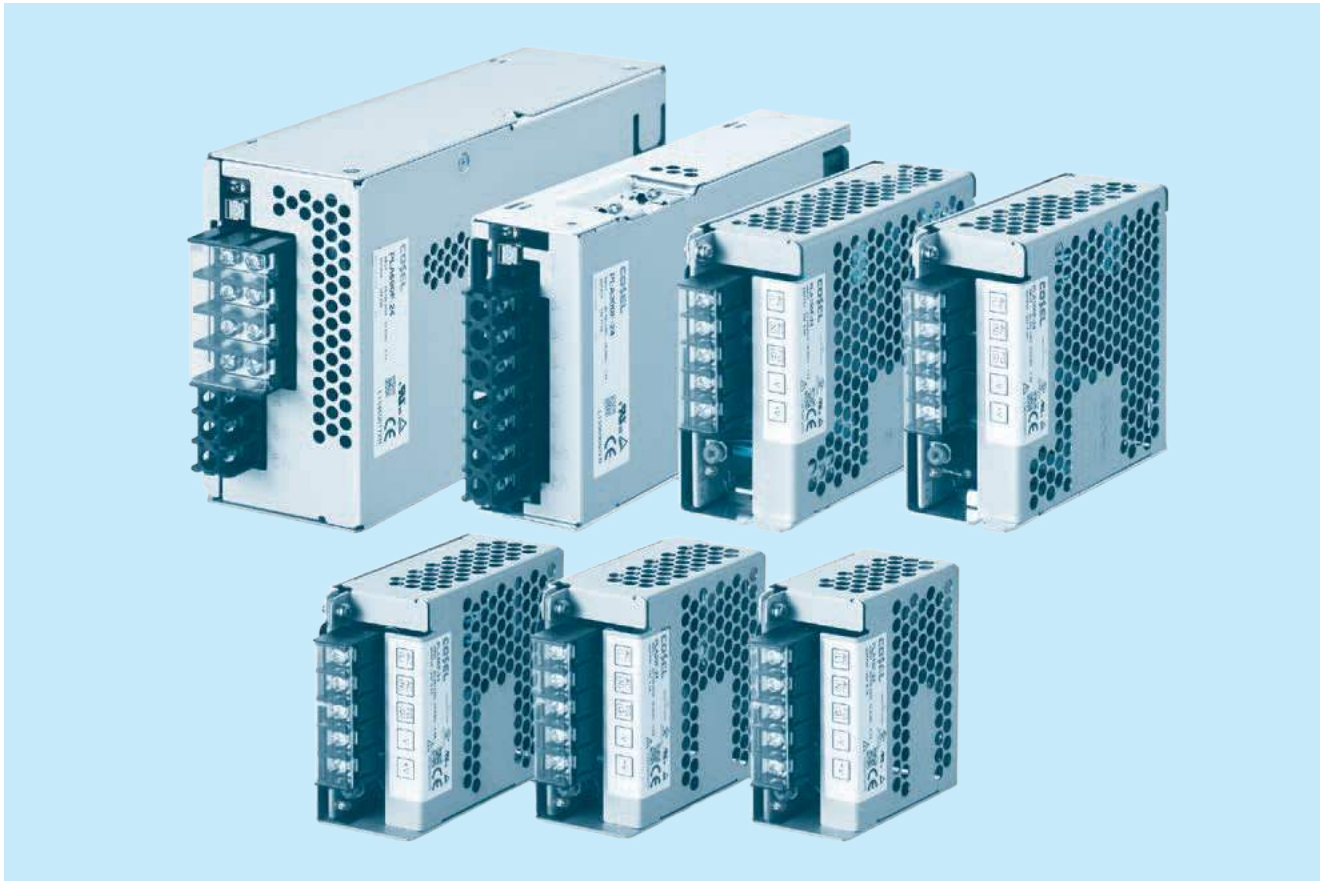
COSEL

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

PLA-series



Feature

Low Profile (15, 30, 50, 100, 150, 300W : 1U size.
600W : 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
Screw hold type terminal block (Only PLA300F and PLA600F)
Complies with SEMI F-47 (Option -U : Refer to instruction manual)
Many optional functions

Safety agency approvals

UL60950-1, C-UL (CSA60950-1), EN62368-1
UL508 (PLA15F-150F) approved
Complies with DEN-AN

5-year warranty (See Instruction Manual)

CE marking

Low Voltage Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

EMI

Complies with FCC-B, CISPR22-B, EN55011-B, EN55022-B, VCCI-B

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

PLA15F

Ordering information

PL ① A ② 15 ③ F 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 ＊7
C : with Coating
J : Connector interface
T : Vertical terminal block
-N□ : with DIN rail

See 5.1 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		PLA15F-5	PLA15F-12	PLA15F-15	PLA15F-24
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) ＊3			
	CURRENT[A]	ACIN 100V	0.4typ (Io=90%)			
		ACIN 115V	0.4typ (Io=100%)			
		ACIN 230V	0.25typ (Io=100%)			
	FREQUENCY[Hz]		50 / 60 (47 - 63)			
	EFFICIENCY[%]	ACIN 100V	72.5typ (Io=90%)	75.5typ (Io=90%)	77.0typ (Io=90%)	78.0typ (Io=90%)
		ACIN 115V	73.5typ (Io=100%)	77.0typ (Io=100%)	78.5typ (Io=100%)	79.0typ (Io=100%)
		ACIN 230V	75.5typ (Io=100%)	78.5typ (Io=100%)	79.5typ (Io=100%)	80.0typ (Io=100%)
	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]		0.30max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)			
OUTPUT	VOLTAGE[V]		5	12	15	24
	CURRENT[A]		3	1.3	1	0.7
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to instruction manual 3.2)			
		ACIN 115V-264V	15.0	15.6	15.0	16.8
	LINE REGULATION[mV] ＊4		20max	48max	60max	96max
	LOAD REGULATION[mV] ＊4		40max	100max	120max	150max
	RIPPLE[mVp-p] ＊1	0 to +50℃	80max	120max	120max	120max
		-10 to 0℃	140max	160max	160max	160max
		Io=0 to 35%	160max	240max	240max	280max
	RIPPLE NOISE[mVp-p] ＊1	0 to +50℃	120max	150max	150max	150max
		-10 to 0℃	160max	180max	180max	180max
		Io=0 to 35%	240max	300max	300max	320max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	150max	240max
		-10 to +50℃	60max	150max	180max	290max
	DRIFT[mV] ＊2		20max	48max	60max	96max
	START-UP TIME[ms]		200typ (ACIN 115V, Io=100%) ＊Start-up time is 700 ms typ for less than 1 minute of applying input again from turning off the input voltage.			
	HOLD-UP TIME[ms]		20typ (ACIN 115V, 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
	OUTPUT VOLTAGE SETTING[V]		5.00 to 5.15	12.00 to 12.48	15.00 to 15.60	24.00 to 24.96
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
	OPERATING INDICATION		LED (Green)			
	REMOTE SENSING		Not provided			
	REMOTE ON/OFF		Not provided			
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)			
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)			
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At room temperature)			
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊5		-20 to +70℃, 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		UL60950-1, C-UL (CSA60950-1), EN62368-1, UL508 (Except option -J) 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

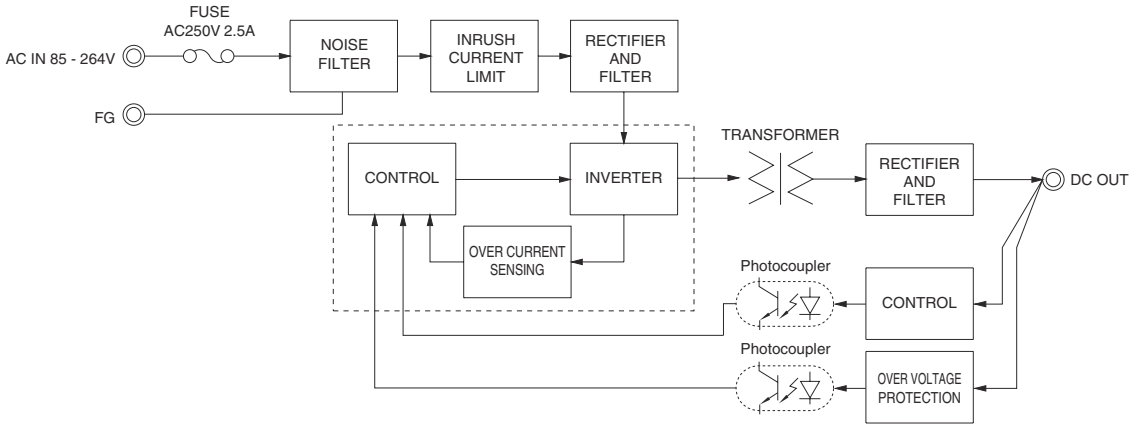
OTHERS	CASE SIZE/WEIGHT		38×80×73mm [1.50×3.15×2.87 inches] (Excluding terminal block and screw) (W×H×D) / 250g max
	COOLING METHOD		Convection
WARRANTY	WARRANTY	※6	5 years (subject to the operating conditions)

※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 - 35%, 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 As for DC input, consult us for advice.
※4 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 35% load or less.
※5 Output power derating is required. See 3.2 in Instruction Manual.
※6 See 3.3 in Instruction Manual for more details.
※7 Consult us about safety agency approvals for the models with optional functions.
※8 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 not possible with this mode.
※ Sound noise may be heard from the power supply when used for pulse load.

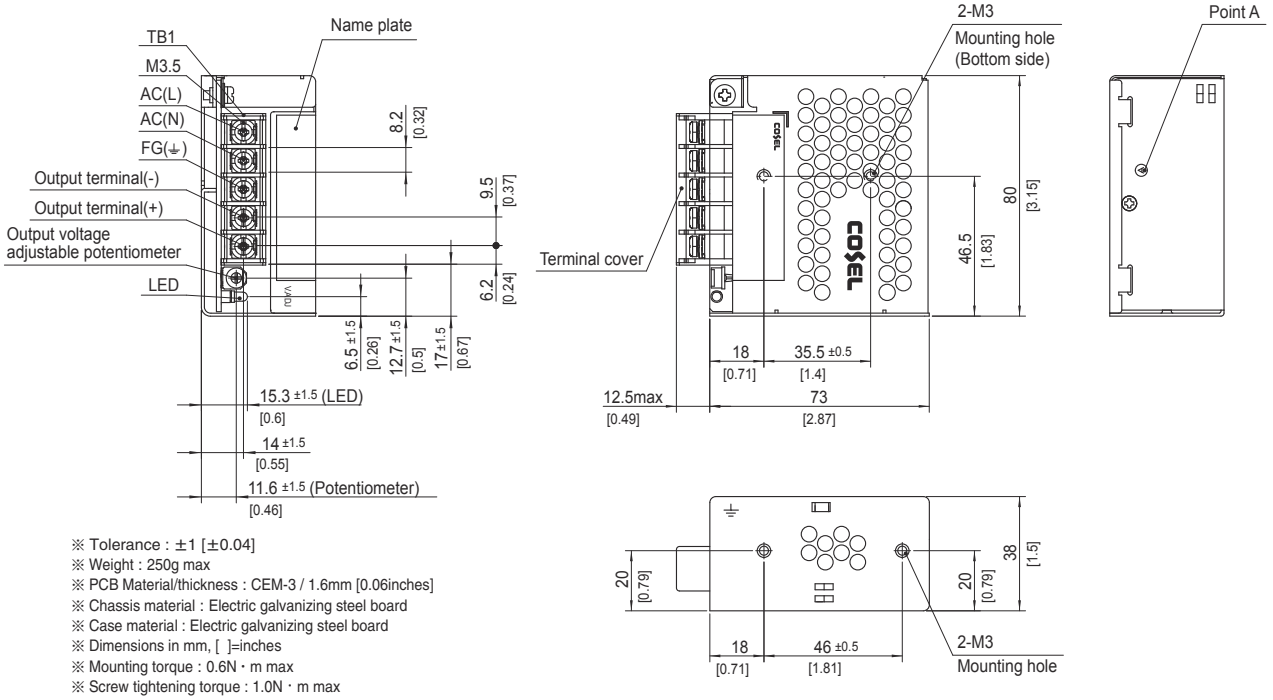
Features

- **Compact design (Depth: 73mm 2.87inches)**
- **Low power consumption (1.0W typ AC240Vin, no load at standard model)**
- **UL508 approved (Except option -J), and complies with SEMI F47**
- **Various connection interface options (vertical terminal [-T], AMP connector [-J])**

Block diagram



External view



※ Tolerance : ±1 [±0.04]
※ Weight : 250g max
※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
※ Chassis material : Electric galvanizing steel board
※ Case material : Electric galvanizing steel board
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 0.6N・m max
※ Screw tightening torque : 1.0N・m max

COSEL AC-DC Power Supplies Enclosed Type

PLA30F

Ordering information

PL	A	30	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 ＊7
C : with Coating
J : Connector interface
T : Vertical terminal block
-N□ : with DIN rail

See 5.1 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		PLA30F-5	PLA30F-12	PLA30F-15	PLA30F-24
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) ＊3			
	CURRENT[A]	ACIN 100V	0.7typ (Io=90%)			
		ACIN 115V	0.7typ (Io=100%)			
		ACIN 230V	0.4typ (Io=100%)			
	FREQUENCY[Hz]		50 / 60 (47 - 63)			
	EFFICIENCY[%]	ACIN 100V	73.0typ (Io=90%)	80.0typ (Io=90%)	81.0typ (Io=90%)	82.5typ (Io=90%)
		ACIN 115V	74.0typ (Io=100%)	80.5typ (Io=100%)	81.5typ (Io=100%)	83.0typ (Io=100%)
		ACIN 230V	77.0typ (Io=100%)	81.0typ (Io=100%)	82.0typ (Io=100%)	83.5typ (Io=100%)
	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]		0.65max (ACIN 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)			
OUTPUT	VOLTAGE[V]		5	12	15	24
	CURRENT[A]		6	2.5	2	1.3
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to instruction manual 3.2)			
		ACIN 115V-264V	30.0	30.0	30.0	31.2
	LINE REGULATION[mV] ＊4		20max	48max	60max	96max
	LOAD REGULATION[mV] ＊4		40max	100max	120max	150max
	RIPPLE[mVp-p] ＊1	0 to +50℃	80max	120max	120max	120max
		-10 to 0℃	140max	160max	160max	160max
	RIPPLE NOISE[mVp-p] ＊1	0 to +50℃	120max	150max	150max	150max
		-10 to 0℃	160max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	150max	240max
		-10 to +50℃	60max	150max	180max	290max
	DRIFT[mV] ＊2		20max	48max	60max	96max
	START-UP TIME[ms]		150typ (ACIN 115V, Io=100%)			
	HOLD-UP TIME[ms]		20typ (ACIN 115V, 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
	OUTPUT VOLTAGE SETTING[V]		5.00 to 5.15	12.00 to 12.48	15.00 to 15.60	24.00 to 24.96
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
	OPERATING INDICATION		LED (Green)			
	REMOTE SENSING		Not provided			
	REMOTE ON/OFF		Not provided			
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)			
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)			
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At room temperature)			
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊5		-20 to +70℃, 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		UL60950-1, C-UL (CSA60950-1), EN62368-1, UL508 (Except option -J) 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

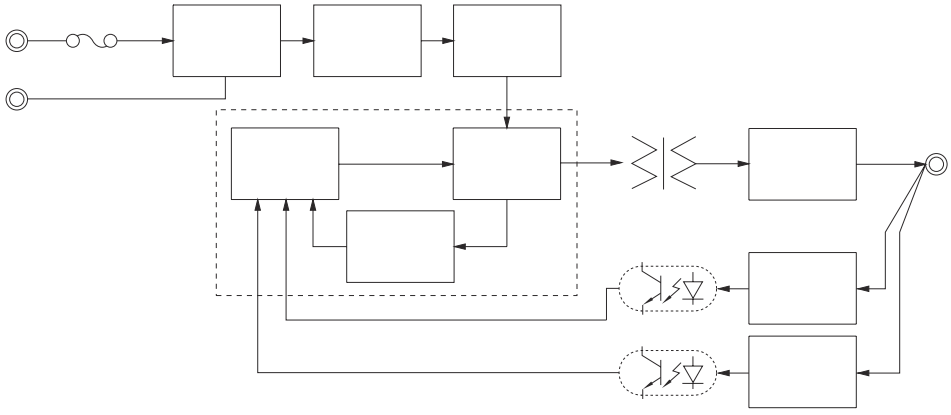
OTHERS	CASE SIZE/WEIGHT		38×80×88mm [1.50×3.15×3.46 inches] (Excluding terminal block and screw) (W×H×D) / 330g max
	COOLING METHOD		Convection
WARRANTY	WARRANTY	✻6	5 years (subject to the operating conditions)

✻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 As for DC input, consult us for advice.
✻4 Consult us about dynamic load and input response.
✻5 Output power derating is required. See 3.2 in Instruction Manual.
✻6 See 3.3 in Instruction Manual for more details.
✻7 Consult us about safety agency approvals for the models with optional functions.
✻8 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 not possible with this mode.
✻ Sound noise may be heard from the power supply when used for pulse load.

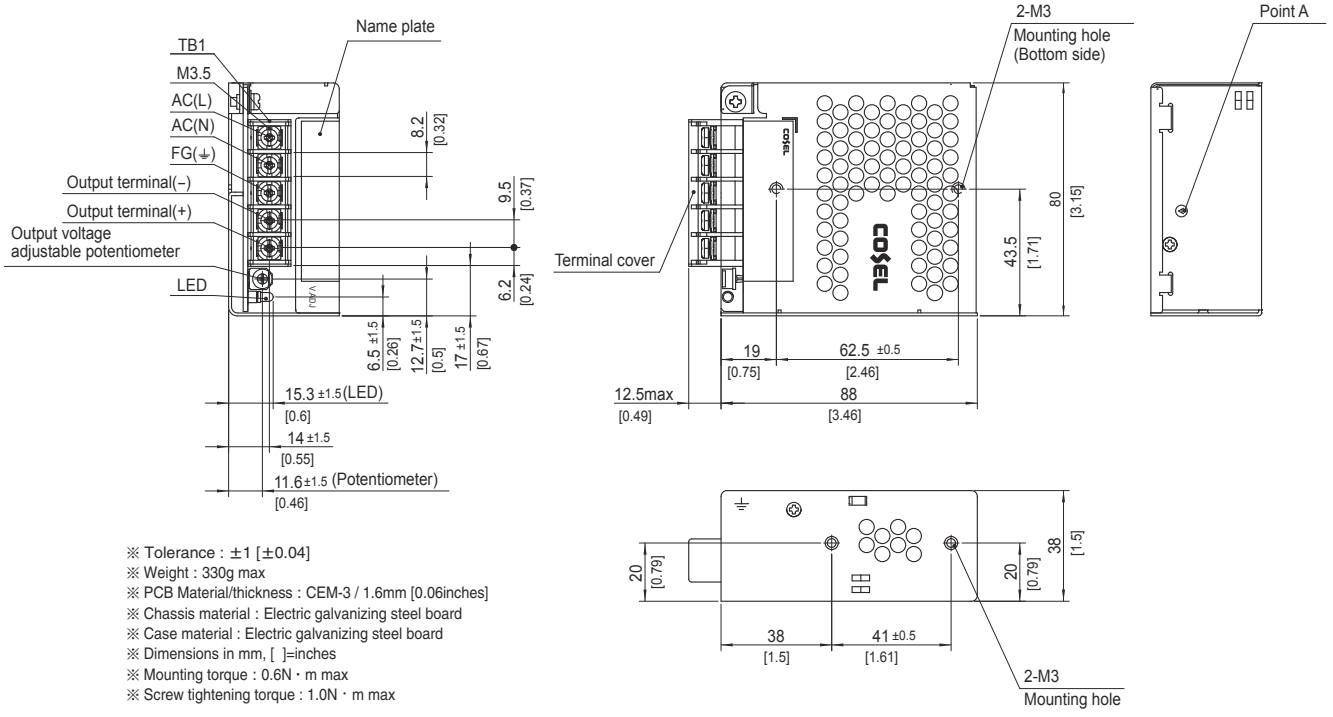
Features

- **Compact design (Depth: 88mm 3.46inches)**
- **UL508 approved (Except option -J), and complies with SEMI F47**
- **Various connection interface options (vertical terminal [-T], AMP connector [-J])**

Block diagram



External view



※ Tolerance : ±1 [±0.04]
※ Weight : 330g max
※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
※ Chassis material : Electric galvanizing steel board
※ Case material : Electric galvanizing steel board
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 0.6N・m max
※ Screw tightening torque : 1.0N・m max

COSEL AC-DC Power Supplies Enclosed Type

PLA50F

Ordering information

PL	A	50	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 ＊7
C : with Coating
J : Connector interface
T : Vertical terminal block
-N□ : with DIN rail

See 5.1 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		PLA50F-5	PLA50F-12	PLA50F-15	PLA50F-24
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) ＊3			
	CURRENT[A]	ACIN 100V	0.6typ (Io=90%)	0.7typ (Io=90%)		
		ACIN 115V	0.6typ (Io=100%)	0.7typ (Io=100%)		
		ACIN 230V	0.3typ (Io=100%)	0.4typ (Io=100%)		
	FREQUENCY[Hz]		50 / 60 (47 - 63)			
	EFFICIENCY[%]	ACIN 100V	74.5typ (Io=90%)	80.0typ (Io=90%)	80.0typ (Io=90%)	81.5typ (Io=90%)
		ACIN 115V	75.0typ (Io=100%)	80.5typ (Io=100%)	80.5typ (Io=100%)	82.0typ (Io=100%)
		ACIN 230V	76.5typ (Io=100%)	82.0typ (Io=100%)	82.0typ (Io=100%)	84.0typ (Io=100%)
	POWER FACTOR	ACIN 100V	0.97typ (Io=90%)	0.98typ (Io=90%)		
		ACIN 115V	0.97typ (Io=100%)	0.98typ (Io=100%)		
		ACIN 230V	0.85typ (Io=100%)	0.87typ (Io=100%)		
	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 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)			
OUTPUT	VOLTAGE[V]		5	12	15	24
	CURRENT[A]		8	4.3	3.5	2.2
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to instruction manual 3.2)			
		ACIN 115V-264V	40.0	51.6	52.5	52.8
	LINE REGULATION[mV] ＊4		20max	48max	60max	96max
	LOAD REGULATION[mV] ＊4		40max	100max	120max	150max
	RIPPLE[mVp-p] ＊1	0 to +45℃	80max	120max	120max	120max
		-10 to 0℃	140max	160max	160max	160max
	RIPPLE NOISE[mVp-p] ＊1	0 to +45℃	120max	150max	150max	150max
		-10 to 0℃	160max	180max	180max	180max
	TEMPERATURE REGULATION[mV]	0 to +45℃	50max	120max	150max	240max
		-10 to +45℃	60max	150max	180max	290max
	DRIFT[mV] ＊2		20max	48max	60max	96max
	START-UP TIME[ms]		350typ (ACIN 115V, Io=100%)			
	HOLD-UP TIME[ms]		20typ (ACIN 115V, 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
	OUTPUT VOLTAGE SETTING[V]		5.00 to 5.15	12.00 to 12.48	15.00 to 15.60	24.00 to 24.96
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
	OPERATING INDICATION		LED (Green)			
	REMOTE SENSING		Not provided			
	REMOTE ON/OFF		Not provided			
ISOLATION	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)			
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At room temperature)			
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 50MΩ min (At room temperature)			
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊5		-20 to +70℃, 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		UL60950-1, C-UL (CSA60950-1), EN62368-1, UL508 (Except option -J) 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

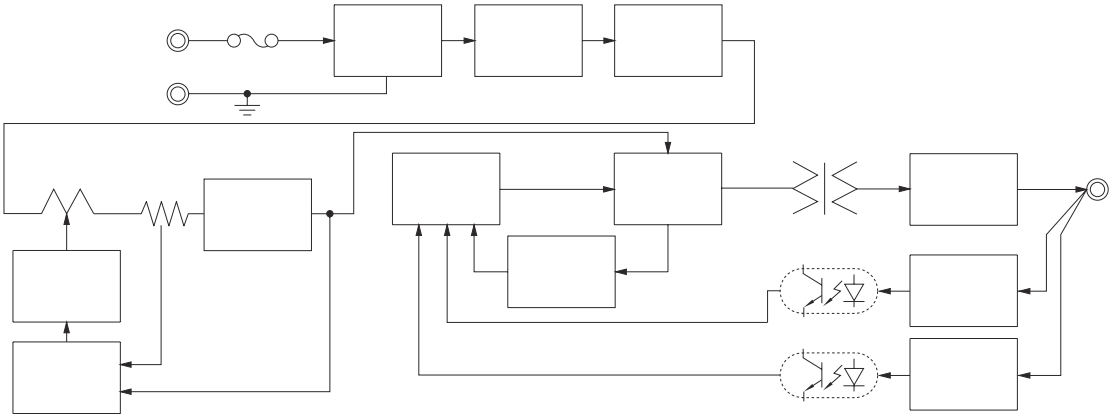
OTHERS	CASE SIZE/WEIGHT	38×80×99mm [1.50×3.15×3.90 inches] (Excluding terminal block and screw) (W×H×D) / 400g max
	COOLING METHOD	Convection
WARRANTY	WARRANTY ※6	5 years (subject to the operating conditions)

※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 As for DC input, consult us for advice.
※4 Consult us about dynamic load and input response.
※5 Output power derating is required. See 3.2 in Instruction Manual.
※6 See 3.3 in Instruction Manual for more details.
※7 Consult us about safety agency approvals for the models with optional functions.
※8 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 not possible with this mode.
※ Sound noise may be heard from the power supply when used for pulse load.

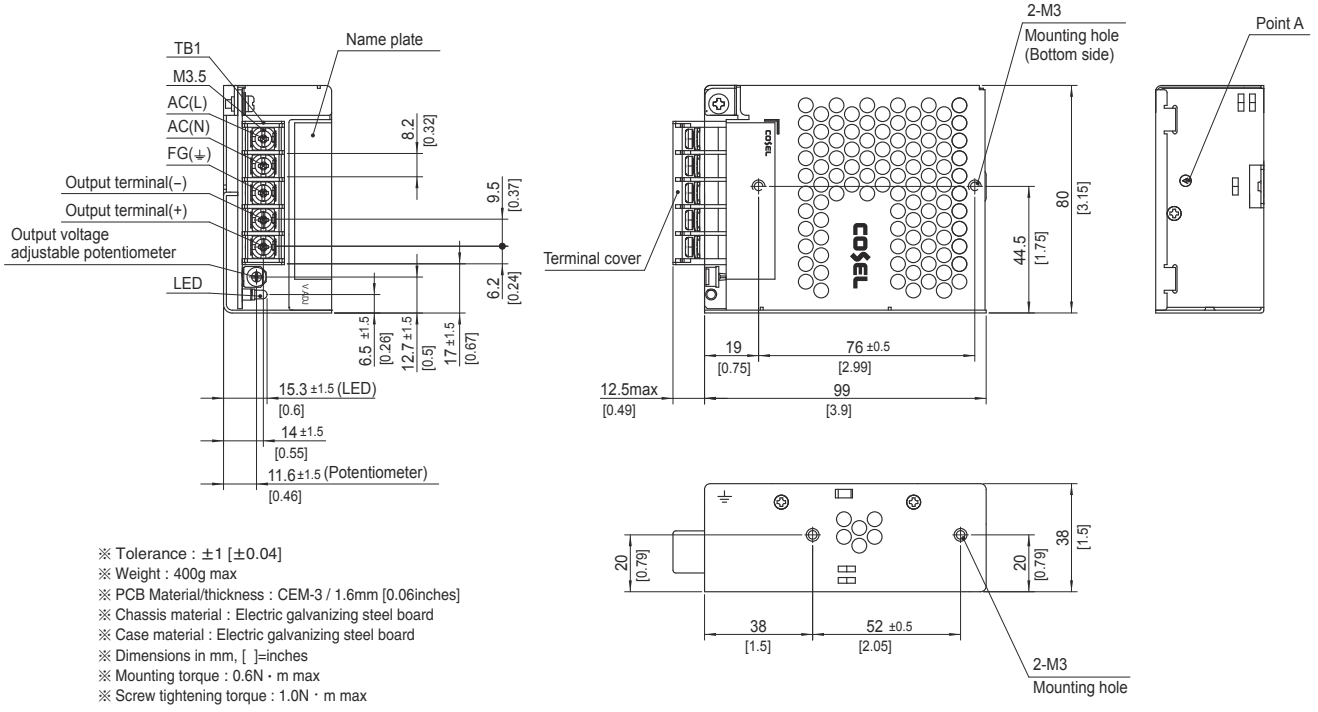
Features

- **Compact design (Depth: 99mm 3.90inches)**
- **UL508 approved (Except option -J), and complies with SEMI F47**
- **Various connection interface options (vertical terminal [-T], AMP connector [-J])**

Block diagram



External view



※ Tolerance : ±1 [±0.04]
※ Weight : 400g max
※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
※ Chassis material : Electric galvanizing steel board
※ Case material : Electric galvanizing steel board
※ Dimensions in mm, [ ]=inches
※ Mounting torque : 0.6N・m max
※ Screw tightening torque : 1.0N・m max

COSEL AC-DC Power Supplies Enclosed Type

PLA100F

Ordering information

PL	A	100	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 ＊7
C : with Coating
R : Remote on/off (Required external power source)
J : Connector interface
T : Vertical terminal block
-N□ : with DIN rail

See 5.1 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		PLA100F-12	PLA100F-15	PLA100F-24	PLA100F-36	PLA100F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) ＊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	0.95typ (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 115V / 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 instruction manual 3.2)				
		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 instruction manual 3.2)				
		ACIN 115V-264V	100.8	100.5	103.2	100.8	100.8
	LINE REGULATION[mV] ＊4		48max	60max	96max	144max	192max
	LOAD REGULATION [mV] ＊4	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 ＊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 ＊5		-20 to +70℃ (Output derating is required), 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		UL60950-1, C-UL (CSA60950-1), EN62368-1, UL508 (Except option -J) 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

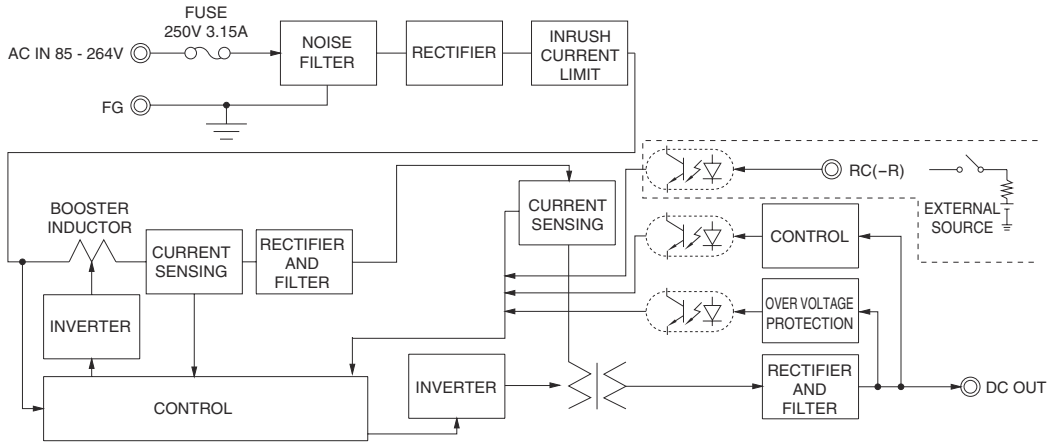
OTHERS	CASE SIZE/WEIGHT	41×97×109mm [1.61×3.82×4.29 inches] (Excluding terminal block and screw) (W×H×D) / 500g max
	COOLING METHOD	Convection
WARRANTY	WARRANTY ✻6	5 years (subject to the operating conditions)

✻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 As for DC input, consult us for advice.
✻4 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.
✻5 Output power derating is required. See 3.2 in Instruction Manual.
✻6 See 3.3 in Instruction Manual for more details.
✻7 Consult us about safety agency approvals for the models with optional functions.
✻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

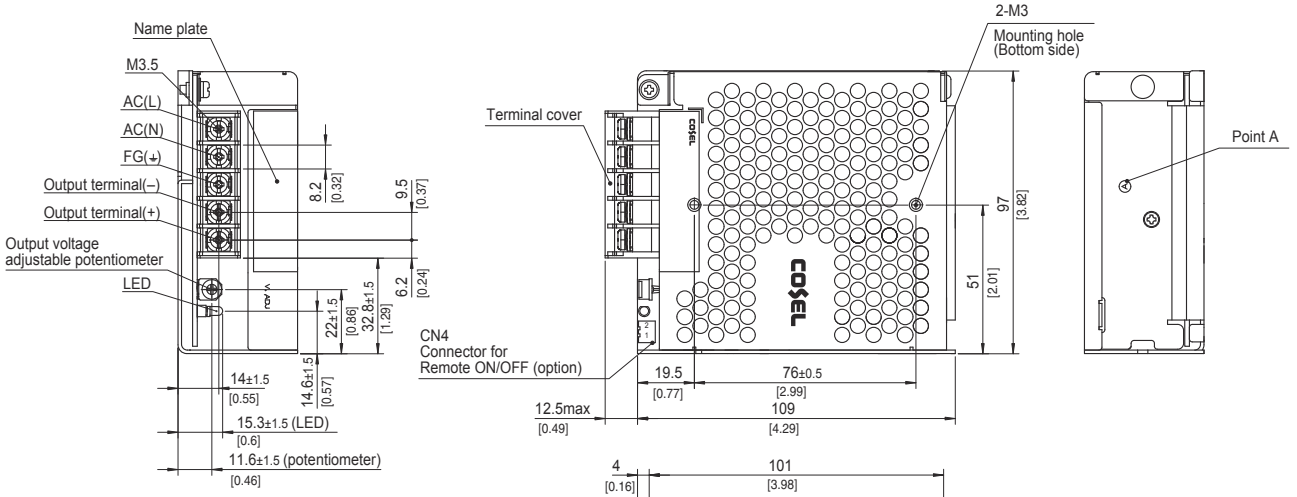
- **Compact design (Depth: 109mm 4.29inches)**
- **High efficiency (88%typ PLA100F-24, AC230Vin, 100% load)**
- **Low power consumption (1.5W typ AC240Vin, no load at standard model)**
- **UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)**
- **Various connection interface options (vertical terminal [-T], AMP connector [-J])**

Block diagram



External view

The external size of –R option, –J option, –N1 option and –T option models is different from the standard model. See “5. Options and Others” in Instruction Manual for more details.



※ Tolerance : ±1 [±0.04]
※ Weight : 500g max
※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
※ Chassis material : Aluminum
※ Cover material : Electric galvanizing steel board
※ 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

PLA150F

Ordering information

PL	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 ＊7
C : with Coating
R : Remote on/off (Required external power source)
J : Connector interface
T : Vertical terminal block
-N□ : with DIN rail

See 5.1 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		PLA150F-12	PLA150F-15	PLA150F-24	PLA150F-36	PLA150F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) ＊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	0.95typ (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 115V / 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 instruction manual 3.2)				
		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 instruction manual 3.2)				
		ACIN 115V-264V	150.0	150.0	153.6	151.2	153.6
	LINE REGULATION[mV] ＊4		48max	60max	96max	144max	192max
	LOAD REGULATION [mV] ＊4	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 ＊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 ＊5		-20 to +70℃ (Output derating is required), 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		UL60950-1, C-UL (CSA60950-1), EN62368-1, UL508 (Except option -J) 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

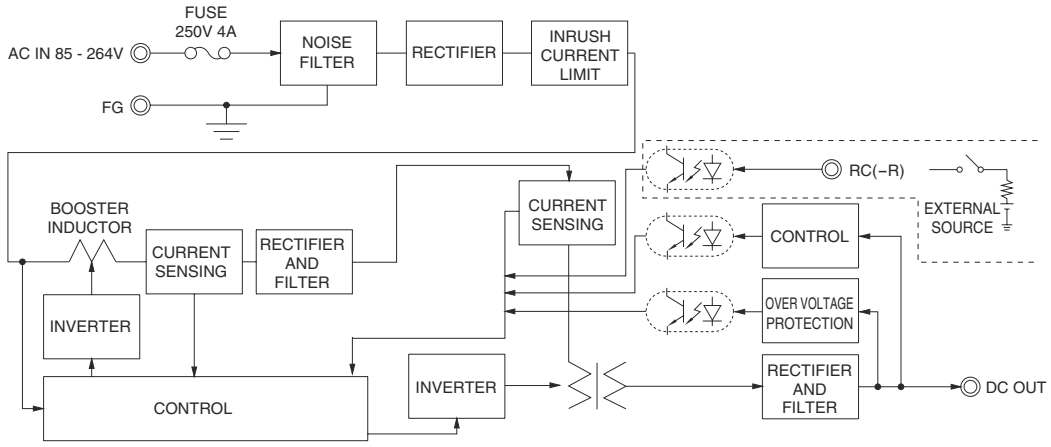
OTHERS	CASE SIZE/WEIGHT	41×97×129mm [1.61×3.82×5.08 inches] (Excluding terminal block and screw) (W×H×D) / 600g max
	COOLING METHOD	Convection
WARRANTY	WARRANTY ✻6	5 years (subject to the operating conditions)

✻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 As for DC input, consult us for advice.
✻4 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.
✻5 Output power derating is required. See 3.2 in Instruction Manual.
✻6 See 3.3 in Instruction Manual for more details.
✻7 Consult us about safety agency approvals for the models with optional functions.
✻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

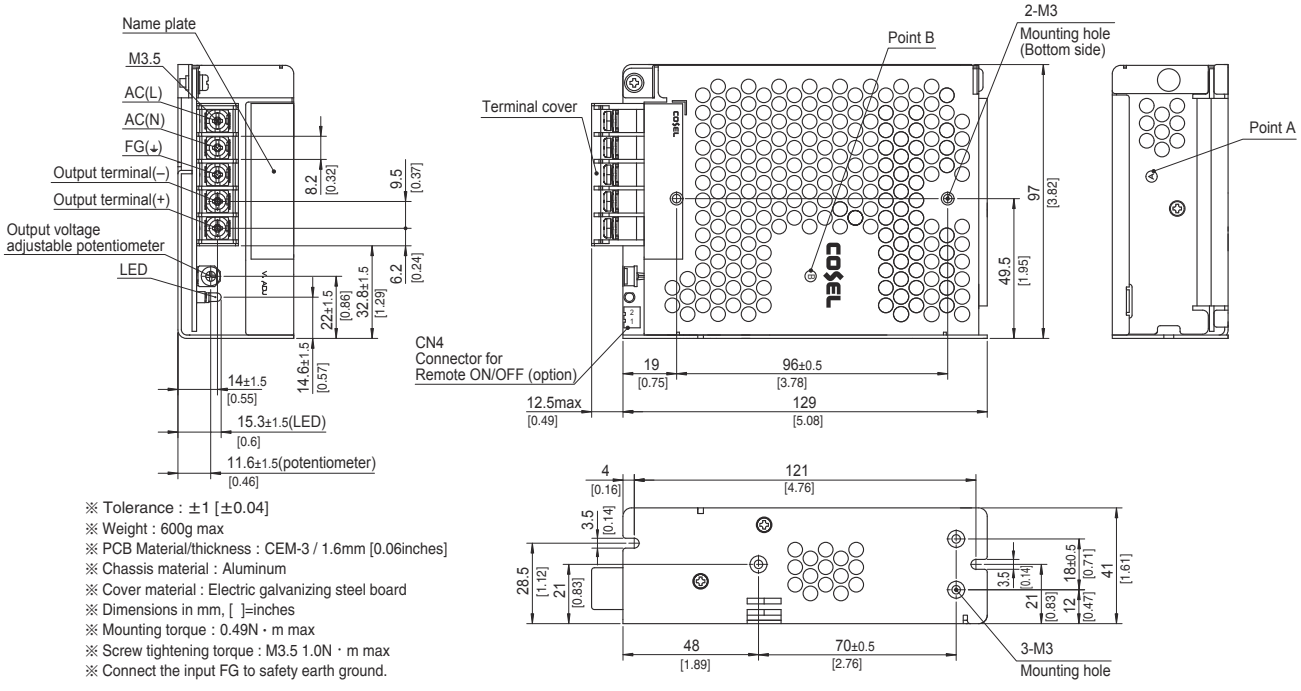
- **Compact design (Depth: 129mm 5.08inches)**
- **High efficiency (90%typ PLA150F-24, AC230Vin, 100% load)**
- **Low power consumption (1.5W typ AC240Vin, no load at standard model)**
- **UL508 approved (Except option -J), and complies with SEMI F47 (see instruction manual 1.1)**
- **Various connection interface options (vertical terminal [-T], AMP connector [-J])**

Block diagram



External view

The external size of –R option, –J option, –N1 option and –T option models is different from the standard model. See “5. Options and Others” in Instruction Manual for more details.



※ Tolerance : ±1 [±0.04]
※ Weight : 600g max
※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
※ Chassis material : Aluminum
※ Cover material : Electric galvanizing steel board
※ 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

PLA300F

Ordering information

PL	A	300	F	-□	-□
①	②	③	④	⑤	⑥

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 ＊7
C : with Coating
G : Low leakage current
V : External potentiometer for output voltage adjustment
U : Low input voltage stop (Complies with SEMI F-47)
R : Remote on/off (Required external power source)
F4: Low speed fan
T2: Horizontal terminal block (non-screw-hold type)

See 5.1 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		PLA300F-5	PLA300F-12	PLA300F-15	PLA300F-24	PLA300F-36	PLA300F-48
INPUT	VOLTAGE[V]		AC85 - 264 1φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) ＊3					
	CURRENT[A]	ACIN 100V	3.1typ (Io=90%)	3.4typ (Io=90%)				
		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=90%)	78typ (Io=90%)	79typ (Io=90%)	81typ (Io=90%)	81typ (Io=90%)	82typ (Io=90%)
		ACIN 115V	74typ (Io=100%)	78typ (Io=100%)	80typ (Io=100%)	82typ (Io=100%)	82typ (Io=100%)	83typ (Io=100%)
		ACIN 230V	77typ (Io=100%)	81typ (Io=100%)	83typ (Io=100%)	86typ (Io=100%)	86typ (Io=100%)	86typ (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	20typ (Io=90%) 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 115V / 240V, 60Hz, Io=100%, According to IEC62368-1 and DEN-AN)					
OUTPUT	VOLTAGE[V]		5	12	15	24	36	48
	CURRENT[A]	ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to instruction manual 3.2)					
		ACIN 115V-264V	50	25	20	12.5	8.4	6.3
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to instruction manual 3.2)					
		ACIN 115V-264V	250	300	300	300	302.4	302.4
	LINE REGULATION[mV] ＊4		20max	48max	60max	96max	144max	192max
	LOAD REGULATION[mV] ＊4		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 115V, Io=100%)					
	HOLD-UP TIME[ms]		20typ (ACIN 115V, 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 ＊10		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 ＊10		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)					
	OUTPUT-RC ＊10		AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At room temperature)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE ＊5		-20 to +70℃ (Output derating is required), 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		UL60950-1, C-UL (CSA60950-1), 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

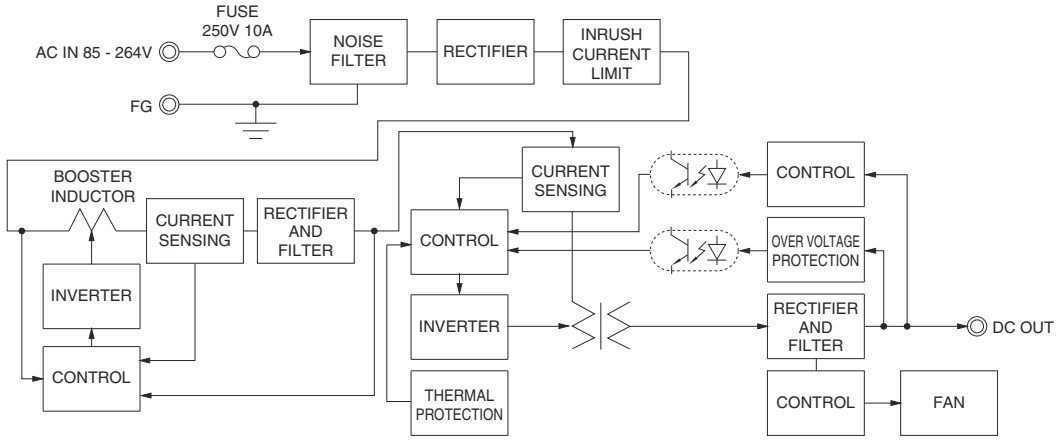
OTHERS	CASE SIZE/WEIGHT		102×41×190mm [4.02×1.61×7.48 inches] (Excluding terminal block and screw) (W×H×D) / 1.0kg max
	COOLING METHOD	✻8	Forced cooling (internal fan)
WARRANTY	WARRANTY	✻6	5 years (subject to the operating conditions)

✻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 Output power derating is required. As for DC input, consult us for advice.
✻4 Consult us about dynamic load and input response.
✻5 See 3.2 in Instruction Manual.
✻6 See 3.3 in Instruction Manual for more details.
✻7 Consult us about safety agency approvals for the models with optional functions.
✻8 The fan speed slows down at no load.
✻9 Consult us about other classes.
✻10 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

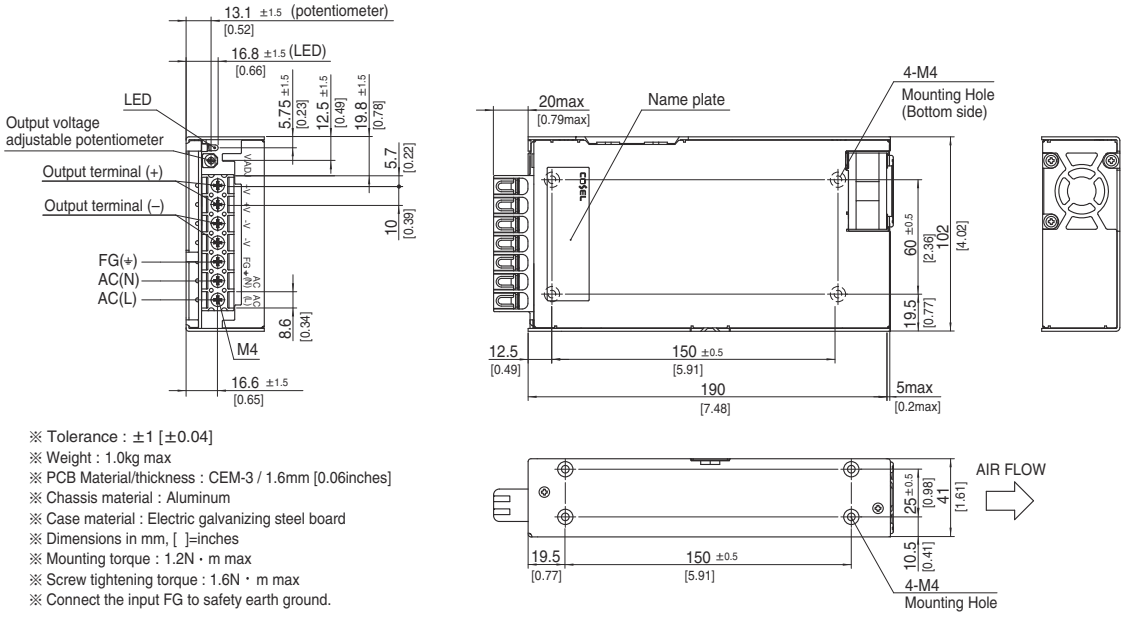
- **Cost-effective**
- **Longer life (see Instruction Manual)**
- **Low profile (meets 1U height = 41 mm or 1.61 inches)**
- **Wide operating temperature range (-20℃ to +70℃ see instruction manual)**
- **Screw hold type terminal block**
- **Slow fan speed at no load**
- **Many optional functions**
- **Complies with SEMI F-47 (-U option, see Instruction Manual for details)**

Block diagram



External view

The external size of –V option, –R option, and –T2 option models is different from the standard model. See “5. Options and Others” in Instruction Manual for more details.



※ Tolerance : ±1 [±0.04]
※ Weight : 1.0kg max
※ PCB Material/thickness : CEM-3 / 1.6mm [0.06inches]
※ Chassis material : Aluminum
※ Case material : Electric galvanizing steel board
※ 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

PLA600F

Ordering information

PL	A	600	F	-□	-□
①	②	③	④	⑤	⑥

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
⑥Optional ＊7
C : with Coating
G : Low leakage current
V : External potentiometer for output voltage adjustment
U : Low input voltage stop (Complies with SEMI F-47)
W: Parallel operation, LV alarm Remote sensing
R : Remote on/off (Required external power source)
F4: Low speed fan
T2: Horizontal terminal block (non-screw-hold type)

See 5.1 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.
＊Please consider “PJA600F-5” about 5V output.

SPECIFICATIONS

	MODEL		PLA600F-12	PLA600F-15	PLA600F-24	PLA600F-36	PLA600F-48
INPUT	VOLTAGE[V]		AC85 - 264 1 φ (Output derating is required at AC85V - 115V. See 1.1 and 3.2 in Instruction Manual) ＊4				
	CURRENT[A]	ACIN 100V	6.7typ (Io=90%)				
		ACIN 115V	6.5typ (Io=100%)				
		ACIN 230V	3.2typ (Io=100%)				
	FREQUENCY[Hz]		50 / 60 (47 - 63)				
	EFFICIENCY[%]	ACIN 100V	81typ (Io=90%)	81typ (Io=90%)	84typ (Io=90%)	85typ (Io=90%)	85typ (Io=90%)
		ACIN 115V	81typ (Io=100%)	81typ (Io=100%)	84typ (Io=100%)	85typ (Io=100%)	85typ (Io=100%)
		ACIN 230V	84typ (Io=100%)	84typ (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	20/40typ (Io=90%) (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 115V / 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 instruction manual 3.2)				
		ACIN 115V-264V	50	40	25	16.7	12.5
	WATTAGE[W]	ACIN 85-115V	Output derating is required at ACIN 115V or less (refer to instruction manual 3.2)				
		ACIN 115V-264V	600	600	600	601.2	600
	LINE REGULATION[mV] ＊8		48max	60max	96max	144max	192max
	LOAD REGULATION[mV] ＊8		100max	120max	150max	150max	300max
	RIPPLE[mVp-p] ＊1	0 to +50℃	120max	120max	120max	150max	150max
		-20 to 0℃	160max	160max	160max	160max	400max
	RIPPLE NOISE[mVp-p] ＊1	0 to +50℃	150max	150max	150max	200max	200max
		-20 to 0℃	180max	180max	180max	240max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	120max	150max	240max	360max	480max
		-20 to +50℃	180max	180max	290max	440max	600max
	DRIFT[mV] ＊2		48max	60max	96max	144max	192max
	START-UP TIME[ms]		300typ (ACIN 115V, Io=100%)				
	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	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 ＊5		-20 to +70℃ (Output derating is required), 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		UL60950-1, C-UL (CSA60950-1), EN62368-1 Complies with DEN-AN				
	CONDUCTED NOISE		Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B				
	HARMONIC ATTENUATOR ＊10		Complies with IEC61000-3-2 class A				

SPECIFICATIONS

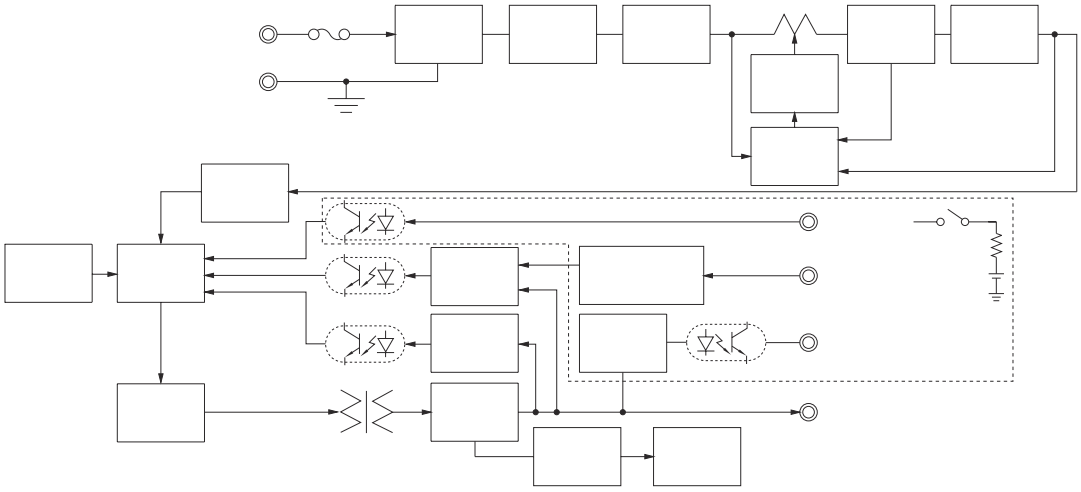
OTHERS	CASE SIZE/WEIGHT		120×61×215mm [4.72×2.40×8.46 inches] (Excluding terminal block and screw) (W×H×D) / 2.0kg max
	COOLING METHOD	✻9	Forced cooling (internal fan)
WARRANTY	WARRANTY	✻6	5 years (subject to the operating conditions)

✻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 The RC terminal is added to option –R models. The RC terminal is isolated from input, output, and FG.
✻4 As for DC input, consult us for advice.
✻5 Output power derating is required. See 3.2 in Instruction Manual.
✻6 See 3.3 in Instruction Manual for more details.
✻7 Consult us about safety agency approvals for the models with optional functions.
✻8 Consult us about dynamic load and input response.
✻9 The fan speed slows down at no load.
✻10 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 PLA600F models with the –W option only.
✻ Sound noise may be heard from the power supply when used for pulse load.

Features

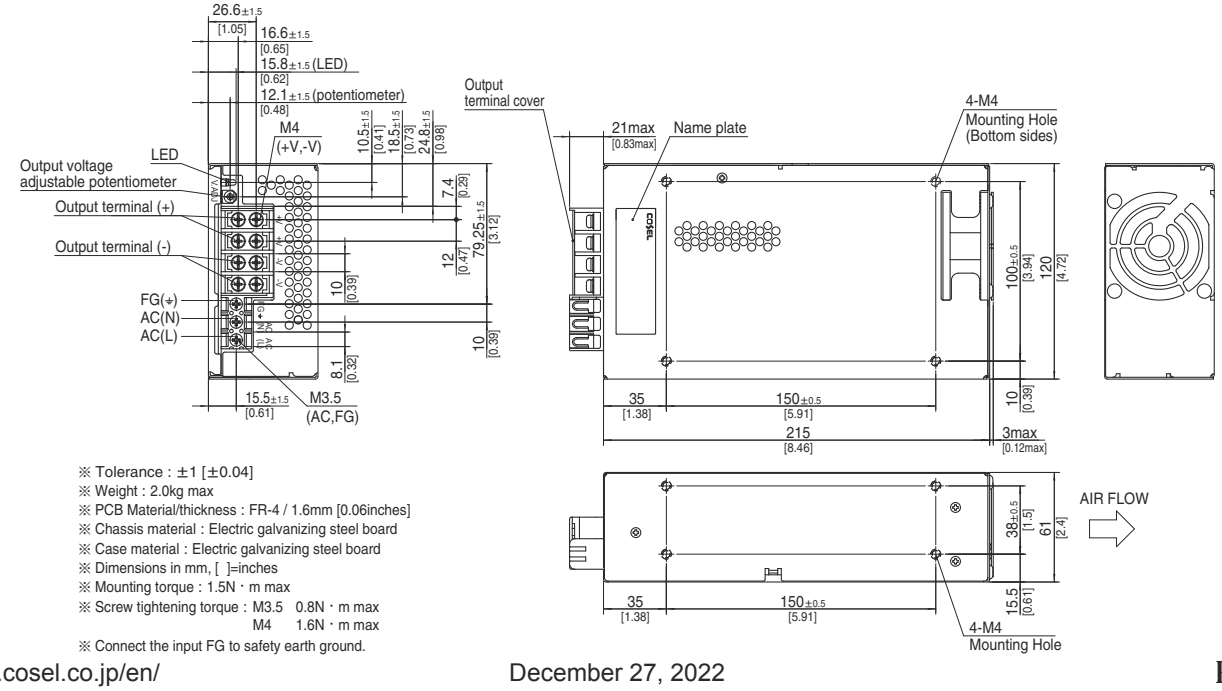
- Cost-effective
- Longer life (see Instruction Manual)
- Low profile (meets 2U height = 61 mm or 2.40 inches)
- Wide operating temperature range (-20℃ to +70℃ see instruction manual)
- Screw hold type terminal block
- Slow fan speed at no load
- Many optional functions
- Complies with SEMI F-47 (-U option, see Instruction Manual for details)

Block diagram



External view

The external size of –V option, –W option, –R option, and –T2 option is different from the standard model. See “5. 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 : Electric galvanizing steel board
※ Case material : Electric galvanizing steel board
※ 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.