

Product Specification

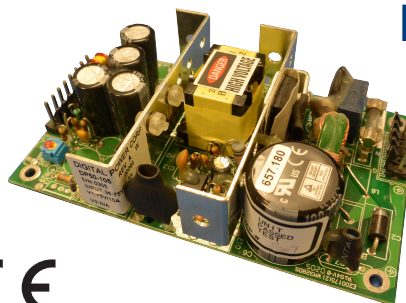
DC/DC Converters

Key Product Features

- Fully isolated input
- Up to 4 outputs
- 75% efficiency
- Input EMI filter
- 5" x 3" x 1.2" size
- UL, cUL recognized and CE approved
- Optional chassis and cover
- Available with 90-264VAC universal input

DP50 Series

50 Watt



Description

The DP50 series are open frame DC/DC converters ideal for systems powered from a 24VDC or 48VDC source. These converters deliver up to 50W of continuous or 60W peak power from one to four outputs. (24V input units deliver slightly lower power.)

The DP50 is one of the *flexibility* series. In addition to the popular models listed on this sheet, thousands of potential other modified standard models are available that include full safety agency approval and do not require any non-recurring engineering (NRE) charge. Prototype delivery is typically just a few weeks.

Flexibility options include chassis and cover, power good signal, and an isolated V4 output. Output voltage options are given in the table below. Fully custom models are also available. Please contact the factory for details.

All DP50 models are also available with 90-264VAC universal input. Please see the US50 data sheet for details.

A cXY`Cdhcbg

A cXY`Bi a VYf ¹	Ci hdi h	Ci hdi hJ c`W[Y	A p ²	Ci hdi h7i ffYbhFUhb[g		
				A UI ³	A UI ⁴	DYU_ ⁵
DP50-105	V1	+5V	0.1A	6.0A	10.0A	10.0A
DP50-112	V1	+12V	0.1A	3.3A	4.2A	4.2A
DP50-124	V1	+24V	0.1A	1.6A	2.0A	2.0A
DP50-201	V1	+5V	0.1A	3.0A	5.0A	7.0A
	V2	+12V	0A	2.0A	2.0A	3.0A
DP50-301	V1	+5V	0.1A	4.0A	5.0A	7.0A
	V2	+12V	0A	1.0A	2.0A	5.0A
	V3	-12V	0A	1.0A	1.0A	2.0A
DP50-303	V1	+5V	0.1A	4.0A	5.0A	7.0A
	V2	+15V	0A	1.5A	3.0A	5.0A
	V3	-15V	0A	1.0A	2.0A	2.0A
DP50-401	V1	+5V	0.1A	2.0A	4.0A	5.0A
	V2	+12V	0A	2.0A	2.0A	3.0A
	V3	-12V	0A	0.5A	1.0A	1.0A
	V4	-5V	0A	0.5A	0.5A	1.0A
Modified standard	V1	±3.3V to ±48V ⁷	0.1A		10.0A	
<i>flexibility</i> output options ⁶	V2	±2.0V to ±48V ⁸	0A		3.0A	
	V3	±2.0V to ±48V ⁸	0A		2.0A	
	V4	±2.0V to ±48V ⁸	0A		0.5A	

¹ DP50-XXX = 48VDC input. DM50-XXX = 24VDC input

² At least 20% of max output current is required to maintain stated regulation

³ Convention cooling. DM ratings slightly lower. Contact the factory

⁴ Forced air cooling. DM ratings slightly lower. Contact the factory

⁵ Peak output, 30 sec max

⁶ The DP50 series allows very fast, flexible modified standard designs within these parameters without non-recurring engineering charge and while retaining safety agency approval. Please contact the factory for more details

⁷ Can be specified in 0.1V increments

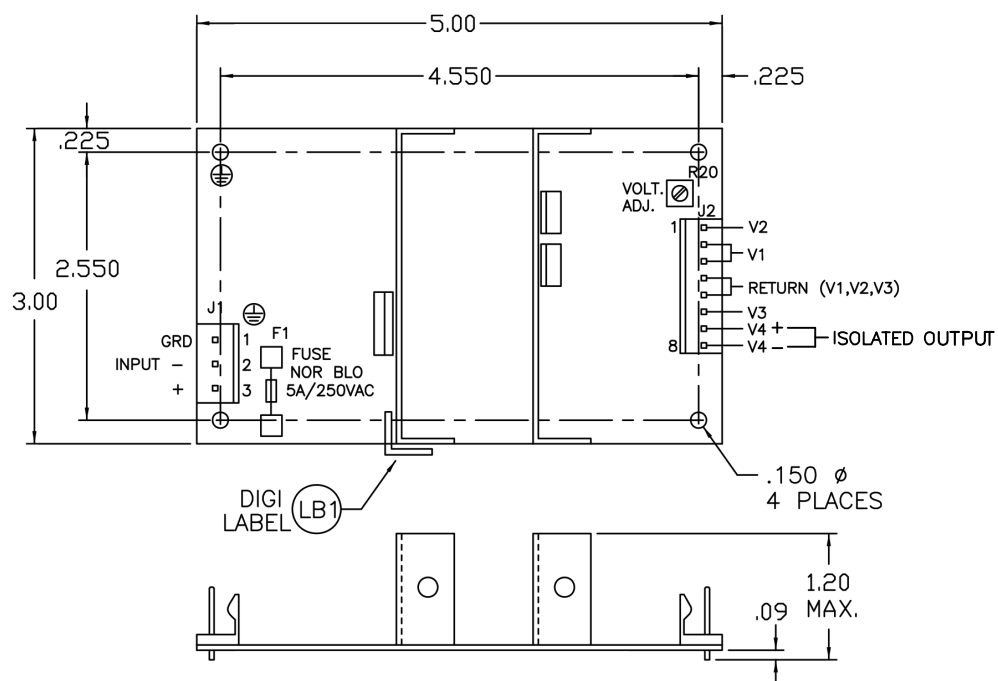
⁸ Can be specified in 0.75V increments

Note: Specifications are typical at 25°C unless otherwise stated

Specifications	
Input	
Input Voltage Range	20-36VDC (24V nominal - DM series) ; 40-72VDC (48V nominal - DP series)
Input Surge Current	8A, max
Efficiency	75% typ at nominal input, full power
Output	
Output Power	Natural convection cooling: (contact factory for 24V input rating), 40W (48V input)
	28CFM forced air cooling: 50W (24V, 48V input) ; 60W peak
Line Regulation	$\pm 0.2\%$, V_{in} (min) to V_{in} (max)
Load Regulation	$\pm 3\%$ (V_1 , 20% to 100% I_0) ; $\pm 5\%$ (V_2 - V_4 , 20% to 100% I_0)
Cross Regulation	$\pm 0.5\%$ (V_1 , 20% to 100% I_0 on V_2 - V_4) ; $\pm 5\%$ (V_2 - V_4 , 50% to 100% I_0 on V_1)
Noise and Ripple	25mV max RMS, 50mV max P-P on V_1 with full load ; 0.5% max RMS, 1% max P-P on V_2 - V_4 with full load
Overshoot	5% max, all outputs
Transient Response	for 25% to 75% I_0 change, 5% max deviation, with recovery to 1% within 500 μ S
Hold-Up Time	10mS, nominal input, full output power
Overvoltage Protection Threshold	130% V_0 , all outputs
Power Foldback Point	120% of max rated power

Environment	
Operating Temperature Range (full power)	0°C to 50°C
Operating Temperature Range (extended range)	0°C to 70°C Derate linearly from full power at 50°C to half power at 70°C
Storage Temperature Range	-25°C to +85°C
Relative Humidity	5% to 95%, non-condensing
Vibration	0.75G peak, 5Hz to 500 Hz. Test three orthogonal axes at 1 octave/min, 5 min dwell at four major resonances

Mechanical Drawings



MATING CONNECTORS DIGITAL POWER #
 J1 CONNECTOR=MOLEX INC.41671 SERIES
 P/N:26-48-1055
 (MATING CONNECTOR=MOLEX INC.6442 SERIES (OR 41695 SERIES)
 J2 CONNECTOR=MOLEX INC. 41671 SERIES
 P/N:26-48-1085
 (MATING CONNECTOR=MOLEX INC.6442 SERIES (OR 41695 SERIES)
 P/N:26-03-4081 (OR 09-50-8081)
 (MATING CRIMP TERMINALS=MOLEX INC.6838 SERIES,
 P/N:08-52-0113 OR 08-52-0112)

Mechanical Drawing

