

PMA60F

PM A 60 F - □ - □

① ② ③ ④ ⑤ ⑥



Optional
-T1

Optional
-T

Normal

Optional
-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	
		ACIN 200V	78typ	83typ	82typ	83typ	
	POWER FACTOR (Io=100%)	ACIN 100V	0.98typ				
		ACIN 200V	0.85typ		0.90typ		
OUTPUT	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)				
	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
	PROTECTION CIRCUIT AND OTHERS	RIPPLE[mVp-p]	0 to +50℃	80max	80max	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]		250typ (ACIN 100V, Io=100%)					
HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)					
ISOLATION	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
ENVIRONMENT	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)				
SAFETY AND NOISE REGULATIONS	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/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis				
OTHERS	IMPACT		196.1m/s ² (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				
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2				
OTHERS	CASE SIZE/WEIGHT		32×82×135mm [1.26×3.23×5.31 inches] (W×H×D) / 350g max (without cover)				
	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.

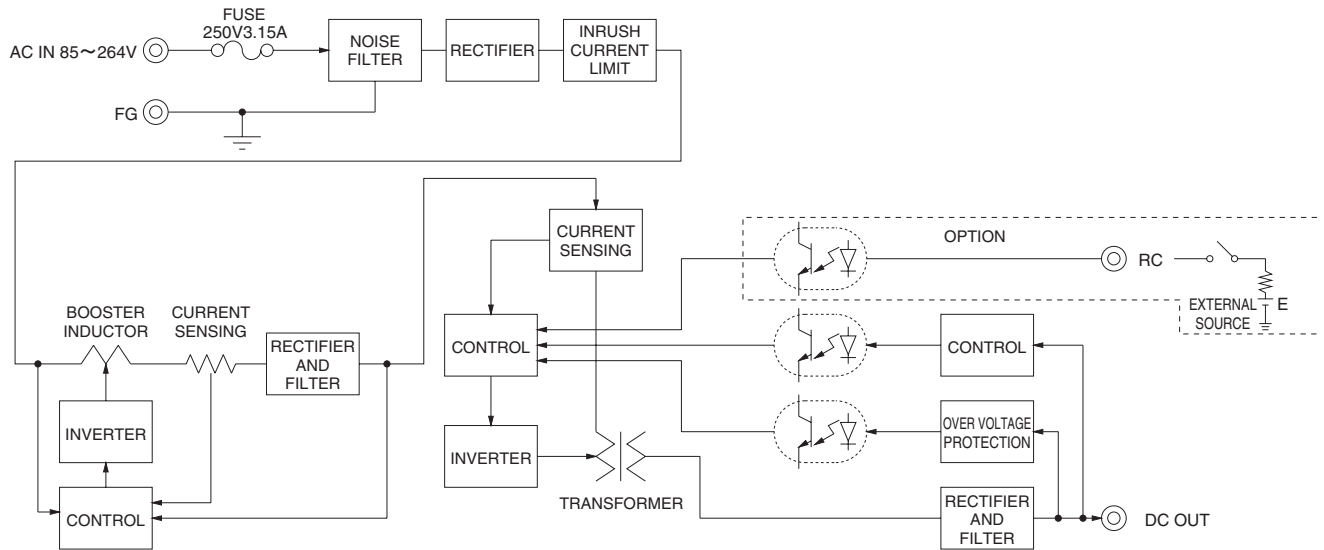
*5 Please contact us about safety approvals for the model with option.

* Parallel operation with other model is not possible.

* Derating is required when operated with cover.

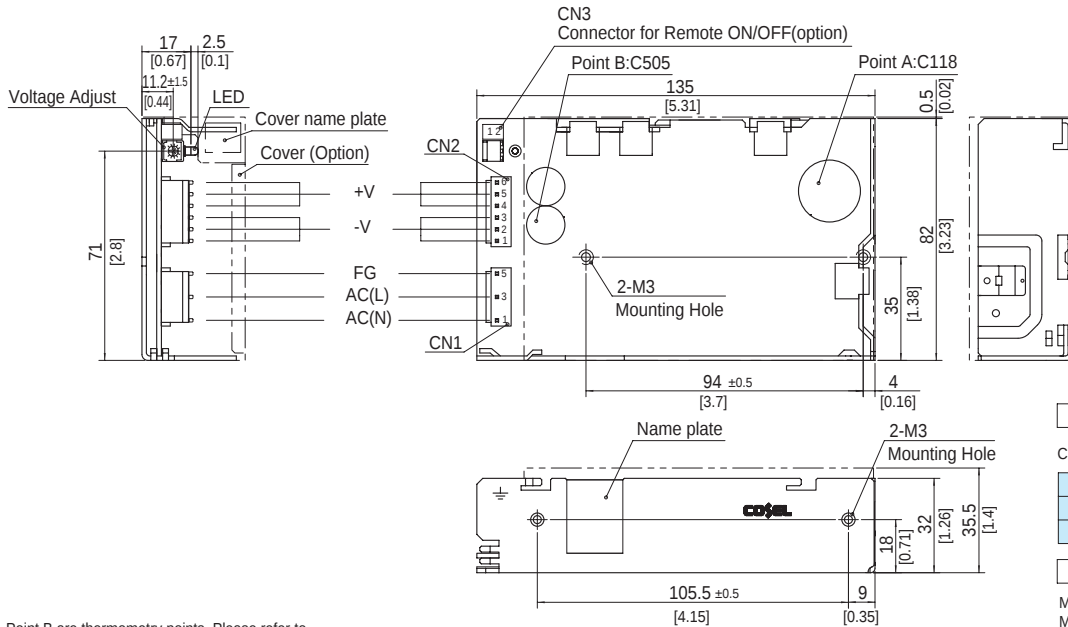
* A sound may occur from power supply at peak loading.

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 (without cover)

※ 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)