

# DSS User Instruction





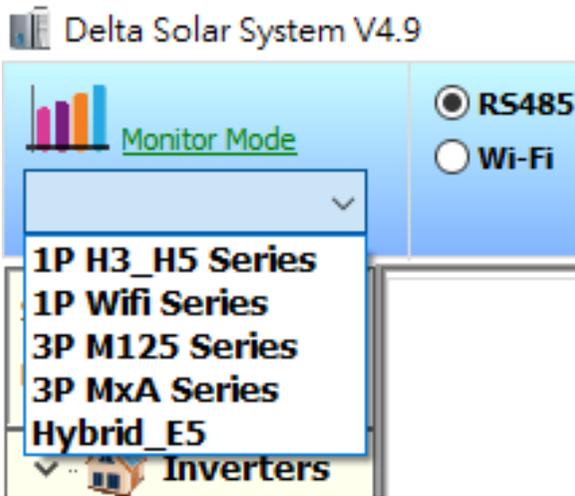
# DSS User Instruction

- First Connection
- Main Page
- Config Page
- Ctrl Page
- Other Function



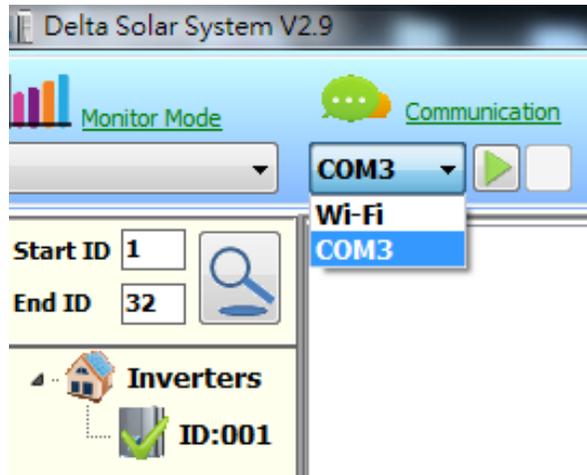
# First Connection

1. Choose corresponding model

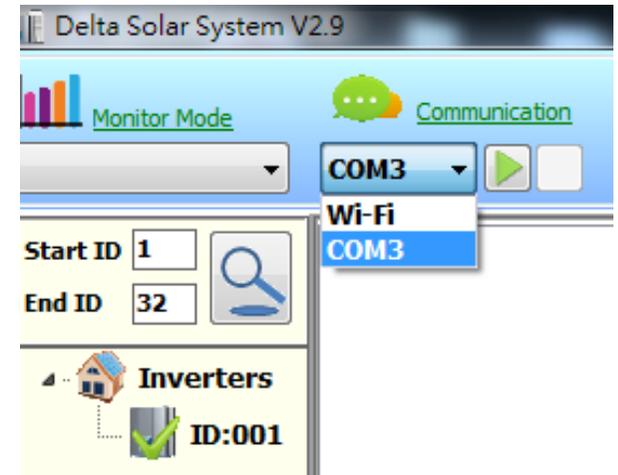


2. Select USB COM port which connects to RS 485 box

3. Press "▶" button



4. Check inv ID  
5. Key in Start ID & End ID  
6. Press "🔍" button



7. Choose "Broadcast" can send command to all inverter detected.





# Main Page

Delta Solar System V3.5-2

Monitor Mode | Communication | Send Command | Sync Clock | Firmware | English | Grid Set(Load/Save) | Datalog | Help

3ph\_UL model | COM3 | Single | Broadcast

Start ID: 1 | End ID: 32

**Inverters**

Main | Config | Ctrl

| Version                         | VAB                | VBC                | VAC                | Temperature 1 |               | String Current |               |        |        | Time   |
|---------------------------------|--------------------|--------------------|--------------------|---------------|---------------|----------------|---------------|--------|--------|--------|
| DSP FW Version<br>V.xx.xx       | Voltage(L-L)<br>?? | Voltage(L-L)<br>?? | Voltage(L-L)<br>?? | Now           | Max           | 1: ??          | 2: ??         | 3: ??  | 4: ??  | 00: ?? |
| Redundant FW Version<br>V.xx.xx | Current<br>??      | Current<br>??      | Current<br>??      | Ambient       | ??            | 5: ??          | 6: ??         | 7: ??  | 8: ??  | 01: ?? |
| Comm. FW Version<br>V.xx.xx     | Power<br>??        | Power<br>??        | Power<br>??        | Boost-1       | ??            | 9: ??          | 10: ??        | 11: ?? | 12: ?? | 02: ?? |
| ARC FW Version<br>V.xx.xx       | Freq.<br>??        | Freq.<br>??        | Freq.<br>??        | Boost-2       | ??            | 13: ??         | 14: ??        | 15: ?? | 16: ?? | 03: ?? |
| SCM FW Version<br>V.xx.xx       | Input 1            |                    | Input 2            |               | Inverter Time |                | Output Energy |        | 04: ?? |        |
| Serial Number<br>??             | Voltage            | Voltage            | Year               | Today         | Wh            | 17: ??         | 18: ??        | 19: ?? | 20: ?? | 05: ?? |
| Model Name<br>??                | Current            | Current            | Month              | Runtime       | ??            | 21: ??         | 22: ??        | 23: ?? | 24: ?? | 06: ?? |
| Status                          |                    | Power              | Day                | Life          | Wh            | Bus Voltage    |               | PBUS   |        | 07: ?? |
| Remote CTRL                     | Total Power        |                    | Hour               | Wh            | ??            | NBus           |               | NBus   |        | 08: ?? |
| State                           | Input              | Output             | Minute             | Lifetime      | ??            |                |               |        |        | 09: ?? |
| Countdown                       | ??                 | ??                 | Second             |               |               |                |               |        |        | 10: ?? |
| Max Power                       | ??                 | ??                 |                    |               |               |                |               |        |        | 11: ?? |
| ??                              |                    |                    |                    |               |               |                |               |        |        | 12: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 13: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 14: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 15: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 16: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 17: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 18: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 19: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 20: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 21: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 22: ?? |
|                                 |                    |                    |                    |               |               |                |               |        |        | 23: ?? |



# Main Page

- Version
- Input 1
- Input 2
- String Current
- Bus Voltage
- Output 1
- Output 2
- Output 3
- Output Power
- Output Energy
- Inverter Time
- Temperature
- Error Event



## Main Page\_Version

| Version                                  |
|--|
| <b>DSP FW Version</b><br>V xxx.xxx       |
| <b>Redundant FW Version</b><br>V xxx.xxx |
| <b>Comm. FW Version</b><br>V xxx.xxx     |
| <b>ARC FW Version</b><br>V xxx.xxx       |
| <b>SCM FW Version</b><br>V xxx.xxx       |
| <b>Serial Number</b><br>??               |
| <b>Model Name</b><br>??                  |

- Showing all FW version
- Serial Number
- Model Name



# Main Page\_Input

| Input 1 |    | Input 2 |    |
|---------|----|---------|----|
| Voltage | ?? | Voltage | ?? |
| Current | ?? | Current | ?? |
| Power   | ?? | Power   | ?? |

- Showing input voltage/Current/Power readings

| String Current |        |
|----------------|--------|
| 1: ??          | 2: ??  |
| 3: ??          | 4: ??  |
| 5: ??          | 6: ??  |
| 7: ??          | 8: ??  |
| 9: ??          | 10: ?? |
| 11: ??         | 12: ?? |
| 13: ??         | 14: ?? |
| 15: ??         | 16: ?? |
| 17: ??         | 18: ?? |
| 19: ??         | 20: ?? |
| 21: ??         | 22: ?? |
| 23: ??         | 24: ?? |

- Showing each string current



# Main Page\_Input

| VAB                | VBC                | VAC                |
|--------------------|--------------------|--------------------|
| Voltage(L-L)<br>?? | Voltage(L-L)<br>?? | Voltage(L-L)<br>?? |
| Current<br>??      | Current<br>??      | Current<br>??      |
| Power<br>??        | Power<br>??        | Power<br>??        |
| Freq.<br>??        | Freq.<br>??        | Freq.<br>??        |

- Showing Output voltage/Current/Power/Freq readings

| Bus Voltage |    |
|-------------|----|
| PBus        | ?? |
| NBus        | ?? |

- Showing bus voltage of internal bus capacitor



# Main Page\_Output Power/Energy

| Total Power |         |
|-------------|---------|
| Input       | ??      |
| Output      | ??      |
|             | Current |
|             | Power   |

- Showing total output information, include current and power

| Output Energy |    |
|---------------|----|
| Today         |    |
| Wh            | ?? |
| Runtime       | ?? |
| Life          |    |
| Wh            | ?? |
| Lifetime      | ?? |

- Showing Energy generated and runtime for today / Life



# Main Page\_Time\_Temperature

| Inverter Time |    |
|---------------|----|
| Year          | ?? |
| Month         | ?? |
| Day           | ?? |
| Hour          | ?? |
| Minute        | ?? |
| Second        | ?? |

- Showing inverter time

| Temperature 1 |     |     |
|---------------|-----|-----|
|               | Now | Max |
| Ambient       | ??  | ??  |
| Boost-1       | ??  | ??  |
| Boost-2       | ??  | ??  |
| Inverter-S    | ??  | ??  |

- Showing temperature for internal ambient and module



# Main Page\_Error Event

## Error Event

| Time   | Code |
|--------|------|
| 00. ?? | ??   |
| 01. ?? | ??   |
| 02. ?? | ??   |
| 03. ?? | ??   |
| 04. ?? | ??   |
| 05. ?? | ??   |
| 06. ?? | ??   |
| 07. ?? | ??   |
| 08. ?? | ??   |
| 09. ?? | ??   |
| 10. ?? | ??   |
| 11. ?? | ??   |
| 12. ?? | ??   |
| 13. ?? | ??   |
| 14. ?? | ??   |
| 15. ?? | ??   |
| 16. ?? | ??   |
| 17. ?? | ??   |
| 18. ?? | ??   |
| 19. ?? | ??   |
| 20. ?? | ??   |
| 21. ?? | ??   |
| 22. ?? | ??   |
| 23. ?? | ??   |
| 24. ?? | ??   |

- Log error events up to 30 pcs



# Config Page

- PW:4613

Delta Solar System V4.9

Monitor Mode | 3P MxA Series | RS485 | Wi-Fi | Communication | Send Command | Single | Broadcast | Sync Clock | Firmware | English | Grid Set(Load/Save) | Datalog | Help

Start ID: [ ] End ID: [ ]

Inverters ID:002

Main | **Config** | Ctrl

| Country Set         | Uac Protection            | Freq. Protection          | Comm Protection  |
|---------------------|---------------------------|---------------------------|--|
| Country: ??         | U High Off: ???           | F High Off: ???           | Mode: <input type="radio"/> ON <input type="radio"/> OFF |
| Language: ??        | U High Off Time: ???      | F High Off Time: ???      | Disconnection time: ??                                   |
| Reclosure Time: ??  | U High On: ???            | F High On: ???            |  |
| Inverter ID: ??     | U High Off Slow: ???      | F High Off Slow: ???      |  |
| RS485 Baud rate: ?? | U High Off Slow Time: ??? | F High Off Slow Time: ??? |  |
|                     | U High On Slow: ???       | F High On Slow: ???       |  |
|                     | U Low Off: ???            | F Low Off: ???            |  |
|                     | U Low Off Time: ???       | F Low Off Time: ???       |  |
|                     | U Low On: ???             | F Low On: ???             |  |
|                     | U Low Off Slow: ???       | F Low Off Slow: ???       |  |
|                     | U Low Off Slow Time: ???  | F Low Off Slow Time: ???  |  |
|                     | U Low On Slow: ???        | F Low On Slow: ???        |  |

**Insulation**

CTRL:  ON  OFF

R Limit: ???

String 1: ?? String 2: ??

**DC Injection**

CTRL:  ON  OFF

Amp: ??

Time: ??

**AC Terminal**

Type:  3P4W  3P3W



## Config Page

- Country Set
- Uac Protection
- Freq. Protection
- AC Terminal
- Insulation
- DC Injection



## Config Page\_Country Set

| Country Set        |                      |
|--------------------|----------------------|
| Country ??         | <input type="text"/> |
| Language ??        | <input type="text"/> |
| Reclosure Time ??  | <input type="text"/> |
| Inverter ID ??     | <input type="text"/> |
| RS485 Baud rate ?? | <input type="text"/> |

- Country Set: allowed to choose different country setting.
- Reclosure time: allowed to change reclosure time



# DELTA Config Page\_Uac/Freq. Protection

| Uac Protection        |     |                      | Freq. Protection      |     |                      |
|-----------------------|-----|----------------------|-----------------------|-----|----------------------|
| U High Off:           | ??? | <input type="text"/> | F High Off:           | ??? | <input type="text"/> |
| U High Off Time:      | ??? | <input type="text"/> | F High Off Time:      | ??? | <input type="text"/> |
| U High On:            | ??? | <input type="text"/> | F High On:            | ??? | <input type="text"/> |
| U High Off Slow:      | ??? | <input type="text"/> | F High Off Slow:      | ??? | <input type="text"/> |
| U High Off Slow Time: | ??? | <input type="text"/> | F High Off Slow Time: | ??? | <input type="text"/> |
| U High On Slow:       | ??? | <input type="text"/> | F High On Slow:       | ??? | <input type="text"/> |
| U Low Off:            | ??? | <input type="text"/> | F Low Off:            | ??? | <input type="text"/> |
| U Low Off Time:       | ??? | <input type="text"/> | F Low Off Time:       | ??? | <input type="text"/> |
| U Low On:             | ??? | <input type="text"/> | F Low On:             | ??? | <input type="text"/> |
| U Low Off Slow:       | ??? | <input type="text"/> | F Low Off Slow:       | ??? | <input type="text"/> |
| U Low Off Slow Time:  | ??? | <input type="text"/> | F Low Off Slow Time:  | ??? | <input type="text"/> |
| U Low On Slow:        | ??? | <input type="text"/> | F Low On Slow:        | ??? | <input type="text"/> |

- Allowed to change Uac/Freq. protection setting
- Key in value in the blank, if the value is out of the range, it will not be modified in inverter side.



# Config Page\_detection functions

**AC Terminal**

Type  
 3P4W     3P3W

---

**Insulation**

CTRL:  ON     OFF

R Limit ???

String 1    String 2  
??            ??

---

**DC Injection**

CTRL:  ON     OFF

Amp  
??

Time  
??

- Allowed to change AC terminal setting
- if there has N wire on AC side please chose 3P4W
- Allowed to enable/disable Insulation detection
- Allowed to enable/disable DC injection detection.

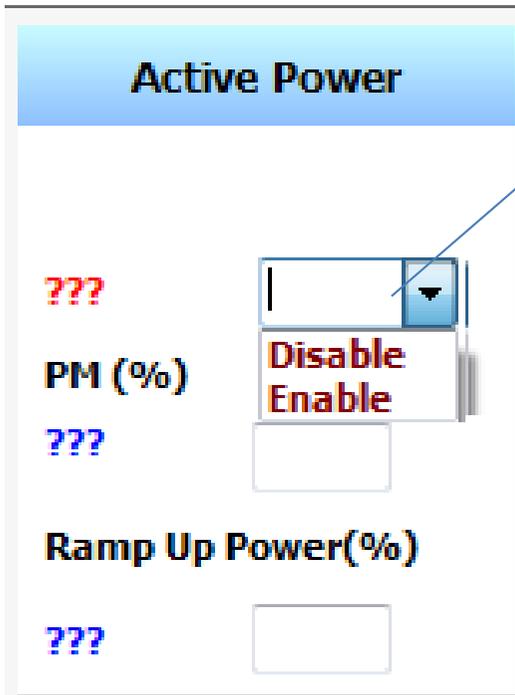


## Ctrl Page

- Active Power
- P-F Control
- P(U) Function
- Reactive Power
- Q(U) Control
- $\text{Cos}(\Phi)$  of P Ctrl

# Ctrl Page\_Active Power

- Enable/Disable this function



The screenshot shows a control interface titled "Active Power". It contains three rows of controls:

- The first row has a red "???" label, a dropdown menu with "Disable" and "Enable" options, and a blue "???" label. An arrow points from the first bullet point in the text to the dropdown menu.
- The second row has a blue "PM (%)" label, an empty input field, and a blue "???" label.
- The third row has a blue "Ramp Up Power(%)" label, an empty input field, and a blue "???" label.

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

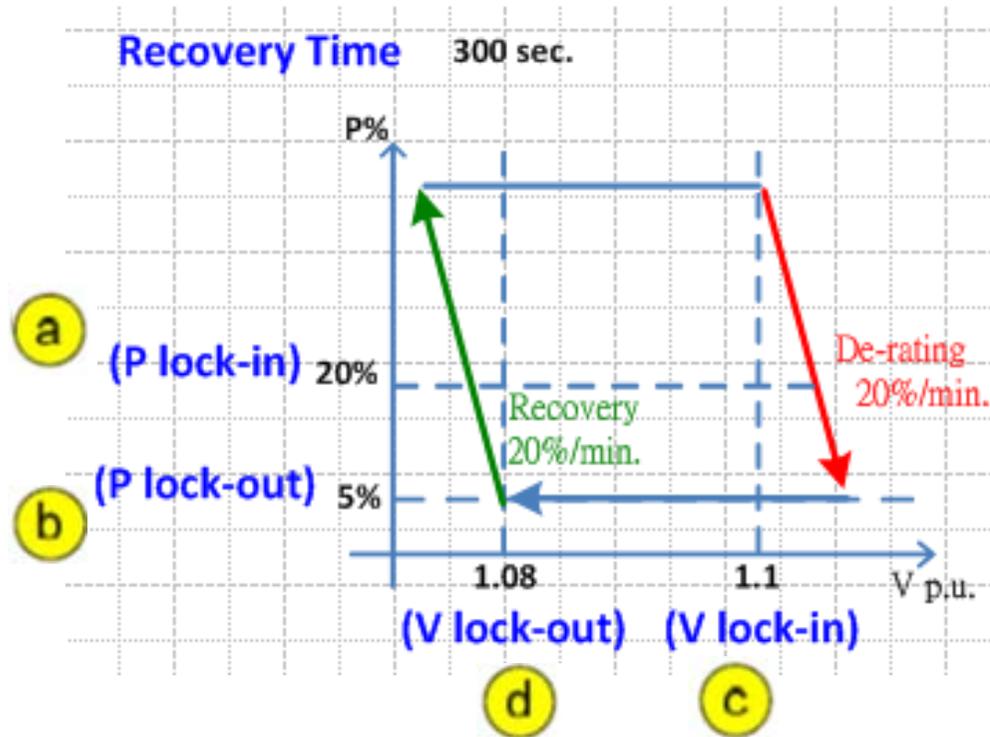




# Ctrl Page\_P(U) Control

| P(U) Function        |     |                          |
|----------------------|-----|--------------------------|
| Mode:                | ??? | <input type="checkbox"/> |
| Recovery Time(s)     | ??? | <input type="checkbox"/> |
| Lockin Power(%)      | ??? | <input type="checkbox"/> |
| Lockout Power(%)     | ??? | <input type="checkbox"/> |
| Lockin Voltage(Vac)  | ??? | <input type="checkbox"/> |
| Lockout Voltage(Vac) | ??? | <input type="checkbox"/> |
| Stop Voltage(Vac)    | ??? | <input type="checkbox"/> |

- Enable/Disable this function



- Enable/Disable this function

## Ctrl Page\_Reactive Power

**Reactive Power**

Mode ??

Fixed cos $\phi$

?? Ind

Fixed Q (%)

?? Ind

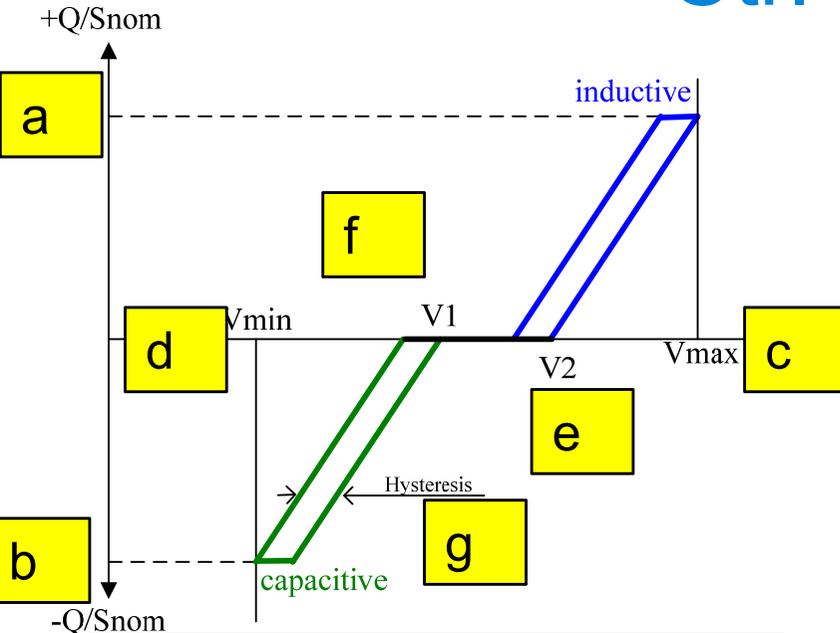
Response Time

??

- Mode: Select reactive power mode
- Fixed cos $\Phi$ : when in “Constant cos $\Phi$ ” 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



# Ctrl Page\_Q(U) Control



- 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

Q(U) Ctrl

|   |  |                                    |   |
|---|--|------------------------------------|---|
| a | Q_Vmax ?? %                            | Q_Vmin ?? %                        | b |
|   | Ind <input type="text"/>               | Ind <input type="text"/>           |   |
| c | Vmax ?? <input type="text"/>           | Vmin ?? <input type="text"/>       | d |
| e | Upper(V2) ?? <input type="text"/>      | Lower(V1) ?? <input type="text"/>  | f |
|   | Lock-in Power ?? <input type="text"/>  |                                    |   |
|   | Lock-out Power ?? <input type="text"/> | Hysteresis ?? <input type="text"/> | g |



# Ctrl Page\_Cos( $\Phi$ ) of P Ctrl

cos( $\phi$ ) of P Ctrl

Upper ??

Ind

Lower ??

Ind

Upper(P1)

?? %

Lower(P2)

?? %

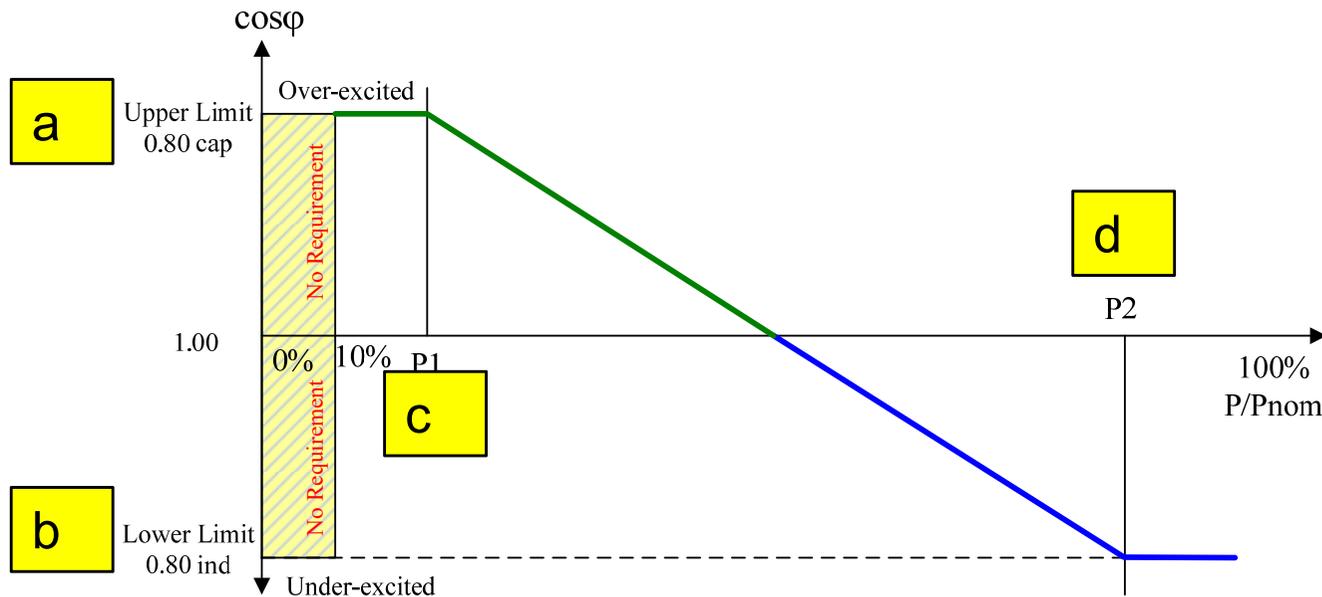
a

b

c

d

- Cos( $\Phi$ ) of P Ctrl function will be controlled in "Reactive Power" page





# Ctrl Page\_Fan test

- You can use fan test function to test the fan.

### Fan Test

Mode  ON  OFF

Duty  
??

### Fan Fail

**Internal**

|     |     |     |     |
|-----|-----|-----|-----|
| F00 | F01 | F02 | F03 |
| F04 | F05 | F06 | F07 |
| F08 | F09 | F10 | F11 |
| F12 | F13 | F14 | F15 |

**External**

|     |     |     |     |
|-----|-----|-----|-----|
| F00 | F01 | F02 | F03 |
| F04 | F05 | F06 | F07 |
| F08 | F09 | F10 | F11 |
| F12 | F13 | F14 | F15 |



# Q setting 24/7

**Reactive Power**

Mode **Fixed Kvar 24/7**  
Fixed Kvar 24/7

**Fixed cosφ**  
1 Ind

**Fixed Q (%)**  
Ind 0% Ind

**Response Time**  
10.00 sec

**Q by Night**

Const.Q\_Percent **40 %**

Q setting 24/7 allows inverter to generate fixed reactive power at night

1. Select reactive mode to “Fixed kvar 24/7”
2. Set specific percentage for reactive power.

\*Range of ConstQ\_Percent : -100%~+100%



# Anti-PID

**Anti-PID**

**Trip Time**  
0

**State** Ready

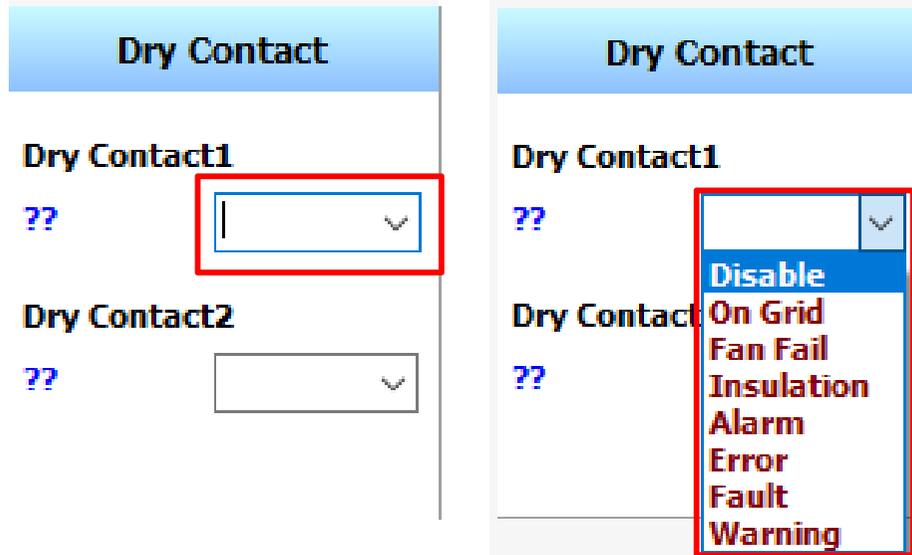
When Trip time is '0' means this function is disable, if the value has been set, the anti-PID function will start after 30 mins when inverter status shows "No DC"

1. Set specific value for anti-PID function active time.

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



# Dry contact



Dry contact function allow you to set external alarm device base on inverter status, dry contact relay will close when the selected status happend

1. Set specific status you want to trigger the relay.  
Items : On grid, Fan Fail, Insulation, Alarm, Error, Fault, Warning



## Other Function

- Sync Clock
- Firmware
- Language
- Protocol
- Grid set
- Datalog



# Other Function\_Sync Clock

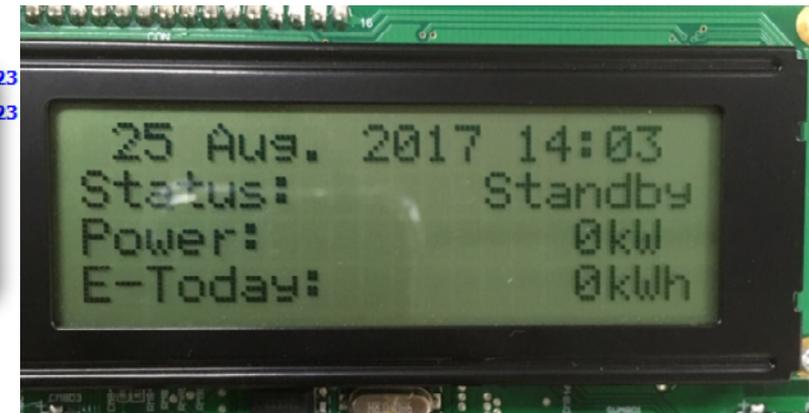
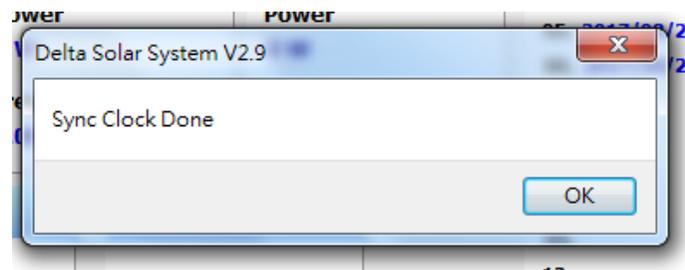


- Sync Clock Function can synchronize inverter's time with your laptop's.

• EX:



Before Sync



After Sync

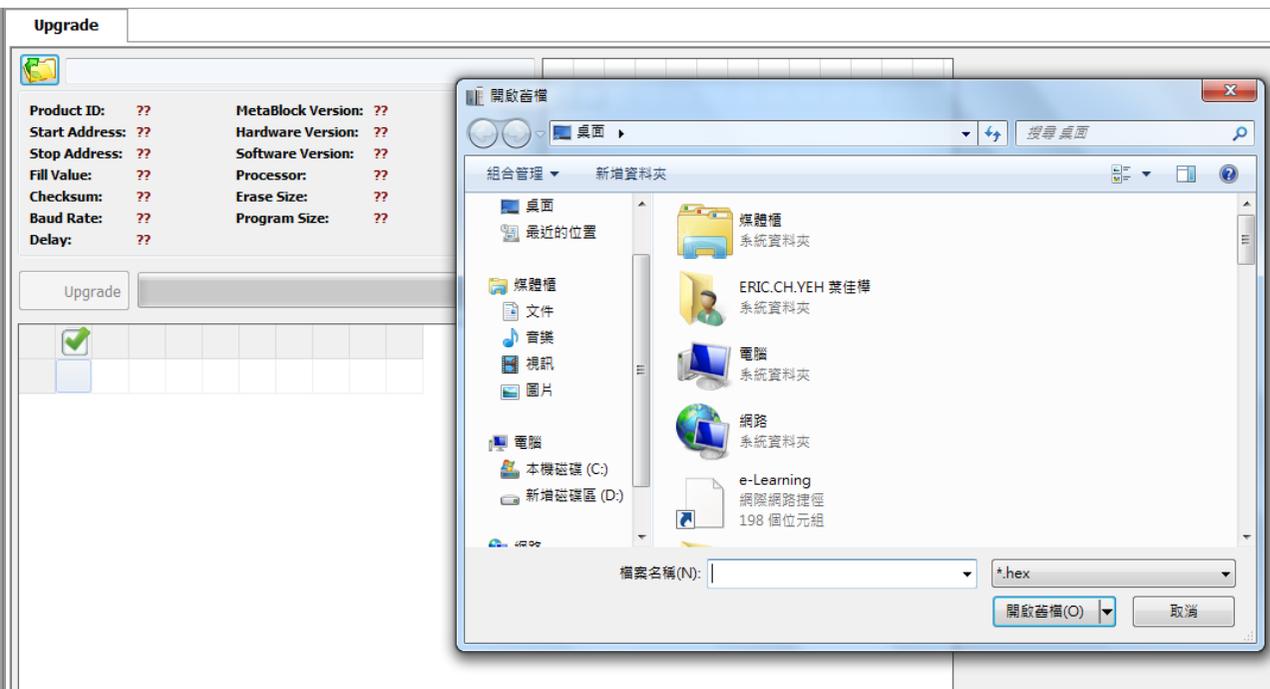
下午 02:03  
2017/8/25



# Other Function\_Firmware



- Firmware Function : for FW upgrade



- After first connection, press”  ”to load FW file.

# Other Function\_Firmware

Upgrade

C:\Users\eric.ch.yeh\Desktop\M80U\_120\_COMM\_V8016\_M1.hex

Product ID: 52000218    MetaBlock Version: 0.01  
Start Address: 0x08007000    Hardware Version: 1.00  
Stop Address: 0x0806FFFF    Software Version: 80.16  
Fill Value: 0xFF    Processor: 0  
Checksum: 0x071D    Erase Size: 128  
Baud Rate: 9600    Program Size: 128  
Delay: 40

| Address | 1        | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  |    |
|---------|----------|----|----|----|----|----|----|----|----|----|
| 1       | 08007000 | 4C | 86 | 00 | 20 | 55 | 71 | 00 | 08 | 99 |
| 2       | 08007080 | 7D | 3E | 03 | 08 | 81 | 3E | 03 | 08 | 85 |
| 3       | 08007100 | 03 | 00 | 00 | 01 | 10 | 50 | 80 | 25 | 00 |
| 4       | 08007180 | 31 | 6A | 03 | 08 | 10 | B5 | AF | 4C | 11 |
| 5       | 08007200 | 1B | F0 | 8E | FB | 07 | E0 | 5F | F4 | E6 |
| 6       | 08007280 | E0 | 81 | E2 | 89 | 0A | 80 | 10 | BD | 3C |

Upgrade

| ID | Mode   | Model Name | Serial Number | Product ID | Boot SW | HW   | SW   |
|----|--------|------------|---------------|------------|---------|------|------|
| 1  | Normal |            | 02L164000     | 52000218   | V03     | 1.00 | 1.25 |

- After the file is loaded, the current FW version will be shown in yellow, you can know whether the FW needs to be upgraded or not.
- If yes, press “  ”
- When upgrade finished, “Upgrade Done” will be shown



# DELTA Other Function\_Language\_Protocol



- Language: three languages available (English /German/French) by clicking the national flag.



- Protocol: Switch between Sunspec & Delta protocol

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

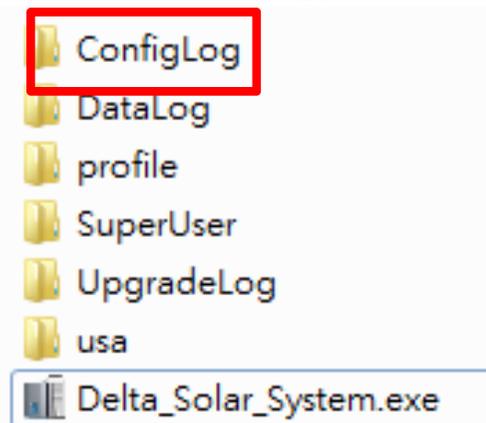
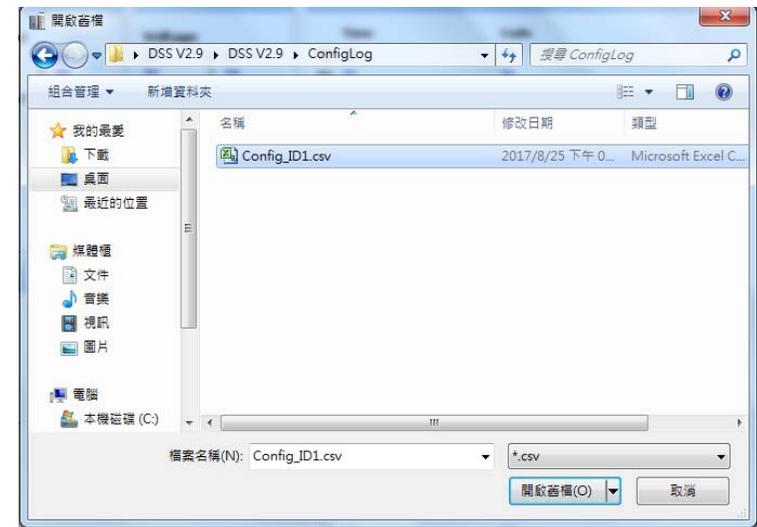
# Other Function\_Grid set



- Grid save: save the Grid setting as “Config\_ID1”



- Grid load: “Config\_ID1” can be found in “Configlog” folder, the setting can be implemented to other inverters.

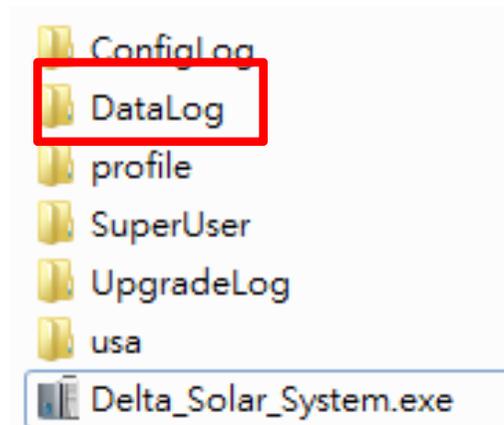
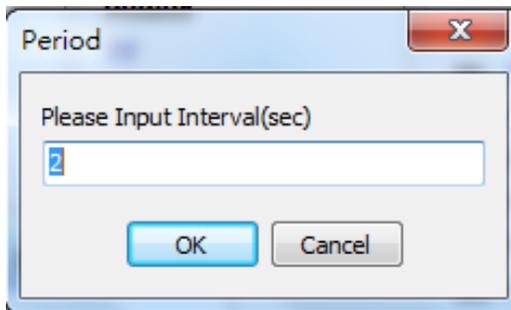




# Other Function\_Datalog



- Datalog Function: log data in Main page.
- Time interval can be chosen
- Data will be in “Datalog” folder



Thank you!

Smarter. Greener. Together.

To learn more about Delta, please visit [www.deltaww.com](http://www.deltaww.com).

