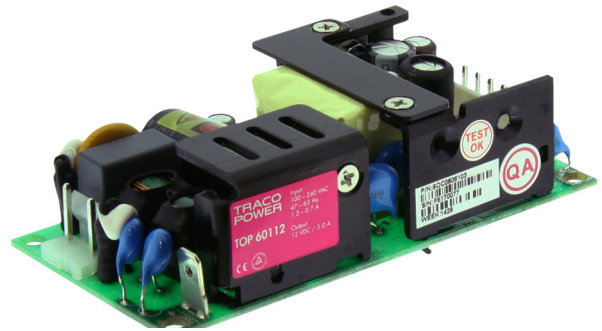


Features

- 60 W power supply in 2.0" x 4.0" footprint
- Single-, dual- and triple output models
- Highest efficiency of 88% typ.
- Operating temperature range -10°C to $+70^{\circ}\text{C}$
- EMI filter meets EN 55022, level B
- Compliance with EN 61000-3-2
- 3-year product warranty



End of Life

The new TOP 60 Series AC/DC open frame power supplies with Industry standard 2.0" x 4.0" (50.8 x 101.6 mm) footprint feature single-, dual- and triple output models with up to 60 Watt continuous output power. The high efficiency allows an operation up to 70°C with convection cooling.

Compliance with global safety and EMC standards qualify these power supplies for industrial and IT applications.

| Models | | | | |
|------------|----------------------|--|------------------------|------------------------|
| Order Code | Output Power nominal | Output 1 | Output 2 ¹⁾ | Output 3 ¹⁾ |
| TOP 60105 | 55 W | 5.0 VDC / 11.0 A | | |
| TOP 60112 | 60 W | 12 VDC / 5.0 A | | |
| TOP 60115 | 64 W | 15 VDC / 4.3 A | | |
| TOP 60124 | 64 W | 24 VDC / 2.7 A | | |
| TOP 60148 | 64 W | 48 VDC / 1.35 A | | |
| TOP 60252 | 55 W | +5.0 VDC / 6.0 A (8.0 A) ¹⁾ | +12 VDC / 3.0 A | |
| TOP 60254 | 55 W | +5.0 VDC / 6.0 A (8.0 A) ¹⁾ | +24 VDC / 1.5 A | |
| TOP 60522 | 55 W | +5.0 VDC / 6.0 A (8.0 A) ¹⁾ | +12 VDC / 3.0 A | -12 VDC / 0.5 A |
| TOP 60533 | 55 W | +5.0 VDC / 6.0 A (8.0 A) ¹⁾ | +15 VDC / 2.4 A | -15 VDC / 0.5 A |
| TOP 60316 | 38 W | +3.3 VDC / 6.0 A (8.0 A) ¹⁾ | +5.2 VDC / 3.0 A | +12 VDC / 0.5 A |
| TOP 60317 | 38 W | +5.0 VDC / 6.0 A (8.0 A) ¹⁾ | +3.3 VDC / 1.5 A | +12 VDC / 0.5 A |
| TOP 60318 | 55 W | +5.0 VDC / 6.0 A (8.0 A) ¹⁾ | +24 VDC / 1.5 A | -12 VDC / 0.5 A |

¹⁾ Peak current for max. 10 sec. or with forced air cooling
Total power should not exceed nominal power

Input Specifications

| | | |
|--|---|--|
| Input voltage | <ul style="list-style-type: none"> - nominal - AC input range - DC input range | 100 – 240 VAC (universal input) 90 – 264 VAC (with derating at low input) 110 – 370 VDC (max. 40 W output power at input below 120 VDC) |
| Input frequency | | 47 – 63 Hz |
| Harmonic limits | | EN 61000-3-2, class A |
| Earth leakage current | | 150 µA max. @264 VAC, 63 Hz |
| Inrush current (< 2ms, cold start at 25°C) | <ul style="list-style-type: none"> - 115 VAC - 230 VAC | 30 A typ. 60 A typ. |
| Input protection | | T3.15 A internal fuses (line and neutral) |
| Recommended circuit breaker | | 5 A (characteristic C or slow blow fuse) |

Output Specifications

| | | |
|---|---|---|
| Voltage set accuracy | | single output models: 2 % max. multi output models, output 1: 3 % max. multi output models, other outputs: 5 % max. |
| Regulation | <ul style="list-style-type: none"> - Input - Load variation | single output models: 2 % max. multi output models, output 1: 3 % max. multi output models, other outputs: 5 % max. |
| Minimum load (to meet regulation specs) | | multi output models, output 1: 0.5 A multi output models, output 2: 0.1 A (not required for single output models and output 3 of multi output models) |
| Ripple and noise (20Mhz Bandwidth) | | 3.3 & 5 VDC models: <100 mVp-p other models: 1 % Vout |
| Overvoltage protection (output 1 only) | | at 110 % – 135 % of Vout nominal |
| Short circuit protection | | foldback (automatic recovery) |
| Capacitive load | TOP 60105/60112/60115/60124/60148 models: TOP 60252/60254 models: TOP 60522/60316/60317/60533/60318 models: | 3300/2200/1500/470/0 µF max. 2200/82 µF max. 1500/5600/1200/470/330 µF max. |
| Transient response (25 % load step change) | | 500 µs typ. |
| Hold-up time | <ul style="list-style-type: none"> - Vin = 110 VAC - Vin = 230 VAC | 12 ms typ. 15 ms typ. |

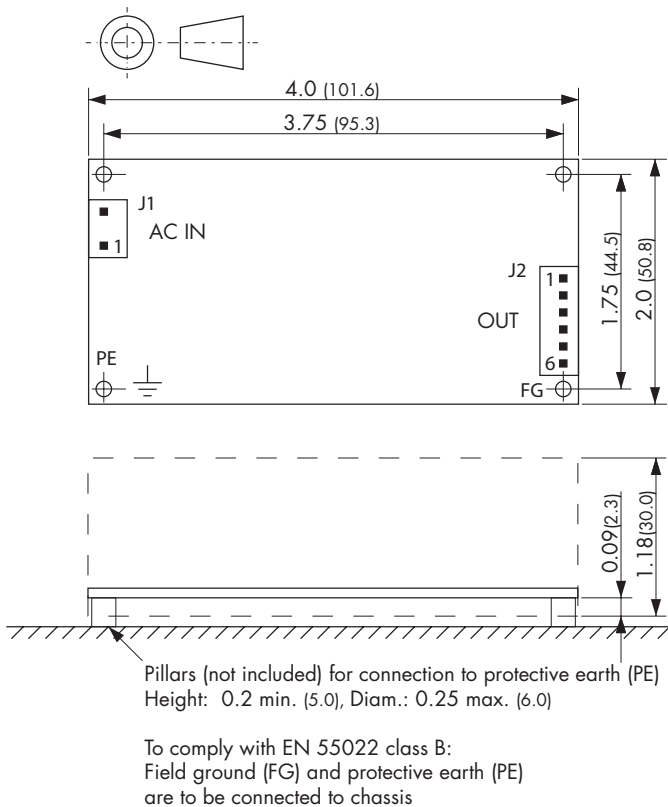
General Specifications

| | | |
|--------------------------------------|--|---|
| Temperature ranges | <ul style="list-style-type: none"> - Operating - Storage (non-operating) | -10°C to +70°C -40°C to +85°C |
| Power derating | | 2.5 %/K above +50°C |
| Humidity (non condensing) | | 0 – 95 % rel. H max. |
| Efficiency | | 80 – 88 % 75 % for TOP 60316 & TOP 60317 |
| Switching frequency | | 62 kHz typ. (pulse width modulation) |
| Altitude during operation | | up to 3'000 m (10'000 ft) approved |
| Start-up time | <ul style="list-style-type: none"> - Vin = 115 VAC - Vin = 230 VAC | <3.5s <2s |
| Electromagnetic compatibility | <ul style="list-style-type: none"> - Electrostatic discharge ESD - RF field susceptibility - Electrical fast transient / burst immunity input - Electrical fast transient / burst immunity output - Surge immunity line – neutral ground - Surge immunity output - Immunity to conducted RF disturbances - Magnetic field immunity - Mains voltage dips and interruptions | EN 61000-4-2 ±8 kV / ±6 kV EN 61000-4-3 3 V/m EN 61000-4-4 ±2 kV EN 61000-4-4 ±2 kV EN 61000-4-5, ±2 kV EN 61000-4-5 ±1 kV EN 61000-4-6 3 Vrms EN 61000-4-8 3 A/m EN 61000-4-11 30 % 500 ms, 60 % 100 ms, >95 % 10 ms |

General Specifications

| | | |
|--|---|---|
| Electromagnetic compatibility (EMC), Emissions | – Conducted input RI suppression – Harmonic current emissions | EN 55022 class B, FCC Part 15 class B IEC/EN 61000-3-2, class A & D |
| Isolation voltage | – Input / Output – Input / Field Ground – Output / Field Ground | 4'000 VDC 1'500 VDC 500 VDC |
| Reliability /calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign) | | >400'000 h |
| Safety standards | – Information technology equipment – Certification documents | IEC/EN/UL 62368-1 IEC/EN 60950-1 www.tracopower.com/overview/top60 |
| Environment | – Vibration acc. IEC 60068-2-6; – Shock acc. IEC 60068-2-27 | 3 axis, sine sweep, 10-55Hz, 1g, 1oct/min 3 axis, 15g half sine, 11msShock 20 G (3 directions each 3 times) |
| Connection | | pin connector (Molex) |
| Weight | | 205 g (7.23 oz) |

Dimensions



Dimensions in Inch, () = mm

Input J1

| Pin | Function |
|-----|----------|
| 1 | AC in |
| 2 | AC in |

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

Output J2

| Pin | Single output | Dual output | Triple output |
|-----|---------------|-------------|---------------|
| 1 | +Vout 1 | Vout 1 | Vout 1 |
| 2 | +Vout 1 | Vout 1 | Vout 1 |
| 3 | -Vout 1 | com. | com. |
| 4 | -Vout 1 | com. | com. |
| 5 | NC | NC | Vout 3 |
| 6 | NC | Vout 2 | Vout 2 |

NC = Not connected

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

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at www.tracopower.com