



2300W High Voltage Output for Harsh Environment

HEP-2300-HV series



Terminal Type



User's Manual



Video



Wiring Type (IP67)



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°C
- 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 mower / AMR / AGV
- Laser related machine
- DC centralized bus
- Charging related equipment(with BMS)

GTIN CODE

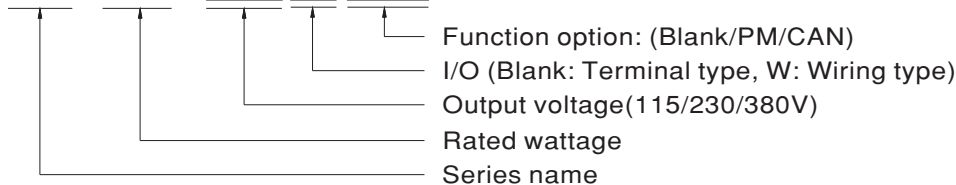
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

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°C ~ 70°C 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



| 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°C (Refer to "Derating Curve") | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH non-condensing | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 50°C) | | | |
| | 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°C / 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°C) | | | |
| | DIMENSION | 375*280*88mm (L*W*H), without mounting plate | | | |
| | PACKING | 12.5Kg; 1pcs/13.5Kg/1.33CUFT | | | |
| NOTE | <ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor. Tolerance includes set up tolerance, line regulation and load regulation. Derating may be needed under low input voltages. Please check the derating curve for more details. SVR function is disabled during PV/PC programming operation. During withstand standards voltage and isolation resistance testing, the screw "A" shall be temporarily removed, and shall be installed back after the testing. 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) The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft). 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°C or less. <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | |

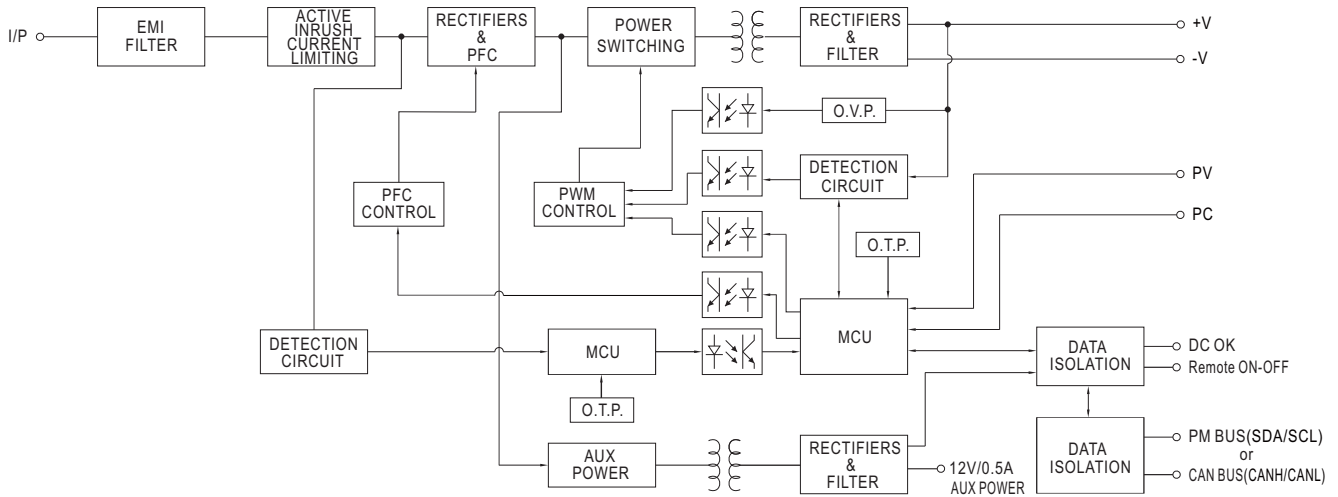


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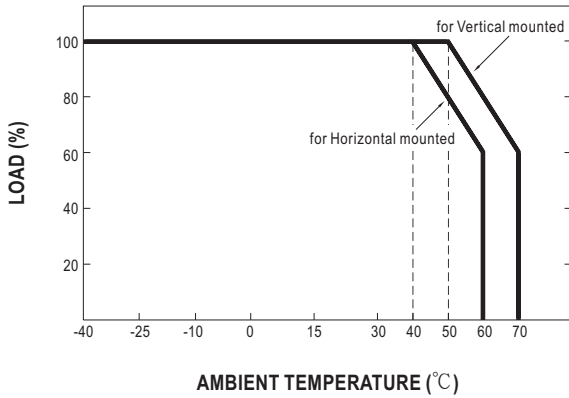
HEP-2300-HV series

■ BLOCK DIAGRAM

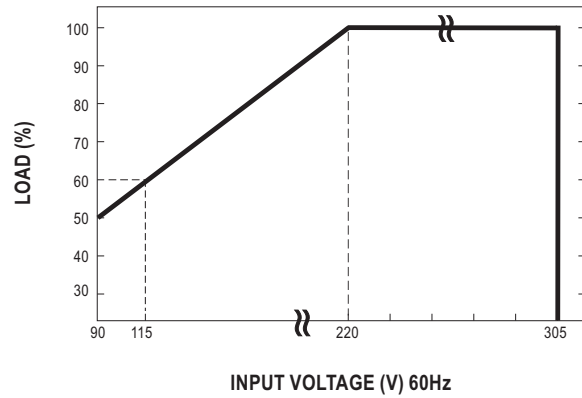
PFC fosc : 80KHz
PWM fosc : 52KHz



■ DERATING CURVE



■ STATIC CHARACTERISTICS



■ TABLE OF FUNCTION

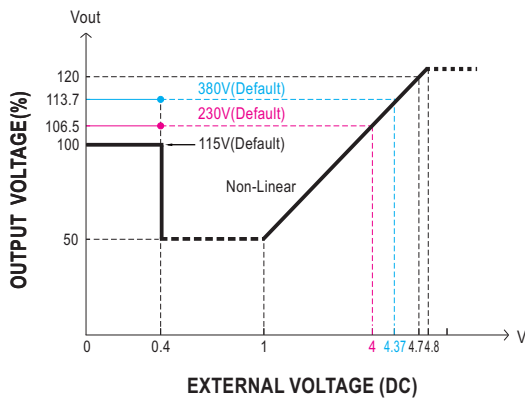
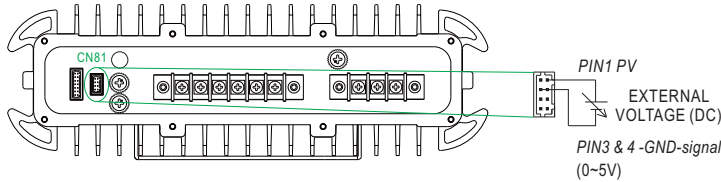
| I/O TYPE | Function type | Power Supply Function | PV/PC Programmable | PMBus Protocol | CANBus Protocol | LED Indicator | Remote On/Off | DC-OK Signal | 12V/0.5A Aux. output |
|---------------|---------------|-----------------------|--------------------|----------------|-----------------|---------------|---------------|--------------|----------------------|
| 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 |



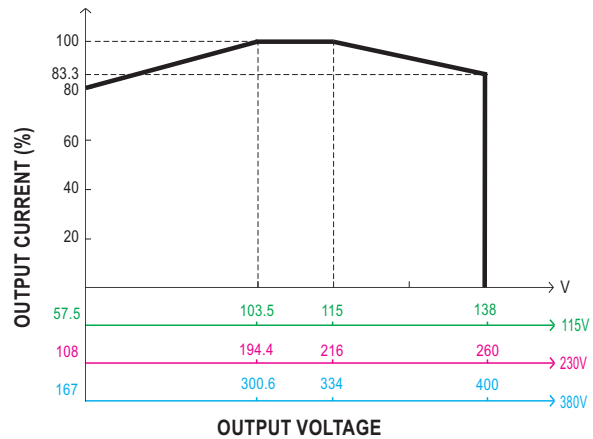
FUNCTION MANUAL

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.



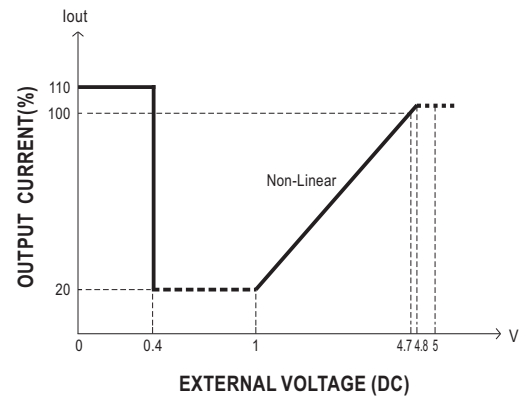
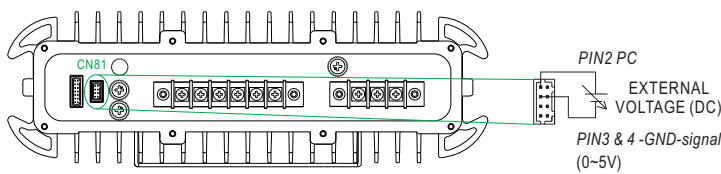
◎ The 100% output voltage is 115/216/334V.



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

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

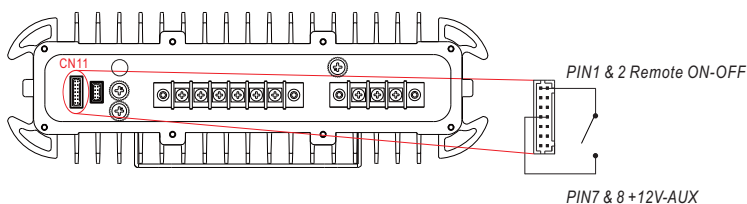
※ The output current can be trimmed to 20~100% of the rated current by applying EXTERNAL VOLTAGE.



- ◎ 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.

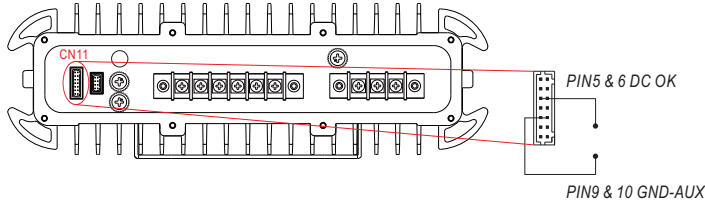


| Remote ON-OFF | Power Supply Status |
|---------------|---------------------|
| Short circuit | ON |
| Open circuit | OFF |



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

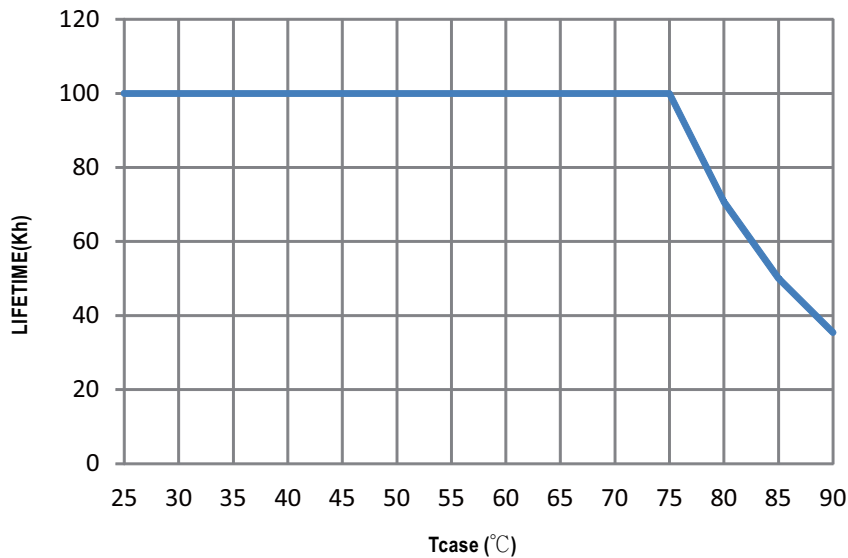
HEP-2300 supports CANBus Rev. 1.1 with maximum 250KHz bus speed, allowing information reading, status monitoring, output trimming, etc. For details, please refer to the User's Manual.

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°C; 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





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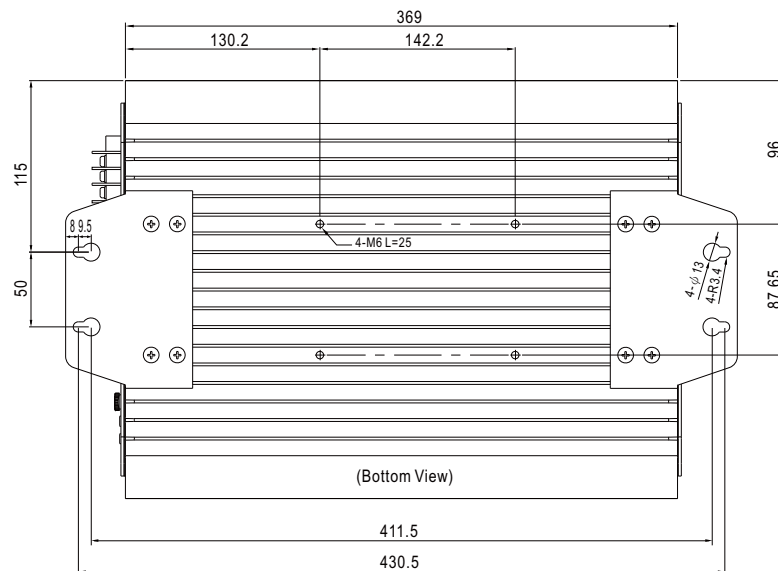
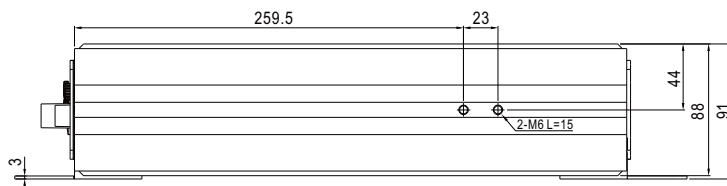
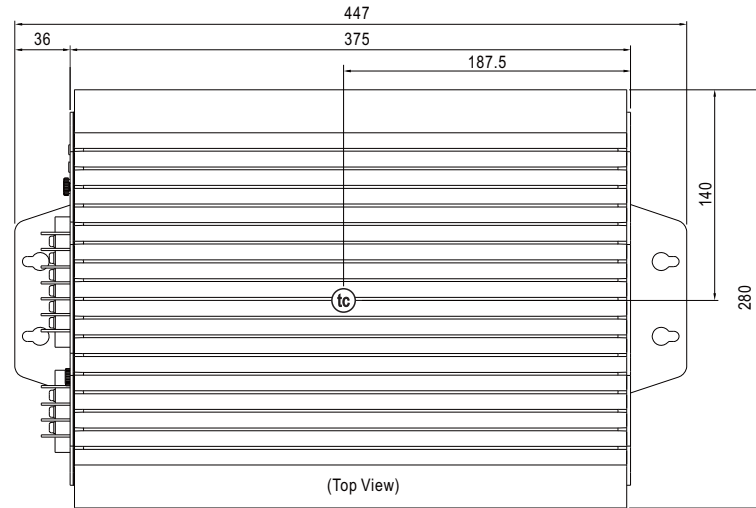
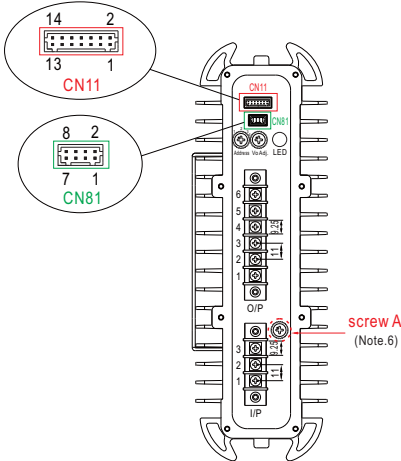
HEP-2300-HV series

MECHANICAL SPECIFICATION

(Unit: mm , tolerance ± 1 mm)

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 |



2300W High Voltage Output for Harsh Environment

HEP-2300-HV series

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

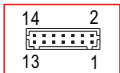


| | |
|----------------|----------------------------------|
| Mating Housing | JST PHDR-8VS or equivalent |
| Terminal | JST SPHD-001T-P0.5 or equivalent |

| 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 $V_{out} \leq 77\% \pm 6\%$ at power mode. High (4.4 ~ 5.5V) : When $V_{out} \geq 80\% \pm 6\%$ 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) |

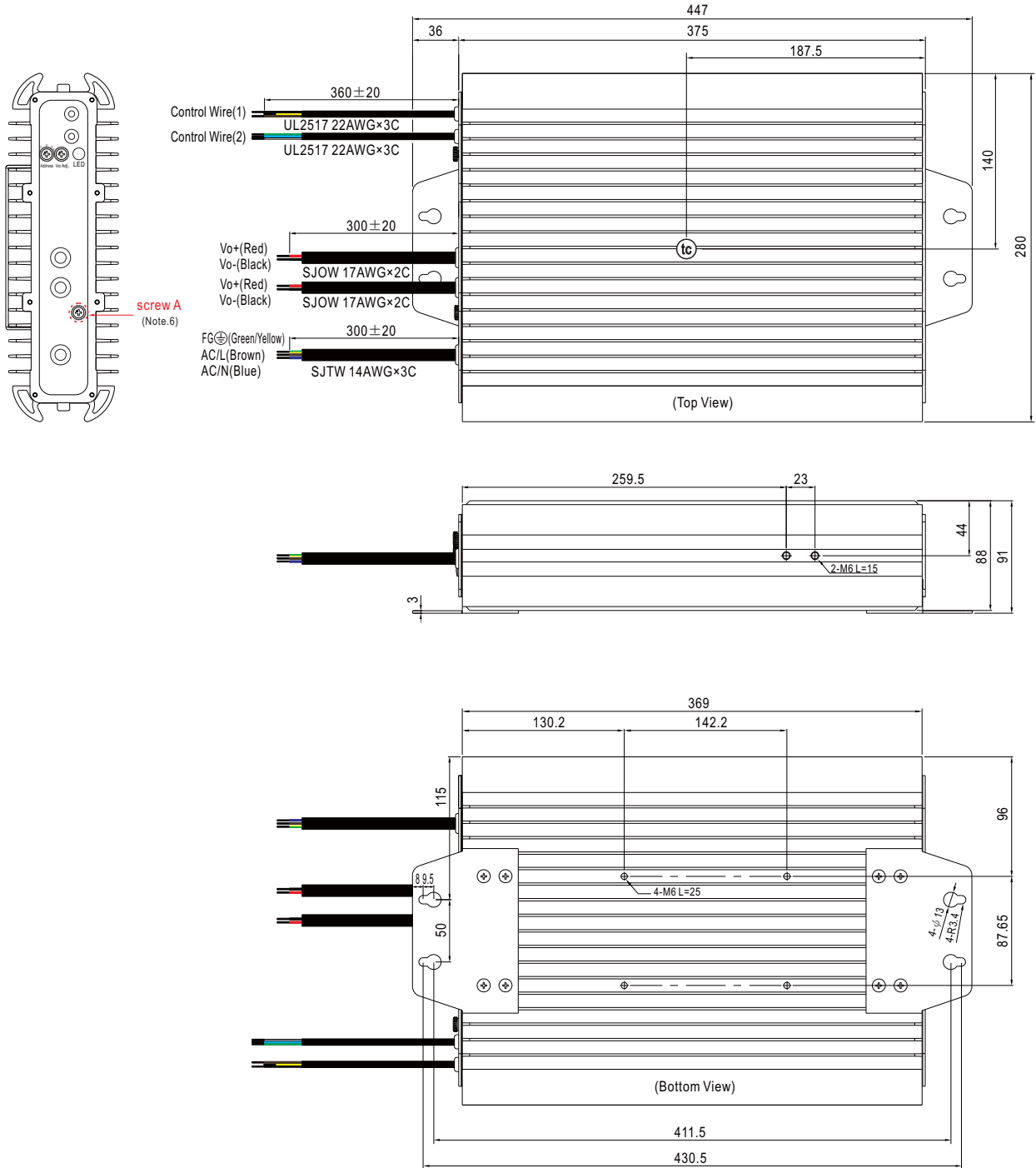
Note: Isolated signal, referenced to GND-AUX.



2300W High Voltage Output for Harsh Environment

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

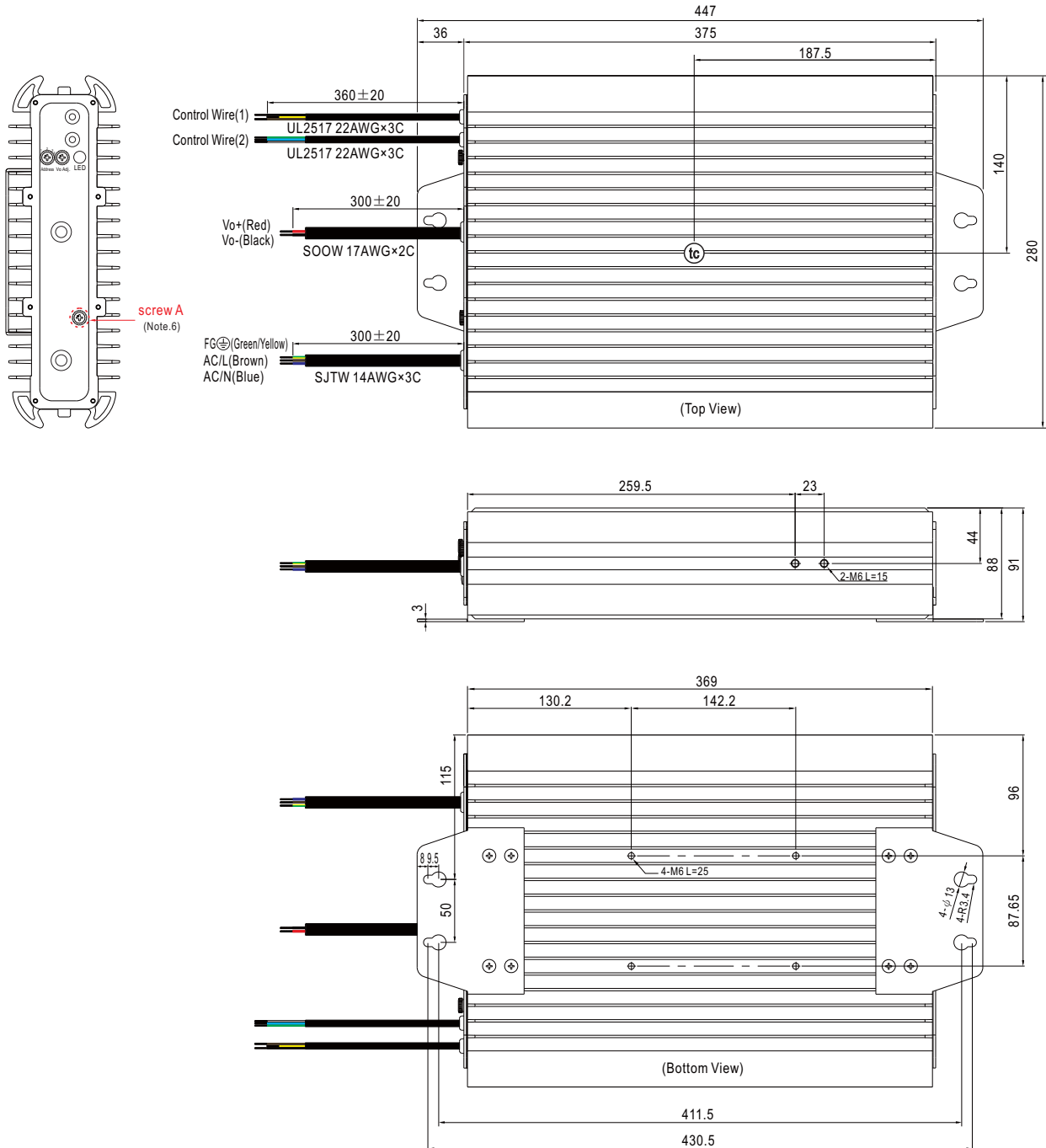




2300W High Voltage Output for Harsh Environment

HEP-2300-HV series

※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 $V_{out} \leq 77\% \pm 6\%$ at power mode. High (4.4 ~ 5.5V) : When $V_{out} \geq 80\% \pm 6\%$ 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 protocol).



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

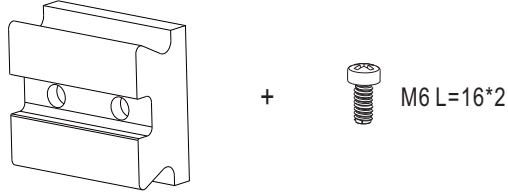
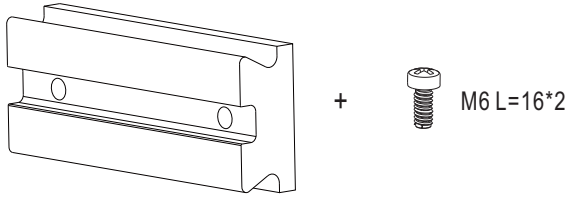
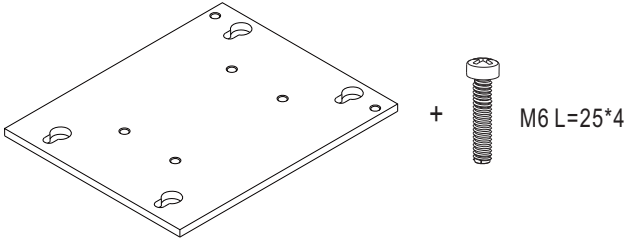
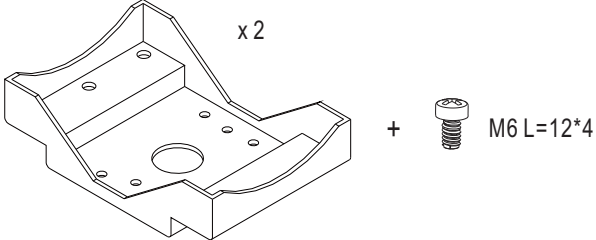
| Color | Function | Description |
|-------|--------------|--|
| Green | PV | Connection for output voltage programming.(Note.1) |
| Blue | PC | Connection for constant current level programming.(Note.1) |
| White | GND (Signal) | Negative output voltage signal.(PV/PC GND) |

※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). |

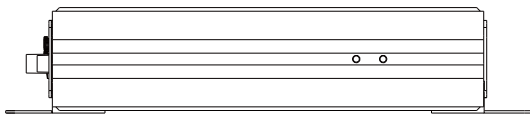
■ Accessory List

※ Optional equipment

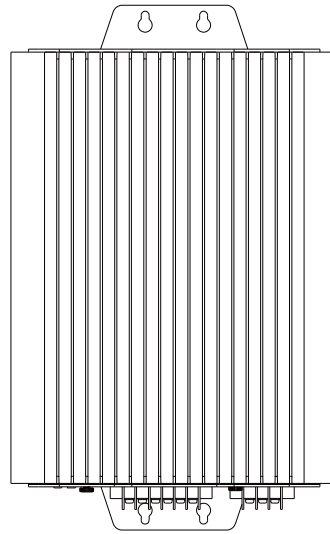
| MW's Order No. | | Item | Quantity |
|-----------------------------------|---|--|----------|
| PGG2BKT-001 (For housing side) | ① |  | 1 |
| PGG2BKT-002 (For pole side) | ② |  | 1 |
| PGG2BKT-003 | ③ |  | 1 |
| PGG2BKT-004 | ④ |  | 1 |

■ Mounting Methods

1. Mounting plate (Standard type)



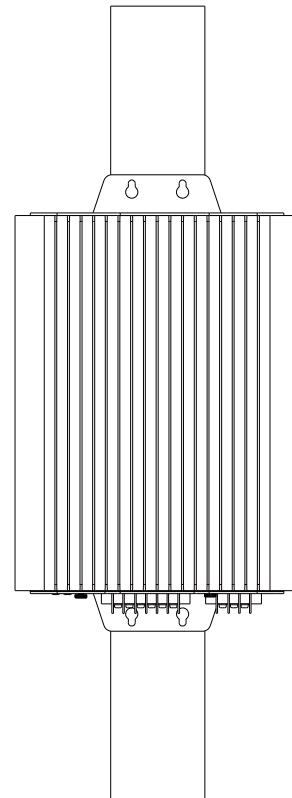
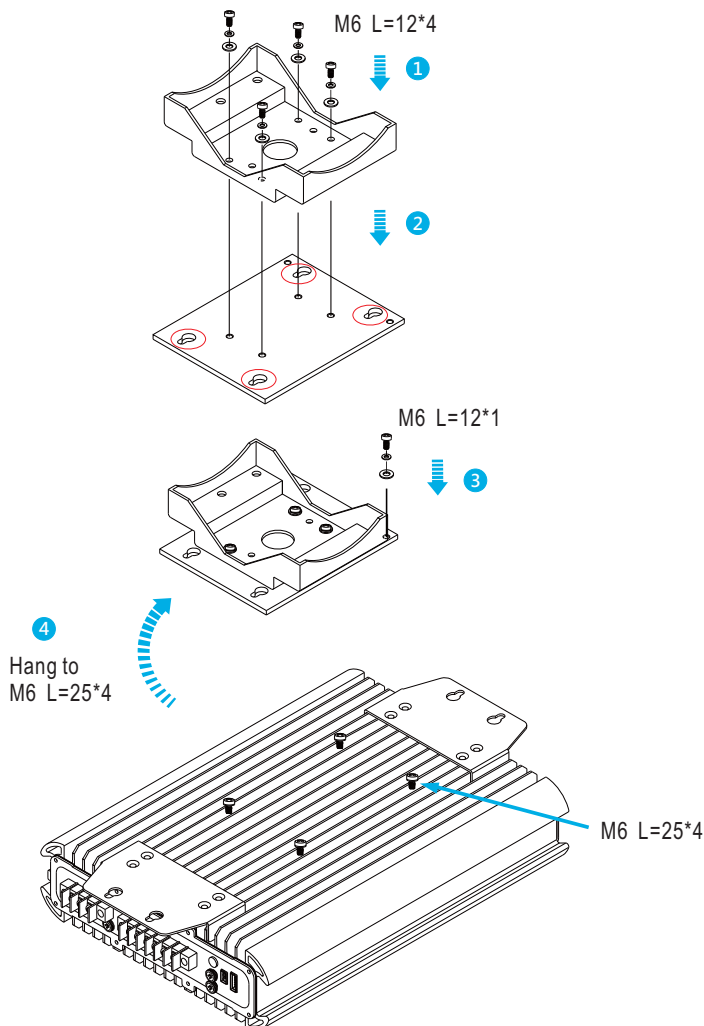
Horizontal mounted



Vertical mounted

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

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





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

