https://product.tdk.com/en/power/drb
https://www.emea.lambda.tdk.com/uk/products/drb-3-phase-series

120W - 240W DIN Rail Mount Three Phase Power Supplies

Industrial Test Semi-Fab



The DRB120/240-3 series supports the growing trend for simple and economically priced 3-phase input 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 94%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of typically 10 years. Available in two power levels, 120W and 240W, the series provides a choice of 12V, 24V and 48V outputs. All models can provide a peak power of 120% for up to 2s to handle capacitive loading. A low energy inrush current level avoids nuisance tripping of circuit breakers. Units can be connected in parallel to provide more power or for redundant applications. A DC Good relay, remote on/off and a choice of models with either screw or push-in wire terminals.

Features	Benefits
• High Efficiency, up to 94%	• Lowers Operating Costs and Improves Thermal Performance
• Narrow Case Widths	• Occupies Less Space on the DIN rail
• Curve B Radiated and Conducted EMI	• Reduced Electrical Noise in the System
• Long E-Capacitor Life (typically 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) (≤2s)	Maximum Power (W)	Maximum Peak Power (W)	Terminal Type	Efficiency (%) (400/500Vac) (1)
DRB120-12-3-A0	12	11.4 - 15	10	12	120	144	Screw	89.4 / 89.1
DRB120-12-3-A1	12	11.4 - 15	10	12	120	144	Push-in	89.4 / 89.1
DRB120-24-3-A0	24	22.5 - 29	5	6	120	144	Screw	91.3 / 91.2
DRB120-24-3-A1	24	22.5 - 29	5	6	120	144	Push-in	91.3 / 91.2
DRB240-24-3-A0	24	22.5 - 29	10	12	240	288	Screw	93.1 / 93.2
DRB240-24-3-A1	24	22.5 - 29	10	12	240	288	Push-in	93.1 / 93.2
DRB240-48-3-A0	48	45 - 56	5	6	240	288	Screw	93.8 / 94.0
DRB240-48-3-A1	48	45 - 56	5	6	240	288	Push-in	93.8 / 94.0

Related Products

Type	Part Number(s)	Description
Redundancy module	DRM40	20 to 40A DIN rail Redundancy module
Buffer DIN rail modules	DBM20	20A DIN rail Buffer (hold-up) modules
Low power DIN rail power supplies	DRB15, 30, 50, 100	15 to 100W AC-DC single phase DIN rail power supplies
Mid power DIN rail power supplies	DRB120, 240, 480	120 to 480W AC-DC single phase DIN rail power supplies
Mid to high power premium DIN rail power supplies	DRF120, 240, 480, 960	120 to 960W AC-DC single phase DIN rail power supplies
DIN rail mount filters	RTMN	6A to 60A 500Vac three phase 2 stage filters with pulse attenuation

Specifications

Model		DRB120-12-3-Ax	DRB120-24-3-Ax	DRB240-24-3-Ax	DRB240-48-3-Ax
Input					
Input Voltage Range	Vac	3-phase 350 - 575			
Input Frequency	Hz	47 - 63			
Input Current (Per Phase Max)	A	0.5	0.5	0.8	0.8
Inrush Current (Cold Start 400 / 500Vac)	A	30 / 40	30 / 39	36 / 40	34 / 49
Dropped Phase Output Power	W	Full load operating on 2 phases. See technical datasheet for conditions			
Leakage Current (575Vac, 60Hz)	mA	<1			
Touch Current (575Vac, 60Hz)	uA	<50			
Power Factor (400/500Vac)	-	>0.5		>0.6	
Harmonic Compliance	-	Meets EN61000-3-2 Class A			
No Load Power Consumption	W	1.7	1.7	1.6	1.9
Hold Up Time (minimum) at 400 / 500Vac	ms	21 / 41	23 / 43	22 / 44	23 / 46
Efficiency	-	See model selector table			
Average Efficiency (400 / 500Vac) (2)	%	87.5 / 87.3	89.8 / 88.9	92.5 / 92.1	93.0 / 92.6
Conducted & Radiated EMI	-	EN55011-B, CISPR11-B			
Immunity	-	See immunity table			
Safety Certifications and Markings	-	IEC/EN/UL/CSA 61010-1, 61010-2-201, 62368-1, IEC 60950-1, EN 60204-1, IEC/EN 62477-1, 61204-7, 61558-2-16, CE Mark and UKCA Mark			

Immunity

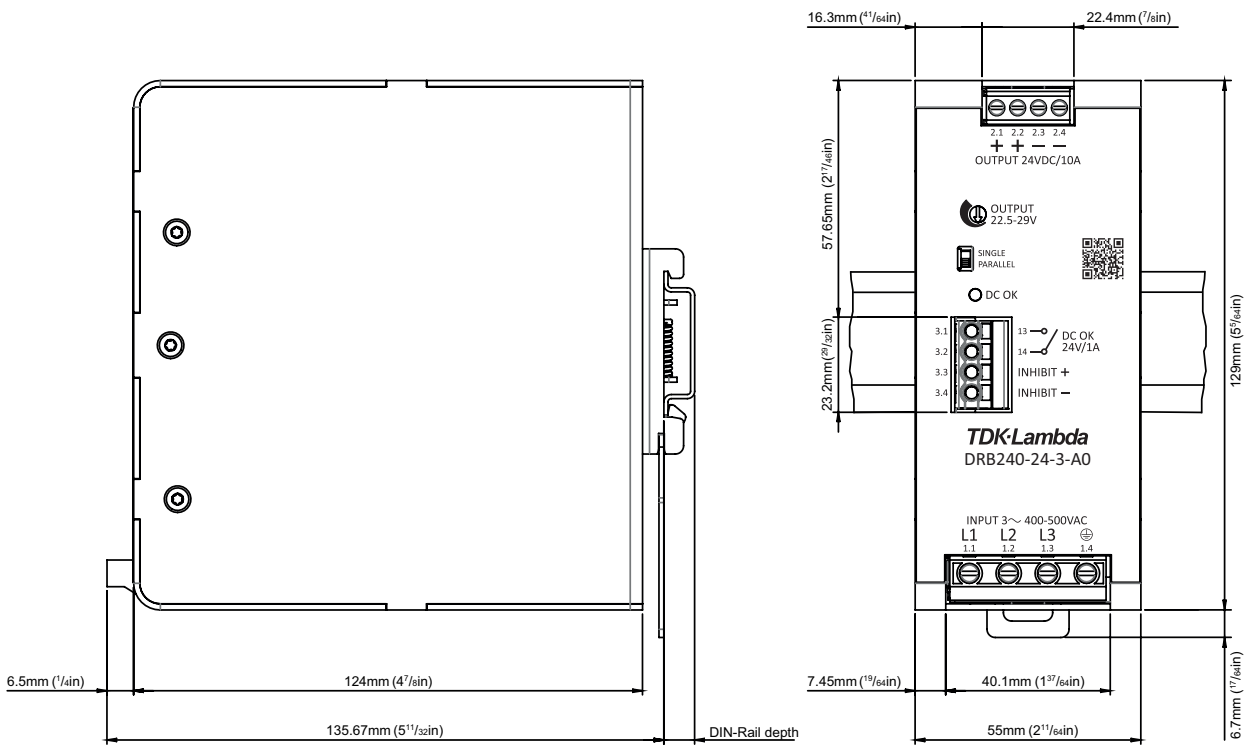
Test	Standard	Test Level	Criteria	
ESD	EN61000-4-2	See immunity report	A	4kV contact 8kV air discharge
Radiated Susceptibility	EN61000-4-3	See immunity report	A	10V/m: 80MHz to 1GHz 3V/m 1.4GHz to 2GHz 1V/m 2GHz to 2.7GHz
Electrical Fast Transient Burst	EN61000-4-4	See immunity report	A	Input 4kV 5kHz Output 2kV 5kHz Signal contact 2kV 5kHz
Surge	EN61000-4-5	See immunity report	A	Input symmetrical (L-L) 2kV Input asymmetrical (L-PE) 4kV Output symmetrical (L-L) 0.5kV Output asymmetrical (L-PE) 1kV
Conducted Susceptibility	EN61000-4-6	10V	A	150kHz to 80MHz
Magnetic Fields	EN61000-4-8	30A/m	A	50Hz, 60s each axis (x, y, z)
Voltage Dips and	EN61000-4-11	500ms	A	400Vac at 70%, 50Hz
Input Interruptions	EN61000-4-34	200ms 20ms 5000ms	A A C	400Vac at 40%, 50Hz 400Vac at 0%, 50Hz 400Vac at 0%, 50Hz

Specifications

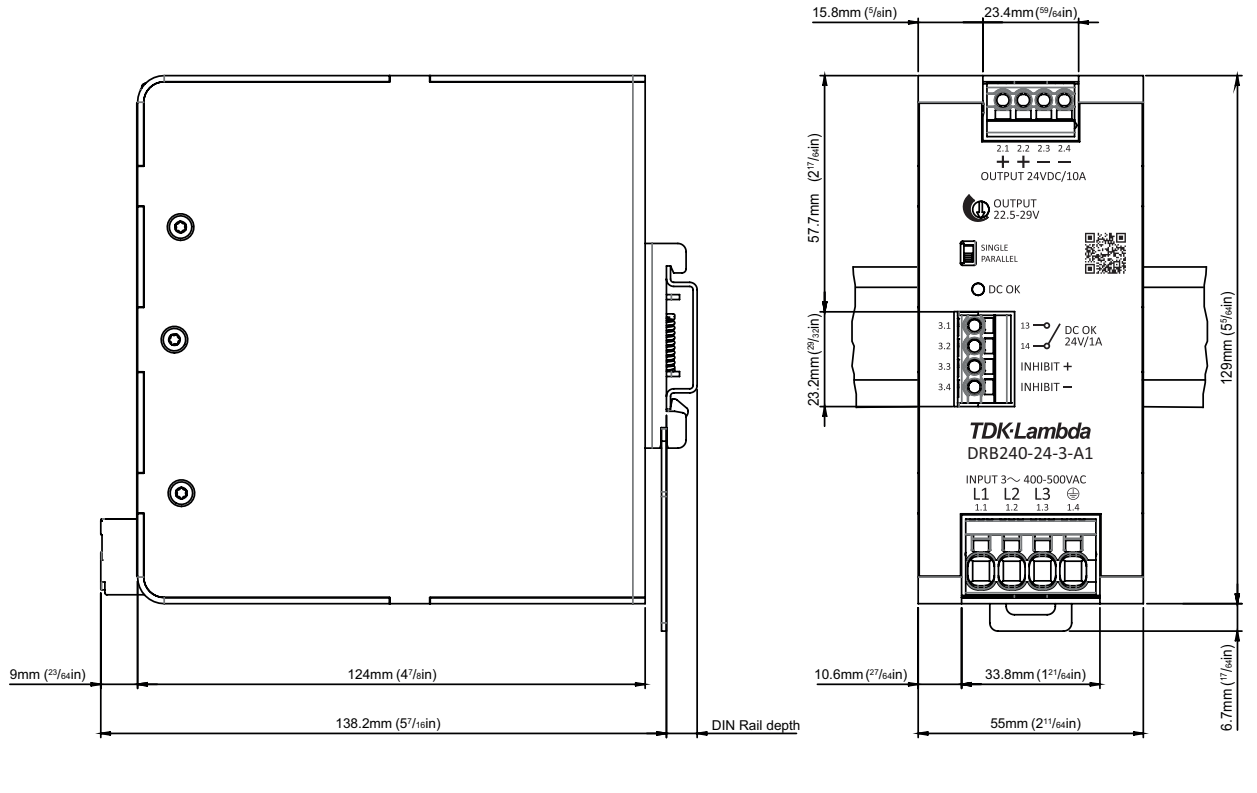
Model		DRB120-12-3-Ax	DRB120-24-3-Ax	DRB240-24-3-Ax	DRB240-48-3-Ax
Output					
Output Voltage Tolerance (100% load)	%	± 3 maximum			
Switching Frequency (Output Converter)	kHz	50 to 135. (Variable with input line and output load)			
Line Regulation	%	≤ 0.1			
Load Regulation (No Parallel Mode)	%	≤ 1.1	≤ 0.4	≤ 0.6	≤ 0.2
Load Regulation (Parallel Mode)	%	≤ 3.8	≤ 2.9	≤ 3.1	≤ 2.8
Ripple & Noise (+25 to 70°C ambient)	mV	10	10	10	20
Ripple & Noise (-25 to ≤+25°C ambient)	mV	20	30	40	80
Minimum Load	-	No minimum load required			
Maximum Load Capacitance	uF	10,000	5,000	10,000	5,000
Overcurrent Protection (Auto Recovery)	%	≤ 145	≤ 150	≤ 150	≤ 150
Overvoltage Protection (Auto Recovery)	V	≤ 18	≤ 32	≤ 32	≤ 58
Overtemperature Protection	-	Yes. Auto recovery			
Remote Sense	-	None			
Remote On/Off	-	Closed contact or <4V enables output			
DC Good	-	Closed contact relay when output voltage is >95%			
Indicators	-	Green LED indicates DC is OK			
Parallel Operation	-	Front panel DIP switch to enable parallel droop mode current sharing. Refer to technical datasheet when paralleling.			
Environmental					
Operating Temperature Nominal	°C	-25 to +55 full load, up to 70 with derating (see derating below)			
Operating Temperature Derating Above 55°C	W/°C	2	0.8	2.4	2.6
Storage Temperature	°C	-40 to +85			
Humidity (Non condensing)	%RH	95 (Operating & Storage)			
Cooling	-	Convection			
Altitude	m	3,000 nominal, (6,000 maximum no UL certification)			
Withstand Voltage (For 1 minute)	Vac	Input to Output 3,510, Input to GND 2,210, Output to GND and signals 1,390			
Vibration (Non operating)	-	IEC 60068-2-6: 2g / 10 to 500Hz, 1 hour/direction X,Y,Z on DIN rail			
Shock (Non operating)	-	IEC 60068-2-27, 30g / 11ms ±5ms, 3 x each axis on DIN rail			
Other					
Weight (Typ)	g	660	660	780	780
Size (WxHxD)	mm	55 x 129 x 138.2			
Size (WxHxD)	Inches	2.17 x 5.08 x 5.44			
Case Material	-	Aluminum			
DIN Rail Type	-	Suitable for mounting on TS-35/7.5 or TS35/15 DIN Rails			
MTBF - Telcordia SR-332 issue 4*	Hours	1,100,000			
Warranty	Years	3			

Notes
See website for detailed specifications, test methods and installation manual
(1) Minimum at 100% load
(2) Weighted average: 10%@Pout=20%, 50%@Pout=50%, 20%@Pout=80%, 20%@Pout=100%
*25°C ambient, full load.

Outline DRB-3 Screw Terminals (-A0 suffix)



Outline DRB-3 Push In Terminals (-A1 suffix)



TDK-Lambda France SAS
Tel: +33 1 60 12 71 65
tlf.fr.powersolutions@tdk.com
www.emea.lambda.tdk.com/fr

Italy Sales Office
Tel: +39 02 61 29 38 63
tlf.it.powersolutions@tdk.com
www.emea.lambda.tdk.com/it

Netherlands
tlf.nl.powersolutions@tdk.com
www.emea.lambda.tdk.com/nl

TDK-Lambda Germany GmbH
Tel: +49 7841 666 0
tlg.powersolutions@tdk.com
www.emea.lambda.tdk.com/de

Austria Sales Office
Tel: +43 2256 655 84
tlg.at.powersolutions@tdk.com
www.emea.lambda.tdk.com/at

Switzerland Sales Office
Tel: +41 44 850 53 53
tlg.ch.powersolutions@tdk.com
www.emea.lambda.tdk.com/ch

Nordic Sales Office
Tel: +45 8853 8086
tlg.dk.powersolutions@tdk.com
www.emea.lambda.tdk.com/dk

TDK-Lambda UK Ltd.
Tel: +44 (0) 12 71 85 66 66
tlu.powersolutions@tdk.com
www.emea.lambda.tdk.com/uk

TDK-Lambda Ltd.
Tel: +9 723 902 4333
tli.powersolutions@tdk.com
www.emea.lambda.tdk.com/il-en

TDK-Lambda Americas
Tel: +1 800-LAMBDA-4 or 1-800-526-2324
tla.powersolutions@tdk.com
www.us.lambda.tdk.com

TDK Electronics do Brasil Ltda
Tel: +55 11 3289-9599
sales.br@tdk-electronics.tdk.com
www.tdk-electronics.tdk.com/en

TDK-Lambda Corporation
Tel: +81-3-6778-1113
www.jp.lambda.tdk.com

TDK-Lambda (China) Electronics Co. Ltd.
Tel: +86 21 6485-0777
tlc.powersolutions@tdk.com
www.lambda.tdk.com.cn

TDK-Lambda Singapore Pte Ltd.
Tel: +65 6251 7211
tls.marketing@tdk.com
www.sg.lambda.tdk.com

TDK India Private Limited, Power Supply Division
Tel: +91 80 4039-0660
mathew.philip@tdk.com
www.sg.lambda.tdk.com