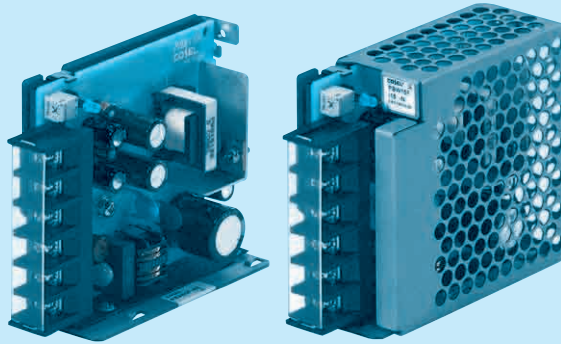
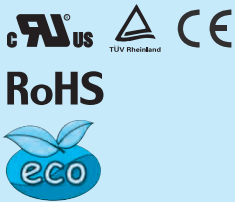


## PBW15F

## Ordering information

PB W 15 F -□ -□

① ② ③ ④ ⑤ ⑥

Recommended EMI/EMC Filter  
NAC-06-472

High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\* The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name  
② Dual output  
③ Output wattage  
④ Universal input  
⑤ Output voltage  
⑥ Optional \*10  
C : with Coating  
G : Low leakage current

E : Low leakage current and EMI class A

T : Vertical terminal block  
J : Connector type  
N : with Cover  
NI : with DIN rail  
V : Output voltage setting potentiometer externally

Cover is optional

| MODEL                 | PBW15F-12          | PBW15F-15   |
|-----------------------|--------------------|-------------|
| MAX OUTPUT WATTAGE[W] | *5 16.8            | 15.0        |
| VOLTAGE[V] *6         | ±12 ( +24 )        | ±15 ( +30 ) |
| DC OUTPUT             | CURRENT1[A] 0.7    | 0.5         |
|                       | CURRENT2[A] *5 1.4 | 1.0         |

## SPECIFICATIONS

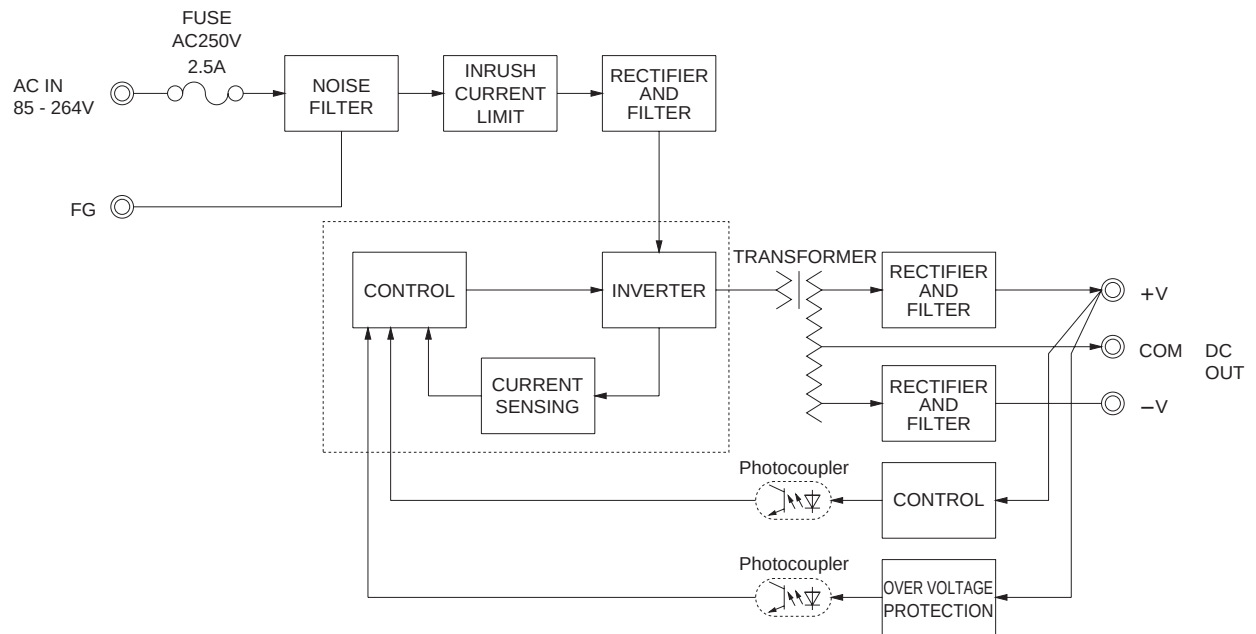
|                               | MODEL                                | PBW15F-12                                                                                                                                 | PBW15F-15                                           |
|-------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| INPUT                         | VOLTAGE[V]                           | AC85 - 264 1φ or DC110 - 370 (AC50 or DC70 Please refer to the instruction manual 2.1 Input voltage *8)                                   |                                                     |
|                               | CURRENT[A]                           | ACIN 100V 0.40typ (CURRENT1)                                                                                                              |                                                     |
|                               |                                      | ACIN 200V 0.20typ (CURRENT1)                                                                                                              |                                                     |
|                               | FREQUENCY[Hz]                        | 50/60 (47 - 440) or DC                                                                                                                    |                                                     |
|                               | EFFICIENCY[%]                        | ACIN 100V 74typ (CURRENT1)                                                                                                                | 78typ (CURRENT1)                                    |
|                               |                                      | ACIN 200V 77typ (CURRENT1)                                                                                                                | 80typ (CURRENT1)                                    |
| OUTPUT                        | INRUSH CURRENT[A]                    | ACIN 100V 15typ (CURRENT1) (At cold start)                                                                                                |                                                     |
|                               |                                      | ACIN 200V 30typ (CURRENT1) (At cold start)                                                                                                |                                                     |
|                               | LEAKAGE CURRENT[ma]                  | 0.15/0.30max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1.DENAN)                                                                |                                                     |
|                               | VOLTAGE[V]                           | ±12                                                                                                                                       | ±15                                                 |
|                               | CURRENT1[A]                          | 0.7                                                                                                                                       | 0.5                                                 |
|                               | CURRENT2[A]                          | 1.4                                                                                                                                       | 1.0                                                 |
|                               | LINE REGULATION[mV]                  | 60max                                                                                                                                     | 60max                                               |
|                               | LOAD REGULATION 1[mV]                | 600max                                                                                                                                    | 600max                                              |
|                               | LOAD REGULATION 2[mV]                | 750max                                                                                                                                    | 750max                                              |
|                               | RIPPLE[mVp-p]                        | 0 to +50℃ *1 120max                                                                                                                       | 120max                                              |
|                               |                                      | -10 - 0℃ *1 160max                                                                                                                        | 160max                                              |
|                               | RIPPLE NOISE[mVp-p]                  | 0 to +50℃ *1 150max                                                                                                                       | 150max                                              |
| PROTECTION CIRCUIT AND OTHERS | TEMPERATURE REGULATION[mV]           | -10 - 0℃ *1 180max                                                                                                                        | 180max                                              |
|                               |                                      | 0 to +50℃ 120max                                                                                                                          | 150max                                              |
|                               |                                      | -10 to +50℃ 150max                                                                                                                        | 180max                                              |
|                               | DRIFT[mV]                            | *2 48max                                                                                                                                  | 60max                                               |
|                               | START-UP TIME[ms]                    | 200typ (ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage. |                                                     |
|                               | HOLD-UP TIME[ms]                     | 20typ (ACIN 100V, Io=100%)                                                                                                                |                                                     |
| ISOLATION                     | OUTPUT VOLTAGE ADJUSTMENT RANGE[V]   | 9.60 - 13.2 (+V and -V are simultaneously adjusted)                                                                                       | 13.2 - 16.5 (+V and -V are simultaneously adjusted) |
|                               | OUTPUT VOLTAGE SETTING[V]            | 11.5 - 12.5 (+V and -V CURRENT1)                                                                                                          | 14.4 - 15.6 (+V and -V CURRENT1)                    |
|                               | OVERCURRENT PROTECTION               | Works over 105% of rated current and recovers automatically                                                                               |                                                     |
|                               | OVERVOLTAGE PROTECTION[V]            | 16.8 - 24.0                                                                                                                               | 20.0 - 29.0                                         |
| ENVIRONMENT                   | OPERATING INDICATION                 | LED (Green)                                                                                                                               |                                                     |
|                               | REMOTE ON/OFF                        | None                                                                                                                                      |                                                     |
|                               | INPUT-OUTPUT                         | AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                                            |                                                     |
| SAFETY AND NOISE REGULATIONS  | INPUT-FG                             | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                                            |                                                     |
|                               | OUTPUT-FG                            | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)                                                              |                                                     |
|                               | OPERATING TEMP., HUMID. AND ALTITUDE | -10 to +71℃ (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max                                                      |                                                     |
| OTHERS                        | STORAGE TEMP., HUMID. AND ALTITUDE   | -20 to +75℃, 20 - 90%RH (Non condensing) 9,000m (30,000feet) max                                                                          |                                                     |
|                               | VIBRATION                            | 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis                                               |                                                     |
|                               | IMPACT                               | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis                                                                              |                                                     |
| OTHERS                        | AGENCY APPROVALS (At only AC input)  | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN                                                                      |                                                     |
|                               | CONDUCTED NOISE                      | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B                                                                  |                                                     |
|                               | HARMONIC ATTENUATOR                  | Complies with IEC61000-3-2 (Not built-in to active filter *7) *12                                                                         |                                                     |
| OTHERS                        | CASE SIZE/WEIGHT                     | 31 x 78 x 85mm [1.22 x 3.07 x 3.35 inches] (without terminal block) (W x H x D) / 200g max (with cover : 235g max)                        |                                                     |
|                               | COOLING METHOD                       | Convection                                                                                                                                |                                                     |

- \*1 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN : RM101).
- \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.
- \*3 Figures for 0 to rated current 1. The current not measured side is fixed.
- \*4 Figures for 0 to rated current 2. The current not measured

- side is fixed.
- \*5 The sum of +power -power must be less than output power.
- \*6 ±12, ±15 can be used as +24 and +30.
- \*7 When two or more units are used, they may not comply with the harmonic attenuator. Please contact us for details.
- \*8 Derating is required.
- \*9 Figures to rated current 1.

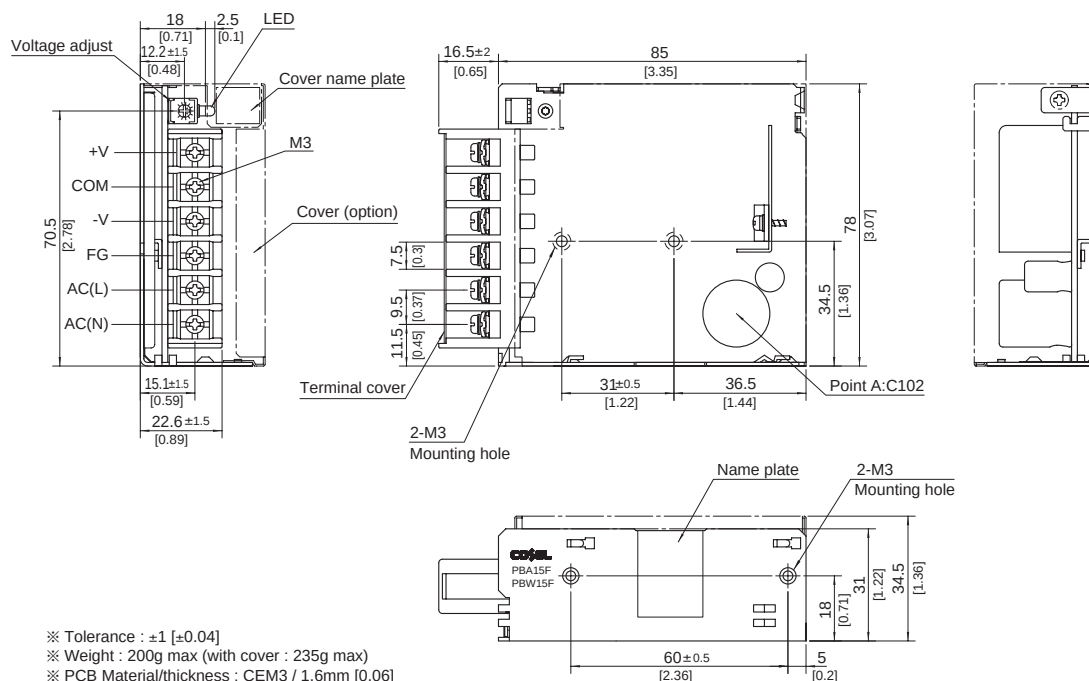
- \*10 Please contact us about safety approvals for the model with option.
- \*11 Please contact us about dynamic load and input response.
- \*12 Please contact us about class C.
- \* Parallel operation with other model is not possible.
- \* Derating is required when operated with cover.
- \* A sound may occur from power supply at peak loading.

## Block diagram



## External view

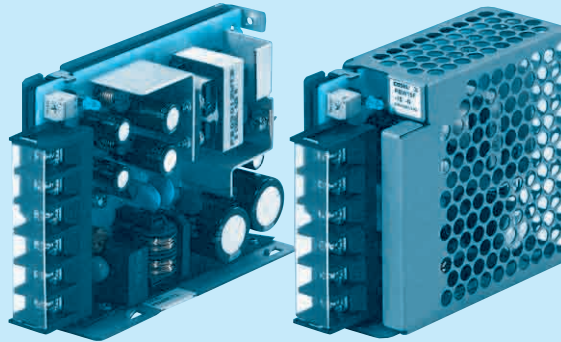
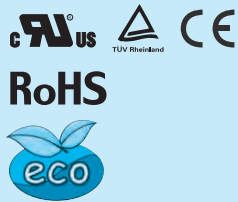
※ External size of option T,J,N,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



- ※ Tolerance :  $\pm 1$  [ $\pm 0.04$ ]
- ※ Weight : 200g max (with cover : 235g max)
- ※ PCB Material/thickness : CEM3 / 1.6mm [0.06]
- ※ Chassis material : Electric galvanizing steel board
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 0.6N • m (6.3kgf • cm) max
- ※ Screw tightening torque : M3 0.8N • m (8.5kgf • cm) max
- ※ Please connect safety ground to the unit in 2-M3 holes.

PB W 30 F -□ -□

① ② ③ ④ ⑤ ⑥

Recommended EMI/EMC Filter  
NAC-06-472

High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\* The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name  
② Dual output  
③ Output wattage  
④ Universal input  
⑤ Output voltage  
⑥ Optional \*10  
C : with Coating  
G : Low leakage current

E : Low leakage current and EMI class A

T : Vertical terminal block  
J : Connector type  
N : with Cover  
NI : with DIN rail  
V : Output voltage setting potentiometer externally

Cover is optional

| MODEL                 | PBW30F-5                                                             | PBW30F-12                 | PBW30F-15                 |
|-----------------------|----------------------------------------------------------------------|---------------------------|---------------------------|
| MAX OUTPUT WATTAGE[W] | 15                                                                   | 31.2                      | 30.0                      |
| DC OUTPUT             | VOLTAGE[V] *6<br>±5 ( +10 )<br>CURRENT1[A] 1.5<br>CURRENT2[A] *5 2.0 | ±12 ( +24 )<br>1.3<br>1.7 | ±15 ( +30 )<br>1.0<br>1.4 |

## SPECIFICATIONS

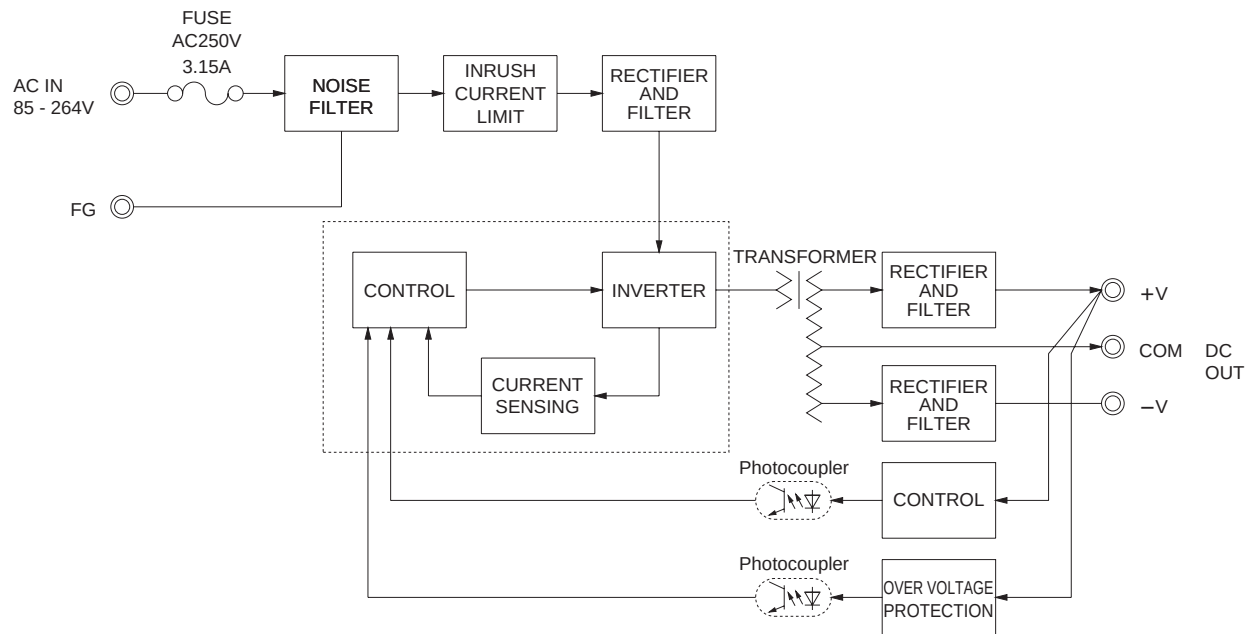
|                                    | MODEL                                |                                                                                                                                          | PBW30F-5                                                                                                            | PBW30F-12                                           | PBW30F-15         |                                                     |             |                             |          |  |        |  |          |  |
|------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------|-----------------------------------------------------|-------------|-----------------------------|----------|--|--------|--|----------|--|
| INPUT                              | VOLTAGE[V]                           |                                                                                                                                          | AC85 - 264 1ϕ or DC110 - 370 (AC50 or DC70 Please refer to the instruction manual 2.1 Input voltage *8)             |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | CURRENT[A]                           | ACIN 100V                                                                                                                                | 0.4typ (CURRENT1)                                                                                                   |                                                     | 0.7typ (CURRENT1) |                                                     |             |                             |          |  |        |  |          |  |
|                                    |                                      | ACIN 200V                                                                                                                                | 0.25typ (CURRENT1)                                                                                                  |                                                     | 0.4typ (CURRENT1) |                                                     |             |                             |          |  |        |  |          |  |
|                                    | FREQUENCY[Hz]                        |                                                                                                                                          | 50/60 (47 - 440) or DC                                                                                              |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | EFFICIENCY[%]                        | ACIN 100V                                                                                                                                | 75typ (CURRENT1)                                                                                                    |                                                     | 78typ (CURRENT1)  |                                                     |             |                             |          |  |        |  |          |  |
|                                    |                                      | ACIN 200V                                                                                                                                | 75typ (CURRENT1)                                                                                                    |                                                     | 81typ (CURRENT1)  |                                                     |             |                             |          |  |        |  |          |  |
|                                    | INRUSH CURRENT[A]                    | ACIN 100V                                                                                                                                | 15typ (CURRENT1) (At cold start)                                                                                    |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| ACIN 200V                          |                                      | 30typ (CURRENT1) (At cold start)                                                                                                         |                                                                                                                     |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| LEAKAGE CURRENT[ma]                |                                      | 0.30/0.65max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1.DENAN)                                                               |                                                                                                                     |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| OUTPUT                             | VOLTAGE[V]                           |                                                                                                                                          | ±5                                                                                                                  | / ( +10V reference number )                         | ±12               | / ( +24V reference number )                         | ±15         | / ( +30V reference number ) |          |  |        |  |          |  |
|                                    | CURRENT1[A]                          |                                                                                                                                          | 1.5                                                                                                                 |                                                     | / 1.5             |                                                     | 1.3         |                             | / 1.3    |  | 1.0    |  | / 1.0    |  |
|                                    | CURRENT2[A]                          |                                                                                                                                          | 2.0                                                                                                                 |                                                     | / -               |                                                     | 1.7         |                             | / -      |  | 1.4    |  | / -      |  |
|                                    | LINE REGULATION[mV]                  |                                                                                                                                          | 20max                                                                                                               |                                                     | / 36max           |                                                     | 60max       |                             | / 96max  |  | 60max  |  | / 96max  |  |
|                                    | LOAD REGULATION 1[mV]                |                                                                                                                                          | 250max                                                                                                              |                                                     | / 100max          |                                                     | 600max      |                             | / 150max |  | 600max |  | / 150max |  |
|                                    | LOAD REGULATION 2[mV]                |                                                                                                                                          | 500max                                                                                                              |                                                     | / -               |                                                     | 750max      |                             | / -      |  | 750max |  | / -      |  |
|                                    | RIPPLE[mVp-p]                        | 0 to +50℃                                                                                                                                | 80max                                                                                                               |                                                     | / 240max          |                                                     | 120max      |                             | / 240max |  | 120max |  | / 240max |  |
|                                    |                                      | -10 - 0℃                                                                                                                                 | 140max                                                                                                              |                                                     | / 320max          |                                                     | 160max      |                             | / 320max |  | 160max |  | / 320max |  |
|                                    | RIPPLE NOISE[mVp-p]                  | 0 to +50℃                                                                                                                                | 120max                                                                                                              |                                                     | / 300max          |                                                     | 150max      |                             | / 300max |  | 150max |  | / 300max |  |
|                                    |                                      | -10 - 0℃                                                                                                                                 | 160max                                                                                                              |                                                     | / 360max          |                                                     | 180max      |                             | / 360max |  | 180max |  | / 360max |  |
|                                    | TEMPERATURE REGULATION[mV]           | 0 to +50℃                                                                                                                                | 50max                                                                                                               |                                                     | 120max            |                                                     | 150max      |                             | 150max   |  |        |  |          |  |
|                                    |                                      | -10 to +50℃                                                                                                                              | 60max                                                                                                               |                                                     | 150max            |                                                     | 180max      |                             | 180max   |  |        |  |          |  |
| DRIFT[mV]                          |                                      | 20max                                                                                                                                    |                                                                                                                     | 48max                                               |                   | 60max                                               |             |                             |          |  |        |  |          |  |
| START-UP TIME[ms]                  |                                      | 200typ(ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage. |                                                                                                                     |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| HOLD-UP TIME[ms]                   |                                      | 20typ (ACIN 100V, Io=100%)                                                                                                               |                                                                                                                     |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] |                                      | 4.99 - 6.00 (+V and -V are simultaneously adjusted)                                                                                      |                                                                                                                     | 9.60 - 13.2 (+V and -V are simultaneously adjusted) |                   | 13.2 - 16.5 (+V and -V are simultaneously adjusted) |             |                             |          |  |        |  |          |  |
| OUTPUT VOLTAGE SETTING[V]          |                                      | 4.99 - 5.30 (+V and -V CURRENT1)                                                                                                         |                                                                                                                     | 11.5 - 12.5 (+V and -V CURRENT1)                    |                   | 14.4 - 15.6 (+V and -V CURRENT1)                    |             |                             |          |  |        |  |          |  |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION               |                                                                                                                                          | Works over 105% of rated current and recovers automatically                                                         |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | OVERVOLTAGE PROTECTION[V]            |                                                                                                                                          | 6.90 - 10.0                                                                                                         |                                                     | 16.8 - 24.0       |                                                     | 20.0 - 29.0 |                             |          |  |        |  |          |  |
|                                    | OPERATING INDICATION                 |                                                                                                                                          | LED (Green)                                                                                                         |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | REMOTE ON/OFF                        |                                                                                                                                          | None                                                                                                                |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| ISOLATION                          | INPUT-OUTPUT                         |                                                                                                                                          | AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                      |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | INPUT-FG                             |                                                                                                                                          | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                      |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | OUTPUT-FG                            |                                                                                                                                          | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)                                        |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| ENVIRONMENT                        | OPERATING TEMP., HUMID. AND ALTITUDE |                                                                                                                                          | -10 to +71℃ (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max                                |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | STORAGE TEMP., HUMID. AND ALTITUDE   |                                                                                                                                          | -20 to +75℃, 20 - 90%RH (Non condensing) 9,000m (30,000feet) max                                                    |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | VIBRATION                            |                                                                                                                                          | 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis                         |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | IMPACT                               |                                                                                                                                          | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis                                                        |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| SAFETY AND NOISE REGULATIONS       | AGENCY APPROVALS (At only AC input)  |                                                                                                                                          | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN                                                |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | CONDUCTED NOISE                      |                                                                                                                                          | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B                                            |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | HARMONIC ATTENUATOR                  |                                                                                                                                          | Complies with IEC61000-3-2 (Not built-in to active filter *7) *12                                                   |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
| OTHERS                             | CASE SIZE/WEIGHT                     |                                                                                                                                          | 31 x 78 x 103mm [1.22 x 3.07 x 4.06 inches] (without terminal block) (W x H x D) / 270g max (with cover : 310g max) |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |
|                                    | COOLING METHOD                       |                                                                                                                                          | Convection                                                                                                          |                                                     |                   |                                                     |             |                             |          |  |        |  |          |  |

- \*1 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN : RM101).  
\*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.  
\*3 Figures for 0 to rated current 1. The current not measured side is fixed.  
\*4 Figures for 0 to rated current 2. The current not measured

- side is fixed.  
\*5 The sum of +power -power must be less than output power.  
\*6 ±5, ±12, ±15 can be used as +10, +24 and +30.  
\*7 When two or more units are used, they may not comply with the harmonic attenuator. Please contact us for details.  
\*8 Derating is required.  
\*9 Figures to rated current 1.

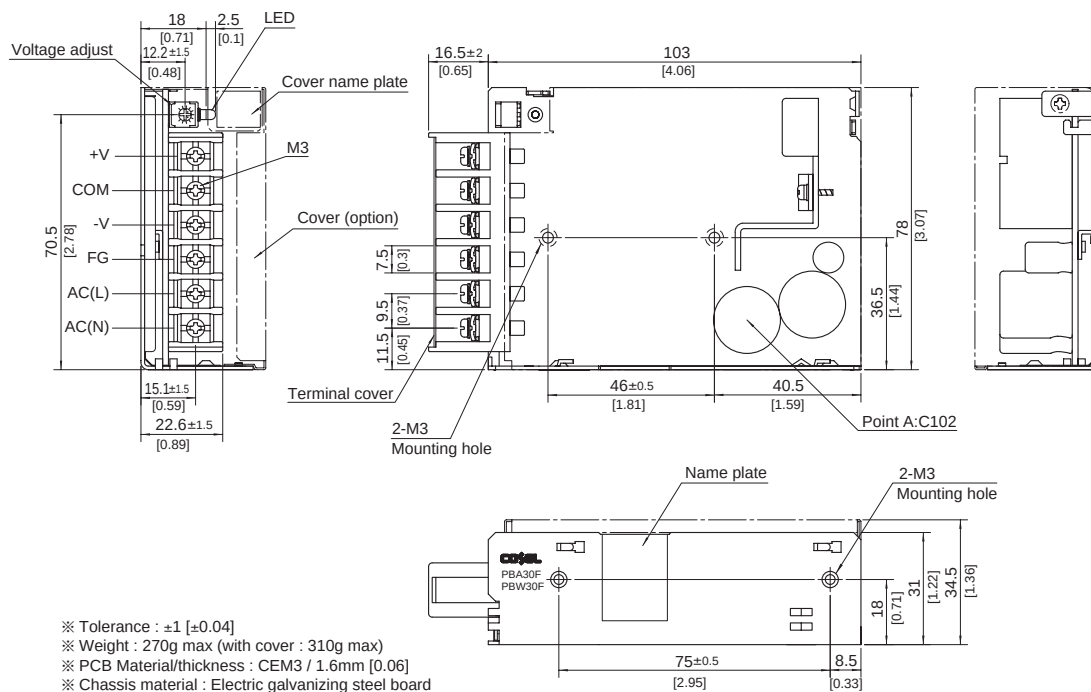
- \*10 Please contact us about safety approvals for the model with option.  
\*11 Please contact us about dynamic load and input response.  
\*12 Please contact us about class C.  
\* Parallel operation with other model is not possible.  
\* Derating is required when operated with cover.  
\* A sound may occur from power supply at peak loading.

## Block diagram

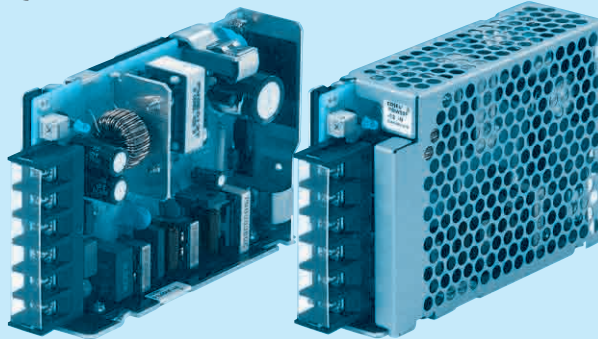


## External view

※ External size of option T,J,N,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



- ※ Tolerance :  $\pm 1$  [ $\pm 0.04$ ]
- ※ Weight : 270g max (with cover : 310g max)
- ※ PCB Material/thickness : CEM3 / 1.6mm [0.06]
- ※ Chassis material : Electric galvanizing steel board
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque :  $0.6\text{N} \cdot \text{m}$  (6.3kgf  $\cdot$  cm) max
- ※ Screw tightening torque : M3  $0.8\text{N} \cdot \text{m}$  (8.5kgf  $\cdot$  cm) max
- ※ Please connect safety ground to the unit in 2-M3 holes.

Recommended EMI/EMC Filter  
NAC-06-472

High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\* The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name  
② Dual output  
③ Output wattage  
④ Universal input  
⑤ Output voltage  
⑥ Optional \*9  
C : with Coating  
G : Low leakage current (0.15mA max / ACIN 240V)  
E : Low leakage current and EMI class A (0.5mA max / ACIN 240V)  
T : Vertical terminal block  
J : Connector type  
R : with Remote ON/OFF  
N : with Cover  
NI : with DIN rail  
V : Output voltage setting potentiometer external-ly

Cover is optional

| MODEL                 | PBW50F-5    | PBW50F-12   | PBW50F-15   |
|-----------------------|-------------|-------------|-------------|
| MAX OUTPUT WATTAGE[W] | 30          | 50.4        | 51          |
| VOLTAGE[V]            | ±5 ( +10 )  | ±12 ( +24 ) | ±15 ( +30 ) |
| DC OUTPUT             | CURRENT1[A] | 2.1         | 1.7         |
|                       | CURRENT2[A] | 2.7         | 2.4         |

## SPECIFICATIONS

|                               | MODEL                               | PBW50F-5                                                                                                | PBW50F-12                                           | PBW50F-15                                           |
|-------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|
| INPUT                         | VOLTAGE[V]                          | AC85 - 264 1φ or DC120 - 370 (AC50 or DC70 Please refer to the instruction manual 2.1 Input voltage *3) |                                                     |                                                     |
|                               | CURRENT[A]                          | ACIN 100V 0.45typ (CURRENT1)                                                                            | 0.70typ (CURRENT1)                                  |                                                     |
|                               |                                     | ACIN 200V 0.30typ (CURRENT1)                                                                            | 0.40typ (CURRENT1)                                  |                                                     |
|                               | FREQUENCY[Hz]                       | 50/60 (47 - 63)                                                                                         |                                                     |                                                     |
|                               | EFFICIENCY[%]                       | ACIN 100V 76typ (CURRENT1)                                                                              | 81typ (CURRENT1)                                    | 81typ (CURRENT1)                                    |
|                               |                                     | ACIN 200V 77typ (CURRENT1)                                                                              | 83typ (CURRENT1)                                    | 83typ (CURRENT1)                                    |
|                               | POWER FACTOR(10=100%)               | ACIN 100V 0.98typ                                                                                       | 0.99typ                                             |                                                     |
| OUTPUT                        |                                     | ACIN 200V 0.87typ                                                                                       | 0.93typ                                             |                                                     |
|                               | INRUSH CURRENT[A]                   | ACIN 100V 15typ (CURRENT1) (At cold start)                                                              |                                                     |                                                     |
|                               |                                     | ACIN 200V 30typ (CURRENT1) (At cold start)                                                              |                                                     |                                                     |
|                               | LEAKAGE CURRENT[ma]                 | 0.40/0.75max (ACIN 100V/240V 60Hz, 10=100%, According to IEC60950-1.DENAN)                              |                                                     |                                                     |
|                               | VOLTAGE[V]                          | ±5 / ( +10V reference number )                                                                          | ±12 / ( +24V reference number )                     | ±15 / ( +30V reference number )                     |
|                               | CURRENT1[A]                         | 3.0 / 3.0                                                                                               | 2.1 / 2.1                                           | 1.7 / 1.7                                           |
|                               | CURRENT2[A]                         | 4.0 / -                                                                                                 | 2.7 / -                                             | 2.4 / -                                             |
| PROTECTION CIRCUIT AND OTHERS | LINE REGULATION[mV]                 | 20max / 36max                                                                                           | 48max / 96max                                       | 60max / 96max                                       |
|                               | LOAD REGULATION 1[mV]               | 250max / 100max                                                                                         | 600max / 150max                                     | 600max / 150max                                     |
|                               | LOAD REGULATION 2[mV]               | 500max / -                                                                                              | 750max / -                                          | 750max / -                                          |
|                               | RIPPLE[mVp-p]                       | 0 to +50°C *1 80max / 240max                                                                            | 120max / 240max                                     | 120max / 240max                                     |
|                               |                                     | -10 - 0°C *1 140max / 320max                                                                            | 160max / 320max                                     | 160max / 320max                                     |
|                               |                                     | 0 to +50°C *1 120max / 300max                                                                           | 150max / 300max                                     | 150max / 300max                                     |
|                               |                                     | -10 - 0°C *1 160max / 360max                                                                            | 180max / 360max                                     | 180max / 360max                                     |
| ISOLATION                     | TEMPERATURE REGULATION[mV]          | 0 to +50°C 50max                                                                                        | 120max                                              | 150max                                              |
|                               |                                     | -10 to +50°C 60max                                                                                      | 150max                                              | 180max                                              |
|                               | DRIFT[mV]                           | *2 20max                                                                                                | 48max                                               | 60max                                               |
|                               | START-UP TIME[ms]                   | 350typ (ACIN 100V, 10=100%)                                                                             |                                                     |                                                     |
|                               | HOLD-UP TIME[ms]                    | 20typ (ACIN 100V, 10=100%)                                                                              |                                                     |                                                     |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V]  | 4.99 - 6.00 (+V and -V are simultaneously adjusted)                                                     | 9.60 - 13.2 (+V and -V are simultaneously adjusted) | 13.2 - 16.5 (+V and -V are simultaneously adjusted) |
|                               | OUTPUT VOLTAGE SETTING[V]           | 4.99 - 5.30 (+V and -V CURRENT1)                                                                        | 11.5 - 12.5 (+V and -V CURRENT1)                    | 14.4 - 15.6 (+V and -V CURRENT1)                    |
| ENVIRONMENT                   | OVERCURRENT PROTECTION              | Works over 105% of rated current and recovers automatically                                             |                                                     |                                                     |
|                               | OVERVOLTAGE PROTECTION[V]           | 6.90 - 10.0                                                                                             | 16.8 - 24.0                                         | 20.0 - 29.0                                         |
|                               | OPERATING INDICATION                | LED (Green)                                                                                             |                                                     |                                                     |
|                               | REMOTE ON/OFF                       | Optional (Required external power source)                                                               |                                                     |                                                     |
|                               | INPUT-OUTPUT · RC                   | *7 AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                       |                                                     |                                                     |
|                               | INPUT-FG                            | AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                          |                                                     |                                                     |
|                               | OUTPUT · RC-FG                      | *7 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)                        |                                                     |                                                     |
| SAFETY AND NOISE REGULATIONS  | OPERATING TEMP.HUMID.AND ALTITUDE   | -10 to +71°C (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max                   |                                                     |                                                     |
|                               | STORAGE TEMP.HUMID.AND ALTITUDE     | -20 to +75°C, 20 - 90%RH (Non condensing) 9,000m (30,000feet) max                                       |                                                     |                                                     |
|                               | VIBRATION                           | 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis             |                                                     |                                                     |
|                               | IMPACT                              | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis                                            |                                                     |                                                     |
|                               | AGENCY APPROVALS (At only AC input) | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN                                    |                                                     |                                                     |
|                               | CONDUCTED NOISE                     | Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B                                |                                                     |                                                     |
|                               | HARMONIC ATTENUATOR                 | Complies with IEC61000-3-2 *10                                                                          |                                                     |                                                     |
| OTHERS                        | CASE SIZE/WEIGHT                    | 31×82×120mm [1.22×3.23×4.72 inches] (without terminal block) (W×H×D) / 280g max (with cover : 325g max) |                                                     |                                                     |
|                               | COOLING METHOD                      | Convection                                                                                              |                                                     |                                                     |

\*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN : RM101).

\*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.

\*3 Derating is required.

\*4 Figures for 0 to rated current 1.The current not measured side is fixed.

\*5 Figures for 0 to rated current 2.The current not measured side is fixed.

\*6 The sum of +power -power must be less than output power.

\*7 RC is applied to remote ON/OFF option. RC is isolated with input/output and FG.

\*8 ±5, ±12, ±15 can be used as +10, +24 and +30.

\*9 Please contact us about safety approvals for the model with option.

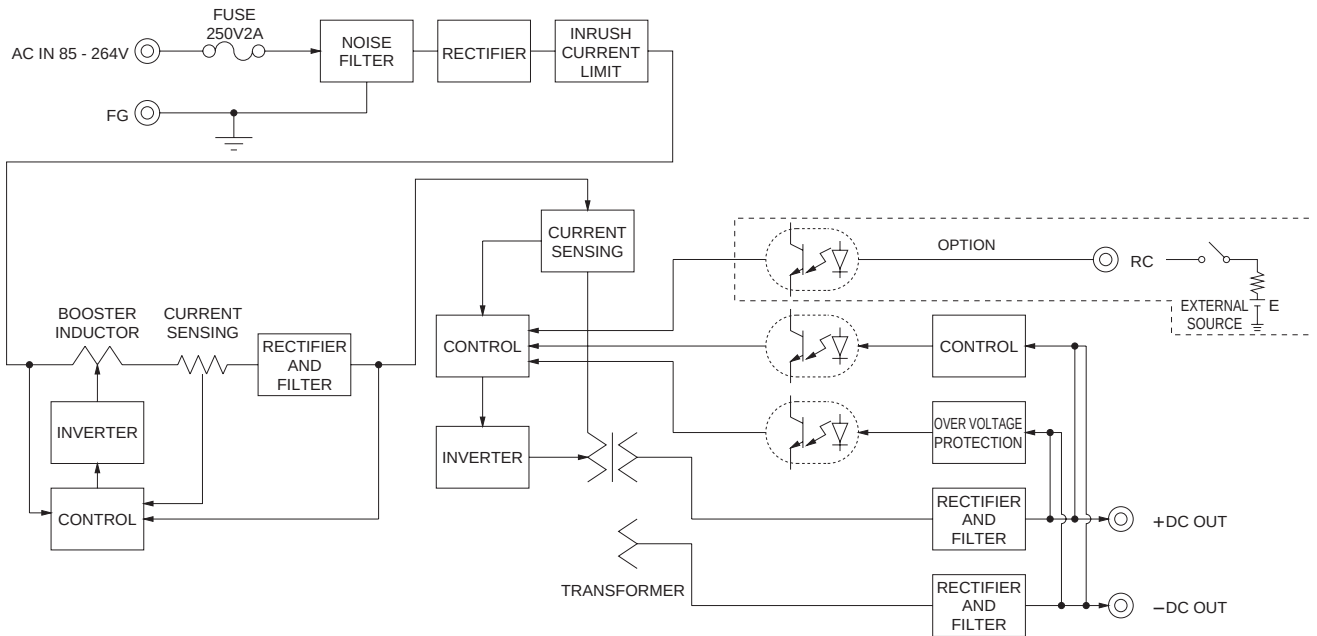
\*10 Please contact us about class C.

\* Parallel operation with other model is not possible.

\* Derating is required when operated with cover.

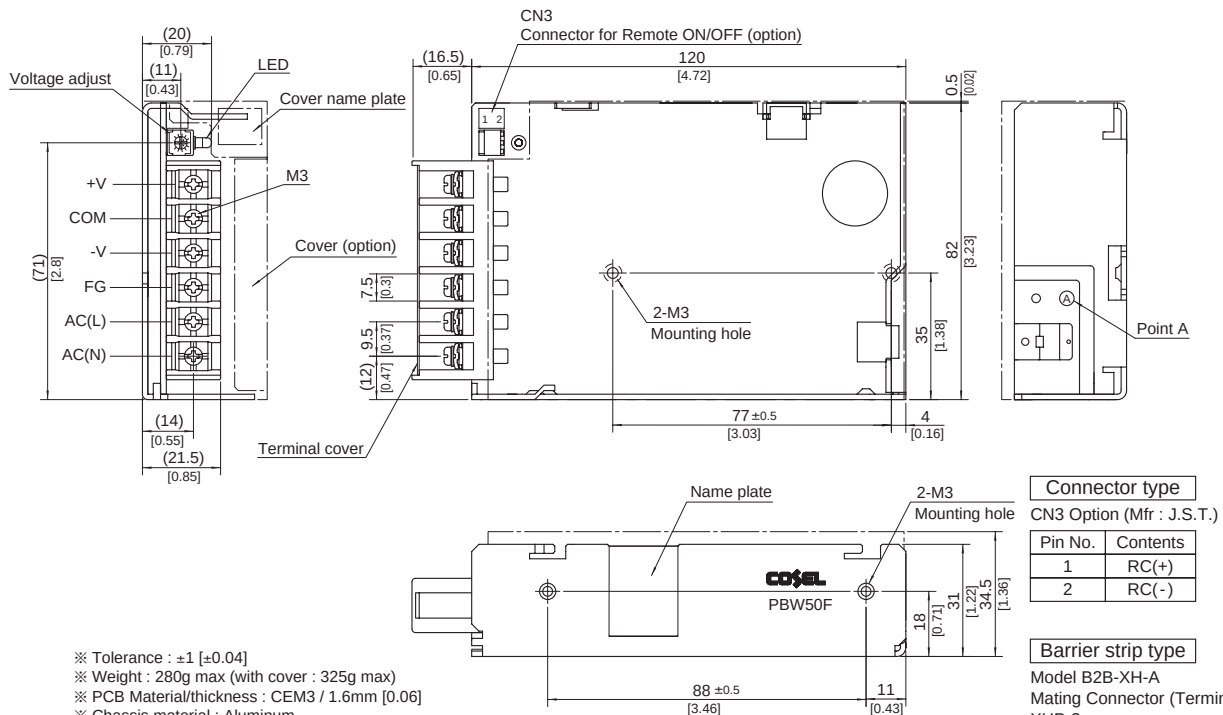
\* A sound may occur from power supply at peak loading.

## Block diagram



## External view

※ External size of option T,J,R,N,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



- ※ Tolerance :  $\pm 1$  [ $\pm 0.04$ ]
- ※ Weight : 280g max (with cover : 325g max)
- ※ PCB Material/thickness : CEM3 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 0.49N • m (5kgf • cm) max
- ※ Screw tightening torque : M3 0.8N • m (8.5kgf • cm) max
- ※ Please connect safety ground to the unit in 2-M3 holes.

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