

DNR120-480 Series



- High Efficiency
- Rugged Design for Industrial Applications
- Wide Adjustment Range
- DC OK 24 V Models
- Optional Parallel Function
- DC Standby Options
- Full Power to 60 °C
- Connector Options

Specification

Input

Input Voltage	• DNR120LS: 93-132/186-264 VAC switch selectable, 210-370 VDC • DNR120AS: 90-132/186-264 VAC auto select, 210-370 VDC • DNR240PS: 93-132/186-264 VAC auto select, 210-370 VDC • DNR480PS: 90-264 VAC, 120-370 VDC
Input Frequency	• 47-63 Hz
Inrush Current	• 120 W: 24/48 A at 115/230 VAC • 240 W: 30/60 A at 115/230 VAC • 480 W: 25/50 A at 115/230 VAC
Power Factor	• Meets EN61000-3-2 for class A equipment
Earth Leakage Current	• 0.8 mA max

Output

Output Voltage	• See tables
Output Voltage Trim	• See tables
Initial Set Accuracy	• +1%
Minimum Load	• No minimum load required
Start Up Delay	• <1000 ms
Start Up Rise Time	• <150 ms
Hold Up Time	• 120 & 240 W: 25/30 ms at 115/230 VAC • 480 W: 30 ms at 115/230 VAC
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• $\pm 1\%$ ($\pm 5\%$ for units in parallel), 120LS models - see note 1
Transient Response	• 300 μs for a 50% load change
Ripple & Noise	• 120 W models: 50 mV pk-pk • 240-480 W models: 100 mV pk-pk, 20 MHz BW
Overvoltage Protection	• Output clamps at 125-145% Vnom
Overload Protection	• 105-145% constant current
Temperature Coefficient	• $\pm 0.02\%$ / °C

General

Efficiency	• See tables
Isolation	• 3000 VAC Input to Output • 1500 VAC Input to Ground • 500 VAC Output to Ground
Switching Frequency	• 100 KHz typical
Signals	• DC ON indicator LED Green, DC LOW indicator LED Red • DC OK: 24 V models
MTBF	• 200 kHrs typical per MIL-HDBK-217F GF, 40 °C

Environmental

Operating Temperature	• DNR120-240: -10 °C to +70 °C, derate linearly from 60 °C at 2.5% / °C • DNR480: -25 °C to +70 °C, derate linearly from 55 °C at 2.5 %/ °C. See derating curves
Cooling	• Convection-cooled
Operating Humidity	• 20-95% RH, non-condensing
Storage Temperature	• -25 °C to +85 °C
Shock	• 4 G, 22 ms, X, Y & Z axis
Vibration	• 1 G, 10 Hz to 500 kHz, along X, Y & Z axis

EMC & Safety

Emissions	• EN55022, level B conducted
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3 amendments 1 & 2
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria B
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria B
Surge	• EN61000-4-5, level 3 Perf Criteria B
Conducted Immunity	• EN61000-4-6, level 3 Perf Criteria B
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms Perf Criteria A, B, B
Safety Approvals	• EN60950, UL508, CE Mark, for models approved to UL1310 - see note 6

Models and Ratings

DNR120-480 **XP**

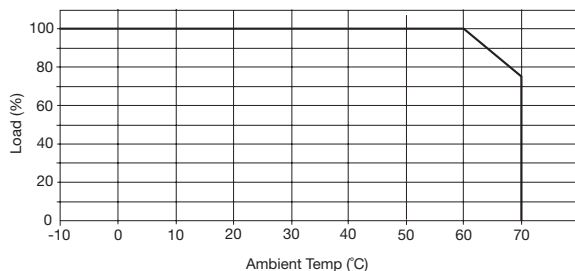
Output Voltage	Output Voltage Trim	Current	Typical Efficiency	Model Number
12.0 V	11.4-14.5 V	10.00 A	84%	DNR120LS12 ^(1,2,3)
24.0 V	22.5-30.0 V	5.00 A	86%	DNR120LS24 ^(1,2,3)
48.0 V	45.0-55.0 V	2.50 A	87%	DNR120LS48 ^(1,2,3)
12.0 V	11.4-14.5 V	10.00 A	84%	DNR120AS12- ^(3,4)
24.0 V	22.5-30.0 V	5.00 A	86%	DNR120AS24- ^(3,4)
48.0 V	45.0-55.0 V	2.50 A	87%	DNR120AS48- ^(3,4)
24.0 V	22.5-28.5 V	10.00 A	89%	DNR240PS24- ^(3,4)
48.0 V	47.0-56.0 V	5.00 A	90%	DNR240PS48- ^(3,4)
24.0 V	22.5-28.5 V	20.00 A	89%	DNR480PS24- ^(3,4)
48.0 V	47.0-56.0 V	10.00 A	90%	DNR480PS48- ^(3,4)

Notes

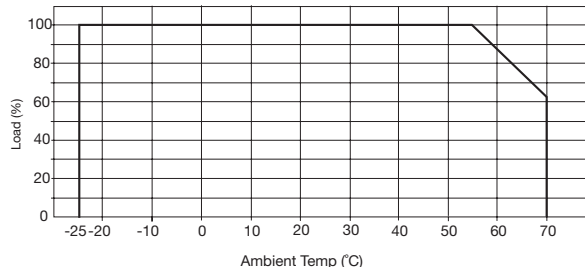
1. Add suffix '-I' to DNR120LS model number for parallel function, (120AS, 240 & 480 W models have parallel function as standard). A maximum of 3 units can be paralleled. Total power available is 90% of the rated current of each unit.
2. For PFC version of DNR120LS, replace 'L' in the model number with 'P' e.g. DNR120PS.
3. Add suffix '-D' for detachable connector option.
4. For DC standby, remove '-I' and add # to the end of the part number.

Derating Curves

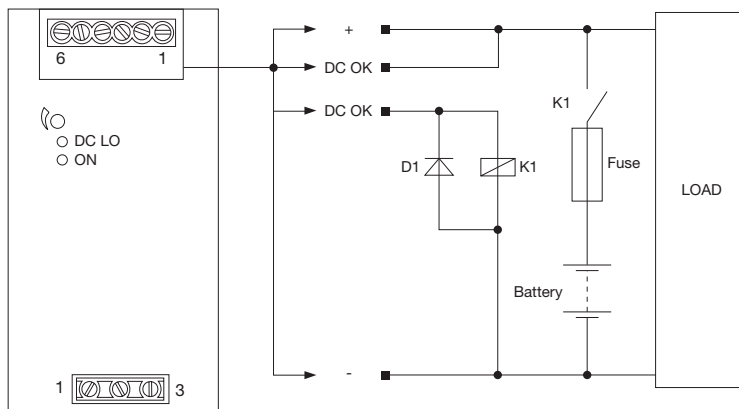
DNR120-240



DNR480



Standby Versions

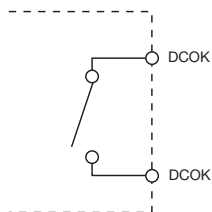


Output Set Voltages For Standby Versions

Model	Voltage	Current	DC OK Shutoff
DNR120AS12#	13.6 V	8.8 A	10.8 V $\pm 5\%$
DNR120AS24#	27.2 V	4.4 A	21.6 V $\pm 5\%$
DNR120AS48#	54.5 V	2.2 A	43.2 V $\pm 5\%$
DNR240PS24#	27.2 V	8.8 A	21.6 V $\pm 5\%$
DNR240PS48#	54.5 V	4.4 A	43.2 V $\pm 5\%$
DNR480PS24#	27.2 V	17.6 A	21.6 V $\pm 5\%$
DNR480PS48#	54.5 V	8.8 A	43.2 V $\pm 5\%$

DC OK

volt free contact normally open
Available on 24 V models only.



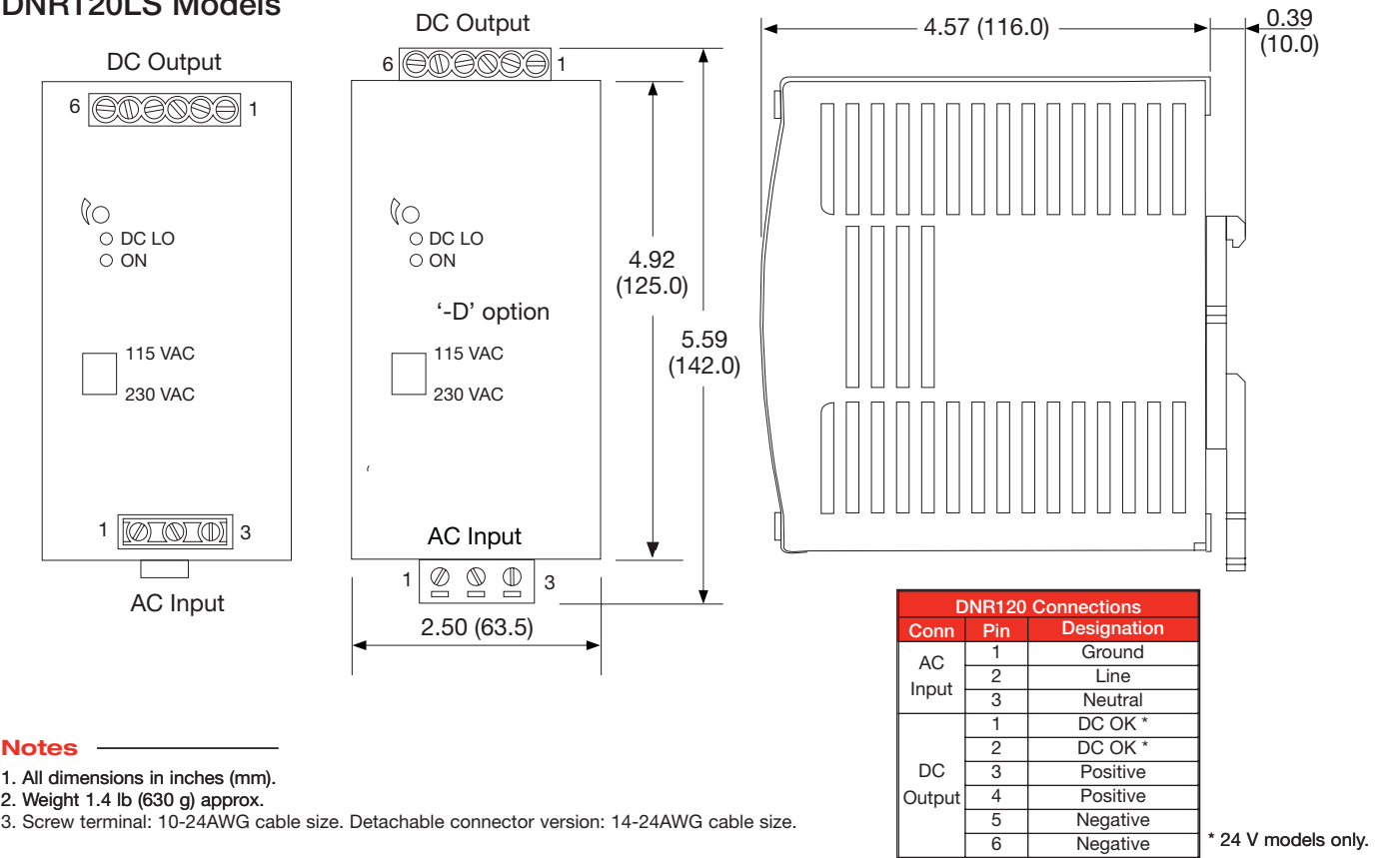
Open = Output fail
Closed = Output good

Contact Rating: 0.3 A at 60 VDC
500 VDC isolation

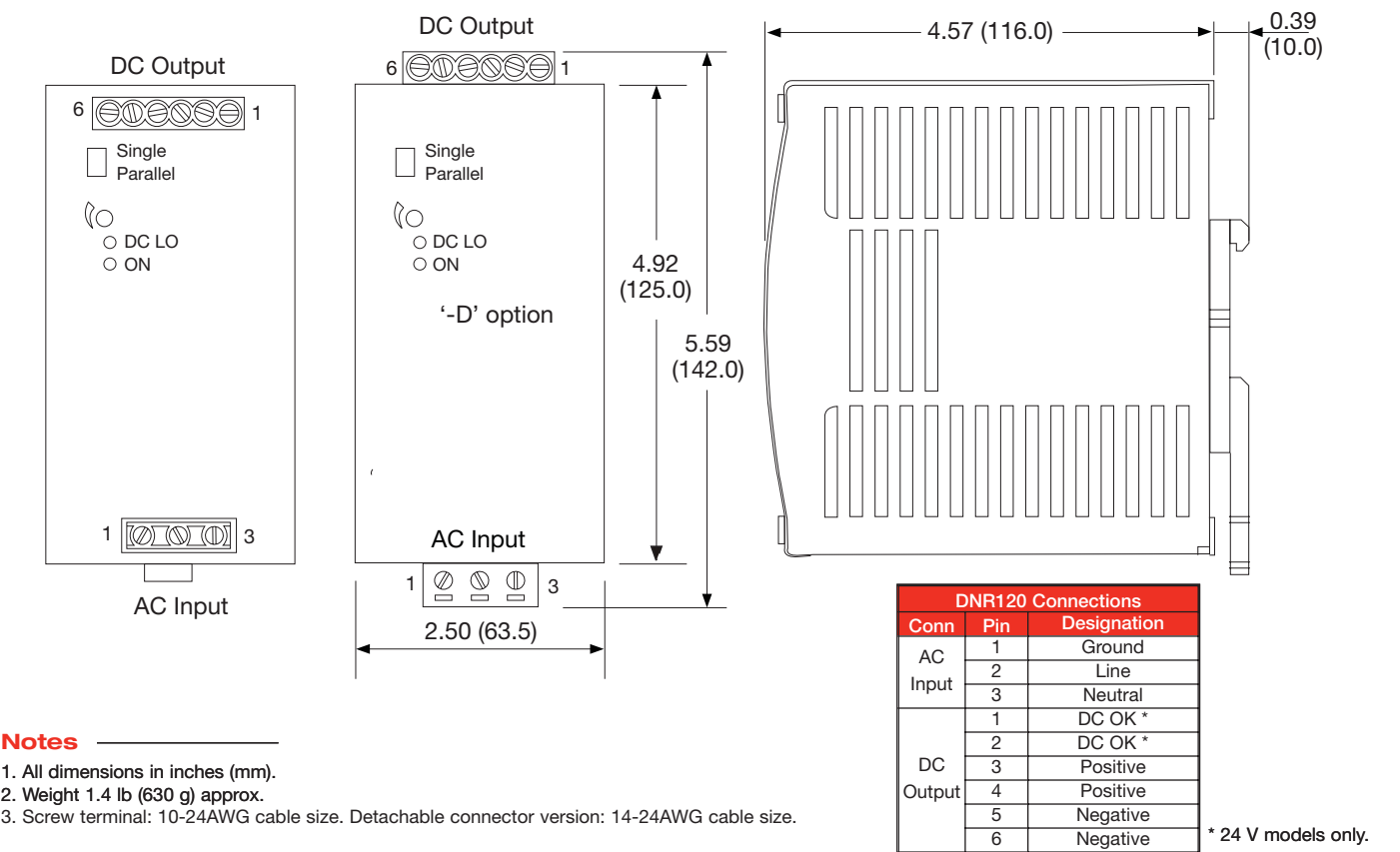
Mechanical Details

DNR120LS Models

DNR120-480 **XP**

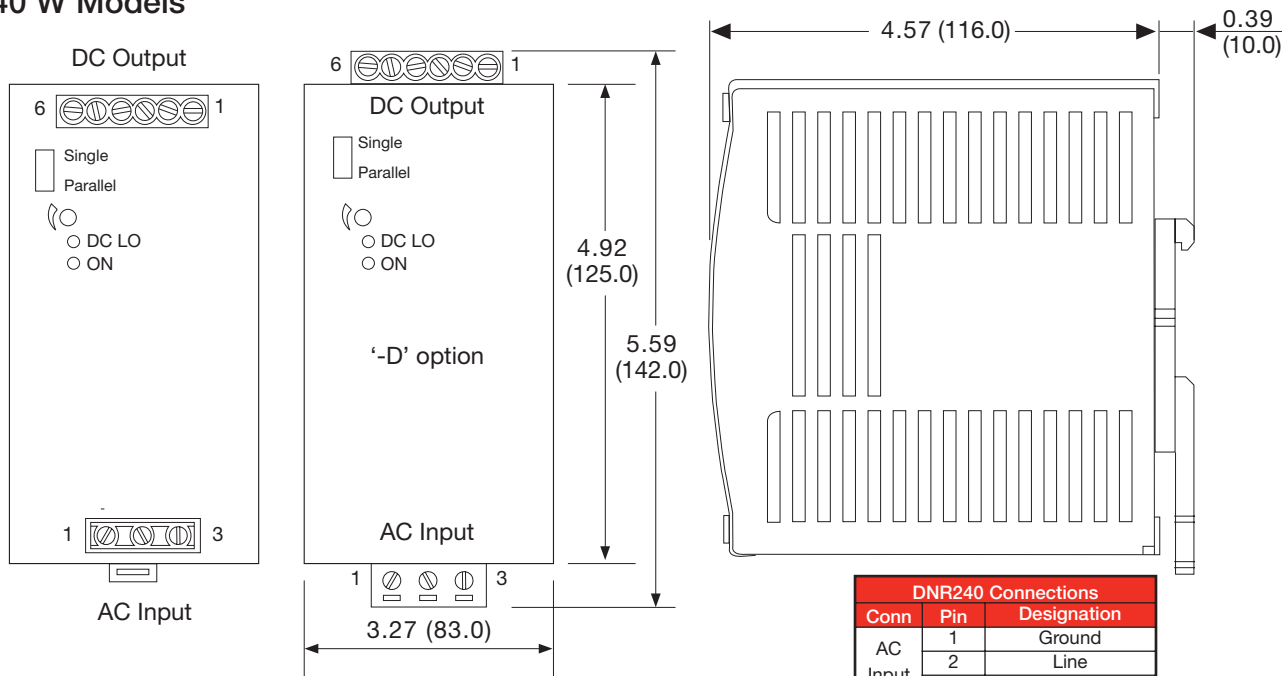


DNR120AS Models



Mechanical Details
240 W Models

DNR120-480 XP



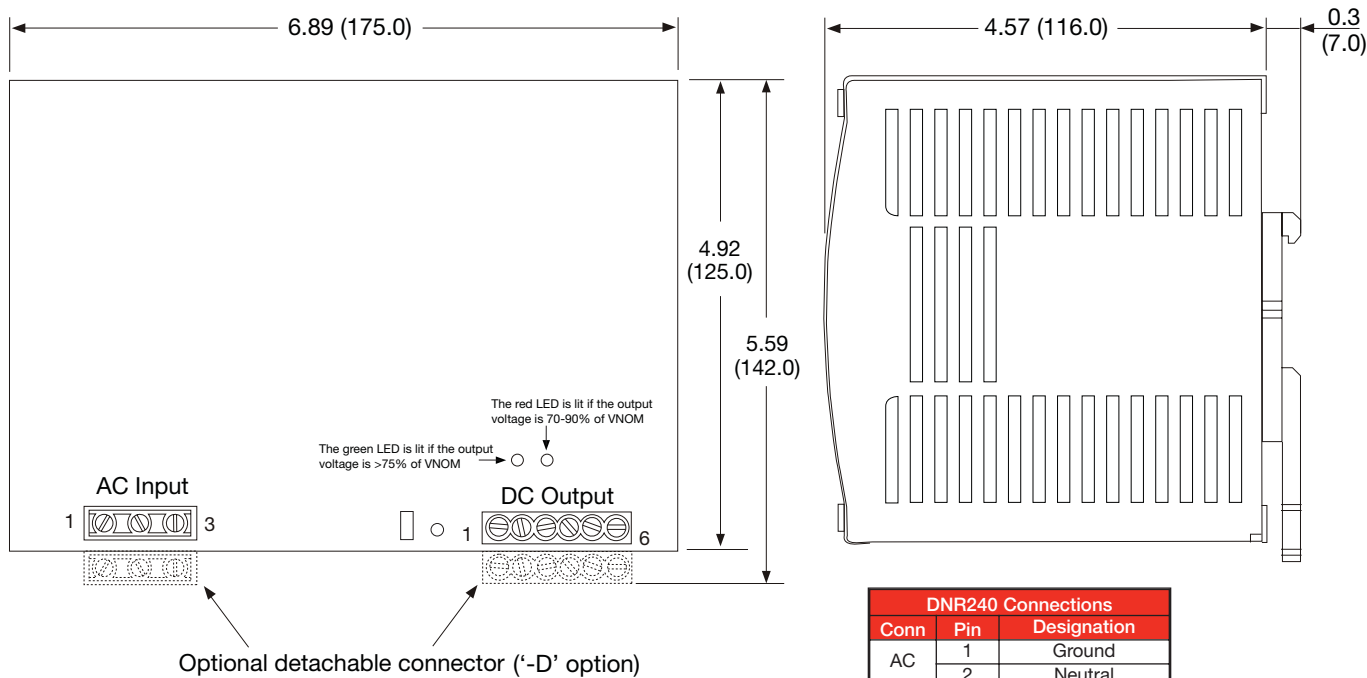
Notes

1. All dimensions in inches (mm).
2. Weight 3.0 lb (1360 g) approx.
3. Screw terminal: 10-24AWG cable size. Detachable connector version: 14-24AWG cable size.

DNR240 Connections		
Conn	Pin	Designation
AC Input	1	Ground
	2	Line
	3	Neutral
DC Output	1	DC OK*
	2	DC OK*
	3	Positive
	4	Positive
	5	Negative
	6	Negative

* 24 V models only.

480 W Models



Notes

1. All dimensions in inches (mm).
2. Weight 4.2 lb (1920 g) approx.
3. Screw terminal: 10-24AWG cable size. Detachable connector version: 14-24AWG cable size.

DNR240 Connections		
Conn	Pin	Designation
AC Input	1	Ground
	2	Neutral
	3	Line
DC Output	1	DC OK*
	2	DC OK*
	3	Positive
	4	Positive
	5	Negative
	6	Negative

* 24 V models only.

