

DNR120-960TS SERIES

AC/DC 3Phase DIN Rail Power Supplies: 120-960 Watts



Features

- Three Phase Input
- Up to 92% Efficiency
- Wide Adjustment Range
- Full Power -40 °C to +60 °C
- Rugged Design for Industrial Applications
- Single Phase Input Operation (340-575 VAC)
- Suitable for battery charging

Specification

Input

Input Voltage	• 340-575 VAC 3 phase (single phase operation with 75% of rated output), 480-820 VDC
Input Frequency	• 47-63 Hz
Input Current	• DNR120TS: 0.35 A at 500 VAC DNR240TS: 0.70 A at 500 VAC DNR480TS: 1.00 A at 500 VAC DNR960TS: 1.60 A at 500 VAC
Inrush Current	• 120 W 15 A typical at 500 VAC, cold start 240 W 20 A typical at 500 VAC, cold start 480 W 29 A typical at 500 VAC, cold start 960 W 30 A typical at 500 VAC, cold start
Power Factor	• 0.6 at 500 VAC input and nominal load
Earth Leakage Current	• 0.32 mA
Input Protection	• 3 internal fuses, 2 A, 600 VAC (DNR120TS) T3.15 A, 500 VAC (DNR240TS, DNR480 TS) 5 A, 600 VAC (DNR960TS)

Output

Output Voltage	• See table
Output Voltage Trim	• See table
Initial Set Accuracy	• $\pm 1\%$
Minimum Load	• No minimum load required
Start Up Delay	• <1000 ms (may increase at low temperature extremes)
Start Up Rise Time	• <150 ms
Hold Up Time	• 20 ms min at 400 VAC
Line Regulation	• $\pm 1\%$
Load Regulation	• $\pm 1\%$ max ($\pm 5\%$ for units in parallel)
Transient Response	• 4% max deviation recovering to within 1% in 1 ms for 50% load change
Ripple & Noise	• 100 mV pk-pk 20 MHz bandwidth (may increase at low temperature extremes)
Overvoltage Protection	• 120-145%, recycle input to reset,
Overload Protection	• 110%-140%, constant current, auto recovery
Temperature Coefficient	• $\pm 0.02\%/^{\circ}\text{C}$
Short Circuit Protection	• Continuous trip and restart (Hiccup Mode) Power limited (DNR480TS)
Parallel Operation	• 2 units can be connected in parallel, DNR240TS, DNR480TS and DNR960TS only, total output derates by 10%, use Ishare connection for DNR960TS. Redundancy module DPM10 available for load currents up to 10 A, contact sales

General

Efficiency	• See table
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 500 VAC Output to Ground
Switching Frequency	• DNR120TS: 65 kHz typical DNR240TS/960TS: 25 kHz typical DNR480TS: 70 kHz typical
Signals	• DC ON indicator LED Green, DC LOW indicator LED Red DC OK: normally open relay on 24 V models
MTBF	• DNR120TS: 560 kHrs, 240TS: 485 kHrs 480TS: 400 kHrs, 960TS: 350 kHrs to Bellcore Issue 6, at +40 °C, GB
DIN Rail	• Compatible with TS35/7.5 or TS35/15

Environmental

Operating Temperature	• -40 °C to 70 °C (DNR480TS -30 °C), derate linearly from 60 °C at 2.5%/°C (3.5%/°C for DNR960TS) (see derating curves)
Cooling	• Convection-cooled with 25 mm free space all sides
Operating Humidity	• 20-95% RH, non-condensing
Storage Temperature	• -40 °C to +85 °C
Shock	• 4 g peak, 22 ms on X, Y and Z axis
Vibration	• 10 to 500 Hz, 1 g rms on X, Y and Z axis

EMC & Safety

Emissions	• EN55022, class B conducted & radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 4 perf criteria A
Radiated Immunity	• EN61000-4-3, level 3 perf criteria A
EFT/Burst	• EN61000-4-4, level 4 perf criteria A
Surge	• EN61000-4-5, level 4 perf criteria A
Conducted Immunity	• EN61000-4-6, level 3 perf criteria A
Magnetic Field	• EN61000-4-8, level 4 perf criteria A
Dips & Interruptions	• EN61000-4-11, 30% 500 ms, 60% 200 ms, >95% 5000 ms Perf Criteria A, A, A
Safety Approvals	• EN60950-1 UL508 UL60950-1 Pollution Degree 2, UL60950-1 Overvoltage Category II UL508 Overvoltage Category III, ANSI/ISA 12.12.01 Class 1, Division 2, Groups A,B,C and D

