240 Watts

DSL240 Series

- Ultra Slim Design
- 150% Peak Load for 3 seconds
- Full Power from –40 °C to +60°C
- High Efficiency – Up to 93%
- Hazardous Locations Approval
- Parallel Capability
- 3 Year Warranty

Specification

Input

Input Voltage	• 88-264 VAC (120-375 VDC)
Input Frequency	• 47-63 Hz
Input Current	• 2.3 A at 115 VAC, 1.15 A at 230 VAC
Inrush Current	• 24/48 A max at 115/230 VAC
Power Factor	• 0.97 typical at 230 VAC Conforms to EN61000-3-2 Class A.
Earth Leakage Current	• 3.5 mA maximum
Input Protection	• Internal fuse in line, T5.0 A/250 VAC

Output

Output Voltage	• See table
Output Voltage Trim	• See table
Initial Set Accuracy	• +1% at 100% load
Minimum Load	• No minimum load required
Start Up Delay	• 1.0 s max
Start Up Rise Time	• 150 ms max
Hold Up Time	• 25 ms minimum at full load and 115 VAC
Line Regulation	• ±1%
Load Regulation	• ±1% (±5% in parallel mode)
Transient Response	• 10% maximum deviation, recovering to less than 1% within 2 ms for 50% step load change at 0.2 A/µs
Ripple & Noise	• 100 mV pk-pk maximum, measured with 20 MHz bandwidth
Overvoltage Protection	• 12 V output: 15-16.5 V, 24 V output: 30-33 V
Overload Protection	• 120-150% of rated current (see application note)
Short Circuit Protection	• Trip and restart (hiccup mode) auto recovery within 7 s
Temperature Coefficient	• ±0.03%/°C
Thermal Protection	• 110°C max, measured on internal heatsink auto recovery
Parallel Operation	• A maximum of 3 units can be paralleled. Max power available is 90% of total rated power. Minimum load of 10% required per unit
Maximum Capacitive Load	• 7000 µF (start up delay increases to 1.5s and rise time to 500 ms)

General

Efficiency	• See table
Isolation	• 3000 VAC Input to Output 1500 VAC Input to Ground 500 VAC Output to Ground
Switching Frequency	• 100 kHz typical PFC & main converter at 230 VAC and full load
DC OK Signal	• Volt free contacts rated at 60 VDC/ 0.3 A on 24 V versions only
Output LED	• Green LED to indicate output on. Red LED to indicate low output voltage. See mechanical details for operating range.
MTBF	• >370 kHrs to BELLCORE Issue 6 at 40 °C, GB

Environmental

Operating Temperature	• -40 °C to +70 °C (see derating curves)
Cooling	• Natural convection
Operating Humidity	• 20-95% RH, non-condensing
Protection	• IP20
Storage Temperature	• -40 °C to +85 °C
Operating Altitude	• 4850 m
Shock	• IEC68-2-27, 4 g, 22 ms half sine, 3 times in each of 6 axes
Vibration	• IEC68-2-6, 10-500 Hz, 2 g 10 mins/sweep. 60 mins for each of 3 axes

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, 8 KV Contact, 15 KV Air Discharge, Perf Criteria A
Radiated Immunity	• EN61000-4-3, 10 V/m Perf Criteria A
EFT/Burst	• EN61000-4-4, level 4 Perf Criteria A
Surge	• EN61000-4-5, Installation Class 4 Perf Criteria A
Conducted Immunity	• EN61000-4-6, 10 V Perf Criteria A
Magnetic Field	• EN61000-4-8, level 4, Perf Criteria A
Dips & Interruptions	• EN55024, 30% 10 ms, 60% 100 ms, 100% 5000 ms Perf Criteria A, B, B
Safety Approvals	• UL508, UL60950-1, EN60950-1, ANSI/ISA 12.12.01 (Class I, Division 2, Groups A, B, C and D)

Models and Ratings

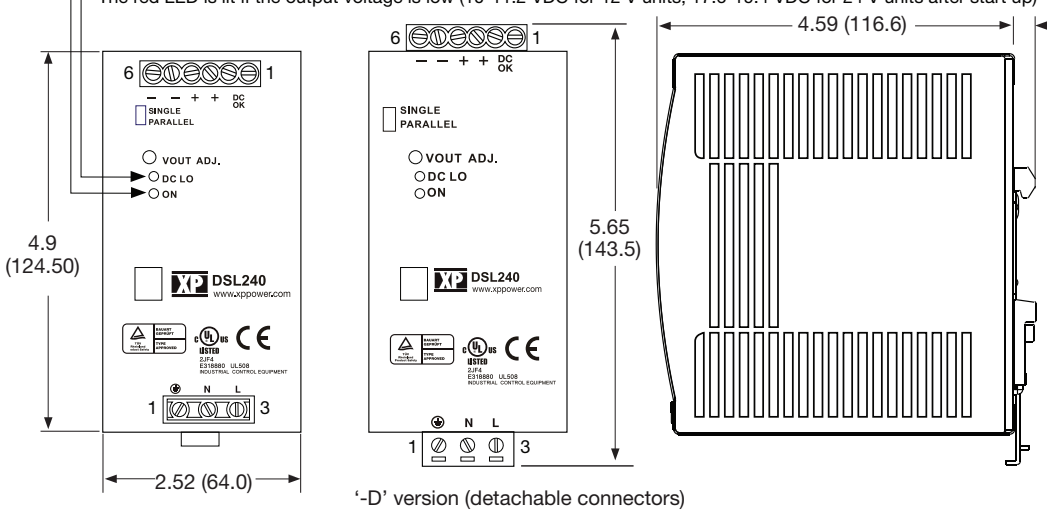
Output Voltage	Output Power	Output Voltage Trim[4]	Output Current	Peak Load[3]	Typical Efficiency[2]	Model Number[1]
12 V	192 W	11.75-14.5 V	16.0 A	24.0 A	90%	DSL240PS12-I
24 V	240 W	22.5-28.5 V	10.0 A	15.0 A	93%	DSL240PS24-I

Notes

1. Add suffix 'D' for detachable connector option e.g. DSL240PS24-ID.
2. Typical efficiency at 230 VAC and full load.
3. Peak load is for a maximum of 3 s with 20% duty cycle. Average power is not to exceed nominal output power.
4. Output current should be limited so that nominal output power is not exceeded.

Mechanical Details

The green LED is lit if the output voltage is OK (10-11.2 VDC for 12 V units, 17.6-19.4 VDC for 24 V units at start up)
The red LED is lit if the output voltage is low (10-11.2 VDC for 12 V units, 17.6-19.4 VDC for 24 V units after start up)



'-D' version (detachable connectors)

Pin 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

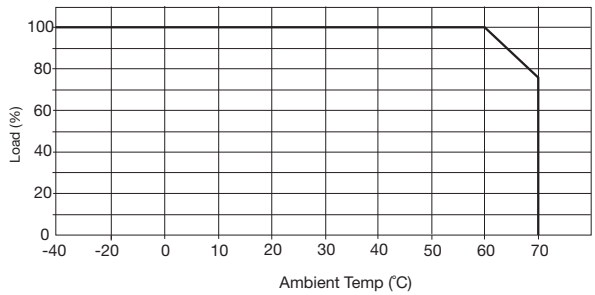
* 24 V models only.

Notes

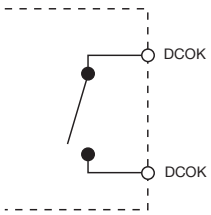
1. All dimensions in inches (mm)
2. Weight: 1.916 lbs (860g)
3. Tolerance: ±0.02 in (±0.5 mm)
4. Screw terminal: 10-24 AWG cables size. Detachable connector version: 14-24 AWG cable size.
5. Connection screw maximum torque: Input: 9lbs-in (1.0 Nm), Output: 5.5 lbs-in (0.6 Nm).

Application Notes

Derating Curves



DC OK



Open = Output fail
Closed = Output good

Contact Rating: 0.3 A at 60 VDC
500 VDC isolation

Peak Loading