





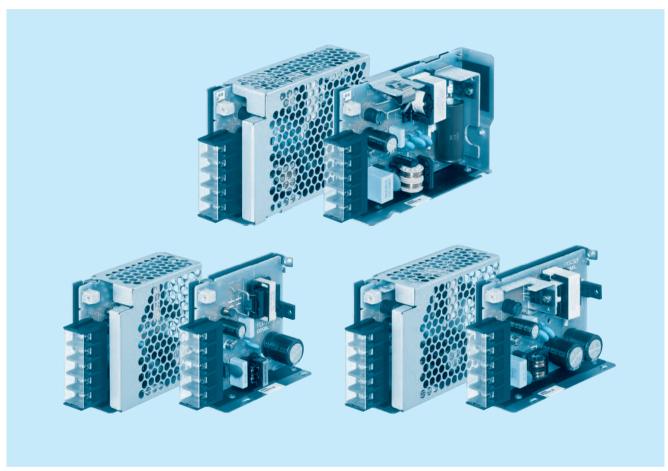






CO\$EL

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

Safety agency approvals

 $\label{eq:L62368-1} \mbox{ $UL62368-1$, 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

A 15

c**PL**°us D C € CA **RoHS**











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. Series name
 Single output
 Output wattage

4)Universal input ⑤Output voltage

Optional *1
 N: with cover

For option details, refer to Instruction Manual 6.

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				
	VOLTAGE[VAC] *2		85 - 264 1 φ (Refer to "Derating" and Instruction Manual 1.1)						
	ACIN 100		0.35typ						
	CURRENT[A]	ACIN 230V	0.19typ						
	FREQUENCY[Hz]		50 / 60 (45 - 440)						
INPUT	EFFICIENCY[%]	ACIN 100V	75.0typ	78.5typ	81.0typ				
	EFFICIENCY[%]	ACIN 230V	78.5typ	81.5typ	83.5typ				
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%)						
	INNUSH CONNENT[A]	ACIN 230V	35typ (Io=100%)						
	LEAKAGE CURREN	T[mA]	0.15 / 0.30max (ACIN 100V / 240V, 6	0Hz, Io=100%, According to IEC62368					
	VOLTAGE[V]		5	12	24				
	CURRENT[A]	*2	3.0	1.3	0.7				
	LINE REGULATION[20max	48max	96max				
[LOAD REGULATION		40max	100max	150max				
	DIDDI Elm\/n n ¹	0 to +55℃		120max	120max				
	RIPPLE[mVp-p]	-20 to 0°C	140max	160max	160max				
			300max	300max	300max				
	DIDDLE NOICE(V1	0 to +55℃	120max	150max	150max				
OUTPUT	RIPPLE NOISE[mVp-p] *4	-20 to 0℃	160max	180max	180max				
			360max	360max	360max				
	TEMPERATURE REGULATION[mV]	0 to +55℃		120max	240max				
	TEMIT ETIATOTIE TIEGOEATION[IIIV]	-20 to +55°C	60max	150max	290max				
	DRIFT[mV] *5			48max	96max				
	START-UP TIME[ms]		80typ (ACIN 100V, lo=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 SET		5.00 to 5.15	12.00 to 12.48	24.00 to 24.96				
	OVERCURRENT PROT		Works over 105% of rating and recover	, , , , , , , , , , , , , , , , , , , ,					
	OVERVOLTAGE PROTI	ECTION	5.75 to 7.00	15.0 to 18.0	30.0 to 37.0				
OTHERS	REMOTE SENSING		Not provided						
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 100M Ω min (At Room Temperature)						
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 100M Ω min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 100M Ω min (At Room Temperature)						
	OPERATING TEMP., HUMID. AND A								
ENVIRONMENT	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	AGENCY APPROVA		UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN						
NOISE	CONDUCTED NOISE		Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B						
REGULATIONS	HARMONIC ATTENU								
OTHERS	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")						

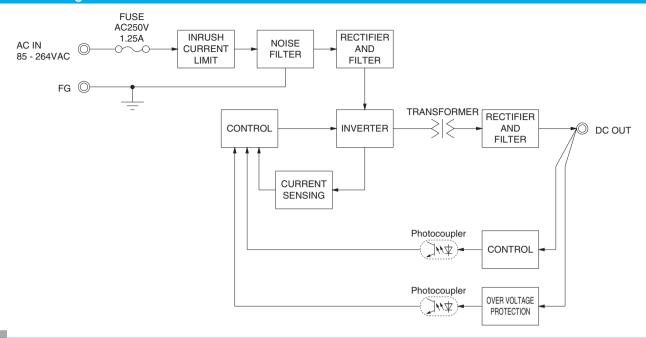
- The listed options may affect the published standard specifications. Please contact us for detailed product specifications.
- Derating is required. Please contact us for DC input.
- At low load conditions, the burst mode operation will start. To check load regulation, you will need to measure the characteristics at average mode with instruments.
- This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal.

Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:RM104)

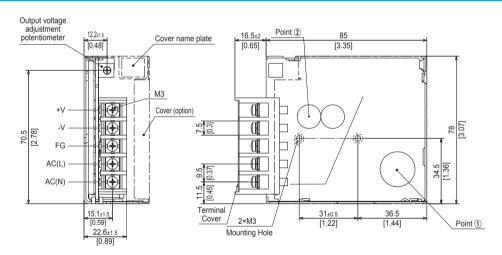
Ripple and ripple noise spec is change at lo=0 to 15% by burst operation.

- 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.
- 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: 180g max (with cover: 210g max)

 * PCB Material / thickness: CEM3 / 1.6mm [0.06]

 * Chassis material: Galvanized steel plate

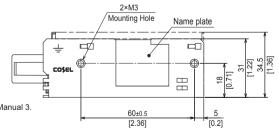
 * Dimensions in mm, [] = inches

 * Mounting torque: 0.6N m max

 * Screw tightening torque: M3 0.8N m max

 * Screw tightening safety crowned to the unit in 2.M3

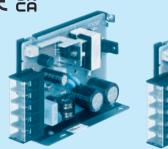
- * Please connect safety ground to the unit in 2-M3 holes
 * Point ①, Point ② are thermometry points. Please refer to Instruction Manual 3.



PDA30F

30











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. Series name
 Single output
 Output wattage

4)Universal input ⑤Output voltage

Optional *1
 N: with cover

For option details, refer to Instruction Manual 6.

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				
	VOLTAGE[VAC] *2		85 - 264 1 φ (Refer to "Derating" and Instruction Manual 1.1)						
	ACIN 10		0.62typ						
	CURRENT[A]	ACIN 230V	0.32typ						
	FREQUENCY[Hz]		50 / 60 (45 - 440)						
INPUT	EFFICIENCY[%]	ACIN 100V	83.0typ	82.0typ	83.5typ				
	EFFICIENCI[76]	ACIN 230V	87.0typ	85.5typ	86.5typ				
	INRUSH CURRENT[A]	ACIN 100V	15typ (lo=100%)						
	INHUSH CURRENT[A]	ACIN 230V	35typ (lo=100%)						
	LEAKAGE CURREN	T[mA]	0.25 / 0.55 max (ACIN 100V / 240V, 6	60Hz, Io=100%, According to IEC6236	8-1, 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			100max	150max				
	DIDDI ElmVe el	0 to +55℃	80max	120max	120max				
	RIPPLE[mVp-p]	-20 to 0℃	140max	160max	160max				
		lo=0 to 15%	300max	300max	300max				
		0 to +55℃	120max	150max	150max				
OUTPUT	RIPPLE NOISE[mVp-p]	-20 to 0℃	160max	180max	180max				
	1	lo=0 to 15%	360max	360max	360max				
	TEMPERATURE REGULATION[mV]	0 to +55℃	50max	120max	240max				
	TEMPERATURE REGULATION[IIIV]	-20 to +55°C	60max	150max	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 SET	TING[V]	5.00 to 5.15	12.00 to 12.48	24.00 to 24.96				
PROTECTION	OVERCURRENT PROT	ECTION	Works over 105% of rating and recovers automatically						
CIRCUIT AND	OVERVOLTAGE PROTI	ECTION	5.75 to 7.00	15.0 to 18.0	30.0 to 37.0				
OTHERS	REMOTE SENSING		Not provided						
	INPUT-OUTPUT		AC3,000V 1minute, Cutoff current = 10mA, DC500V 100MΩ min (At Room Temperature)						
ISOLATION	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 100M Ω min (At Room Temperature)						
	OUTPUT-FG		AC500V 1minute, Cutoff current = 25mA, DC500V 100M Ω min (At Room Temperature)						
	OPERATING TEMP., HUMID. AND A		, , , , , ,						
ENVIRONMENT	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max						
LITTII ONWENT	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	AGENCY APPROVA		UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN						
NOISE	CONDUCTED NOISE		Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B						
REGULATIONS	HARMONIC ATTENUATOR *6								
OTHERS	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)						
J.11L110	COOLING METHOD *2		Convection/Forced air (Requires external fan) (Refer to "Derating")						

- The listed options may affect the published standard specifications. Please contact us for detailed product specifications.
- Derating is required. Please contact us for DC input.
- 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.
- This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal.

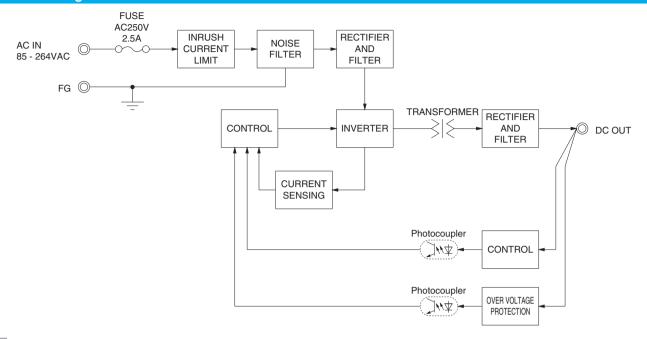
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:RM104)

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

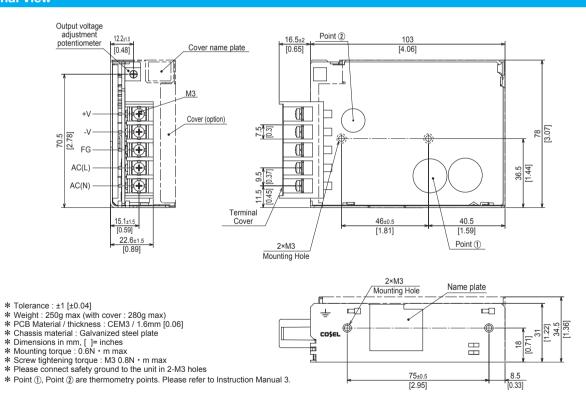
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C , with the input voltage held constant at the rated input/output.
- Please contact us about another class. When two or more units are operating it may
- not comply with the IEC61000-3-2. Please contact us for 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

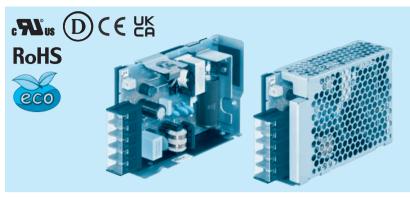


External view



PDA50F

50



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 Series name
 Single output
 Output wattage

4)Universal input ⑤Output voltage

Optional *1
 N: with cover

may be recommended in view of the other devices that could be connected in parallel with the power supply. For option details, refer to Instruction Manual 6.

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

RFFICIENCY[%] ACM 280/ 85.0typ 85.0typ 87.5typ 87.5typ		MODEL		PDA50F-5	PDA50F-12	PDA50F-24			
COHRENTIA ACM 230V 5.52 typ 85.0typ 85.0typ 87.5typ	<u> </u>								
PREQUENCY x Sol /60 (45 - 440)		ACIN 1		71					
		CORRENT[A]	ACIN 230V	0.52typ					
NRUSH CURRENT A ACM 130V 85.01yp 85.01yp 87.51yp		FREQUENCY[Hz]		50 / 60 (45 - 440)					
INRUSH CURRENTINA ACM 100 / 150 / 100 / 150 / 100	INPUT	EFFICIENCY[9/1	ACIN 100V	81.5typ	82.5typ	85.0typ			
INFLIGHT CORRENT A		EFFICIENCY[%]	ACIN 230V	85.0typ	85.0typ	87.5typ			
LEAKAGE CURRENT[mA] 0.3 / 0.65 max (ACIN 100V / 240V, 60Hz, lo=100%, According to IEC62368-1, and DEN-AN)		INDUCUI OUDDENTIAL	ACIN 100V	15typ (lo=100%)					
VOLTAGE[V]		INRUSH CURRENT[A]	ACIN 230V	35typ (lo=100%)					
CURRENT[A] # 10		LEAKAGE CURREN	T[mA]	0.3 / 0.65 max (ACIN 100V / 240V, 60Hz, Io=100%, According to IEC62368-1, and DEN-AN)					
LINE REGULATION[mV]		VOLTAGE[V]		5	12	24			
LOAD REGULATION[mV] \$3 40max 100max 150max 120max 1		CURRENT[A]	*2	10	4.3	2.2			
OUTPUT RIPPLE[mVp-p]		LINE REGULATION[mV] *3	20max	48max	96max			
PROTECTION OVERVOLTAGE SETTING[V] ACIN 100V, lo=100%) Input-Forman AC3,000V 1minute, Cutoff current = 10mA, DC500V 100MΩ min (At Room Temperature) Input-Forman AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC3,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC5,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC5,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC5,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC5,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC5,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC5,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OPERATING TEMPERATURE AC5,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Te		LOAD REGULATION	I[mV] *3	40max	100max	150max			
140 15% 300 max 150 max 150 max 150 max 150 max 150 max 360 max 3		DIDDI EL-V	0 to +50°C	80max	120max	120max			
OUTPUT A OUTPUT OUTPU		RIPPLE[mvp-p]	-20 to 0°C	140max	160max	160max			
RIPPLE NOISE[mVp-p]			lo=0 to 15%	300max	300max	300max			
Solition		DIDDLE MOIOEC W	0 to +50°C	120max	150max	150max			
TEMPERATURE REGULATION(miv)	OUTPUT	RIPPLE NOISE[mvp-p]	-20 to 0°C	160max	180max	180max			
DRIFT[mV]		***	lo=0 to 15%	360max	360max	360max			
DRIFT[mV] \$85 20max 150max 290max 96max		TEMPERATURE REGULATION[mV]	0 to +50°C	50max	120max	240max			
START-UP TIME[ms] 80typ (ACIN 100V, Io=100%) HOLD-UP TIME[ms] 20typ (ACIN 100V, Io=100%) / 140typ (ACIN 230V, Io=100%) 0UTPUT 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 PROTECTION 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 OTHERS INPUT-OUTPUT AC3,000V 1 minute, Cutoff current = 10mA, DC500V 100MΩ min (At Room Temperature) INPUT-FG AC2,000V 1 minute, Cutoff current = 10mA, DC500V 100MΩ min (At Room Temperature) OUTPUT-FG AC500V 1 minute, Cutoff current = 25mA, DC500V 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 2-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max STORAGE TEMP, HUMID.AND ALTITUDE 2-20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max OTHERS AGENCY APPROVALS UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN CONDUCTED NOISE Complies with IEC61000-3-2 (Class A) (No built-in power factor correction) OTHERS CASE SIZE/WEIGHT 31×82×120mm [1.22×3.23×4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g max)			-20 to +50°C	60max	150max	290max			
HOLD-UP TIME[ms] 20typ (ACIN 100V, Io=100%) / 140typ (ACIN 230V, Io=100%)		DRIFT[mV] *5		20max	48max	96max			
OUTPUT VOLTAGE ADJUSTMENT RANGE[V] 4.00 to 5.50 10.0 to 13.2 19.2 to 27.0		START-UP TIME[ms]		80typ (ACIN 100V, Io=100%)					
OUTPUT VOLTAGE SETTING[V] 5.00 to 5.15 12.00 to 12.48 24.00 to 24.96									
OVERCURRENT PROTECTION OVERCURRENT PROTECTION OVERVOLTAGE PROTECTION 5.75 to 7.00 15.0 to 18.0 30.0 to 37.0		OUTPUT VOLTAGE ADJUSTMENT RANGE[V]		4.00 to 5.50	10.0 to 13.2	19.2 to 27.0			
CIRCUIT AND OTHERS OVERVOLTAGE PROTECTION Portion 5.75 to 7.00 15.0 to 18.0 30.0 to 37.0 OTHERS REMOTE SENSING REMOTE SENSING Not provided INPUT-OUTPUT AC3,000V 1minute, Cutoff current = 10mA, DC500V 100MΩ min (At Room Temperature) ISOLATION INPUT-FG AC2,000V 1minute, Cutoff current = 25mA, DC500V 100MΩ min (At Room Temperature) OUTPUT-FG AC500V 1minute, Cutoff current = 25mA, DC500V 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 2 -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 AGENCY APPROVALS UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN NOISE CONDUCTED NOISE Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B REGULATIONS CASE SIZE/WEIGHT 31 × 82 × 120mm [1.22 × 3.23 × 4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g max)		OUTPUT VOLTAGE SET	TING[V]	5.00 to 5.15	12.00 to 12.48	24.00 to 24.96			
REMOTE SENSING Not provided	PROTECTION	OVERCURRENT PROT	ECTION	Works over 105% of rating and recovers automatically					
INPUT-OUTPUT AC3,000V 1minute, Cutoff current = 10mA, DC500V 100MΩ min (At Room Temperature)		OVERVOLTAGE PROT	ECTION	5.75 to 7.00	15.0 to 18.0	30.0 to 37.0			
INPUT-FG AC2,000V 1minute, Cutoff current = 10mA, DC500V 100MΩ min (At Room Temperature)	OTHERS								
OUTPUT-FG OUTPUT-FG AC500V 1minute, Cutoff current = 25mA, DC500V 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 2-20 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 CONDUCTED NOISE CONDUCTED NOISE COMPLIES with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B REGULATIONS CASE SIZE/WEIGHT 31×82×120mm [1.22×3.23×4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g max)									
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 CONDUCTED NOISE Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B REGULATIONS HARMONIC ATTENUATOR 6 Complies with IEC61000-3-2 (Class A) (No built-in power factor correction) CASE SIZE/WEIGHT 31×82×120mm [1.22×3.23×4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g max)	ISOLATION								
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 CONDUCTED NOISE Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B REGULATIONS CASE SIZE/WEIGHT 31×82×120mm [1.22×3.23×4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g 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 CONDUCTED NOISE CONDUCTED NOISE CONDUCTED NOISE COMPLIES COMPLIE		OPERATING TEMP., HUMID. AND	ALTITUDE *2	3// -/					
IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis IMPACT 196.1m/s² (20G), 11ms, once each X, Y and Z axis SAFETY AND NOISE CONDUCTED NOISE CONDUCTED NOISE HARMONIC ATTENUATOR *6 COMPLIES COM	ENVIDONMENT		ALTITUDE	7 077 7					
AGENCY APPROVALS UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN CONDUCTED NOISE CONDUCTED NOISE COMPlies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B CASE SIZE/WEIGHT UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN COMPLIES COMPLIES (Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B COMPLIES (COMPLIES WITH DEN-AN) CASE SIZE/WEIGHT 31×82×120mm [1.22×3.23×4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g max)	LIVINONWENT	VIBRATION							
NOISE CONDUCTED NOISE Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part15-B, FCC Part18-B, VCCI-B REGULATIONS HARMONIC ATTENUATOR ** Complies with IEC61000-3-2 (Class A) (No built-in power factor correction) CASE SIZE/WEIGHT 31×82×120mm [1.22×3.23×4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g max)									
REGULATIONS HARMONIC ATTENUATOR *6 Complies with IEC61000-3-2 (Class A) (No built-in power factor correction) CASE SIZE/WEIGHT 31 × 82 × 120mm [1.22 × 3.23 × 4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g max)	SAFETY AND								
CASE SIZE/WEIGHT 31 × 82 × 120mm [1.22 × 3.23 × 4.72 inches] (without terminal block) (W × H × D) / 330g max (with cover : 370g max)	NOISE								
	REGULATIONS								
COOLING METHOD *2 Convection/Forced air (Requires external fan) (Refer to "Derating")	OTHERS			31×82×120mm [1.22×3.23×4.72 inches] (without terminal block) (W×H×D) / 330g max (with cover : 370g max)					
	OTHERS =	COOLING METHOD *2		Convection/Forced air (Requires exte	rnal fan) (Refer to "Derating")				

- The listed options may affect the published standard specifications. Please contact us for detailed product specifications.
- Derating is required. Please contact us for DC input.
- 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.
- This is the value that measured on measuring board with capacitor of 22 µ F at 150mm from output terminal.

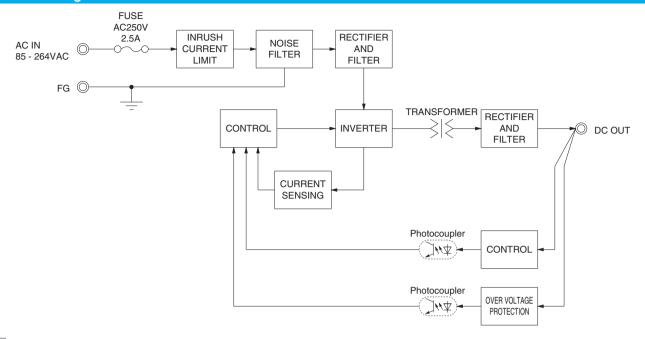
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN:RM104)

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

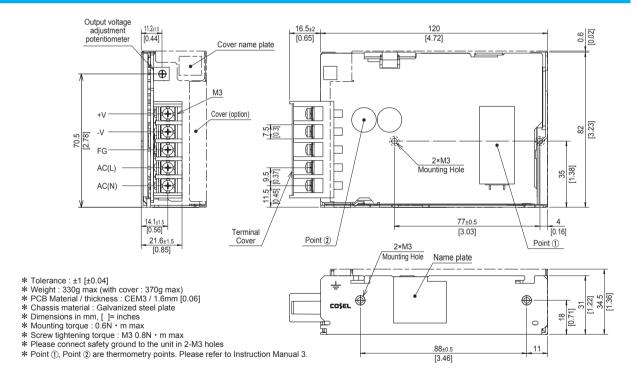
- Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C , with the input voltage held constant at the rated input/output.
- Please contact us about another class. When two or more units are operating it may
- not comply with the IEC61000-3-2. Please contact us for 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



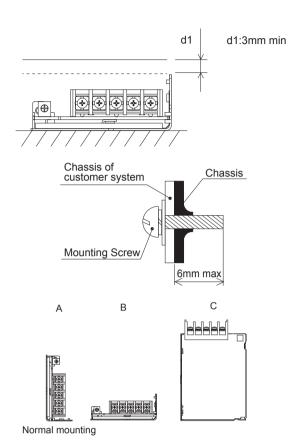
Assembling and Installation Method

Installation method

■For the metal chassis, keep the distance d1 for isolation between component and metal chassis.

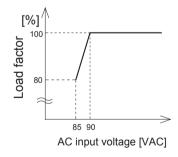
The d1 dimension is the distance required for insulation and does not satisfy cooling conditions. For cooling conditions, please refer to "Derating" and section 3 of the instruction manual.

- ■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.
- ■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".

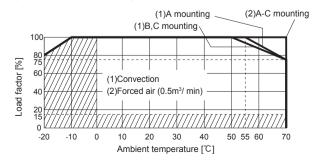


Derating

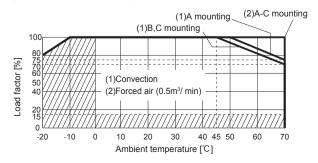
 Derating curve for input voltage PDA15F, PDA30F



PDA15F
 Ambient temperature derating curve (Reference value)



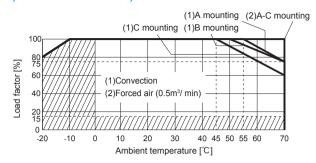
 PDA15F-□-N Ambient temperature derating curve (Reference value)



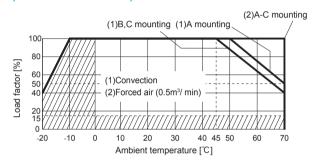


Derating

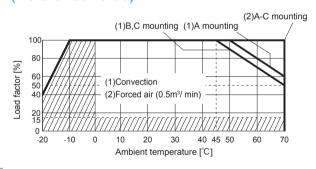
PDA30F Ambient temperature derating curve (Reference value)



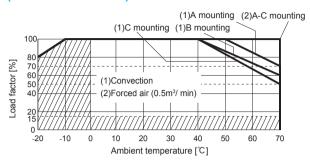
PDA50F-5 Ambient temperature derating curve (Reference value)



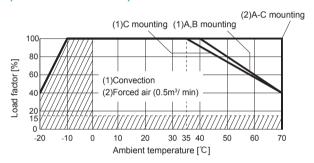
PDA50F-12. -24 Ambient temperature derating curve (Reference value)



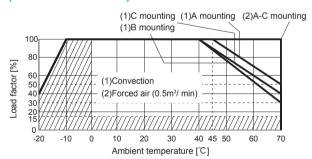
PDA30F-□-N Ambient temperature derating curve (Reference value)



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



PDA50F-12-N, -24-N Ambient temperature derating curve (Reference value)



Instruction Manuals

Please see catalog and instructionmanual 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 Input current [kHz] *1 *2 *3 [A]	1		PCB/Pattern			Series/Parallel operation availability		
				Material	Single sided	Double sided	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

^{*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.