

40W DC to DC Power Supply DIN Rail Mount

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**RoHS
Compliant**



Features

- 3:1 Wide Input Range
- Short Circuit Protection
- Internal Input Filter
- Remote ON / OFF
- Low Profile



Model List

Model No.	Input Voltage	Input Current		Output Wattage	Output Voltage	Output Current	EFF. (Min.)	EFF. (Typ.)
		(Type)	(Max.)					
Single Output Models								
MP-DRD40-12	10V DC to 32V DC	2.1 A	5 A	40 WATTS	+12V DC	3.4 A	82%	84%
MP-DRD40-24					+24V DC	1.7 A	83%	85%

Specification

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

General

Characteristics	Conditions	Min.	Typ.	Max.	Unit
Switching Frequency	Vi nom, Io nom	100		300	kHz
Isolation Voltage	Input - Output	1,500			V DC
Isolation Resistance	Input- Output, @ 500V DC	100			MΩ
Ambient Temperature	Operating at Vi nom	-40		+71	°C
Derating (see Derating curve)	Vi nom, from +51°C to +71°C			2.5	% / °C
Storage Temperature	Non operational	-40		+ 85	°C
Relative Humidity	Vi nom, Io nom	20		95	% RH
Temperature Coefficient	Vi nom, Io min			±0.03	% / °C
MTBF	Bellcore Issue 6 @40°C, GB 5V 9V 12V 15V 24V		576,000 560,000 568,000 580,000 605,000		Hours
Altitude During Operation	IEC 60068-2-13			4,850	m
Dimension		L91 × W53 × D56.5			mm
Cooling	Free air convection				
Installation Position	Vertical (other direction may derating using)				
Pollution Degree		2			

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Input Specifications					
Characteristics	Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	Ta min ... Ta max, Io nom	10	24	32	V DC
No Load Input Current	Vi nom, Io = 0			40	mA
Input Voltage w/o Damage	Io nom			40	V DC
Startup Voltage	Io nom		9.6		V DC
Input Filter	Pi type				

Output Specifications

Characteristics	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Vi nom, Io max	0		+ 1	%
Minimum Load	Vi nom	0			%
Line Regulation	Io nom, Vi min ...Vi max			+ 1	%
Voltage Trim Range	Vi nom, 0.8 Io nom	5V	4.75	5.5	V DC
		9V	8.55	9.9	
		12V	11.4	13.8	
		15V	14.25	16.5	
		24V	22.8	27.6	
Rated Continuous Loading	Vi nom	5V	6 A @ 5V DC / 5.4 A @ 5.5 V DC		
		9V	4 A @ 9V DC / 3.6 A @ 9.9 V DC		
		12V	3.4 A @ 12V DC / 2.9 A @ 13.8 V DC		
		15V	2.7 A @ 15V DC / 2.4 A @ 16.5 V DC		
		24V	1.7 A @ 24V DC / 1.45 A @ 27.6 V DC		
Startup Time	Vi nom, Io nom			50	ms
Transient Recovery Time	Vi nom, 1~0.5 Io nom			1	ms
Ripple & Noise	Vi nom, Io nom, BW = 20MHz			100	mV
Power Back Immunity	Vi nom, Io nom	5V	7.5		V DC
		9V	15		
		12V	18		
		15V	22		
		24V	35		
Capacitor Load	Vi nom, Io nom	5V		3,500	μF
		9V		2,200	
	12V, 15V			1,000	
	24V			470	
DC ON Indicator Threshold at start up (Green LED)	Vi nom, Io nom 5V	5V	3.5	4.5	V DC
		9V	6.8	8.1	
		12V	9	10.8	
		15V	11	13.5	
		24V	19.2	21.6	
DC LOW Indicator Threshold after start up (Red LED)	Vi nom, Io nom	5V	3.5	4.5	V DC
		9V	6.8	8.1	
		12V	9	10.8	
		15V	11	13.5	
		24V	19.2	21.6	
Efficiency	Vi nom, Io nom, Po / Pi	Up to 85%, See model list and typ efficiency curve			

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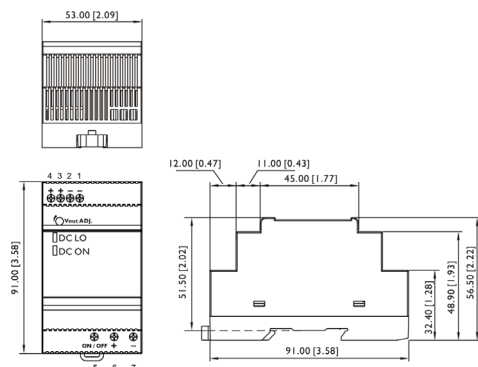
Control and Protection						
Characteristics	Conditions	Min.	Typ.	Max.	Unit	
Input Fuse		T6.3A / 125VDC internal				
Internal Surge Voltage Protection	IEC 61000-4-5	Varistor				
Rated Over Load Protection	Vi nom (see typ current limited curve)	110		145	%	
Over Voltage Protection	Vi nom, 0.8 Io nom	5V	5.75	6.5	V DC	
	(Auto Recovery)	9V	10.35	11.7		
		12V	14.4	16.2		
		15V	17.25	19.5		
		24	28.8	32.4		
Remote ON / OFF	ON : opened or 8V DC to 10V DC applied, reference to input GND OFF : -0.3 ~ 2VDC applied, reference to input GND					
Output Short Circuit		Current limited (Auto-Recovery)				
Degree of Protection		IP20				

Approvals and Standards	
UL / cUL	UL 508
cTUVUS	UL 60950-1
TUV	EN 60950-1
CE	EN 61000-6-3, EN 55032 Class B EN 61000-6-2, EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4 EN 61000-4-5, EN 61000-4-6, EN61000-4-8, ENV 50204, EN 61204-3
Vibration resistance	Meet IEC 60068-2-6 (Mounting on rail : 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	Meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)

Physical Characteristics

Case Size	91mm × 53mm × 56.5mm (3.58 inches × 2.09 inches × 2.22 inches)
Case Material	Plastic
Weight	180g

Mechanism & Pin Configuration



Dimensions : Millimetres

Construction

Easy snap-on mounting onto the DIN-Rail
(TS35/7.5 or TS35/15), unit sits safely and firmly on the rail; no tools required even to remove

Installation

Ventilation / Cooling Normal convection
All sides 25mm free space For cooling recommended Connector size range
AWG24-12 (0.2mm² to 2.5mm²) flexible / solid cable
-Connector can withstand torque at maximum 6 pound-inches.
7 mm stripping at cable end recommends. Use copper conductors only, 60/75°C

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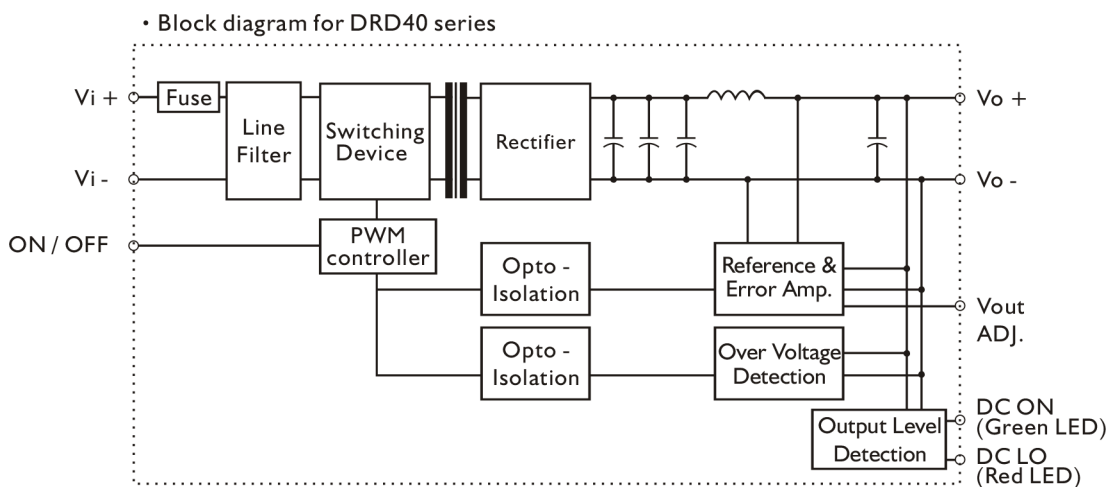
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Mechanism & Pin Configuration

General Tolerance	
0[0.00] - 30[1.18]	±0.3[0.01]
30[1.18] - 120[4.72]	±0.5[0.02]

Pin Assignment			
PIN NO.	Designation		Description
1, 2	OUT	-	Negative output terminal
3, 4		+	Positive output terminal
5	IN	ON / OFF	Remote ON / OFF terminal
6		+	Positive input terminal
7		-	Negative input terminal
	OTHER	Vout ADJ.	Trimmer-potentiometer for Vout adjustment
		DC ON	Operation indicator LED
		DC LO	DC Low indicator LED

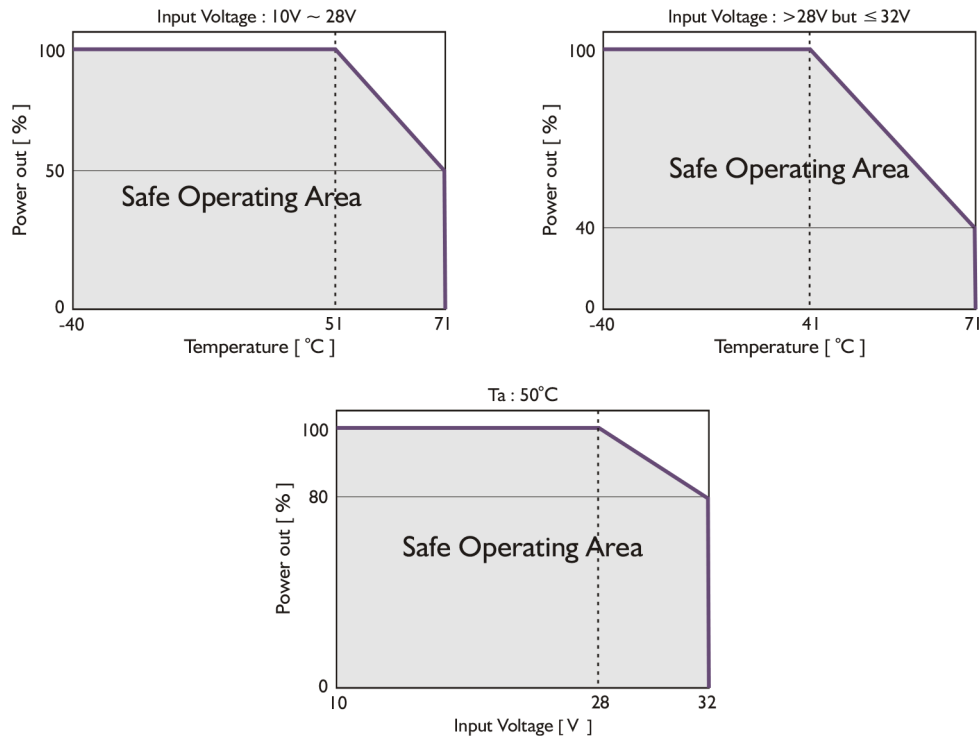
Circuit Schematic



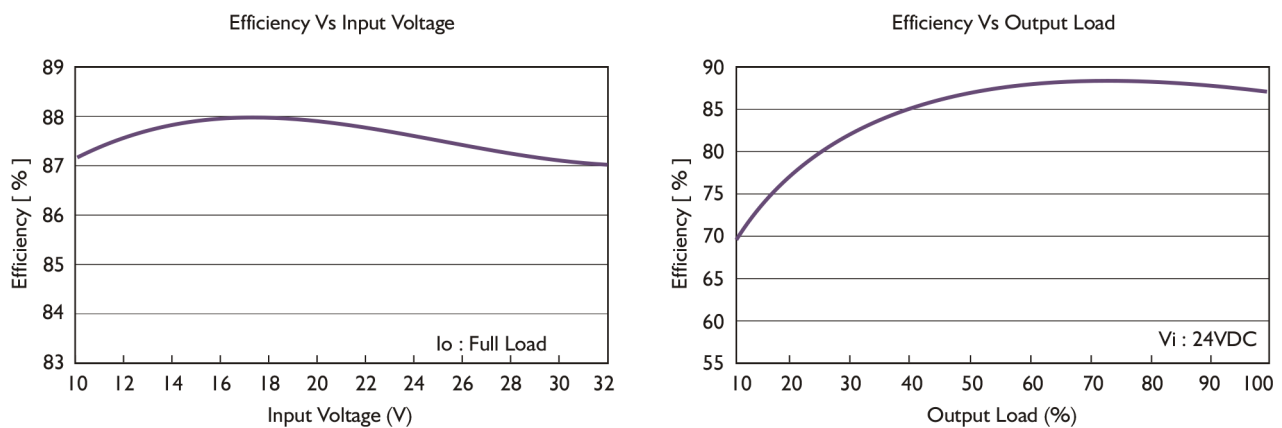
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Derating Curve



Derating and Efficiency Curve



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