

Delta Monitoring Solution

Delta Solar System Software Operation Manual



www.deltaww.com

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1. Home Screen





Monitor Mode: Choose corresponding model.



Communication:

Select USB COM port which connects to RS485 box. Press" > " button.

③ ID set up:

Check inverter ID and key in Start ID & End ID. Press" Sutton.

(4) Send Command:

Choose "Single" can send command to the current set inverter. Choose "Broadcast" can send command to all inverters detected.

(5) Auto ID Function:

Click this icon for inverters first time commission, please refer to *Chapter 2* for more details.

2. Auto ID function (first commission)

Delta Solar System Monitor Mode 3P MxA Series	
Start ID 1 Main Config IE Deta Solar System With Construction With Construction With Construction With Construction With Construction Single Obradcast Single Obradcas	- 0 × - <<
Start ID 1 End ID 10 Start	

- 1 Select the corresponding model
- 2 Click "RS485"
- ③ Select communication port (automatic detection by the system)
- ④ Click ▶
- (5) Click "Auto ID F "

Delta Solar System	Communication Communication O Single OBroadcast Since Clock Firmware Fi
Start ID 1 End ID 10 • - D Inverters ID:001	Auto ID Status: Step1 Inv Num Scan Set ID Set ID Set
	SN ID SN ID

Delta Solar System	
Monitor Mode	Image: Send Command Communication Send Command Send Command Send Comm
Start ID 1 End ID 10	Auto ID Status: Next Step - Set Inverter ID Step1

🚛 Delta Solar System	
Monitor Mode	• R5485 • Communication • Single • Broadcast Single • Broadcast Single • Single • Broadcast Single • S
Start ID 1	Auto ID
End ID 10	Status: Completed - Set ID Step1 Step 2 Step 3 9 Inv Num 1 Scan Set ID
	SN ID SN ID 08X20904508WH 1 0K

- 6 Enter numbers of inverters, and click "Scan"
- The serial number of the successfully scanned device will be displayed, the default ID can be changed.
- (8) After ID setting is completed, click "Set ID".
- (9) Select the country of inverter, and click "Set ".
- * Time will also been sync from laptop or PC at this step

3. Main Page

Main Con	fig Ctrl					
1 Version	(4) Output 1	Output 2	Output 3	7 Temperature 1	10 Max Input Value	12 String Current 1
DSP FW Version V51.29 Redundant FW Version V1.11 Comm. FW Version V1.26 ARC FW Version V1.15	Voltage(L-N) 0.0 V Current 0.00 A Power 0 W Freq. 0.00 Hz (5) Input 1	Voltage(L-N) 0.0 V Current 0.00 A Power 0 W Freq. 0.00 Hz Input 2	Voltage(L-N) 0.0 V Current 0.00 A Power 0 W Freq. 0.00 Hz	Now Max Ambient 34 °C 46 °C Boost-1 26 °C 63 °C Boost-2 0 °C 0 °C Inverter-S 25 °C 71 °C Image: State of the	Vdc1: 800.0 V Vdc2: 800.3 V Idc1: 21.14 A Idc2: 21.12 A Pdc1: 12700 W Pdc2: 12740 W Vdc3: 800.2 V Vdc4: 800.1 V Idc3: 21.01 A Idc4: 20.07 A Pdc3: 12700 W Pdc4: 12100 W Vdc5: 800.1 V Vdc6: 800.0 V Idc5: 20.10 A Idc6: 20.11 A Pdc5: 12120 W Pdc6: 12120 W Vdc7: 0.0 V Vdc8: 0.0 V Idc7: 0.00 A Idc8: 0.00 A Pdc7: 0.0 W Pdc8: 0 W	1: 0.00 A 2: 0.00 A 3: 0.00 A 4: 0.00 A 5: 0.00 A 6: 0.00 A 7: 0.00 A 8: 0.00 A 9: 0.00 A 10: 0.00 A 11: 0.00 A 10: 0.00 A 13: 0.00 A 14: 0.00 A 15: 0.00 A 16: 0.00 A 17: 0.00 A 18: 0.00 A 19: 0.00 A 20: 0.00 A 21: 0.00 A 22: 0.00 A 23: 0.00 A 24: 0.00 A
08X20904508WH Model Name M70A_260 2 Status Remote ctrl cut	Voltage 0.0 V Current 0.00 A Power 0 W	Voltage 0.0 V Current 0.00 A Power 0 W	Clock 2021/03/24 08:03:05 Installation 0/00/00	Life Wh 415.500 KWh Lifetime 8:12:7	(1) Max Output Value Vac1: 302.2 V Pac1: 23860 W Jac1: 111.94 A Fac1: 60.11 Hz	DC1/2 Enable (M88H) 13 Total Power Output Input 0.00A 0.00A
State Check PV Power(8) Countdown 0 s Max Power 76,380 W Grid unlock	Input 3 Voltage 0.0 V Current 0.00 A Power 0 W	Input 4 Voltage 0.0 V Current 0.00 A Power 0 W		PBus 0.0 V NBus 0.0 V	Vac2: 321.4 V Pac2: 24030 W Jac2: 111.92 A Fac2: 60.11 Hz Vac3: 301.0 V Pac3: 23820 W Jac3: 112.03 A Fac3: 60.11 Hz	OW OW Q: Cap O Var PF: Cap 0.00
	Input 5	Input 6				
3 Warning Display	Voltage 0.0 V Current 0.00 A Power 0 W	Voltage 0.0 V Current 0.00 A Power 0 W				

- (1) Version: Showing all FW version, Serial Number and Model Name.
- (2) Status: Showing inverter status and maximum power.
- (3) Warning Display: Showing warning of the inverter.
- (4) **Output:** Showing Output voltage, Current, Power and Freq readings.
- (5) Input: Showing input voltage, Current and Power readings.
- 6 Inverter Time: Showing inverter time.
- **Temperature:** Showing temperature for internal ambient and module.
- (8) **Output Energy:** Showing energy generated and runtime for today / Life.
- (9) Bus Voltage: Showing bus voltage of internal bus capacitor.
- (1) Max. Input Value: Showing maximum input voltage ever occurs.
- (1) Max. Output Value: Showing maximum output voltage ever occurs.
- (12) **String Current:** Showing each string current.
- (13) **Total Power:** Showing total output information, include current and power.

(14) Derating R	ecords for OPV	Derating F	Records for OPV_Lo	Deratin	g Records for PM	Derating R	ecords for Ramp Up	Dera	ating Reco	ords
Start Time	Add up Time	Start Time	Add up Time	Start Time	Add up Time	Start Time	Add up Time	Therm		
01.		01.		01.		01.		Vin		
02.		02.		02.		02.		OPV L		
03.		03.		03.		03.		PM		
04.		04.		04.		04.		P(F)		
05.		05.		05.		05.		Ramp		
06.		06.		06.		06.		Others		
07.		07.		07.		07.				
08.		08.		08.		08.				
09.		09.		09.		09.				
10.		10.		10.		10.				
11.		11.		11.		11.				
12.		12.		12.		12.				
Derating F	Records for Vin	Derating F	lecords for Thermal	Deratin	ig Records for PF	Derating	Records for Others	(15)	Test	Value
Start Time	Add up Time	Start Time	Add up Time	Start Time	Add up Time	Start Time	Add up Time	T00:	0	11
				Start		Start fine	Add up Time	T01:	0	0
01.		01.		01.		01.		T02-	0	2065
02.		02.		02.		02.				2005
03.		03.		03.		03.		103:	U	2058
04.		04.		04.		04.		T04:	0	2059
06		06		05.		05.		T05:	0	0
07.		07.		07.		07.		T06:	0	0
08.		08.		08.		08.		107	0	0
09.		09.		09.		09.				
10.		10.		10.		10.		108:	U	U
11.		11.		11.		11.		T09:	0	0
12.		12.		12.		12.		T10:	0	0
								T11:	0	0
		1				1			-	-

(14) **Derating Records:** Showing derating records of the inverter.

(15) **Test Value:** Showing some internal DSP value.

This tab is for engineer when doing on site checking.

16	Error Event	17		Energy - Day
Time	Code	_		
00.		2021/03/2	24: 0.000 KWh	2021/03/08: 0.000 KWh
01.		2021/03/2	23: 98.000 KWh	2021/03/07: 0.000 KWh
02.		2021/03/2	22: 7.000 KWh	2021/03/06: 0.000 KWh
03.		2021/03/2	21: 0.000 KWh	2021/03/05: 0.000 KWh
04.		2021/03/2	20: 0.000 KWh	2021/03/04: 0.000 KWh
05.		2021/03/2	L9: 53.000 KWh	2021/03/03: 0.000 KWh
06.		2021/03/	18: 76.000 KWh	2021/03/02: 0.000 KWh
07.		2021/03/	L7: 75.000 KWh	2021/03/01: 0.000 KWh
08.		2021/03/	L6: 70.000 KWh	2021/02/28: 0.000 KWh
09.		2021/03/	L5: 36.000 KWh	2021/02/27: 0.000 KWh
10.		2021/03/3	L4: 0.000 KWh	2021/02/26: 0.000 KWh
11.		2021/03/2	L3: 0.000 KWh	2021/02/25: 0.000 KWh
12.		2021/03/	L2: 0.000 KWh	2021/02/24: 0.000 KWh
13.		2021/03/	L1: 0.000 KWh	2021/02/23: 0.000 KWh
14.		2021/03/	LO: 0.000 KWh	2021/02/22: 0.000 KWh
15.		2021/03/0	09: 0.000 KWh	2021/02/21: 0.000 KWh
16.				
17.				Marsh
18.			E	nergy - Month
19.				
20.		2021/03:	410.000 KWh	2020/03: 0.000 KWh
21.		2021/02:	0.000 KWh	2020/02: 0.000 KWh
22.		2021/01:	0.000 KWh	2020/01: 0.000 KWh
23.		2020/12:	0.000 KWh	2019/12: 0.000 KWh
25		2020/11:	0.000 KWh	2019/11: 0.000 KWh
26		2020/10:	0.000 KWh	2019/10: 0.000 KWh
27.		2020/09:	0.000 KWh	2019/09: 0.000 KWh
28.		2020/08:	0.000 KWh	2019/08: 0.000 KWh

- (16) **Error Event:** Log error events up to 30 pcs.
- (17) **Energy Day / Month:** Showing Day / Month energy of the inverter.

4. Config Page



Please contact local service team to get the password first.

Main Config	Ctrl			
1 Country Set	4 Uac Protection	Freq. Protection	5 mm Protection	(8) EPO
Country Set Country India Country India Language English Reclosure Time 30.00 sec Inverter ID INVERTER ID INVERTER ID CTRL: ON CTRL: ON CTRL: ON RLEakage(kohm) Now Max Min RI 0 0 R2 0 0 0	Uac Protection U High Off: 276.0 V U High Off Time: 0.05 Sec U High Off Time: 0.05 Sec U High Off: 273.0 V U High Off Slow: 275.0 V U High Off Slow: 275.0 V U High Off Slow: 275.0 V U High Off Slow: 273.0 V U High Off Slow: 273.0 V U Low Off: 184.0 V U Low Off: 187.0 V U Low Off Slow: 184.0 V U Low Off Slow: 184.0 V U Low Off Slow: 184.0 V	Freq. Protection F High Off: 65.00 Hz F High Off: 0.20 Sec F High Off Time: 0.20 Nz F High Off Slow: 64.00 Hz F High Off Slow: 64.00 Hz F High Off Slow: 64.00 Hz F High Off Slow: 62.00 Hz F High Off Slow: 62.00 Hz F Low Off: 45.00 Hz F Low Off: 45.00 Hz F Low Off Time: 0.20 Sec F Low Off Slow: 45.00 Hz F Low Off Slow: 45.00 Hz F Low Off Slow: 45.00 Hz	Smm Protection Mode ON Disconnection time 300 Sec Sec	8 EPO EP01 Normal Open EP02 Normal Close 9 Wi-Fi Function Countdown: 0 sec Wi-Fi Reset Return to default password
3 DC Injection CTRL: • ON OFF Amp 1.00 A Time 0.2 Sec	U Low On Slow: 187.0 V	F Low On Slow: 45.05 Hz	ON	

$\widehat{1}$		Country Set			Coun	itry Set	
0	Country	Default		Country	Defau	It	
		Default	~				\sim
	Language	100 France MV 600V	·	Language	Englis	•	~
	Reclosure	Taiwan 600V France LV 600V		Reclosure	Time	20.00 sec	
	Inverter II	VDE 4110 600V		Inverter I	D	1	
	RS485 Bau	d rate 19200	~	R5485 Bau	ıd rate	19200	~

Country Set:

• Country:

allowed to choose different country setting.

 Reclosure time: allowed to change reclosure time.

- (2) **Insulation:** Allowed to enable/disable Insulation detection.
- **3 DC Injection:** Allowed to enable/disable DC injection detection.
- (4) Uac/Freq. Protection: Allowed to change Uac/Freq. protection setting. Key value in the blank, if the value is out of the range, it will not be modified in inverter side.
- (5) **Comm Protection:** Allow to set the communication protection with other device, if disconnect over specific value, inverter will shutdown.
- 6 AC Terminal: Allowed to change AC terminal setting. if there has N wire on AC side please chose 3P4W.
- **Islanding:** On/Off selection for anti-islanding function.
- (8) **EPO:** Emergency power off function, user can set the port to Normal open /close depends on different applications.
- Wi-Fi Function: Allowed to reset Wi-fi module or reset password.
 * Only for Wifi supported inverters.

5. Ctrl Page



Please contact local service team to get the password first.

Main Config Ctrl				
Main Config Ctrl Image: Config Ctrl Image: Ctrl Image: Ctrl Image: Ctrl Image: Ctrl Disable Image: Ctrl Image: Ctrl Ramp Up Power(%) Image: Ctrl Image: Ctrl 600 % Image: Ctrl Image: Ctrl Active Power Slope 1 Image: Ctrl 60 sec Image: Ctrl Image: Ctrl Image: Ctrl Image: Ctrl Image: Ctrl Image: Ctrl<	Q(U) Ctrl Q.Vmax Ind 44% Q.Vmax Ind 2 Ind 2 Ind 2 Ymax Vmin 23.0.0 V 184.0 V Upper(V2) Lower(V1) 230.0 V 230.0 V Q2 Q3 0 0 1cck-in Power Lock-out Power 0% 0%	P(U) Function Hode: Disable Recovery Time(s) 300 sec P Lock in(%) 20 % Lower Power(%) 5 % V Lock in(%) 23.3 V V Lock-in(%) 248.4 V Start Voltage 253.0 V Stop Voltage 253.0 V V recover 248.4 V	Q by Hight Const.Q. Percent 0 % Q(U)_Upper_Limit 44 % Q(U)_Lower_Limit 44 % Q(U)_Vmax(V23) 184.0V Q(U)_Ymax(V23) 253.0V Q(U)_Ymax(V23) 253.0V Q(U)_Ymax(V23) 230.0V Q(U)_YQ(V15) 230.0V Q(U)_P_Lock_in 0 % Q(U)_P_Lock_out 0 % Q(U)_Hysteresis 0.0V Response_Delay 0.00 sec	Q(P) Function Setting Hode Rated No of Set Point 5
P-F Control Very Frequency Mode Disable Freq. Start Freq. Start Freq. Start Freq. Start Freq. Start Freq. Start Gradient (%s) Under Frequency Mode Disable Gradient (%s) Freq. Start 40.00 sec Under Frequency Freq. Start 40.00 sec Freq. Start Freq	Cos(p) of P Ctrl Oper Upper 1 Lower Ind 0.90 90 % Upper(1) Lower(P2) 100 % 90 % 100 % S0 % Utper(P1) Uwer(P2) 100 % S0 % Utper(P2) 100 % V Lock in V Lock out Disa 3.00 0.0 V 0.0 V 0.0 V 17 T 3.00 17 T 13.00 17 T 100 % S0 % 17 T 17 T	FRT Is Band Umin Dead Band Umax %6 110 %6 actor	Fan Test Fan Fail Piede OH @ OFF Duty Internal Total field f	Multi-function Relay Relay 1 Relay 1 Relay 1 Fault/Error/Warning 1: 0 Fault/Error/Warning 1: 0 Fault/Error/Warning 2: 0 Fault/Error/Warning 3: 0 All Foult All Warning Power Production 0 0 Othor One Oth Delay time: 1 min Off Delay time: 1 min Control external Fans Temperature 1: 40.0 °C



Active Power:

- Enable/Disable this function
- PM(%):
 - control the max output power percentage (0~100%)
- Ramp up power (%):
- ramp up rate per minute (max 6000)



Reactive Power:

Mode:

Select reactive power mode

- Fixed cosΦ:
- when in "Constant cosΦ "mode,the value can be controlled here • Fixed Q:
- when in "Constant Q "mode, the value can be controlled here
- Response time:

decide the response time for all reactive power function

3 Q(U) Ctrl:



- · Q(U) function will be controlled in "Reactive Power "page
- · Lock-in Power: when active power is higher than this value, this function start working
- · Lock-out Power: when active power is lower than this value, this function stop working

④ P(U) Function:



Reactive Power	Q by Night	
Mode Fixed Kvar 24/7	Const.Q_Percent 0%	
	Q(U)_Upper_Limit 0%	
Fixed cosp	Q(U)_Lower_Limit 0%	
1 Ind 🗘	Q(U)_Vmin(V2i) 0.0V	
	Q(U)_Vmax(V2s) 0.0V	
Fixed O (%)	Q(U)_V1(V1i) 0.0V	
Ted 00%	Q(U)_V2(V1s) 0.0V	
THIC 0%	Q(U)_P_Lock_in 0%	
	Q(U)_P_Lock_out 0%	
Response Time	Q(U)_Hysteresis 0.0V	
10.00 sec	Response_Delay 0.05 sec	

Q by Night:

- · Mode:
 - 1. Select reactive mode to "Fixed kvar 24/7"
 - 2. Set specific percentage for reactive power.
- Q setting 24/7 allows inverter to generate fixed reactive power at night.
- Range of ConstQ_Percent: -100%~+100%



Q(P) Function Setting:

This function is only apply for VDE4110, customer can set different (P,Q) point to determined the behavior of inverter.



6



(8) Cos(Φ) of P Ctrl: It will be controlled in "Reactive Power "page.



(9) FRT: Some grid code required FRT function, different behavior can be made by this part. (Only person with permission from Delta can modify the value)

10	Fan Test	Fan Fail	
	Mode 🔿 ON 💿 OFF		
		F00 F01 F02 F03	
	Duty	F04 F05 F06 F07	
	0	F08 F09 F10 F11	
		F12 F13 F14 F15	
l		External	
		F00 F01 F02 F03	
		F04 F05 F06 F07	
		F08 F09 F10 F11	
		F12 F13 F14 F15	

Fan Test: You can use fan test function to test the fan.Fan Fail: Showing the defective fan during fan test.

1 Anti-PID:

When Trip time is '0' means this function is disable, if the value has been set, the anti-PID function will start after 30 mins when inverter status shows "No DC".

Set specific value for anti-PID function active time.

*Range of Trip Time value : 0~11 (hour)

- (12) **ARC:** When Arc detected, inverter will be lock, user can use "un-lock" to unlock the inverter.
- (13) **Dry Contact:** User can set different trigger condition for dry contact relay to make external alarm device work.
- Multi-function Relay: Same as dry contact function, but include more application combination.

6. Other Functions



- (1) Sync Clock: synchronize inverter's time with your laptop's
- (2) Firmware: for FW upgrade



After first connection, press" ស "to load FW file.

After the file is loaded, the current FW version will shown in yellow, you can know whether the FW needs to be upgraded or not.

If yes, press " 🕢 Upgrade ".



When upgrade finished, "FIRMWARE UPGRADE COMPLETED" will be shown.

- 3 Language: Three languages available(English /German/French)by clicking the national flag.
- (4) **Protocol:** Switch between Sunspec & Delta protocol.

Notice : If switched to Sunspec, there will be no readings in DSS because DSS is for Delta protocol

5 Grid Load:

Colds Sold Cytered Image: Cold Cytered </th <th>Input Password</th> <th>Enter the password you got.</th> <th></th>	Input Password	Enter the password you got.				
Netrol Note	The Certa Solar System					
	Start ID 1 End ID 32 Start ID 1 Start	Hain With Your Arring Display Water Time Water Time Water Time Non A Statu Yes Yes Yes Yes Yes Status Yes Ye	 1P H3_H5 Series 1P Wifi Series 3P M125 Series 3P MxA Series ConfigLog DataLog Hybrid_E5 profile SuperUser UpgradeLog Delta_Solar_System V4.92 			

"Config_ID1" can be found in "ConfigLog" folder, settings can be implemented to other inverters.

- 6 Grid save: save the Grid setting as "Config_ID1" in "ConfigLog" folder
- ⑦ Datalog : log data in Main page



