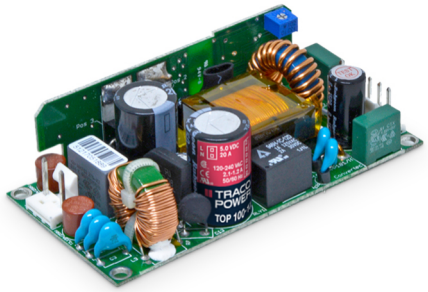
TRACO POWER

AC/DC Power Supply

TOP 100 Series, 100 Watt

- **100 W power supply in 2.0”x 4.0“ footprint!**
- **Full load operation up to +50°C with convection cooling**
- **Highest efficiency, 90 % typ.**
- **EMI filter meets EN 55032, level B**
- **Compliance with EN 61000-3-2**
- **Low leakage current**
- **Safety class I and class II operation**
- **3-year product warranty**



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Scheme

UL 60950-1 IEC 62368-1

The new TOP 100 Series AC/DC Power Supplies feature the highest power rating in the industry standard 2.0” x 4.0” (50.8 x 101.6 mm) footprint. They can supply up to 100 W output power with convection cooling over an industrial operating temperature range of –25°C to +50°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.
Also see: www.tracopower.com/info/top100_article_e1.pdf
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 nom. (adjustable)	Output Current max.	Efficiency typ.
TOP 100-103 *	100 W	3.3 VDC (3.3 - 3.5 VDC)	20'000 mA	87 %
TOP 100-105		5 VDC (5.0 - 5.2 VDC)	20'000 mA	91 %
TOP 100-112		12 VDC (12.0 - 13.0 VDC)	8'300 mA	91 %
TOP 100-115		15 VDC (15.0 - 16.0 VDC)	6'700 mA	91 %
TOP 100-124		24 VDC (24.0 - 26.0 VDC)	4'200 mA	91 %
TOP 100-148		48 VDC (48.0 - 52.0 VDC)	2'100 mA	91 %

Options

Suffix C	- Encased version: www.tracopower.com/overview/top100c

Note * End of life

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Input Specifications

Input Voltage		Operational Range:	90 - 132 VAC / 187 - 264 VAC (Auto Range)
Input Frequency		Operational Range:	47 - 63 Hz
		Certified:	50/60 Hz
Power Consumption	- No load & Vin = 230 VAC		2'600 mW max.
	- No load & Vin = 115 VAC		3'500 mW max.
Input Inrush Current	- At 230 VAC		60 A max.
Power Factor	- At 230 VAC		0.51 min.
	- At 115 VAC		0.59 min.
Input Protection			T 3.15 A / 250 VAC (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

Output Voltage Adjustment		3.3 VDC model:	3.3 - 3.5 VDC
		5 VDC model:	5.0 - 5.2 VDC
		12 VDC model:	12.0 - 13.0 VDC
		15 VDC model:	15.0 - 16.0 VDC
		24 VDC model:	24.0 - 26.0 VDC
		48 VDC model:	48.0 - 52.0 VDC
			(By trim potentiometer) Output power must not exceed rated power!
Voltage Set Accuracy			±1.5% max.
Regulation	- Input Variation (Vmin - Vmax)		1% max. (3.3 Vout model)
			0.5 % max. (other models)
	- Load Variation (0 - 100%)		1.5% max. (3.3 Vout model)
			1 % max. (other models)
Ripple and Noise (20 MHz Bandwidth)		3.3 VDC model:	150 mVp-p max.
		5 VDC model:	150 mVp-p max.
		12 VDC model:	150 mVp-p max.
		15 VDC model:	150 mVp-p max.
		24 VDC model:	150 mVp-p max.
		48 VDC model:	200 mVp-p max.
Capacitive Load			10'000 µF max.
Minimum Load			Not required
Temperature Coefficient			±0.02 %/K max.
Hold-up Time	- At 230 VAC		15 ms min.
	- At 115 VAC		10 ms min.
Start-up Time	- At 230 VAC		2'000 ms max.
	- At 115 VAC		3'500 ms max.
Short Circuit Protection			Automatic recovery 60% typ. of Iout nom.
Overload Protection			Foldback Mode
Output Current Limitation			150% max. of Iout max. (depending on model) 25 A max. (3.3 Vout model) 25 A max. (5 Vout model) 11 A max. (12 Vout model) 10 A max. (15 Vout model) 6 A max. (24 Vout model) 3 A max. (48 Vout model)

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

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Overvoltage Protection		135% typ. of Vout nom. (depending on model) 5 V typ. (3.3 Vout model) 6 V typ. (5 Vout model) 16 V typ. (12 Vout model) 20 V typ. (15 Vout model) 30 V typ. (24 Vout model) 60 V typ. (48 Vout model)
Transient Response	- Peak Variation	400 mV max. (10% to 90% Load Step)
	- Response Time	3'000 µs max. (10% to 90% Load Step)

Safety Specifications

Standards	- IT / Multimedia Equipment	EN 60950-1 EN 62368-1 IEC 60950-1 IEC 62368-1 UL 60950-1
	- Certification Documents	www.tracopower.com/top100-safety-cert
Protection Class		Class I & II (Prepared): Reinforced Insulation
	See application note:	www.tracopower.com/info/protection-class.pdf
Energy Source	- Output, acc. to 62368-1	ES1
Power Source	- Output, acc. to 62368-1	PS3
Pollution Degree		PD 2
Over Voltage Category		OVC II

EMC Specifications

EMI (Emissions)		EN 61000-6-3 (Generic Residential)
	- Conducted Emissions	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 (conductive plane to be connected to safety earth to meet all EMI specifications)
EMS (Immunity)	- RF Electromagnetic Field	EN 61000-4-3, 10 V/m, perf. criteria A
	- EFT (Burst) / Surge	EN 61000-4-4, ±2 kV, perf. criteria A
	L to L:	EN 61000-4-5, ±1 kV, perf. criteria A
	L to PE:	EN 61000-4-5, ±2 kV, perf. criteria A
	- 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
	1 s:	EN 61000-4-8, 1000 A/m, perf. criteria A
	- Voltage Dips & Interruptions 230 VAC / 50 Hz:	EN 61000-4-11
	115 VAC / 60 Hz:	EN 61000-4-11
EMC / Environmental	- Certification Documents	www.tracopower.com/top100-emc-cert

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	1.8 %/K above 40°C (3.3 Vout model) 2.0 %/K above 40°C (5 Vout model) 2.0 %/K above 50°C (other models)
	- Low Input Voltage	3.8 %/V below 103 VAC (3.3 Vout model) 0.9 %/V below 207 VAC (3.3 Vout model) 3.8 %/V below 103 VAC (other models) 1.0 %/V below 207 VAC (other models)
Cooling System		Natural convection (20 LFM)

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Altitude During Operation		2'000 m max.
Regulator Topology		Soft switch half bridge 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 MΩ min.
Isolation Capacitance	- Input to Output, 100 kHz, 1 V	1'120 pF typ.
Leakage Current	- Earth Leakage Current	500 µA max.
	- Touch Current	100 µA max.
Reliability	See application note:	www.tracopower.com/top100-mtbf
Environment	- Vibration	IEC 60068-2-6 1 g, 3 axis, sine sweep, 10-55 Hz, 1 oct/min
	- Mechanical Shock	IEC 60068-2-27 10 g, 3 axis, half sine, 11 ms 20 g, 3 axis, 3 shocks
Housing Type		Open Frame
Mounting Type		Chassis Mount
Connection Type		Pin Connector
Weight		170 g
Power Back Immunity	3.3 VDC model:	5 VDC max. (6 VDC for 1 s)
	5 VDC model:	6.3 VDC max. (7 VDC for 1 s)
	12 VDC model:	16 VDC max. (18 VDC for 1 s)
	15 VDC model:	20 VDC max. (23 VDC for 1 s)
	24 VDC model:	35 VDC max. (40 VDC for 1 s)
	48 VDC model:	63 VDC max. (68 VDC 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	14dcee4b-8b62-447f-a548-9bdfc3eceaa4

Additional Information

Supporting Documents	www.tracopower.com/overview/top100
Frequently Asked Questions	www.tracopower.com/glossary-faq
Glossary	www.tracopower.com/info/glossary.pdf

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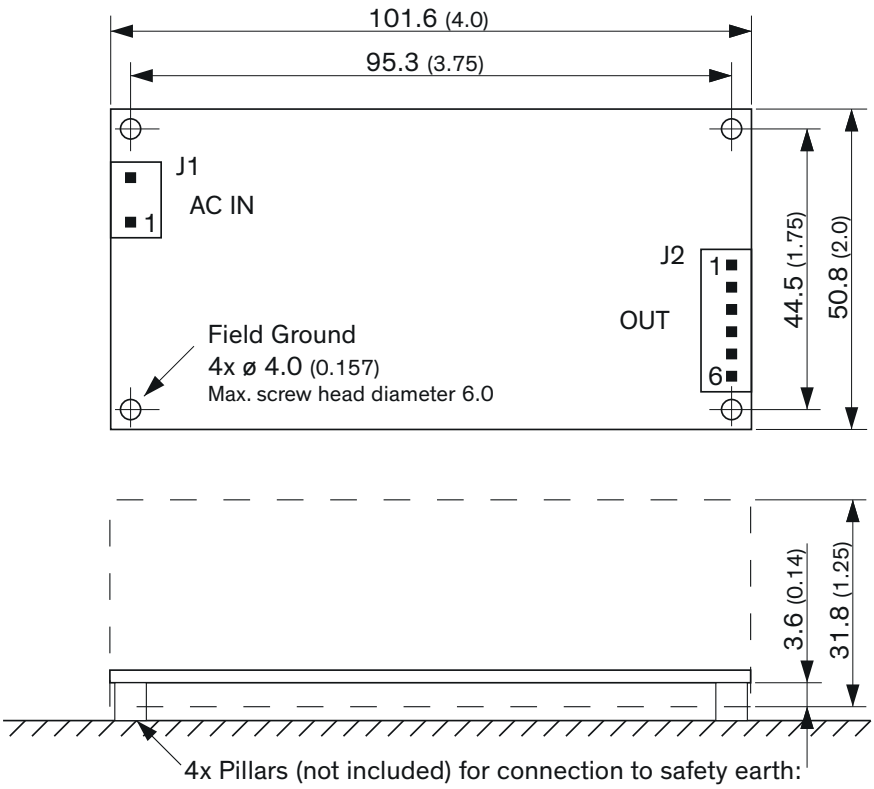
Outline Dimensions



4x Pillars (not included) for connection to safety earth:
Height: 5.0 min. (0.2), Diam.: 6.0 max. (0.25)
To comply with EN 55022 class B:
Field ground (FG) is to be connected to chassis

Mounting screw tightening torque: 0.9 - 1.1 Nm

Dimensions in mm (inch)
Tolerances: ±0.2 (±0.008)

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

Output (J2)	
Pin	**Function**
1	– Vout
2	– Vout
3	– Vout
4	+ Vout
5	+ Vout
6	+ Vout

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

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