

AC/DC Power Supply

TOP 200C Series, 200 Watt

Not recommended for new designs

- 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 200C 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.

Options

on demand (backorder with MOQ non stocking item)	- Optional model with 12 VDC and 16'000 mA - Optional model with 15 VDC and 13'000 mA - Optional model with 24 VDC and 8'300 mA - Optional model with 48 VDC and 4'200 mA
---	--

Note * Not recommended for new designs

Input Specifications

Input Voltage	Operational Range: 85 - 264 VAC (Full Range) Rated Range: 100 - 240 VAC (Full Range)
Input Frequency	Operational Range: 47 - 63 Hz Certified: 50/60 Hz
Power Consumption	- No load & Vin = 230 VAC 4'000 mW max. - No load & Vin = 115 VAC 5'700 mW max.
Input Inrush Current	- At 230 VAC 40 A max.
Power Factor	- At 230 VAC 0.98 min. (Active Power Factor Correction)
Input Protection	T 4 A (Internal Fuse in L & N)
Recommended Input Fuse	6'000 mA (slow blow) (The need of an external fuse has to be assessed in the final application.)

Output Specifications

Voltage Set Accuracy	±3% max.
Regulation	- Input Variation (Vmin - Vmax) 1% max. - Load Variation (0 - 100%) 1% max.
Ripple and Noise (20 MHz Bandwidth)	12 VDC model: 120 mVp-p max. 15 VDC model: 120 mVp-p max. 24 VDC model: 120 mVp-p max. 48 VDC model: 150 mVp-p max.
Capacitive Load	12 VDC model: 15'000 µF max. 15 VDC model: 15'000 µF max. 24 VDC model: 4'000 µF max. 48 VDC model: 1'000 µF max.
Minimum Load	Not required
Temperature Coefficient	±0.02 %/K max.
Hold-up Time	- At 230 VAC 10 ms min. - At 115 VAC 10 ms min.
Start-up Time	- At 230 VAC 2'000 ms max. - At 115 VAC 3'000 ms max.
Short Circuit Protection	Automatic recovery 60% typ. of Iout nom.
Overload Protection	Foldback Mode
Output Current Limitation	120 - 150% of Iout max.
Overvoltage Protection	150% typ. of Vout nom. (depending on model) 20 V typ. (12 Vout model) 25 V typ. (15 Vout model) 35 V typ. (24 Vout model) 60 V typ. (48 Vout model)
Transient Response	- Peak Variation 600 mV max. (10% to 90% Load Step) - Response Time 20'000 µs max. (10% to 90% Load Step)

Safety Specifications

Standards	- IT / Multimedia Equipment - Certification Documents	EN 60950-1 EN 62368-1 IEC 60950-1 IEC 62368-1 UL 60950-1 www.tracopower.com/overview/top200c
Protection Class	See application note:	Class I & II (Prepared): Reinforced Insulation www.tracopower.com/info/protection-class.pdf
Pollution Degree		PD 2
Over Voltage Category		OVC II

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

EMC Specifications

EMI (Emissions)	- Conducted Emissions	EN 61000-6-3 (Generic Residential) EN 55032 class A (internal filter) EN 55032 class B (internal filter)
	- Radiated Emissions	EN 55032 class A (internal filter) EN 55032 class B (internal filter)
	- Harmonic Current Emissions	EN 61000-3-2, class A
EMS (Immunity)	- RF Electromagnetic Field	EN 61000-4-3, 20 V/m, perf. criteria A
	- EFT (Burst) / Surge	EN 61000-4-4, ± 2 kV, perf. criteria B
		L to L: EN 61000-4-5, ± 1 kV, perf. criteria B
		L to PE: EN 61000-4-5, ± 2 kV, perf. criteria B
	- Conducted RF Disturbances	EN 61000-4-6, 10 Vrms, perf. criteria A
	- PF Magnetic Field	Continuous: EN 61000-4-8, 100 A/m, perf. criteria A
	- Voltage Dips & Interruptions	230 VAC / 50 Hz: EN 61000-4-11 20%, 250 periods, perf. criteria A 30%, 25 periods, perf. criteria A 60%, 10 periods, perf. criteria B >95%, 1 period, perf. criteria B
		115 VAC / 60 Hz: EN 61000-4-11 20%, 250 periods, perf. criteria A 30%, 25 periods, perf. criteria B 60%, 10 periods, perf. criteria B >95%, 1 period, perf. criteria B

General Specifications

Relative Humidity		95% max. (non condensing)
Temperature Ranges	- Operating Temperature	-25°C to +70°C
	- Storage Temperature	-40°C to +80°C
Power Derating	- High Temperature	2 %/K above 40°C (12 & 15 Vout models) 2 %/K above 50°C (24 & 48 Vout models)
		1 %/V below 115 VAC (12 & 15 Vout models)
	- Low Input Voltage	1.5 %/V below 108 VAC (24 & 48 Vout models)
Cooling System		Natural convection (20 LFM)
Remote Control	- Voltage Controlled Remote	See application note: www.tracopower.com/overview/top200c
	- Current Controlled Remote	See application note: www.tracopower.com/overview/top200c
Altitude During Operation		2'000 m max.
Regulator Topology		LLC Converter
Switching Frequency		100 kHz typ. (PWM)
Insulation System		Reinforced Insulation
Isolation Test Voltage	- Input to Output, 60 s	3'000 VAC
	- Input to Case or PE, 60 s	1'500 VAC
	- Output to Case or PE, 60 s	500 VAC
Creepage	- Input to Output	7 mm min.
	- Input to Case or PE	4 mm min.
	- Output to Case or PE	1 mm min.
Clearance	- Input to Output	5 mm min.
	- Input to Case or PE	2.5 mm min.
	- Output to Case or PE	0.5 mm min.
Isolation Resistance	- Input to Output, 500 VDC	100 M Ω min.
Isolation Capacitance	- Input to Output, 100 kHz, 1 V	1'500 pF typ.
Leakage Current	- Earth Leakage Current	500 μ A max.
	- Touch Current	100 μ A max.
Reliability	- Calculated MTBF	(see application note)

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

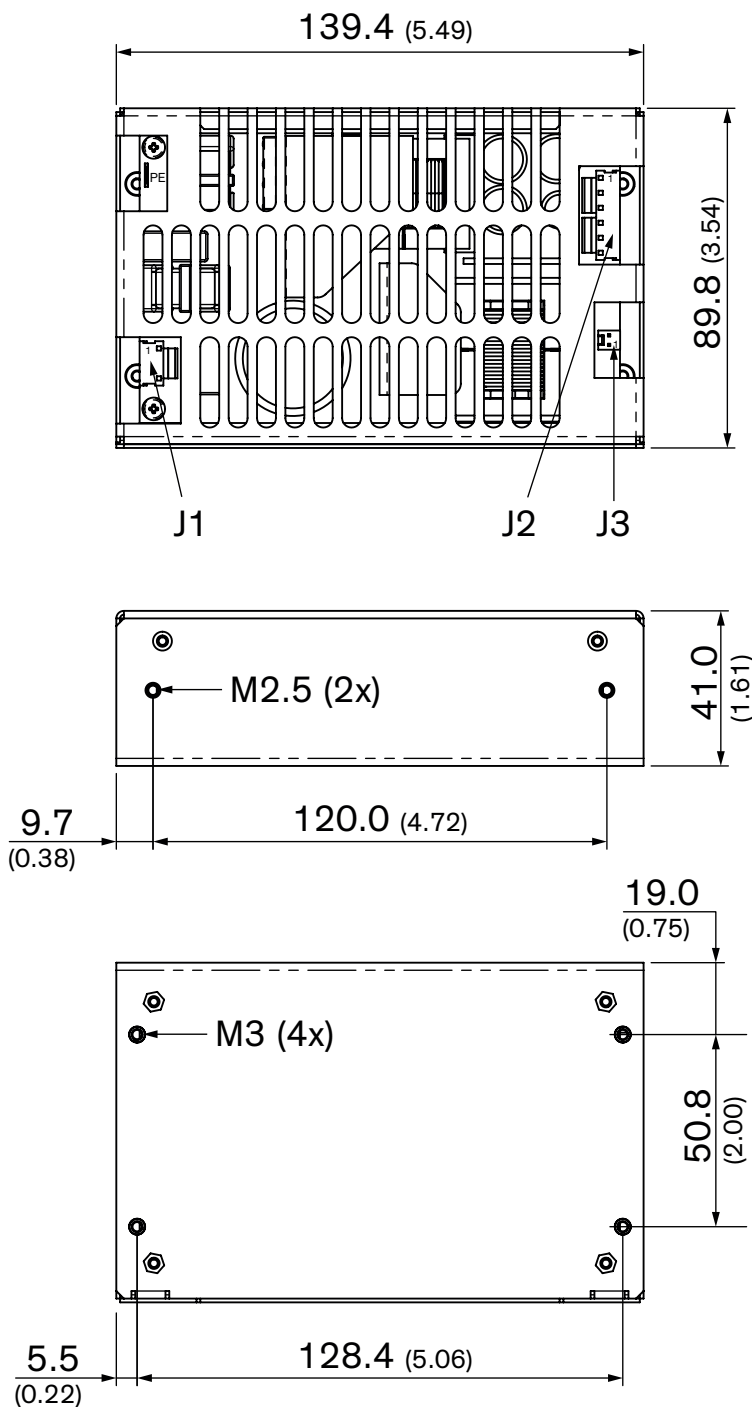
Environment	- Vibration	IEC 60068-2-6 3 axis, sine sweep, 10-55 Hz, 0.075 mm
	- Mechanical Shock	IEC 60068-2-27 15 g, 3 axis, half sine, 11 ms
Housing Material		Aluminum
Housing Type		Metal Case
Mounting Type		Chassis Mount
Connection Type		Pin Connector
Weight		600 g
Power Back Immunity	12 VDC model:	16 V max. (18 V for 1 s)
	15 VDC model:	20 V max. (23 V for 1 s)
	24 VDC model:	35 V max. (40 V for 1 s)
	48 VDC model:	63 V max. (68 V for 1 s)
Environmental Compliance	- REACH Declaration	www.tracopower.com/info/reach-declaration.pdf REACH SVHC list compliant REACH Annex XVII compliant
	- RoHS Declaration	www.tracopower.com/info/rohs-declaration.pdf Exemptions: 7(a), 7(c)-I (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).)
	- SCIP Reference Number	192cf8a2-0a88-49a2-96d5-f396b839dcc5

Additional Information

Supporting Documents	www.tracopower.com/overview/top200c
Frequently Asked Questions	www.tracopower.com/glossary-faq
Glossary	www.tracopower.com/info/glossary.pdf

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Outline Dimensions

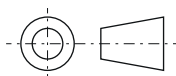


Max. Screw Penetration: 4.0 (0.16)

Mounting screw tightening torque: 0.9 - 1.1 Nm

Dimensions in mm (inch)

Tolerances: ± 0.008 (± 0.2)



Input	
J1	
Pin	Function
1	AC (L)
2	AC (N)

Output	
J2	
Pin	Function
1-3	+ Vout
4-6	- Vout

On / Off	
J3	
Pin	Function
1	-
2	+

Input Connector

PCB terminal: Molex 41791-26-62-4030

Terminal Housing: Molex 2139-09-50-3031

Crimp Terminal: Molex 2478-08-52-0072

Wire size: 22-18 AWG

Output Connector

PCB terminal: Molex 2139-26-60-4060

Terminal Housing: Molex 2139-09-50-3061

Crimp Terminal: Molex 2478-08-52-0072

Wire size: 20-18 AWG

On/Off Connector

PCB terminal: Molex KK 22-27-2021

Terminal Housing: Molex KK 22-01-2025

Crimp Terminal: Molex KK 08-50-0032

Wire size: 30-22 AWG