

# PD Series

40-110 WATTS WIDE INPUT

## Features

- Low cost
- 100% burn-in
- Small size, light weight
- Overvoltage protection
- Overcurrent protection
- Three wide input ranges:  
10–30VDC, 20–60VDC, 30–90VDC



## Specifications

### INPUT

Input voltage	10–30VDC (PD40 & 65 – L series) 20–60VDC (PD40 & 65 – M series) 30–90VDC (PD40 & 65 – H series) 10–20VDC (PD110 – L series) 18–36VDC (PD110 – M series) 36–72VDC (PD110 – H series)
Input current	4.1A (rms) for 24VDC typical for PD65 2.1A (rms) for 48VDC typical for PD65 1.5A (rms) for 72VDC typical for PD65

### OUTPUT

Output voltage/current	See rating chart
Total output power	40W, 65W and 110W
Ripple & noise	1% pk-pk 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 $\pm 0.04\%$ per °C maximum
Transient response	Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 $\mu$ s after a 25% step load change
Output derating	See notes

## OPERATING

MTBF	100,000 hours minimum at full load at 25°C ambient
Switching frequency	32kHz $\pm 5$ kHz
Efficiency	70% minimum at full load
Line regulation	$\pm 0.5\%$ maximum at full load
Withstand voltage	1000VDC from input to output

## ENVIRONMENTAL

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

## STANDARDS AND APPROVALS

C-tick	AS/NZCISPR11 Group 1, Class A
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# PD Series

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## Selection Table PD40 SERIES (40W)

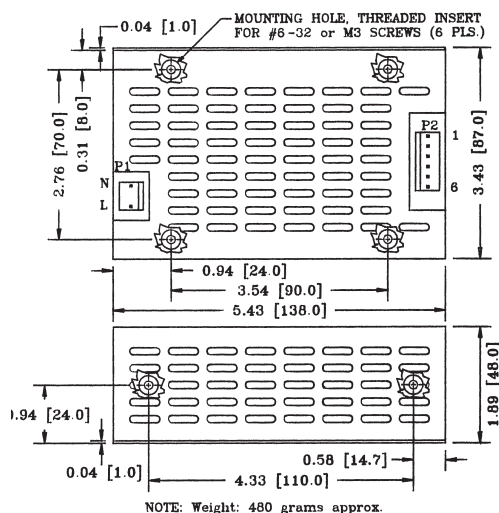
MODEL NUMBER	OUTPUT #1				OUTPUT #2				OUTPUT #3				MAXIMUM OUTPUT POWER
	VNOM.	IMIN.	IMAX.	TOL.	VNOM.	IMIN.	IMAX.	TOL.	VNOM.	IMIN.	IMAX.	TOL.	
PD40-10	5V	0A	8.0A	2%									40W
PD40-12	12V	0A	3.5A	1%									40W
PD40-13	15V	0A	3.0A	1%									40W
PD40-14	24V	0A	2.0A	1%									40W
PD40-23	+5V	0.5A	3.0A	3%	+12V	0.2A	2A	5%					40W
PD40-24	+5V	0.5A	3.0A	3%	+15V	0.2A	2A	5%					40W
PD40-25	+5V	0.5A	3.0A	3%	+24V	0.1A	1A	5%					40W
PD40-30	+5V	0.5A	3.0A	3%	+12V	0.2A	2A	5%	-5V	0A	0.8A	5%	40W
PD40-31	+5V	0.5A	3.0A	3%	+12V	0.2A	2A	5%	-12V	0A	0.8A	5%	40W
PD40-32	+5V	0.5A	3.0A	3%	+15V	0.2A	2A	5%	-15V	0A	0.8A	5%	40W
PD40-33	+5V	0.5A	3.0A	3%	+15V	0.2A	2A	5%	-12V	0A	0.8A	5%	40W
PD40-39	+5V	0.5A	3.0A	3%	+24V	0.1A	1A	5%	-12V	0A	0.8A	5%	40W

### NOTES

- All multi-output units may be operated at no load without damage. At no load, output tolerance increases to 10%
- Suffix codes for mechanical format and input range are as follows. PD40-XYZ; "XX" is the model code from the above table, "Y" is the input range (L = 10-30VDC, M = 20-60VDC, H = 30-90VDC) and "Z" is the mechanical format (A = open PCB, B=L-bracket, C=enclosed), eg, PD40-31MC (20-60VDC input range, enclosed).
- "L" series is suitable only for 75% of the above stated maximum output power.

## Technical Illustration

### PD40 ENCLOSED



### NOTES

- Dimensions shown in inch (mm)
- Tolerance 0.02 (0.5) maximum
- Input connector mates with Molex housing 09-50-3041 and Molex 2878 series crimp terminal
- Output connector mates with Molex housing 09-50-3061 and Molex 2878 series crimp terminal
- Weight: 300 grams approx (PCB format)
- For the mechanical details of L-bracket and enclosed formats please consult sales office

## Pin Chart

MODEL	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6
PD40-10 PD40-12	OUTPUT	OUTPUT	OUTPUT	RETURN	RETURN	RETURN
PD40-13 PD40-14	#1	#1	#1			
PD40-23 PD40-24	OUTPUT	OUTPUT	OUTPUT	COMMON	COMMON	N/C
PD40-25	#2	#1	#1	RETURN	RETURN	
PD40-30 PD40-31	OUTPUT	OUTPUT	OUTPUT	COMMON	COMMON	OUTPUT
PD40-32 PD40-33	#2	#1	#1	RETURN	RETURN	#3
PD40-39						

# PD Series

40-110 WATTS WIDE INPUT

## Selection Table PD65 SERIES (65W)

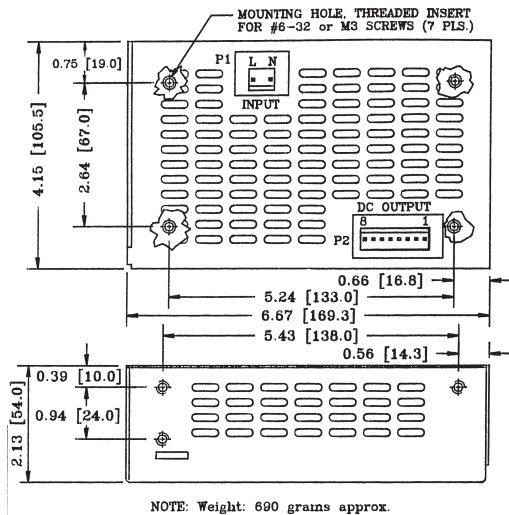
MODEL NUMBER	OUTPUT #1				OUTPUT #2				OUTPUT #3				OUTPUT #4				MAXIMUM OUTPUT POWER
	VNOM.	IMIN.	IMAX.	TOL.	VNOM.	IMIN.	IMAX.	TOL.	VNOM.	IMIN.	IMAX.	TOL.	VNOM.	IMIN.	IMAX.	TOL.	
PD65-10	5V	0A	10A	1%													50W
PD65-12	12V	0A	5.5A	1%													65W
PD65-13	15V	0A	4.5A	1%													65W
PD65-14	24V	0A	3.0A	1%													65W
PD65-23	+5V	1A	6.0A	3%	+12V	0.5A	3A	5%									65W
PD65-24	+5V	1A	6.0A	3%	+15V	0.4A	3A	5%									65W
PD65-25	+5V	1A	6.0A	3%	+24V	0.3a	2a	5%									65W
PD65-30	+5V	1A	6.0A	3%	+12V	0.5A	3A	5%	-5V	0.1A	0.5A	10%					65W
PD65-31	+5V	1A	6.0A	3%	+12V	0.5A	3A	5%	-12V	0.1A	0.5A	10%					65W
PD65-32	+5V	1A	6.0A	3%	+15V	0.4A	3A	5%	-15V	0.1A	0.5A	10%					65W
PD65-33	+5V	1A	6.0A	3%	+15V	0.4A	3A	5%	-12V	0.1A	0.5A	10%					65W
PD65-39	+5V	1A	6.0A	3%	+24V	0.3A	2A	5%	-12V	0.1A	0.5A	10%					65W
PD65-40	+5V	1A	6.0A	3%	+12V	0.5A	3A	5%	-12V	0.1A	0.5A	10%	-5V	0.1A	0.5A	10%	65W

### NOTES

- All multi-output units may be operated at no load without damage. At no load, output tolerance increases to 10%.
- Suffix codes for mechanical format and input range are as follows: PD65-XYZ; "XX" is the model code from the above table, "Y" is the input range (L = 10–30VDC, M = 20–60VDC, H = 30–90VDC) and "Z" is the mechanical format (A = open PCB, B = L-bracket, C = enclosed), eg, PD65-31MC (20–60VDC input range, enclosed).
- The models for 10–30VDC input range are suitable only for 70% of the above stated maximum output power.

## Technical Illustration

### PD65 ENCLOSED



### NOTES

- Dimensions shown in inch (mm)
- Tolerance 0.02 (0.5) maximum
- Input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal
- Output connector mates with Molex housing 09-50-3081 and Molex 2878 series crimp terminal
- Weight: 380 grams approx (PCB format)
- For the mechanical details of L-bracket and enclosed formats please consult sales office

## Pin chart

MODEL	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
PD65-10 PD65-12	OUTPUT	OUTPUT	OUTPUT	OUTPUT	RETURN	RETURN	RETURN	RETURN
PD65-13 PD65-14	#1	#1	#1	#1				
PD65-23 PD65-24	OUTPUT	OUTPUT	COMMON	COMMON	OUTPUT	OUTPUT	N/C	N/C
PD65-25	#1	#1	RETURN	RETURN	#2	#2		
PD65-30 PD65-31	OUTPUT	OUTPUT	COMMON	COMMON	OUTPUT	OUTPUT	OUTPUT	N/C
PD65-32 PD65-33	#1	#1	RETURN	RETURN	#2	#2	#3	
PD65-39	OUTPUT	OUTPUT	OUTPUT	COMMON	COMMON	OUTPUT	OUTPUT	OUTPUT
PD65-40	#1	#1	RETURN	RETURN	#2	#2	#3	#4

# PD Series

40-110 WATTS WIDE INPUT

## Selection Table

### PD110 SERIES (110W)

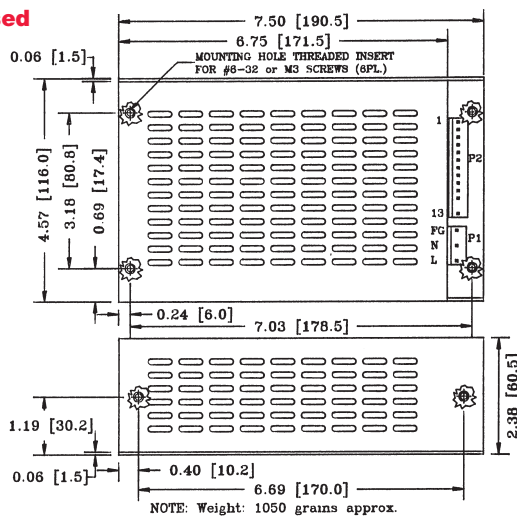
MODEL NUMBER	OUTPUT #1				OUTPUT #2				OUTPUT #3				OUTPUT #4				MAXIMUM OUTPUT POWER	
	VNOM.	IMIN.	IMAX.	TOL.	VNOM.	IMIN.	IMAX.	IPEAK	TOL.	VNOM.	IMIN.	IMAX.	TOL.	VNOM.	IMIN.	IMAX.		TOL.
PD110-10	5V	0A	22A	3%														110W
PD110-12	12V	0A	9.0A	2%														110W
PD110-13	15V	0A	7.5A	2%														110W
PD110-14	24V	0A	4.5A	2%														110W
PD110-16	30V	0A	3.6A	2%														110W
PD110-23	+5V	0A	10A	3%	+12V	0A	5A	9.0A	3%									110W
PD110-31	+5V	0A	10A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%					110W
PD110-32	+5V	0A	10A	3%	+15V	0A	4A	7.5A	3%	-15V	0A	1A	4%					110W
PD110-40	+5V	0A	10A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	-5V	0A	1A	4%	110W
PD110-41	+5V	0A	10A	3%	+15V	0A	4A	7.5A	3%	-15V	0A	1A	4%	+24V	0A	1A	4%	110W
PD110-42	+5V	0A	10A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	+12V	0A	1A	4%	110W
PD110-45-1	+5V	0A	10A	3%	+12V	0A	5A	9.0A	3%	-12V	0A	1A	4%	+24V	0A	1.5A	10%	110W
PD110-45-2	+5V	0A	10A	3%	+24V	0A	3A	5.0A	3%	-12V	0A	1A	4%	+12V	0A	1A	4%	110W
PD110-46	+5V	0A	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 110W maximum at 20 CFM forced air cooling or 80W maximum at convection cooling. PD110 "L" series are suitable only for 90W maximum at 20 CFM forced air cooling or 70W 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 = 10-20VDC, M = 18-36VDC, H = 36-72VDC), "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), eg, PD110-31MCT (18-36VDC input range, enclosed format and miniature terminals blocks).

## Technical Illustration

### PD110 Enclosed



### 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<sup>2</sup> (AWG #14)  
Output terminals allow wires up to 2mm<sup>2</sup> (AWG #14)
5. Weight: 640 grams (PCB format)
6. For the mechanical details of L-bracket and enclosed formats please consult sales office

## 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	OUTPUT	RETURN	RETURN	OUTPUT	N/C	N/C	KEY	N/C
PD110-13	PD110-14	#1			#1				
PD110-16									
PD110-23		OUTPUT	COMMON	COMMON	OUTPUT	N/C	N/C	N/C	KEY
		#1	RETURN	RETURN	#2				
PD110-31	PD110-32	OUTPUT	COMMON	COMMON	OUTPUT	N/C	OUTPUT	KEY	N/C
		#1	RETURN	RETURN	#2		#3		
PD110-40	PD110-41	OUTPUT	COMMON	COMMON	OUTPUT	N/C	OUTPUT	KEY	OUTPUT
PD110-42	PD110-45-1	#1	RETURN	RETURN	#2		#3		
PD110-45-2	PD110-46								