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















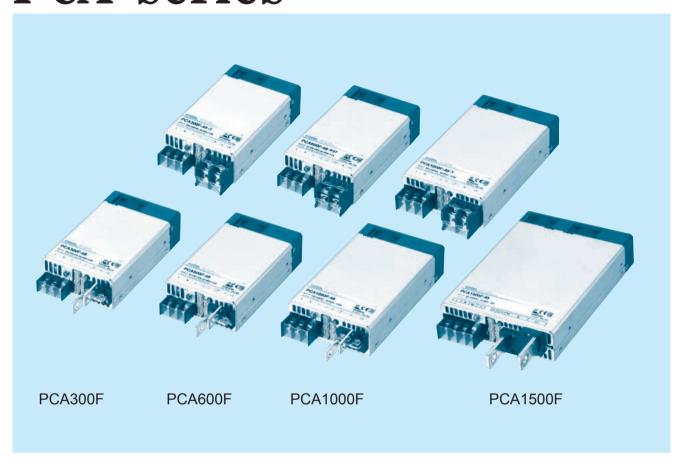








# **PCA-series**



# 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) UL508 (Optional)

# Safety agency approval

· UL62368-1, C-UL (CSA62368-1), EN62368-1, ANSI/AAMI ES60601-1, EN60601-1 3rd UL508 (Optional)

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

# CE marking

Low Voltage Directive RoHS Directive

# UKCA marking

Electrical Equipment Safety Regulations RoHS Regulations

# **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

www.cosel.co.jp/en/ June 18, 2024 PCA-1

# 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

T5:UL508

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

	MODEL			PCA300F-5	PCA300F-12	PCA300F-15	PCA300F-24	PCA300F-32	PCA300F-48			
	VOLTAGE		[VAC]	85 - 264 1 φ								
	VOLIAGE		[VDC] *1	1 88 - 370								
	OUDDENIETA I		ACIN 100V	3.8typ								
	CURRENT[A]		ACIN 230V	1.6typ								
	FREQUENCY[H	lz]		50/60 (45 - 66)								
	-	ľ	(lo=50%)	86typ	87typ	87typ	88typ	88typ	88typ			
		ACIN 100V	(lo=100%)	87typ	88typ	88typ	89typ	89typ	89typ			
IPUT	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		остур	опур	опур	оттур			
	POWER FACTO	)R	ACIN 230V	0.95typ (lo=100								
		-	ACIN 100V*2	,,,	00%) (Primary inrus	sh current / Second	ary inruch current)	(More than 3 sec. to	re-start)			
	INRUSH CURRE	NT[A]	ACIN 100V*2		00%) (Primary inrus							
-	LEAKAGE CUF	DENT[m/		,,,	240V 60Hz, lo=1009		<u> </u>	(IVIOLE ILIAIT 3 SEC. IC	ne-start)			
		NEW I [III.	<u>*]</u>	5	12	15	24	32	48			
	VOLTAGE[V]			60	27	22	14	10	7			
	CURRENT[A]							-				
	LINE REGULATION[mV]			20max	48max	60max	96max	128max	192max			
	LOAD REGULA	VI ION[mV		40max	100max	120max	150max	150max	480max			
	RIPPLE[mVp-p	1	0 to +50°C *3*4	160max	240max	240max	240max	320max	480max			
		-	-20 to 0°C *3	280max	320max	320max	320max	420max	640max			
	RIPPLE NOISE[mVp-p]	0 to +50°C *3*4	240max	300max	300max	300max	400max	600max				
UTPUT		r b b2	-20 to 0°C *3	320max	360max	360max	360max	480max	720max			
	TEMPERATURE REGULATION[mV]	I ATION[mV]	0 to +50°C *4	50max	120max	150max	240max	320max	480max			
	TEMP ENVIOUENCE NEGOEATION[III1]		-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 lo=100%)								
	HOLD-UP TIME	HOLD-UP TIME[ms]			0V lo=80%) / 16typ	(ACIN 230V Io=10	0%)					
	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 57.6			
	OUTPUT VOLTAGE SETTING[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 105% of rating (Recovers automatically, Hiccup 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 67.2			
ROTECTION	REMOTE SENS	SING		Provided	•		•	·				
RCUIT AND	REMOTE ON/O	FF (RC)		Provided								
THERS	DC_OK LAMP			LED (Blue)								
	ALARM LAMP			LED (Orange)								
	COMMUNICATION	ON FUNCT	ION	Provided (Exter	nded UART)							
	INPUT-OUTPUT	r r		AC4,000V 1min	ute, Cutoff current :	= 10mA, DC500V 5	0MΩ min (At Room	Temperature) 2MC	)PP			
	INPUT-FG											
OLATION	OUTPUT-FG			AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (At Room Temperature) 1MOPP AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (At Room Temperature)								
	OUTPUT - AUX · RC · PG ·	INFO · DS · ADDI	RO · ADDR1 · ADDR2		te, Cutoff current =							
	OPERATING TEMP.,H				0 - 90%RH (Non co		( )	, , , , , , , , , , , , , , , , , , ,				
	STORAGE TEMP.,HU				0 - 90%RH (Non co							
VIRONMENT	VIBRATION				n/s² (2G) 3minutes		ach along X Y and	I 7 axis				
	IMPACT				) 11ms, once each	·	authorig A, i allo	4/10				
					62368-1, C-UL (equiv		222 2 No 62368-1\	ANSI/AAMI ESEOEO	1-1 FN60601-1 3			
AFETY	AGENCY APPR	ROVALS		,	t to CAN/CSA-C22.2		,,		,			
ND NOISE	CONDUCTED	NOISE	-		C Part15 classB, VCCI			55 Mill 12 500001-1-	_ /01 _0.			
GULATIONS	HARMONIC AT		D *6		EC61000-3-2 (class		O 1 1 D, LINUUUZ-D					
	HARIVIONIC AT	LINUATU	71 70	Compiles with I	L001000-3-2 (Class	י רו						





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)

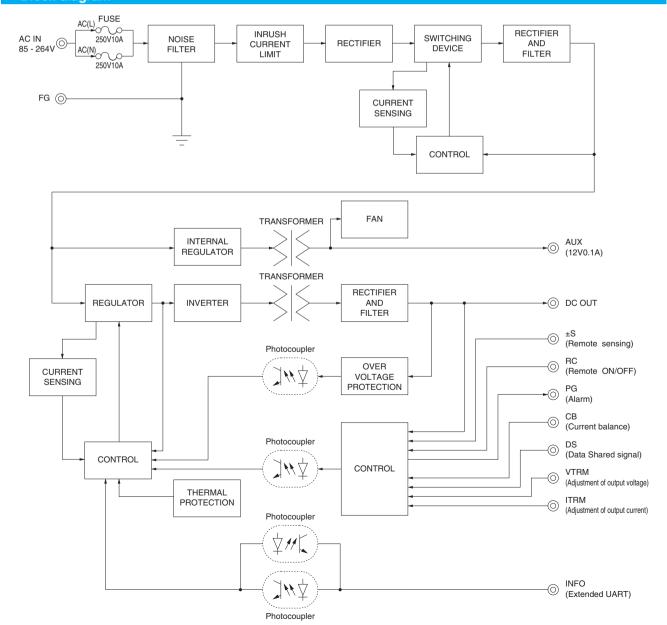
- \*1 DC input safety agency approvals deleted.
- \*2 The value is primary surge. The current of input surge to a built-in EMI/EMS Filter(0.2ms or less) is excluded.
- \*3 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN:RM103). Please refer to the instruction manual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

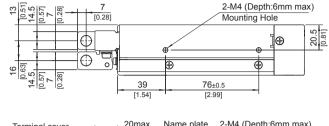
- · Low profile (41mm, 1.61 inch = meet 1U height)
- · Universal input 85 264VAC
- · DC input 88 370VDC possible
- · For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
- · Medical Isolation Grade 2MOPP
- · With AUX output 12V 0.1A (Voltage adjustable range 5 -12V)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

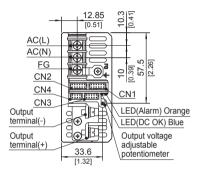
- · Output voltage can be adjusted to near 0V (the item 2.6 on Instruction Manual)
- · With various alarms
- · Parallel Operation / N+1 Parallel Redundancy Operation possible
- · Monitoring function and various setting values can be changed by communication
- (the item 2.11 on Instruction Manual)
- · Complies with SEMI F47 (the item 2.1 on Instruction Manual)
- · UL508 approval

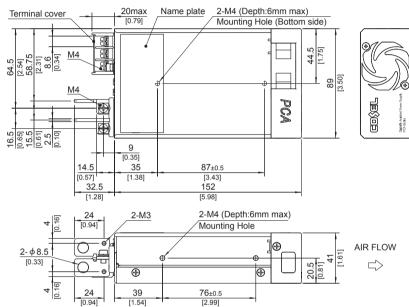




# <PCA300F ☐ (Bus Bar Style) >





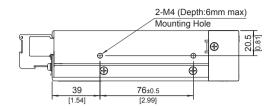


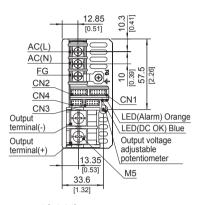
- \*\* Tolerance : ±1 [±0.04]
- % Weight: 840g max
- $\frak{W}$  PCB Material / thickness : FR-4 / 1.6mm [0.06]
- Chassis Material : Aluminum
- ※ Fan cover Material : PBT
- % Dimensions in mm, [ ] = inches
- $\ensuremath{\,\mathbb{X}\,}$  Input and output terminal screw tightening torque

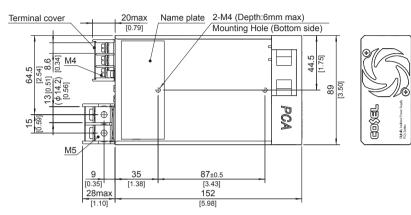
M3 0.6N·m max M4 1.6N·m max



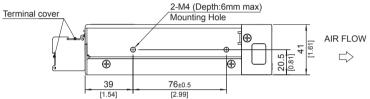
# <PCA300F- T (Terminal Block Style) >







- \*\* 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
- ※ Mounting torque: 1.2N⋅m max
- \* Input and output terminal screw tightening torque
  - M4 1.6N·m max M5 2.5N·m max
- \* Please connect safety ground to FG terminal on the unit.



2-M4 (Depth:6mm max)

10

20.5

AIR FLOW

Mounting Hole

**(** 

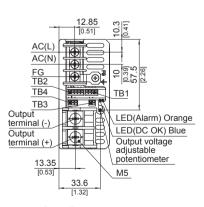
2-M4 (Depth:6mm max)

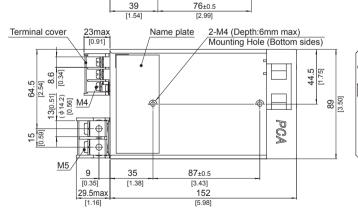
Mounting Hole

76±0.5

[2.99]

# <PCA300F- T5 (Acquired UL508) >





Terminal cover

**(H)** 

39

[1.54]

 $\oplus$ 

- \*\* 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
- Mounting torque: 1.2N·m max
- $\ensuremath{\,\times\,}$  Input and output terminal screw tightening torque
  - M4 1.6N·m max
  - M5 2.5N·m max
- \* Please connect safety ground to FG terminal on the unit. www.cosel.co.jp/en/

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20.5

# Ordering information

# PCA600F

600



① Series name ② Single output ③ Output wattage

4 Universal input

⑤Output voltage

Optional \*7
 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

T5:UL508 (Only 12V, 15V, 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	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

	MODEL			PCA600F-5	PCA600F-12	PCA600F-15	PCA600F-24	PCA600F-32	PCA600F-48		
	VOLTAGE		[VAC]	85 - 264 1 φ (O	output derating is red	uired at less than	90V. Refer to "Dera	ting")			
	VOLIAGE		[VDC] *1	88 - 370 (Output derating is required at less than 110V. Refer to "Derating")							
	CURRENTIAL		ACIN 100V	7.3typ							
	CURRENT[A]		ACIN 230V	3.2typ							
	FREQUENCY[H	lz]		50/60 (45 - 66)							
			(lo=50%)	90typ	91typ	91typ	91typ	91typ	91typ		
		ACIN 100V	(lo=100%)	89typ	90typ	90typ	91typ	91typ	91typ		
IPUT	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 71	1 31	, ,,		
	POWER FACTO	DR	ACIN 230V	0.95typ (lo=100	)%)						
			ACIN 100V*2	,,,,	00%) (Primary inrus	h current / Seconda	ary inrush current)	More than 3 sec. to	re-start)		
	INRUSH CURRE	NT[A]	ACIN 230V*2		00%) (Primary inrus						
	LEAKAGE CUF	RENTIMA		71 \	240V 60Hz, lo=1009		, ,	(			
	VOLTAGE[V]			5	12	15	24	32	48		
	CURRENT[A]			120	53	43	27	20	13		
	LINE REGULAT	TION[mV1		20max	48max	60max	96max	128max	192max		
	LOAD REGULA		1	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			
UTPUT	RIPPLE NOISE[mVp-p]	-20 to 0°C *3	320max	360max	360max	360max	480max	720max			
		0 to +50°C *4	50max	120max	150max	240max	320max	480max			
	TEMPERATURE REGULATION[mV]		-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	Comax	120max	10211107		
	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		
	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 48.48		
	OVERCURRENT				5% of rating (Recove	_		02.00 to 02.02	140.00 10 40.40		
	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 67.20		
ROTECTION	REMOTE SENS		SI4[4]	Provided	10.00 to 10.00	10.75 to 21.00	00.00 to 00.00	140.00 10 44.00	00.00 10 07.20		
RCUIT AND	REMOTE ON/O			Provided							
THERS	DC OK LAMP	11 (110)		LED (Blue)							
	ALARM LAMP			LED (Blue)							
	COMMUNICATION	ON FLINCT	ION	Provided (Extended UART)							
	INPUT-OUTPUT		1011			- 10mA DC500V 5	OMO min (At Room	Temperature) 2MC			
	INPUT-FG			AC4,000V 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	-		AC2,000V 1minute, Cutoff current = 100mA, 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	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)  AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)							
	OPERATING TEMPH				0 - 90%RH (Non co		MALTIOOTT	Temperature)			
	STORAGE TEMP.,HU			,	0 - 90%RH (Non co						
IVIRONMENT	VIBRATION		ALITIODE		m/s² (2G) 3minutes		ach along X V and	7 avis			
	IMPACT				i) 11ms, once each		aon along A, 1 and	_ u/io			
	AGENCY APPR	ROVALS			62368-1. C-UL (equi		222 2 No 62368-1)	ANSI/AAMI ESEOEO	1-1 FN60601-1		
SAFETY AND NOISE	AGENOT AFFE	IOVALO		,	, ( ] .		, ,		,		
	CONDUCTED NOICE			C-UL (equivalent to CAN/CSA-C22.2 No.60601-1), UL508 (Optional), Complies with IEC60601-1-2 4th Ed.  Complies with FCC Part15 classB, VCCI-B, CISPR32-B, EN55011-B, EN55032-B							
	CONDUCTED	NOISE				-B. CISPR32-B FN55	011-B. EN55032-B				





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)

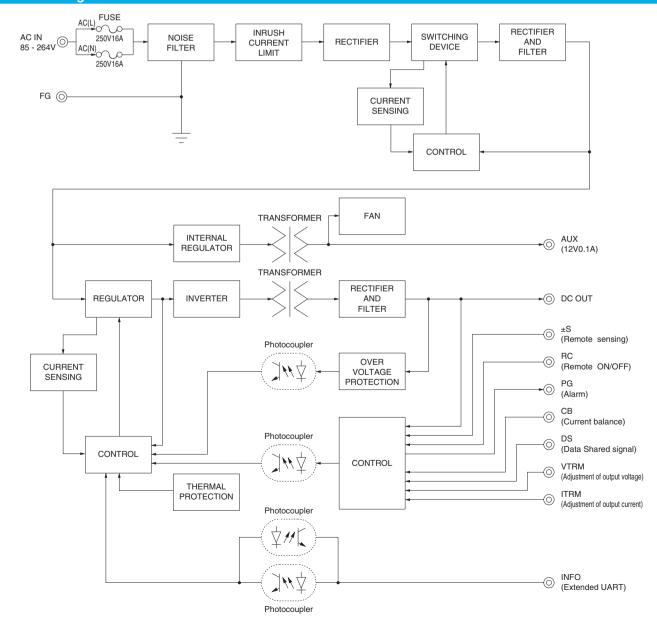
- \*1 DC input safety agency approvals deleted.
- \*2 The value is primary surge. The current of input surge to a built-in EMI/EMS Filter(0.2ms or less) is excluded.
- \*3 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN:RM103). Please refer to the instruction manual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

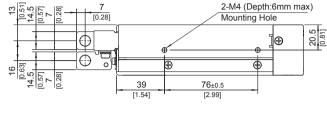
- · Low profile (41mm, 1.61 inch = meet 1U height)
- · Universal input 85 264VAC (Refer to "Derating", when using at 85 - 90VAC)
- · DC input 88 370VDC possible (Refer to when using at 88 - 110VDC)
- · For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
- · Medical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

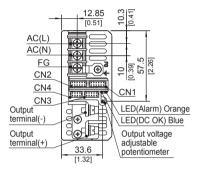
- · Output voltage can be adjusted to near 0V (the item 2.6 on Instruction Manual)
- · With various alarms
- · Parallel Operation / N+1 Parallel Redundancy Operation possible
- · Monitoring function and various setting values can be changed by communication (the item 2.11 on Instruction Manual)
- · Complies with SEMI F47 (the item 2.1 on Instruction Manual)
- · UL508 approval

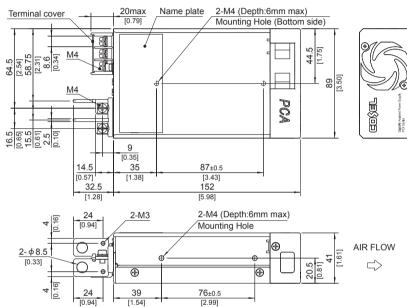




# <PCA600F (Bus Bar Style) >







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

M3 0.6N·m max M4 1.6N·m max

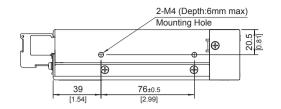
2-M4 (Depth:6mm max)

Mounting Hole (Bottom side)



# **External view**

# <PCA600F- T (Terminal Block Style) >

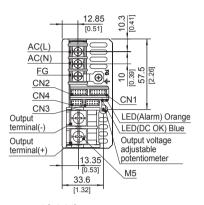


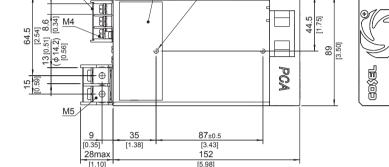
Name plate

20max

[0.79]

Terminal cover

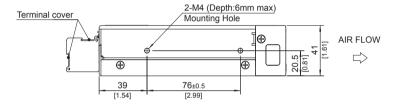




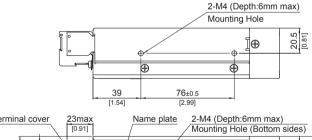
- \*\* Tolerance : ±1 [±0.04]
- Weight: 840g max
- ※ PCB Material / thickness : FR-4 / 1.6mm [0.06]
- \* Chassis Material: Aluminum
- \* Fan cover Material: PBT
- ※ Dimensions in mm, [ ] = inches
- Mounting torque: 1.2N · m max
- \* Input and output terminal screw tightening torque

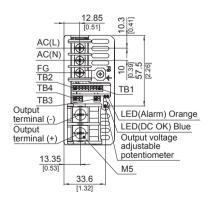
M4 1.6N·m max M5 2.5N·m max

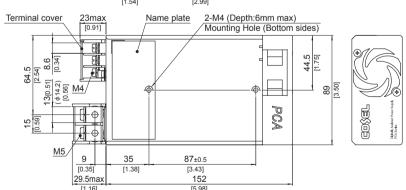
\* Please connect safety ground to FG terminal on the unit.



# <PCA600F- - T5 (Acquired UL508)) >







- \*\* Tolerance : ±1 [±0.04] \* Weight: 840g max
- ※ PCB Material / thickness : FR-4 / 1.6mm [0.06]
- **%** Chassis Material: Aluminum
- **※** Fan cover Material : PBT

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- ※ Dimensions in mm, [ ] = inches
- Mounting torque: 1.2N·m max
- $\ensuremath{\,\times\,}$  Input and output terminal screw tightening torque

# **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) T5:UL508

(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

	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")						
	CURRENTIAL		ACIN 100V	12.0typ							
	OUTHERT		ACIN 230V	5.3typ							
	FREQUENCY[Hz]			50/60 (45 - 66)							
		ACINI 100V	(lo=50%)	90typ	91typ	91typ	91typ	91typ	91typ		
	EEEICIENCVI0/1	ACIN 100V	(lo=100%)	89typ	90typ	90typ	91typ	91typ	91typ		
PUT	EFFICIENCI[%]	A CINI ODOV	(lo=50%)	92typ	92typ	92typ	93typ	93typ	93typ		
		ACIN 230V	(lo=100%)	91typ	92typ	92typ	93typ	93typ	93typ		
	DOWED EAST	\D	ACIN 100V	0.98typ (lo=100%	5)				•		
	POWER FACTO	Ж	ACIN 230V	0.95typ (lo=100%	5)						
	INDUCTION OF THE		ACIN 100V*1	20/40 typ (lo=100	)%) (Primary inrush	current / Seconda	ry inrush current) (	More than 3 sec. to	re-start)		
	INRUSH CURRE	NI[A]	ACIN 230V*1	40/40 typ (lo=100	)%) (Primary inrush	current / Seconda	ry inrush current) (	More than 3 sec. to	re-start)		
	LEAKAGE CUR	RENT[m/	A1	,,,		, According to IEC6	, , ,		,		
	VOLTAGE[V]			5	12	15	24	32	48		
				200	88	70	44	33	22		
		[ION[mV]		20max	48max	60max	96max	128max	192max		
			1	40max	100max	120max	150max	150max	480max		
			0 to +50°C *2*3	160max	240max	240max	240max	320max	480max		
	ACIN 100V  EFFICIENCY[%]  ACIN 230V  POWER FACTOR  INRUSH CURRENT[A]  LEAKAGE CURRENT[MAYOLTAGE[V]  CURRENT[A]  LINE REGULATION[mV]  LOAD REGULATION[mV]  RIPPLE [mVp-p]  RIPPLE NOISE[mVp-p]  TEMPERATURE REGULATION[mV]  DRIFT[mV]  START-UP TIME[ms]  HOLD-UP TIME[ms]  OUTPUT VOLTAGE ADJUSTMENT  OVERCURRENT PROTECTION  REMOTE SENSING  REMOTE ON/OFF (RC)  DC_OK LAMP  ALARM LAMP  COMMUNICATION FUNCT  INPUT-FG  OUTPUT-GG  OUTPUT-FG  OUTPUT-FG  OUTPUT-FG  OUTPUT-FG  OUTPUT-FG  OUTPUT-FG  OUTPUT-FG  OUTPUT-GURDEN ADDI OPERATING TEMP.,HUMIDITY.AND VIBRATION	-20 to 0°C *2	280max	320max	320max	320max	420max	640max			
OUTPUT			0 to +50°C *2*3	240max	300max	300max	300max	400max	600max		
	RIPPLE NOISE[mVp-p]	-20 to 0°C *2	320max	360max	360max	360max	480max	720max			
UIFUI		0 to +50°C *3	50max	120max	150max	240max	320max	480max			
	TEMPERATURE REGU	LATION[mV]	-20 to +50°C *3	75max	180max	180max	290max	400max	600max		
	DDIETI\/I		*4	20max				_			
					48max	60max	96max	128max	192max		
				700typ (ACIN 100/230V lo=100%) 20typ (ACIN 230V lo=80%) / 16typ (ACIN 230V lo=100%)							
			,,,	, , , , , , , , , , , , , , , , , , , ,		,'	10.00 to 00.40	00 00 to 57 0			
				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 48.4		
						s automatically, Hid	<del>, ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '</del>	1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	T		
			ON[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				Provided							
RCUIT AND		FF (RC)		Provided							
THERS				LED (Blue)							
				LED (Orange)							
			TION	Provided (Extended UART)							
		Г		AC4,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 2MOPP							
OLATION	INPUT-FG			AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature) 1MOPP							
OLAHON	OUTPUT-FG	_		AC500V 1minute	, Cutoff current = 1	00mA, DC500V 50N	MΩ min (At Room	Temperature)			
	OUTPUT - AUX · RC · PG ·	INFO · DS · ADD	R0 · ADDR1 · ADDR2	AC500V 1minute	, Cutoff current = 1	00mA, DC500V 50l	MΩ min (At Room	Temperature)			
	OPERATING TEMP.,H	IUMIDITY.ANI	D ALTITUDE	-20 to +70°C, 20 ·	- 90%RH (Non con	densing)					
VIRONMENT	STORAGE TEMP.,HU	JMIDITY.AND	ALTITUDE	-20 to +75°C, 20	- 90%RH (Non con	densing)					
I VIDONIVIEN I	VIBRATION			10 - 55Hz 19.6m/	s² (2G) 3minutes p	eriod, 60minutes ea	ach along X, Y and	Z axis			
	IMPACT			196.1m/s² (20G)	11ms, once each X	, Y and Z axis					
	AGENCY APPR	ROVALS		UL62368-1, EN62	368-1, C-UL (equiva	alent to CAN/CSA-C	22.2 No.62368-1), A	NSI/AAMI ES60601	-1, EN60601-1 3		
FETY				C-UL (equivalent t	o CAN/CSA-C22.2	No.60601-1), UL508	(Optional), Complie	es with IEC60601-1-	2 4th Ed.		
ID NOISE	CONDUCTED N	NOISE		Complies with FCC	Part15 classA, VCCI-	A, CISPR32-A, EN550	11-A, EN55032-A				
GULATIONS.	HARMONIC ATTENUATOR *5			Complies with IE	C61000-3-2 (class	A)			,		





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
OTHERS	COOLING METHOD	Forced cooling (internal fan)

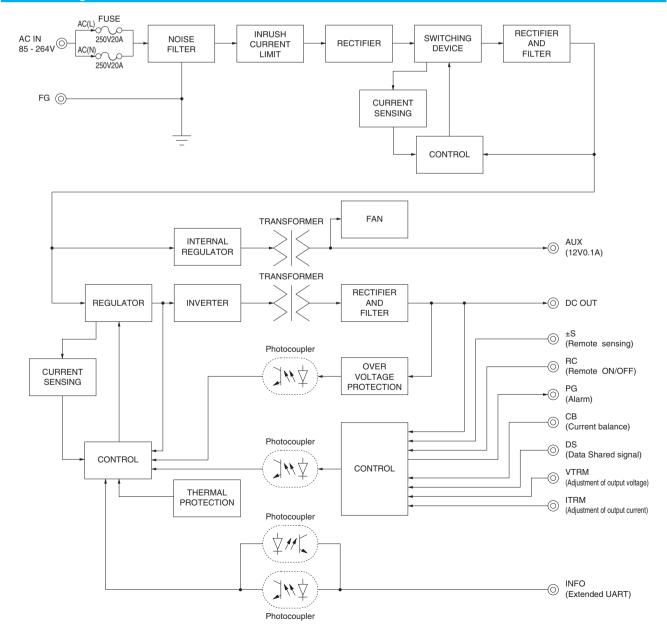
- The value is primary surge. The current of input surge to a built-in EMI/EMS Filter(0.2ms or
- \*2 Measured by 20MHz oscilloscope or Ripple-Noise meter (equivalent to KEISOKU-GIKEN: RM103). Please refer to the instruction manual 1.2
- \*3 5V, 12V, 15V output product, the maximum temperature of 40°C.

- 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**

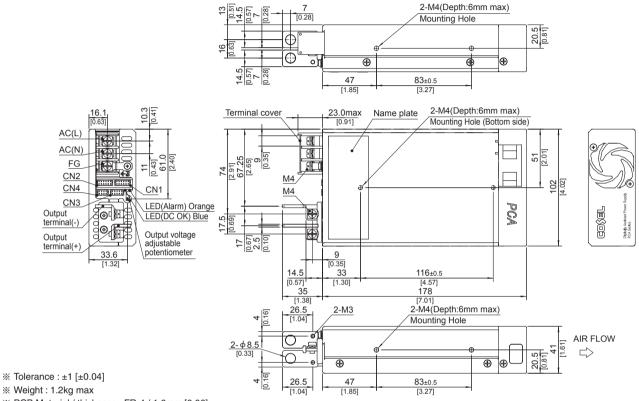
- · Low profile (41mm, 1.61 inch = meet 1U height)
- · Universal input 85 264VAC (Refer to "Derating", when using at 85 - 90VAC)
- · For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd, IEC60601-1-2 4th Ed.)
- · Medical Isolation Grade 2MOPP
- · With AUX output 12V 0.1A (Voltage adjustable 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 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)
- · UL508 approval





# <PCA1000F- (Bus Bar Style) >



 $\frak{W}$  PCB Material / thickness : FR-4 / 1.6mm [0.06]

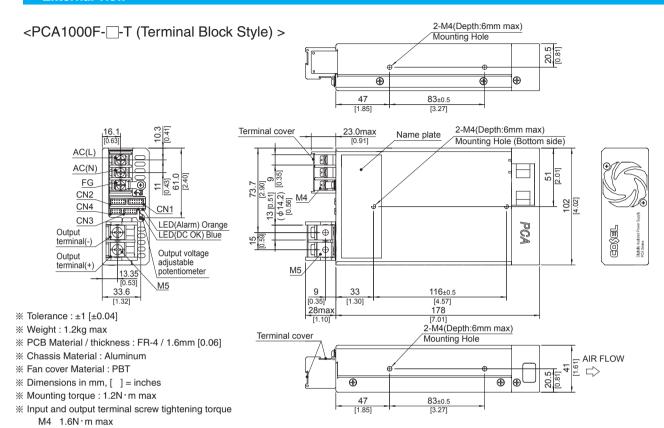
\* Fan cover Material : PBT

% Dimensions in mm, [ ] = inches

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

M3 0.6N·m max M4 1.6N·m max



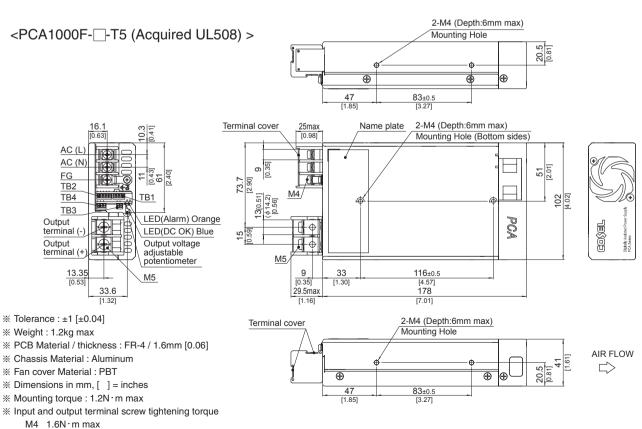


\* Please connect safety ground to FG terminal on the unit.

M5 2.5N·m max

M5 2.5N·m max

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



# Ordering information

# **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.

- ① Series name ② Single output ③ Output wattage
- 4 Universal 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

	MODEL			PCA1500F-5	PCA1500F-12	PCA1500F-15	PCA1500F-24	PCA1500F-32	PCA1500F-48			
	VOLTAGE		[VAC]	85 - 264 1 φ (Output derating is required at less than 95V. Refer to "Derating")								
	OUDDENTIAL		ACIN 100V	18typ								
	CURRENT[A]  ACIN 230V			7.8typ 8.5typ								
	FREQUENCY[H	lz]	'	50/60 (45 - 66)								
			(lo=50%)	90typ	91typ	91typ	91typ	91typ	91typ			
		ACIN 100V	(lo=100%)	88typ	90typ	90typ	91typ	91typ	91typ			
IPUT	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%	6)			, ,,				
	POWER FACTO	PR	ACIN 230V	0.95typ (lo=100%)								
			ACIN 100V*1	- ' '		current / Seconda	ry inrush current) (	More than 10 sec. t	o re-start)			
	INRUSH CURRE	NT[A]	ACIN 230V*1	,,,		current / Seconda	, , ,					
	LEAKAGE CUR	RENT[m/				, According to IEC			,			
	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		]	40max	100max	120max	150max	150max	480max			
			0 to +50°C *2*3	160max	240max	240max	240max	320max	480max			
	RIPPLE[mVp-p]	-20 to 0°C *2	280max	320max	320max	320max	420max	640max				
	DIDDI E NOIGE		0 to +50°C *2*3	240max	300max	300max	300max	400max	600max			
UTPUT	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[mV]		-20 to +50°C *3	75max	180max	180max	290max	400max	600max			
	DRIFT[mV] *4			20max	48max	60max	96max	128max	192max			
<u> </u>	START-UP TIME[ms]			700typ (ACIN 10	0/230V lo=100%)	<u>'</u>						
	HOLD-UP TIME[ms]			20typ (ACIN 230	V Io=80%) / 16typ (	ACIN 230V lo=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 48.48			
	OVERCURRENT	PROTECTI	ION	Works over 105%	6 of rating (Recover	s automatically, Hic	cup overcurrent)	,				
	OVERVOLTAGE F	PROTECTION	IVINC	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	ING		Provided	'	'						
RCUIT AND	REMOTE ON/O	FF (RC)		Provided								
THERS	DC_OK LAMP			LED (Blue)								
	ALARM LAMP			LED (Orange)								
	COMMUNICATIO	ON FUNCT	ION	Provided (Extend	ded UART)							
	INPUT-OUTPUT	-		AC4,000V 1minu	te, Cutoff current =	10mA, DC500V 50	MΩ min (At Room	Temperature) 2MO	PP			
OL ATION	INPUT-FG					10mA, DC500V 50						
OLATION	OUTPUT-FG			AC500V 1minute	, Cutoff current = 1	00mA, DC500V 50I	MΩ min (At Room	Temperature)				
	OUTPUT - AUX · RC · PG ·	INFO · DS · ADD	R0 · ADDR1 · ADDR2	AC500V 1minute	, Cutoff current = 1	00mA, DC500V 50I	MΩ min (At Room 7	Temperature)				
	OPERATING TEMP.,H	UMIDITY.AND	ALTITUDE	-20 to +70°C, 20	- 90%RH (Non con	densing)	·					
N/IDONMENT	STORAGE TEMP.,HU	MIDITY.AND	ALTITUDE	-20 to +75°C, 20	- 90%RH (Non con	densing)						
IVIRONMENT	VIBRATION			10 - 55Hz 19.6m	/s² (2G) 3minutes p	eriod, 60minutes ea	ach along X, Y and	Z axis				
	IMPACT		-	196.1m/s² (20G)	11ms, once each X	X, Y and Z axis						
\	AGENCY APPR	OVALS				alent to CAN/CSA-C	22.2 No.62368-1), A	NSI/AAMI ES60601	-1, EN60601-1 3			
AFETY				C-UL (equivalent	to CAN/CSA-C22.2	No.60601-1), Compl	es with IEC60601-1	-2 4th Ed.				
ND NOISE	CONDUCTED N	IOISE		Complies with FCC	Part15 classA, VCCI-	A, CISPR11-A, CISPF	32-A, EN55011-A, El	N55032-A				
REGULATIONS +	HARMONIC ATTENUATOR *5			Camandia a with IF	CC1000 0 0 (alass	Complies with FCC Part15 classA, VCCI-A, CISPR11-A, CISPR32-A, EN55011-A, EN55032-A Complies with IEC61000-3-2 (class A)						





OTHERS	CASE SIZE/WEIGHT	140×41×203mm [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.

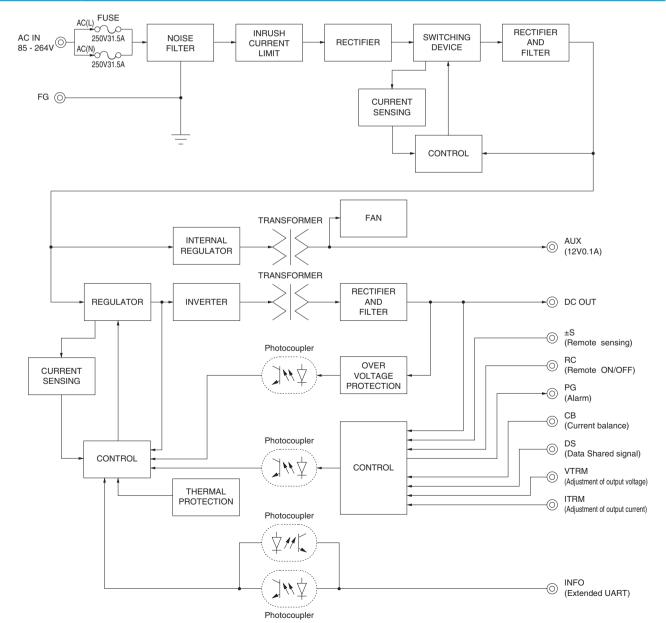
#### **Features**

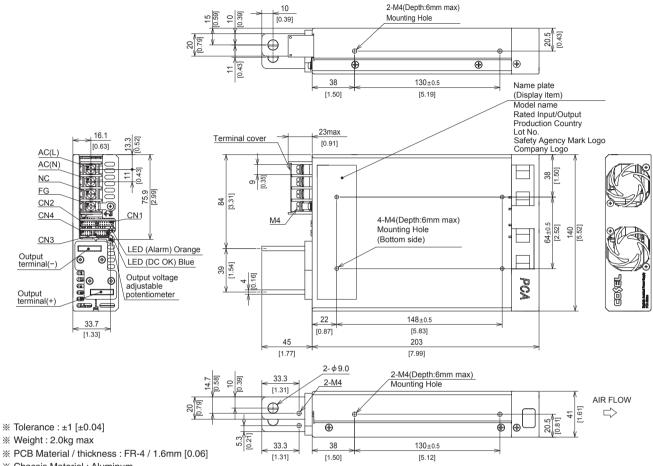
- · Low profile (41mm, 1.61 inch = meet 1U height)
- · Universal input 85 264VAC (Refer to "Derating", when using at 85 - 95VAC)
- · For medical electric equipment (ANSI/AAMI ES60601-1, EN60601-1 3rd. IEC60601-1-2 4th Ed.)
- · Medical Isolation Grade 2MOPP
- · With AUX output 12V 0.1A (Voltage adjustable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





**%** 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

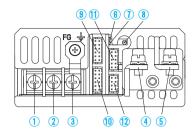
M3 0.6N·m max M4 1.6N·m max

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

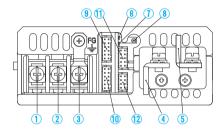


# **Terminal Blocks**

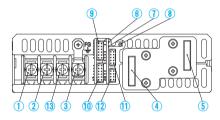
# PCA300F, PCA600F

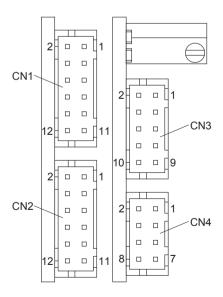


# ●PCA1000F



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

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

#### Pin Configuration and Functions of CN3

Pin No.		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.		Ground level	
1	SDA	Serial data *2	SGND
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	LCT
CN3	S10B-PHDSS	PHDR-10VS		J.S.1
CN4	S8B-PHDSS	PHDR-8VS	BPHD-002T-P0.5 *3	

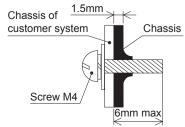
**★**1 For -P3 option.

\*2 For -I option.

\*3 The manufacturer prepares only the ratchet hand.

# **Assembling and Installation Method**

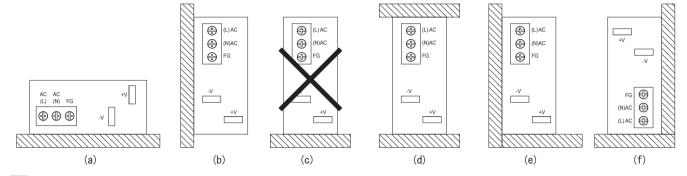
■Please observe the mounting screw length in right figure to obtain enough isolation between screws and internal components.



# **Assembling and Installation Method**

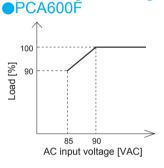
- ■Please do not block built-in fans and ventilation holes. When the power supply is mounted by screws, please consider its weight and set it in place. (Please see below.)
- ■Please avoid installing the power supply by only one narrow side like the Fig.(c).

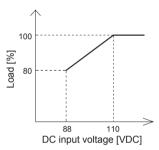
  In that case, another narrow side or the wide side should be also used to install as shown in Fig.(d), (e), and (f).
- If power supplies are used in a dusty environment, it might cause a failure. Please consider taking such countermeasures as installing an air filter near the suction area of the system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

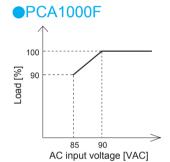


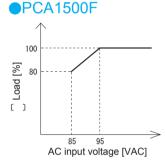
# **Derating**

# Input voltage Derating curve

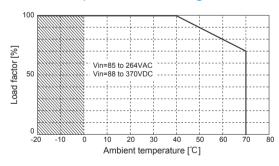




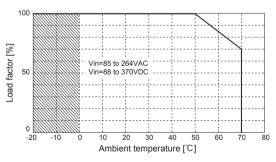




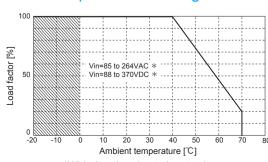
# PCA300F-5 Ambient Temperature Derating Curve



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

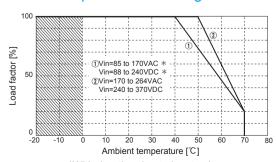


# ●PCA600F-5 Ambient Temperature Derating Curve



\*With derating due to input voltage

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

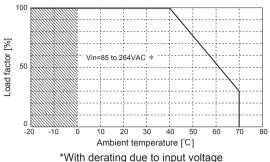


\*With derating due to input voltage

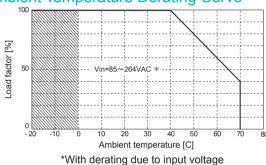


# Derating

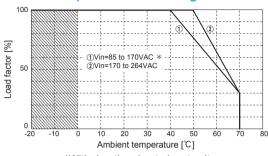
# ●PCA1000F-5, -12, -15 **Ambient Temperature Derating Curve**



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

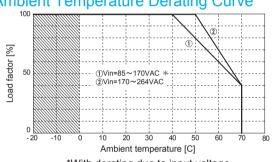


# PCA1000F-24, -32, -48 **Ambient Temperature Derating Curve**



\*With derating due to input voltage

# 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://www.cosel.co.jp/redirect/catalog/en/PCA/ Before using our product https://en.cosel.co.jp/technical/caution/index.html





#### **Basic Characteristics Data**

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

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