120-240 Watts

DNR120-240TS Series

- Rugged Design for Industrial Applications
- Up to 88% Typical Efficiency
- Wide Adjustment Range
- Full Power to 60 °C
- Three Phase Operation
- Single Phase Operation
- -25 °C to 70 °C Operation

Specification

Input

Input Voltage	• 340-575 VAC 3Ø (1Ø to 1Ø operation with 75% output derating), 480-820 VDC
Input Frequency	• 47-63 Hz
Input Current	• DNR120TS: 0.35 A at 500 VAC DNR240TS: 0.70 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
Power Factor	• 0.6 at 500 VAC input and nominal load
Earth Leakage Current	• 0.32 mA

Output

Output Voltage	• See table
Output Voltage Trim	• See table
Initial Set Accuracy	• ±1%
Minimum Load	• No minimum load required
Start Up Delay	• <1000 ms
Start Up Rise Time	• <150 ms
Hold Up Time	• 20 ms min at 400 VAC
Line Regulation	• ±1%
Load Regulation	• ±1% (±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 BW
Overvoltage Protection	• 120-145%, recycle input to reset
Overload Protection	• Continuous current limit
Temperature Coefficient	• ±0.02%/°C
Current Share	• 2 units can be connected in parallel, DNR240TS only, total output derates by 10%

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: 25 kHz typical
Signals	• DC ON indicator LED Green, DC LOW indicator LED Red DC OK: normally open relay on 24 V models
MTBF	• 210 kHrs to MIL-STD 217 F

Environmental

Operating Temperature	• -25 °C to 70 °C, derate linearly from 60 °C at 3.5%/°C (see derating curve)
Cooling	• Convection-cooled
Operating Humidity	• 20-95% RH, non-condensing
Storage Temperature	• -25 °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 3 perf criteria B
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, 100% 5000 ms Perf Criteria A, A, A
Safety Approvals	• EN60950-1:2001, UL508, UL60950-1

Models and Ratings

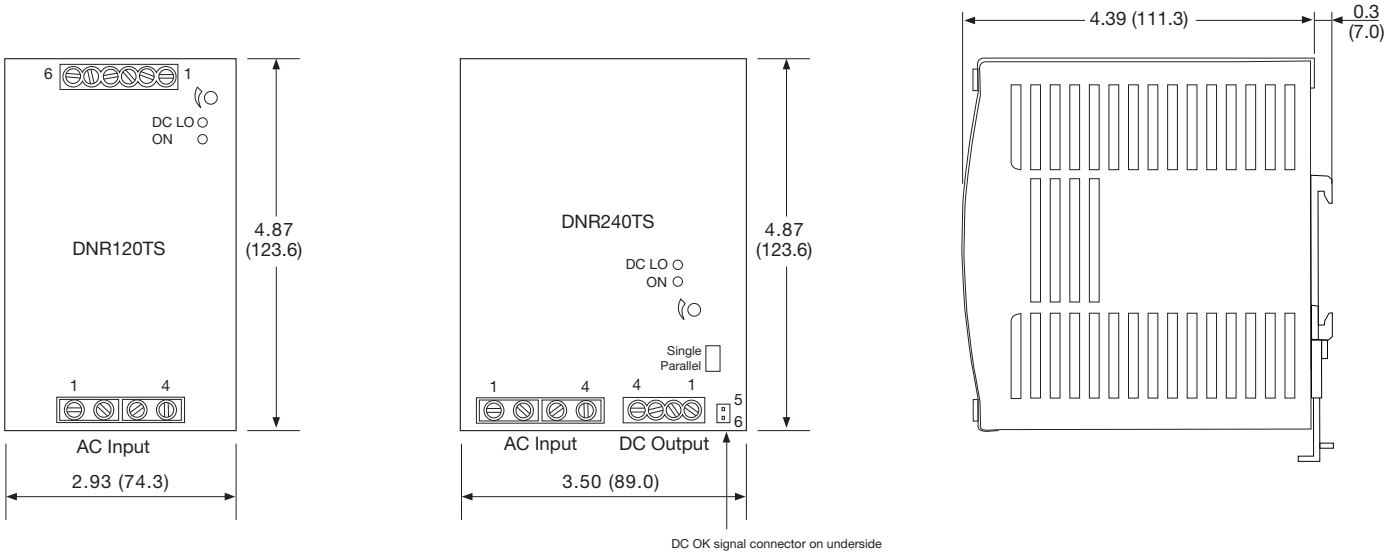
DNR120-240TS

Output Voltage	Output Voltage Trim	Output Current[1]	Typical Efficiency	Model Number
12 V	11.4-14.5 V	10.0 A	87%	DNR120TS12
24 V	22.5-28.5 V	5.0 A	88%	DNR120TS24
24 V	22.5-28.5 V	10.0 A	87%	DNR240TS24-I
48 V	47.0-56.0 V	5.0 A	88%	DNR240TS48-I

Notes

1. Reduce by 25% for single phase input operation.

Mechanical Details



Notes

1. All dimensions in inches (mm).
2. Weight - DNR120TS: 1.76 lb (800 g) approx.
   DNR240TS: 2.43 lb (1100 g) approx.
3. Screw terminal: 10-24 AWG cable size.
   DC OK signal connector: 10-24 AWG cable
4. DC OK Relay 60 VDC at 300 mA
5. Allow 0.98" (25 mm) clearance all round for cooling

Pin Connections - AC Input	
Pin	Designation
1	Ground
2	L1
3	L2
4	L3

Pin Connections - DC Output	
Pin	Designation
1	-V
2	-V
3	+V
4	+V
5	DC OK*
6	DC OK*

* Available on 24 V versions.

Derating Curves