

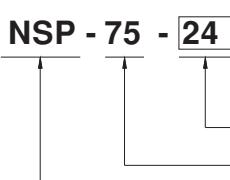
## ■ Features

- 85~305Vac input with PFC(277Vac available)
- No load power consumption <0.3W~0.5W 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 92%
- -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
- Fanless design for noise sensitive applications
- Built-in remote ON/OFF control
- Over voltage category III (OVC III)
- Operating altitude up to 5000 meters
- Conformal coating
- 5 years warranty

## ■ Description

The NSP-75 series is a 75W AC/DC power supply with PFC function, designed for high reliability and suitable for multiple industries. Key features include: compact size (99\*97\*30 mm) for better space utilization in system installations, ultra-wide input range of 85~305Vac for global compatibility, up to 92% efficiency and low standby power consumption (<0.3W~0.5W) for energy-saving and carbon reduction, constant current design with 200% peak power capability, fanless design, wide operating temperature range from -40 to +85°C(+60°C at full load), compliance with OVCIII, built-in Remote Control, 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



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

## ■ GTIN CODE

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



# 75W AC/DC High Reliable Multi-Industries Enclosed Type Power Supply NSP-75 series

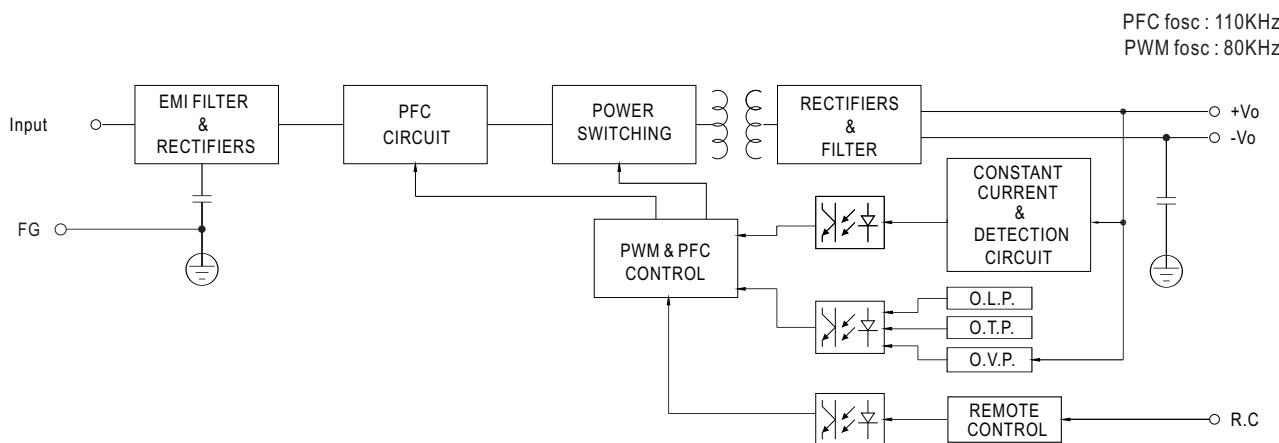
SPECIFICATION		NSP-75-5	NSP-75-12	NSP-75-15	NSP-75-24	NSP-75-27	NSP-75-36	NSP-75-48	NSP-75-60
<strong>OUTPUT</strong>									
DC VOLTAGE		5V	12V	15V	24V	27V	36V	48V	60V
RATED CURRENT		15A	6.3A	5A	3.2A	2.8A	2.1A	1.6A	1.3A
CURRENT RANGE		0 ~ 15A	0 ~ 6.3A	0 ~ 5A	0 ~ 3.2A	0 ~ 2.8A	0 ~ 2.1A	0 ~ 1.6A	0 ~ 1.3A
RATED POWER		75W	75.6W	75W	76.8W	75.6W	75.6W	76.8W	78W
PEAK	CURRENT(5 sec.)	N/A	12.5A	10A	6.3A	5.6A	4.2A	3.2A	2.5A
	POWER(5 sec.)	N/A	150W	150W	150W	150W	150W	150W	150W
RIPPLE & NOISE (max.) Note.2		150mVp-p	150mVp-p	150mVp-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	1000ms, 80ms/277Vac					
HOLD UP TIME (Typ.)		16ms at full load							
<strong>INPUT</strong>									
VOLTAGE RANGE Note.4		85 ~ 305Vac	120 ~ 431Vdc						
NO LOAD POWER CONSUMPTION(Typ.)	Remote Power OFF	0.3W/115Vac	0.5W/230Vac	0.5W/277Vac					
	Remote Power ON	2W/115Vac	2W/230Vac	2W/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.)		90.5%	92%	92%	90.5%	91%	91.5%	92%	92%
AC CURRENT (Typ.)		0.8A/115Vac	0.4A/230Vac	0.35A/277Vac					
INRUSH CURRENT (Typ.)		COLD START	20A/115Vac	35A/230Vac	45A/277Vac				
LEAKAGE CURRENT		Earth leakage current <350µA(rms)@277Vac, touch current<100µA(rms) @ 277Vac							
<strong>PROTECTION</strong>									
SHORT CIRCUIT	5V	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							
OVERLOAD	5V	105%~170% rated output power; 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							
		>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							
<strong>FUNCTION</strong>									
REMOTE CONTROL		POWER ON: RC+-RC-	0~0.8Vdc or open						
		POWER OFF: RC+-RC-	3.3~10 Vdc by external voltage						
<strong>ENVIRONMENT</strong>									
WORKING TEMP.		-40 ~ +85°C (Refer to "Derating Curve")							
WORKING HUMIDITY		20 ~ 90% RH non-condensing							
STORAGE TEMP., HUMIDITY		-40 ~ +85°C, 10 ~ 95% RH non-condensing							
TEMP. COEFFICIENT		±0.05%/°C (0 ~ 60°C)							
VIBRATION		10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes							



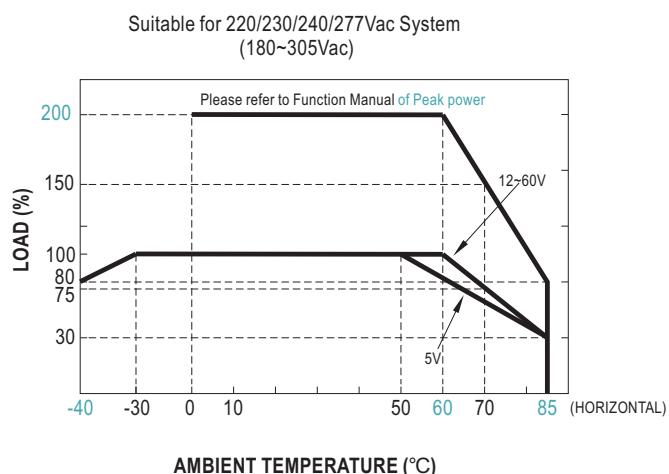
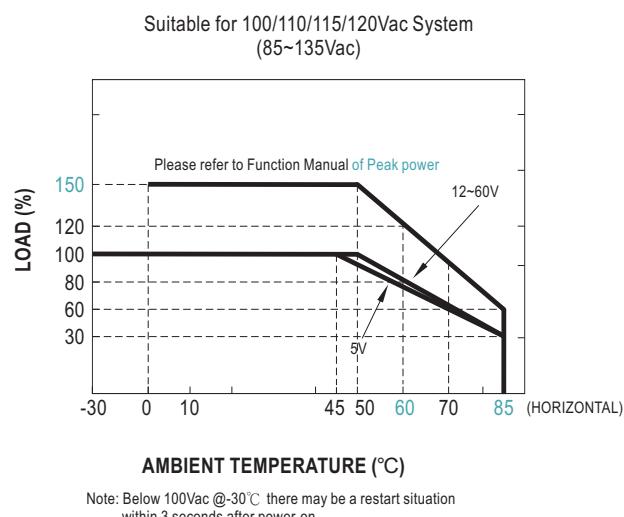
# 75W AC/DC High Reliable Multi-Industries Enclosed Type Power Supply **NSP-75** series

SAFETY & EMC (Note 5&6)				
<b>SAFETY STANDARDS</b>	CB DEKRA UL CCC BSMI EAC SEMI F47 KC/BIS	IEC62368-1, IEC60335-1, IEC61558-1/-2-16, IEC61010-1/-2-201, IEC60601-1; IEC62477-1 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 UL62368-1, ANSI/AAMI ES60601-1(3.2 Version),UL61010-1/-2-201 GB4943.1 CNS15598-1 TP TC 004 approved; KC 62368-1 and BIS IS 13252(Part 1) certified, no stock by request, contact sales for inquires		
<b>ISOLATION LEVEL (Note 7)</b>	Primary-Secondary: 2xMOPP, Primary-Earth: 1xMOPP, Secondary-Earth: 1xMOPP			
<b>OVER VOLTAGE CATEGORY (Note 8)</b>	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/ANSI/AAMI ES60601-1 (OVC II , altitude up to 4000M) IEC/EN/UL 61010-1/-2-201 (OVC II , altitude up to 5000M) IEC/EN 62477-1 (OVC II , altitude up to 5000M)			
<b>SAFETY EXTRA-LOW VOLTAGE(SELV)</b>	IEC/EN 61558-2-16 (SELV, 5 ~ 36V) IEC/EN 60335-1 (SELV, 5 ~ 36V) IEC/EN/UL 62368-1 (SELV/ES1, 5 ~ 36V)			
<b>WITHSTAND VOLTAGE</b>	I/P-O/P:4.2KVac I/P-FG:2.1KVac O/P-FG:1.5KVac			
<b>ISOLATION RESISTANCE</b>	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH			
<b>EMC EMISSION</b>	<b>Parameter</b>	<b>Standard</b>	<b>Test Level / Note</b>	
	Conducted	BS EN/EN55032(CISPR32),CNS 15936,GB/T 9254.1,KS C 9832	Class B	
		BS EN/EN55014-1(CISPR14-1)		
		BS EN/EN55011(CISPR11)	Class B	
	Radiated	BS EN/EN55032(CISPR32),CNS 15936,GB/T 9254.1,KS C 9832	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)	-----	
<b>EMC IMMUNITY</b>	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),KS C 9835,SEMI F47 tested at 200Vac			
	<b>Parameter</b>	<b>Standard</b>	<b>Test Level / Note</b>	
	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) 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, >95% interruptions 250 periods	
OTHERS				
<b>MTBF</b>	2163.5 K hrs min.	Telcordia SR-332 (Bellcore) ; 250.4 K hrs min. MIL-HDBK-217F (25°C)		
<b>DIMENSION (L*W*H)</b>	<b>99*97*30mm</b>			
<b>PACKING</b>	0.3Kg;45pcs/13.9Kg/0.91CUFT			
NOTE				
1. All parameters NOT specially mentioned are measured at 230Vac input, rated load and 25°C of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor. 3. Tolerance: includes set up tolerance, line regulation and load regulation. 4. Derating may be need under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details. 5. The Regulatory Compliance Mark (RCM) is applied on a voluntary basis. The equipment meets the relevant IEC or AS/NZS standards, or AS/NZS 3820 where applicable. The use of the RCM mark complies with AS/NZS 4417.1. 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." (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> ) 7. Some factory or model may not have the BIS logo, please contact your MEAN WELL sales for more information. 8. MOPP is suitable for 100-240Vac input only 9. The ambient temperature derating of 3.5°C/1000m with fanless models and 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). ※ Product Liability Disclaimer: For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>				

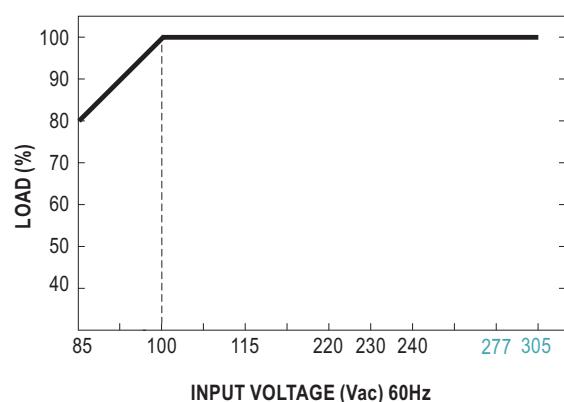
### Block Diagram



### Derating Curve



### Output Derating vs Input Voltage



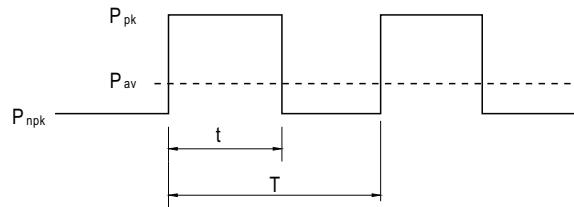
## ■ Function Manual

### 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)

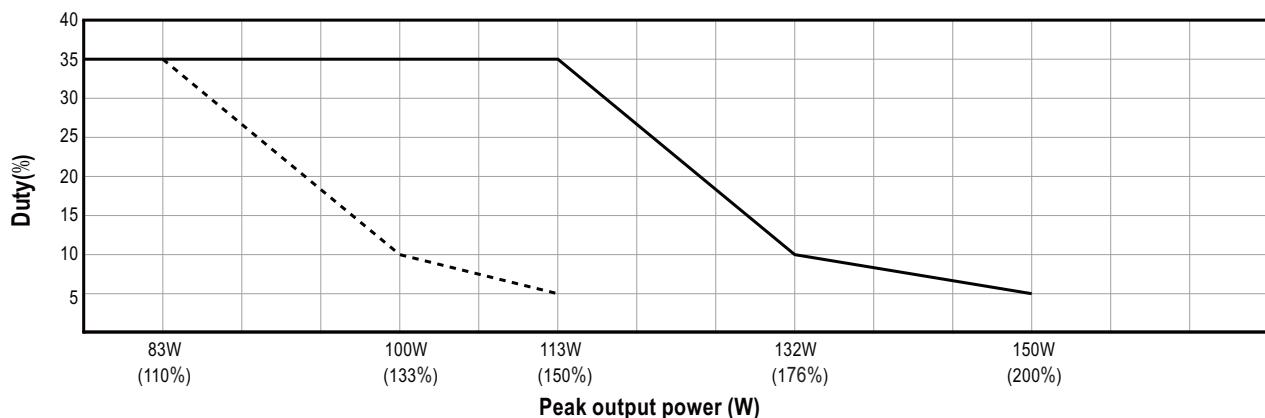
$P_{npk}$ : Non-peak output power (W)

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

$t$ : Peak power width (sec)

$T$ : Period (sec)

— 100Vac  
— 220Vac



For example (24V model) :

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

$P_{av} = P_{rated} = 75\text{W}$

$P_{pk} = 150\text{W}$

$t \leq 5 \text{ sec}$

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

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

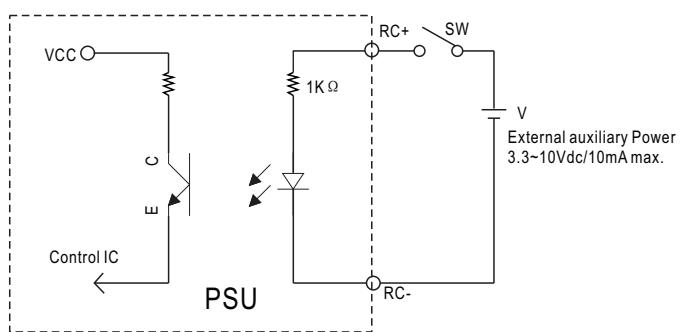
$$P_{npk} \leq 71\text{W}$$

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

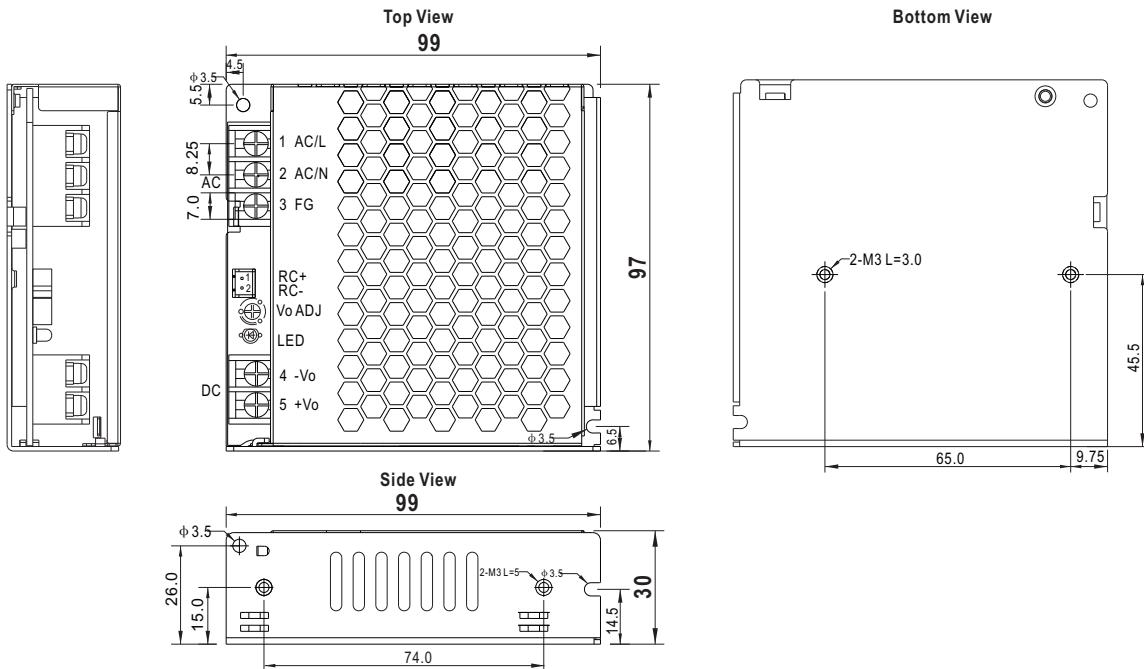
### 2. Remote Control

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

PSU Vo Status	Between RC+(pin1) and RC-(pin2) on CN1
POWER ON	Keep 0~0.8Vdc or open
POWER OFF	Keep 3.3~10Vdc by external voltage



**Mechanical Specification**

 Case No.240A Unit:mm Tolerance: $\pm 1$ 

**※ Input Terminal Pin No. Assignment**

Pin No.	Assignment	Diagram	Screw thread	Mounting torque
1	AC/L or DC input +Vin			
2	AC/N or DC input -Vin			
3	FG $\pm$		M3	4~5Kgf.cm

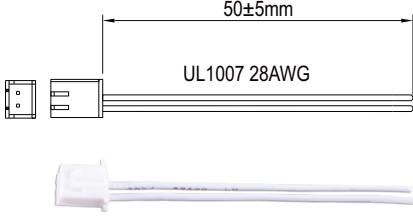
**※ DC Output Terminal Pin No. Assignment**

Pin No.	Assignment	Diagram	Screw thread	Mounting torque
4	-Vo			
5	+Vo		M3	4~5Kgf.cm

Remote ON/OFF: JST S2B-XH or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	RC+	JST XHP	JST SXH-001T-P0.6
2	RC-	or equivalent	or equivalent

**Accessory List**

No.	Item	Quantity	
1	Control function interface(CN1) mating wire along with NSP-75 (standard accessory)	50 $\pm$ 5mm UL1007 28AWG 	1pcs/per model
2	Terminal cover MW'S Order NO. : PEE4TBC-03, PEE4TBC-02 (By request accessory,should ordered separately)		1pcs/per model

**Installation Manual**

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