











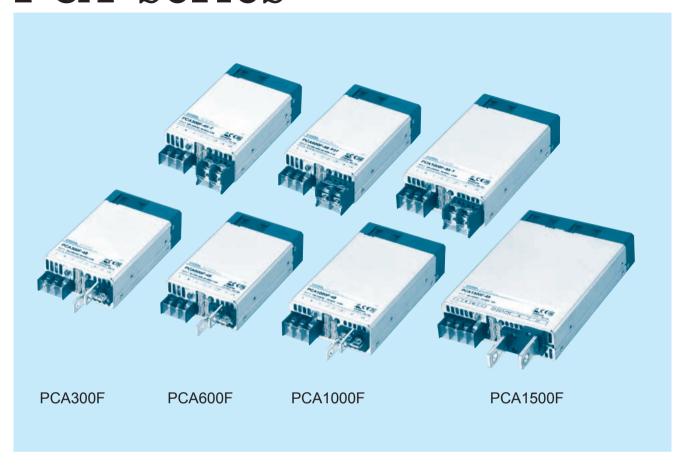








PCA-series



Feature

Low profile (41mm, 1.61 inch = meet 1U height)

Universal input 85 - 264VAC

(Refer to "Input vItage Derating")

DC input 88 - 370VDC possible : Excluding PCA1000F and

PCA1500F

(Refer to "Input vltage Derating")

For medical electric equipment

(ANSI/AAMI ES60601-1, EN60601-1 3rd)

Medical Isolation Grade 2MOPP

With AUX output 12V 0.1A (Voltage adjustable range 5 - 12V) Constant current function

Output voltage can be adjusted to near 0V (the item 2.6 on Instruction Manual)

With various alarms

Parallel Operation / N+1 Parallel Redundancy Operation possible Monitoring function and various setting values can be changed by communication (the item 2.11 on Instruction Manual)

Safety agency approval

· UL62368-1, C-UL (CSA62368-1), EN62368-1, ANSI/AAMI ES60601-1, EN60601-1 3rd

Up to 5-year warranty (Refer to Instruction Manual)

CE marking

Low Voltage Directive RoHS Directive

EMI

· PCA300F, PCA600F

Complies with FCC-B, CISPR32-B, EN55011-B, EN55032-B, VCCI-B

· PCA1000F, PCA1500F

Complies with FCC-A, CISPR32-A, EN55011-A, EN55032-A, VCCI-A

EMS Compliance: EN61204-3, EN61000-6-2

IEC60601-1-2 (2014), EN60601-1-2 (2015)

EN61000-4-2

EN61000-4-3

EN61000-4-4

EN61000-4-5

EN61000-4-6 EN61000-4-8

EN61000-4-11

Ordering information

PCA300F

300



- ①Series name ②Single output ③Output wattage ④Universal input
- ⑤Output voltage
- © Optional *7
 C:with Coating
 G:Low leakage current
 T:Terminal Block Style
 I:with PMBus interface

 - F2:Reverse air exhaust type P3:Master-slave Operation
- W1:Alarm function

For option details, refer to instruction manual 6.1.

*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	PCA300F-5	PCA300F-12	PCA300F-15	PCA300F-24	PCA300F-32	PCA300F-48
MAX OUTPUT WATTAGE[W]	300	324	330	336	320	336
DC OUTPUT	5V 60A	12V 27A	15V 22A	24V 14A	32V 10A	48V 7A

SPECIFICATIONS

	MODEL			PCA300F-5	PCA300F-12	PCA300F-15	PCA300F-24	PCA300F-32	PCA300F-48		
	V01 0-		[VAC]	85 - 264 1 φ	· ·		·	· ·			
	VOLTAGE		[VDC] *1	88 - 370							
	OUDDENITE AT		ACIN 100V	3.8typ							
	CURRENT[A]		ACIN 230V	1.6typ							
	FREQUENCY[H	lz]		50/60 (45 - 66)							
	_	Ī. <u>.</u>	(lo=50%)	86typ	87typ	87typ	88typ	88typ	88typ		
		ACIN 100V	(lo=100%)	87typ	88typ	88typ	89typ	89typ	89typ		
NPUT	EFFICIENCY[%]		(lo=50%)	87typ	88typ	88typ	89typ	89typ	89typ		
		ACIN 230V	(lo=100%)	89typ	90typ	90typ	91typ	91typ	91typ		
			ACIN 100V	0.98typ (lo=100°	%)	7.	1 71	1 71			
	POWER FACTO)R	ACIN 230V	0.95typ (lo=100°							
			ACIN 100V*2	71 1		h current / Seconda	ary inrush current)	More than 3 sec. to	re-start)		
	INRUSH CURRE	NT[A]	ACIN 230V*2	,,,,			<u>, , , , , , , , , , , , , , , , , , , </u>	·			
	LEAKAGE CURRENT[mA]			40/40 typ (lo=100%) (Primary inrush current / Secondary inrush current) (More than 3 sec. to re-start) 0.5max (ACIN 240V 60Hz, lo=100%, According to IEC60601-1)							
	VOLTAGE[V]		-,	5	12	15	24	32	48		
	CURRENT[A]			60	27	22	14	10	7		
	LINE REGULATION[mV]			20max	48max	60max	96max	128max	192max		
	LOAD REGULATION[mV]			40max	100max	120max	150max	150max	480max		
	RIPPLE[mVp-p]		0 to +50°C *3*4	160max	240max	240max	240max	320max	480max		
			-20 to 0°C *3	280max	320max	320max	320max	420max	640max		
		0 to +50°C *3*4	240max	300max	300max	300max	400max	600max			
DUTPUT	RIPPLE NOISE	RIPPLE NOISE[mVp-p]	-20 to 0°C *3	320max	360max	360max	360max	480max	720max		
	TEMPERATURE REGULATION[mV]	0 to +50°C *4	50max	120max	150max	240max	320max	480max			
		-20 to +50°C *4	75max	180max	180max	290max	400max	600max			
	DRIFT[mV]		*5	20max	48max	60max	96max	128max	192max		
	START-UP TIME[ms]				00/230V lo=100%)	Coman	Coman	TEOTHAX	102111031		
	HOLD-UP TIME[ms]			20typ (ACIN 230V Io=80%) / 16typ (ACIN 230V Io=100%)							
	OUTPUT VOLTAGE A		RANGE[V]	3.00 to 6.00	7.20 to 14.40	9.00 to 18.00	14.40 to 28.80	19.20 to 38.40	28.80 to 57.6		
	OUTPUT VOLTA	-		5.00 to 5.05	12.00 to 12.12	15.00 to 15.15	24.00 to 24.24	32.00 to 32.32	48.00 to 48.4		
	OVERCURRENT				% of rating (Recove			100000000000000000000000000000000000000			
	OVERVOLTAGE I	-		6.25 to 7.00	15.00 to 16.80	18.75 to 21.00	30.00 to 33.60	40.00 to 44.80	60.00 to 67.2		
ROTECTION	REMOTE SENS		[]	Provided	1010010101010	100000000000000000000000000000000000000	100100100100	1 10100 10 11100	1		
IRCUIT AND	REMOTE ON/O			Provided							
THERS	DC_OK LAMP	()		LED (Blue)							
	ALARM LAMP			LED (Orange)							
	COMMUNICATION	ON FUNCT	ION	Provided (Extended UART)							
	INPUT-OUTPUT			AC4,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) 2MOPP							
	INPUT-FG			-				Temperature) 1MC			
SOLATION	OUTPUT-FG			-			MΩ min (At Room				
	OUTPUT - AUX · RC · PG ·	INFO · DS · ADD	RO · ADDR1 · ADDR2		<u>, </u>		MΩ min (At Room				
	OPERATING TEMPH				- 90%RH (Non cor		()	, , ,			
	STORAGE TEMP.,HU			,	- 90%RH (Non cor						
NVIRONMENT	VIBRATION			,			ach along X, Y and	Z axis			
	IMPACT				11ms, once each			*****			
				` ′		<u> </u>	22.2 No.62368-1) A	ANSI/AAMI ES6060	I-1. EN60601-1 3		
SAFETY	AGENCY APPR	ROVALS		· '	, , ,		lies with IEC60601-		,		
AND NOISE	CONDUCTED	IOISE		· ·							
EGULATIONS	HARMONIC ATTENUATOR *6			Complies with FCC Part15 classB, VCCI-B, CISPR32-B, EN55011-B, EN55032-B Complies with IEC61000-3-2 (class A)							





OTHERS	CASE SIZE/WEIGHT	89×41×152mm [3.50×1.61×5.98 inches] (without terminal block and screw) (W×H×D) / 840g max
OTHERS	COOLING METHOD	Forced cooling (internal fan)

- *1 DC input safety agency approvals deleted.
- *2 The value is primary surge. The current of input surge to a built-in EMI/EMS Filter(0.2ms or less) is excluded.
- *3 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN:RM103). Please refer to the instruction manual 1.2.
- *4 5V output product, the maximum temperature of 40°C.

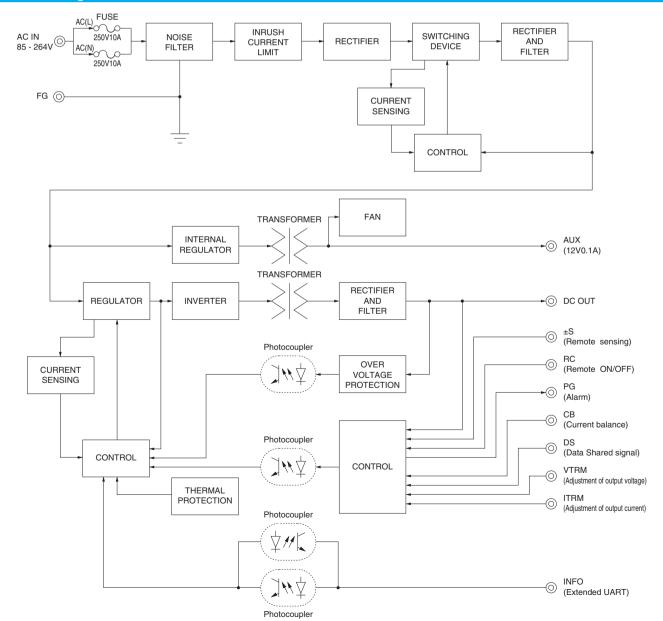
- Drift is the change in DC output for an eight hours period after a half-hour warm-up at 25°C.
- Please contact us about another class
- The listed options may affect the published standard specifications. Please contact us for detailed product specifications and safety approvals.
- A sound may occur from power supply at pulse loading.

Features

- · Low profile (41mm, 1.61 inch = meet 1U height)
- · Universal input 85 264VAC
- · DC input 88 370VDC possible
- · For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
- · Medical Isolation Grade 2MOPP
- · With AUX output 12V 0.1A (Voltage adjustable range 5 -12V)
- · Constant current function

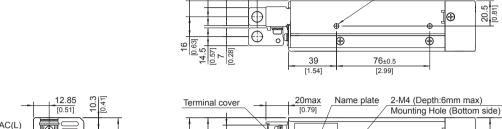
- · Output voltage can be adjusted to near 0V (the item 2.6 on Instruction Manual)
- · With various alarms
- Parallel Operation / N+1 Parallel Redundancy Operation possible
- · Monitoring function and various setting values can be changed by communication (the item 2.11 on Instruction Manual)
- · Complies with SEMI F47 (the item 2.1 on Instruction Manual)

Block diagram

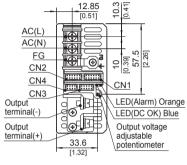


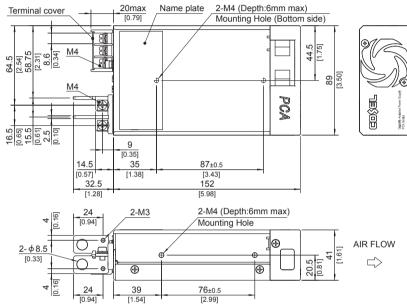


<PCA300F ☐ (Bus Bar Style) >



[0.28]





2-M4 (Depth:6mm max)

Mounting Hole

- ** Tolerance : ±1 [±0.04]
- % Weight: 840g max
- \frak{W} PCB Material / thickness : FR-4 / 1.6mm [0.06]
- ※ Fan cover Material : PBT
- % Dimensions in mm, [] = inches
- Mounting torque: 1.2N⋅m max
- $\ensuremath{\,\mathbb{X}\,}$ Input and output terminal screw tightening torque

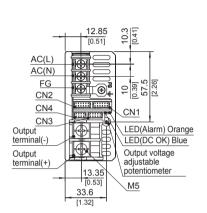
M3 0.6N·m max M4 1.6N·m max

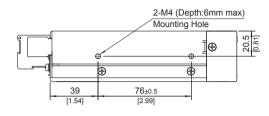
PCA-4 April 02, 2021

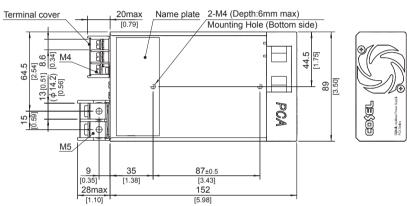


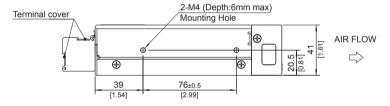


<PCA300F-_-T (Terminal Block Style) >









- ** Tolerance : ±1 [±0.04]
- * Weight: 840g max
- ※ PCB Material / thickness: FR-4 / 1.6mm [0.06]
- * Chassis Material: Aluminum
- ※ Fan cover Material : PBT
- ※ Dimensions in mm, [] = inches
- * Input and output terminal screw tightening torque

M4 1.6N·m max M5 2.5N·m max

 $\ensuremath{\mathbb{X}}$ Please connect safety ground to FG terminal on the unit.

Ordering information

PCA600F

600



- ① Series name ② Single output ③ Output wattage
- 4 Universal input
- ⑤Output voltage
- Orbut voltage
 Orbit voltage
 Orbit voltage
 C:with Coating
 G:Low leakage current
 T:Terminal Block Style (Only 12V, 15V, 24V, 32V and 48V)

 I :with PMBus interface F2:Reverse air exhaust type

 - P3:Master-slave Operation
- W1:Alarm function

For option details, refer to instruction manual 6.1.

*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	PCA600F-5	PCA600F-12	PCA600F-15	PCA600F-24	PCA600F-32	PCA600F-48
MAX OUTPUT WATTAGE[W]	600	636	645	648	640	624
DC OUTPUT	5V 120A	12V 53A	15V 43A	24V 27A	32V 20A	48V 13A

SPECIFICATIONS

	MODEL			PCA600F-5	PCA600F-12	PCA600F-15	PCA600F-24	PCA600F-32	PCA600F-48			
	VOLTACE		[VAC]	85 - 264 1 φ (Oι	utput derating is rec	uired at less than	90V. Refer to "Dera	ting")	<u> </u>			
	VOLTAGE		[VDC] *1	88 - 370 (Output derating is required at less than 110V. Refer to "Derating")								
	OUDDENITE AT		ACIN 100V	7.3typ								
	CURRENT[A]		ACIN 230V	3.2typ								
	FREQUENCY[H	lz]		50/60 (45 - 66)								
		Ī. .	(lo=50%)	90typ	91typ	91typ	91typ	91typ	91typ			
		ACIN 100V	(lo=100%)	89typ	90typ	90typ	91typ	91typ	91typ			
NPUT	EFFICIENCY[%]		(lo=50%)	92typ	92typ	92typ	93typ	93typ	93typ			
		ACIN 230V	(lo=100%)	91typ	92typ	92typ	93typ	93typ	93typ			
			ACIN 100V	0.98typ (lo=100		1		1	1 7			
	POWER FACTO	PR	ACIN 230V	0.95typ (lo=100								
			ACIN 100V*2	71 1		h current / Seconda	ary inruch current)	(More than 3 sec. to	re-etart)			
	INRUSH CURRE	NT[A]	ACIN 100V*2	7. \				(More than 3 sec. to				
	LEAKAGE CUF	DENTIM		7. \	40V 60Hz, lo=100%			(INIOTE ITIAIT 3 SEC. IC	ne-start)			
		INENT [III/	<u>^_</u>	5	12	15	24	32	48			
	VOLTAGE[V]			120	53	43		20	13			
-	CURRENT[A]	TIONIT17					27					
	LINE REGULATION[mV]			20max	48max	60max	96max	128max	192max			
	LOAD REGULA	VIIONIMA		40max	100max	120max	150max	150max	480max			
	RIPPLE[mVp-p] RIPPLE NOISE[mVp-p]	0 to +50°C *3*4	160max	240max	240max	240max	320max	480max				
			-20 to 0°C *3	280max	320max	320max	320max	420max	640max			
		0 to +50°C *3*4	240max	300max	300max	300max	400max	600max				
UTPUT		-20 to 0°C *3	320max	360max	360max	360max	480max	720max				
	TEMPERATURE REGULATION[mV]	0 to +50°C *4	50max	120max	150max	240max	320max	480max				
			-20 to +50°C *4	75max	180max	180max	290max	400max	600max			
	DRIFT[mV] *5			20max	48max	60max	96max	128max	192max			
	START-UP TIME[ms]			700typ (ACIN 100/230V Io=100%)								
	HOLD-UP TIME[ms]			20typ (ACIN 230	OV Io=80%) / 16typ	(ACIN 230V lo=100	0%)					
	OUTPUT VOLTAGE A	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		3.00 to 6.00	7.20 to 14.40	9.00 to 18.00	14.40 to 28.80	19.20 to 38.40	28.80 to 57.60			
	OUTPUT VOLTA	AGE SETT	ING[V]	5.00 to 5.05	12.00 to 12.12	15.00 to 15.15	24.00 to 24.24	32.00 to 32.32	48.00 to 48.48			
	OVERCURRENT	PROTECTI	ON	Works over 1059	% of rating (Recove	rs automatically, Hi	ccup overcurrent)		,			
	OVERVOLTAGE I	PROTECTION	N[V]	6.25 to 7.00	15.00 to 16.80	18.75 to 21.00	30.00 to 33.60	40.00 to 44.80	60.00 to 67.20			
ROTECTION	REMOTE SENS	SING		Provided		•	'					
IRCUIT AND	REMOTE ON/O	FF (RC)		Provided								
THERS	DC_OK LAMP			LED (Blue)								
	ALARM LAMP			LED (Orange)								
	COMMUNICATION	ON FUNCT	ION	Provided (Extended UART)								
	INPUT-OUTPUT			AC4.000V 1min	ute. Cutoff current =	= 10mA, DC500V 5	0MΩ min (At Room	Temperature) 2MC)PP			
	INPUT-FG			AC2.000V 1min	ute. Cutoff current =	= 10mA, DC500V 5	OMΩ min (At Room	Temperature) 1MC)PP			
OLATION	OUTPUT-FG			AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 1MOPP AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)								
	OUTPUT - AUX · RC · PG ·	INFO · DS · ADD	RO · ADDR1 · ADDR2		e, Cutoff current = 1				-			
	OPERATING TEMP.,H				- 90%RH (Non cor		(
	STORAGE TEMP.,HU				- 90%RH (Non cor							
NVIRONMENT	VIBRATION				n/s² (2G) 3minutes p		ach along X Y and	I 7 axis	,			
	IMPACT				11ms, once each		ac. along A, T all	- = 0.110				
	AGENCY APPR	SUNVI S					222 2 No 62268.1\	ANSI/AAMI ES6060	11-1 FN60601-1 3			
AFETY	AGENOT APPE	IOVALO			to CAN/CSA-C22.2				/			
ND NOISE	CONDUCTED	NOISE	-	, ,	Part15 classB, VCCI			mu.				
EGULATIONS	HARMONIC AT		ID #6		EC61000-3-2 (class		511 D, E1100002-D					
	HARIMONIC AL	LINUATU	70	Compiles with it	(Class	^)						

PCA-6 April 02, 2021





OTHERS	CASE SIZE/WEIGHT	89×41×152mm [3.50×1.61×5.98 inches] (without terminal block and screw) (W×H×D) / 840g max
OTHERS	COOLING METHOD	Forced cooling (internal fan)

- *1 DC input safety agency approvals deleted.
- *2 The value is primary surge. The current of input surge to a built-in EMI/EMS Filter(0.2ms or less) is excluded.
- *3 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN:RM103). Please refer to the instruction manual 1.2.
- *4 5V output product, the maximum temperature of 40°C.

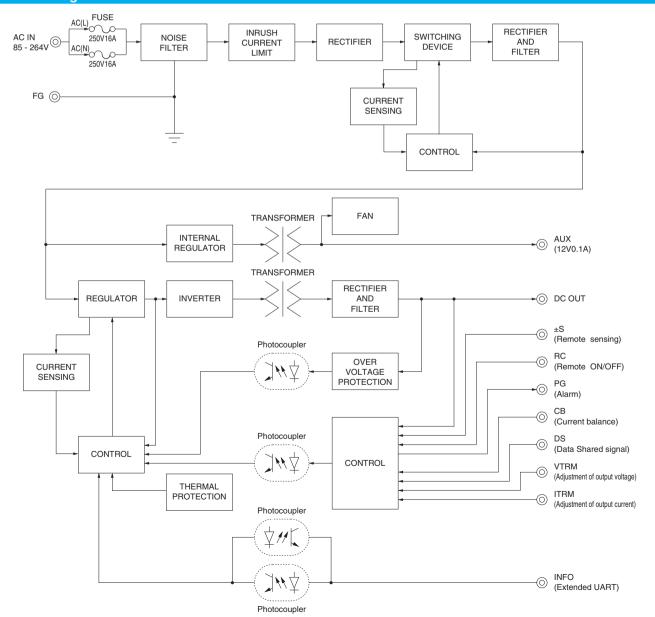
- Drift is the change in DC output for an eight hours period after a half-hour warm-up at 25°C.
- Please contact us about another class
- The listed options may affect the published standard specifications. Please contact us for detailed product specifications and safety approvals.
- A sound may occur from power supply at pulse loading.

Features

- · Low profile (41mm, 1.61 inch = meet 1U height)
- · Universal input 85 264VAC (Refer to "Derating", when using at 85 - 90VAC)
- · DC input 88 370VDC possible (Refer to when using at 88 - 110VDC)
- · For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
- · Medical Isolation Grade 2MOPP
- · With AUX output 12V 0.1A (Voltage adjustable range 5 12V)
- · Constant current function

- · Output voltage can be adjusted to near 0V (the item 2.6 on Instruction Manual)
- · With various alarms
- · Parallel Operation / N+1 Parallel Redundancy Operation possible
- · Monitoring function and various setting values can be changed by communication (the item 2.11 on Instruction Manual)
- · Complies with SEMI F47 (the item 2.1 on Instruction Manual)

Block diagram

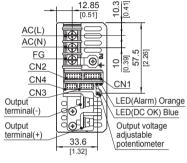


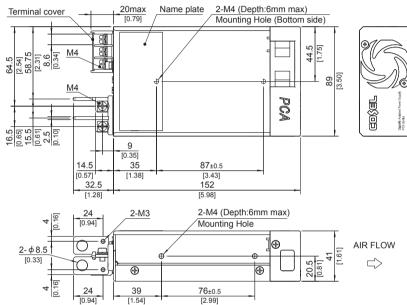


<PCA600F (Bus Bar Style) >



[0.28]





2-M4 (Depth:6mm max)

Mounting Hole

- % Tolerance : ± 1 [± 0.04]
- % Weight: 840g max
- \frak{W} PCB Material / thickness : FR-4 / 1.6mm [0.06]
- ※ Fan cover Material : PBT
- % Dimensions in mm, [] = inches
- $\ensuremath{\,\mathbb{X}\,}$ Input and output terminal screw tightening torque

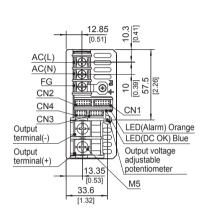
M3 0.6N·m max M4 1.6N·m max

PCA-8 April 02, 2021

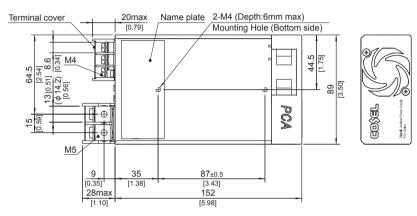


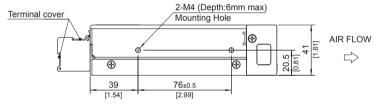


<PCA600F-_-T (Terminal Block Style) >



2-M4 (Depth:6mm max) Mounting Hole 20.5 [0.81] • 39 [1.54] 76±0.5





- ** Tolerance : ±1 [±0.04]
- * Weight: 840g max
- \frak{W} PCB Material / thickness : FR-4 / 1.6mm [0.06]
- * Chassis Material: Aluminum
- ※ Fan cover Material : PBT
- ※ Dimensions in mm, [] = inches
- * Input and output terminal screw tightening torque

M4 1.6N·m max M5 2.5N·m max

 $\ensuremath{\mathbb{X}}$ Please connect safety ground to FG terminal on the unit.

Ordering information

PCA1000F

1000



①Series name ②Single output 3 Output wattage

4 Universal input

⑤Output voltage

Optional *6
 C :with Coating

G:Low leakage current T:Terminal Block Style

(Only 24V, 32V and 48V)
I:with PMBus interface
F2:Reverse air exhaust type
P3:Master-slave Operation

W1:Alarm function

E1:EMI classB

(Only 24V, 32V and 48V)

For option details, refer to instruction manual 6.1.

*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL	PCA1000F-5	PCA1000F-12	PCA1000F-15	PCA1000F-24	PCA1000F-32	PCA1000F-48
MAX OUTPUT WATTAGE[W]	1000	1056	1050	1056	1056	1056
DC OUTPUT	5V 200A	12V 88A	15V 70A	24V 44A	32V 33A	48V 22A

SPECIFICATIONS

	MODEL			PCA1000F-5	PCA1000F-12	PCA1000F-15	PCA1000F-24	PCA1000F-32	PCA1000F-48			
	VOLTAGE		[VAC]	85 - 264 1 ϕ (Output derating is required at less than 90V. Refer to "Derating")								
	CURRENT[A]		ACIN 100V	12.0typ								
	OOTHIERTIA		ACIN 230V	5.3typ								
	FREQUENCY[H	lz]		50/60 (45 - 66)								
		ACIN 100V	(lo=50%)	90typ	91typ	91typ	91typ	91typ	91typ			
	EFFICIENCY[%]	ACIN 100V	(lo=100%)	89typ	90typ	90typ	91typ	91typ	91typ			
PUT	LITIOILING I[/8]	ACIN 230V	(lo=50%)	92typ	92typ	92typ	93typ	93typ	93typ			
		ACIN 230V	(lo=100%)	91typ	92typ	92typ	93typ	93typ	93typ			
	POWER FACTO	ND.	ACIN 100V	0.98typ (lo=1009	%)							
	POWER FACTO	,n	ACIN 230V	0.95typ (lo=1009	%)							
	INDUCH CURRE	NTFA1	ACIN 100V*1	20/40 typ (lo=10	0%) (Primary inrush	n current / Seconda	ry inrush current) (More than 3 sec. to	re-start)			
	INRUSH CURREN	NI[A]	ACIN 230V*1	40/40 typ (lo=10	0%) (Primary inrust	n current / Seconda	ry inrush current) (More than 3 sec. to	re-start)			
	LEAKAGE CUR	RENT[m/	A]	0.5max (ACIN 24	40V 60Hz, lo=100%	, According to IEC	60601-1)					
	VOLTAGE[V]			5	12	15	24	32	48			
	CURRENT[A]			200	88	70	44	33	22			
RI	LINE REGULAT	TION[mV]		20max	48max	60max	96max	128max	192max			
	LOAD REGULA	TION[mV]	40max	100max	120max	150max	150max	480max			
	DIDDI FIV1	0 to +50°C *2*3	160max	240max	240max	240max	320max	480max				
	RIPPLE[mVp-p	GE CURRENT[mA EE[V] NT[A] EGULATION[mV] EGULATION[mV] [mVp-p] NOISE[mVp-p] JRE REGULATION[mV] nV] JP TIME[ms] P TIME[ms] DITAGE ADJUSTMENT F VOLTAGE SETT RRENT PROTECTIO	-20 to 0°C *2	280max	320max	320max	320max	420max	640max			
			0 to +50°C *2*3	240max	300max	300max	300max	400max	600max			
	RIPPLE NOISE[mVp-p]	[mVp-p]	-20 to 0°C *2	320max	360max	360max	360max	480max	720max			
			0 to +50°C *3	50max	120max	150max	240max	320max	480max			
	TEMPERATURE REGULATION[m]	LATION[mV]	-20 to +50°C *3	75max	180max	180max	290max	400max	600max			
	DRIFT[mV]		*4	20max	48max	60max	96max	128max	192max			
	START-UP TIME[ms]			700typ (ACIN 10	0/230V lo=100%)							
	HOLD-UP TIME[ms]		20typ (ACIN 230V Io=80%) / 16typ (ACIN 230V Io=100%)									
		OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		3.00 to 6.00	7.20 to 14.40	9.00 to 18.00	14.40 to 28.80	19.20 to 38.40	28.80 to 57.60			
				5.00 to 5.05	12.00 to 12.12	15.00 to 15.15	24.00 to 24.24	32.00 to 32.32	48.00 to 48.48			
					% of rating (Recove			1				
		-		6.25 to 7.00	15.00 to 16.80	18.75 to 21.00	30.00 to 33.60	40.00 to 44.80	60.00 to 67.20			
OTECTION	REMOTE SENS			Provided	1	1.0110101010	100100 10 00100	1	100.00			
RCUIT AND	REMOTE ON/O			Provided								
HERS	DC_OK LAMP	()		LED (Blue)								
	ALARM LAMP			LED (Blue)								
	COMMUNICATION	ON FUNCT	ION	Provided (Extended UART)								
	INPUT-OUTPUT			AC4,000V 1minute, Cutoff current = 10mA, DC500V 50M Ω min (At Room Temperature) 2MOPP								
	INPUT-FG			AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 2MOPP AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 1MOPP								
OLATION	OUTPUT-FG			· · · · · · · · · · · · · · · · · · ·	e, Cutoff current = 1		,		•			
	OUTPUT - AUX · RC · PG ·	INFO · DS · ADDI	RO · ADDR1 · ADDR2		e, Cutoff current = 1				·			
	OPERATING TEMP.,H				- 90%RH (Non con		WIZE THIN (ALT TOOM	remperature)				
	STORAGE TEMP.,HU			,	- 90%RH (Non con	- 0/			-			
VIRONMENT	VIBRATION	INIDIT I.AITO	ALITIODE	,	/s² (2G) 3minutes p		ach along X V and	7 avis				
	IMPACT		-		11ms, once each >		aon along A, i and	_ 4/10				
	AGENCY APPR	2 I AVOS		, ,	2368-1, C-UL (equiva	<u> </u>	22 2 No 62368-1\ A	NSI/AAMI ESEGEG	-1 FN60601-1 20			
FETY	AGENC! APPR	IOVALS			to CAN/CSA-C22.2				-1, ENOUGUI-I 3			
ID NOISE	CONDUCTED	IOISE			Part15 classA, VCCI-			_ 101 _ 0.				
GULATIONS	CONDUCTED NOISE HARMONIC ATTENUATOR *5				C61000-3-2 (class		, , E110000L A					

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OTHERS	CASE SIZE/WEIGHT	102×41×178mm [4.02×1.61×7.01 inches] (without terminal block and screw) (W×H×D) / 1.2kg max
UITERS	COOLING METHOD	Forced cooling (internal fan)

The value is primary surge. The current of input surge to a built-in EMI/EMS Filter(0.2ms or

- *2 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN: RM103). Please refer to the instruction manual 1.2.
- *3 5V, 12V, 15V output product, the maximum temperature of 40°C.

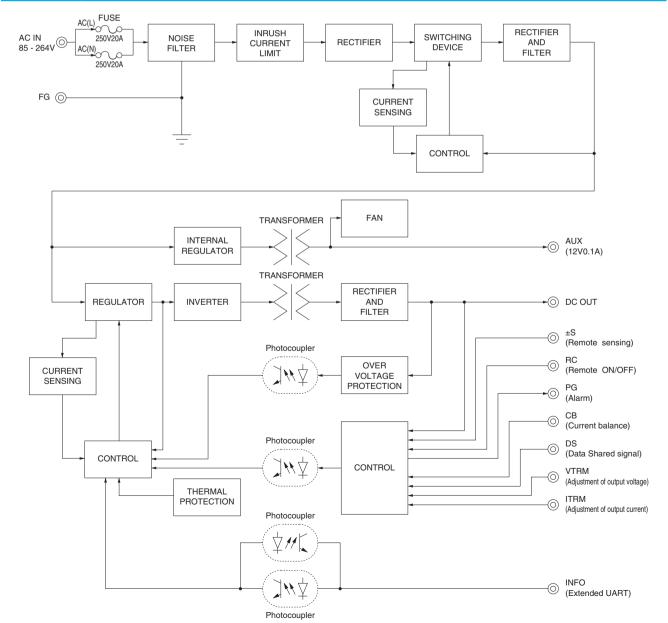
- Drift is the change in DC output for an eight hours period after a half-hour warm-up at 25°C.
- Please contact us about another class.
- *6 The listed options may affect the published standard specifications. Please contact us for detailed product specifications and safety approvals.
- A sound may occur from power supply at pulse loading.

Features

- · Low profile (41mm, 1.61 inch = meet 1U height)
- · Universal input 85 264VAC (Refer to "Derating", when using at 85 - 90VAC)
- · For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
- · Medical Isolation Grade 2MOPP
- · With AUX output 12V 0.1A (Voltage adjustable range 5 -12V)
- · Constant current function

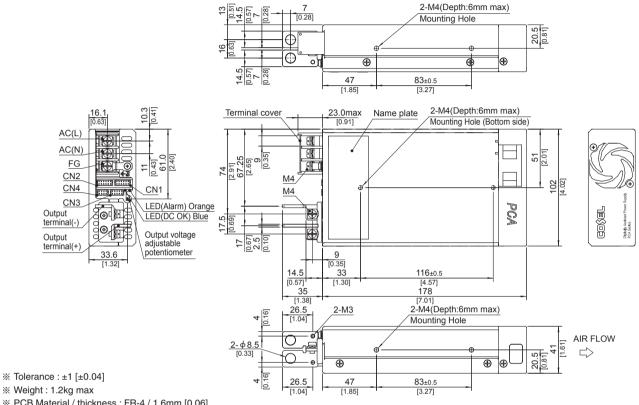
- · Output voltage can be adjusted to near 0V (the item 2.6 on Instruction Manual)
- · With various alarms
- · Parallel Operation / N+1 Parallel Redundancy Operation
- · Monitoring function and various setting values can be changed by communication (the item 2.11 on Instruction Manual)
- · Complies with SEMI F47 (the item 2.1 on Instruction Manual)

Block diagram





<PCA1000F- (Bus Bar Style) >



% PCB Material / thickness : FR-4 / 1.6mm [0.06]

* Chassis Material : Aluminum

※ Fan cover Material : PBT

※ Dimensions in mm, [] = inches

Mounting torque: 1.2N·m max

* Input and output terminal screw tightening torque

M3 0.6N·m max M4 1.6N·m max

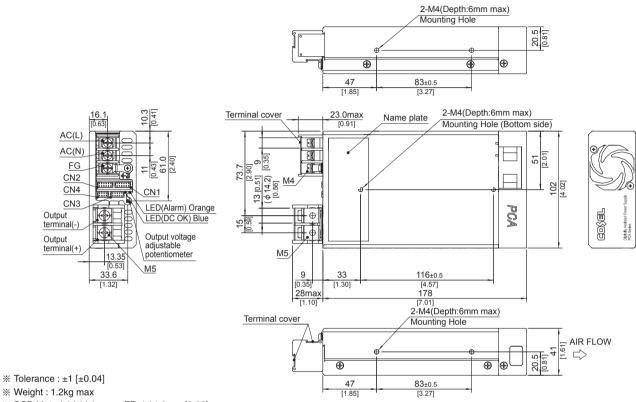
* Please connect safety ground to FG terminal on the unit.

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<PCA1000F- T (Terminal Block Style) >



- ※ Weight : 1.2kg max
- \frak{W} PCB Material / thickness : FR-4 / 1.6mm [0.06]
- * Chassis Material: Aluminum
- ※ Fan cover Material : PBT
- ※ Dimensions in mm, [] = inches
- Mounting torque: 1.2N⋅m max
- * Input and output terminal screw tightening torque

M4 1.6N·m max M5 2.5N·m max

 $\ensuremath{\mathbb{X}}$ Please connect safety ground to FG terminal on the unit.

PCA1500F

1500









High voltage pulse noise type : NAP series Low leakage current type : NAM series Low profile type : EAC series

*A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

- ①Series name ②Single output ③Output wattage ④Universal input
- ⑤Output voltage
- ® Optional *6
 C :with Coating
 G :Low leakage current
 - I :with PMBus interface
 - F2:Reverse air exhaust type
- P3:Master-slave Operation W1:Alarm function

For option details, refer to instruction manual 6.1.

*Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

MODEL		PCA1500F-5	PCA1500F-12	PCA1500F-15	PCA1500F-24	PCA1500F-32	PCA1500F-48
MAX OUTPUT WATTAGE[W]	ACIN 100V/230V	1500/1500	1500/1500	1500/1500	1560/1680	1504/1664	1536/1680
DC OUTPUT	ACIN 100V/230V	5V 300A/300A	12V 125A/125A	15V 100A/100A	24V 65A/70A	32V 47A/52A	48V 32A/35A

SPECIFICATIONS

	MODEL			PCA1500F-5	PCA1500F-12	PCA1500F-15	PCA1500F-24	PCA1500F-32	PCA1500F-48		
,	VOLTAGE		[VAC]	85 - 264 1 φ (Οι	tput derating is req	uired at less than 9	5V. Refer to "Derati	ng")			
	CUDDENTIAL		ACIN 100V	18typ							
'	CURRENT[A] ACIN 230V		ACIN 230V	7.8typ			8.5typ				
П	FREQUENCY[H	lz]		50/60 (45 - 66)							
		1001140014	(lo=50%)	90typ	91typ	91typ	91typ	91typ	91typ		
1.		ACIN 100V	(lo=100%)	88typ	90typ	90typ	91typ	91typ	91typ		
PUT '	EFFICIENCY[%]	4011 0001	(lo=50%)	92typ	92typ	92typ	93typ	93typ	93typ		
		ACIN 230V	(lo=100%)	91typ	92typ	92typ	93typ	93typ	93typ		
Γ.	DOWED FACTO		ACIN 100V	0.98typ (lo=100°	%)				•		
	POWER FACTO)K	ACIN 230V	0.95typ (Io=100%)							
Γ.	NEUGU GUERE	UTCA1	ACIN 100V*1	20/40 typ (Io=10	0%) (Primary inrus	n current / Seconda	ry inrush current) (More than 10 sec. t	o re-start)		
	NRUSH CURREN	NI[A]	ACIN 230V*1	40/40 typ (lo=10	0%) (Primary inrus	n current / Seconda	ry inrush current) (More than 10 sec. t	o re-start)		
Ī	LEAKAGE CUR	RENT[m/	<u> </u>	0.5max (ACIN 240V 60Hz, lo=100%, According to IEC60601-1)							
1	VOLTAGE[V]			5	12	15	24	32	48		
	CURRENT[A]		ACIN 100V/230V	300/300	125/125	100/100	65/70	47/52	32/35		
	LINE REGULAT	ION[mV]		20max	48max	60max	96max	128max	192max		
	LOAD REGULA	TION[mV]		40max	100max	120max	150max	150max	480max		
- 1,	RIPPLE[mVp-p]	1	0 to +50°C *2*3	160max	240max	240max	240max	320max	480max		
L'	nieecciiivp-p	J	-20 to 0°C *2	280max	320max	320max	320max	420max	640max		
	RIPPLE NOISE[mVp-p]	[m\/n_n]	0 to +50°C *2*3	240max	300max	300max	300max	400max	600max		
UTPUT		-20 to 0°C *2	320max	360max	360max	360max	480max	720max			
.	TEMPERATURE REGULATION[mV]	I ATION[mV]	0 to +50°C *3	50max	120max	150max	240max	320max	480max		
	TEMPERATORE REGULATION[IIIV]		-20 to +50°C *3	75max	180max	180max	290max	400max	600max		
L	DRIFT[mV] *4		20max	48max	60max	96max	128max	192max			
_;	START-UP TIME[ms]			700typ (ACIN 100/230V lo=100%)							
	HOLD-UP TIME[ms]		20typ (ACIN 230V Io=80%) / 16typ (ACIN 230V Io=100%)								
	OUTPUT VOLTAGE A	DJUSTMENT	RANGE[V]	3.00 to 6.00	7.20 to 14.40	9.00 to 18.00	14.40 to 28.80	19.20 to 38.40	28.80 to 57.60		
	OUTPUT VOLTA	AGE SETT	ING[V]	5.00 to 5.05	12.00 to 12.12	15.00 to 15.15	24.00 to 24.24	32.00 to 32.32	48.00 to 48.4		
	OVERCURRENT	PROTECTI	ON	Works over 1059	6 of rating (Recove	rs automatically, Hi	ccup overcurrent)		_		
_	OVERVOLTAGE F		N[V]	6.25 to 7.00	15.00 to 16.80	18.75 to 21.00	30.00 to 33.60	40.00 to 44.80	60.00 to 67.20		
	REMOTE SENS			Provided	,						
. –	REMOTE ON/O	FF (RC)		Provided							
F	DC_OK LAMP			LED (Blue)	,						
	ALARM LAMP			LED (Orange)							
	COMMUNICATIO		ION	Provided (Extended UART)							
<u> </u>	INPUT-OUTPUT			,	ite, Cutoff current =						
SOLATION ⊢	INPUT-FG				ite, Cutoff current =				PP		
H	OUTPUT-FG				e, Cutoff current = 1		· · · · · · · · · · · · · · · · · · ·				
	OUTPUT - AUX · RC · PG ·				e, Cutoff current = 1		$MΩ$ min (At Room $\overline{}$	Temperature)			
_	OPERATING TEMP.,H			,	- 90%RH (Non con						
IVIRONMENI 🗕	STORAGE TEMP.,HU	IMIDITY.AND	ALTITUDE		- 90%RH (Non con						
_	VIBRATION				/s² (2G) 3minutes p		ach along X, Y and	∠ axis			
	IMPACT	01/4: 0			11ms, once each >		00 0 NL 00000 11 1	NO. / A A A A	d ENGGEST : -		
AFETY	AGENCY APPR	OVALS		,	2368-1, C-UL (equiv		,,,		-1, EN60601-1 3		
ND NOISE	CONDUCTED N	IOICE			to CAN/CSA-C22.2 Part15 classA, VCCI-						
EGULATIONS \vdash			D. def				NOZ-A, ENDOUTT-A, EI	N00032-A			
· · · I	HARMONIC AT	IENUAIO	H *5	Compiles with IE	C61000-3-2 (class	A)					

PCA-14 April 02, 2021





OTHERS	CASE SIZE/WEIGHT	40×41×203mm [5.52×1.61×7.99 inches] (without terminal block and screw) (W×H×D) / 2.0kg max					
OTHERS	COOLING METHOD	Forced cooling (internal fan)					

The value is primary surge. The current of input surge to a built-in EMI/EMS Filter(0.2ms or

- *2 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN: RM103). Please refer to the instruction manual 1.2
- *3 5V, 12V, 15V output product, the maximum temperature of 40°C.

- Drift is the change in DC output for an eight hours period after a half-hour warm-up at 25°C.
- Please contact us about another class.
- *6 The listed options may affect the published standard specifications. Please contact us for detailed product specifications and safety approvals.
- A sound may occur from power supply at pulse loading.

Features

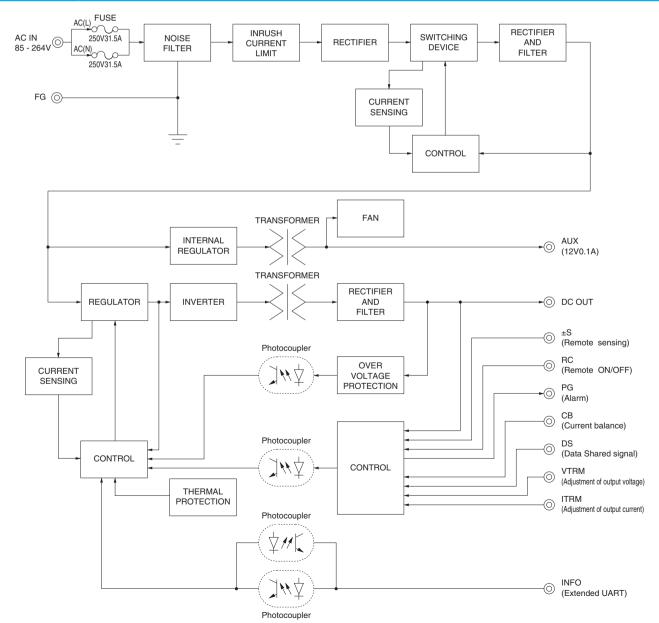
- · Low profile (41mm, 1.61 inch = meet 1U height)
- · Universal input 85 264VAC (Refer to "Derating", when using at 85 - 95VAC)
- · For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd. IEC60601-1-2 4th Ed.)
- · Medical Isolation Grade 2MOPP
- · With AUX output 12V 0.1A (Voltage adjustable range 5 12V)
- · Constant current function

- · Output voltage can be adjusted to near 0V (Refer to the item 2.6 on Instruction Manual.)
- · With various alarms
- · Parallel Operation / N+1 Parallel Redundancy Operation available
- · Monitoring function and various setting values can be changed by communication

(Refer to the item 2.11 on Instruction Manual.)

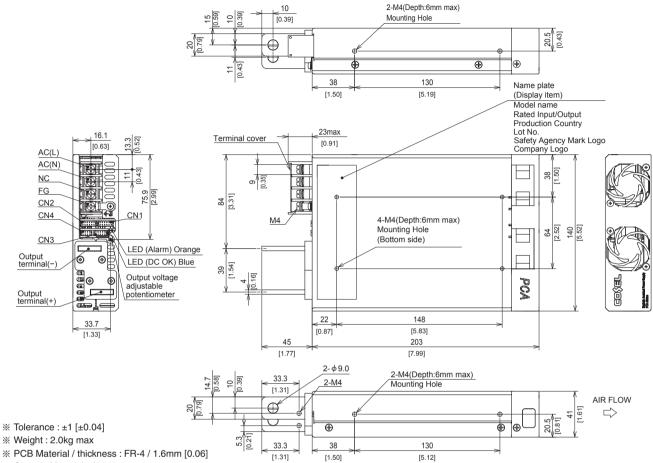
· Complies with SEMI F47 (Refer to the item 2.1 on Instruction Manual.)

Block diagram



COSEL | PCA1500F

External view



% Chassis Material : Aluminum

※ Fan cover Material : PBT

※ Dimensions in mm, [] = inches

Mounting torque: 1.2N·m max

 $\ensuremath{\,\mathbb{X}\,}$ Input and output terminal screw tightening torque

M3 0.6N·m max M4 1.6N·m max

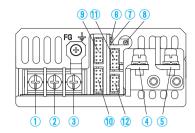
 $\ensuremath{\,\times\,}$ Please connect safety ground to FG terminal on the unit.

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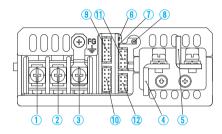


Terminal Blocks

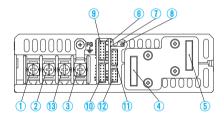
PCA300F, PCA600F

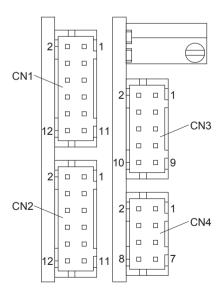


●PCA1000F



PCA1500F





Connector pin numbers

①AC (L) Input Terminals 85 - 264VAC 1 \$\phi\$45 - 66Hz

(2)AC (N) (M4) 88 - 370VDC (Excluding PCA1000F PCA1500F)

(3)Frame ground (M4)

(4)-Output

(5)+Output

(6)LED for fault condition detection (ALARM) Color: Orange

(7)LED for output voltage confirmation (DC OK) Color: Bule

(8)Output voltage adjustable potentiometer

(9)CN1

10CN2 (11)CN3

Connectors

(12)CN4

(13)N.C.

Pin Configuration and Functions of CN1, CN2

Pin No.	Function		Ground level
1	+S	+Remote sensing	COM
2	N.C.	No connection	-
3	N.C.	No connection	-
4	-S	-Remote sensing	COM
5	VTRM	Adjustment of output voltage	COM
6	COM	Common ground (for signal)	COM
7	INFO	Extended UART signal	SGND
8	CB	Current Balance	COM
9	DS	Data Shared signal	SGND
10	SGND	Signal ground	SGND
11	RC2	Remote ON/OFF	RCG
12	RCG	RCG	

* Each terminal of CN1 and CN2 are connected inside the power supply.

Pin Configuration and Functions of CN3

Pin No.		Function	Ground level	
1	AUX	Auxiliary output	AUXG	
2	AUXG	Auxiliary output ground	AUXG	
3	RC1	Remote ON/OFF	AUXG	
4	AUXG	Auxiliary output ground	AUXG	
5	PG	Alarm	PGG	
6	PGG	Alarm ground	PGG	
7	ITRM	Adjustment of output current	COM	
8	COM	Common ground (for signal)	COM	
9	VTRM_EN	Enable Vtrm	COM	
10	SLV_EN	Enable Slave mode *1	COM	

Pin Configuration and Functions of CN4

Pin No.		Function	Ground level				
1	SDA	Serial data *2					
2	SGND	Signal ground	SGND				
3	SCL	Serial clock *2	SGND				
4	SMBA	SMBAlert *2	SGND				
5	ADDR0	Address bit 0	SGND				
6	ADDR1	Address bit 1	SGND				
7	ADDR2	Address bit 2	SGND				
8	SGND	Signal ground	SGND				

Matching connectors and terminals

	Connector		Housing	Terminal	Mfr.	
	CN1 CN2	S12B-PHDSS	PHDR-12VS	Reel: SPHD-002T-P0.5 Loose:BPHD-001T-P0.5 *3	1 C T	
ĺ	CN3	S10B-PHDSS	PHDR-10VS		J.S.1	ı
ĺ	CN4	S8B-PHDSS	PHDR-8VS	BPHD-002T-P0.5 *3		ı

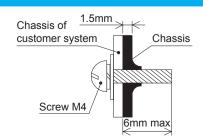
★1 For -P3 option.

*2 For -I option.

*3 The manufacturer prepares only the ratchet hand.

Assembling and Installation Method

■Please observe the mounting screw length in right figure to obtain enough isolation between screws and internal components.

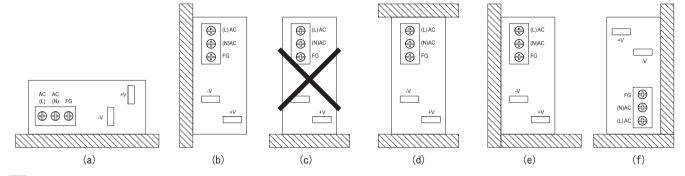




Assembling and Installation Method

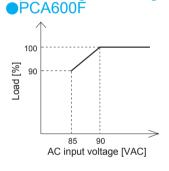
- ■Please do not block built-in fans and ventilation holes. When the power supply is mounted by screws, please consider its weight and set it in place. (Please see below.)
- ■Please avoid installing the power supply by only one narrow side like the Fig.(c).

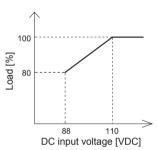
 In that case, another narrow side or the wide side should be also used to install as shown in Fig.(d), (e), and (f).
- If power supplies are used in a dusty environment, it might cause a failure. Please consider taking such countermeasures as installing an air filter near the suction area of the system to prevent a failure.

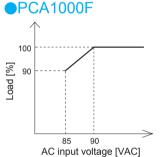


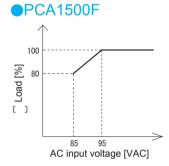
Derating

Input voltage Derating curve

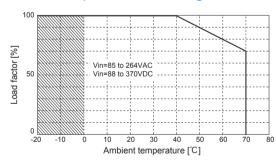




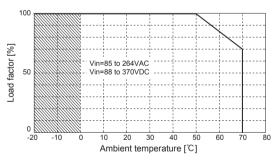




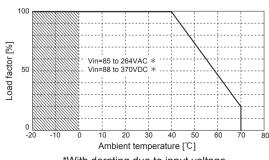
PCA300F-5 Ambient Temperature Derating Curve



●PCA300F-12, -15, -24, -32, -48 Ambient Temperature Derating Curve

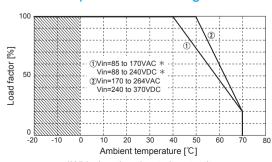


PCA600F-5 Ambient Temperature Derating Curve



*With derating due to input voltage

●PCA600F-12, -15, -24, -32, -48 Ambient Temperature Derating Curve

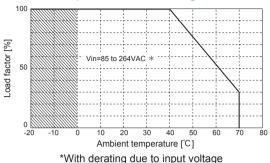


*With derating due to input voltage

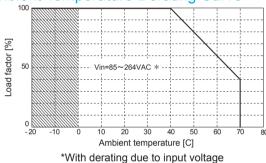


Derating

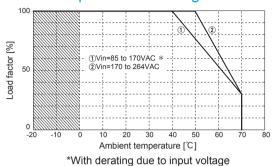
●PCA1000F-5, -12, -15 **Ambient Temperature Derating Curve**



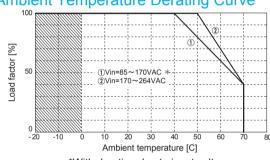
PCA1500F-5,-12,-15 **Ambient Temperature Derating Curve**



PCA1000F-24, -32, -48 **Ambient Temperature Derating Curve**



PCA1500F-24,-32,-48 **Ambient Temperature Derating Curve**



*With derating due to input voltage

- ■Specifications for ripple and ripple noise are different in the hatched area.
- ■The ambient temperature is defined as the temperature of the air at air-intake side of the power supply.

Instruction Manual

◆ It is neccessary to read the "Instruction Manual" and "Before using our product" before you use our product.

Instruction Manual https://en.cosel.co.jp/product/powersupply/PCA/ Before using our product https://en.cosel.co.jp/technical/caution/index.html





Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz]	Input current [A]	Rated input fuse	Inrush current protection circuit	PCB/Pattern		Series/Parallel operation availability		
Model						Material	Single sided	Double sided	Series operation	Parallel operation
	Active filter	15 - 400	3.8	250V 10A	Relay	FR-4	-	Yes	Yes	Yes
PCA300F	Buck converter	88								
	Full - bridge converter	44								
	Active filter	15 - 400	7.3	250V 16A	Relay	FR-4	-	Yes	Yes	Yes
PCA600F	Buck converter	88								
	Full - bridge converter	44								
	Active filter	15 - 400	12.0	250V 20A	Relay	FR-4	-	Yes	Yes	Yes
PCA1000F	Buck converter	88								
	Full - bridge converter	44								
	Active filter	15 - 400	18.0	250V 31.5A	Relay	FR-4	-	Yes	Yes	Yes
PCA1500F	Buck converter	88								
	Full - bridge converter	44								

The value of input current is at ACIN 100VAC and rated load.