

## DSL240 Series



- Ultra Slim Design
- 150% Peak Load for 3 seconds
- Full Power from  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$
- 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	• $\pm 1\%$ 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	• $\pm 1\%$
Load Regulation	• $\pm 1\%$ ( $\pm 5\%$ 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/ $\mu\text{s}$
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, auto recovery
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	• $\pm 0.03\%/^{\circ}\text{C}$
Thermal Protection	• $110^{\circ}\text{C}$ 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 $\mu\text{F}$ (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 $40^{\circ}\text{C}$ , GB

#### Environmental

Operating Temperature	• $-40^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ (see derating curves)
Cooling	• Natural convection
Operating Humidity	• 20-95% RH, non-condensing
Protection	• IP20
Storage Temperature	• $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$
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, UL62368-1, EN60950-1, EN62368-1, ANSI/ISA 12.12.01 (Class I, Division 2, Groups A, B, C and D)

## Models and Ratings

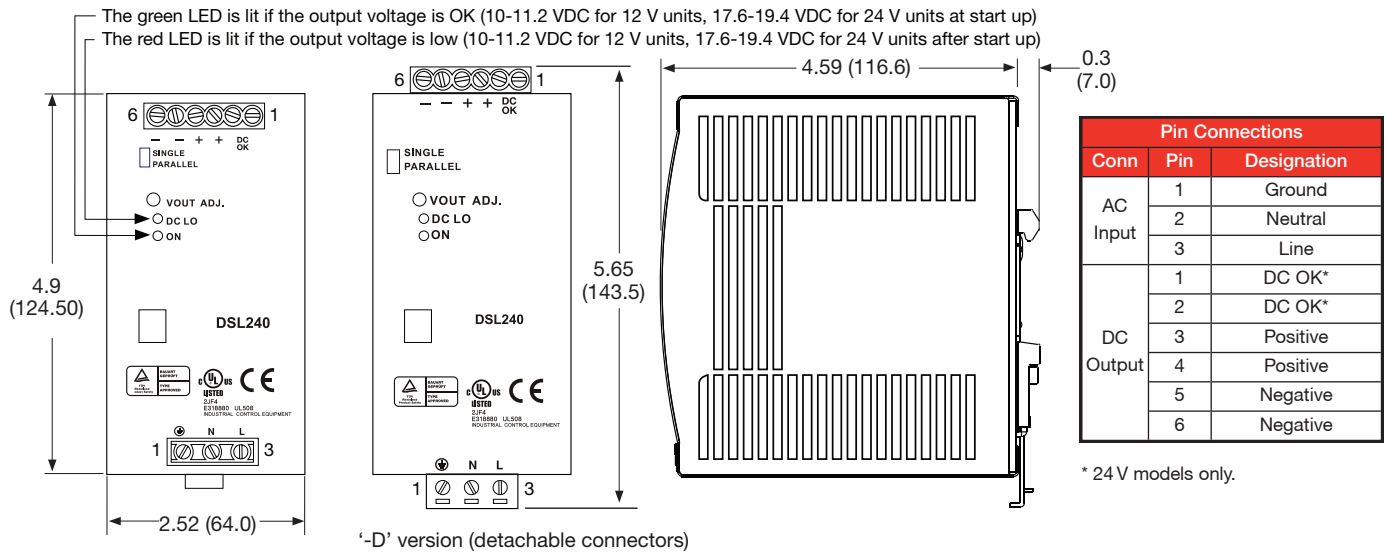
Output Voltage	Output Power	Output Voltage Trim <sup>(4)</sup>	Output Current	Peak Load <sup>(3)</sup>	Typical Efficiency <sup>(2)</sup>	Model Number <sup>(1)</sup>
12 V	192 W	11.75-14.5 V	16.0 A	24.0 A	90%	DSL240PS12-I
24 V	240 W	22.5-28.5 V	10.0 A	15.0 A	93%	DSL240PS24-I

### 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

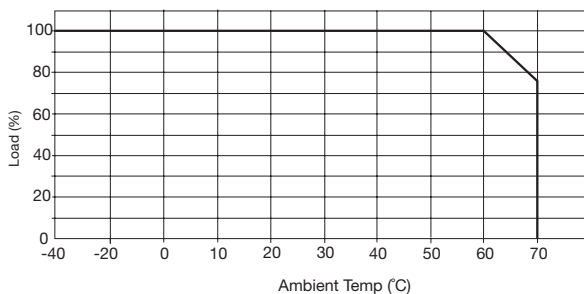


### Notes

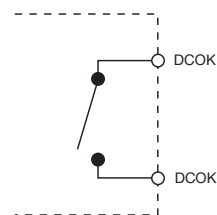
1. All dimensions in inches (mm)
2. Weight: 1.916 lbs (860g)
3. Tolerance:  $\pm 0.02$  in ( $\pm 0.5$  mm)
4. Screw terminal: 10-24 AWG cables size. Detachable connector version: 14-24 AWG cable size.
5. Connection screw maximum torque: Input: 9lbs-in (1.0 Nm), Output: 5.5 lbs-in (0.6 Nm).

## 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

