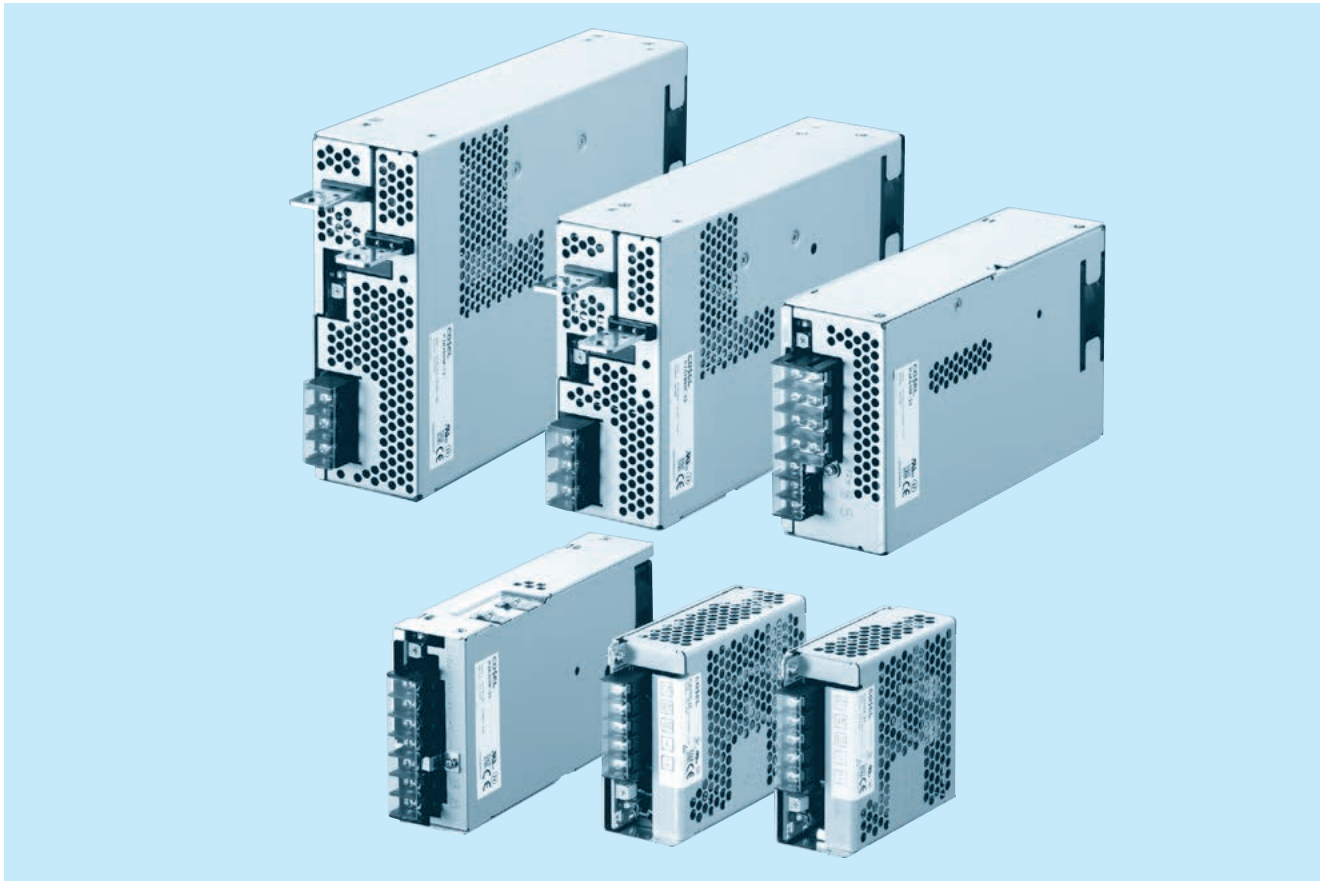
COSEL

Power Factor Correction | World wide | Cost Effective | Safety Approvals | EMI | Inrush current limiting | OCP | OVP

PJA-series



Feature

Low Profile (PJA100F, 150F, 300F : 1U size)
(PJA600F, 1000F, 1500F : 2U size)
Wide temperature range (-20℃ to +70℃, Derating is required)
Harmonic attenuator (Complies with IEC61000-3-2 class A)
Universal input (AC85 - 264V, Derating is required)
Low power consumption at no load
Complies with SEMI F-47 (PJA1000F, 1500F can meet at 200V input range only)
Many optional functions

Safety agency approvals

UL62368-1, C-UL (CSA62368-1), EN62368-1
UL508 (PJA100F, 150F)
Complies with DEN-AN

5-year warranty (See Instruction Manual)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B
(PJA1500F: Class A. In conducted noise, it can meet class B by additional EMI/EMC filter.)

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

EN61000-4-2
EN61000-4-3
EN61000-4-4
EN61000-4-5
EN61000-4-6
EN61000-4-8
EN61000-4-11

COSEL AC-DC Power Supplies Enclosed Type

PJA100F

Ordering information

PJ	A	100	F	-□	-□
①	②	③	④	⑤	⑧

Example recommended EMI/EMC filter
NAC-04-472

High voltage pulse noise type : NAP series
Low leakage current type : NAM 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
⑥Optional ＊6
C : with Coating
R : Remote on/off (Required external power source)
J : EP (Tyco Electronics) connector type
J1 : VH (J.S.T.) connector type
T : Vertical terminal block
N2 : with DIN rail

See 6.1 in Instruction Manual.

＊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.

SPECIFICATIONS

＊ Please consider "PBA100F-5-N" about 5V output with case cover.

	MODEL		PJA100F-12	PJA100F-15	PJA100F-24	PJA100F-36	PJA100F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. Refer to “Derating” and instruction manual 1.1, 3)				
	CURRENT[A]	ACIN 100V	1.2typ (Io=90%)				
		ACIN 115V	1.1typ (Io=100%)				
		ACIN 230V	0.6typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
	EFFICIENCY[%]	ACIN 100V	82typ (Io=90%)	83typ (Io=90%)	85typ (Io=90%)	86typ (Io=90%)	86typ (Io=90%)
		ACIN 115V	82typ (Io=100%)	83typ (Io=100%)	85typ (Io=100%)	86typ (Io=100%)	86typ (Io=100%)
		ACIN 230V	85typ (Io=100%)	86typ (Io=100%)	88typ (Io=100%)	89typ (Io=100%)	89typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.98typ (Io=90%)				
		ACIN 115V	0.98typ (Io=100%)				
		ACIN 230V	0.90typ (Io=100%) ＊ Power factor correction is stopped at AC250V or more.				
	INRUSH CURRENT[A]	ACIN 100V	16typ (Io=90%) Ta=25℃ at cold start				
		ACIN 115V	16typ (Io=100%) Ta=25℃ at cold start				
		ACIN 230V	32typ (Io=100%) Ta=25℃ at cold start				
	LEAKAGE CURRENT[mA]		0.75max (ACIN 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)				
OUTPUT	VOLTAGE[V]		12	15	24	36	48
	CURRENT[A]	ACIN 85-115V	Output derating is required at ACIN 115V or less (Refer to “Derating”)				
		ACIN 115V-264V	8.4	6.7	4.3	2.8	2.1
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (Refer to “Derating”)				
		ACIN 115V-264V	100.8	100.5	103.2	100.8	100.8
	LINE REGULATION[mV] ＊3		48max	60max	96max	144max	192max
	LOAD REGULATION [mV] ＊3	Io=30 to 100%	100max	120max	150max	150max	300max
		Io=0 to 30%	Burst operation (Please contact us about detail)				
	RIPPLE[mVp-p] ＊1 Io: load factor	0 to +40℃	120max	120max	120max	150max	150max
		-10 to 0℃	160max	160max	160max	200max	400max
		Io=0 to 30%	500max	500max	500max	500max	500max
	RIPPLE NOISE[mVp-p] ＊1 Io: load factor	0 to +40℃	150max	150max	150max	200max	200max
		-10 to 0℃	180max	180max	180max	240max	500max
		Io=0 to 30%	600max	600max	600max	600max	600max
	TEMPERATURE REGULATION[mV]	0 to +40℃	120max	150max	240max	360max	480max
		-10 to +40℃	180max	180max	290max	440max	600max
	DRIFT[mV] ＊2		48max	60max	96max	144max	192max
	START-UP TIME[ms]		500typ (ACIN 115V, Io=100%) Ta=25℃				
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		10.80 to 13.20	13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80
	OUTPUT VOLTAGE SETTING[V]		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]		13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	54.00 to 67.20
	OPERATING INDICATION		LED (Green)				
	REMOTE SENSING		Not provided				
	REMOTE ON/OFF		Optional (Required external power source. Option -R)				
ISOLATION	INPUT-OUTPUT • RC ＊8		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 • RC-FG ＊8		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
	OUTPUT-RC ＊8		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊4		-20 to +70℃ (Refer to “Derating”), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max				
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axes				
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axes				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL62368-1, C-UL (CSA62368-1), EN62368-1, UL508 (Except option -J, -J1) Complies with DEN-AN				
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B				
	HARMONIC ATTENUATOR ＊7		Complies with IEC61000-3-2 class A				

SPECIFICATIONS

OTHERS	CASE SIZE/WEIGHT		41×97×109mm [1.61×3.82×4.29 inches] (Excluding terminal block and screw) (W×H×D) / 500g max
	COOLING METHOD		Convection
WARRANTY	WARRANTY	✻5	5 years (subject to the operating conditions)

✻1 This is the result of measurement of the testing board with capacitors of 22μF and 0.1μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
When the load factor is 0 - 30%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.

✻2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.

✻3 Consult us about dynamic load and input response. Measure the output voltage by using the average mode of the tester to deal with the burst operation at 30% load or less.

✻4 Output power derating is required. Refer to "Derating".

✻5 See 4 in Instruction Manual for more details.

✻6 Consult us about safety agency approvals for the models with optional functions.

✻7 Consult us about other classes.

✻8 The RC terminal is added to option –R models. The RC terminal is isolated from input, output, and FG.

✻ Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.

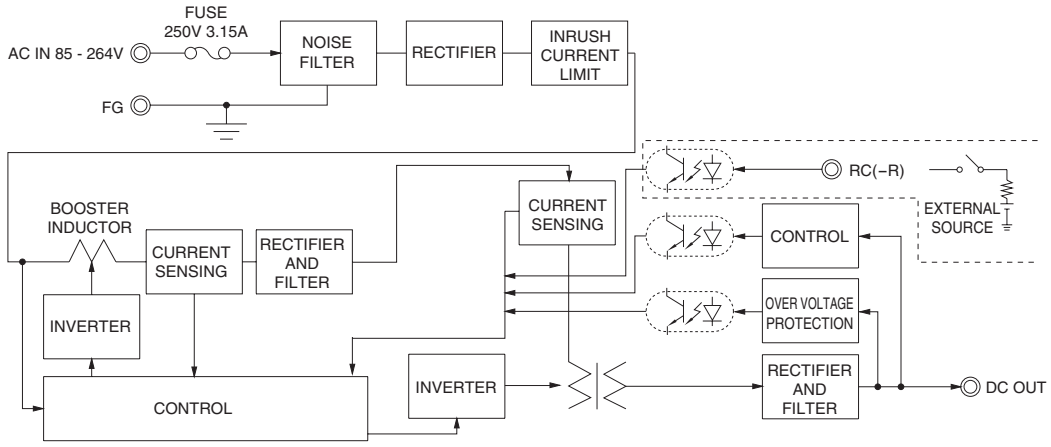
✻ Parallel operation is not possible with this mode.

✻ Sound noise may be heard from the power supply when used for pulse load.

Features

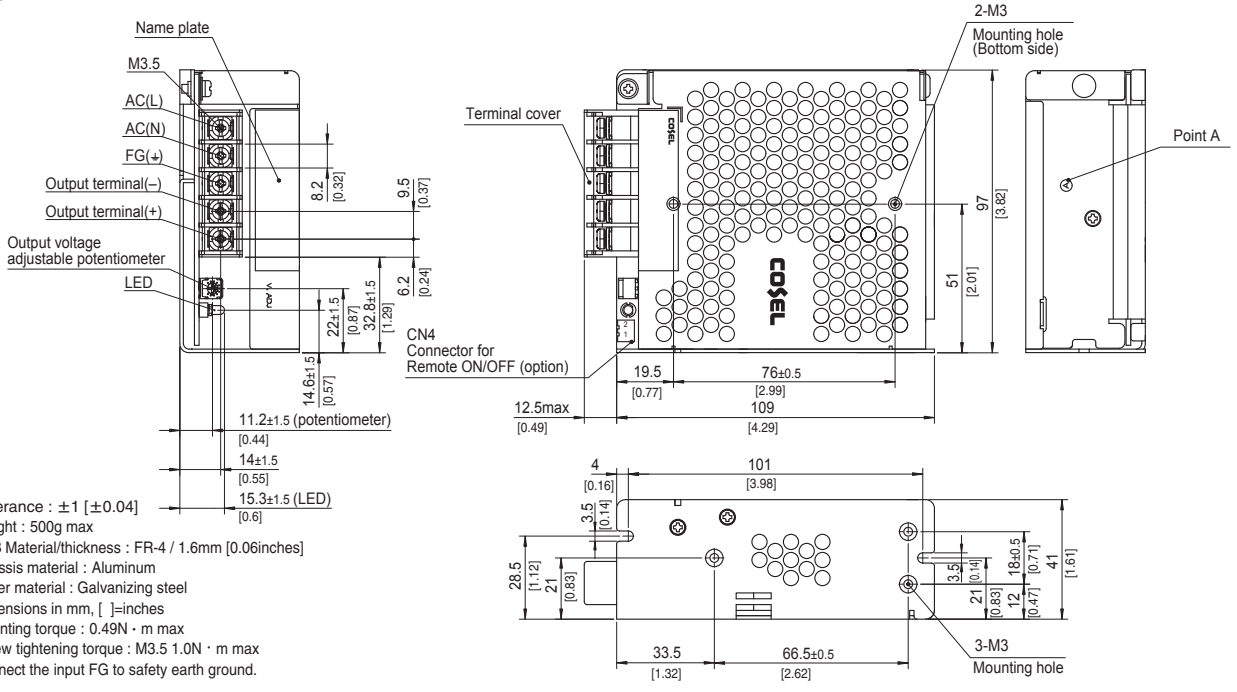
- **Compact design (Depth: 109mm 4.29inches)**
- **High efficiency (88%typ PJA100F-24, AC230Vin, 100% load)**
- **Low power consumption (1.5W typ AC240Vin, no load at standard model)**
- **UL508 approved (Except option -J, -J1), and complies with SEMI F47 (see instruction manual 1.1)**
- **Various connection interface options (vertical terminal [-T], AMP connector [-J], [-J1])**

Block diagram



External view

The external size of –R option, –J option, –J1 option, –N2 option and –T option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



※ Tolerance : ±1 [±0.04]
※ Weight : 500g max
※ PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
※ Chassis material : Aluminum
※ Cover material : Galvanizing steel
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 0.49N・m max
※ Screw tightening torque : M3.5 1.0N・m max
※ Connect the input FG to safety earth ground.

COSEL AC-DC Power Supplies Enclosed Type

PJA150F

Ordering information

PJ	A	150	F	-□	-□
①	②	③	④	⑤	⑥

Example recommended EMI/EMC filter
NAC-04-472

High voltage pulse noise type : NAP series
Low leakage current type : NAM 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
⑥Optional ＊6
C : with Coating
R : Remote on/off (Required external power source)
J : EP (Tyco Electronics) connector type
J1 : VH (J.S.T.) connector type
T : Vertical terminal block
N2 : with DIN rail

See 6.1 in Instruction Manual.

＊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.

SPECIFICATIONS

＊ Please consider "PBA150F-5-N" about 5V output with case cover.

	MODEL		PJA150F-12	PJA150F-15	PJA150F-24	PJA150F-36	PJA150F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. Refer to "Derating" and instruction manual 1.1, 3)				
	CURRENT[A]	ACIN 100V	1.7typ (Io=90%)				
		ACIN 115V	1.6typ (Io=100%)				
		ACIN 230V	0.8typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
	EFFICIENCY[%]	ACIN 100V	84typ (Io=90%)	84typ (Io=90%)	87typ (Io=90%)	87typ (Io=90%)	87typ (Io=90%)
		ACIN 115V	84typ (Io=100%)	84typ (Io=100%)	87typ (Io=100%)	87typ (Io=100%)	87typ (Io=100%)
		ACIN 230V	87typ (Io=100%)	87typ (Io=100%)	90typ (Io=100%)	90typ (Io=100%)	90typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.98typ (Io=90%)				
		ACIN 115V	0.98typ (Io=100%)				
		ACIN 230V	0.93typ (Io=100%) ＊ Power factor correction is stopped at AC250V or more.				
	INRUSH CURRENT[A]	ACIN 100V	16typ (Io=90%) Ta=25℃ at cold start				
		ACIN 115V	16typ (Io=100%) Ta=25℃ at cold start				
		ACIN 230V	32typ (Io=100%) Ta=25℃ at cold start				
	LEAKAGE CURRENT[mA]		0.75max (ACIN 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)				
OUTPUT	VOLTAGE[V]		12	15	24	36	48
	CURRENT[A]	ACIN 85-115V	Output derating is required at ACIN 115V or less (Refer to "Derating")				
		ACIN 115V-264V	12.5	10	6.4	4.2	3.2
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (Refer to "Derating")				
		ACIN 115V-264V	150.0	150.0	153.6	151.2	153.6
	LINE REGULATION[mV] ＊3		48max	60max	96max	144max	192max
	LOAD REGULATION [mV] ＊3	Io=30 to 100%	100max	120max	150max	150max	300max
		Io=0 to 30%	Burst operation (Please contact us about detail)				
	RIPPLE[mVp-p] ＊1 Io: load factor	0 to +40℃	120max	120max	120max	150max	150max
		-10 to 0℃	160max	160max	160max	200max	400max
		Io=0 to 30%	500max	500max	500max	500max	500max
	RIPPLE NOISE[mVp-p] ＊1 Io: load factor	0 to +40℃	150max	150max	150max	200max	200max
		-10 to 0℃	180max	180max	180max	240max	500max
		Io=0 to 30%	600max	600max	600max	600max	600max
	TEMPERATURE REGULATION[mV]	0 to +40℃	120max	150max	240max	360max	480max
		-10 to +40℃	180max	180max	290max	440max	600max
	DRIFT[mV] ＊2		48max	60max	96max	144max	192max
	START-UP TIME[ms]		500typ (ACIN 115V, Io=100%) Ta=25℃				
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		10.80 to 13.20	13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80
	OUTPUT VOLTAGE SETTING[V]		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]		13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	54.00 to 67.20
	OPERATING INDICATION		LED (Green)				
	REMOTE SENSING		Not provided				
	REMOTE ON/OFF		Optional (Required external power source. Option -R)				
ISOLATION	INPUT-OUTPUT • RC ＊8		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 • RC-FG ＊8		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
	OUTPUT-RC ＊8		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)				
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊4		-20 to +70℃ (Refer to "Derating"), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max				
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axes				
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axes				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL62368-1, C-UL (CSA62368-1), EN62368-1, UL508 (Except option -J, -J1) Complies with DEN-AN				
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B				
	HARMONIC ATTENUATOR ＊7		Complies with IEC61000-3-2 class A				

SPECIFICATIONS

OTHERS	CASE SIZE/WEIGHT	41×97×129mm [1.61×3.82×5.08 inches] (Excluding terminal block and screw) (W×H×D) / 600g max
	COOLING METHOD	Convection
WARRANTY	WARRANTY ※5	5 years (subject to the operating conditions)

※1 This is the result of measurement of the testing board with capacitors of 22μF and 0.1μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
When the load factor is 0 - 30%, the switching power loss is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.

※2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.

※3 Consult us about dynamic load and input response. Measure the output voltage by using the average mode of the tester to deal with the burst operation at 30% load or less.

※4 Output power derating is required. Refer to "Derating".

※5 See 4 in Instruction Manual for more details.

※6 Consult us about safety agency approvals for the models with optional functions.

※7 Consult us about other classes.

※8 The RC terminal is added to option –R models. The RC terminal is isolated from input, output, and FG.

※ Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.

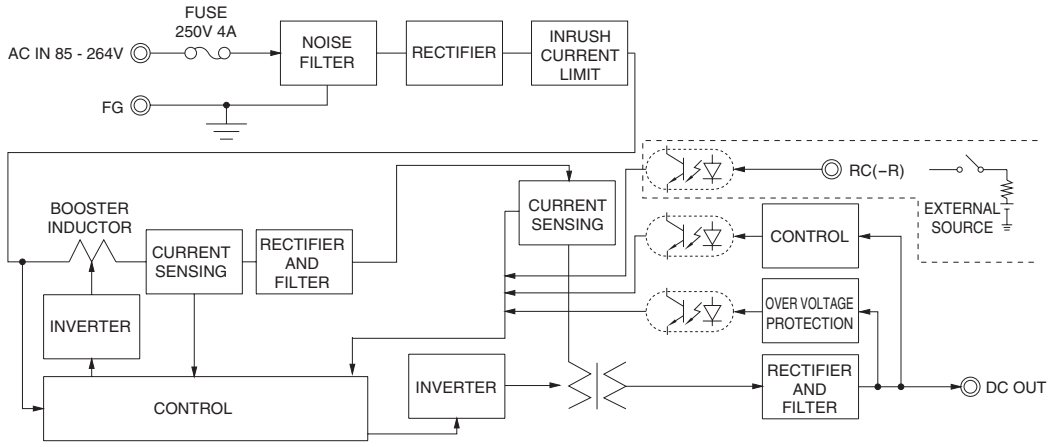
※ Parallel operation is not possible with this mode.

※ Sound noise may be heard from the power supply when used for pulse load.

Features

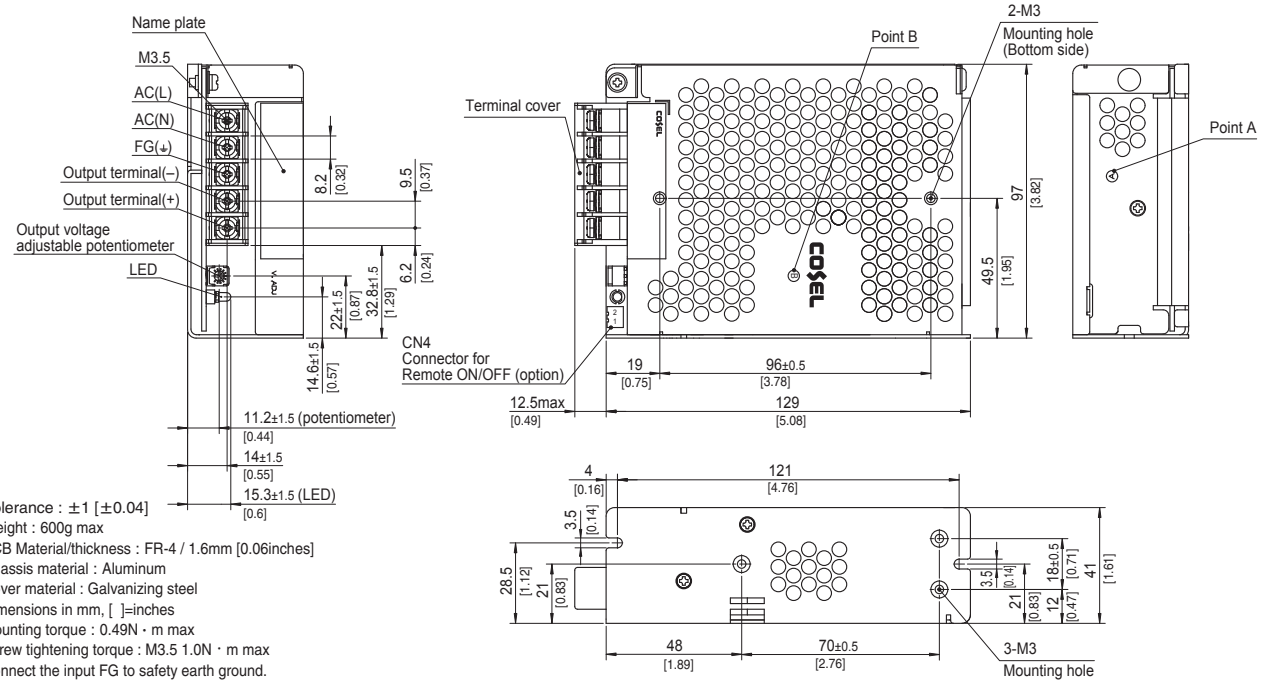
- **Compact design (Depth: 129mm 5.08inches)**
- **High efficiency (90%typ PJA150F-24, AC230Vin, 100% load)**
- **Low power consumption (1.5W typ AC240Vin, no load at standard model)**
- **UL508 approved (Except option -J, -J1), and complies with SEMI F47 (see instruction manual 1.1)**
- **Various connection interface options (vertical terminal [-T], AMP connector [-J], [-J1])**

Block diagram



External view

The external size of –R option, –J option, –J1 option, –N2 option and –T option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



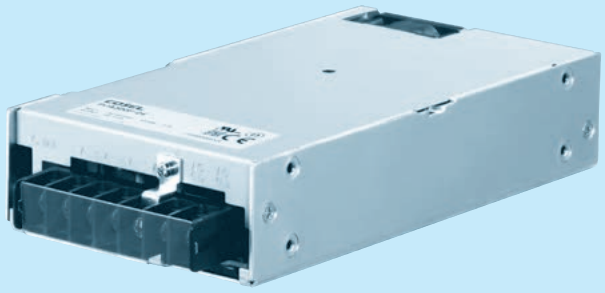
※ Tolerance : ±1 [±0.04]
※ Weight : 600g max
※ PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
※ Chassis material : Aluminum
※ Cover material : Galvanizing steel
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 0.49N・m max
※ Screw tightening torque : M3.5 1.0N・m max
※ Connect the input FG to safety earth ground.

COSEL AC-DC Power Supplies Enclosed Type

PJA300F

Ordering information

PJ	A	300	F	-□	-□
①	②	③	④	⑤	⑧



Example recommended EMI/EMC filter
NAC-06-472

High voltage pulse noise type : NAP series
Low leakage current type : NAM 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
⑥Optional ＊6
C : with Coating
G : Low leakage current
V : External potentiometer for output voltage adjustment
R : Remote on/off (Required external power source)
F4: Low speed fan

See 6.1 in Instruction Manual.

＊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.

SPECIFICATIONS

	MODEL		PJA300F-5	PJA300F-12	PJA300F-15	PJA300F-24	PJA300F-36	PJA300F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 100V. Refer to “Derating” and instruction manual 1.1, 3)					
	CURRENT[A]	ACIN 100V	3.5typ (Io=100%)	3.9typ (Io=100%)				
		ACIN 115V	3.0typ (Io=100%)	3.3typ (Io=100%)				
		ACIN 230V	1.5typ (Io=100%)	1.7typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)					
	EFFICIENCY[%]	ACIN 100V	73typ (Io=100%)	79typ (Io=100%)	81typ (Io=100%)	82typ (Io=100%)	83typ (Io=100%)	82typ (Io=100%)
		ACIN 115V	74typ (Io=100%)	80typ (Io=100%)	82typ (Io=100%)	83typ (Io=100%)	83typ (Io=100%)	83typ (Io=100%)
		ACIN 230V	77typ (Io=100%)	82typ (Io=100%)	84typ (Io=100%)	86typ (Io=100%)	87typ (Io=100%)	86typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.99typ (Io=100%)					
		ACIN 115V	0.98typ (Io=100%)					
		ACIN 230V	0.95typ (Io=100%)					
	INRUSH CURRENT[A]	ACIN 100V	20typ (Io=100%) Ta=25℃ at cold start					
		ACIN 115V	20typ (Io=100%) Ta=25℃ at cold start					
		ACIN 230V	40typ (Io=100%) Ta=25℃ at cold start					
	LEAKAGE CURRENT[mA]		0.75max (ACIN 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)					
OUTPUT	VOLTAGE[V]		5	12	15	24	36	48
	CURRENT[A]	ACIN 85-100V	Output derating is required at ACIN 100V or less (Refer to “Derating”)					
		ACIN 100V-264V	50	25	20	12.5	8.4	6.3
	WATTAGE[W]	ACIN 85-100V	Output derating is required at ACIN 100V or less (Refer to “Derating”)					
		ACIN 100V-264V	250	300	300	300	302.4	302.4
	LINE REGULATION[mV] ＊3		20max	48max	60max	96max	144max	192max
	LOAD REGULATION[mV] ＊3		40max	100max	120max	150max	150max	300max
	RIPPLE[mVp-p] ＊1	0 to +50℃	80max	120max	120max	120max	150max	150max
		-10 to 0℃	140max	160max	160max	160max	160max	400max
	RIPPLE NOISE[mVp-p] ＊1	0 to +50℃	120max	150max	150max	150max	200max	200max
		-10 to 0℃	160max	180max	180max	180max	240max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	150max	240max	360max	480max
		-10 to +50℃	75max	180max	180max	290max	440max	600max
	DRIFT[mV] ＊2		20max	48max	60max	96max	144max	192max
	START-UP TIME[ms]		300typ (ACIN 100V, Io=100%)					
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		4.50 to 5.50	10.80 to 13.20	13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80
	OUTPUT VOLTAGE SETTING[V]		5.00 to 5.15	12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTECTION[V]		5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20
	OPERATING INDICATION		LED (Green)					
	REMOTE SENSING		Not provided					
	REMOTE ON/OFF		Optional (Required external power source. Option -R)					
ISOLATION	INPUT-OUTPUT • RC ＊9		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 • RC-FG ＊9		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)					
	OUTPUT-RC ＊9		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊4		-20 to +70℃ (Refer to “Derating”), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max					
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max					
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axes					
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axes					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL62368-1, C-UL (CSA62368-1), EN62368-1 Complies with DEN-AN					
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B					
	HARMONIC ATTENUATOR ＊8		Complies with IEC61000-3-2 class A					

SPECIFICATIONS

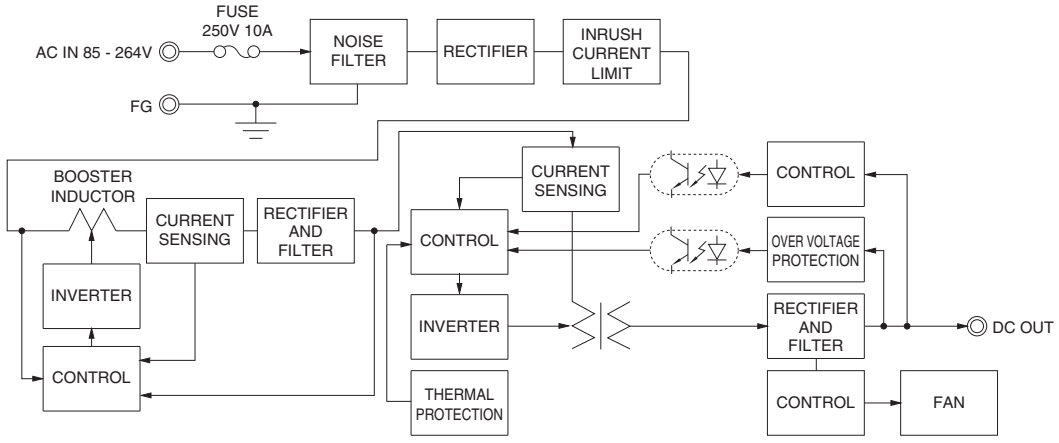
OTHERS	CASE SIZE/WEIGHT		102×41×190mm [4.02×1.61×7.48 inches] (Excluding terminal block and screw) (W×H×D) / 1.0kg max
	COOLING METHOD	✻7	Forced cooling (internal fan)
WARRANTY	WARRANTY	✻5	5 years (subject to the operating conditions)

✻1 This is the result of measurement of the testing board with capacitors of 22μF and 0.1μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
✻2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.
✻3 Consult us about dynamic load and input response.
✻4 Output power derating is required. Refer to "Derating".
✻5 See 4 in Instruction Manual for more details.
✻6 Consult us about safety agency approvals for the models with optional functions.
✻7 The fan speed slows down at no load.
✻8 Consult us about other classes.
✻9 The RC terminal is added to option –R models. The RC terminal is isolated from input, output, and FG.
✻ Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
✻ Parallel operation is not possible with this mode.
✻ Sound noise may be heard from the power supply when used for pulse load.

Features

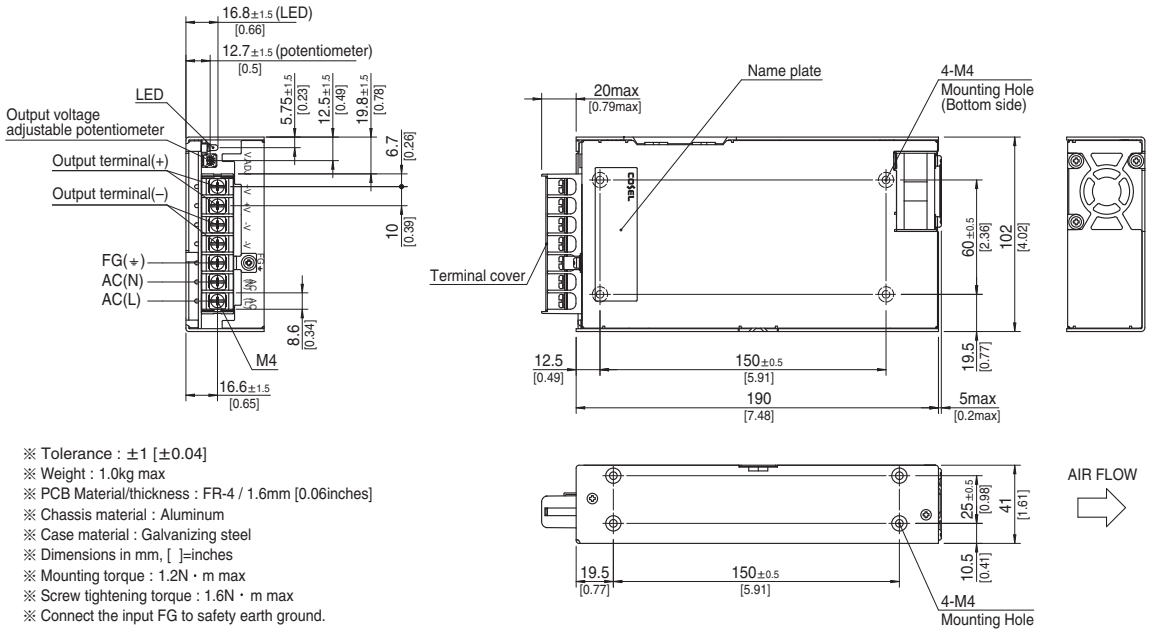
- **Cost-effective**
- **Longer life (see Instruction Manual)**
- **Low profile (meets 1U height = 41 mm or 1.61 inches)**
- **Wide operating temperature range (-20℃ to +70℃ Refer to "Derating")**
- **Slow fan speed at no load**
- **Complies with SEMI F-47**
- **Many optional functions**

Block diagram



External view

The external size of –V option and –R option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



※ Tolerance : ±1 [±0.04]
※ Weight : 1.0kg max
※ PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
※ Chassis material : Aluminum
※ Case material : Galvanizing steel
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 1.2N・m max
※ Screw tightening torque : 1.6N・m max
※ Connect the input FG to safety earth ground.

COSEL AC-DC Power Supplies Enclosed Type

PJA600F

Ordering information

PJ	A	600	F	-□	-□
①	②	③	④	⑤	⑧

Example recommended EMI/EMC filter
NAC-16-472

High voltage pulse noise type : NAP series
Low leakage current type : NAM 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
⑧Optional ＊6
C : with Coating
G : Low leakage current
V : External potentiometer for output voltage adjustment
W: Parallel operation, LV alarm and Remote sensing
R : Remote on/off (Required external power source)
F4: Low speed fan

See 6.1 in Instruction Manual.

＊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.

SPECIFICATIONS

	MODEL		PJA600F-5	PJA600F-12	PJA600F-15	PJA600F-24	PJA600F-36	PJA600F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 100V. Refer to “Derating” and instruction manual 1.1, 3)					
	CURRENT[A]	ACIN 100V	6.7typ (Io=100%)	7.5typ (Io=100%)				
		ACIN 115V	5.7typ (Io=100%)	6.5typ (Io=100%)				
		ACIN 230V	2.8typ (Io=100%)	3.2typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)					
	EFFICIENCY[%]	ACIN 100V	76typ (Io=100%)	81typ (Io=100%)	82typ (Io=100%)	84typ (Io=100%)	85typ (Io=100%)	85typ (Io=100%)
		ACIN 115V	77typ (Io=100%)	82typ (Io=100%)	82typ (Io=100%)	85typ (Io=100%)	86typ (Io=100%)	85typ (Io=100%)
		ACIN 230V	79typ (Io=100%)	84typ (Io=100%)	85typ (Io=100%)	88typ (Io=100%)	88typ (Io=100%)	88typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.99typ (Io=100%)					
		ACIN 115V	0.98typ (Io=100%)					
		ACIN 230V	0.95typ (Io=100%)					
	INRUSH CURRENT[A]	ACIN 100V	20/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3sec to re-start)					
		ACIN 115V	20/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3sec to re-start)					
		ACIN 230V	40/40typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 3sec to re-start)					
	LEAKAGE CURRENT[mA]		1.5max (ACIN 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)					
OUTPUT	VOLTAGE[V]		5	12	15	24	36	48
	CURRENT[A]	ACIN 85-100V	Output derating is required at ACIN 100V or less (Refer to “Derating”)					
		ACIN 100V-264V	100	50	40	25	16.7	12.5
	WATTAGE[W]	ACIN 85-100V	Output derating is required at ACIN 100V or less (Refer to “Derating”)					
		ACIN 100V-264V	500	600	600	600	601.2	600
	LINE REGULATION[mV] ＊7		20max	48max	60max	96max	144max	192max
	LOAD REGULATION[mV] ＊7		40max	100max	120max	150max	150max	300max
	RIPPLE[mVp-p] ＊1	0 to +50℃	80max	120max	120max	120max	150max	150max
		-20 to 0℃	140max	160max	160max	160max	160max	400max
	RIPPLE NOISE[mVp-p] ＊1	0 to +50℃	120max	150max	150max	150max	200max	200max
		-20 to 0℃	160max	180max	180max	180max	240max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	150max	240max	360max	480max
		-20 to +50℃	75max	180max	180max	290max	440max	600max
	DRIFT[mV] ＊2		20max	48max	60max	96max	144max	192max
	START-UP TIME[ms]		300typ (ACIN 100V, Io=100%)					
	HOLD-UP TIME[ms]		20typ (ACIN 100V, Io=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		4.50 to 5.50	10.80 to 13.20	13.50 to 16.50	21.60 to 26.40	32.40 to 39.60	43.20 to 52.80
	OUTPUT VOLTAGE SETTING[V]		5.00 to 5.15	12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTECTION[V]		5.75 to 7.00	13.80 to 16.80	17.25 to 21.00	27.60 to 33.60	41.40 to 50.40	55.20 to 67.20
	OPERATING INDICATION		LED (Green)					
	REMOTE SENSING		Optional (Option -W)					
	REMOTE ON/OFF		Optional (Required external power source. Option -R)					
ISOLATION	INPUT-OUTPUT • RC ＊3		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 • RC-FG ＊3		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)					
	OUTPUT-RC ＊3		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊4		-20 to +70℃ (Refer to “Derating”), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max					
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max					
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axes					
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axes					
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL62368-1, C-UL (CSA62368-1), EN62368-1 Complies with DEN-AN					
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B					
	HARMONIC ATTENUATOR ＊9		Complies with IEC61000-3-2 class A					

SPECIFICATIONS

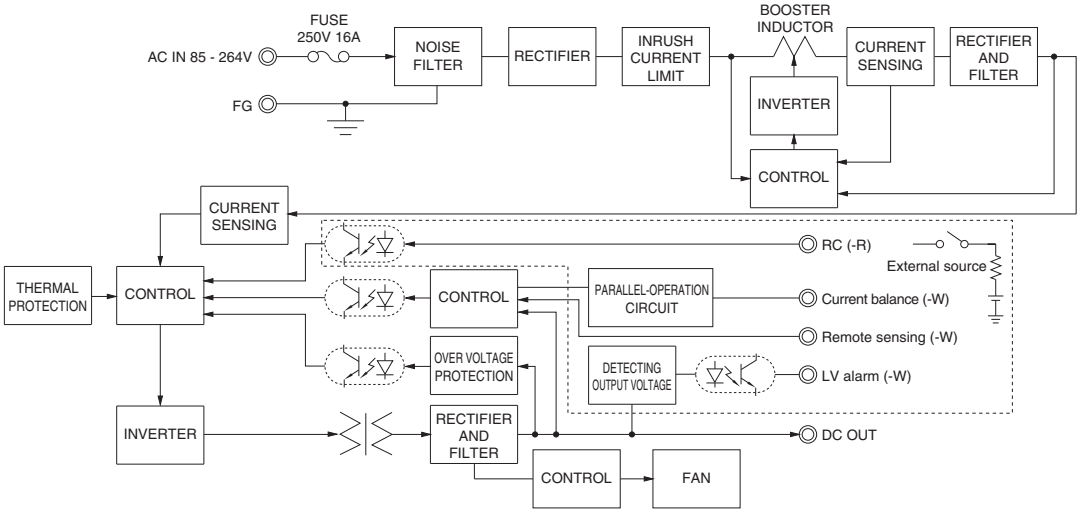
OTHERS	CASE SIZE/WEIGHT		120×61×215mm [4.72×2.40×8.46 inches] (Excluding terminal block and screw) (W×H×D) / 2.0kg max
	COOLING METHOD	✻8	Forced cooling (internal fan)
WARRANTY	WARRANTY	✻5	5 years (subject to the operating conditions)

✻1 This is the result of measurement of the testing board with capacitors of 22 μ F and 0.1 μ F placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
✻2 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.
✻3 The RC terminal is added to option –R models. The RC terminal is isolated from input, output, and FG.
✻4 Output power derating is required. Refer to "Derating".
✻5 See 4 in Instruction Manual for more details.
✻6 Consult us about safety agency approvals for the models with optional functions.
✻7 Consult us about dynamic load and input response.
✻8 The fan speed slows down at no load.
✻9 Consult us about other classes.
✻ Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
✻ Parallel operation is allowed for PLA600FA models with the –W option only.
✻ Sound noise may be heard from the power supply when used for pulse load.

Features

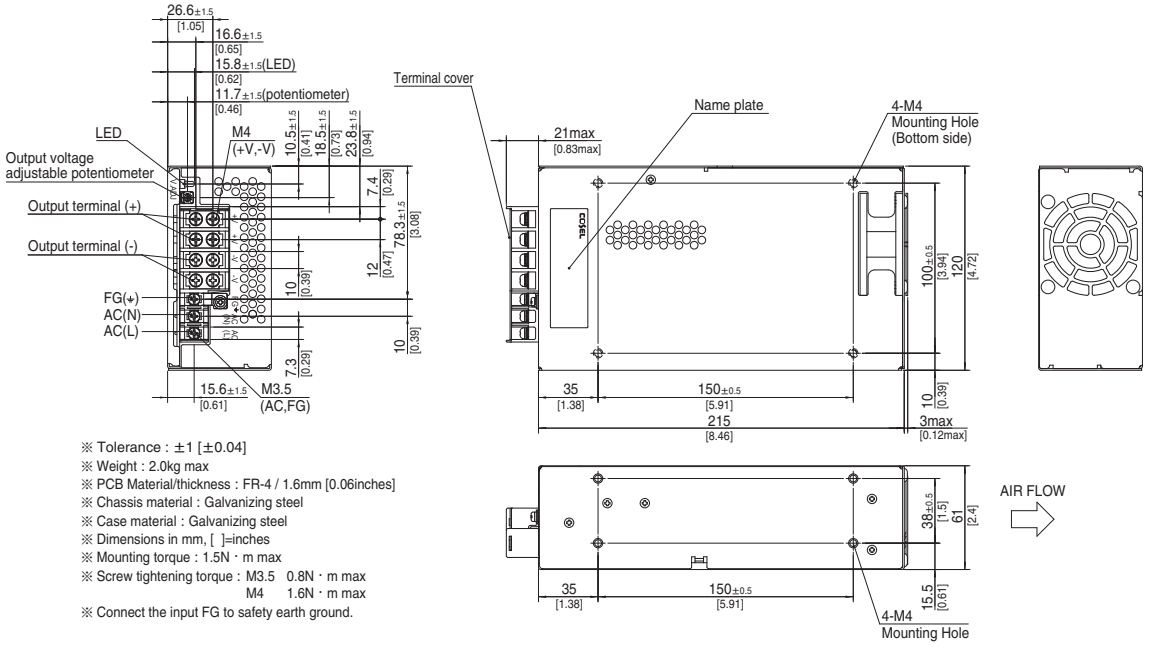
- **Cost-effective**
- **Longer life (see Instruction Manual)**
- **Low profile (meets 2U height = 61 mm or 2.40 inches)**
- **Wide operating temperature range (-20℃ to +70℃ Refer to "Derating")**
- **Slow fan speed at no load**
- **Complies with SEMI F-47**
- **Many optional functions**

Block diagram



External view

The external size of –V option, –W option and –R option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



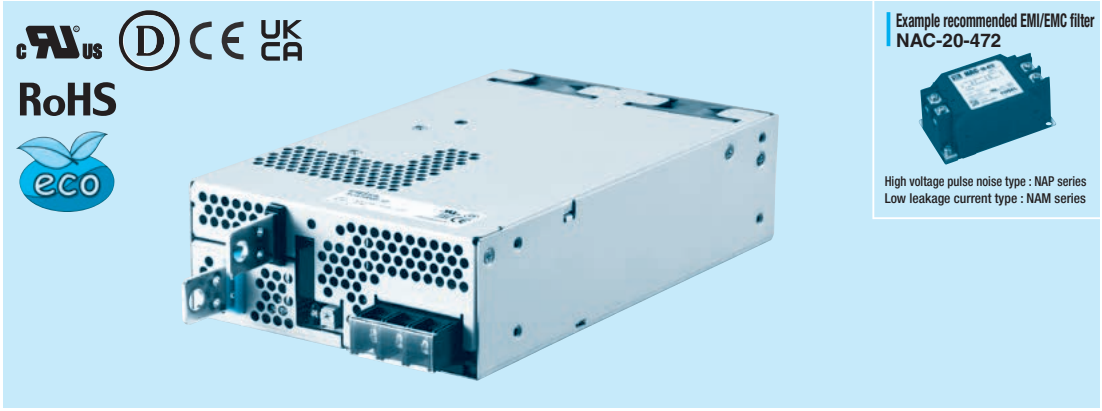
※ Tolerance : ±1 [±0.04]
※ Weight : 2.0kg max
※ PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
※ Chassis material : Galvanizing steel
※ Case material : Galvanizing steel
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 1.5N · m max
※ Screw tightening torque : M3.5 0.8N · m max
M4 1.6N · m max
※ Connect the input FG to safety earth ground.

COSEL AC-DC Power Supplies Enclosed Type

PJA1000F

Ordering information

PJ	A	1000	F	-□	-□
①	②	③	④	⑤	⑧



Example recommended EMI/EMC filter
NAC-20-472

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

①Series name
②Single output
③Output wattage
④Universal input
⑤Output voltage
⑧Optional *8
C : with Coating
G : Low leakage current
V : External potentiometer for output voltage adjustment
W: Parallel operation, LV alarm and Remote sensing
R : Remote on/off (Required external power source)

See 6.1 in Instruction Manual.

*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.

SPECIFICATIONS

	MODEL		PJA1000F-12	PJA1000F-15	PJA1000F-24	PJA1000F-36	PJA1000F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. Refer to "Derating" and instruction manual 1.1, 3)				
	CURRENT[A]	ACIN 100V	12.5typ (Io=90%)				
		ACIN 115V	11.0typ (Io=100%)				
		ACIN 230V	5.5typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
	EFFICIENCY[%]	ACIN 100V	81typ (Io=90%)	82typ (Io=90%)	84typ (Io=90%)	84typ (Io=90%)	84typ (Io=90%)
		ACIN 115V	82typ (Io=100%)	82typ (Io=100%)	85typ (Io=100%)	85typ (Io=100%)	85typ (Io=100%)
		ACIN 230V	85typ (Io=100%)	85typ (Io=100%)	88typ (Io=100%)	88typ (Io=100%)	88typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.98typ (Io=90%)				
		ACIN 115V	0.98typ (Io=100%)				
		ACIN 230V	0.95typ (Io=100%)				
	INRUSH CURRENT[A]	ACIN 100V	15/30typ (Io=90%) (Primary inrush current /Secondary inrush current) (More than 10sec to re-start)				
		ACIN 115V	15/30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10sec to re-start)				
		ACIN 230V	30/30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10sec to re-start)				
	LEAKAGE CURRENT[mA]		1.5max (ACIN 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)				
OUTPUT	VOLTAGE[V]		12	15	24	36	48
	CURRENT[A]	ACIN 85-115V	Output derating is required at ACIN 115V or less (Refer to "Derating")				
		ACIN 115V-264V	84	67	42	28	21
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (Refer to "Derating")				
		ACIN 115V-264V	1008	1005	1008	1008	1008
	LINE REGULATION[mV] *2		48max	60max	96max	144max	192max
	LOAD REGULATION[mV] *2		100max	120max	150max	150max	300max
	RIPPLE[mVp-p] *1	0 to +50℃	180max	180max	120max	150max	200max
		-20 to 0℃	240max	240max	160max	200max	500max
	RIPPLE NOISE[mVp-p] *1	0 to +50℃	210max	210max	150max	200max	300max
		-20 to 0℃	270max	270max	180max	240max	600max
	TEMPERATURE REGULATION[mV]	0 to +50℃	120max	150max	240max	360max	480max
		-20 to +50℃	180max	180max	290max	440max	600max
	DRIFT[mV] *3		48max	60max	96max	144max	192max
	START-UP TIME[ms]		800typ (ACIN 115V, Io=100%)				
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		10.80 to 13.50	13.50 to 17.30	20.40 to 28.50	30.60 to 40.80	40.80 to 55.20
	OUTPUT VOLTAGE SETTING[V]		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]		14.40 to 17.40	18.00 to 21.80	28.80 to 34.80	43.20 to 52.20	57.00 to 67.20
	OPERATING INDICATION		LED (Green)				
	REMOTE SENSING		Optional (Option -W)				
	REMOTE ON/OFF		Optional (Required external power source. Option -R)				
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 25mA, 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 = 100mA, DC500V 50MΩ min (At room temperature)				
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE *4		-20 to +70℃ (Refer to "Derating"), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max				
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axes				
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axes				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL62368-1, C-UL (CSA62368-1), EN62368-1 Complies with DEN-AN				
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B				
	HARMONIC ATTENUATOR *5		Complies with IEC61000-3-2 class A				

SPECIFICATIONS

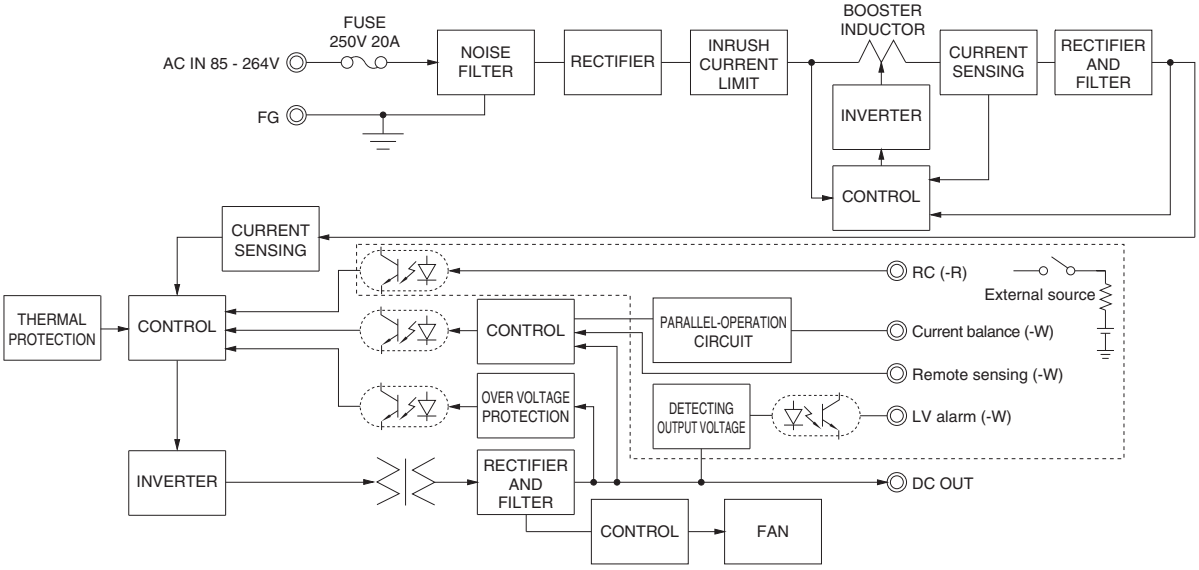
OTHERS	CASE SIZE/WEIGHT		150×61×240mm [5.91×2.40×9.45 inches] (Excluding terminal block and screw) (W×H×D) / 2.8kg max
	COOLING METHOD	✻6	Forced cooling (internal fan)
WARRANTY	WARRANTY	✻7	5 years (subject to the operating conditions)

✻1 This is the result of measurement of the testing board with capacitors of 22μF and 0.1μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
✻2 Consult us about dynamic load and input response.
✻3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.
✻4 Output power derating is required. Refer to "Derating".
✻5 Consult us about other classes.
✻6 The fan speed slows down or stops at no load.
✻7 See 4 in Instruction Manual for more details.
✻8 Consult us about safety agency approvals for the models with optional functions.
✻ Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
✻ Parallel operation is not possible with this mode.
✻ Audible noise may be heard from the power supply when used for pulse load.

Features

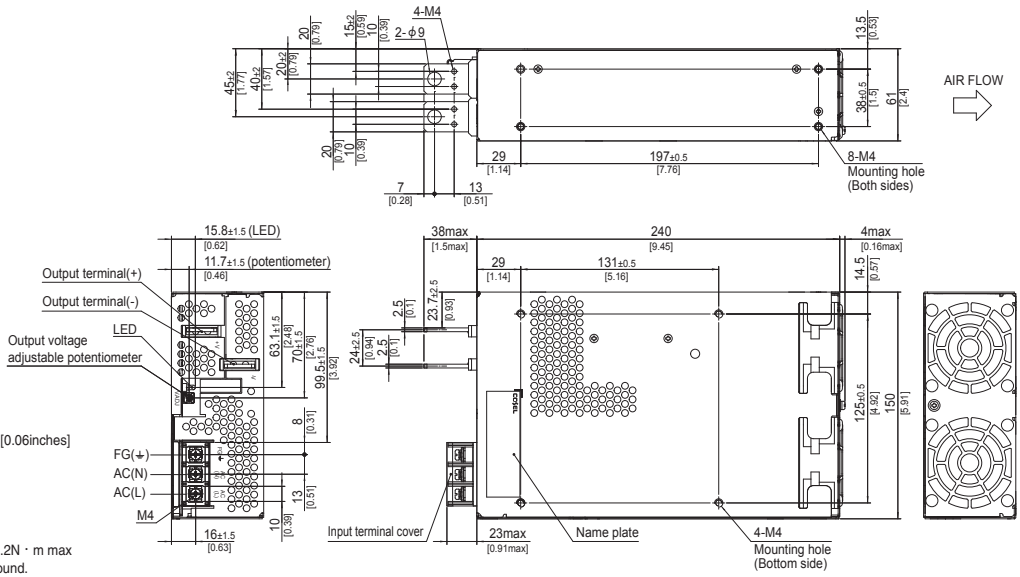
- **Cost-effective**
- **Longer life (see Instruction Manual)**
- **Low profile (meets 2U height = 61 mm or 2.4 inches)**
- **Wide operating temperature range (-20℃ to +70℃ Refer to "Derating")**
- **Stop or slow fan speed at no load**

Block diagram



External view

The external size of –V option, –W option and –R option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



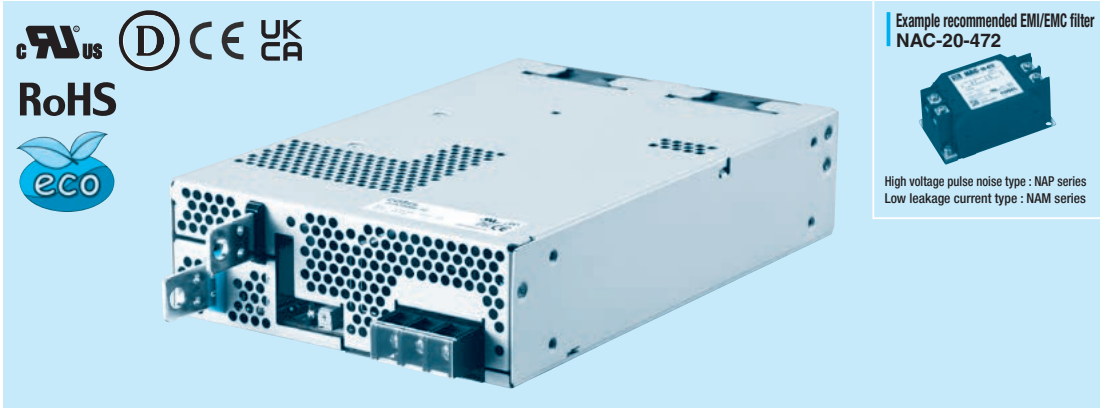
※ Tolerance : ±1 [±0.04]
※ Weight : 2.8kg max
※ PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
※ Chassis material : Galvanizing steel
※ Case material : Galvanizing steel
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 1.5N・m max
※ Screw tightening torque : 1.6N・m max
※ Output terminal M4 tightening torque : 1.2N・m max
※ Connect the input FG to safety earth ground.

COSEL AC-DC Power Supplies Enclosed Type

PJA1500F

Ordering information

PJ	A	1500	F	-□	-□
①	②	③	④	⑤	⑥



Example recommended EMI/EMC filter
NAC-20-472

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

①Series name
②Single output
③Output wattage
④Universal input
⑤Output voltage
⑥Optional *8
C : with Coating
G : Low leakage current
V : External potentiometer for output voltage adjustment
W: Parallel operation, LV alarm and Remote sensing
R : Remote on/off (Required external power source)

See 6.1 in Instruction Manual.

*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.

SPECIFICATIONS

	MODEL		PJA1500F-12	PJA1500F-15	PJA1500F-24	PJA1500F-36	PJA1500F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. Refer to "Derating" and instruction manual 1.1, 3)				
	CURRENT[A]	ACIN 100V	18typ (Io=90%)				
		ACIN 115V	16typ (Io=100%)				
		ACIN 230V	8typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
	EFFICIENCY[%]	ACIN 100V	81typ (Io=90%)	82typ (Io=90%)	84typ (Io=90%)	84typ (Io=90%)	84typ (Io=90%)
		ACIN 115V	82typ (Io=100%)	82typ (Io=100%)	85typ (Io=100%)	85typ (Io=100%)	84typ (Io=100%)
		ACIN 230V	85typ (Io=100%)	85typ (Io=100%)	88typ (Io=100%)	88typ (Io=100%)	87typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.98typ (Io=90%)				
		ACIN 115V	0.98typ (Io=100%)				
		ACIN 230V	0.95typ (Io=100%)				
	INRUSH CURRENT[A]	ACIN 100V	15/30typ (Io=90%) (Primary inrush current /Secondary inrush current) (More than 10sec to re-start)				
		ACIN 115V	15/30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10sec to re-start)				
		ACIN 230V	30/30typ (Io=100%) (Primary inrush current /Secondary inrush current) (More than 10sec to re-start)				
	LEAKAGE CURRENT[mA]		1.5max (ACIN 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)				
OUTPUT	VOLTAGE[V]		12	15	24	36	48
	CURRENT[A]	ACIN 85-115V	Output derating is required at ACIN 115V or less (Refer to "Derating")				
		ACIN 115V-264V	125	100	64	42	32
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (Refer to "Derating")				
		ACIN 115V-264V	1500	1500	1536	1512	1536
	LINE REGULATION[mV] *2		48max	60max	96max	144max	192max
	LOAD REGULATION[mV] *2		100max	120max	150max	150max	300max
	RIPPLE[mVp-p] *1	0 to +50℃	180max	180max	120max	150max	200max
		-20 to 0℃	240max	240max	160max	200max	500max
	RIPPLE NOISE[mVp-p] *1	0 to +50℃	210max	210max	150max	200max	300max
		-20 to 0℃	270max	270max	270max	240max	600max
	TEMPERATURE REGULATION[mV]	0 to +50℃	120max	150max	240max	360max	480max
		-20 to +50℃	180max	180max	290max	440max	600max
	DRIFT[mV] *3		48max	60max	96max	144max	192max
	START-UP TIME[ms]		800typ (ACIN 115V, Io=100%)				
	HOLD-UP TIME[ms]		20typ (ACIN 115V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		10.80 to 13.50	13.50 to 17.30	20.40 to 28.50	30.60 to 40.80	40.80 to 55.20
	OUTPUT VOLTAGE SETTING[V]		12.00 to 12.48	15.00 to 15.60	24.00 to 24.96	36.00 to 37.44	48.00 to 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]		14.40 to 17.40	18.00 to 21.80	28.80 to 34.80	43.20 to 52.20	57.00 to 67.20
	OPERATING INDICATION		LED (Green)				
	REMOTE SENSING		Optional (Option -W)				
	REMOTE ON/OFF		Optional (Required external power source. Option -R)				
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 25mA, 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 = 100mA, DC500V 50MΩ min (At room temperature)				
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE *4		-20 to +70℃ (Refer to "Derating"), 20 - 90%RH (Non condensing), 3,000m (10,000 feet) max				
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +75℃, 20 - 90%RH (Non condensing), 9,000m (30,000 feet) max				
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axes				
	IMPACT		196.1m/s² (20G), 11ms, once each X, Y and Z axes				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS		UL62368-1, C-UL (CSA62368-1), EN62368-1, Complies with DEN-AN				
	CONDUCTED NOISE		Complies with FCC-A, VCCI-A, CISPR22-A, EN55011-A, EN55022-A, additional EMI/EMC Filter is required for meeting class B				
	HARMONIC ATTENUATOR *5		Complies with IEC61000-3-2 class A				

SPECIFICATIONS

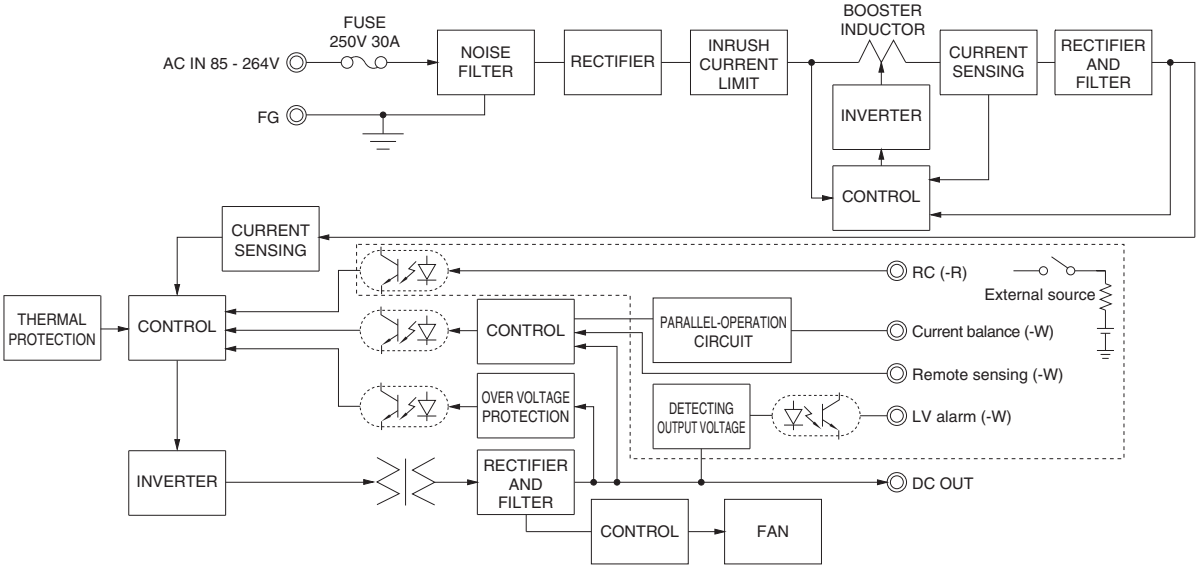
OTHERS	CASE SIZE/WEIGHT		178×61×268mm [7.01×2.40×10.55 inches] (Excluding terminal block and screw) (W×H×D) / 3.5kg max
	COOLING METHOD	✻6	Forced cooling (internal fan)
WARRANTY	WARRANTY	✻7	5 years (subject to the operating conditions)

✻1 This is the result of measurement of the testing board with capacitors of 22μF and 0.1μF placed at 150 mm from the output terminals by a 20 MHz oscilloscope or a ripple-noise meter equivalent to Keisoku-Giken RM103.
See 1.6 of Instruction Manual for more details.
✻2 Consult us about dynamic load and input response.
✻3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃.
✻4 Output power derating is required. Refer to "Derating".
✻5 Consult us about other classes.
✻6 The fan speed slows down or stops at no load.
✻7 See 4 in Instruction Manual for more details.
✻8 Consult us about safety agency approvals for the models with optional functions.
✻ Do not use the power supply in overcurrent conditions or in unspecified input voltage ranges. Otherwise the internal components may be damaged.
✻ Parallel operation is not possible with this mode.
✻ Audible noise may be heard from the power supply when used for pulse load.

Features

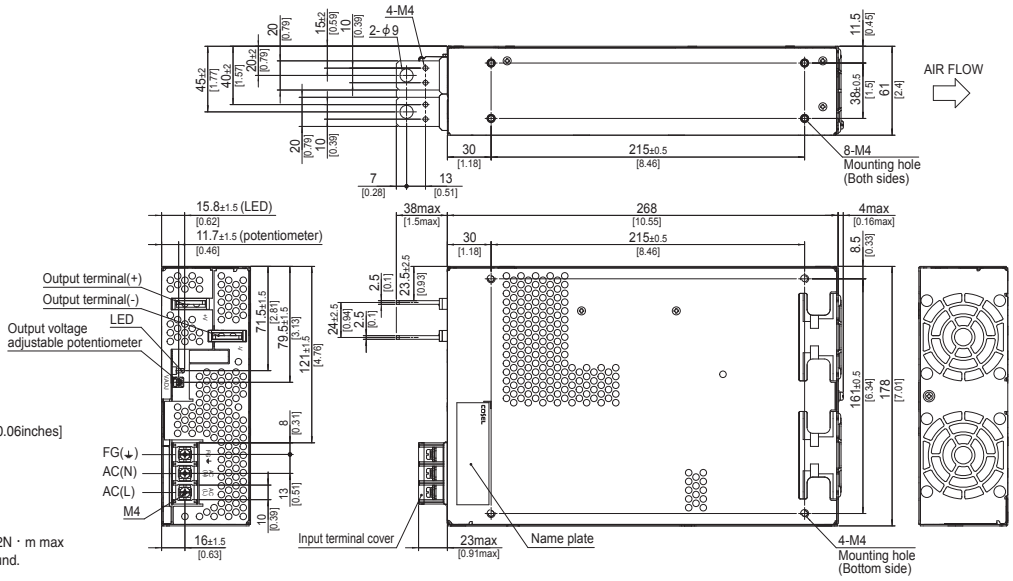
- **Cost-effective**
- **Longer life (see Instruction Manual)**
- **Low profile (meets 2U height = 61 mm or 2.4 inches)**
- **Wide operating temperature range (-20℃ to +70℃ Refer to "Derating")**
- **Stop or slow fan speed at no load**

Block diagram



External view

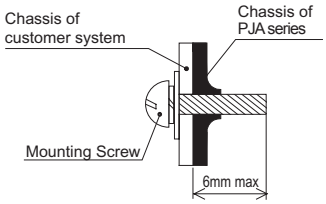
The external size of –V option, –W option and –R option models is different from the standard model. See "6. Options and Others" in Instruction Manual for more details.



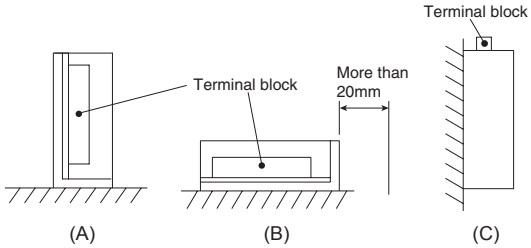
※ Tolerance : ±1 [±0.04]
※ Weight : 3.5kg max
※ PCB Material/thickness : FR-4 / 1.6mm [0.06inches]
※ Chassis material : Galvanizing steel
※ Case material : Galvanizing steel
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 1.5N · m max
※ Screw tightening torque : 1.6N · m max
※ Output terminal M4 tightening torque : 1.2N · m max
※ Connect the input FG to safety earth ground.

Assembling and Installation Method

■Do not insert a screw more than 6mm from the outside of a power supply to keep enough insulation distance between the screw and internal components.

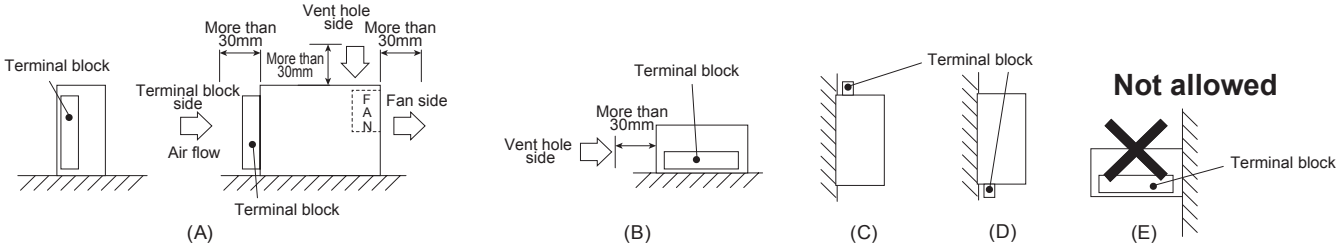


● PJA100F, PJA150F

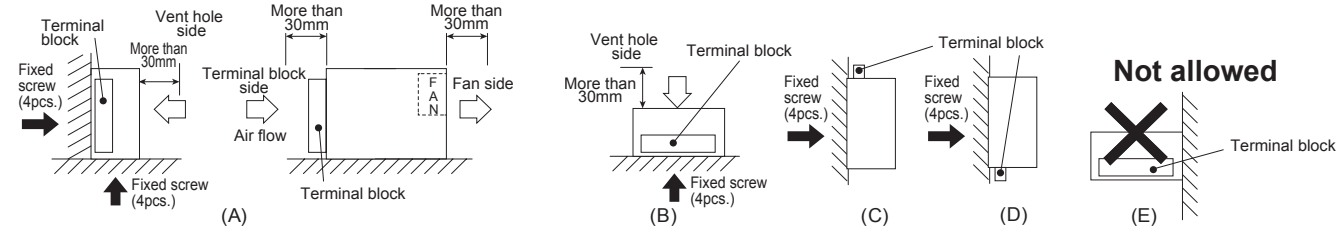


■If you use two or more power supplies side by side, please keep a sufficient distance between them to allow enough air ventilation.
■Ambient temperature around each power supply should not exceed the temperature range shown in “derating”.

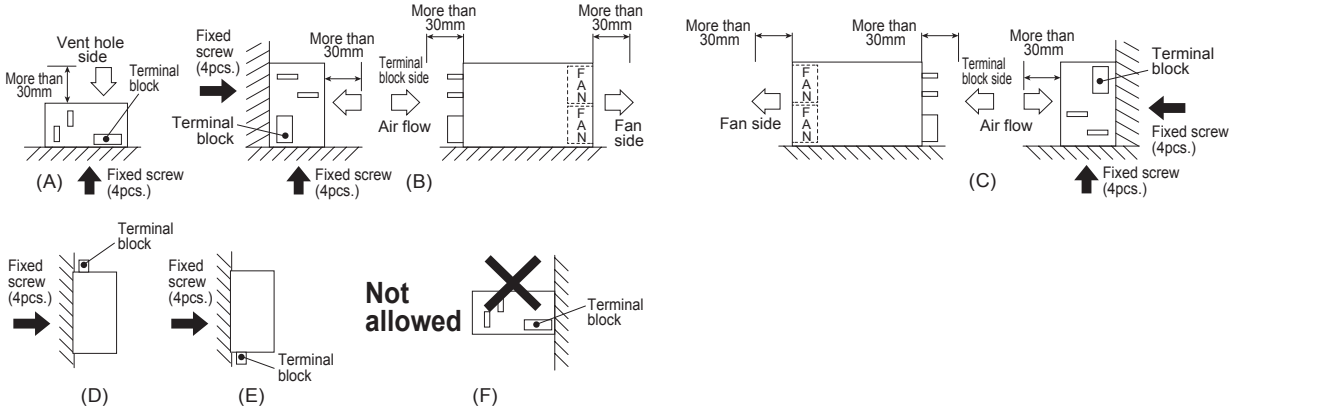
● PJA300F



● PJA600F



● PJA1000F, PJA1500F

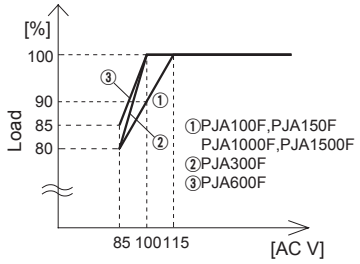


Assembling and Installation Method

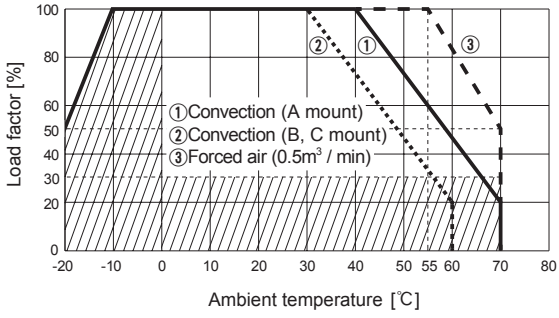
■When mounting the power supply with screws, it is recommended that this be done as shown above . If other methods are used, be sure the weight of the power supply is taken into account.
■Avoid the not allowed installation method as it gives excessive stress to the mounting holes.
■Do not block air flow of the built-in fan (terminal block and ventilation hole).
■If the power supply is used in a dusty environment, use an airfilter. Make sure air flow is not blocked.
■If the built-in fan stops, thermal protection will work and the outputwill stop.
■The life expectancy (R(t)=90%) of the built-in fan varies depending on the operating condition.

Derating

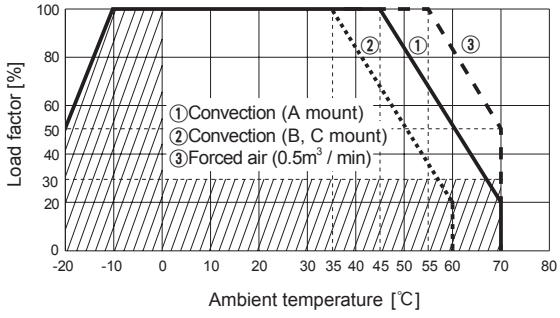
● Input voltage Derating Curve



● PJA100F/150F-12,15 Ambient temperature Derating Curve (Reference value)

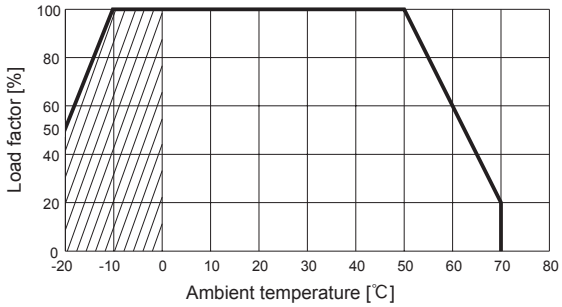


● PJA100F/150F-24,36,48 Ambient temperature Derating Curve (Reference value)

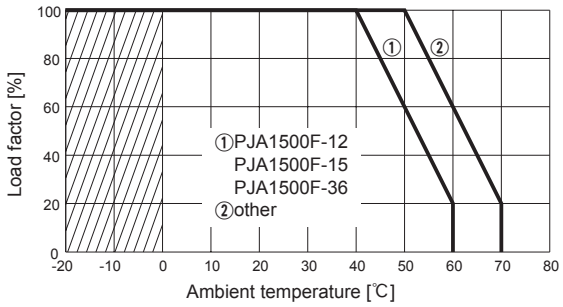


■In the hatched area, the specification of Ripple, Ripple Noise is different from other area.
■The ambient temperature should be measured 5 to 10 cm away from the power supply so that it won't be influenced by the heat from the power supply. Please consult us for more details.
■Make sure the temperature at point A and point B is less than the temperatures shown in Instruction Manual 3.

● PJA300F Ambient temperature Derating Curve



● PJA600F/1000F/1500F Ambient temperature Derating Curve



■The ambient temperature is defined as the temperature of the air (at the terminal block side) that the built-in cooling fan blows into the power supply. Please pay attention to the heat generated by the input and output wires. Please consult us for more details.

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/PJA/
Before using our product https://en.cosel.co.jp/technical/caution/index.html

PJA

NOTICE

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	
						Material	Single sided	Double sided	Series operation	Parallel operation
PJA100F	Active filter	40 to 160	1.2 ∗1	250V 3.15A	Thermistor	FR-4		Yes	Yes	No
	Flyback converter	20 to 150 ∗2								
PJA150F	Active filter	40 to 160	1.7 ∗1	250V 4A	Thermistor	FR-4		Yes	Yes	No
	Flyback converter	20 to 150 ∗2								
PJA300F	Active filler	60	3.9 ∗3	250V 10A	Thermistor	FR-4		Yes	Yes	No
	Forward converter	140								
PJA600F	Active filler	60	7.5 ∗3	250V 16A	SCR	FR-4		Yes	Yes	∗4
	Forward converter	220								
PJA1000F	Active filter	65	12.5 ∗1	250V 20A	TRIAC	FR-4		Yes	Yes	∗4
	Forward converter	210								
PJA1500F	Active filter	65	18.0 ∗1	250V 30A	TRIAC	FR-4		Yes	Yes	∗4
	Forward converter	210								

∗1 The input current shown is at ACIN 100V and 90% load.
∗2 The burst mode frequency varies according to the operating conditions. Consult us for more details.
∗3 The input current shown is at ACIN 100V and 100% load.
∗4 Parallal operation is possible with -W option. see “6.Option and Other” is Instruction Manual.

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PJA600F-12 PJA600F-24 PJA100F-24 PJA150F-36 PJA600F-15 PJA100F-36 PJA600F-48 PJA150F-15 PJA600F-5 PJA100F-48 PJA150F-12 PJA150F-48 PJA100F-15 PJA100F-12 PJA600F-36 PJA150F-24 PJA1000F-48 PJA1500F-48 PJA1000F-24 PJA1500F-24 PJA100F-36-C PJA600F-15-C PJA100F-36-R PJA600F-48-W PJA150F-24-N2 PJA150F-24-C PJA100F-24-C PJA600F-24-F4 PJA150F-48-R PJA150F-12-J PJA600F-15-W PJA600F-36-G PJA150F-48-J PJA600F-5-G PJA600F-24-R PJA100F-15-T PJA100F-36-N2 PJA100F-15-J PJA600F-24-G PJA100F-48-T PJA600F-24-C PJA150F-12-R PJA600F-12-G PJA100F-15-C PJA600F-48-G PJA100F-24-J PJA150F-12-T PJA150F-15-J PJA150F-15-T PJA150F-24-T PJA150F-24-J PJA100F-48-J PJA600F-36-W PJA100F-36-T PJA600F-24-V PJA100F-12-N2 PJA600F-15-F4 PJA600F-12-V PJA600F-5-C PJA100F-36-J PJA150F-36-N2 PJA600F-48-V PJA150F-36-R PJA150F-15-C PJA600F-36-R PJA100F-12-J PJA100F-48-C PJA600F-15-G PJA600F-24-W PJA150F-36-C PJA100F-12-R PJA600F-48-R PJA600F-36-V PJA600F-12-C PJA150F-36-T PJA600F-12-F4 PJA600F-5-F4 PJA150F-48-T PJA150F-48-N2 PJA600F-5-R PJA100F-15-R PJA600F-5-W PJA100F-24-R PJA150F-15-R PJA150F-12-N2 PJA100F-12-C PJA100F-48-R PJA100F-24-T PJA100F-48-N2 PJA600F-36-C PJA100F-24-N2 PJA150F-48-C PJA150F-36-J PJA150F-24-R PJA150F-12-C PJA600F-12-R PJA150F-15-N2 PJA600F-15-R PJA600F-12-W PJA600F-5-V