**AC-DC Power Supplies Enclosed Type** 

### PBA10F

#### Ordering information

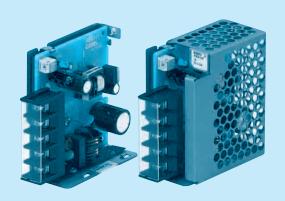
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High voltage pulse noise type : NAP series Low leakage current type : NAM series \*The EMI/EMC Filter is recommended to connect with several devices.

- ①Series name ②Single output
- 3 Output wattage 4 Universal input
- ⑤Output voltage ⑥Optional \*5
- C :with Coating
  G :Low leakage current
  E :Low leakage current
  and EMI class A
  T :Vertical terminal block
- Vertical terrifinal block
   J :Connector type
   N :with Cover
   (UL508 is acquired)
   Wi :with DIN rail and Cover

- V :Output voltage setting
- potentiometer external-

Cover is optional

MODEL	PBA10F-5	PBA10F-12	PBA10F-24
MAX OUTPUT WATTAGE[W]	10	10.8	12
DC OUTPUT	5V 2A	12V 0.9A	24V 0.5A

#### **SPECIFICATIONS**

	MODEL		PBA10F-5	PBA10F-12	PBA10F-24
	VOLTAGE[V]		AC85 - 264 1 φ or DC110 - 370 (AC5	0 or DC70 Please refer to the instruction	on manual 2.1 Input voltage *3)
	CUDDENTIAL	ACIN 100V	0.30typ (lo=100%)		
	CURRENT[A]	ACIN 200V	0.20typ (Io=100%)		
	FREQUENCY[Hz]		50/60 (47 - 440) or DC		
INPUT	EFFICIENCY[0/]	ACIN 100V	74typ	76typ	77typ
	EFFICIENCY[%]	ACIN 200V	74typ	76typ	77typ
	INRUSH CURRENT[A]	ACIN 100V	15typ (Io=100%)		
	INKUSH CUKKENI[A]	ACIN 200V	30typ (Io=100%)		
	LEAKAGE CURREN	T[mA]	0.15/0.30max (ACIN 100V/240V 60Hz	, lo=100%, According to IEC60950-1,D	ENAN)
	VOLTAGE[V]		5	12	24
	CURRENT[A]		2	0.9	0.5
	LINE REGULATION[I	mV] *6	20max	48max	96max
	LOAD REGULATION	[mV] *6	40max	100max	150max
	RIPPLE[mVp-p]	0 to +50°C *1	80max	120max	120max
	KIFFEE[IIIVP-P]	-10 - 0℃ *1	140max	160max	160max
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	150max	150max
OUTPUT	KIPPLE NOISE[IIIVP-P]	-10 - 0℃ *1	160max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	240max
	TEMPERATORE REGULATION[IIV]	-10 to +50℃	60max	150max	290max
	DRIFT[mV]	*2	20max	48max	96max
	START-UP TIME[ms]		200typ(ACIN 100V, Io=100%) *Start-up time	is 700ms typ for less than 1minute of applying	g input again from turning off the input voltage.
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)		
	OUTPUT VOLTAGE ADJUSTMENT	FRANGE[V]	4.50 - 5.50	10.0 - 13.2	19.2 - 27.0
	OUTPUT VOLTAGE SET	TING[V]	5.00 - 5.15	12.00 - 12.48	24.00 - 24.96
		ECTION	Works over 105% of rated current and	recovers automatically	
PROTECTION CIRCUIT AND	OVERVOLTAGE PROTEC	TION[V]	5.75 - 7.00	15.0 - 18.0	30.0 - 37.0
OTHERS	OPERATING INDICA	TION	LED (Green)		
	REMOTE ON/OFF		None		
	INPUT-OUTPUT			0mA, DC500V 50MΩmin (At Room Te	· · · · · · · · · · · · · · · · · · ·
ISOLATION	INPUT-FG			0mA, DC500V 50M $\Omega$ min (At Room Te	
	OUTPUT-FG			mA, DC500V 50M $\Omega$ min (At Room Tem	
	OPERATING TEMP.,HUMID.AND			- 90%RH (Non condensing) 3,000m (10	0,000feet) max
ENVIRONMENT	STORAGE TEMP.,HUMID.AND	ALTITUDE	-20 to +75℃, 20 - 90%RH (Non conde		
	VIBRATION			eriod, 60minutes each along X, Y and 2	Z axis
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms, once each X,		
SAFETT AND				0950-1, EN50178 Complies with DEN-A	
NOISE REGULATIONS	CONDUCTED NOISE			CI-B, CISPR22-B, EN55011-B, EN550	22-B
REGULATIONS	HARMONIC ATTENU		Complies with IEC61000-3-2 (Not buil		
OTHERS	CASE SIZE/WEIGHT			hes] (without terminal block) (W $ imes$ H $ imes$ D	) / 150g max (with cover : 180g max)
	COOLING METHOD		Convection		
			motor/oquivalent to KEISOKI I CIKEN	k E. Please contact us about safety approvals for	a rational a

- \*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.
- \*4 When two or more units are used,they may not comply with the harmonic attenuator. Please
- \*5 Please contact us about safety approvals for the model with option.
  \*6 Please contact us about dynamic load and input response.
- Please contact us about class C.

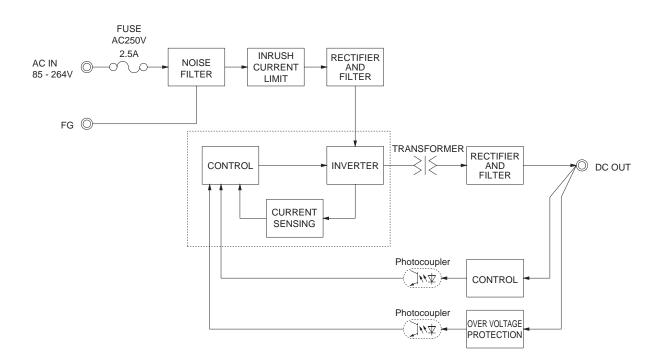
- Perallel operation with other model is not possible.

  Derating is required when operated with cover.

  A sound may occur from power supply at peak loading.

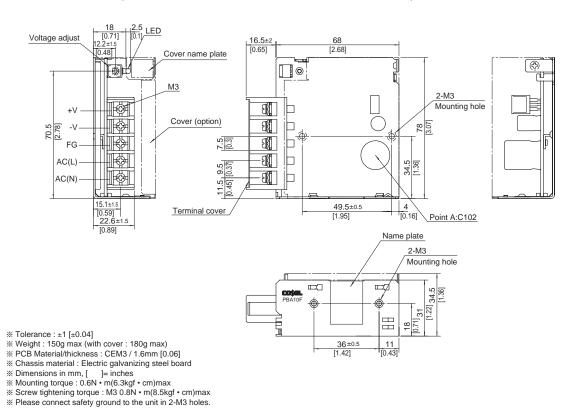
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#### **Block diagram**



#### **External view**

\*\* External size of option T,J,N,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



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CO\$EL **AC-DC Power Supplies Enclosed Type** 

### PBA15F

#### Ordering information

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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.

- ①Series name ②Single output
- 3 Output wattage 4 Universal input
- ⑤Output voltage ⑥Optional \*5
- C :with Coating
  G :Low leakage current
  E :Low leakage current
  and EMI class A
  T :Vertical terminal block

- Connector type
   N:with Cover
   (UL508 is acquired
   [5V, 12V, 24V])
   With DIN rail and Cover
- V :Output voltage setting potentiometer external-

Cover is optional

MODEL	PBA15F-3R3	PBA15F-5	PBA15F-9	PBA15F-12	PBA15F-15	PBA15F-24	PBA15F-48
MAX OUTPUT WATTAGE[W]	9.9	15	15.3	15.6	15	16.8	16.8
DC OUTPUT	3.3V 3A	5V 3A	9V 1.7A	12V 1.3A	15V 1A	24V 0.7A	48V 0.35A

### **SPECIFICATIONS**

	MODEL		PBA15F-3R3	PBA15F-5	PBA15F-9	PBA15F-12	PBA15F-15	PBA15F-24	PBA15F-48			
	VOLTAGE[V]		AC85 - 264 1 φ	or DC110 - 370	(AC50 or DC70	Please refer to the	ne instruction ma	anual 2.1 Input vo	ltage *3)			
	CURRENTIAL	ACIN 100V	0.30typ (lo=100%)	0.4typ (lo=100%	6)							
	CURRENT[A]	ACIN 200V	0.15typ (lo=100%)	0.2typ (Io=100%	6)							
	FREQUENCY[Hz]		50/60 (47 - 440	or DC								
INPUT	EFFICIENCY[0/]	ACIN 100V	68typ	74typ	75typ	75typ	77typ	75typ	75typ			
	EFFICIENCY[%]	ACIN 200V	68typ         75typ         77typ         78typ         80typ         78typ         78typ									
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%	) (At cold start)								
	INKUSH CUKKENI[A]	ACIN 200V	30typ (lo=100%) (At cold start)									
	LEAKAGE CURRENT[mA]		0.15/0.30max (A	0.15/0.30max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1,DENAN)								
	VOLTAGE[V]		3.3	5	9	12	15	24	48			
	CURRENT[A]		3	3	1.7	1.3	1	0.7	0.35			
	LINE REGULATION[	mV] *6	20max	20max	36max	48max	60max	96max	192max			
	LOAD REGULATION	[mV] *6	40max	40max	100max	100max	120max	150max	240max			
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	120max	150max			
	KIPPLE[IIIVP-P]	-10 - 0℃ *1	140max	140max	160max	160max	160max	160max	200max			
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	150max	250max			
OUTPUT	KIFFEE NOISE[IIIVP-P]	-10 - 0℃ *1	160max	160max	180max	180max	180max	180max	300max			
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	50max	90max	120max	150max	240max	480max			
	TEMPERATURE REGULATION[IIV]	-10 to +50℃	60max	60max	120max	150max	180max	290max	600max			
	DRIFT[mV]	*2	20max	20max	36max	48max	60max	96max	192max			
	START-UP TIME[ms]		200typ(ACIN 100V	, lo=100%) <b>∦</b> Start-u	up time is 700ms typ	for less than 1minu	ite of applying input	again from turning	off the input voltage			
	HOLD-UP TIME[ms]		20typ (ACIN 10	0V, Io=100%)								
	OUTPUT VOLTAGE ADJUSTMENT		2.85 - 3.60	4.50 - 5.50	7.50 - 10.0	10.0 - 13.2	13.2 - 18.0	19.2 - 27.0	39.0 - 53.0			
	OUTPUT VOLTAGE SET		3.30 - 3.40	5.00 - 5.15	9.00 - 9.36	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	48.00 - 49.92			
	OVERCURRENT PROT			% of rated currer	nt and recovers a	utomatically						
PROTECTION CIRCUIT AND	OVERVOLTAGE PROTEC	TION[V]	4.00 - 5.25	5.75 - 7.00	11.5 - 14.0	15.0 - 18.0	20.0 - 25.0	30.0 - 37.0	58.0 - 65.0			
OTHERS	OPERATING INDICA	TION	LED (Green)									
	REMOTE ON/OFF		None									
-	INPUT-OUTPUT			ute, Cutoff currer				<u> </u>				
ISOLATION	INPUT-FG			ute, Cutoff currer		`						
	OUTPUT-FG			e, Cutoff current								
	OPERATING TEMP.,HUMID.AND	-	- ,	equired Derating				feet) max				
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE		0 - 90%RH (Non								
	VIBRATION			m/s² (2G), 3min			g X, Y and Z axi	S				
	IMPACT			), 11ms, once ea								
SAFELL AND	AGENCY APPROVALS (At only			JL(CSA60950-1),								
NOISE REGULATIONS	CONDUCTED NOISE			CC Part15 class			1-B, EN55022-B					
NEGULATIONS	HARMONIC ATTENU			EC61000-3-2 (No								
OTHERS	CASE SIZE/WEIGHT	'		$[1.22 \times 3.07 \times 3.3]$	35 inches] (withou	ut terminal block)	(W×H×D) / 2	00g max (with co	ver : 235g max)			
	COOLING METHOD		Convection									

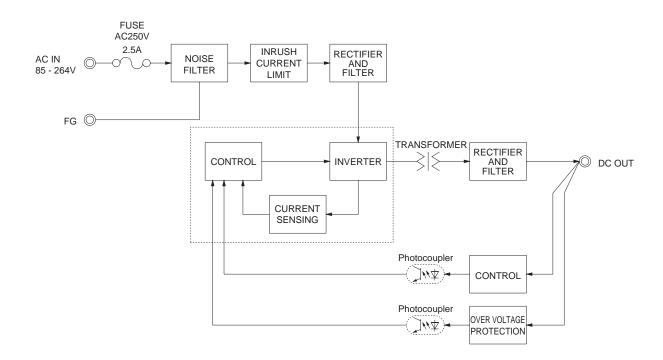
- \*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- :RM101).

  \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- \*4 When two or more units are used,they may not comply with the harmonic attenuator. Please
- \*5 Please contact us about safety approvals for the model with option.
  \*6 Please contact us about dynamic load and input response.
- 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.

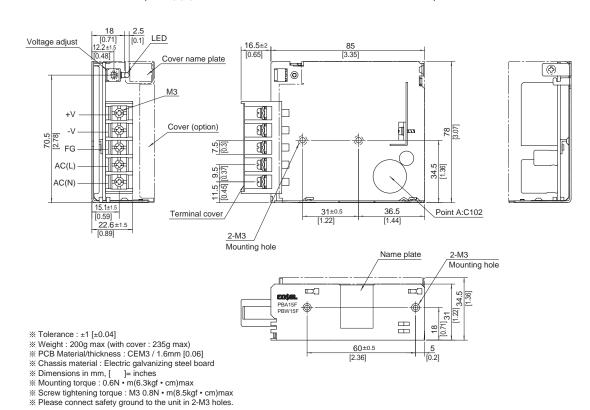
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#### **Block diagram**



#### **External view**

\*\* External size of option T,J,N,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



COSEL **AC-DC Power Supplies Enclosed Type** 

PBA30F

#### Ordering information

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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.

- ①Series name ②Single output
- 3 Output wattage 4 Universal input
- ⑤Output voltage ⑥Optional \*5
- C :with Coating
  G :Low leakage current
  E :Low leakage current
  and EMI class A
  T :Vertical terminal block

- Vertical terminal block
   J :Connector type
   N :with Cover
   (UL508 is acquired
   [5V, 12V, 24V])
   W :with DIN rail and Cover
   V :Output voltage setting
   potentiometer external in.

Cover is optional

MODEL	PBA30F-3R3	PBA30F-5	PBA30F-9	PBA30F-12	PBA30F-15	PBA30F-24	PBA30F-48
MAX OUTPUT WATTAGE[W]	19.8	30	30.6	30	30	31.2	31.2
DC OUTPUT	3 3V 6A	5V 6A	QV 3.4A	12V 25A	15V 2A	24V 1 3A	48V 0.65A

#### **SPECIFICATIONS**

DC OUTPUT

	MODEL		PBA30F-3R3	PBA30F-5	PBA30F-9	PBA30F-12	PBA30F-15	PBA30F-24	PBA30F-48			
	VOLTAGE[V]		AC85 - 264 1 φ	or DC110 - 370	(AC50 or DC70	Please refer to the	ne instruction ma	nual 2.1 Input vo	ltage *3)			
	CURRENTIAL	ACIN 100V	0.50typ (lo=100%)	0.70typ (lo=100	%)							
	CURRENT[A]	ACIN 200V	0.30typ (lo=100%)	0.40typ (lo=100	%)							
	FREQUENCY[Hz]		50/60 (47 - 440	or DC								
INPUT	EFFICIENCY[%]  ACIN ACIN ACIN ACIN ACIN		68typ	74typ	75typ	76typ	78typ	78typ	79typ			
	EFFICIENCT[%]	ACIN 200V	69typ	77typ	77typ	78typ	81typ	81typ	81typ			
	INDUCH CURRENTIAL	ACIN 100V	15typ (lo=100%	) (At cold start)								
	INKUSH CUKKENI[A]	ACIN 200V	30typ (Io=100%	30typ (lo=100%) (At cold start)								
	LEAKAGE CURREN	T[mA]	0.30/0.65max (A	ACIN 100V/240V	60Hz, lo=100%,	According to IEC	C60950-1,DENA	N)				
	VOLTAGE[V]		3.3	5	9	12	15	24	48			
	CURRENT[A]		6	6	3.4	2.5	2	1.3	0.65			
	LINE REGULATION[	mV] *6	20max	20max	36max	48max	60max	96max	192max			
	LOAD REGULATION	[mV] *6	40max	40max	100max	100max	120max	150max	240max			
	RIPPLE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	120max	150max			
	KIFFEE[IIIVP-P]	-10 - 0℃ *1	140max	140max	160max	160max	160max	160max	200max			
	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	120max	150max	150max	150max	150max	250max			
OUTPUT	KIFFEE NOISE[IIIVP-P]	-10 - 0℃ *1	160max	160max	180max	180max	180max	180max	300max			
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	50max	90max	120max	150max	240max	480max			
	TEMI ENATONE NEODEATION[IIV]	-10 to +50℃	60max	60max	120max	150max	180max	290max	600max			
	DRIFT[mV]	*2	20max	20max	36max	48max	60max	96max	192max			
- L	START-UP TIME[ms]				up time is 700ms typ	for less than 1minu	ite of applying input	again from turning of	off the input voltage			
	HOLD-UP TIME[ms]		20typ (ACIN 10	0V, Io=100%)								
- L	OUTPUT VOLTAGE ADJUSTMENT		2.85 - 3.60	4.50 - 5.50	7.50 - 10.0	10.0 - 13.2	13.2 - 18.0	19.2 - 27.0	39.0 - 53.0			
	OUTPUT VOLTAGE SET		3.30 - 3.40	5.00 - 5.15	9.00 - 9.36	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	48.00 - 49.92			
	OVERCURRENT PROT	ECTION		% of rated currer	nt and recovers a	automatically						
PROTECTION CIRCUIT AND	OVERVOLTAGE PROTEC	TION[V]	4.00 - 5.25	5.75 - 7.00	11.5 - 14.0	15.0 - 18.0	20.0 - 25.0	30.0 - 37.0	58.0 - 65.0			
OTHERS	OPERATING INDICA	TION	LED (Green)									
	REMOTE ON/OFF		None									
	INPUT-OUTPUT			ute, Cutoff currer								
	INPUT-FG		· · · · · · · · · · · · · · · · · · ·	ute, Cutoff currer		`						
	OUTPUT-FG			e, Cutoff current								
- F	OPERATING TEMP., HUMID. AND			equired Derating				feet) max				
ENVIRONMENT:	STORAGE TEMP.,HUMID.AND	ALTITUDE		0 - 90%RH (Non								
	VIBRATION			0 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis								
	IMPACT			), 11ms, once ea								
SAFELL AND	AGENCY APPROVALS (At only			JL(CSA60950-1),								
NOISE REGULATIONS	CONDUCTED NOISE			CC Part15 class			1-B, EN55022-B					
	HARMONIC ATTENU		Complies with IEC61000-3-2 (Not built-in to active filter *4) *7									
OTHERS	CASE SIZE/WEIGHT	'		n [1.22 × 3.07 × 4	.06 inches] (with	out terminal block	k) (W × H × D) / 2	270g max (with co	over : 310g max			
	COOLING METHOD		Convection									

- \*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- RM101).

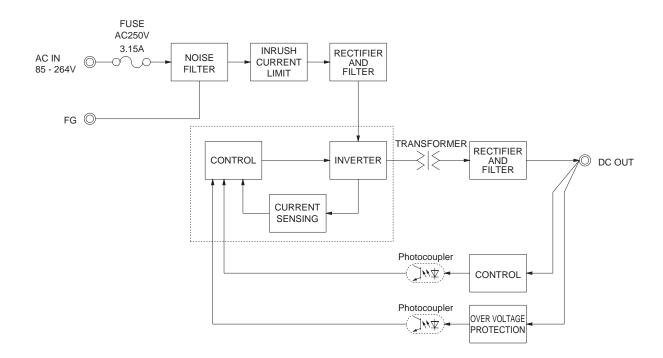
  \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- \*4 When two or more units are used,they may not comply with the harmonic attenuator. Please
- \*5 Please contact us about safety approvals for the model with option.
  \*6 Please contact us about dynamic load and input response.
- 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.

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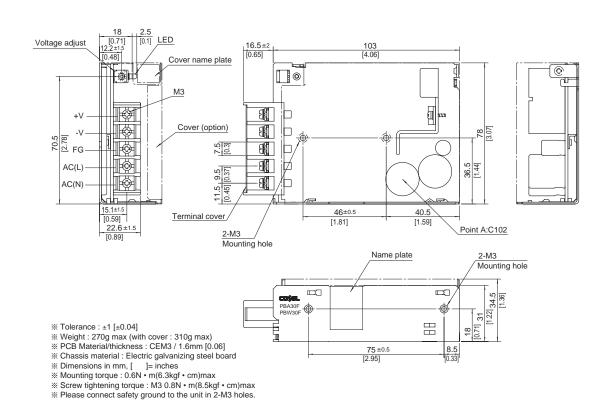


#### **Block diagram**



#### **External view**

\*\* External size of option T,J,N,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



CO\$EL **AC-DC Power Supplies Enclosed Type** 

PBA50F

#### Ordering information

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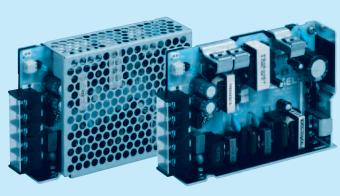
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Recommended EMI/EMC Filter NAC-06-472



High voltage pulse noise type : NAP series Low leakage current type : NAM series \*The EMI/EMC Filter is recommended to connect with several devices.

- ①Series name ②Single output
- 3 Output wattage 4 Universal input
- ⑤Output voltage ⑥Optional \*5

- Diptional \*5
  C:with Coating
  G:Low leakage current
  (0.15mA max / ACIN 240V)
  E:Low leakage current
  and EMI class A
- (0.5mA max / ACIN 240V) T:Vertical terminal block
- J :Connector type
  R :with Remote ON/OFF

- N :with Cover (Only 24V UL508 is acquired) N1 :with DIN rail and Cover
- V :Output voltage setting potentiometer externally

Cover is optional

MODEL	PBA50F-3R3	PBA50F-5	PBA50F-9	PBA50F-12	PBA50F-15	PBA50F-24	PBA50F-36	PBA50F-48
MAX OUTPUT WATTAGE[W]	33	50	50.4	51.6	52.5	52.8	50.4	52.8
DC OUTPUT	3.3V 10A	5V 10A	9V 5.6A	12V 4.3A	15V 3.5A	24V 2.2A	36V 1.4A	48V 1.1A
•								

#### **SPECIFICATIONS**

	MODEL		PBA50F-3R3	PBA50F-5	PBA50F-9	PBA50F-12	PBA50F-15	PBA50F-24	PBA50F-36	PBA50F-48
	VOLTAGE[V]		AC85 - 264 1 ¢	or DC120 - 37	0 (AC50 or DC7	Dease refer to	the instruction i	manual 2.1 Input	voltage *4)	
		ACIN 100V	0.5typ	0.7typ						
	CURRENT[A]	ACIN 200V	0.3typ	0.4typ						
	FREQUENCY[Hz]		50/60 (47 - 63)							
	EEEIQIENQVII	ACIN 100V	75typ	80typ	79typ	80typ	81typ	82typ	83typ	83typ
INPUT	EFFICIENCY[%]	ACIN 200V	76typ	82typ	81typ	82typ	83typ	84typ	85typ	85typ
	POWER FACTOR(Io=100%)	ACIN 100V	0.98typ	0.99typ						
	POWER FACTOR(IO=100%)	ACIN 200V	0.87typ	0.93typ						
	INDUCUI OUDDENITAL	ACIN 100V	15typ (lo=100%	6) (At cold start)						
	INRUSH CURRENT[A]	ACIN 200V	30typ (lo=100%	6) (At cold start)						
	LEAKAGE CURRENT[r	nA]	0.4/0.75max (A	CIN 100V/240V	60Hz, lo=100%	According to IE	C60950-1,DENA	AN)		
	VOLTAGE[V]		3.3	5	9	12	15	24	36	48
	CURRENT[A]		10	10	5.6	4.3	3.5	2.2	1.4	1.1
	LINE REGULATION[m\	/]	20max	20max	36max	48max	60max	96max	144max	192max
	LOAD REGULATION[m	nV]	40max	40max	100max	100max	120max	150max	240max	240max
	DIDDI ElmVa al	0 to +50°C *1	80max	80max	120max	120max	120max	120max	150max	150max
	RIPPLE[mVp-p]	-10 - 0°C *1	140max	140max	160max	160max	160max	160max	200max	200max
	DIDDLE NOICE(V1	0 to +50°C *1	120max	120max	150max	150max	150max	150max	250max	250max
TEN	RIPPLE NOISE[mVp-p]	-10 - 0℃ *1	160max	160max	180max	180max	180max	180max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	50max	90max	120max	150max	240max	360max	480max
	TEMPERATURE REGULATION[MV]	-10 to +50℃	60max	60max	120max	150max	180max	290max	450max	600max
	DRIFT[mV]	*2	20max	20max	36max	48max	60max	96max	144max	192max
	START-UP TIME[ms]		350typ(ACIN 1	00V, lo=100%)						
	HOLD-UP TIME[ms]		20typ (ACIN 10	00V, lo=100%)						
	OUTPUT VOLTAGE ADJUSTMENT	T RANGE[V]	2.85 - 3.63	4.00 - 5.50	7.50 - 10.0	10.0 - 13.2	13.2 - 18.0	19.2 - 27.0	28.8 - 39.6	39.0 - 53.0
	OUTPUT VOLTAGE SET	TING[V]	3.30 - 3.40	5.00 - 5.15	9.00 - 9.36	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	35.00 - 37.44	48.00 - 49.92
	OVERCURRENT PROT	ECTION	Works over 10	5% of rated curr	ent and recovers	automatically				
PROTECTION CIRCUIT AND	OVERVOLTAGE PROTEC	TION[V]	4.00 - 5.25	5.75 - 7.00	11.5 - 14.0	15.0 - 18.0	20.0 - 25.0	30.0 - 37.0	43.0 - 50.0	58.0 - 65.0
OTHERS	OPERATING INDICATION	ON	LED (Green)							
	REMOTE ON/OFF		Optional (Requ	ired external por	wer source)					
	INPUT-OUTPUT · RC	*3			ent = 10mA, DC					
ISOLATION	INPUT-FG		AC2,000V 1mir	nute, Cutoff curre	ent = 10mA, DC	$500V~50M\Omega$ min	(At Room Temp	erature)		
	OUTPUT · RC-FG	*3	AC500V 1minu	te, Cutoff curren	t = 100mA, DC5	00V 50MΩmin	(At Room Tempe	erature)		
	OPERATING TEMP.,HUMID.AND	ALTITUDE	-10 to +71°C (F	Required Deratin	g), 20 - 90%RH	(Non condensing	g) 3,000m (10,00	00feet) max		
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 2	0 - 90%RH (No	n condensing) 9,	000m (30,000fee	et) max			
ENVIRONMENT	VIBRATION		10 - 55Hz, 19.6	6m/s <sup>2</sup> (2G), 3mi	nutes period, 60	minutes each ale	ong X, Y and Z	axis		
	IMPACT		196.1m/s <sup>2</sup> (200	3), 11ms, once 6	each X, Y and Z	axis				
SAFETY AND	AGENCY APPROVALS (At only	y AC input)			), EN60950-1, E					
NOISE	CONDUCTED NOISE		Complies with	FCC Part15 clas	sB, VCCI-B, CIS	SPR22-B, EN550	11-B, EN55022-	В		
REGULATIONS	HARMONIC ATTENUAT	ΓOR	Complies with	IEC61000-3-2	<b>*</b> 6					
OTHERS	CASE SIZE/WEIGHT		31 × 82 × 120m	m [1.22 × 3.23 ×	4.72 inches] (wit	hout terminal blo	ock) (W×H×D)	/ 280g max (wit	h cover : 325g m	ax)
OTHERS	COOLING METHOD		Convection							
		St I N								

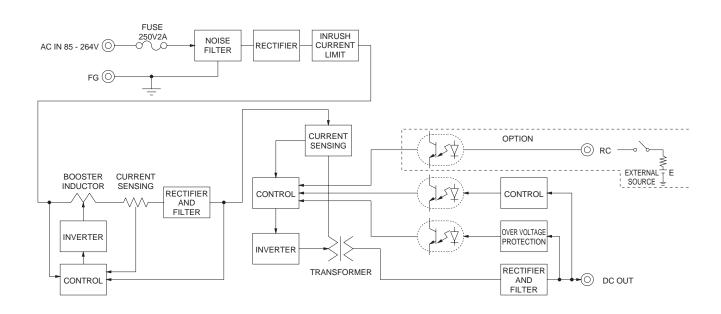
- \*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
  \*3 Applicable when Remote ON/OFF(optional) is added. RC is insulated with input, output and FG.
- \*4 Derating is required.

- 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.

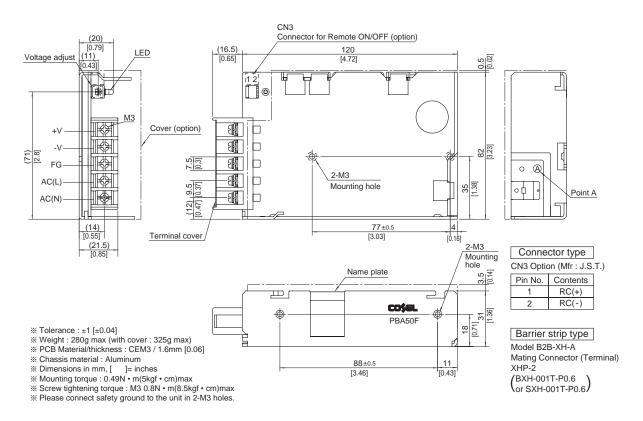
# PBA50F | CO\$EL | PBAPEN

#### **Block diagram**



#### **External view**

\*\* External size of option T,J,R,N,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



CO\$EL PBA/PBW

**AC-DC Power Supplies Enclosed Type** 

### PBA75F

#### Ordering information

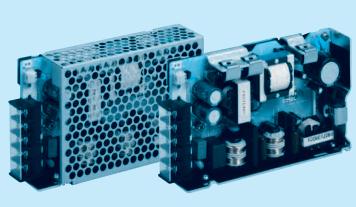
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Recommended EMI/EMC Filter NAC-06-472



High voltage pulse noise type : NAP series Low leakage current type : NAM series \*The EMI/EMC Filter is recommended to connect with several devices.

- ①Series name ②Single output
- 3 Output wattage 4 Universal input
- ⑤Output voltage ⑥Optional \*5

- C :with Coating
  G :Low leakage current
  (0.15mA max / ACIN 240V)
  E :Low leakage current
  and EMI class A
- (0.5mA max / ACIN 240V) T:Vertical terminal block
- J :Connector type
  R :with Remote ON/OFF

- N :with Cover (Only 24V UL508 is acquired) N1 :with DIN rail and Cover
- V :Output voltage setting potentiometer externally

_				
Cover	is	or	ntio	nal

MODEL	PBA75F-3R3	PBA75F-5	PBA75F-9	PBA75F-12	PBA75F-15	PBA75F-24	PBA75F-36	PBA75F-48
MAX OUTPUT WATTAGE[W]	49.5	75	75.6	75.6	75	76.8	75.6	76.8
DC OUTPUT	3.3V 15A	5V 15A	9V 8.4A	12V 6.3A	15V 5A	24V 3.2A	36V 2.1A	48V 1.6A

#### **SPECIFICATIONS**

	MODEL		PBA75F-3R3	PBA75F-5	PBA75F-9	PBA75F-12	PBA75F-15	PBA75F-24	PBA75F-36	PBA75F-48	
	VOLTAGE[V]		AC85 - 264 1 d	or DC120 - 37	0 (AC50 or DC70	Please refer to	the instruction r	manual 2.1 Input	voltage *4)		
	CUDDENTIAL	ACIN 100V	0.7typ	1.0typ							
	CURRENT[A]	ACIN 200V	0.4typ	0.5typ							
	FREQUENCY[Hz]		50/60 (47 - 63)								
	EEEIGIENGVI0/1	ACIN 100V	77typ	81typ	80typ	81typ	82typ	83typ	84typ	84typ	
INPUT	EFFICIENCY[%]	ACIN 200V	78typ	83typ	82typ	83typ	84typ	85typ	86typ	86typ	
	POWER FACTOR(Io=100%)	ACIN 100V	0.98typ	0.99typ							
	POWER FACTOR(IO=100%)	ACIN 200V	0.87typ	0.93typ							
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%	6) (At cold start)							
	INKUSH CUKKENI[A]	ACIN 200V	30typ (Io=100%	6) (At cold start)							
	LEAKAGE CURRENT[r	nA]	0.4/0.75max (A	CIN 100V/240V	60Hz, lo=100%,	According to IE	C60950-1,DENA	N)			
	VOLTAGE[V]		3.3	5	9	12	15	24	36	48	
	CURRENT[A]		15	15	8.4	6.3	5	3.2	2.1	1.6	
	LINE REGULATION[m\		20max	20max	36max	48max	60max	96max	144max	192max	
	LOAD REGULATION[m	V]	40max	40max	100max	100max	120max	150max	240max	240max	
	RIPPLE[mVp-p]	0 to +50°C *1		80max	120max	120max	120max	120max	150max	150max	
	Kii i EE[iiivp-p]	-10 - 0℃ *1	140max	140max	160max	160max	160max	160max	200max	200max	
	RIPPLE NOISE[mVp-p]	0 to +50°C *1		120max	150max	150max	150max	150max	250max	250max	
OUTPUT		-10 - 0℃ *1		160max	180max	180max	180max	180max	300max	300max	
	TEMPERATURE REGULATION[mV]	0 to +50℃		50max	90max	120max	150max	240max	360max	480max	
	TEMI ENATONE NEGOEATION[IIIV]	-10 to +50℃		60max	120max	150max	180max	290max	450max	600max	
	DRIFT[mV]	*2	20max	20max	36max	48max	60max	96max	144max	192max	
	START-UP TIME[ms]		350typ(ACIN 1								
	HOLD-UP TIME[ms]		20typ (ACIN 10								
	OUTPUT VOLTAGE ADJUSTMENT			4.00 - 5.50	7.50 - 10.0	10.0 - 13.2	13.2 - 18.0	19.2 - 27.0	28.8 - 39.6	39.0 - 53.0	
	OUTPUT VOLTAGE SET			5.00 - 5.15	9.00 - 9.36	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	36.00 - 37.44	48.00 - 49.92	
PROTECTION	OVERCURRENT PROT				ent and recovers		1		1	1	
CIRCUIT AND	OTERTOEIAGE TROTEG		4.00 - 5.25	5.75 - 7.00	11.5 - 14.0	15.0 - 18.0	20.0 - 25.0	30.0 - 37.0	43.0 - 50.0	58.0 - 65.0	
OTHERS	OPERATING INDICATION	ON	LED (Green)								
	REMOTE ON/OFF			ired external por			/A . D . T				
	INPUT-OUTPUT · RC	*3			ent = 10mA, DC						
ISOLATION	INPUT-FG				ent = 10mA, DC						
	OUTPUT · RC-FG	*3			t = 100mA, DC5						
	OPERATING TEMP.,HUMID.AND		- '		g), 20 - 90%RH		J,	Jureet) max			
<b>ENVIRONMENT</b>	STORAGE TEMP.,HUMID.AND	ALIIIUDE			n condensing) 9,						
	VIBRATION				nutes period, 60 each X, Y and Z		ong X, Y and Z a	axis			
		. 10:		,			id- DEN AN				
SAFETY AND	AGENCY APPROVALS (At only CONDUCTED NOISE	/ AC input)			), EN60950-1, E			D.			
NOISE REGULATIONS		TOP.		Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B  Complies with IEC61000-3-2 *6							
	TIARMONIO ATTENOA	IUK				hout torminal I-I-	ak) (MVHVD)	/ 250a may /	h aguar i 100	ov)	
OTHERS	CASE SIZE/WEIGHT			III [1.26 X 3.23 X	5.31 inches] (wit	nout terminal bio	OCK) (WXHXD)	soug max (Wit	n cover : 400g m	ax)	
	COOLING METHOD		Convection								
*1 Measured	by 20MHz oscilloscope or R	Ripple-Nois	e meter(equivalen	to KEISOKU-GIK	EN *5 PI	ease contact us ab	out safety approva	als for the model w	ith option.		

- \*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- \*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.

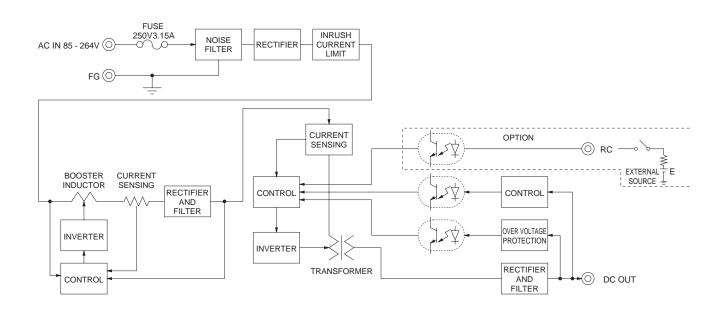
- \*5 Please contact us about safety approvals for the model with option.\*6 Please contact us about class C.
- Parallel operation with other model is not possible.

Derating is required when operated with cover.

A sound may occur from power supply at peak loading.

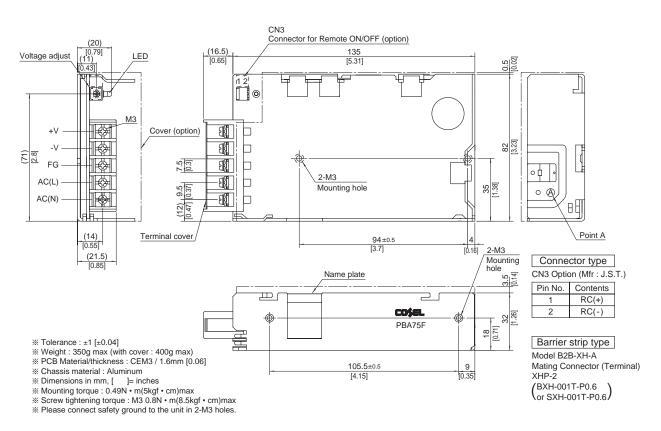
# PBA75F | COSEL PRAPER

#### **Block diagram**



#### **External view**

\*\* External size of option T,J,R,N,N1 and V is different from standard model and refer to 7 Option of instruction manual for details.



CO\$EL PBA/PBW

**AC-DC Power Supplies Enclosed Type** 

### PBA100F

#### Ordering information

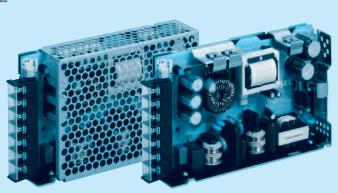
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Recommended EMI/EMC Filter NAC-06-472



High voltage pulse noise type : NAP series Low leakage current type : NAM series \*The EMI/EMC Filter is recommended to connect with several devices.

- ①Series name ②Single output
- 3 Output wattage 4 Universal input
- ⑤Output voltage ⑥Optional \*5
- Diptional \*5
  C:with Coating
  G:Low leakage current
  (0.15mA max / ACIN 240V)
  E:Low leakage current
  and EMI class A
- (0.5mA max / ACIN 240V) T:Vertical terminal block
- J :Connector type (Only -12,-15,-24,-36,-48) R :with Remote ON/OFF N :with Cover (Only 24V UL508 is acquired)

- N1:with DIN rail and Cover V:Output voltage setting potentiometer external-

Cover is optional

MODEL	PBA100F-3R3	PBA100F-5	PBA100F-9	PBA100F-12	PBA100F-15	PBA100F-24	PBA100F-36	PBA100F-48
MAX OUTPUT WATTAGE[W]	66	100	94.5	102	105	108	100.8	100.8
DC OUTPUT	3.3V 20A	5V 20A	9V 10.5A	12V 8.5A	15V 7A	24V 4.5A	36V 2.8A	48V 2.1A

#### **SPECIFICATIONS**

	MODEL		PBA100F-3R3	PBA100F-5	PBA100F-9	PBA100F-12	PBA100F-15	PBA100F-24	PBA100F-36	PBA100F-48		
	VOLTAGE[V]		AC85 - 264 1 φ	or DC120 - 37	0 (AC50 or DC70	Please refer to	the instruction r	nanual 2.1 Input	voltage *4)	•		
INPUT		ACIN 100V										
	CURRENT[A]	ACIN 200V										
	FREQUENCY[Hz]		50/60 (47 - 63)									
	ACIN 100		77typ	82typ	80typ	81typ	83typ	84typ	84typ	84typ		
	EFFICIENCY[%]	ACIN 200V		84typ	82typ	83typ	86typ	86typ	86typ	86typ		
	POWER FACTOR(Io=100%)	ACIN 100V	0.98tvp	0.99typ	, ,,		, ,,		, ,,	, ,,		
		ACIN 200V		0.93typ								
		ACIN 100V	20typ (lo=100%) (At cold start)									
	INRUSH CURRENT[A]	ACIN 200V										
	LEAKAGE CURRENT[mA]		0.4/0.75max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1,DENAN)									
	VOLTAGE[V]		3.3	5	9	12	15	24	36	48		
	CURRENT[A]		20	20	10.5	8.5	7	4.5	2.8	2.1		
	LINE REGULATION[mV]		20max	20max	36max	48max	60max	96max	144max	192max		
	LOAD REGULATION[mV]		40max	40max	100max	100max	120max	150max	240max	240max		
	RIPPLE[mVp-p] RIPPLE NOISE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	120max	150max	150max		
OUTPUT		-10 - 0℃ *1	140max	140max	160max	160max	160max	160max	200max	200max		
		0 to +50°C *1	120max	120max	150max	150max	150max	150max	250max	250max		
		-10 - 0°C *1	160max	160max	180max	180max	180max	180max	300max	300max		
		0 to +50℃	50max	50max	90max	120max	150max	240max	360max	480max		
	TEMPERATURE REGULATION[mV]	-10 to +50℃	60max	60max	120max	150max	180max	290max	450max	600max		
	DRIFT[mV] *2		20max	20max	36max	48max	60max	96max	144max	192max		
	START-UP TIME[ms]		350typ(ACIN 100V, lo=100%)									
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)									
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 - 3.63	4.00 - 5.50	7.50 - 10.0	10.0 - 13.2	13.2 - 18.0	19.2 - 27.0	28.8 - 39.6	39.0 - 53.0		
	<b>OUTPUT VOLTAGE SET</b>	TING[V]	3.20 - 3.40	5.00 - 5.15	9.00 - 9.36	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	36.00 - 37.44	48.00 - 49.92		
	OVERCURRENT PROT	ECTION	Works over 105	5% of rated curre	ent and recovers	automatically						
PROTECTION	OVERVOLTAGE PROTECTION[V]		4.00 - 5.25	5.75 - 7.00	11.5 - 14.0	15.0 - 18.0	20.0 - 25.0	30.0 - 37.0	43.0 - 50.0	58.0 - 65.0		
CIRCUIT AND	OPERATING INDICATION		LED (Green)									
OTHERS	REMOTE SENSING		Optional (Only -3R3, -5 Option -K)									
	REMOTE ON/OFF		Optional (Required external power source)									
	INPUT-OUTPUT · RC	*3	3 AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M Ωmin (At Room Temperature)									
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩmin (At Room Temperature)									
	OUTPUT · RC-FG *3		Tieses Timinate, eaten earent = Teens ( Beecet eensemm ( A Tiesen Temperature)									
ENVIRONMENT	OPERATING TEMP., HUMID. AND	ALTITUDE	-10 to +71°C (Required Derating), 20 - 90%RH (Non condensing) 3,000m (10,000feet) max									
	STORAGE TEMP., HUMID.AND	ALTITUDE										
	VIBRATION		10 - 55Hz, 19.6m/s² (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									
NOISE	AGENCY APPROVALS (At only	/ AC input)										
	CONDUCTED NOISE		Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B									
	HARMONIC ATTENUAT	TOR	Complies with IEC61000-3-2 *6									
OTHERS	CASE SIZE/WEIGHT		32×93×147mm [1.26×3.66×5.79 inches] (without terminal block) (W×H×D) / 440g max (with cover : 500g max)									
	COOLING METHOD		Convection									
	by 20MHz appilledance of F					anna anntant un ab						

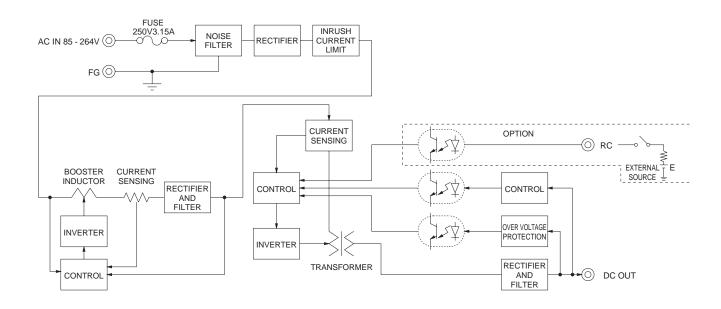
- \*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- \*2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
  \*3 Applicable when Remote ON/OFF(optional) is added. RC is insulated with input, output and FG.
- \*4 Derating is required.

- 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.

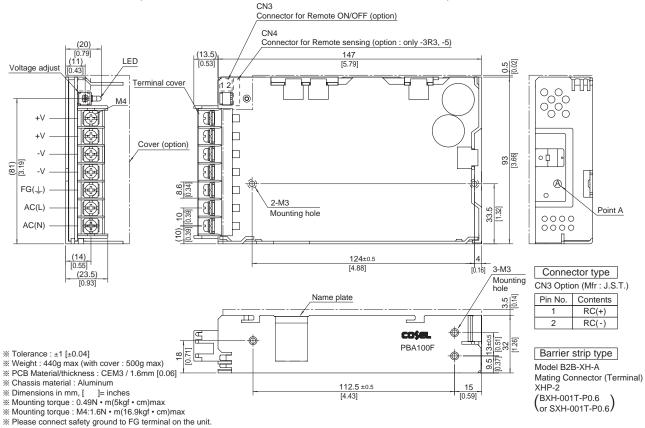


#### **Block diagram**



#### **External view**

\*\* External size of option T,J,R,N,N1,V and K is different from standard model and refer to 7 Option of instruction manual for details.



CO\$EL **AC-DC Power Supplies Enclosed Type** 

### PBA150F

#### Ordering information

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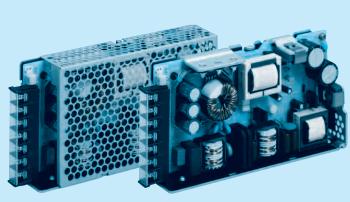
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Recommended EMI/EMC Filter NAC-06-472



High voltage pulse noise type : NAP series Low leakage current type : NAM series \*The EMI/EMC Filter is recommended to connect with several devices.

- ①Series name ②Single output
- 3 Output wattage 4 Universal input
- ⑤Output voltage ⑥Optional \*5

- Diptional \*5
  C:with Coating
  G:Low leakage current
  (0.15mA max / ACIN 240V)
  E:Low leakage current
  and EMI class A
- (0.5mA max / ACIN 240V) T :Vertical terminal block
- J :Connector type (Only -12,-15,-24,-36,-48) R :with Remote ON/OFF

- N :with Cover (Only 24V UL508 is acquired)
- N1:with DIN rail and Cover V:Output voltage setting potentiometer external-

Cover is optional

MODEL	PBA150F-3R3	PBA150F-5	PBA150F-9	PBA150F-12	PBA150F-15	PBA150F-24	PBA150F-36	PBA150F-48
MAX OUTPUT WATTAGE[W]	99	150	150.3	156	150	156	154.8	158.4
DC OUTPUT	3.3V 30A	5V 30A	9V 16.7A	12V 13A	15V 10A	24V 6.5A	36V 4.3A	48V 3.3A

#### **SPECIFICATIONS**

	MODEL		PBA150F-3R3	PBA150F-5	PBA150F-9	PBA150F-12	PBA150F-15	PBA150F-24	PBA150F-36	PBA150F-48	
	VOLTAGE[V]		AC85 - 264 1 φ or DC120 - 370 (AC50 or DC70 Please refer to the instruction manual 2.1 Input voltage *4)								
INPUT	CURRENT[A]	ACIN 100V	1.3typ	2.0typ							
	CURRENT[A]	ACIN 200V	0.7typ 1.0typ								
	FREQUENCY[Hz]		50/60 (47 - 63)								
	EFFICIENCY[%]	ACIN 100V	80typ	83typ	82typ	83typ	84typ	85typ	85typ	85typ	
		ACIN 200V	82typ	86typ	85typ	86typ	87typ	88typ	88typ	88typ	
	POWER FACTOR(Io=100%)	ACIN 100V	0.98typ	0.99typ							
		ACIN 200V	0.87typ 0.93typ								
	INRUSH CURRENT[A]	ACIN 100V	20typ (lo=100%) (At cold start)								
		ACIN 200V	40typ (lo=100%) (At cold start)								
	LEAKAGE CURRENT[mA]		0.4/0.75max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1,DENAN)								
	VOLTAGE[V]		3.3	5	9	12	15	24	36	48	
OUTPUT	CURRENT[A]		30	30	16.7	13	10	6.5	4.3	3.3	
	LINE REGULATION[mV]		20max	20max	36max	48max	60max	96max	144max	192max	
	LOAD REGULATION[mV]		40max	40max	100max	100max	120max	150max	240max	240max	
	RIPPLE[mVp-p] RIPPLE NOISE[mVp-p]	0 to +50°C *1	80max	80max	120max	120max	120max	120max	150max	150max	
		-10 - 0℃ *1	140max	140max	160max	160max	160max	160max	200max	200max	
		0 to +50°C *1	120max	120max	150max	150max	150max	150max	250max	250max	
		-10 - 0℃ *1	160max	160max	180max	180max	180max	180max	300max	300max	
	TEMPERATURE REGULATION[mV]	0 to +50°C		50max	90max	120max	150max	240max	360max	480max	
		-10 to +50℃	60max	60max	120max	150max	180max	290max	450max	600max	
	DRIFT[mV] *2		20max	20max	36max	48max	60max	96max	144max	192max	
	START-UP TIME[ms]		350typ(ACIN 100V, Io=100%)								
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)								
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		2.85 - 3.63	4.00 - 5.50	7.50 - 10.0	10.0 - 13.2	13.2 - 18.0	19.2 - 27.0	28.8 - 39.6	39.0 - 53.0	
	OUTPUT VOLTAGE SETTING[V]			5.00 - 5.15	9.00 - 9.36	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	36.00 - 37.44	48.00 - 49.92	
	OVERCURRENT PROTECTION										
PROTECTION	OVERVOLTAGE PROTECTION[V]		4.00 - 5.25	5.75 - 7.00	11.5 - 14.0	15.0 - 18.0	20.0 - 25.0	30.0 - 37.0	43.0 - 50.0	58.0 - 65.0	
	OPERATING INDICATION		LED (Green)								
OTHERS	REMOTE SENSING		Optional (Only -3R3, -5 Option -K)								
	REMOTE ON/OFF		Optional (Required external power source)								
	INPUT-OUTPUT · RC *3		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩmin (At Room Temperature)								
ISOLATION	INPUT-FG		AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩmin (At Room Temperature)								
	OUTPUT · RC-FG *3		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At Room Temperature)								
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE		-10 to +71°C (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/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis								
NOISE	AGENCY APPROVALS (At only AC input)										
	CONDUCTED NOISE		Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B								
	TIAKWONIC ATTENDATOR		Complies with IEC61000-3-2 *6								
OTHERS	CASE SIZE/WEIGHT	34×93×168mm [1.34×3.66×6.61 inches] (without terminal block) (W×H×D) / 560g max (with cover: 630g max)									
	COOLING METHOD		Convection								

- \*1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN
- \*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.

- 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.

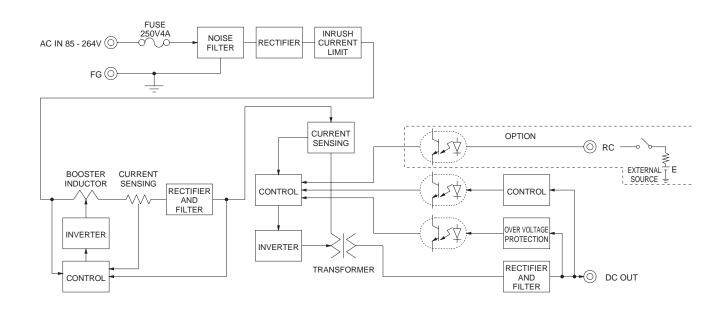
  A sound may occur from power supply at peak loading.

#### PBA/PBW-14

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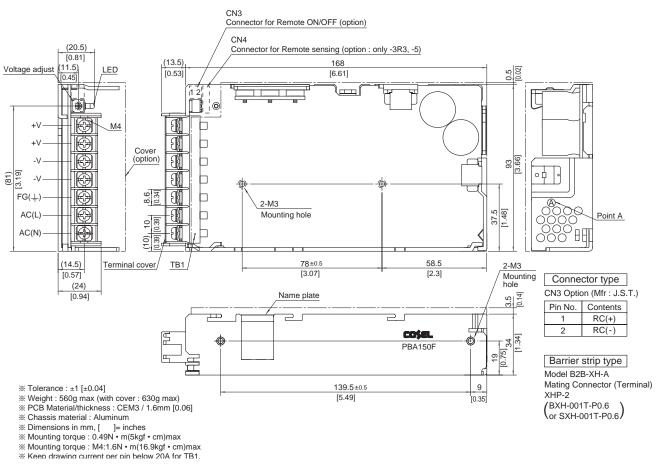


#### **Block diagram**



#### **External view**

\*\* External size of option T,J,R,N,N1,V and K is different from standard model and refer to 7 Option of instruction manual for details.



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