LED Technologies

Creative LED & Effect Technology for the Trade Professional

UHP-1000 series

1000W Slim Type with PFC Switching Supply

User's Manual

Video



UL62368-1 EN BS/EN62368-1 TPTC004 IEC62368-1

Household Automate Industrial Security Network Telecom

Features

- Slim and Low profile (41mm)
- Fanless and conduction-cooled design
- Withstand 300VAC surge input for 5 seconds
- Built-in active PFC function
- -30~+70℃ working temperature
- Output voltage and constant current level programmable
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in remote ON-OFF control
- DC OK active signal
- Operating altitude up to 5000 meter (Note.7)
- LED indicator for power on
- 5 years warranty

Applications

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipment or apparatus
- Test and measurement instrument
- Laser related machine
- Charging related equipment
- Household appliances
- Power Sourcing Equipment of PoE (48V model: DC O/P range 48~57.6V)

GTIN CODE

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

Description

UHP-1000 series is a 1000W single-output slim type power supply with 41mm of low profile design. Adopting the full range 90~264VAC input, the entire series provides an output voltage line of 12V,24V,36V and 48V. In addition to the high efficiency up to 96%, that the whole series operates from -30℃ ~ 70℃ under air convection without fan. UHP-1000 has the complete protection functions and 5G anti-vibration capability; It is complied with the international safety regulations such as TUV BS EN/EN62368-1, UL62368-1. UHP-1000 series serves as a high performance power supply solution for various industrial applications.

Model Encoding

UHP - 1000 - 12

- 12 — Output voltage
- 1000 — Rated wattage
- UHP — Series name

SPECIFICATION

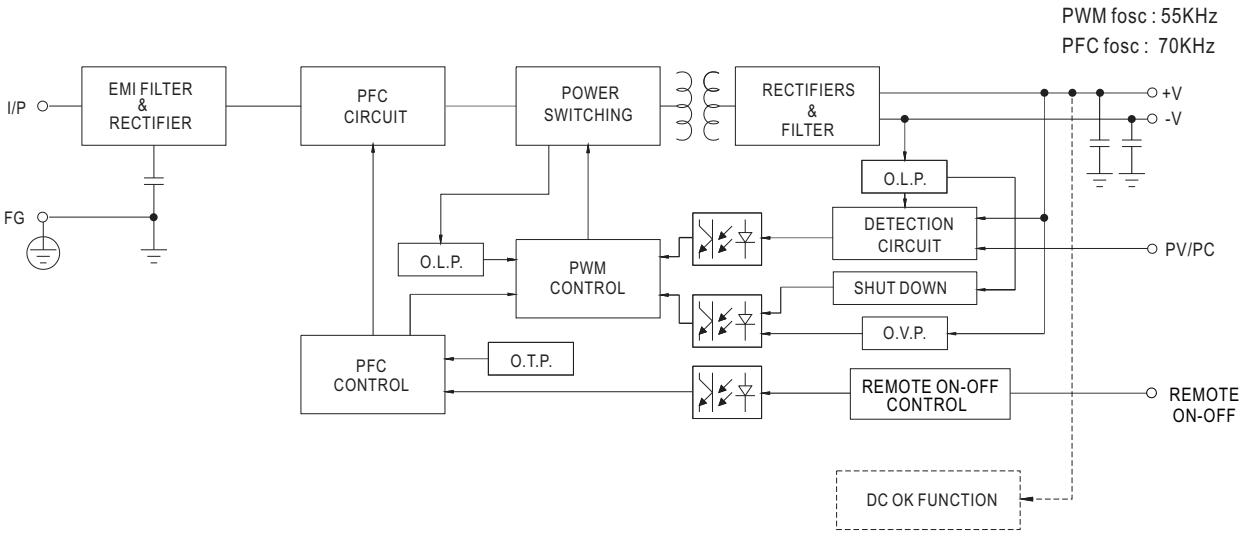
MODEL		UHP-1000-12	UHP-1000-24	UHP-1000-36	UHP-1000-48
OUTPUT	DC VOLTAGE	12V	24V	36V	48V
	RATED CURRENT	80A	42A	28A	21A
	RATED POWER	960W	1008W	1008W	1008W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	240mVp-p	240mVp-p	300mVp-p
	VOLTAGE ADJ. RANGE	By built-in potentiometer, SVR			
		12~14.4V	24~28.8V	36~43.2V	48~57.6V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.4	1000ms, 50ms/230VAC 1000ms,50ms/115VAC at full load			
	HOLD UP TIME (Typ.)	12ms/230VAC 12ms/115VAC			
INPUT	VOLTAGE RANGE Note.4	90 ~ 264VAC 250 ~ 370VDC			
	FREQUENCY RANGE	47 ~ 63Hz			
	POWER FACTOR (Typ.) Note.4	PF≥0.95/230VAC PF≥0.99/115VAC at full load			
	EFFICIENCY (Typ.)	94%	95%	95.5%	96%
	AC CURRENT (Typ.)	10.1A/115VAC 5.3A/230VAC			
	INRUSH CURRENT (Typ.)	Cold start 20A/115VAC 40A/230VAC			
	LEAKAGE CURRENT	<0.75mA / 240VAC			
PROTECTION	OVERLOAD	105~120% rated output power			
		Protection type: Constant current limiting with delay shutdown after 3 seconds, re-power on to recover			
	SHORT CIRCUIT	Protection type: Constant current limiting with delay shutdown after 3 seconds, re-power on to recover			
	OVER VOLTAGE	14.5 ~ 16V	29 ~ 33V	43.5 ~ 49V	59 ~ 66V
		Protection type: Shut down O/P voltage, re-power on to recover			
	OVER TEMPERATURE	Protection type: Shut down O/P voltage, recovers automatically after temperature goes down			
FUNCTION	OUTPUT VOLTAGE PROGRAMMABLE(PV) Note 5	Adjustment of output voltage is allowable to 50 ~ 120% of nominal output voltage Please refer to the Function Manual.			
	OUTPUT CURRENT PROGRAMMABLE(PC) Note 5	Adjustment of constant current level is allowable to 20 ~ 100% of rated current. Please refer to the Function Manual.			
	REMOTE ON/OFF CONTROL	Power ON: "Low" <0 ~ 0.5V or Short circuit Power OFF: "Hi" >2 ~ 5V or Open circuit			
	AUXILIARY POWER	12V@0.5A tolerance±10%, ripple 150mVp-p			
	DC-OK SIGNAL	The TTL signal out, PSU turn on = 4.5 ~ 5.5V; PSU turn off = -0.1 ~ 0.5V. Please refer to the Function Manual.			
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes			
SAFETY & EMC (Note.6)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004 approved			
	WITHSTAND VOLTAGE	I/P-O/P: 3.75KVAC I/P-FG: 2KVAC O/P-FG: 1.25KVAC			
	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)	Class B	
		Radiated	BS EN/EN55032 (CISPR32)	Class B	
		Harmonic Current	BS EN/EN61000-3-2	Class A	
		Voltage Flicker	BS EN/EN61000-3-3	-----	
	EMC IMMUNITY	BS EN/EN55035, BS EN/EN61000-6-2			
		Parameter	**Standard**	**Test Level / Note**	
		ESD	BS EN/EN61000-4-2	Level 3, 8KV air ; Level 2, 4KV contact	
		Radiated	BS EN/EN61000-4-3	Level 3	
		EFT / Burst	BS EN/EN61000-4-4	Level 3	
		Surge	BS EN/EN61000-6-2	2KV/Line-Line 4KV/Line-Earth	
		Conducted	BS EN/EN61000-4-6	Level 3	
		Magnetic Field	BS EN/EN61000-4-8	Level 4	
		Voltage Dips and Interruptions	BS EN/EN61000-4-11	>95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods	
OTHERS	MTBF	662.3K hrs min. Telcordia SR-332 (Bellcore) ; 69.8K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	240*115*41mm (L*W*H)			
	PACKING	1.74kg ; 8pcs/14.9kg/0.74CUFT			

NOTE

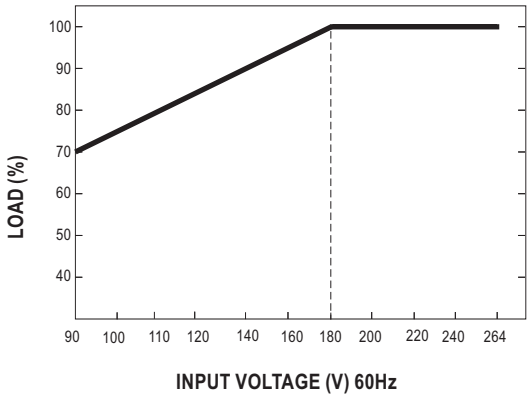
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance: includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the derating curve and Static characteristics for more details.
5. PV/PC functions when users do not use SVR.
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 https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
7. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).

※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

BLOCK DIAGRAM

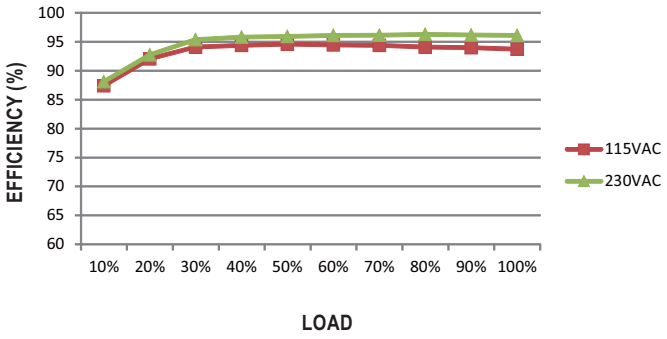


STATIC CHARACTERISTIC



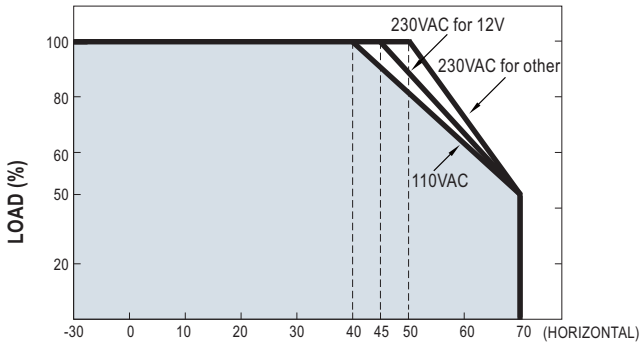
INPUT VOLTAGE (V) 60Hz

EFFICIENCY VS LOAD (48V MODEL)

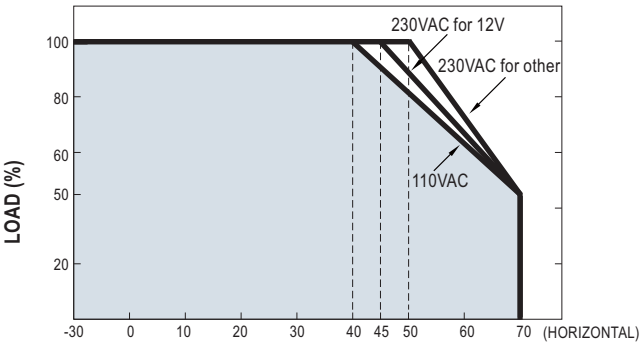


LOAD

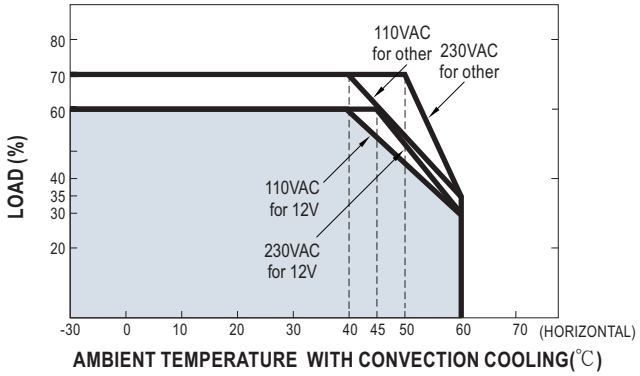
DERATING CURVE



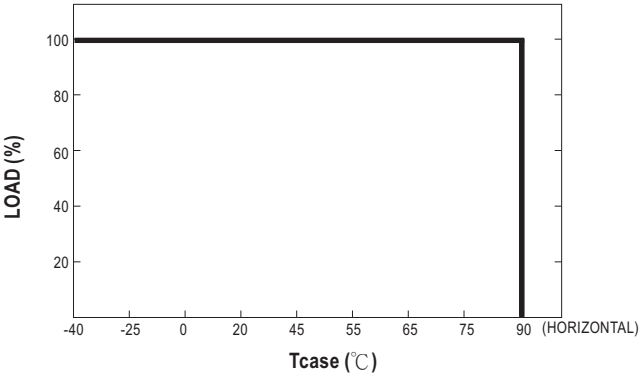
AMBIENT TEMPERATURE WITH CONDUCTION COOLING(℃)



AMBIENT TEMPERATURE WITH FORCED AIR COOLING(℃)



AMBIENT TEMPERATURE WITH CONVECTION COOLING(℃)

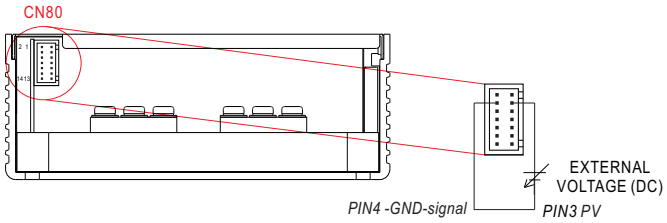


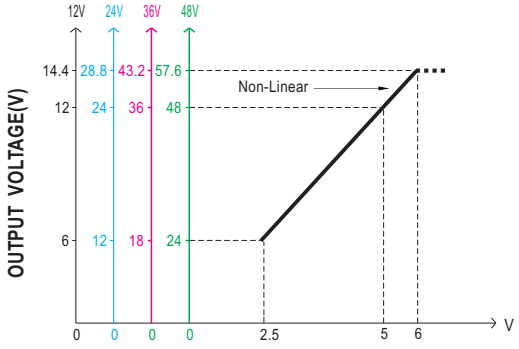
Tcase (℃)

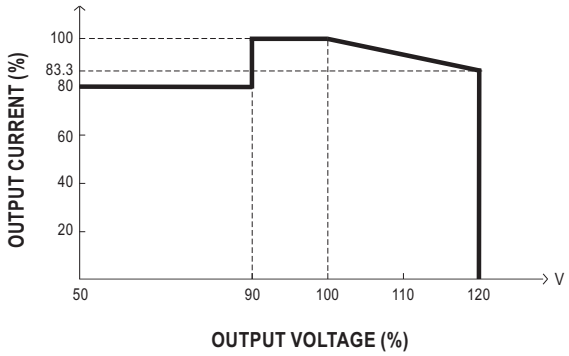
■ FUNCTION MANUAL

1.Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)

※ In addition to the adjustment via the built-in potentiometer, the output voltage can be trimmed by applying EXTERNAL VOLTAGE.





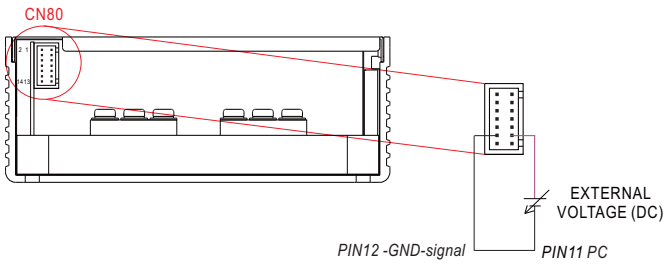


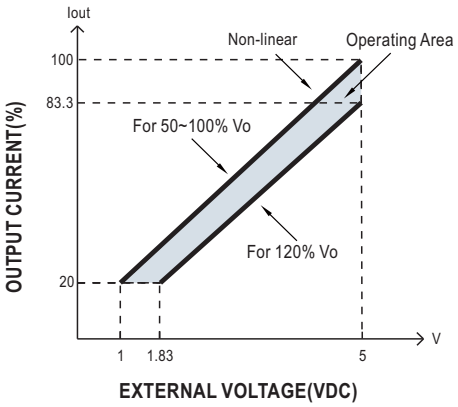
※ Caution: By factory default, the Output Voltage Programming is not activated, and *PV (pin1)* and *PV-DIS(pin2)* are shorted by connector. Whenever this function is not needed to activate, as assumed in other sections' diagrams, please keep *PV (pin1)* and *PV-DIS(pin2)* shorted ; otherwise the power supply will have no output.

※ Caution: When this function is needed to activate, please keep PV(pin1) and PV-DIS(pin2) opened.

2.Output Current Programming (or, PC / remote current programming / dynamic current trim)

※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.





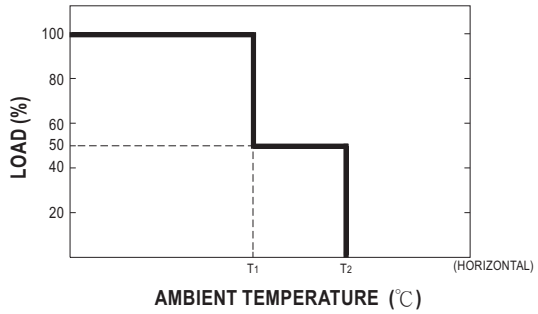
※ Caution: By factory default, the Output Current Programming is not activated, and *VCCS(pin13)* and *PC-DIS(pin14)* are shorted by connector. Whenever this function is not needed to activate, as assumed in other sections' diagrams, please keep *VCCS(pin13)* and *PC-DIS(pin14)* shorted ; otherwise, the power supply will have no output.

※ Caution: When this function is needed to activate, please keep VCCS(pin13) and PV-DIS(pin14) opened.

※ Covered by over temperature protection, auto de-rating function works under operation in PC mode .

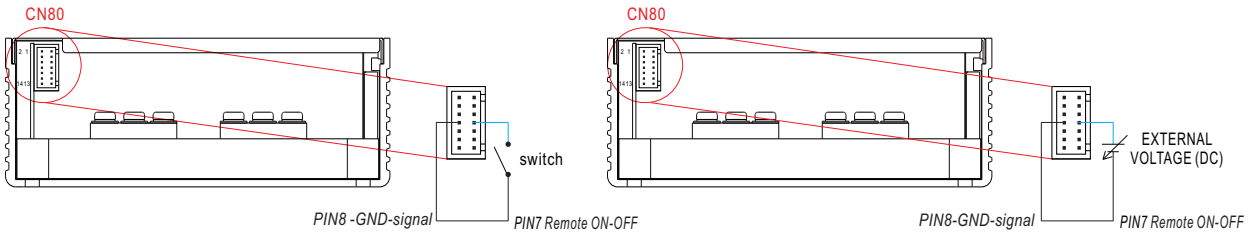
$T_{1(Typ.)}$: Maximum ambient temperature of full load.

$T_{2(Typ.)}$: T1+5℃.



3.Remote ON-OFF Control

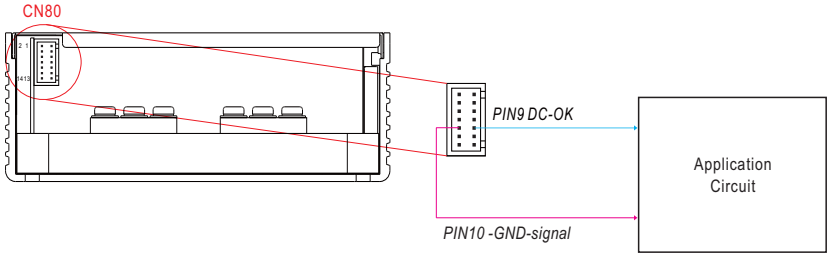
The power supply can be turned ON/OFF individually or along with other units in parallel by using the "Remote ON-OFF" function.



Remote ON-OFF	Power Supply Status
"Low" <0~0.5V or Short circuit	ON
"Hi" >2~5V or Open circuit	OFF

4.DC-OK Signal

DC-OK signal is a TTL level signal. The maximum sink current is 10mA and the maximum external voltage is 5.6V.

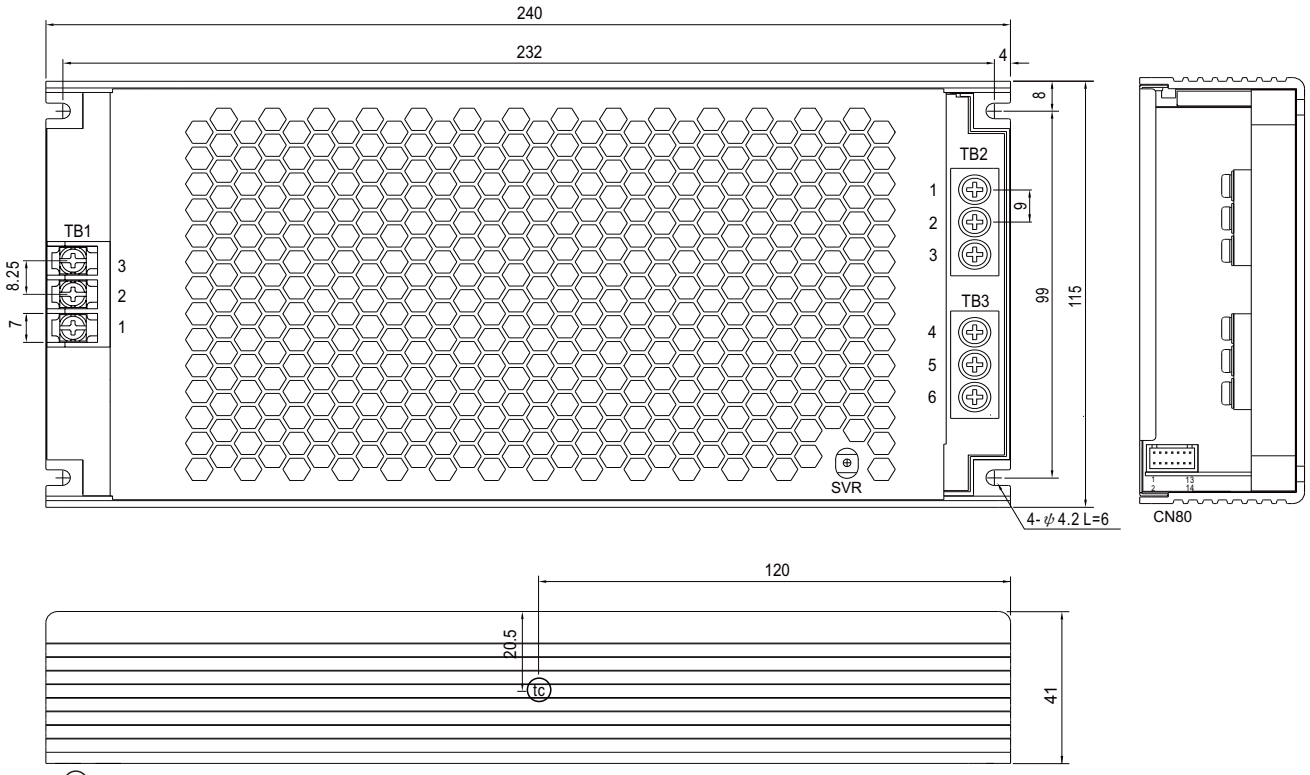


DC-OK signal	Power Supply Status
"Hi" >4.5~5.5V	ON
"Low" <-0.1~0.5V	OFF

■ MECHANICAL SPECIFICATION

(Unit: mm , tolerance ±0.5mm)

Case No.:272A



• (tc) : Max. Case Temperature

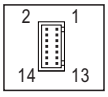
AC Input Terminal(TB1) Pin NO. Assignment

Pin No.	Assignment	Terminal	Max mounting torque
1	AC/L	DECA T42-ES11-03	13.8Kgf-cm
2	AC/N		
3	⏚		

DC Output Terminal (TB2,TB3) Pin NO. Assignment

Pin No.	Assignment	Terminal	Max mounting torque
1,2,3	+V	(MW) NEL-400	8Kgf-cm
4,5,6	-V		

※Control Pin No. Assignment(CN80): HRS DF11-14DP-2DS or equivalent



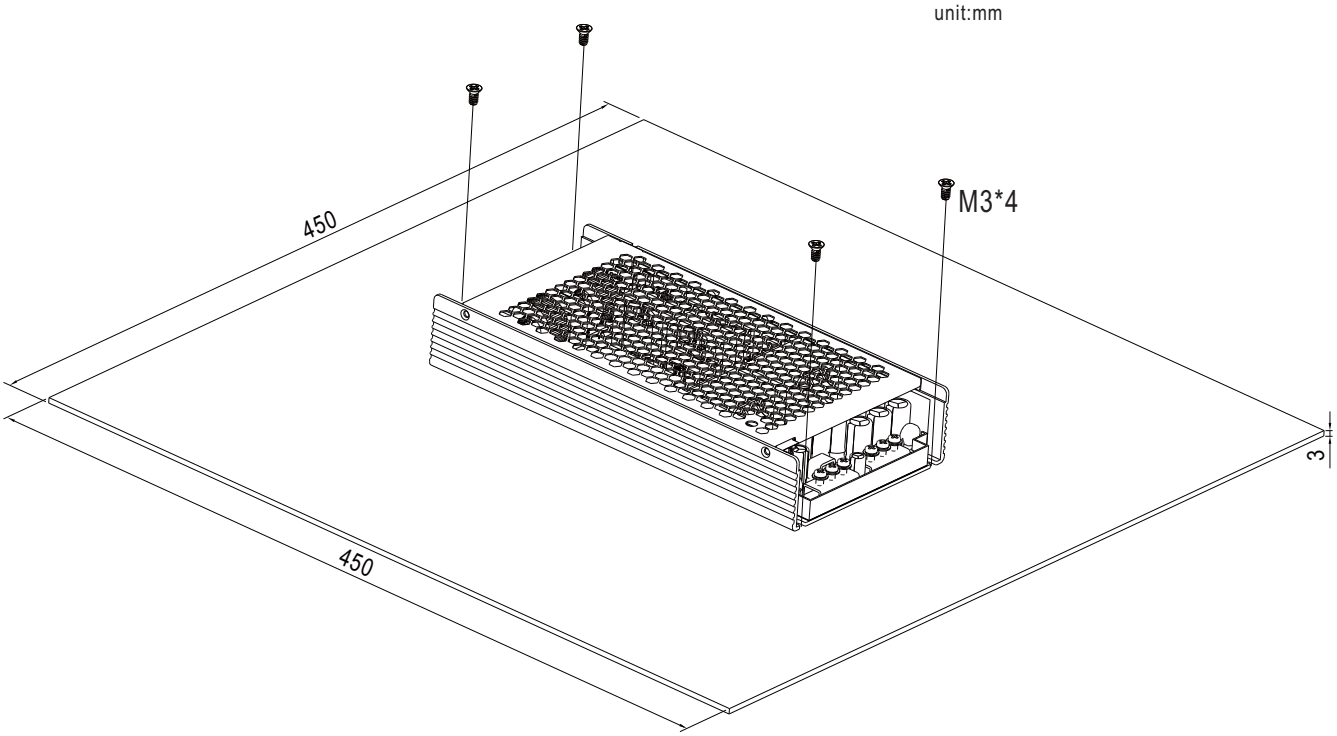
Mating Housing	HRS DF11-14DS or equivalent
Terminal	HRS DF11-**SC or equivalent

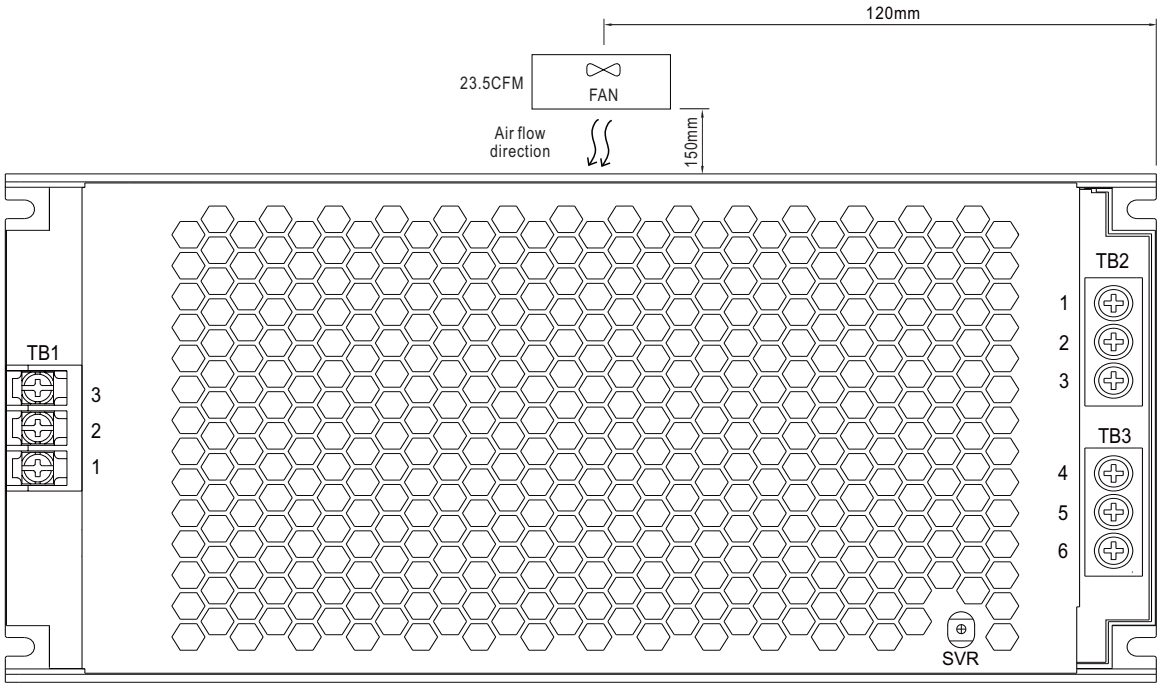
Pin No.	Function	Description
1,3	PV	Connection for output voltage programming.
2	PV-DIS	Short connecting between PV (pin1) and PV-DIS (pin2) if output voltage programming function is not activated.
4,8,10,12	GND (Signal)	Negative output voltage signal.
5	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX (pin6). The maximum load current is 0.5A. This output is not controlled by "Remote ON-OFF".
6	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).
7	Remote ON-OFF	The unit can turn the output ON/OFF by electrical signal or dry contact between Remote ON/OFF. Short (0 ~ 0.5V): Power ON; Open (2 ~ 5V): Power OFF ; The maximum input voltage is 5.5V.
9	DC-OK	Low (-0.1 ~ 0.5V): When the Vout≦80%±5%. High (4.5 ~ 5.5V): When Vout≧80%±5%. The maximum sink current is 10mA and only for output.
11	PC	Connection for constant current level programming.
13	Vccs	Positive output voltage signal.
14	PC-DIS	Short connecting between Vccs (pin13) and PC-DIS (pin14) if output current programming function is not activated.

Operate with additional aluminum plate and fan

In order to meet the "Derating Curve" and the "Static Characteristics" , UHP-1000 series can be installed onto an aluminum plate(or the cabinet of the same size) on the bottom or apply forced air cooled solution. The size of the suggested aluminum plate and configuration of fan are shown as below. And for optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and UHP-1000 series must be firmly mounted at the center of the aluminum plate.

unit:mm





■ INSTALLATION MANUAL

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