

SC500PV Series

Solar Pump Inverter Simple Manual



Hybrid Solar Pump Inverter

0.75KW~220KW

CONTENTS

CONTENTS.....	1
1. Security Tips.....	2
2. Product Model.....	2
3. Technical Specification.....	2
3.1 Economic Type.....	2
3.2 General Type.....	3
4. Appearance and Dimension.....	4
4.1 Dimension of Economic Type.....	4
4.2 Dimension of General Type.....	5
5. Wiring.....	6
5.1 Single Phase Pump/Motor Diagram.....	6
5.2 General Wiring Diagram.....	7
6. Parameters List.....	8
7. Fault Diagnosis and Solution.....	19

1. Security Tips

1. Only qualified personnel can operate the equipment.
2. AC power supply should not be connected with output ports U, V, W, otherwise there is a danger of damage to frequency inverter.
3. After electrified, it is forbidden to contact internal wiring board and its parts.

2. Product Model

SC500 - 4 T - 7P5 G - PV

① ② ③ ④ ⑤ ⑥

SN	Naming rule	Description
①	Product Series	SC500: SC500 Series
②	Output Voltage	1: AC 1PH 110V
		2: AC 3PH 220V~240V
		4: AC 3PH 380V~480V
③	Input Phase Class	S: Single Phase
		T: Three Phase
④	Rated Output Power	P75G: 0.75KW, 7P5G: 7.5KW
		011G: 11KW, 110G: 110KW
⑤	Applicable Load Type	G: General Type
		S: Economy Type
⑥	Product Type	PV: PV Series Hybrid Solar Pump Inverter
		Without PV: SC500 Series General Inverter (VFD)

3. Technical Specification

3.1 Economic Type

Model	Pump Motor		Rated Output Current(A)	Rated Output Voltage(V)	Max DC Input Voltage(V)	Output Frequency (Hz)
	Rated Power(kW)	Rated Power(HP)				
SC500 Series, DC 170V-450V Input, Single Phase 220V Input, 3 Phase 220~240VAC Output						
SC500-2S-P75S-PV	0.75	1	4.0	220	450	0 ~ 50/60
SC500-2S-1P5S-PV	1.5	2	7.0	220	450	0 ~ 50/60
SC500-2S-2P2S-PV	2.2	3	9.6	220	450	0 ~ 50/60
SC500-2S-4P0S-PV	4.0	5.5	17	220	450	0 ~ 50/60

SC500 Series, DC 270V-900V Input, 3-Phase 380V Input, 3-Phase 380~480VAC Output						
SC500-4T-P75S-PV	0.75	1	2.8	380	900	0 ~ 50/60
SC500-4T-1P5S-PV	1.5	2	4.4	380	900	0 ~ 50/60
SC500-4T-2P2S-PV	2.2	3	5.8	380	900	0 ~ 50/60
SC500-4T-4P0S-PV	4.0	5.5	10	380	900	0 ~ 50/60
SC500-4T-5P5S-PV	5.5	7.5	13	380	900	0 ~ 50/60
SC500-4T-7P5S-PV	7.5	10	17	380	900	0 ~ 50/60

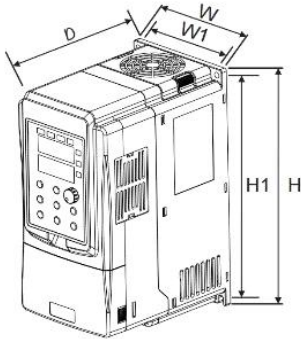
3.2 General Type

Model	Pump Motor		Rated Output Current(A)	Rated Output Voltage(V)	Max DC Input Voltage(V)	Output Frequency (Hz)
	Rated Power(kW)	Rated Power(HP)				
SC500 Series, DC 170V-450V Input, Single Phase 220V Input, 3 Phase 220~240VAC Output						
SC500-2S-P75G-PV	0.75	1	4.0	220	450	0 ~ 50/60
SC500-2S-1P5G-PV	1.5	2	7.0	220	450	0 ~ 50/60
SC500-2S-2P2G-PV	2.2	3	9.6	220	450	0 ~ 50/60
SC500-2S-4P0G-PV	4.0	5.5	17	220	450	0 ~ 50/60
SC500-2S-5P5G-PV	5.5	7.5	25	220	450	0 ~ 50/60
SC500-2S-7P5G-PV	7.5	10	32	220	450	0 ~ 50/60
SC500-2S-011G-PV	11	15	45	220	450	0 ~ 50/60
SC500 Series, DC 270V-900V Input, 3-Phase 380V Input, 3-Phase 380~480VAC Output						
SC500-4T-P75G-PV	0.75	1	2.8	380	900	0 ~ 50/60
SC500-4T-1P5G-PV	1.5	2	4.4	380	900	0 ~ 50/60
SC500-4T-2P2G-PV	2.2	3	5.8	380	900	0 ~ 50/60
SC500-4T-4P0G-PV	4.0	5.5	10	380	900	0 ~ 50/60
SC500-4T-5P5G-PV	5.5	7.5	13	380	900	0 ~ 50/60
SC500-4T-7P5G-PV	7.5	10	17	380	900	0 ~ 50/60
SC500-4T-011G-PV	11	15	25	380	900	0 ~ 50/60
SC500-4T-015G-PV	15	20	32	380	900	0 ~ 50/60
SC500-4T-018G-PV	18.5	25	37	380	900	0 ~ 50/60
SC500-4T-022G-PV	22	30	45	380	900	0 ~ 50/60
SC500-4T-030G-PV	30	40	60	380	900	0 ~ 50/60
SC500-4T-037G-PV	37	50	75	380	900	0 ~ 50/60

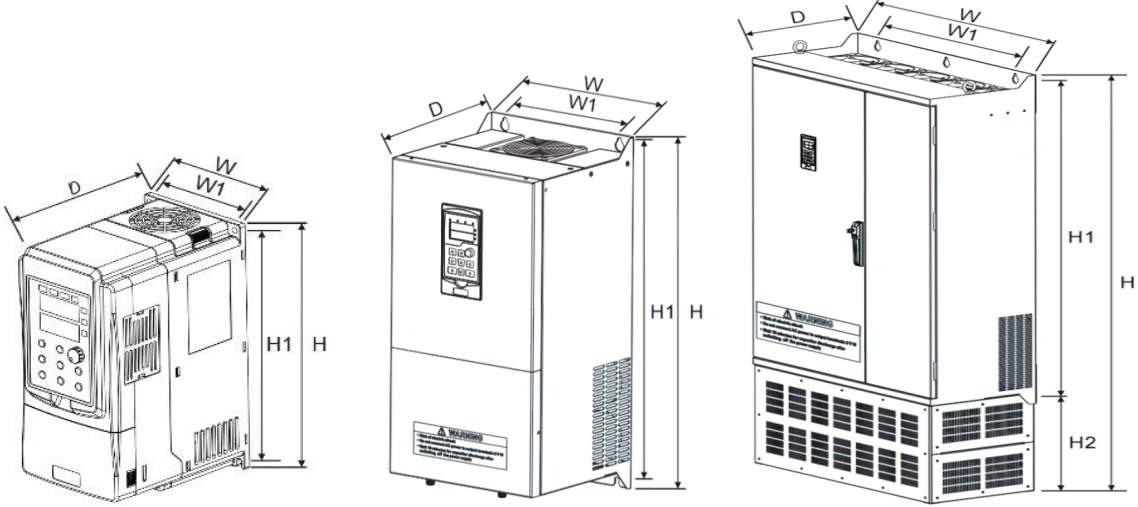
SC500 Series, DC 270V-900V Input, 3-Phase 380V Input, 3-Phase 380~480VAC Output						
SC500-4T-045G-PV	45	60	90	380	900	0 ~ 50/60
SC500-4T-055G-PV	55	75	110	380	900	0 ~ 50/60
SC500-4T-075G-PV	75	100	152	380	900	0 ~ 50/60
SC500-4T-093G-PV	93	125	176	380	900	0 ~ 50/60
SC500-4T-110G-PV	110	150	210	380	900	0 ~ 50/60
SC500-4T-132G-PV	132	180	253	380	900	0 ~ 50/60
SC500-4T-160G-PV	160	215	304	380	900	0 ~ 50/60
SC500-4T-185G-PV	185	250	350	380	900	0 ~ 50/60
SC500-4T-200G-PV	200	270	380	380	900	0 ~ 50/60
SC500-4T-220G-PV	220	300	426	380	900	0 ~ 50/60

4. Appearance and Dimension

4.1 Dimension of Economic Type

Model	H(mm)	W(mm)	D(mm)	H1(mm)	W1(mm)	Mounting Aperture
						
SC500-2S-P75S-PV	187	90	133	177	80	Φ4.5
SC500-2S-1P5S-PV						
SC500-2S-2P2S-PV						
SC500-2S-4P0S-PV	247	130	162	236.5	115	Φ5
SC500-4T-P75S-PV	187	90	133	177	80	Φ4.5
SC500-4T-1P5S-PV						
SC500-4T-2P2S-PV						
SC500-4T-4P0S-PV	247	130	162	236.5	115	Φ4.5
SC500-4T-5P5S-PV	247	130	162	236.5	115	Φ5
SC500-4T-7P5S-PV						

4.2 Dimension of General Type

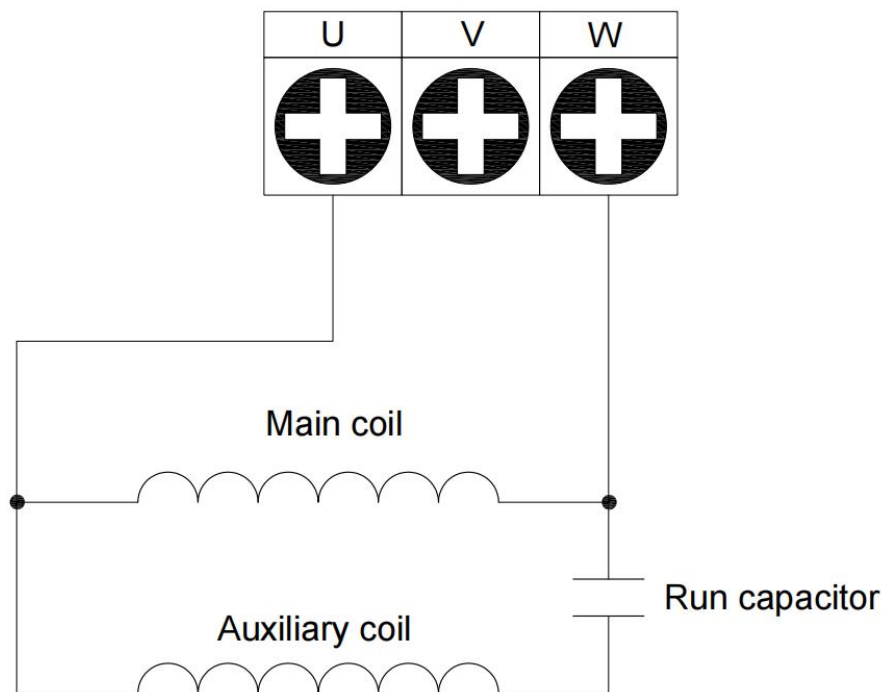
Model	H(mm)	W(mm)	D(mm)	H1(mm)	H2(mm)	W1(mm)	Mounting Aperture
							
SC500-2S-P75G-PV	187	90	133	177	-	80	Φ4.5
SC500-2S-1P5G-PV							
SC500-2S-2P2G-PV							
SC500-2S-4P0G-PV	247	130	162	236.5	-	115	Φ5
SC500-2S-5P5G-PV	272	160	201	259	-	146	Φ5.2
SC500-2S-7P5G-PV							
SC500-2S-011G-PV	313	211	205	299	-	196	Φ5
SC500-4T-P75G-PV	187	90	133	177	-	80	Φ4.5
SC500-4T-1P5G-PV							
SC500-4T-2P2G-PV							
SC500-4T-4P0G-PV	207	100	142	197	-	90	Φ4.5
SC500-4T-5P5G-PV	247	130	162	236.5	-	115	Φ5
SC500-4T-7P5G-PV							
SC500-4T-011G-PV	272	160	201	259	-	146	Φ5.2
SC500-4T-015G-PV							
SC500-4T-018G-PV	313	211	205	299	-	196	Φ6.5
SC500-4T-022G-PV							
SC500-4T-030G-PV	418	252	206.9	399	-	201	Φ9
SC500-4T-037G-PV							

SC500-4T-045G-PV	603	299	276.7	581	-	240	Φ9
SC500-4T-055G-PV							
SC500-4T-075G-PV	643	338	312	619	-	280	Φ11
SC500-4T-093G-PV							
SC500-4T-110G-PV							
SC500-4T-132G-PV	1126	410	383.7	776	356	320	Φ12
SC500-4T-160G-PV							
SC500-4T-185G-PV							
SC500-4T-200G-PV							
SC500-4T-220G-PV	1472	650	430.2	1046.8	426	520	Φ13

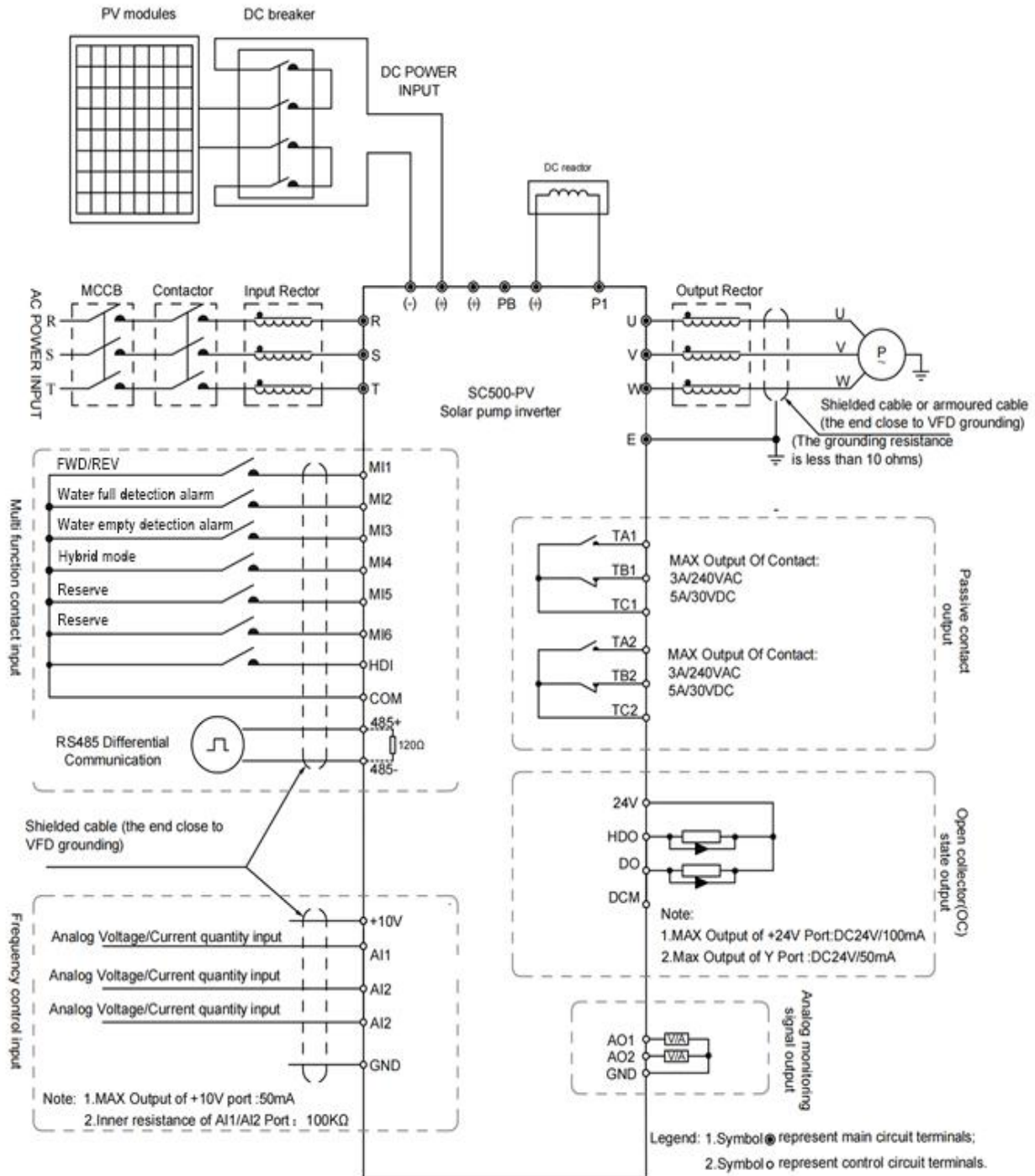
- H2 is the base size, 132-200kw base is optional, and 220kw and above power is standard.

5. Wiring

5.1 Single Phase Pump/Motor Diagram



5.2 General Wiring Diagram



6. Parameters List

○: Can't be modified while running

●: Can be modified while running

×: Read only

Code	Name	Setting Range	Description	Default Setting	Property
P00 Basic Function Parameter					
P00.10	Keypad set frequency	0.00Hz ~P27.07	This parameter is set to the displayed keyboard frequency.	50.00Hz	●
P05 Group Input Terminals					
P05.01	MI1 terminals function selection	0~63	0: No function 1: Forward 2: Reverse	01	○
P05.02	MI2 terminals function selection		3: 3-wire control operation 6: Coast to stop 7: Fault reset	43	○
P05.03	MI3 terminals function selection		8: Operation pause 10: Increasing frequency setting (UP)	44	○
P05.04	MI4 terminals function selection		11: Decreasing frequency setting (DOWN) 42: Hybrid mode 43: Full water signal 44: Non-water signal	42	○
P06 Group Output Terminals					
P06.03	Relay 1 TA/TB/TC output selection	0~23	0: Invalid 1: In operation 2: Forward rotation operation 3: Reverse rotation operation	05	●
P06.04	Relay 2 TA/TB/TC output selection		5: VFD fault 8: Frequency arrival 14: Overload alarm 15: Underload alarm 30: Shift to PV mode	05	●

Code	Name	Setting Range	Description	Default Setting	Property
P07 Group Keyboard Function					
P07.04	STOP/RESET stop function	0~3	0: Only valid for the keypad control 1: Both valid for keypad and terminals control 2: Both valid for keypad and communication control 3: Valid for all control modes	3	●
P07.08	Frequency display factor	0.01~10.00	Display frequency = running frequency * P07.08	1.00	●
P07.33	Current fault operating frequency	-	-	0.00Hz	✕
P07.35	Current fault output voltage	-	-	0VAC	✕
P07.36	Current fault output current	-	-	0.0A	✕
P07.37	Current fault bus voltage	-	-	0.0VDC	✕
P07.41	The frequency of the previous failure	-	-	0.00Hz	✕
P07.43	The output voltage of the previous failure	-	-	0VAC	✕
P07.44	The output current of the previous	-	-	0.0A	✕
P07.45	The bus voltage of the previous failure	-	-	0.0VDC	✕
P14 Group Serial Communication Function					
P14.00	Local communication address	1~247	Note: The slave address cannot be set to 0.	001	●

Code	Name	Setting Range	Description	Default Setting	Property
P14.01	Communication baud rate setting	0~6	Set the data transmission rate between the upper computer and the frequency inverter. 0: 1200 BPS 1: 2400 BPS 2: 4800 BPS 3: 9600 BPS 4: 19200 BPS 5: 38400 BPS 6: 57600 BPS Note: the baud rate set by the upper computer and the frequency inverter must be the same.	3	•
P14.02	Data bit verification setting	0~5	0: no verification (N, 8, 1) for RTU 1: Parity check (E, 8, 1) for RTU 2: Odd check (O, 8, 1) for RTU 3: No verification (N, 8, 2) for RTU 4: Parity check (E, 8, 2) for RTU 5: Odd check (O, 8, 2) for RTU	0	•
P15 Group Functions Special					
P15.06	KP1	0.00~100.00	Proportion coefficient 1 of the target frequency.	12.00	•
P15.07	KI1	0.00~100.00	Integral coefficient 1 of target frequency.	12.00	•
P15.08	KP2	0.00~100.00	Proportion coefficient 2 of target frequency.	25.00	•
P15.09	KI2	0.00~100.00	Integral coefficient 2 of the target frequency.	25.00	•
P15.35	Rated flow of water pump	0.0~6553.5	The flow rate (QN) of the water pump at rated frequency and rated head.	0.0m³/h	•

Code	Name	Setting Range	Description	Default Setting	Property
P15.36	Rated head of water pump	0.0~6553.5	The head (HN) of the water pump at rated frequency and rated flow rate	0.0m	●
P17 Group State Viewing					
P17.00	Set frequency	0.0~P27.07	Displays the current set frequency of the frequency inverter. Unit:Hz	Monitoring value	✕
P17.01	Output frequency	0.0~P27.07	Displays the current output frequency of the frequency inverter. Unit:Hz	Monitoring value	✕
P17.03	Output voltage	0~1200	Displays the current output voltage of the frequency converter. Unit:VAC	Monitoring value	✕
P17.04	Output current	0.0~5000.0	Displays the effective value of the current output current of the frequency inverter. Unit:A	Monitoring value	✕
P17.05	Motor speed	0~65535	Displays the current motor speed. Unit:RPM	Monitoring value	✕
P17.19	DC input power	0.0~1000	The current DC input power of the frequency inverter. Unit: kW	Monitoring value	✕
P17.20	DC input current	0.0~5000.0	The current DC input current of the frequency inverter. Unit:A	Monitoring value	✕
P17.21	DC input voltage	0.0~2000.0	Bus voltage; Displays the current DC input voltage of the frequency inverter. Unit:VDC	Monitoring value	✕
P27 Group Photovoltaic Water Pump Parameters					
P27.00	Running control mode	0~3	0: Keyboard Mode 1: Automatic Mode 2: Terminal Mode 3: Communication Mode	1	●

Code	Name	Setting Range	Description	Default Setting	Property
P21.01	Single phase motor mode	0~1	0: Invalid 1: Valid	0	○
P27.02	Motor direction	0~1	0: Forward 1: Reverse	0	○
P27.03	Operating mode	0~2	0: VFD control mode 1: MPPT control mode 2: CVT control mode	1	○
P27.04	CVT target voltage	0.0~900.0	This parameter represents the final stable voltage value expected in CVT mode. It can be modified only in CVT mode. The default value of 0 means invalid. It is valid only after modification. This function is only effective when P27.03 is equal to 2.	0.0	●
P27.05	Waiting time in automatic operation mode	0~9	0.10S 1.30S 2.60S 3.90S 4.180S 5.300S 6.600S 7.1200S 8.1800S 9.0S In the automatic start (P27.00=1) mode, it will run automatically after the set time.	9	○
P27.06	Reserve	0~65535	Unit: h	00000	●
P27.07	Maximum output frequency	0.0~400.0Hz	The maximum output frequency or rated output frequency.	50.00Hz	●

Code	Name	Setting Range	Description	Default Setting	Property
P27.08	Fault reset delay	0.0~6553.5	When fault appear, the solar pump inverter stop, starts after the setting time of P27.08 automatically, it avoid repeated startup, with the unit of 0.1s.	600.0s	○
P27.09	Fault reset times	0~65535	The maximum times of fault resetting. It won't be reset when over then number.	10	○
P27.10	Under-voltage setting	0~400	Threshold of under voltage, "UV" appears on the keypad when DC voltage over then P27.10.	Related to the mode	○
P27.11	Over-voltage setting	0~900	Threshold of over voltage, "OV" appears on the keypad when DC voltage over then P27.11. 900VDC(Special model). Note: this parameter will not be restored to the factory.	Related to the mode	○
P27.12	Acceleration time	0~3000.0	In MPPT mode(P27.03=1), acceleration and deceleration times must be adjusted via the P15.06/07/08/09 settings.	Related to the mode	●
P27.13	Deceleration time	0~3000.0		Related to the mode	●
P27.14	Frequency reduction temperature	0 -95℃	When the frequency inverter reaches the set temperature, the output frequency will automatically decrease.	82℃	●
P27.15	Frequency decrease at sudden power loss	0~1	0.Invalid 1.Valid Frequency decrease at sudden power loss switch.	0	○

Code	Name	Setting Range	Description	Default Setting	Property
P27.16	Frequency decrease ratio at sudden power loss	0~50.00 Hz/s	When the bus voltage drops, frequency inverter starts to reduce the operating frequency according to the frequency decrease at sudden power loss set in P27.16, with the unit of 0.01hz/s.	3.00Hz/s	○
P27.17	Factory parameters restore	0~1	0: No action 1: Restore	0	○
P27.18	Parameter setting password	0~65535	00000: No password; other numbers will be used as passwords. If P27.18 is not equal to 00000, P27.18 will be used as the password to set the parameters.	00000	○
P27.19	Software version	-	-	Monitoring value	×
P27.20	Reserve	-	-	00000	×
P27.21	IGBT temperature	-	-	Monitoring value	×
P27.22	Phase loss protection	000~011	000~ 011 LED units digit: (display Rightmost - 010) 0: Input phase loss protection prohibited 1: Input phase loss protection is allowed LED ten digit: (display middle -010) 0: Output phase loss protection disabled	010	●

Code	Name	Setting Range	Description	Default Setting	Property
			1: Output phase loss protection is allowed Single motor setting is P27.22=000		
P27.23	Tank fulfilled detect time	0~10000	After the water tank full signal is detected and maintained throughout P27.23, the inverter will automatically shut down and "A-tf" will appear on the keypad. (MI2-DCM)	5s	●
P27.24	Tank fulfilled restore time	0~10000	After the tank full signal isn't detected and maintained for the time of P27.24, the "A-tf" fault will disappeared, then it will run automatically. (MI2-DCM)	20s	●
P27.25	Tank empty detect time	0~10000	After the water tank empty signal is detected and maintained throughout P27.25, the inverter will automatically stop and "A-tL" will appear on the keypad. (MI3-DCM)	5s	●
P27.26	Tank empty restore time	0~10000	After the tank full signal isn't detected and maintained for the time of P27.26, the "A-tL" fault will disappeared, then it will run automatically. (MI3-DCM)	20s	●
P27.27	Under-load detect current	0.0~1000.0	Overload protection current setting. Setting method: pump nominal current * 30%; Default setting P27.27=0.0, disables this function.	0.0A	●

Code	Name	Setting Range	Description	Default Setting	Property
P27.28	Under-load protection detect time	0.0~3000.0	Under-load protection detection time setting. During operation, if it is detected that the output current is lower than the Under-load protection current value set in P27.27 and exceeds the protection detection time set in P27.28, an "A-LL" early warning will be issued.	30.0s	●
P27.29	Under-load protection restore time	0.0~3000.0	Under-load protection automatic reset time. If the "A-LL" alarm persists for the reset time set in P27.29, the inverter will automatically reset the alarm and continue operating automatically.	300.0s	●
P27.30	Low speed protection threshold	0.00~300.00	Low speed protection frequency setting. This setting determines the minimum operating frequency of the inverter in adverse weather conditions to prevent malfunctions and protect the water pump. Setting P27.30=0.00Hz disables this function.	10.00Hz	●
P27.31	Low speed detect time	0.0~1000.0	Low speed protection detection time setting. During operation, if it is detected that the output frequency is lower than or equal to the low speed protection	10s	●

Code	Name	Setting Range	Description	Default Setting	Property
			frequency value set in P27.30 and exceeds the protection detection time set in P27.31, an early warning "A-LS" signal is given.		
P27.32	Low speed restore time	0.0~1000.0	Low speed protection automatic reset time. After the "A-LS" alarm persists for the reset time set in P27.32, the inverter will automatically reset the alarm and resume operation automatically.	300s	●
P27.33	Rated power of motor	0.75~400.0	Unit: KW	Related to the mode	○
P27.34	Rated voltage of motor	0~600	Unit: V	Related to the mode	○
P27.35	Rated current of motor	0.0~1000.0	Unit: A	Related to the mode	○
P27.36	Rated speed of motor	100~10000	Unit: rpm/min	Related to the mode	○
P27.37	Rated frequency of motor	0.00~300.00	Unit: Hz	Related to the mode	○
P27.38	The last fault	-	Check section 7 for fault parameters.	Monitoring value	✕
P27.39	The second last fault	-	Check section 7 for fault parameters.	Monitoring value	✕
P27.40	The third last fault	-	Check section 7 for fault parameters.	Monitoring value	✕
P27.41	Stop mode selection	0~1	0: Decelerate to stop 1: Coast to stop	0	●

Code	Name	Setting Range	Description	Default Setting	Property
P27.42	Carrier frequency setting	1.0~15.0 kHz	Related to the mode	Related to the mode	●
P27.43	Overheat threshold temperature	70.0~100.0℃	When the temperature sensor detects a temperature exceeding the set overheating point, an overheating fault (OH) is reported.	95℃	●
P27.44	Chip operation status monitoring	-	Monitoring value	Monitoring value	✕
P27.45	Overload selection	0~1	0: Invalid 1: Valid	1	○
P27.46	Overheat selection	0~1	0: Invalid 1: Valid	1	○
P27.47	Parameter Open Password	-	After setting a password for the open parameters, user can modify and view all parameters.	-	○
P27.48	Inverter power level setting	00~43	Inverter power code settings	Related to the mode	○
P27.49	Inverter power	0.75~220	For other inverter models with higher power capacity, please contact the manufacturer.	Monitoring value	✕

7. Fault Diagnosis and Solution

Fault Code	Fault Type	Possible Cause	Solutions
OUt1	Inverter unit U phase protection	1.The acceleration is too fast. 2.This phase IGBT is damaged internally.	1.Increase the acceleration time. 2.Change the power unit. 3.Check the drive wire. 4.Check whether the peripheral equipment has strong interference sources.
OUt2	Inverter unit V phase protection	3.Interference causes misoperation. 4.The drive wire is connected improperly.	
OUt3	Inverter unit W phase protection	5.The load transients or is abnormal. 6.The grounding is short circuited.	
OV1	ACC overvoltage	1.The input voltage is abnormal.	1.Check the input power. 2.Check if the DEC time of the load is too short or the VFD starts during the rotation of the motor or it needs to increase the energy consumption components. 3.Install the braking components. 4.Check the setting of relative function codes.
OV2	DEC overvoltage	2.There is large energy feedback. 3.No braking components.	
OV3	Constant-speed overvoltage	4.Braking energy is not open.	
OC1	ACC overcurrent	1.The acceleration or deceleration is too fast. 2.The voltage of the grid is too low.	1.Increase the ACC time. 2.Check the input power. 3.Select the VFD with a larger power. 4.Check if the load is short circuited (the grounding short circuited or the wire short circuited) or the rotation is not smooth. 5.Check the output configuration.
OC2	DEC overcurrent	3.The power of the VFD is too low.	
OC3	Constant-speed overcurrent	4.The load transients or is abnormal. 5.The grounding is short	

Fault Code	Fault Type	Possible Cause	Solutions
		circuited or the output is phase loss. 6. There is strong external interference. 7. The overvoltage stall protection is not open. 8. The distance between the water pump cable and the inverter is too long, more than 50m.	6. Check if there is strong interference. 7. Check the setting of relative function codes. 8. Add AC output reactor and connect it to the inverter output side. 9. It may be that the mppt parameter is too large, and the P15.06/074/08/09 parameter settings are reduced by half. If are not resolved, It's will be further reduced parameter value.
UV	Bus undervoltage	1. The voltage of the power supply is too low. 2. The overvoltage stall protection is not open.	1. Check the input power of the supply line. 2. Check the setting of relative function codes.
OL1	Motor overload	1. The voltage of the power supply is too low. 2. The motor setting rated current is incorrect. 3. The motor stall or load transients is too strong.	1. Check the power of the supply line. 2. Reset the rated current of the motor. 3. Check the load and adjust the torque lift.
OL2	VFD overload	1. The acceleration is too fast. 2. The rotating motor is reset. 3. The voltage of the power supply is too low. 4. The load is too heavy. 5. The motor power is too small.	1. Increase the ACC time. 2. Avoid the restarting after stopping. 3. Check the power of the supply line. 4. Select a VFD with bigger power. 5. Select a proper motor.

Fault Code	Fault Type	Possible Cause	Solutions
SPI	Input phase loss	1.Phase loss or fluctuation of input R,S,T	1.Check input power. 2.Check installation distribution.
SPO	Output phase loss	1.U,V,W phase loss output (or serious asymmetrical three phase of the load). 2.Single motor is used, and the output phase loss is not closed.	1.Check the output distribution. 2.Check the motor and cable. 3.Single phase motor setting P27.22=000.
OH1	Rectifier overheat	1.Air duct jam or fan damage. 2.Ambient temperature is too high.	1.Dredge the wind channel or change the fan. 2.Decrease the environment temperature.
OH2	Inverter module overheat	3.The time of overload running is too long.	
EF	External fault	1.External fault input terminals action.	1.Check the external device input.
CE	Communication error	1.The baud rate setting is incorrect. 2.Fault occurs to the communication wiring. 3.The communication address is wrong. 4.There is strong interference to the communication.	1.Set proper baud rate. 2.Check the communication connection distribution. 3.Set proper communication address. 4.Change or replace the connection distribution or improve the anti-interference capability.
ItE	Current detection fault	1.The connection of the control board is not good. 2.Assistant power is bad. 3.Hall components is broken. 4.The magnifying circuit is abnormal.	1.Check the connector and repatch. 2.Change the Hall. 3.Change the main control panel.

Fault Code	Fault Type	Possible Cause	Solutions
tE	Auto-tuning fault	1.The motor capacity does not comply with the VFDcapability. 2.The rated parameter of the motor is not set correctly. 3.The offset between the parameters from autotune and the standard parameter is huge. 4.Autotune overtime.	1.Change the VFD mode. 2.Set the rated parameter according to the motor name plate. 3.Empty the motor load. 4.Check the motor connection and set the parameter. 5.Check if the upper limit frequency is above 2/3 of the rated frequency.
EEP	EEPROM fault	1.Error of controlling the write and read of the parameters. 2.Damage to EEPROM.	1.Press STOP/RST to reset. 2.Change the main control panel.
PIDE	PID feedback fault	1.PID feedback is offline. 2.The PID feedback source disappears.	1.Check the PID feedback signal. 2.Check the PID feedback source.
END	Time arrival of factory setting	1.The actual running time of the VFD is above the internal setting running time.	1.Ask for the supplier and adjust the setting running time.
OL3	Electrical overload	1.The VFD will report overload pre-alarm according to the set value.	1.Check the load and the overload pre-alarm point.
ETH1	Grounding short circuit fault 1	1.The grounding of the VFDoutput terminal is short circuited.	1.Check whether the motor wiring is proper. 2.Change the Hall. 3.Change the main control panel. 4.Set motor parameters correctly.
ETH2	Grounding short circuit fault 2	2.The current detection circuit is faulty. 3.The actual motor power sharply differs from the VFD power.	

Fault Code	Fault Type	Possible Cause	Solutions
dEu	Velocity deviation fault	1.The load is too heavy or stalled.	1.Check the load and ensure it is normal. Increase the detection time. 2.Check whether the control parameters are normal.
LL	Electronic underload fault	1.The VFD will report the underload pre-alarm according to the set value.	1.Check the load and the underload pre-alarm point.
PINV	PV reverse connection fault	1.Incorrect PV wiring	1.Change the wiring direction of the positive and negative terminals and connect the cables again.
PVOC	PV overcurrent	1.The acceleration or deceleration is too fast. 2.The VFD power is too low. 3.The load transients or is abnormal. 4.The grounding is short circuited.	1.Increase the ACC or DCC time. 2.Select the VFD with a larger power. 3.Check if the load is short circuited(the grounding short circuited or the wire short circuited) or the rotation is not smooth.
PVOV	PV overvoltage	1.The solar cell panel input voltage is too high. 2.The parameter settings are incorrect.	1.Reduce the number of solar cell panels that are wired in series. 2.Check and reset the model.
PVLV	PV undervoltage	1.The power of the solar cell panel series is too low or it is cloudy and rainy weather. 2.The motor start-up current is too high.	1.Increase the number of solar cell panels or perform the test in the normal sun light. 2.Change the motor.
A-LS	Weak light alarm	1.The sun light is weak or the solar cell panel configuration is insufficient.	1.The equipment automatically runs when the light becomes strong. 2.Check whether the solar panel configuration is proper.

Fault Code	Fault Type	Possible Cause	Solutions
A-LL	Underload alarm	1.The reservoir is empty. 2.No load connection	1.Check the reservoir or deep well. 2.The load current is less than the set underload current value P27.27. 3.There is no load connection at this time.
A-tF	Full-water alarm	1.The reservoir is full. 2.This feature will be enabled when MI2 and DCM are connected.	1.If the user has set the full-water alarm function, the equipment automatically stops when the full-water alarm time reaches the specified time. In this situation, the user does not need to perform any operation. Otherwise, check whether terminals are wired incorrectly.
A-tL	Empty-water alarm	1.The reservoir is empty. 2.This feature will be enabled when MI3 and DCM are connected.	1.If the user has set the empty-water alarm function, the equipment automatically stops when the empty-water alarm time reaches the specified time. In this situation, the user does not need to perform any operation. Otherwise, check whether terminals are wired incorrectly.



Shenzhen Socon Electric Co.,Ltd.

Langxin commercial center, Langxin community,
Shiyan street, Bao'an District, Shenzhen China

Email: overseas@soconcn.com

[Http://www.socon.com.cn](http://www.socon.com.cn)



Version:2025 V1.3

Socon Electric Co.,Ltd all rights reserved,

Subject to change without notice.