110 WATT DC TO DC CONVERTERS

PD110 SERIES

DESCRIPTION

The PD110 series of DC/DC converters provide up to 110 watts of continuous output power. Available in three standard input range of 10-20 VDC, 18-36 VDC and 36-72 VDC, they are ideal for a variety of applications including telecoms, portable equipment and vehicle mounted instrumentation. All units are available in compact “open PCB” or “enclosed” mechanical formats.



FEATURES

- **Low cost**
- **Small size, light weight**
- **100% burn-in**
- **Overvoltage protection**
- **Overcurrent protection**
- **Three wide input ranges:**
  10-20 VDC, 18-36 VDC and 36-72 VDC

INPUT SPECIFICATIONS

Input voltage： 10 to 20 VDC（PD110 “L” series）
18 to 36 VDC（PD110 “M” series）
36 to 72 VDC（PD110 “H” series）

Input current： 15A（rms）for 12VDC
9.4A（rms）for 24VDC
4.7A（rms）for 48VDC

ENVIRONMENTAL SPECIFICATIONS

Operating temperature： 0℃ to +70℃
Storage temperature： -40℃ to +85℃
Relative humidity： 5% to 95% non-condensing
Derating： Derate from 100% at +50℃ linearly to 50% at +70℃

OUTPUT SPECIFICATIONS

Output voltage/current： See rating chart

Total output power： 110 watts maximum

Ripple and noise： 1% peak to peak max.

Overvoltage protection： set at 112 - 132% of its nominal output voltage

Overcurrent protection： All outputs protected to short circuit conditions

Temperature coefficient： All outputs ±0.04% /℃ maximum

Transient response： Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500us after a 25% step load change

GENERAL SPECIFICATIONS

Switching frequency： 50KHz ±5KHz

Efficiency： 70% minimum at full load

Line regulation： ±0.5% maximum at full load

Withstand voltage： 1000VDC from input to output

MTBF： 400,000 hours minimum at full load at 25℃ ambient, calculated per MIL-HDBK-217F

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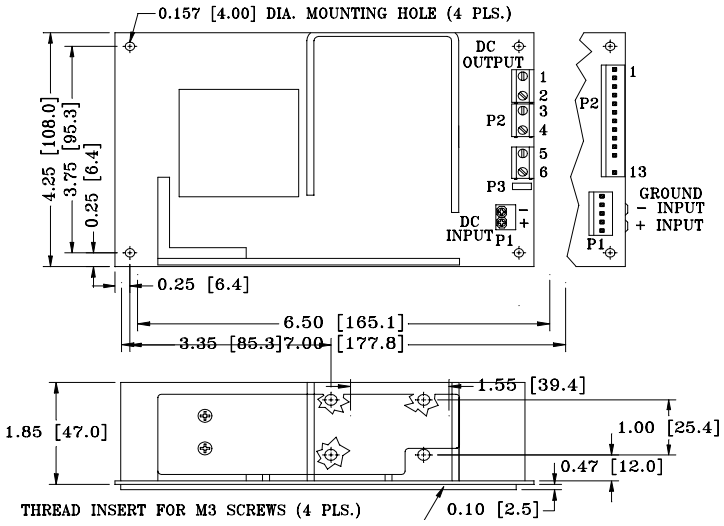
DC TO DC CONVERTERS PD110 SERIES

OUTPUT VOLTAGE/CURRENT RATING CHART

(3)	Output #1				Output #2(1)					Output #3				Output #4				Maximum Output
Model	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Ipeak	Tol.	Vnom.	Imin.	Imax.	Tol.	Vnom.	Imin.	Imax.	Tol.	Power (2)
PD110-10	5V	0A	22A	3%			(N/A)				(N/A)				(N/A)			110W
PD110-12	12V	0A	9.0A	2%			(N/A)				(N/A)				(N/A)			110W
PD110-13	15V	0A	7.5A	2%			(N/A)				(N/A)				(N/A)			110W
PD110-14	24V	0A	4.5A	2%			(N/A)				(N/A)				(N/A)			110W
PD110-16	30V	0A	3.6A	2%			(N/A)				(N/A)				(N/A)			110W
PD110-23	+5V	0.8A	10A	3%	+12V	0A	5A	9.0A	3%		(N/A)				(N/A)			110W
PD110-31	+5V	0.8A	10A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%		(N/A)			110W
PD110-32	+5V	0.8A	10A	3%	+15V	0A	4A	7.5A	3%	-15V	0A	1A	4%		(N/A)			110W
PD110-40	+5V	0.8A	10A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	-5V	0A	1A	4%	110W
PD110-41	+5V	0.8A	10A	3%	+15V	0A	4A	7.5A	3%	-15V	0A	1A	4%	+24V	0A	1A	4%	110W
PD110-42	+5V	0.8A	10A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	+12V	0A	1A	4%	110W
PD110-45-1	+5V	0.8A	10A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	+24V	0A	1.5A	10%	110W
PD110-45-2	+5V	0.8A	10A	3%	+24V	0A	3A	5.0A	3%	-12V	0A	1A	4%	+12V	0A	1A	4%	110W
PD110-46	+5V	0.8A	10A	3%	+15V	0A	4A	7.5A	3%	-15V	0A	1A	4%	-5V	0A	1A	4%	110W

Notes: (1) Peak output current with 10% maximum duty cycle for less than 60 seconds.
(2) PD110"M" & "H" series are suitable only for 110 watts maximum at 20 CFM forced air cooling or 80 watts maximum at convection cooling. PD110"L" series are suitable only for 90 watts maximum at 20 CFM forced air cooling or 70 watts maximum at convection cooling.
(3) Suffix codes for input range, mechanical format and connector are as follows. PD110-X1X2X3X4X5, "X1X2" is the model code from the above table, "X3" is the input range (L=10-20 VDC, M=18-36 VDC, H=36-72 VDC), "X4" is the mechanical format (A=open PCB, B=L-bracket, C=enclosed) and "X5" is the input and output connector code (Blank=Molex KK type, T=miniature terminal block), e.g. PD110-31MCT (18-36 VDC input range, enclosed format and miniature terminal blocks).

MECHANICAL SPECIFICATIONS



NOTES:
1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Molex KK type connectors:
   Input connector mates with Molex housing 09-50-3051 and Molex 2878 series crimp terminal.
   Output connector mates with Molex housing 09-50-3131 and Molex 2878 series crimp terminal.
4. Miniature terminal blocks:
   Input terminals allow wires up to $2mm^2$ (AWG #14).
   Output terminals allow wires up to $2mm^2$ (AWG #14).
5. Weight: 640grams (PCB format)
6. See the mechanical details of L-bracket and enclosed formats in page 7-2.

PIN CHART

MINI. TERMINAL / MOLEX CONNECTOR / MODEL	1	2	3	4		5		6
	1,2,3	4,5	6,7	8,9	10	11	12	13
PD110-10 PD110-12 PD110-13 PD110-14 PD110-16	OUTPUT #1	RETURN	RETURN	OUTPUT #1	N.C.	N.C.	KEY	N.C.
PD110-23	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #2	N.C.	N.C.	KEY	N.C.
PD110-31 PD110-32	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #2	N.C.	OUTPUT #3	KEY	N.C.
PD110-40 PD110-41 PD110-42 PD110-45-1 PD110-45-2 PD110-46	OUTPUT #1	COMMON RETURN	COMMON RETURN	OUTPUT #2	N.C.	OUTPUT #3	KEY	OUTPUT #4

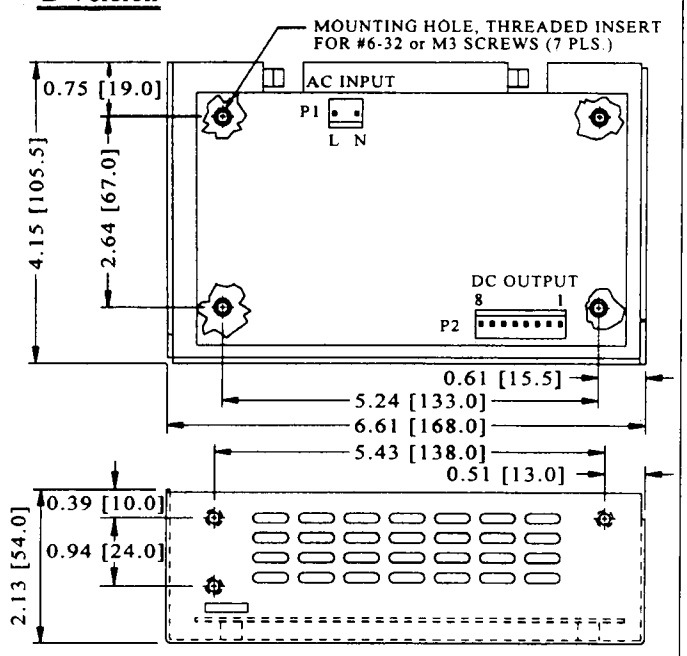
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L-Bracket and Enclosed Formats of PU65, PU110, PM65, PM110, PD65 and PD110 series

Unit: inch [mm]
Tolerance: 0.02 [0.5]

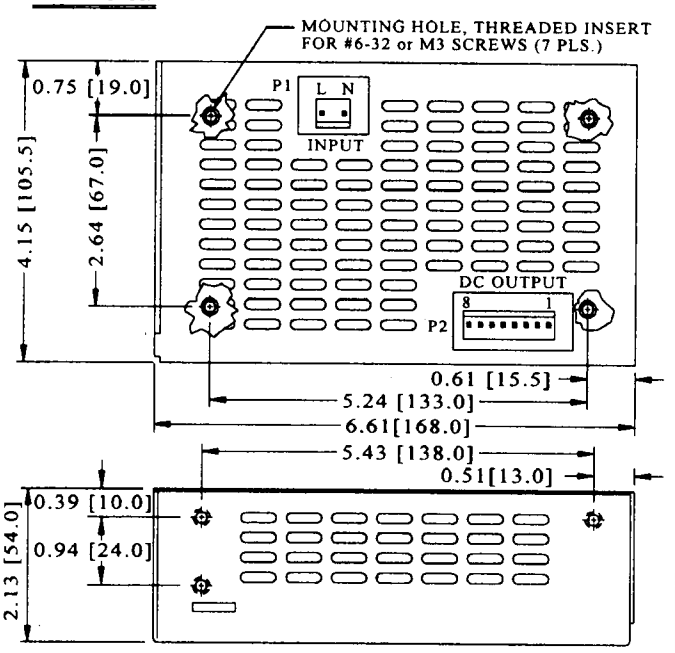
SERIES: PU65/PM65/PD65

B Version



NOTE: Weight: 540 grams approx.

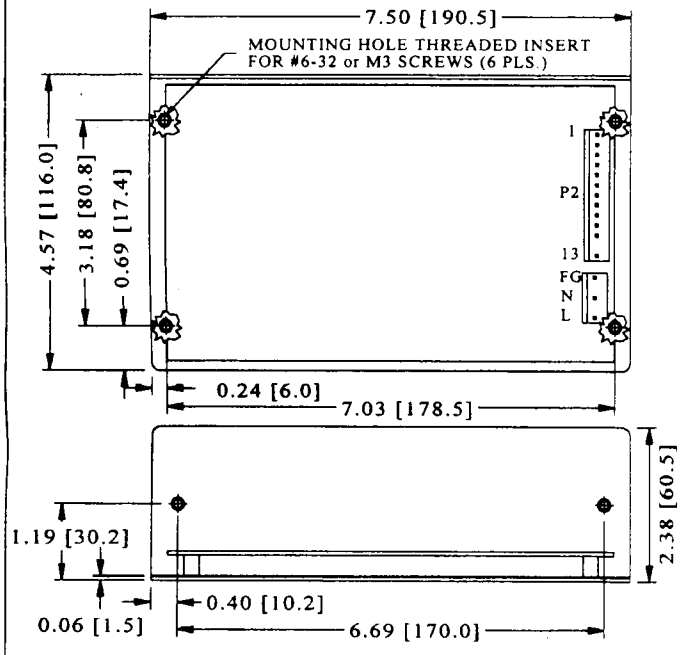
C Version



NOTE: Weight: 690 grams approx.

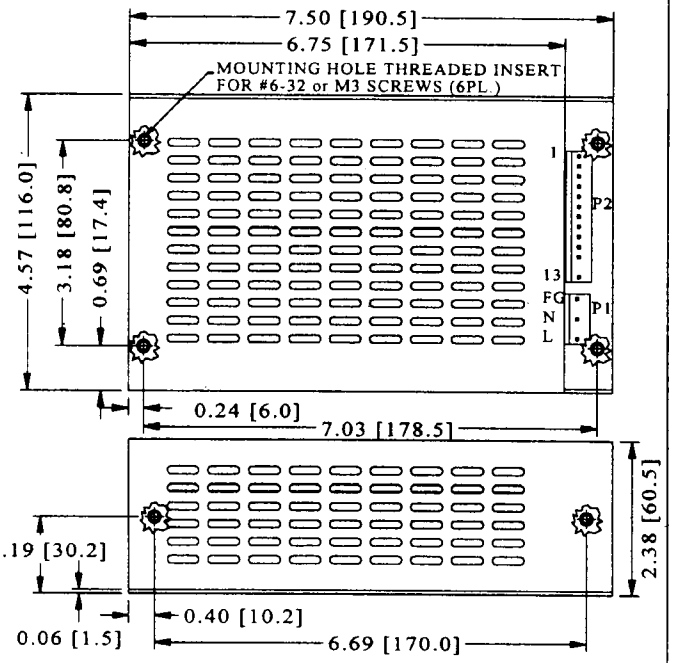
SERIES: PU110/PM110/PD110

B Version



NOTE: Weight: 760 grams approx.

C Version



NOTE: Weight: 1050 grams approx.