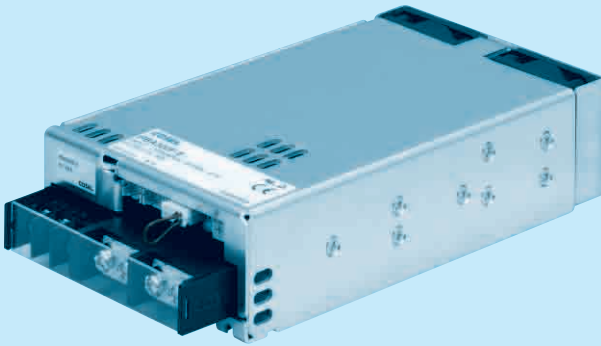


Recommended EMI/EMC Filter
NAC-06-472

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
	ACIN 200V *3	3.3V 60A	5V 60A	7.5V 40A	12V 27A	15V 22A	24V 14(16.5)A	36V 9A

SPECIFICATIONS

	MODEL		PBA300F-3R3	PBA300F-5	PBA300F-7R5	PBA300F-12	PBA300F-15	PBA300F-24	PBA300F-36	PBA300F-48
INPUT	VOLTAGE[V]		AC85 - 264 1ϕ 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	81typ	79typ
		ACIN 200V	71typ	77typ	79typ	81typ	81typ	82typ	84typ	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)							
OUTPUT	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℃ *1	80max	80max	120max	120max	120max	150max	150max	150max
		-20 - 0℃ *1	140max	140max	160max	160max	160max	160max	160max	400max
	RIPPLE NOISE[mVp-p]	0 to +50℃ *1	120max	120max	150max	150max	150max	150max	200max	200max
		-20 - 0℃ *1	160max	160max	180max	180max	180max	180max	240max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	40max	50max	75max	120max	150max	240max	360max	480max
		-20 to +50℃	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
PROTECTION CIRCUIT AND OTHERS	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							
ISOLATION	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)							
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-20 to +71℃ (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max							
	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 (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 *6							
OTHERS	CASE SIZE/WEIGHT		102×42×170mm [4.02×1.65×6.69 inches] (without terminal block and screw) (W×H×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℃.

*3 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.

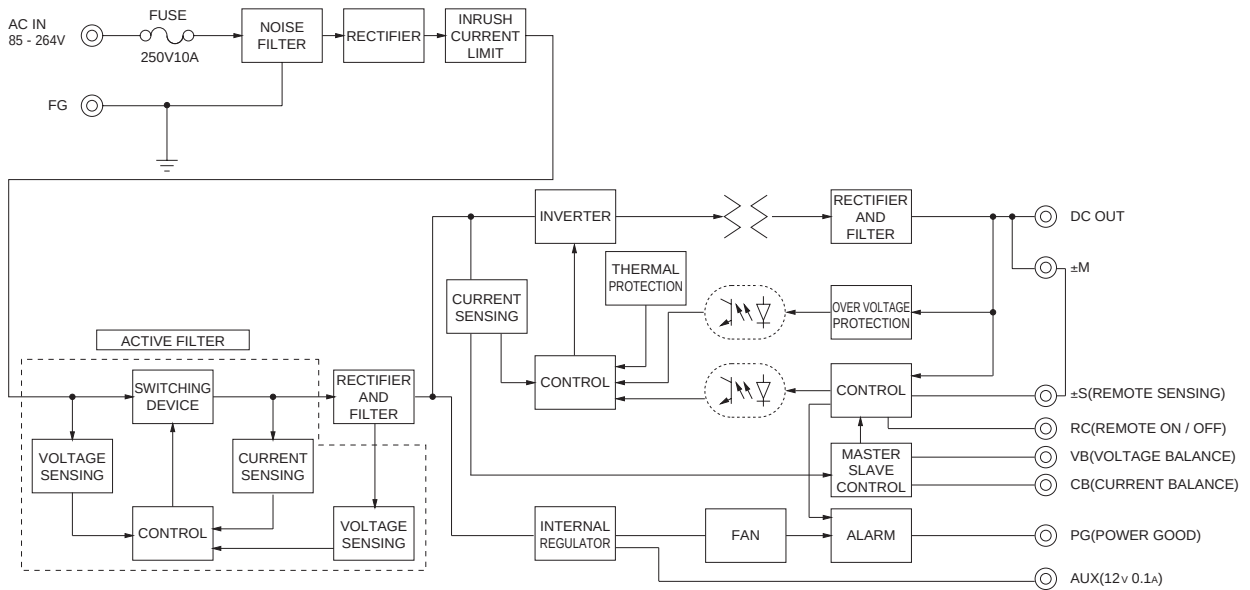
*4 Derating is required.Consult us for details.

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

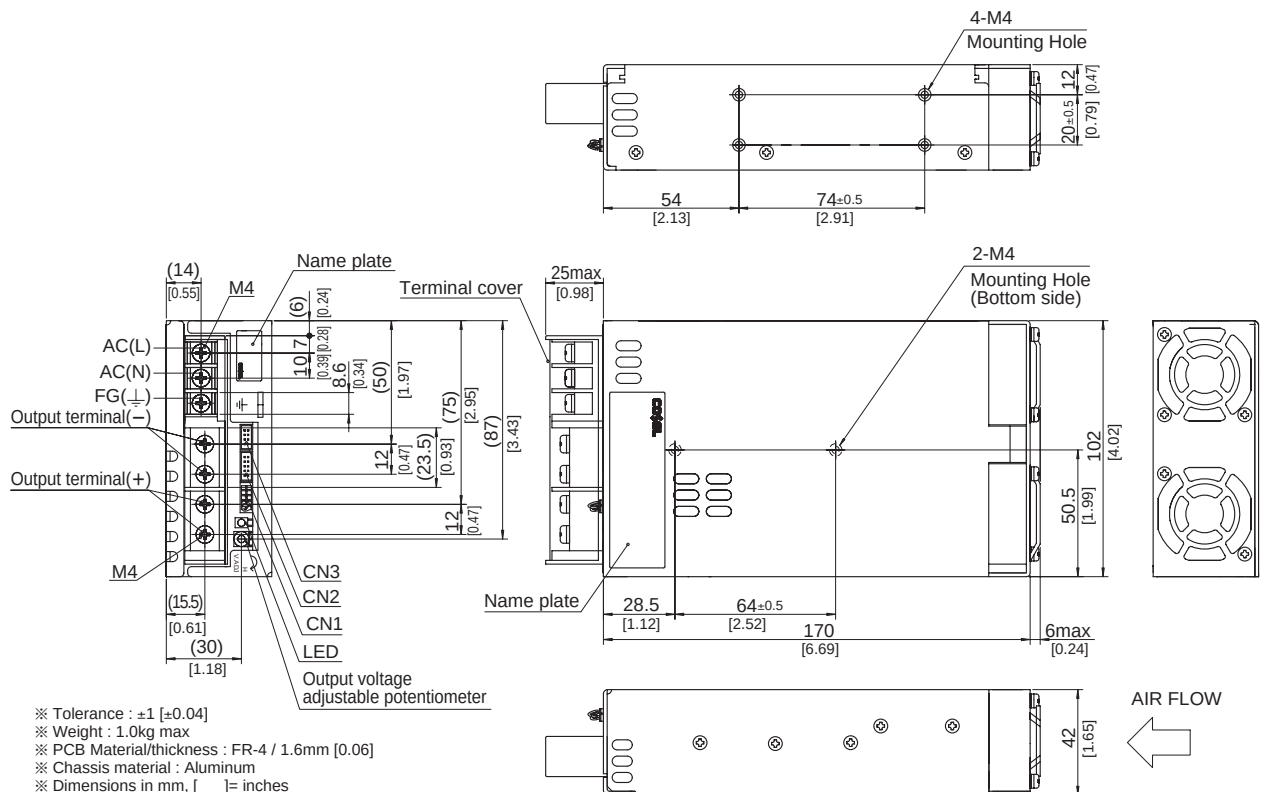
*6 Please contact us about class C.

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

Block diagram

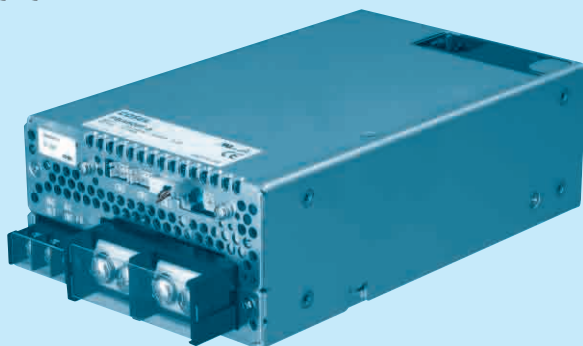


External view



- ※ 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 is mounted on CN1
- ※ Please connect safety ground to FG terminal on the unit.



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 1ϕ 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℃ *1	80max	80max	120max	120max	120max	120max	150max	150max
		-20 - 0℃ *1	140max	140max	160max	160max	160max	160max	160max	400max
	RIPPLE NOISE[mVp-p]	0 to +50℃ *1	120max	120max	150max	150max	150max	150max	200max	200max
		-20 - 0℃ *1	160max	160max	180max	180max	180max	180max	240max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	40max	50max	75max	120max	150max	240max	360max	480max
		-20 to +50℃	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								
	REMOTE ON/OFF	Provided								
ISOLATION	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)								
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	-20 to +71℃ (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max								
	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 (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℃.

*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.

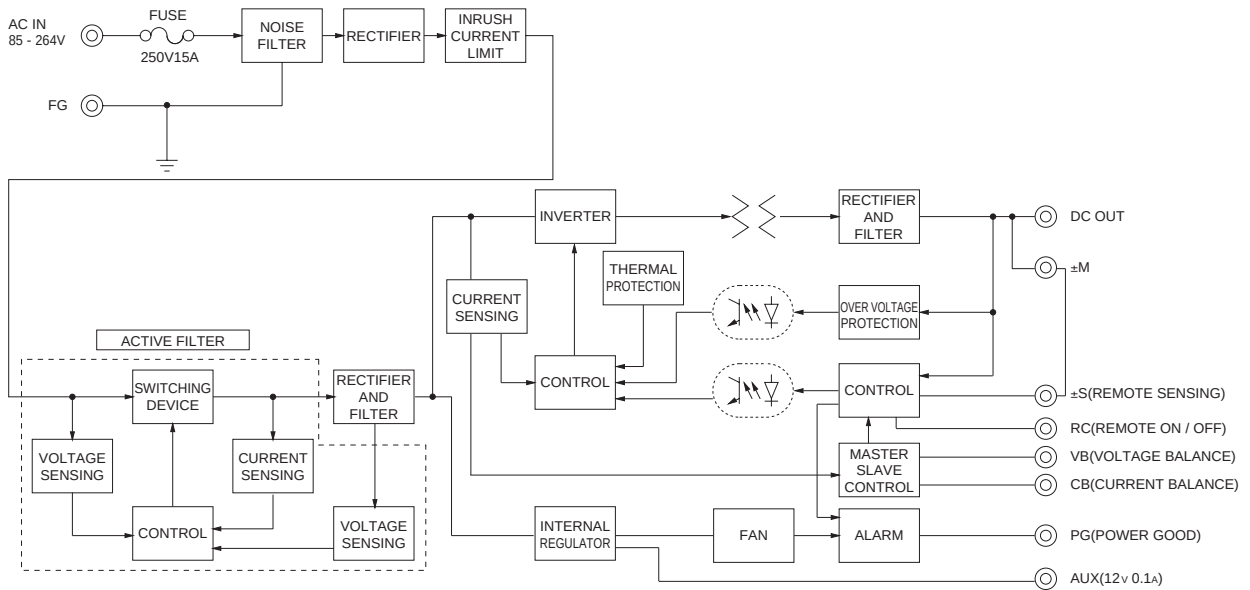
*5 Derating is required. Consult us for details.

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

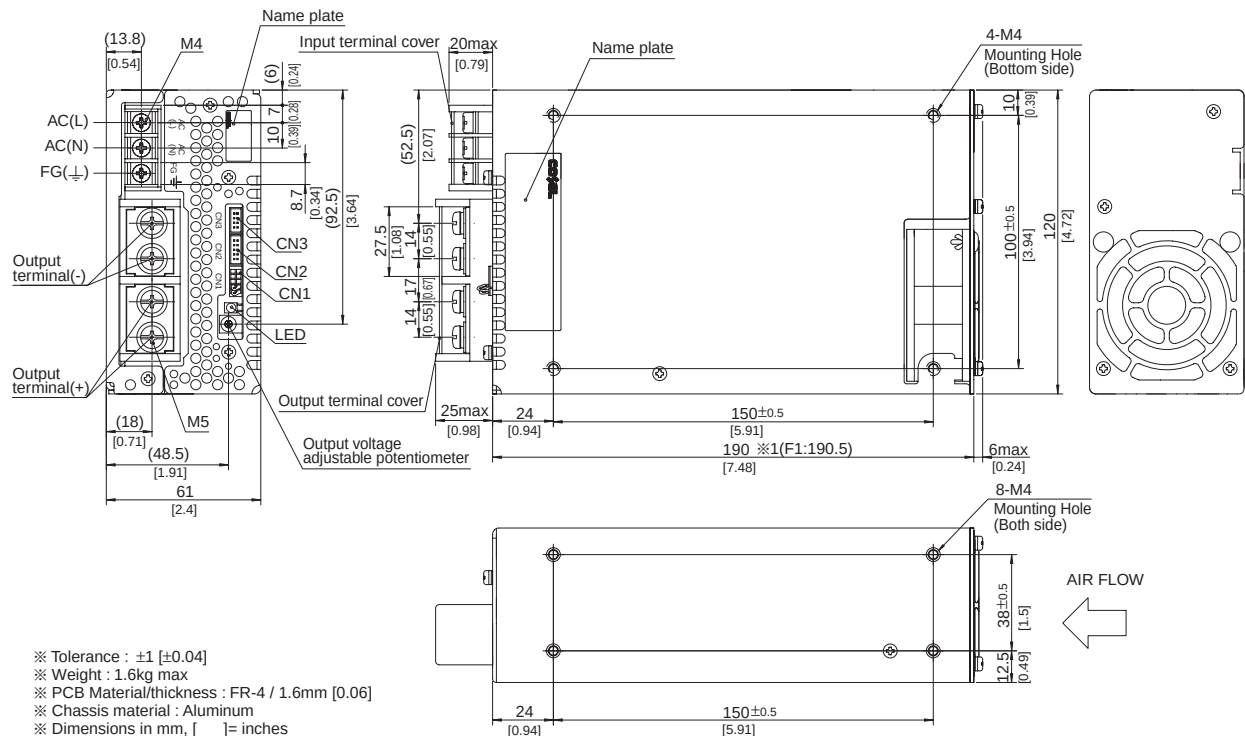
*7 Please contact us about class C.

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

Block diagram



External view

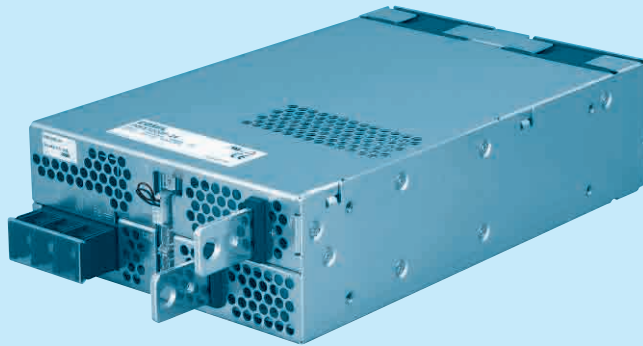
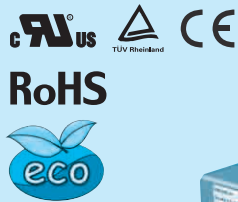


- ※ Tolerance : ± 1 [± 0.04]
- ※ Weight : 1.6kg max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Dimensions in mm, [] = inches
- ※ Mounting torque : M4 1.2N · m (12.8kgf · cm) max
- ※ Screw tightening torque : M4 1.6N · m (16.9kgf · cm) max
M5 2.5N · m (24.5kgf · 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

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
	ACIN 200V *3	3.3V 200A	5V 200A	7.5V 134A	12V 88A	15V 70A	24V 44(51)A	36V 29A

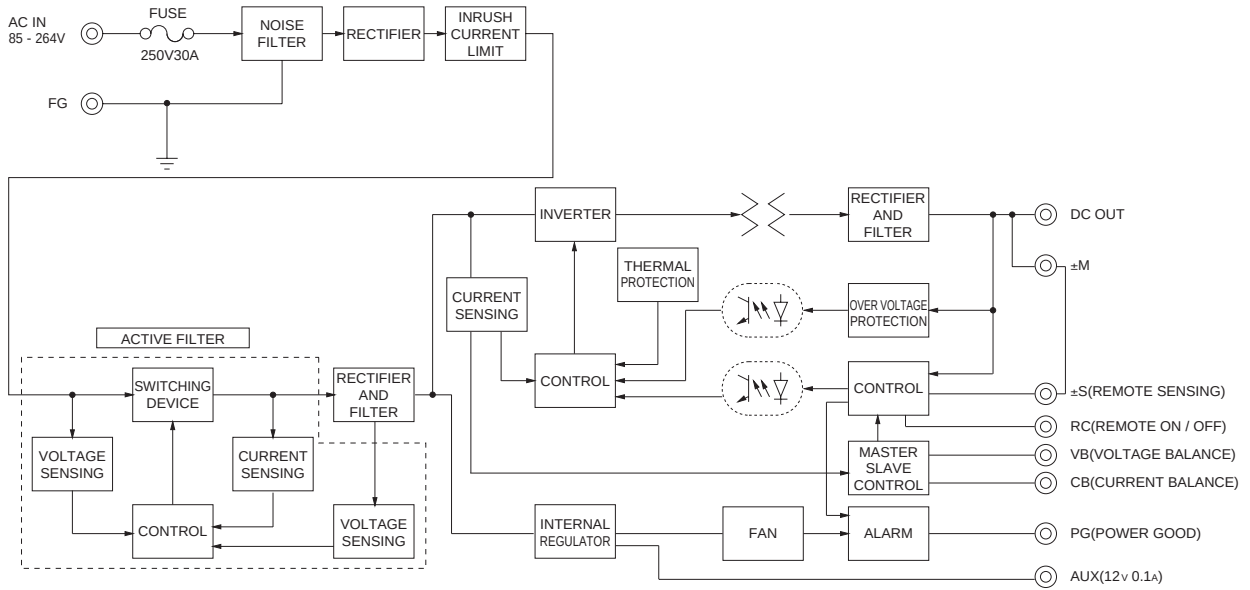
SPECIFICATIONS

	MODEL		PBA1000F-3R3	PBA1000F-5	PBA1000F-7R5	PBA1000F-12	PBA1000F-15	PBA1000F-24	PBA1000F-36	PBA1000F-48	
INPUT	VOLTAGE[V]		AC85 - 264 1ϕ 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 then 10 sec. to re-start)								
		ACIN 200V	40/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More then 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		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℃ *1	80max	80max	120max	120max	120max	150max	150max	150max	
		-20 - 0℃ *1	140max	140max	160max	160max	160max	160max	160max	400max	
	RIPPLE NOISE[mVp-p]	0 to +50℃ *1	120max	120max	150max	150max	150max	150max	200max	200max	
		-20 - 0℃ *1	160max	160max	180max	180max	180max	180max	240max	500max	
	TEMPERATURE REGULATION[mV]	0 to +50℃	40max	50max	75max	120max	150max	240max	360max	480max	
		-20 to +50℃	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								
	REMOTE ON/OFF		Provided								
ISOLATION	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)								
	OUTPUT-RC · AUX		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)								
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE		-20 to +71℃ (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max								
	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 (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 x 61 x 240mm [5.91 x 2.4 x 9.45 inches] (without terminal block and screw) (W x H x D) /2.2kg max								
	COOLING METHOD		Forced cooling (internal fan)								

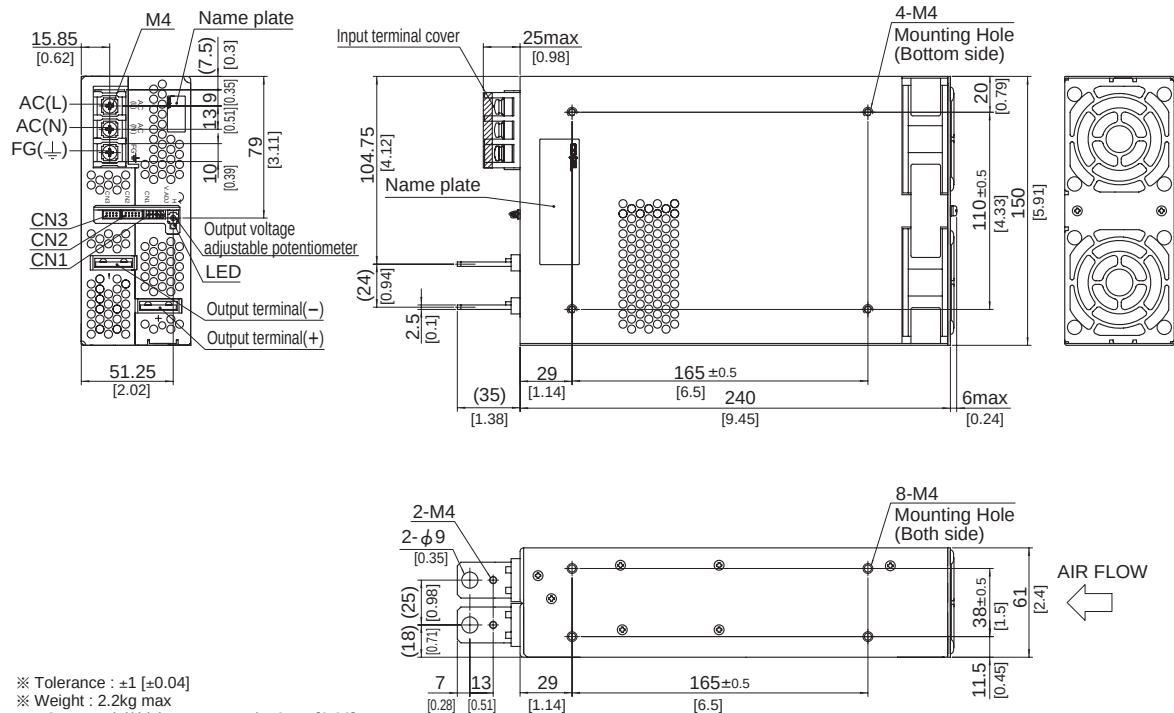
*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN :RM101).
Ripple and ripple noise is measured on measuring board with capacitor of 22 μF within 150mm from the output terminal.
*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.
*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

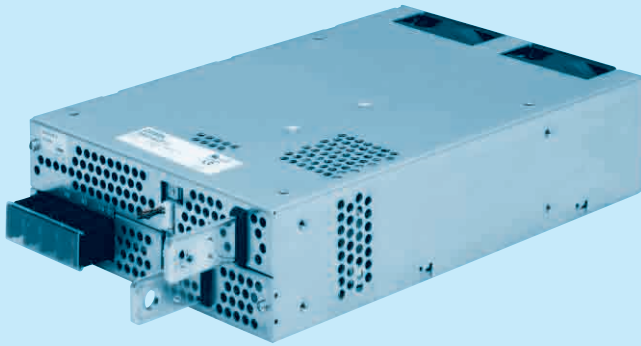


- ※ Tolerance : ± 1 [± 0.04]
- ※ Weight : 2.2kg max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Dimensions in mm, [] = inches
- ※ Mounting torque : $1.2\text{N} \cdot \text{m}$ (12.8kgf $\cdot$ cm) max
- ※ Screw tightening torque : $1.6\text{N} \cdot \text{m}$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

PBA1500F

PB A 1500 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	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
	ACIN 200V *3	3.3V 300A	5V 300A	7.5V 200A	12V 125A	15V 100A	24V 70(105)A	36V 47(70)A

SPECIFICATIONS

	MODEL		PBA1500F-3R3	PBA1500F-5	PBA1500F-7R5	PBA1500F-12	PBA1500F-15	PBA1500F-24	PBA1500F-36	PBA1500F-48
INPUT	VOLTAGE[V]		AC85 - 264 1ϕ 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%)								
	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℃ *1	80max	80max	120max	120max	120max	120max	150max	150max
		-20 - 0℃ *1	140max	140max	160max	160max	160max	160max	160max	400max
	RIPPLE NOISE[mVp-p]	0 to +50℃ *1	120max	120max	150max	150max	150max	150max	200max	200max
		-20 - 0℃ *1	160max	160max	180max	180max	180max	180max	240max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	40max	50max	75max	120max	150max	240max	360max	480max
		-20 to +50℃	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							
	REMOTE ON/OFF		Provided							
ISOLATION	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)							
	OUTPUT-RC · AUX		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)							
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-20 to +71℃ (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max							
	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 (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							
	HARMONIC ATTENUATOR		Complies with IEC61000-3-2 *7							
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 22μF 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℃.

*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.

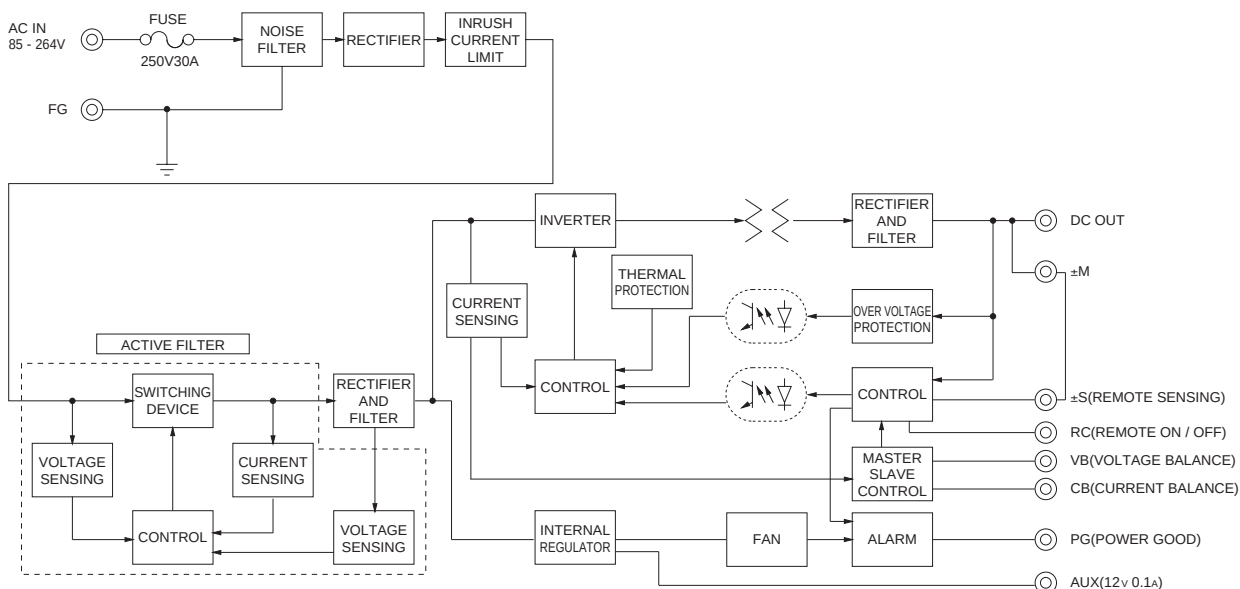
*5 Derating is required. Consult us for details.

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

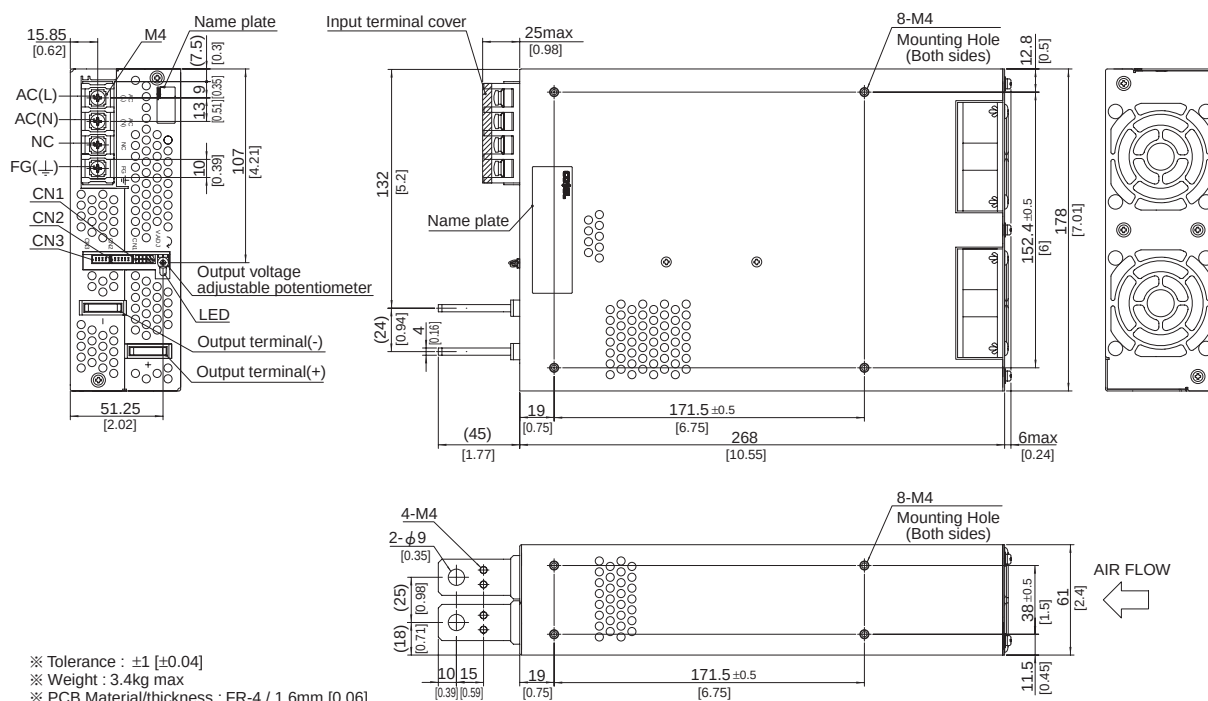
*7 Please contact us about class C.

* 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

PB

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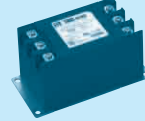
④

⑤

⑥



RoHS

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℃ *1 80max	120max	120max	150max
		-20 - 0℃ *1 140max	160max	160max	400max
	RIPPLE NOISE[mVp-p]	0 to +50℃ *1 120max	150max	150max	200max
		-20 - 0℃ *1 160max	180max	180max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃ 50max	120max	240max	480max
		-20 to +50℃ 75max	180max	290max	600max
	DRIFT[mV]	*2 20max	48max	96max	192max
PROTECTION CIRCUIT AND OTHERS	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
	OVERCURRENT PROTECTION	Works over 105% of rated current or 101% of peak current and recovers automatically			
ISOLATION	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			
	REMOTE ON/OFF	Provided			
ENVIRONMENT	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)			
	OUTPUT-RC · AUX	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩmin (At Room Temperature)			
SAFETY AND NOISE REGULATIONS	OPERATING TEMP., HUMID. AND ALTITUDE	-20 to +71℃ (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max			
	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 (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 22μF within 150mm from the output terminal.

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*3 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.

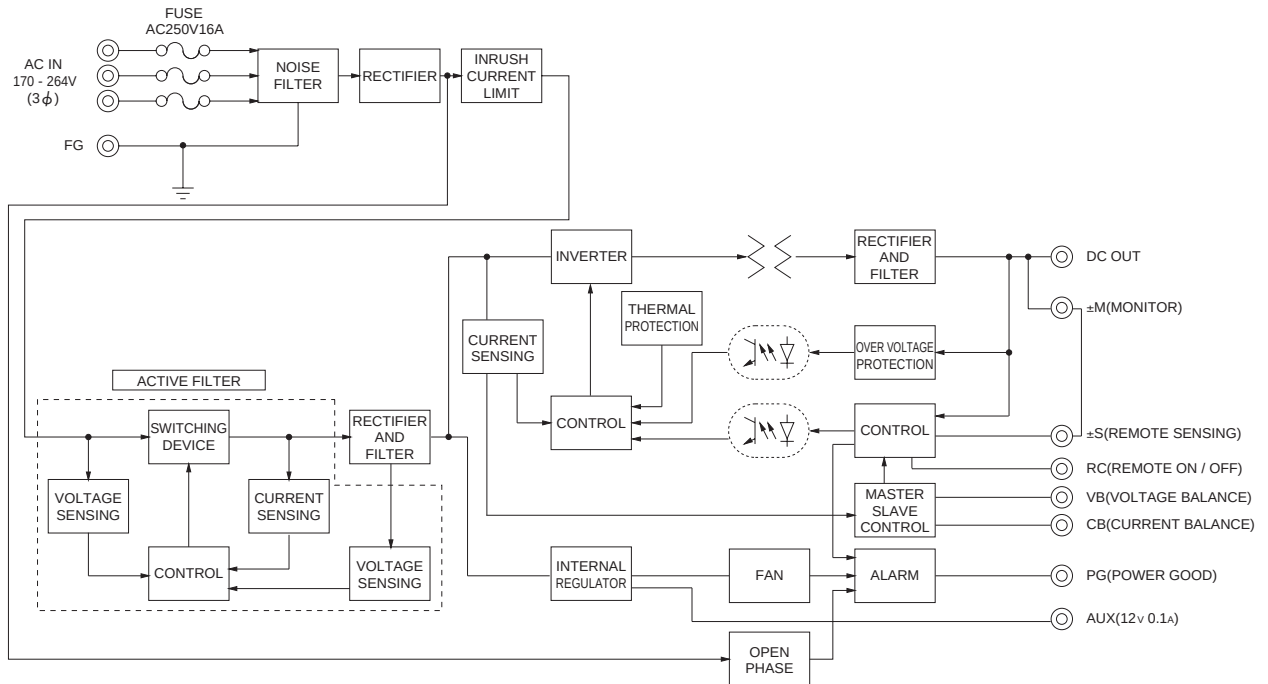
*4 Overvoltage protection circuit to follow to output voltage setting. Standard overvoltage protection circuit is please contact us for details.

*5 Derating is required. Consult us for details.

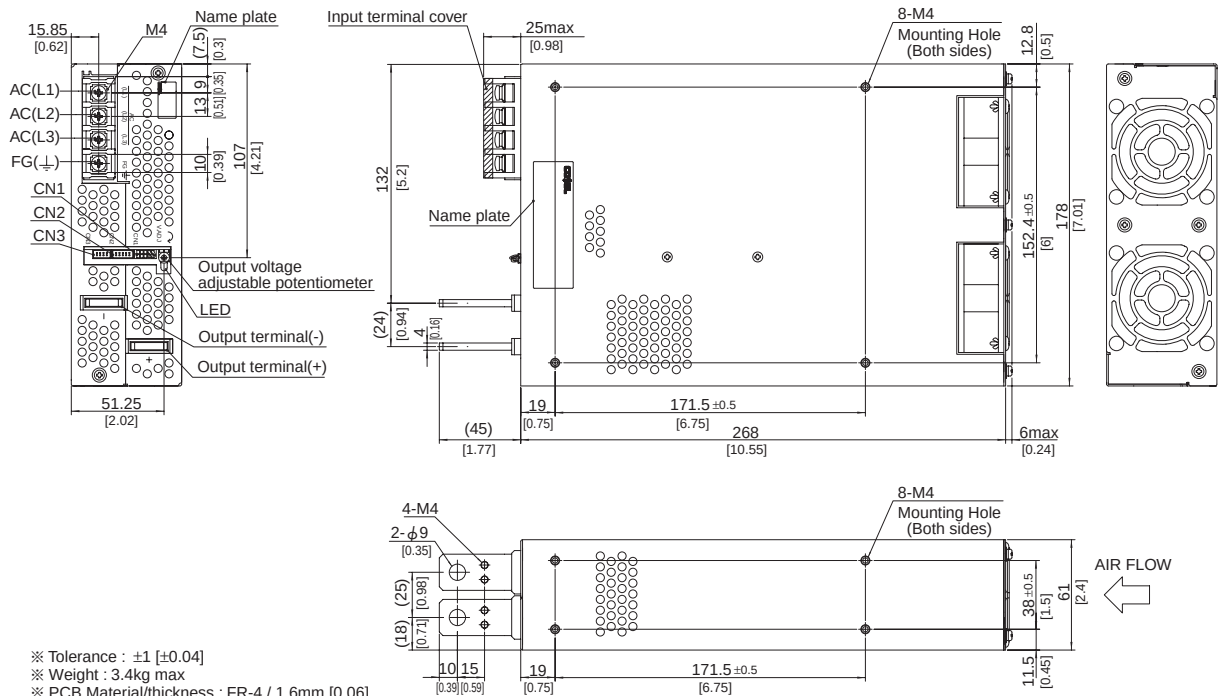
*6 Please contact us about safety approvals for the model with option.

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

Block diagram



External view



- ※ Tolerance : ± 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 unit in M4 holes.



Макро Групп – это:

- дистрибьютор электронных компонентов с 1994 года
- контрактный производитель электроники с 2007 года с собственным производством в Санкт-Петербурге (компания Макро ЕМС, входит в ГК Макро Групп)
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