

Features

- Miniature AC/DC Switching Power Modules
- PCB Mounting with Solder Pins or Chassis Mounting with Screw Terminals
- Single, Dual and Triple Output Models
- Universal Input 85-264 VAC, 47-400 Hz
- High Efficiency
- EMI meets EN 55022, Class B and FCC, Level B
- Low Ripple and Noise
- Short Circuit and Overload Protection
- Safety Class II Product
- 2 Year Product Warranty



The TPM Series switching power supplies, comprising 51 (!) standard models, offer highest power density in a full encapsulated module. This feature makes these modules an ideal solution for all space critical applications in commercial and industrial electronic equipment. Full compliance to European low voltage and EMC directive, UL and cUL safety approval qualifies this product for worldwide markets. SMD-technology and a high efficiency guarantees a high reliability of these MiniSwitcher.

| Models | | | | | |
|---|--|-------------------|---|--|--------------------------------------|
| Ordercode | | Output Power max. | Output 1 Inom | Output 2 Inom | Output 3 Inom |
| PCB-mounting with solder pins | Chassis mounting with screw terminals | | | | |
| TPM 05105 TPM 05112 TPM 05124 TPM 05212 TPM 05215 | | 5 Watt | 5 VDC / 1000 mA 12 VDC / 420 mA 24 VDC / 210 mA +12 VDC / 250 mA +15 VDC / 150 mA | -12 VDC / 150 mA -15 VDC / 150 mA | |
| TPM 10105 TPM 10112 TPM 10124 TPM 10212 TPM 10215 TPM 10512 TPM 10515 | TPM 10105C TPM 10112C TPM 10124C TPM 10212C TPM 10215C TPM 10512C TPM 10515C | 10 Watt | 5 VDC / 2000 mA 12 VDC / 840 mA 24 VDC / 420 mA +12 VDC / 400 mA +15 VDC / 300 mA *5 VDC / 1200 mA *5 VDC / 1200 mA | -12 VDC / 400 mA -15 VDC / 300 mA +12 VDC / 120 mA +15 VDC / 100 mA | -12 VDC / 120 mA -15 VDC / 100 mA |

DC input (18 – 72 VDC) and other output voltages on request

* Output floating

Models

| Ordercode | | Output Power max. | Output 1 Inom | Output 2 Inom | Output 3 Inom |
|----------------------------------|--|----------------------|-------------------|-------------------|------------------|
| PCB-mounting with solder pins | Chassis mounting with screw terminals | | | | |
| TPM 15105 | TPM 15105C | 15 Watt | 5 VDC / 3000 mA | | |
| TPM 15112 | TPM 15112C | | 12 VDC / 1300 mA | | |
| TPM 15124 | TPM 15124C | | 24 VDC / 600 mA | | |
| TPM 15212 | TPM 15212C | | +12 VDC / 600 mA | -12 VDC / 400 mA | |
| TPM 15215 | TPM 15215C | | +15 VDC / 500 mA | -15 VDC / 400 mA | |
| TPM 15512 | TPM 15512C | | *5 VDC / 1600 mA | +12 VDC / 150 mA | -12 VDC / 150 mA |
| TPM 15515 | TPM 15515C | | *5 VDC / 1600 mA | +15 VDC / 150 mA | -15 VDC / 150 mA |
| TPM 30105 | TPM 30105C | 30 Watt | 5 VDC / 6000 mA | | |
| TPM 30112 | TPM 30112C | | 12 VDC / 2500 mA | | |
| TPM 30124 | TPM 30124C | | 24 VDC / 1300 mA | | |
| TPM 30212 | TPM 30212C | | +12 VDC / 1200 mA | -12 VDC / 1200 mA | |
| TPM 30215 | TPM 30215C | | +15 VDC / 1000 mA | -15 VDC / 1000 mA | |
| TPM 30252 | TPM 30252C | | *5 VDC / 3000 mA | *12 VDC / 1200 mA | |
| TPM 30254 | TPM 30254C | | *5 VDC / 3000 mA | *24 VDC / 600 mA | |
| TPM 30512 | TPM 30512C | | *5 VDC / 3000 mA | +12 VDC / 600 mA | -12 VDC / 600 mA |
| TPM 30515 | TPM 30515C | | *5 VDC / 3000 mA | +15 VDC / 500 mA | -15 VDC / 500 mA |

DC input (18 – 72 VDC) and other output voltages on request

* Output floating

Input Specifications

| | |
|-----------------------------|------------------------------|
| Input voltage range | 85 – 264 VAC (100 – 375 VDC) |
| Input frequency | 47 – 400 Hz |
| Input current no load | 115 VAC / 230 VAC |
| – TPM 05 models | 18 mA / 13 mA typ. |
| – TPM 10 models | 18 mA / 18 mA typ. |
| – TPM 15 models | 18 mA / 18 mA typ. |
| – TPM 30 models | 25 mA / 20 mA typ. |
| Input current full load | 115 VAC / 230 VAC |
| – TPM 05 models | 100 mA / 60 mA typ. |
| – TPM 10 models | 150 mA / 90 mA typ. |
| – TPM 15 models | 220 mA / 118 mA typ. |
| – TPM 30 models | 430 mA / 240 mA typ. |
| Inrush current (< 2 ms) | 115 VAC / 230 VAC |
| – TPM 05 models | 8 A / 16 A max. |
| – TPM 10 models | 9 A / 18 A max. |
| – TPM 15 models | 9 A / 20 A max. |
| – TPM 30 models | 10 A / 20 A max. |
| External fuse (recommended) | 0.5 A slow blow type |
| – TPM 10 models | 1.0 A slow blow type |
| – TPM 15 models | 1.0 A slow blow type |
| – TPM 30 models | 2.0 A slow blow type |

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

Output Specifications

| | | |
|-------------------------------------|------------------------------|--|
| Voltage set accuracy | – Output 1 (main output) | ± 1 % |
| | – Output 2/3 (aux. outputs) | ± 4 % |
| Regulation | – Input variation | ± 0.5 % max. |
| | – Load variation (10 – 90 %) | |
| | – Single output models | ± 0.5 % max. |
| | – Dual/ triple output models | ± 2 % typ. / ± 5 % max. (symmetric load) |
| Minimum load | – Dual/ triple output models | 5 % (main output) |
| Ripple and noise (20 Mhz Bandwidth) | | 100 mV pk-pk max. |
| Current limitation | | 105 – 130 % of I _{out} max., constant current |
| Short circuit protection | | hiccup mode, indefinite (automatic recovery) |
| Capacitive load | | 1000 µF (each output) TPM 05xxx only 4700 µF (each output) all other models |

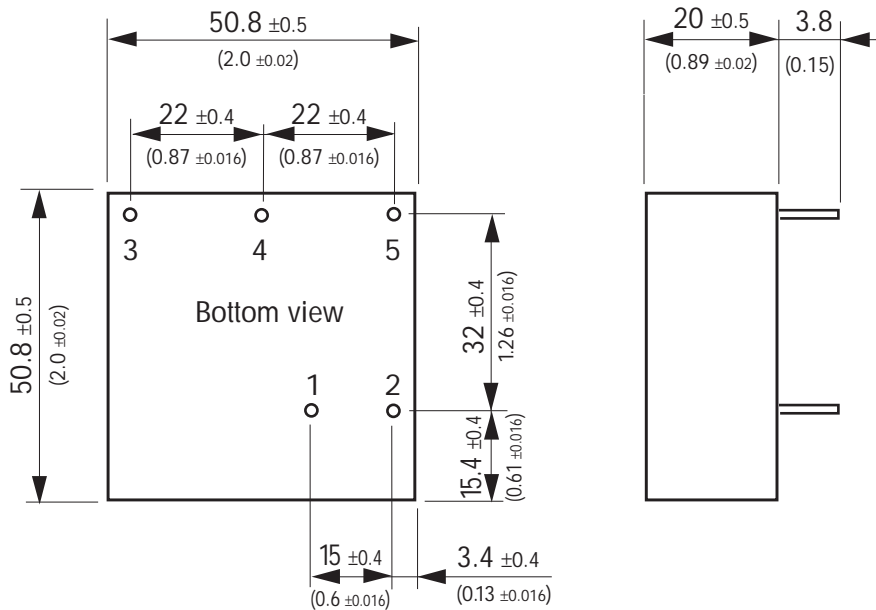
General Specifications

| | | |
|--|--|---|
| Temperature ranges | – Operating | – 25 °C...+70 °C ambient temp. max. |
| | – Case | 95 °C (over temp. protected) |
| | – Derating 5 % / °C above | 55 °C (TPM 5/ 10 models) |
| | | 50 °C (TPM 15/30 models) |
| | – Storage (non operating) | – 40 °C...+100 °C |
| Temperature coefficient | | 0.01 % / °C |
| Efficiency | | 70 – 80 % (depending on model) |
| Humidity (non condensing) | | 95 % rel max. |
| Switching frequency | | 100 kHz typ. (Puls width modulation PWM) |
| Hold-up time | – Vin = 115 VAC | 50 ms min. |
| | – Vin = 230 VAC | 50 ms min. |
| Isolation voltage | – Input/ Output | 3'300 VAC |
| Reliability /calculated MTBF (MIL-HDBK-217E) | | > 150'000 h @ 40°C |
| EMI / RFI conducted | | EN 55022, class B, FCC part 15, level B |
| EMC compliance | – Electrostatic discharge ESD | IEC / EN 61000-4-2 4 kV / 8 kV |
| | – RF field susceptibility | IEC / EN 61000-4-3 10 V/m |
| | – Electrical fast transients/bursts on mainsline | IEC / EN 61000-4-4 2 kV |
| | – Surge | IEC / EN 61000-4-5 2 kV sym. |
| Safety Class II | | to IEC / EN 60536 |
| Safety standards | | UL 1950, IEC 60950, EN 60950 |
| Safety approval | | cUL /UL (E172055) |
| Case material | | CELANEX 2360 FL (flammability to UL 94-V0) |

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

Outline Dimensions mm (inches)

PCB-mounting with solder pins

TPM 5 W


Weight TPM 5 90 g (0.02 lb)

Pin-Out

| Pin | Single | Dual |
|-----|--------|--------|
| 1 | AC in | AC in |
| 2 | AC in | AC in |
| 3 | -V out | -V out |
| 4 | no pin | Common |
| 5 | +V out | +V out |

 Pin diameter $\varnothing 1.0 \pm 0.1$ (0.04 ± 0.004)

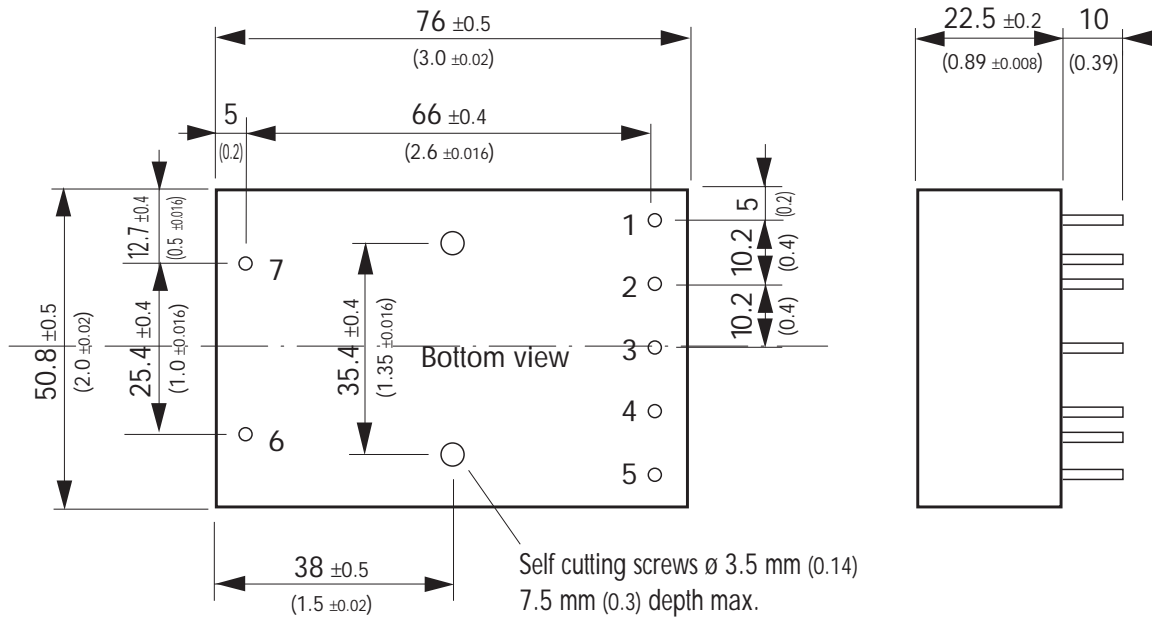
Specifications can be changed without notice

<http://www.tracopower.com>

Outline Dimensions mm (inches)

PCB-mounting with solder pins

TPM 10/15 W



Pin diameter $\varnothing 1.1 \pm 0.1$ (0.043 ± 0.004) inches

Weight TPM 10 150 g (0.33 lb)
TPM 15 150 g (0.33 lb)

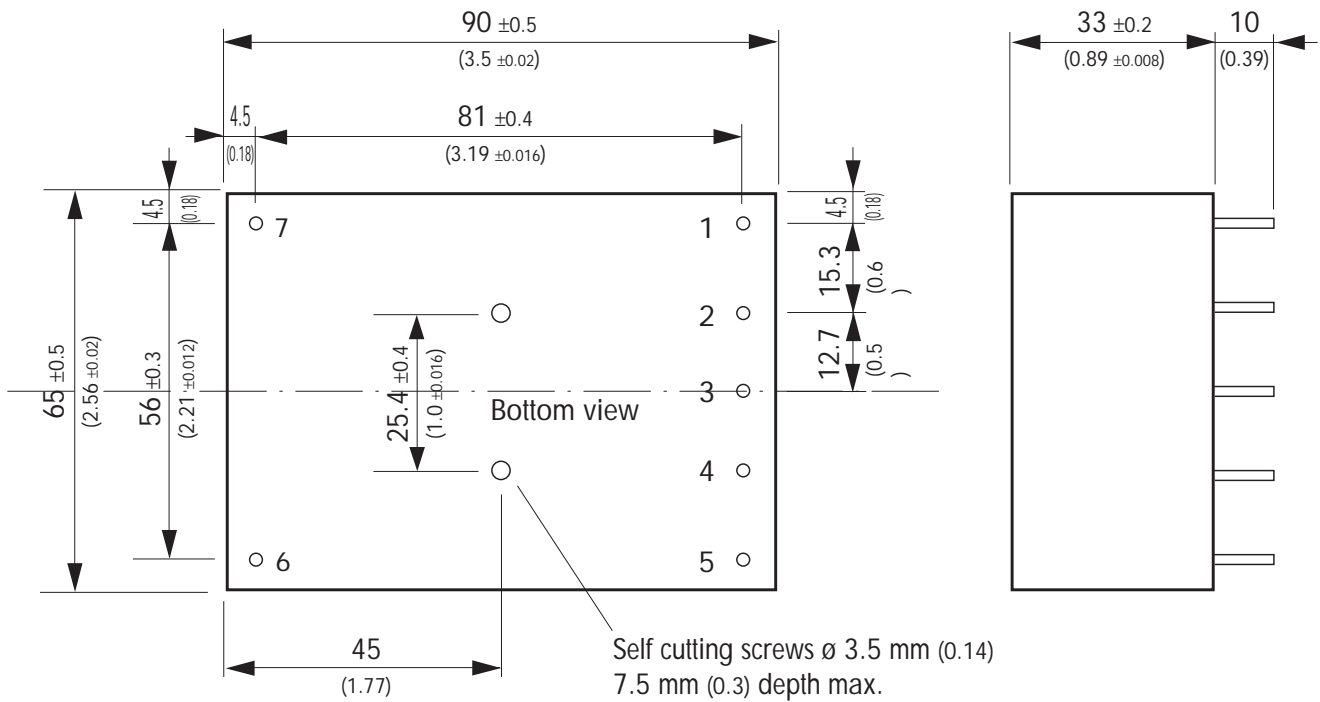
Pin-Out

| Pin | Single | Dual | Triple |
|-----|--------|--------|----------|
| 1 | -V out | -V out | -V out 3 |
| 2 | No Pin | No Pin | -V out 1 |
| 3 | No Pin | Common | Com. 2/3 |
| 4 | No Pin | No Pin | +V out 1 |
| 5 | +V out | +V out | +V out 2 |
| 6 | AC in | AC in | AC in |
| 7 | AC in | AC in | AC in |

Outline Dimensions mm (inches)

PCB-mounting with solder pins

TPM 30 W



Pin diameter $\varnothing 1.2 \pm 0.1$ (0.05 ± 0.004)

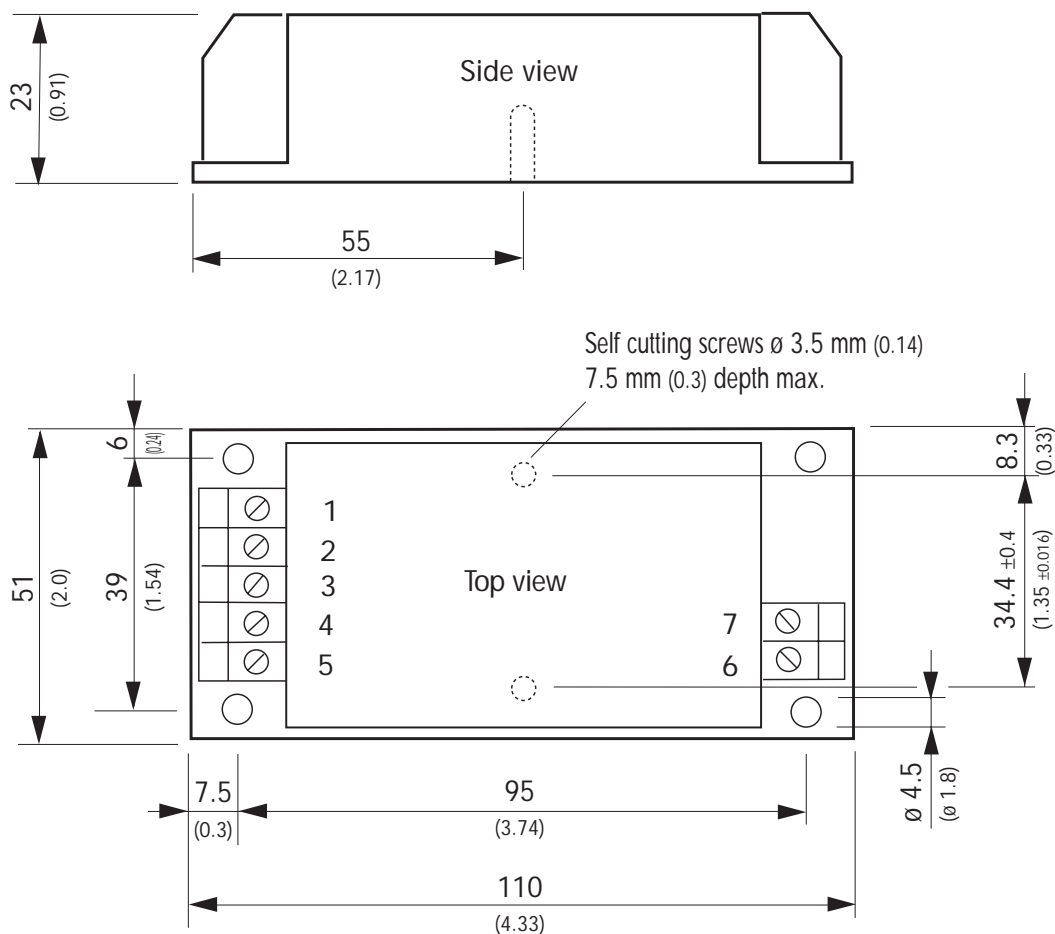
Weight TPM 30 340 g (0.75 lb)

| Pin-Out | | | | |
|---------|--------|-----------|------------|----------|
| Pin | Single | Dual sym. | Dual asym. | Triple |
| 1 | No Pin | -V out | -V out 1 | -V out 3 |
| 2 | No Pin | No Pin | +V out 1 | -V out 1 |
| 3 | -V out | Common | No Pin | Com. 2/3 |
| 4 | No Pin | No Pin | -V out 2 | +V out 1 |
| 5 | +V out | +V out | +V out 2 | +V out 2 |
| 6 | AC in | AC in | AC in | AC in |
| 7 | AC in | AC in | AC in | AC in |

Outline Dimensions mm (inches)

Chassis mounting with screw terminals

TPM 10/15 W C



Connection: wire diameter $\varnothing 0.2 - 4.0$ mm² (AWG 24 - 12)

Weight **TPM 10 C** 200 g (0.44 lb)
 TPM 15 C 220 g (0.44 lb)

Pin-Out

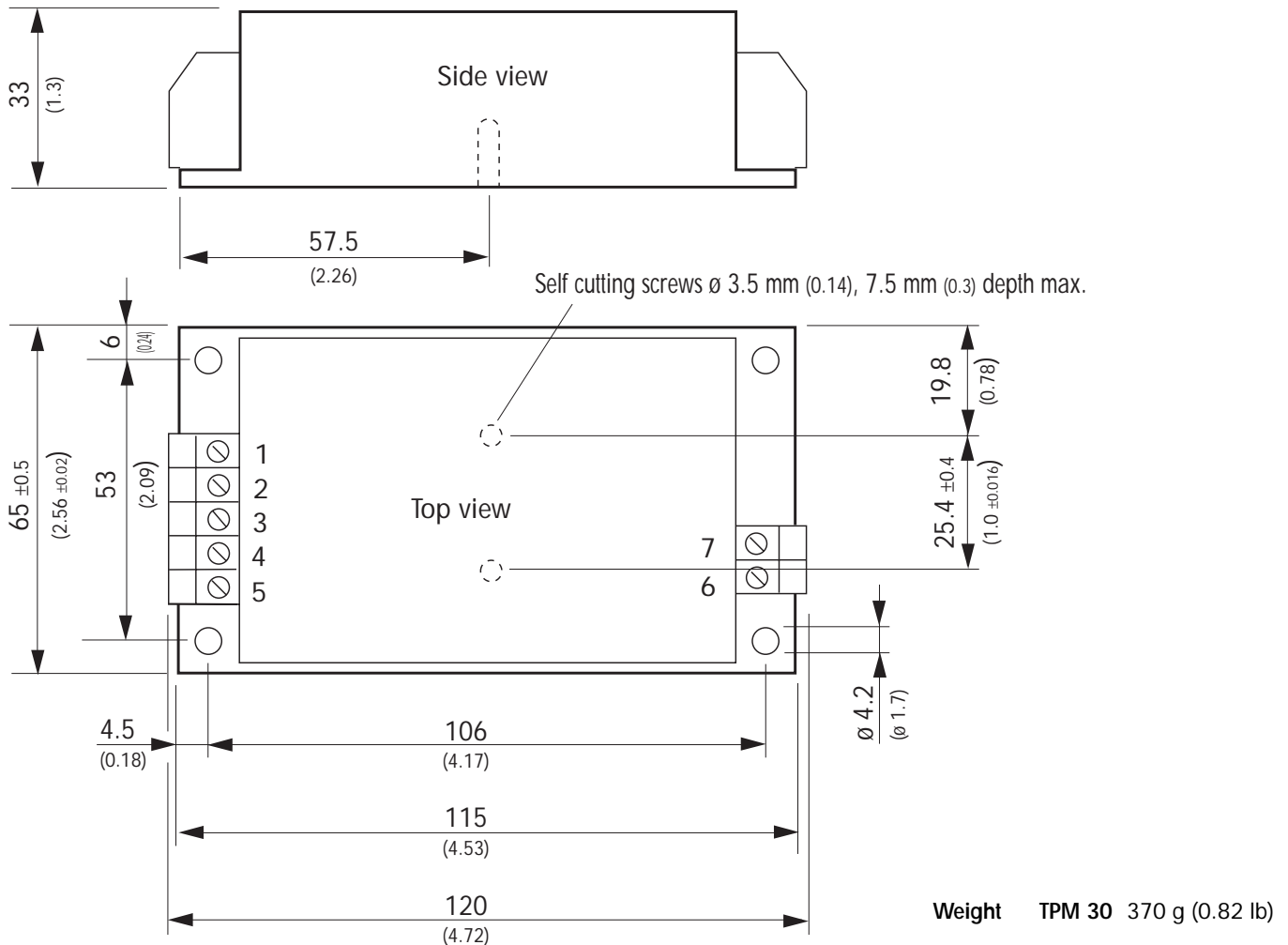
| Pin | Single | Dual | Triple |
|-----|-------------|-------------|----------|
| 1 | No Terminal | No Terminal | -V out 3 |
| 2 | No Terminal | No Terminal | -V out 1 |
| 3 | No Terminal | -V out | Com. 2/3 |
| 4 | -V out | Common | +V out 1 |
| 5 | +V out | +V out | +V out 2 |
| 6 | AC in | AC in | AC in |
| 7 | AC in | AC in | AC in |

Specifications can be changed without notice

Outline Dimensions mm (inches)

Chassis mounting with screw terminals

TPM 30 W C



Connection: wire diameter ø 0.2 – 4.0 mm² (AWG 24 – 12)

| Pin-Out | | | | |
|---------|-------------|-------------|-------------|----------|
| Pin | Single | Dual sym. | Dual asym. | Triple |
| 1 | No Terminal | No Terminal | No Terminal | –V out 3 |
| 2 | No Terminal | No Terminal | –V out 1 | –V out 1 |
| 3 | No Terminal | –V out | +V out 1 | Com. 2/3 |
| 4 | –V out | Common | –V out 2 | +V out 1 |
| 5 | +V out | +V out | +V out 2 | +V out 2 |
| 6 | AC in | AC in | AC in | AC in |
| 7 | AC in | AC in | AC in | AC in |

Specifications can be changed without notice