



200W Single Output with PFC Function

**UHP-200A** series

User's Manual



## ■ Features

- Universal AC input / Full range
- Withstand 300VAC surge input for 5 seconds
- Low profile:26mm
- Built-in active PFC function
- Fanless design, cooling by free air convection
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Low leakage current<1.0mA
- LED indicator for power on
- 3 years warranty

## ■ Applications

- LED signage display
- Moving sign
- LED channel letter
- LED TV wall

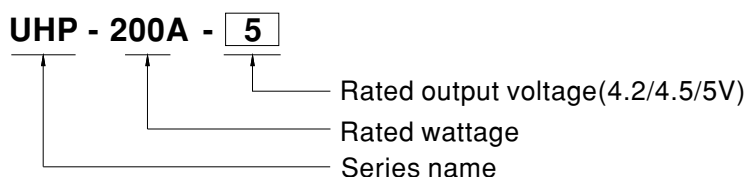
## ■ GTIN CODE

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

## ■ Description

UHP-200A series is a 200W LED display power solution. The ultra low profile design that allows the height and weight of the sign module to be slim. It greatly simplifies the delivery and installation process. Accounting for high efficiency and energy saving, the series effectively achieves electricity reduction. It is suitable for LED signage display, moving sign, LED channel letter and LED TV wall etc.

## ■ Model Encoding





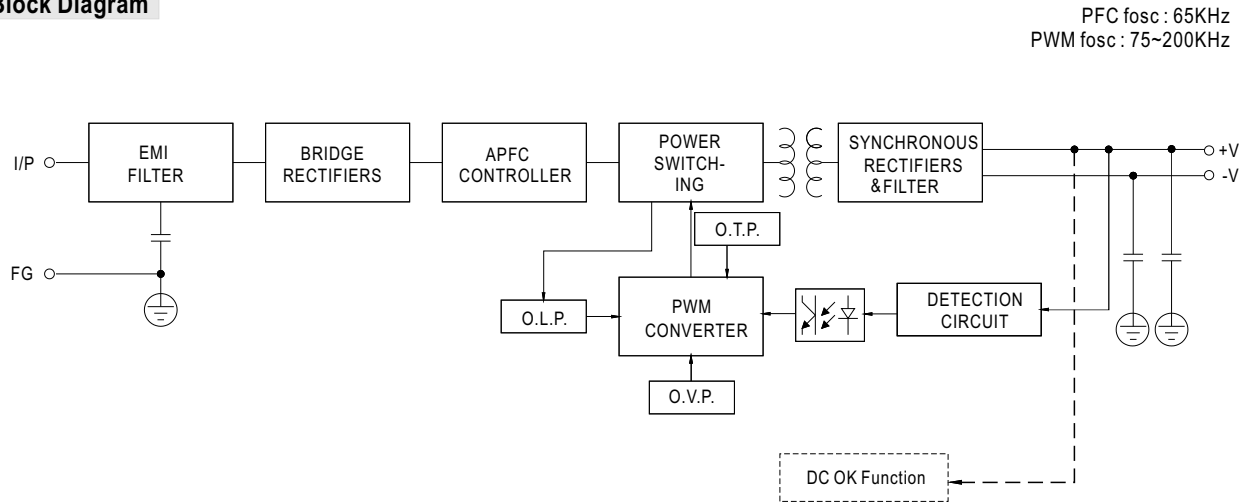
200W Single Output with PFC Function

UHP-200A series

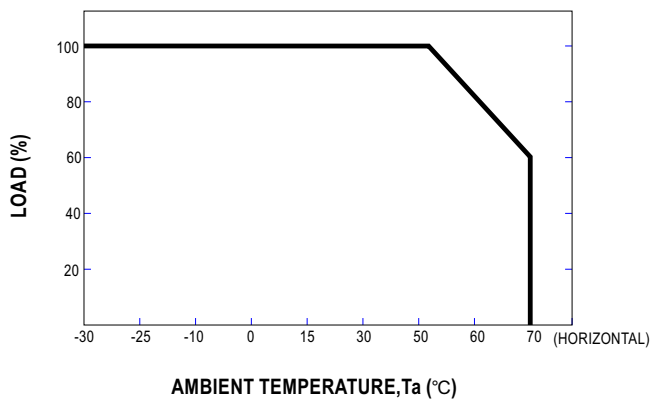
## SPECIFICATION

| MODEL                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | UHP-200A-4.2                                                                                                          | UHP-200A-4.5                                       | UHP-200A-5                                                                                           |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------|
| OUTPUT                  | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4.2V                                                                                                                  | 4.5V                                               | 5V                                                                                                   |
|                         | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 40A                                                                                                                   | 40A                                                | 40A                                                                                                  |
|                         | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0~40A                                                                                                                 | 0~40A                                              | 0~40A                                                                                                |
|                         | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 168W                                                                                                                  | 180W                                               | 200W                                                                                                 |
|                         | RIPPLE & NOISE(max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 200mVp-p                                                                                                              | 200mVp-p                                           | 200mVp-p                                                                                             |
|                         | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.0~4.4V                                                                                                              | 4.3~4.7V                                           | 4.7~5.3V                                                                                             |
|                         | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ±4.0%                                                                                                                 | ±4.0%                                              | ±4.0%                                                                                                |
|                         | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±0.5%                                                                                                                 | ±0.5%                                              | ±0.5%                                                                                                |
|                         | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±2.5%                                                                                                                 | ±2.5%                                              | ±2.5%                                                                                                |
|                         | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2000ms, 200ms/230VAC at full load, 3000ms, 200ms/115VAC at 80% load                                                   |                                                    |                                                                                                      |
|                         | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10ms/230VAC 10ms/115VAC                                                                                               |                                                    |                                                                                                      |
|                         | DC OK FUNCTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | PSU Turns on:DC ok; PSU turns off:DC fail                                                                             |                                                    |                                                                                                      |
| INPUT                   | VOLTAGE RANGE Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 90 ~ 264VAC 127 ~ 370VDC                                                                                              |                                                    |                                                                                                      |
|                         | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 47 ~ 63Hz                                                                                                             |                                                    |                                                                                                      |
|                         | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PF≥0.97/115VAC PF≥0.95/230VAC at full load                                                                            |                                                    |                                                                                                      |
|                         | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 88%                                                                                                                   | 88%                                                | 88.5%                                                                                                |
|                         | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2.4A/115VAC 1.2A/230VAC                                                                                               |                                                    |                                                                                                      |
|                         | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Cold start 85A/230VAC                                                                                                 |                                                    |                                                                                                      |
|                         | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <1.0mA / 240VAC                                                                                                       |                                                    |                                                                                                      |
| PROTECTION              | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 110~140% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |                                                    |                                                                                                      |
|                         | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Protection type : Hiccup mode, recovers automatically after fault condition is removed                                |                                                    |                                                                                                      |
|                         | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4.6 ~ 6V                                                                                                              | 5 ~ 6.4V                                           | 5.6 ~ 7.1V<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed |
|                         | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Protection type : Shut down O/P voltage, recovers automatically after fault condition is removed                      |                                                    |                                                                                                      |
|                         | ENVIRONMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | WORKING TEMP.                                                                                                         | -30 ~ +70℃ (Refer to "OUTPUT LOAD vs TEMPERATURE") |                                                                                                      |
| WORKING HUMIDITY        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20 ~ 95% RH non-condensing                                                                                            |                                                    |                                                                                                      |
| STORAGE TEMP., HUMIDITY |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -40 ~ +85℃, 10 ~ 95% RH                                                                                               |                                                    |                                                                                                      |
| TEMP. COEFFICIENT       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±0.03%/℃ (0 ~ 50℃ )                                                                                                   |                                                    |                                                                                                      |
| VIBRATION               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes                                                          |                                                    |                                                                                                      |
| SAFETY & EMC (Note.5)   | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | UL 62368-1,TUV BS EN/EN62368-1,GB 4943.1, EAC TP TC 004 approved                                                      |                                                    |                                                                                                      |
|                         | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | I/P-O/P:3.0KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC                                                                           |                                                    |                                                                                                      |
|                         | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25℃ / 70%RH                                                                  |                                                    |                                                                                                      |
|                         | EMC EMISSION Note.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliance to BS EN/EN55032 (CISPR32),GB17625.1,GB/T 9254.1, 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 4KV),EAC TP TC 020            |                                                    |                                                                                                      |
| OTHERS                  | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1949.0 K hrs min. Telcordia SR-332 (Bellcore) ; 211.7K hrs min. MIL-HDBK-217F (25℃)                                   |                                                    |                                                                                                      |
|                         | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 167*55*26mm (L*W*H)                                                                                                   |                                                    |                                                                                                      |
|                         | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.42kg; 20pcs/ 11.4kg/0.76CUFT                                                                                        |                                                    |                                                                                                      |
| NOTE                    | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : line regulation and load regulation.<br>4. Derating may be needed under low input voltages. Please check the static characteristics for more details.<br>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.<br>6. Transient response measure shall be made with 10% load at least.<br>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 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a> )<br>8. Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment may cause radio interference.<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                       |                                                    |                                                                                                      |

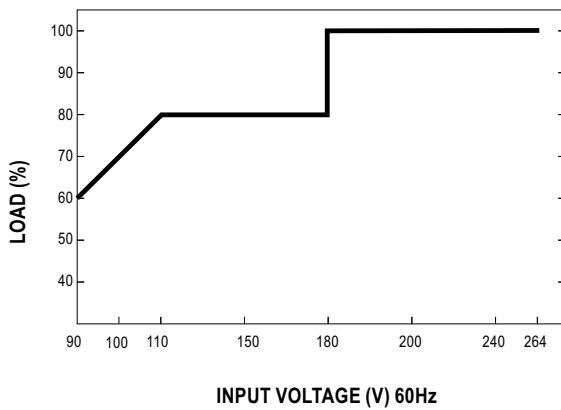
## Block Diagram



## OUTPUT LOAD vs TEMPERATURE

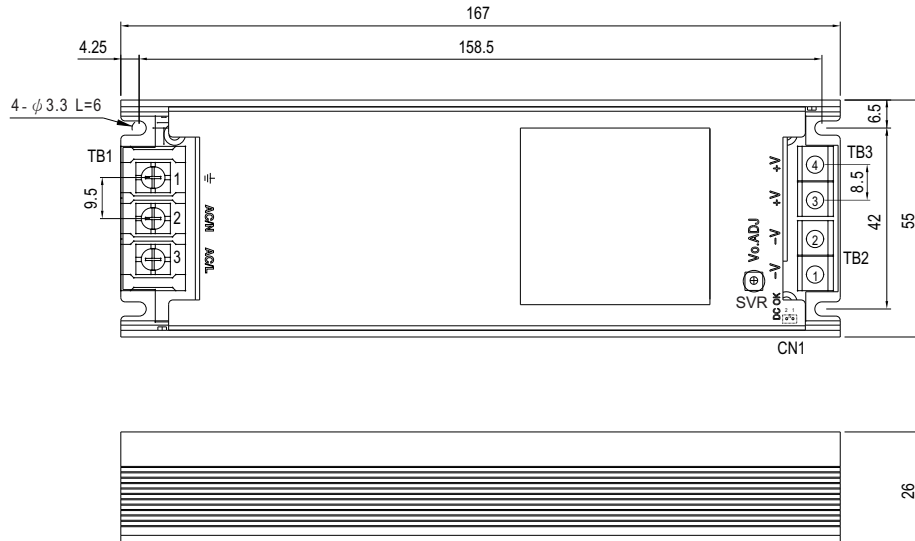


## STATIC CHARACTERISTIC



## Mechanical Specification

CASE NO.: 249A Unit:mm



AC Input Terminal(TB1) pin NO. Assignment

| Pin No. | Assignment | Terminal                 | Max mounting torque |
|---------|------------|--------------------------|---------------------|
| 1       | AC/L       | (DECA)<br>T14-EM11033703 | 13Kgf-cm            |
| 2       | AC/N       |                          |                     |
| 3       | ⊥          |                          |                     |

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

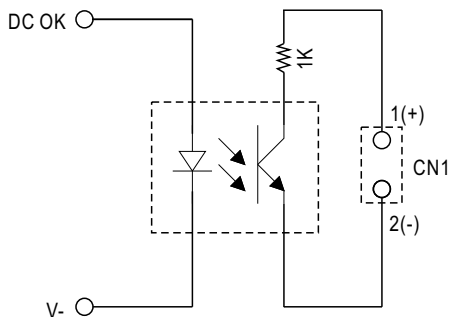
| Pin No. | Assignment | Terminal               | Max mounting torque |
|---------|------------|------------------------|---------------------|
| 1,2     | -V         | (MW)<br>TB-HTP-200-40A | 8Kgf-cm             |
| 3,4     | +V         |                        |                     |

DC OK Connector(CN1):JST B2B-PH-K-S or equivalent

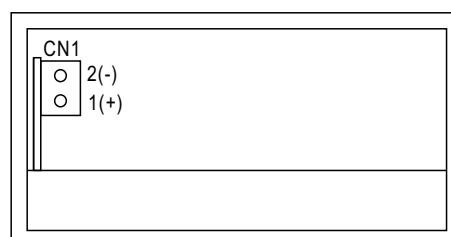
| Pin No. | Assignment | Mating Housing             | Terminal                            |
|---------|------------|----------------------------|-------------------------------------|
| 1       | DC OK +V   | JST PHR-2<br>or equivalent | JST SPH-002T-P0.5S<br>or equivalent |
| 2       | DC COM     |                            |                                     |

## Function manual

### 1.Internal circuit of DC ok



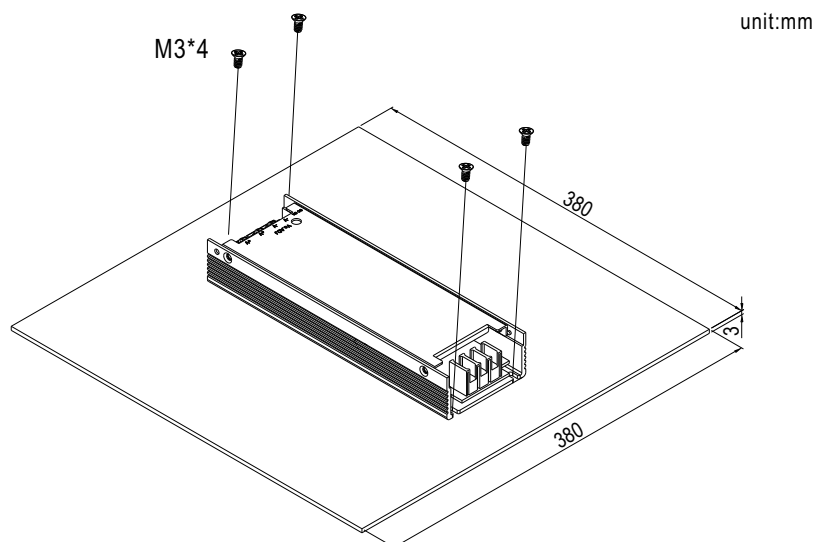
|                      |               |         |
|----------------------|---------------|---------|
| Contact Close        | PSU turns on  | DC ok   |
| Contact Open         | PSU turns off | DC fail |
| Contact Rating(max.) | 10Vdc/1mA     |         |



## ■ Installation

### 1. Operate with additional aluminum plate

In order to meet the "Derating Curve" and the "Static Characteristics", UHP-200A series must be installed onto an aluminum plate (or the cabinet of the same size) on the bottom. The size of the suggested aluminum plate is shown as below. And for optimizing thermal performance, the aluminum plate must have an even and smooth surface (or coated with thermal grease), and UHP-200A series must be firmly mounted at the center of the aluminum plate.



### 2. For heat dissipation, at least 5cm installation distance around the PSU should be kept, shown as below:

