

#### ■ Features :

- Universal AC input / Full range
- Isolated output & GND for CH1,CH2
- Built-in active PFC function, PF>0.92
- Protections:Short circuit / Overload / Over voltage / Over temperature
- Remote control for CH1
- Peak load 170% for CH1 within 10 sec.
- Cooling by free air convection
- 100% full load burn-in test
- 3 years warranty

User's Manual

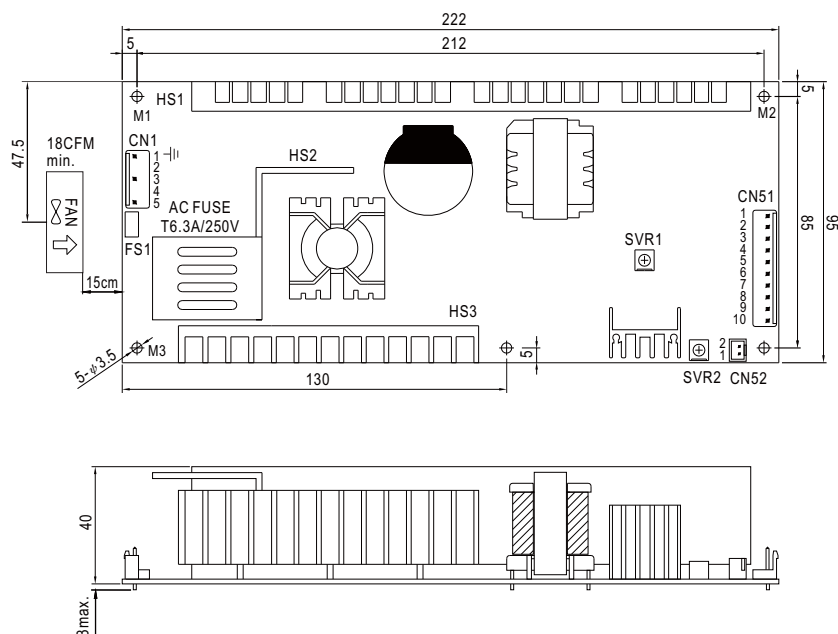


#### SPECIFICATION

| MODEL                    |                                | PID-250A                                                                                                                                                                                                                                   |              | PID-250B                 |              | PID-250C                 |              | PID-250D                |              |
|--------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------|--------------------------|--------------|-------------------------|--------------|
| OUTPUT                   | OUTPUT NUMBER                  | CH1                                                                                                                                                                                                                                        | CH2          | CH1                      | CH2          | CH1                      | CH2          | CH1                     | CH2          |
|                          | DC VOLTAGE                     | 12V                                                                                                                                                                                                                                        | 5V           | 24V                      | 5V           | 36V                      | 5V           | 48V                     | 5V           |
|                          | RATED CURRENT                  | 15A(Peak 20A)                                                                                                                                                                                                                              | 5A           | 9.4A(Peak 16.7A)         | 5A           | 6.3A(Peak 11.1A)         | 5A           | 4.7A(Peak 8.4A)         | 5A           |
|                          | CURRENT RANGE      Note.6      | 0 ~ 15A<br>(Peak 20A)                                                                                                                                                                                                                      | 0 ~ 5A       | 0 ~ 9.4A<br>(Peak 16.7A) | 0 ~ 5A       | 0 ~ 6.3A<br>(Peak 11.1A) | 0 ~ 5A       | 0 ~ 4.7A<br>(Peak 8.4A) | 0 ~ 5A       |
|                          | RATED POWER                    | 205W                                                                                                                                                                                                                                       |              | 250.6W                   |              | 251.8W                   |              | 250.6W                  |              |
|                          | RIPPLE & NOISE (max.)   Note.2 | 120mVp-p                                                                                                                                                                                                                                   | 50mVp-p      | 150mVp-p                 | 50mVp-p      | 200mVp-p                 | 50mVp-p      | 200mVp-p                | 50mVp-p      |
|                          | VOLTAGE ADJ. RANGE             | 10.8 ~ 13.2V                                                                                                                                                                                                                               | 4.75 ~ 5.25V | 21.6 ~ 26.4V             | 4.75 ~ 5.25V | 32.4 ~ 39.6V             | 4.75 ~ 5.25V | 43.2 ~ 52.8V            | 4.75 ~ 5.25V |
|                          | VOLTAGE TOLERANCE   Note.3     | ± 3.0%                                                                                                                                                                                                                                     | ± 2.0%       | ± 2.0%                   | ± 2.0%       | ± 2.0%                   | ± 2.0%       | ± 2.0%                  | ± 2.0%       |
|                          | LINE REGULATION                | ± 0.5%                                                                                                                                                                                                                                     | ± 0.5%       | ± 0.5%                   | ± 0.5%       | ± 0.5%                   | ± 0.5%       | ± 0.5%                  | ± 0.5%       |
|                          | LOAD REGULATION                | ± 1.0%                                                                                                                                                                                                                                     | ± 2.0%       | ± 1.0%                   | ± 2.0%       | ± 1.0%                   | ± 2.0%       | ± 1.0%                  | ± 2.0%       |
| SETUP, RISE TIME         |                                | 2500ms, 60ms/115VAC    1200ms, 60ms/230VAC                                                                                                                                                                                                 |              |                          |              |                          |              |                         |              |
| HOLD UP TIME (Typ.)      |                                | 30ms at full load                                                                                                                                                                                                                          |              |                          |              |                          |              |                         |              |
| INPUT                    | VOLTAGE RANGE      Note.5      | 90 ~ 264VAC    127 ~ 370VDC                                                                                                                                                                                                                |              |                          |              |                          |              |                         |              |
|                          | FREQUENCY RANGE                | 47 ~ 63Hz                                                                                                                                                                                                                                  |              |                          |              |                          |              |                         |              |
|                          | POWER FACTOR                   | PF ≥ 0.92/230VAC    PF ≥ 0.97/115VAC at full load                                                                                                                                                                                          |              |                          |              |                          |              |                         |              |
|                          | EFFICIENCY(Typ.)               | 83%                                                                                                                                                                                                                                        |              | 86%                      |              | 86%                      |              | 86%                     |              |
|                          | AC CURRENT (Typ.)              | 3A/115VAC    1.5A/230VAC                                                                                                                                                                                                                   |              |                          |              |                          |              |                         |              |
|                          | INRUSH CURRENT (Typ.)          | COLD START 58A/230VAC                                                                                                                                                                                                                      |              |                          |              |                          |              |                         |              |
| LEAKAGE CURRENT          |                                | <3.5mA/ 240VAC                                                                                                                                                                                                                             |              |                          |              |                          |              |                         |              |
| PROTECTION               | OVERLOAD                       | CH1: 105 ~ 170% rated output power<br>Normally work within 10 sec and then shut down, re-power on to recover<br>Over 180% rated power or short circuit, constant current limiting within 10 sec and then shut down, re-power on to recover |              |                          |              |                          |              |                         |              |
|                          |                                | CH2: 101 ~ 150% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                               |              |                          |              |                          |              |                         |              |
|                          | OVER VOLTAGE                   | 13.8 ~ 16.2V                                                                                                                                                                                                                               | 5.5 ~ 6.75V  | 27.6 ~ 32.4V             | 5.5 ~ 6.75V  | 40 ~ 48V                 | 5.5 ~ 6.75V  | 54 ~ 64.8V              | 5.5 ~ 6.75V  |
|                          |                                | Protection type : Shut down o/p voltage, re-power on to recover for CH1 ; Hiccup mode, recovers automatically afer fault condition is removed for CH2(by zener diode clamp)                                                                |              |                          |              |                          |              |                         |              |
| OVER TEMPERATURE         |                                | Shut down o/p voltage(CH1), recovers automatically after temperature goes down                                                                                                                                                             |              |                          |              |                          |              |                         |              |
| FUNCTION                 | REMOTE CONTROL                 | CN52 : Open=CH1 & CH2 power on ; Short = CH1 power off, CH2 power on; when CH2 is malfunction, CH1 will be shut down                                                                                                                       |              |                          |              |                          |              |                         |              |
| ENVIRONMENT              | WORKING TEMP.                  | -20 ~ +70℃ (Refer to "Derating Curve")                                                                                                                                                                                                     |              |                          |              |                          |              |                         |              |
|                          | WORKING HUMIDITY               | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                 |              |                          |              |                          |              |                         |              |
|                          | STORAGE TEMP., HUMIDITY        | -20 ~ +85℃, 10 ~ 95% RH                                                                                                                                                                                                                    |              |                          |              |                          |              |                         |              |
|                          | TEMP. COEFFICIENT              | ± 0.05%/℃ (0 ~ 50℃)                                                                                                                                                                                                                        |              |                          |              |                          |              |                         |              |
|                          | VIBRATION                      | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min each along X, Y, Z axes                                                                                                                                                                     |              |                          |              |                          |              |                         |              |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS               | UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004 approved                                                                                                                                                                                     |              |                          |              |                          |              |                         |              |
|                          | WITHSTAND VOLTAGE              | I/P-O/P:3KVAC    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                   | Compliance to BS EN/EN55032 (CISPR32) Class B, BS EN/EN61000-3-2,-3, EAC TP TC 020                                                                                                                                                         |              |                          |              |                          |              |                         |              |
| OTHERS                   | EMC IMMUNITY                   | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61000-6-2, heavy industry level, criteria A, EAC TP TC 020                                                                                                                           |              |                          |              |                          |              |                         |              |
|                          | MTBF                           | 150.4K hrs min.    MIL-HDBK-217F (25℃)                                                                                                                                                                                                     |              |                          |              |                          |              |                         |              |
|                          | DIMENSION                      | 222*95*40mm (L*W*H)                                                                                                                                                                                                                        |              |                          |              |                          |              |                         |              |
|                          | PACKING                        | 0.74Kg; 18pcs/14.3Kg/0.98CUFT                                                                                                                                                                                                              |              |                          |              |                          |              |                         |              |

## ■ Mechanical Specification

Unit:mm



AC Input Connector (CN1) : JST B5P-VH or equivalent

| Pin No. | Assignment       | Mating Housing           | Terminal                         |
|---------|------------------|--------------------------|----------------------------------|
| 1       | FG $\frac{1}{2}$ | JST VHR<br>or equivalent | JST SVH-21T-P1.<br>or equivalent |
| 2,4     | No Pin           |                          |                                  |
| 3       | AC/N             |                          |                                  |
| 5       | AC/L             |                          |                                  |

$\perp$  : Grounding Required

DC Output Connector (CN51) : JST B10P-VH or equivalent

| Pin No. | Assignment | Mating Housing           | Terminal                         |
|---------|------------|--------------------------|----------------------------------|
| 1,2,3   | COM1       | JST VHR<br>or equivalent | JST SVH-21T-P1.<br>or equivalent |
| 4,5,6   | V1         |                          |                                  |
| 7,8     | COM2       |                          |                                  |
| 9,10    | V2         |                          |                                  |

Remote ON/OFF Connector(CN52):JST B2B-XH or equivalent

| Pin No.           | Status            | Mating Housing           | Terminal                          |
|-------------------|-------------------|--------------------------|-----------------------------------|
| PIN1,2<br>(Short) | V1: OFF<br>V2: ON | JST XHP<br>or equivalent | JST SXH-001T-P04<br>or equivalent |
| PIN1,2<br>(Open)  | V1: ON<br>V2: ON  |                          |                                   |

|      |         |
|------|---------|
| SVR1 | For CH1 |
| SVR2 | For CH2 |

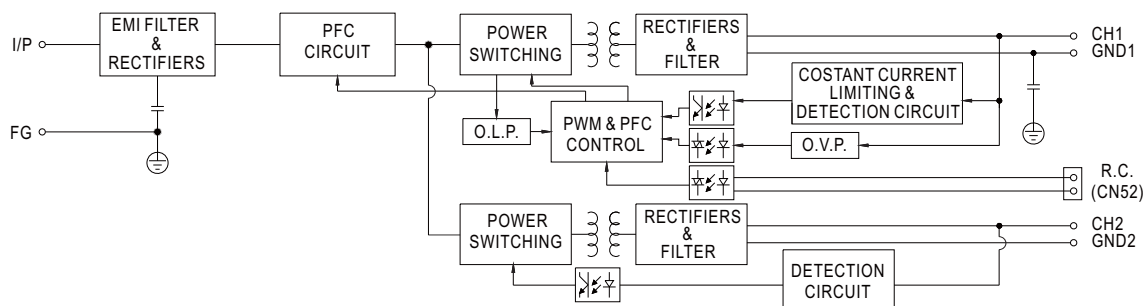


- 1.HS1,HS2,HS3 cannot be shorted.
- 2.CN1:Pin1 is safety ground. For better EMC performance,Please secure an electrical connection between M1,M2,M3,and chassis grounding.

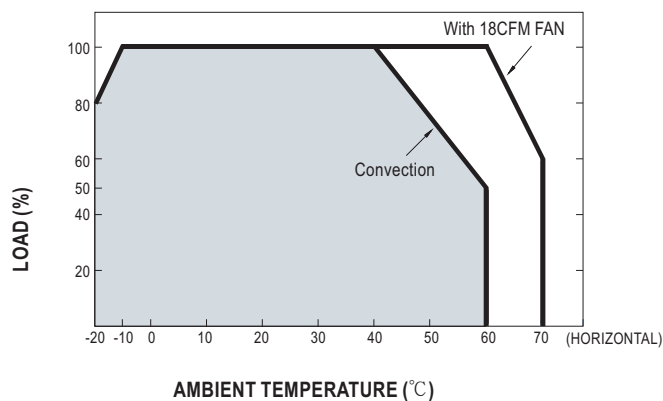
PFC fosc : 100KHz

PWM fosc : 100KHz

### ■ Block Diagram



### Derating Curve



### ■ Output Derating VS Input Voltage

