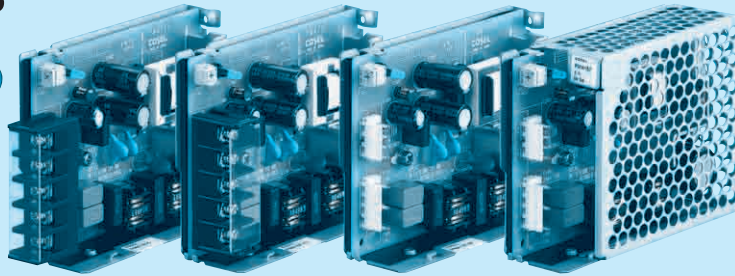


PMA15F

① PM ② A ③ 15 ④ F ⑤ -□ ⑥ -□



Horizontal terminal block (option : -T1) Vertical terminal block (option : -T) Standard type with Cover (option : -N)

Recommended EMI/EMC Filter
NAM-04-000



Low leakage current type : NAM series
*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *5
- T : Vertical terminal block
- T1 : Horizontal terminal block
- N : with Cover
- J1 : VH(J.S.T.)connector type

Specification is changed at option, refer to Instruction Manual.

| MODEL | PMA15F-3R3 | PMA15F-5 | PMA15F-12 | PMA15F-15 | PMA15F-24 |
|-----------------------|------------|----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 9.9 | 15 | 15.6 | 15 | 16.8 |
| DC OUTPUT | 3.3V 3A | 5V 3A | 12V 1.3A | 15V 1A | 24V 0.7A |

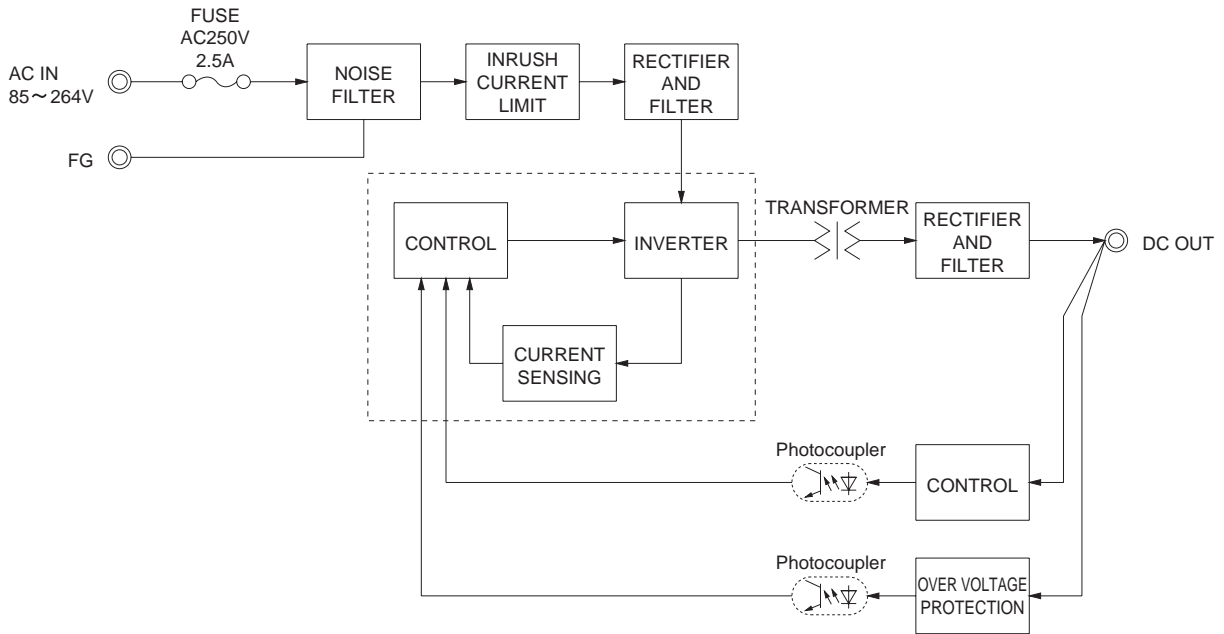
SPECIFICATIONS

| | MODEL | PMA15F-3R3 | PMA15F-5 | PMA15F-12 | PMA15F-15 | PMA15F-24 | |
|------------------------------------|---|---|-------------------|-------------------|----------------|----------------|--------|
| INPUT | VOLTAGE[V] | AC85 - 264 1φ (Refer to the Instruction Manual 1.1 and 3.2) *3 | | | | | |
| | CURRENT[A] | ACIN 100V | 0.30typ (Io=100%) | 0.40typ (Io=100%) | | | |
| | | ACIN 200V | 0.15typ (Io=100%) | 0.20typ (Io=100%) | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 440) | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 66typ | 70typ | 74typ | 76typ | 76typ |
| | | ACIN 200V | 67typ | 74typ | 78typ | 79typ | 79typ |
| INRUSH CURRENT[A] | ACIN 100V | 15typ (Io=100%) (At cold start) | | | | | |
| | ACIN 200V | 30typ (Io=100%) (At cold start) | | | | | |
| LEAKAGE CURRENT[ma] | 0.05/0.10max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1) | | | | | | |
| OUTPUT | VOLTAGE[V] | 3.3 | 5 | 12 | 15 | 24 | |
| | CURRENT[A] | 3.0 | 3.0 | 1.3 | 1.0 | 0.7 | |
| | LINE REGULATION[mV] | 20max | 20max | 48max | 60max | 96max | |
| | LOAD REGULATION[mV] | 40max | 40max | 100max | 120max | 150max | |
| | RIPPLE[mVp-p] | *1 | 0 to +50°C | 80max | 80max | 120max | 120max |
| | | | -10 - 0°C | 140max | 140max | 160max | 160max |
| | RIPPLE NOISE[mVp-p] | *1 | 0 to +50°C | 120max | 120max | 150max | 150max |
| | | | -10 - 0°C | 160max | 160max | 180max | 180max |
| | TEMPERATURE REGULATION[mV] | *1 | 0 to +50°C | 50max | 50max | 120max | 150max |
| | | | -10 to +50°C | 60max | 60max | 150max | 180max |
| | DRIFT[mV] | *2 | 20max | 20max | 48max | 60max | 96max |
| 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] | 2.85 to 3.60 | | 4.50 to 5.50 | | 10.00 to 13.20 | 13.20 to 18.00 | |
| OUTPUT VOLTAGE SETTING[V] | 3.30 to 3.40 | | 5.00 to 5.15 | | 12.00 to 12.48 | 15.00 to 15.60 | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | |
| | OVERVOLTAGE PROTECTION[V] | 4.00 to 5.25 | 5.75 to 7.00 | 15.00 to 18.00 | 20.00 to 25.00 | 30.00 to 37.00 | |
| | OPERATING INDICATION | LED (Green) | | | | | |
| | REMOTE ON/OFF | Not provided | | | | | |
| ISOLATION | INPUT-OUTPUT | AC4,000V 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 +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max *3 | | | | | |
| | STORAGE TEMP., HUMID. AND ALTITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max | | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1 | | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B | | | | | |
| | HARMONIC ATTENUATOR | Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter *4) | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 31 X 78 X 103mm [1.22 X 3.07 X 4.06 inches] (W X H X D) / 230g max (with cover : 265g 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 When two or more units are used, they may not comply with the harmonic attenuator. Please contact us for details.

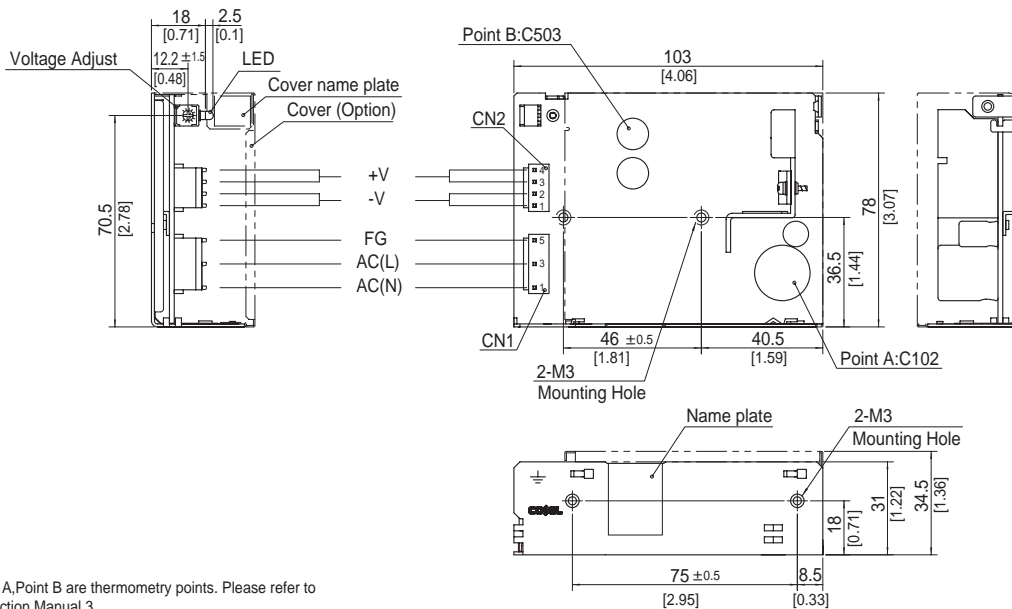
*5 Please contact us about safety approvals for the model with option.
 *6 Please contact us about another class.
 * Parallel operation with other model is not possible.
 * Derating is required when operated with cover.
 * A sound may occur from power supply at peak loading.

Block diagram



External view

※ External size of option T,T1 and N is different from standard model and refer to 4 Option of instruction manual for details.



※ Point A,Point B are thermometry points. Please refer to Instruction Manual 3.

| I/O Connector | Mating Connector | Terminal |
|---------------|------------------|-----------------|
| CN1 | 1-1123722-5 | Chain 1123721-1 |
| | | Loose 1318912-1 |
| CN2 | 1-1123722-4 | Chain 1123721-1 |
| | | Loose 1318912-1 |

(Mfr : Tyco Electronics AMP)

※ I/O Connector is Mfr.Tyco Electronics AMP
 ※ Option : -J1 : (J.S.T) connector type
 -T : Vertical terminal block type
 -T1 : Horizontal terminal block type
 Refer to Instruction Manual 4.

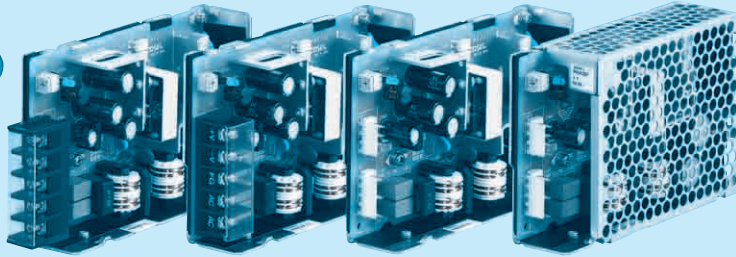
<PIN CONNECTION>

| Pin No. | Input | Pin No. | Output |
|---------|-------|---------|--------|
| 1 | AC(N) | 1, 2 | -V |
| 2 | | 3, 4 | +V |
| 3 | AC(L) | | |
| 4 | | | |
| 5 | FG | | |

※ Tolerance : ±1 [±0.04]
 ※ Weight : 230g max (with cover : 265g max)
 ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
 ※ Chassis material : Electric galvanizing steel board
 ※ Keep drawing current per pin below 5A of CN2.
 ※ Dimensions in mm, []=inches
 ※ Mounting torque : 0.6N · m (6.3kgf · cm) max
 ※ Please connect safety ground to the unit in 2-M3 holes.

PMA30F

① PM ② A ③ 30 ④ F ⑤ -□ ⑥ -□



Horizontal terminal block (option : -T1) Vertical terminal block (option : -T) Standard type with Cover (option : -N)

Recommended EMI/EMC Filter
NAM-04-000



Low leakage current type : NAM series
*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *5
- T : Vertical terminal block
- T1 : Horizontal terminal block
- N : with Cover
- J1 : VH(J.S.T.)connector type

Specification is changed at option, refer to Instruction Manual.

| MODEL | PMA30F-3R3 | PMA30F-5 | PMA30F-12 | PMA30F-15 | PMA30F-24 |
|-----------------------|------------|----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 19.8 | 30 | 30 | 30 | 31.2 |
| DC OUTPUT | 3.3V 6A | 5V 6A | 12V 2.5A | 15V 2A | 24V 1.3A |

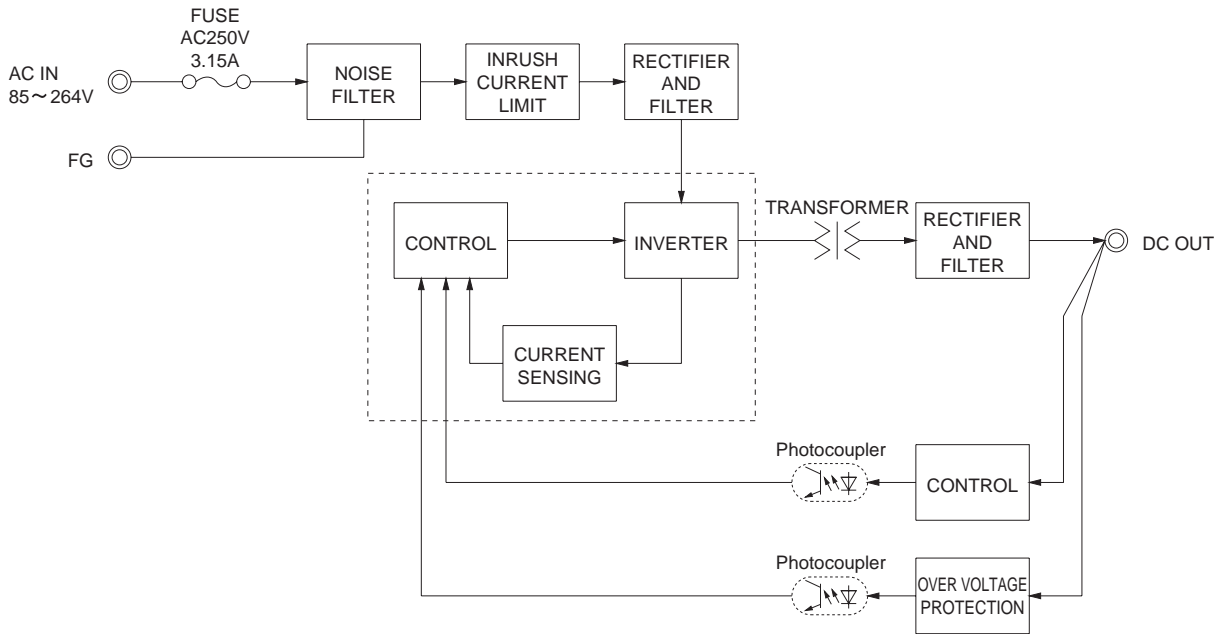
SPECIFICATIONS

| | MODEL | PMA30F-3R3 | PMA30F-5 | PMA30F-12 | PMA30F-15 | PMA30F-24 | |
|------------------------------------|---|---|-------------------|-------------------|----------------|----------------|--------|
| INPUT | VOLTAGE[V] | AC85 - 264 1φ (Refer to the Instruction Manual 1.1 and 3.2) *3 | | | | | |
| | CURRENT[A] | ACIN 100V | 0.50typ (Io=100%) | 0.70typ (Io=100%) | | | |
| | | ACIN 200V | 0.30typ (Io=100%) | 0.40typ (Io=100%) | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 440) | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 67typ | 71typ | 76typ | 77typ | 77typ |
| | | ACIN 200V | 69typ | 74typ | 78typ | 80typ | 80typ |
| INRUSH CURRENT[A] | ACIN 100V | 15typ (Io=100%) (At cold start) | | | | | |
| | ACIN 200V | 30typ (Io=100%) (At cold start) | | | | | |
| LEAKAGE CURRENT[mA] | 0.05 / 0.10max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1) | | | | | | |
| OUTPUT | VOLTAGE[V] | 3.3 | 5 | 12 | 15 | 24 | |
| | CURRENT[A] | 6.0 | 6.0 | 2.5 | 2.0 | 1.3 | |
| | LINE REGULATION[mV] | 20max | 20max | 48max | 60max | 96max | |
| | LOAD REGULATION[mV] | 40max | 40max | 100max | 120max | 150max | |
| | RIPPLE[mVp-p] | *1 | 0 to +50°C | 80max | 80max | 120max | 120max |
| | | | -10 - 0°C | 140max | 140max | 160max | 160max |
| | RIPPLE NOISE[mVp-p] | *1 | 0 to +50°C | 120max | 120max | 150max | 150max |
| | | | -10 - 0°C | 160max | 160max | 180max | 180max |
| | TEMPERATURE REGULATION[mV] | *1 | 0 to +50°C | 50max | 50max | 120max | 150max |
| | | | -10 to +50°C | 60max | 60max | 150max | 180max |
| | DRIFT[mV] | *2 | 20max | 20max | 48max | 60max | 96max |
| 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] | 2.85 to 3.60 | | 4.50 to 5.50 | | 10.00 to 13.20 | 13.20 to 18.00 | |
| OUTPUT VOLTAGE SETTING[V] | 3.30 to 3.40 | | 5.00 to 5.15 | | 12.00 to 12.48 | 15.00 to 15.60 | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | |
| | OVERVOLTAGE PROTECTION[V] | 4.00 to 5.25 | 5.75 to 7.00 | 15.00 to 18.00 | 20.00 to 25.00 | 30.00 to 37.00 | |
| | OPERATING INDICATION | LED (Green) | | | | | |
| | REMOTE ON/OFF | Not provided | | | | | |
| ISOLATION | INPUT-OUTPUT | AC4,000V 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 +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *3 | | | | | |
| | 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 ² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1 | | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B | | | | | |
| | HARMONIC ATTENUATOR | Complies with IEC61000-3-2 (Class A) *6 (Not built-in to active filter *4) | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 31 X 82 X 120mm [1.22 X 3.23 X 4.72 inches] (W X H X D) / 240g max (with cover : 280g 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 When two or more units are used, they may not comply with the harmonic attenuator. Please contact us for details.

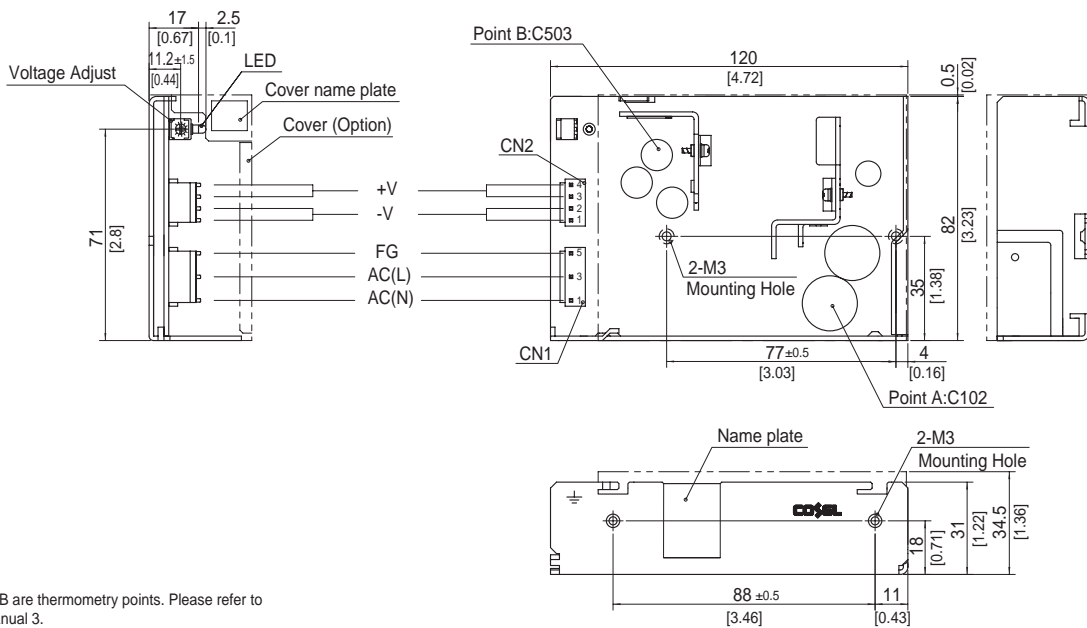
*5 Please contact us about safety approvals for the model with option.
 *6 Please contact us about another class.
 * Parallel operation with other model is not possible.
 * Derating is required when operated with cover.
 * A sound may occur from power supply at peak loading.

Block diagram



External view

※ External size of option T, T1 and N is different from standard model and refer to 4 Option of instruction manual for details.



※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

| I/O Connector | Mating Connector | Terminal |
|---------------|------------------|-----------------|
| CN1 | 1-1123724-3 | Chain 1123721-1 |
| | | Loose 1318912-1 |
| CN2 | 1-1123723-4 | Chain 1123721-1 |
| | | Loose 1318912-1 |

(Mfr: Tyco Electronics AMP)

※ I/O Connector is Mfr. Tyco Electronics AMP
 ※ Option : -J1 : (J.S.T) connector type
 -T : Vertical terminal block type
 -T1 : Horizontal terminal block type
 Refer to Instruction Manual 4.

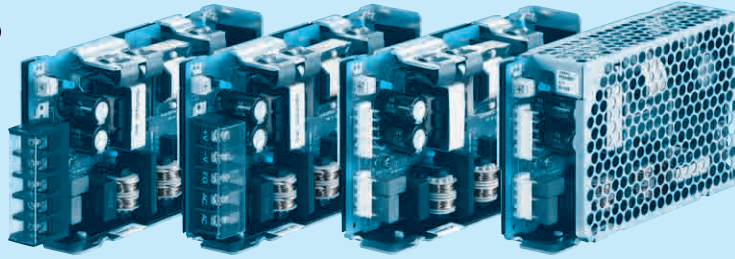
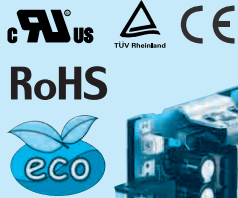
<PIN CONNECTION>

| CN1 | | CN2 | |
|---------|-------|---------|--------|
| Pin No. | Input | Pin No. | Output |
| 1 | AC(N) | 1, 2 | -V |
| 2 | | 3, 4 | +V |
| 3 | AC(L) | | |
| 4 | | | |
| 5 | FG | | |

※ Tolerance : ± 1 [± 0.04]
 ※ Weight : 240g max (with cover : 280g max)
 ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
 ※ Chassis material : Aluminum
 ※ Keep drawing current per pin below 5A of CN2.
 ※ Dimensions in mm, [] = inches
 ※ Mounting torque : 0.49N · m (5kgf · cm) max
 ※ Please connect safety ground to the unit in 2-M3 holes.

PMA60F

① PM ② A ③ 60 ④ F ⑤ -□ ⑥ -□



Horizontal terminal block (option : -T1) Vertical terminal block (option : -T) Standard type with Cover (option : -N)

Recommended EMI/EMC Filter
NAM-04-000



Low leakage current type : NAM series
*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *5
- T : Vertical terminal block
- T1 : Horizontal terminal block
- N : with Cover
- J1 : VH(J.S.T.)connector type
- R : with Remote ON/OFF

Specification is changed at option, refer to Instruction Manual.

| MODEL | PMA60F-3R3 | PMA60F-5 | PMA60F-12 | PMA60F-15 | PMA60F-24 |
|-----------------------|------------|----------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 39.6 | 60 | 60 | 60 | 60 |
| DC OUTPUT | 3.3V 12A | 5V 12A | 12V 5A | 15V 4A | 24V 2.5A |

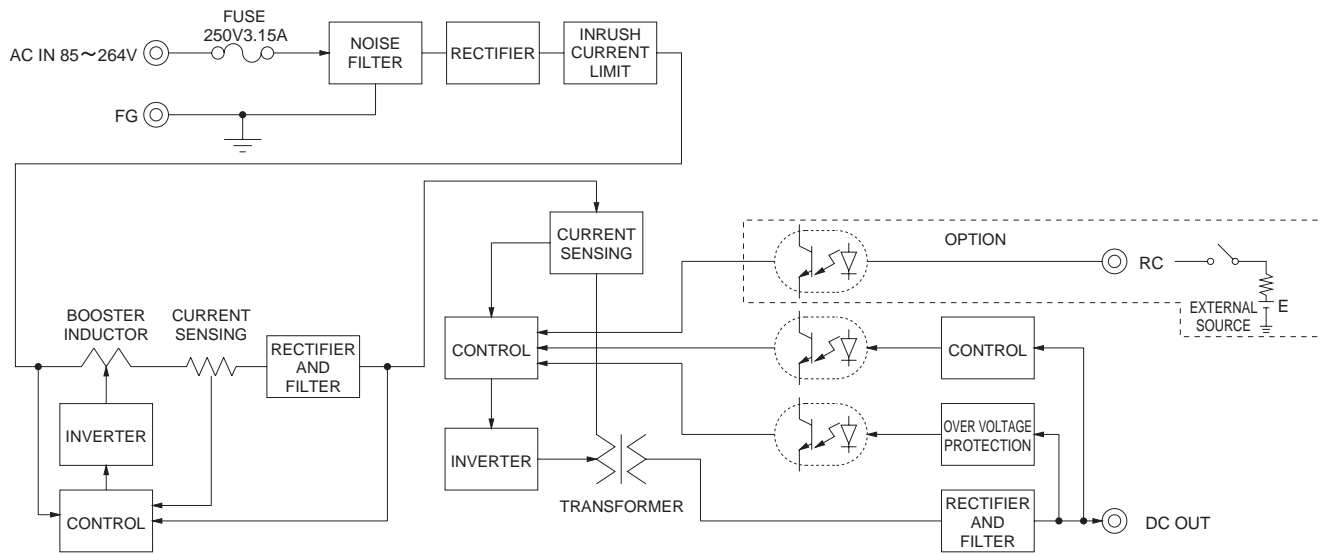
SPECIFICATIONS

| | MODEL | PMA60F-3R3 | PMA60F-5 | PMA60F-12 | PMA60F-15 | PMA60F-24 | |
|------------------------------------|--|---|--|------------------|----------------|----------------|--------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Refer to the Instruction Manual 1.1) | | | | | |
| | CURRENT[A] | ACIN 100V | 0.7typ (Io=100%) | 0.8typ (Io=100%) | | | |
| | | ACIN 200V | 0.4typ (Io=100%) | 0.5typ (Io=100%) | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 63) | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 77typ | 80typ | 80typ | 81typ | 81typ |
| | | ACIN 200V | 78typ | 83typ | 82typ | 83typ | 83typ |
| | POWER FACTOR (Io=100%) | ACIN 100V | 0.98typ | | | | |
| | | ACIN 200V | 0.85typ | | 0.90typ | | |
| INRUSH CURRENT[A] | ACIN 100V | 15typ (Io=100%) (At cold start) | | | | | |
| | ACIN 200V | 30typ (Io=100%) (At cold start) | | | | | |
| LEAKAGE CURRENT[ma] | 0.09 / 0.18max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1) | | | | | | |
| OUTPUT | VOLTAGE[V] | 3.3 | 5 | 12 | 15 | 24 | |
| | CURRENT[A] | 12.0 | 12.0 | 5.0 | 4.0 | 2.5 | |
| | LINE REGULATION[mV] | 20max | | | | | |
| | LOAD REGULATION[mV] | 40max | | | | | |
| | RIPPLE[mVp-p] | *1 | 0 to +50°C | 80max | 80max | 120max | 120max |
| | | | -10 - 0°C | 140max | 140max | 160max | 160max |
| | RIPPLE NOISE[mVp-p] | *1 | 0 to +50°C | 120max | 120max | 150max | 150max |
| | | | -10 - 0°C | 160max | 160max | 180max | 180max |
| | TEMPERATURE REGULATION[mV] | *1 | 0 to +50°C | 50max | 50max | 120max | 240max |
| | | | -10 to +50°C | 60max | 60max | 150max | 180max |
| | DRIFT[mV] | *2 | 20max | 20max | 48max | 60max | 96max |
| | START-UP TIME[ms] | 250typ (ACIN 100V, Io=100%) | | | | | |
| HOLD-UP TIME[ms] | 20typ (ACIN 100V, Io=100%) | | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 2.85 to 3.60 | 4.50 to 5.50 | 10.00 to 13.20 | 13.20 to 18.00 | 19.20 to 27.00 | | |
| OUTPUT VOLTAGE SETTING[V] | 3.30 to 3.40 | 5.00 to 5.15 | 12.00 to 12.48 | 15.00 to 15.60 | 24.00 to 24.96 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | |
| | OVERVOLTAGE PROTECTION[V] | 4.00 to 5.25 | 5.75 to 7.00 | 15.00 to 18.00 | 20.00 to 25.00 | 30.00 to 37.00 | |
| | OPERATING INDICATION | LED (Green) | | | | | |
| | REMOTE ON/OFF | Optional (Required external power source) | | | | | |
| ISOLATION | INPUT-OUTPUT-RC | *3 | AC4,000V 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 | *3 | AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) | | | | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTIITUDE | -10 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *4 | | | | | |
| | STORAGE TEMP.,HUMID.AND ALTIITUDE | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max | | | | | |
| | VIBRATION | 10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1 | | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B | | | | | |
| | HARMONIC ATTENUATOR | Complies with IEC61000-3-2 *6 | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 32 X 82 X 135mm [1.26 X 3.23 X 5.31 inches] (W X H X D) / 350g max (with cover : 395g 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 Applicable when Remote ON/OFF (optional) is added. RC is insulated with input, output and FG.
 *4 Derating is required.
 *5 Please contact us about safety approvals for the model with option.

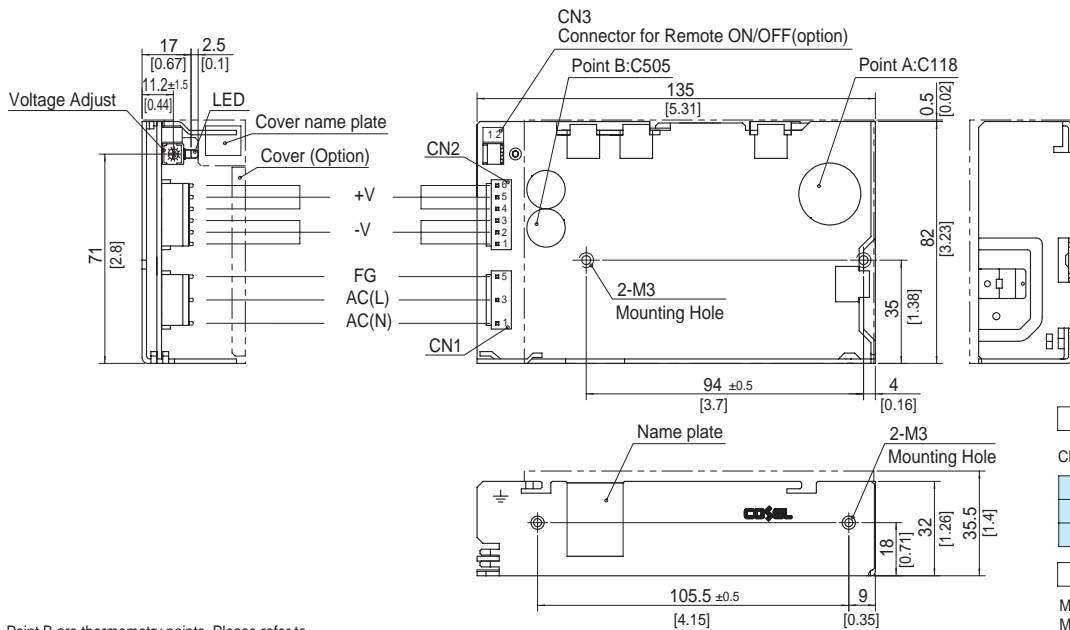
*6 Please contact us about class C.
 * Parallel operation with other model is not possible.
 * Derating is required when operated with cover.
 * A sound may occur from power supply at peak loading.

Block diagram



External view

※ External size of option T,T1,R and N is different from standard model and refer to 4 Option of instruction manual for details.



※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

| I/O Connector | Mating Connector | Terminal |
|---------------|------------------|-----------------------------|
| CN1 | 1-1123724-3 | 1-1123722-5 Chain 1123721-1 |
| | | Loose 1318912-1 |
| CN2 | 1-1123723-6 | 1-1123722-6 Chain 1123721-1 |
| | | Loose 1318912-1 |

(Mfr: Tyco Electronics AMP)

※ I/O Connector is Mfr. Tyco Electronics AMP
 ※ Option : -J1 : (J.S.T) connector type
 -T : Vertical terminal block type
 -T1 : Horizontal terminal block type
 Refer to Instruction Manual 4.

<PIN CONNECTION>

| Pin No. | Input |
|---------|-------|
| 1 | AC(N) |
| 2 | |
| 3 | AC(L) |
| 4 | |
| 5 | FG |

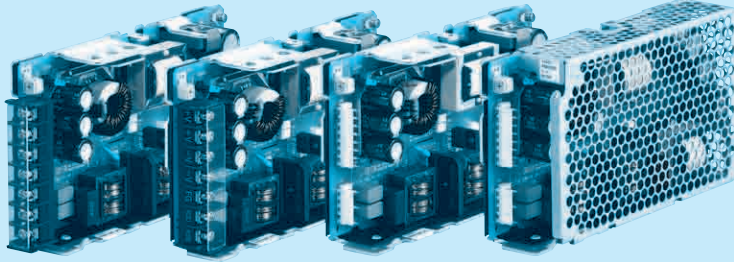
| Pin No. | Output |
|---------|--------|
| 1 - 3 | -V |
| 4 - 6 | +V |

- ※ Tolerance : ± 1 [± 0.04]
- ※ Weight : 350g max (with cover : 395g max)
- ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
- ※ Chassis material : Aluminum
- ※ Keep drawing current per pin below 5A of CN2.
- ※ Dimensions in mm, []=inches
- ※ Mounting torque : 0.49N · m (5kgf · cm) max
- ※ Please connect safety ground to the unit in 2-M3 holes.

| Connector type | |
|----------------------------------|----------|
| CN3 Option (Mfr:J.S.T) | |
| PIN No. | Contents |
| 1 | RC(+) |
| 2 | RC(-) |
| Barrier strip type | |
| Model B2B-XH-A | |
| Mating Connector (Terminal) | |
| XHP-2 | |
| (BXH-001T-P0.6 or SXH-001T-P0.6) | |

PMA100F

① PM ② A ③ 100 ④ F ⑤ -□ ⑥ -□



Horizontal terminal block (option : -T) Vertical terminal block (option : -T) Standard type with Cover (option : -N)

Recommended EMI/EMC Filter
NAM-06-000



Low leakage current type : NAM series
*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *5
- T : Vertical terminal block
- T1 : Horizontal terminal block
- N : with Cover
- J1 : VH(J.S.T.)connector type
- R : with Remote ON/OFF

Specification is changed at option, refer to Instruction Manual.

| MODEL | PMA100F-3R3 | PMA100F-5 | PMA100F-12 | PMA100F-24 | PMA100F-48 |
|-----------------------|-------------|-----------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 66 | 100 | 102 | 108 | 100.8 |
| DC OUTPUT | 3.3V 20A | 5V 20A | 12V 8.5A | 24V 4.5A | 48V 2.1A |

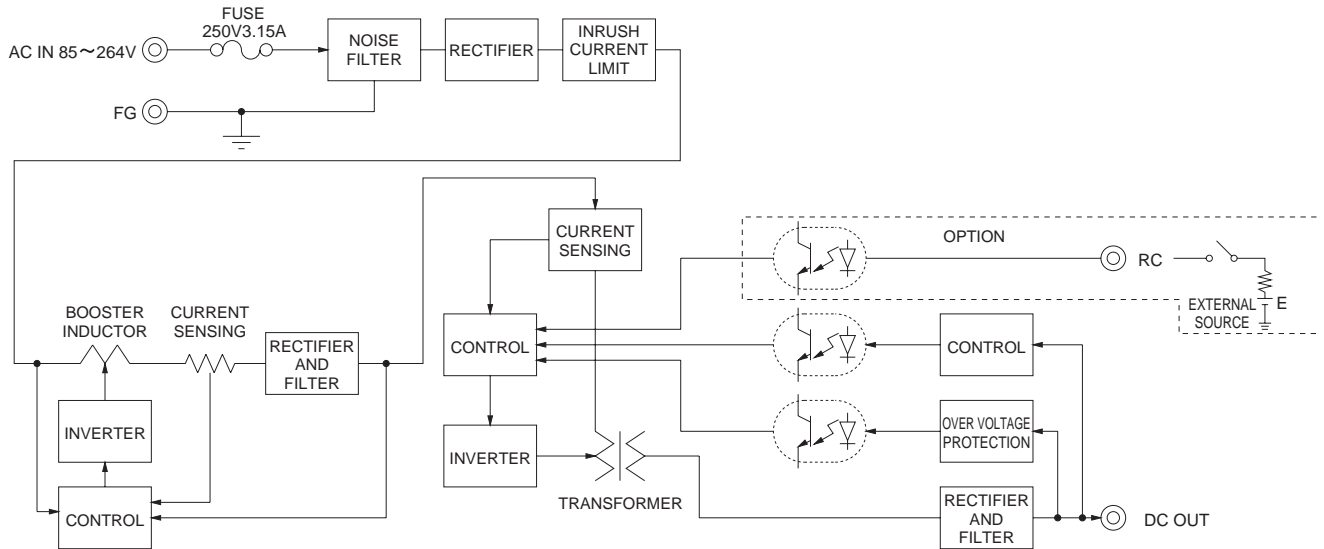
SPECIFICATIONS

| | MODEL | PMA100F-3R3 | PMA100F-5 | PMA100F-12 | PMA100F-24 | PMA100F-48 | |
|------------------------------------|--|---|------------------|------------------|----------------|----------------|--------|
| INPUT | VOLTAGE[V] | AC85 - 264 1 φ (Refer to the Instruction Manual 1.1) | | | | | |
| | CURRENT[A] | ACIN 100V | 0.9typ (Io=100%) | 1.3typ (Io=100%) | | | |
| | | ACIN 200V | 0.5typ (Io=100%) | 0.7typ (Io=100%) | | | |
| | FREQUENCY[Hz] | 50 / 60 (47 - 63) | | | | | |
| | EFFICIENCY[%] | ACIN 100V | 77typ | 81typ | 82typ | 84typ | 84typ |
| | | ACIN 200V | 78typ | 83typ | 83typ | 86typ | 86typ |
| | POWER FACTOR (Io=100%) | ACIN 100V | 0.98typ | | 0.90typ | | |
| | | ACIN 200V | 0.85typ | | 0.90typ | | |
| INRUSH CURRENT[A] | ACIN 100V | 20typ (Io=100%) (At cold start) | | | | | |
| | ACIN 200V | 40typ (Io=100%) (At cold start) | | | | | |
| LEAKAGE CURRENT[mA] | 0.09 / 0.18max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60601-1) | | | | | | |
| OUTPUT | VOLTAGE[V] | 3.3 | 5 | 12 | 24 | 48 | |
| | CURRENT[A] | 20.0 | 20.0 | 8.5 | 4.5 | 2.1 | |
| | LINE REGULATION[mV] | 20max | 20max | 48max | 96max | 192max | |
| | LOAD REGULATION[mV] | 40max | 40max | 100max | 150max | 240max | |
| | RIPPLE[mVp-p] | 0 to +50°C | 80max | 80max | 120max | 150max | 150max |
| | | *1 -10 - 0°C | 140max | 140max | 160max | 160max | 200max |
| | RIPPLE NOISE[mVp-p] | 0 to +50°C | 120max | 120max | 150max | 150max | 250max |
| | | *1 -10 - 0°C | 160max | 160max | 180max | 180max | 300max |
| | TEMPERATURE REGULATION[mV] | 0 to +50°C | 50max | 50max | 120max | 240max | 480max |
| | | *1 -10 to +50°C | 60max | 60max | 150max | 290max | 600max |
| | DRIFT[mV] | *2 | 20max | 20max | 48max | 96max | 192max |
| | START-UP TIME[ms] | 250typ (ACIN 100V, Io=100%) | | | | | |
| | HOLD-UP TIME[ms] | 20typ (ACIN 100V, Io=100%) | | | | | |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 2.85 to 3.60 | 4.50 to 5.50 | 10.00 to 13.20 | 19.20 to 27.00 | 39.00 to 53.00 | | |
| OUTPUT VOLTAGE SETTING[V] | 3.30 to 3.40 | 5.00 to 5.15 | 12.00 to 12.48 | 24.00 to 24.96 | 48.00 to 49.92 | | |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION | Works over 105% of rating and recovers automatically | | | | | |
| | OVERVOLTAGE PROTECTION[V] | 4.00 to 5.25 | 5.75 to 7.00 | 15.00 to 18.00 | 30.00 to 37.00 | 58.00 to 65.00 | |
| | OPERATING INDICATION | LED (Green) | | | | | |
| | REMOTE ON/OFF | Optional (Required external power source) | | | | | |
| ISOLATION | INPUT-OUTPUT-RC | *3 AC4,000V 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 | *3 AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) | | | | | |
| ENVIRONMENT | OPERATING TEMP.,HUMID.AND ALTITUDE | -10 to +70°C, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *4 | | | | | |
| | 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 ² (2G), 3minutes period, 60minutes each along X, Y and Z axis | | | | | |
| | IMPACT | 196.1m/s ² (20G), 11ms, once each X, Y and Z axis | | | | | |
| SAFETY AND NOISE REGULATIONS | AGENCY APPROVALS | UL60601-1, C-UL (CSA-C22.2 No.601.1), EN60601-1 | | | | | |
| | CONDUCTED NOISE | Complies with FCC-B, VCCI-B, CISPR11-B, CISPR22-B, EN55011-B, EN55022-B | | | | | |
| | HARMONIC ATTENUATOR | Complies with IEC61000-3-2 *6 | | | | | |
| OTHERS | CASE SIZE/WEIGHT | 34 X 93 X 168mm [1.34 X 3.66 X 6.61 inches] (W X H X D) / 560g max (with cover : 625g 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 Applicable when Remote ON/OFF (optional) is added. RC is insulated with input, output and FG.
 *4 Derating is required.
 *5 Please contact us about safety approvals for the model with option.

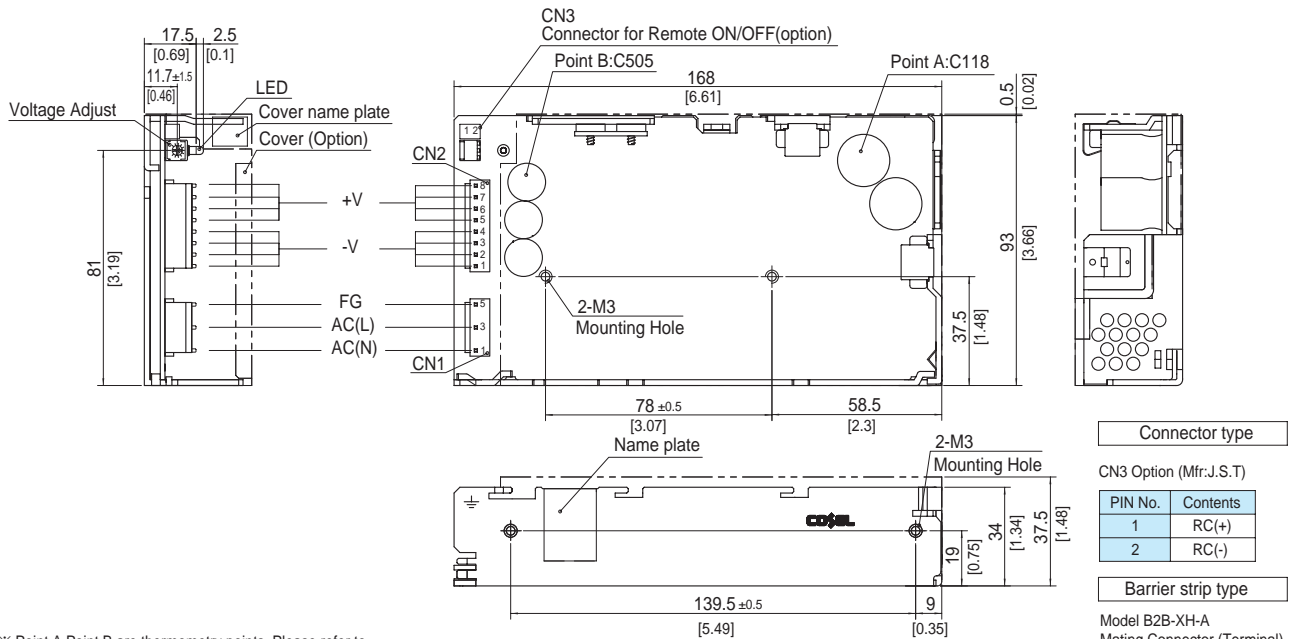
*6 Please contact us about class C.
 * Parallel operation with other model is not possible.
 * Derating is required when operated with cover.
 * A sound may occur from power supply at peak loading.

Block diagram



External view

※ External size of option T, T1, R and N is different from standard model and refer to 4 Option of instruction manual for details.



Connector type

CN3 Option (Mfr: J.S.T)

| PIN No. | Contents |
|---------|----------|
| 1 | RC(+) |
| 2 | RC(-) |

Barrier strip type

Model B2B-XH-A
Mating Connector (Terminal)
XHP-2
(BXH-001T-P0.6 or SXH-001T-P0.6)

※ Point A, Point B are thermometry points. Please refer to Instruction Manual 3.

| I/O Connector | Mating Connector | Terminal |
|---------------|------------------|-----------------|
| CN1 | 1-1123724-3 | 1-1123722-5 |
| | | Chain 1123721-1 |
| | | Loose 1318912-1 |
| CN2 | 1-1123723-8 | 1-1123722-8 |
| | | Chain 1123721-1 |
| | | Loose 1318912-1 |

(Mfr: Tyco Electronics AMP)

※ I/O Connector is Mfr. Tyco Electronics AMP
 ※ Option : -J1 : (J.S.T) connector type
 -T : Vertical terminal block type
 -T1 : Horizontal terminal block type
 Refer to Instruction Manual 4.

<PIN CONNECTION>

| Pin No. | Input |
|---------|-------|
| 1 | AC(N) |
| 2 | |
| 3 | AC(L) |
| 4 | |
| 5 | FG |

| Pin No. | Output |
|---------|--------|
| 1 - 4 | -V |
| 5 - 8 | +V |

※ Tolerance : ± 1 [± 0.04]
 ※ Weight : 560g max (with cover : 625g max)
 ※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
 ※ Chassis material : Aluminum
 ※ Keep drawing current per pin below 5A of CN2.
 ※ Dimensions in mm, [] =inches
 ※ Mounting torque : 0.49N · m (5kgf · cm) max
 ※ Please connect safety ground to the unit in 2-M3 holes.

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