100W Switching Power Supply for Harsh Environment HEP-100 series

User's Manual

TAIWAN EXCELLENCE 2015

IP65 IP68 (optional)

UL62368-1 TPTC004 IEC62368-1

Household Automate Industrial Security Network Telecom

Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 93%
- Fanless design, cooling by free air convection
- -55~+70℃ wide operating range
- Aluminum case and filling with heat-conducted silicone
- IP65 design, optional IP68 rated model available
- Meet 6KV surge immunity level
- Withstand 10G vibration test
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Operating altitude up to 5000 meters (Note.9)
- 6 years warranty

Applications

- Outdoor telecommunication equipment
- Outdoor electronic signage and billboard
- Petroleum plant or mine shaft facility

GTIN CODE

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

Description

HEP-100 is a 100W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted silicone. Thanks to state-of-the-art design, the working efficiency is up to 93%, enabling HEP-100 perfectly work between -55℃ and +70℃ under free air convection.

Model Encoding

HEP - 100 - 12 A

- A : Standard model, IP65, Vo and Io level can be adjusted through internal potentiometer.
- Blank : Optional model, IP68, with fixed Vo and Io level.

Function mode option
Output voltage
Output wattage
Series name

SPECIFICATION

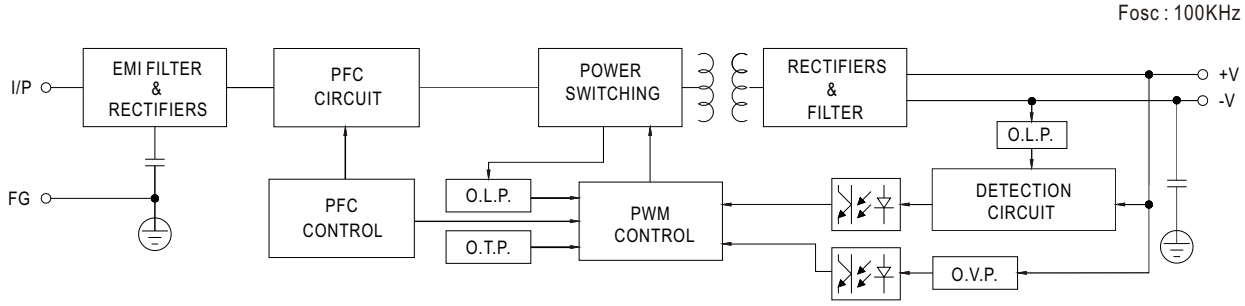
MODEL		HEP-100-12□	HEP-100-15□	HEP-100-24□	HEP-100-36□	HEP-100-48□	HEP-100-54□
OUTPUT	DC VOLTAGE	12V	15V	24V	36V	48V	54V
	RATED CURRENT	8.34A	6.67A	4A	2.65A	2A	1.77A
	RATED POWER	100.08W	100.05W	96W	95.4W	96W	95.58W
	RIPPLE & NOISE (max.) Note.2	120mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.5	10.8 ~ 13.5V	13.5 ~ 17V	22 ~ 27V	33 ~ 40V	43 ~ 53V	49 ~ 58V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer for A type only					
		5 ~ 8.34A	4 ~ 6.67A	2.5 ~ 4A	1.65 ~ 2.65A	1.25 ~ 2A	1.1 ~ 1.77A
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7	1200ms,50ms/115VAC 500ms,50ms/230VAC at full load					
	HOLD UP TIME (Typ.)	16ms at full load 230VAC /115VAC					
INPUT	VOLTAGE RANGE Note.4	90~264VAC (277VAC operational) 128~370VDC(390VDC operational)					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.91/277VAC at full load					
	EFFICIENCY (Typ.)	92%	92%	93%	93%	93%	93%
	AC CURRENT (Typ.)	1.2A / 115VAC 0.55A / 230VAC 0.5A / 277VAC					
	INRUSH CURRENT(Typ.)	COLD START 60A at 230VAC					
	LEAKAGE CURRENT	<0.75mA / 277VAC					
PROTECTION	OVERLOAD	105 ~ 125%					
		Protection type : Constant current limiting, recovers automatically after fault condition is removed					
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	14 ~ 17V	18 ~ 21V	28 ~ 34V	41 ~ 46V	54 ~ 63V	59 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery					
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down					
ENVIRONMENT	WORKING TEMP.	-55 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-60 ~ +85℃, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)					
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS Note.6,9	UL62368-1, IEC62368-1,IP65 (or IP68 for HEP-100 Blank type), EAC TP TC 004 approved ; Design refer to BS EN/EN62368-1					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC 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	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020					
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, light industry level (surge 6KV), EAC TP TC 020					
OTHERS	MTBF	1970.2K hrs min. Telcordia SR-332 (Bellcore) ; 164.8Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	220*68*38.8mm (L*W*H)					
	PACKING	1.12Kg; 12pcs/14.4Kg/0.8CUFT					

NOTE

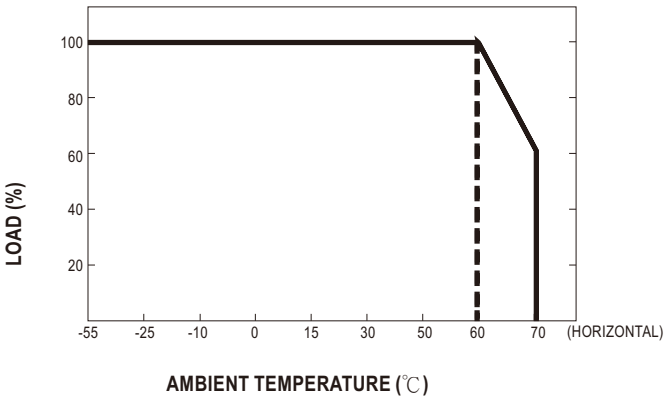
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. A type only.
6. Safety and EMC design refer to BS EN/EN60598-1, CNS15233, GB7000.1, FCC part18.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
   (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
9. The water protection level test for the IP68 rating is performed 1000mm below the surface of the water for 1 month.
10. 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

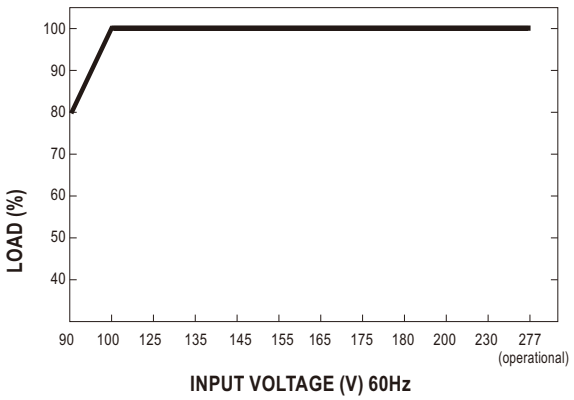
■ Block Diagram



■ Derating Curve



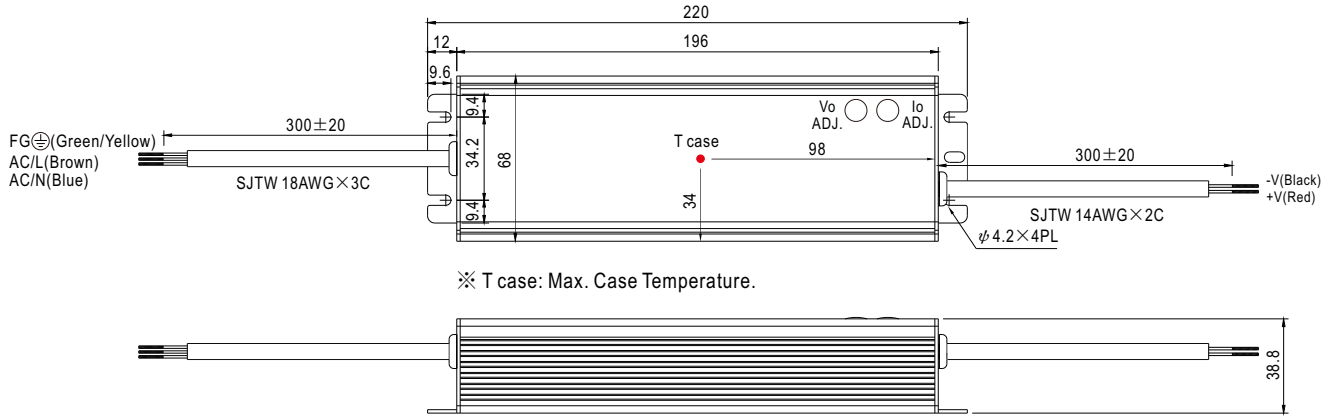
■ Static Characteristics



■ Mechanical Specification

Case No.994A Unit:mm Tolerance:±1

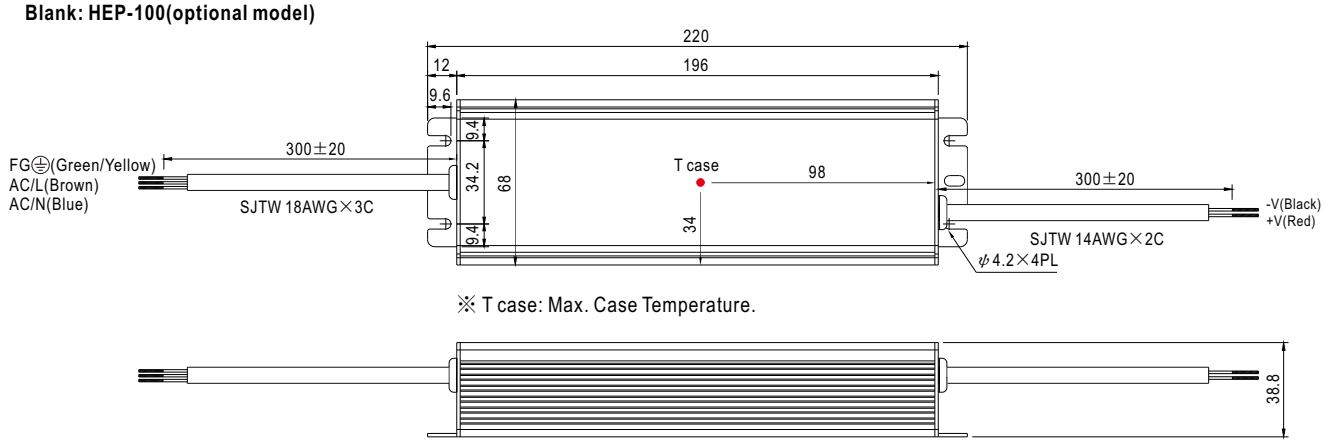
A Type: HEP-100-_A(standard model)



※ T case: Max. Case Temperature.

※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

Blank: HEP-100(optional model)



※ T case: Max. Case Temperature.

※IP68 rated. Cable for I/O connection.

■ Installation Manual

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

150W Switching Power Supply for Harsh Environment HEP-150 series

User's Manual

TAIWAN EXCELLENCE 2015

IP65 IP68 (optional)

UL62368-1 TPTC004 IEC62368-1

Household Automate Industrial Security Network Telecom

Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 94%
- Fanless design, cooling by free air convection
- -55~+70℃ wide operating range
- Aluminum case and filling with heat-conducted silicone
- IP65 design, optional IP68 rated model available
- Meet 6KV surge immunity level
- Withstand 10G vibration test
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Operating altitude up to 5000 meters (Note.9)
- 6 years warranty

Applications

- Outdoor telecommunication equipment
- Outdoor electronic signage and billboard
- Petroleum plant or mine shaft facility

GTIN CODE

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

Description

HEP-150 is a 150W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted silicone. Thanks to state-of-the-art design, the working efficiency is up to 94%, enabling HEP-150 perfectly work between -55℃ and +70℃ under free air convection.

Model Encoding

HEP - 150 - 12 A

- A → Function mode option
  - A : Standard model, IP65, Vo and Io level can be adjusted through internal potentiometer.
  - Blank : Optional model, IP68, with fixed Vo and Io level.
- 12 → Output voltage
- 150 → Output wattage
- HEP → Series name

MEAN WELL

150W Switching Power Supply for Harsh Environment HEP-150 series

SPECIFICATION

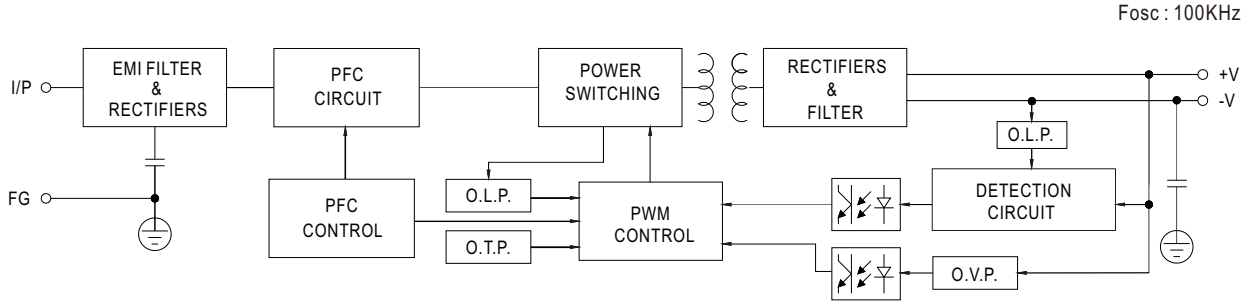
MODEL		HEP-150-12□	HEP-150-15□	HEP-150-24□	HEP-150-36□	HEP-150-48□	HEP-150-54□
OUTPUT	DC VOLTAGE	12V	15V	24V	36V	48V	54V
	RATED CURRENT	12.5A	10A	6.3A	4.2A	3.2A	2.8A
	RATED POWER	150W	150W	151.2W	151.2W	153.6W	151.2W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.5	10.8 ~ 13.5V	13.5 ~ 17V	22 ~ 27V	33 ~ 40V	43 ~ 53V	49 ~ 58V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer for A type only					
		7.5 ~ 12.5A	6 ~ 10A	3.8 ~ 6.3A	2.5 ~ 4.2A	1.92 ~ 3.2A	1.68 ~ 2.8A
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7	1000ms,50ms/115VAC 500ms,50ms/230VAC at full load					
	HOLD UP TIME (Typ.)	16ms at full load 230VAC /115VAC					
INPUT	VOLTAGE RANGE Note.4	90~264VAC (277VAC operational) 128~370VDC(390VDC operational)					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load					
	EFFICIENCY (Typ.)	91.5%	92%	93%	93.5%	94%	94%
	AC CURRENT (Typ.)	1.7A / 115VAC 0.75A / 230VAC 0.7A / 277VAC					
	INRUSH CURRENT(Typ.)	COLD START 65A at 230VAC					
	LEAKAGE CURRENT	<0.75mA / 277VAC					
PROTECTION	OVERLOAD	105 ~ 125%					
		Protection type : Constant current limiting, recovers automatically after fault condition is removed					
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	14 ~ 17V	18 ~ 21V	28 ~ 34V	41 ~ 46V	54 ~ 63V	59 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery					
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down					
ENVIRONMENT	WORKING TEMP.	-55 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-60 ~ +80℃, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)					
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS Note.6,9	UL62368-1, IEC62368-1,IP65 (or IP68 for HEP-150 Blank type), EAC TP TC 004 approved ; Design refer to BS EN/EN62368-1					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC 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	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020					
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, light industry level (surge 6KV), EAC TP TC 020					
OTHERS	MTBF	1967.4K hrs min. Telcordia SR-332 (Bellcore) ; 164.2Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	228*68*38.8mm (L*W*H)					
	PACKING	1.15Kg; 12pcs/14.8Kg/0.8CUFT					

NOTE

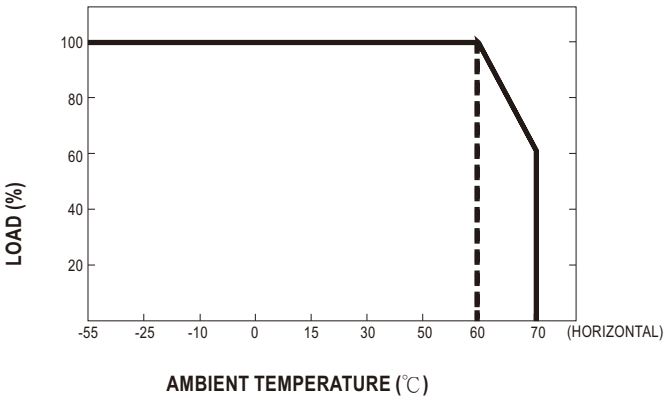
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. A type only.
6. Safety and EMC design refer to BS EN/EN60598-1, CNS15233, GB7000.1, FCC part18.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
   (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
9. The water protection level test for the IP68 rating is performed 1000mm below the surface of the water for 1 month.
10. 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

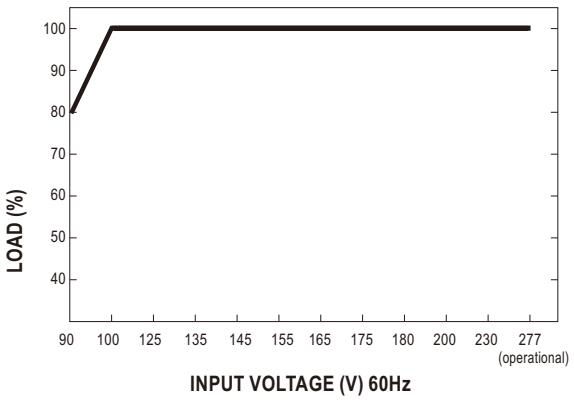
■ Block Diagram



■ Derating Curve



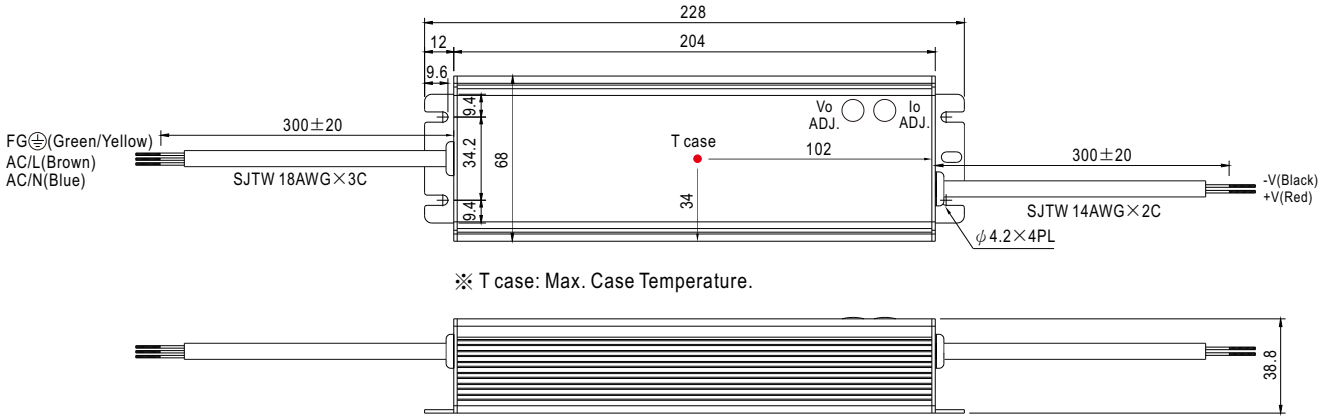
■ Static Characteristics



■ Mechanical Specification

Case No.994D Unit:mm Tolerance:±1

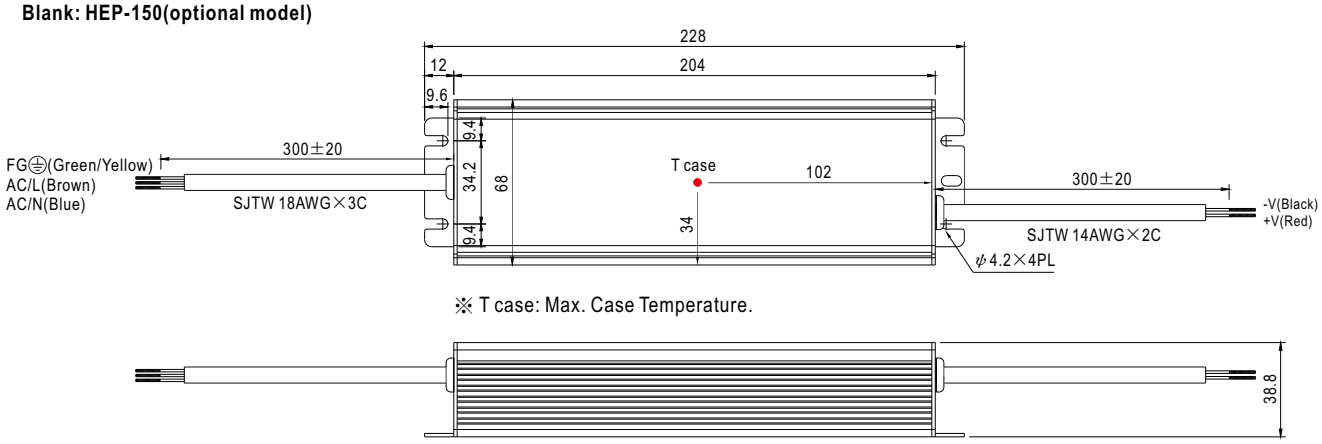
A Type: HEP-150-_A(standard model)



※ T case: Max. Case Temperature.

※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

Blank: HEP-150(optional model)



※ T case: Max. Case Temperature.

※IP68 rated. Cable for I/O connection.

■ Installation Manual

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

185W Switching Power Supply for Harsh Environment HEP-185 series

User's Manual

TAIWAN EXCELLENCE 2015

IP65 IP68 (optional)

UL62368-1 TPTC004 IEC62368-1

Household Automate Industrial Security Network Telecom

Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 94%
- Fanless design, cooling by free air convection
- -55~+70℃ wide operating range
- Aluminum case and filling with heat-conducted silicone
- IP65 design, optional IP68 rated model available
- Meet 6KV surge immunity level
- Withstand 10G vibration test
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Operating altitude up to 5000 meters (Note.9)
- 6 years warranty

Applications

- Outdoor telecommunication equipment
- Outdoor electronic signage and billboard
- Petroleum plant or mine shaft facility

GTIN CODE

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

Description

HEP-185 is a 185W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted silicone. Thanks to state-of-the-art design, the working efficiency is up to 94%, enabling HEP-185 perfectly work between -55℃ and +70℃ under free air convection.

Model Encoding

HEP - 185 - 12 A

- A : Standard model, IP65, Vo and Io level can be adjusted through internal potentiometer.
- Blank : Optional model, IP68, with fixed Vo and Io level.

Function mode option
Output voltage
Output wattage
Series name

SPECIFICATION

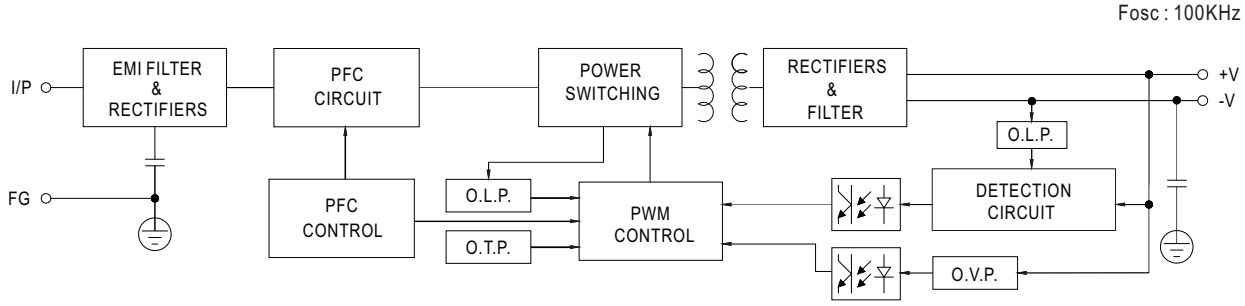
MODEL		HEP-185-12□	HEP-185-15□	HEP-185-24□	HEP-185-36□	HEP-185-48□	HEP-185-54□
OUTPUT	DC VOLTAGE	12V	15V	24V	36V	48V	54V
	RATED CURRENT	13A	11.5A	7.8A	5.2A	3.9A	3.45A
	RATED POWER	156W	172W	187.2W	187.2W	187.2W	186.3W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.5	10.8 ~ 13.5V	13.5 ~ 17V	22 ~ 27V	33 ~ 40V	43 ~ 53V	49 ~ 58V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer for A type only					
		6.5 ~ 13A	5.75 ~ 11.5A	3.9 ~ 7.8A	2.6 ~ 5.2A	1.95 ~ 3.9A	1.72 ~ 3.45A
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.7	1000ms,50ms/115VAC 500ms,50ms/230VAC at full load					
	HOLD UP TIME (Typ.)	16ms at full load 230VAC /115VAC					
INPUT	VOLTAGE RANGE Note.4	90~264VAC (277VAC operational) 128~370VDC(390VDC operational)					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load					
	EFFICIENCY (Typ.)	91.5%	92%	93.5%	93.5%	94%	94%
	AC CURRENT (Typ.) 12V	1.8A / 115VAC 0.8A / 230VAC 0.7A / 277VAC					
	AC CURRENT (Typ.) 15V ~ 54V	2.1A / 115VAC 1A / 230VAC 0.8A / 277VAC					
	INRUSH CURRENT(Typ.)	COLD START 65A at 230VAC					
	LEAKAGE CURRENT	<0.75mA / 277VAC					
PROTECTION	OVERLOAD	105 ~ 125%					
		Protection type : Constant current limiting, recovers automatically after fault condition is removed					
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	14 ~ 17V	18 ~ 21V	28 ~ 34V	41 ~ 46V	54 ~ 63V	59 ~ 65V
		Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery					
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down					
ENVIRONMENT	WORKING TEMP.	-55 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-60 ~ +80℃, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)					
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS Note.6,9	UL62368-1, IEC62368-1, IP65 (or IP68 for HEP-185 Blank type), EAC TP TC 004 approved ; Design refer to BS EN/EN62368-1					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC 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	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020					
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, light industry level (surge 6KV), EAC TP TC 020					
OTHERS	MTBF	1967.4K hrs min. Telcordia SR-332(Bellcore) ; 164.2K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	228*68*38.8mm (L*W*H)					
	PACKING	1.15Kg; 12pcs/14.8Kg/0.8CUFT					

NOTE

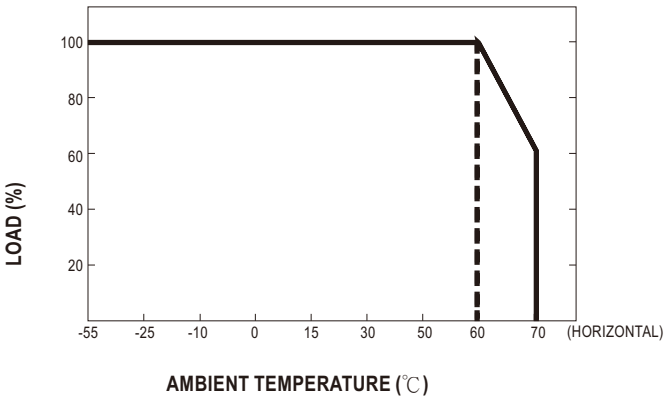
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. A type only.
6. Safety and EMC design refer to BS EN/EN60598-1, CNS15233, GB7000.1, FCC part18.
7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
8. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
   (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
9. The water protection level test for the IP68 rating is performed 1000mm below the surface of the water for 1 month.
10. 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

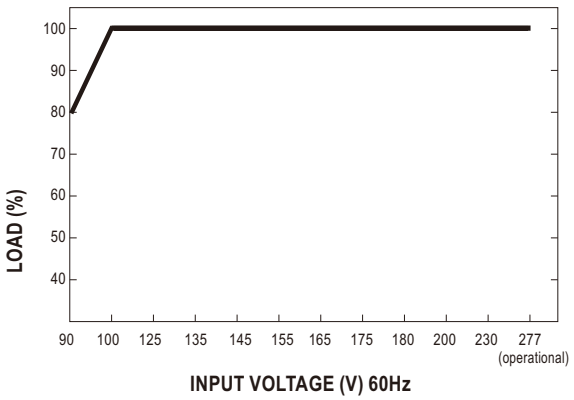
■ Block Diagram



■ Derating Curve



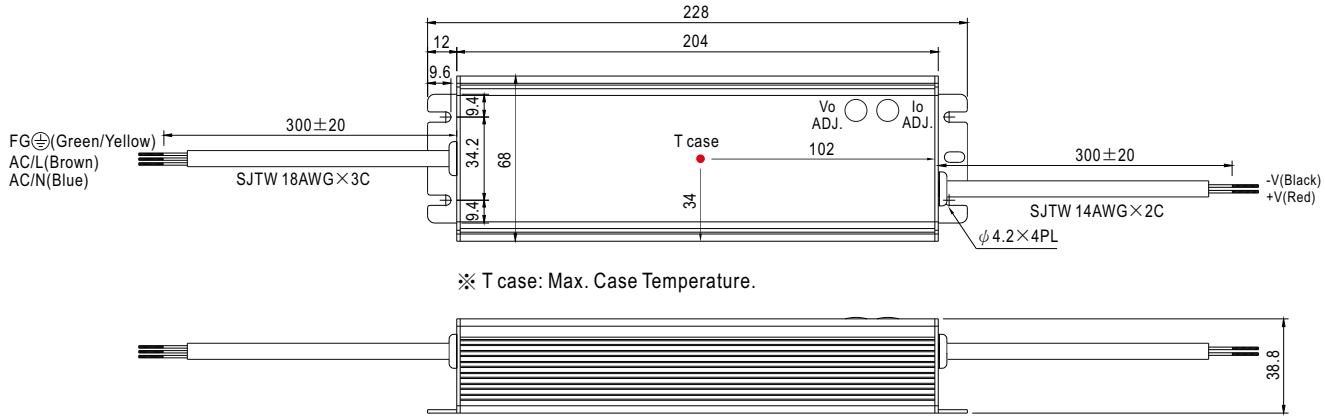
■ Static Characteristics



■ Mechanical Specification

Case No.994D Unit:mm Tolerance:±1

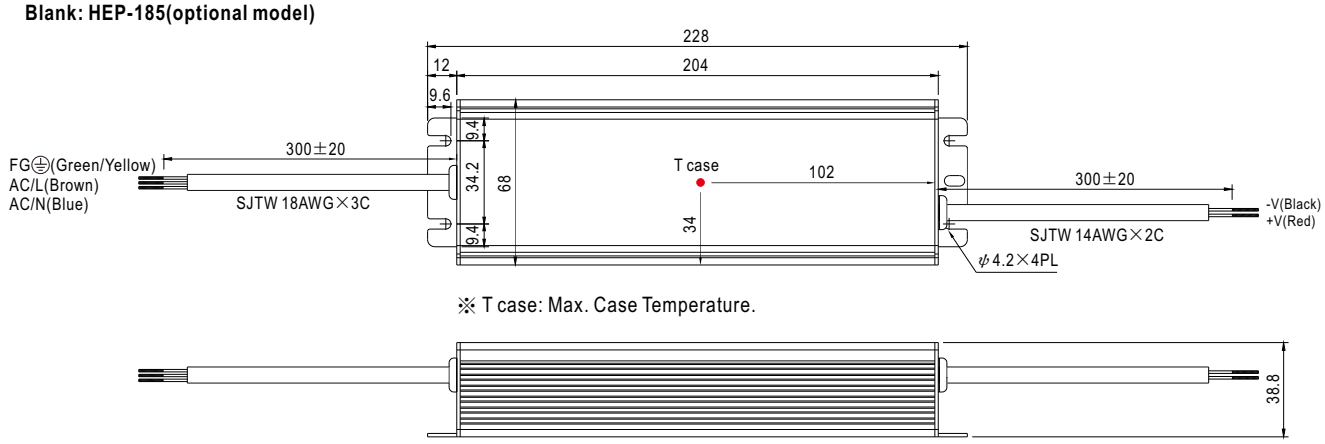
A Type: HEP-185-_A(standard model)



※ T case: Max. Case Temperature.

※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

Blank: HEP-185(optional model)



※ T case: Max. Case Temperature.

※IP68 rated. Cable for I/O connection.

■ Installation Manual

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

240W Switching Power Supply for Harsh Environment HEP-240 series

User's Manual

TAIWAN EXCELLENCE 2015

IP65 IP68 (optional)

UL62368-1 TPTC004 IEC62368-1

Household Automate Industrial Security Network Telecom

Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 93.5%
- Fanless design, cooling by free air convection
- -55~+70℃ wide operating range
- Aluminum case and filling with heat-conducted silicone
- IP65 design, optional IP68 rated model available
- Meet 6KV surge immunity level
- Withstand 10G vibration test
- Operating altitude up to 5000 meters (Note.8)
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 6 years warranty (Note.10)

Applications

- Outdoor telecommunication equipment
- Outdoor electronic signage and billboard
- Petroleum plant or mine shaft facility

GTIN CODE

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

Description

HEP-240 is a 240W industrial AC/DC power supply featuring the outstanding capability to operate under a harsh environment with high dust density, humidity, vibration and altitude. The entire series is housed with a robust aluminum case and fully potted with heat-conducted silicone. Thanks to state-of-the-art design, the working efficiency is up to 93.5%, enabling HEP-240, with a fanless design, perfectly work between -55℃ and +70℃ under free air convection.

Model Encoding

HEP - 240 - 15 A

- Function mode option
  - A : Standard model, IP65, Vo and Io level can be adjusted through internal potentiometer.
  - Blank : Optional model, IP68, with fixed Vo and Io level.
- Output voltage
- Output wattage
- Series name

SPECIFICATION

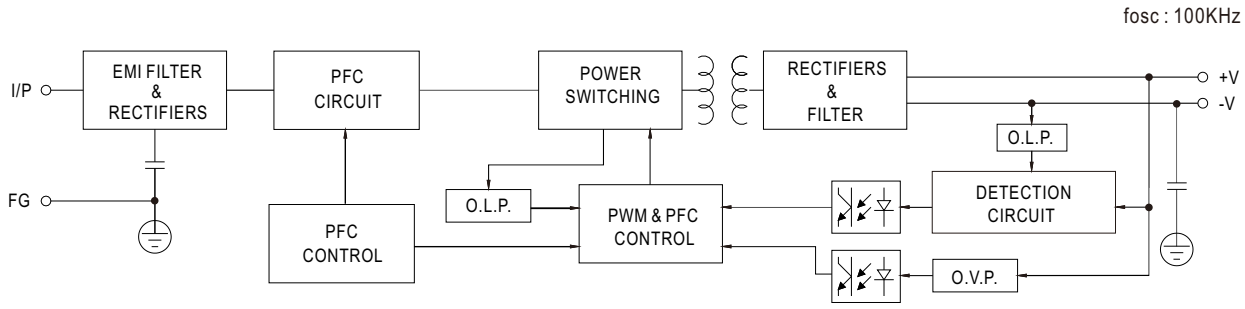
MODEL		HEP-240-12□	HEP-240-15□	HEP-240-24□	HEP-240-36□	HEP-240-48□	HEP-240-54□
OUTPUT	DC VOLTAGE	12V	15V	24V	36V	48V	54V
	RATED CURRENT	16A	15A	10A	6.7A	5A	4.45A
	RATED POWER	192W	225W	240W	241.2W	240W	240.3W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE Note.5	11.2 ~ 12.8V	14 ~ 16V	22.4 ~ 25.6V	33.5 ~ 38.5V	44.8 ~ 51.2V	50 ~ 57V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer for A type only					
		8 ~ 16A	7.5 ~ 15A	5 ~ 10A	3.3 ~ 6.7A	2.5 ~ 5A	2.23 ~ 4.45A
	VOLTAGE TOLERANCE Note.3	±2.5%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.6	1000ms,80ms/115VAC 500ms,80ms/230VAC at full load					
	HOLD UP TIME (Typ.)	15ms at full load 230VAC /115VAC					
INPUT	VOLTAGE RANGE Note.4	90~264VAC (277VAC operational) 128~370VDC(390VDC operational)					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load					
	EFFICIENCY (Typ.)	90%	90%	92.5%	92.5%	93%	93.5%
	AC CURRENT (Typ.) 12V	2A / 115VAC 1.05A / 230VAC 0.9A/277VAC					
	AC CURRENT (Typ.) 15~54V	2.5A / 115VAC 1.3A / 230VAC 1.1A/277VAC					
	INRUSH CURRENT(Typ.)	COLD START 75A at 230VAC					
	LEAKAGE CURRENT	<0.75mA / 277VAC					
PROTECTION	OVER CURRENT	105 ~ 125%					
		Protection type : Constant current limiting, recovers automatically after fault condition is removed					
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	13.5 ~ 18V	17.5 ~ 21.5V	27 ~ 34V	43 ~ 49V	55 ~ 63V	60 ~ 67V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover					
	OVER TEMPERATURE	Shut down o/p voltage, recovers automatically after temperature goes down					
ENVIRONMENT	WORKING TEMP.	-55 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-60 ~ +80℃, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)					
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS Note.8	UL62368-1, IEC62368-1, IP65 (or IP68 for HEP-240 Blank-Type), EAC TP TC 004 approved; Design refer to BS EN/EN62368-1					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC 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	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020					
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, light industry level (surge 6KV), EAC TP TC 020					
OTHERS	MTBF	2008.7K hrs min. Telcordia SR-332 (Bellcore) ; 171.3Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	244.2*68*38.8mm (L*W*H)					
	PACKING	1.3Kg; 12pcs/16.6Kg/0.84CUFT					

NOTE

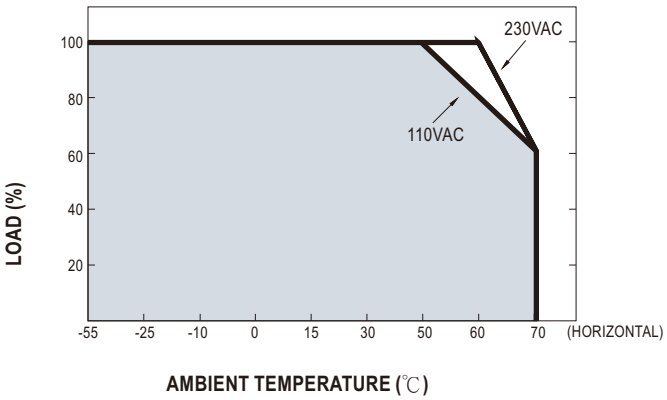
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. A-Type only.
6. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
7. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
8. The water protection level test for the IP68 rating is performed 1000mm below the surface of the water for 1 month.
9. Refer to warranty statement.
10. 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

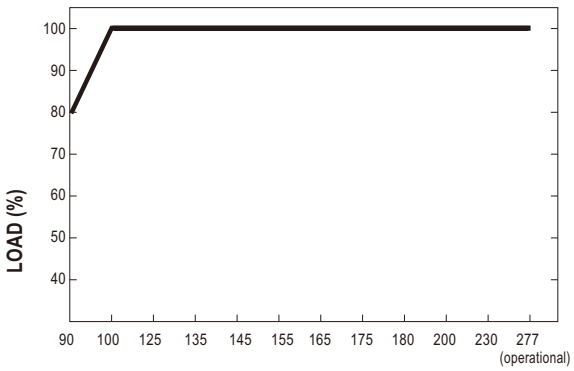


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Static Characteristics

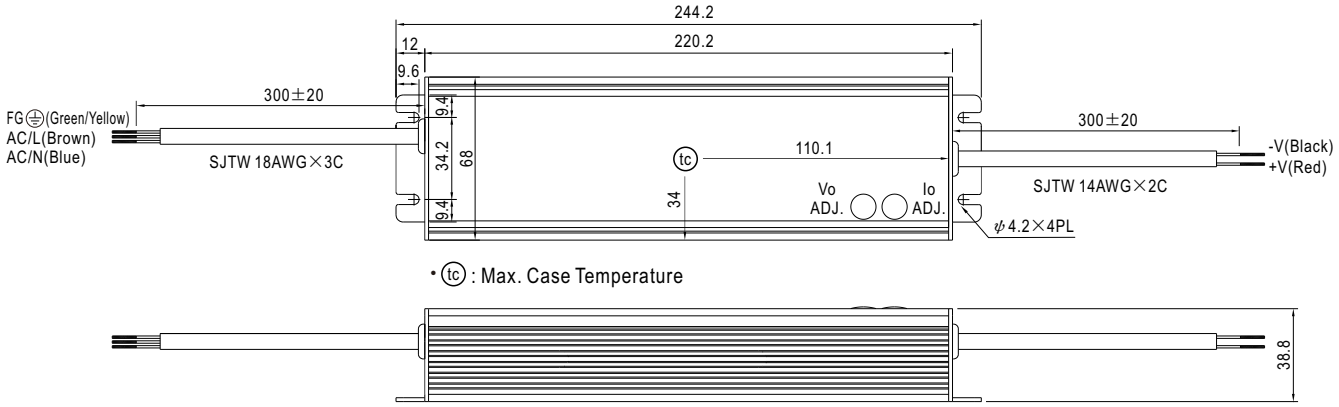


INPUT VOLTAGE (V) 60Hz

■ Mechanical Specification

Case No.994H Unit:mm Tolerance:±1

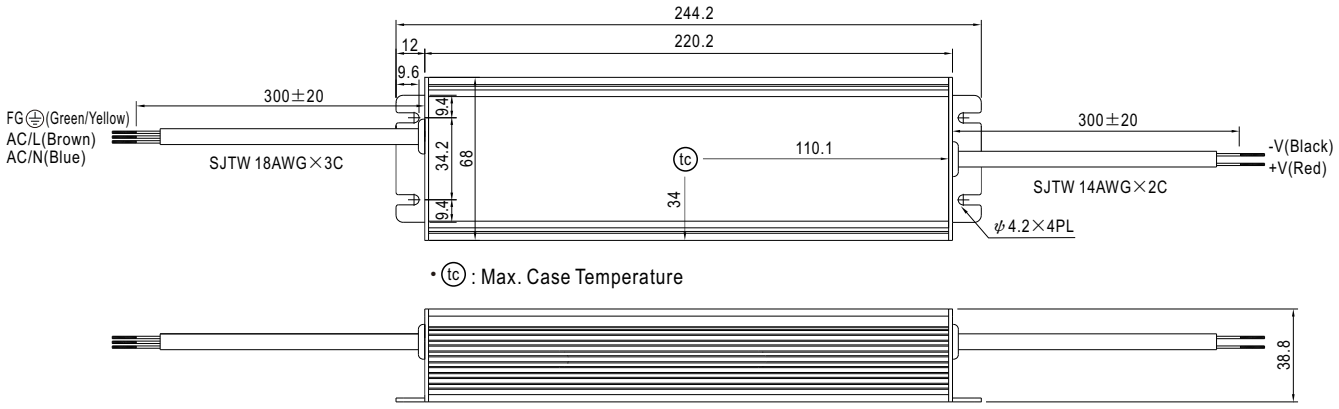
A-Type: HEP-240-_A(standard model)



• tc : Max. Case Temperature

※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

Blank-Type: HEP-240(optional model)



• tc : Max. Case Temperature

※IP68 rated. Cable for I/O connection.

■ Installation Manual

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

320W Switching Power Supply for Harsh Environment HEP-320 series

User's Manual

TAIWAN EXCELLENCE 2015

IP65 IP68 (optional)

UL62368-1 TPTC004 IEC62368-1

Household Automate Industrial Security Network Telecom

Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 95%
- Fanless design, cooling by free air convection
- -55~+70℃ wide operating range
- Aluminum case and filling with heat-conducted silicone
- IP65 design, optional IP68 rated model available
- Meet 6KV surge immunity level
- Withstand 10G vibration test
- Operating altitude up to 5000 meters (Note.8)
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 6 years warranty

Applications

- Outdoor telecommunication equipment
- Outdoor electronic signage and billboard
- Petroleum plant or mine shaft facility

GTIN CODE

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

Description

HEP-320 is a 320W industrial AC/DC power supply featuring the outstanding capability to operate under a harsh environment with high dust density, humidity, vibration and altitude. The entire series is housed with a robust aluminum case and fully potted with heat-conducted silicone. Thanks to state-of-the-art design, the working efficiency is up to 95%, enabling HEP-320, with a fanless design, perfectly work between -55℃ and +70℃ under free air convection.

Model Encoding

HEP - 320 - 12 A

- Function mode option
  - A : Standard model, IP65, Vo and Io level can be adjusted through internal potentiometer.
  - Blank : Optional model, IP68, with fixed Vo and Io level.
- Output voltage
- Output wattage
- Series name

320W Switching Power Supply for Harsh Environment **HEP-320 series**

SPECIFICATION

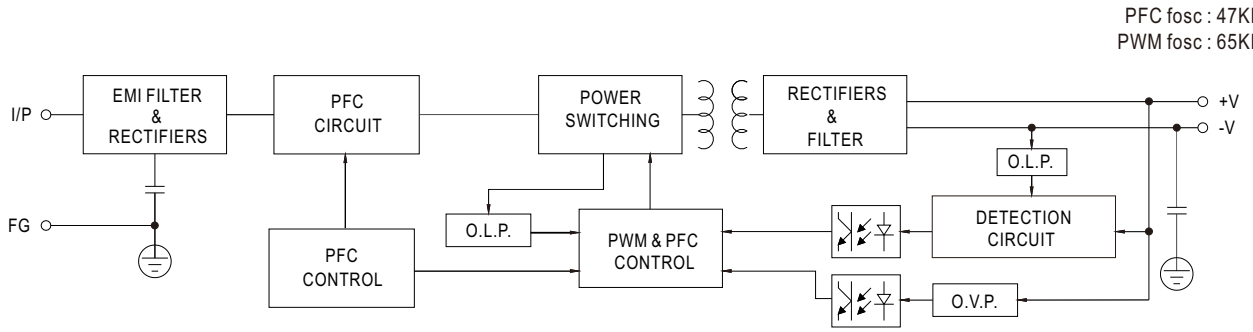
MODEL		HEP-320-12□	HEP-320-15□	HEP-320-24□	HEP-320-36□	HEP-320-48□	HEP-320-54□
OUTPUT	DC VOLTAGE	12V	15V	24V	36V	48V	54V
	RATED CURRENT	22A	19A	13.34A	8.9A	6.7A	5.95A
	RATED POWER	264W	285W	320.16W	320.4W	321.6W	321.3W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE Note.5	10.8 ~ 13.5V	13.5 ~ 17V	21 ~ 26V	32 ~ 39V	43 ~ 52V	49 ~ 58V
	CURRENT ADJ. RANGE Note.5	11 ~ 22A	9.5 ~ 19A	6.67 ~ 13.34A	4.45 ~ 8.9A	3.35 ~ 6.7A	2.97 ~ 5.95A
	VOLTAGE TOLERANCE Note.3	±3.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.6	2500ms,80ms/115VAC 600ms,80ms/230VAC at full load					
	HOLD UP TIME (Typ.)	15ms at full load 230VAC /115VAC					
INPUT	VOLTAGE RANGE Note.4	90~264VAC (277VAC operational) 128~370VDC(390VDC operational)					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.94/277VAC at full load					
	EFFICIENCY (Typ.)	91%	92.5%	94%	94%	94.5%	95%
	AC CURRENT (Typ.)	3.5A / 115VAC 1.65A / 230VAC 1.45A / 277VAC					
	INRUSH CURRENT(Typ.)	COLD START 70A at 230VAC					
	LEAKAGE CURRENT	<0.75mA / 277VAC					
PROTECTION	OVER CURRENT	105 ~ 125%					
		Protection type : Hiccup mode, recovers automatically after fault condition is removed					
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed					
	OVER VOLTAGE	14 ~ 17V	17.5 ~ 21V	27 ~ 33V	40 ~ 46V	53.5 ~ 60V	59 ~ 65V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover					
	OVER TEMPERATURE	Shut down and latch off o/p voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	-55 ~ +70℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-60 ~ +80℃, 10 ~ 95% RH non-condensing					
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)					
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS Note.8	UL62368-1,IEC62368-1, IP65 (or IP68 for HEP-320 Blank-Type), EAC TP TC 004 approved ; Design refer to BS EN/EN62368-1					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC 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	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020					
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, light industry level (surge 6KV), EAC TP TC 020					
OTHERS	MTBF	1565.6K hrs min. Telcordia SR-332 (Bellcore) ; 154.2Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	252*90*43.8mm (L*W*H)					
	PACKING	1.88Kg; 8pcs/16Kg/0.92CUFT					

NOTE

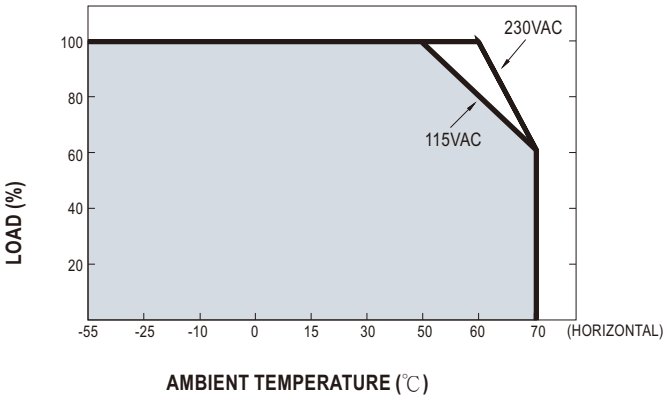
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. A-type only.
6. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
7. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
   (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
8. 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).
9. The water protection level test for the IP68 rating is performed 1000mm below the surface of the water for 1 month.

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

■ Block Diagram

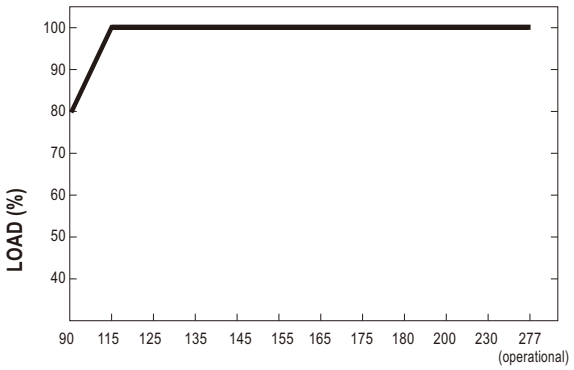


■ Derating Curve



AMBIENT TEMPERATURE (℃)

■ Static Characteristics

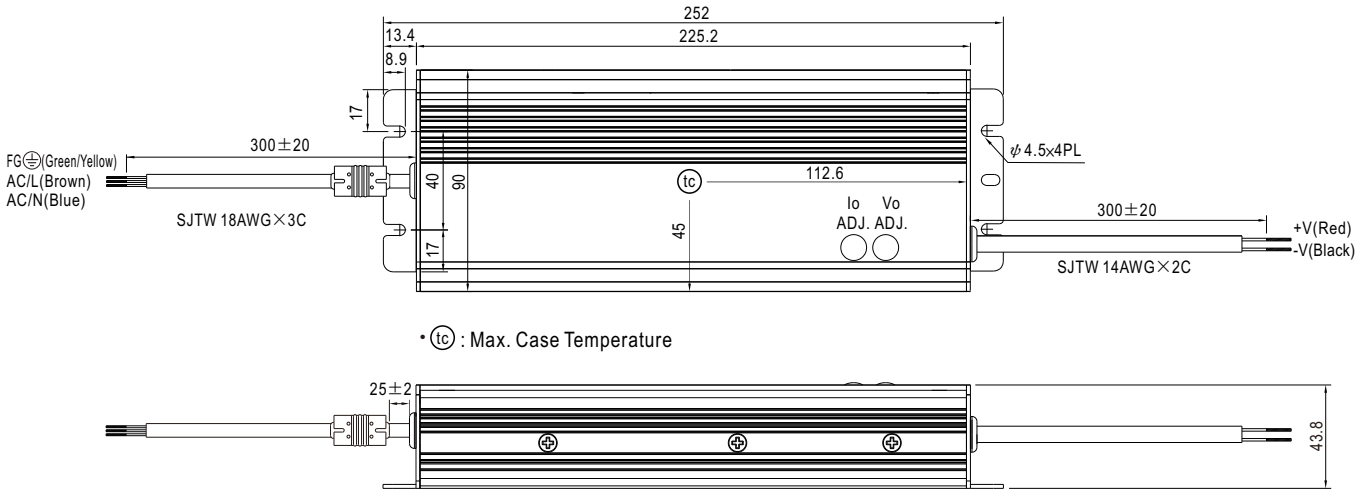


INPUT VOLTAGE (V) 60Hz

■ Mechanical Specification

Case No.202A Unit:mm Tolerance:±1

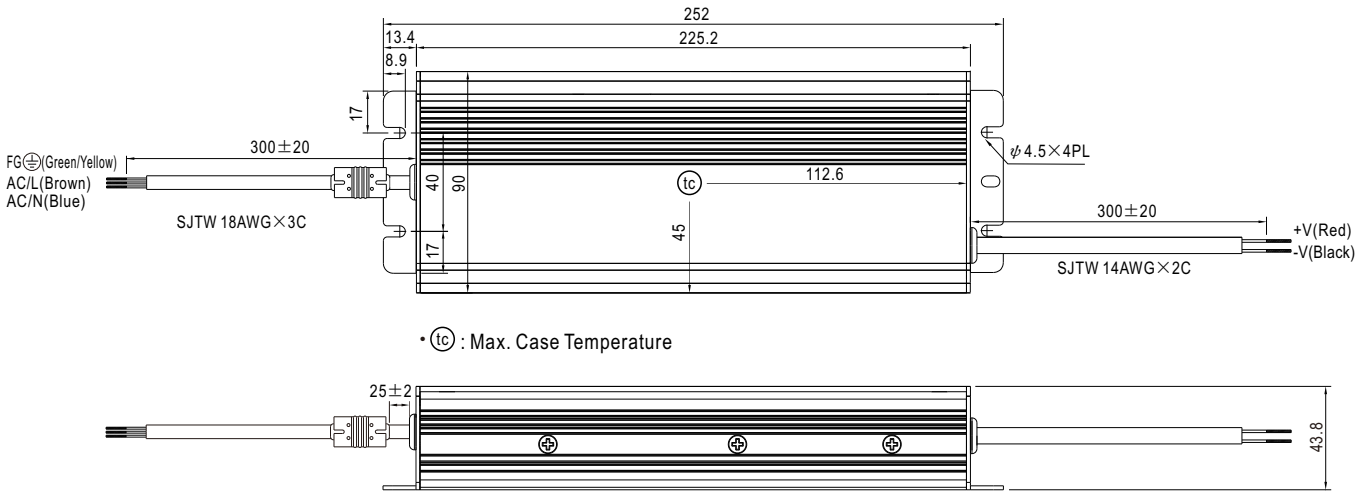
A-Type: HEP-320-_A(standard model)



• tc : Max. Case Temperature

※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

Blank-Type: HEP-320(optional model)



• tc : Max. Case Temperature

※IP68 rated. Cable for I/O connection.

■ Installation Manual

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

480W Switching Power Supply for Harsh Environment HEP-480 series

User's Manual

TAIWAN EXCELLENCE 2015

IP65 IP68 (optional)

UL62368-1 TPTC004 IEC62368-1

Household Automate Industrial Security Network Telecom

Features

- Universal AC input / Full range
- Built-in active PFC function
- High efficiency up to 95%
- Fanless design, cooling by free air convection
- -55~+65℃ wide operating range
- Aluminum case and filling with heat-conducted silicone
- IP65 design, optional IP68 rated model available
- Meet 6KV surge immunity level
- Withstand 10G vibration test
- Operating altitude up to 5000 meters (Note.7)
- Protections: Short circuit / Overload / Over voltage / Over temperature
- 6 years warranty

Applications

- Outdoor telecommunication equipment
- Outdoor electronic signage and billboard
- Petroleum plant or mine shaft facility

GTIN CODE

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

Description

HEP-480 is a 480W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted silicone. Thanks to state-of-the-art design, the working efficiency is up to 95%, enabling HEP-480 perfectly work between -55℃ and +65℃ under free air convection.

Model Encoding

HEP - 480 - 24 A

- A : Standard model, IP65, Vo and Io level can be adjusted through internal potentiometer.
- Blank : Optional model, IP68, with fixed Vo and Io level.

Function mode option

Output voltage

Output wattage

Series name

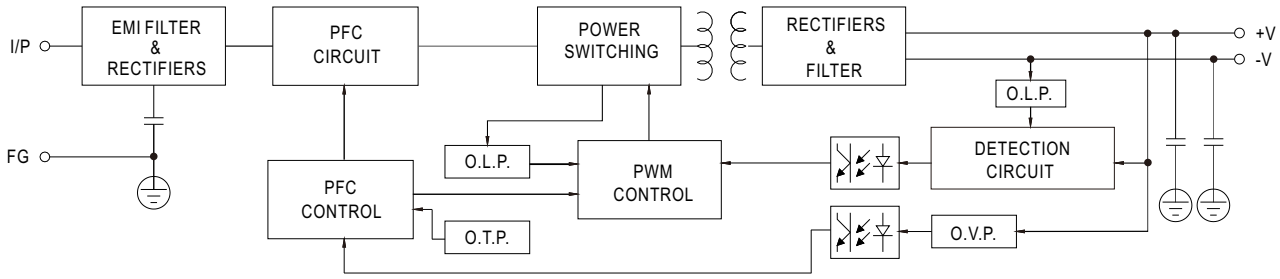
480W Switching Power Supply for Harsh Environment **HEP-480 series**

SPECIFICATION

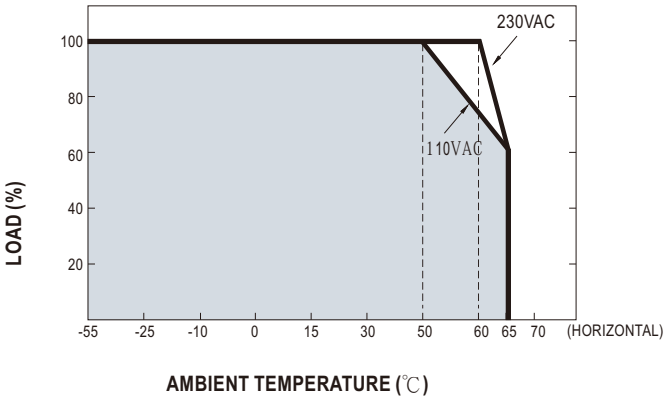
MODEL		HEP-480-24□	HEP-480-36□	HEP-480-48□	HEP-480-54□
OUTPUT	DC VOLTAGE	24V	36V	48V	54V
	RATED CURRENT	20A	13.3A	10A	8.9A
	RATED POWER	480W	478.8W	480W	480.6W
	RIPPLE & NOISE (max.) Note.2	200mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE Note.5	Adjusted for A-type only (via built-in potentiometer)			
		20.4 ~ 25.2V	30.6 ~ 37.8V	40.8 ~ 50.4V	45.9 ~ 56.7V
	CURRENT ADJ. RANGE	Adjusted for A-type only (via built-in potentiometer)			
		10 ~ 20A	6.6 ~ 13.3A	5 ~ 10A	4.4 ~ 8.9A
	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	500ms, 80ms 115VAC/230VAC			
	HOLD UP TIME (Typ.)	16ms 115VAC/230VAC			
INPUT	VOLTAGE RANGE Note.5	90~264VAC (277VAC operational) 128~370VDC(390VDC operational)			
	FREQUENCY RANGE	47 ~ 63Hz			
	POWER FACTOR (Typ.)	PF≧0.98/115VAC, PF≧0.97/230VAC, PF≧0.95/277VAC at full load			
	EFFICIENCY (Typ.)	94%	95%	94.5%	95%
	AC CURRENT (Typ.)	5A / 115VAC 2.45A / 230VAC 2A/277VAC			
	INRUSH CURRENT(Typ.)	COLD START 35A at 230VAC			
	LEAKAGE CURRENT	<0.75mA / 277VAC			
PROTECTION	OVER CURRENT	105 ~ 125%			
		Constant current limiting, recovers automatically after fault condition is removed			
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	27 ~ 33V	40 ~ 50V	53 ~ 63V	60 ~ 70V
		Shut down output voltage, re-power on to recover			
	OVER TEMPERATURE	Shut down output voltage, re-power on to recover			
ENVIRONMENT	WORKING TEMP.	-55 ~ +65℃ (Refer to "Derating Curve")			
	WORKING HUMIDITY	20 ~ 95% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-60 ~ +80℃, 10 ~ 95% RH non-condensing			
	TEMP. COEFFICIENT	±0.02%/℃ (0 ~ 60℃)			
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes			
SAFETY & EMC	SAFETY STANDARDS Note.7	UL62368-1,IEC62368-1, IP65 (or IP68 for HEP-480 Blank-Type), EAC TP TC 004 approved ;Design refer to BS EN/EN62368-1			
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC 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	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020			
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55035, light industry level (surge 6KV), EAC TP TC 020			
OTHERS	MTBF	1036.8K hrs min. Telcordia SR-332 (Bellcore) ; 89.8Khrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	262*125*43.8mm (L*W*H)			
	PACKING	2.8Kg;4pcs/11.5Kg/0.55CUFT			
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. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the setup time. 5. Derating may be needed under low input voltages. Please refer to the “STATIC CHARACTERISTICS” for more details. 6. The power supply shall be regarded as one component of the final system. The EMC performance will be affected by the complete system installation and/or configuration, the final system manufacturers must re-verify overall EMC directive with the complete installation and/or configuration. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf) 7. The water protection level test for the IP68 rating is performed 1000mm below the surface of the water for 1 month. 8. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com 9. 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

PFC fosc : 45KHz
PWM fosc : 55KHz

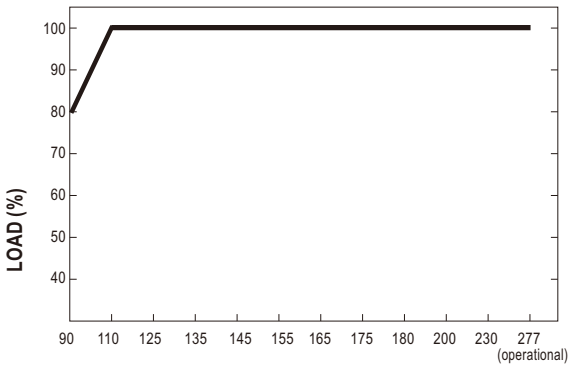


Derating Curve



AMBIENT TEMPERATURE (℃)

Static Characteristics



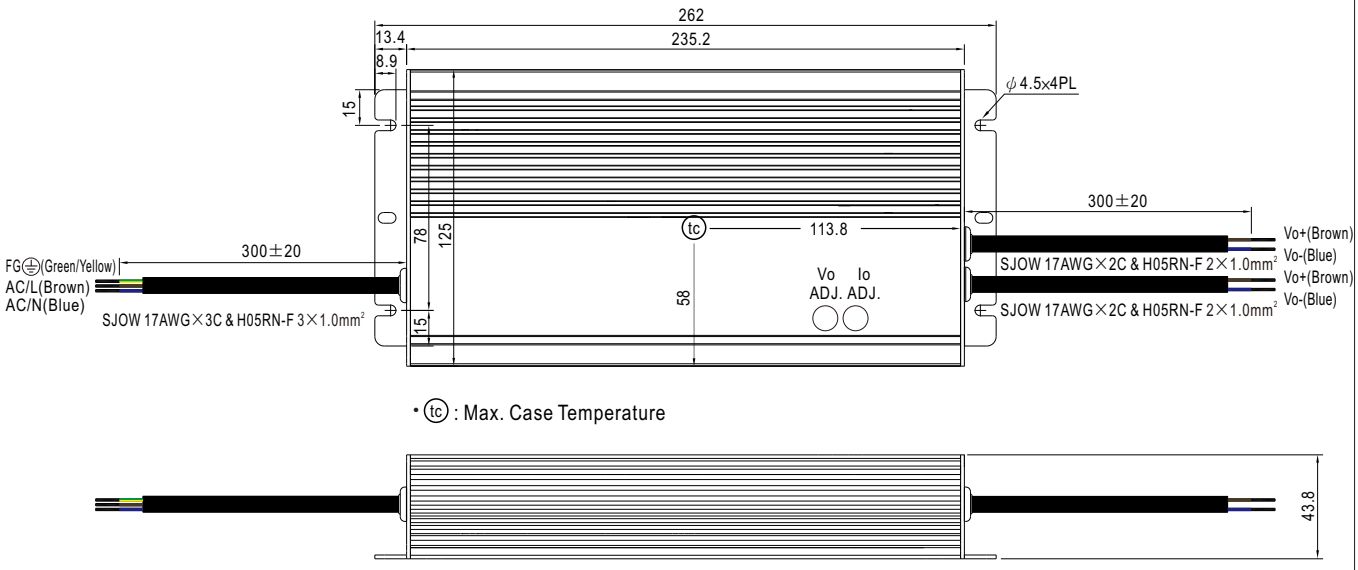
INPUT VOLTAGE (V) 60Hz

■ Mechanical Specification

Case No. 251 Unit:mm Tolerance:±1

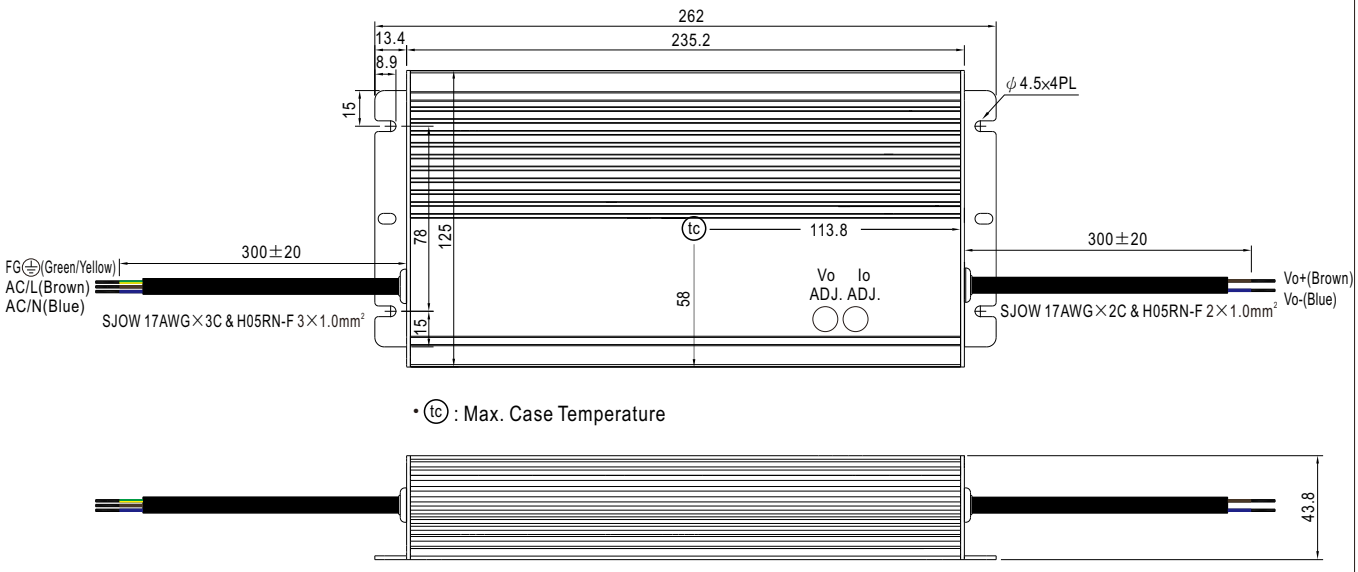
※**A-Type (standard model)**

For 24V,36V



• tc : Max. Case Temperature

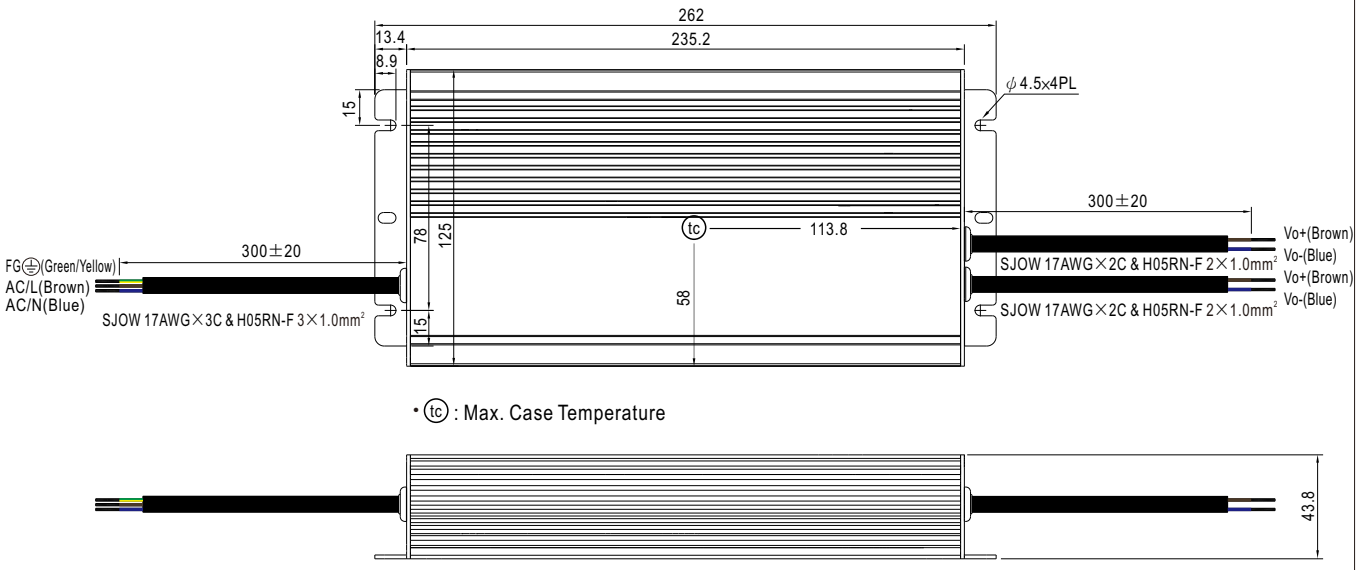
For Others



• tc : Max. Case Temperature

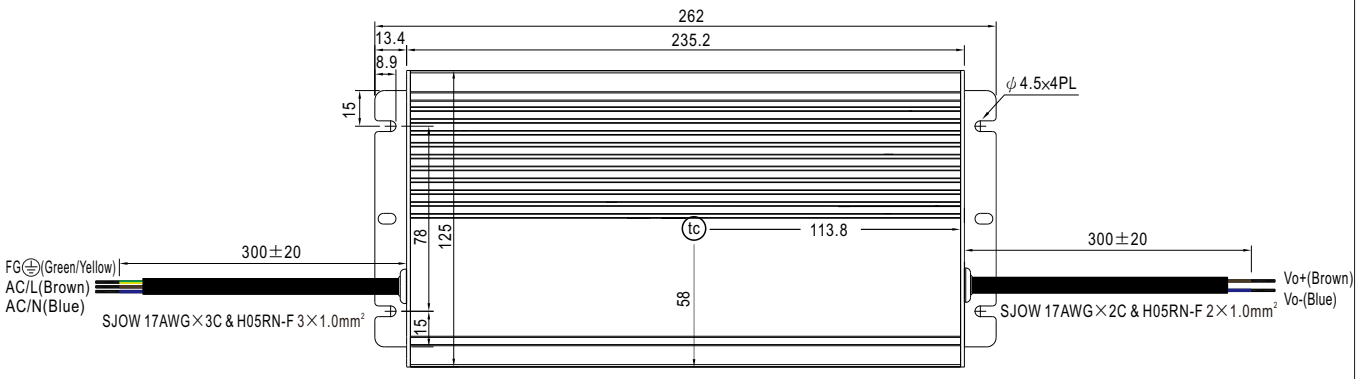
※**Blank-Type (optional model)**

For 24V,36V

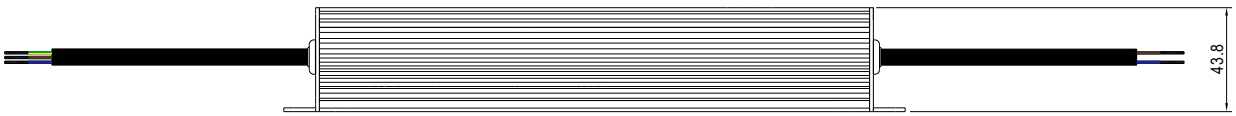


• tc : Max. Case Temperature

For Others



• tc : Max. Case Temperature



■ INSTALLATION MANUAL

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

600W Switching Power Supply for Harsh Environment HEP-600 series

User's Manual

IS 13252 (Note 8)

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

Automate Industrial Security Network Telecom

Features

- Universal AC input / Full range
- Built-in active PFC function
- No load power consumption <0.5W at remote OFF
- High efficiency up to 96%
- Fanless design, cooling by free air convection
- -40 ~ +70℃ wide operating range
- Aluminum case and filling with heat-conducted glue
- Withstand 10G vibration test
- Output voltage and output current can be adjusted through internal potentiometer
- Protections: Short circuit / Over current / Over voltage / Over temperature
- LED indicator for power on
- Operating altitude up to 5000 meters (Note.7)
- 6 years warranty

Applications

- Outdoor telecommunication equipment
- Outdoor electronic signage and billboard
- Petroleum plant or mine shaft facility

GTIN CODE

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

Description

HEP-600 is a 600W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted silicone. Thanks to state-of-the-art design, the working efficiency is up to 96%, enabling HEP-600 perfectly work between -40℃ and +70℃ under free air convection.

Model Encoding

HEP - 600 - 12

- 12 — Output voltage
- 600 — Output wattage
- HEP — Series name

SPECIFICATION

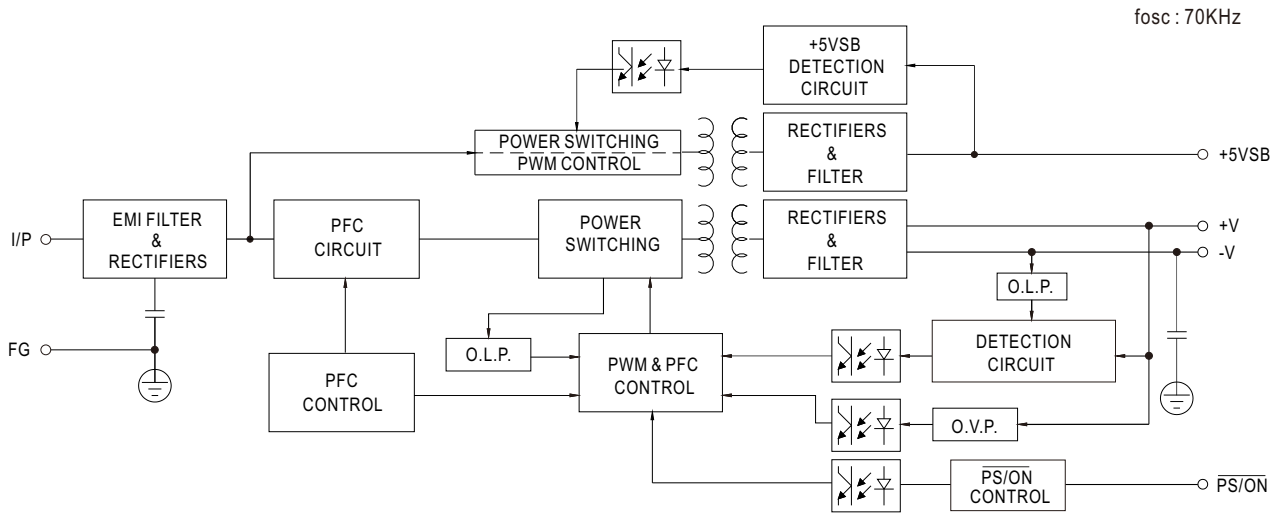
MODEL		HEP-600-12	HEP-600-15	HEP-600-20	HEP-600-24	HEP-600-30	HEP-600-36	HEP-600-42	HEP-600-48	HEP-600-54
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	RATED CURRENT	40A	36A	28A	25A	20A	16.7A	14.3A	12.5A	11.2A
	RATED POWER	480W	540W	560W	600W	600W	601.2W	600.6W	600W	604.8W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE ADJ. RANGE	10.2 ~ 12.6V	12.7 ~ 15.8V	17 ~ 21V	20.4 ~ 25.2V	25.5 ~ 31.5V	30.6 ~ 37.8V	35.7 ~ 44.1V	40.8 ~ 50.4V	45.9 ~ 56.7V
	CURRENT ADJ. RANGE	Can be adjusted by internal potentiometer								
		20 ~ 40A	18 ~ 36A	14 ~ 28A	12.5 ~ 25A	10 ~ 20A	8.3 ~ 16.7A	7.1 ~ 14.3A	6.2 ~ 12.5A	5.6 ~ 11.2A
	VOLTAGE TOLERANCE Note.3	±3.0%	±2.0%	±1.5%	±1.0%	±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%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.5	500ms, 80ms at full load 230VAC /115VAC								
	HOLD UP TIME (Typ.)	15ms at full load 230VAC /115VAC								
INPUT	VOLTAGE RANGE Note.4	90~264VAC(277VAC operational) 128~370VDC(390VDC operational)								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load								
	EFFICIENCY (Typ.)	93%	94%	95%	95%	95.5%	95.5%	96%	96%	96%
	AC CURRENT (Typ.)	7A / 115VAC 3.3A / 230VAC 2.9A / 277VAC								
	INRUSH CURRENT(Typ.)	COLD START 70A(t_{width}=1000μs measured at 50% I_{peak}) at 230VAC								
	LEAKAGE CURRENT	<0.75mA / 277VAC								
PROTECTION	OVER CURRENT	105 ~ 125%								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	13 ~ 16V	16.5 ~ 20.5V	22 ~ 26V	26 ~ 30V	32.5 ~ 36.5V	39.5 ~ 43.5V	46 ~ 50V	52.5 ~ 56.5V	59 ~ 63V
		Protection type : Shut down o/p voltage, re-power on to recover								
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover								
FUNCTION	REMOTE ON/OFF CONTROL	Power on : "Hi" >2 ~ 5V or Open circuit Power off : "Low" <0 ~ 0.5V or Short circuit								
	5V STANDBY	$5V_{SB}$: 5V@0.5A ; tolerance ±5%, ripple : 100mVp-p(max.)								
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)								
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC (Note.6)	SAFETY STANDARDS	UL62368-1,TUV BS EN/EN62368-1, EAC TP TC 004, BIS IS13252(Part1): 2010/IEC 60950-1:2005(NOTE 8) approved								
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC 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	Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020								
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN55024, heavy industry level, EAC TP TC 020								
OTHERS	MTBF	914.7K hrs min. Telcordia SR-332 (Bellcore) ; 76.9K hrs min. MIL-HDBK-217F (25℃)								
	DIMENSION	280*144*48.5mm (L*W*H)								
	PACKING	3.9Kg; 4pcs/16Kg/0.9CUFT								

NOTE

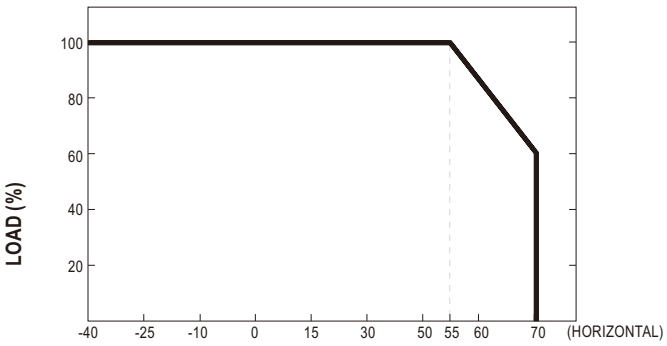
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.
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).
8. Some model may not have the BIS logo, please contact your MEAN WELL sales for more information.

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

■ Block Diagram

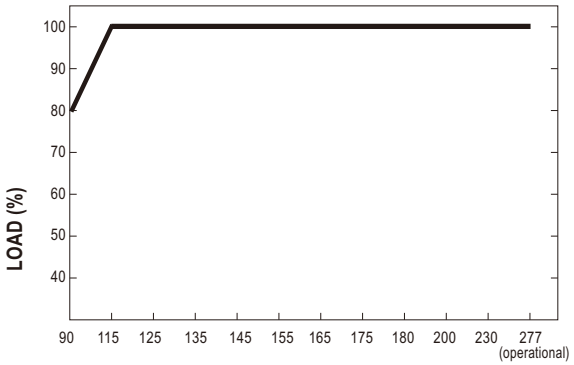


■ Derating Curve



AMBIENT TEMPERATURE (℃)

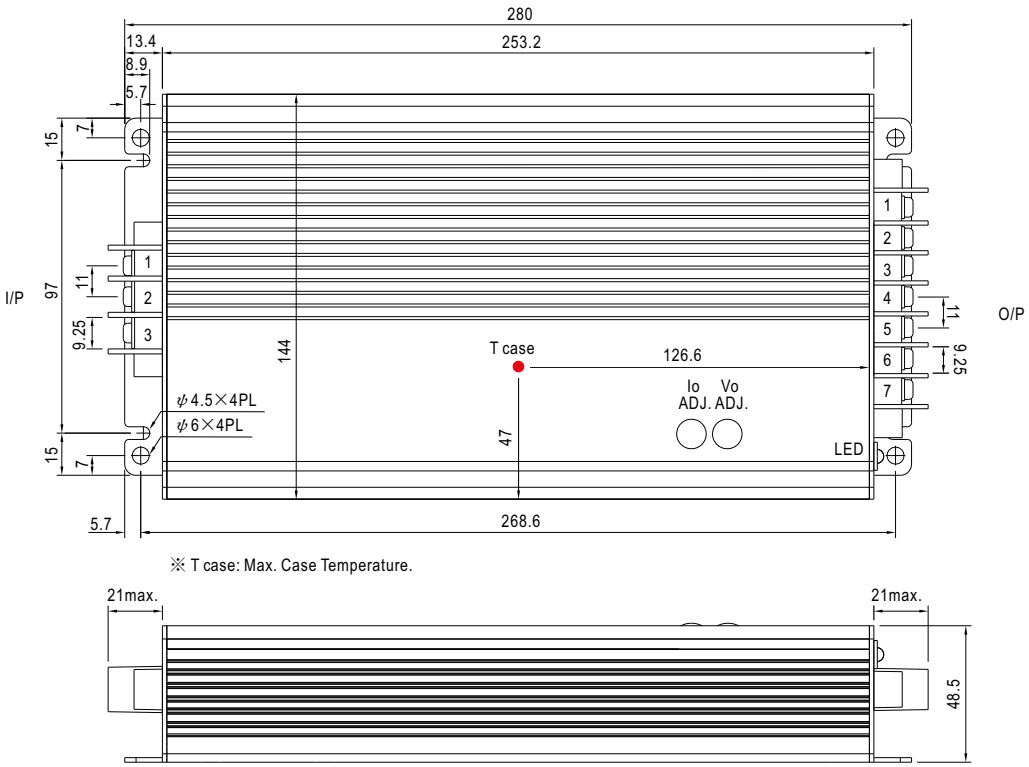
■ Static Characteristics



INPUT VOLTAGE (V) 60Hz

■ Mechanical Specification

Case No. 228A Unit:mm Tolerance:±1



※ T case: Max. Case Temperature.

※ Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	FG ⏚
2	AC/L
3	AC/N

DC Output Terminal Pin No. Assignment

Pin No.	Assignment	Pin No.	Assignment
1	RC+	4,5	-V
2	RC- & GND	6,7	+V
3	+5VSB		

■ Installation Manual

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

1000W Switching Power Supply for Harsh Environment HEP-1000 series

User's Manual

(Terminal Type)

(Wiring Type)

TAIWAN EXCELLENCE 2020 | PMBus Power Management. Defined. | IS 13252 (Note 9)

IP67 (Wiring type) | UL62368-1 | BS EN/EN62368-1 | TPTC004 | IEC62368-1

Automate | Industrial | Security | Network | Telecom

Features

- Power or charger mode switchable by SBP-001(Terminal type)
- High efficiency up to 96%
- Aluminum case fanless design and filling with heat-conducted glue and able to withstand 10G vibration test
- Wide operating temperature range -40 ~ +70℃
- Charger for lead-acid batteries (flooded, Gel and AGM) and Li-ion batteries (lithium iron and lithium manganese)
- Built-in default 2/3 stage charging curves and programmable curve
- Built-in PMBus protocol / CANBus protocol (optional)
- Output voltage and constant current level programmable
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in remote ON-OFF control (Terminal type)
- DC OK active signal and 12V Auxiliary power available
- LED indicator for power on (Terminal type)
- IP67 design for indoor or outdoor installation (Wiring type)
- 6 years warranty

Applications

- Industrial automation machinery
- Industrial control system at harsh environment
- Mechanical and electrical equipment
- Electronic instruments, equipments
- 5G telecom equipments
- Robotic lawn mower/AMR/AGV
- Equipments or instruments with back-up battery

GTIN CODE

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

Description

HEP-1000 is a 1000W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted glue. Adopting the full range 90~305VAC input, the entire series provides an output voltage line of 24V, 48V and 100V. In addition to the high efficiency up to 96%, that the whole series operates from -40℃ ~ 70℃ under air convection without fan. HEP-1000 has the complete protection functions and 10G anti-vibration capability ; It is complied with the international safety regulations such as TUV BS EN/EN62368-1 UL62368-1, and the design refers to BS EN/EN61558-1 and BS EN/EN60335-1HEP-1000 series serves as a high performance power supply solution for various industrial and charger applications.

Model Encoding

HEP -1000 - 24 W □

- Function option: Blank/PM/CAN/CPM/CCAN
- Blank : Terminal type / W : Wiring type with IP67
- Output voltage(24/48/100V)
- Rated wattage
- Series name

I/O Type	Function type	Communication Protocol	Note
Terminal	Blank	PMBus and PV/PC programmable	In Stock
	CAN	CANBus and PV/PC programmable	By request
Wiring	Blank	PV/PC programmable	By request
	PM	PMBus	By request
	CAN	CANBus	By request
	CPM	Charger with PMBus	By request
	CCAN	Charger with CANBus	By request

Note: Terminal type with charger function by programmer or PMBus/CANBus setting

SPECIFICATION FOR POWER SUPPLY (Default Setting)

MODEL		HEP-1000-24□□	HEP-1000-48□□	HEP-1000-100□□
OUTPUT	DC VOLTAGE	24V	48V	100V
	RATED CURRENT	42A	21A	10A
	RATED POWER	1008W	1008W	1000W
	RIPPLE & NOISE (max.) Note.2	200mVp-p	250mVp-p	500mVp-p
	VOLTAGE ADJ. RANGE	By built-in potentiometer, SVR		
		24 ~ 30V	48 ~ 60V	100 ~ 125V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1800ms, 80ms at full load 230VAC /115VAC		
	HOLD UP TIME (Typ.)	16ms / 230VAC at 75% load 12ms / 230VAC at full load		
INPUT	VOLTAGE RANGE Note.4	90 ~ 305VAC 250 ~ 431VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	PF>0.99/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load		
	EFFICIENCY (Typ.)	95%	96%	96%
	AC CURRENT (Typ.)	10.1A / 115VAC 5.3A / 230VAC 4.5A / 277VAC		
	INRUSH CURRENT(Typ.)	Cold start 40A at 230VAC		
	LEAKAGE CURRENT	<0.75mA / 240VAC		
PROTECTION	OVERLOAD	105~125% rated current		
		Protection type : Constant current limiting, shut down O/P voltage after 5 sec. After O/P voltage falls, re-power on to recover		
	SHORT CIRCUIT	Constant current limiting, unit will shutdown after 5 sec, re-power on to recover		
	OVER VOLTAGE	30 ~ 35V	60 ~ 70V	125 ~ 145V
		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 ~ 125% 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 : Short circuit Power OFF : Open circuit		
	AUXILIARY POWER	12V @ 0.5A tolerance ±10%, ripple=150mVp-p		
	DC-OK SIGNAL	The TTL signal out, PSU turn on = 4.4 ~ 5.5V ; PSU turn off = -0.5 ~ 0.5V. Please refer to the Function Manual.		
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 95% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes		
SAFETY & EMC (Note.7)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, BIS IS13252(Part1): 2010/IEC 60950-1:2005(NOTE 9), EAC TP TC 004 approved; design refer to BS EN/EN61558-1, BS EN/EN60335-1(by request)		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC 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/EN55024 , 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	583.7K hrs min. Telcordia SR-332 (Bellcore) ; 52.3K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	310*144*48.5mm (L*W*H)		
	PACKING	4Kg;4pcs/18.25Kg/1.04CUFT		

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 for more details.
5. PV/PC functions when users do not use SVR.
6. In power mode: When O/P voltage is below < 80% of Vset for 5 sec. the unit will shut down afterwards.
7. 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 720mm*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)
8. 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).
9. Some model may not have the BIS logo, please contact your MEAN WELL sales for more information.

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

SPECIFICATION FOR CHARGER (Option function)

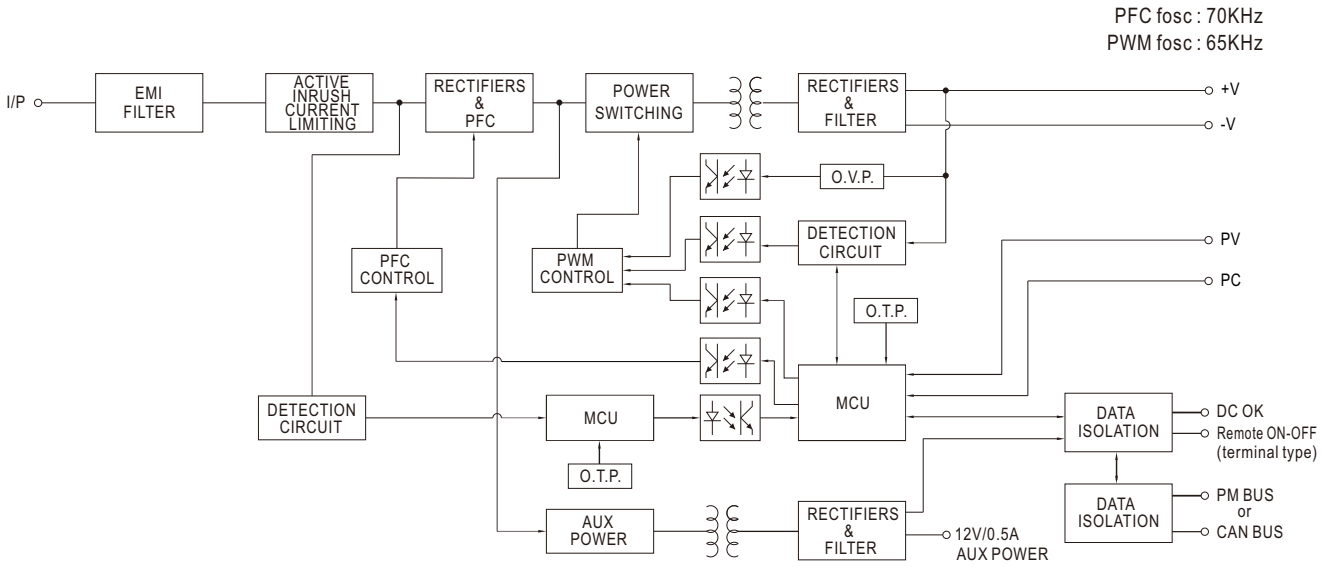
MODEL		HEP-1000-24□□	HEP-1000-48□□	HEP-1000-100□□
OUTPUT	BOOST CHARGE VOLTAGE Vboost	28.8V	57.6V	115.2V
	FLOAT CHARGE VOLTAGE Vfloat	27.6V	55.2V	110.4V
	RECOMMENDED BATTERY CAPACITY(AMP HOURS)(Note 2)	120 ~ 350AH	60 ~ 175AH	30 ~ 85AH
	BATTERY TYPE	Open & Sealed Lead Acid		
	OUTPUT CURRENT	35A	17.5A	8.7A
INPUT	VOLTAGE RANGE Note 3	90 ~ 305VAC 250 ~ 431VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	PF>0.99/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load		
	EFFICIENCY (Typ.)	95%	96%	96%
	AC CURRENT (Typ.)	10.1A / 115VAC 5.3A / 230VAC 4.5A / 277VAC		
	INRUSH CURRENT(Typ.)	Cold start 40A at 230VAC		
	LEAKAGE CURRENT	<0.75mA / 240VAC		
PROTECTION	SHORT CIRCUIT	Constant current limiting, unit will shutdown after 5 sec, re-power on to recover.		
	OVER VOLTAGE	30 ~ 35V	60 ~ 70V	125 ~ 145V
		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	REMOTE ON/OFF CONTROL	Power ON : Short circuit Power OFF : Open circuit		
	AUXILIARY POWER	12V @ 0.5A tolerance ±10%, ripple=150mVp-p		
	DC-OK SIGNAL	The TTL signal out, PSU turn on = 4.4 ~ 5.5V ; PSU turn off = -0.5 ~ 0.5V. Please refer to the Function Manual.		
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 95% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes		
SAFETY & EMC (Note.5)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, BIS IS13252(Part1): 2010/IEC 60950-1:2005(NOTE 7), EAC TP TC 004 approved; design refer to BS EN/EN61558-1, BS EN/EN60335-1(by request)		
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC 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 A
		Harmonic Current	BS EN/EN61000-3-2	Class A
		Voltage Flicker	BS EN/EN61000-3-3	-----
	EMC IMMUNITY	BS EN/EN55024 , 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	583.7K hrs min. Telcordia SR-332 (Bellcore) ; 52.3K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	310*144*48.5mm (L*W*H)		
	PACKING	4Kg;4pcs/18.25Kg/1.04CUFT		

NOTE

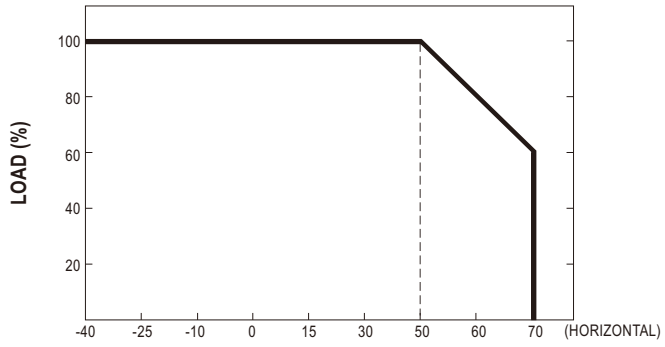
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. This is Mean Well's suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.
3. Derating may be needed under low input voltages. Please check the derating curve for more details.
4. In charge mode: When O/P voltage < 67% of Vset for 5 sec. the unit will shut down afterwards.
5. 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 720mm*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)
6. 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).
7. Some model may not have the BIS logo, please contact your MEAN WELL sales for more information.

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

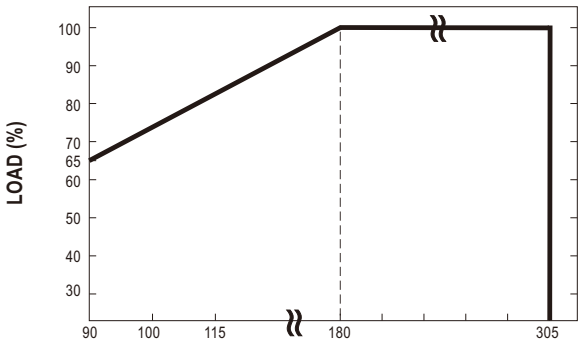
■ BLOCK DIAGRAM



■ DERATING CURVE



■ STATIC CHARACTERISTICS



※ For 100V model charging mode, output current is 20% rated min. when operating tempature at -40℃, and can reach 100% above -30℃.

■ TABLE OF FUNCTION

I/O TYPE	Function type	Power Supply Function	Charging Function	PV/PC Programmable	PMBus Protocol	CANBus Protocol	LED Indicator	Remote On/Off	DC-OK Signal	Temperature Compensation	12V/0.5A Aux. output
Terminal type	Blank	V(default)	V	V	V		V	V	V	V	V
	CAN	V(default)	V	V		V	V	V	V	V	V
Wiring type	Blank	V		V					V		V
	PM	V			V				V		V
	CAN	V				V			V		V
	CPM		V		V				V	V	V
	CCAN		V			V			V	V	V

■ FUNCTION MANUAL

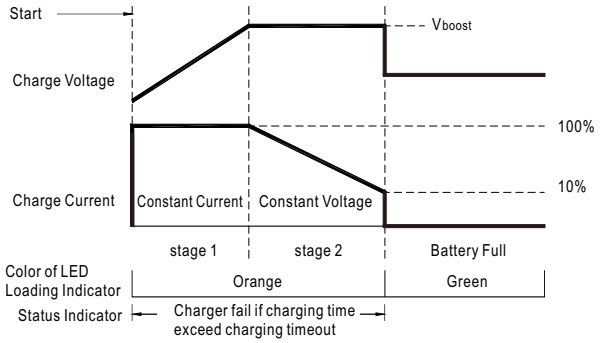
1.Charging Curve (For charger type or setting HEP-1000 to charger mode)

※ By default, the HEP-1000 operates in power supply mode, and it can be configured to charger mode by PMBus, CANBus, or SBP-001.

※ By factory default, this charger performs the default curve which can be programmed via PMBus and CANBus.

※ To accommodate the parameters of the charging curve, SBP-001, the smart battery charging programmer designed by MEAN WELL, and a personal computer are needed. Please contact MEAN WELL for details.

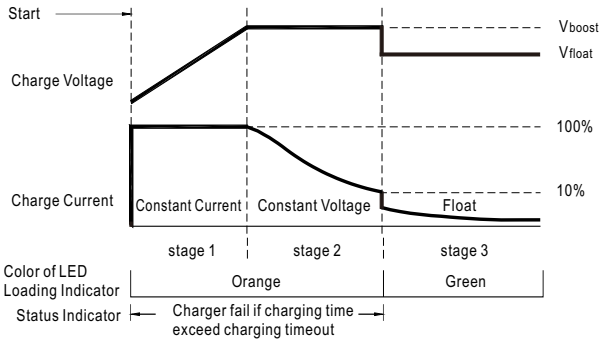
※ 2 stage charging curve



State	24	48	100
Constant Current	35A	17.5A	8.7A
Vboost	28.8V	57.6V	115.2V

◎ Suitable for lead-acid batteries (flooded, Gel and AGM) and Li-ion batteries (lithium iron and lithium manganese).

※ 3 stage charging curve (default)



State	24	48	100
Constant Current	35A	17.5A	8.7A
Vboost	28.8V	57.6V	115.2V
Vfloat	27.6V	55.2V	110.4V

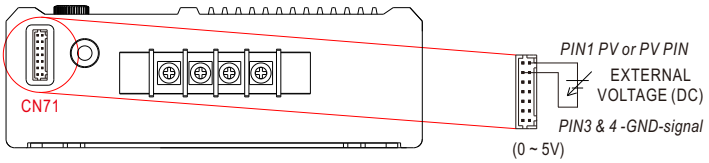
◎ Suitable for lead-acid batteries (flooded, Gel and AGM) and Li-ion batteries (lithium iron and lithium manganese).

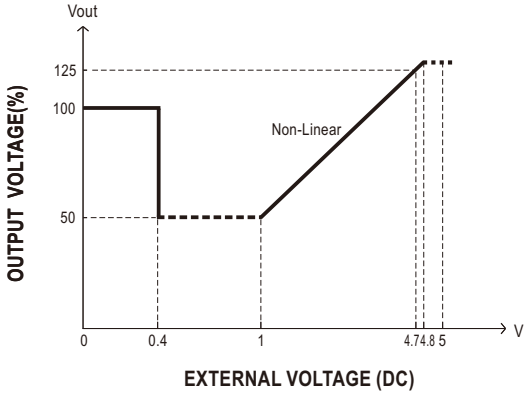
2. Front Panel LED Indicators & Corresponding Signal at Function Pins (Terminal type)

LED	Description
Green	Float (stage 3)
Orange	Charging (stage 1 or stage 2)
Red	Abnormal status (OTP, OLP, Charging timeout.)
Red (Flashing)	The LED will flash with the red light when the internal temperature reaches 95℃; under this condition, the unit still operates normally without entering OTP. (In the meantime, an alarm signal will be sent out through the PMBus interface.)

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

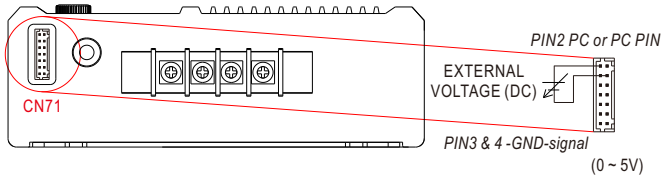
※ In addition to the adjustment via the built-in potentiometer, the output voltage can be trimmed by applying EXTERNAL VOLTAGE.
(For Blank type of Terminal and wiring)

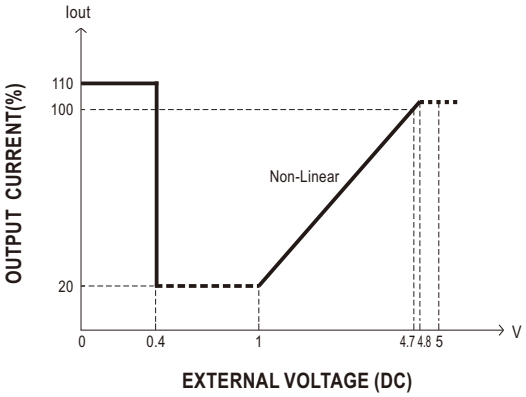




4.Output Current Programming (or, PC / remote current programming / dynamic current trim)

※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.
(For Blank type of Terminal and wiring)

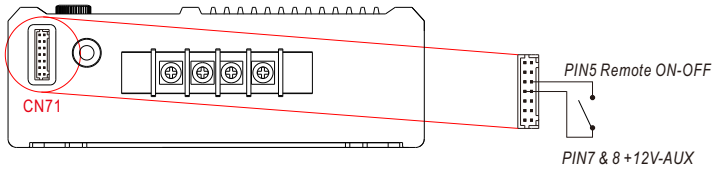




◎ When O/P voltage is below 80% of Vset for 5 sec, the unit will shut down afterwards, re-power on to recover.

5.Remote ON-OFF Control (Terminal type)

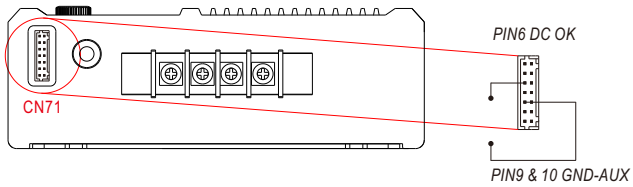
The power supply can be turned ON/OFF individually or along with other units in parallel by using the "Remote ON-OFF" function.



Remote ON-OFF	Power Supply Status
Short circuit	ON
Open circuit	OFF

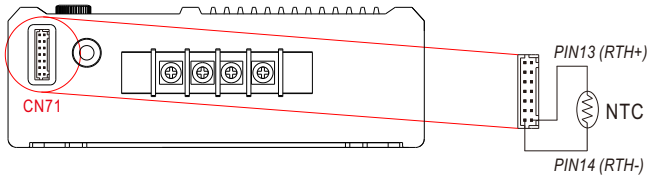
6.DC-OK Signal

DC-OK signal is a TTL level signal. The maximum source current is 10mA and the maximum external voltage is 5.5V.



DC-OK signal	Power Supply Status
“High” >4.4~5.5V	ON
“Low” <-0.5~0.5V	OFF

7.Temperature Compensation



◎ To exploit the temperature compensation function, please attach the temperature sensor, NTC, which is enclosed with the charger, to the battery or the battery's vicinity.
◎ The charger is able to work normally without the NTC.

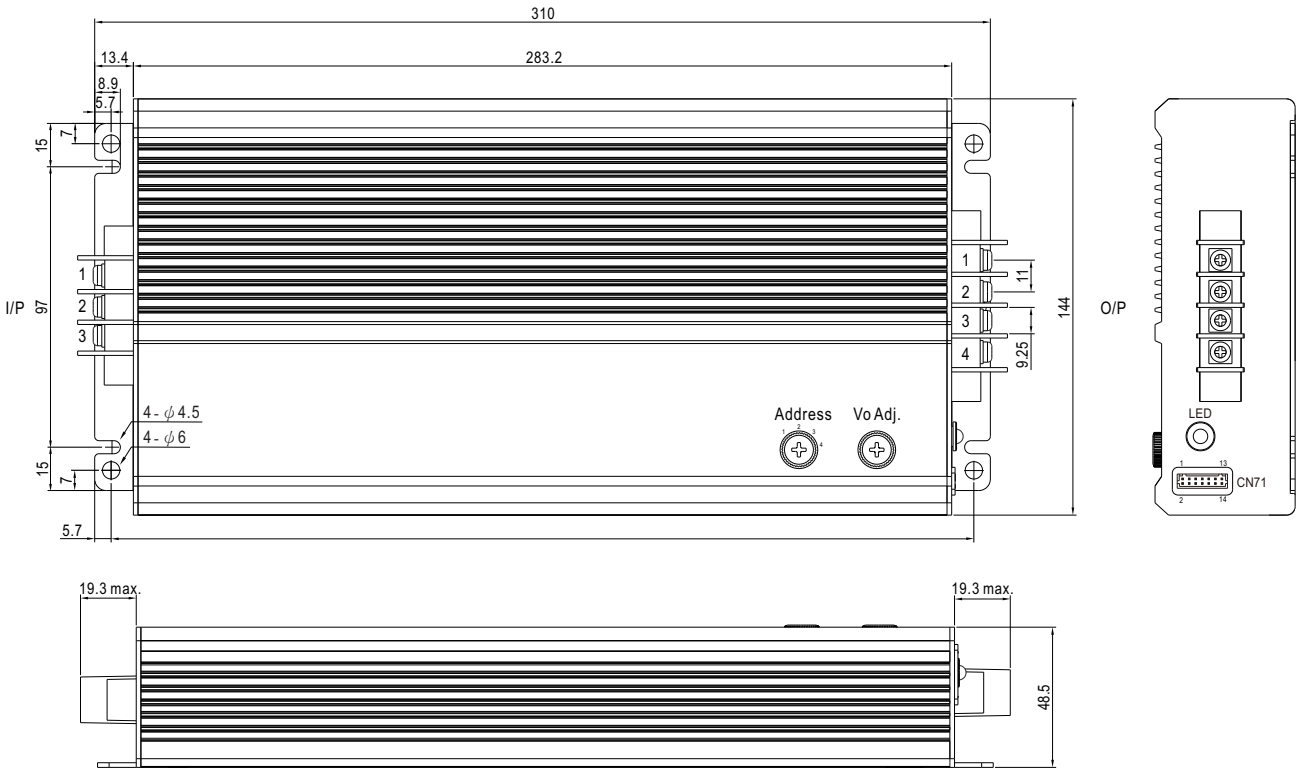
8.PMBus Communication Interface

HEP-1000 supports PMBus Rev. 1.1 with maximum 100KHz bus speed, allowing information reading, status monitoring, output trimming, etc. For details, please refer to the User’s Manual.

■ MECHANICAL SPECIFICATION

Case No.228F Unit:mm Tolerance:±1

※**Blank-Type (Terminal type)**



※ Output voltage current level can be adjusted through internal potentiometer.(Vo Adj.)
(Can access by removing the rubber stopper on the case.)
※ PMBus interface address selection.(Address)

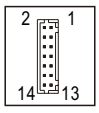
AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	FG ⏚
2	AC/L
3	AC/N

DC Output Terminal Pin No. Assignment

Pin No.	Assignment
1,2	-V
3,4	+V

※Control Pin No. Assignment(CN71) : JST S14B-PHDKS-B or equivalent



Mating Housing	JST PHDR-14VS or equivalent
Terminal	JST SPHD-001T-P0.5 or equivalent

Pin No.	Function	Description
1	PV	Connection for output voltage programming.(Note1)
2	PC	Connection for constant current level programming.(Note.1)
3,4	GND (Signal)	Negative output voltage signal.
5	Remote ON-OFF	The unit can turn the output ON/OFF by dry contact between Remote ON/OFF and +12-AUX.(Note.2) Short (10.8 ~ 13.2V) : Power ON ; Open(0 ~ 0.5V) : Power OFF ; The maximum input voltage is 13.2V
6	DC-OK	Low (-0.5 ~ 0.5V) : When Vout≦77%±6% at power mode. Vout≦66%±6% at charger mode. High (4.4 ~ 5.5V) : When Vout≧80%±6% at power mode. Vout≧67%±6% at charger mode. The maximum sourcing current is 10mA and only for output.(Note.2)
7,8	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX (pin9 & 10). The maximum load current is 0.5A. This output is not controlled by "Remote ON-OFF".
9,10	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).
11	SDA	For PMBus model: Serial Data used in the PMBus interface. (Note.2)
	CANH	For CANBus model: Data line used in CANBus interface. (Note.2)
12	SCL	For PMBus model: Serial Clock used in the PMBus interface. (Note.2)
	CANL	For CANBus model: Data line used in CANBus interface. (Note.2)
13	RTH+	Temperature sensor(NTC, 5KOhm) comes along with the charger can be connected to the unit to allow temperature compensation of the charging voltage.
14	RTH-	

Note1: Non-isolated signal, referenced to [GND(signal)].
Note2: Isolated signal, referenced to GND-AUX.

※W-Type (Wiring type)

※ Output voltage current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

※ Control Wire Assigment : (AWM 24AWG×6C)

Color	Function	Description
Yellow	PV	Connection for output voltage programming.(Note1)
Orange	PC	Connection for constant current level programming.(Note.1)
Green	GND (Signal)	Negative output voltage signal.(PV/PC GND)
Brown	DC-OK	Low (0 ~ 0.5V) : When Vout≦77%±6% at power mode. Vout≦66%±6% at charger mode. High (4.4 ~ 5.5V) : When Vout≧80%±6% at power mode. Vout≧67%±6% at charger mode. The maximum sourcing current is 10mA and only for output.(Note.2)
Red	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX. The maximum load current is 0.5A.
Black	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).

Note1: Non-isolated signal, referenced to [GND(signal)].
Note2: Isolated signal, referenced to GND-AUX (GND for CANBus and PMBus protocal).

※W-Type (Wiring type with charger)

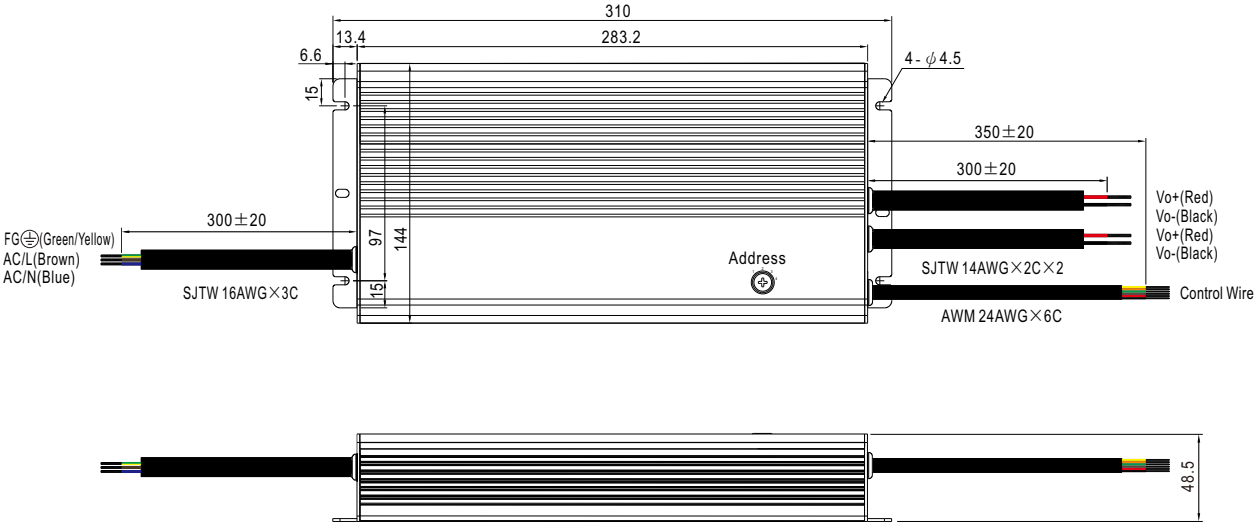
※ Output voltage current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

※ Control Wire Assigment : (AWM 24AWG×6C)

Color	Function	Description
Yellow	SDA	For PMBus model: Serial Data used in the PMBus interface. (Note.1)
	CANH	For CANBus model: Data line used in CANBus interface. (Note.1)
Orange	SCL	For PMBus model: Serial Clock used in the PMBus interface. (Note.1)
	CANL	For CANBus model: Data line used in CANBus interface. (Note.1)
Green	RTH-	Temperature sensor(NTC, 5KOhm) comes along with the charger can be connected to the unit to allow temperature compensation of the charging voltage.
Brown	RTH+	
Red	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX. The maximum load current is 0.5A.
Black	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).

Note1: Isolated signal, referenced to GND-AUX.

※**W-Type (Wiring of WPM/WCAN)**



※ Output voltage current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

※ Control Wire Assigment : (AWM 24AWG×6C)

Color	Function	Description
Yellow	SDA	For PMBus model: Serial Data used in the PMBus interface. (Note.1)
	CANH	For CANBus model: Data line used in CANBus interface. (Note.1)
Orange	SCL	For PMBus model: Serial Clock used in the PMBus interface. (Note.1)
	CANL	For CANBus model: Data line used in CANBus interface. (Note.1)
Green	GND (Signal)	Negative output voltage signal.(PV/PC GND)
Brown	DC-OK	Low (0 ~ 0.5V) : When Vout≦77%±6% at power mode. Vout≦66%±6% at charger mode. High (4.4 ~ 5.5V) : When Vout≧80%±6% at power mode. Vout≧67%±6% at charger mode. The maximum sourcing current is 10mA and only for output.(Note.1)
Red	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX. The maximum load current is 0.5A.
Black	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).

Note1: Isolated signal, referenced to GND-AUX.

HEP-2300-HV series

2300W High Voltage Output for Harsh Environment

Terminal Type

User's Manual

Wiring Type (IP67)

IP67 (W type) UL62368-1 EN62368-1 TPTC004 IEC62368-1

Automate Industrial Security Network Telecom

Features

- High voltage output (115/230/380VDC)
- High efficiency up to 95.5% and active PFC function
- Fanless design, cooling by free air convection
- Aluminum case and filling with heat-conducted glue
- Withstand 10G vibration test
- Wide operating temperature range -40 ~ 70℃
- Built-in CANBus and PMBus by optional
- Output voltage and constant current level programmable
- Protections: Short circuit / Over load / Over voltage / Over temperature
- Built-in remote ON-OFF control and DC OK active signal
- LED indicator for power on and 12V auxiliary power available
- Diverse installation scenarios-Mounting methods
- Wiring type with IP67 rating
- 6 years warranty

Applications

- Industrial automation machinery
- Industrial control system at harsh environment
- Mechanical and electrical equipment
- Electronic instruments, equipments
- Robotic lawn moner / AMR / AGV
- Laser related machine
- DC centralized bus
- Charging related equipment(with BMS)

GTIN CODE

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

Description

HEP-2300-HV is a 2300W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted glue.Adopting the full range 90~305VAC input, the entire series provides output voltage line of 115V, 230V and 380V. In addition to the high efficiency up to 95.5%, that the whole series operates from -40℃ ~ 70℃ under free air convection without fan. HEP-2300-HV has the complete protection functions and 10G anti-vibration capability ; It is complied with the international safety regulations such as TUV EN62368-1 UL62368-1, and the design refers to EN61558-1 and EN60335-1. HEP-2300-HV series serves as a high performance power supply solution for various industrial applications.

Model Encoding

HEP -2300 - 115 W CAN

- CAN: Function option: (Blank/PM/CAN)
- W: I/O (Blank: Terminal type, W: Wiring type)
- 115: Output voltage(115/230/380V)
- 2300: Rated wattage
- HEP: Series name

I/O Type	Function type	Communication Protocol	Note
Terminal	Blank	CANBus and PV/PC programmable	In Stock
	PM	PMBus and PV/PC programmable	By request
Wiring	Blank	PV/PC programmable	In Stock
	PM	PMBus	By request
	CAN	CANBus	By request

Note: MEAN WELL can provide complete cable modification services. Please contact sales representatives for details.

SPECIFICATION

MODEL		HEP-2300-115	HEP-2300-230	HEP-2300-380
OUTPUT	DC VOLTAGE (factory default)	115V	230V	380V
	CURRENT (factory default)	20A	10A	6.05A
	RATED CURRENT (max.)	20A	10.6A	6.9A
	RATED POWER (max.)	2300W	2300W	2300W
	FULL POWER VOLTAGE RANGE	115 ~ 138V	216 ~ 260V	334 ~ 400V
	RIPPLE & NOISE (max.) Note.2	1500mVp-p	2500mVp-p	4000mVp-p
	VOLTAGE ADJ. RANGE	By potentiometer VR		
		90 ~ 138V	170 ~ 260V	260 ~ 400V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1800ms, 100ms/230VAC at full load		
	HOLD UP TIME (Typ.)	12ms/230VAC at full load		
INPUT	VOLTAGE RANGE Note.4	90 ~ 305VAC 250 ~ 431VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	PF>0.99/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load		
	EFFICIENCY (Typ.)	95%	95.5%	95.5%
	AC CURRENT (Typ.)	13.3A / 115VAC 11A / 230VAC 9.3A / 277VAC		
	INRUSH CURRENT (Typ.)	Cold start 60A/230VAC		
	LEAKAGE CURRENT	<1.8mA Peak / 240VAC <2mA Peak / 277VAC		
PROTECTION	OVERLOAD	105 ~ 115% rated output power		
		Protection type : Constant current limiting, unit will shutdown after 5 sec. re-power on to recover		
	OVER VOLTAGE	145 ~ 166V	273 ~ 312V	420 ~ 480V
		Protection type :Shut down O/P voltage,re-power on to recover		
	OVER TEMPERATURE	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 : Short circuit Power OFF : 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 = -0.5 ~ 0.5V. Please refer to the Function Manual		
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 95% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes		
SAFETY & EMC (Note.7)	SAFETY STANDARDS	UL62368-1,TUV BS EN/EN62368-1, EAC TP TC 004 approved; design refers to BS EN/EN61558-1, BS EN/EN60335-1(by request)		
	WITHSTAND VOLTAGE Note 6	OVC Ⅲ I/P-O/P: 6KVDC I/P-FG:4KVDC O/P-FG:4KVDC		
	ISOLATION RESISTANCE Note 6	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 A
		Harmonic Current	BS EN/EN61000-3-2	Class A
		Voltage Flicker	BS EN/EN61000-3-3	-----
	EMC IMMUNITY	BS EN/EN55024, 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	478K hrs min. Telcordia SR-332 (Bellcore) ; 44.8K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	375*280*88mm (L*W*H), without mounting plate		
	PACKING	12.5Kg;1pcs/13.5Kg/1.33CUFT		

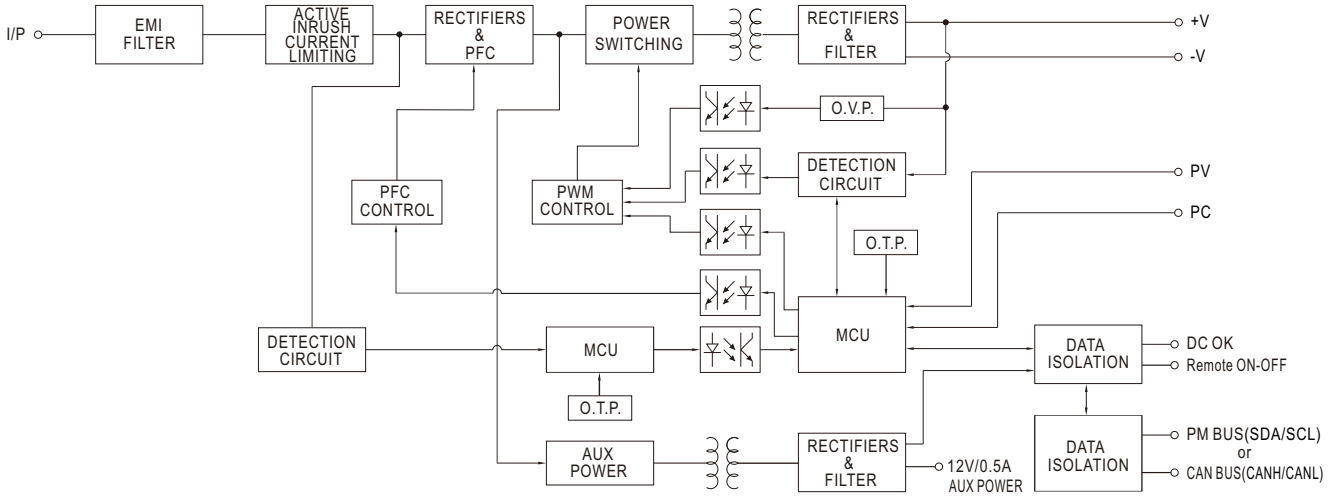
NOTE

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 for more details.
5. SVR function is disabled during PV/PC programming operation.
6. During withstandards voltage and isolation resistance testing, the screw "A" shall be temporarily removed, and shall be istalled back after the testing.
7. 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 1100mm*650mm 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)
8. 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).
9. This series meets the typical life expectancy of > 55,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 80℃ or less.

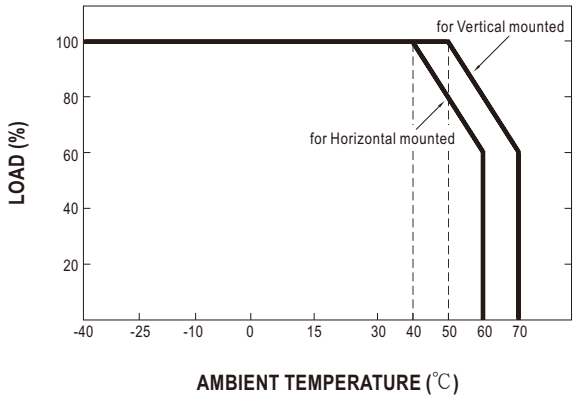
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ BLOCK DIAGRAM

PFC fosc : 80KHz
PWM fosc : 52KHz

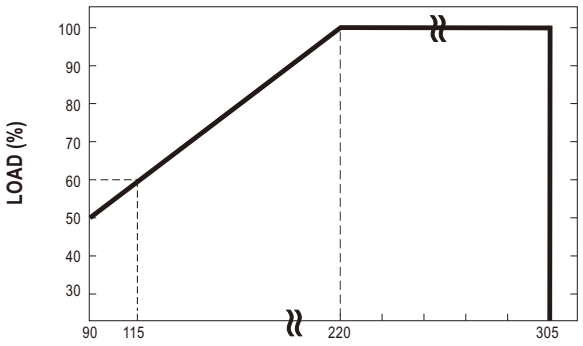


■ DERATING CURVE



AMBIENT TEMPERATURE (℃)

■ STATIC CHARACTERISTICS



INPUT VOLTAGE (V) 60Hz

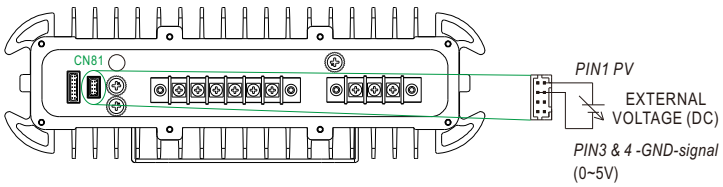
■ TABLE OF FUNCTION

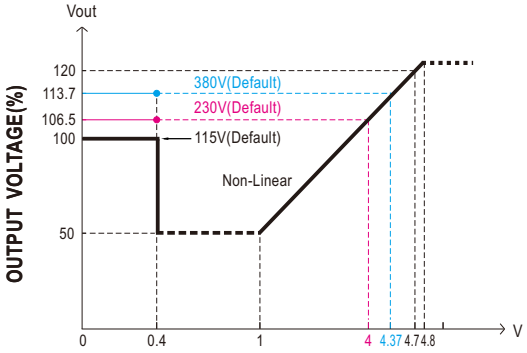
I/O TYPE	Function type	Power Supply Function	PV/PC Programmable	PMBus Protocol	CANBus Protocol	LED Indicator	Remote On/Off	DC-OK Signal	12V/0.5A Aux. output
Terminal type	Blank	V(default)	V		V	V	V	V	V
	PM	V(default)	V	V		V	V	V	V
Wiring type	Blank	V(default)	V			V		V	V
	PM	V(default)		V		V		V	V
	CAN	V(default)			V	V		V	V

■ FUNCTION MANUAL

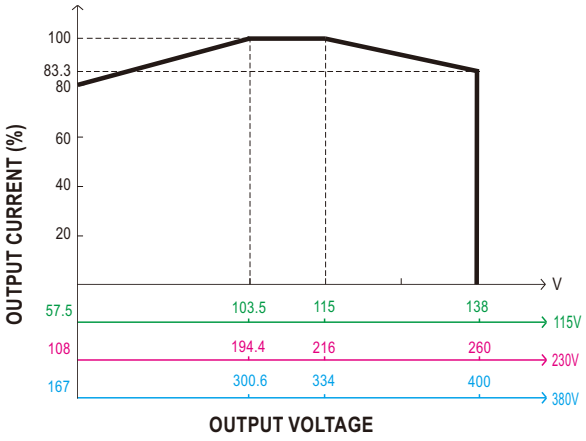
1.Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)

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





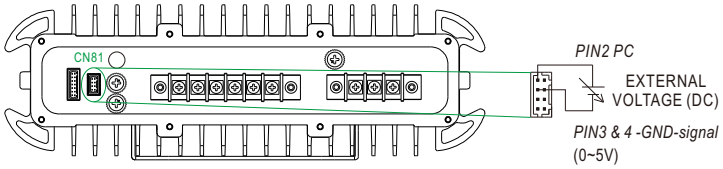
◎ The 100% output voltage is 115/216/334V.

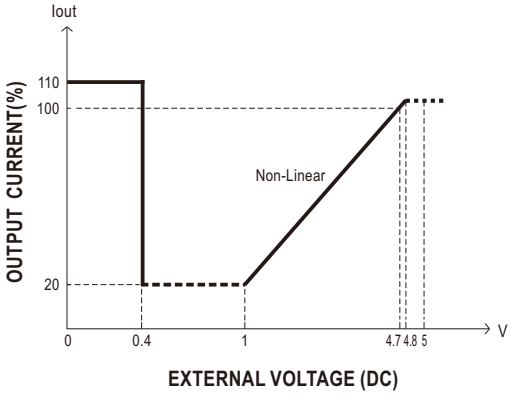


◎ The rated current should change with the Output Voltage Programming accordingly.

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.

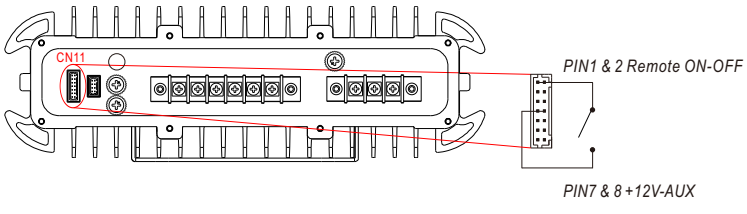




◎ The 100% output current is rated current.
◎ Maximum operation current <100% is recommended.
◎ When external voltage <0.4V the 100% output current will be default current.

3.Remote ON-OFF Control

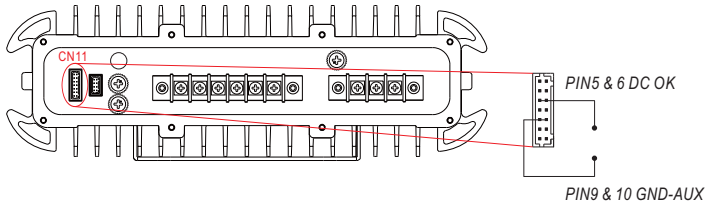
The power supply can be turned ON/OFF individually or along with other units in parallel by using the "Remote ON-OFF" function.



Remote ON-OFF	Power Supply Status
Short circuit	ON
Open circuit	OFF

4.DC-OK Signal

DC-OK signal is a TTL level signal. The maximum source current is 10mA and the maximum external voltage is 5.5V.



DC-OK signal	Power Supply Status
"High" >4.4~5.5V	ON
"Low" <-0.5~0.5V	OFF

5.CANBus Communication Interface

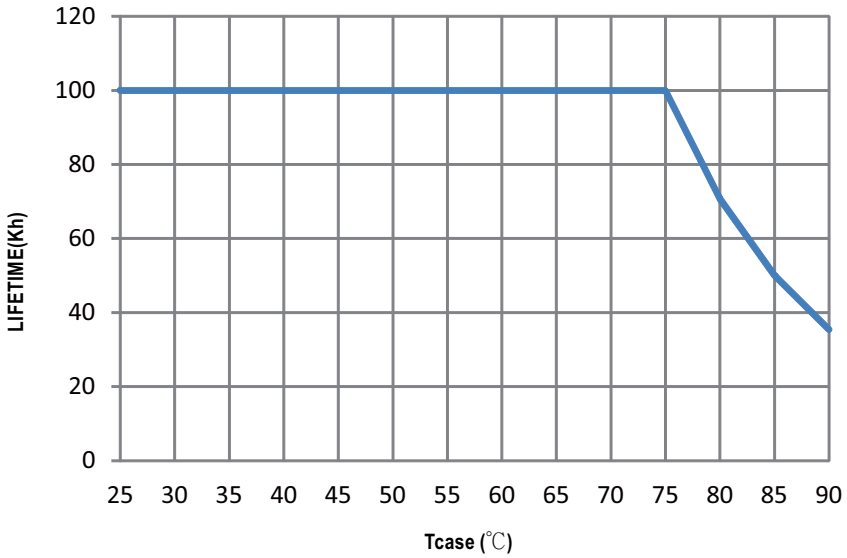
HEP-2300 supports CANBus Rev. 1.1 with maximum 250KHz bus speed, allowing information reading, status monitoring, output trimming, etc. For details, please refer to the User's Manual.

6.Front Panel LED

LED Status Indicators

LED	Description
Green	The power supply functions normally.
Red	Abnormal status (Over temperature protection, Overload protection)
Red (Flashing)	The LED will flash with the red light when the internal temperature reaches 95℃; under this condition, the unit still operates normally without entering OTP. (In the meantime, an alarm signal will be sent out through the PMBus/CANBus interface.)

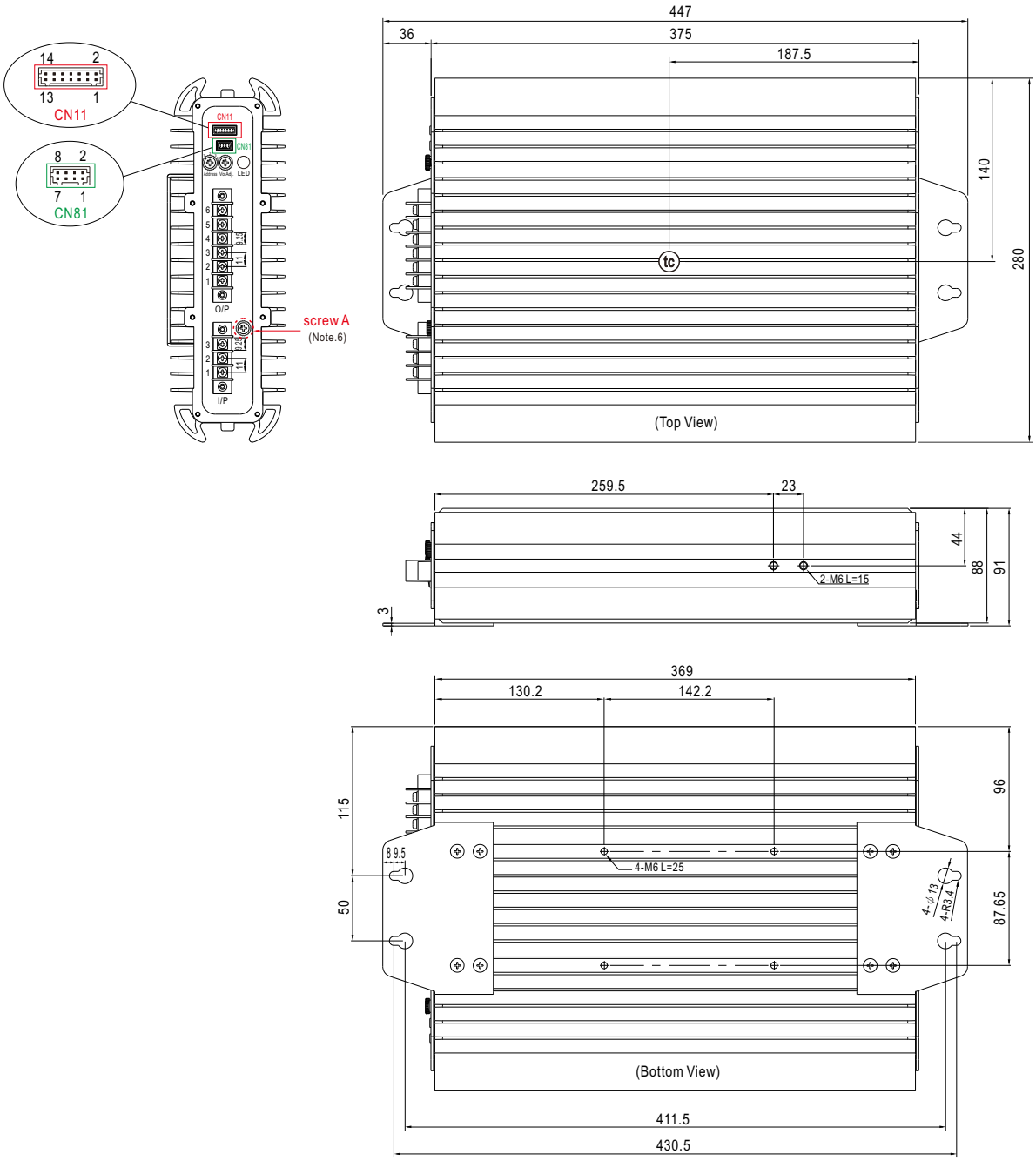
■ LIFETIME



■ MECHANICAL SPECIFICATION

※**Blank-Type (Terminal type)**

Case No. 293A Unit:mm Tolerance:±1



※ Output voltage current level can be adjusted through internal potentiometer.(Vo Adj.)
(Can access by removing the rubber stopper on the case.)
※ PMBus interface address selection.(Address)

AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	FG ⏚
2	AC/L
3	AC/N

DC Output Terminal Pin No. Assignment

Pin No.	Assignment
1,2,3	+V
4,5,6	-V

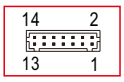
※Control Pin No. Assignment(CN81) : JST S8B-PHDKS-B or equivalent

Mating Housing	JST PHDR-8VS or equivalent
Terminal	JST SPHD-001T-P0.5 or equivalent

Pin No.	Function	Description
1	PV	Connection for output voltage programming.(Note)
2	PC	Connection for constant current level programming.(Note)
3,4	GND (Signal)	Negative output voltage signal.
5,6,7,8	NC	-----

Note: Non-isolated signal, referenced to [GND(signal)].

※Control Pin No. Assignment(CN11) : JST S14B-PHDKS-B or equivalent

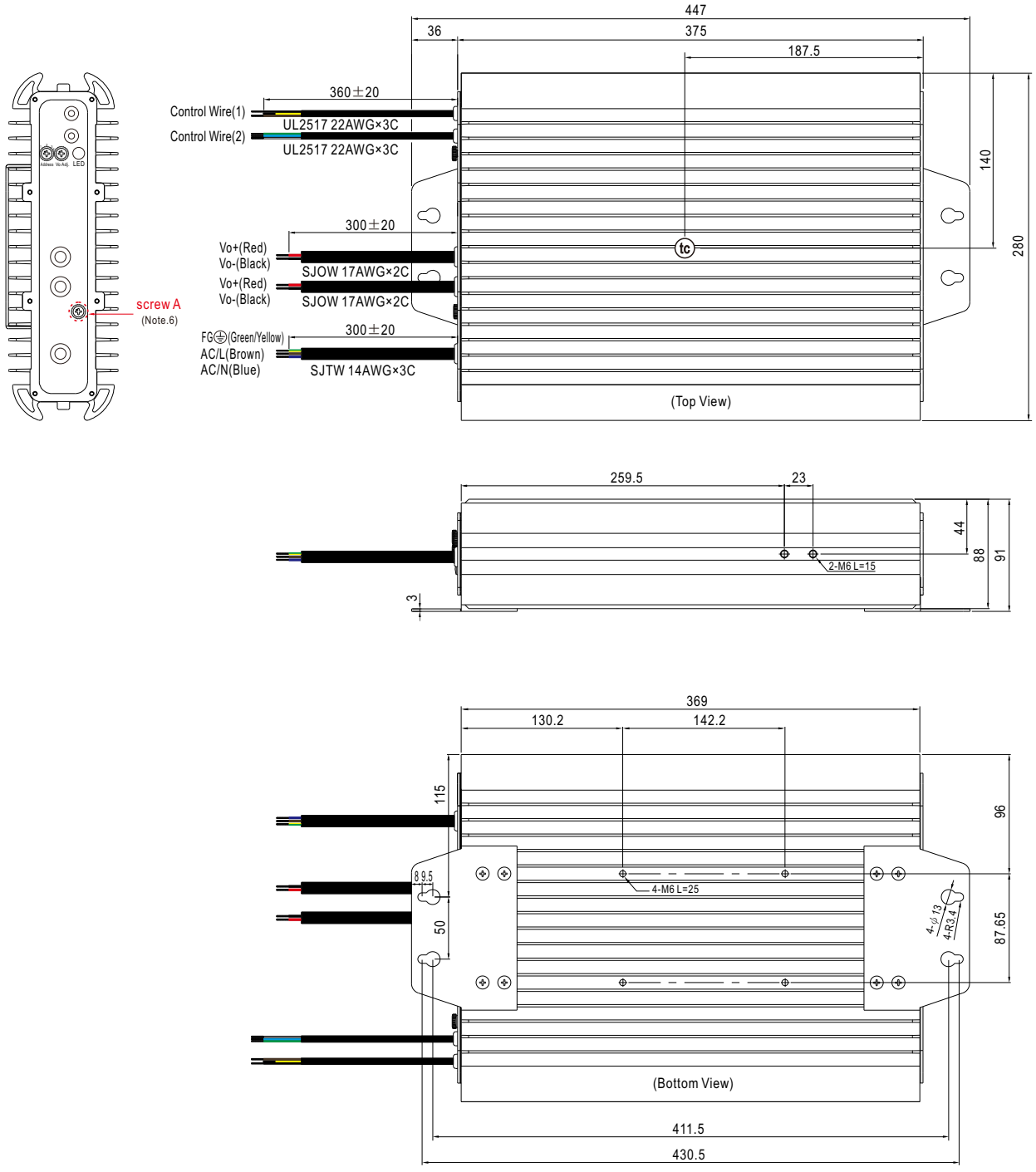


Mating Housing	JST PHDR-14VS or equivalent
Terminal	JST SPHD-001T-P0.5 or equivalent

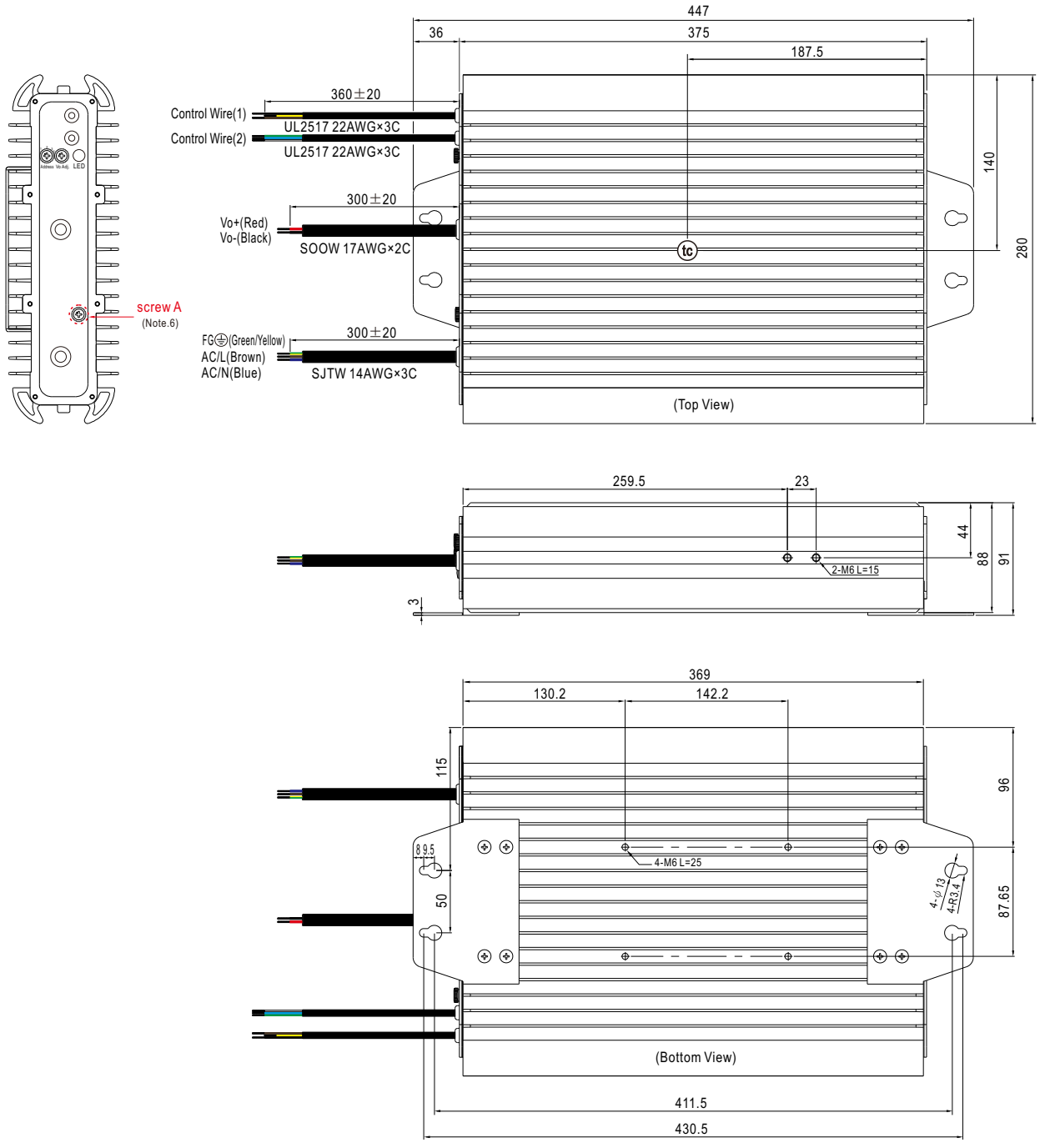
Pin No.	Function	Description
1,2	Remote ON-OFF	The unit can turn the output ON/OFF by dry contact between Remote ON/OFF and +12V-AUX.(Note) Short (10.8 ~ 13.2V) : Power ON ; Open(0 ~ 0.5V) : Power OFF ; The maximum input voltage is 13.2V
3,4,13,14	NC	-----
5,6	DC-OK	Low (-0.5 ~ 0.5V) : When Vout≦77%±6% at power mode. High (4.4 ~ 5.5V) : When Vout≧80%±6% at power mode. The maximum sourcing current is 10mA and only for output.(Note)
7,8	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX (pin9 & 10). The maximum load current is 0.5A. This output is not controlled by “Remote ON-OFF”.
9,10	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).
11	SDA	For PMBus model: Serial Data used in the PMBus interface. (Note)
	CANH	For CANBus model: Data line used in CANBus interface. (Note)
12	SCL	For PMBus model: Serial Clock used in the PMBus interface. (Note)
	CANL	For CANBus model: Data line used in CANBus interface. (Note)

Note: Isolated signal, referenced to GND-AUX.

※W-Type (Wiring type) : For 115/230 Type



※**W-Type (Wiring type) : For 380 Type**



※Control Wire Assigment(1) : UL2517 22AWG×3C

Color	Function	Description
Brown	DC-OK	Low (0 ~ 0.5V) : When Vout≦77%±6% at power mode. High (4.4 ~ 5.5V) : When Vout≧80%±6% at power mode. The maximum sourcing current is 10mA and only for output.(Note.2)
Yellow	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX. The maximum load current is 0.5A.
Black	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).

Note1: Non-isolated signal, referenced to [GND(signal)].
Note2: Isolated signal, referenced to GND-AUX (GND for CANBus and PMBus protocal).

※ Control Wire Assigment(2) : UL2517 22AWG×3C for Blank

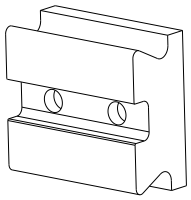
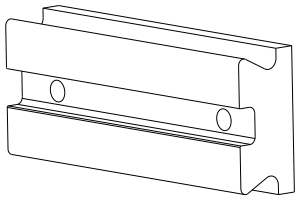
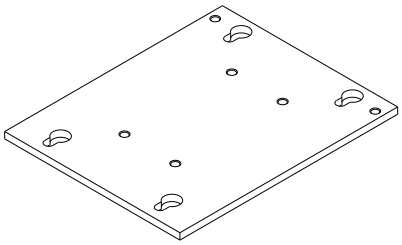
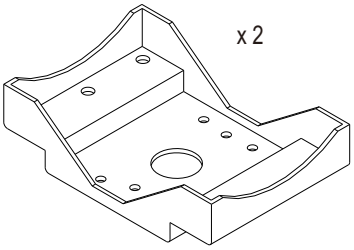
Color	Function	Description
Green	PV	Connection for output voltage programming.(Note1)
Blue	PC	Connection for constant current level programming.(Note.1)
White	GND (Signal)	Negative output voltage signal.(PV/PC GND)

※Control Wire Assigment(2) : UL2517 22AWG×3C for PM/CANBus function

Color	Function	Description
Green	SDA	For PMBus model: Serial Data used in the PMBus interface. (Note.2)
	CANH	For CANBus model: Data line used in CANBus interface. (Note.2)
Blue	SCL	For PMBus model: Serial Clock used in the PMBus interface. (Note.2)
	CANL	For CANBus model: Data line used in CANBus interface. (Note.2)
White	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).

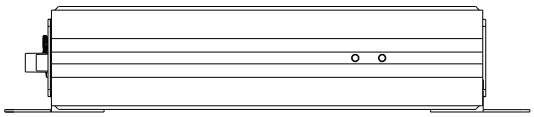
■ Accessory List

※ Optional equipment

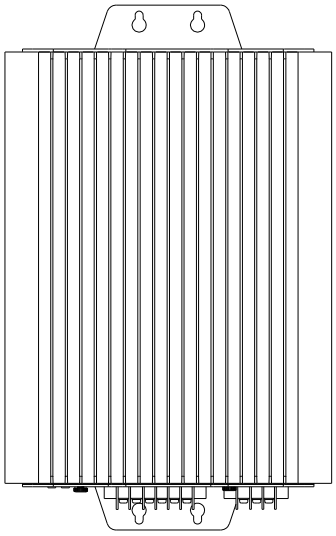
MW's Order No.	Item		Quantity
DGG2BKT-001 (For housing side)	①	 +  M6 L=16*2	1
DGG2BKT-002 (For pole side)	②	 +  M6 L=16*2	1
DGG2BKT-003	③	 +  M6 L=25*4	1
DGG2BKT-004	④	 x 2 +  M6 L=12*4	1

■ Mounting Methods

1.Mounting plate (Standard type)



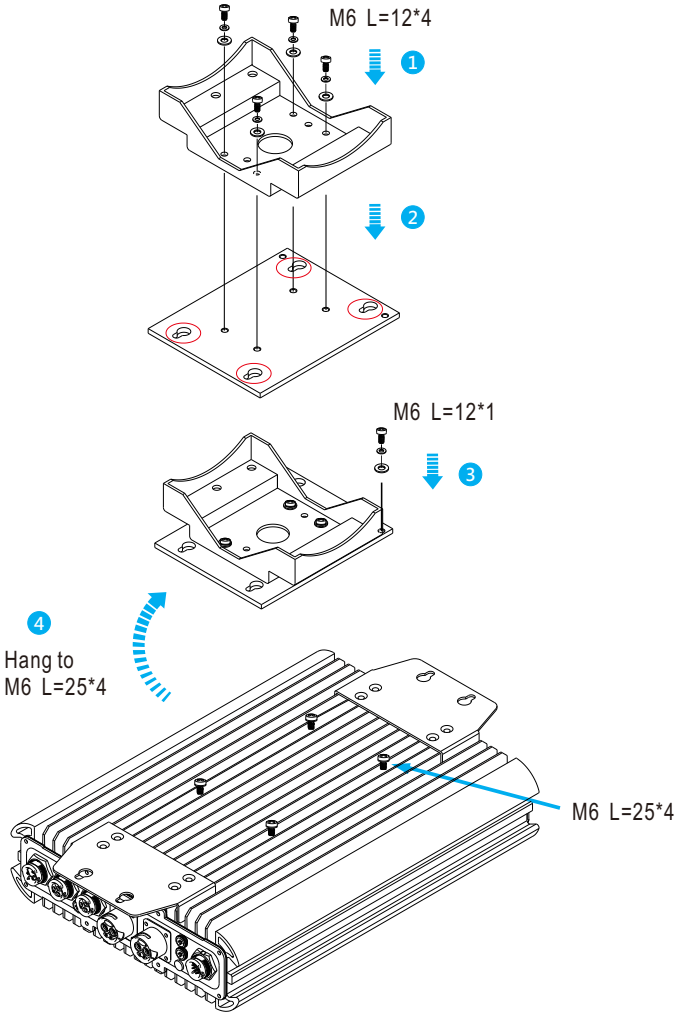
Horizontal mounted

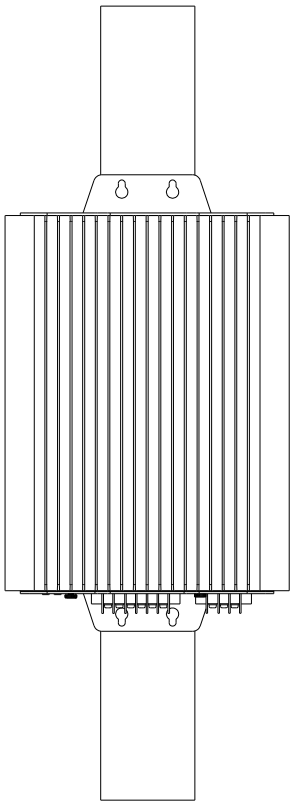


Vertical mounted

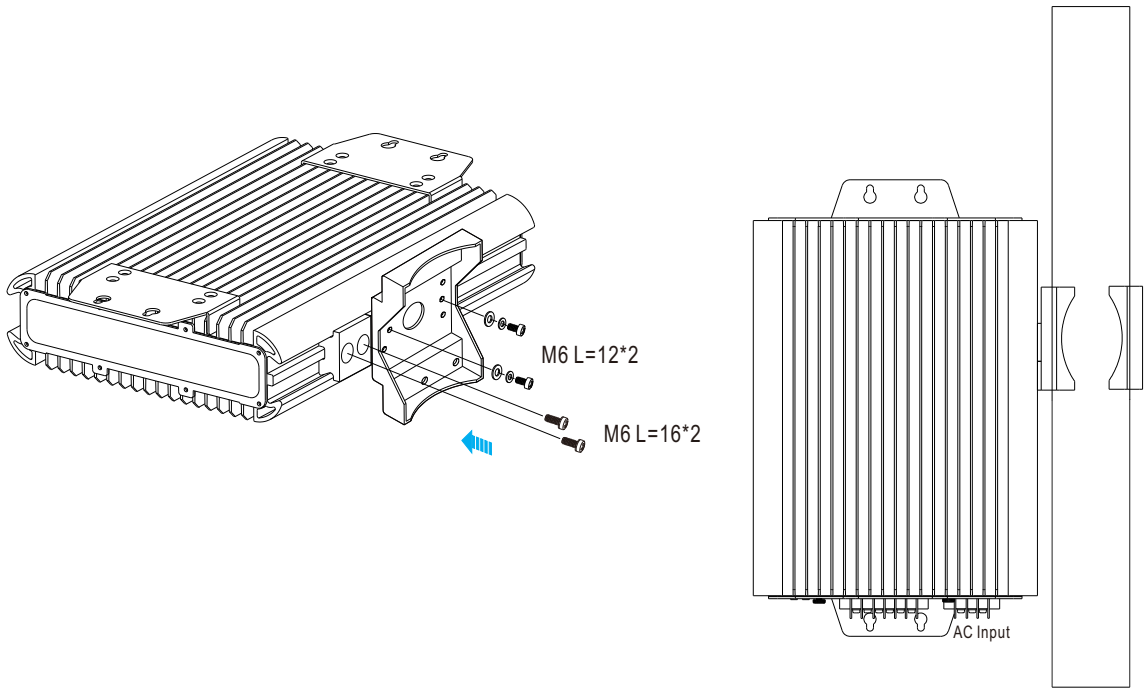
2.Pole mounted with a bracket kit (Optional type)

◎ Rear mounted (Optional Bracket Part No:DGG2BKT-003、DGG2BKT-004)





◎ Side mounted (Optional Bracket part No.: DGG2BKT-001、DGG2BKT-002、DGG2BKT-004)



2300W Switching Power Supply for Harsh Environment HEP-2300 series

Terminal Type

User's Manual

Video

Wiring Type (IP67)

Harness connector type
5G Antenna power
(IP66)

IP66 (H type) IP67 (W type) UL62368-1 EN62368-1 TPTC004 IEC62368-1

Automate Industrial Security Network Telecom

Features

- High efficiency up to 95.5% and active PFC function
- Fanless design, cooling by free air convection
- Aluminum case and filling with heat-conducted glue
- Withstand 10G vibration test
- Wide operating temperature range -40 ~ +70℃
- Charger function for lead-acid batteries and Li-ion batteries
- Built-in default 2/3 stage charging curves and programmable curve
- Built-in CANBus and PMBus / MODBus by optional
- Output voltage and constant current level programmable
- Protections: Short circuit / Over load / Over voltage / Over temperature
- Built-in remote ON-OFF control and DC OK active signal
- Harness connector type with AC fail and T-Alarm signal
- LED indicator for power on and 12V auxiliary power available
- Diverse installation scenarios-Mounting methods
- 6 years warranty

Applications

- Industrial automation machinery
- Industrial control system at harsh environment
- Mechanical and electrical equipment
- Electronic instruments, equipments
- Charing related equipments.
- 4G telecom system(RRU)
- 5G active antenna unit(AAU)

GTIN CODE

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

Description

HEP-2300 is a 2300W industrial AC/DC power supply featuring the outstanding capability to operate under highly humid, dusty, oily, and high-vibration harsh environment. The entire series is housed with the aluminum case and fully potted with heat-conducted glue.Adopting the full range 90~305VAC input, the series provides an output voltage 55V. In addition to the high efficiency up to 95.5%, that the series operates from -40℃ ~ 70℃ under free air convection without fan. HEP-2300 has the complete protection functions and 10G anti-vibration capability ; It is complied with the international safety regulations such as TUV EN62368-1 UL62368-1, and design refers to EN61558-1 and EN60335-1. HEP-2300 series serves as a high performance power supply solution for various industrial and 4G/5G telecom applications.

Model Encoding

HEP -2300 - 55 W CAN

- CAN: Function option(Blank/PM/CAN/MOD)
- W: I/O type(Blank: Terminal type, W: Wiring type, H: Harness connector type)
- 55: Output voltage(55V)
- 2300: Rated wattage
- HEP: Series name

I/O Type	Function type	Communication Protocol	Note
Terminal	Blank	CANBus and PV/PC programmable	In Stock
	PM	PMBus and PV/PC programmable	By request
Wiring	Blank	PV/PC programmable	In Stock
	PM	PMBus	By request
	CAN	CANBus	By request
Harness connector	Blank	CANBus	In Stock
	PM	PMBus	By request
	MOD	MODBus-RTU/RS-485	By request

Note: 1.MEAN WELL can provide complete cable modification services. Please contact sales representatives for details.
2.Charger function by programmer or PMBus/CANBus/MODBus setting

SPECIFICATION

MODEL		HEP-2300-55□□		
OUTPUT	DC VOLTAGE (factory default)	55V		
	CURRENT (factory default)	41.8A		
	RATED CURRENT (max.)	48A		
	POWER (factory default)	2300W		
	RATED POWER (max.)	2304W		
	FULL POWER VOLTAGE RANGE	48 ~ 57.6V		
	RIPPLE & NOISE (max.) Note.2	480mVp-p		
	VOLTAGE ADJ. RANGE	By potentiometer VR		
		39 ~ 57.6V		
	VOLTAGE TOLERANCE Note.3	±1.0%		
	LINE REGULATION	±0.5%		
	LOAD REGULATION	±0.5%		
	SETUP, RISE TIME	1800ms, 100ms/230VAC at full load		
	HOLD UP TIME (Typ.)	12ms/230VAC at full load		
INPUT	VOLTAGE RANGE Note.4	90 ~ 305VAC 250 ~ 431VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	PF>0.99/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load		
	EFFICIENCY (Typ.)	95.5%		
	AC CURRENT (Typ.)	13.3A / 115VAC 11A / 230VAC 9.3A / 277VAC		
	INRUSH CURRENT (Typ.)	Cold start 60A/230VAC		
	LEAKAGE CURRENT	<1.8mA Peak / 240VAC <2mA Peak / 277VAC		
PROTECTION	OVERLOAD	105 ~ 115% rated output power		
		Protection type : Constant current limiting, unit will shutdown after 5 sec. re-power on to recover		
	OVER VOLTAGE	59 ~ 69.1V		
		Protection type :Shut down O/P voltage,re-power on to recover		
	OVER TEMPERATURE	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 : Short circuit Power OFF : 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 = -0.5 ~ 0.5V. Please refer to the Function Manual		
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 95% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes		
SAFETY & EMC (Note.7)	SAFETY STANDARDS	UL62368-1,TUV BS EN/EN62368-1, EAC TP TC 004 approved; design refers to BS EN/EN61558-1, BS EN/EN60335-1(by request)		
	WITHSTAND VOLTAGE Note 6	OVC Ⅲ I/P-O/P: 6KVDC I/P-FG:4KVDC O/P-FG:4KVDC		
	ISOLATION RESISTANCE Note 6	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 A
		Harmonic Current	BS EN/EN61000-3-2	Class A
		Voltage Flicker	BS EN/EN61000-3-3	-----
	EMC IMMUNITY	BS EN/EN55024, 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	478K hrs min. Telcordia SR-332 (Bellcore) ; 44.8K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	375*280*88mm (L*W*H), without mounting plate		
	PACKING	12.5Kg;1pcs/13.5Kg/1.33CUFT		

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 for more details.
5. SVR function is disabled during PV/PC programming operation.
6. During withstandards voltage and isolation resistance testing, the screw "A" shall be temporarily removed, and shall be istalled back after the testing.
7. 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 1100mm*650mm 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)
8. 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).
9. This series meets the typical life expectancy of > 55,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 80℃ or less.

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

SPECIFICATION FOR CHARGER (Option function)

MODEL		HEP-2300-55□□		
OUTPUT	BOOST CHARGE VOLTAGE Vboost	57.6V		
	FLOAT CHARGE VOLTAGE Vfloat	55.2V		
	RECOMMENDED BATTERY CAPACITY(AMP HOURS)(Note 2)	120 ~ 400AH		
	BATTERY TYPE	Open & Sealed Lead Acid		
	OUTPUT CURRENT (max.)	40A		
INPUT	VOLTAGE RANGE Note 3	90 ~ 305VAC 250 ~ 431VDC		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR (Typ.)	PF>0.99/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load		
	EFFICIENCY (Typ.)	95.5%		
	AC CURRENT (Typ.)	13.3A / 115VAC 11A / 230VAC 9.3A / 277VAC		
	INRUSH CURRENT(Typ.)	Cold start 60A at 230VAC		
	LEAKAGE CURRENT	<1.8mA Peak / 240VAC <2mA Peak / 277VAC		
PROTECTION	SHORT CIRCUIT	Constant current limiting, unit will shutdown after 5 sec, re-power on to recover.		
	OVER VOLTAGE	59 ~ 69.1V		
		Protection type :Shut down O/P voltage,re-power on to recover		
	OVER TEMPERATURE	Shut down O/P voltage, recovers automatically after temperature goes down		
FUNCTION	REMOTE ON/OFF CONTROL	Power ON : Short circuit Power OFF : 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 = -0.5 ~ 0.5V. Please refer to the Function Manual.		
ENVIRONMENT	WORKING TEMP.	-40 ~ +70℃ (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 95% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)		
	VIBRATION	20 ~ 500Hz, 10G 12min./1cycle, period for 72min. each along X, Y, Z axes		
SAFETY & EMC (Note.5)	SAFETY STANDARDS	UL62368-1,TUV BS EN/EN62368-1, EAC TP TC 004 approved; design refers to BS EN/EN61558-1, BS EN/EN60335-1(by request)		
	WITHSTAND VOLTAGE Note 4	OVC Ⅲ I/P-O/P: 6KVDC I/P-FG:4KVDC O/P-FG:4KVDC		
	ISOLATION RESISTANCE Note 4	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 A
		Harmonic Current	BS EN/EN61000-3-2	Class A
		Voltage Flicker	BS EN/EN61000-3-3	-----
	EMC IMMUNITY	BS EN/EN55024, 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	478K hrs min. Telcordia SR-332 (Bellcore) ; 44.8K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	375*280*88mm (L*W*H), without mounting plate		
	PACKING	12.5Kg;1pcs/13.5Kg/1.33CUFT		

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. This is Mean Well's suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.
3. Derating may be needed under low input voltages. Please check the derating curve for more details.
4. During withstandards voltage and isolation resistance testing, the screw "A" shall be temporarily removed, and shall be istalled back after the testing.
5. 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 1100mm*650mm 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)
6. 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).
7. This series meets the typical life expectancy of > 55,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 80℃ or less.

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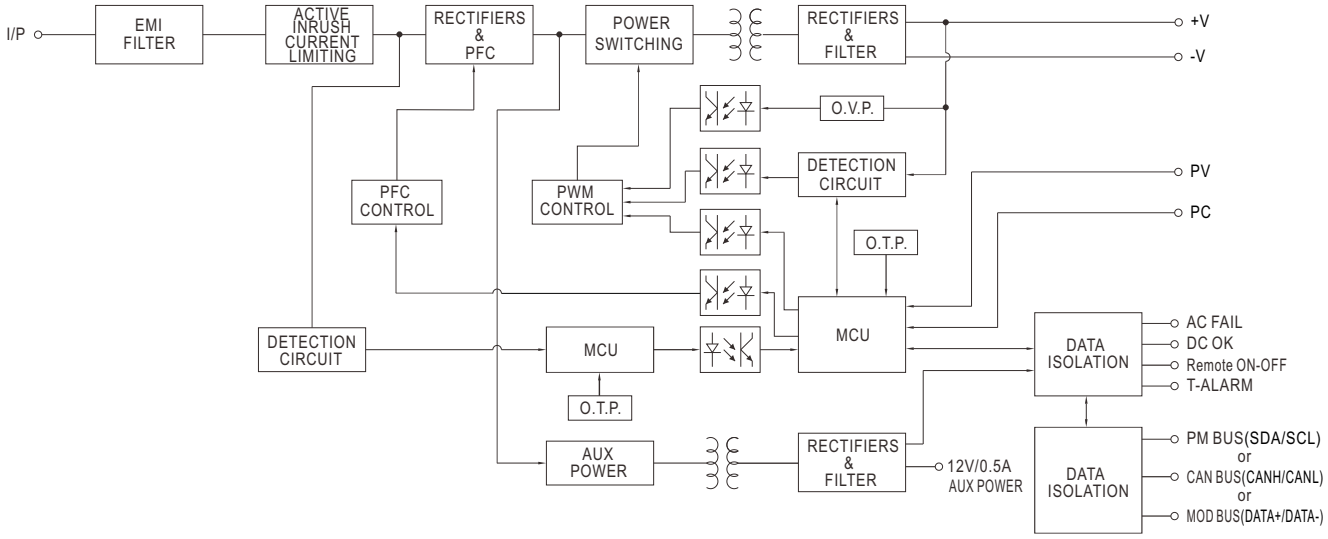
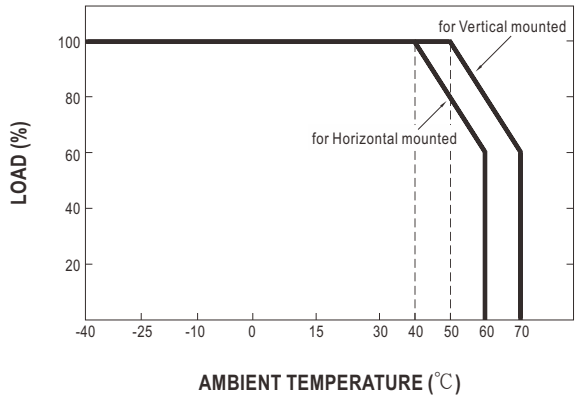
■ BLOCK DIAGRAM

PFC fosc : 80KHz
PWM fosc : 52KHz

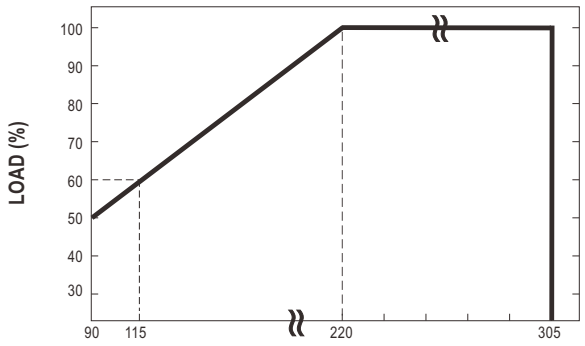


■ DERATING CURVE



AMBIENT TEMPERATURE (℃)

■ STATIC CHARACTERISTICS



INPUT VOLTAGE (V) 60Hz

■ TABLE OF FUNCTION

I/O TYPE	Function type	Power Supply Function	Charging Function	PV/PC Programmable	PMBus Protocol	CANBus Protocol	MOD RS-485	LED Indicator	Remote On/Off	DC-OK Signal	Temperature Compensation	12V/0.5A Aux. output	AC Fail	T-Alarm OK Signal
Terminal type	Blank	V(default)	V	V		V		V	V	V	V	V		
	PM	V(default)	V	V	V			V	V	V	V	V		
Wiring type	Blank	V(default)		V				V		V		V		
	PM	V(default)	V		V			V		V		V		
	CAN	V(default)	V			V		V		V		V		
Harness connector	Blank	V(default)	V			V		V	V	V		V	V	V
	PM	V(default)	V		V			V	V	V		V	V	V
	MOD	V(default)	V				V	V	V	V		V	V	V

■ FUNCTION MANUAL

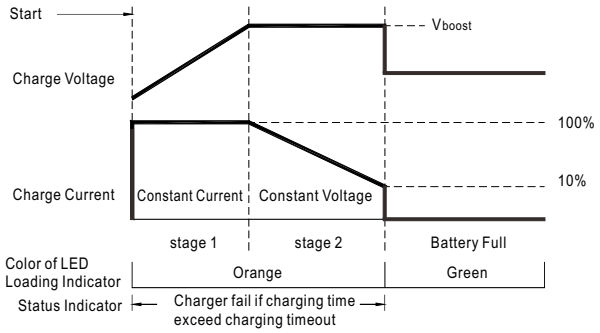
1.Charging Curve

※ By default, the HEP-2300 operates in power supply mode, and it can be configured to charger mode by PMBus, CANBus, MODBus, or SBP-001.

※ By factory default, this charger performs the default curve which can be programmed via PMBus, CANBus and MODBus.

※ To accommodate the parameters of the charging curve, SBP-001, the smart battery charging programmer designed by MEAN WELL, and a personal computer are needed. Please contact MEAN WELL for details.

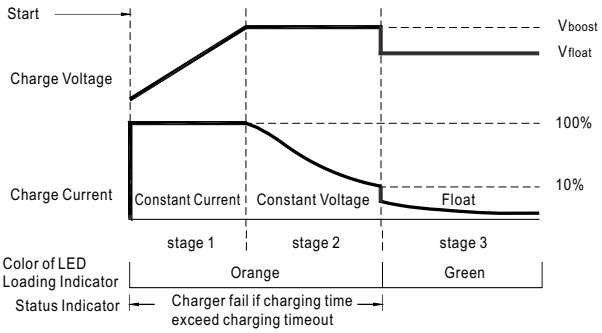
※ 2 stage charging curve



State	HEP-2300-55
Constant Current	40A
Vboost	57.6V

◎ Suitable for lead-acid batteries (flooded, Gel and AGM) and Li-ion batteries (lithium iron and lithium manganese).

※ 3 stage charging curve (default)



State	HEP-2300-55
Constant Current	40A
Vboost	57.6V
Vfloat	55.2V

◎ Suitable for lead-acid batteries (flooded, Gel and AGM) and Li-ion batteries (lithium iron and lithium manganese).

2. Front Panel LED Indicators & Corresponding Signal at Function Pins

※ LED Status Indicators

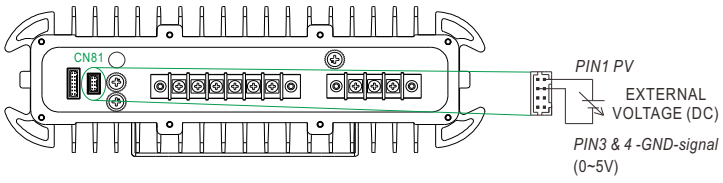
LED	Description
Green	The power supply functions normally.
Red	Abnormal status (Over temperature protection, Over load protection)
Red (Flashing)	The LED will flash with the red light when the internal temperature reaches 95℃; under this condition, the unit still operates normally without entering OTP. (In the meantime, an alarm signal will be sent out through the PMBus/CANBus/MODBus interface.)

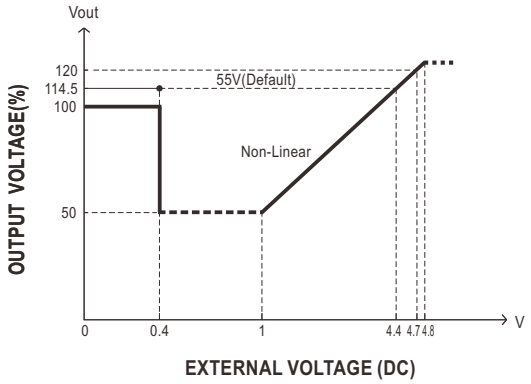
※ LED Status Indicators (for Charger)

LED	Description
Green	Float (stage 3)
Orange	Charging (stage 1 or stage 2)
Red	Abnormal status (Over temperature protection, Over load protection, Charging timeout.)
Red (Flashing)	The LED will flash with the red light when the internal temperature reaches 95℃; under this condition, the unit still operates normally without entering OTP. (In the meantime, an alarm signal will be sent out through the PMBus/CANBus/MODBus interface.)

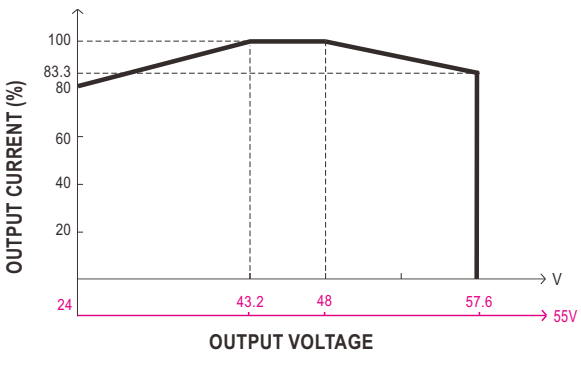
3.Output Voltage Programming (or, PV / remote voltage programming / remote adjust / margin programming / dynamic voltage trim)

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





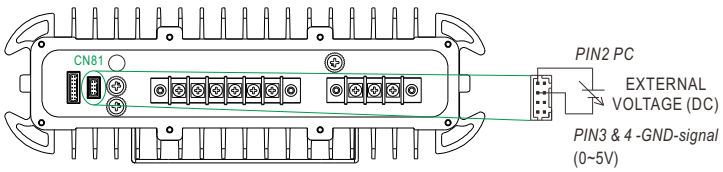
◎ The 100% output voltage is 48V.

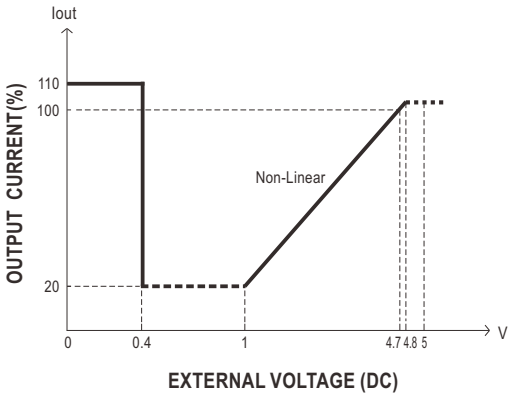


◎ The rated current should change with the Output Voltage Programming accordingly.

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

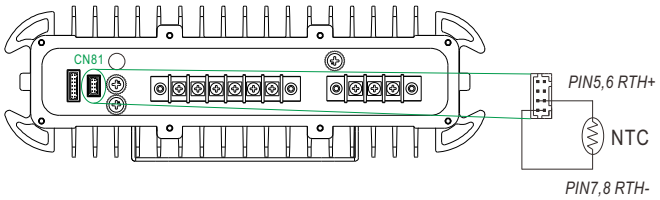
※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.





◎ The 100% output current is rated current.
◎ Maximum operation current <100% is recommended.
◎ When external voltage <0.4V the 100% output current will be default current.

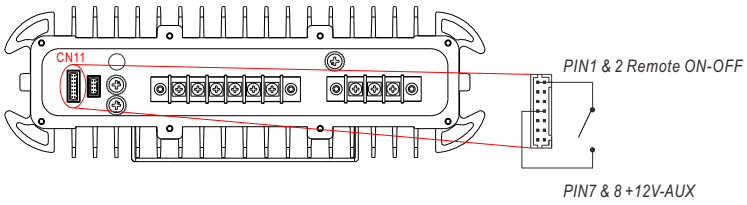
5.Temperature Compensation



◎ To exploit the temperature compensation function, please attach the temperature sensor, NTC, which is enclosed with the charger, to the battery or the battery's vicinity.
◎ The charger is able to work normally without the NTC.

6.Remote ON-OFF Control

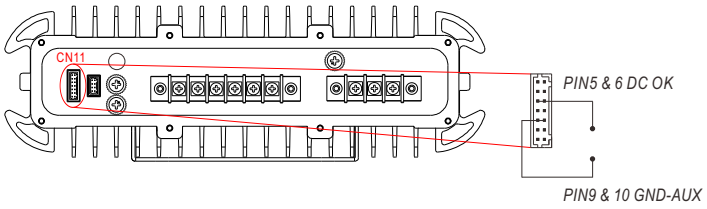
The power supply can be turned ON/OFF individually or along with other units in parallel by using the "Remote ON-OFF" function.



Remote ON-OFF	Power Supply Status
Short circuit	ON
Open circuit	OFF

7.DC-OK Signal

DC-OK signal is a TTL level signal. The maximum source current is 10mA and the maximum external voltage is 5.5V.



DC-OK signal	Power Supply Status
"High" >4.4~5.5V	ON
"Low" <-0.5~0.5V	OFF

8.CANBus Communication Interface

HEP-2300 supports CANBus Rev. 2.0B with maximum 250KHz bus speed, allowing information reading, status monitoring, output trimming, etc. For details, please refer to the User's Manual.

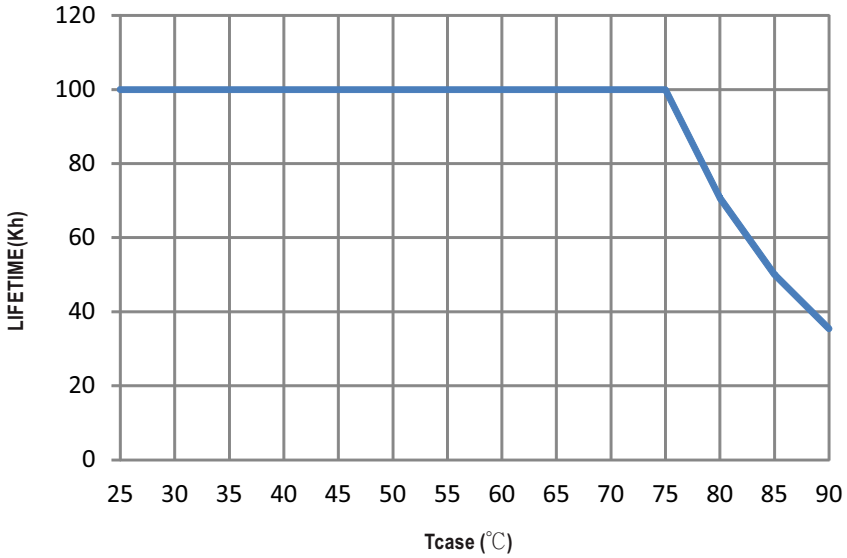
9.AC FAIL SIGNAL

Dry contact output, Open: alarm; Closed: normal.

10.OTP SIGNAL

Dry contact output, Open: normal; Closed: alarm.

■ LIFETIME

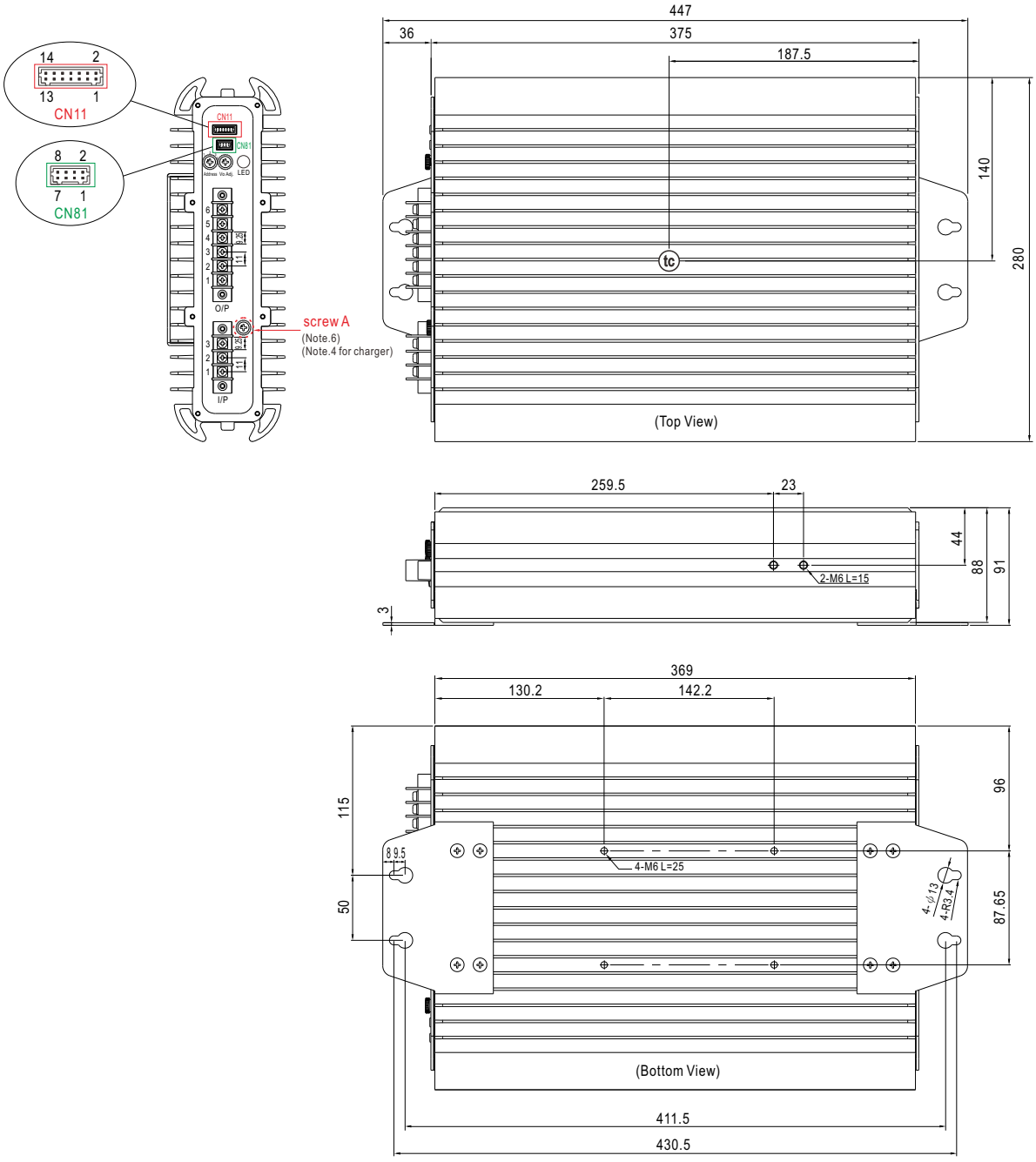

120
100
80
60
40
20
0
LIFETIME(Kh)
25 30 35 40 45 50 55 60 65 70 75 80 85 90
Tcase (℃)

■ MECHANICAL SPECIFICATION

(Unit: mm , tolerance ±1mm)

Case No. 293A

※**Blank-Type (Terminal type)**



※ Output voltage current level can be adjusted through internal potentiometer.(Vo Adj.)
(Can access by removing the rubber stopper on the case.)
※ PMBus interface address selection.(Address)

AC Input Terminal Pin No. Assignment

Pin No.	Assignment
1	FG ⏚
2	AC/L
3	AC/N

DC Output Terminal Pin No. Assignment

Pin No.	Assignment
1,2,3	+V
4,5,6	-V

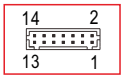
※Control Pin No. Assignment(CN81) : JST S8B-PHDKS-B or equivalent

Mating Housing	JST PHDR-8VS or equivalent
Terminal	JST SPHD-001T-P0.5 or equivalent

Pin No.	Function	Description
1	PV	Connection for output voltage programming.(Note)
2	PC	Connection for constant current level programming.(Note)
3,4	GND (Signal)	Negative output voltage signal.
5,6	RTH+	Temperature sensor(NTC, 5KOhm) comes along with the charger can be connected to the unit to allow temperature compensation of the charging voltage.
7,8	RTH-	

Note: Non-isolated signal, referenced to [GND(signal)].

※Control Pin No. Assignment(CN11) : JST S14B-PHDKS-B or equivalent

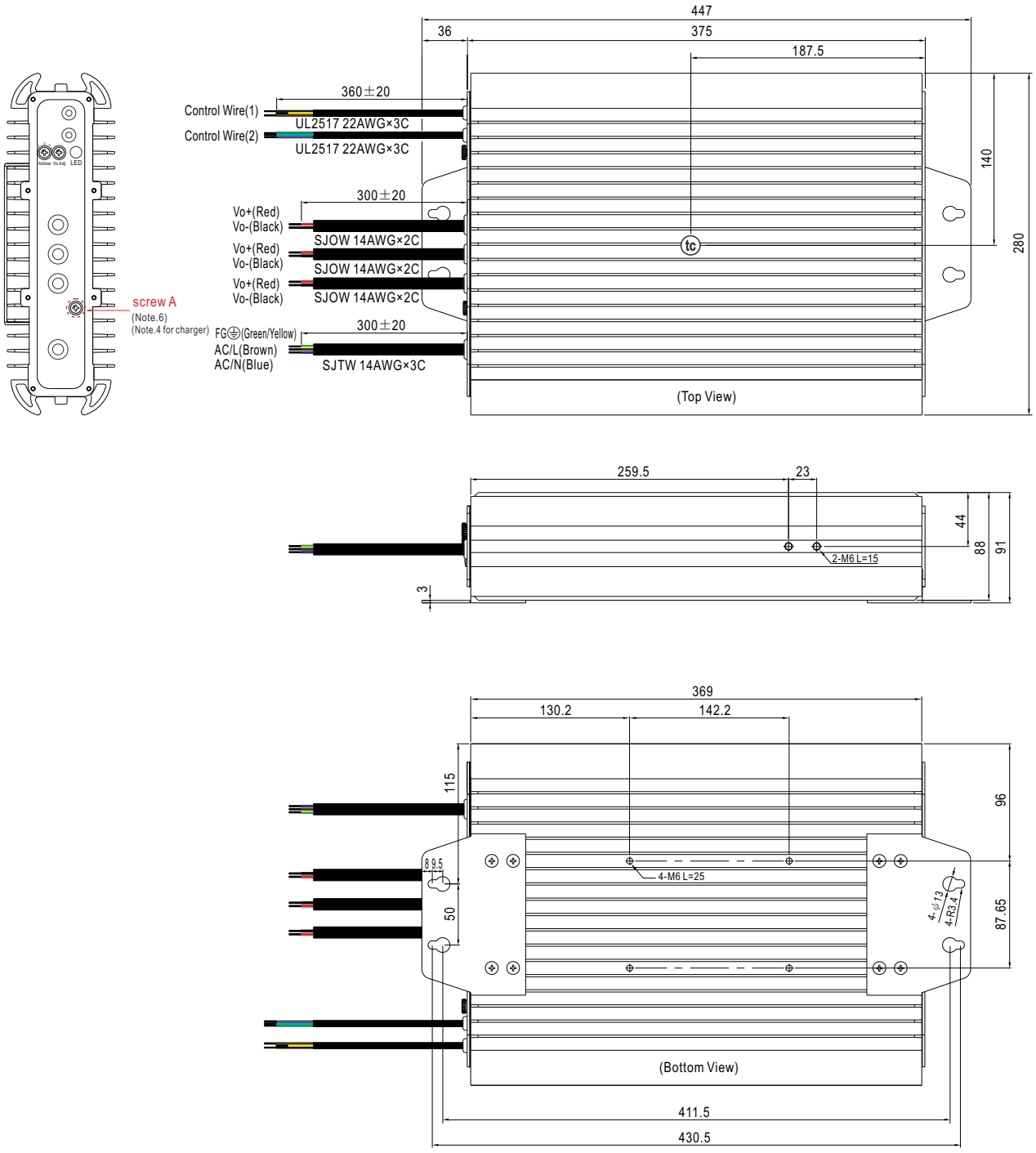


Mating Housing	JST PHDR-14VS or equivalent
Terminal	JST SPHD-001T-P0.5 or equivalent

Pin No.	Function	Description
1,2	Remote ON-OFF	The unit can turn the output ON/OFF by dry contact between Remote ON/OFF and +12V-AUX.(Note) Short (10.8 ~ 13.2V) : Power ON ; Open(0 ~ 0.5V) : Power OFF ; The maximum input voltage is 13.2V
3,4,13,14	NC	-----
5,6	DC-OK	Low (-0.5 ~ 0.5V) : When Vout≦77%±6% at power mode. Vout≦66%±6% at charger mode. High (4.4 ~ 5.5V) : When Vout≧80%±6% at power mode. Vout≧67%±6% at charger mode. The maximum sourcing current is 10mA and only for output.(Note)
7,8	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX (pin9 & 10). The maximum load current is 0.5A. This output is not controlled by “Remote ON-OFF”.
9,10	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).
11	SDA	For PMBus model: Serial Data used in the PMBus interface. (Note)
	CANH	For CANBus model: Data line used in CANBus interface. (Note)
12	SCL	For PMBus model: Serial Clock used in the PMBus interface. (Note)
	CANL	For CANBus model: Data line used in CANBus interface. (Note)

Note: Isolated signal, referenced to GND-AUX.

※**W-Type (Wiring type)**



※Control Wire Assigment(1) : UL2517 22AWG×3C

Color	Function	Description
Brown	DC-OK	Low (0 ~ 0.5V) : When Vout≦77%±6% at power mode. Vout≦66%±6% at charger mode. High (4.4 ~ 5.5V) : When Vout≧80%±6% at power mode. Vout≧67%±6% at charger mode. The maximum sourcing current is 10mA and only for output.(Note.2)
Yellow	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX. The maximum load current is 0.5A.
Black	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).

Note1: Non-isolated signal, referenced to [GND(signal)].
Note2: Isolated signal, referenced to GND-AUX (GND for CANBus and PMBus protocal).

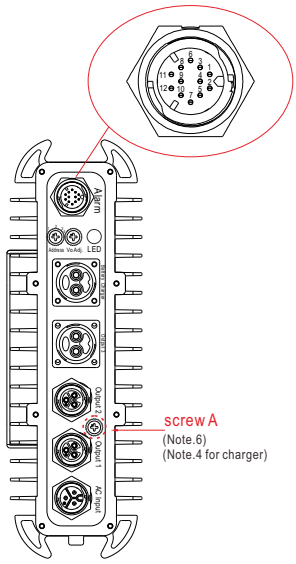
※ Control Wire Assigment(2) : UL2517 22AWG×3C for Blank

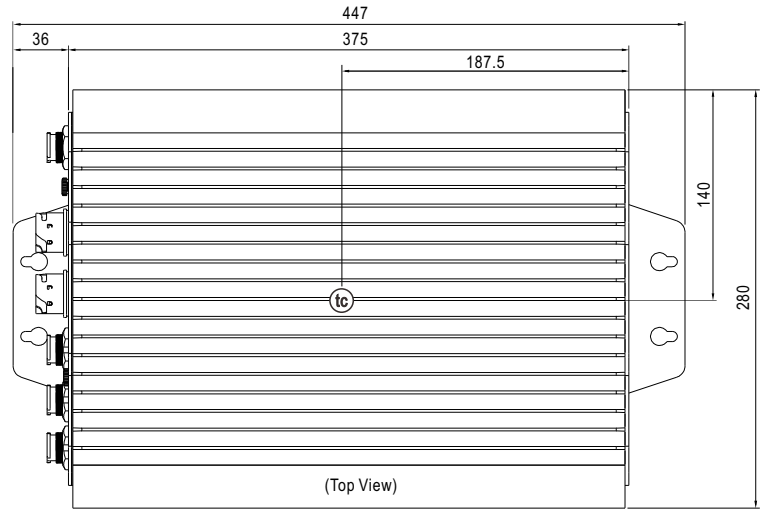
Color	Function	Description
Green	PV	Connection for output voltage programming.(Note1)
Blue	PC	Connection for constant current level programming.(Note.1)
White	GND (Signal)	Negative output voltage signal.(PV/PC GND)

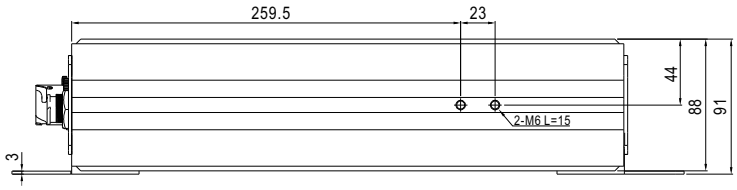
※Control Wire Assigment(2) : UL2517 22AWG×3C for PM/CANBus Function

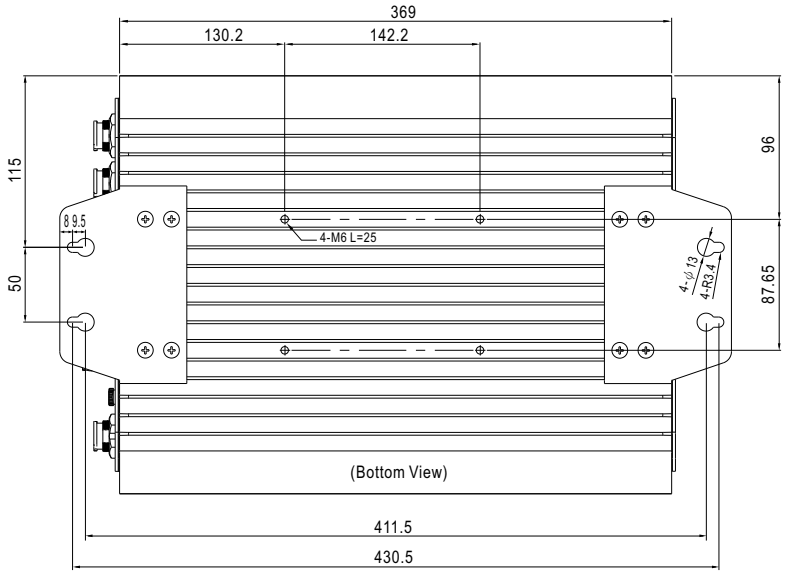
Color	Function	Description
Green	SDA	For PMBus model: Serial Data used in the PMBus interface. (Note.2)
	CANH	For CANBus model: Data line used in CANBus interface. (Note.2)
Blue	SCL	For PMBus model: Serial Clock used in the PMBus interface. (Note.2)
	CANL	For CANBus model: Data line used in CANBus interface. (Note.2)
White	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).

※**H-Type (Harness connector type)**

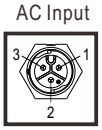






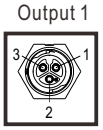


AC Input



Max. 20A

Output 1



Max. 20A

Output 2

Max. 20A

Output 3

Max. 50A

Battery Charger

Max. 50A

AC Input Pin No.Assignment :
ALTW CC-03PMMS-QC800P or equivalent

Pin No.	Assignment	Mating connector
1	AC/L	CC-03BFFA-QL8APP or equivalent
2	FG ⏚	
3	AC/N	

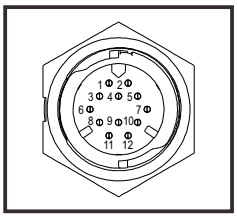
DC Output 1,2 Pin No.Assignment :
ALTW CC-03PMFS-QC800P or equivalent

Pin No.	Assignment	Mating connector
1,3	+V	CC-03BFMA-QL8APP or equivalent
2	-V	

DC Output 3 , Battery Charger Pin No.Assignment :
ALTW PWM-02RMFS-TS7001 or equivalent

Pin No.	Assignment	Mating connector
1	+V	PWM-02BFMB-TL7001 or equivalent
2	-V	

※Control Pin No. Assignment : ALTW CD-12PMMS-QC8001 or equivalent



Mating connector	CD-12BFFA-QL8AP0 or equivalent

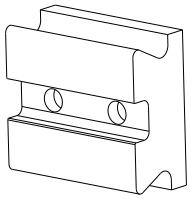
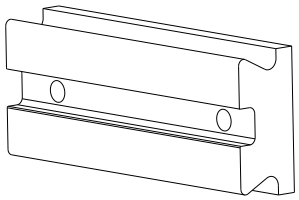
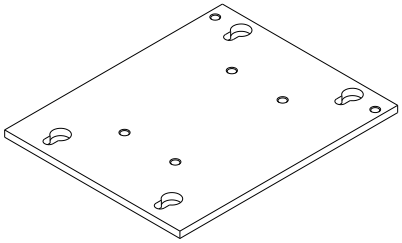
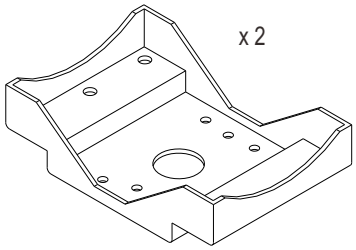
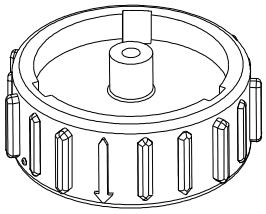
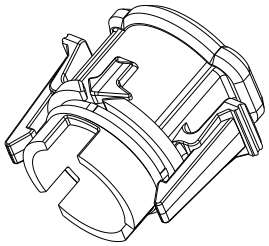
Alarm and signal

Pin No.	Function	Description
1	DC-OK-GND	Dry contact output. Open: alarm, Closed: normal.
2	Remote ON-OFF	The unit can turn the output OFF by dry contact between OFF and GND-AUX.(Note) Short (10.8 ~ 13.2V) : Power ON ; Open(0 ~ 0.5V) : Power OFF ; The maximum input voltage is 13.2V
3	DC-OK	Dry contact output. Open: alarm, Closed: normal. Relay contact rating(maximum) is 30V/1A resistive.
4	+12V-AUX	Auxiliary voltage output, 10.8~13.2V, referenced to GND-AUX (pin9 & 10). The maximum load current is 0.5A. This output is not controlled by “Remote ON-OFF”.
5,7	GND-AUX	Auxiliary voltage output GND. The signal return is isolated from the output terminals (+V & -V).
6	AC Fail-GND	Dry contact output, Open: alarm; Closed: normal.
8	AC Fail	Dry contact output, Open: alarm; Closed: normal. Relay contact rating(maximum) is 30V/1A resistive.
9	T-Alarm-GND	Dry contact output, Open: normal; Closed: alarm. (OTP signal)
10	SDA	For PMBus model: Serial Data used in the PMBus interface. (Note)
	CANH	For CANBus model: Data line used in CANBus interface. (Note)
	Data +	For RS-485 model: Data +.
11	T-Alarm	Dry contact output, Open: normal; Closed: alarm. (OTP signal) Relay contact rating(maximum) is 30V/1A resistive.
12	SCL	For PMBus model: Serial Clock used in the PMBus interface. (Note)
	CANL	For CANBus model: Data line used in CANBus interface. (Note)
	Data -	For RS-485 model: Data -.

Note: Isolated signal, referenced to GND-AUX.

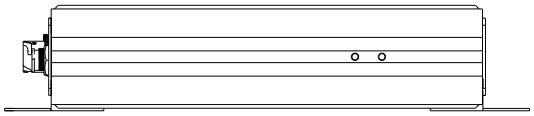
■ Accessory List

※ Optional equipment

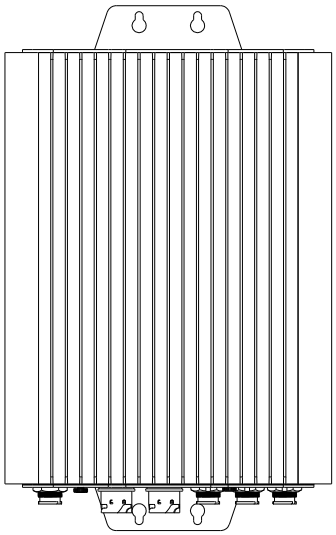
MW's Order No.	Item		Quantity
PGG2BKT-001 (For housing side)	①	 +  M6 L=16*2	1
PGG2BKT-002 (For pole side)	②	 +  M6 L=16*2	1
PGG2BKT-003	③	 +  M6 L=25*4	1
PGG2BKT-004	④	 x 2 +  M6 L=12*4	1
PFF1ZAHB-A0025(A)	⑤	 Waterproof connector cap for output 3 and Battery charger.	1
PFF1CAP-WACMQMA1(B)	⑥	 Waterproof connector cap for AC, output 1/2 and alarm signal.	1

■ Mounting Methods

1.Mounting plate (Standard type)



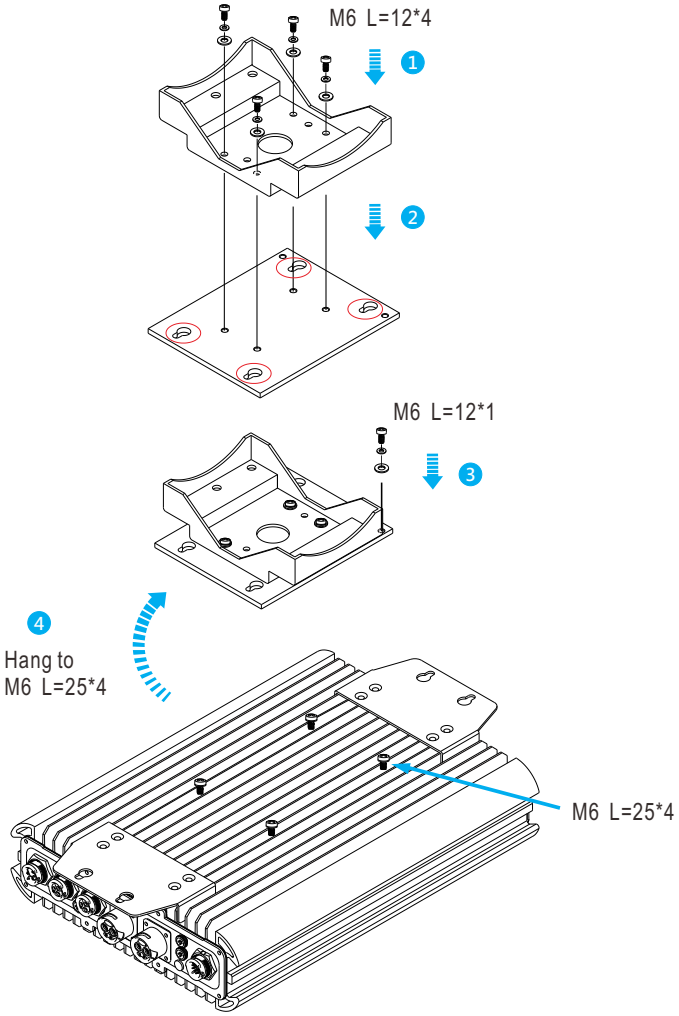
Horizontal mounted

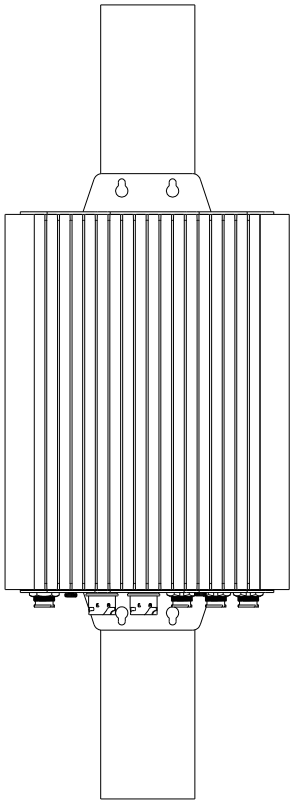


Vertical mounted

2.Pole mounted with a bracket kit (Optional type)

◎ Rear mounted (Optional Bracket Part No:PGG2BKT-003、PGG2BKT-004)





◎ Side mounted (Optional Bracket part No.: PGG2BKT-001、PGG2BKT-002、PGG2BKT-004)