



User's Manual



IEC62368-1  
IEC61558-1/2-16  
IEC61010-1/2-201  
IEC60601-1  
IEC60335-1  
IEC62477-1

BS EN/EN62368-1  
BS EN/EN61558-1/2-16  
BS EN/EN61010-1/2-201  
BS EN/EN60601-1  
BS EN/EN60335-1  
BS EN/EN62477-1

UL62368-1  
ANSI/AAMI ES60601-1

LISTED  
UL61010-1



AS/NZS61558-1/2-16 GB4943.1 CNS15598-1 KC62368-1 (By request) TPTC004  
AS/NZS62368-1

## Features

- 85~305Vac input with PFC(277Vac available)
- No load power consumption<0.75W by R.C.
- Global certificates in multi-fields  
(ITE 62368-1, Medical 60601-1, Household 60335-1, Industrial 61558-1/2-16/61010-1, Energy converter 62477-1)
- 200% peak power capability(12~60V models)
- High efficiency up to 95%
- -40~+85°C wide range operation temperature(> +60°C derating)
- Extremely low leakage current<350μA, 2 x MOPP, suitable for BF medical applications
- Built-in constant current limiting circuit
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC fan with noise <45dB and fan ON/OFF control
- Built-in Remote ON/OFF control/Remote Sense/ DC OK signal
- Over voltage category III (OVC III)
- Operating altitude up to 5000 meters
- Conformal coating
- 5 years warranty

## Description

The NSP-500 series is a 500W AC/DC power supply with PFC function, designed for high reliability and suitable for multiple industries. Key features include: compact size (199\*99\*41 mm) for better space utilization in system installations, ultra-wide input range of 85~305Vac for global compatibility, up to 95%efficiency and low standby power consumption (<0.75W)for energy-saving and carbon reduction, constant current design with 200% peak power capability,wide operating temperature range from -40 to +85°C (+60°C at full load), compliance with OVCIII, built-in Remote Control /Remote Sense/DC OK signal, internal PCB coating, complete protections, certifications for multiple safety standards including 62368-1, 60601-1, 61558-1, 60335-1, 62477-1, and 61010-1, as well as 2 X MOPP compliance and extremely low leakage current (<350μA).It is suitable for BF-rated medical equipment and comes with a 5-years warranty, making it a highly cost-effective solution for industrial power supply needs.

## Model Encoding

NSP -500- 24

- Output voltage (5V/12V/15V/24V/27V/36V/48V/60V)
- Output wattage
- Series name



## Applications

- Industrial automation machinery/ control system
- Security system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus
- Network equipment
- Telecom devices
- Power sourcing equipment of PoE
- Home automation
- Medical devices
- Charging application

## GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>



# 500W AC/DC High Reliable Multi-Industries Enclosed Type Power Supply **NSP-500** series

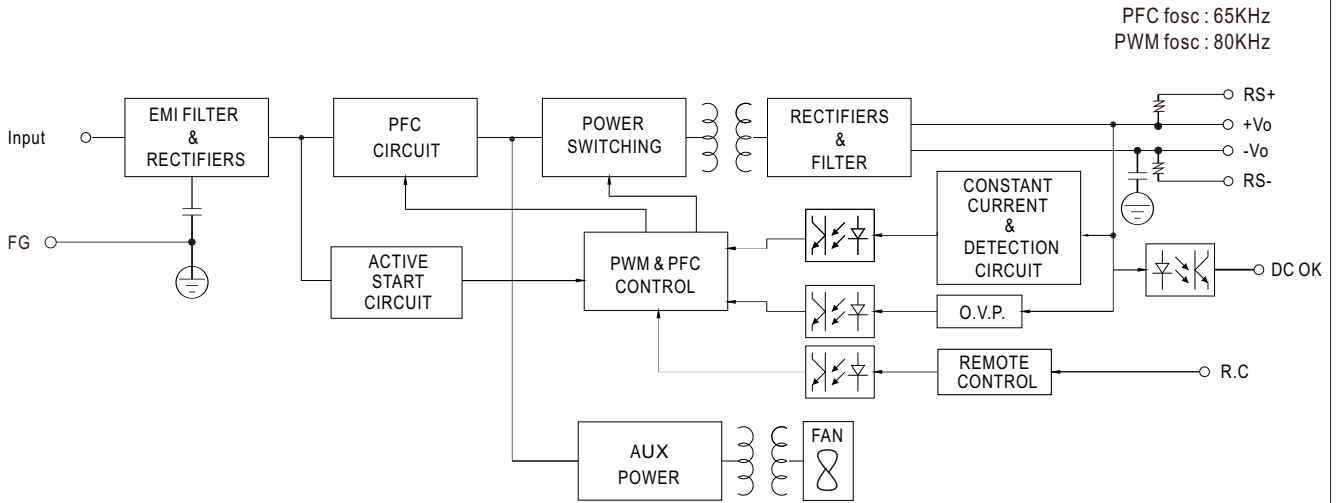
| SPECIFICATION                   |                  | NSP-500-5 | NSP-500-12                                                                                                                                                                                                                                                                                                                                                                                                                                           | NSP-500-15   | NSP-500-24          | NSP-500-27 | NSP-500-36         | NSP-500-48 | NSP-500-60 |          |
|---------------------------------|------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------|------------|--------------------|------------|------------|----------|
| OUTPUT                          |                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                     |            |                    |            |            |          |
| DC VOLTAGE                      |                  | 5V        | 12V                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 15V          | 24V                 | 27V        | 36V                | 48V        | 60V        |          |
| RATED CURRENT                   |                  | 90A       | 42A                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 33.4A        | 21A                 | 18.6A      | 13.9A              | 10.5A      | 8.4A       |          |
| CURRENT RANGE                   |                  | 0 ~ 90A   | 0 ~ 42A                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0 ~ 33.4A    | 0 ~ 21A             | 0 ~ 18.6A  | 0 ~ 13.9A          | 0 ~ 10.5A  | 0 ~ 8.4A   |          |
| RATED POWER                     |                  | 450W      | 504W                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 501W         | 504W                | 502.2W     | 500.4W             | 504W       | 504W       |          |
| PEEK                            | CURRENT(5 sec.)  | N/A       | 84A                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 66.7A        | 41.7A               | 37A        | 27.8A              | 20.8A      | 16.7A      |          |
|                                 | POWER(5 sec.)    | N/A       | 1000W                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1000W        | 1000W               | 1000W      | 1000W              | 1000W      | 1000W      |          |
| RIPPLE & NOISE (max.)           |                  | Note.2    | 200mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                             | 200mVp-p     | 200mVp-p            | 240mVp-p   | 240mVp-p           | 240mVp-p   | 300mVp-p   |          |
| VOLTAGE ADJ. RANGE              |                  |           | 4.7 ~ 5.5V                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10.8 ~ 14V   | 15 ~ 19V            | 21 ~ 26V   | 26 ~ 32V           | 32 ~ 43V   | 44 ~ 57V   | 54 ~ 72V |
| VOLTAGE TOLERANCE               |                  | Note.3    | ±2.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                | ±2.0%        | ±2.0%               | ±1.0%      | ±1.0%              | ±1.0%      | ±1.0%      | ±1.0%    |
| LINE REGULATION                 |                  |           | ±0.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                | ±0.5%        | ±0.5%               | ±0.5%      | ±0.5%              | ±0.5%      | ±0.5%      | ±0.5%    |
| LOAD REGULATION                 |                  |           | ±1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                | ±0.5%        | ±0.5%               | ±0.5%      | ±0.5%              | ±0.5%      | ±0.5%      | ±0.5%    |
| SETUP, RISE TIME                |                  |           | 1500ms, 80ms/115Vac                                                                                                                                                                                                                                                                                                                                                                                                                                  |              | 1000ms, 80ms/230Vac |            | 900ms, 80ms/277Vac |            |            |          |
| HOLD UP TIME (Typ.)             |                  |           | 16ms at full load                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |                     |            |                    |            |            |          |
| INPUT                           |                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                     |            |                    |            |            |          |
| VOLTAGE RANGE                   |                  | Note.4    | 85 ~ 305Vac                                                                                                                                                                                                                                                                                                                                                                                                                                          |              | 120 ~ 431Vdc        |            |                    |            |            |          |
| NO LOAD POWER CONSUMPTION(Typ.) | Remote Power OFF |           | 0.75W/115Vac                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.75W/230Vac | 0.75W/277Vac        |            |                    |            |            |          |
|                                 | Remote Power ON  |           | 3.3W/115Vac                                                                                                                                                                                                                                                                                                                                                                                                                                          | 3W/230Vac    | 3W/277Vac           |            |                    |            |            |          |
| FREQUENCY RANGE                 |                  |           | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |                     |            |                    |            |            |          |
| POWER FACTOR (Typ.)             |                  |           | PF>0.98/115Vac, PF>0.93/230Vac, PF>0.9/277Vac at full load                                                                                                                                                                                                                                                                                                                                                                                           |              |                     |            |                    |            |            |          |
| EFFICIENCY (Typ.)               |                  |           | 90%                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 92%          | 92%                 | 94%        | 94%                | 94.5%      | 95%        | 95%      |
| AC CURRENT (Typ.)               |                  |           | 5.3A/115Vac                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.6A/230Vac  | 2.2A/277Vac         |            |                    |            |            |          |
| INRUSH CURRENT (Typ.)           |                  |           | COLD START 20A/115Vac 40A/230Vac 50A/277Vac                                                                                                                                                                                                                                                                                                                                                                                                          |              |                     |            |                    |            |            |          |
| LEAKAGE CURRENT                 |                  |           | Earth leakage current <350μA(rms)@277Vac, touch current<100μA(rms) @ 277Vac                                                                                                                                                                                                                                                                                                                                                                          |              |                     |            |                    |            |            |          |
| PROTECTION                      |                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                     |            |                    |            |            |          |
| SHORT CIRCUIT                   | 5V               |           | Constant current limiting for more than 5 seconds (Vout<30%) and then hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                           |              |                     |            |                    |            |            |          |
|                                 | 12V ~ 60V        |           | Constant current limiting for more than 5 seconds (Vout<30%) and then shut down o/p voltage, AC re-power on to recover or Hiccup mode, recovery automatically after fault condition is removed. Depends on the user's wire impedance                                                                                                                                                                                                                 |              |                     |            |                    |            |            |          |
| OVERLOAD                        | 5V               |           | 105%~150% rated output power; More than 5 seconds and then hiccup mode,recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                       |              |                     |            |                    |            |            |          |
|                                 | 12V ~ 60V        |           | Normally works within 105 ~ 200% rated output power for more than 5 seconds and then constant current limiting without shutdown(Vout>30%), recovers automatically after fault condition is removed, or shut down o/p voltage when Vout<30%,AC re-power on to recover<br>>200% rated power, constant current limiting (Vout>30%)with auto-recovery after fault condition is removed, or shut down o/p voltage when Vout<30%,AC re-power on to recover |              |                     |            |                    |            |            |          |
| OVER VOLTAGE                    |                  |           | 5.8 ~ 7.5V                                                                                                                                                                                                                                                                                                                                                                                                                                           | 15 ~ 19V     | 20 ~ 25V            | 28 ~ 36V   | 33~ 42V            | 44 ~ 54V   | 58~ 70V    | 73~ 86V  |
|                                 |                  |           | Protection type : Shut down o/p voltage, AC re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                   |              |                     |            |                    |            |            |          |
| OVER TEMPERATURE                |                  |           | Shut down o/p voltage, AC re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                     |              |                     |            |                    |            |            |          |
| FUNCTION                        |                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                     |            |                    |            |            |          |
| REMOTE CONTROL                  |                  |           | POWER ON: RC+~RC- 0~0.8Vdc or open ,<br>POWER OFF: RC+~RC- 3.3~10Vdc by external voltage                                                                                                                                                                                                                                                                                                                                                             |              |                     |            |                    |            |            |          |
| REMOTE SENSE                    |                  |           | Compensate voltage drop on the load wiring up to 0.3V. Please refer to the Function Manual                                                                                                                                                                                                                                                                                                                                                           |              |                     |            |                    |            |            |          |
| DC OK SIGNAL                    |                  |           | By phototransistor contact rating(max.):15Vdc/10mA resistive load. Please refer to the Function Manual.                                                                                                                                                                                                                                                                                                                                              |              |                     |            |                    |            |            |          |
| FAN NOISE(Typ.)                 |                  |           | Fan ON/OFF control, RTH4≥50℃ ±10℃ FAN ON; RTH4≤40℃ ±10℃ FAN OFF                                                                                                                                                                                                                                                                                                                                                                                      |              |                     |            |                    |            |            |          |
|                                 |                  |           | 45dB                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |                     |            |                    |            |            |          |
| ENVIRONMENT                     |                  |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                     |            |                    |            |            |          |
| WORKING TEMP.                   |                  |           | -40 ~ +85℃ (Refer to "Derating Curve")                                                                                                                                                                                                                                                                                                                                                                                                               |              |                     |            |                    |            |            |          |
| WORKING HUMIDITY                |                  |           | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                           |              |                     |            |                    |            |            |          |
| STORAGE TEMP., HUMIDITY         |                  |           | -40 ~ +85℃, 10 ~ 95% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                               |              |                     |            |                    |            |            |          |
| TEMP. COEFFICIENT               |                  |           | ±0.05%/℃ (0 ~ 60℃)                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |                     |            |                    |            |            |          |
| VIBRATION                       |                  |           | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                         |              |                     |            |                    |            |            |          |



# 500W AC/DC High Reliable Multi-Industries Enclosed Type Power Supply **NSP-500** series

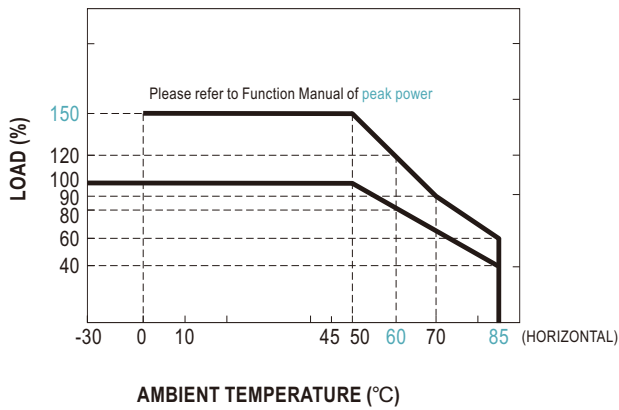
| SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                    | NSP-500-5                                                                                                                     | NSP-500-12 | NSP-500-15 | NSP-500-24 | NSP-500-27 | NSP-500-36                                                                  | NSP-500-48 | NSP-500-60 |
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| SAFETY & EMC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                    | Note 6&7                                                                                                                      |            |            |            |            |                                                                             |            |            |
| SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CB                                                                                                                 | IEC62368-1, IEC60335-1, IEC61558-1/-2-16, IEC61010-1/-2-201, IEC60601-1; IEC62477-1                                           |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | DEKRA                                                                                                              | BS EN/EN62368-1, BS EN/EN60335-1, BS EN/EN61558-1/-2-16, BS EN/EN61010-1/-2-201, BS EN/EN60601-1(3.2 Version);BS EN/EN62477-1 |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | UL                                                                                                                 | UL62368-1, ANSI/AAMI ES60601-1(3.2 Version),UL61010-1/-2-201                                                                  |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RCM                                                                                                                | AS/NZS 62368-1, AS/NZS 61558-1/-2-16                                                                                          |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CCC                                                                                                                | GB4943.1                                                                                                                      |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | BSMI                                                                                                               | CNS15598-1                                                                                                                    |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EAC                                                                                                                | TP TC 004 approved;                                                                                                           |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | KC/BIS                                                                                                             | KC62368-1 and BIS IS 13252(Part 1) :2010 certified, no stock by request, contact sale for inquiries                           |            |            |            |            |                                                                             |            |            |
| ISOLATION LEVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Note 8                                                                                                             | Primary-Secondary: 2xMOPP, Primary-Earth: 1xMOPP, Secondary-Earth: 1xMOPP                                                     |            |            |            |            |                                                                             |            |            |
| OVER VOLTAGE CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | IEC/EN 61558-1/-2-16                                                                                               | (OVC III, altitude up to 2000M)                                                                                               |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | IEC/EN/UL 62368-1                                                                                                  | (OVC II, altitude up to 5000M)                                                                                                |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | IEC/EN 60335-1                                                                                                     | (OVC II, altitude up to 5000M)                                                                                                |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | IEC/EN 60601-1                                                                                                     | (OVC II, altitude up to 4000M)                                                                                                |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | IEC/EN 61010-1/-2-201                                                                                              | (OVC II, altitude up to 5000M)                                                                                                |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | IEC/EN 62477-1                                                                                                     | (OVC II, altitude up to 5000M)                                                                                                |            |            |            |            |                                                                             |            |            |
| SAFETY EXTRA-LOW VOLTAGE(SELV)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                    | IEC/EN 61558-2-16 (SELV, 5 ~ 36V)<br>IEC/EN 60335-1 (SELV, 5 ~ 36V)<br>IEC/EN/UL 62368-1 (SELV/ES1, 5 ~ 36V)                  |            |            |            |            |                                                                             |            |            |
| WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                    | I/P-O/P:4.2KVac I/P-FG:2.1KVac O/P-FG:1.5KVac                                                                                 |            |            |            |            |                                                                             |            |            |
| ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                    | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                                     |            |            |            |            |                                                                             |            |            |
| EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Parameter                                                                                                          | Standard                                                                                                                      |            |            |            |            | Test Level / Note                                                           |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Conducted                                                                                                          | BS EN/EN55032(CISPR32),CNS 15936                                                                                              |            |            |            |            | Class B                                                                     |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | BS EN/EN55014-1(CISPR14-1)                                                                                                    |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | BS EN/EN55011(CISPR11)                                                                                                        |            |            |            |            | Class B                                                                     |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Radiated                                                                                                           | BS EN/EN55032(CISPR32),CNS 15936                                                                                              |            |            |            |            | Class B                                                                     |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | BS EN/EN55014-1(CISPR14-1)                                                                                                    |            |            |            |            |                                                                             |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                    | BS EN/EN55011(CISPR11)                                                                                                        |            |            |            |            | Class B                                                                     |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Harmonic Current                                                                                                   | BS EN/EN61000-3-2(IEC61000-3-2)                                                                                               |            |            |            |            | Class A                                                                     |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Voltage Flicker                                                                                                    | BS EN/EN61000-3-3(IEC61000-3-3)                                                                                               |            |            |            |            | -----                                                                       |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | BS EN/EN55035(CISPR35),BS EN/EN61000-6-2(IEC61000-6-2),BS EN/EN60601-1-2(IEC60601-1-2), BS EN/EN55014-2(CISPR14-2) |                                                                                                                               |            |            |            |            |                                                                             |            |            |
| EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Parameter                                                                                                          | Standard                                                                                                                      |            |            |            |            | Test Level / Note                                                           |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ESD                                                                                                                | BS EN/EN61000-4-2                                                                                                             |            |            |            |            | Level 4, 15KV air ; Level 4, 8KV contact                                    |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Radiated                                                                                                           | BS EN/EN61000-4-3                                                                                                             |            |            |            |            | Level 3, 10V/m(80MHz~2.7GHz)<br>Table 9, 9~28V/m(385MHz~5.78GHz)            |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EFT / Burst                                                                                                        | BS EN/EN61000-4-4                                                                                                             |            |            |            |            | Level 3, 2KV                                                                |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Surge                                                                                                              | BS EN/EN61000-4-5                                                                                                             |            |            |            |            | Level 4, 2KV/Line-Line 4KV/Line-Earth                                       |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Conducted                                                                                                          | BS EN/EN61000-4-6                                                                                                             |            |            |            |            | Level 3, 10V                                                                |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Magnetic Field                                                                                                     | BS EN/EN61000-4-8                                                                                                             |            |            |            |            | Level 4, 30A/m                                                              |            |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Voltage Dips and Interruptions                                                                                     | BS EN/EN61000-4-11                                                                                                            |            |            |            |            | >95% dip 0.5 periods, 30% dip 25 periods,<br>>95% interruptions 250 periods |            |            |
| OTHERS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                    |                                                                                                                               |            |            |            |            |                                                                             |            |            |
| MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1213.4 K hrs min. Telcordia SR-332 (Bellcore) ; 212.1K hrs min. MIL-HDBK-217F (25℃)                                |                                                                                                                               |            |            |            |            |                                                                             |            |            |
| DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 199*99*41mm                                                                                                        |                                                                                                                               |            |            |            |            |                                                                             |            |            |
| PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1Kg;12pcs/13Kg/0.72 CUFT                                                                                           |                                                                                                                               |            |            |            |            |                                                                             |            |            |
| NOTE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                    |                                                                                                                               |            |            |            |            |                                                                             |            |            |
| 1. All parameters NOT specially mentioned are measured at 230Vac input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.<br>3. Tolerance: includes set up tolerance, line regulation and load regulation.<br>4. Derating may be need under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.<br>5. The ambient temperature derating of 3.5℃/1000m with fanless models and 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft)..<br>6. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a> )<br>7. RCM is on voluntary basis and meets relevant IEC or AS/NZS standards complying with AS/NZS 4417.1.<br>8. MOPP is suitable for 100-240Vac input only.<br>※ Product Liability Disclaimer: For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                    |                                                                                                                               |            |            |            |            |                                                                             |            |            |

## ■ Block Diagram

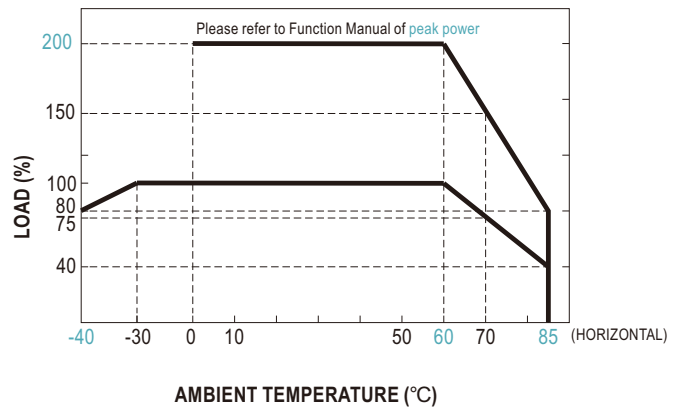


## ■ Derating Curve

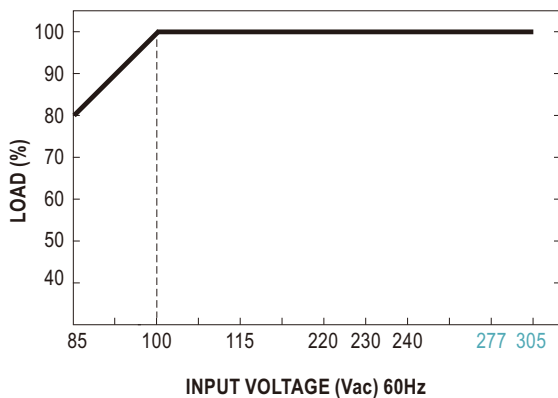
Suitable for 100/110/115/120Vac System  
(85~135Vac)



Suitable for 220/230/240/277Vac System  
(180~305Vac)



## ■ Output Derating vs Input Voltage



## Function Manual

### 1. Peak Power

$$P_{av} = \frac{P_{pk} \times t + P_{npk} \times (T-t)}{T} \leq P_{rated}$$

$$\text{Duty} = \frac{t}{T} \times 100\% \leq 35\%$$

$$t \leq 5 \text{ sec}$$

$P_{av}$  : Average output power (W)

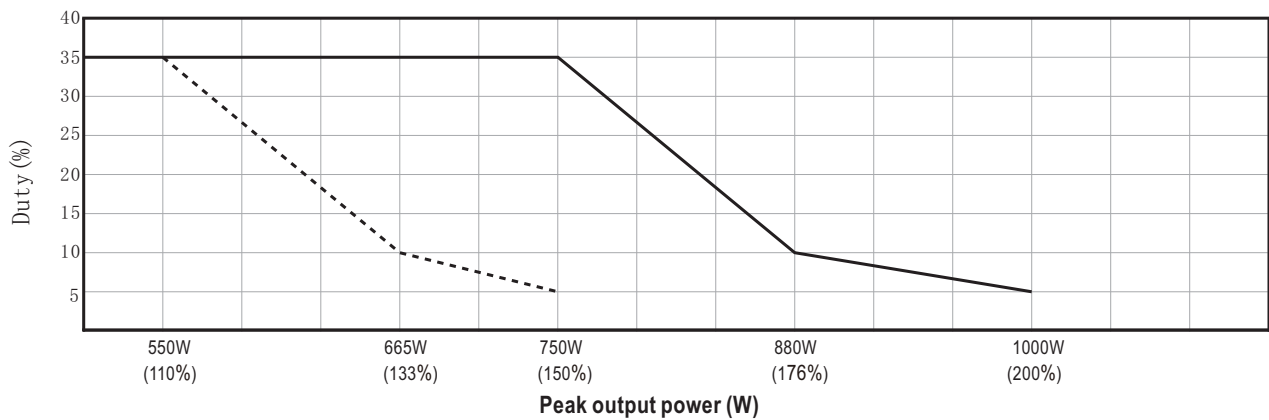
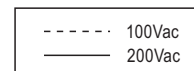
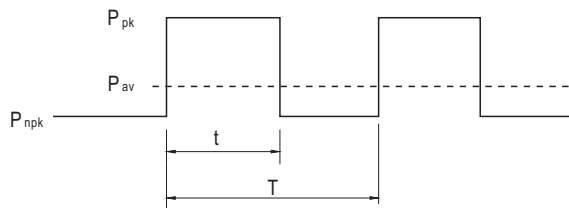
$P_{pk}$  : Peak output power (W)

$P_{npk}$  : Non-peak output power (W)

$P_{rated}$  : Rated output power (W)

$t$  : Peak power width (sec)

$T$  : Period (sec)



#### For example (24V model) :

$V_{in} = 200\text{Vac}$      $\text{Duty}_{\text{max}} = 5\%$

$P_{av} = P_{rated} = 500\text{W}$

$P_{pk} = 1000\text{W}$

$t \leq 5 \text{ sec}$

$$T \geq \frac{5 \text{ sec}}{5\%} \geq 100\text{sec}$$

$$P_{npk} \leq \frac{T P_{av} - t P_{pk}}{T-t}$$

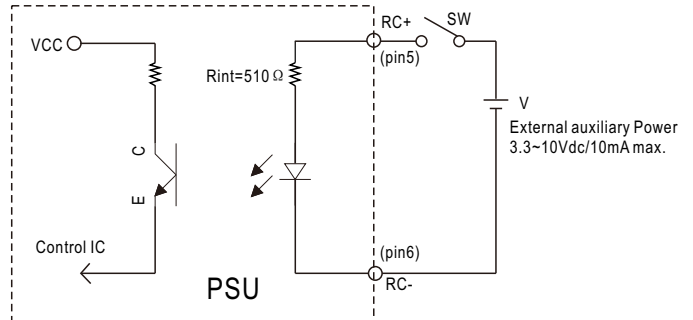
$$P_{npk} \leq 473\text{W}$$

Note: When the output voltage is adjusted to the upper limit, the peak power is 150% rated power.

## 2.Remote Control

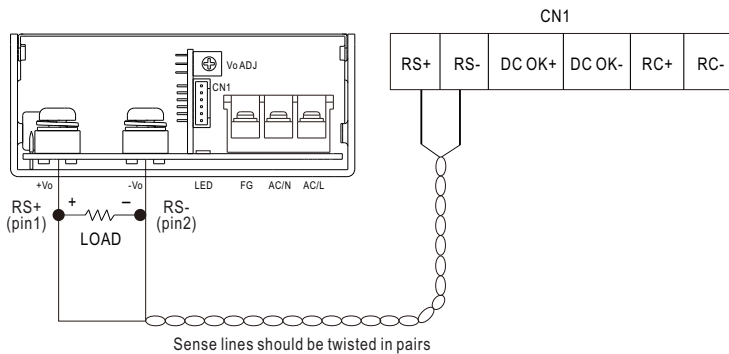
The PSU can be turned ON/OFF by using the "Remote Control" function with external switch and auxiliary power.

| PSU Vo Status | Between RC-(pin6) and RC+(pin5) on CN1 |
|---------------|----------------------------------------|
| POWER ON      | Keep 0~0.8Vdc or open                  |
| POWER OFF     | Keep 3.3~10Vdc by external voltage     |



## 3.Remote Sense

The remote sensing compensates voltage drop on the load wiring up to 0.3Vdc.

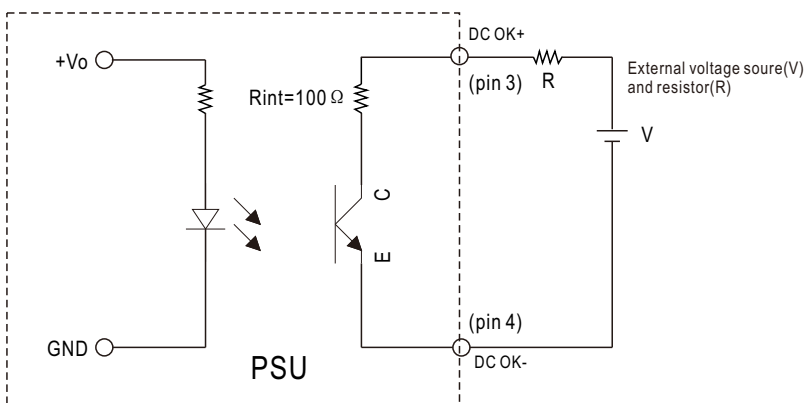


## 4.DC\_OK signal

DC\_OK is a collector shorted signal. It is used by an optocoupler in the power supply which indicates the output status of the power supply as exhibited below.

| PSU Vo Status | Photo transistor       |
|---------------|------------------------|
| POWER ON      | Conduct(Low impedance) |
| POWER OFF     | Open(High impedance)   |

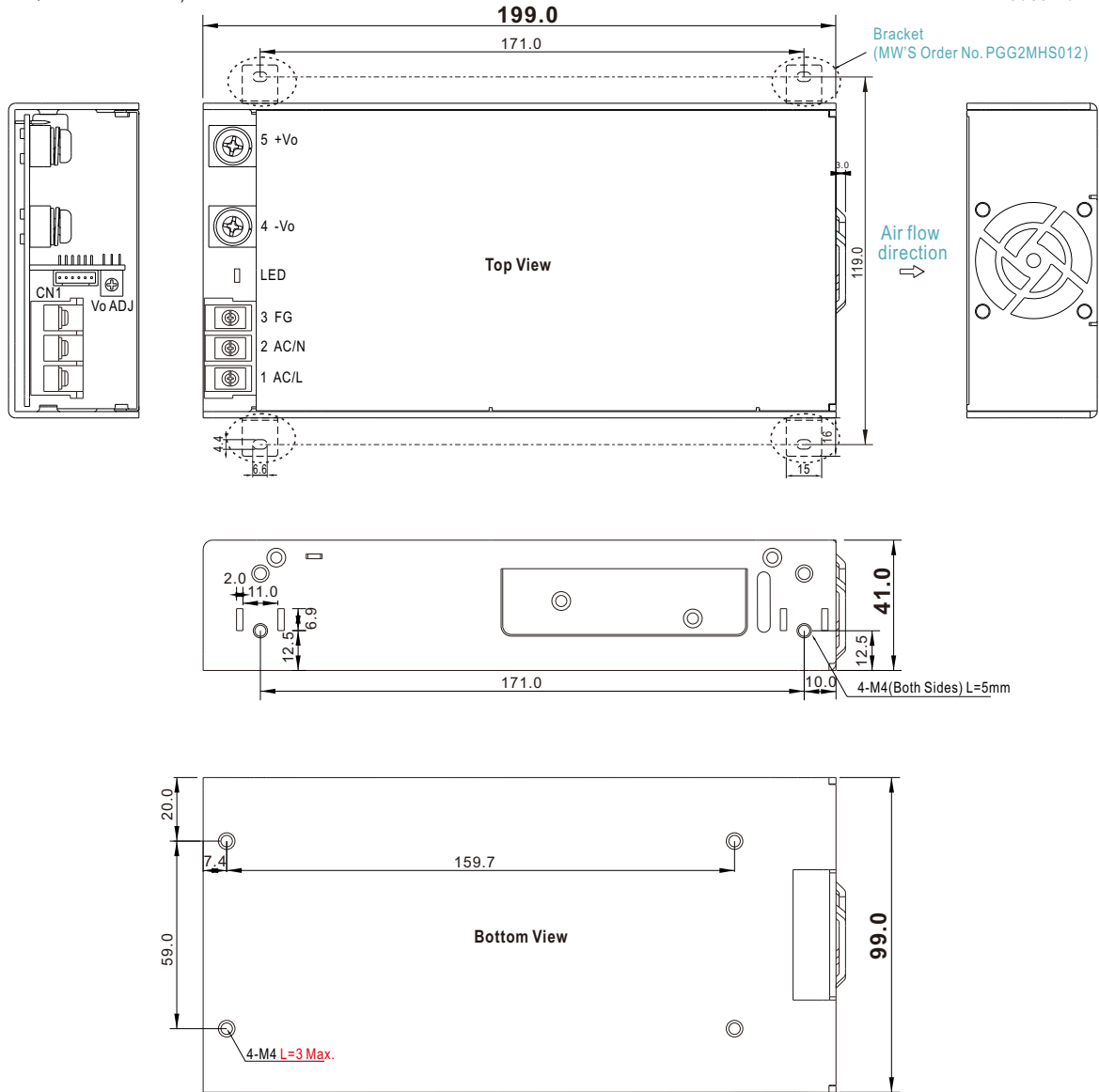
Optocoupler Rating(max.) 15Vdc/10mA resistive load



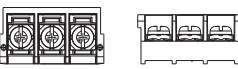
## ■ Mechanical Specification

(Unit: mm , tolerance  $\pm 1$ mm)

Case No.215B



### ※ AC Input Terminal Pin No. Assignment

| Pin No. | Assignment            | Diagram                                                                             | Screw Size | Mounting torque |
|---------|-----------------------|-------------------------------------------------------------------------------------|------------|-----------------|
| 1       | AC/N or DC input -Vin |  | M3.5       | 8~10Kgf-cm      |
| 2       | AC/L or DC input +Vin |                                                                                     |            |                 |
| 3       | FG $\perp$            |                                                                                     |            |                 |

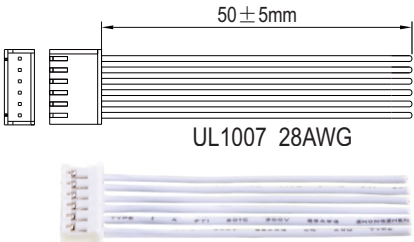
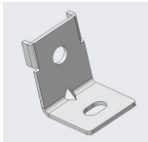
### ※ DC Output Terminal Pin No. Assignment

| Pin No. | Assignment | Diagram                                                                                                  | Screw Size | Mounting torque |
|---------|------------|----------------------------------------------------------------------------------------------------------|------------|-----------------|
| 5       | +Vo        | For 5~15V models<br>  | M5         | 10~12Kgf-cm     |
| 4       | -Vo        | For 24~60V models<br> | M4         |                 |

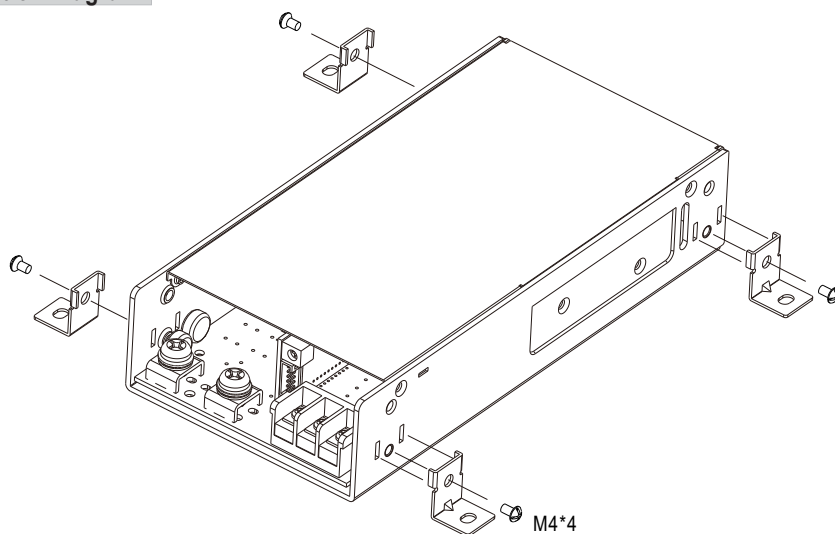
※ Connector Pin No. Assignment (CN1): DJS-1125R-06 or equivalent

| Pin No. | Assignment | Mating Housing               | Terminal                      |
|---------|------------|------------------------------|-------------------------------|
| 1       | RS+        | JS-11242-06<br>or equivalent | DJS-1125R-06<br>or equivalent |
| 2       | RS-        |                              |                               |
| 3       | DC OK+     |                              |                               |
| 4       | DC OK-     |                              |                               |
| 5       | RC+        |                              |                               |
| 6       | RC-        |                              |                               |

### ■ Accessory List

| No. | Item                                                                                                                                                                                      | Quantity                                                    |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 1   | Control function interface(CN1) mating wire along with NSP-500<br>(standard accessory)<br>              | 1pcs/per model                                              |
| 2   | Bracket<br>MW'S Order NO. : PGG2MHS012<br>(By request accessory,should ordered seperately)<br>          | 4pcs/per model<br>(Please refer to<br>Installation Diagram) |
| 3   | Terminal cover<br>MW'S Order NO. : PEE4TBC-03<br>(By request accessory,should ordered seperately)<br> | 1pcs/per model                                              |

### ■ Installation Diagram



### ■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>