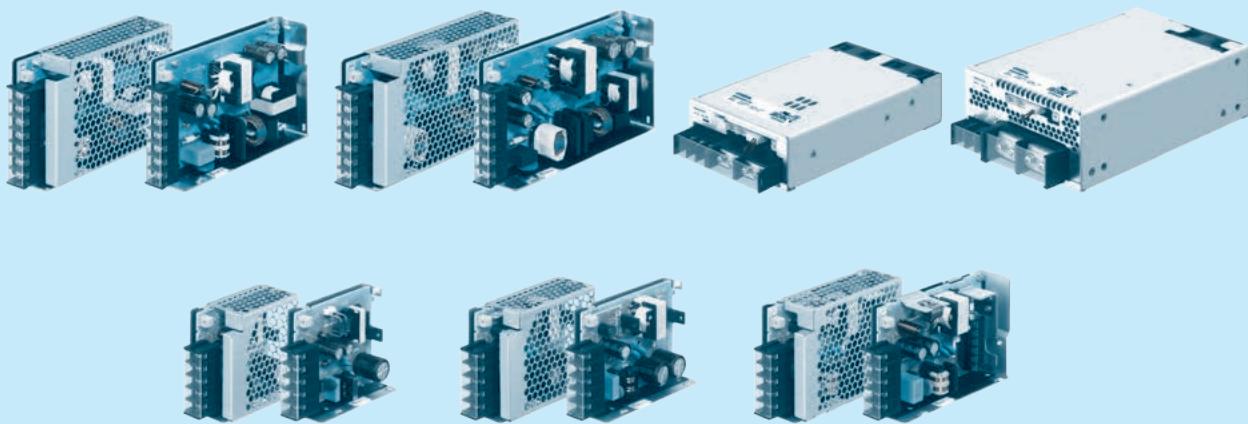




PDA-series



■ Feature

- High efficiency
- Low noise
- Complies with SEMI F47
- Harmonic attenuator (Complies with IEC61000-3-2)
- Universal input (85-264VAC)
- Built-in inrush current, overcurrent and overvoltage protection circuits
- PDA300F/600F
- Parallel Operation / N+1 Parallel Redundancy Operation possible
- With various alarms
- With AUX output 12V
- Output voltage can be varied to near 0V

■ Safety agency approvals

- UL62368-1, C-UL (equivalent to CAN/CSA-C22.2 No.62368-1), EN62368-1
- Complies with DEN-AN

■ 5-year warranty (refer to Instruction Manual)

■ CE marking

- Low Voltage Directive
- RoHS Directive

■ UKCA marking

- Electrical Equipment Safety Regulations
- RoHS Regulations

■ EMI

- Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part 15-B, FCC Part 18-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

PDA15F

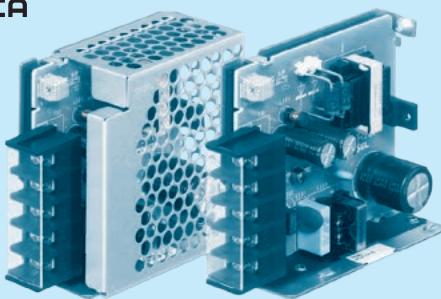
Ordering information

PD A 15 F -□ -□

① ② ③ ④ ⑤ ⑥ ⑦ ⑧



RoHS


 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.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *1
C: with Coating
N: with cover

 For option details, refer to
Instruction Manual 8.1.

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

MODEL	PDA15F-5	PDA15F-12	PDA15F-24
MAX OUTPUT WATTAGE[W]	*2 15	15.6	16.8
DC OUTPUT	*2 5V 3A	12V 1.3A	24V 0.7A

SPECIFICATIONS

	MODEL	PDA15F-5	PDA15F-12	PDA15F-24
INPUT	VOLTAGE[VAC]	*2 85 - 264 1φ (Refer to "Derating" and Instruction Manual 1.1)		
	CURRENT[A]	ACIN 100V 0.35typ ACIN 230V 0.19typ		
	FREQUENCY[Hz]	50 / 60 (45 - 440)		
	EFFICIENCY[%]	ACIN 100V 75.0typ ACIN 230V 78.5typ	78.5typ 81.5typ	81.0typ 83.5typ
	INRUSH CURRENT[A]	ACIN 100V 15typ (Io=100%) at cold start ACIN 230V 35typ (Io=100%) at cold start		
	LEAKAGE CURRENT[mA]	0.15 / 0.30max (ACIN 100V / 240V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)		
	VOLTAGE[V]	5	12	24
	CURRENT[A]	*2 3.0	1.3	0.7
	LINE REGULATION[mV]	*3 20max	48max	96max
	LOAD REGULATION[mV]	*3 40max	100max	150max
OUTPUT	RIPPLE[mVp-p]	0 to +55°C 80max -20 to 0°C 140max Io=0 to 15% 300max	120max 160max 300max	120max 160max 300max
		0 to +55°C 120max -20 to 0°C 160max Io=0 to 15% 360max	150max 180max 360max	150max 180max 360max
		0 to +55°C 50max -20 to +55°C 60max	120max 150max	240max 290max
	DRIFT[mV]	*5 20max	48max	96max
	START-UP TIME[ms]	80typ (ACIN 100V, Io=100%)		
	HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%) / 150typ (ACIN 230V, Io=100%)		
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	4.50 to 5.50	10.0 to 13.2	19.2 to 27.0
	OUTPUT VOLTAGE SETTING[V]	5.00 to 5.15	12.00 to 12.48	24.00 to 24.96
	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically		
	OVERVOLTAGE PROTECTION	5.75 to 7.00	15.0 to 18.0	30.0 to 37.0
PROTECTION CIRCUIT AND OTHERS	REMOTE SENSING	Not provided		
	INPUT-OUTPUT	3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)		
	INPUT-FG	2,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)		
ENVIRONMENT	OUTPUT-FG	500VAC 1minute, Cutoff current = 25mA, 500VDC 100MΩ min (At Room Temperature)		
	OPERATING TEMP., HUMID. AND ALTITUDE	*2 -20 to +70°C, 20 - 90%RH (Non condensing), 5,000m (16,500feet) max		
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max		
	VIBRATION	10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis		
SAFETY AND NOISE REGULATIONS	IMPACT	196.1m/s² (20G), 11ms, once each X, Y and Z axis		
	AGENCY APPROVALS	UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN		
	CONDUCTED NOISE	Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B		
OTHERS	HARMONIC ATTENUATOR	*6 Complies with IEC61000-3-2 (Class A) (No built-in power factor correction)		
	CASE SIZE/WEIGHT	31 X 78 X 85mm [1.22 X 3.07 X 3.35 inches] (without terminal block) (W X H X D) / 180g max (with cover : 210g max)		
	COOLING METHOD	*2 Convection/Forced air (Requires external fan) (Refer to "Derating")		

*1 The listed options may affect the published standard specifications. Please contact us for detailed product specifications.

*2 Derating is required. Please contact us for DC input.

*3 At low load conditions, the burst mode operation will start. To check load regulation, you will need to measure the characteristics at average mode with instruments.

*4 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter

(Equivalent to KEISOKU-GIKEN:RM104).

Ripple and ripple noise spec is change at Io=0 to 15% by burst operation.

*5 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

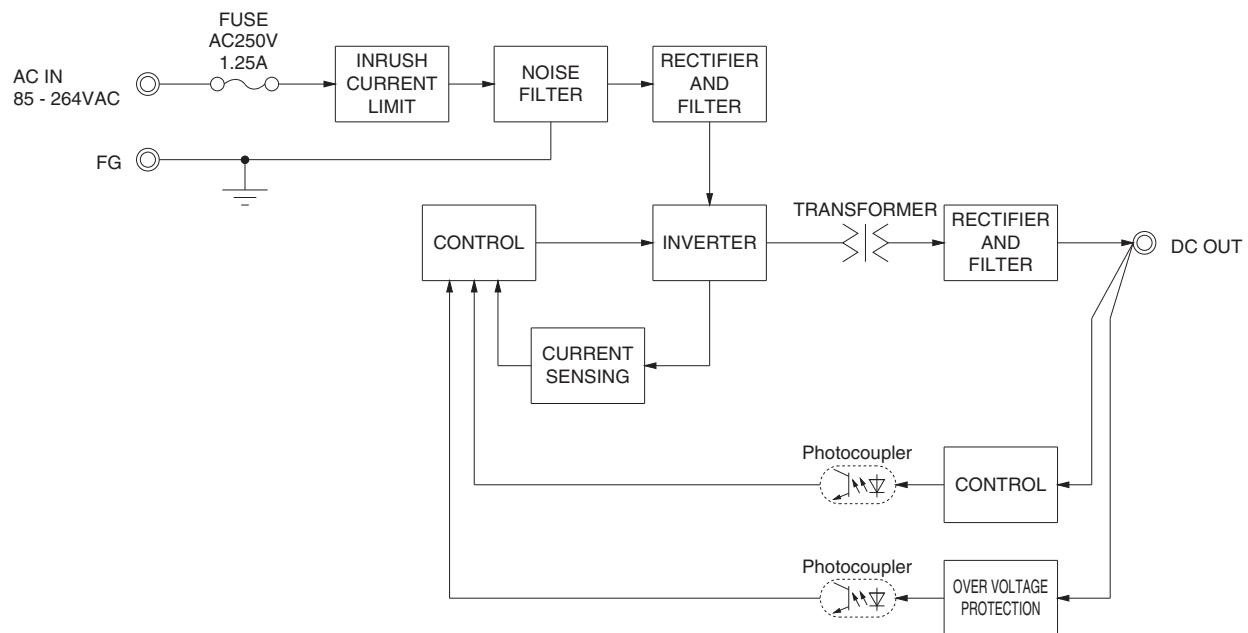
*6 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

*7 To meet the specification, do not operate overload condition.

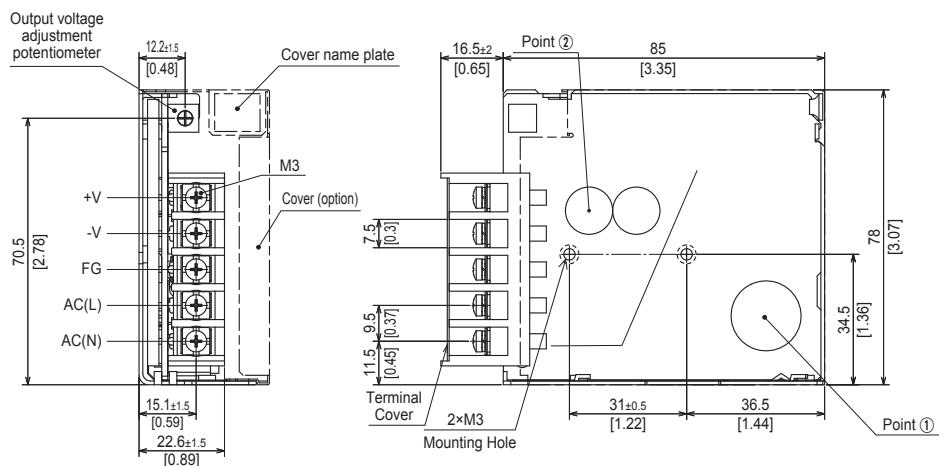
*8 Parallel operation is not possible.

*9 Sound noise may be generated by power supply in case of pulse load.

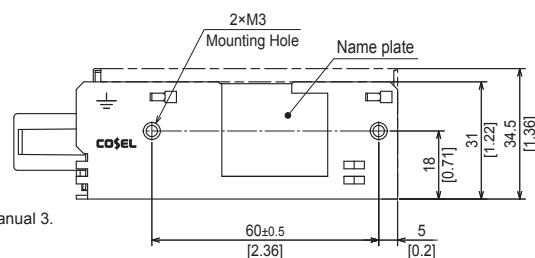
Block diagram



External view



- * Tolerance : ± 1 [± 0.04]
- * Weight : 180g max (with cover : 210g max)
- * PCB Material / thickness : CEM3 / 1.6mm [0.06]
- * Chassis material : Galvanized steel plate
- * Dimensions in mm, []= inches
- * Mounting torque : 0.6N · m max
- * Screw tightening torque : M3 0.8N · m max
- * Please connect safety ground to the unit in 2-M3 holes
- * Point ①, Point ② are thermometry points. Please refer to Instruction Manual 3.



PDA30F

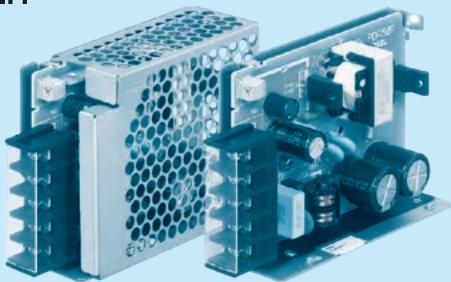
Ordering information

PD A 30 F -□ -□

① ② ③ ④ ⑤ ⑥ ⑦ ⑧



RoHS


 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.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *1
C: with Coating
N: with cover

 For option details, refer to
Instruction Manual 8.1.

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

MODEL	PDA30F-5	PDA30F-12	PDA30F-24
MAX OUTPUT WATTAGE[W]	*2 30	30	31.2
DC OUTPUT	*2 5V 6A	12V 2.5A	24V 1.3A

SPECIFICATIONS

	MODEL	PDA30F-5	PDA30F-12	PDA30F-24
INPUT	VOLTAGE[VAC]	*2 85 - 264 1φ (Refer to "Derating" and Instruction Manual 1.1)		
	CURRENT[A]	ACIN 100V 0.62typ ACIN 230V 0.32typ		
	FREQUENCY[Hz]	50 / 60 (45 - 440)		
	EFFICIENCY[%]	ACIN 100V 83.0typ ACIN 230V 87.0typ	82.0typ 85.5typ	83.5typ 86.5typ
	INRUSH CURRENT[A]	ACIN 100V 15typ (Io=100%) at cold start ACIN 230V 35typ (Io=100%) at cold start		
	LEAKAGE CURRENT[mA]	0.25 / 0.55 max (ACIN 100V / 240V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)		
	VOLTAGE[V]	5	12	24
	CURRENT[A]	*2 6.0	2.5	1.3
	LINE REGULATION[mV]	*3 20max	48max	96max
	LOAD REGULATION[mV]	*3 40max	100max	150max
OUTPUT	RIPPLE[mVp-p]	0 to +55°C 80max -20 to 0°C 140max Io=0 to 15% 300max	120max 160max 300max	120max 160max 300max
		0 to +55°C 120max -20 to 0°C 160max Io=0 to 15% 360max	150max 180max 360max	150max 180max 360max
		0 to +55°C 50max -20 to +55°C 60max	120max 150max	240max 290max
	DRIFT[mV]	*5 20max	48max	96max
	START-UP TIME[ms]	80typ (ACIN 100V, Io=100%)		
	HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%) / 150typ (ACIN 230V, Io=100%)		
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	4.50 to 5.50	10.0 to 13.2	20.4 to 27.0
	OUTPUT VOLTAGE SETTING[V]	5.00 to 5.15	12.00 to 12.48	24.00 to 24.96
	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically		
	OVERVOLTAGE PROTECTION	5.75 to 7.00	15.0 to 18.0	30.0 to 37.0
PROTECTION CIRCUIT AND OTHERS	REMOTE SENSING	Not provided		
	INPUT-OUTPUT	3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)		
	INPUT-FG	2,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)		
ENVIRONMENT	OUTPUT-FG	500VAC 1minute, Cutoff current = 25mA, 500VDC 100MΩ min (At Room Temperature)		
	OPERATING TEMP., HUMID. AND ALTITUDE	*2 -20 to +70°C, 20 - 90%RH (Non condensing), 5,000m (16,500feet) max		
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max		
	VIBRATION	10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis		
SAFETY AND NOISE REGULATIONS	IMPACT	196.1m/s² (20G), 11ms, once each X, Y and Z axis		
	AGENCY APPROVALS	UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN		
	CONDUCTED NOISE	Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B		
OTHERS	HARMONIC ATTENUATOR	*6 Complies with IEC61000-3-2 (Class A) (No built-in power factor correction)		
	CASE SIZE/WEIGHT	31 X 78 X 103mm [1.22 X 3.07 X 4.06 inches] (without terminal block) (W X H X D) / 250g max (with cover : 280g max)		
	COOLING METHOD	*2 Convection/Forced air (Requires external fan) (Refer to "Derating")		

*1 The listed options may affect the published standard specifications. Please contact us for detailed product specifications.

*2 Derating is required. Please contact us for DC input.

*3 At low load conditions, the burst mode operation will start. To check load regulation, you will need to measure the characteristics at average mode with instruments.

*4 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter

(Equivalent to KEISOKU-GIKEN:RM104).

Ripple and ripple noise spec is change at Io=0 to 15% by burst operation.

*5 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

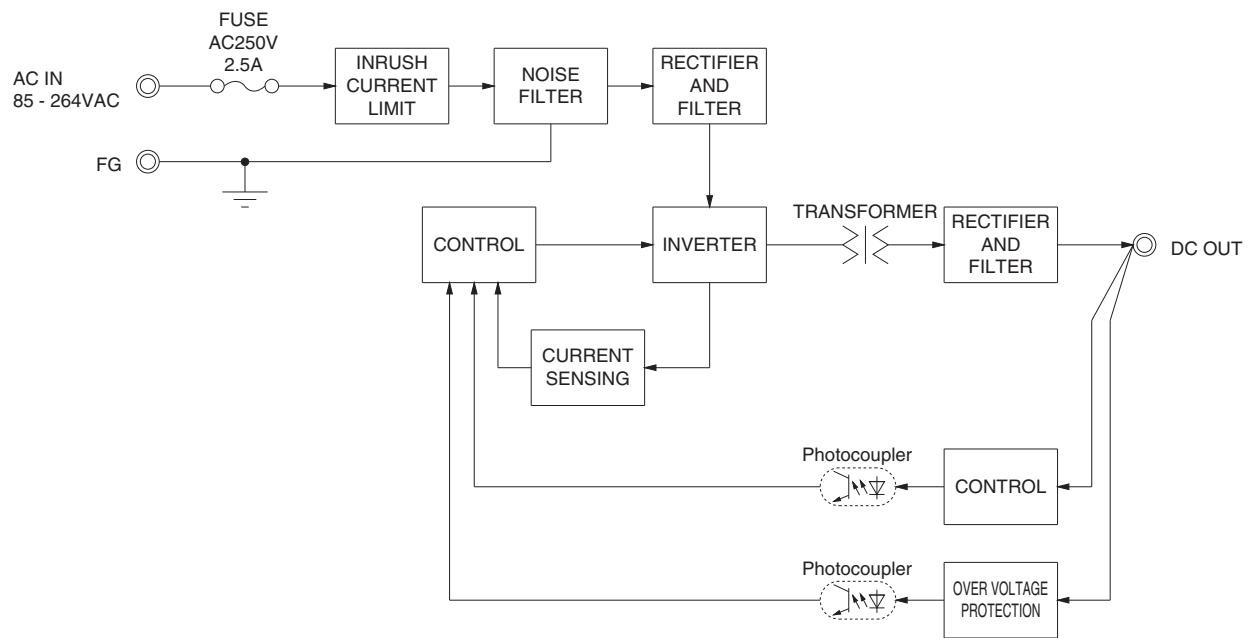
*6 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

* To meet the specification, do not operate overload condition.

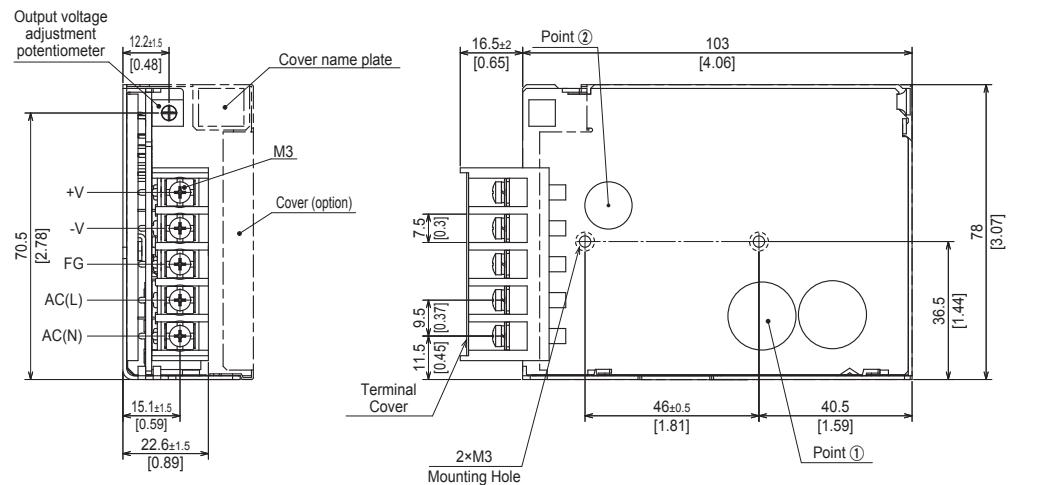
* Parallel operation is not possible.

* Sound noise may be generated by power supply in case of pulse load.

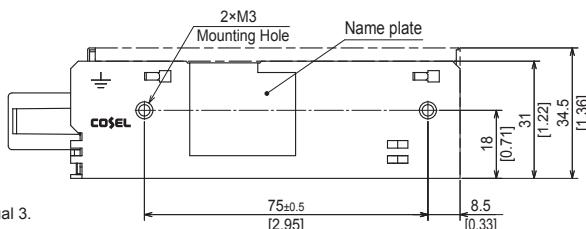
Block diagram



External view



- * Tolerance : ±1 [±0.04]
- * Weight : 250g max (with cover : 280g max)
- * PCB Material / thickness : CEM3 / 1.6mm [0.06]
- * Chassis material : Galvanized steel plate
- * Dimensions in mm, []= inches
- * Mounting torque : 0.6N · m max
- * Screw tightening torque : M3 0.8N · m max
- * Please connect safety ground to the unit in 2-M3 holes
- * Point ①, Point ② are thermometry points. Please refer to Instruction Manual 3.



PDA50F

Ordering information

PD A 50 F -□ -□

① ② ③ ④ ⑤ ⑥ ⑦ ⑧



RoHS


**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.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *1
C: with Coating
N: with cover

 For option details, refer to
Instruction Manual 8.1.

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

MODEL	PDA50F-5	PDA50F-12	PDA50F-24
MAX OUTPUT WATTAGE[W]	*2 50	51.6	52.8
DC OUTPUT	*2 5V 10A	12V 4.3A	24V 2.2A

SPECIFICATIONS

	MODEL	PDA50F-5	PDA50F-12	PDA50F-24
INPUT	VOLTAGE[VAC]	*2 85 - 264 1φ (Refer to Instruction Manual 1.1)		
	CURRENT[A]	ACIN 100V 1.05typ ACIN 230V 0.52typ		
	FREQUENCY[Hz]	50 / 60 (45 - 440)		
	EFFICIENCY[%]	ACIN 100V 81.5typ ACIN 230V 85.0typ	82.5typ 85.0typ	85.0typ 87.5typ
	INRUSH CURRENT[A]	ACIN 100V 15typ (Io=100%) at cold start ACIN 230V 35typ (Io=100%) at cold start		
	LEAKAGE CURRENT[mA]	0.3 / 0.65 max (ACIN 100V / 240V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)		
	VOLTAGE[V]	5	12	24
	CURRENT[A]	*2 10	4.3	2.2
	LINE REGULATION[mV]	*3 20max	48max	96max
	LOAD REGULATION[mV]	*3 40max	100max	150max
OUTPUT	RIPPLE[mVp-p]	0 to +50°C 80max -20 to 0°C 140max Io=0 to 15% 300max	120max 160max 300max	120max 160max 300max
		0 to +50°C 120max -20 to 0°C 160max Io=0 to 15% 360max	150max 180max 360max	150max 180max 360max
		0 to +50°C 50max -20 to +50°C 60max	120max 150max	240max 290max
		DRIFT[mV]	20max	48max
	START-UP TIME[ms]	80typ (ACIN 100V, Io=100%)		
	HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%) / 140typ (ACIN 230V, Io=100%)		
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	4.00 to 5.50	10.0 to 13.2	19.2 to 27.0
	OUTPUT VOLTAGE SETTING[V]	5.00 to 5.15	12.00 to 12.48	24.00 to 24.96
	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically		
	OVERVOLTAGE PROTECTION	5.75 to 7.00	15.0 to 18.0	30.0 to 37.0
PROTECTION CIRCUIT AND OTHERS	REMOTE SENSING	Not provided		
	INPUT-OUTPUT	3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)		
	INPUT-FG	2,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)		
	OUTPUT-FG	500VAC 1minute, Cutoff current = 25mA, 500VDC 100MΩ min (At Room Temperature)		
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	*2 -20 to +70°C, 20 - 90%RH (Non condensing), 5,000m (16,500feet) max		
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max		
	VIBRATION	10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis		
	IMPACT	196.1m/s² (20G), 11ms, once each X, Y and Z axis		
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN		
	CONDUCTED NOISE	Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B		
	HARMONIC ATTENUATOR	*6 Complies with IEC61000-3-2 (Class A) (No built-in power factor correction)		
OTHERS	CASE SIZE/WEIGHT	31 X 82 X 120mm [1.22 X 3.23 X 4.72 inches] (without terminal block) (W X H X D) / 330g max (with cover : 370g max)		
	COOLING METHOD	*2 Convection/Forced air (Requires external fan) (Refer to "Derating")		

*1 The listed options may affect the published standard specifications. Please contact us for detailed product specifications.

*2 Derating is required. Please contact us for DC input.

*3 At low load conditions, the burst mode operation will start. To check load regulation, you will need to measure the characteristics at average mode with instruments.

*4 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter

(Equivalent to KEISOKU-GIKEN:RM104).

Ripple and ripple noise spec is change at Io=0 to 15% by burst operation.

*5 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

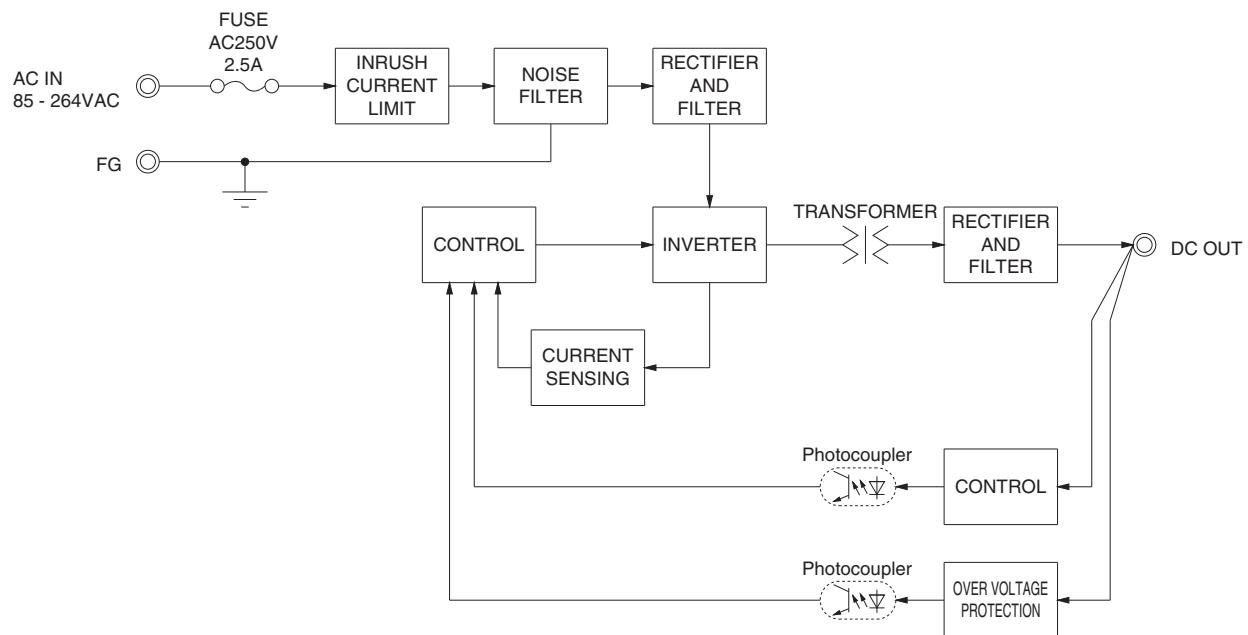
*6 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

*7 To meet the specification, do not operate overload condition.

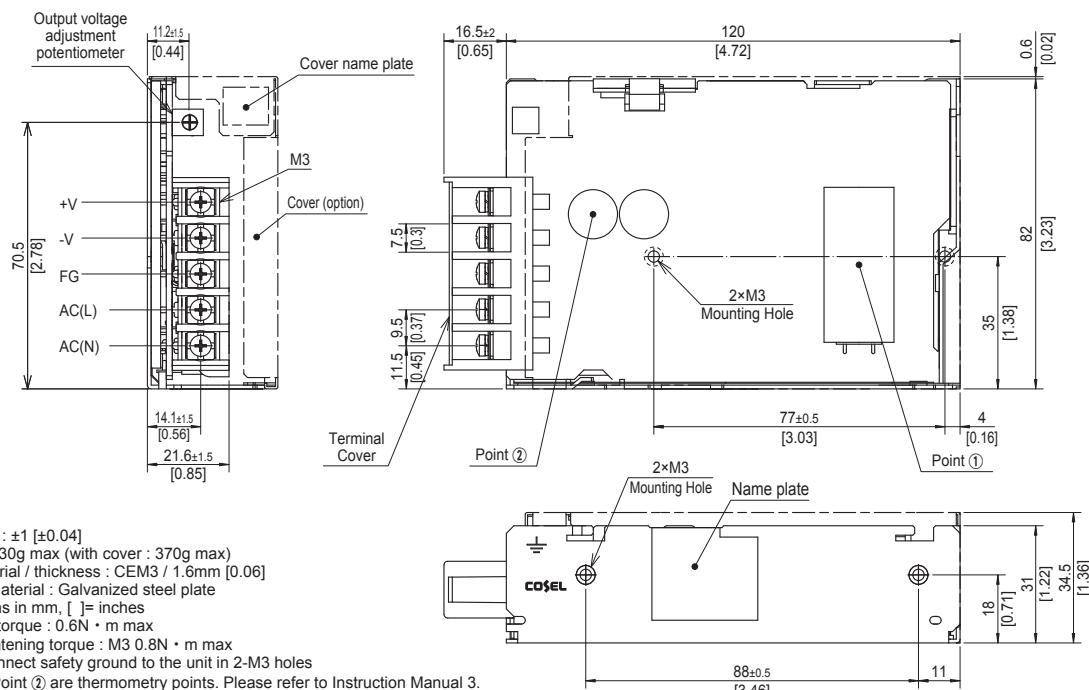
*8 Parallel operation is not possible.

*9 Sound noise may be generated by power supply in case of pulse load.

Block diagram



External view



- * Tolerance : ±1 [±0.04]
- * Weight : 330g max (with cover : 370g max)
- * PCB Material / thickness : CEM3 / 1.6mm [0.06]
- * Chassis material : Galvanized steel plate
- * Dimensions in mm, []= inches
- * Mounting torque : 0.6N · m max
- * Screw tightening torque : M3 0.8N · m max
- * Please connect safety ground to the unit in 2-M3 holes
- * Point ①, Point ② are thermometry points. Please refer to Instruction Manual 3.

PDA100F

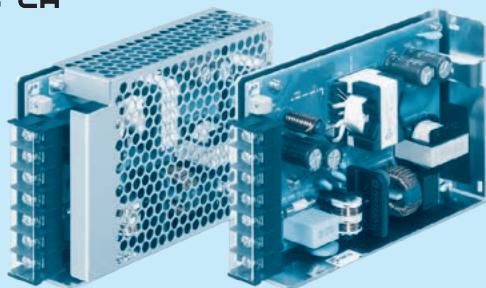
Ordering information

PD A 100 F -□ -□

① ② ③ ④ ⑤ ⑥ ⑦ ⑧



RoHS

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.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *1
C: with Coating
N: with cover

For option details, refer to
Instruction Manual 8.1.

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

MODEL	PDA100F-5	PDA100F-12	PDA100F-15	PDA100F-24
MAX OUTPUT WATTAGE[W]	*2 100	102	105	108
DC OUTPUT	*2 5V 20A	12V 8.5A	15V 7A	24V 4.5A

SPECIFICATIONS

	PDA100F-5	PDA100F-12	PDA100F-15	PDA100F-24
INPUT				
VOLTAGE[VAC]	*2 85 - 264 1φ (Refer to Instruction Manual 1.1)			
CURRENT[A]	ACIN 100V 1.3typ ACIN 230V 0.6typ			
FREQUENCY[Hz]	50 / 60 (45 - 66)			
EFFICIENCY[%]	ACIN 100V 87.0typ ACIN 230V 89.5typ	88.5typ 91.0typ	88.5typ 91.0typ	87.5typ 89.5typ
POWER FACTOR (Io=100%)	ACIN 100V 0.97typ ACIN 230V 0.87typ			
INRUSH CURRENT[A]	ACIN 100V 15typ (Io=100%) at cold start ACIN 230V 35typ (Io=100%) at cold start			
LEAKAGE CURRENT[mA]	0.4 / 0.75 max (ACIN 100V / 240V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)			
VOLTAGE[V]	5	12	15	24
CURRENT[A]	*2 20	8.5	7	4.5
LINE REGULATION[mV]	*3 20max	48max	60max	96max
LOAD REGULATION[mV]	*3 40max	100max	120max	150max
RIPPLE[mVp-p]	0 to +50°C 80max -20 to 0°C 140max Io=0 to 15% 300max	120max 160max 360max	120max 160max 500max	120max 160max 500max
OUTPUT				
RIPPLE NOISE[mVp-p]	0 to +50°C 120max -20 to 0°C 160max Io=0 to 15% 360max	150max 180max 400max	150max 180max 600max	150max 180max 600max
TEMPERATURE REGULATION[mV]	0 to +50°C 50max -20 to +50°C 60max	120max 150max	150max 180max	240max 290max
DRIFT[mV]	*5 20max	48max	60max	96max
START-UP TIME[ms]	100typ (ACIN 100V, Io=100%)			
HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%)			
OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	4.00 to 5.50	10.00 to 13.20	13.20 to 18.00	19.20 to 27.00
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	5.75 to 7.00	15.00 to 18.00	20.00 to 25.00	30.00 to 37.00
REMOTE SENSING	Not provided			
ISOLATION				
INPUT-OUTPUT	3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)			
INPUT-FG	2,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)			
OUTPUT-FG	500VAC 1minute, Cutoff current = 25mA, 500VDC 100MΩ min (At Room Temperature)			
ENVIRONMENT				
OPERATING TEMPERATURE,HUMID	*2 -20 to +70°C, 20 - 90%RH (Non condensing)			
STORAGE TEMPERATURE,HUMID	-20 to +75°C, 20 - 90%RH (Non condensing)			
VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis			
IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis			
SAFETY AND NOISE REGULATIONS				
AGENCY APPROVALS	UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN			
CONDUCTED NOISE	Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B			
HARMONIC ATTENUATOR	*6 Complies with IEC61000-3-2 (Class A)			
OTHERS				
CASE SIZE/WEIGHT	32X93X147mm [1.26x3.66x5.79 inches] (without terminal block) (W×H×D) / 440g max (with cover : 500g max)			
COOLING METHOD	*2 Convection/Forced air (Refer to "Derating")			

*1 The listed options may affect the published standard specifications. Please contact us for detailed product specifications.

(Equivalent to KEISOKU-GIKEN:RM104).

*2 Derating is required. Please contact us for DC input.

Ripple and ripple noise spec is change at Io=0 to 15% by burst operation.

*3 At low load conditions, the burst mode operation will start. To check load regulation, you will need to measure the characteristics at average mode with instruments.

*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

*4 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.

*5 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

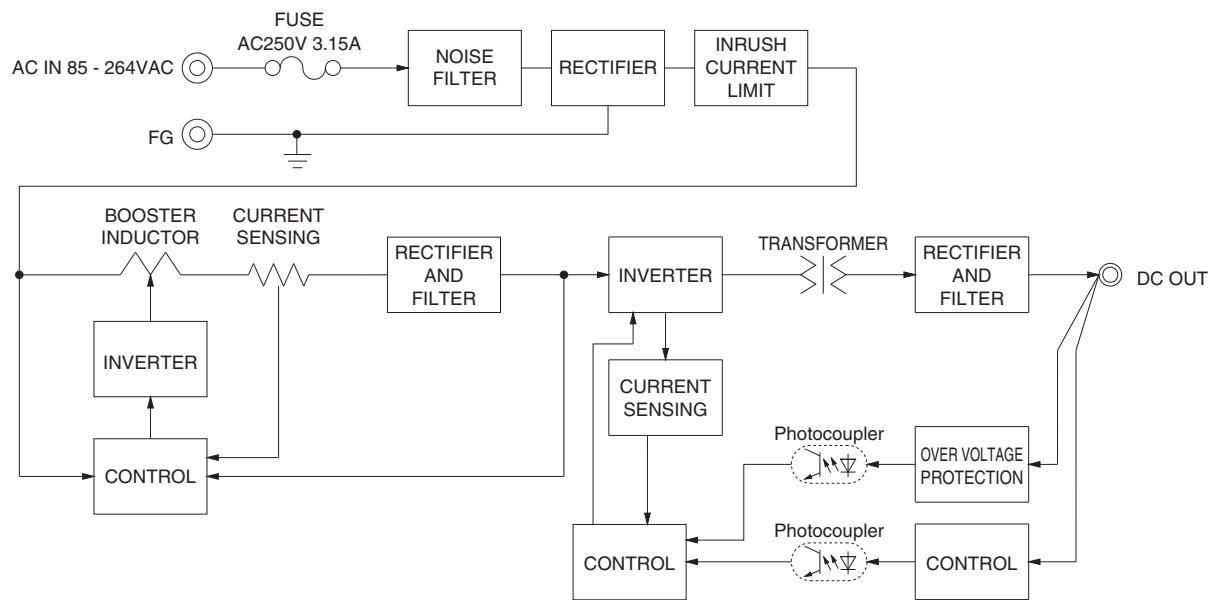
Measured by 20MHz oscilloscope or Ripple-Noise meter

*6 To meet the specification, do not operate overload condition.

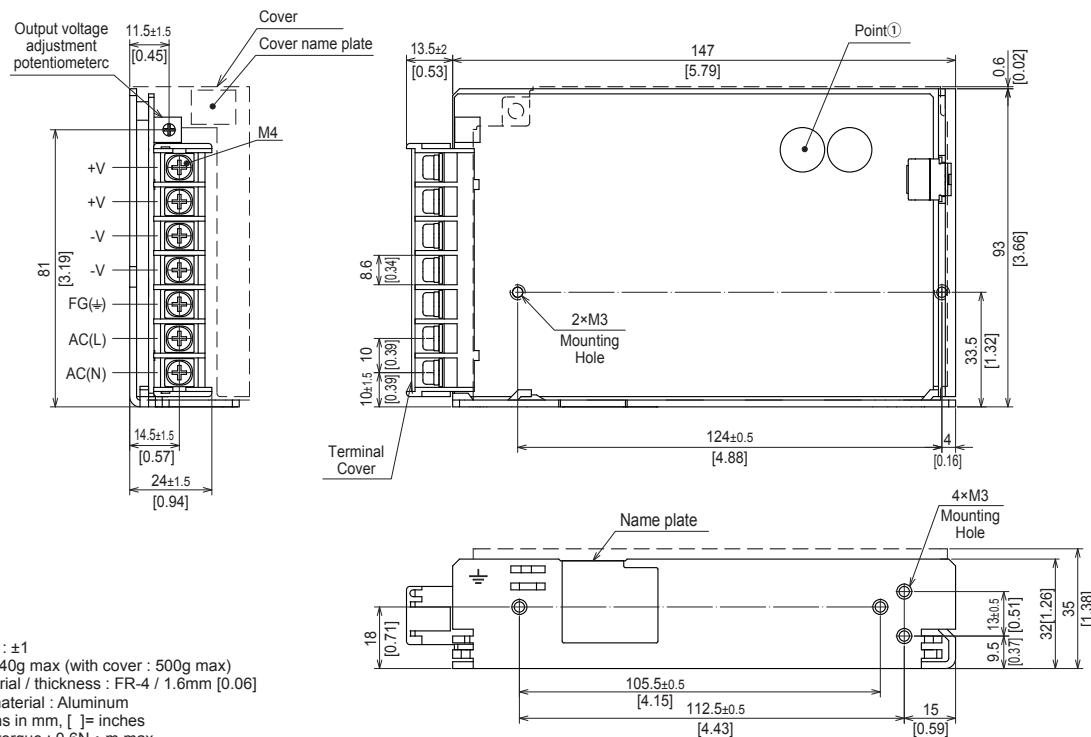
*7 Parallel operation is not possible.

*8 Sound noise may be generated by power supply in case of pulse load.

Block diagram



External view



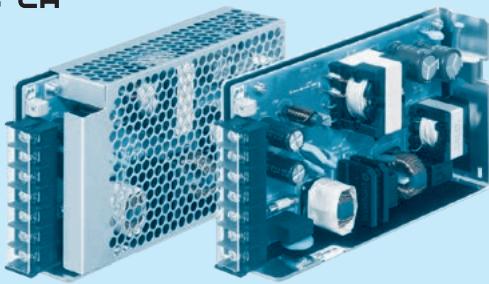
- * Tolerance : ±1
- * Weight : 440g max (with cover : 500g max)
- * PCB Material / thickness : FR-4 / 1.6mm [0.06]
- * Chassis material : Aluminum
- * Dimensions in mm, [] = inches
- * Mounting torque : 0.6N · m max
- * Screw tightening torque : M4 1.6N · m max
- * Please connect safety ground to the FG terminal on the unit.
- * Point ① is the thermometry points. Please refer to Instruction Manual 3.

PDA150F

Ordering information

PD A 150 F -□ -□

① ② ③ ④ ⑤ ⑥ ⑦ 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.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional *1
C: with Coating
N: with cover

For option details, refer to
Instruction Manual 8.1.

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

MODEL	PDA150F-5	PDA150F-12	PDA150F-15	PDA150F-24
MAX OUTPUT WATTAGE[W]	*2 150	156	150	156
DC OUTPUT	*2 5V 30A	12V 13A	15V 10A	24V 6.5A

SPECIFICATIONS

	PDA150F-5	PDA150F-12	PDA150F-15	PDA150F-24
INPUT	VOLTAGE[VAC]	*2 85 - 264 1φ (Refer to Instruction Manual 1.1)		
	CURRENT[A]	ACIN 100V 1.8typ ACIN 230V 0.9typ		
	FREQUENCY[Hz]	50 / 60 (45 - 66)		
	EFFICIENCY[%]	ACIN 100V 85.0typ ACIN 230V 87.5typ	87.0typ 89.0typ	88.5typ 89.5typ
	POWER FACTOR (Io=100%)	ACIN 100V 0.97typ ACIN 230V 0.87typ		
	INRUSH CURRENT[A]	ACIN 100V 15typ (Io=100%) at cold start ACIN 230V 35typ (Io=100%) at cold start		
	LEAKAGE CURRENT[mA]	0.4 / 0.75 max (ACIN 100V / 240V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)		
	VOLTAGE[V]	5	12	15
	CURRENT[A]	30	13	10
	LINE REGULATION[mV]	*3 20max	48max	60max
OUTPUT	LOAD REGULATION[mV]	*3 40max	100max	120max
	RIPPLE[mVp-p]	0 to +50°C 80max -20 to 0°C 140max Io=0 to 15% 300max	120max 160max 360max	120max 160max 500max
	RIPPLE NOISE[mVp-p]	0 to +50°C 120max -20 to 0°C 160max Io=0 to 15% 360max	150max 180max 400max	150max 180max 600max
	TEMPERATURE REGULATION[mV]	0 to +50°C 50max -20 to +50°C 60max	120max 150max	150max 180max
	DRIFT[mV]	*5 20max	48max	60max
	START-UP TIME[ms]	120typ (ACIN 100V, Io=100%)		
	HOLD-UP TIME[ms]	20typ (ACIN 100V, Io=100%)		
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	4.00 to 5.50	10.00 to 13.20	13.20 to 18.00
	OUTPUT VOLTAGE SETTING[V]	5.00 to 5.15	12.00 to 12.48	15.00 to 15.60
				19.20 to 27.00 24.00 to 24.96
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically		
	OVERVOLTAGE PROTECTION	5.75 to 7.00	15.00 to 18.00	20.00 to 25.00
	REMOTE SENSING	Not provided		
ISOLATION	INPUT-OUTPUT	3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)		
	INPUT-FG	2,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)		
	OUTPUT-FG	500VAC 1minute, Cutoff current = 25mA, 500VDC 100MΩ min (At Room Temperature)		
ENVIRONMENT	OPERATING TEMPERATURE,HUMID	*2 -20 to +70°C, 20 - 90%RH (Non condensing)		
	STORAGE TEMPERATURE,HUMID	-20 to +75°C, 20 - 90%RH (Non condensing)		
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis		
	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis		
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS	UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN		
	CONDUCTED NOISE	Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B		
	HARMONIC ATTENUATOR	*6 Complies with IEC61000-3-2 (Class A)		
OTHERS	CASE SIZE/WEIGHT	34X93X168mm [1.34x3.66x6.61 inches] (without terminal block) (W×H×D) / 530g max (with cover : 600g max)		
	COOLING METHOD	*2 Convection/Forced air (Refer to "Derating")		

*1 The listed options may affect the published standard specifications. Please contact us for detailed product specifications.

*2 Derating is required. Please contact us for DC input.

*3 At low load conditions, the burst mode operation will start. To check load regulation, you will need to measure the characteristics at average mode with instruments.

*4 This is the value that measured on measuring board with capacitor of 22 μF at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter

(Equivalent to KEISOKU-GIKEN:RM104).

Ripple and ripple noise spec is change at Io=0 to 15% by burst operation.

*5 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

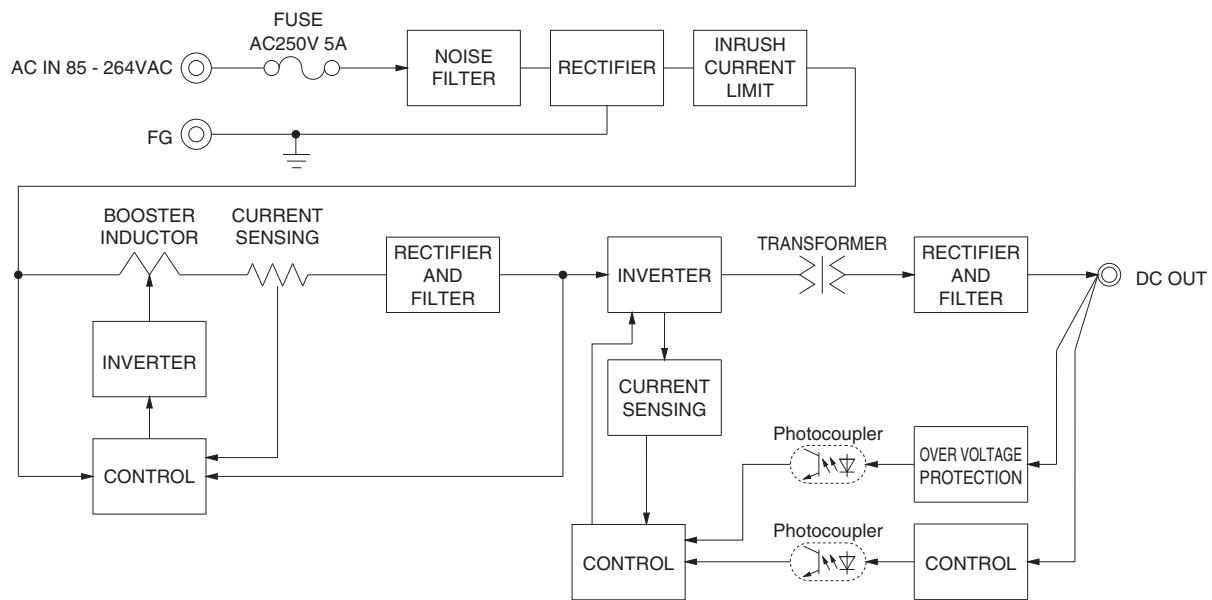
*6 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

*7 To meet the specification, do not operate overload condition.

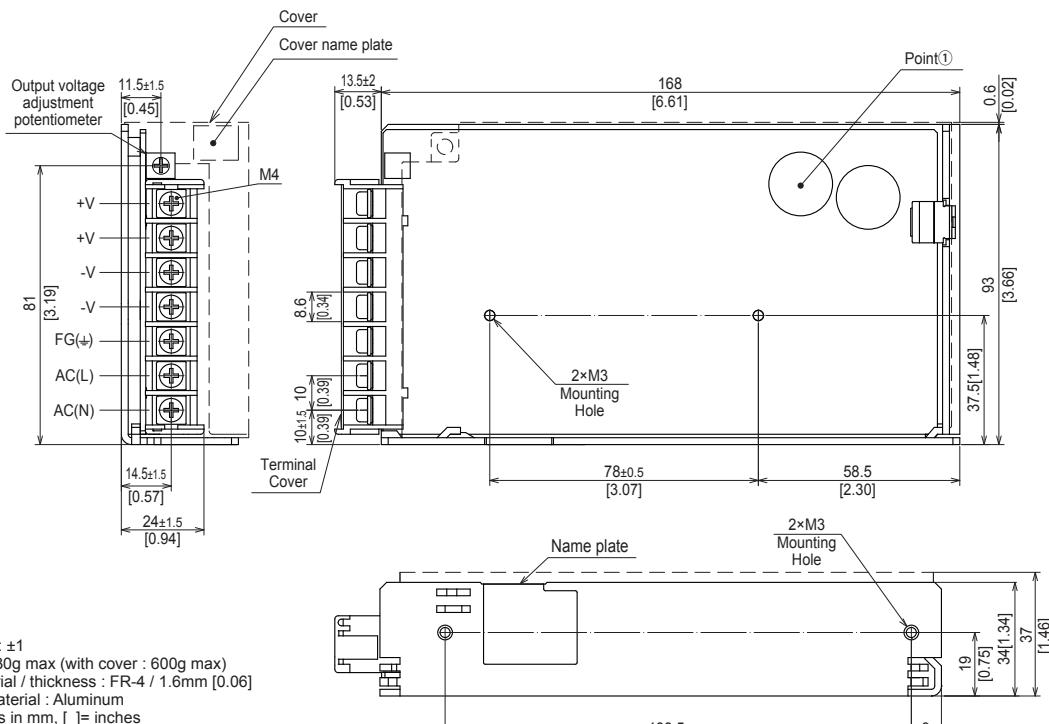
*8 Parallel operation is not possible.

*9 Sound noise may be generated by power supply in case of pulse load.

Block diagram



External view



- * Tolerance : ± 1
- * Weight : 530g max (with cover : 600g max)
- * PCB Material / thickness : FR-4 / 1.6mm [0.06]
- * Chassis material : Aluminum
- * Dimensions in mm, [] = inches
- * Mounting torque : 0.6N · m max
- * Screw tightening torque : M4 1.6N · m max
- * Please connect safety ground to the FG terminal on the unit.
- * Keep drawing current per pin below 20A for TB1.
- * Point ① is the thermometry points. Please refer to Instruction Manual 3.

PDA300F

Ordering information

PD A 300 F -

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RoHS


 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.

MODEL	PDA300F-12	PDA300F-15	PDA300F-24	PDA300F-36	PDA300F-48
MAX OUTPUT WATTAGE[W]	*1 324	330	336	324	336
DC OUTPUT	ACIN 100V *1 ACIN 230V	12V 27A *2 12V 27A	15V 22A 15V 22A	24V 14A 24V 14 (16.5) A	36V 9A 36V 9A
					48V 7A 48V 7A

SPECIFICATIONS

	MODEL	PDA300F-12	PDA300F-15	PDA300F-24	PDA300F-36	PDA300F-48
INPUT	VOLTAGE[VAC]	*1 85 - 264 1φ (Refer to Instruction Manual 1.1)				
	CURRENT[A]	ACIN 100V 4.1typ				
		ACIN 230V 1.9typ				
	FREQUENCY[Hz]	50 / 60 (45-66)				
	EFFICIENCY[%]	ACIN 100V 79.0typ	80.5typ	82.0typ	81.0typ	82.5typ
		ACIN 230V 82.0typ	84.0typ	84.5typ	84.5typ	86.0typ
	POWER FACTOR (Io=100%)	ACIN 100V 0.99typ				
		ACIN 230V 0.95typ				
	INRUSH CURRENT[A]	ACIN 100V 20typ (Io=100%) at cold start				
		ACIN 230V 40typ (Io=100%) at cold start				
OUTPUT	LEAKAGE CURRENT[mA]	0.4 / 0.75 max (ACIN 100V / 240V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)				
	VOLTAGE[V]	12	15	24	36	48
	CURRENT[A]	ACIN 100V 27	22	14	9	7
		ACIN 230V 27	22	14 (16.5)	9	7
	LINE REGULATION[mV]	48max	60max	96max	144max	192max
	LOAD REGULATION[mV]	100max	120max	150max	150max	300max
	RISSLE[mVp-p]	0 to +50°C -20 to 0°C	120max 160max	120max 160max	150max 160max	150max 400max
	RISSLE NOISE[mVp-p]	0 to +50°C -20 to 0°C	150max 180max	150max 180max	200max 240max	200max 500max
	TEMPERATURE	0 to +50°C	120max	150max	240max	360max
	REGULATION[mV]	-20 to +50°C	180max	180max	290max	440max
PROTECTION CIRCUIT AND OTHERS	DRIFT[mV]	*4 48max	60max	96max	144max	192max
	START-UP TIME[ms]	300typ (ACIN 100V, Io=100%)				
	HOLD-UP TIME[ms]	35typ (ACIN 100V, Io=100%)				
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	8.25 to 13.20	10.50 to 16.50	16.50 to 26.40	25.20 to 39.60	38.40 to 56.00
ISOLATION	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
	OVERCURRENT PROTECTION	Works over 105% of rating and recovers automatically				
	OVERVOLTAGE PROTECTION[V]	14.4 to 18.6	18.0 to 23.3	28.8 to 37.2	43.2 to 54.0	57.6 to 80.0
	REMOTE SENSING	Provided				
ENVIRONMENT	REMOTE ON/OFF	Provided				
	INPUT-OUTPUT-RC	3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)				
	INPUT-FG	2,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)				
	OUTPUT-RC-AUX-FG	500VAC 1minute, Cutoff current = 100mA, 500VDC 100MΩ min (At Room Temperature)				
SAFETY AND NOISE REGULATIONS	OUTPUT-RC-AUX	500VAC 1minute, Cutoff current = 100mA, 500VDC 100MΩ min (At Room Temperature)				
	OPERATING TEMP., HUMID. AND ALTITUDE	*1 -20 to +70°C (Refer to "Derating"), 20 - 90%RH (Non condensing)				
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing)				
	VIBRATION	10 - 55Hz, 19.6m/s ² (2G), 3minutes period, 60minutes each along X, Y and Z axis				
OTHERS	IMPACT	196.1m/s ² (20G), 11ms, once each X, Y and Z axis				
	AGENCY APPROVALS (At only AC input)	UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN				
	CONDUCTED NOISE	Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B				
OTHERS	HARMONIC ATTENUATOR	*5 Complies with IEC61000-3-2 (Class A)				
	CASE SIZE/WEIGHT	102×42×170mm [4.02×1.65×6.69 inches] (without terminal block and screw) (W×H×D) / 1.0kg max				
	COOLING METHOD	*1 Forced cooling (internal fan)				

*1 Derating is required. Please contact us for DC input.

*2 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.

*3 This is the value measured on measuring board with capacitor of 22μF within 150mm from output terminal.

Measured by 20MHz Oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN : RM-104).

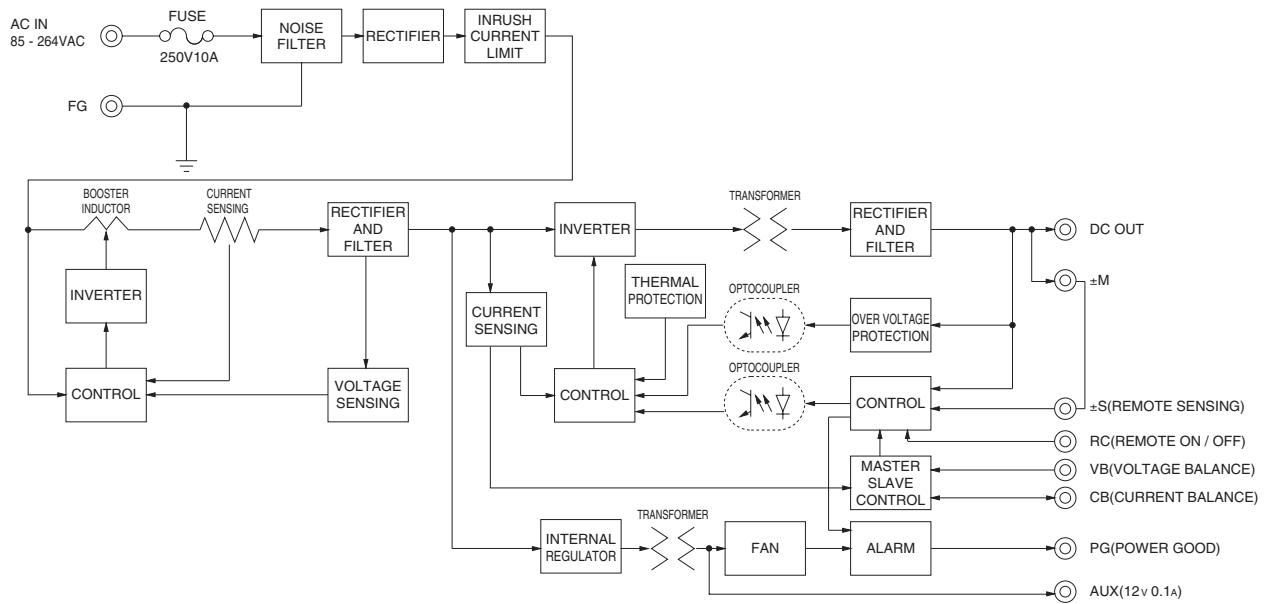
*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

*5 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

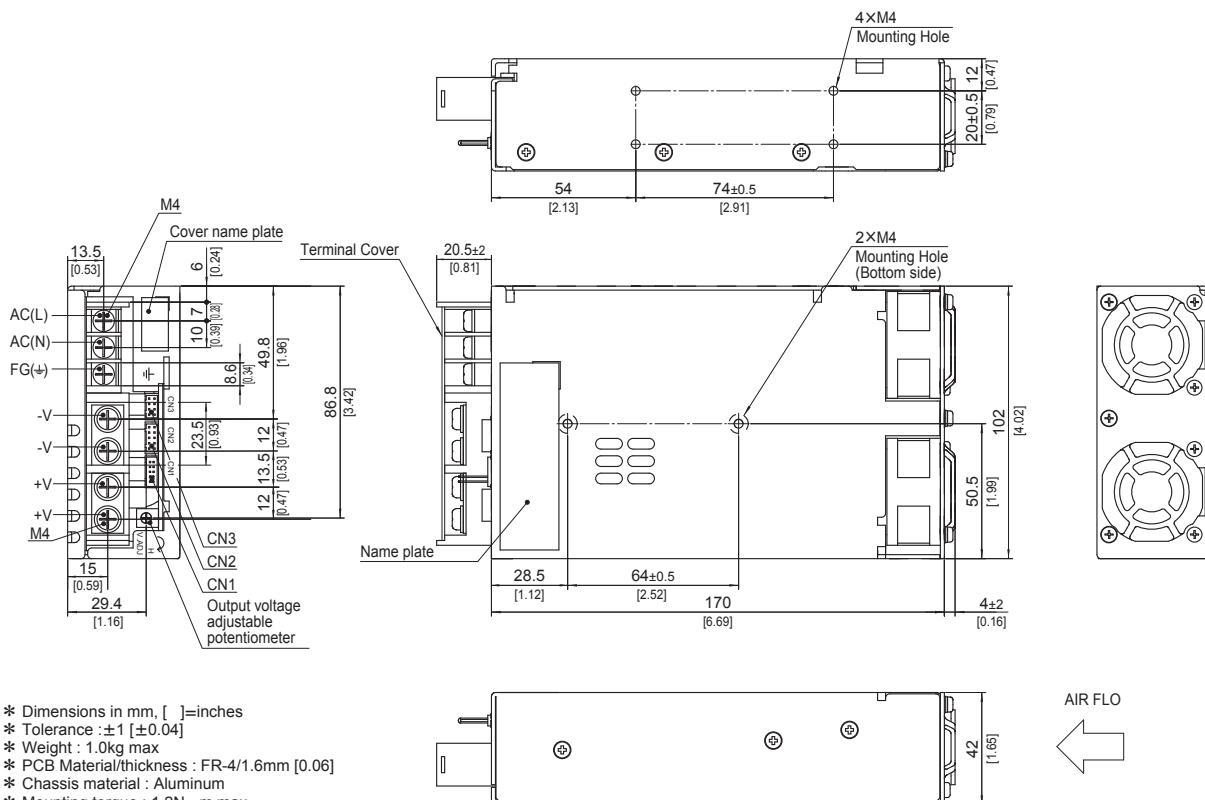
* To meet the specification, do not operate overload condition.

* Sound noise may be generated by power supply in case of pulse load.

Block diagram



External view



- * Dimensions in mm, []=inches
- * Tolerance : $\pm 1 [\pm 0.04]$
- * Weight : 1.0kg max
- * PCB Material/thickness : FR-4/1.6mm [0.06]
- * Chassis material : Aluminum
- * Mounting torque : $1.2N \cdot m$ max
- * Screw tightening torque : $M4 : 1.6N \cdot m$ max
- * The housing for the remote sensing unused is mounted on CN1
- * Please connect safety ground to FG terminal on the unit

PDA600F

Ordering information

PD A 600 F -

①

②

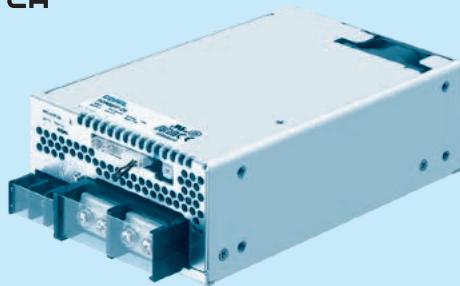
③

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RoHS


 Example recommended EMI/EMC filter
NAC-10-472


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.

MODEL	PDA600F-12	PDA600F-15	PDA600F-24	PDA600F-36	PDA600F-48
MAX OUTPUT WATTAGE[W]	*1 636	645	648	648	624
DC OUTPUT	*1 ACIN 100V *2 ACIN 230V	12V 53A 15V 43A	24V 27A 36V 18A	48V 13A 36V 18A	48V 13A 48V 13A

SPECIFICATIONS

	MODEL	PDA600F-12	PDA600F-15	PDA600F-24	PDA600F-36	PDA600F-48
INPUT	VOLTAGE[VAC]	*1 85 - 264 1φ (Refer to Instruction Manual 1.1)				
	CURRENT[A]	ACIN 100V ACIN 230V	7.9typ 3.4typ			
	FREQUENCY[Hz]		50 / 60 (45-66)			
	EFFICIENCY[%]	ACIN 100V ACIN 230V	83.0typ 85.5typ	83.5typ 86.5typ	85.5typ 88.0typ	84.5typ 87.0typ
	POWER FACTOR (Io=100%)	ACIN 100V ACIN 230V	0.98typ 0.95typ			
	INRUSH CURRENT[A]	ACIN 100V ACIN 230V	20/40typ (Io=100%) (Primary / Secondary inrush current) (More than 3 sec. to re-start) 40/40typ (Io=100%) (Primary / Secondary inrush current) (More than 3 sec. to re-start)			
	LEAKAGE CURRENT[mA]		0.4 / 0.75 max (ACIN 100V / 240V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)			
	VOLTAGE[V]	12	15	24	36	48
	CURRENT[A]	*2 ACIN 100V ACIN 230V	53 53	43 43	27 27 (31)	18 18
	LINE REGULATION[mV]		48max	60max	96max	144max
OUTPUT	LOAD REGULATION[mV]		100max	120max	150max	150max
	RIPPLE[mVp-p]	*3 0 to +50°C -20 to 0°C	120max 160max	120max 160max	120max 160max	150max 200max
	RIPPLE NOISE[mVp-p]	*3 0 to +50°C -20 to 0°C	150max 180max	150max 180max	150max 180max	200max 240max
	TEMPERATURE	0 to +50°C	120max	150max	240max	360max
	REGULATION[mV]	-20 to +50°C	180max	180max	290max	440max
	DRIFT[mV]	*4 48max	60max	96max	144max	192max
	START-UP TIME[ms]		400typ (ACIN 100V, Io=100%)			
	HOLD-UP TIME[ms]		35typ (ACIN 100V, Io=100%)			
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	8.25 to 13.20	10.50 to 16.50	16.50 to 26.40	25.20 to 39.60	38.40 to 56.00
	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]	14.4 to 18.6	18.0 to 23.3	28.8 to 37.2	43.2 to 54.0	57.6 to 80.0
	REMOTE SENSING		Provided			
	REMOTE ON/OFF		Provided			
ISOLATION	INPUT-OUTPUT-RC		3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)			
	INPUT-FG		2,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)			
	OUTPUT-RC-AUX-FG		500VAC 1minute, Cutoff current = 100mA, 500VDC 100MΩ min (At Room Temperature)			
	OUTPUT-RC-AUX		500VAC 1minute, Cutoff current = 100mA, 500VDC 100MΩ min (At Room Temperature)			
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE	*1 -20 to +70°C (Refer to "Derating"), 20 - 90%RH (Non condensing)				
	STORAGE TEMP., HUMID. AND ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing)				
	VIBRATION	10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis				
	IMPACT	196.1m/s² (20G), 11ms, once each X, Y and Z axis				
SAFETY AND NOISE REGULATIONS	AGENCY APPROVALS (At only AC input)	UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN				
	CONDUCTED NOISE	Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B				
OTHERS	HARMONIC ATTENUATOR	*5 Complies with IEC61000-3-2 (Class A)				
	CASE SIZE/WEIGHT	120×61×190mm [4.72×2.4×7.48 inches] (without terminal block and screw) (W×H×D) / 1.6kg max				
	COOLING METHOD	*1 Forced cooling (internal fan)				

*1 Derating is required. Please contact us for DC input.

*2 () means peak current. Peak loading for 10s. And Duty 35% max, refer to Instruction manual in detail.

*3 This is the value measured on measuring board with capacitor of 22μF within 150mm from output terminal.

Measured by 20MHz Oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN : RM-104).

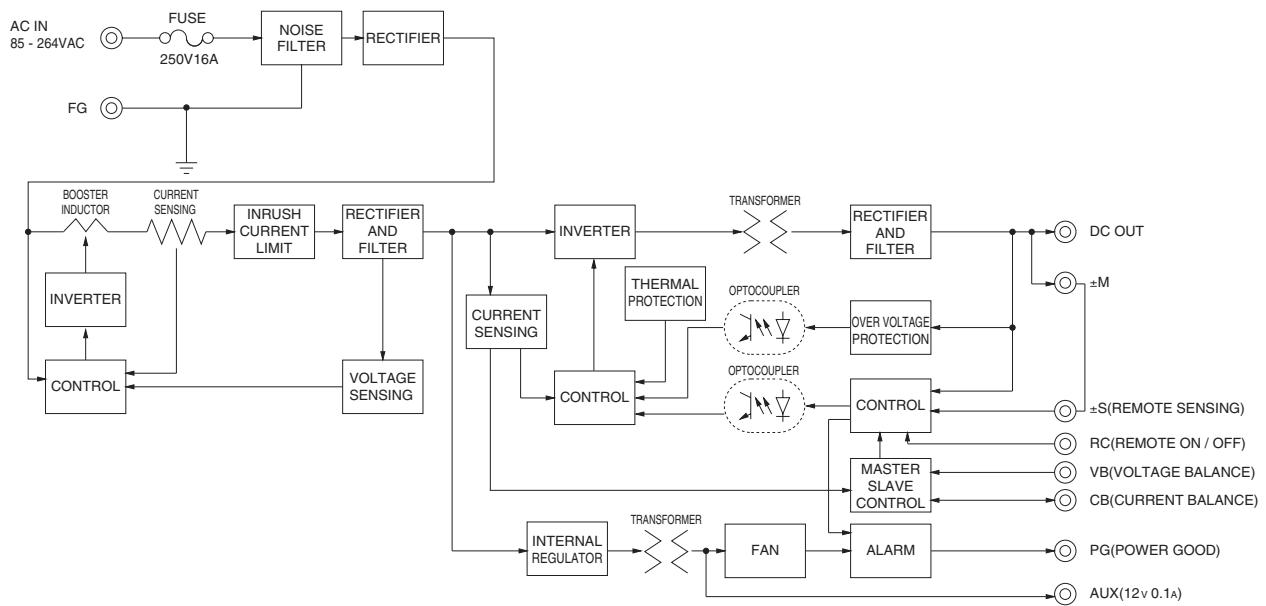
*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

*5 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.

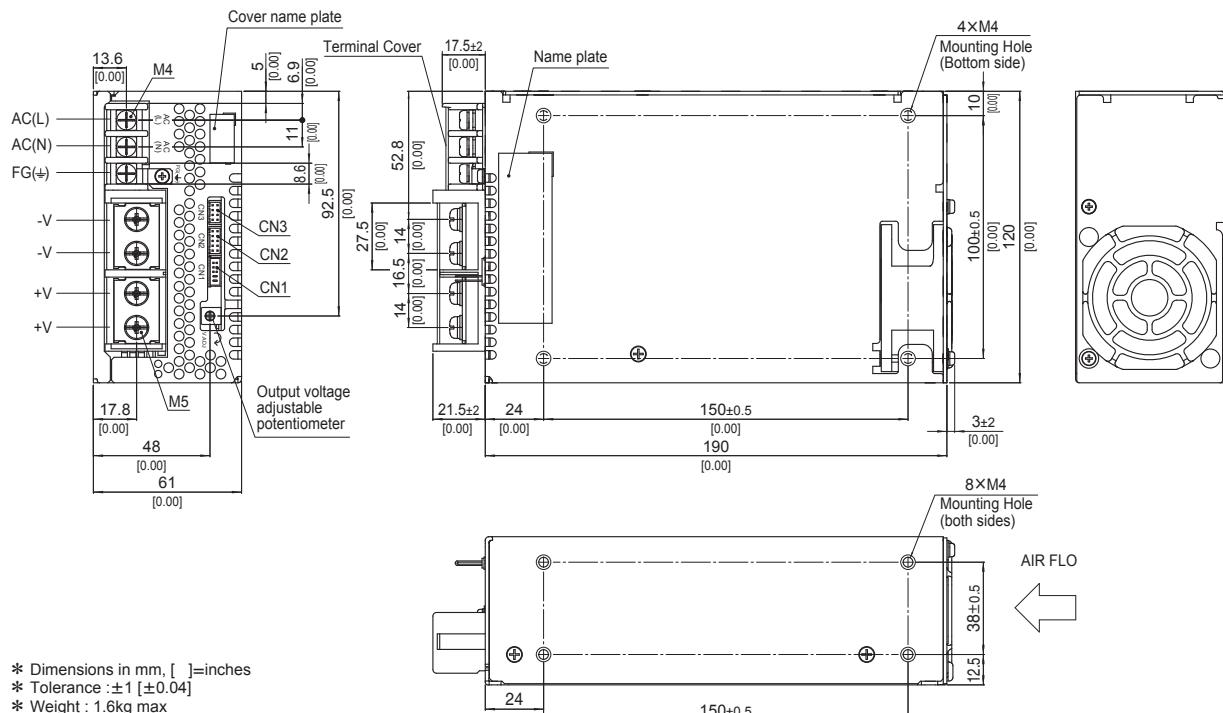
*6 To meet the specification, do not operate overload condition.

*7 Sound noise may be generated by power supply in case of pulse load.

Block diagram



External view

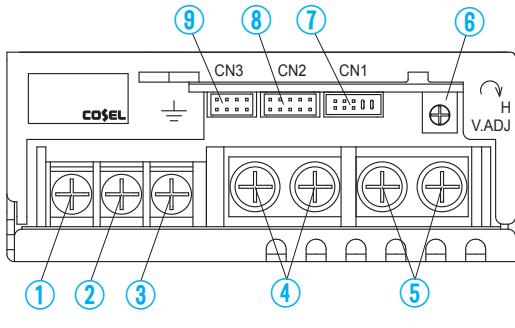


- * Dimensions in mm, []=inches
- * Tolerance :±1 [±0.04]
- * Weight : 1.6kg max
- * PCB Material/thickness : FR-4/1.6mm [0.06]
- * Chassis material : Aluminum
- * Mounting torque : 1.2N • m max
- * Screw tightening torque
 - M4 : 1.6N • m max
 - M5 : 2.5N • m max
- * The housing for the remote sensing unused is mounted on CN1
- * Please connect safety ground to FG terminal on the unit

Terminal Blocks

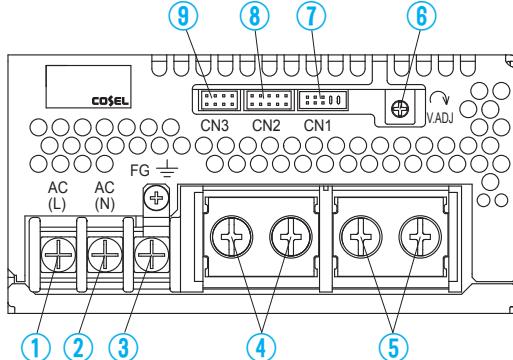
*The following information covers PDA300F - 600F. Please see External View for PDA15F - 150F.

● PDA300F

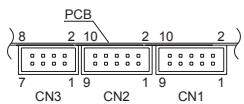


- ①AC (L) } Input Terminals 85 - 264VAC ϕ 45 - 66Hz
- ②AC (N) }
- ③Frame ground (M4 \pm)
- ④-Output
- ⑤+Output
- ⑥Output voltage adjustable potentiometer
- ⑦CN1
- ⑧CN2 } Connectors
- ⑨CN3

● PDA600F



● PDA300F, 600F Pin Configuration



Pin Configuration and Functions of CN1 and CN2

Pin No.	Function
1	+M : Self sensing terminal. (Do not wire for external connection.)
2	+S : +Sensing
3	-M : Self sensing terminal. (Do not wire for external connection.)
4	-S : -Sensing
5	VB : Voltage balance
6	CB : Current balance
7	TRM : Adjustment of output voltage
8	-S : -Sensing
9	RC2 : Remote ON/OFF
10	RCG : Remote ON/OFF (GND)

Pin Configuration and Functions of CN3

Pin No.	Function
1	-S : -Sensing
2	-S : -Sensing
3	AUX : Auxiliary output (12V 0.1A)
4	RC1 : Remote ON/OFF
5	AUXG : Auxiliary output (GND)
6	N.C. : No connection
7	PG : Alarm
8	PGG : Alarm (GND)

*Common signs among CN1, CN2 and CN3 such as -S represent the same potential.

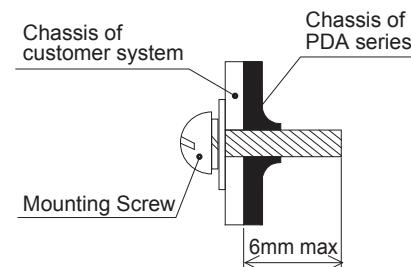
Matching connectors and terminals on CN1, CN2 and CN3

Connector	Housing	Terminal	Mfr.
CN1 CN2	S10B-PHDSS	PHDR-10VS	Reel : SPHD-002T-P0.5 Loose : BPHD-001T-P0.5
CN3	S8B-PHDSS	PHDR-08VS	J.S.T.

Assembling and Installation Method

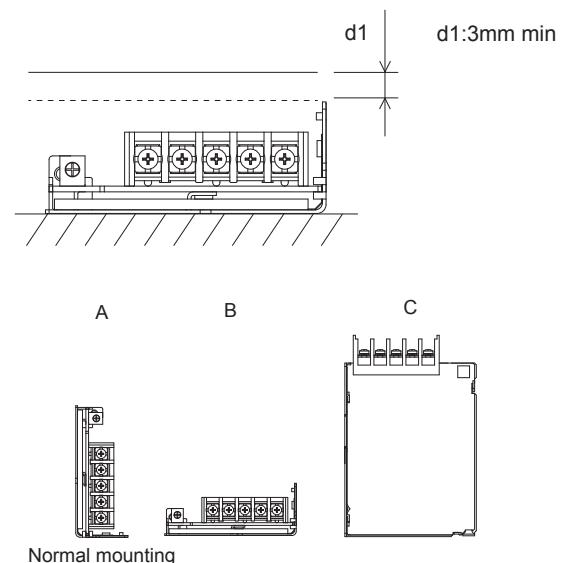
Installation method

- 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.



● PDA15F, PDA30F, PDA50F, PDA100F, PDA150F

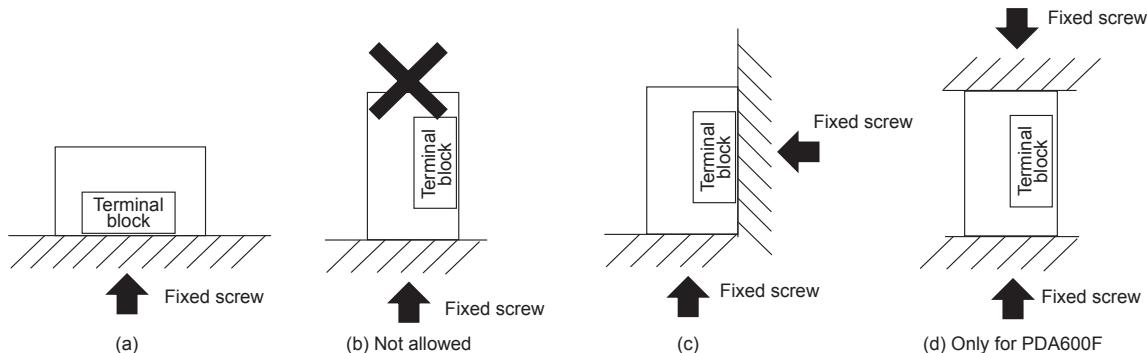
- For the metal chassis, keep the distance d_1 for isolation between component and metal chassis. The d_1 dimension is the distance required for insulation and does not satisfy cooling conditions. For cooling conditions, please refer to "Derating" and section 3 of the instruction manual.



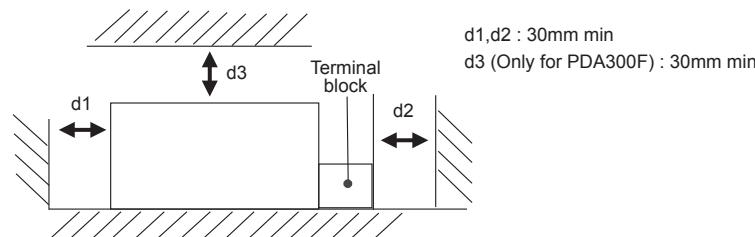
- If you use two or more power supplies side by side, please keep a sufficient distance between them to allow enough air ventilation.
- Ambient temperature around each power supply should not exceed the temperature range shown in "Derating".

● PDA300F, PDA600F

- If you need to secure a power supply by screws, securely fix it, taking into consideration of its weight. You can install it in any direction.

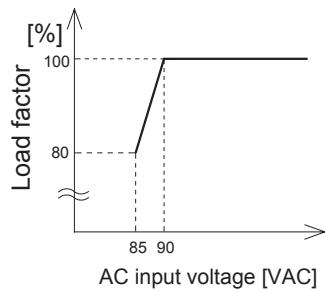


- If you use a power supply in a dusty environment, it can cause a failure. Please consider taking such countermeasures as installing an air filter near the suction area of the system to prevent a failure.
- The power supplies have a built-in forced cooling fan. Do not block ventilation at the suction side and its opposite side.

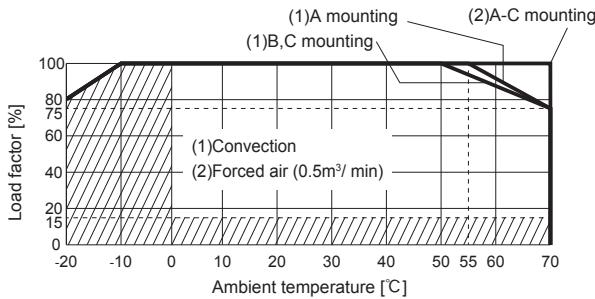


Derating

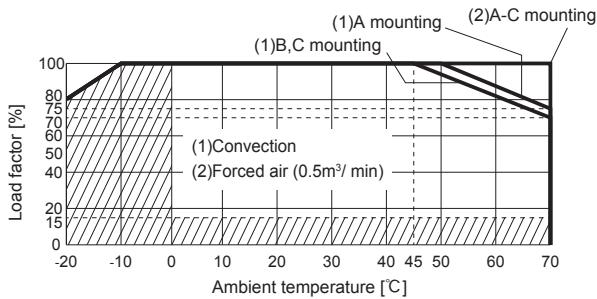
- Derating curve for input voltage
PDA15F, PDA30F



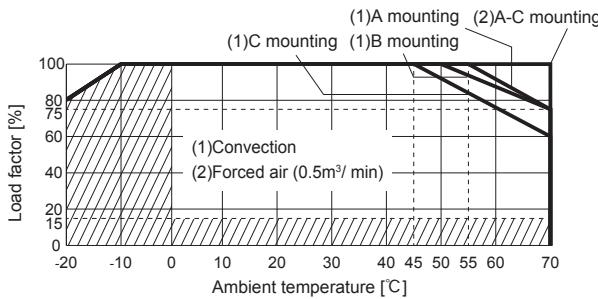
- PDA15F
Ambient temperature derating curve
(Reference value)



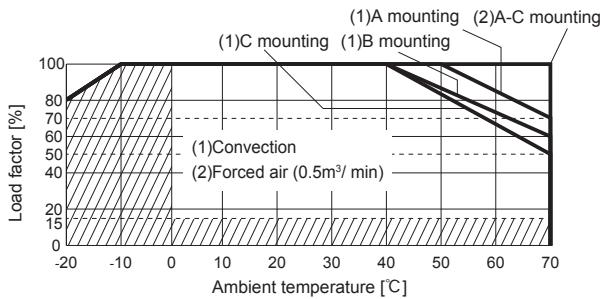
- PDA15F-□-N
Ambient temperature derating curve
(Reference value)



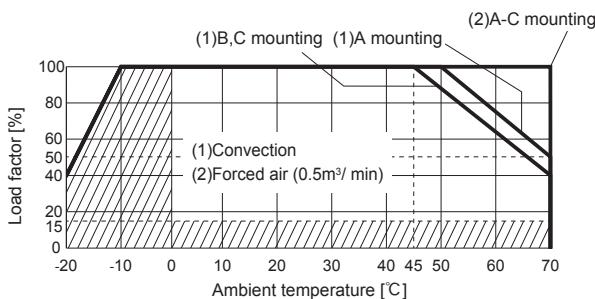
- PDA30F
Ambient temperature derating curve
(Reference value)



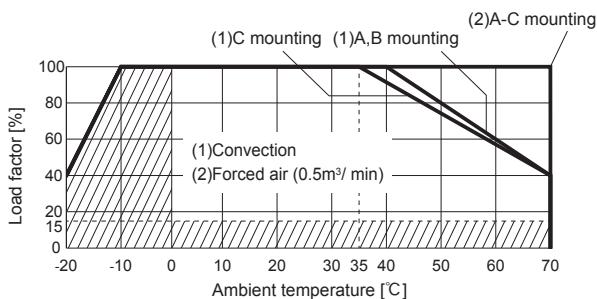
- PDA30F-□-N
Ambient temperature derating curve
(Reference value)



- PDA50F-5
Ambient temperature derating curve
(Reference value)



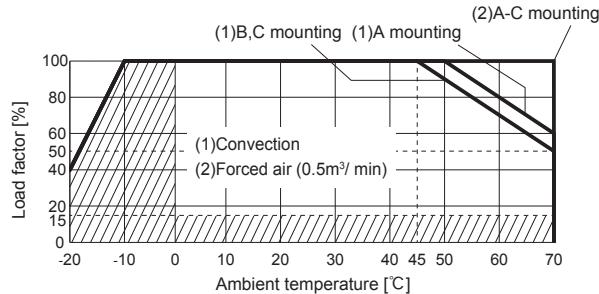
- PDA50F-5-N
Ambient temperature derating curve
(Reference value)



Derating

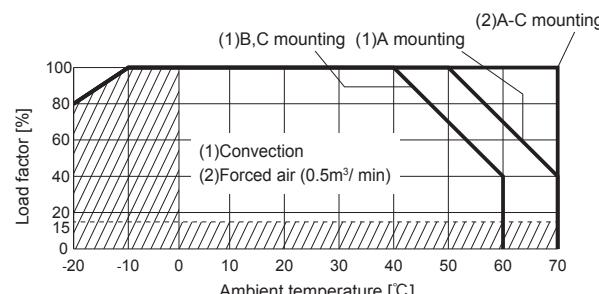
● PDA50F-12, -24

Ambient temperature derating curve
(Reference value)



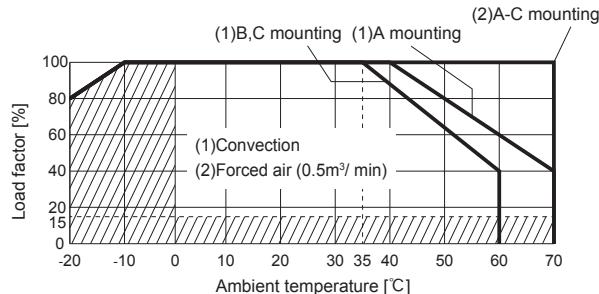
● PDA100F

Ambient temperature derating curve
(Reference value)



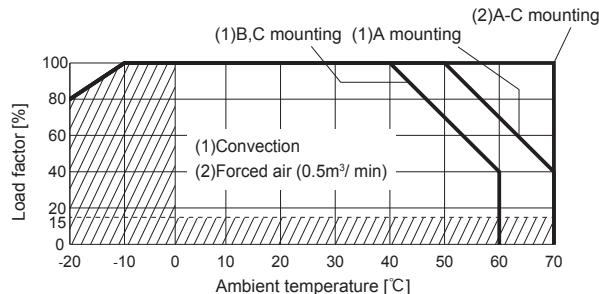
● PDA150F-5

Ambient temperature derating curve
(Reference value)



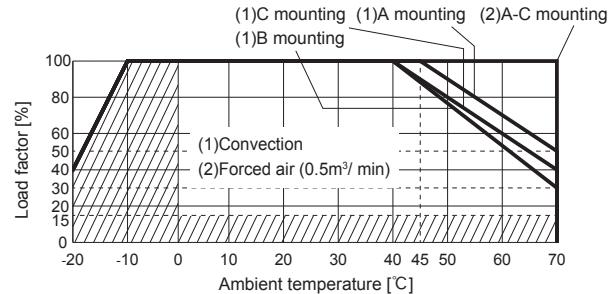
● PDA150F-12, -15, -24

Ambient temperature derating curve
(Reference value)



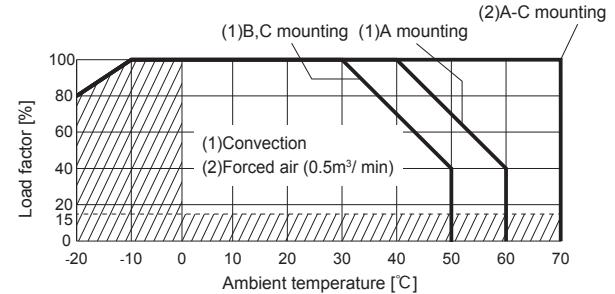
● PDA50F-12-N, -24-N

Ambient temperature derating curve
(Reference value)



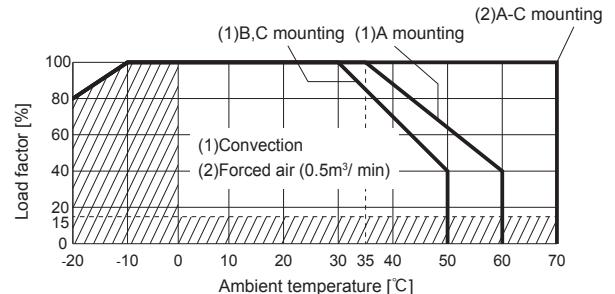
● PDA100F-□-N

Ambient temperature derating curve
(Reference value)



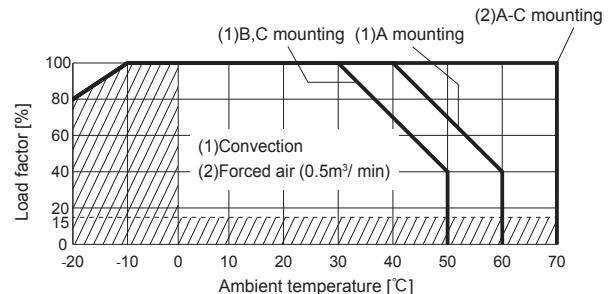
● PDA150F-5-N

Ambient temperature derating curve
(Reference value)



● PDA150F-12-N, -15-N, -24-N

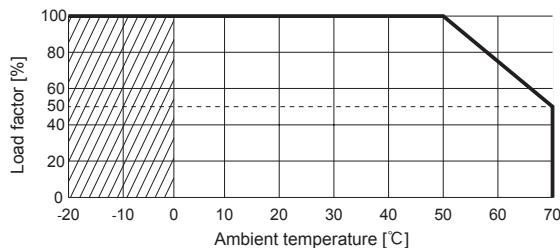
Ambient temperature derating curve
(Reference value)



Derating

- The operating ambient temperature is different by with / without chassis cover or mounting position.
- 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 make sure the maximum component temperature rise given in Instruction manual 3 is not exceeded.
- Please contact us for more information about operating ambient temperature.

● PDA300F, PDA600F Ambient temperature derating curve (Reference value)



- In the hatched area, the specification of Ripple, Ripple Noise is different from other area.
- Derating curve depending on an ambient temperature (temperature of air sucked in for a cooling purpose) is shown above.

Instruction Manuals

- ◆ Please see catalog and instruction manual before you use.

Instruction Manuals <https://www.cosel.co.jp/redirect/catalog/en/PDA/>
 Before using our product <https://en.cosel.co.jp/technical/caution/index.html>



Basic Characteristics Data

Model	Circuit method	Switching frequency [kHz] *1 *2	Input current [A]	Inrush current protection	PCB/Pattern			Series/Parallel operation availability	
					Material	Single sided	Double	Series operation	Parallel operation
PDA15F	Flyback converter	20 to 125	0.35	Thermistor	CEM-3	Yes	-	Yes	No
PDA30F	Flyback converter	30 to 130	0.62	Thermistor	CEM-3	Yes	-	Yes	No
PDA50F	Flyback converter	25 to 130	1.05	Thermistor	CEM-3	Yes	-	Yes	No
PDA100F	Active filter	20 to 250	1.3	Thermistor	FR-4	-	Yes	Yes	No
	Flyback converter	45 to 110							
PDA150F	Active filter	20 to 250	1.8	Thermistor	FR-4	-	Yes	Yes	No
	Flyback converter	45 to 110							
PDA300F	Active filter	65	4.1	Thermistor	FR-4	Yes	Yes	Yes	Yes
	Forward converter	140							
PDA600F	Active filter	65	7.9	SCR	FR-4	Yes	Yes	Yes	Yes
	Forward converter	220							

*1 The value changes depending on input and load.

*2 At light load, burst operation is performed to reduce input power. The switching frequency is changed by using condition. Please contact us for more details.

*3 The value of input current is at ACIN 100V and rated load.

*1, *2 are only for PDA15F-150F

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