

## 1.1 INTRODUCTION

First of all, thank you for purchasing DMyWx series redundant power supply.

The DMyWx series is a N+1 hot-swappable / hot-pluggable redundant power supply. It consists of,

The total output is up to your power's requirements, you can figure out the total Power's consumption and check over the specification, the you can find out the correct configuration.

It delivers full safety redundant (hot-swappable) function and provides the hot-pluggable feature. In other words, it can offer a more reliable and safer, easy install / maintain operation in the power energy supply to your system.

Its major function is to deliver the full power and the mean time these power modules can mutually backup once one of the power modules is defective.

It provides a warning subsystem, include LED display, buzzer alarm, TTL signal etc., at the same time, it also indicates the status of the power system.

When all the power modules are at normal condition, it balances the load share and results the power system increase reliability.

To really discover the power and ease in using the product, we recommend that you read through this manual carefully.

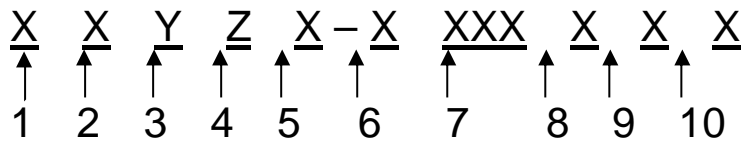
## 1.2 PACKING

Your DMyWx package should consist of the followings:

- (A) DMyWx series x 1
- (B) Accessory pack x 1
- (C) Product Manual x 1

## 1.3 MODEL DESIGNATION

### Model number identification



#### 1st --- Category

X --- blank AC input ( AC – DC )

D -48Vdc input

B -24Vdc input

#### 2nd --- Serial ID

X --- R redundant 1 + 1

M redundant N + 1

#### 3rd --- for # U use

Y --- 1 for 1U use

2 for 2U use

#### 4th --- PM or Customer specify

#### 5th --- # of power module in N+1 system

X --- 1 single

2 1+1 power system

3 2+1 power system

4 3+1 power system

#### 6th --- # of the channel

X --- 2 5V, 12V ( Disk Array )

4 5V, 12V, -5V, -12V ( AT )

5 5V, 12V, 3.3V, 5Vsb, -12V ( ATX / EPS )

6 5V, 12V, 3.3V, 5Vsb, -5V, -12V ( ATX / EPS )

#### 7th --- # of total wattages

XXX --- 460

AXX --- 10XX

BXX --- 11XX

CXX --- 12XX

.....

8th --- attribute

- X --- P w/ PFC
- F w/ EMI filter

9th --- chassis type

- X --- H horizontal type
- V vertical type
- M horizontal + vertical type

10th --- Use FAN type

- X --- 3 use 3.8CM type
- 4 use 4CM type
- 6 use 6CM type
- 8 use 8CM type

## 1.4 FEATURES

### DMyWx

N+1, Hot-swap, Hot-plug, AC input min redundant power system

- Low profile power module for building to the requirement
- N+1 power system design
- Current sharing design
- Remote sensing design
- 6 channels ( 5/12/-5/-12/3.3/5Vsb ) 460W / 500W / 950W / 1350W / 1800W power module outputs
- Active power factor correction (PFC) built-in
- Universal AC power input
- Warning methods---LED, buzzer. TTL signal
- UL, UL+C, TUV, CB approved
- Meet FCC class B, CISPR 22 class B
- Truly redundant feature design
- Debounce power disturbance keep from shut-down / reset
- Isolated fence in power housing meets the safety regulation
- Double protection on OCP & OVP
- I2C function (optional)

## 1.5 DRAWING

## 1.6 SPECIFICATIONS

### INPUT CHARACTERISTICS:

DM1W-6460F

- VOLTAGE: DC -36 V ~ -72 V
- INPUT CURRENT: 15A ( RMS ) FOR – 48 VDC
- INRUSH CURRENT : 20 A MAX.

### OUTPUT CHARACTERISTICS:

OUTPUT VOLTAGE	OUTPUT CURRENT		REGULATION		OUTPUT RIPPLE & NOISE MAX. [P-P]
	MIN. [A]	MAX. [A]	LOAD	LINE	
+5V	3.5	30	± 5%	± 1%	70mV
-5V	0.05	0.7	± 5/-10%	± 1%	120mV
+12V	2	32	+6%	± 1%	120mV
-12V	0.05	0.7	+5/-10%	± 1%	120mV
+3.3V	1	24	± 5%	± 1%	70mV
+5VSB	0.1	2.0	± 5/-6%	± 1%	70mV

REMARKS: 1.TOTAL CURRENT OF +5V AND +3.3V NOT EXCEED 40A

2.TOTAL OUTPUT POWER NOT EXCEED 460W

### SPECIFICATION:

- TEMPERATURE RANGE: OPERATING 0 --- 40 ,STORAGE -20 --- 70
- HOLD UP TIME: 1.6 ms MINIMUM AT FULL LOAD & -48VDC INPUT VOLTAGE
- DIELECTRIC WITHSTAND: INPUT / OUTPUT 1500 VAC FOR 1 MINUTE  
INPUT TO FRAME GROUND 1500 VAC FOR 1 MINUTE
- EFFICIENCY: 68% TYPICAL, AT FULL LOAD
- POWER GOOD SIGNAL: ON DELAY 100 ms TO 500 ms, OFF DELAY 1 ms
- OVER LOAD PROTECTION: 110~160% MAX
- OVER VOLTAGE PROTECTION: +5V → 5.7V ~ 6.5V, +3.3V → 3.9V~4.3V,+12V → 13.3V ~ 14.3V
- SHORT CIRCUIT PROTECTION: +5V, +12V, +3.3V
- EMI NOISE FILTER: FCC CLASS A, CISPR22 CLASS A
- SAFETY: UL 1950, CSA 22.2 NO/ 950, TÜV IEC 950
- REMOTE ON / OFF CONTROL  
THE UNIT SHALL ACCEPT A LOGIC OPEN COLLECTOR LEVEL WHICH WILL DISABLE / ENABLE ALL THE OUTPUT VOLTAGE (EXCLUDE +5V STANDBY), AS LOGIC LEVEL IS LOW, OUTPUTS VOLTAGE WERE ENABLE, AS LOGIC LEVEL IS HIGH, OUTPUTS VOLTAGE WERE DISABLE.
- COOLING: TWO 38x38x28mm DC FAN
- DC INLET IN EACH MODULE

## INPUT CHARACTERISTICS:

DM2W-6460F

- VOLTAGE: DC -36 V ~ -72 V
- INPUT CURRENT: 15 A ( RMS ) FOR – 48 VDC
- INRUSH CURRENT : 20 A MAX.

## OUTPUT CHARACTERISTICS:

OUTPUT VOLTAGE	OUTPUT CURRENT		REGULATION		OUTPUT RIPPLE & NOISE MAX. [P-P]
	MIN. [A]	MAX. [A]	LOAD	LINE	
+5V	3.5	30	± 5%	± 1%	70mV
-5V	0.05	0.7	± 5/-10%	± 1%	120mV
+12V	2	32	+6%	± 1%	120mV
-12V	0.05	0.7	+5/-10%	± 1%	120mV
+3.3V	1	24	± 5%	± 1%	70mV
+5VSB	0.1	2.0	+ 5/-6%	± 1%	70mV

- REMARKS: 1.TOTAL OUTPUT POWER OF +5V AND +3.3V NOT EXCEED 40A  
2.TOTAL OUTPUT POWER NOT EXCEED 460W

## SPECIFICATION:

- TEMPERATURE RANGE: OPERATING 0 --- 40 ,STORAGE -20 --- 70
- HOLD UP TIME: 1.6 ms MINIMUM AT FULL LOAD & -48VDC INPUT VOLTAGE
- DIELECTRIC WITHSTAND: INPUT / OUTPUT 1500 VAC FOR 1 MINUTE  
INPUT TO FRAME GROUND 1500 VAC FOR 1 MINUTE
- EFFICIENCY: 68% TYPICAL, AT FULL LOAD
- POWER GOOD SIGNAL: ON DELAY 100 ms TO 500 ms, OFF DELAY 1 ms
- OVER LOAD PROTECTION: 110~160% MAX
- OVER VOLTAGE PROTECTION: +5V → 5.7V ~ 6.5V, +3.3V → 3.9V~4.3V,+12V → 13.3V ~ 14.3V
- SHORT CIRCUIT PROTECTION: +5V, +12V, +3.3V
- EMI NOISE FILTER: FCC CLASS A, CISPR22 CLASS A
- SAFETY: UL 1950, CSA 22.2 NO/ 950, TÜV IEC 950
- REMOTE ON / OFF CONTROL  
THE UNIT SHALL ACCEPT A LOGIC OPEN COLLECTOR LEVEL WHICH WILL DISABLE / ENABLE ALL THE OUTPUT VOLTAGE (EXCLUDE +5V STANDBY), AS LOGIC LEVEL IS LOW, OUTPUTS VOLTAGE WERE ENABLE, AS LOGIC LEVEL IS HIGH, OUTPUTS VOLTAGE WERE DISABLE.
- COOLING: TWO 38x38x28mm DC FANS
- DC INLET IN EACH MODULE

## INPUT CHARACTERISTICS:

DM1W2-5600V/5650V/5700V

### A、 INPUT CHARACTERISTICS :

- VOLTAGE: -36 ~ -72 VDC, NORMAL -48VDC
- INPUT CURRENT : 16/17/19A ( RMS ) FOR -48VDC
- INRUSH CURRENT : 30A AT -48VDC (AT 25 DEGREES AMBIEND COLD START)

### B、 OUTPUT CHARACTERISTICS :

OUTPUT VOLTAGE	OUTPUT CURRENT		REGULATION		OUTPUT RIPPLE & NOISE MAX. [P-P]
	MIN.	MAX.	LOAD	LINE	
+5V	0.5	32	±5%	±1%	50mV
+12V	2	45/50/55	±5%	±1%	120mV
-12V	0.05	0.8	±10%	±1%	120mV
+3.3V	0.5	36	±5%	±1%	50mV
+5VSB	0.1	3.5	±5%	±1%	50mV

REMARK: 1.+5V AND +3.3V TOTAL OUTPU NOT EXCEED 200W

2. TOTAL OUTPUT POWER NOT EXCEED 600W/650W/700W

### C、 SPECIFICATION

1. TEMPERATURE RANGE : OPERATING 0 60 , STORAGE -20 80
2. HOLD UP TIME : 1mS MIN. AT FULL LOAD
3. DIELECTRIC WITHSTAND : INPUT/OUTPUT 1500 VAC FOR 1 minute  
INPUT TO FRAME GROUND 1500 VAC FOR 1 minute
4. EFFICIENCY : 80% TYPICAL , AT INPUT -48V FULL LOAD
5. POWER GOOD SIGNAL : ON DELAY 100mS TO 500mS , OFF DELAY 1mS
6. OVER POWER PROTECTION : 110 150% MAX
7. OVER VOLTAGE PROTECTION : +5V? 5.7V 6.5V , +3.3V? 3.9V 4.3V , +12V? 13.3V  
14.3V
8. OVER CURRENT PROTECTION:+5V,+12V,+3.3V
- 9 . EMI : FCC CLASS A , CISPR 22 CLASS A
10. SAFETY : TO MEET UL, CUL, TUV
- 11 . REMOTE ON / OFF CONTROL  
THE UNIT SHALL ACCEPT A LOGIC OPEN COLLECTOR LEVEL WHICH WILL DISABLE/ENABLE ALL THE OUTPUT VOLTAGE (EXCLUDE +5V STAND BY).  
AS LOGIC LEVEL IS LOW , OUTPUTS VOLTAGE WERE ENABLE ,  
AS LOGIC LEVEL IS HIGH , OUTPUTS VOLTAGE WERE DISABLE.
12. COOLING: TWO 38x38x28mm DC FANS
- 13 .DC INLET IN EACH MODULE
14. DIMENSION : 300(D) X 101.2(W) X 84(H) mm

## 1.7 INSTALLATION & TESTING

Mount the power system into the system chassis

Attach the connectors to main board by following the main board's instructions, there are various on pinouts / connectors in both the power system and main board, they should match each other, otherwise the connection will cause undetectable harms.

Attach all the remaining power supply connections to the various peripherals as needed, these connectors maybe "keyed", so there will be only one possible way to connect them.

Before applying power source to the system, make sure these are no loose or incorrect connections. Please check your power system is AC source version or DC source version, to supply the correct source.

To test the redundancy function, please supply the source to the individual power modules. If the individual power module. Operates normally, the LED on the module lits in GREEN, and the external warning LED also lits in GREEN. Now remove the source from one of the individual power module, the warning buzzer in the power system will sound, and the external warning LED which displays the status of the total power supply system will blink/RED, the individual LED indicating the power module's status will not light. Meanwhile the power system will continue to backup the power output without affecting the system's operation.

The warning buzzer will continue sounding, the user can reset the warning buzzer by pressing the buzzer reset switch.

Turn on the power module which is turned off for testing earlier, the sound of the warning buzzer will disappear, the external warning LED will turn GREEN again; the LED indicating the status of power module will light again, you may test other power module by performing the similar procedure.



## 1.8 Hot-swap procedures

Please refer to the following when one power module is found defective.

(1) Locate the defective power module by examining the individual LED (if LED is without light, it indicates the power module is defective).

### WARNING:

Please perform the BELOW step carefully; otherwise, it may cause shut down of the whole system.

(2) Turn off

### WARNING:

Please do not remove the defective power module until you have worn gloves to keep from being burned. This is due to the cover of the power module is used as heat sink for cooling. Usually, its temperature is around 50-60 degree Celsius under full load condition.

(3) Remove the defective power module by pulling out method.

### WARNING:

Please put aside the power module to wait for cooling down. Keep other people from touching it until it is cooled.

(4) Replace a new / GOOD power module, insert the power module into the power system till to the end.

(5) Turn on the new power module.

(6) Check the LED of the power module light GREEN.

(7) Check the LED which indicates the total power system status, that SHOULD be from blink/RED to GREEN.

(8) If you want to test this new power module and simulate the defective situation, please refer to Section 1.7 Installation & Testing Section.

## 1.9 PINOUTS AND FUNCTION OF THE CONNECTORS

### A. Power module defective signal:

PIN#	VOLTAGE	SPECIFICATION
1	GND	
2	TTL SIGNAL	pull up to +5Vsb Low Active --- Defective High --- Normal

### B. Power status LED:

PIN#	VOLTAGE	SPECIFICATION
1	GND	
2	12V	Resistance 1K ohm to +12V Low Active(blink) --- Defective High (Green) --- Normal

### C. Buzzer reset switch:

PIN#	VOLTAGE	SPECIFICATION
2	GND	
1	5V	pull up to +5Vsb Low Active --- on shoot trigger

### TTL signal:

Sink current max. 5mA  
Source current max. 50uA  
Low Active ---Defective  
High ---Normal

## 1.10 TROUBLE SHOOTING

If you have followed all directions correctly, these should be no problem. Some common symptoms are: the system doesn't work, buzzer sound, work for a very short period etc., please try the following steps to verify and correct it:

1. Check all the connections (correct pinouts, loose connection, wrong direction etc.,)
2. Check for short-circuit or defective peripherals by unhooking each peripheral once at a time. When the system functions again, you have solved the problem.
3. Once you hear the buzzer sound or see the LED is blinking/ RED, please aware of:
  - a. If the source is OK.
  - b. If the load is under the minimum / over. The maximum load of each channel (please refer the Specification)
  - c. If Ac / Dc input voltage been selected correctly.
  - d. If the power cable(s) been well plugged into the Input kit.

Suppose the above condition been happened, please turn off the power system, await for 2-3 minutes for releasing the protection state, then test it again.

- e. If buzzer still sound or the LED shows power module is defective, please locate which power module is defective, perform Hot-swap procedure at your proper time, send the defective item to your vendor for RMA operation.
- f. If you can not fix the problem, please contact with your vendor for supporting.

The description stated herein is subject to change without prior notice.

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