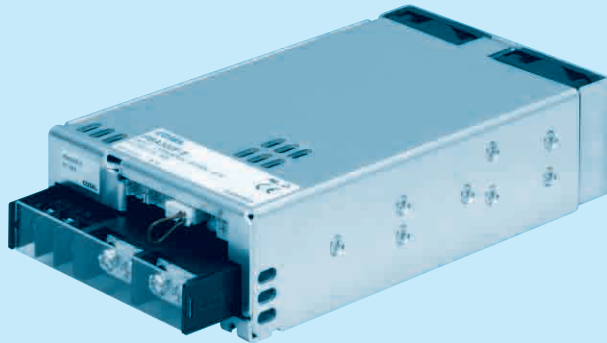


# PBA300F

① PB ② A ③ 300 ④ F ⑤ -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 Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional \*5
- C :with Coating
- G :Low leakage current
- U :Operation stop voltage is set at a lower value
- F3 :Reverse air exhaust type
- F4 :Low speed fan
- N1 :with DIN rail

Refer to instruction manual 7.1.

MODEL	PBA300F-3R3	PBA300F-5	PBA300F-7R5	PBA300F-12	PBA300F-15	PBA300F-24	PBA300F-36	PBA300F-48	
MAX OUTPUT WATTAGE[W]	198	300	300	324	330	336	324	336	
DC OUTPUT	ACIN 100V	3.3V 60A	5V 60A	7.5V 40A	12V 27A	15V 22A	24V 14A	36V 9A	48V 7A
	ACIN 200V *3	3.3V 60A	5V 60A	7.5V 40A	12V 27A	15V 22A	24V 14(16.5)A	36V 9A	48V 7A

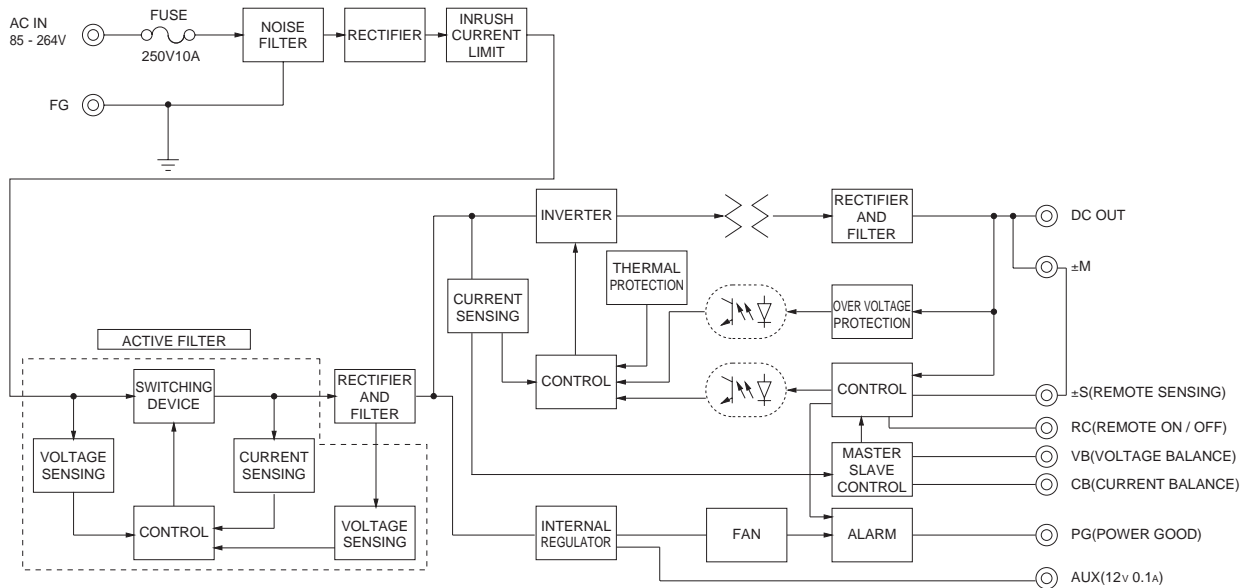
## SPECIFICATIONS

MODEL	PBA300F-3R3	PBA300F-5	PBA300F-7R5	PBA300F-12	PBA300F-15	PBA300F-24	PBA300F-36	PBA300F-48	
VOLTAGE[V]	AC85 - 264 1 φ or DC120 - 350 (AC50 or DC70 Please refer to the instruction manual 7. option *4)								
CURRENT[A]	ACIN 100V	3typ		4.1typ					
	ACIN 200V	1.6typ		2typ					
FREQUENCY[Hz]	50/60 (47 - 63)								
EFFICIENCY[%]	ACIN 100V	68typ	74typ	76typ	78typ	78typ	79typ	79typ	
	ACIN 200V	71typ	77typ	79typ	81typ	81typ	82typ	82typ	
POWER FACTOR	ACIN 100V	0.98typ (Io=100%)							
	ACIN 200V	0.95typ (Io=100%)							
INRUSH CURRENT[A]	ACIN 100V	20/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More then 3 sec. to re-start)							
	ACIN 200V	40/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More then 3 sec. to re-start)							
LEAKAGE CURRENT[mA]	0.45/0.75max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1.DENAN)								
VOLTAGE[V]	3.3	5	7.5	12	15	24	36	48	
CURRENT[A]	ACIN 100V	60	60	40	27	22	14	9	7
	ACIN 200V *3	60	60	40	27	22	14(16.5)	9	7
LINE REGULATION[mV]	20max	20max	36max	48max	60max	96max	144max	192max	
LOAD REGULATION[mV]	40max	40max	60max	100max	120max	150max	150max	300max	
RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	150max	150max	
	-20 - 0°C *1	140max	140max	160max	160max	160max	160max	400max	
RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	200max	200max	
	-20 - 0°C *1	160max	160max	180max	180max	180max	240max	500max	
TEMPERATURE REGULATION[mV]	0 to +50°C	40max	50max	75max	120max	150max	240max	360max	480max
	-20 to +50°C	60max	75max	120max	180max	180max	290max	440max	600max
DRIFT[mV]	*2	12max	20max	30max	48max	60max	96max	144max	192max
START-UP TIME[ms]	300typ(ACIN 100/200V, Io=100%) *Start-up time is 500ms typ for less than 1minute of applying input again from turning off the input voltage.								
HOLD-UP TIME[ms]	20typ (ACIN 100/200V, Io=100%)								
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.64 - 3.96	3.96 - 6.00	5.25 - 8.25	8.25 - 13.20	10.50 - 16.50	16.50 - 26.40	25.20 - 39.60	38.40 - 56.00	
OUTPUT VOLTAGE SETTING[V]	3.30 - 3.40	5.00 - 5.15	7.50 - 7.80	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	36.00 - 37.44	48.00 - 49.92	
OVERCURRENT PROTECTION	Works over 105% of rated current or 101% of peak current and recovers automatically								
OVERVOLTAGE PROTECTION[V]	4.3 - 6.3	6.5 - 8.0	9.0 - 11.6	14.4 - 18.6	18.0 - 23.3	28.8 - 37.2	43.2 - 54.0	57.6 - 80.0	
OPERATING INDICATION	LED (Green)								
REMOTE SENSING	Provided								
REMOTE ON/OFF	Provided								
INPUT-OUTPUT - RC	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩmin (At Room Temperature)								
INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩmin (At Room Temperature)								
OUTPUT - RC - AUX-FG	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)								
OUTPUT-RC - AUX	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)								
OPERATING TEMP.,HUMID.AND ALTITUDE	-20 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, EN5011-B, EN55022-B								
HARMONIC ATTENUATOR	Complies with IEC61000-3-2 *6								
CASE SIZE/WEIGHT	102 x 42 x 170mm [4.02 x 1.65 x 6.69 inches] (without terminal block and screw) (W x H x D) /1.0kg max								
COOLING METHOD	Forced cooling (internal fan)								

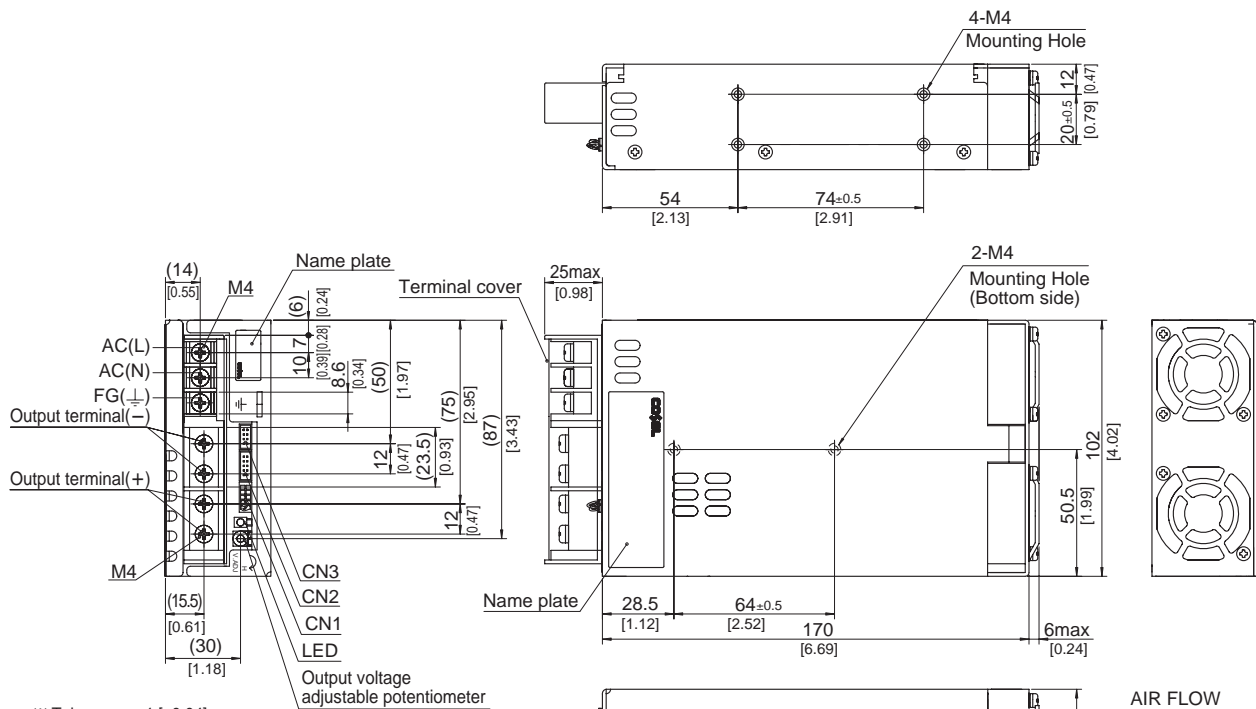
\*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).  
 \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.  
 \*3 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.  
 \*4 Derating is required.Consult us for details.

\*5 Please contact us about safety approvals for the model with option.  
 \*6 Please contact us about class C.  
 \* A sound may occur from power supply at pulse loading.

Block diagram



External view



- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 1.0kg max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 1.2N • m max
- ※ Screw tightening torque : 1.6N • m max
- ※ The housing for the remote sensing unused is mounted on CN1
- ※ Please connect safety ground to FG terminal on the unit.

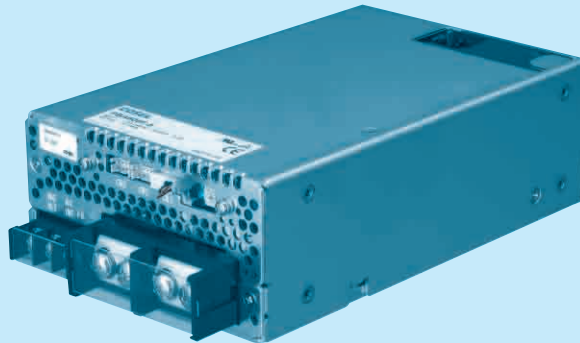
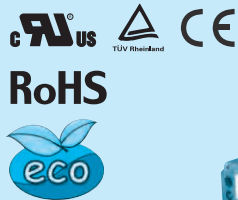


# PBA600F

## Ordering information

**PB A 600 F -5 -** □

① ② ③ ④ ⑤ ⑥



### Recommended EMI/EMC Filter NAC-16-472



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 Single output
  - ③ Output wattage
  - ④ Universal input
  - ⑤ Output voltage
  - ⑥ Optional \*6
- C :with Coating  
 G :Low leakage current  
 U :Operation stop voltage is set at a lower value  
 F1 :With Long-Life fan  
 F3 :Reverse air exhaust type  
 F4 :Low speed fan

Refer to instruction manual 7.1.

MODEL	PBA600F-3R3	PBA600F-5	PBA600F-7R5	PBA600F-12	PBA600F-15	PBA600F-24	PBA600F-36	PBA600F-48	
MAX OUTPUT WATTAGE[W]	396	600	600	636	645	648	648	624	
DC OUTPUT	ACIN 100V	3.3V 120A	5V 120A	7.5V 80A	12V 53A	15V 43A	24V 27A	36V 18A	48V 13A
	ACIN 200V *3	3.3V 120A	5V 120A	7.5V 80A	12V 53A	15V 43A	24V 27(31)A	36V 18A	48V 13A

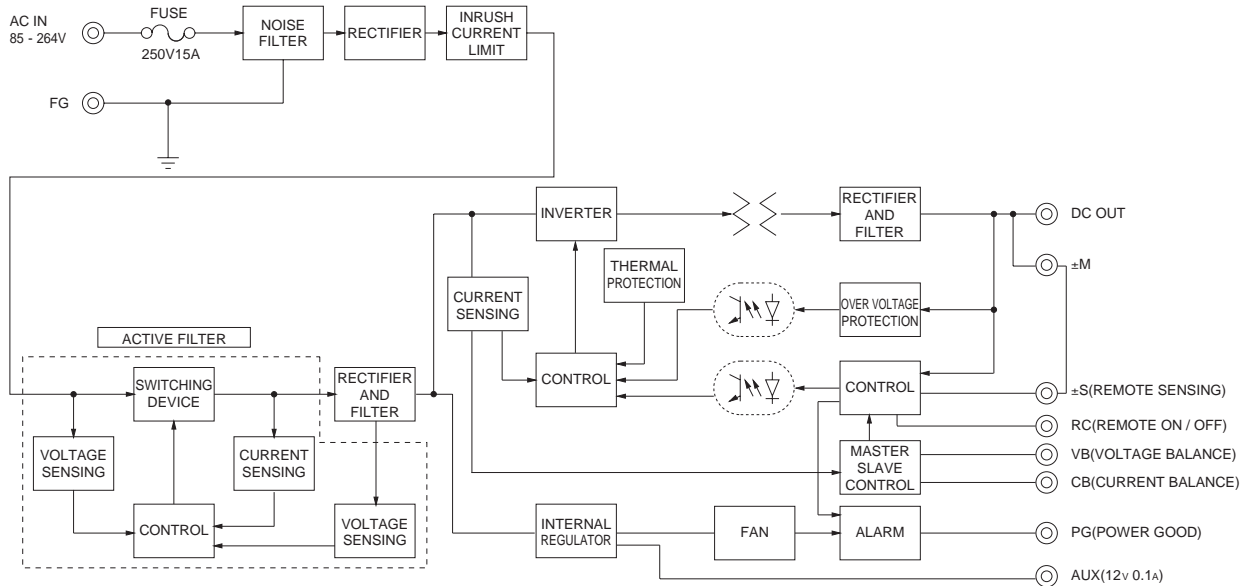
## SPECIFICATIONS

	MODEL	PBA600F-3R3	PBA600F-5	PBA600F-7R5	PBA600F-12	PBA600F-15	PBA600F-24	PBA600F-36	PBA600F-48							
INPUT	VOLTAGE[V]	AC85 - 264 1 φ or DC120 - 350 (AC50 or DC70 Please refer to the instruction manual 7. option *5)														
	CURRENT[A]	ACIN 100V	5.8typ	8.2typ												
		ACIN 200V	3typ	4.1typ												
	FREQUENCY[Hz]	50/60 (47 - 63)														
	EFFICIENCY[%]	ACIN 100V	70typ	75typ	76typ	79typ	79typ	81typ	82typ	81typ						
		ACIN 200V	72typ	77typ	79typ	82typ	82typ	84typ	84typ	83typ						
	POWER FACTOR	ACIN 100V	0.98typ (Io=100%)													
		ACIN 200V	0.95typ (Io=100%)													
	INRUSH CURRENT[A]	ACIN 100V	20/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start)													
		ACIN 200V	40/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3 sec. to re-start)													
LEAKAGE CURRENT[mA]	0.45/0.75max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1, DENAN)															
OUTPUT	VOLTAGE[V]	3.3	5	7.5	12	15	24	36	48							
	CURRENT[A]	ACIN 100V	120	120	80	53	43	27	18	13						
		ACIN 200V *3	120	120	80	53	43	27(31)	18	13						
	LINE REGULATION[mV]	20max	20max	36max	48max	60max	96max	144max	192max							
	LOAD REGULATION[mV]	40max	40max	60max	100max	120max	150max	150max	300max							
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	120max	150max	150max						
		-20 - 0°C *1	140max	140max	160max	160max	160max	160max	160max	400max						
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	150max	200max	200max						
		-20 - 0°C *1	160max	160max	180max	180max	180max	180max	240max	500max						
	TEMPERATURE REGULATION[mV]	0 to +50°C	40max	50max	75max	120max	150max	240max	360max	480max						
-20 to +50°C		60max	75max	120max	180max	180max	290max	440max	600max							
DRIFT[mV]	*2	12max	20max	30max	48max	60max	96max	144max	192max							
START-UP TIME[ms]	400typ(ACIN 100/200V, Io=100%) *Start-up time is 500ms typ for less than 1minute of applying input again from turning off the input voltage.															
HOLD-UP TIME[ms]	20typ (ACIN 100/200V, Io=100%)															
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.64 - 3.96		3.96 - 6.00		5.25 - 8.25		8.25 - 13.20		10.50 - 16.50		16.50 - 26.40		25.20 - 39.60		38.40 - 56.00	
OUTPUT VOLTAGE SETTING[V]	3.30 - 3.40		5.00 - 5.15		7.50 - 7.80		12.00 - 12.48		15.00 - 15.60		24.00 - 24.96		36.00 - 37.44		48.00 - 49.92	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rated current or 101% of peak current and recovers automatically														
	OVERVOLTAGE PROTECTION[V] *4	Vo+0.66 - 1.32	Vo+1.0 - 2.0	Vo+1.5 - 3.0	Vo+2.4 - 4.8	Vo+3.0 - 6.0	Vo+4.8 - 9.6	Vo+7.2 - 14.4	Vo+4.8 - 12.0							
	OPERATING INDICATION	LED (Green)														
	REMOTE SENSING	Provided														
ISOLATION	REMOTE ON/OFF	Provided														
	INPUT-OUTPUT - RC	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩmin (At Room Temperature)														
	INPUT-FG	AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩmin (At Room Temperature)														
	OUTPUT - RC - AUX-FG	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)														
ENVIRONMENT	OUTPUT-RC - AUX	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)														
	OPERATING TEMP.,HUMID.AND ALTITUDE	-20 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														
SAFETY AND NOISE REGULATIONS	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 *7														
OTHERS	CASE SIZE/WEIGHT	120×61×190mm [4.72×2.4×7.48 inches] (without terminal block and screw) (W×H×D) /1.6kg max														
	COOLING METHOD	Forced cooling (internal fan)														

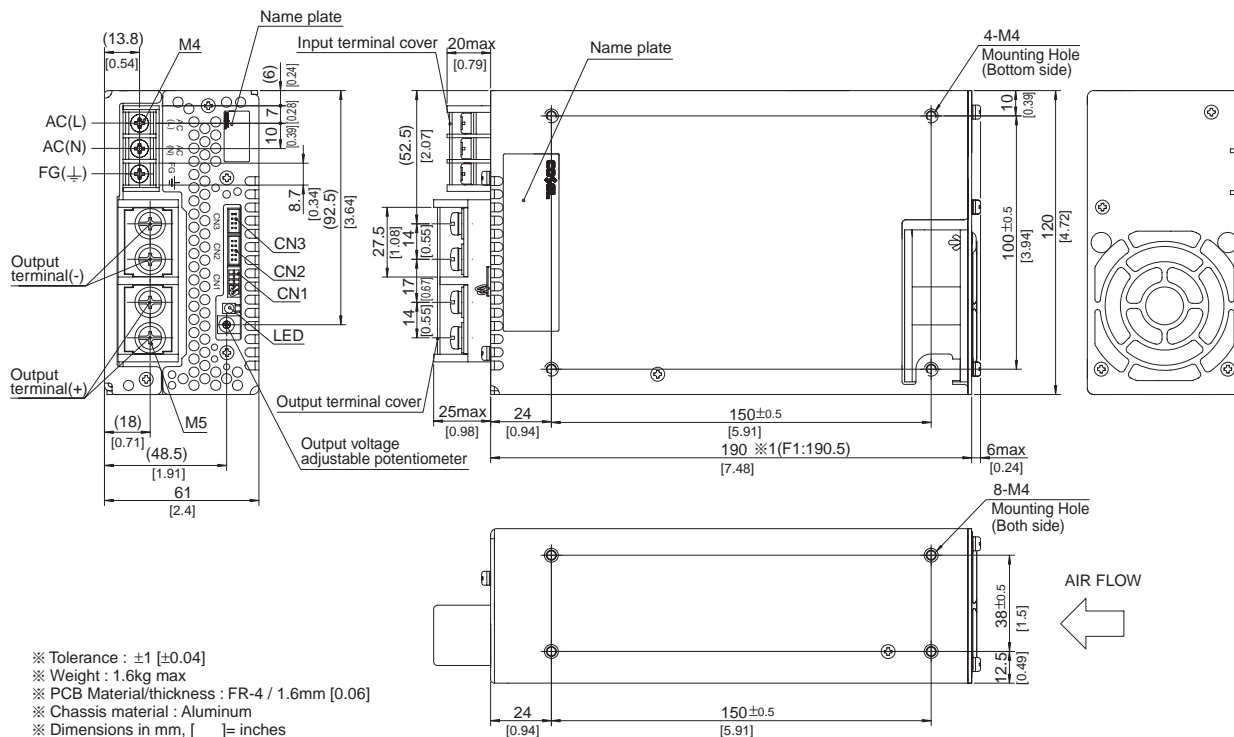
\*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).  
 \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.  
 \*3 ( ) means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.  
 \*4 Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.

\*5 Derating is required.Consult us for details.  
 \*6 Please contact us about safety approvals for the model with option.  
 \*7 Please contact us about class C.  
 \* A sound may occur from power supply at pulse loading.

Block diagram



External view



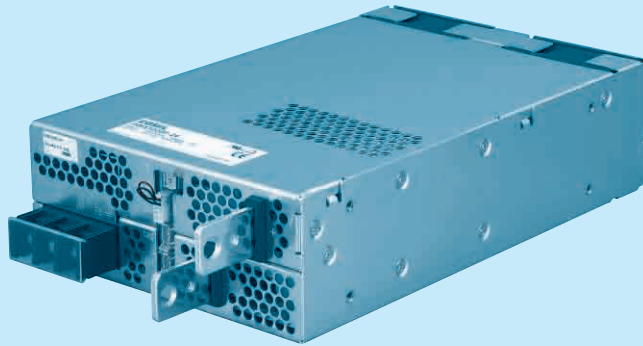
- ※ Tolerance :  $\pm 1 [\pm 0.04]$
- ※ Weight : 1.6kg max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 1.2N · m (12.8kgf · cm) max
- ※ Screw tightening torque : M4 1.6N · m (16.9kgf · cm) max  
M5 2.5N · m (24.5kgf · cm) max
- ※ The housing for the remote sensing unused is mounted on CN1
- ※ 1 F1 (Optional): 190.5
- ※ Please connect safety ground to FG terminal on the unit.

# PBA1000F

Ordering information

**PB A 1000 F -5 -** □

① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter  
**NAC-20-472**



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 Single output
  - ③ Output wattage
  - ④ Universal input
  - ⑤ Output voltage
  - ⑥ Optional \*6
- C :with Coating  
G :Low leakage current  
U :Operation stop voltage is set at a lower value  
F1 :With Long-Life fan  
F3 :Reverse air exhaust type  
F4 :Low speed fan

Refer to instruction manual 7.1.

MODEL	PBA1000F-3R3	PBA1000F-5	PBA1000F-7R5	PBA1000F-12	PBA1000F-15	PBA1000F-24	PBA1000F-36	PBA1000F-48	
MAX OUTPUT WATTAGE[W]	660	1000	1005	1056	1050	1056	1044	1056	
DC OUTPUT	ACIN 100V	3.3V 200A	5V 200A	7.5V 134A	12V 88A	15V 70A	24V 44A	36V 29A	48V 22A
	ACIN 200V *3	3.3V 200A	5V 200A	7.5V 134A	12V 88A	15V 70A	24V 44(51)A	36V 29A	48V 22A

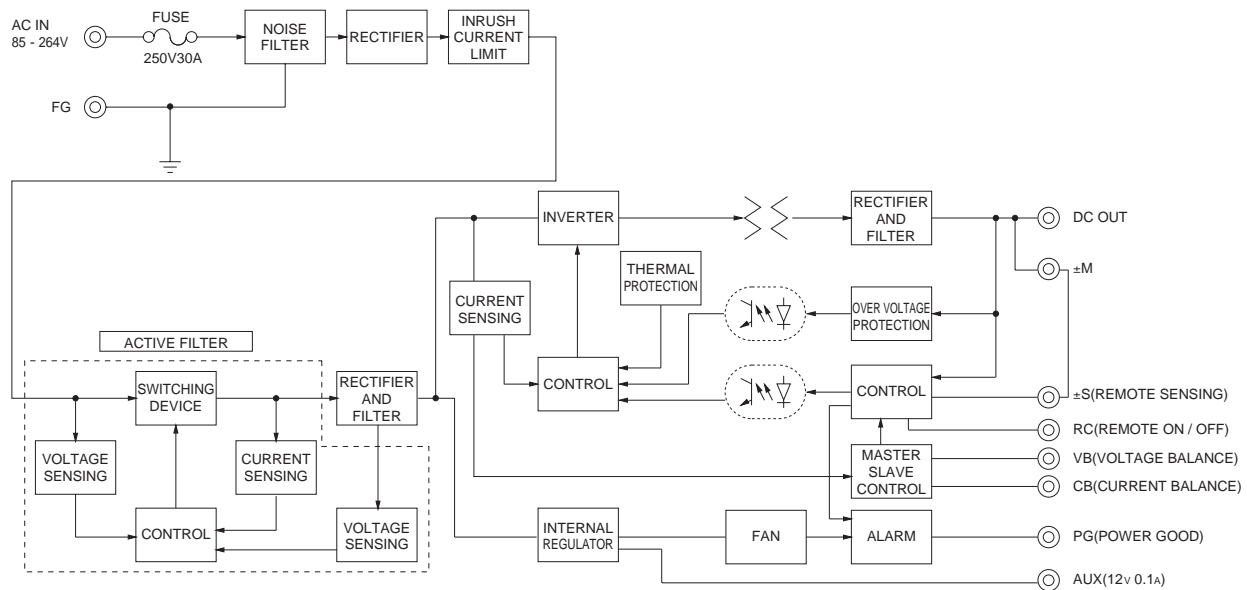
## SPECIFICATIONS

	MODEL	PBA1000F-3R3	PBA1000F-5	PBA1000F-7R5	PBA1000F-12	PBA1000F-15	PBA1000F-24	PBA1000F-36	PBA1000F-48							
INPUT	VOLTAGE[V]	AC85 - 264 1 φ or DC120 - 350 (AC50 or DC70 Please refer to the instruction manual 7. option *5)														
	CURRENT[A]	ACIN 100V	9typ	13typ												
		ACIN 200V	5typ	7typ												
	FREQUENCY[Hz]	50/60 (47 - 63)														
	EFFICIENCY[%]	ACIN 100V	74typ	79typ	80typ	82typ	82typ	84typ	84typ	84typ						
		ACIN 200V	76typ	81typ	83typ	84typ	84typ	86typ	86typ	86typ						
	POWER FACTOR	ACIN 100V	0.98typ (Io=100%)													
ACIN 200V		0.95typ (Io=100%)														
INRUSH CURRENT[A]	ACIN 100V	20/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10 sec. to re-start)														
	ACIN 200V	40/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10 sec. to re-start)														
LEAKAGE CURRENT[mA]	0.5/1.0max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1, DENAN)															
OUTPUT	VOLTAGE[V]	3.3	5	7.5	12	15	24	36	48							
	CURRENT[A]	ACIN 100V	200	200	134	88	70	44	29	22						
		ACIN 200V *3	200	200	134	88	70	44(51)	29	22						
	LINE REGULATION[mV]	20max	20max	36max	48max	60max	96max	144max	192max							
	LOAD REGULATION[mV]	40max	40max	60max	100max	120max	150max	150max	300max							
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	120max	150max	150max						
		-20 - 0°C *1	140max	140max	160max	160max	160max	160max	160max	400max						
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	150max	200max	200max						
		-20 - 0°C *1	160max	160max	180max	180max	180max	180max	240max	500max						
	TEMPERATURE REGULATION[mV]	0 to +50°C	40max	50max	75max	120max	150max	240max	360max	480max						
-20 to +50°C		60max	75max	120max	180max	180max	290max	440max	600max							
DRIFT[mV]	*2	12max	20max	30max	48max	60max	96max	144max	192max							
START-UP TIME[ms]	400typ(ACIN 100/200V, Io=100%) *Start-up time is 500ms typ for less than 1minute of applying input again from turning off the input voltage.															
HOLD-UP TIME[ms]	20typ (ACIN 100/200V, Io=100%)															
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.64 - 3.96		3.96 - 6.00		5.25 - 8.25		8.25 - 13.20		10.50 - 16.50		16.50 - 26.40		25.20 - 39.60		38.40 - 56.00	
OUTPUT VOLTAGE SETTING[V]	3.30 - 3.40		5.00 - 5.15		7.50 - 7.80		12.00 - 12.48		15.00 - 15.60		24.00 - 24.96		36.00 - 37.44		48.00 - 49.92	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rated current or 101% of peak current and recovers automatically														
	OVERVOLTAGE PROTECTION[V] *4	Vo+0.66 - 1.32	Vo+1.0 - 2.0	Vo+1.5 - 3.0	Vo+2.4 - 4.8	Vo+3.0 - 6.0	Vo+4.8 - 9.6	Vo+7.2 - 14.4	Vo+4.8 - 12.0							
	OPERATING INDICATION	LED (Green)														
	REMOTE SENSING	Provided														
ISOLATION	REMOTE ON/OFF	Provided														
	INPUT-OUTPUT - RC	AC3,000V 1minute, Cutoff current = 25mA, DC500V 50MΩmin (At Room Temperature)														
	INPUT-FG	AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩmin (At Room Temperature)														
	OUTPUT - RC - AUX-FG	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)														
ENVIRONMENT	OUTPUT-RC - AUX	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)														
	OPERATING TEMP.,HUMID.AND ALTITUDE	-20 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														
SAFETY AND NOISE REGULATIONS	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 *7														
OTHERS	CASE SIZE/WEIGHT	150×61×240mm [5.91×2.4×9.45 inches] (without terminal block and screw) (W×H×D) /2.2kg max														
	COOLING METHOD	Forced cooling (internal fan)														

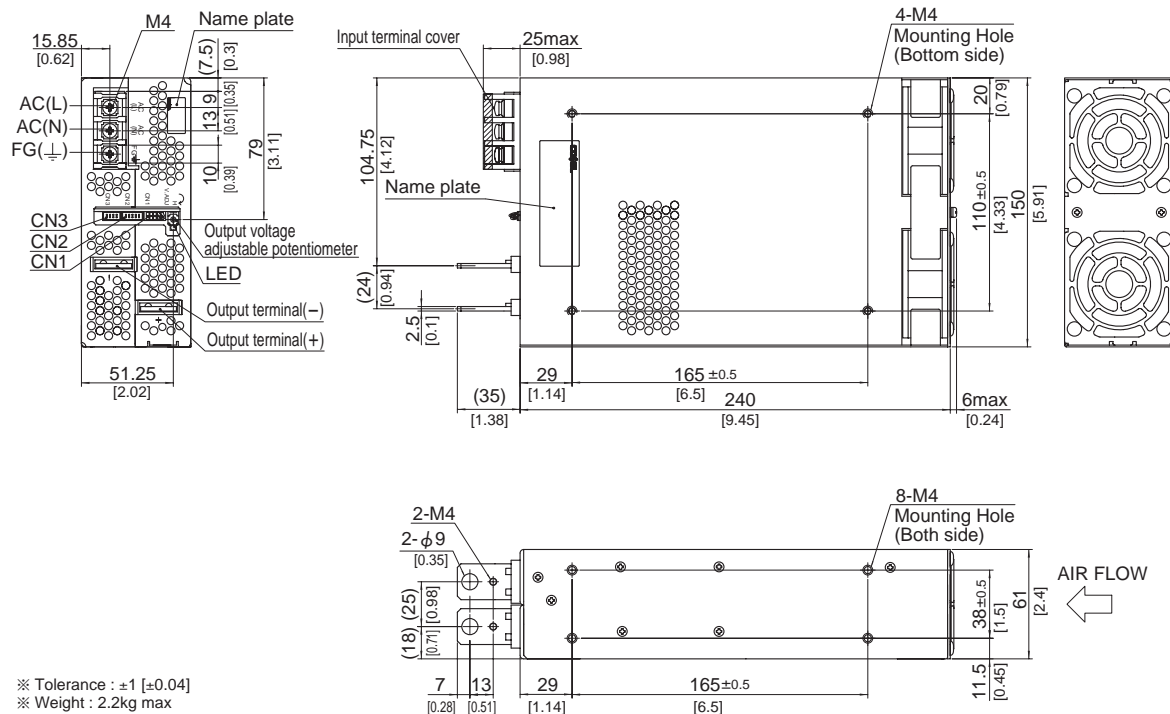
\*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).  
Ripple and ripple noise is measured on measuring board with capacitor of 22 μF within 150mm from the output terminal.  
\*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.  
\*3 ( ) means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.

\*4 Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.  
\*5 Derating is required.Consult us for details.  
\*6 Please contact us about safety approvals for the model with option.  
\*7 Please contact us about class C.  
\* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 2.2kg max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 1.2N · m(12.8kgf · cm)max
- ※ Screw tightening torque : 1.6N · m(16.9kgf · cm)max
- ※ The housing for the remote sensing unused is mounted on CN1
- ※ Please connect safety ground to FG terminal on the unit.

# PBA1500F

① PB ② A ③ 1500 ④ F ⑤ -5 ⑥ -□



Recommended EMI/EMC Filter  
NAC-20-472



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 Single output
  - ③ Output wattage
  - ④ Universal input
  - ⑤ Output voltage
  - ⑥ Optional \*6
- C :with Coating  
G :Low leakage current  
U :Operation stop voltage is set at a lower value  
F1 :With Long-Life fan  
F3 :Reverse air exhaust type  
F4 :Low speed fan

Refer to instruction manual 7.1.

MODEL	PBA1500F-3R3	PBA1500F-5	PBA1500F-7R5	PBA1500F-12	PBA1500F-15	PBA1500F-24	PBA1500F-36	PBA1500F-48	
MAX OUTPUT WATTAGE[W]	990	1500	1500	1500	1500	1680	1692	1680	
DC OUTPUT	ACIN 100V	3.3V 300A	5V 300A	7.5V 200A	12V 125A	15V 100A	24V 65A	36V 42A	48V 32A
	ACIN 200V *3	3.3V 300A	5V 300A	7.5V 200A	12V 125A	15V 100A	24V 70(105)A	36V 47(70)A	48V 35A

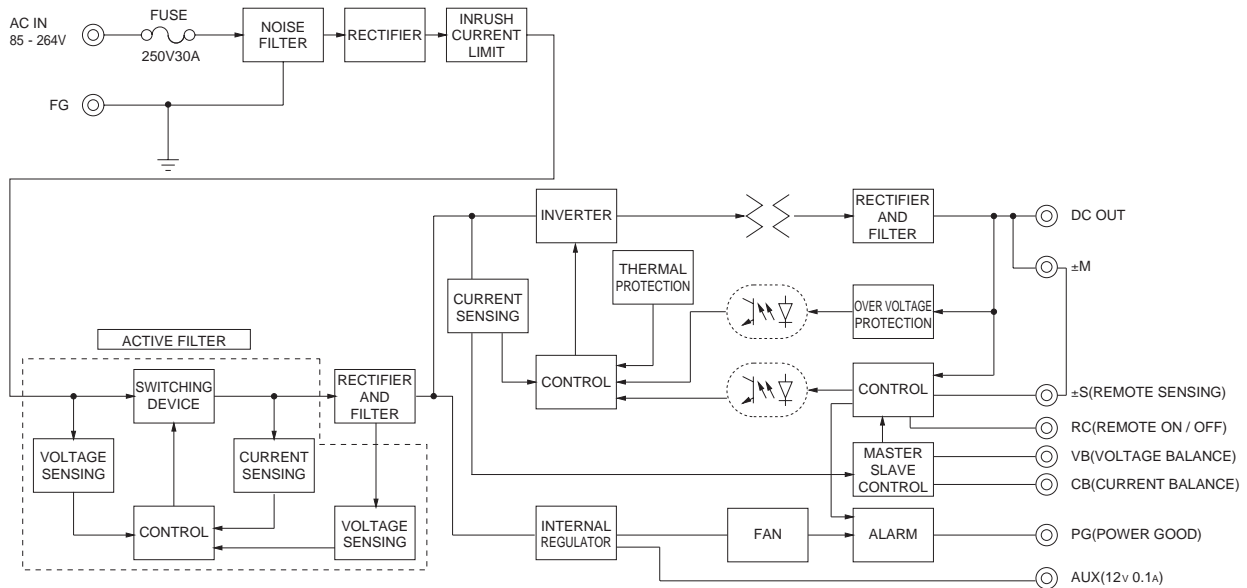
## SPECIFICATIONS

	MODEL	PBA1500F-3R3	PBA1500F-5	PBA1500F-7R5	PBA1500F-12	PBA1500F-15	PBA1500F-24	PBA1500F-36	PBA1500F-48							
INPUT	VOLTAGE[V]	AC85 - 264 1 φ or DC120 - 370 (AC50 or DC70 Please refer to the instruction manual 7. option *5)														
	CURRENT[A]	ACIN 100V	15typ	19typ												
		ACIN 200V	8typ	10typ												
	FREQUENCY[Hz]	50/60 (47 - 63)														
	EFFICIENCY[%]	ACIN 100V	72typ	77typ	81typ	81typ	83typ	84typ	84typ	84typ						
		ACIN 200V	75typ	81typ	83typ	84typ	86typ	87typ	87typ	87typ						
	POWER FACTOR	ACIN 100V	0.98typ (Io=100%)													
ACIN 200V		0.95typ (Io=100%)														
INRUSH CURRENT[A]	ACIN 100V	20/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10 sec. to re-start)														
	ACIN 200V	40/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10 sec. to re-start)														
LEAKAGE CURRENT[mA]	0.9/1.5max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1, DENAN)															
OUTPUT	VOLTAGE[V]	3.3	5	7.5	12	15	24	36	48							
	CURRENT[A]	ACIN 100V	300	300	200	125	100	65	42	32						
		ACIN 200V *3	300	300	200	125	100	70(105)	47(70)	35						
	LINE REGULATION[mV]	20max	20max	36max	48max	60max	96max	144max	192max							
	LOAD REGULATION[mV]	40max	40max	60max	100max	120max	150max	150max	300max							
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	120max	150max	150max						
		-20 - 0°C *1	140max	140max	160max	160max	160max	160max	160max	400max						
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	150max	200max	200max						
		-20 - 0°C *1	160max	160max	180max	180max	180max	180max	240max	500max						
	TEMPERATURE REGULATION[mV]	0 to +50°C	40max	50max	75max	120max	150max	240max	360max	480max						
		-20 to +50°C	60max	75max	120max	180max	180max	290max	440max	600max						
	DRIFT[mV]	*2	12max	20max	30max	48max	60max	96max	144max	192max						
	START-UP TIME[ms]	600typ(ACIN 100/200V, Io=100%)														
HOLD-UP TIME[ms]	20typ (ACIN 100/200V, Io=100%)															
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	2.64 - 3.96		3.96 - 6.00		5.25 - 8.25		8.25 - 13.20		10.50 - 16.50		16.50 - 26.40		25.20 - 39.60		38.40 - 56.00	
OUTPUT VOLTAGE SETTING[V]	3.30 - 3.40		5.00 - 5.15		7.50 - 7.80		12.00 - 12.48		15.00 - 15.60		24.00 - 24.96		36.00 - 37.44		48.00 - 49.92	
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rated current or 101% of peak current and recovers automatically														
	OVERVOLTAGE PROTECTION[V] *4	Vo+0.66 - 1.32	Vo+1.0 - 2.0	Vo+1.5 - 3.0	Vo+2.4 - 4.8	Vo+3.0 - 6.0	Vo+4.8 - 9.6	Vo+7.2 - 14.4	Vo+4.8 - 12.0							
	OPERATING INDICATION	LED (Green)														
	REMOTE SENSING	Provided														
ISOLATION	REMOTE ON/OFF	Provided														
	INPUT-OUTPUT - RC	AC3,000V 1minute, Cutoff current = 25mA, DC500V 50MΩmin (At Room Temperature)														
	INPUT-FG	AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩmin (At Room Temperature)														
	OUTPUT - RC - AUX-FG	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)														
ENVIRONMENT	OUTPUT-RC - AUX	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)														
	OPERATING TEMP.,HUMID.AND ALTITUDE	-20 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														
SAFETY AND NOISE REGULATIONS	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, EN5011-B, EN55022-B, additional EMI/EMC Filter required for meeting class B														
	HARMONIC ATTENUATOR	Complies with IEC61000-3-2 *7														
OTHERS	CASE SIZE/WEIGHT	178 X 61 X 268mm [7.01 X 2.4 X 10.55 inches] (without terminal block and screw) (W X H X D) /3.4kg max														
	COOLING METHOD	Forced cooling (internal fan)														

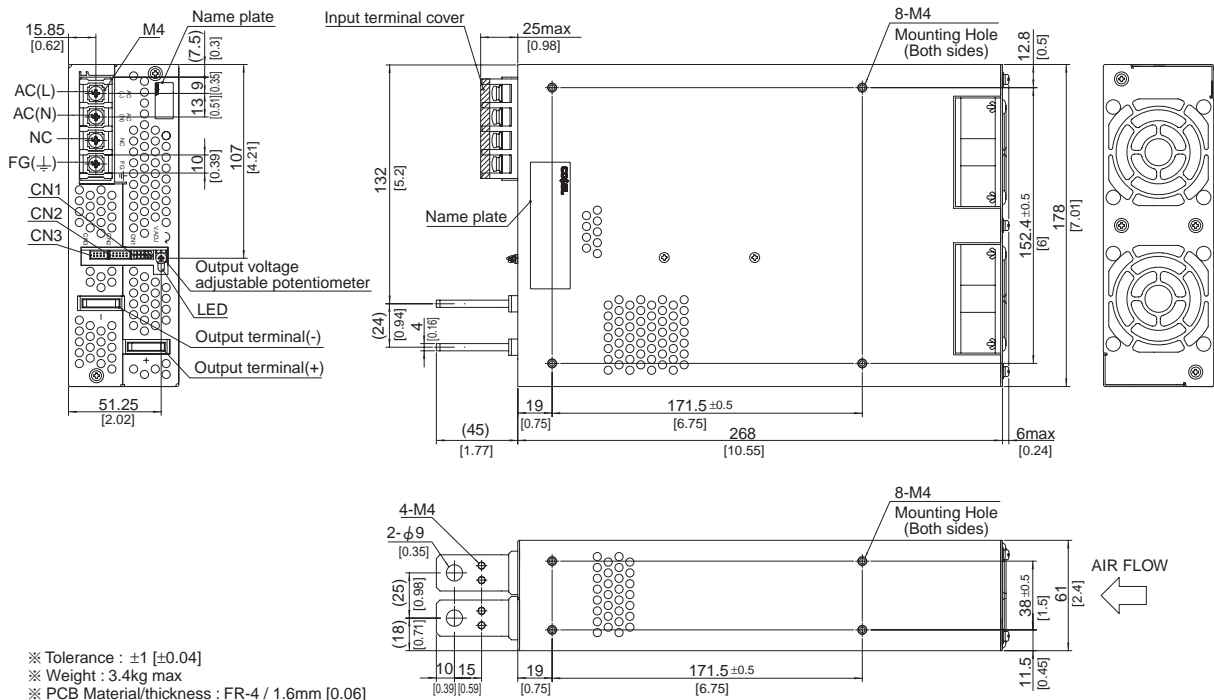
\*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).  
Ripple and ripple noise is measured on measuring board with capacitor of 22 μF within 150mm from the output terminal.  
\*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.  
\*3 ( ) means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.

\*4 Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.  
\*5 Derating is required.Consult us for details.  
\*6 Please contact us about safety approvals for the model with option.  
\*7 Please contact us about class C.  
\* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 3.4kg max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 1.2N • m(12.8kgf • cm)max
- ※ Screw tightening torque : 1.6N • m(16.9kgf • cm)max
- ※ The housing for the remote sensing unused is mounted on CN1
- ※ Please connect safety ground to FG terminal on the unit.

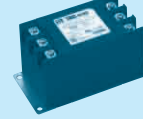


# PBA1500T

① PB ② A ③ 1500 ④ T ⑤ -5 ⑥ -□



Recommended EMI/EMC Filter  
TAC-10-683



- ① Series name
- ② Single output
- ③ Output wattage
- ④ Triple input phase
- ⑤ Output voltage
- ⑥ Optional \*6
- C :with Coating
- G :Low leakage current
- U :Operation stop voltage is set at a lower value
- F1 :With Long-Life fan
- F3 :Reverse air exhaust type
- F4 :Low speed fan

Refer to instruction manual 7.1.

MODEL	PBA1500T-5	PBA1500T-12	PBA1500T-24	PBA1500T-48
MAX OUTPUT WATTAGE[W]	1500	1500	1680	1680
DC OUTPUT	ACIN 200V *3 5V 300A	12V 125A	24V 70(105)A	48V 35A

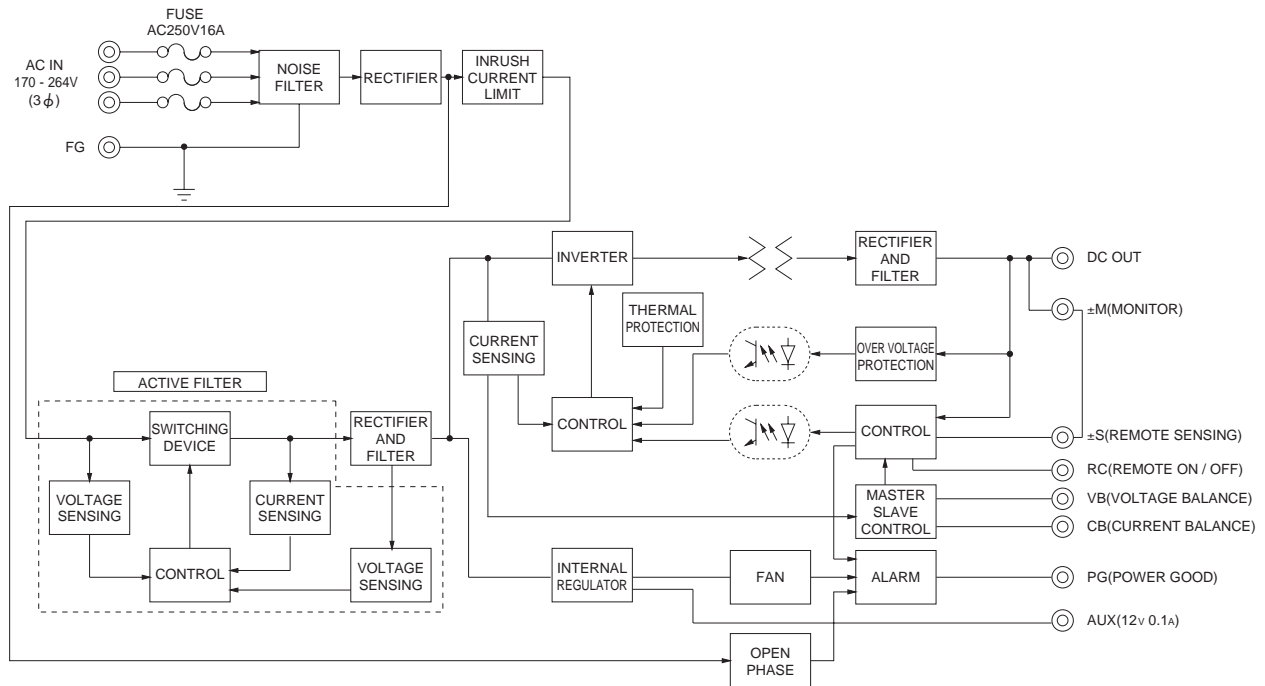
## SPECIFICATIONS

	MODEL	PBA1500T-5	PBA1500T-12	PBA1500T-24	PBA1500T-48	
INPUT	VOLTAGE[V]	AC170 - 264 3φ (AC100 Please refer to the instruction manual 7. option *5)				
	CURRENT[A]	ACIN 200V 6typ				
	FREQUENCY[Hz]	50/60 (47 - 63)				
	EFFICIENCY[%]	ACIN 200V 81typ	84typ	87typ	87typ	
	POWER FACTOR	ACIN 200V 0.95typ (Io=100%)				
	INRUSH CURRENT[A]	ACIN 200V 40/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10 sec. to re-start)				
OUTPUT	LEAKAGE CURRENT[mA]	1.5max (ACIN 240V 60Hz, Io=100%, According to IEC60950-1, DENAN)				
	VOLTAGE[V]	5	12	24	48	
	CURRENT[A]	ACIN 200V *3 300	125	70(105)	35	
	LINE REGULATION[mV]	20max	48max	96max	192max	
	LOAD REGULATION[mV]	40max	100max	150max	300max	
	RIPPLE[mVp-p]	0 to +50°C *1	80max	120max	120max	150max
		-20 - 0°C *1	140max	160max	160max	400max
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	150max	150max	200max
		-20 - 0°C *1	160max	180max	180max	500max
	TEMPERATURE REGULATION[mV]	0 to +50°C	50max	120max	240max	480max
		-20 to +50°C	75max	180max	290max	600max
	DRIFT[mV]	*2 20max	48max	96max	192max	
	START-UP TIME[ms]	300typ(ACIN 200V, Io=100%) * Start-up time is 500ms typ for less than 1 minute of applying input again from turning off the input voltage.				
	HOLD-UP TIME[ms]	20typ (ACIN 200V, Io=100%)				
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	3.96 - 6.00	8.25 - 13.20	16.50 - 26.40	38.40 - 56.00		
OUTPUT VOLTAGE SETTING[V]	5.00 - 5.15	12.00 - 12.48	24.00 - 24.96	48.00 - 49.92		
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rated current or 101% of peak current and recovers automatically				
	OVERVOLTAGE PROTECTION[V] *4	Vo+1.0 - 2.0	Vo+2.4 - 4.8	Vo+4.8 - 9.6	Vo+2.0 - 12.0	
	OPERATING INDICATION	LED (Green)				
	REMOTE SENSING	Provided				
ISOLATION	REMOTE ON/OFF	Provided				
	INPUT-OUTPUT - RC	AC3,000V 1minute, Cutoff current = 25mA, DC500V 50MΩmin (At Room Temperature)				
	INPUT-FG	AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩmin (At Room Temperature)				
	OUTPUT - RC - AUX-FG	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)				
ENVIRONMENT	OUTPUT-RC - AUX	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)				
	OPERATING TEMP.,HUMID.AND ALTTITUDE	-20 to +71°C (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max				
	STORAGE TEMP.,HUMID.AND ALTTITUDE	-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 (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, additional EMI/EMC Filter required for meeting class B				
OTHERS	CASE SIZE/WEIGHT	178×61×268mm [7.01×2.4×10.55 inches] (without terminal block and screw) (W×H×D) /3.4kg max				
	COOLING METHOD	Forced cooling (internal fan)				

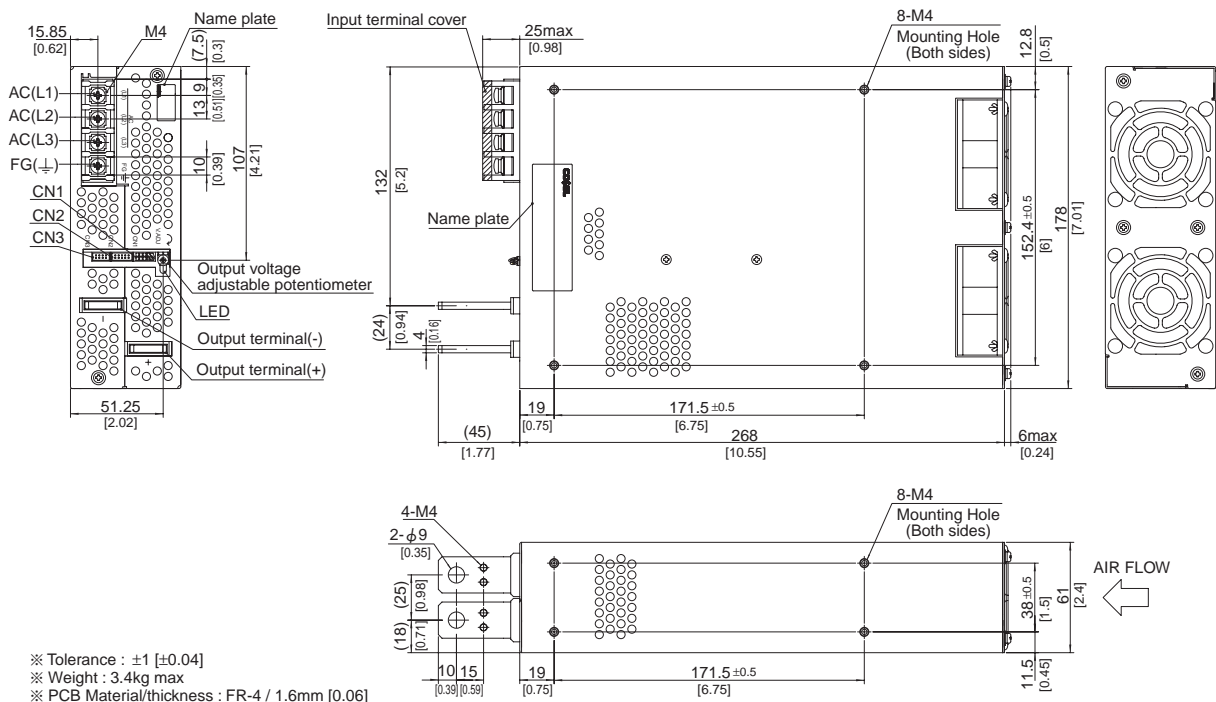
\*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).  
Ripple and ripple noise is measured on measuring board with capacitor of 22 μF within 150mm from the output terminal.  
\*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.  
\*3 ( ) means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.

\*4 Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.  
\*5 Derating is required.Consult us for details.  
\*6 Please contact us about safety approvals for the model with option.  
\* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



- ※ Tolerance :  $\pm 1$  [ $\pm 0.04$ ]
- ※ Weight : 3.4kg max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 1.2N · m (12.8kgf · cm) max
- ※ Screw tightening torque : 1.6N · m (16.9kgf · cm) max
- ※ The housing for the remote sensing unused is mounted on CN1
- ※ Please connect safety ground to unit in M4 holes.

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