

- Fully encapsulated power supplies in plastic casing for PCB mount
- Fully regulated outputs
- 4242 VDC I/O-isolation
- High efficiency up to 90%
- Universal input range 90 to 264 VAC
- Operating temperature range: -40°C to +70°C max.
- Safety class II prepared
- Short circuit, over power and over voltage protection



TMG Series AC/DC power modules come in fully encapsulated plastic package. They are ultra-compact, energy-efficient and cost/performance optimised for prevailing market requirements. The high efficiency and the use of high grade components make these modules suitable for an operating temperature range of -40°C to +70°C. Together with very low no-load power consumption they are suitable for applications conforming with the ErP directive. The modules are protected against short-circuit and over voltage. EMI/EMC characteristics and the safety approval package qualify them for demanding applications in equipment for industrial or commercial environments.

| Models | | | | |
|------------|---------------------|-----------------------|-----------------------|-------------------|
| Order Code | Output Power (max.) | Output Voltage (nom.) | Output Current (max.) | Efficiency (typ.) |
| TMG 07105 | 6.3 W | 5.0 VDC | 1260 mA | 77 % |
| TMG 07112 | 7 W | 12 VDC | 583 mA | 80 % |
| TMG 07115 | 7 W | 15 VDC | 466 mA | 80 % |
| TMG 07124 | 7 W | 24 VDC | 292 mA | 80 % |
| TMG 15105 | 13.5 W | 5.0 VDC | 2700 mA | 80 % |
| TMG 15112 | 15 W | 12 VDC | 1250 mA | 84 % |
| TMG 15115 | 15 W | 15 VDC | 1000 mA | 84 % |
| TMG 15124 | 15 W | 24 VDC | 625 mA | 85 % |
| TMG 30103 | 16.5 W | 3.3 VDC | 5000 mA | 80 % |
| TMG 30105 | 25 W | 5.0 VDC | 5000 mA | 84 % |
| TMG 30112 | 30 W | 12 VDC | 2500 mA | 89 % |
| TMG 30115 | 30 W | 15 VDC | 2000 mA | 86 % |
| TMG 30124 | 30 W | 24 VDC | 1250 mA | 86 % |
| TMG 50105 | 40 W | 5.0 VDC | 8000 mA | 86 % |
| TMG 50112 | 50 W | 12 VDC | 4167 mA | 90 % |
| TMG 50115 | 50 W | 15 VDC | 3333 mA | 87 % |
| TMG 50124 | 50 W | 24 VDC | 2083 mA | 88 % |
| TMG 50148 | 50 W | 48 VDC | 1040 mA | 89 % |

Input Specifications

| | | |
|--------------------------------|------------|---|
| Input voltage | – AC Input | 30 W model: 90 – 305 VAC (47 – 63 Hz) other models: 90 – 264 VAC (47 – 63 Hz) all models: derating of 2%/V below 100 VAC required |
| | – DC Input | 120 – 370 VDC (DC+: N / DC–: L) |
| Leakage current | | < 0.25 mA (at <240 VAC) |
| Inrush current* | | 7 W models: 20/40 A max. (115/230 VAC) 15 W models: 25/45 A max. (115/230 VAC) 30 W models: 30/60 A max. (115/230 VAC) 50 W models: 40/60 A max. (115/230 VAC) |
| No-load power consumption | | < 0.3 W |
| External input fuse (required) | | 7 & 15 W models: 2.0 A slow blow type 30 & 50 W models: 3.15 A slow blow type |

Output Specifications

| | | |
|---|-----------------------------|---|
| Voltage accuracy | | ± 2 % max. |
| Regulation | – Input variation | 0.5 % max. |
| | – Load variation (10–100 %) | 7 & 15 W models: 1.0 % max. |
| | – Load variation (0–100 %) | 30 & 50 W models: 1.0 % max. |
| Minimum load | | not required |
| Hold-up time | | 7 W models: 30 ms min. (230 VAC) |
| | | 15 W models: 35 ms min. (230 VAC) |
| | | 30 W models: 10 ms min. (230 VAC) |
| | | 50 W models: 10 ms min. (230 VAC) |
| Ripple and Noise (20MHz bandwidth) (measured with 0.1µF & 47µF parallel capacitor) | 5 VDC models: | 120 mVp-p max. |
| | other models: | 1 % of Vout max. |
| Over power protection | | 7 W models: 134 – 203% of rated output power 15 W models: 164 – 228% of rated output power 30 W models: 172 – 268% of rated output power 50 W models: 200 – 258% of rated output power |
| Short circuit protection | | hiccup, indefinite, auto recovery |
| Overvoltage protection | 15, 30 & 50 W models: | by Zener diode |

| Max. capacitive load [µF] | 3.3 VDC | 5.0 VDC | 12 VDC | 15 VDC | 24 VDC | 48 VDC |
|---------------------------|---------|---------|--------|--------|--------|--------|
| TMG 07 | – | 3'300 | 1'000 | 470 | 68 | – |
| TMG 15 | – | 7'000 | 1'500 | 1'000 | 470 | – |
| TMG 30 | 6'800 | 6'800 | 1'600 | 1'200 | 470 | – |
| TMG 50 | – | 10'000 | 3'500 | 3'000 | 2'200 | 330 |

General Specifications

| | | |
|----------------------------------|---|-------------------------------------|
| Temperature ranges | – operational (natural convection 20 LFM) | –40°C to +70°C max. |
| | – Storage temperature | –40°C to +85°C max. |
| Power derating | | see derating graphs on page 3 |
| Temperature coefficient | | 0.02 %/K |
| Cooling | | natural convection, no internal fan |
| Altitude during operation | 7 & 15 W models: | 3000 m max. |
| | 30 & 50 W models: | 2000 m max. |
| Switching frequency (at 230 VAC) | 7 W models: | 60 kHz – 140 kHz |
| | 15 W models: | 40 kHz – 140 kHz |
| | 30 W models: | 40 kHz – 73 kHz |
| | 50 W models: | 60 kHz – 70 kHz |

* For the 7 & 15 W models an external Thermistor has to be integrated in the circuit at the converter input L (in series).
Thermistor recommendation: 10R / 15z

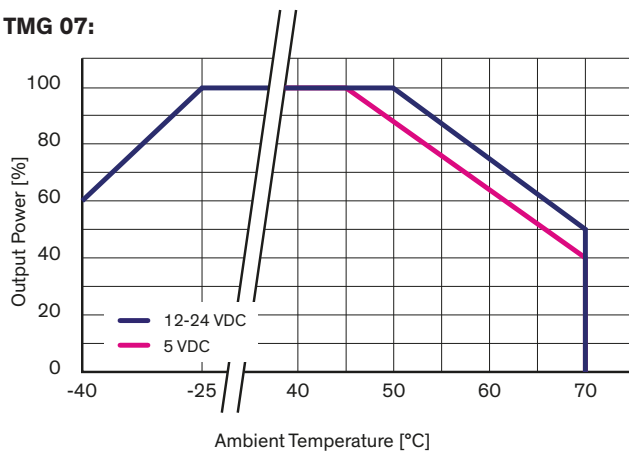
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

General Specifications (continued)

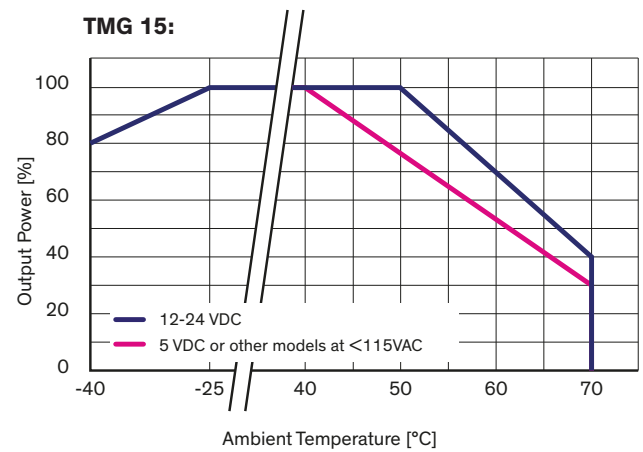
| | | |
|--|--|---|
| Humidity (non condensing) | | 95 % rel. H max. |
| Isolation | – Input/Output | 15 W models: 5656 VDC other models: 4242 VDC |
| MTBF (MIL-HDBK-217F, at 25 °C ground benign) | | 7 W models: > 500'000 h 15 W models: > 450'000 h 30 W models: > 400'000 h 50 W models: > 300'000 h |
| Protection class | | class II prepared |
| Safety standards | | IEC/EN 60950-1 UL 60950-1 www.tracopower.com/overview/tmg |
| | – Certification documents | |
| Electromagnetic compatibility (EMC), Emissions | – Conducted/Radiated RI suppression on input | EN 55032 class B |
| Electromagnetic compatibility (EMC), Immunity | | EN 55024 |
| | – Electrostatic discharge (ESD) | IEC/EN 61000-4-2 4 kV / 8 kV criteria A |
| | – Radiated RF field immunity | IEC/EN 61000-4-3 10V/m criteria A |
| | – Electrical fast transient / burst immunity | IEC/EN 61000-4-4 2 kV criteria A |
| | – Surge immunity* | IEC/EN 61000-4-5 1 kV criteria A |
| | – Immunity to conducted RF disturbances | IEC/EN 61000-4-6 10V criteria A |
| | – Magnetic field immunity | IEC/EN 61000-4-8 30 A/m criteria A |
| | – Mains voltage dips and interruptions | IEC/EN 61000-4-11 30% / 500ms criteria A |
| Case material | | plastic (UL94V-0 rated) |
| Environmental compliance | – Reach – RoHS | www.tracopower.com/info/reach-declaration.pdf RoHS directive 2011/65/EU |

* For the 7 & 15 W models an external Varistor has to be integrated in the circuit at the converter input (in parallel). Recommendation: 14S471K

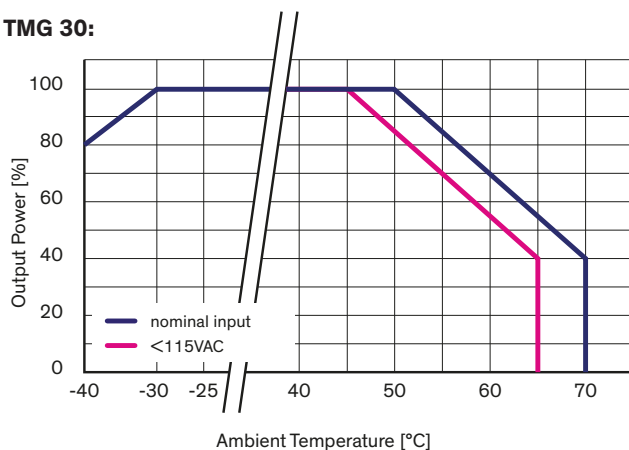
TMG 07:



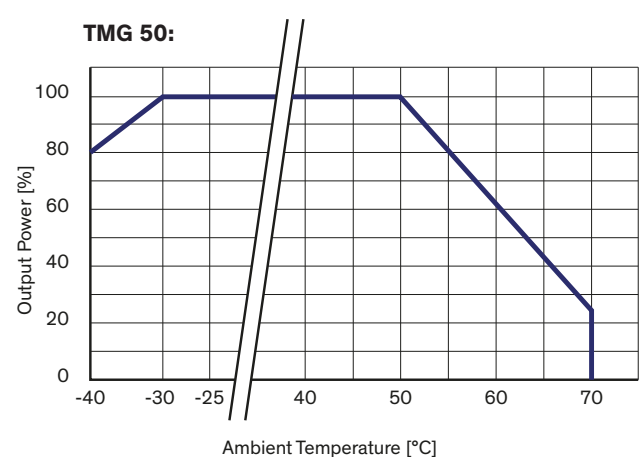
TMG 15:



TMG 30:

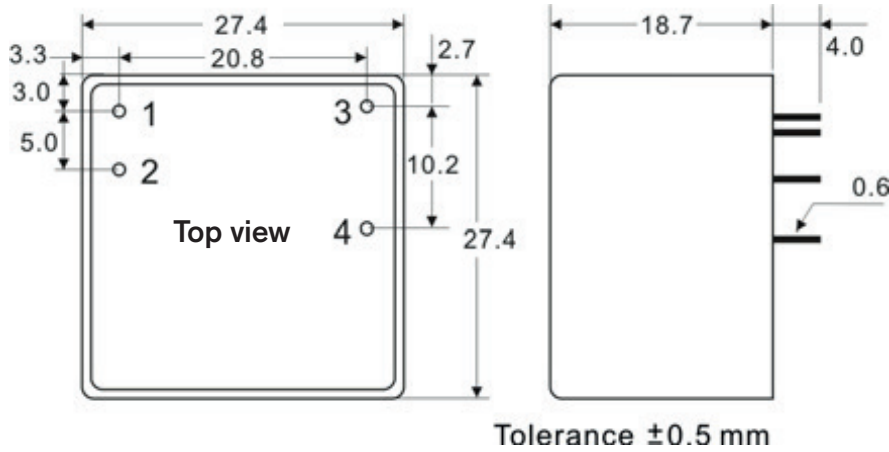


TMG 50:



Outline Dimensions

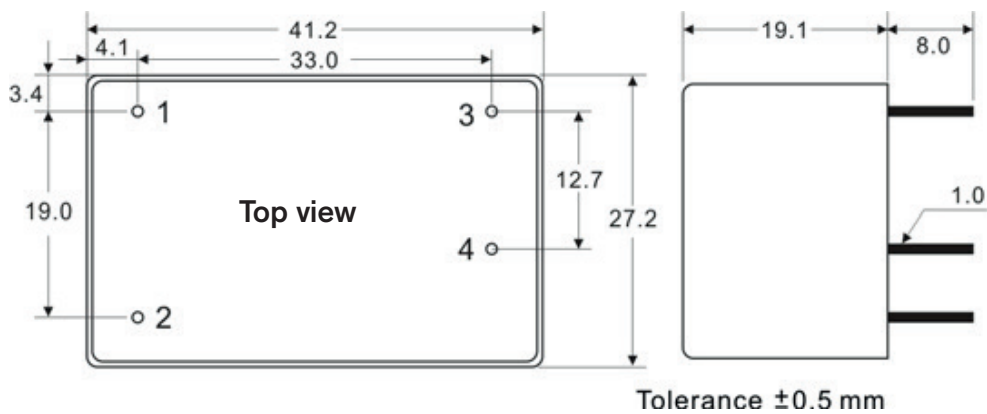
TMG 07 xxx:



| Pinout | |
|--------|-----------|
| Pin | Single |
| 1 | AC IN (N) |
| 2 | AC IN (L) |
| 3 | +Vout |
| 4 | -Vout |

Weight: 26 g (0.92 oz)

TMG 15 xxx:



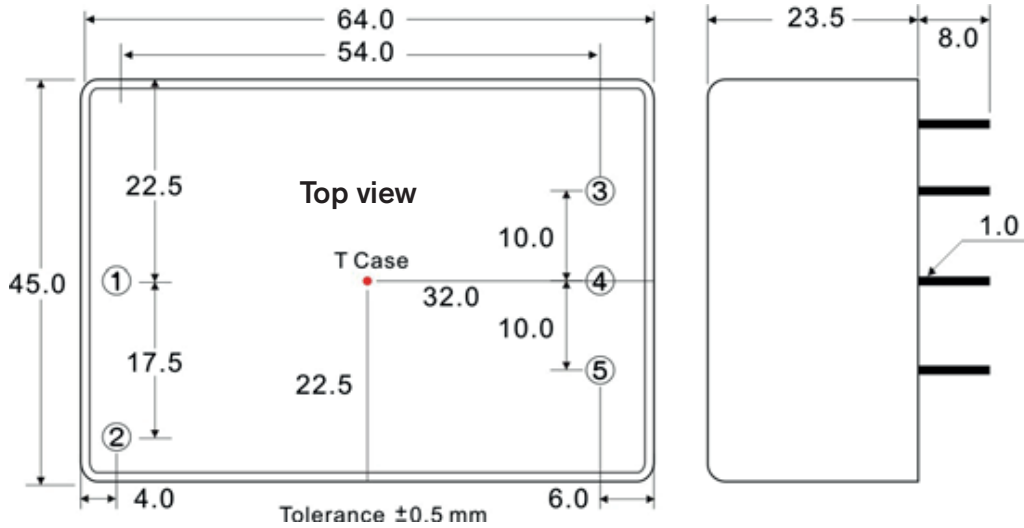
| Pinout | |
|--------|-----------|
| Pin | Single |
| 1 | AC IN (L) |
| 2 | AC IN (N) |
| 3 | -Vout |
| 4 | +Vout |

Weight: 47 g (1.66 oz)

Dimensions in [mm]
 Tolerances: ± 0.5 mm
 Pin tolerances: ± 0.1 mm

Outline Dimensions (continued)

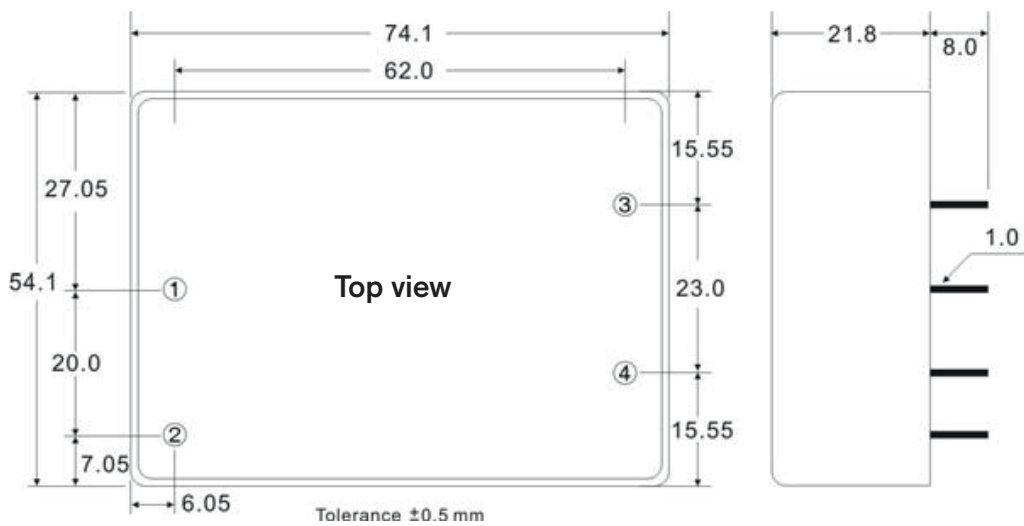
TMG 30 xxx:



| Pinout | |
|--------|-----------|
| Pin | Single |
| 1 | AC IN (N) |
| 2 | AC IN (L) |
| 3 | -Vout |
| 4 | No Pin |
| 5 | +Vout |

Weight: 130 g (4.59 oz)

TMG 50 xxx:



| Pinout | |
|--------|-----------|
| Pin | Single |
| 1 | AC IN (N) |
| 2 | AC IN (L) |
| 3 | -Vout |
| 4 | +Vout |

Weight: 166 g (5.86 oz)

Dimensions in [mm]
 Tolerances: ±0.5 mm
 Pin tolerances: ±0.1 mm