

DSL240 Series



- Ultra Slim Design
- 150% Peak Load for 3 seconds
- Full Power from $-40\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$
- 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/ 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, 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°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 $40\text{ }^{\circ}\text{C}$, GB |

Environmental

| | |
|-----------------------|--|
| Operating Temperature | • $-40\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$ (see derating curves) |
| Cooling | • Natural convection |
| Operating Humidity | • 20-95% RH, non-condensing |
| Protection | • IP20 |
| Storage Temperature | • $-40\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$ |
| 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

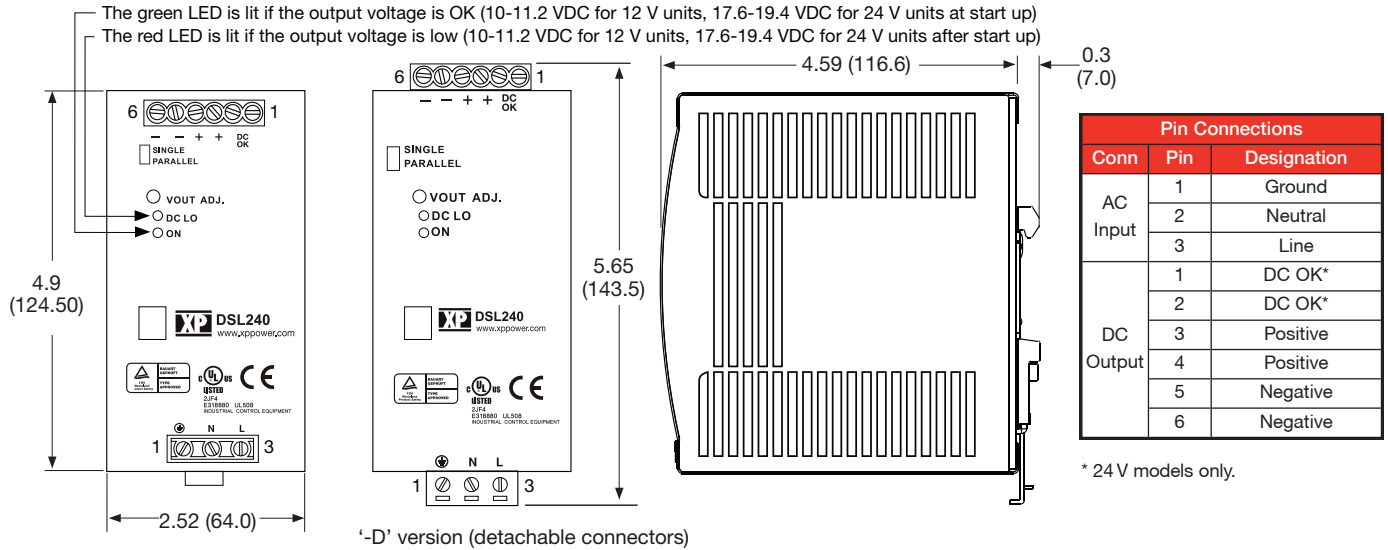
| Output Voltage | Output Power | Output Voltage Trim ⁽⁴⁾ | Output Current | Peak Load ⁽³⁾ | Typical Efficiency ⁽²⁾ | Model Number ⁽¹⁾ |
|----------------|--------------|------------------------------------|----------------|--------------------------|-----------------------------------|-----------------------------|
| 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

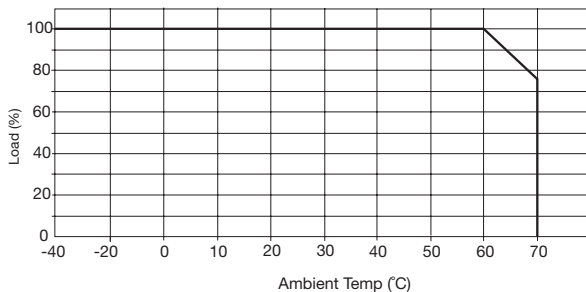


Notes

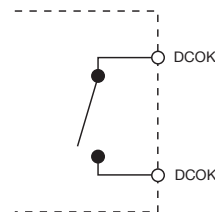
1. All dimensions in inches (mm)
2. Weight: 1.916 lbs (860g)
3. Tolerance: ±0.02 in (±0.5 mm)
4. Screw terminal: 10-24 AWG cables size. Detachable connector version: 14-24 AWG cable size.
5. Connection screw maximum torque: Input: 9lbs-in (1.0 Nm), Output: 5.5 lbs-in (0.6 Nm).

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

