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eco

DDW45E 40

PBW15F

15









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

- Series name
 Dual output
- (3)Output wattage 4 Universal input
- ⑤Output voltage
- (B) Optional *10
 C :with Coating
 G :Low leakage current
 - E:Low leakage current and EMI class A
 - T: Vertical terminal block
 - J :Connector type
 - N :with Cover
 - N1:with DIN rail
 - V :Output voltage setting potentiometer external-

Cover is optional

DDW45E 45

MODEL		PBW15F-12	PBW15F-15	
MAX OUTPUT WATTAGE[W] *5		16.8	15.0	
DC OUTPUT	VOLTAGE[V] *6	±12 (+24)	±15 (+30)	
	CURRENT1[A]	0.7	0.5	
	CURRENT2[A] *5	1.4	1.0	

SPECIFICATIONS

MODEL

CURRENT2[A]		MODEL		PBW15F-12 PBW15F-15					
INPUT FREQUENCY[Hz] S0(60 (47 - 440) or DC		VOLTAGE[V]							
REGUENCY Hz 50/60 (47-440) or DC 78typ (CURRENT1) 78typ (CUR		CURRENTIAL	ACIN 100V						
FFICIENCY[%] ACM 100V 741yp (CURRENT1) 781yp (CURRENT1) 801yp (CURRENT1) 801		ACIN 200V							
REFEIGENCY[%] ACM 200V 77yp (CURRENTT) 80typ (CURRENTT)		FREQUENCY[Hz]							
NRUSH CURRENT(A) ACM 2007 A		ACIN 100V		74typ (CURRENT1)		78typ (CURRENT1)			
INROS CURRENT A A A A A A A A A		EFFICIENCY[%]	ACIN 200V	77typ (CURRENT1)		80typ (CURRENT1)			
LEAKAGE CURRENT[ma]									
VOLTAGE[V]		INKUSH CUKKENI[A]	ACIN 200V	30typ (CURRENT1) (At co	old start)				
CURRENT1[A]		LEAKAGE CURRENT[mA]							
CURRENT2[A]		VOLTAGE[V]		±12	/ (+24V reference number)	±15	/ (+30V reference number)		
LINE REGULATION[mV]		CURRENT1[A]		0.7	/ 0.7	0.5	/ 0.5		
COAD REGULATION 1[mV]		CURRENT2[A]	* 5	1.4	/ -	1.0	/ -		
COUTPUT COU		LINE REGULATION[mV		60max	/ 96max	60max	/ 96max		
OUTPUT RIPPLE[mVp-p]					/ 150max		/ 150max		
OUTPUT RIPPLE NOISE[mVp-p] 10 - 0°C * 160max		LOAD REGULATION 2[[mV] ***	750max	/ -	750max	/ -		
OUTPUT RIPPLE NOISE[mVp-p] 150/max		DIDDI E[m//n n]	0 to +50°C *1	120max	/ 240max	120max	/ 240max		
RIPPLE NOISE[mVp-p]		RIPPLE[IIIVP-P]	-10 - 0℃ *1	160max	/ 320max	160max	/ 320max		
Temperature regulation mi 10 - 0C * 180max 7360max 180max 7360max 150max 15	OUTPUT	DIDDI E NOISEImVa al	0 to +50°C * 1	150max	/ 300max	150max	/ 300max		
TEMPERATURE REGULATION[m] -10 to +50°C 150 max 180 max 180 max 60 max 8 max 60 max		HIPPLE NOISE[IIIVP-P]	-10 - 0℃ *1	180max	/ 360max	180max	/ 360max		
START-UP TIME[ms] 20typ(ACIN 100V. lo=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input vol HOLD-UP TIME[ms] 20typ (ACIN 100V. lo=100%) 0UTPUT VOLTAGE ADJUSTMENT RANGE[V] 9.60 - 13.2 (+V and -V are simultaneously adjusted) 13.2 - 16.5 (+V and -V are simultaneously adjusted) 0UTPUT VOLTAGE SETTING[V] 11.5 - 12.5 (+V and -V CURRENT1) 14.4 - 15.6 (+V and -V CURRENT1) 0VERCURRENT PROTECTION Works over 105% of rated current and recovers automatically 0VERVOLTAGE PROTECTION[V] 16.8 - 24.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20.0 - 29.0 20		TEMPEDATURE RECULATION(~VI	0 to +50℃	120max		150max			
START-UP TIME[ms] 200typ(ACIN 100V. lo=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input vol HOLD-UP TIME[ms] 20typ (ACIN 100V, lo=100%) OUTPUT VOLTAGE ADJUSTMENT RANGE[V] 9.60 - 13.2 (+V and -V are simultaneously adjusted) 13.2 - 16.5 (+V and -V are simultaneously adjusted) OUTPUT VOLTAGE SETTING[V] 11.5 - 12.5 (+V and -V CURRENT1) 14.4 - 15.6 (+V and -V CURRENT1) OVERCURRENT PROTECTION Works over 105% of rated current and recovers automatically OVERVOLTAGE PROTECTIONVI 16.8 - 24.0 20.0 - 29.0 OPERATING INDICATION LED (Green) REMOTE ON/OFF None INPUT-OUTPUT AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) INPUT-FG AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-FG AC2.000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) 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°C, 20 - 90%RH (Non condensing) 9.000m (30.000feet) max VIBRATION 10 - 55Hz, 19.6m/s² (20G), 3minutes period, 60minutes each along X, Y and Z axis SAFETY AND AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN		TEMPERATURE REGULATION[IIIV]	-10 to +50°C						
HOLD-UP TIME[ms] 20typ (ACIN 100V, Io=100%) 0UTPUT VOLTAGE ADJUSTMENT RANGE[V] 9.60 - 13.2 (+V and -V are simultaneously adjusted) 13.2 - 16.5 (+V and -V are simultaneously adjusted) 0UTPUT VOLTAGE SETTING[V] 11.5 - 12.5 (+V and -V CURRENT1) 14.4 - 15.6 (+V and -V CURRENT1) 0VERCURRENT PROTECTION Works over 105% of rated current and recovers automatically 0VERVOLTAGE PROTECTION[V] 16.8 - 24.0 20.0 - 29.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0		DRIFT[mV]	*2						
OUTPUT VOLTAGE ADJUSTMENT RANGE[V] 9.60 - 13.2 (+V and -V are simultaneously adjusted) 13.2 - 16.5 (+V and -V are simultaneously adjusted)				200typ(ACIN 100V. lo=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage.					
OUTPUT VOLTAGE SETTING[V] 11.5 - 12.5 (+V and -V CURRENT1) 14.4 - 15.6 (+V and -V CURRENT1) PROTECTION OVERCURRENT PROTECTION Works over 105% of rated current and recovers automatically OVERVOLTAGE PROTECTION[V] 16.8 - 24.0 20.0 - 29.0 OPERATING INDICATION LED (Green) REMOTE ON/OFF None INPUT-OUTPUT AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) INPUT-FG AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-FG AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) OPERATING TEMP.HUMID.AND ALTITUDE -10 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 SAFETY AND AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN									
PROTECTION OVERCURRENT PROTECTION Works over 105% of rated current and recovers automatically OVERVOLTAGE PROTECTION[V] 16.8 - 24.0 20.0 - 29.0 DEPARTING INDICATION LED (Green) REMOTE ON/OFF None INPUT-OUTPUT AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) INPUT-FG AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-FG AC5.000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) OPERATING TEMP.,HUMID.AND ALTITUDE -10 to +71°C (Required Derating), 20 - 99%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 1096.1m/s² (20G), 11ms, once each X, Y and Z axis SAFETY AND AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN		1.1				13.2 - 16.5 (+V and -V are	e simultaneously adjusted)		
PROTECTION CIRCUIT AND OTHERS OVERVOLTAGE PROTECTION[V] 16.8 - 24.0 20.0 - 29.0					· · · · · · · · · · · · · · · · · · ·	14.4 - 15.6 (+V and -V CU	JRRENT1)		
CIRCUIT AND OTHERS OPERATING INDICATION 15.5 - 24.0 [25.5 - 25.0] OPERATING INDICATION LED (Green) REMOTE ON/OFF None INPUT-OUTPUT AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) INPUT-FG AC2,000V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-FG AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) OPERATING TEMP.HUMID.AND ALTITUDE -10 to +71 °C (Required Derating) 2.0 - 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/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis SAFETY AND AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN					current and recovers automatically				
OTHERS OPERATING INDICATION REMOTE ON/OFF LED (Green) INPUT-OUTPUT AC3.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) INPUT-FG AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) OUTPUT-FG AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) 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°C, 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 SAFETY AND AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN		OVERVOLIAGE PROTECTION[V]				20.0 - 29.0			
INPUT-OUTPUT AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)			ON	(
INPUT-FG AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)									
OUTPUT-FG AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At Room Temperature) 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°C, 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 AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN									
PENVIRONMENT 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°C, 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 AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN	ISOLATION								
ENVIRONMENT STORAGE TEMP.HUMID.AND ALTITUDE -20 to +75°C, 20 - 90%RH (Non condensing) 9.000m (30,000feet) max		1							
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 AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN		OPERATING TEMP., HUMID. AND ALTITUDE		3, 3,					
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 AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN									
SAFETY AND AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN									
SAFETY AND AGENCY APPROVALS (At only AC input) UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN									
	SAFETY AND	AGENCY APPROVALS (At only AC input)		UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN					
REALU ATIONO	NOISE			Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B					
TIANMONIC ATTENDATOR Compiles with 12001000-3-2 (Not built-in to active litter \$7) *12	REGULATIONS		OR	Complies with IEC61000-3-2 (Not built-in to active filter ★7) *12					
OTHERS CASE SIZE/WEIGHT 31 x 78 x 85mm [1.22 x 3.07 x 3.35 inches] (without terminal block) (WxHxD) / 200g max (with cover : 235g max)	OTHERS				07 × 3.35 inches] (without terminal blo	ck) (W×H×D) / 200g max	(with cover : 235g max)		
COOLING METHOD Convection		COOLING METHOD		Convection					

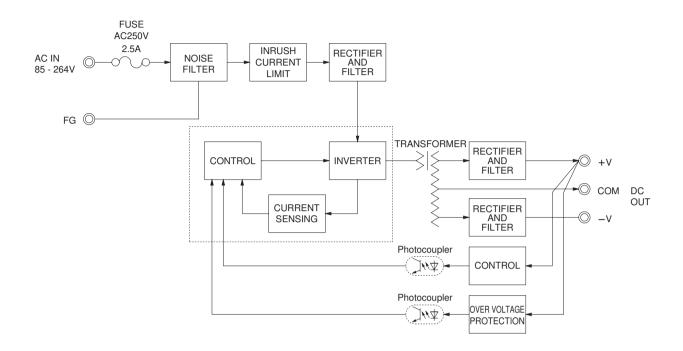
- *1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN : RM101).
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Figures for 0 to rated current 1.The current not measured
- side is fixed.

 *4 Figures for 0 to rated current 2.The current not measured
- *5 The sum of +power -power must be less than output power.
- *6 ±12,±15 can be used as +24 and +30.
 *7 When two or more units are used, they may not comply with the harmonic attenuator. Please contact us for details.
- *8 Derating is required.
 *9 Figures to rated current 1.

- *10 Please contact us about safety approvals for the model with option.
- *11 Please contact us about dynamic load and input response. *12 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover.

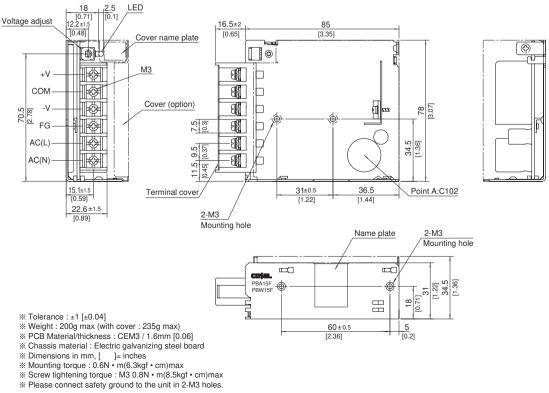
 A sound may occur from power supply at peak loading.

Block diagram



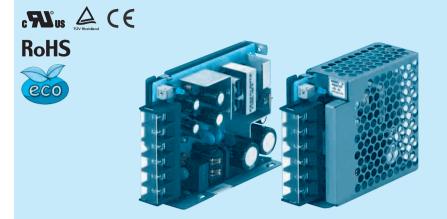
External view

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



PBW30F

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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.

- Series name
 Dual output
- (3)Output wattage 4 Universal input
- ⑤Output voltage
- ® Optional *10
 C :with Coating
 - G:Low leakage current
 - E:Low leakage current and EMI class A
 - T: Vertical terminal block
 - J :Connector type
 - N :with Cover
 - N1:with DIN rail
 - V :Output voltage setting potentiometer external-

Cover is optional

MODEL		PBW30F-5	PBW30F-12	PBW30F-15
MAX OUTPUT WATTAGE[W] *5		15	31.2	30.0
	VOLTAGE[V] *6	±5 (+10)	±12 (+24)	±15 (+30)
DC OUTPUT	CURRENT1[A]	1.5	1.3	1.0
	CURRENT2[A] *5	2.0	1.7	1.4

SPECIFICATIONS

	MODEL		PBW30F-5	BW30F-5 PBW30F-12 PI			PBW30F-15			
	VOLTAGE[V]		AC85 - 264 1 φ or DC110 - 370 (AC50 or DC70 Please refer to the instruction manual 2.1 Input voltage *8)							
	ACIN 100V		0.4typ (CURRENT1) 0.7typ (CURRENT1)							
	CURRENT[A]	ACIN 200V	0.25typ (CURRENT1)		0.4typ (CURRENT1)					
	FREQUENCY[Hz]		50/60 (47 - 440) or DC							
INPUT	ACIN 100V		75typ (CURRENT1)		77typ (CURRENT1)		78typ (CURRENT1)			
	EFFICIENCY[%]	ACIN 200V	75typ (CURRENT1)		81typ (CURRENT1)		79typ (CURRENT1)			
	INDUCUI CURRENTIAL	ACIN 100V	15typ (CURREN	IT1) (At cold start)						
	INRUSH CURRENT[A] ACIN 100V		30typ (CURRENT1) (At cold start)							
	LEAKAGE CURRENT[mA]		0.30/0.65max (ACIN 100V/240V 60Hz, lo=100%, According to IEC60950-1.DENAN)							
	VOLTAGE[V]		±5	/ (+10V reference number)	±12	/ (+24V reference number)	±15	/ (+30V reference number)		
	CURRENT1[A]		1.5	/ 1.5	1.3	/ 1.3	1.0	/ 1.0		
	CURRENT2[A]	*5	2.0	/ -	1.7	/ -	1.4	/ -		
	LINE REGULATION[m\	/] * ⁹	20max	/ 36max	60max	/ 96max	60max	/ 96max		
	LOAD REGULATION 1	[mV] ***	250max	/ 100max	600max	/ 150max	600max	/ 150max		
	LOAD REGULATION 2	[mV] **1	500max	/ -	750max	/ -	750max	/ -		
	DIDDI E(m//m m1	0 to +50°C *1	80max	/ 240max	120max	/ 240max	120max	/ 240max		
	RIPPLE[mVp-p]	-10 - 0°C *1	140max	/ 320max	160max	/ 320max	160max	/ 320max		
OUTPUT	RIPPLE NOISE[mVp-p]	0 to +50°C *1	120max	/ 300max	150max	/ 300max	150max	/ 300max		
	KIPPLE NOISE[mvp-p]	-10 - 0°C *1	160max	/ 360max	180max	/ 360max	180max	/ 360max		
	TEMPERATURE REQUILATIONS	0 to +50°C	50max		120max		150max			
	TEMPERATURE REGULATION[mV]	-10 to +50°C	60max		150max		180max			
	DRIFT[mV] *2		20max		48max		60max			
	START-UP TIME[ms]		200typ(ACIN 100V, Io=100%) *Start-up time is 700ms typ for less than 1minute of applying input again from turning off the input voltage.							
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]				9.60 - 13.2 (+V and	-V are simultaneously adjusted)	13.2 - 16.5 (+V and -V are	e simultaneously adjusted)		
	OUTPUT VOLTAGE SETTING[V]				11.5 - 12.5 (+V a	and -V CURRENT1)	14.4 - 15.6 (+V and	-V CURRENT1)		
		ECTION	Works over 105% of rated current and recovers automatically							
PROTECTION CIRCUIT AND						20.0 - 29.0				
OTHERS	OPERATING INDICATION		LED (Green)							
	REMOTE ON/OFF		None							
	INPUT-OUTPUT		AC3.000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature)							
ISOLATION	INPUT-FG		AC2:000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)							
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50M Ω min (At Room Temperature)							
	OPERATING TEMP., HUMID. AND	-	3, 11 1 3, 11 1 1 1 1 1 1 1 1 1 1 1 1 1							
	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 ² (20G), 11ms, once each X, Y and Z axis							
SAFETY AND	AGENCY APPROVALS (At only	y AC input)	UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN							
NOISE	CONDUCTED NOISE		Complies with FCC Part15 classB, VCCI-B, CISPR22-B, EN55011-B, EN55022-B							
REGULATIONS	HARMONIC ATTENUAT	ror	Complies with IEC61000-3-2 (Not built-in to active filter *7) *12							
OTHERS	CASE SIZE/WEIGHT		31 x 78 x 103mm [1.22 x 3.07 x 4.06 inches] (without terminal block) (W x H x D) / 270g max (with cover : 310g max)							
UTILITO	COOLING METHOD		Convection							

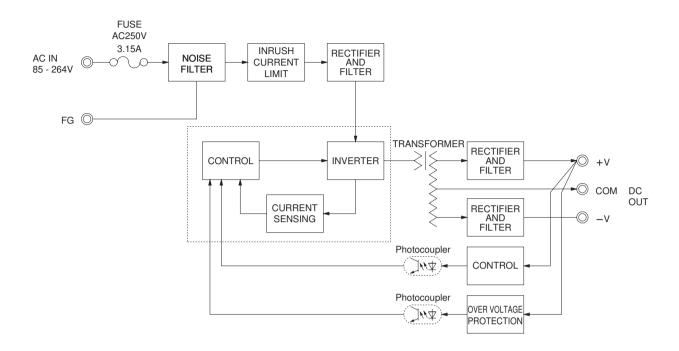
- *1 Measured by 20MHz oscilloscope or Ripple-Noise meter(equivalent to KEISOKU-GIKEN: RM101).
- *2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C.
- *3 Figures for 0 to rated current 1.The current not measured
- side is fixed.

 *4 Figures for 0 to rated current 2.The current not measured
- *5 The sum of +power -power must be less than output power.
- *6 ±5,±12,±15 can be used as +10,+24 and +30. *7 When two or more units are used,they may not comply with
- the harmonic attenuator. Please contact us for details
- *8 Derating is required.
 *9 Figures to rated current 1.

- *10 Please contact us about safety approvals for the model with option.
- *11 Please contact us about dynamic load and input response. *12 Please contact us about class C.
- Parallel operation with other model is not possible.
- Derating is required when operated with cover.

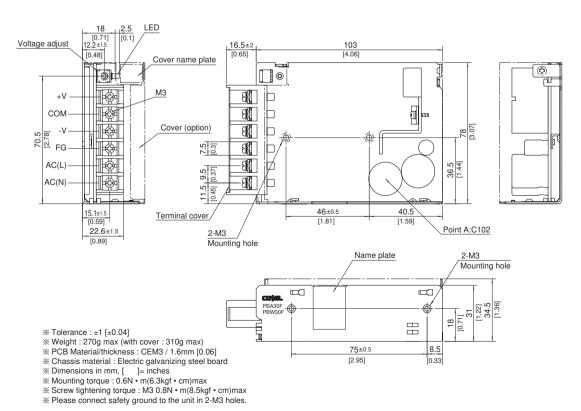
 A sound may occur from power supply at peak loading.

Block diagram



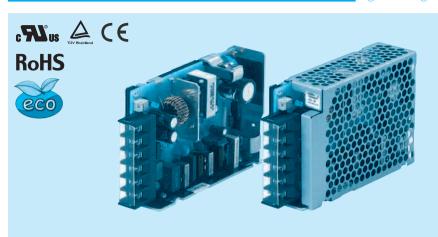
External view

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



PBW50F

50







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

Cover is optional

- Series name
 Dual output
- (3)Output wattage
- 4 Universal input
- ⑤Output voltage
- ® Optional *9
 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 N1 :with DIN rail
- V :Output voltage setting potentiometer external-

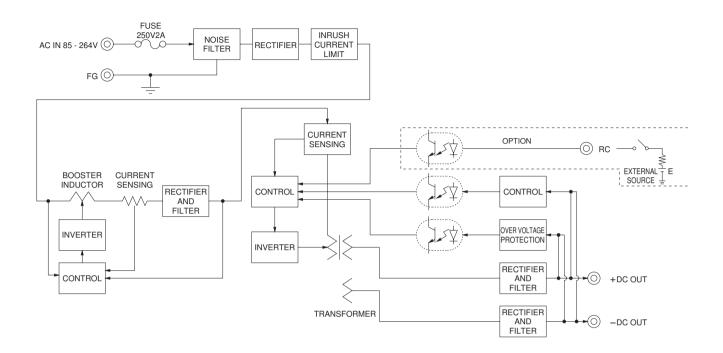
MODEL		PBW50F-5	PBW50F-12	PBW50F-15	
MAX OUTPUT WATTAGE[W] *6		30	50.4	51	
DC OUTPUT	VOLTAGE[V] *8	±5 (+10)	±12 (+24)	±15 (+30)	
	CURRENT1[A]	3.0	2.1	1.7	
	CURRENT2[A] *6	4.0	2.7	2.4	

SPECIFICATIONS

	MODEL		PBW50F-5		PBW50F-12		PBW50F-15			
	VOLTAGE[V]		AC85 - 264 1 φ or DC120 - 370 (AC50 or DC70 Please refer to the instruction manual 2.1 Input voltag				l 2.1 Input voltage *3			
			0.45typ (CURRENT1)							
					0.40typ (CURRENT1)					
	FREQUENCY[Hz]		50/60 (47 - 63)							
	ACIN 100V		76typ (CURRENT1)		81typ (CURRENT1)		81typ (CURRENT1)			
INPUT	EFFICIENCY[%]	ACIN 200V	77typ (CURRENT1)		83typ (CURRENT1)		83typ (CURRENT1)			
	POWER FACTOR(Io=100%) ACIN 200\				0.99typ					
					0.93typ					
			15typ (CURRENT1) (At cold start)							
	INNUSH CONNENT[A]	ACIN 200V	30typ (CURRENT1) (At cold start)							
	LEAKAGE CURRENT[I	mA]	0.40/0.75max (ACIN 100V/240V 60Hz, Io=100%, According to IEC60950-1,DENAN)							
	VOLTAGE[V]		±5	/ (+10V reference number)	±12	/ (+24V reference number)	±15	/ (+30V reference number)		
	CURRENT1[A]		3.0	/ 3.0		/ 2.1	1.7	/ 1.7		
	CURRENT2[A]	*6	4.0	/ -	2.7	/ -	2.4	/ -		
	LINE REGULATION[m)		20max	/ 36max		/ 96max	60max	/ 96max		
	LOAD REGULATION 1		250max	/ 100max		/ 150max	600max	/ 150max		
	LOAD REGULATION 2	[mV] *5	500max	/ -	7 Oomax	/ -	750max	/ -		
	RIPPLE[mVp-p]	0 to +50°C *1	80max	/ 240max		/ 240max	120max	/ 240max		
	1111 1 EE[1114 P-P]	-10 - 0℃ *1		/ 320max		/ 320max		/ 320max		
OUTPUT	RIPPLE NOISE[mVp-p]	0 to +50°C *1		/ 300max		/ 300max	150max	/ 300max		
	IIII I EE NOIGE[III P P]	-10 - 0℃ *1		/ 360max	180max	/ 360max	180max	/ 360max		
	TEMPERATURE REGULATION[mV] 0 to +50°				120max		150max			
	' 10 to +50℃				150max		180max			
	DRIFT[mV] *2		20max 48max 60max							
	START-UP TIME[ms]		350typ(ACIN 100V, Io=100%)							
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%) 4.99 - 6.00 (+V and -V are simultaneously adjusted) 9.60 - 13.2 (+V and -V are simultaneously adjusted) 13.2 - 16.5 (+V and -V are simultaneously adjusted)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]						13.2 - 16.5 (+V and -V are			
	OUTPUT VOLTAGE SET		4.99 - 5.30 (+V and -V CURRENT1) 11.5 - 12.5 (+V and -V CURRENT1)			14.4 - 15.6 (+V and -	V CURRENT1)			
PROTECTION	OVERCURRENT PROT	ECTION	Works over 105% of rated current and recovers automatically							
CIRCUIT AND	OVERVOLTAGE PROTEC	TION[V]	6.90 - 10.0 16.8 - 24.0 20.0 - 29.0							
OTHERS	OPERATING INDICATION	ON	LED (Green)							
	REMOTE ON/OFF		Optional (Required external power source)							
ISOLATION	INPUT-OUTPUT · RC *7		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)							
	INPUT-FG OUTPUT · RC-FG *7		AC2.000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)							
	OPERATING TEMP.,HUMID.AND	×/	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature) -10 to +71℃ (Required Derating), 20 - 90%RH (Non condensing) 3.000m (10,000feet) max							
ENVIRONMENT	STORAGE TEMP.,HUMID.AND									
	VIBRATION	ALIIIUDE	10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT		196.1m/s² (2GG), 11ms, once each X, Y and Z axis							
0455577 4335	AGENCY APPROVALS (At only	ν ΔC innut)	UL60950-1, C-UL(CSA60950-1), EN60950-1, EN50178 Complies with DEN-AN							
SAFETY AND NOISE	CONDUCTED NOISE	y AC IIIput)			3, CISPR22-B, EN5501					
	HARMONIC ATTENUAT	TOR	Complies with IEC61	<u> </u>	, OIGI 1122-D, LINGSUI	I D, LINUUZZ-D				
	CASE SIZE/WEIGHT	ion			1 (without terminal bloc	-k) (M > H > D) / 280	a may (with cover : 30)	5a may)		
OTHERS	COOLING METHOD		31 x 82 x 120mm [1.22 x 3.23 x 4.72 inches] (without terminal block) (W x H x D) / 280g max (with cover : 325g max)							
	COOLING WETHOD		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℃.
- *3 Derating is required.
- Figures for 0 to rated current 1.The current not measured side is fixed.
- *5 Figures for 0 to rated current 2.The current not measured
- The sum of +power -power must be less than output power. RC is applied to remote ON/OFF option. RC is isolated with input/output and FG.
- *8 $\pm 5, \pm 12, \pm 15$ can be used as +10,+24 and +30.
- *9 Please contact us about safety approvals for the model with option.
- *10 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 and V is different from standard model and refer to 7 Option of instruction manual for details.

