TDK·Lambda

DRB120-480 Series

120W - 480W DIN Rail Mount Single Phase Power Supplies

https://product.tdk.com/en/power/drb
www.emea.lambda.tdk.com/drb

Industrial Test Semi-Fab

The DRB series supports the growing trend for simple and economically priced DIN power supplies for industrial and process control applications. The series combines low cost, reliability and compact dimensions with energy saving efficiencies of up to 93%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 10 years. Available in three power levels, 120W, 240W and 480W, the series provides a choice of 12V, 24V and 48V outputs. An opto-isolated DC OK signal is fitted for remote monitoring.

Features	Benefits
• High Efficiency, up to 93%	• Lowers Operating Costs and Improves Thermal Performance
• Narrow Case Widths	• Increases Available Space on the DIN Rail
• Curve B Radiated and Conducted EMI	• Reduced Electrical Noise in the System
• Long E-Capacitor Life (Up to 10 Years)	• Improved Field Life
• Low Off-Load Power Consumption	• Saves Energy

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Peak Current (A) 10s maximum, <35% duty cycle	Maximum Power (W)	Maximum Peak Power (W)	Overvoltage Protection (V)	Efficiency (%) (120/230Vac) (1)
DRB120-12-1	12	12 - 13.2	10	12	120	144	13.8 - 17.4	>90 / 91
DRB120-24-1	24	24 - 28	5	6	120	144	30 - 35	91 / 93 (Typ)
DRB240-24-1	24	24 - 28	10	12	240	288	30 - 35	91 / 93 (Typ)
DRB480-24-1	24	24 - 26.4	20	-	480	-	29.4 - 30.6	>90 / 92
DRB120-48-1	48	48 - 52.8	2.5	3	120	144	55.2 - 60	>90 / 91
DRB240-48-1	48	48 - 52.8	5	6	240	288	55.2 - 60	>90 / 92
DRB480-48-1	48	48 - 52.8	10	-	480	-	54.7 - 59.3	>90 / 92

Related Products

Type	Part Number(s)	Description
Redundancy module	DRM40	20 to 40A DIN Rail Redundancy Module
Low power DIN rail power supplies	DRB15, 30, 50, 100	15 to 100W AC-DC DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC DIN rail power supplies
DIN rail mount filters	RSMN	3A to 30A 250Vac 2 stage filters with pulse attenuation
DIN rail mount filters	RSEV	6A to 30A 250Vac 2 stage filters
RSEV DIN rail mounting kit	DIN-RSEV	RSEV DIN rail mounting kit

Specifications

Model		DRB120	DRB240	DRB480
Input				
Input Voltage Range (Operating)	Vac	85 - 264 (2)		90 - 264 (2)
Nominal Input Voltage Range	Vac	100 - 240 (Note: Safety certified for 90 - 264Vac only)		
Input Surge Voltage	-	Withstands 300Vac for 5 seconds		-
Input Frequency	Hz	47 - 63 (Note: Safety certified for 50/60Hz only)		
Input Current (115/230Vac)	A	1.2 / 0.7	2.4 / 1.4	5 / 2.5
Inrush Current (Cold Start)	A	<64 (at 230Vac)		<40 (at 264Vac)
Leakage Current (264Vac 63Hz)	mA	<1		<1.7
Power Factor (115/230Vac)	-	0.98 / 0.9		0.98 / 0.96
Harmonic Compliance	-	Meets EN61000-3-2 Class A		
No Load Power Consumption	W	<0.7	<0.9	<5
Hold Up Time at 100Vac Input (4)	ms	>20		
Efficiency	-	See model selector table		
Average Efficiency (230Vac) (3)	%	>87		
Conducted & Radiated EMI	-	EN55011-B, EN55032-B, CISPR11-B, CISPR22-B, EN61204-3 Class A		
Immunity	-	See immunity table		
Safety Agency Certifications and Markings	-	IEC/EN/CSA/UL62368-1, 60950-1, BIS IS 13252(Part 1) for DRB120-240 24V models only, UL508 CE Mark and UKCA Mark, (DRB120-240: Built to meet IEC/EN62477-1 OVC III)		

Immunity

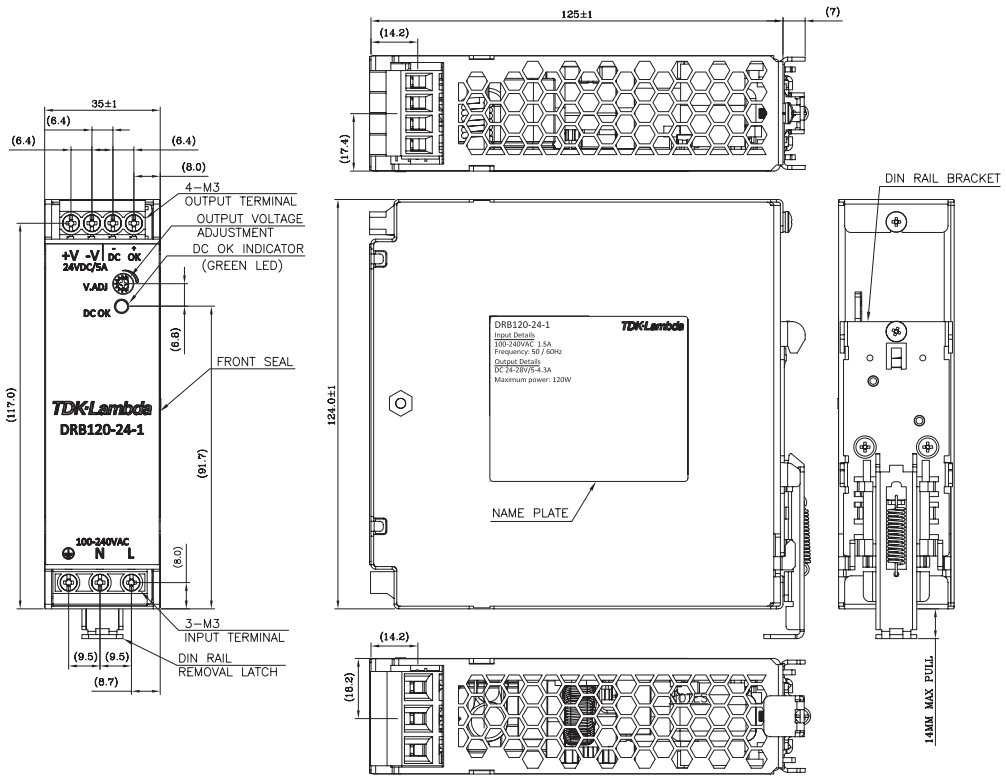
Test	Standard	Test Level	Criteria	
ESD	EN61000-4-2	3	A	-
Radiated Susceptibility	EN61000-4-3	3	A	-
Electrical Fast Transient Burst	EN61000-4-4	4	A	DRB480 Level 3
Surge	EN61000-4-5	3	A	DRB120/240-24-1 Level 4
Conducted Susceptibility	EN61000-4-6	3	A	-
Magnetic fields	EN61000-4-8	4	A	-
Voltage Dips and Input Interuptions	EN61000-4-11 Class 3 Industrial	0% for 1/2 cycle	A	-
		0% for 1 cycle	B	-
		40% for 10/12 cycles	B	-
		70% for 25/30 cycles	B	-
		80% for 250/300 cycles	B	-
Voltage Fluctuations	EN61000-4-14	3	A	-
SEMI F47 Line Dip	SEMI F47	-	-	> 200Vac input (<70% load DRB120)

Specifications

Model		DRB120	DRB240	DRB480
Output				
Output Voltage Tolerance (100% load)	%	±1	±1	±2
Switching Frequency (Output Converter)	kHz	78 - 134	76 - 142	51 - 80
Line Regulation	%	<0.1		
Load Regulation	%	<1		
Ripple & Noise	%	<1 at 25°C, <2.5 over full operating temperature range		
Temperature Coefficient	%/°C	<±0.02		
Minimum Load	-	No minimum load required		
Overcurrent Protection (Hiccup Mode)	% / A	>1.01% of peak power rating		24V: 21 - 29A, 48V: 10.5 - 15A
Overvoltage Protection	V	See model selector table		
Overtemperature Protection		Yes. Latching, cycle input voltage to reset		
Remote Sense	-	-		
Remote On/Off	-	-		
DC Good	-	Opto-isolated. On when Vout >80% of nominal output. 50V, 5mA maximum		
Indicators	-	Green LED indicates DC is OK		
Parallel Operation	-	Not possible		
Series Operation	-	Please contact Technical Sales for guidance		
Environmental				
Operating Temperature (-40°C start-up)	°C	-25 to +70 (Derate linearly to 50% load from 55 to 70). DRB240-48-1: Derate linearly to 50% load from 50 to 70		-20 to +70 (Derate linearly to 62.5% load from 50 to 70)
Storage Temperature	°C	-40 to +85		
Humidity (non condensing)	%RH	5 - 95 (Operating & Storage)		
Cooling	-	Convection		
Altitude	m	3,000		
Withstand Voltage (For 1 minute)	Vac	Input to Output 3,000, Input to GND 1,500, Output to GND 500		
Isolation Resistance	MΩ	>100 at 25°C, 70%RH & 500Vdc		
Vibration (Non operating)	-	2G, 10 to 55Hz		2G, IEC 60068-2-6, 10 to 500Hz
Shock	-	20G, IEC 60068-2-27, half-sine, 22ms, 3 x each axis on DIN rail		5G
Other				
Weight (Max)	g	500	750	1200
Size (WxHxD)	mm	35 x 124 x 125	41 x 124 x 125	84 x 124 x 125
Size (WxHxD)	Inches	1.38 x 4.88 x 4.92	1.61 x 4.88 x 4.92	3.31 x 4.88 x 4.92
Case Material	-	Aluminum sides and back, steel wrap around cover		
DIN Rail Type	-	Suitable for mounting on TS-35/7.5 or TS35/15 DIN Rails		
MTBF - Telcordia SR-332 issue 5*	Hours	1,291,932	443,841	644,000
Warranty	yrs	3		

Notes
See website for detailed specifications, test methods and installation manual
(1) 100% load
(2) DRB480: derate linearly to 92.5% load from 100 to 90Vac. DRB120-12-1, DRB120-48-1 and DRB240-48-1: derate linearly to 88.7% load from 100 to 85Vac
(3) Measured at 25%, 50%, 75% and 100% load conditions
(4) At beginning of life
*24V output model, 25°C ambient, full load, 230Vac input. DRB480 issue 3

Outline DRB 120



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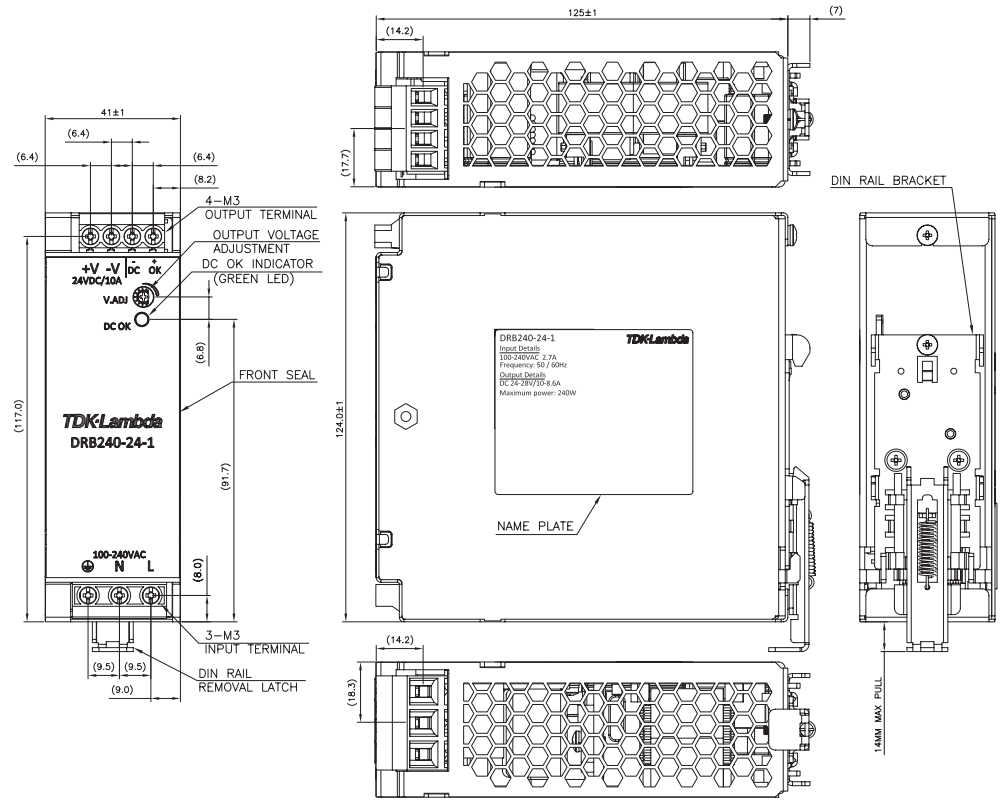
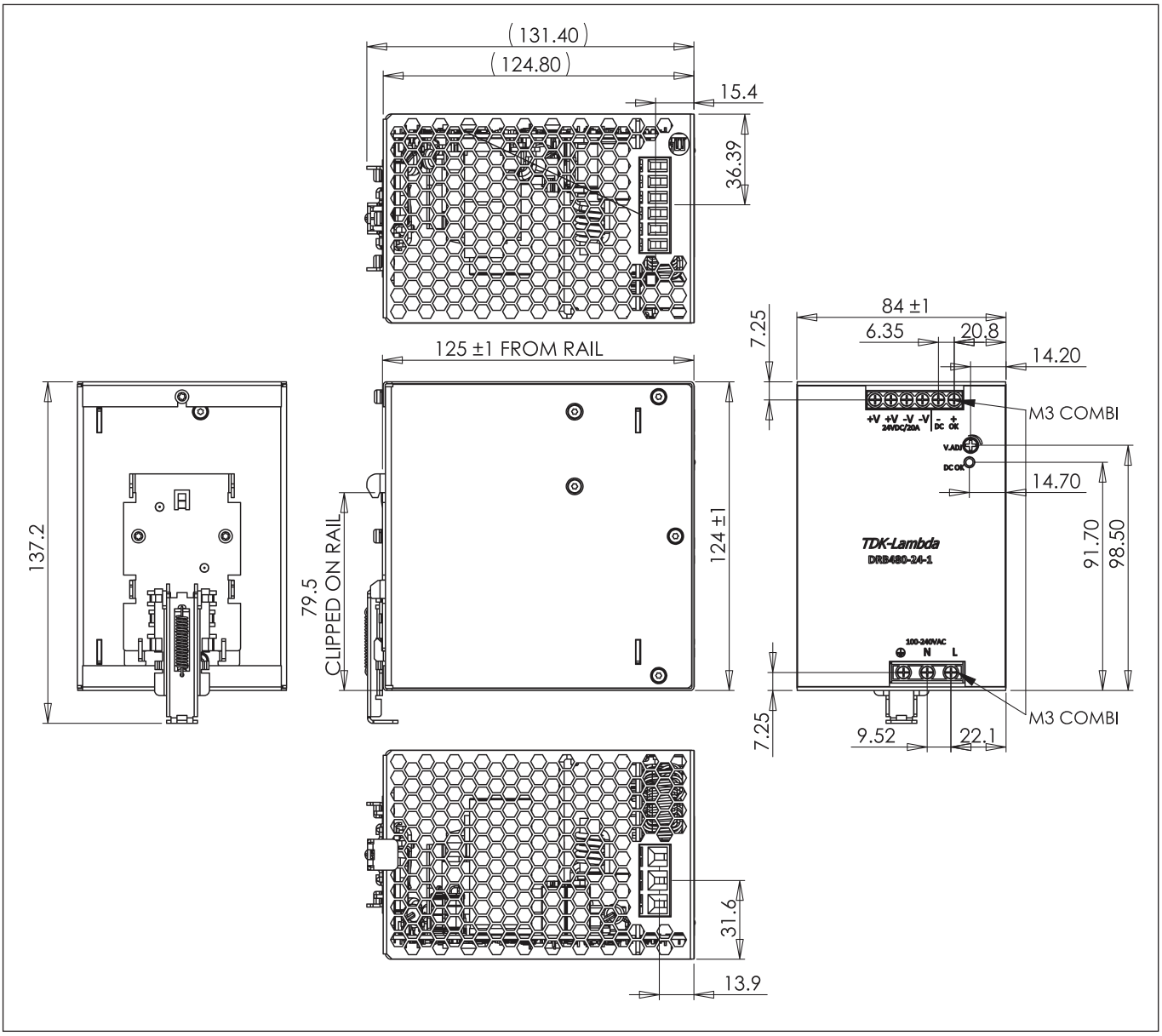


Outline DRB 480



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