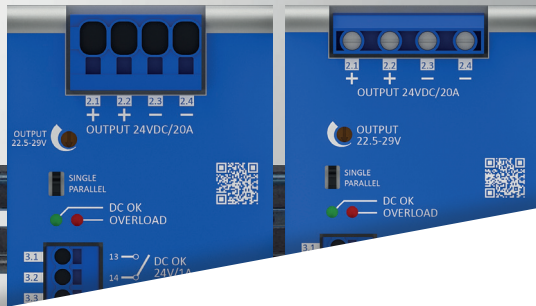




Efficient all-round talents with push-in or screw terminals

DRB 3 Phase Series

The DIN-Rail power supplies in the DRB series are part of TDK-Lambda's industrial heritage. They can be used in many applications, ranging from conventional switch cabinets and decentralised machinery and systems, to information and communications technology solutions.



EMEA.LAMBDA.TDK.COM/DRB-3-PHASE

PD000001A06_DRB3PhaseSeries_EN_Ver | 29.02.24

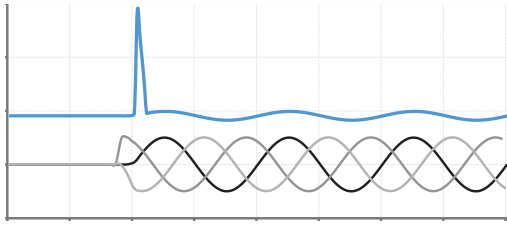


DRB 3 Phase Series DIN-Rail Power Supplies



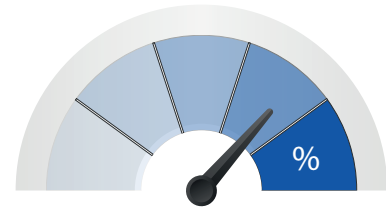
The series covers the popular output voltages of 12, 24, 48 and 72 volts, and users can choose between screw and push-in terminal blocks. All seven major electrical safety standards are covered, enabling global market access. The DRB's high operating efficiencies, conservative thermal design and redundant overvoltage protection measures provide maximum system up-time. Product reliability is also supported by a reduced component count and TDK-Lambda's stringent testing requirements. Overall the DRB 3 phase series offer an excellent balance between functionality and price.





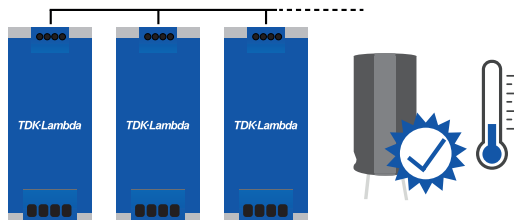
NUISANCE CIRCUIT BREAKER TRIPPING? NOT A PROBLEM!

The input inrush current of the power supplies lasts less than 2ms. This, combined with a very low energy content of the initial current drawn, false or nuisance tripping of the line protection circuitry is avoided.



POWERFUL WITH CAPACITIVE LOADS

Starting into a capacitive load poses a challenge for many power supplies. Thanks to comprehensive boost power capability of 150 percent for several seconds, these applications get reliably started.



DISTRIBUTING LOAD CURRENT, ENHANCING RELIABILITY

To provide additional power, DRB models of the same voltage and current can be connected in parallel. Using the front panel dip-switch, the DRBs can be easily configured from single to parallel operation. The load current is then shared between the power supplies, reducing the thermal stress on the electrolytic capacitors and enhancing field longevity.



SUPPORTING SYSTEM CONTROLS

The availability of the output voltage can be remotely determined using the DC-OK relay contact. To avoid false notifications, voltage drops lasting less than 100ms are not reported. The highly responsive inhibit contact enables the DRB power supplies to be turned on and off in an effective manner.



120W models

 All products are available with screw-type (-A0) or push-in terminals (-A1)

		DRB120-12-3-XX	DRB120-24-3-XX
Output voltage	<i>nom.</i>	12V _{DC}	24V _{DC}
Adjustment range	<i>nom.</i>	11.4 .. 15V _{DC}	22.5 .. 29V _{DC}
Output current	<i>nom.</i>	10A	5A
Boost current 1	<i>max.</i>	12A / continuous	6A / continuous
Boost current 2	<i>max.</i>	14.5A / 600s	7.5A / 600s
Hold-up time ¹	<i>min.</i>	20 / 40ms	20 / 40ms
Ripple & noise voltage	<i>max.</i>	10mVpp	10mVpp
Overload behaviour		Constant current + Intermittent mode (Hiccup)	
AC power systems		TN, TT, IT (IEC 61010-1), CGD	
Mains frequency	<i>nom.</i>	50/60Hz	
AC input voltage ⁷	<i>nom.</i>	3x400..500V _{AC}	
Voltage range	<i>max.</i>	3x350..575V _{AC}	
AC input current ²	<i>max.</i>	3x0.5A	3x0.5A
Inrush current ¹	<i>max.</i>	25 / 30A <2ms	
Inrush energy ¹	<i>max.</i>	0.3 / 0.6A ² s	0.3 / 0.6A ² s
Output power	<i>nom.</i>	120W	120W
Boost power 1	<i>max.</i>	144W / continuous	144W / continuous
Boost power 2	<i>max.</i>	174W / 600s	174W / 600s
Dropped phase power ⁶	<i>max.</i>	120W	120W
Power factor ²	<i>typ.</i>	0.50	0.50
Conversion efficiency ¹	<i>min.</i>	89.4 / 89.1%	91.3 / 91.2%
Power losses ¹	<i>max.</i>	14.2 / 14.7W	11.4 / 11.6W
No-load consumption ¹	<i>max.</i>	1.7 / 2.1W	1.7 / 2.1W
Service lifetime ¹	<i>min.</i>	162,000 / 142,000hrs	184,000 / 162,000hrs
Service / Early life MTBF ⁴	<i>min.</i>	1.8M / 0.79M hrs	
Ambient operating temperature	<i>max.</i>	-25 .. +70°C _{amb} (-13 .. +158°F _{amb})	
	<i>nom.</i>	-25 .. +55°C _{amb} (-13 .. +131°F _{amb})	
Power derating	<i>min.</i>	1.6 / 2.0W/°C _{amb} (1.11W/°F _{amb})	0.8W/°C _{amb} (0.44W/°F _{amb})
Operating altitude	<i>nom.</i>	3000mASL (9842ftASL)	
	<i>max.</i>	6000mASL (19685ftASL) ⁵	
Percental power derating ³	<i>min.</i>	5% per 1000m (5% per 3281ft)	
Temperature derating ³	<i>min.</i>	5K per 1000m (9K per 3281ft)	
Class of protection		I / IEC 61140	
Ingress protection degree		IP 20	
Radiated noise emission		Class B	
Conducted noise emission		Class B	
Width x Height x Depth	<i>max.</i>	55 x 129 x 138.2mm (2 ¹¹ / ₆₄ in x 5 ⁵ / ₆₄ in x 5 ⁷ / ₁₆ in)	
Weight		660g (1.46lb)	
Certifications (CB, UL, UR)		IEC/EN/UL/CSA 61010-1, 61010-2-201, 62368-1 (Ed.2)	
Designed to meet		IEC 60950-1 EN 60204-1 IEC/EN 62477-1, 61204-7, 61558-2-16	

Unless otherwise stated, all values are specified in normal mounting position, at full load, nominal input and output voltages, 25°C ambient temperature and a run-in time of 5 minutes.

¹ 400 / 500V_{AC} | ² 400 .. 500V_{AC} | ³ above 3000mASL (9842ftASL) | ⁴ Telcordia SR-332 Issue 4 | ⁵ not UL approved, reduced OVC | ⁶ 2x 350 .. 575V_{AC}

⁷ The product is also capable to operate with DC input voltage. Please contact your local support team.



240W models

 All products are available with screw-type (-A0) or push-in terminals (-A1)

		DRB240-24-3-XX	DRB240-48-3-XX
Output voltage	nom.	24V _{DC}	48V _{DC}
Adjustment range	nom.	22.5 .. 29V _{DC}	45 .. 56V _{DC}
Output current	nom.	10A	5A
Boost current 1	max.	12A / 300s	6A / 300s
Boost current 2	max.	15A / 60s	7.5A / 60s
Hold-up time ¹	min.	20 / 40ms	20 / 40ms
Ripple & noise voltage ¹	max.	10 / 40mVpp	20 / 80mVpp
Overload behaviour		Constant current + Intermittent mode (Hiccup)	
AC power systems		TN, TT, IT (IEC 61010-1), CGD	
Mains frequency	nom.	50/60Hz	
AC input voltage ⁷	nom.	3x400..500V _{AC}	
Voltage range	max.	3x350..575V _{AC}	
AC input current ²	max.	3x0.8A	3x0.8A
Inrush current ¹	max.	25 / 30A <3ms	
Inrush energy ¹	max.	0.3 / 0.8A ² s	0.3 / 0.8A ² s
Output power	nom.	240W	240W
Boost power 1	max.	288W / 300s	288W / 300s
Boost power 2	max.	360W / 60s	360W / 60s
Dropped phase power ⁶	max.	240W	240W
Power factor ²	typ.	0.60	0.60
Conversion efficiency ¹	min.	93.1 / 93.2%	93.8 / 94%
Power losses ¹	max.	17.8 / 17.5W	15.9 / 15.3W
No-load consumption ¹	max.	1.6 / 2.0W	1.9 / 2.3W
Service lifetime ¹	min.	82,000 / 78,000hrs	94,000 / 90,000hrs
Service / Early life MTBF ⁴	min.	1.8M / 0.79M hrs	
Ambient operating temperature	max.	-25 .. +70°C _{amb} (-13 .. +158°F _{amb})	
	nom.	-25 .. +55°C _{amb} (-13 .. +131°F _{amb})	
Power derating	min.	2.4W/°C _{amb} (1.33W/°F _{amb})	2.6W/°C _{amb} (1.44W/°F _{amb})
Operating altitude	nom.	3000mASL (9842ftASL)	
	max.	6000mASL (19685ftASL) ⁵	
Percental power derating ³	min.	5% per 1000m (5% per 3281ft)	
Temperature derating ³	min.	5K per 1000m (9K per 3281ft)	
Class of protection		I / IEC 61140	
Ingress protection degree		IP 20	
Radiated noise emission		Class B	
Conducted noise emission		Class B	
Width x Height x Depth	max.	55 x 129 x 138.2mm (2 ¹¹ / ₆₄ in x 5 ⁵ / ₆₄ in x 5 ⁷ / ₁₆ in)	
Weight		780g (1.72lb)	
Certifications (CB, UL, UR)		IEC/EN/UL/CSA 61010-1, 61010-2-201, 62368-1 (Ed.2)	
Designed to meet		IEC 60950-1 EN 60204-1 IEC/EN 62477-1, 61204-7, 61558-2-16	

Unless otherwise stated, all values are specified in normal mounting position, at full load, nominal input and output voltages, 25°C ambient temperature and a run-in time of 5 minutes.

¹ 400 / 500VAC | ² 400 .. 500VAC | ³ above 3000mASL (9842ftASL) | ⁴ Telcordia SR-332 Issue 4 | ⁵ not UL approved, reduced OVC | ⁶ 2x 350 .. 575VAC

⁷ The product is also capable to operate with DC input voltage. Please contact your local support team.



480W models

 All products are available with screw-type (-A0) or push-in terminals (-A1)

		DRB480-24-3-XX	DRB480-48-3-XX	DRB480-72-3-XX
Output voltage	<i>nom.</i>	24V _{DC}	48V _{DC}	72V _{DC}
Adjustment range	<i>nom.</i>	22.5 .. 29V _{DC}	45 .. 56V _{DC}	70 .. 85V _{DC}
Output current	<i>nom.</i>	20.0A	10.0A	6.7A
Boost current 1	<i>max.</i>	30A / 5s	15A / 5s	10A / 5s
Boost current 2	<i>max.</i>	30A / 7s	15A / 7s	10A / 7s
Hold-up time ²	<i>min.</i>	24ms		
Ripple & noise voltage	<i>max.</i>	30mVpp	40mVpp	50mVpp
Overload behaviour		Constant current + Intermittent mode (Hiccup)		
AC power systems		TN, TT, IT (IEC 61010-1), CGD		
Mains frequency	<i>nom.</i>	50/60Hz		
AC input voltage ⁷	<i>nom.</i>	3x400..500V _{AC}		
Voltage range	<i>max.</i>	3x350..575V _{AC}		
AC input current ²	<i>max.</i>	3x1.2A		
Inrush current ¹	<i>max.</i>	17 / 22A <200µs		
Inrush energy ¹	<i>max.</i>	0.04 / 0.05A ² s		
Output power	<i>nom.</i>	480W		
Boost power 1	<i>max.</i>	720W / 5s		
Boost power 2	<i>max.</i>	720W / 7s		
Dropped phase power ⁶	<i>max.</i>	240W		
Power factor ²	<i>typ.</i>	0.92		
Conversion efficiency ¹	<i>min.</i>	95.1 / 94.9%	95.3 / 95.1%	95.7 / 95.6%
Power losses ¹	<i>max.</i>	24.7 / 25.8W	23.7 / 24.7W	21.6 / 22.1W
No-load consumption ¹	<i>max.</i>	3.0 / 3.2W	3.0 / 3.3W	3.0 / 3.3W
Service lifetime ¹	<i>min.</i>	148,000 / 124,000hrs	157,000 / 119,000hrs	137,000 / 123,000hrs
Service / Early life MTBF ⁴	<i>min.</i>	0.86M / 0.48M hrs	0.86M / 0.45M hrs	0.86M / 0.45M hrs
Ambient operating temperature	<i>max.</i> <i>nom.</i>	-25 .. +70°C _{amb} (-13 .. +158°F _{amb}) -25 .. +55°C _{amb} (-13 .. +131°F _{amb})		
Power derating	<i>min.</i>	12W/°C _{amb} (6.67W/°F _{amb})	9.6W/°C _{amb} (5.33W/°F _{amb})	8.0W/°C _{amb} (4.44W/°F _{amb})
Operating altitude	<i>nom.</i> <i>max.</i>	3000mASL (9842ftASL) 6000mASL (19685ftASL) ⁵		
Percental power derating ³	<i>min.</i>	5% per 1000m (5% per 3281ft)		
Temperature derating ³	<i>min.</i>	5K per 1000m (9K per 3281ft)		
Class of protection		I / IEC 61140		
Ingress protection degree		IP 20		
Radiated noise emission		Class B		
Conducted noise emission		Class B		
Width x Height x Depth	<i>max.</i>	65 x 129 x 159.3mm (2 ⁹ / ₁₆ in x 5 ⁵ / ₁₆ in x 6 ¹⁷ / ₆₄ in)		
Weight		1050g (2.31lb)		
Certifications (CB, UL, UR)		IEC/EN/UL/CSA 61010-1, 61010-2-201, 62368-1 (Ed.2)		
Designed to meet		IEC 60950-1 EN 60204-1 IEC/EN 62477-1, 61204-7, 61558-2-16		

Unless otherwise stated, all values are specified in normal mounting position, at full load, nominal input and output voltages, 25°C ambient temperature and a run-in time of 5 minutes.

¹ 400 / 500V_{AC} | ² 400 .. 500V_{AC} | ³ above 3000mASL (9842ftASL) | ⁴ Telcordia SR-332 Issue 4 | ⁵ not UL approved, reduced OVC | ⁶ 2x 350 .. 575V_{AC}

⁷ The product is also capable to operate with DC input voltage. Please contact your local support team.



960W models

i All products are available with screw-type (-A0) or push-in terminals (-A1)

		DRB960-24-3-XX	DRB960-48-3-XX	DRB960-72-3-XX
Output voltage	nom.	24V _{DC}	48V _{DC}	72V _{DC}
Adjustment range	nom.	22.5 .. 29V _{DC}	45 .. 56V _{DC}	70 .. 85V _{DC}
Output current	nom.	40.0A	20.0A	13.3A
Boost current 1	max.	60A / 5s	30A / 5s	20A / 5s
Boost current 2	max.	60A / 7s	30A / 7s	20A / 7s
Hold-up time ²	min.	20ms		
Ripple & noise voltage	max.	65mVpp	100mVpp	40mVpp
Overload behaviour	Constant current + Intermittent mode (Hiccup)			
AC power systems	TN, TT, IT (IEC 61010-1), CGD			
Mains frequency	nom.	50/60Hz		
AC input voltage ⁷	nom.	3x400..500V _{AC}		
Voltage range	max.	3x350..575V _{AC}		
AC input current ²	max.	3x2A		
Inrush current ¹	max.	17 / 20A <1ms		
Inrush energy ¹	max.	0.02 / 0.02A ² s		
Output power	nom.	960W		
Boost power 1	max.	1440W / 5s		
Boost power 2	max.	1440W / 7s		
Dropped phase power ⁶	max.	480W		
Power factor ²	typ.	0.94		
Conversion efficiency ¹	min.	95.2 / 95.1%	95.9 / 95.8%	96.3 / 96.2%
Power losses ¹	max.	48.4 / 49.5W	41.0 / 42.1W	36.9 / 37.9W
No-load consumption ¹	max.	6.1 / 6.0W	6.2 / 6.1W	5.6 / 5.6W
Service lifetime ¹	min.	117,000 / 113,000hrs	130,000 / 128,000hrs	130,000 / 124,000hrs
Service / Early life MTBF ⁴	min.	0.97M / 0.39M hrs		
Ambient operating temperature	max.	-25 .. +70°C _{amb} (-13 .. +158°F _{amb})		
	nom.	-25 .. +55°C _{amb} (-13 .. +131°F _{amb})		
Power derating	min.	16W/°C _{amb} (8.89W/°F _{amb})	16W/°C _{amb} (8.89W/°F _{amb})	6.24W/°C _{amb} (3.47W/°F _{amb})
Operating altitude	nom.	3000mASL (9842ftASL)		
	max.	6000mASL (19685ftASL) ⁵		
Percental power derating ³	min.	5% per 1000m (5% per 3281ft)		
Temperature derating ³	min.	5K per 1000m (9K per 3281ft)		
Class of protection		I / IEC 61140		
Ingress protection degree		IP 20		
Radiated noise emission		Class B		
Conducted noise emission		Class B		
Width x Height x Depth	max.	100 x 129 x 171.9mm (3 ¹⁵ / ₁₆ in x 5 ⁵ / ₆₄ in x 6 ⁴⁹ / ₆₄ in)		
Weight		1750g (3.86lb)		
Certifications (CB, UL, UR)		IEC/EN/UL/CSA 61010-1, 61010-2-201, 62368-1 (Ed.2)		
Designed to meet		IEC 60950-1 EN 60204-1 IEC/EN 62477-1, 61204-7, 61558-2-16		

Unless otherwise stated, all values are specified in normal mounting position, at full load, nominal input and output voltages, 25°C ambient temperature and a run-in time of 5 minutes.

¹ 400 / 500V_{AC} | ² 400 .. 500V_{AC} | ³ above 3000mASL (9842ftASL) | ⁴ Telcordia SR-332 Issue 4 | ⁵ not UL approved, reduced OVC | ⁶ 2x 350 .. 575V_{AC}

⁷ The product is also capable to operate with DC input voltage. Please contact your local support team.

i All values are preliminary and subject to changes without notice.



Accessories



DBM buffer modules

In order to secure process uptime and reliability in 24V low-voltage systems, DBM buffer modules increase hold-up time or provide a reserve for peak loads.

DBM20

20A input/output, electrolytic capacitors, signalling & control, screw terminals

DBM20/E

20A input/output, electrolytic capacitors, signalling & control, spring clamp terminals

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DRM redundancy modules

For building fault tolerant 12/24V systems, DRM redundancy modules can be used to decouple n+1 power supplies.

DRM40

40A output, 2x20A input, screw terminals, DC OK and balancing LEDs

DRM40B

40A output, 2x20A input, screw terminals

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DDA DC/DC converter

Non-isolated step-down converter for creating additional DC bus voltages from a single DC input source.

DDA250

Single output 20A at 3.3..15V, input 9..53V, DC OK LED, screw terminals

DDA325

Dual output 14A at 3.3..24V and 8A at -3.3..-24V, input 9..40V, DC OK LEDs, screw terminals

DDA500

Dual output 2x20A at 3.3..15V, input 9..53V, DC OK LEDs, screw terminals

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