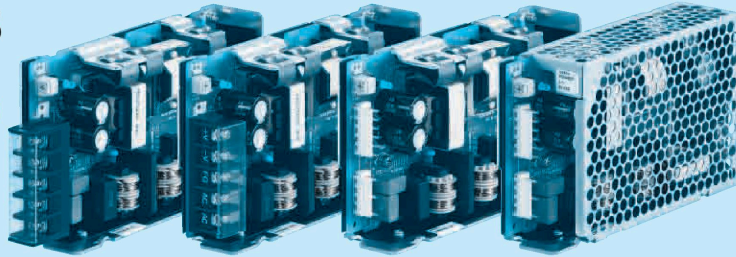


# PMA60F

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 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 <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis					
SAFETY AND NOISE REGULATIONS	IMPACT	196.1m/s <sup>2</sup> (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°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.