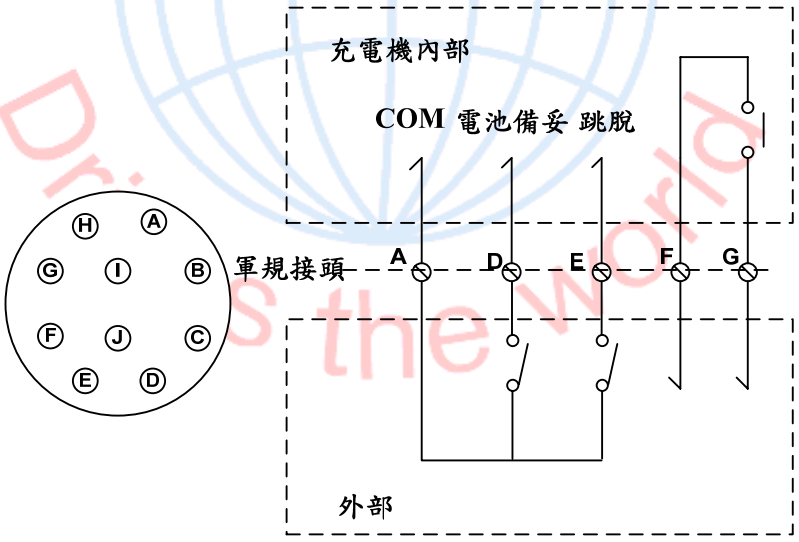
Rear Panel-Lower Part

Side

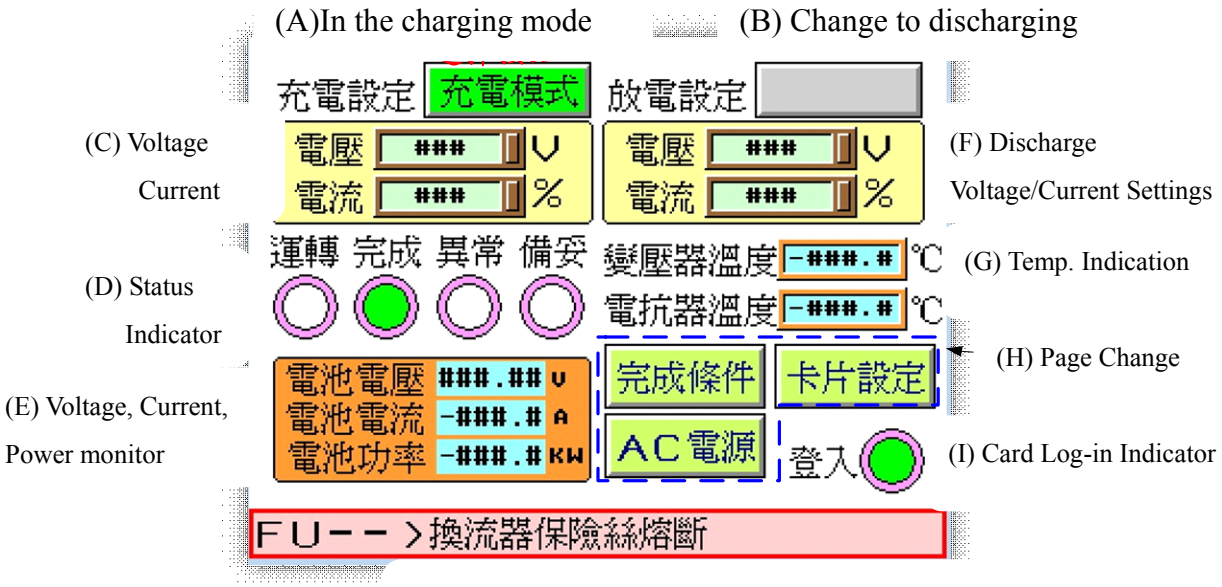
Terminal Description:



1. D and A should be closed for the inverter operation
2. E and A are short circuit when external fault is input
3. F and G are for Inverter ready signal (dry contact)

Human-Machine Interface

Display 1

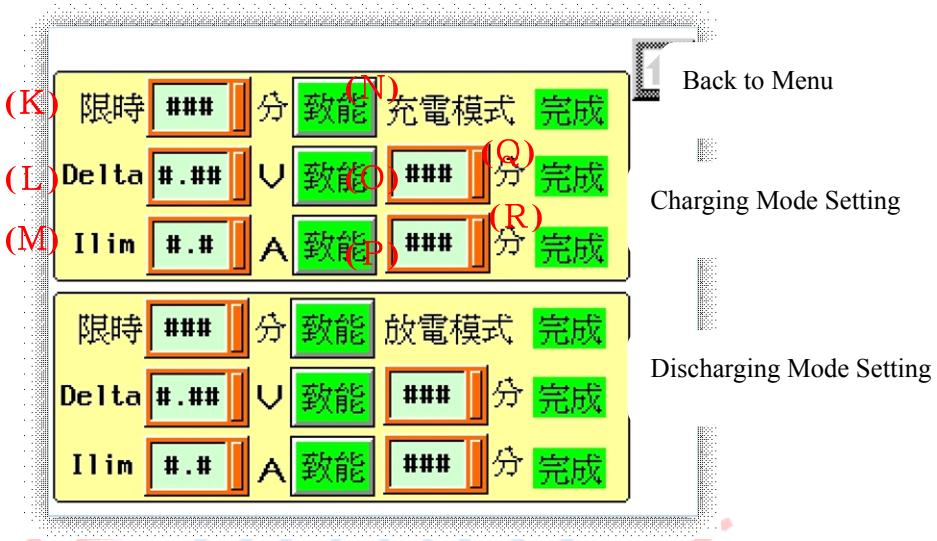


(J) Error Message Display

Operation Steps:

1. Connect the DC terminals：Pay attention to the correct connection and fault messages display.
2. Switch on the main power breaker.
3. Switch on the control power breaker.
4. Choose (A) or (B) for Charging or Discharging mode.
5. Set (C) or (F) Voltage/Current. In the charging mode, press (A) first and then set (C)
6. In the discharging mode, press (B) and then set (F)
7. Complete the settings (Display 2)
8. Card Reader for log-in
9. Press the Start key

Display 2



After setting all the conditions on 1st display, it goes to the 2nd display.

In charging mode, the operation steps

1. Timer Function

- Press (N) to enable the timer function.
- Set the timer in the unit of minute in (K).
- In the charging mode, the time set in (K) limits the time and when it is finished, the “complete” on the right side shows.

2. CV Function

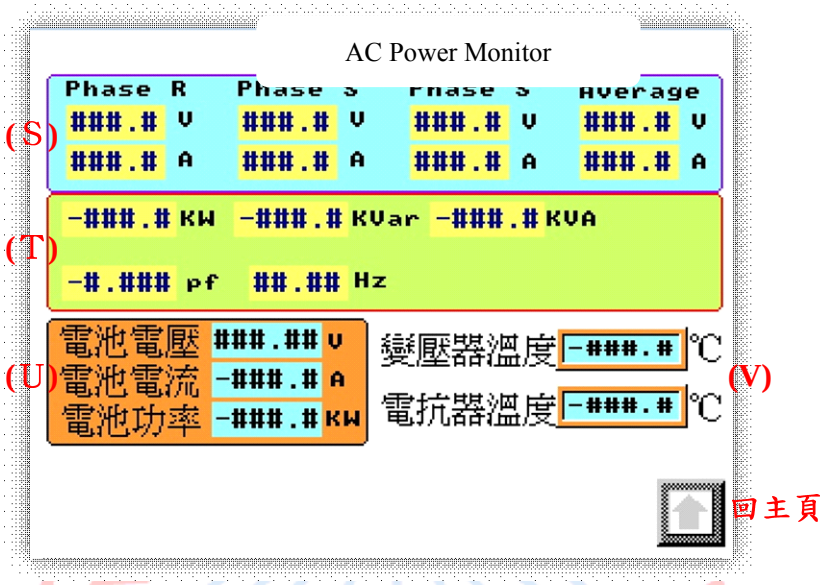
When battery voltage is ≧ setting voltage－(L)Delta and continues for (Q) minutes，the completed status will be displayed when it is finished.

3. The minimum current

When the battery current is ≦(M)Ilim and continues for (R) minutes，the completed status will be displayed when it is finished.

The operation in the discharging mode is the same as in the charging mode

Display 3



Press AC Power on the Menu page to go to this page

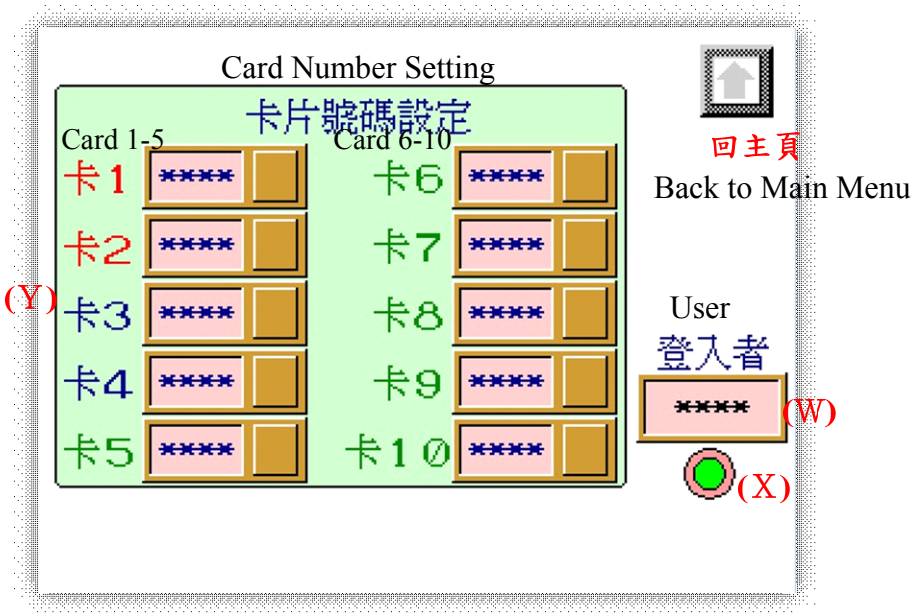
(S) The voltage, current, balanced voltage and current in each phase out of the three phase AC power

(T) Efficiency, power, apparent power, power factor, frequency Hz

(U) Battery voltage, current and status indicator

(V) Transformer and choke temperature

Display 4



Press “Card setting” on the menu page, and then enter the password.

Introduction:

Using this setting to control the personnel of operating the machine; please use the new card to swipe the card machine, then the user password will display on W, if the password has stored in Y (the maximum 10 sets), then the X light will be light in green. If not, then please set the user code (W) into card 1~10 column.

Protocol

Protocol 9600 baud, No parity, 8bits data, 1stop bit, MODBOS RTU, Address=1

Address	Name	Range	W/R
6010	Charging Voltage Setting	300V~450V	W
6011	Charging Current Setting	1~100%	W
6012	Discharge Voltage Setting	300V~450V	W
6013	Discharge Current Setting	1~100%	W
6014	5555H START AAAAH STOP	5555H AAAAH	W
6015	5555H Charging Mode AAAAH Discharge Mode	5555H AAAAH	W
6016	State Register		R
6017	State Register 1		
6018	State Register 2		

6016 Operating State Register

bit	**State**	**bit**	**State**
0	0:Charge 1:Discharge	8	1: Charging completed within CV capacity
1	0:STOP 1:RUN	9	1: Charging completed within I lim capacity
2	0:Normal 1:Error	10	1: Discharge completed within stipulated time
3	0:Not Ready 1:Ready	11	1: Discharge completed within CV capacity
4	1: Charging completed within stipulated time	12	1: Discharge completed within I lim capacity
5	1: Charging completed within CV capacity	13	1: Discharge completed within stipulated time

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6	1: Charging completed within I lim capacity	14	1: Discharge completed within CV capacity
7	1: Charging completed within stipulated time	15	1: Discharge completed within I lim capacity

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6017 Operating State Register 1

bit	State	bit	State
0	FU: fuse on the converter burnt out	8	OH: Over Heat
1	UV1:Main Circuit Under Voltage	9	OH1: Over Heat1
2	UV2:Control Power Under Voltage	10	OL1: Over Load1
3	UV3:MC Trip	11	OL2: Over Load2
4	SC: Short Circuit	12	OL3: Over Load3
5	GF: Ground Fault	13	OL4: Over Load4
6	OC: Over Current	14	Reserve
7	OV: Over Voltage	15	Reserve

6018 Operating State Register 2

bit	State	bit	State
0	Emergency STOP button	16	DC fuse burnt out
1	Reserve	17	AC fuse burnt out
2	Reserve	18	Charging Trip
3	Reserve	19	SD low voltage
4	Reserve	20	Low voltage or battery not ready
5	Reserve	21	Door improperly closed
6	Reserve	22	Reactance overheat >90℃
7	Reserve	23	Transformer overheat >90℃
8	Reserve	24	Unmatched Transformer or battery
9	Reserve	25	Reserve
10	Reserve	26	Reserve
11	Reserve	27	Reserve
12	Reserve	28	Reserve
13	Reserve	29	Reserve
14	Converter EEPROM ERROR	30	Reserve
15	Reserve	31	Reserve

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Address	Name	Format	Unit	Write (W) / Read (R)
7605	R phase voltage	###.#	V	R
7609	R phase current	###.#	A	R
7606	S phase voltage	###.#	V	R
7610	S phase current	###.#	A	R
7607	T phase voltage	###.#	V	R
7611	T phase current	###.#	A	R
7608	Average voltage	###.#	V	R
7612	Average current	###.#	A	R
7617	Active Power	-###.#	KW	R
7621	Reactive Power	-###.#	KVar	R
7625	Apparent Power	-###.#	KVA	R
7629	Power Factor	-#.###	PF	R
7600	Frequency	##.##	Hz	R

Address	Name	Format	Unit	Write (W) / Read (R)
6070	Charging Voltage setting	###	V	R
6071	SOC setting	###	%	R
6072	Current charging Voltage	###.##	V	R
6073	Current charging Current	-###.#	A	R
6074	Current Battery Power	-###.#	KW	R
6075	Current Temperature of transformer	-###.#	℃	R
6076	Current Temperature of reactor	-###.#	℃	R
6077	Discharge Voltage setting	###	V	R

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6078	Discharge current setting	###	%	R

※Those setting value above are decimal, the hexadecimal will shows "H" at the end of the digital, and the "－"on format column means signed number.

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Trouble Shooting

When AC Capacitor R-phase fuse burnt out, the NFB1 will OFF.
When AC Capacitor S-phase fuse 2 burnt out, the NFB2 will OFF.
When AC Capacitor T-phase fuse 3 burnt out, the NFB3 will OFF.
R-phase fuse 4 burnt out, the NFB4 will OFF
S-phase fuse 5 burnt out, the NFB5 will OFF
T-phase fuse 6 burnt out, the NFB6 will OFF
AC fuse burnt out, the NFB7 will OFF

Please check the cause then change the fuse.

Marquee message:
OH: heat sink of transformer overheated, please check the unit or fan of transformer.
SC: DC or AC shorted
GF: DC grounded error
OC: DC over current, please check the output current

OV: Battery or DC voltage over 500V

Transformer or battery unmatched: battery is not connected when operating or the voltage of transformer cannot reach to 250VDC in 60 seconds.