**TRC ELECTRONICS, INC.**

*Providing exceptional customer service since 1982*

## 75 Watts

- Ultra Slim Design - 32 mm
- 150% Peak Load for 3 seconds
- Ambient Operation from -25 °C to +70 °C
- Full Load at 60 °C
- High Efficiency - Up to 91%
- Volt-Free Contact for DC OK
- Selectable Parallel Operation
- 85  to 264 VAC Operation
- 3 Year Warranty

**Dimensions:**
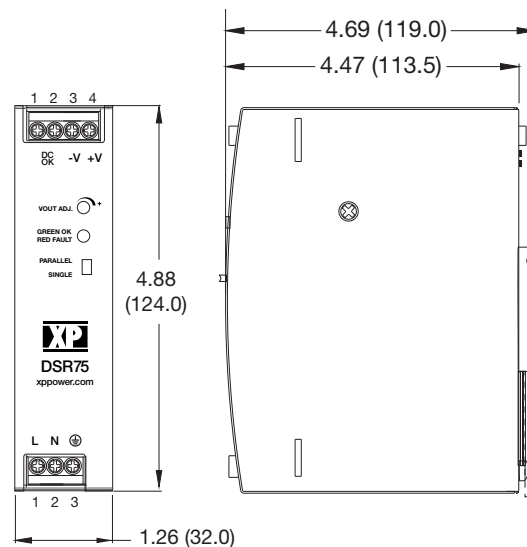
**DSR75:**
1.26 x 4.88 x 4.69" (32.0 x 124.0 x 119.0 mm)

## Models & Ratings

| Output Voltage | Output Power | Output Voltage Trim[3] | Output Current | Peak Current[2] | Typical Efficiency[1] | Model Number |
|---|---|---|---|---|---|---|
| 12 V | 75 W | 12.0-14.0 V | 6.3 A | 9.45 A | 88% | DSR75PS12 |
| 24 V | 75 W | 24.0-28.0 V | 3.2 A | 4.80 A | 91% | DSR75PS24 |
| 48 V | 75 W | 48.0-56.0 V | 1.6 A | 2.40 A | 91% | DSR75PS48 |

### Notes

1. Typical efficiency at 230 VAC and full load.
2. Peak current is for a maximum of 3 s, see Application Notes. Average power is not to exceed nominal output power.
3. Output current should be limited so that nominal output power is not exceeded.

## Mechanical Details

4.69 (119.0)
4.47 (113.5)

1 2 3 4

DC  -V  +V
OK

VOUT ADJ.

GREEN OK
RED FAULT

PARALLEL
SINGLE

**XP**
DSR75
xppower.com

L N ⏚

1 2 3

4.88
(124.0)

1.26 (32.0)

| Pin Connector | | |
|---|---|---|
| Conn | Pin | Designation |
| AC I/P | 1 | L |
| | 2 | N |
| | 3 | Ground |
| DC O/P | 1 | DC OK |
| | 2 | DC OK |
| | 3 | -Vout |
| | 4 | +Vout |

### Notes

1. All dimensions in inches (mm)
2. Weight: 1.06 lbs (480g)
3. Tolerance: ±0.02 in (±0.5 mm)

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## Input

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---|---|---|---|---|---|
| Input Voltage - Operating | 85 | | 264 | VAC | |
| Input Frequency | 47 | 50/60 | 63 | Hz | |
| Power Factor | | 0.95 | | | At 230 VAC. Conforms to EN61000-3-2 Class A |
| Input Current - Full Load | | 0.8/0.4 | | A | 115/230 VAC |
| Inrush Current | | | 30/60 | A | At 115/230 VAC. Cold start, 25 °C |
| Earth Leakage Current | | | 1.0 | mA | At 264 VAC, 60 Hz |
| Input Protection | T5.0 A / 250 V internal in-line fuse | | | | |

## Output

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---|---|---|---|---|---|
| Output Voltage - V1 | 12 | | 48 | VDC | See Models and Ratings table |
| Initial Set Accuracy | | | ±1 | % | At 100% load |
| Output Voltage Adjustment | | | | % | See Models and Ratings table |
| Minimum Load | 0 | | | A | No minimum load required |
| Start Up Delay | | | 500 | ms | At 100 VAC |
| Hold Up Time | 20 | | | ms | At full load |
| Line Regulation | | | ±0.5 | % | |
| Load Regulation | | | ±1 | % | |
| Transient Response - V1 | | | 5 | % | Recovery within 1% in less than 200 µs for a 50% step load change at 0.2 A/µs |
| Ripple & Noise | | | 100/120/240 | mV pk-pk | 12 V/24 V/48 V models. Measured at 20 MHz bandwidth 0-70°C |
| | | | 200/240/240 | | 12 V/24 V/48 V models. Measured at 20 MHz bandwidth -25-0°C |
| Overvoltage Protection | 15 | | 20 | V | 12 V model, at 115/230 VAC input |
| | 29 | | 40 | V | 24 V model, at 115/230 VAC input |
| | 58 | | 65 | V | 48 V model |
| Overload Protection | 110 | | 150 | % | Trip & restart. See application note. |
| Short Circuit Protection | | | | | Trip & restart (hiccup mode), auto recovery |
| Thermal Protection | | 110 ±10 | | °C | Measured internally, recycle AC to reset |
| Temperature Coefficient | | | 0.03 | %/°C | |

## General

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---|---|---|---|---|---|
| Efficiency | | 91 | | % | See Models & Ratings table |
| Isolation: Input to Output | 3000 | | | VAC | |
| Input to Ground | 2500 | | | VAC | |
| Output to Ground | 500 | | | VAC | |
| Switching Frequency | | 65 | | kHz | PFC, fixed |
| | 60 | | 400 | kHz | Main converter, variable, at 115/230 VAC input |
| DC OK Signal | Volt free contacts rated at 60 VDC/0.3 A, 30 VDC/1.0 A or 30 VAC/0.3 A (resistive load) | | | | |
| Output LED | Green LED to indicate output on. | | | | |
| Mean Time Between Failure | 300 | | | kHrs | MIL-HDBK-217F, +25 °C GB |
| Weight | | 1.06 (480) | | lb (g) | |

## Environmental

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---|---|---|---|---|---|
| Operating Temperature | -25 | | +70 | °C | See derating curve in Application Notes |
| Storage Temperature | -40 | | +85 | °C | |
| Cooling | | | | | Natural convection |
| Operating Humidity | 20 | | 95 | %RH | Non-condensing |
| Operating Altitude | | | 5000 | m | |
| Shock | | 4 | | g | IEC68-2-27, 22 ms half sine, 3 times in each of 6 axes |
| Vibration | | 2 | | g | IEC68-2-6, 10-500 Hz, 10 mins/sweep. 60 mins for each of 3 axes |

## EMC: Emissions

| Phenomenon | Standard | Test Level | Criteria | Notes & Conditions |
|---|---|---|---|---|
| Conducted | EN55032 | Class B | | |
| Radiated | EN55032 | Class B | | |
| Harmonic Current | EN61000-3-2 | Class A | | |
| Voltage Fluctuations | EN61000-3-3 | | | |

## EMC: Immunity

| Phenomenon | Standard | Test Level | Criteria | Notes & Conditions |
|---|---|---|---|---|
| ESD Immunity | EN61000-4-2 | 6 kV | A | Contact |
| | | 8 kV | | Air Discharge |
| Radiated Immunity | EN61000-4-3 | 10 V/m | A | |
| EFT/Burst | EN61000-4-4 | 3 | A | |
| Surges | EN61000-4-5 | Installation class 3 | A | |
| Conducted | EN61000-4-6 | 10 V | A | |
| Magnetic Fields | EN61000-4-8 | 4 | A | |
| Dips and Interruptions | EN55024 | Dip: 30%, 10 ms | A | |
| | | Dip: 60%, 100 ms | A/B | High Line/Low Line |
| | | Dip: 100%, 5000 ms | B | |

## Safety Approvals

| Safety Agency | Safety Standard | Notes & Conditions |
|---|---|---|
| UL | UL508/UL60950 | Industrial Control Equipment/Information Technology |
| TUV | EN62368-1 | Information Technology |

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## Mechanical Details

1 2 3 4

DC
OK    -V  +V

VOUT ADJ.    +

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L  N  ⏚

1  2  3

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(124.0)

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| Pin Connector | | |
|---|---|---|
| **Conn** | **Pin** | **Designation** |
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| DC O/P | 1 | DC OK |
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| | 3 | -Vout |
| | 4 | +Vout |
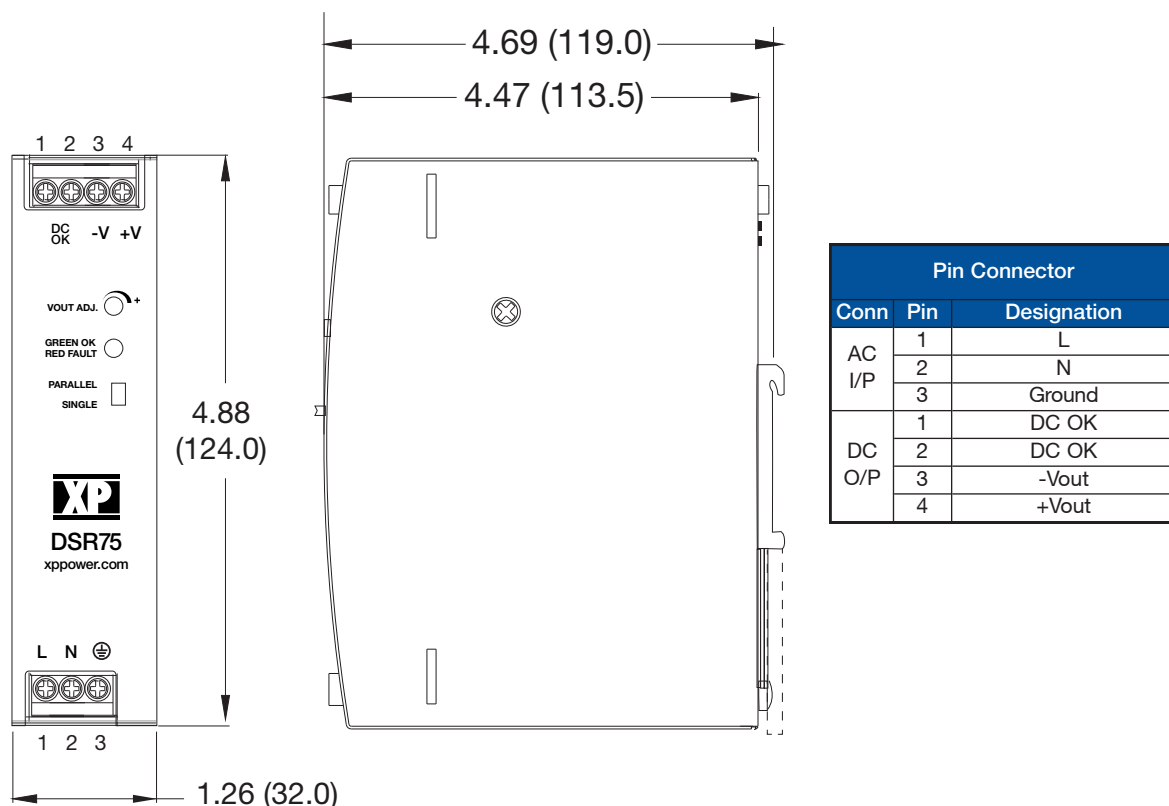
### Notes

1. All dimensions in inches (mm)
2. Weight: 1.06 lbs (480 g)

3. Tolerance: ±0.02 in (±0.5 mm)

## Application Notes

### Derating Curves

**DSR75PS12**

# TRC ELECTRONICS, INC.

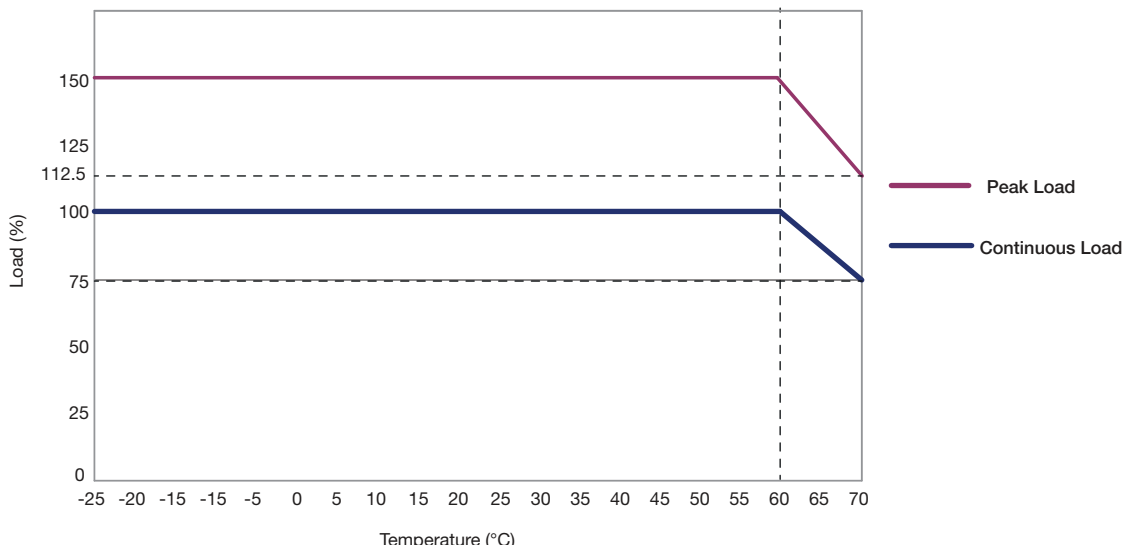*Providing exceptional customer service since 1982*
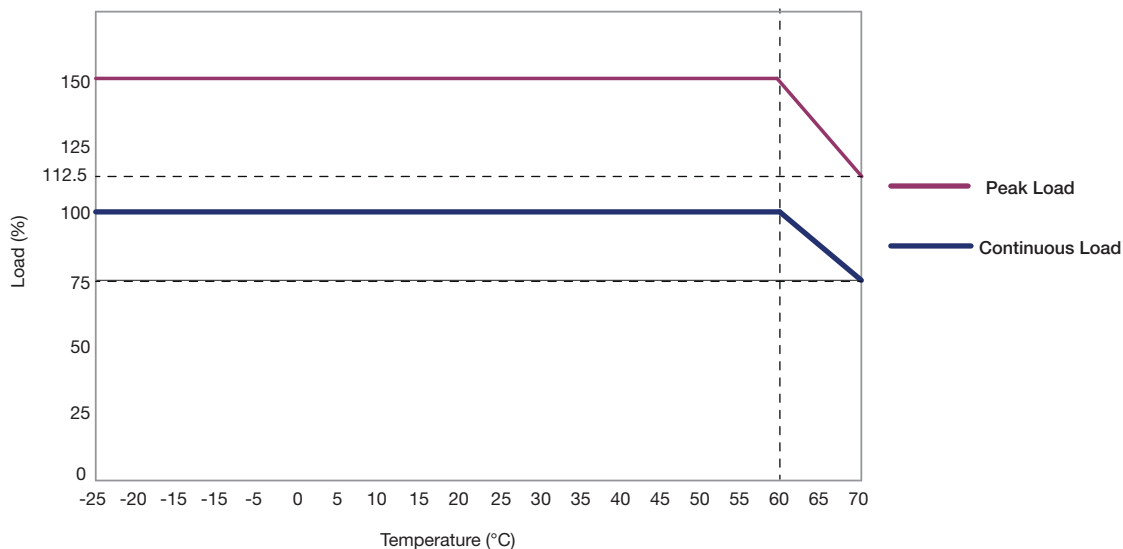
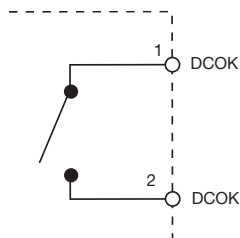## Application Notes

**Derating Curves**
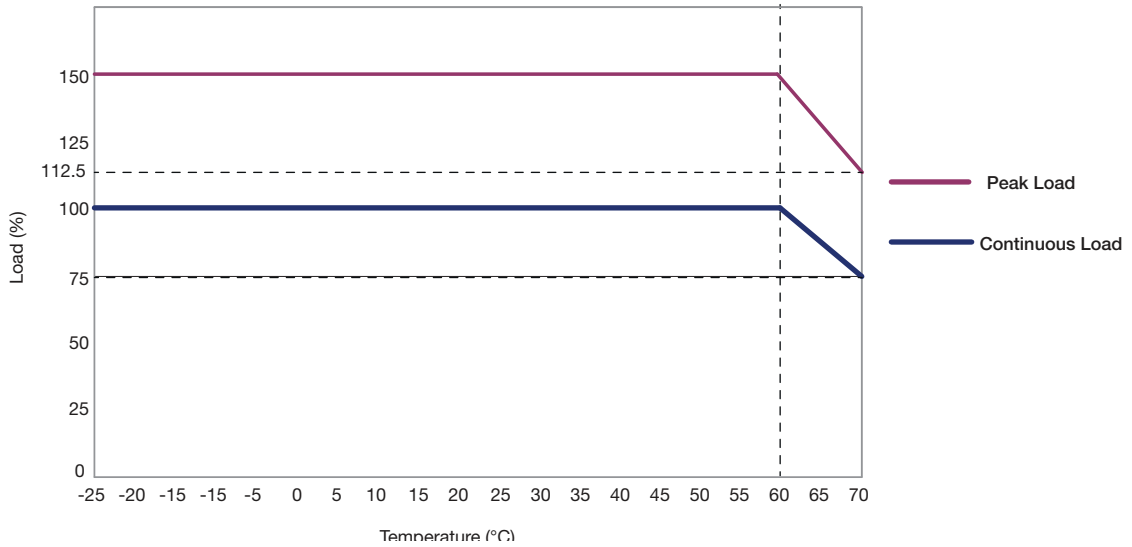
### DSR75PS24



### DSR75PS48

## DC OK

Open = Output fail, if voltage drops below 80% of nominal
Closed = Output good

Contact Rating: 0.3 A at 60 VDC, 1.0 A at 30 VDC, 0.5 A at 30 VAC.
500 VDC isolation to output.

## Peak Load and Overload

A peak load can be used for a certain period after which the output goes into overload mode. Overload operation is trip and restart. The peak load duration depends on the value of the load, e.g. a peak load of 150% can be taken for approximately 3s. After this time the output will turn off for approximately 7s before turning back on.

If the load has reduced to 100% or less than normal operation is resumed. If the load remains at 150% then the output is maintained for a further 3s before turning off for 7s. See example plot below.
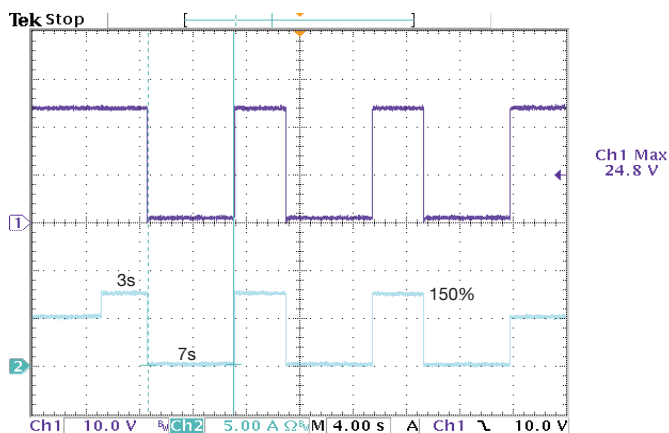


If the peak load is less than 150%, the duration of the peak can be longer than 3s before the output turns off, for example, a peak load of 130% could typically be taken for up to 13s and a peak load of 140% could typically be taken for up to 5s. The off duration is always approximately 7s.

Average power is not to exceed nominal output power.