

Features

- ◆ Highest power density in 5.0" x 3.0" footprint
- ◆ Supplies 200 W (convection cooling!)
- ◆ Highest efficiency up to 95%
- ◆ Operating temperature range -25°C to +70°C
- ◆ Universal input 85 – 264 VAC
- ◆ Compliance with EN 61000-3-2
- ◆ Power Back immunity
- ◆ Low leakage current
- ◆ Protection class I and class II
- ◆ 3-year product warranty



The new TOP-200 Series AC/DC Power Supplies feature the highest power rating in the industry standard 3.0" x 5.0" (76.2 x 127 mm) footprint. They can supply up to 200 W output power with convection cooling over an industrial operating temperature range of -25°C to +70°C. This performance could be realized by a state of the art design providing an extremely high efficiency of >90 % which eliminates the need for a dedicated power supply cooling fan.

Compliance with global safety and EMC standards qualify these power supplies for worldwide markets. Approved for Class I and Class II applications, these switchers are suitable for industrial and IT systems but also for consumer products. High reliability is provided by use of industrial quality grade components and an excellent thermal management. This product offers an interesting power supply solution for many space and cost critical applications in commercial and industrial electronic equipment.

Models

| Order Code | Output Power max. | Output Voltage (fixed) | Output Current max. |
|-------------|-------------------|------------------------|---------------------|
| TOP 200-112 | 200 W | 12 VDC | 16 A |
| TOP 200-115 | | 15 VDC | 13 A |
| TOP 200-124 | | 24 VDC | 8.3 A |
| TOP 200-148 | | 48 VDC | 4.2 A |

Input Specifications

| | | |
|-----------------------------|-------------------------------|--|
| Input voltage | - nominal - AC input range | 120 – 240 VAC (universal input) 85 – 264 VAC with derating at low input see power derating graph 1 |
| Input frequency | | 47 – 63 Hz |
| Input protection | | T4A / 250 V |
| Harmonic limits | | EN 61000-3-2, class A |
| Zero load power consumption | | 3.6 W |
| Input protection | | T4 A internal fuses (line and neutral) |
| Recommended circuit breaker | | 6 A (characteristic C) or slow blow fuse. For protection class II use two fuses (line and neutral) |

Output Specifications

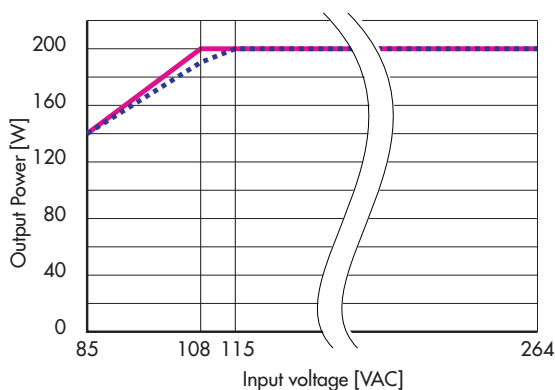
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| Voltage set accuracy | TOP 200-112: min. 11.9 V, max. 12.3 V TOP 200-115: min. 14.9 V, max. 15.3 V TOP 200-124: min. 23.8 V, max. 24.2 V TOP 200-148: min. 48.0 V, max. 49.3 V |
| Regulation | - Input and Load variation 1.0 % max. |
| Ripple and noise (20Mhz Bandwidth) | <120 mVp-p <150 mVp-p for 48 VDC models |
| Overvoltage protection | 12 & 15 VDC models: >150 % of Vout 24 & 48 VDC models: >125 % of Vout |
| Power back immunity | 12 VDC model: 16 V (18 V for 1 sec.) 15 VDC model: 20 V (23 V for 1 sec.) 24 VDC model: 35 V (40 V for 1 sec.) 48 VDC model: 63 V (68 V for 1 sec.) |
| Overload protection by current limit | at 120 – 150 % Iout max. |
| Short circuit protection | foldback (automatic recovery) |
| Capacitive load | 12 & 15 VDC models: 15'000 µF max. 24 VDC model: 4'000 µF max. 48 VDC model: 1'000 µF max. |

General Specifications

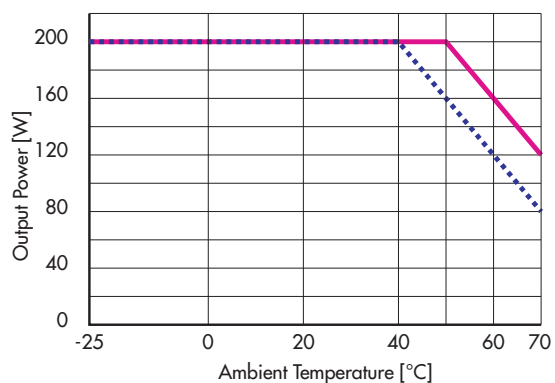
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|-----------------------|------------|---|
| Operating temperature | - derating | -25°C to +70°C (convection cooling) see power derating graph 2 |
|-----------------------|------------|---|

Power derating

Graph 1:
In respect to input voltage



Graph 2:
in respect to ambient temperature



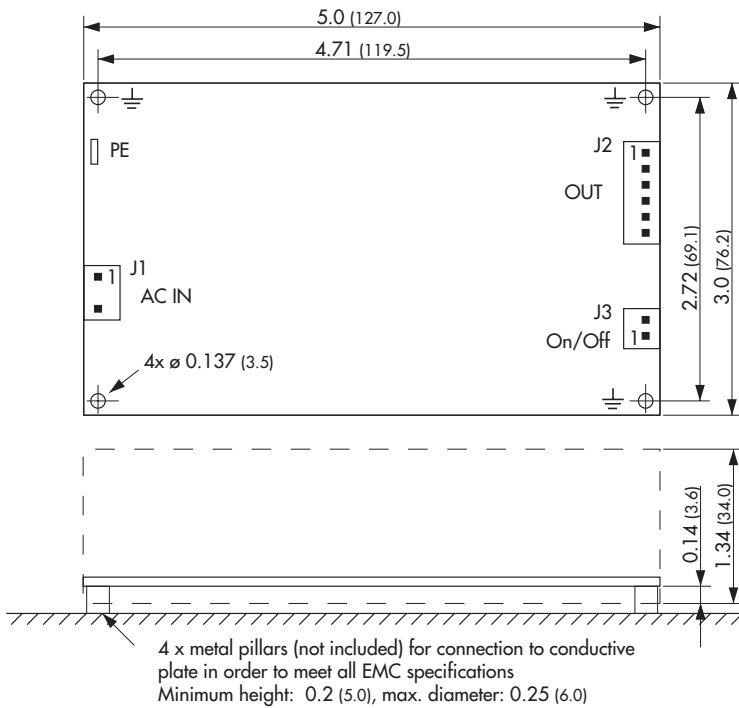
..... 12 & 15 VDC models — 24 & 48 VDC models

General Specifications

| | | |
|---|---|--|
| Humidity (non condensing) | | 0 – 95 % rel. H max. |
| Efficiency | – Vin = 115 VAC | 12 & 15 VDC models: 88 – 91 % |
| | | 24 & 48 VDC models: 90 – 93 % |
| | – Vin = 230 VAC | 12 & 15 VDC models: 90 – 93 % |
| | | 24 & 48 VDC models: 92 – 95 % |
| Switching frequency | | 100 kHz typ. (pulse width modulation) |
| Hold-up time | | 10 ms typ. |
| Start-up time | – Vin = 115 VAC | <3.0s |
| | – Vin = 230 VAC | <2.0s |
| Remote On/Off | – On: | open contacts on J3 |
| | – Off: | see J3 remote On/Off function on last page |
| Isolation voltage | – Input / Output | 3000 VAC |
| | – Input / Field Ground | 1500 VAC |
| | – Output / Field Ground | 500 VAC |
| Isolation resistance (at 500 VDC) | | 100 Mohm min. |
| Earth leakage current | | 500 µA max. |
| Reliability, calculated MTBF at +25°C acc. to IEC 61709 | | www.tracopower.com/products/top200-mtbf.pdf |
| Safety class (for built in use only) | | class I, class II prepared with second fuse |
| Electromagnetic compatibility (EMC), emissions | – Conducted input RI suppression | EN 55022, class B (conductive plane to be connected to field ground) |
| | – Harmonic current emissions | IEC/EN 61000-3-2, class A |
| Electromagnets compatibility (EMC), immunity | – Electrostatic discharge ESD | IEC/EN 61000-4-2 |
| | – RF field immunity | IEC/EN 61000-4-3 |
| | – Electrical fast transients/burst immunity | IEC/EN 61000-4-4 |
| | – Surge | IEC/EN 61000-4-5 |
| | – Conducted RF | IEC/EN 61000-4-6 |
| | – Voltage dip | IEC/EN 61000-4-11 |
| Safety approvals and Certificate | – CB test certificate for IEC/EN 60950-1 | www.tracopower.com/products/top200-cb.pdf |
| | – SIQ certificate (IEC/EN 60950-1) | www.tracopower.com/products/top200-siq.pdf |
| | – CSA certificate for UL/cUL 60950-1 | www.tracopower.com/products/top200-csa.pdf |
| | – Bureau Veritas for other standards | www.tracopower.com/products/top200-bv.pdf |
| Environment | – Vibration acc. IEC 60068-2-6; | 3 axis, sine sweep, 10 – 55Hz, 0.075 mm |
| | – Shock acc. IEC 60068-2-27 | 3 axis, 15g half sine, 11ms |
| Environmental compliance | – Reach | www.tracopower.com/products/top200-reach.pdf |
| | – RoHS | RoHS directive 2011/65/EU |
| Connection | | pin connector (Molex) |
| Weight | | 315 g (8.93 oz) |
| Installation instruction | | www.tracopower.com/products/top200-inst.pdf |

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Dimensions



J1: Molex Series 41791
mates with Molex crimp terminal: 08-52-0072
and terminal housing: 09-50-3031

J2: Molex Series 41791
mates with Molex crimp terminal: 08-52-0072
and terminal housing: 09-50-3061

J3: Molex Series KK
mates with Molex crimp terminal: 08-50-0032
and terminal housing: 22-01-2025

PE: Faston
mates with TAB-6.3 (1/4")

Dimensions in Inch, () = mm

PE to connect to protective earth if used as safety class I unit

| J1 | |
|-----|---------|
| Pin | Input |
| 1 | AC in L |
| 2 | AC in N |

| J2 | |
|-----|--------|
| Pin | Output |
| 1 | + Vout |
| 2 | + Vout |
| 3 | + Vout |
| 4 | - Vout |
| 5 | - Vout |
| 6 | - Vout |

| J3 | |
|-----|--------|
| Pin | Remote |
| 1 | - |
| 2 | + |

J3 remote On/Off function:

On: pin 1 & 2 open

Off:

- Pin 1 connected to secondary ground.

Note: Output voltage may pulse to 20% of nominal output voltage.

- External current source of 10 mA

- External voltage source. Use external serial resistor ($R_{ext.}$) in reference to applied voltage ($U_{ext.}$) as follows:

TOP 200-112: $R_{ext.} [Ohm] = (U_{ext.} - 1.2)/0.01 - 150$

TOP 200-115: $R_{ext.} [Ohm] = (U_{ext.} - 1.2)/0.01 - 240$

TOP 200-124: $R_{ext.} [Ohm] = (U_{ext.} - 1.2)/0.01 - 430$

TOP 200-148: $R_{ext.} [Ohm] = (U_{ext.} - 1.2)/0.01 - 800$