

DRB 3 Phase Series

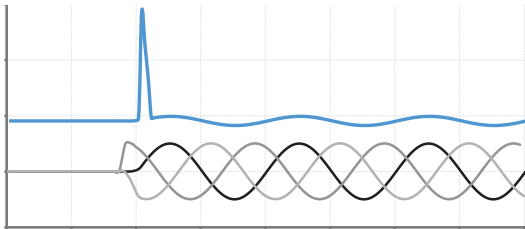
120/240W DIN-Rail power supplies



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. The series covers the popular output voltages of 12, 24 and 48 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.



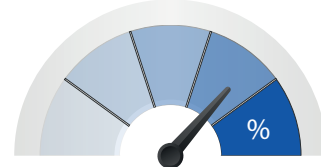
Nuisance circuit breaker tripping? Not a problem!



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

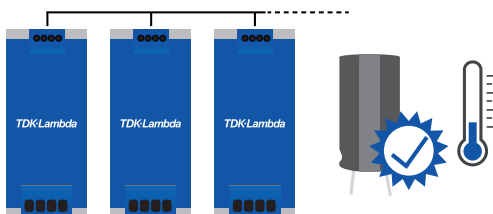


POWER

Starting into a capacitive load poses a challenge for many power supplies. Thanks to the DRB's peak power capability of 120 percent for 2 seconds and a constant current overload characteristic, the DRB series can reliably operate under these conditions.



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.

 All products are available as **-A0** (screw-in terminal) and **-A1** (push-in terminal) versions.





| Technical data | | DRB120-12-3-XX | DRB120-24-3-XX | DRB240-24-3-XX | DRB240-48-3-XX |
|--|--------------------------|---|--|--|--|
| Output voltage | <i>nom.</i> | 12V _{DC} | 24V _{DC} | 24V _{DC} | 48V _{DC} |
| Adjustment range | <i>max.</i> | 11.4 .. 15V _{DC} | 22.5 .. 29V _{DC} | 22.5 .. 29V _{DC} | 45 .. 56V _{DC} |
| Output current | <i>nom.</i> | 10A | 5A | 10A | 5A |
| Boost current | <i>max.</i> | 12A / 2s | 6A / 2s | 12A / 2s | 6A / 2s |
| Hold-up time ¹ | <i>min.</i> | 21 / 41ms | 23 / 43ms | 22 / 44ms | 23 / 46ms |
| Ripple & noise voltage | <i>max.</i> | 20mVpp | 30mVpp | 40mVpp | 80mVpp |
| Overload behaviour | | CC + Hiccup | | | |
| AC power systems | | TN, TT, wye | | | |
| Mains frequency | <i>nom.</i> | 50/60Hz | | | |
| AC input voltage | <i>nom.</i> | 3x400V _{AC} | | | |
| Voltage range | <i>max.</i> | 3x350 .. 575V _{AC} | | | |
| AC input current ² | <i>max.</i> | 3x0.5A | 3x0.5A | 3x0.8A | 3x0.8A |
| Inrush current ² | <i>max.</i> | 30A | 30A | 42A | 34A |
| Inrush energy ¹ | <i>max.</i> | 0.3 / 0.6A ² s | 0.3 / 0.6A ² s | 0.3 / 0.8A ² s | 0.3 / 0.8A ² s |
| Output power | <i>nom.</i> | 120W | 120W | 240W | 240W |
| Boost power | <i>max.</i> | 144W / 2s | 144W / 2s | 288W / 2s | 288W / 2s |
| Dropped phase power | <i>max.</i> | 120W / continuous | 120W / continuous | 240W / continuous | 240W / continuous |
| Power factor ² | <i>min.</i> | 0.50 | 0.50 | 0.60 | 0.58 |
| Conversion efficiency ¹ | <i>max.</i> | 89.4 / 89.1% | 91.3 / 91.2% | 93.1 / 93.2% | 93.8 / 94% |
| Power consumption ² | <i>max.</i> | 14.5W | 11.5W | 18.0W | 16.0W |
| Stand-by consumption | <i>max.</i> | 2.1W | 2.1W | 2.0W | 2.2W |
| Service lifetime ¹ | <i>min.</i> | 307,000 / 220,000hrs | 343,000 / 258,000hrs | 125,000 / 136,000hrs | 150,000 / 160,000hrs |
| Service / Early life MTBF ⁴ | <i>min.</i> | 5.7M / 1.1M 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> | 2.0W/°C _{amb} (1.11W/°F _{amb}) | 0.8W/°C _{amb} (0.44W/°F _{amb}) | 2.4W/°C _{amb} (1.33W/°F _{amb}) | 2.6W/°C _{amb} (1.44W/°F _{amb}) |
| Operating altitude | <i>nom.</i> | 3000mASL (9842ftASL) | | | |
| | <i>max.</i> ⁵ | 6000mASL (19685ftASL) | | | |
| Percental power derating ³ | <i>min.</i> | 7% per 1000m (7% per 3281ft) | | | |
| Temperature derating ³ | <i>min.</i> | 5°C per 1000m (9°F 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 / ₆₄ in) | | | |
| Weight | | 660g (1.46lb) | | 780g (1.72lb) | |
| Certifications (CB, UL, UR) | | IEC/EN/UL/CSA 61010-1, 61010-2-201, 62368-1 (Ed.2) | | | |
| Additional safety standards ⁶ | | 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 UL approval limited to 3000mASL (9842ftASL)

⁶ The safety design of the products also complies with the harmonised standards mentioned here.

Accessories

| | | |
|----------------|---|---|
| DBM20 | 20A buffer module for short-term hold-up or peak power in 24V _{DC} load systems. |  |
| DRM40B | 40A redundancy module for creating redundant power supply systems up to 2x 20A. |  |
| DRM40 | 40A redundancy module with additional signalling features for creating redundant power supply systems up to 2x 20A. |  |
| DDA250N | 250W non-isolated step-down DC/DC converter for creating additional DC bus voltages from a single DC input source. |  |