



Medical Power Solutions

Product Portfolio 2018



TRACO POWER products for applied versus non-applied medical requirements

For non-applied parts sections of medical equipment, power and safety requirements can be satisfied by any of Traco Power power supplies, non-medical for 1×MOPP applications and medical rated power supplies for all other MOPP levels. If this part of the system is attaching to a DC input from a non-medical rated power supply, then use of our DC/DC Converters should satisfy safety requirements for 1×MOPP / 2×MOPP applications.

For applied parts sections of medical equipment, the clearance and creepage distances, as well as a secondary isolation barrier are required to further isolate the patient from potentially high voltages (2×MOPP is means of patient protection). The isolation barrier may be satisfied using Traco Power medical rated 2×MOPP AC/DC power supplies or DC/DC converters. Even this reinforced insulation system does not unconditionally qualify a power supply unit and DC/DC converter for medical applications. Particular and collateral standards also require that a risk/quality management System be in place at the component level, especially for safety critical applications.

TRACO POWER products for applied parts applications with a 2×MOPP rating, have been carefully designed and manufactured to the highest standards to meet the increased quality, reliability and safety standards for medical equipment. These products have fully regulated output voltages and feature:

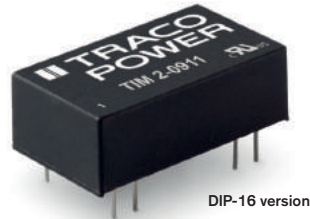
- Product certification according to IEC/EN/ES 60601-1 3rd edition for 2×MOPP
- Risk management process according to ISO 14971 including risk management file
- EMC emission and immunity to IEC 60601-1-2 edition 4
- Acceptance criteria for electronic assemblies according to IPC-A-610 Level 3
- Design and production to ISO 13485 quality management system (certification soon)
- 5-year product warranty

TIM 2(SM) Series

NEW

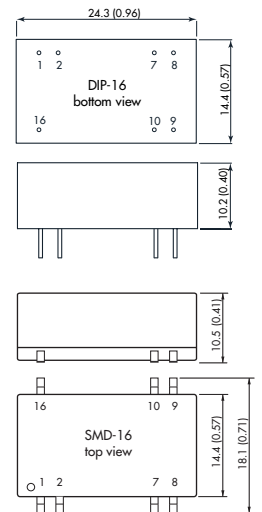
2 Watt DC/DC converter in DIP or SMD package

- 2:1 input voltage with extended low input range:
4.5-12, 9-18, 18-36, 36-75
- Output voltages:
5.0, 12, 15, 24, ± 12 , ± 15 VDC
- I/O isolation 5000 VACrms rated for 250 VACrms working voltage
- Low leakage current $< 2 \mu\text{A}$
- Input filter to meet EN55032 class A



www.tracopower.com/overview/tim2 www.tracopower.com/overview/tim2sm

1: -Vin
2: NC
7: NC
8: NC / com
9: +Vout
10: -Vout
16: +Vin

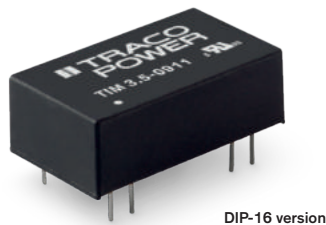


TIM 3.5(SM) Series

NEW

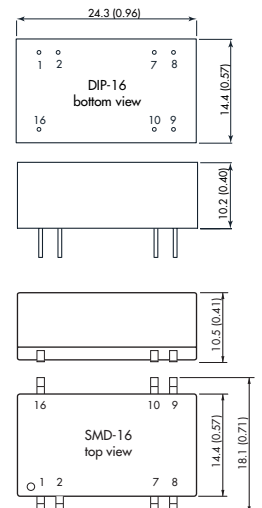
3.5 Watt DC/DC converter in DIP-16 package

- 2:1 input voltage with extended low input range:
4.5-12, 9-18, 18-36, 36-75
- Output voltages:
5.0, 12, 15, 24, ± 12 , ± 15 VDC
- I/O isolation 5000 VACrms rated for 250 VACrms working voltage
- Low leakage current $< 2 \mu\text{A}$
- Input filter to meet EN55032 class A



www.tracopower.com/overview/tim3 www.tracopower.com/overview/tim3sm

1: -Vin
2: NC
7: NC
8: NC / com
9: +Vout
10: -Vout
16: +Vin



THM 3(WI) Series

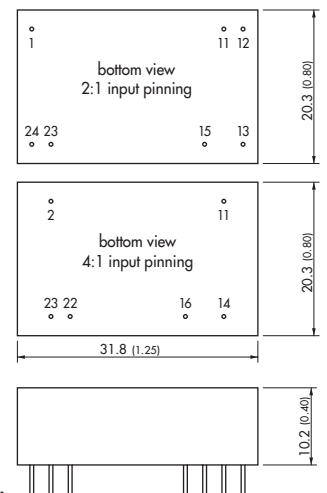
3 Watt DC/DC converter in DIP-24 package

- THM 3: 2:1 input voltage ranges
4.5-9, 9-18, 18-36, 36-75
THM 3WI: 4:1 input voltage ranges
4.5-9, 9-36, 18-75 VDC
- Output voltages:
3.3, 5.0, 12, 15, 24, ± 5 , ± 12 , ± 15 VDC
- I/O isolation 5000 VACrms rated for 250 VACrms working voltage
- Low leakage current $< 2 \mu\text{A}$
- Very high efficiency up to 87%
- Extended operating temperature range
 -40°C to 80°C at full load.
- Input filter to meet EN55032 class A



2:1 Input	4:1 Input
Single output	Single output
1: +Vin	2: -Vin
11: no pin	11: NC
12: -Vout	14: +Vout
13: +Vout	16: -Vout
15: no pin	22: +Vin
23: -Vin	23: +Vin
24: -Vin	
Dual output	Dual output
1: +Vin	2: -Vin
11: com	11: -Vout
12: no pin	14: +Vout
13: -Vout	16: com
15: +Vout	22: +Vin
23: -Vin	23: +Vin
24: -Vin	

Optional: interchanged pinning



www.tracopower.com/overview/thm3 www.tracopower.com/overview/thm3wi

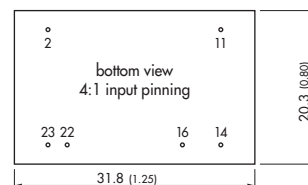
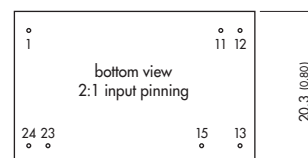
THM 6(WI) Series

6 Watt DC/DC converter in DIP-24 package

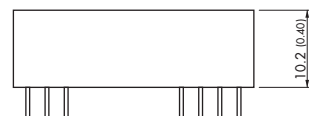
- THM 6: 2:1 input voltage ranges
4.5-9, 9-18, 18-36, 36-75
THM 6WI: 4:1 input voltage ranges
4.5-9, 9-36, 18-75 VDC
- Output voltages:
3.3, 5.0, 12, 15, 24, ± 5 , ± 12 , ± 15 VDC
- I/O isolation 5000 VACrms rated for
250 VACrms working voltage
- Low leakage current $< 2 \mu\text{A}$
- Very high efficiency up to 88%
- Extended operating temperature range
 -40°C to 70°C at full load.
- Input filter to meet EN55032 class A


www.tracopower.com/overview/thm6
www.tracopower.com/overview/thm6wi

2:1 Input	4:1 Input
Single output	Single output
1: +Vin	2: -Vin
11: no pin	11: NC
12: -Vout	14: +Vout
13: +Vout	16: -Vout
15: no pin	22: +Vin
23: -Vin	23: +Vin
24: -Vin	
Dual output	Dual output
1: +Vin	11: -Vout
11: com	14: +Vout
12: no pin	16: com
13: -Vout	22: +Vin
15: +Vout	23: +Vin
23: -Vin	
24: -Vin	



Optional: interchanged pinning



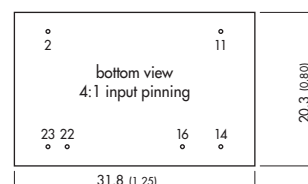
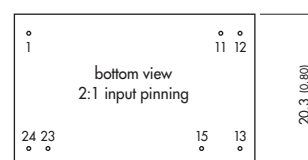
THM 10(WI) Series

10 Watt DC/DC converter in DIP-24 package

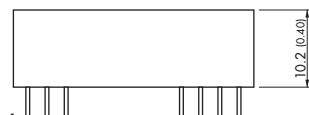
- THM 10: 2:1 input voltage ranges
4.5-9, 9-18, 18-36, 36-75
THM 10WI: 4:1 input voltage ranges
4.5-9, 9-36, 18-75 VDC
- Output voltages:
3.3, 5.0, 12, 15, 24, ± 5 , ± 12 , ± 15 VDC
- I/O isolation 5000 VACrms rated for
250 VACrms working voltage
- Low leakage current $< 2 \mu\text{A}$
- Very high efficiency up to 89%
- Input filter to meet EN55032 class A


www.tracopower.com/overview/thm10
www.tracopower.com/overview/thm10wi

2:1 Input	4:1 Input
Single output	Single output
1: +Vin	2: -Vin
11: no pin	11: NC
12: -Vout	14: +Vout
13: +Vout	16: -Vout
15: no pin	22: +Vin
23: -Vin	23: +Vin
24: -Vin	
Dual output	Dual output
1: +Vin	11: -Vout
11: com	14: +Vout
12: no pin	16: com
13: -Vout	22: +Vin
15: +Vout	23: +Vin
23: -Vin	
24: -Vin	



Optional: interchanged pinning

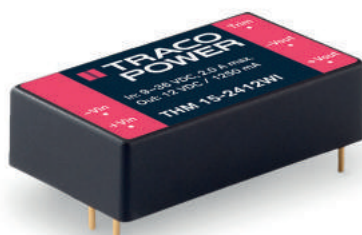


THM 15(WI) Series

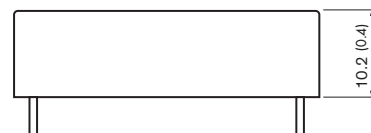
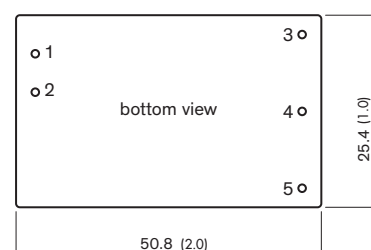
NEW models

15 Watt DC/DC converter in 1.6" x 1" package

- THM 15: 2:1 input voltage ranges:
9-18, 18-36, 36-75
THM 15WI: 4:1 input voltage ranges:
9-36, 18-75
- Output voltages:
5.0, 12, 15, 24 VDC adjust. $\pm 10\%$
 ± 5 , ± 12 , ± 15 VDC
- I/O isolation 5000 VACrms rated for
250 VACrms working voltage
- Low leakage current
- Very high efficiency up to 90%


www.tracopower.com/overview/thm15
www.tracopower.com/overview/thm15wi

Single output
1: +Vin
2: -Vin
4: +Vout
5: -Vout
6: Trim
Dual output
1: +Vin
2: -Vin
4: +Vout
5: com.
6: -Vout



THM 20(WI) Series

NEW models

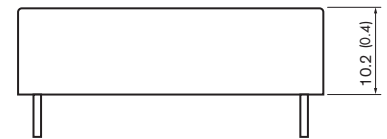
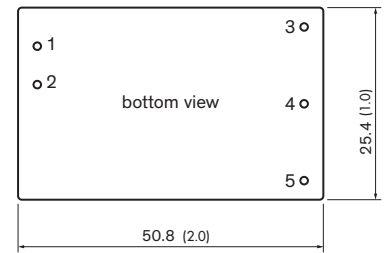
20 Watt DC/DC converter in 1.6" x 1" package

- THM 20: 2:1 input voltage ranges:
9-18, 18-36, 36-75
THM 20WI: 4:1 input voltage ranges:
9-36, 18-75
- Output voltages:
5.0, 12, 15, 24 VDC adjust. $\pm 10\%$
 ± 5 , ± 12 , ± 15 VDC
- I/O isolation 5000 VACrms rated for
250 VACrms working voltage
- Low leakage current
- Very high efficiency up to 90%



Single output
1: +Vin
2: -Vin
4: +Vout
5: -Vout
6: Trim

Dual output
1: +Vin
2: -Vin
4: +Vout
5: com.
6: -Vout



www.tracopower.com/overview/thm20

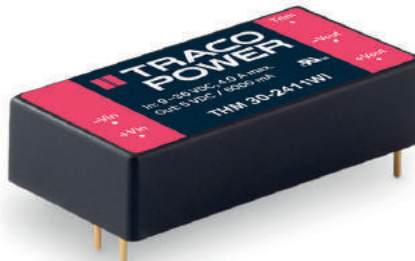
www.tracopower.com/overview/thm20wi

THM 30(WI) Series

NEW models

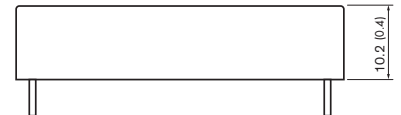
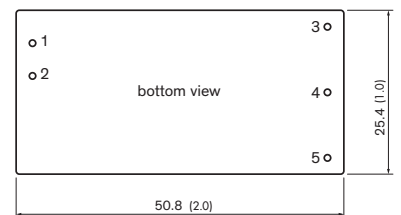
30 Watt DC/DC converter in 2" x 1" package

- THM 30: 2:1 input voltage ranges:
9-18, 18-36, 36-75
THM 30WI: 4:1 input voltage ranges:
9-36, 18-75
- Output voltages:
5.0, 12, 15, 24 VDC adjust. $\pm 10\%$
 ± 5 , ± 12 , ± 15 VDC
- I/O isolation 5000 VACrms rated for
250 VACrms working voltage
- Low leakage current
- Very high efficiency up to 90%



Single output
1: +Vin
2: -Vin
4: +Vout
5: -Vout
6: Trim

Dual output
1: +Vin
2: -Vin
4: +Vout
5: com.
6: -Vout



www.tracopower.com/overview/thm30

www.tracopower.com/overview/thm30wi

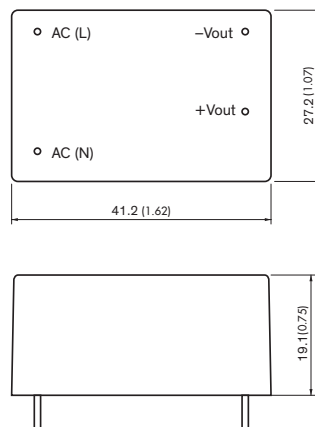
TMF 05 Series

- Universal input 90-264 VAC and 120-370 VDC
- Output voltages: 5.0, 12, 15, 24 VDC
- Fully encapsulated ultra compact plastic casing for PCB mount
- Protection class II prepared
- Low leakage current <100 μ A
- Operating temperature range -25°C to 70°C.
- Input filter to meet EN55032 class B



www.tracopower.com/overview/tmf05

5 Watt AC/DC power module



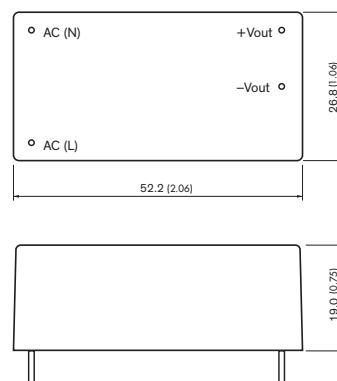
TMF 10 Series

- Universal input 90-264 VAC and 120-370 VDC
- Output voltages: 5.0, 12, 15, 24 VDC
- Fully encapsulated ultra compact plastic casing for PCB mount
- Protection class II prepared
- Low leakage current <100 μ A
- Operating temperature range -25°C to 70°C.
- Input filter to meet EN55032 class B



www.tracopower.com/overview/tmf10

10 Watt AC/DC power module

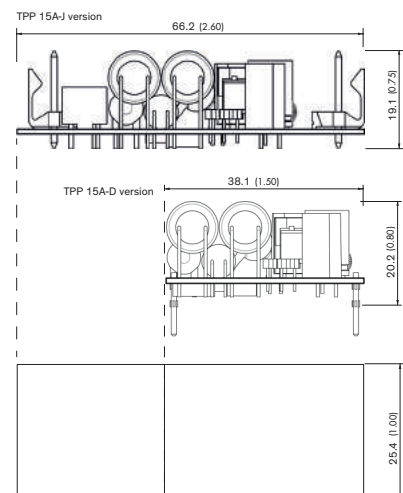
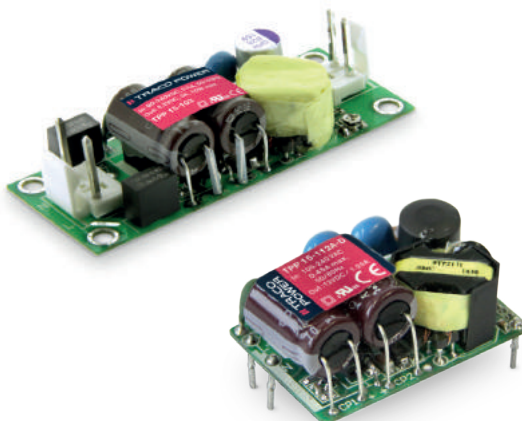


TPP 15A Series

NEW

15 Watt AC/DC open frame power supply

- Universal input 90-264 VAC and 120-370 VDC
- Output voltages adjust $\pm 10\%$: 3.3, 5.0, 12, 15, 24, 48 VDC
- Protection class II prepared
- Low leakage current <75 μ A
- Operating temperature range -25°C to 85°C.
- Input filter to meet EN55032 class B
- Available for PCB mount (-D) or with Pin-connector (-J)



www.tracopower.com/overview/tp15a

TPP 15 Series

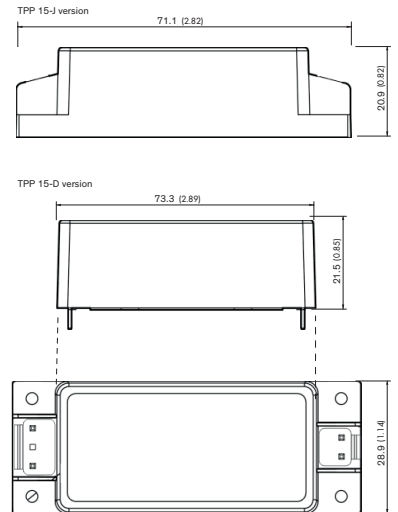
NEW

- Universal input 90-264 VAC and 120-370 VDC
- Output voltages adjust $\pm 10\%$: 3.3, 5.0, 12, 15, 24, 48 VDC
- Protection class II prepared
- Low leakage current $< 75 \mu\text{A}$
- Operating temperature range -25°C to 85°C .
- Input filter to meet EN55032 class B
- Available for PCB mount (-D) or for chassis mount (-J)



www.tracopower.com/overview/tpp15

15 Watt AC/DC power module



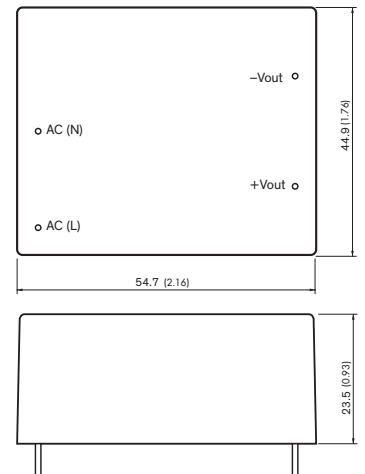
TMF 20 Series

- Universal input 90-264 VAC and 120-370 VDC
- Output voltages: 5.0, 12, 15, 24 VDC
- Fully encapsulated ultra compact plastic casing for PCB mount
- Protection class II prepared
- Low leakage current $< 100 \mu\text{A}$
- Operating temperature range -25°C to 70°C .
- Input filter to meet EN55032 class B



www.tracopower.com/overview/tmf20

20 Watt AC/DC power module



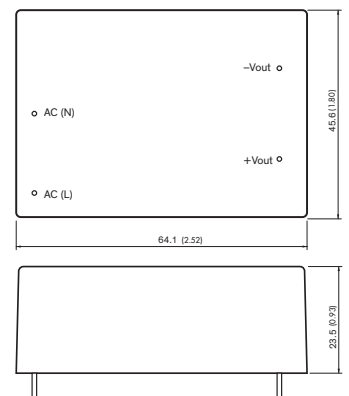
TMF 30 Series

- Universal input 90-264 VAC and 120-370 VDC
- Output voltages: 5.0, 12, 15, 24 VDC
- Fully encapsulated ultra compact plastic casing for PCB mount
- Protection class II prepared
- Low leakage current $< 100 \mu\text{A}$
- Operating temperature range -25°C to 70°C .
- Input filter to meet EN55032 class B



www.tracopower.com/overview/tmf30

30 Watt AC/DC power module

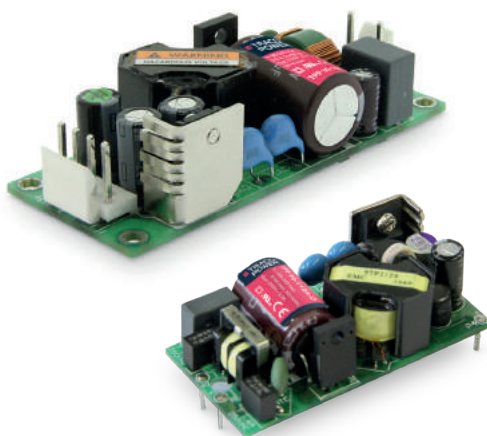


TPP 30A Series

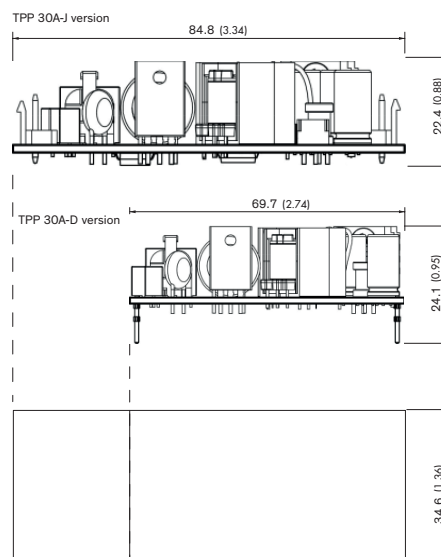
NEW

30 Watt AC/DC open frame power supply

- Universal input 90-264 VAC and 120-370 VDC
- Output voltages adjust $\pm 10\%$: 3.3, 5.0, 12, 15, 24, 48 VDC
- Protection class II prepared
- Low leakage current $< 100 \mu\text{A}$
- Operating temperature range -25°C to 85°C .
- Input filter to meet EN55032 class B
- Available for PCB mount (-D) or with Pin-connector (-J)



www.tracopower.com/overview/tpp30a



TPP 30

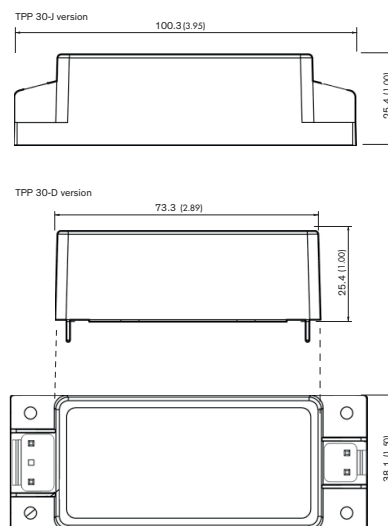
NEW

30 Watt AC/DC ...

- Universal input 90-264 VAC and 120-370 VDC
- Output voltages adjust $\pm 10\%$: 3.3, 5.0, 12, 15, 24, 48 VDC
- Protection class II prepared
- Low leakage current $< 100 \mu\text{A}$
- Operating temperature range -25°C to 85°C .
- Input filter to meet EN55032 class B
- Available for PCB mount (-D) or for chassis mount (-J)



www.tracopower.com/overview/tpp30

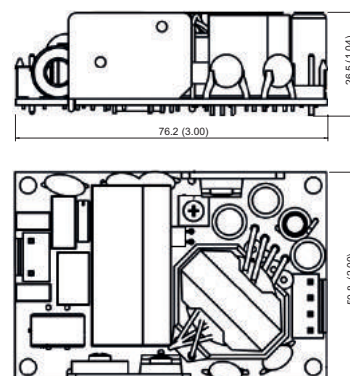


TPP 40A Series

NEW

40 Watt AC/DC open frame power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages (Vout1 adjust. $\pm 10\%$) single: 5.0, 12, 24, 48 VDC
- Highest efficiency (ErP ready)
- Protection class I & II prepared
- Low leakage current $< 75 \mu\text{A}$
- Optional: individual output voltage



www.tracopower.com/overview/tpp40a

TPP 40 Series

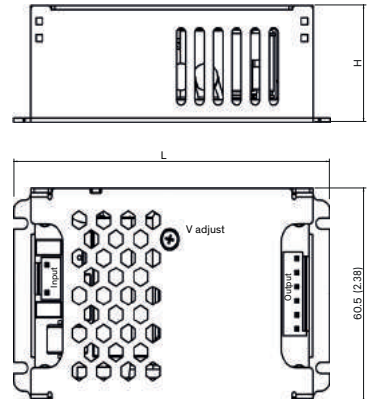
40 Watt AC/DC metal enclosure power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages (Vout1 adjust. $\pm 10\%$)
single: 5.0, 12, 15, 24, 48 VDC
dual: 12/5, 15/5, 24/5 VDC
triple: $\pm 12/5$, $\pm 15/5$, 24/5/12 VDC
- Highest efficiency (ErP ready)
- Protection class II prepared
- Low leakage current $< 75 \mu\text{A}$
- Optional: DIN-rail, individual output voltages...



Single output
L = 89.7 (3.53)
H = 33.3 (1.31)

Multi output
L = 102.4 (4.03)
H = 34.3 (1.36)



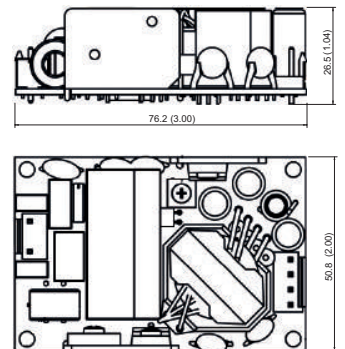
www.tracopower.com/overview/tpp40

TPP 65A Series

NEW

65 Watt AC/DC open frame power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages (Vout1 adjust. $\pm 10\%$)
single: 5.0, 12, 15, 24, 48 VDC
dual: 12/5, 15/5, 24/5 VDC
triple: $\pm 12/5$, $\pm 15/5$, 24/5/12 VDC
- Highest efficiency (ErP ready)
- Protection class II prepared
- Low leakage current $< 75 \mu\text{A}$
- Optional: individual output voltages...



www.tracopower.com/overview/tpp65a

TPP 65 Series

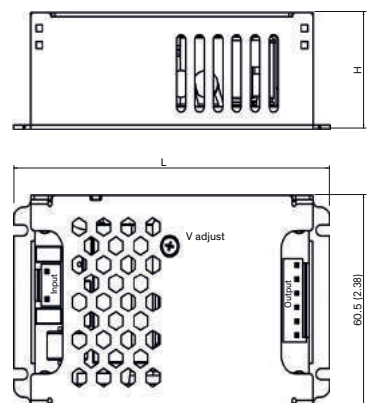
65 Watt AC/DC metal enclosure power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages (Vout1 adjust. $\pm 10\%$)
single: 5.0, 12, 15, 24, 48 VDC
dual: 12/5, 15/5, 24/5 VDC
triple: $\pm 12/5$, $\pm 15/5$, 24/5/12 VDC
- Highest efficiency (ErP ready)
- Protection class II prepared
- Low leakage current $< 75 \mu\text{A}$
- Optional: Open frame, DIN-rail, individual output voltages...



Single output
L = 89.7 (3.53)
H = 33.3 (1.31)

Multi output
L = 102.4 (4.03)
H = 34.3 (1.36)



www.tracopower.com/overview/tpp65

TPP 100A Series

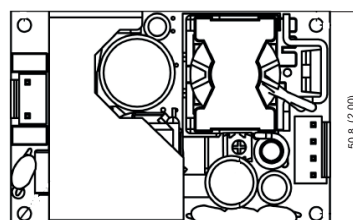
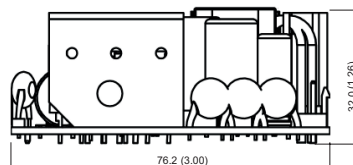
NEW

100 Watt AC/DC open frame power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages adjustable $\pm 10\%$: 12, 15, 24, 28, 36, 48 VDC
- Active power factor correction
- Highest efficiency (ErP ready)
- Protection class II prepared
- Low leakage current $< 75 \mu\text{A}$
- Optional: individual output voltages...



www.tracopower.com/overview/tpp100a



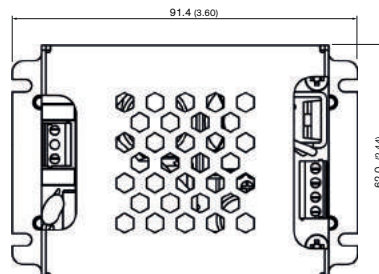
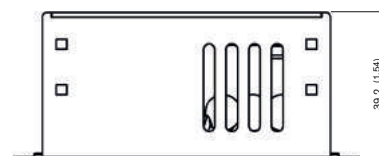
TPP 100 Series

100 Watt AC/DC metal enclosure power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages adjustable $\pm 10\%$: 12, 15, 24, 28, 36, 48 VDC
- Active power factor correction
- Highest efficiency (ErP ready)
- Protection class II prepared
- Low leakage current $< 75 \mu\text{A}$
- Optional: DIN-rail, individual output voltages...



www.tracopower.com/overview/tpp100



TPP 150A Series

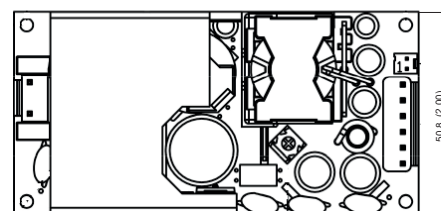
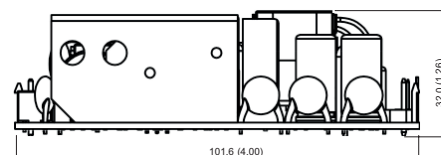
NEW

150 Watt AC/DC open frame power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages adjustable $\pm 10\%$: 12, 15, 24, 28, 36, 48 VDC
- Active power factor correction
- Highest efficiency (ErP ready)
- Protection class II prepared
- Low leakage current $< 75 \mu\text{A}$
- Optional: individual output voltages...



www.tracopower.com/overview/tpp150a



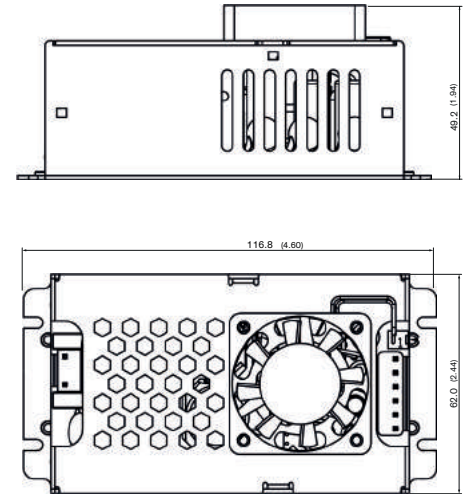
TPP 150 Series

150 Watt AC/DC metal enclosure power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages adjustable $\pm 10\%$: 12, 15, 24, 28, 36, 48 VDC
- Active power factor correction
- Highest efficiency (ErP ready)
- Protection class II prepared
- Low leakage current $< 75 \mu\text{A}$
- Optional: DIN-rail, individual output voltages...



www.tracopower.com/overview/tpp150



TPP 450A Series

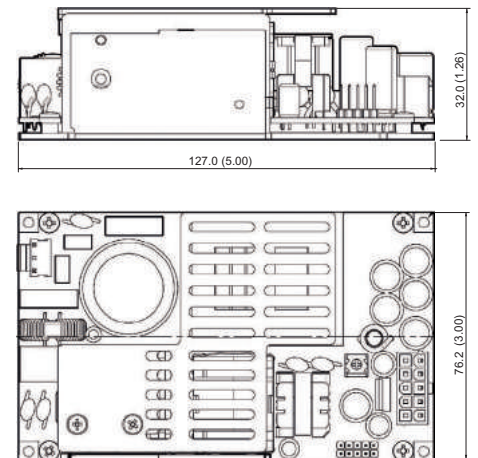
NEW

450 Watt AC/DC open frame power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages adjustable $\pm 10\%$: 12, 15, 24, 28, 36, 48, 53 VDC
- Active power factor correction
- Highest efficiency (ErP ready)
- Protection class I
- Low leakage current $< 100 \mu\text{A}$



www.tracopower.com/overview/tpp450a



TPP 450 Series

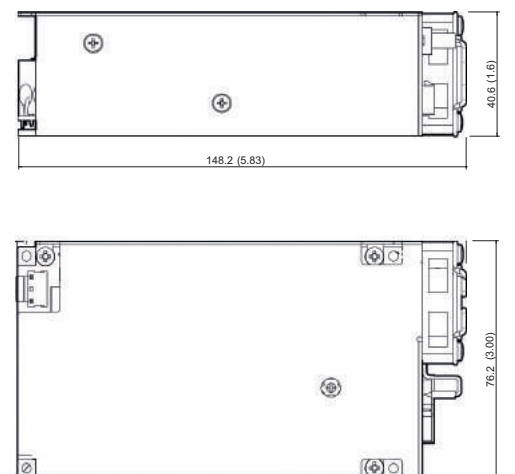
NEW

450 Watt AC/DC metal enclosure power supply

- Universal input 85-264 VAC and 120-370 VDC
- Output voltages adjustable $\pm 10\%$: 12, 15, 24, 28, 36, 48, 53 VDC
- Active power factor correction
- Highest efficiency (ErP ready)
- Protection class I
- Low leakage current $< 100 \mu\text{A}$



www.tracopower.com/overview/tpp450



TRACO POWER – dedicated to design and production of high quality, state-of-the-art AC/DC & DC/DC power conversion products for Industrial, Medical & Railway applications. Our mission is to provide optimal power supply solutions for specific applications with regard to performance, quality, cost and functionality.

TRACO POWER stocks an average of USD 15+ million in available finished goods inventory for immediate shipment through our distribution partners.

TRACO POWER offers extended product life-cycles, typically 10+ years, and our products are supported by a 3 or 5 year product warranty.

We understand our customers require a high quality solution as well as a diverse product offering, availability from stock, extended life-cycles and a strong commitment to quality in the form of extended warranty to support their business.

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