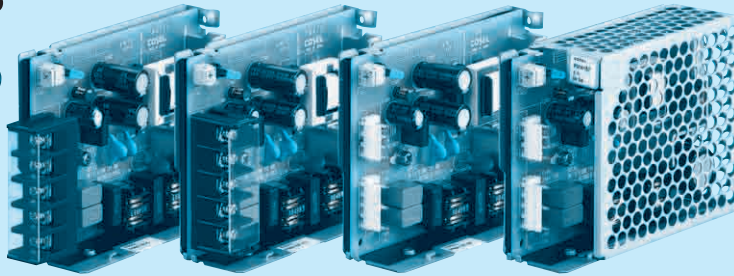


PMA15F

PM A 15 F -□ -□
① ② ③ ④ 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 1 φ (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]	0 to +50℃	80max	80max	120max	120max	120max
		*1 -10 - 0℃	140max	140max	160max	160max	160max
	RIPPLE NOISE[mVp-p]	0 to +50℃	120max	120max	150max	150max	150max
		*1 -10 - 0℃	160max	160max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	50max	120max	150max	240max
		-10 to +50℃	60max	60max	150max	180max	290max
	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%)					
PROTECTION CIRCUIT AND OTHERS	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
	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℃, 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max *3				
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis				
	IMPACT		196.1m/s² (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				

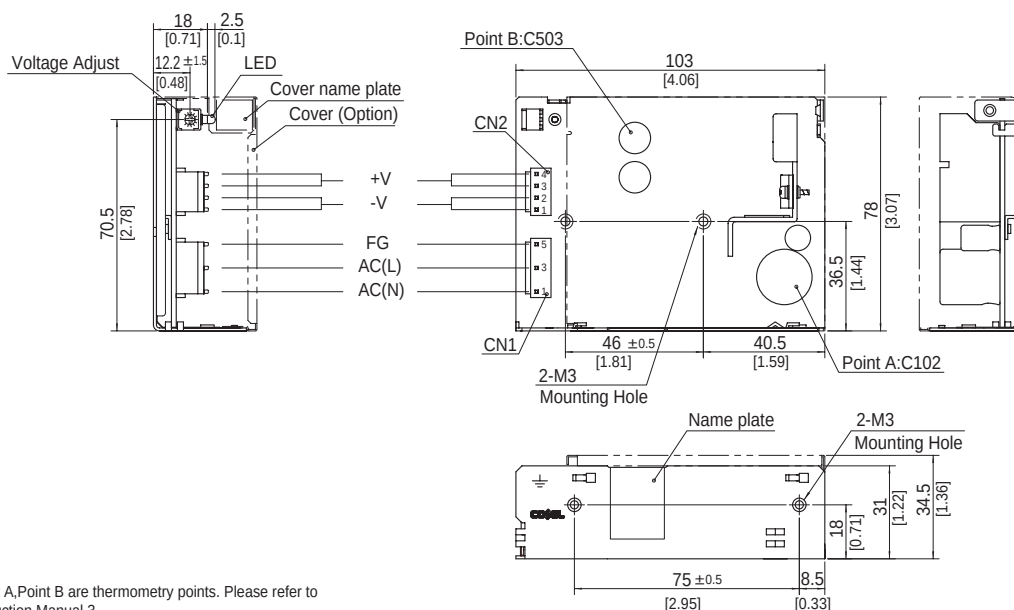
*1 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN: RM101).
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.
*3 Derating is required.
*4 When two or more units are used, they may not comply with the harmonic attenuator. Please 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.

The diagram illustrates a power supply system with the following components and connections:

- AC IN 85 ~ 264V**: The main power input.
- FUSE AC250V 2.5A**: A fuse connected in series with the AC input.
- NOISE FILTER**: Receives input from the AC line and the FG line.
- INRUSH CURRENT LIMIT**: Receives input from the NOISE FILTER.
- RECTIFIER AND FILTER**: Receives input from the INRUSH CURRENT LIMIT.
- FG**: Grounding point connected to the NOISE FILTER.
- CONTROL** (Primary): Receives input from the RECTIFIER AND FILTER and outputs to the INVERTER.
- CURRENT SENSING**: Receives input from the INVERTER and outputs to the CONTROL.
- INVERTER**: Receives input from the CONTROL and outputs to the TRANSFORMER.
- TRANSFORMER**: Receives input from the INVERTER and outputs to the secondary RECTIFIER AND FILTER.
- RECTIFIER AND FILTER** (Secondary): Receives input from the TRANSFORMER and outputs to the DC OUT.
- DC OUT**: The final output of the power supply.
- Feedback Loop**:
 - The **CONTROL** block is connected to a **Photocoupler**, which is connected to a **CONTROL** block in the feedback loop.
 - The **OVER VOLTAGE PROTECTION** block is connected to a **Photocoupler**, which is connected to the **CONTROL** block.

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



- ※ 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 material per pin bellow 5A of CN2.
- ※ Dimensions in mm, []=inches
- ※ Mounting torque : $0.6\text{N} \cdot \text{m}$ (6.3kgf · cm) max
- ※ Please connect safety ground to the unit in 2-M3 holes.

PMA30F

PM

A

30

F

-

-

①

②

③

④

⑤

⑥



RoHS

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]	0 to +50℃	80max	80max	120max	120max	120max
		*1 -10 -0℃	140max	140max	160max	160max	160max
	RIPPLE NOISE[mVp-p]	0 to +50℃	120max	120max	150max	150max	150max
		*1 -10 -0℃	160max	160max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	50max	120max	150max	240max
		-10 to +50℃	60max	60max	150max	180max	290max
	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	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		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℃, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *3				
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 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		31×82×120mm [1.22×3.23×4.72 inches] (W×H×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℃.

*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.

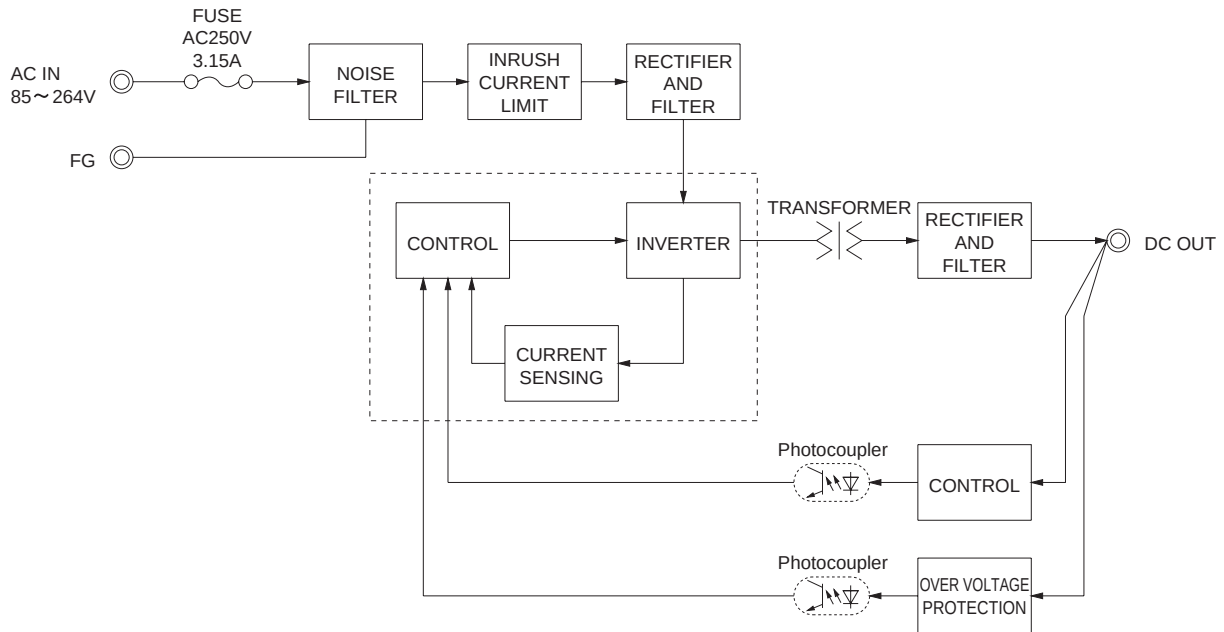
*6 Please contact us about another class.

* Parallel operation with other model is not possible.

* Derating is required when operated with cover.

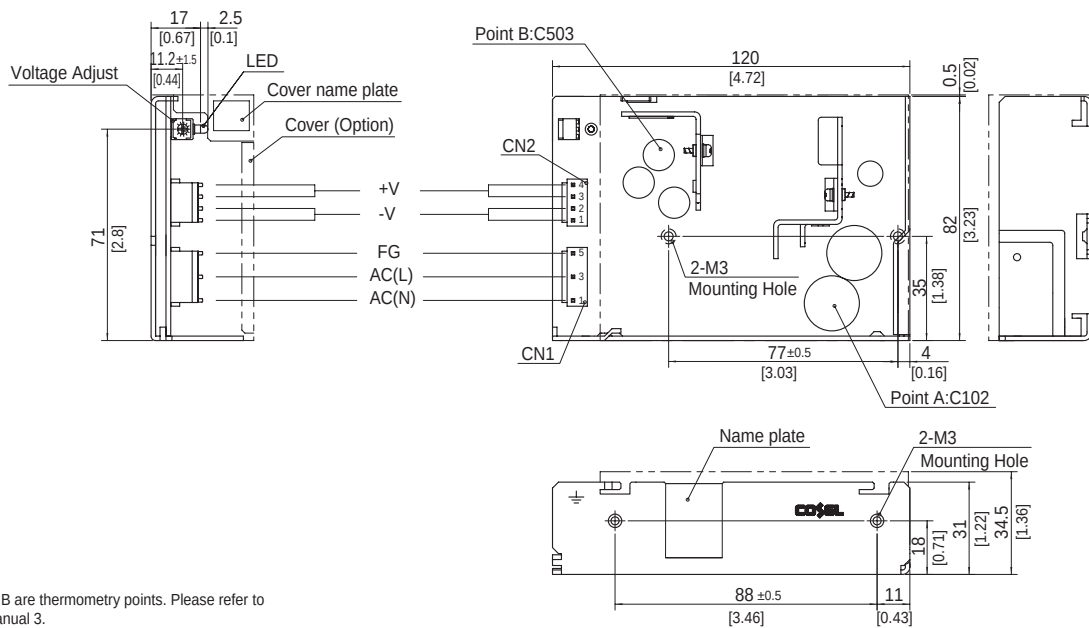
* A sound may occur from power supply at peak loading.

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

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

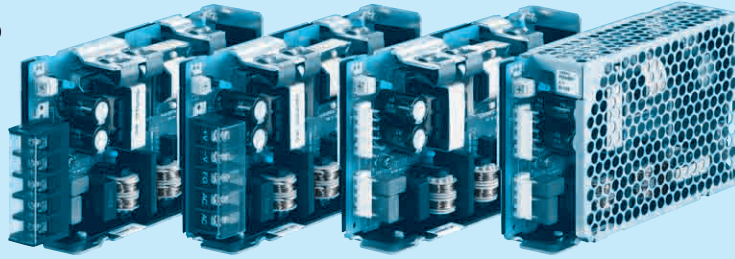
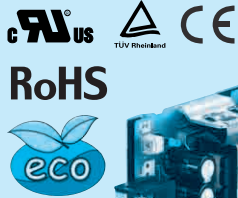
CN2

Pin No.	Output
1, 2	-V
3, 4	+V

※ 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

PM A 60 F -□ -□
① ② ③ ④ 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

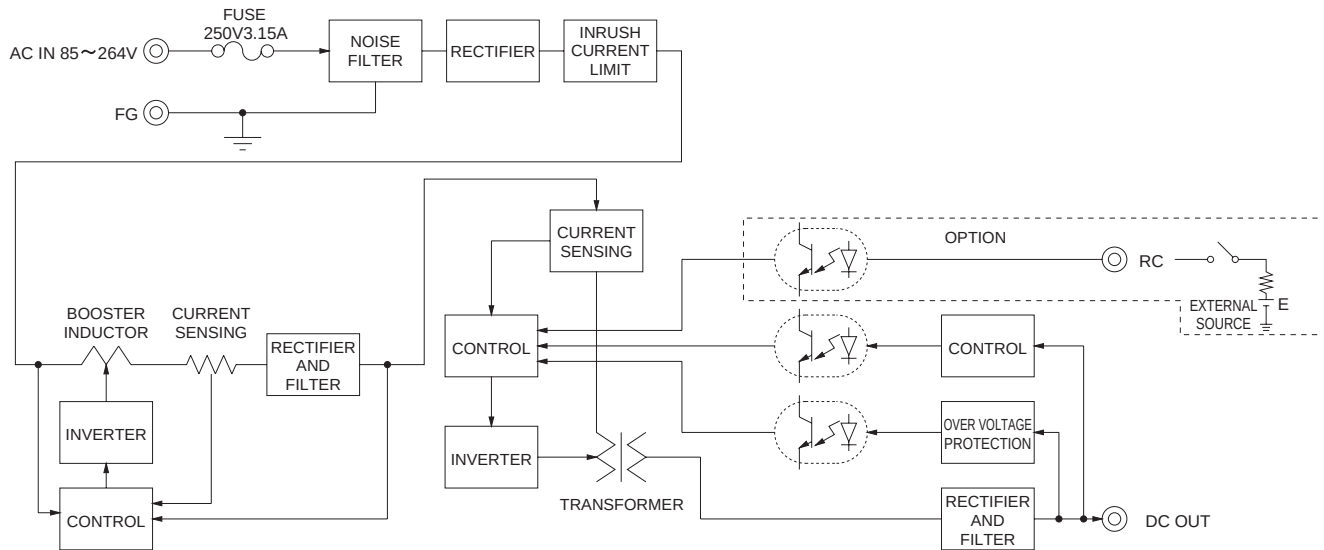
SPECIFICATIONS

	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	20max	48max	60max	96max
	LOAD REGULATION[mV]		40max	40max	100max	120max	150max
	RIPPLE[mVp-p]	0 to +50℃	80max	80max	120max	120max	120max
		*1 -10 - 0℃	140max	140max	160max	160max	160max
	RIPPLE NOISE[mVp-p]	0 to +50℃	120max	120max	150max	150max	150max
		*1 -10 - 0℃	160max	160max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	50max	120max	150max	240max
		*1 -10 to +50℃	60max	60max	150max	180max	290max
	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%)					
PROTECTION CIRCUIT AND OTHERS	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
	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
ISOLATION	OPERATING INDICATION		LED (Green)				
	REMOTE ON/OFF		Optional (Required external power source)				
	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)				
ENVIRONMENT	OUTPUT-RC-FG		*3 AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature)				
	OPERATING TEMP., HUMID. AND ALTITUDE		-10 to +70℃, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *4				
	STORAGE TEMP., HUMID. AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis				
SAFETY AND NOISE REGULATIONS	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axis				
	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				
OTHERS	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 *6				
	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℃.
*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.

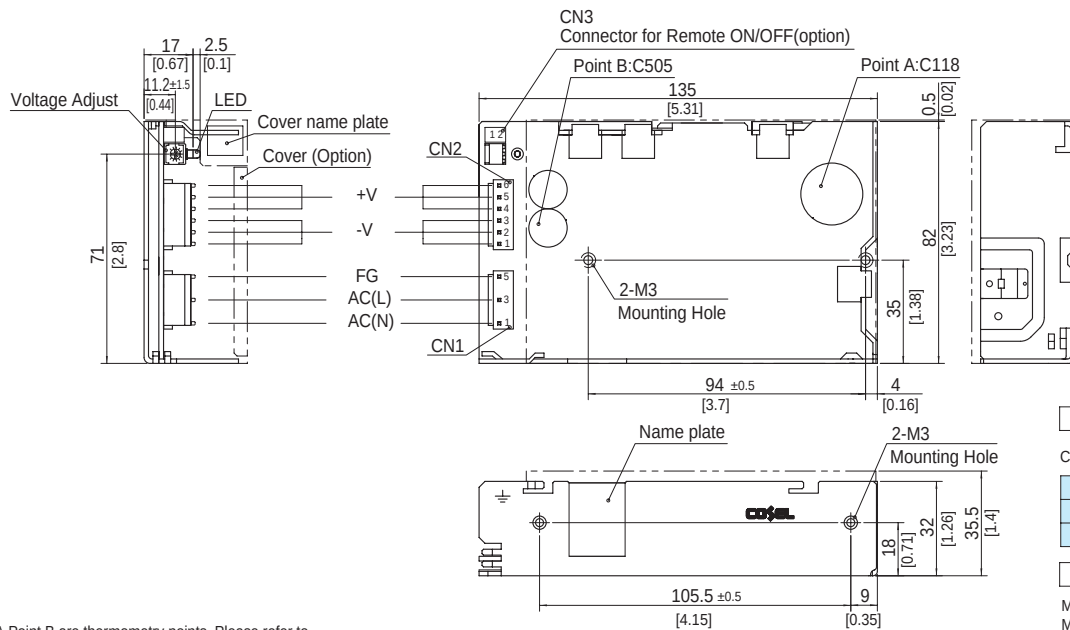
*6 Please contact us about class C.
* Parallel operation with other model is not possible.
* Derating is required when operated with cover.
* A sound may occur from power supply at peak loading.

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(-)

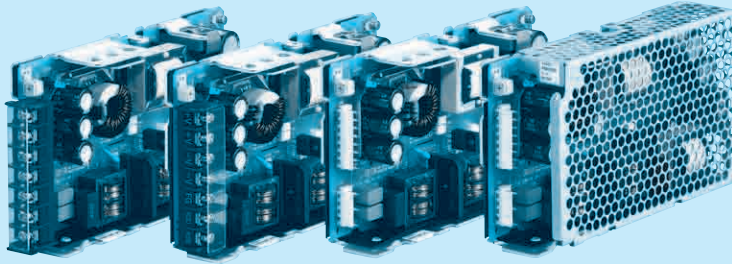
Barrier strip type

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

PMA100F

PM A 100 F -□ -□

① ② ③ ④ ⑤ ⑥

Horizontal terminal block
(option : -T1)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 1ϕ (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					
		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℃	80max	80max	120max	120max	150max	
		*1 -10 - 0℃	140max	140max	160max	160max	200max	
	RIPPLE NOISE[mVp-p]	0 to +50℃	120max	120max	150max	150max	250max	
		*1 -10 - 0℃	160max	160max	180max	180max	300max	
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	50max	120max	240max	480max	
		-10 to +50℃	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℃, 20 - 90%RH (Non condensing), 3,000m (10,000feet) max *4					
	STORAGE TEMP., HUMID. AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max					
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT		196.1m/s² (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℃.

*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.

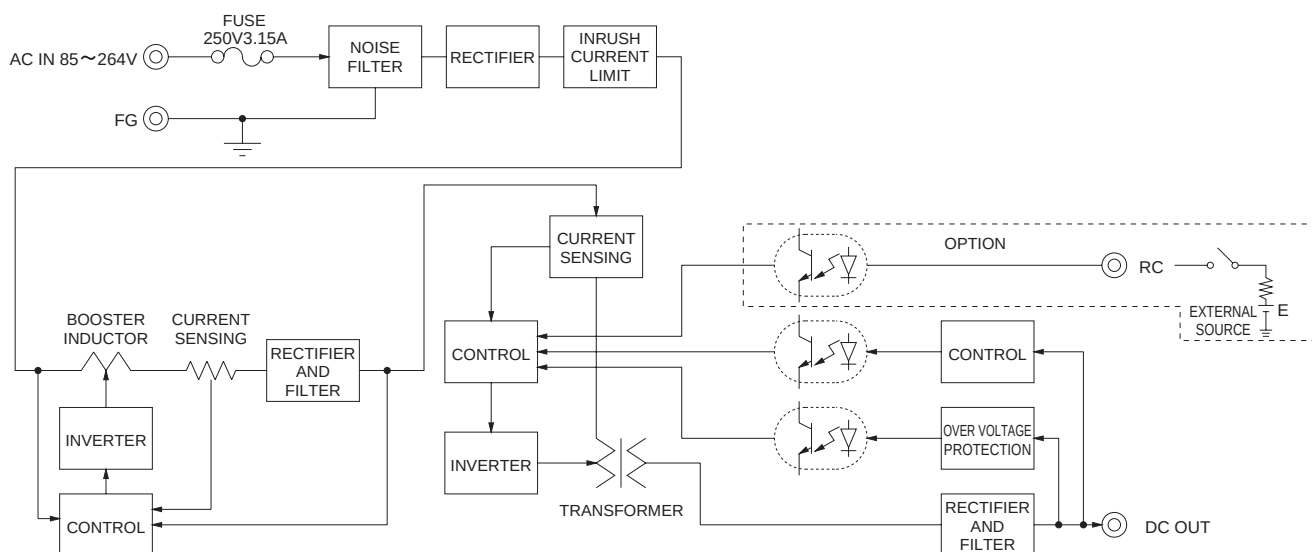
*6 Please contact us about class C.

* Parallel operation with other model is not possible.

* Derating is required when operated with cover.

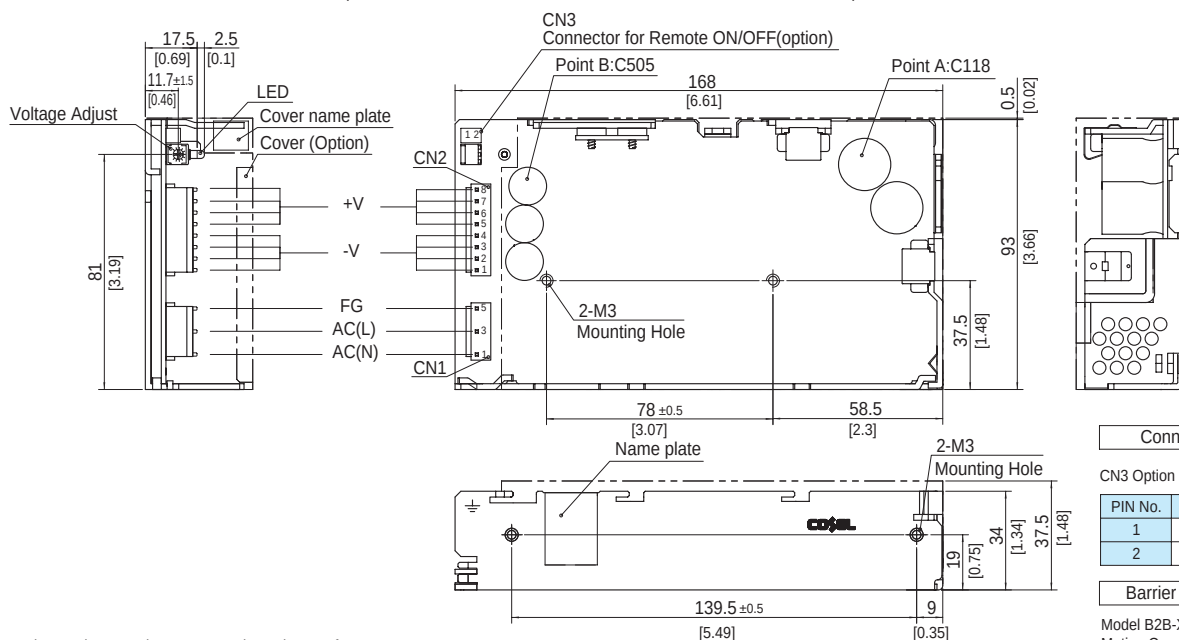
* A sound may occur from power supply at peak loading.

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
		Loose
CN2	1-1123723-8	1-1123722-8
		Chain
		Loose

(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.

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)	

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