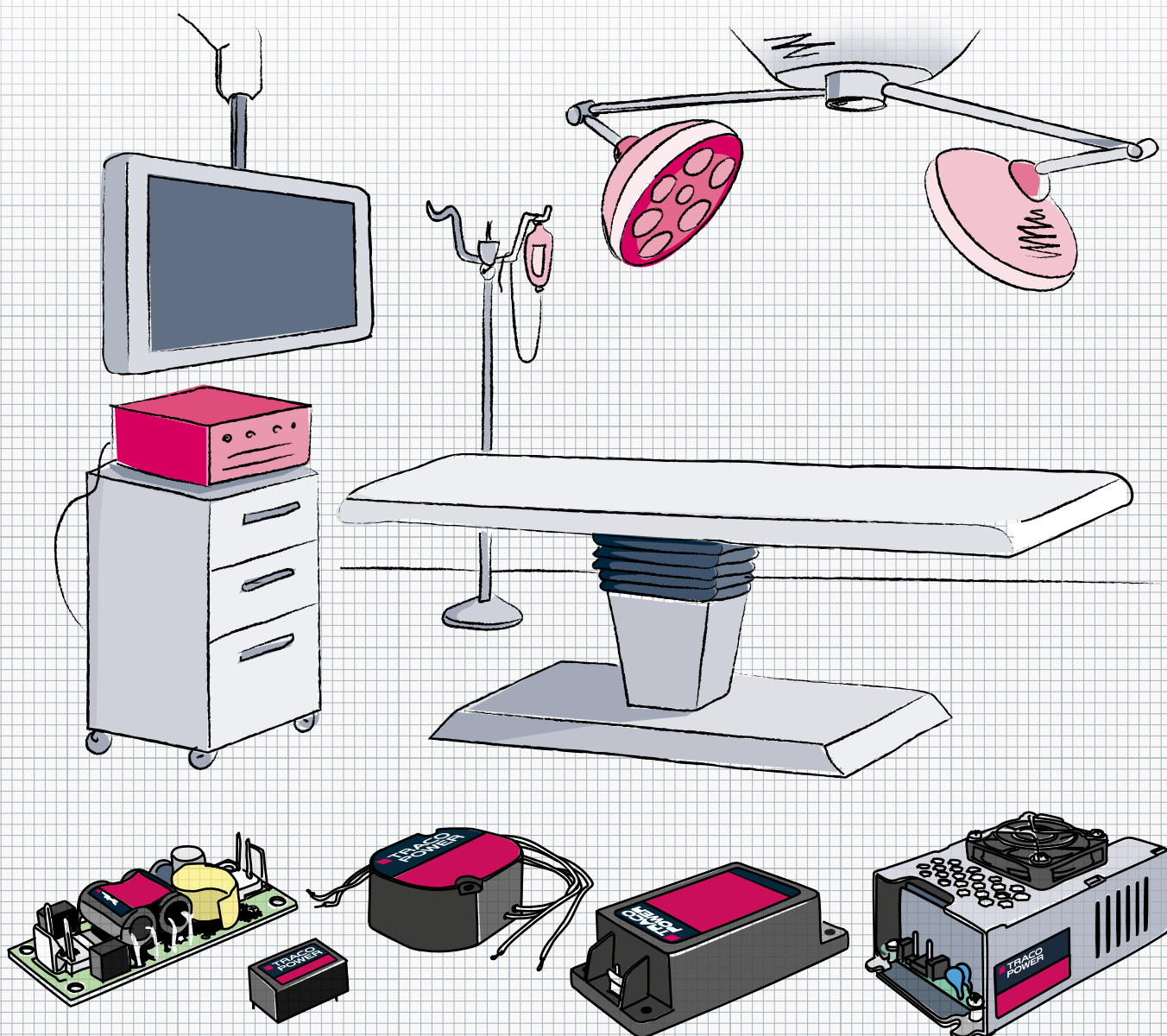


2026 | Medical Power Solutions Product Portfolio



Company Profile

TRACO Electronic AG is a Swiss company with headquarters based in Baar, Switzerland. As a leading power supply specialist with more than 40 years experience we are dedicated to the design and manufacturing of high quality DC/DC and AC/DC power conversion products.

TRACO markets its products worldwide under the registered trademark TRACO POWER. Our mission is to provide our customers with optimal power supply solutions in terms of performance, quality and cost for their individual application.

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 × MOOP 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 according to IEC 60601-1-2 edition 4
- Acceptance criteria for electronic assemblies according to IPC-A-610 Level 3
- Design and production according to ISO 13485 quality management system
- 5-year product warranty

DC/DC converters 1-60 Watt 2:1 | 4:1 AC/DC power supplies 5-850 Watt

Features

- IEC/EN/ES 60601-1
3rd Edition for 2 X MOPP
- Risk Management ISO 14971
- IPC-A-610 Class 3

High Performance Acceptability

- EMC Emission to IEC 60601-1-2 ed. 4
- Quality Management ISO 13485
- 5-year Warranty

Standards and Directives

- ISO 9001
- ISO 14001
- RoHS
- REACH
- EMC Acc. EN55032
- ErP Directive

Medical DC/DC Converters

SMD



2 - 3.5 W

SIP



1 - 2 W

DIP



2 - 60 W

Medical AC/DC Power supplies

Encapsulated



5 - 65 W

Open Frame



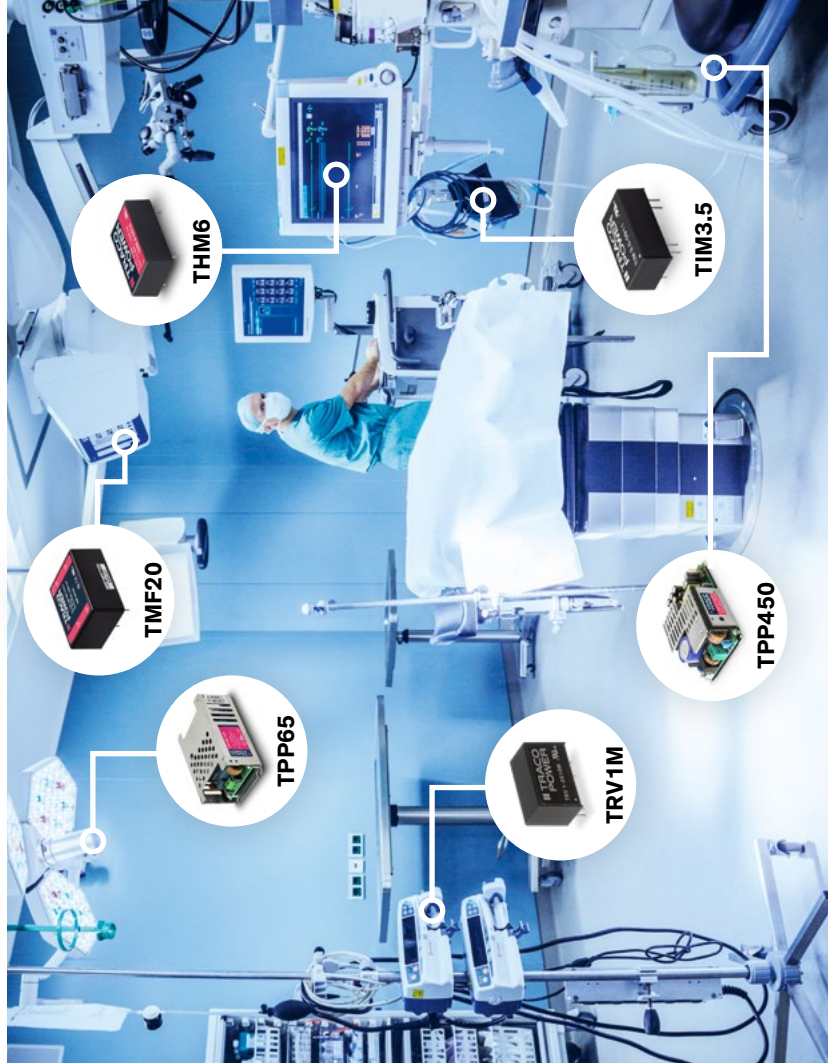
15 - 850 W

Metal Enclosure



40 - 450 W

1 10 100 1000
PERFORMANCE IN WATTS



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DC/DC Converters

	Footprint	Mounting	Input	Housing	I/O isolation			
TRV 1M	SIP-9	PCB	±10%	Encapsulated	5000 VAC	2×MOPP	1 Watt	6
TRV 2M	SIP-9	PCB	±10%	Encapsulated	5000 VAC	2×MOPP	2 Watt	7
TIM 2	DIP-16	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	2 Watt	7
TIM 2SM	DIP-16	SMD	2:1	Encapsulated	5000 VAC	2×MOPP	2 Watt	8
TIM 3.5	DIP-16	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	3.5 Watt	8
TIM 3.5SM	DIP-16	SMD	2:1	Encapsulated	5000 VAC	2×MOPP	3.5 Watt	9
THM 3	DIP-24	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	3 Watt	9
THM 3WI	DIP-24	PCB	4:1	Encapsulated	5000 VAC	2×MOPP	3 Watt	10
THM 6	DIP-24	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	6 Watt	10
TIM 6	DIP-24	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	6 Watt	11
THM 6WI	DIP-24	PCB	4:1	Encapsulated	5000 VAC	2×MOPP	6 Watt	11
THM 10	DIP-24	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	10 Watt	12
THM 10WI	DIP-24	PCB	4:1	Encapsulated	5000 VAC	2×MOPP	10 Watt	12
THM 15	1.6"×1.0"	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	15 Watt	13
THM 15WI	1.6"×1.0"	PCB	4:1	Encapsulated	5000 VAC	2×MOPP	15 Watt	13
THM 20	1.6"×1.0"	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	20 Watt	14
THM 20WI	1.6"×1.0"	PCB	4:1	Encapsulated	5000 VAC	2×MOPP	20 Watt	14
THM 30	2.0"×1.0"	PCB	2:1	Encapsulated	5000 VAC	2×MOPP	30 Watt	15
THM 30WI	2.0"×1.0"	PCB	4:1	Encapsulated	5000 VAC	2×MOPP	30 Watt	15
THM 60WI	2.28"×1.45"	PCB	4:1	Encapsulated	5000 VAC	2×MOPP	60 Watt	16

AC/DC Power Supplies

	Footprint	Mounting	Input	Housing	I/O isolation			
TMF 05	1.6"×1.0"	PCB	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	5 Watt	17
TMF 10	2.0"×1.0"	PCB	90–264 VAC	Encapsulated	4000 VAC	2×MOPP	10 Watt	18
TPP 15A-J	2.6"×1.0"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	15 Watt	18
TPP 15A-D	1.5"×1.0"	PCB	85–264 VAC	Open frame	4000 VAC	2×MOPP	15 Watt	19
TPP 15-J	2.82"×1.14"	Chassis	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	15 Watt	19
TPP 15-D	1.65"×1.14"	PCB	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	15 Watt	20
TMF 20	2.16"×1.78"	PCB	90–264 VAC	Encapsulated	4000 VAC	2×MOPP	20 Watt	20
TMW 24	2.09"×2.0"	Flush box	85–264 VAC	Encapsulated (IP68)	4000 VAC	2×MOPP	24 Watt	21
TMF 30	2.52"×1.80"	PCB	90–264 VAC	Encapsulated	4000 VAC	2×MOPP	30 Watt	21
TPP 30A-J	3.34"×1.36"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	30 Watt	22
TPP 30A-D	2.74"×1.1"	PCB	85–264 VAC	Open frame	4000 VAC	2×MOPP	30 Watt	22
TPP 30-J	3.95"×1.5"	Chassis	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	30 Watt	23
TPP 30-D	2.89"×1.50"	PCB	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	30 Watt	23
TMW 36	2.09"×2.0"	Flush box	85–264 VAC	Encapsulated (IP68)	4000 VAC	2×MOPP	36 Watt	24
TPP 40A	3"×2"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	40 Watt	24
TPP 40	3.53"×2.38"	Chassis	85–264 VAC	Encased	4000 VAC	2×MOPP	40 Watt	25
TPP 40E-J	4.3"×2.2"	Chassis	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	40 Watt	25
TPP 40E-D	3.2"×2.2"	PCB	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	40 Watt	26
TPP 65A	3"×2"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	65 Watt	26
TPP 65	3.53"×2.38"	Chassis	85–264 VAC	Encased	4000 VAC	2×MOPP	65 Watt	27
TPP 65E-J	4.3"×2.2"	Chassis	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	65 Watt	27

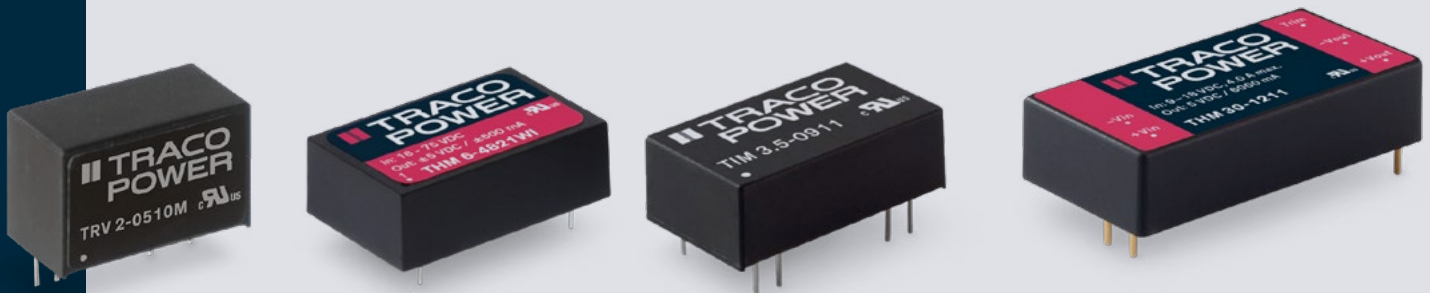
Index

	Footprint	Mounting	Input	Housing	I/O isolation			
TPP 65E-D	3.2"×2.2"	PCB	85–264 VAC	Encapsulated	4000 VAC	2×MOPP	65 Watt	28
TPP 100A-J	3"×2"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	100 Watt	28
TPP 100	3.6"×2.44"	Chassis	85–264 VAC	Encased	4000 VAC	2×MOPP	100 Watt	29
TPP 150A-J	4"×2"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	150 Watt	29
TPP 150	4.6"×2.44"	Chassis	85–264 VAC	Encased	4000 VAC	2×MOPP	150 Watt	30
TPP 180A-M	3"×2"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	180 Watt	30
TPP 180-M	3.6"×2.44"	Chassis	85–264 VAC	Encased	4000 VAC	2×MOPP	180 Watt	31
TPP 300A-M	4"×2"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	300 Watt	31
TPP 300-M	4"×2"	Chassis	85–264 VAC	Encased	4000 VAC	2×MOPP	300 Watt	32
TPP 450BA	5"×3"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	450 Watt	32
TPP 450B	5.83"×3"	Chassis	85–264 VAC	Encased	4000 VAC	2×MOPP	450 Watt	33
TPX 850L	6"×4"	Chassis	85–264 VAC	Open frame	4000 VAC	2×MOPP	NEW under development	850 Watt 33

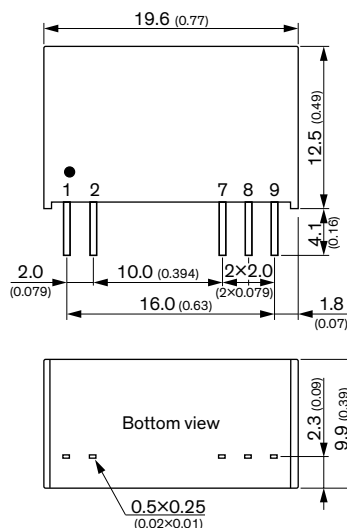
DC/DC Converters

1–60 watt

- IEC/EN/ES 60601-1 3rd Edition for 2 × MOPP
- Risk Management ISO 14971
- IPC-A-610 Class 3 High Performance Acceptability
- EMC Emission acc. to IEC 60601-1-2 ed. 4
- Quality Management ISO 13485
- 5-years warranty



TRV 1M | 1 W



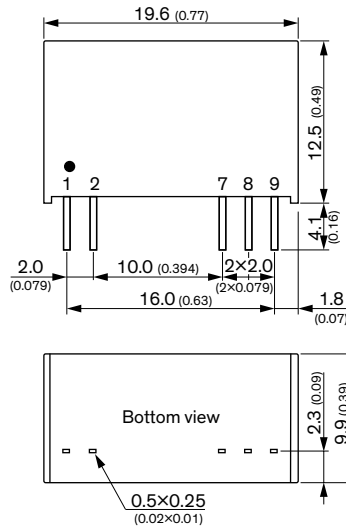
- I/O isolation 5000 VAC (reinforced)
- Short circuit protection
- Semi-regulated outputs
- Input voltage ranges ($\pm 10\%$): 5, 12, 15, 24 VDC
- Operating temperature range -40 to $+95^\circ\text{C}$ without derating
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP and IEC/EN/UL 62368-1
- Low leakage current $< 2 \mu\text{A}$
- Efficiency up to 85%
- Operation up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single Output	Dual Output
1	+Vin	+Vin
2	-Vin	-Vin
7	-Vout	-Vout
8	No pin	Common
9	+Vout	+Vout

Model	Input	Vout	Iout	Efficiency
TRV 1-0510M	4.5–5.5 VDC (5 VDC nom.)	3.3 VDC	303 mA	80%
TRV 1-0511M		5 VDC	200 mA	82%
TRV 1-0512M		12 VDC	83 mA	85%
TRV 1-0513M		15 VDC	67 mA	84%
TRV 1-0521M		± 5 VDC	± 100 mA	85%
TRV 1-0522M	± 12 VDC	± 42 mA	85%	
TRV 1-0523M		± 15 VDC	± 34 mA	84%
TRV 1-1210M		3.3 VDC	303 mA	80%
TRV 1-1211M	9.6–14.4 VDC (12 VDC nom.)	5 VDC	200 mA	82%
TRV 1-1212M		12 VDC	83 mA	84%
TRV 1-1213M		15 VDC	67 mA	83%
TRV 1-1221M		± 5 VDC	± 100 mA	82%
TRV 1-1222M		± 12 VDC	± 42 mA	83%
TRV 1-1223M	± 15 VDC	± 34 mA	83%	
TRV 1-1510M		3.3 VDC	303 mA	79%
TRV 1-1511M		5 VDC	200 mA	83%
TRV 1-1512M	12–18 VDC (15 VDC nom.)	12 VDC	83 mA	84%
TRV 1-1513M		15 VDC	67 mA	84%
TRV 1-1521M		± 5 VDC	± 100 mA	82%
TRV 1-1522M		± 12 VDC	± 42 mA	83%
TRV 1-1523M		± 15 VDC	± 34 mA	83%
TRV 1-2410M	19.2–28.8 VDC (24 VDC nom.)	3.3 VDC	303 mA	78%
TRV 1-2411M		5 VDC	200 mA	82%
TRV 1-2412M		12 VDC	83 mA	83%
TRV 1-2413M		15 VDC	67 mA	83%
TRV 1-2421M		± 5 VDC	± 100 mA	80%
TRV 1-2422M		± 12 VDC	± 42 mA	81%
TRV 1-2423M		± 15 VDC	± 34 mA	81%



TRV 2M | 2 W

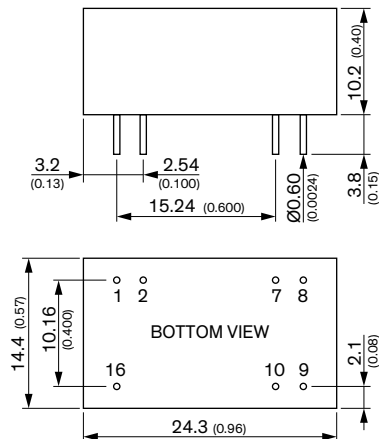
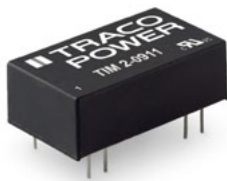


- I/O isolation 5000 VAC (reinforced)
- Wide 1.5:1 input voltage range
- Operating temperature range -40 to +80°C without derating
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP and IEC/EN/UL 62368-1
- Short circuit protection
- Regulated outputs
- Low leakage current <2 μA
- Efficiency up to 84%
- Operation up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
7	-Vout	-Vout
8	No Pin	Common
9	+Vout	+Vout

Model	Input Voltage Range	Output		Efficiency
		Vnom	Iout	
TRV 2-0510M	4.5–7 VDC (5 VDC nom.)	3.3 VDC	600 mA	78%
TRV 2-0511M		5 VDC	400 mA	81%
TRV 2-0512M		12 VDC	167 mA	83%
TRV 2-0513M		15 VDC	134 mA	83%
TRV 2-0521M		±5 VDC	±200 mA	82%
TRV 2-0522M		±12 VDC	±83 mA	83%
TRV 2-0523M	±15 VDC	±67 mA	81%	
TRV 2-1210M	9.6–14.4 VDC (12 VDC nom.)	3.3 VDC	600 mA	79%
TRV 2-1211M		5 VDC	400 mA	81%
TRV 2-1212M		12 VDC	167 mA	84%
TRV 2-1213M		15 VDC	134 mA	83%
TRV 2-1221M		±5 VDC	±200 mA	81%
TRV 2-1222M		±12 VDC	±83 mA	83%
TRV 2-1223M	±15 VDC	±67 mA	82%	
TRV 2-1510M	12–18 VDC (15 VDC nom.)	3.3 VDC	600 mA	79%
TRV 2-1511M		5 VDC	400 mA	81%
TRV 2-1512M		12 VDC	167 mA	84%
TRV 2-1513M		15 VDC	134 mA	83%
TRV 2-1521M		±5 VDC	±200 mA	81%
TRV 2-1522M		±12 VDC	±83 mA	83%
TRV 2-1523M	±15 VDC	±67 mA	80%	
TRV 2-2410M	19.2–28.8 VDC (24 VDC nom.)	3.3 VDC	600 mA	78%
TRV 2-2411M		5 VDC	400 mA	80%
TRV 2-2412M		12 VDC	167 mA	82%
TRV 2-2413M		15 VDC	134 mA	82%
TRV 2-2421M		±5 VDC	±200 mA	81%
TRV 2-2422M		±12 VDC	±83 mA	81%
TRV 2-2423M	±15 VDC	±67 mA	80%	

TIM 2 | 2 W



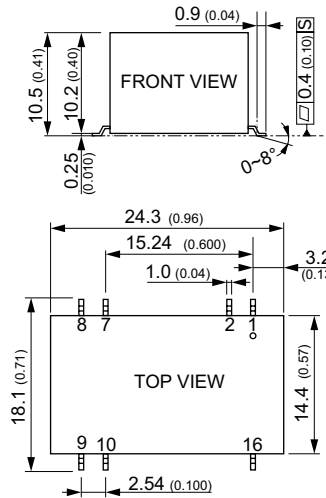
- Compact DIP-16-package
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP and operation up to 5000 m altitude
- Low leakage current <2 μA
- Extended operating temperature range -40°C to 95°C.
- 5-year product warranty

Pinout		
Pin	Single Output	Dual Output
1	-Vin (GND)	-Vin (GND)
2	Remote	Remote
7	NC	NC
8	NC	Common
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output		Efficiency
		Vnom	I _{max}	
TIM 2-0910	4.5–12 VDC (9 VDC nom.)	3.3 VDC	600 mA	75%
TIM 2-0911		5 VDC	400 mA	78%
TIM 2-0919		9 VDC	222 mA	78%
TIM 2-0912		12 VDC	167 mA	82%
TIM 2-0913		15 VDC	134 mA	82%
TIM 2-0915		24 VDC	83 mA	82%
TIM 2-0922	±12 VDC	83 mA	82%	
TIM 2-0923	±15 VDC	67 mA	80%	
TIM 2-1210	9–18 VDC (12 VDC nom.)	3.3 VDC	600 mA	76%
TIM 2-1211		5 VDC	400 mA	78%
TIM 2-1219		9 VDC	222 mA	79%
TIM 2-1212		12 VDC	167 mA	82%
TIM 2-1213		15 VDC	134 mA	82%
TIM 2-1215		24 VDC	83 mA	81%
TIM 2-1222	±12 VDC	83 mA	81%	
TIM 2-1223	±15 VDC	67 mA	81%	
TIM 2-2410	18–36 VDC (24 VDC nom.)	3.3 VDC	600 mA	76%
TIM 2-2411		5 VDC	400 mA	79%
TIM 2-2419		9 VDC	222 mA	80%
TIM 2-2412		12 VDC	167 mA	81%
TIM 2-2413		15 VDC	134 mA	81%
TIM 2-2415		24 VDC	83 mA	81%
TIM 2-2422	±12 VDC	83 mA	81%	
TIM 2-2423	±15 VDC	67 mA	81%	
TIM 2-4810	36–75 VDC (48 VDC nom.)	3.3 VDC	600 mA	76%
TIM 2-4811		5 VDC	400 mA	78%
TIM 2-4819		9 VDC	222 mA	79%
TIM 2-4812		12 VDC	167 mA	80%
TIM 2-4813		15 VDC	134 mA	82%
TIM 2-4815		24 VDC	83 mA	81%
TIM 2-4822	±12 VDC	83 mA	81%	
TIM 2-4823	±15 VDC	67 mA	81%	



TIM 2SM | 2 W

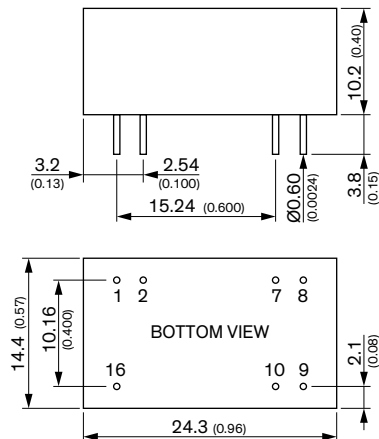
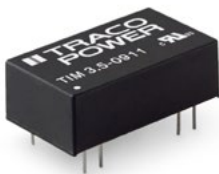


- Compact SMD-16-package
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP and operation up to 5000 m altitude
- Low leakage current <2 μA
- Extended operating temperature range -40°C to 95°C.
- 5-year product warranty

Pinout		
Pin	Single Output	Dual Output
1	-Vin (GND)	-Vin (GND)
2	Remote	Remote
7	NC	NC
8	NC	Common
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
TIM 2-0910SM	4.5–12 VDC (9 VDC nom.)	3.3 VDC	600 mA	75%
TIM 2-0911SM		5 VDC	400 mA	78%
TIM 2-0919SM		9 VDC	222 mA	78%
TIM 2-0912SM		12 VDC	167 mA	82%
TIM 2-0913SM		15 VDC	134 mA	82%
TIM 2-0915SM		24 VDC	83 mA	82%
TIM 2-0922SM	±12 VDC	83 mA	82%	
TIM 2-0923SM		±15 VDC	67 mA	80%
TIM 2-1210SM		3.3 VDC	600 mA	76%
TIM 2-1211SM	9–18 VDC (12 VDC nom.)	5 VDC	400 mA	78%
TIM 2-1219SM		9 VDC	222 mA	79%
TIM 2-1212SM		12 VDC	167 mA	82%
TIM 2-1213SM		15 VDC	134 mA	82%
TIM 2-1215SM		24 VDC	83 mA	81%
TIM 2-1222SM		±12 VDC	83 mA	81%
TIM 2-1223SM	±15 VDC	67 mA	81%	
TIM 2-2410SM	18–36 VDC (24 VDC nom.)	3.3 VDC	600 mA	76%
TIM 2-2411SM		5 VDC	400 mA	79%
TIM 2-2419SM		9 VDC	222 mA	80%
TIM 2-2412SM		12 VDC	167 mA	81%
TIM 2-2413SM		15 VDC	134 mA	81%
TIM 2-2415SM		24 VDC	83 mA	81%
TIM 2-2422SM	±12 VDC	83 mA	81%	
TIM 2-2423SM		±15 VDC	67 mA	81%
TIM 2-4810SM		3.3 VDC	600 mA	76%
TIM 2-4811SM	36–75 VDC (48 VDC nom.)	5 VDC	400 mA	78%
TIM 2-4819SM		9 VDC	222 mA	79%
TIM 2-4812SM		12 VDC	167 mA	80%
TIM 2-4813SM		15 VDC	134 mA	82%
TIM 2-4815SM		24 VDC	83 mA	81%
TIM 2-4822SM		±12 VDC	83 mA	81%
TIM 2-4823SM	±15 VDC	67 mA	81%	

TIM 3.5 | 3.5 W



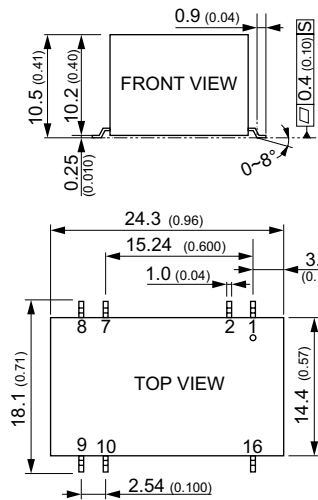
- Compact DIP-16-package
- I/O isolation 5000 VACrms rated for 250 VACrms working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP and operation to 5000 m altitude
- Low leakage current <2 μA for BF-applications
- Extended operating temperature range -40°C to 90°C
- 5-year product warranty

Pinout		
Pin	Single Output	Dual Output
1	-Vin (GND)	-Vin (GND)
2	Remote	Remote
7	NC	NC
8	NC	Common
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
TIM 3.5-0911	4.5–12 VDC (9 VDC nom.)	5 VDC	700 mA	77%
TIM 3.5-0919		9 VDC	389 mA	78%
TIM 3.5-0912		12 VDC	292 mA	82%
TIM 3.5-0913		15 VDC	234 mA	82%
TIM 3.5-0915		24 VDC	146 mA	82%
TIM 3.5-0922		±12 VDC	146 mA	82%
TIM 3.5-0923	±15 VDC	117 mA	81%	
TIM 3.5-1211	9–18 VDC (12 VDC nom.)	5 VDC	700 mA	79%
TIM 3.5-1219		9 VDC	389 mA	79%
TIM 3.5-1212		12 VDC	292 mA	82%
TIM 3.5-1213		15 VDC	234 mA	82%
TIM 3.5-1215		24 VDC	146 mA	82%
TIM 3.5-1222		±12 VDC	146 mA	82%
TIM 3.5-1223	±15 VDC	117 mA	82%	
TIM 3.5-2411	18–36 VDC (24 VDC nom.)	5 VDC	700 mA	79%
TIM 3.5-2419		9 VDC	389 mA	80%
TIM 3.5-2412		12 VDC	292 mA	83%
TIM 3.5-2413		15 VDC	234 mA	83%
TIM 3.5-2415		24 VDC	146 mA	82%
TIM 3.5-2422		±12 VDC	146 mA	82%
TIM 3.5-2423	±15 VDC	117 mA	82%	
TIM 3.5-4811	36–75 VDC (48 VDC nom.)	5 VDC	700 mA	79%
TIM 3.5-4819		9 VDC	389 mA	80%
TIM 3.5-4812		12 VDC	292 mA	82%
TIM 3.5-4813		15 VDC	234 mA	82%
TIM 3.5-4815		24 VDC	146 mA	82%
TIM 3.5-4822		±12 VDC	146 mA	82%
TIM 3.5-4823	±15 VDC	117 mA	82%	



TIM 3.5SM | 3.5 W

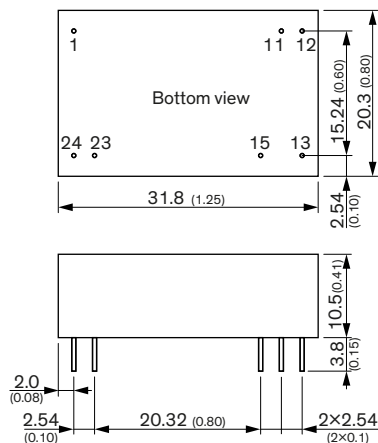


- Compact SMD-16-package
- I/O isolation 5000 VACrms rated for 250 VACrms working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP and operation to 5000 m altitude
- Low leakage current $\lt; 2 \mu\text{A}$ for BF-applications
- Extended operating temperature range -40°C to 90°C
- 5-year product warranty

Pinout		
Pin	Single Output	Dual Output
1	-Vin (GND)	-Vin (GND)
2	Remote	Remote
7	NC	NC
8	NC	Common
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
TIM 3.5-0911SM	4.5–12 VDC (9 VDC nom.)	5 VDC	700 mA	77%
TIM 3.5-0919SM		9 VDC	389 mA	78%
TIM 3.5-0912SM		12 VDC	292 mA	82%
TIM 3.5-0913SM		15 VDC	234 mA	82%
TIM 3.5-0915SM		24 VDC	146 mA	82%
TIM 3.5-0922SM		±12 VDC	146 mA	82%
TIM 3.5-0923SM	±15 VDC	117 mA	81%	
TIM 3.5-1211SM	9–18 VDC (12 VDC nom.)	5 VDC	700 mA	79%
TIM 3.5-1219SM		9 VDC	389 mA	79%
TIM 3.5-1212SM		12 VDC	292 mA	82%
TIM 3.5-1213SM		15 VDC	234 mA	82%
TIM 3.5-1215SM		24 VDC	146 mA	82%
TIM 3.5-1222SM		±12 VDC	146 mA	82%
TIM 3.5-1223SM	±15 VDC	117 mA	82%	
TIM 3.5-2411SM	18–36 VDC (24 VDC nom.)	5 VDC	700 mA	79%
TIM 3.5-2419SM		9 VDC	389 mA	80%
TIM 3.5-2412SM		12 VDC	292 mA	83%
TIM 3.5-2413SM		15 VDC	234 mA	83%
TIM 3.5-2415SM		24 VDC	146 mA	82%
TIM 3.5-2422SM		±12 VDC	146 mA	82%
TIM 3.5-2423SM	±15 VDC	117 mA	82%	
TIM 3.5-4811SM	36–75 VDC (48 VDC nom.)	5 VDC	700 mA	79%
TIM 3.5-4819SM		9 VDC	389 mA	80%
TIM 3.5-4812SM		12 VDC	292 mA	82%
TIM 3.5-4813SM		15 VDC	234 mA	82%
TIM 3.5-4815SM		24 VDC	146 mA	82%
TIM 3.5-4822SM		±12 VDC	146 mA	82%
TIM 3.5-4823SM	±15 VDC	117 mA	82%	

THM 3 | 3 W



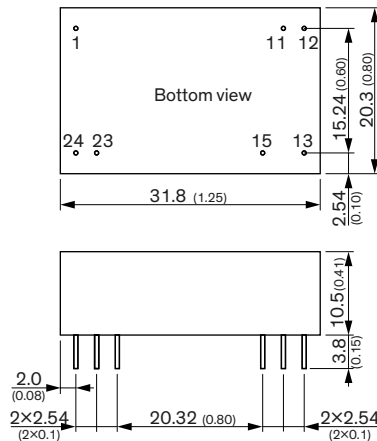
- Compact DIP-24 plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- IEC 60601-1 certification for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current $\lt; 2 \mu\text{A}$
- Operating temperature -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
11	No pin	Common
12	-Vout	No pin
13	+Vout	-Vout
15	No pin	+Vout
23	-Vin (GND)	-Vin (GND)
24	-Vin (GND)	-Vin (GND)

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
THM 3-0510	4.5–9 VDC (5 VDC nom.)	3.3 VDC	1000 mA	81%
THM 3-0511		5 VDC	600 mA	85%
THM 3-0512		12 VDC	250 mA	86%
THM 3-0513		15 VDC	200 mA	88%
THM 3-0515		24 VDC	125 mA	86%
THM 3-0521		±5 VDC	300 mA	83%
THM 3-0522	±12 VDC	125 mA	86%	
THM 3-0523	±15 VDC	100 mA	86%	
THM 3-1210	9–18 VDC (12 VDC nom.)	3.3 VDC	1000 mA	82%
THM 3-1211		5 VDC	600 mA	85%
THM 3-1212		12 VDC	250 mA	87%
THM 3-1213		15 VDC	200 mA	87%
THM 3-1215		24 VDC	125 mA	87%
THM 3-1221		±5 VDC	300 mA	84%
THM 3-1222	±12 VDC	125 mA	88%	
THM 3-1223	±15 VDC	100 mA	87%	
THM 3-2410	18–36 VDC (24 VDC nom.)	3.3 VDC	1000 mA	82%
THM 3-2411		5 VDC	600 mA	85%
THM 3-2412		12 VDC	250 mA	87%
THM 3-2413		15 VDC	200 mA	87%
THM 3-2415		24 VDC	125 mA	87%
THM 3-2421		±5 VDC	300 mA	83%
THM 3-2422	±12 VDC	125 mA	87%	
THM 3-2423	±15 VDC	100 mA	86%	
THM 3-4810	36–75 VDC (48 VDC nom.)	3.3 VDC	1000 mA	81%
THM 3-4811		5 VDC	600 mA	84%
THM 3-4812		12 VDC	250 mA	87%
THM 3-4813		15 VDC	200 mA	87%
THM 3-4815		24 VDC	125 mA	87%
THM 3-4821		±5 VDC	300 mA	83%
THM 3-4822	±12 VDC	125 mA	86%	
THM 3-4823	±15 VDC	100 mA	86%	



THM 3WI | 3 W



- Ultra wide 4:1 input voltage 3 W DC/DC converter in a compact DIP-24 plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2 μA
- Operating temperature -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	No pin*/Remote	No pin*/Remote
2	-Vin (GND)	-Vin (GND)
10	No pin*/Trim	No pin*/Trim
11	No pin/NC**	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

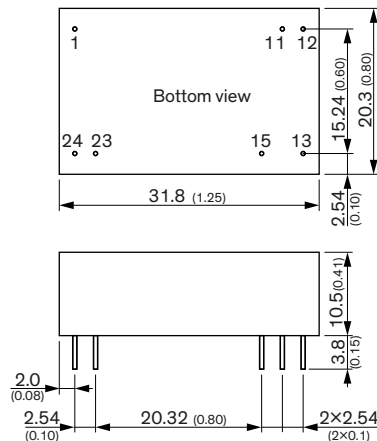
Model	Input Voltage Range	Output		Efficiency	
		Vnom	I _{max}		
THM 3-0510WI	4.5-9 VDC (5 VDC nom.)	3.3 VDC	1000 mA	81%	
THM 3-0511WI		5 VDC	600 mA	85%	
THM 3-0512WI		12 VDC	250 mA	86%	
THM 3-0513WI		15 VDC	200 mA	88%	
THM 3-0515WI		24 VDC	125 mA	86%	
THM 3-0521WI		±5 VDC	300 mA	83%	
THM 3-0522WI		±12 VDC	125 mA	86%	
THM 3-0523WI		±15 VDC	100 mA	86%	
THM 3-2410WI		9-36 VDC (24 VDC nom.)	3.3 VDC	1000 mA	82%
THM 3-2411WI			5 VDC	600 mA	85%
THM 3-2412WI	12 VDC		250 mA	87%	
THM 3-2413WI	15 VDC		200 mA	87%	
THM 3-2415WI	24 VDC		125 mA	87%	
THM 3-2421WI	±5 VDC		300 mA	83%	
THM 3-2422WI	±12 VDC		125 mA	87%	
THM 3-2423WI	±15 VDC		100 mA	86%	
THM 3-4810WI	18-75 VDC (48 VDC nom.)	3.3 VDC	1000 mA	81%	
THM 3-4811WI		5 VDC	600 mA	84%	
THM 3-4812WI		12 VDC	250 mA	87%	
THM 3-4813WI		15 VDC	200 mA	87%	
THM 3-4815WI		24 VDC	125 mA	87%	
THM 3-4821WI		±5 VDC	300 mA	83%	
THM 3-4822WI		±12 VDC	125 mA	86%	
THM 3-4823WI		±15 VDC	100 mA	86%	

NC: No connection

* If Remote or Trim is not selected there is no pin on corresponding number.

**If Trim is selected there is no pin on the corresponding pin number.

THM 6 | 6 W



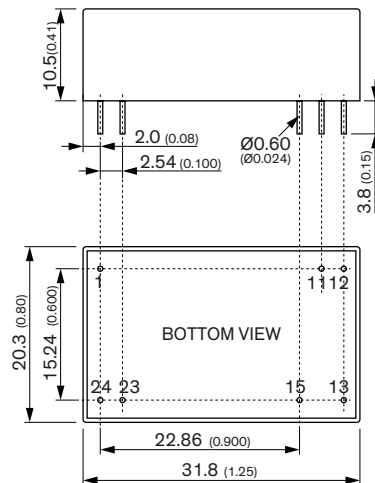
- Compact DIP-24 plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- IEC 60601-1 certification for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2 μA
- Operating temperature -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
11	No pin	Common
12	-Vout	No pin
13	+Vout	-Vout
15	No pin	+Vout
23	-Vin (GND)	-Vin (GND)
24	-Vin (GND)	-Vin (GND)

Model	Input Voltage Range	Output		Efficiency	
		Vnom	I _{max}		
THM 6-0510	4.5-9 VDC (5 VDC nom.)	3.3 VDC	1800 mA	82%	
THM 6-0511		5 VDC	1200 mA	86%	
THM 6-0512		12 VDC	500 mA	86%	
THM 6-0513		15 VDC	400 mA	88%	
THM 6-0515		24 VDC	250 mA	87%	
THM 6-0521		±5 VDC	600 mA	84%	
THM 6-0522		±12 VDC	250 mA	87%	
THM 6-0523		±15 VDC	200 mA	88%	
THM 6-1210		9-18 VDC (12 VDC nom.)	3.3 VDC	1800 mA	84%
THM 6-1211			5 VDC	1200 mA	86%
THM 6-1212	12 VDC		500 mA	89%	
THM 6-1213	15 VDC		400 mA	89%	
THM 6-1215	24 VDC		250 mA	89%	
THM 6-1221	±5 VDC		600 mA	85%	
THM 6-1222	±12 VDC		250 mA	89%	
THM 6-1223	±15 VDC		200 mA	88%	
THM 6-2410	18-36 VDC (24 VDC nom.)	3.3 VDC	1800 mA	83%	
THM 6-2411		5 VDC	1200 mA	86%	
THM 6-2412		12 VDC	500 mA	89%	
THM 6-2413		15 VDC	400 mA	89%	
THM 6-2415		24 VDC	250 mA	89%	
THM 6-2421		±5 VDC	600 mA	85%	
THM 6-2422		±12 VDC	250 mA	89%	
THM 6-2423		±15 VDC	200 mA	89%	
THM 6-4810	36-75 VDC (48 VDC nom.)	3.3 VDC	1800 mA	83%	
THM 6-4811		5 VDC	1200 mA	87%	
THM 6-4812		12 VDC	500 mA	88%	
THM 6-4813		15 VDC	400 mA	89%	
THM 6-4815		24 VDC	250 mA	88%	
THM 6-4821		±5 VDC	600 mA	85%	
THM 6-4822		±12 VDC	250 mA	88%	
THM 6-4823		±15 VDC	200 mA	87%	



TIM 6 | 6 W

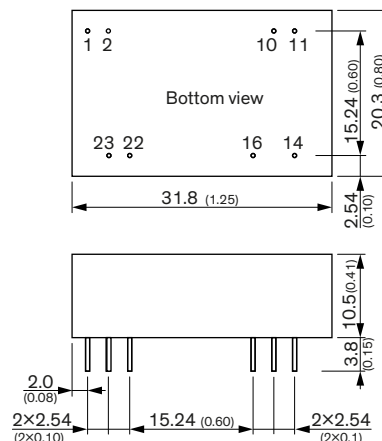


- Compact DIP-24 plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2 μ A
- Operating temperature -40°C to 95°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	+Vin	+Vin
11	No Pin	Common
12	-Vout	No Pin
13	+Vout	-Vout
15	No Pin	+Vout
23	-Vout	-Vout
24	-Vout	-Vout

Model	Input Voltage Range	Output		Efficiency
		Vnom	I _{max}	
TIM 6-1211	9-18 VDC (12 VDC nom.)	5 VDC	1200 mA	84%
TIM 6-1212		12 VDC	500 mA	87%
TIM 6-1213		15 VDC	400 mA	86%
TIM 6-1221		±5 VDC	±600 mA	83%
TIM 6-1222		±12 VDC	±250 mA	87%
TIM 6-1223	±15 VDC	±200 mA	86%	
TIM 6-2411	18-36 VDC (24 VDC nom.)	5 VDC	1200 mA	84%
TIM 6-2412		12 VDC	500 mA	87%
TIM 6-2413		15 VDC	400 mA	87%
TIM 6-2421		±5 VDC	±600 mA	84%
TIM 6-2422		±12 VDC	±250 mA	86%
TIM 6-2423	±15 VDC	±200 mA	86%	
TIM 6-4811	36-75 VDC (48 VDC nom.)	5 VDC	1200 mA	84%
TIM 6-4812		12 VDC	500 mA	87%
TIM 6-4813		15 VDC	400 mA	86%
TIM 6-4821		±5 VDC	±600 mA	83%
TIM 6-4822		±12 VDC	±250 mA	87%
TIM 6-4823	±15 VDC	±200 mA	85%	

THM 6WI | 6 W



- Ultra wide 4:1 input voltage 6 W DC/DC converter in a compact DIP-24 plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2 μ A
- Operating temperature -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	No pin*/Remote	No pin*/Remote
2	-Vin (GND)	-Vin (GND)
10	No pin*/Trim	No pin*/Trim
11	No pin/NC**	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output		Efficiency
		Vnom	I _{max}	
THM 6-0510WI	4.5-9 VDC (5 VDC nom.)	3.3 VDC	1800 mA	82%
THM 6-0511WI		5 VDC	1200 mA	86%
THM 6-0512WI		12 VDC	500 mA	86%
THM 6-0513WI		15 VDC	400 mA	88%
THM 6-0515WI		24 VDC	250 mA	87%
THM 6-0521WI	9-36 VDC (24 VDC nom.)	±5 VDC	600 mA	84%
THM 6-0522WI		±12 VDC	250 mA	87%
THM 6-0523WI		±15 VDC	200 mA	88%
THM 6-2410WI		3.3 VDC	1800 mA	83%
THM 6-2411WI		5 VDC	1200 mA	86%
THM 6-2412WI	18-75 VDC (48 VDC nom.)	12 VDC	500 mA	89%
THM 6-2413WI		15 VDC	400 mA	89%
THM 6-2415WI		24 VDC	250 mA	89%
THM 6-2421WI		±5 VDC	600 mA	85%
THM 6-2422WI		±12 VDC	250 mA	89%
THM 6-2423WI	±15 VDC	200 mA	89%	
THM 6-4810WI	36-75 VDC (48 VDC nom.)	3.3 VDC	1800 mA	83%
THM 6-4811WI		5 VDC	1200 mA	87%
THM 6-4812WI		12 VDC	500 mA	88%
THM 6-4813WI		15 VDC	400 mA	89%
THM 6-4815WI		24 VDC	250 mA	88%
THM 6-4821WI	18-75 VDC (48 VDC nom.)	±5 VDC	600 mA	85%
THM 6-4822WI		±12 VDC	250 mA	88%
THM 6-4823WI		±15 VDC	200 mA	87%

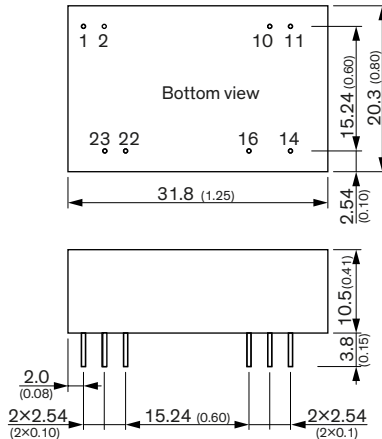
NC: No connection

* If Remote or Trim is not selected there is no pin on corresponding number.

**If Trim is selected there is no pin on the corresponding pin number.



THM 10WI | 10 W



- Ultra wide 4:1 input voltage
10 W DC/DC converter in a compact DIP-24 plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2 μA
- Operating temperature -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

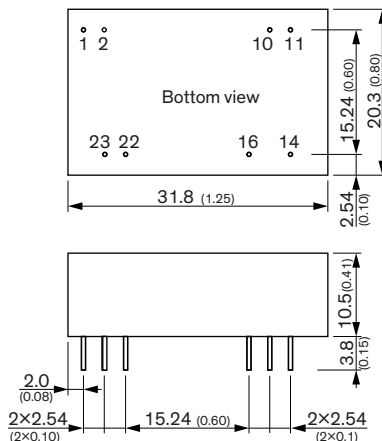
Pinout		
Pin	Single	Dual
1	No pin*/Remote	No pin*/Remote
2	-Vin (GND)	NC -Vin (GND)
10	No pin*/Trim	No pin*/Trim
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output		Efficiency
		Vnom	I _{max}	
THM 10-0510WI	4.5-9 VDC (5 VDC nom.)	3.3 VDC	2500 mA	80%
THM 10-0511WI		5 VDC	2000 mA	84%
THM 10-0512WI		12 VDC	830 mA	87%
THM 10-0513WI		15 VDC	670 mA	87%
THM 10-0515WI		24 VDC	416 mA	86%
THM 10-0521WI		±5 VDC	1000 mA	83%
THM 10-0522WI		±12 VDC	416 mA	86%
THM 10-0523WI	±15 VDC	333 mA	87%	
THM 10-2410WI	9-36 VDC (24 VDC nom.)	3.3 VDC	2500 mA	83%
THM 10-2411WI		5 VDC	2000 mA	87%
THM 10-2412WI		12 VDC	830 mA	89%
THM 10-2413WI		15 VDC	670 mA	89%
THM 10-2415WI		24 VDC	416 mA	89%
THM 10-2421WI		±5 VDC	1000 mA	85%
THM 10-2422WI		±12 VDC	416 mA	89%
THM 10-2423WI	±15 VDC	333 mA	88%	
THM 10-4810WI	18-75 VDC (48 VDC nom.)	3.3 VDC	2500 mA	83%
THM 10-4811WI		5 VDC	2000 mA	87%
THM 10-4812WI		12 VDC	830 mA	89%
THM 10-4813WI		15 VDC	670 mA	89%
THM 10-4815WI		24 VDC	416 mA	89%
THM 10-4821WI		±5 VDC	1000 mA	85%
THM 10-4822WI		±12 VDC	416 mA	88%
THM 10-4823WI	±15 VDC	333 mA	88%	

NC: No connection

* If Remote or Trim is not selected there is no pin on corresponding number.

THM 10WI | 10 W



- Ultra wide 4:1 input voltage
10 W DC/DC converter in a compact DIP-24 plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2 μA
- Operating temperature -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	No pin*/Remote	No pin*/Remote
2	-Vin (GND)	NC -Vin (GND)
10	No pin*/Trim	No pin*/Trim
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

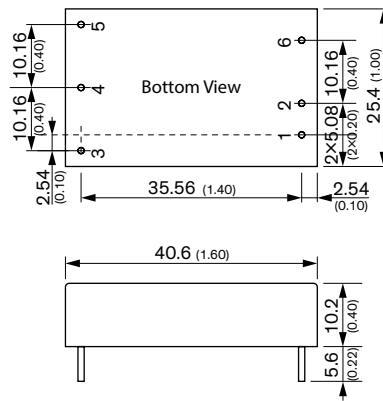
Model	Input Voltage Range	Output		Efficiency
		Vnom	I _{max}	
THM 10-0510WI	4.5-9 VDC (5 VDC nom.)	3.3 VDC	2500 mA	80%
THM 10-0511WI		5 VDC	2000 mA	84%
THM 10-0512WI		12 VDC	830 mA	87%
THM 10-0513WI		15 VDC	670 mA	87%
THM 10-0515WI		24 VDC	416 mA	86%
THM 10-0521WI		±5 VDC	1000 mA	83%
THM 10-0522WI		±12 VDC	416 mA	86%
THM 10-0523WI	±15 VDC	333 mA	87%	
THM 10-2410WI	9-36 VDC (24 VDC nom.)	3.3 VDC	2500 mA	83%
THM 10-2411WI		5 VDC	2000 mA	87%
THM 10-2412WI		12 VDC	830 mA	89%
THM 10-2413WI		15 VDC	670 mA	89%
THM 10-2415WI		24 VDC	416 mA	89%
THM 10-2421WI		±5 VDC	1000 mA	85%
THM 10-2422WI		±12 VDC	416 mA	89%
THM 10-2423WI	±15 VDC	333 mA	88%	
THM 10-4810WI	18-75 VDC (48 VDC nom.)	3.3 VDC	2500 mA	83%
THM 10-4811WI		5 VDC	2000 mA	87%
THM 10-4812WI		12 VDC	830 mA	89%
THM 10-4813WI		15 VDC	670 mA	89%
THM 10-4815WI		24 VDC	416 mA	89%
THM 10-4821WI		±5 VDC	1000 mA	85%
THM 10-4822WI		±12 VDC	416 mA	88%
THM 10-4823WI	±15 VDC	333 mA	88%	

NC: No connection

* If Remote or Trim is not selected there is no pin on corresponding number.



THM 15 | 15 W



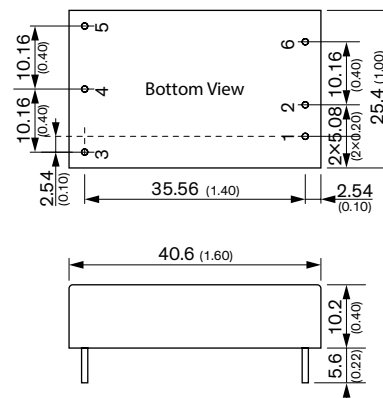
- Wide 2:1 input voltage 15 W DC/DC converter in a 1.6 × 1" plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2.5 μA
- Operating temperature -40°C to 85°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	-Vout	Common
5	Trim	-Vout
6	No pin*/Remote	No pin*/Remote

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
THM 15-1211	9-18 VDC (12 VDC nom.)	5 VDC	3000 mA	89%
THM 15-1212		12 VDC	1250 mA	89%
THM 15-1213		15 VDC	1000 mA	89%
THM 15-1215		24 VDC	625 mA	89%
THM 15-1221		±5 VDC	1500 mA	86%
THM 15-1222		±12 VDC	625 mA	89%
THM 15-1223	±15 VDC	500 mA	89%	
THM 15-2411	18-36 VDC (24 VDC nom.)	5 VDC	3000 mA	90%
THM 15-2412		12 VDC	1250 mA	90%
THM 15-2413		15 VDC	1000 mA	90%
THM 15-2415		24 VDC	625 mA	90%
THM 15-2421		±5 VDC	1500 mA	86%
THM 15-2422		±12 VDC	625 mA	90%
THM 15-2423	±15 VDC	500 mA	90%	
THM 15-4811	36-75 VDC (48 VDC nom.)	5 VDC	3000 mA	90%
THM 15-4812		12 VDC	1250 mA	88%
THM 15-4813		15 VDC	1000 mA	89%
THM 15-4815		24 VDC	625 mA	89%
THM 15-4821		±5 VDC	1500 mA	86%
THM 15-4822		±12 VDC	625 mA	89%
THM 15-4823	±15 VDC	500 mA	89%	

* If Remote or Trim is not selected there is no pin on corresponding number.

THM 15WI | 15 W



- Ultra wide 4:1 input voltage 15 W DC/DC converter in a 1.6 × 1" plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2.5 μA
- Operating temperature -40°C to 85°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

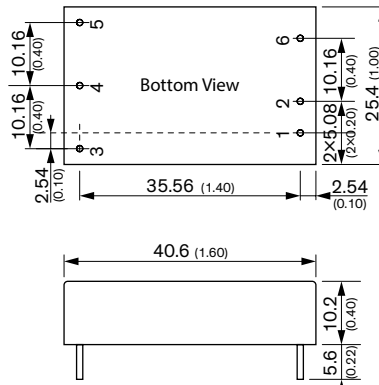
Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	-Vout	Common
5	Trim	-Vout
6	No pin*/Remote	No pin*/Remote

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
THM 15-2411WI	9-36 VDC (24 VDC nom.)	5 VDC	3000 mA	88%
THM 15-2412WI		12 VDC	1250 mA	89%
THM 15-2413WI		15 VDC	1000 mA	89%
THM 15-2415WI		24 VDC	625 mA	88%
THM 15-2421WI		±5 VDC	1500 mA	86%
THM 15-2422WI		±12 VDC	625 mA	88%
THM 15-2423WI	±15 VDC	500 mA	89%	
THM 15-4811WI	18-75 VDC (48 VDC nom.)	5 VDC	3000 mA	90%
THM 15-4812WI		12 VDC	1250 mA	88%
THM 15-4813WI		15 VDC	1000 mA	89%
THM 15-4815WI		24 VDC	625 mA	89%
THM 15-4821WI		±5 VDC	1500 mA	86%
THM 15-4822WI		±12 VDC	625 mA	89%
THM 15-4823WI	±15 VDC	500 mA	89%	

* If remote is not selected there will be no pin.



THM 20 | 20 W



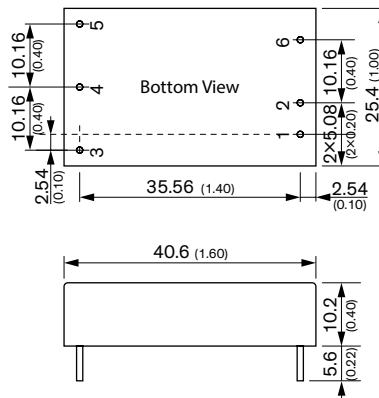
- Wide 2:1 input voltage 20 W DC/DC converter in a 1.6 × 1" plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2.5 μA
- Operating temperature -40°C to 80°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	-Vout	Common
5	Trim	-Vout
6	No pin*/Remote	No pin*/Remote

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
THM 20-1211	9-18 VDC (12 VDC nom.)	5 VDC	4000 mA	89%
THM 20-1212		12 VDC	1670 mA	89%
THM 20-1213		15 VDC	1330 mA	89%
THM 20-1215		24 VDC	833 mA	89%
THM 20-1221		±5 VDC	2000 mA	86%
THM 20-1222		±12 VDC	833 mA	89%
THM 20-1223	±15 VDC	667 mA	89%	
THM 20-2411	18-36 VDC (24 VDC nom.)	5 VDC	4000 mA	90%
THM 20-2412		12 VDC	1670 mA	90%
THM 20-2413		15 VDC	1330 mA	90%
THM 20-2415		24 VDC	833 mA	90%
THM 20-2421		±5 VDC	2000 mA	86%
THM 20-2422		±12 VDC	833 mA	90%
THM 20-2423	±15 VDC	667 mA	90%	
THM 20-4811	36-75 VDC (48 VDC nom.)	5 VDC	4000 mA	90%
THM 20-4812		12 VDC	1670 mA	89%
THM 20-4813		15 VDC	1330 mA	89%
THM 20-4815		24 VDC	833 mA	89%
THM 20-4821		±5 VDC	2000 mA	86%
THM 20-4822		±12 VDC	833 mA	89%
THM 20-4823	±15 VDC	667 mA	89%	

* If remote is not selected there will be no pin.

THM 20WI | 20 W



- Ultra wide 4:1 input voltage 20 W DC/DC converter in a 1.6 × 1" plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2.5 μA
- Operating temperature -40°C to 80°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

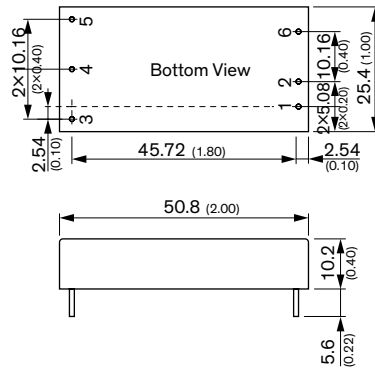
Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	-Vout	Common
5	Trim	-Vout
6	No pin*/Remote	No pin*/Remote

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
THM 20-2411WI	9-36 VDC (24 VDC nom.)	5 VDC	4000 mA	89%
THM 20-2412WI		12 VDC	1670 mA	89%
THM 20-2413WI		15 VDC	1330 mA	89%
THM 20-2415WI		24 VDC	833 mA	89%
THM 20-2421WI		±5 VDC	2000 mA	86%
THM 20-2422WI		±12 VDC	833 mA	89%
THM 20-2423WI	±15 VDC	667 mA	89%	
THM 20-4811WI	18-75 VDC (48 VDC nom.)	5 VDC	4000 mA	90%
THM 20-4812WI		12 VDC	1670 mA	89%
THM 20-4813WI		15 VDC	1330 mA	89%
THM 20-4815WI		24 VDC	833 mA	89%
THM 20-4821WI		±5 VDC	2000 mA	86%
THM 20-4822WI		±12 VDC	833 mA	89%
THM 20-4823WI	±15 VDC	667 mA	89%	

* If remote is not selected there will be no pin.



THM 30 | 30 W



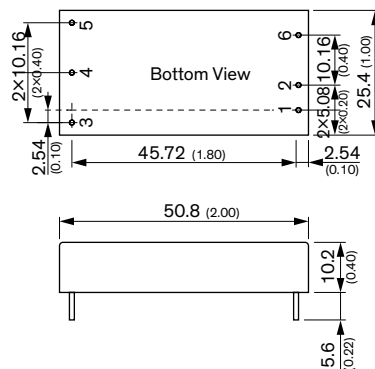
- Wide 2:1 input voltage 30 W DC/DC converter in a 2 × 1" plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2.5 μA
- Operating temperature -40°C to 80°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	-Vout	Common
5	Trim	-Vout
6	No pin*/Remote	No pin*/Remote

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
THM 30-1211	9-18 VDC (12 VDC nom.)	5 VDC	6000 mA	89%
THM 30-1212		12 VDC	2500 mA	89%
THM 30-1213		15 VDC	2000 mA	90%
THM 30-1215		24 VDC	1250 mA	89%
THM 30-1221		±5 VDC	3000 mA	86%
THM 30-1222		±12 VDC	1250 mA	89%
THM 30-1223	±15 VDC	1000 mA	89%	
THM 30-2411	18-36 VDC (24 VDC nom.)	5 VDC	6000 mA	89%
THM 30-2412		12 VDC	2500 mA	89%
THM 30-2413		15 VDC	2000 mA	91%
THM 30-2415		24 VDC	1250 mA	90%
THM 30-2421		±5 VDC	3000 mA	86%
THM 30-2422		±12 VDC	1250 mA	90%
THM 30-2423	±15 VDC	1000 mA	90%	
THM 30-4811	36-75 VDC (48 VDC nom.)	5 VDC	6000 mA	89%
THM 30-4812		12 VDC	2500 mA	89%
THM 30-4813		15 VDC	2000 mA	90%
THM 30-4815		24 VDC	1250 mA	89%
THM 30-4821		±5 VDC	3000 mA	87%
THM 30-4822		±12 VDC	1250 mA	90%
THM 30-4823	±15 VDC	1000 mA	90%	

* If remote is not selected there will be no pin.

THM 30WI | 30 W



- Ultra wide 4:1 input voltage 30 W DC/DC converter in a 2 × 1" plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <2.5 μA
- Operating temperature -40°C to 80°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000 m altitude
- 5-year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	-Vout	Common
5	Trim	-Vout
6	No pin*/Remote	No pin*/Remote

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
THM 30-2411WI	9-36 VDC (24 VDC nom.)	5 VDC	6000 mA	89%
THM 30-2412WI		12 VDC	2500 mA	89%
THM 30-2413WI		15 VDC	2000 mA	91%
THM 30-2415WI		24 VDC	1250 mA	90%
THM 30-2421WI		±5 VDC	3000 mA	86%
THM 30-2422WI		±12 VDC	1250 mA	90%
THM 30-2423WI	±15 VDC	1000 mA	90%	
THM 30-4811WI	18-75 VDC (48 VDC nom.)	5 VDC	6000 mA	89%
THM 30-4812WI		12 VDC	2500 mA	89%
THM 30-4813WI		15 VDC	2000 mA	90%
THM 30-4815WI		24 VDC	1250 mA	89%
THM 30-4821WI		±5 VDC	3000 mA	87%
THM 30-4822WI		±12 VDC	1250 mA	90%
THM 30-4823WI	±15 VDC	1000 mA	90%	

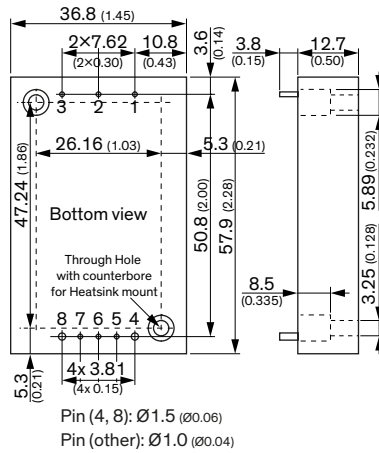
* If remote is not selected there will be no pin.



THM 60WI | 60 W



- Wide 4:1 input voltage 60 W DC/DC converter in a compact 2.3 × 1.45" plastic case
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <4.5 μA
- Operating temperature range: -40 to +75°C
- EMC compliance according to IEC 60601-1-2 4th edition
- Operating up to 5000 m altitude
- 5-year product warranty



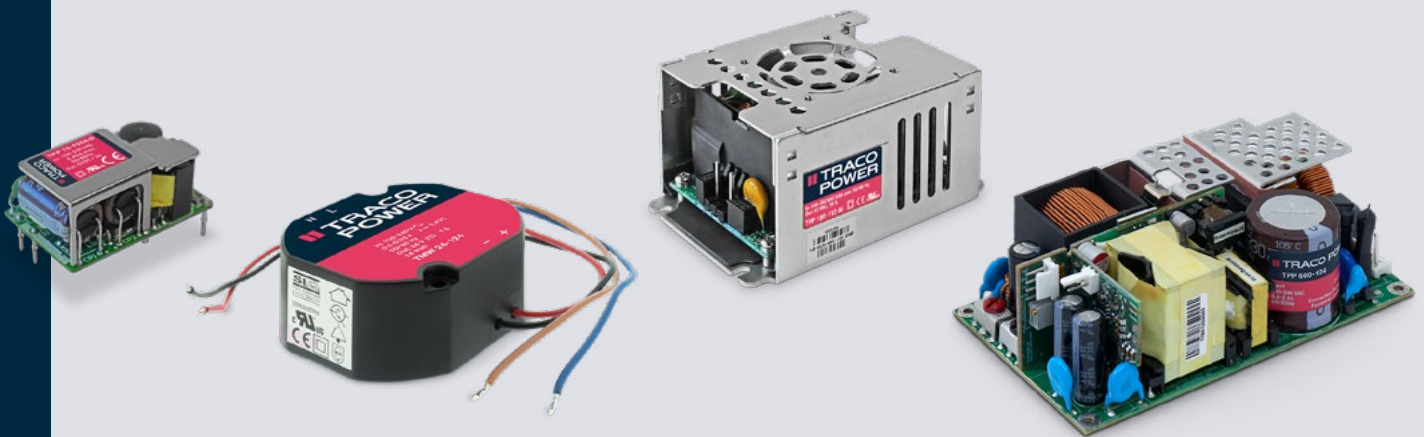
Pinout		
Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
3	+Vin (Vcc)	+Vin (Vcc)
4	-Vout	-Vout
5	-Sense	-Sense
6	Trim	Common
7	+Sense	+Sense
8	+Vout	+Vout

Model	Input Voltage Range	Output		
		Vnom	I _{max}	Efficiency
THM 60-2411WI	9-36 VDC (24 VDC nom.)	5.1 VDC	12.0 A	90%
THM 60-2412WI		12.0 VDC	5.0 A	92%
THM 60-2413WI		15.0 VDC	4.0 A	90%
THM 60-2415WI		24.0 VDC	2.5 A	89%
THM 60-2422WI		±12.0 VDC	±2.5 A	89%
THM 60-2423WI		±15.0 VDC	±2.0 A	90%
THM 60-4811WI	18-75 VDC (48 VDC nom.)	5.1 VDC	12.0 A	90%
THM 60-4812WI		12.0 VDC	5.0 A	92%
THM 60-4813WI		15.0 VDC	4.0 A	93%
THM 60-4815WI		24.0 VDC	2.5 A	90%
THM 60-4822WI		±12.0 VDC	±2.5 A	90%
THM 60-4823WI		±15.0 VDC	±2.0 A	90%

AC/DC Power Supplies

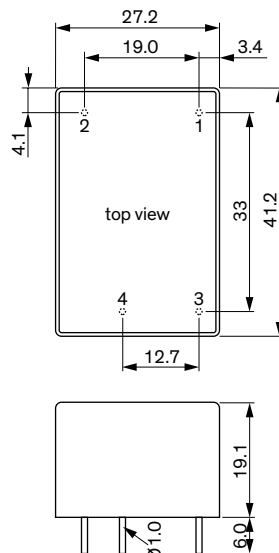
5–850 watt

- IEC/EN/ES 60601-1 3rd Edition for 2 × MOPP
- Risk Management ISO 14971
- IPC-A-610 Class 3 High Performance Acceptability
- EMC Emission acc. to IEC 60601-1-2 ed. 4
- Quality Management ISO 13485
- 5-years warranty



TMF 05 | 5 W

ERC CE UK CA cULus CB



- Fully encapsulated power supplies in plastic casing for PCB mount
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 including risk management file
- Acceptance criteria for electronic assemblies according to IPC-A-610 Level 3
- Low leakage current <math><100 \mu\text{A}</math> rated for BF applications
- Operating temperature range: -25°C to $+70^\circ\text{C}$ max.
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product warranty

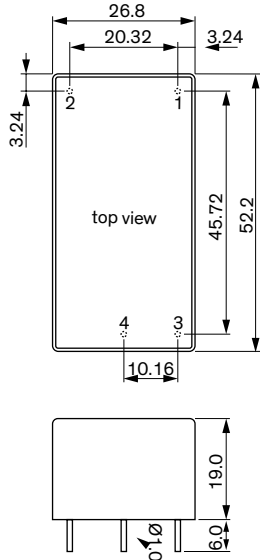
Model	Output Voltage	Output Current (max.)	Efficiency (typ.)
TMF 05105	5.0 VDC	1000 mA	77%
TMF 05112	12 VDC	417 mA	82%
TMF 05115	15 VDC	333 mA	82%
TMF 05124	24 VDC	208 mA	82%

Pinout

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



TMF 10 | 10 W EAC CE UK CA cULus CB Scheme



- Fully encapsulated power supplies in plastic casing for PCB mount
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 including risk management file
- Acceptance criteria for electronic assemblies according to IPC-A-610 Level 3
- Low leakage current <100 μA rated for BF applications
- Operating temperature range: -25°C to +70°C max.
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product warranty

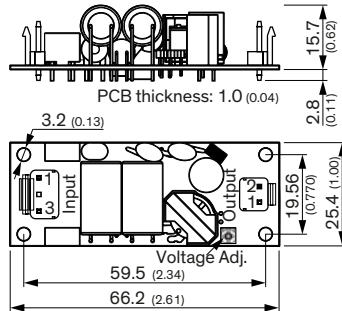
Pinout	
Pin	Single
1	AC (L)
2	AC (N)
3	-Vout
4	+Vout

Model	Output Voltage	Output Current (max.)	Efficiency (typ.)
TMF 10105	5.0 VDC	2000 mA	79%
TMF 10112	12 VDC	833 mA	84%
TMF 10115	15 VDC	666 mA	84%
TMF 10124	24 VDC	417 mA	84%

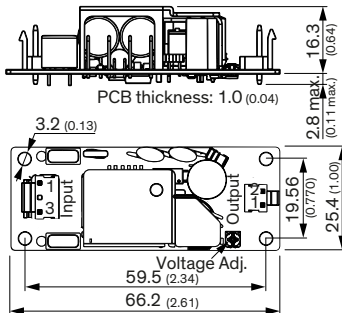
TPP 15A-J | 15 W CE UK CA MOPP ErP ready cULus CB Scheme EAC



12, 15, 24, 36 and 48 VDC models – without heatsink



3.3, 5 and 9 VDC models – with heatsink



- High power density power supply (open frame)
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <100 μA rated for BF applications
- EMC compliance to IEC 60601-1-2 4th edition
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Protection class I and II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, no load power consumption <100 mW
- 5-year product warranty

Pin Connectors			
Input		Output	
Pin	Function	Pin	Function
1	AC (L)	1	-Vout
3	AC (N)	2	+Vout

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 15-103A-J	3.3 VDC (2.97–3.63 VDC)	4000 mA	84%
TPP 15-105A-J	5 VDC (4.5–5.5 VDC)	3000 mA	86%
TPP 15-109A-J	9 VDC (8.1–9.9 VDC)	1670 mA	86%
TPP 15-112A-J	12 VDC (10.8–13.2 VDC)	1250 mA	87%
TPP 15-115A-J	15 VDC (13.5–16.5 VDC)	1000 mA	87%
TPP 15-124A-J	24 VDC (21.6–26.4 VDC)	625 mA	88%
TPP 15-136A-J	36 VDC (32.4–39.6 VDC)	417 mA	88%
TPP 15-148A-J	48 VDC (43.2–52.8 VDC)	313 mA	89%

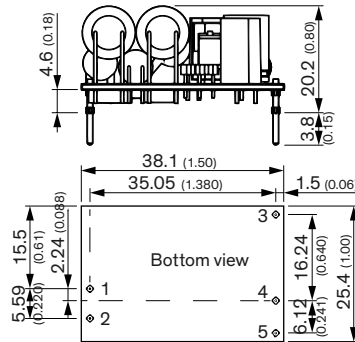


TPP 15A-D | 15 W

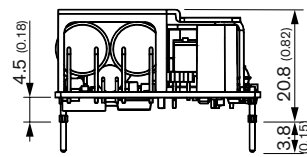


- High power density power supply (open frame)
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <100 µA rated for BF applications
- EMC compliance to IEC 60601-1-2 4th edition
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Protection class II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, no load power consumption <100 mW
- 5-year product warranty

12, 15, 24, 36 and 48 VDC models – without heatsink



3.3, 5 and 9 VDC models –with heatsink



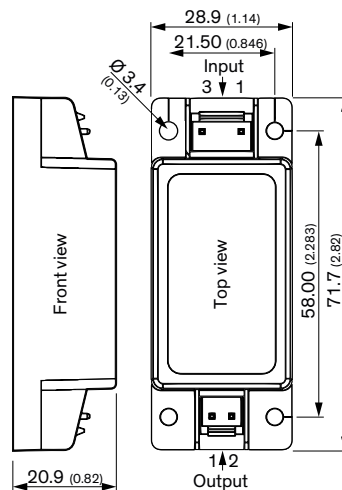
Pinout	
Pin	Function
1	AC (N)
2	AC (L)
3	Trim
4	-Vout
5	+Vout

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 15-103A-D	3.3 VDC (2.97–3.63 VDC)	4000 mA	84%
TPP 15-105A-D	5 VDC (4.5–5.5 VDC)	3000 mA	86%
TPP 15-109A-D	9 VDC (8.1–9.9 VDC)	1670 mA	86%
TPP 15-112A-D	12 VDC (10.8–13.2 VDC)	1250 mA	87%
TPP 15-115A-D	15 VDC (13.5–16.5 VDC)	1000 mA	87%
TPP 15-124A-D	24 VDC (21.6–26.4 VDC)	625 mA	88%
TPP 15-136A-D	36 VDC (32.4–39.6 VDC)	417 mA	88%
TPP 15-148A-D	48 VDC (43.2–52.8 VDC)	313 mA	89%

TPP 15-J | 15 W



- High power density power supply (encapsulated)
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <100 µA rated for BF applications
- EMC compliance to IEC 60601-1-2 4th edition
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Protection class II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, no load power consumption <100 mW
- 5-year product warranty

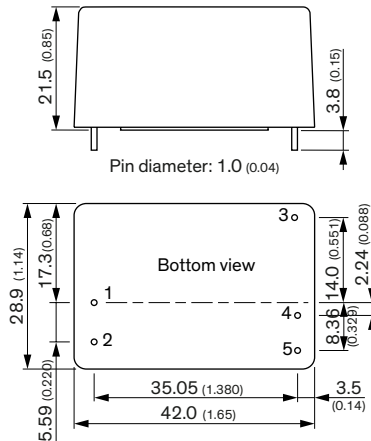


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPP 15-103-J	3.3 VDC	4000 mA	84%
TPP 15-105-J	5 VDC	3000 mA	86%
TPP 15-109-J	9 VDC	1670 mA	86%
TPP 15-112-J	12 VDC	1250 mA	87%
TPP 15-115-J	15 VDC	1000 mA	87%
TPP 15-124-J	24 VDC	625 mA	88%
TPP 15-136-J	36 VDC	417 mA	88%
TPP 15-148-J	48 VDC	313 mA	89%

Pin Connectors			
Input		Output	
Pin	Function	Pin	Function
1	AC (L)	1	-Vout
3	AC (N/I)	2	+Vout



TPP 15-D | 15 W

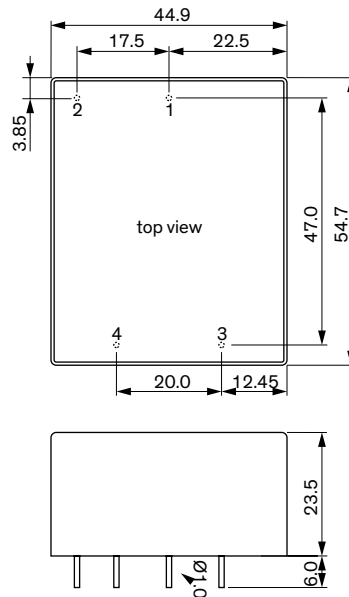


- High power density power supply (encapsulated)
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <100 µA rated for BF applications
- EMC compliance to IEC 60601-1-2 4th edition
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Protection class II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, no load power consumption <100 mW
- 5-year product warranty

Model	Output Voltage nom.*	*adjustable	Output Current max.	Efficiency typ.
TPP 15-103-D	3.3 VDC	2.97–3.63 VDC	4000 mA	84%
TPP 15-105-D	5 VDC	4.5–5.5 VDC	3000 mA	86%
TPP 15-109-D	9 VDC	8.1–9.9 VDC	1670 mA	86%
TPP 15-112-D	12 VDC	10.8–13.2 VDC	1250 mA	87%
TPP 15-115-D	15 VDC	13.5–16.5 VDC	1000 mA	87%
TPP 15-124-D	24 VDC	21.6–26.4 VDC	625 mA	88%
TPP 15-136-D	36 VDC	32.4–39.6 VDC	417 mA	88%
TPP 15-148-D	48 VDC	43.2–52.8 VDC	313 mA	89%

Pin Connections	
Pin	Function
1	AC (N)
2	AC (L)
3	Trim
4	-Vout
5	+Vout

TMF 20 | 20 W



- Fully encapsulated power supplies in plastic casing for PCB mount
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 including risk management file
- Acceptance criteria for electronic assemblies according to IPC-A-610 Level 3
- Low leakage current <100 µA rated for BF applications
- Operating temperature range: -25°C to +70°C max.
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product warranty

Model	Output Voltage	Output Current (max.)	Efficiency (typ.)
TMF 20105	5.0 VDC	3600 mA	78%
TMF 20112	12 VDC	1667 mA	84%
TMF 20115	15 VDC	1333 mA	84%
TMF 20124	24 VDC	833 mA	84%

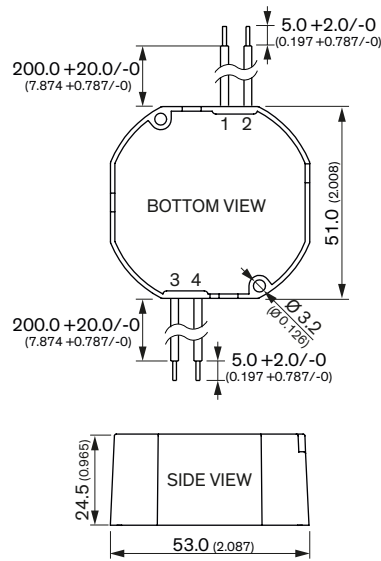
Pinout	
Pin	Single
1	AC (L)
2	AC (N)
3	-Vout
4	+Vout



TMW 24 | 24 W



- Fully encapsulated, dust resistant, and waterproof (IP68 certified)
- Operating temperature range -20°C to $+80^{\circ}\text{C}$
- Mountable in wall outlet boxes
- Screw mountable on wood and inside furniture
- Safety approval IEC/EN 62368-1 and IEC/EN 60335-1
- IEC/EN 60601-1 (3rd edition) certified, 2 x MOPP compliant
- Leakage current $<100\ \mu\text{A}$ for body-floating (BF) applications
- I/O isolation 4000 VAC (reinforced)
- Short-circuit protection (SCP), overvoltage protection (OVP) and overtemperature protection (OTP)
- 5 year product warranty



Pinout			
Pin	Wire	Color	Type
1	Vac IN (N)	Blue	20AWG/0.52 mm ²
2	Vac IN (L)	Brown	20AWG/0.52 mm ²
3	-Vout	Black	20AWG/0.52 mm ²
4	+Vout	Red	20AWG/0.52 mm ²

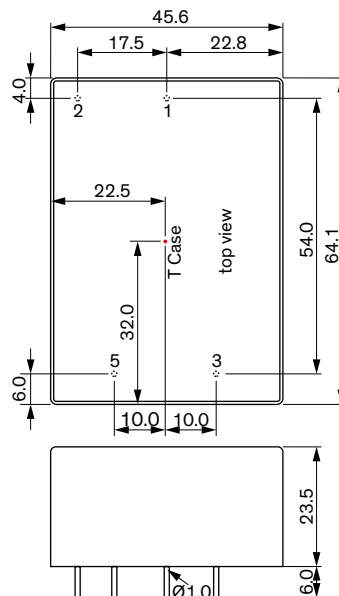
Model *	Output Voltage nom.	Output Current max.	Efficiency typ.
TMW 24-105	5.1 VDC	4000 mA	85%
TMW 24-112	12 VDC	2000 mA	88%
TMW 24-124	24 VDC	1000 mA	89%

* Also available as pin version: suffix -P

TMF 30 | 30 W



- Fully encapsulated power supplies in plastic casing for PCB mount
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 x MOPP
- Risk management process according to ISO 14971 including risk management file
- Acceptance criteria for electronic assemblies according to IPC-A-610 Level 3
- Low leakage current $<100\ \mu\text{A}$ rated for BF applications
- Operating temperature range: -25°C to $+70^{\circ}\text{C}$ max.
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product warranty

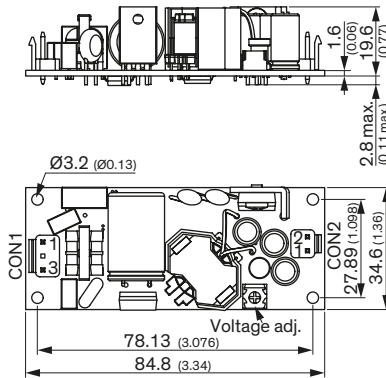


Pinout	
Pin	Single
1	AC (L)
2	AC (N)
3	-Vout
4	+Vout

Model	Output Voltage	Output Current (max.)	Efficiency (typ.)
TMF 30105	5.0 VDC	5000 mA	82%
TMF 30112	12 VDC	2500 mA	88%
TMF 30115	15 VDC	2000 mA	86%
TMF 30124	24 VDC	1250 mA	85%



TPP 30A-J | 30 W

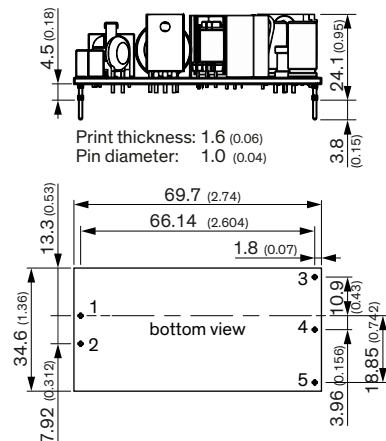


- High power density power supply (open frame)
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <75 µA rated for BF applications
- EMC compliance to IEC 60601-1-2 4th edition
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Protection class I and II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, no load power consumption <60 mW
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 30-103A-J	3.3 VDC (2.97–3.63 VDC)	6000 mA	84%
TPP 30-105A-J	5 VDC (4.5–5.5 VDC)	6000 mA	87%
TPP 30-109A-J	9 VDC (8.1–9.9 VDC)	3340 mA	88%
TPP 30-112A-J	12 VDC (10.8–13.2 VDC)	2500 mA	91%
TPP 30-115A-J	15 VDC (13.5–16.5 VDC)	2000 mA	91%
TPP 30-124A-J	24 VDC (21.6–26.4 VDC)	1250 mA	90%
TPP 30-136A-J	36 VDC (32.4–39.6 VDC)	840 mA	90%
TPP 30-148A-J	48 VDC (43.2–52.8 VDC)	630 mA	92%

Pin Connectors			
Input (CON1)		Output (CON2)	
Pin	Function	Pin	Function
1	AC (L)	1	+Vout
3	AC (N)	2	-Vout

TPP 30A-D | 30 W



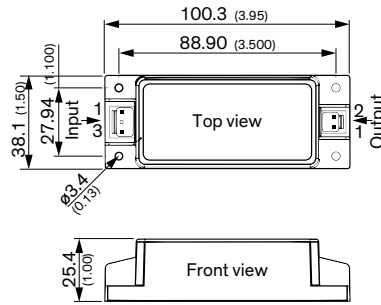
- High power density power supply (open frame)
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <75 µA rated for BF applications
- EMC compliance to IEC 60601-1-2 4th edition
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Protection class II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, no load power consumption <60 mW
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 30-103A-D	3.3 VDC (2.97–3.63 VDC)	6000 mA	84%
TPP 30-105A-D	5 VDC (4.5–5.5 VDC)	6000 mA	87%
TPP 30-109A-D	9 VDC (8.1–9.9 VDC)	3340 mA	88%
TPP 30-112A-D	12 VDC (10.8–13.2 VDC)	2500 mA	91%
TPP 30-115A-D	15 VDC (13.5–16.5 VDC)	2000 mA	91%
TPP 30-124A-D	24 VDC (21.6–26.4 VDC)	1250 mA	90%
TPP 30-136A-D	36 VDC (32.4–39.6 VDC)	840 mA	90%
TPP 30-148A-D	48 VDC (43.2–52.8 VDC)	630 mA	92%

Pinout	
Pin	Function
1	AC (N)
2	AC (L)
3	+Vout
4	-Vout
5	Trim



TPP 30-J | 30 W

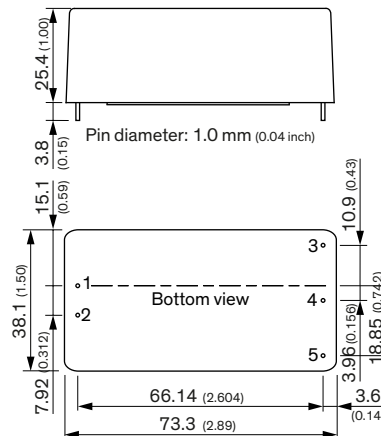


- High power density power supply (encapsulated)
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <75 µA rated for BF applications
- EMC compliance to IEC 60601-1-2 4th edition
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Protection class II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, no load power consumption <60 mW
- 5-year product warranty

Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPP 30-103-J	3.3 VDC (2.97–3.63 VDC)	6000 mA	84%
TPP 30-105-J	5 VDC (4.5–5.5 VDC)	6000 mA	87%
TPP 30-109-J	9 VDC (8.1–9.9 VDC)	3340 mA	88%
TPP 30-112-J	12 VDC (10.8–13.2 VDC)	2500 mA	91%
TPP 30-115-J	15 VDC (13.5–16.5 VDC)	2000 mA	91%
TPP 30-124-J	24 VDC (21.6–26.4 VDC)	1250 mA	90%
TPP 30-136-J	36 VDC (32.4–39.6 VDC)	840 mA	90%
TPP 30-148-J	48 VDC (43.2–52.8 VDC)	630 mA	92%

Pin Connectors			
Input		Output	
Pin	Function	Pin	Function
1	AC (L)	1	+Vout
3	AC (N)	2	–Vout

TPP 30-D | 30 W



- High power density power supply (encapsulated)
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <75 µA rated for BF applications
- EMC compliance to IEC 60601-1-2 4th edition
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Protection class II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, no load power consumption <60 mW
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 30-103-D	3.3 VDC (2.97–3.63 VDC)	6000 mA	84%
TPP 30-105-D	5 VDC (4.5–5.5 VDC)	6000 mA	87%
TPP 30-109-D	9 VDC (8.1–9.9 VDC)	3340 mA	88%
TPP 30-112-D	12 VDC (10.8–13.2 VDC)	2500 mA	91%
TPP 30-115-D	15 VDC (13.5–16.5 VDC)	2000 mA	91%
TPP 30-124-D	24 VDC (21.6–26.4 VDC)	1250 mA	90%
TPP 30-136-D	36 VDC (32.4–39.6 VDC)	840 mA	90%
TPP 30-148-D	48 VDC (43.2–52.8 VDC)	630 mA	92%

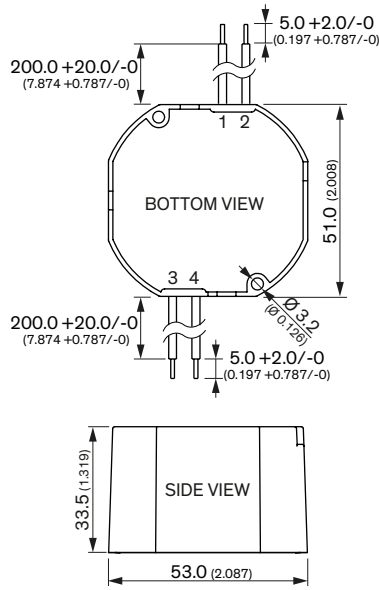
Pinout	
Pin	Function
1	AC (N)
2	AC (L)
3	+Vout
4	–Vout
5	Trim



TMW 36 | 36 W ErP ready UK CA ENE CE MOPP W W CB Scheme e RA US



- Fully encapsulated, dust resistant, and waterproof (IP68 certified)
- Operating temperature range -20°C to +80°C
- Mountable in wall outlet boxes
- Screw mountable on wood and inside furniture
- Safety approval IEC/EN 62368-1 and IEC/EN 60335-1
- IEC/EN 60601-1 (3rd edition) certified, 2 × MOPP compliant
- Leakage current <100 µA for body-floating (BF) applications
- I/O isolation 4000 VAC (reinforced)
- Short-circuit protection (SCP), overvoltage protection (OVP) and overtemperature protection (OTP)
- 5 year product warranty



Pinout			
Pin	Wire	Color	Type
1	Vac IN (N)	Blue	20AWG/0.52 mm ²
2	Vac IN (L)	Brown	20AWG/0.52 mm ²
3	-Vout	Black	20AWG/0.52 mm ²
4	+Vout	Red	20AWG/0.52 mm ²

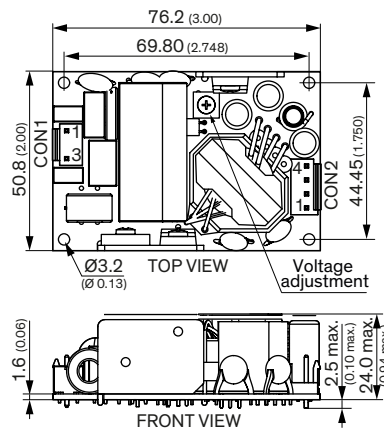
Model *	Output Voltage nom.	Output Current max.	Efficiency typ.
TMW 36-112	12 VDC	3.0 A	87%
TMW 36-124	24 VDC	1.5 A	87%

* Also available as pin version: suffix -P

TPP 40A | 40 W CE UK CA MOPP ErP ready e RA US CB ENE



- Open frame power supply with pin connector
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <75 µA rated for BF applications
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- EMC compliance to IEC 60601-1-2 ed. 4
- Protection class I and II prepared
- Operating up to 5000 m altitude
- Ready to meet ErP directive, <0.15 W no load power consumption
- 5-year product warranty



Pin connectors			
Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1, 2	-Vout
3	AC (N)	3, 4	+Vout

Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 40-105A-J	5 VDC (4.5–5.5 VDC)	8000 mA	90%
TPP 40-112A-J	12 VDC (10.8–13.2 VDC)	3340 mA	92%
TPP 40-124A-J	24 VDC (21.6–26.4 VDC)	1670 mA	92%
TPP 40-148A-J	48 VDC (43.2–52.8 VDC)	840 mA	93%

Note
– Other output models are available on request.

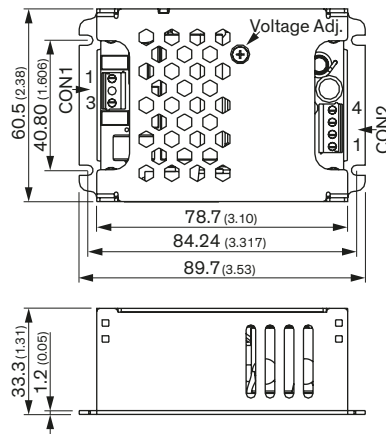
* Terminal rated for 7 A max. (at higher current connection has to be split)

CON1: JST series mates with JST crimp terminal: BVH-21T-P1.1 and terminal housing: VHR-3N

CON2: JST series mates with JST crimp terminal: BVH-21T-P1.1 and terminal housing: VHR-4N



TPP 40 | 40 W



- Enclosed power supply with screw terminal connection
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <75 µA rated for BF applications
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- EMC compliance to IEC 60601-1-2 ed. 4
- Protection class I and II prepared
- Operating up to 5000 m altitude
- Ready to meet ErP directive, <0.15 W no load power consumption
- 5-year product warranty

Screw Terminal (Single Output Models)

Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1, 2	-Vout
3	AC (N)	3, 4	+Vout

Screw Terminal (Multi Output Models)

Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1	Vout 3
3	AC (N)	2, 3	COM
		4, 5	Vout 2
		6	Vout 1

Model	Vout	Iout	Efficiency
TPP 40-105	5 VDC	8.00 A	90%
TPP 40-112	12 VDC	3.34 A	92%
TPP 40-115	15 VDC	2.67 A	92%
TPP 40-124	24 VDC	1.67 A	92%
TPP 40-221	+12/+5 VDC	3.34/6.00 A	89%
TPP 40-231	+15/+5 VDC	2.67/6.00 A	89%
TPP 40-251	+24/+5 VDC	1.67/6.00 A	86%
TPP 40-321M2	+12/+5/-12 VDC	3.34/6.00/0.50 A	88%
TPP 40-331M3	+15/+5/-15 VDC	2.67/6.00/0.50 A	88%
TPP 40-3512	+24/+5/+12 VDC	1.67/6.00/0.50 A	86%

Note

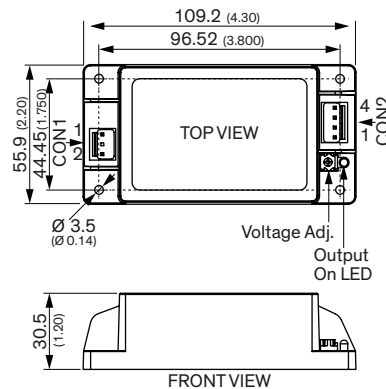
- Total Power must not exceed 40 W.
- Other output models are available on request.
- Multi output models have a common ground.

Note (Dimensions)

- Multi output models 102.4 (4.03) length, 34.5 (1.36) height

* Terminal rated for 10 A max.
(at higher current connection has to be split)

TPP 40E-J | 40 W



- Compact encapsulated 40 Watt Chassis mount module (4.3" × 2.2")
- I/O isolation 4000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <100 µA rated for BF applications
- Operating temperature -40°C to 80°C
- EMC compliance according to IEC 60601-1-2 4th edition and EN55032 class B
- Operating up to 5000 m altitude
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 40-105E-J	5 VDC (4.5-5.5 VDC)	8000 mA	90%
TPP 40-112E-J	12 VDC (10.8-13.2 VDC)	3340 mA	92%
TPP 40-115E-J	15 VDC (13.5-16.5 VDC)	2670 mA	92%
TPP 40-124E-J	24 VDC (21.6-26.4 VDC)	1670 mA	92%
TPP 40-136E-J	36 VDC (32.4-39.6 VDC)	1120 mA	92%
TPP 40-148E-J	48 VDC (43.2-52.8 VDC)	840 mA	93%

Pin connectors

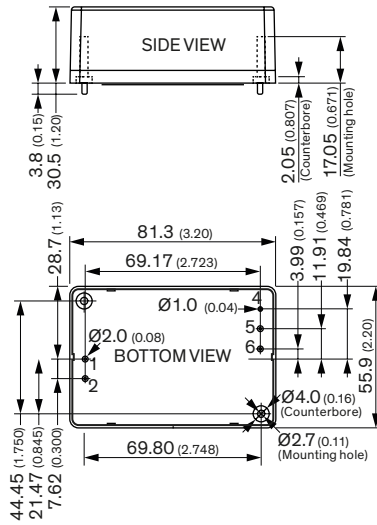
Input (CON1)		Output (CON2)	
Pin	Function	Pin	Function
1	Line	1, 2	-Vout
3	Neutral	3, 4	+Vout



TPP 40E-D | 40 W EAC UK CA CE MOPP ErP ready cUL US CB Scheme ErP ready



- Compact encapsulated 40 Watt PCB module (3.2" x 2.2")
- I/O isolation 4000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 x MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <100 µA rated for BF applications
- Operating temperature -40°C to 80°C
- EMC compliance according to IEC 60601-1-2 4th edition and EN55032 class B
- Operating up to 5000 m altitude
- 5-year product warranty



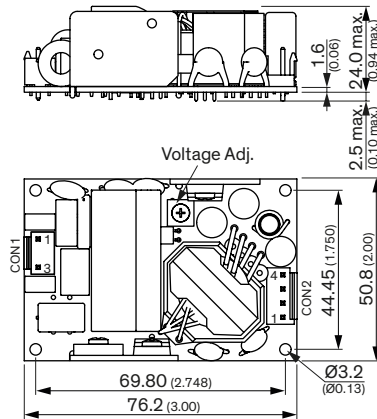
Pinout	
Pin	Function
1	AC (N)
2	AC (L)
4	Trim
5	-Vout
6	+Vout

Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 40-105E-D	5 VDC (4.5–5.5 VDC)	8000 mA	90%
TPP 40-112E-D	12 VDC (10.8–13.2 VDC)	3340 mA	92%
TPP 40-115E-D	15 VDC (13.5–16.5 VDC)	2670 mA	92%
TPP 40-124E-D	24 VDC (21.6–26.4 VDC)	1670 mA	92%
TPP 40-136E-D	36 VDC (32.4–39.6 VDC)	1120 mA	92%
TPP 40-148E-D	48 VDC (43.2–52.8 VDC)	840 mA	93%

TPP 65A | 65 W CE UK CA MOPP ErP ready cUL US CB Scheme EAC



- Open frame power supply with pin connection
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 x MOPP
- Low leakage current <75 µA rated for BF applications
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- EMC compliance to IEC 60601-1-2 ed. 4
- Protection class I and II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, <0.15 W no load power consumption
- 5-year product warranty



Pin connectors			
Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1, 2	-Vout
3	AC (N)	3, 4	+Vout

Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 65-105A-J	5 VDC (4.5–5.5 VDC)	10000 mA	90%
TPP 65-112A-J	12 VDC (10.8–13.2 VDC)	5420 mA	93%
TPP 65-124A-J	24 VDC (21.6–26.4 VDC)	2710 mA	94%
TPP 65-148A-J	48 VDC (43.2–52.8 VDC)	1360 mA	93%

Note
 – Other output models are available on request.

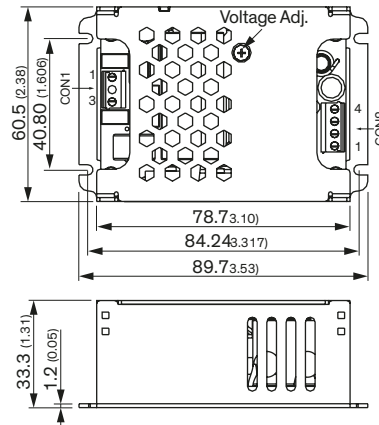
* Terminal rated for 10 A max. (at higher current connection has to be split)

CON1: JST series mates with JST crimp terminal: SVH-21T-P1.1 and terminal housing: VHR-3N

CON2: JST series mates with JST crimp terminal: SVH-21T-P1.1 and terminal housing: VHR-4N



TPP 65 | 65 W



- Enclosed power supply with screw terminal connection
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <75 µA rated for BF applications
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- EMC compliance to IEC 60601-1-2 ed. 4
- Protection class I and II
- Operating up to 5000 m altitude
- Ready to meet ErP directive, <0.15 W no load power consumption
- 5-year product warranty

Screw Terminal (Single Output Models)

Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1, 2	-Vout
3	AC (N)	3, 4	+Vout

Screw Terminal (Multi Output Models)

Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1	Vout 3
3	AC (N)	2, 3	COM
		4, 5	Vout 2
		6	Vout 1

Model	Vout	Iout	Efficiency
TPP 65-105	5 VDC	10.00 A	90%
TPP 65-112	12 VDC	5.42 A	93%
TPP 65-115	15 VDC	4.34 A	94%
TPP 65-124	24 VDC	2.71 A	94%
TPP 65-221	+12/+5 VDC	5.42/8.00 A	90%
TPP 65-231	+15/+5 VDC	4.34/8.00 A	91%
TPP 65-251	+24/+5 VDC	2.71/8.00 A	89%
TPP 65-321M2	+12/+5/-12 VDC	5.42/8.00/0.60 A	89%
TPP 65-331M3	+15/+5/-15 VDC	4.34/8.00/0.60 A	90%
TPP 65-3512	+24/+5/+12 VDC	2.71/8.00/0.60 A	89%

Note

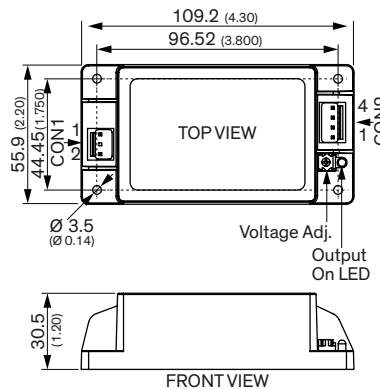
- Total Power must not exceed 65 W.
- Other output models are available on request.
- Multi output models have a common ground.

Note (Dimensions)

- Multi output models 102.4 (4.03) length, 34.5 (1.36) height

* Terminal rated for 10 A max. (at higher current connection has to be split)

TPP 65E-J | 65 W



- Compact encapsulated 65 Watt Chassis mount module (4.3" × 2.2")
- I/O isolation 4000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <100 µA rated for BF applications
- Operating temperature -40°C to 80°C
- EMC compliance according to IEC 60601-1-2 4th edition and EN55032 class B
- Operating up to 5000 m altitude
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 65-105E-J	5 VDC (4.5-5.5 VDC)	10000 mA	90%
TPP 65-112E-J	12 VDC (10.8-13.2 VDC)	5420 mA	93%
TPP 65-115E-J	15 VDC (13.5-16.5 VDC)	4340 mA	94%
TPP 65-124E-J	24 VDC (21.6-26.4 VDC)	2710 mA	94%
TPP 65-136E-J	36 VDC (32.4-39.6 VDC)	1810 mA	93%
TPP 65-148E-J	48 VDC (43.2-52.8 VDC)	1360 mA	93%

Pin connectors

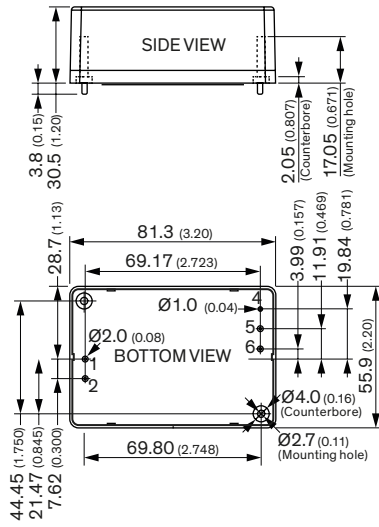
Input (CON1)		Output (CON2)	
Pin	Function	Pin	Function
1	Line	1, 2	-Vout
3	Neutral	3, 4	+Vout



TPP 65E-D | 65 W



- Compact encapsulated 65 Watt PCB module (3.2" x 2.2")
- I/O isolation 4000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 x MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Low leakage current <100 µA rated for BF applications
- Operating temperature -40°C to 80°C
- EMC compliance according to IEC 60601-1-2 4th edition and EN 55032 class B
- Operating up to 5000 m altitude
- 5-year product warranty



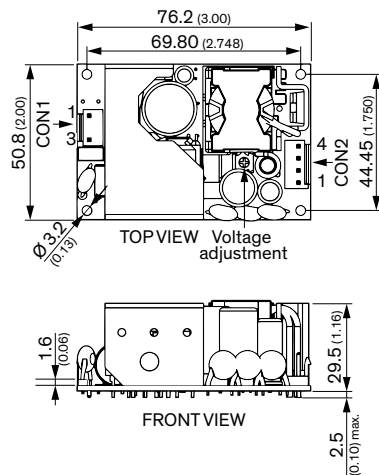
Pinout	
Pin	Function
1	AC (N)
2	AC (L)
4	Trim
5	-Vout
6	+Vout

Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 65-105E-D	5 VDC (4.5–5.5 VDC)	10000 mA	90%
TPP 65-112E-D	12 VDC (10.8–13.2 VDC)	5420 mA	93%
TPP 65-115E-D	15 VDC (13.5–16.5 VDC)	4340 mA	94%
TPP 65-124E-D	24 VDC (21.6–26.4 VDC)	2710 mA	94%
TPP 65-136E-D	36 VDC (32.4–39.6 VDC)	1810 mA	93%
TPP 65-148E-D	48 VDC (43.2–52.8 VDC)	1360 mA	93%

TPP 100A-J | 100 W



- Open frame 100 W power supply with JST connection in 2.0" x 3.0" package
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 x MOPP
- Low leakage current <75 µA rated for BF applications
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Active power factor correction >0.95
- Protection class I and II prepared
- Operating up to 5000 m altitude
- Ready to meet ErP directive, <0.3 W no load power consumption
- 5-year product warranty



Pin connectors			
Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1, 2	-Vout
3	AC (N)	3, 4	+Vout

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 100-112A-J	12 VDC (10.8–13.2 VDC)	8340 mA	91%
TPP 100-115A-J	15 VDC (13.5–16.5 VDC)	6670 mA	92%
TPP 100-124A-J	24 VDC (21.6–26.4 VDC)	4170 mA	92%
TPP 100-128A-J	28 VDC (25.2–30.8 VDC)	3580 mA	92%
TPP 100-136A-J	36 VDC (32.4–39.6 VDC)	2780 mA	91%
TPP 100-148A-J	48 VDC (43.2–52.8 VDC)	2090 mA	91%

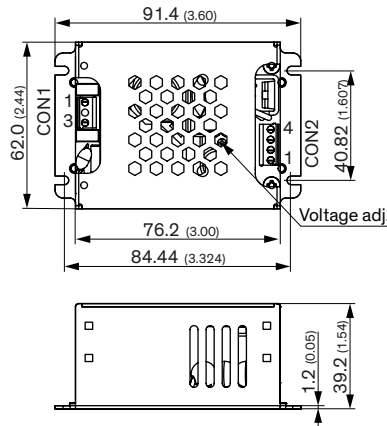
* Terminal rated for 7 A max. (at higher current connection has to be split)

CON1: JST series mates with JST crimp terminal: SVH-21T-P1.1 and terminal housing: VHR-3N

CON2: JST series mates with JST crimp terminal: SVH-21T-P1.1 and terminal housing: VHR-4N



TPP 100 | 100 W

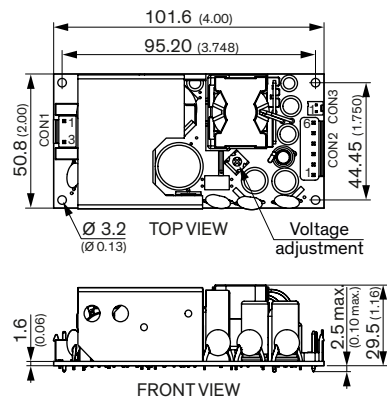


- Encased 100 W power supply with screw connection in 2.44" x 3.6" package
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 x MOPP
- Low leakage current <75 µA rated for BF applications
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Active power factor correction >0.95
- Protection class I and II prepared
- Operating up to 5000 m altitude
- Ready to meet ErP directive, <0.3 W no load power consumption
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 100-112	12 VDC (10.8–13.2 VDC)	8340 mA	91%
TPP 100-115	15 VDC (13.5–16.5 VDC)	6670 mA	92%
TPP 100-124	24 VDC (21.6–26.4 VDC)	4170 mA	92%
TPP 100-128	28 VDC (25.2–30.8 VDC)	3580 mA	92%
TPP 100-136	36 VDC (32.4–39.6 VDC)	2780 mA	91%
TPP 100-148	48 VDC (43.2–52.8 VDC)	2090 mA	91%

Screw Terminal			
Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1, 2	-Vout
3	AC (N)	3, 4	+Vout

TPP 150A-J | 150 W



- Open frame 150 W power supply with JST connection in 2.0" x 4.0" package
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 x MOPP
- Low leakage current <100 µA rated for BF applications
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Active power factor correction >0.95
- Protection class I and II prepared
- Operating up to 5000 m altitude
- Ready to meet ErP directive, <0.3 W no load power consumption
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output Current max. (Forced air cooling)	Efficiency typ.
TPP 150-112A-J	12 VDC (10.8–13.2 VDC)	12500 mA	91%
TPP 150-115A-J	15 VDC (13.5–16.5 VDC)	10000 mA	92%
TPP 150-124A-J	24 VDC (21.6–26.4 VDC)	6250 mA	92%
TPP 150-128A-J	28 VDC (25.2–30.8 VDC)	5360 mA	92%
TPP 150-136A-J	36 VDC (32.4–39.6 VDC)	4170 mA	92%
TPP 150-148A-J	48 VDC (43.2–52.8 VDC)	3130 mA	92%

Pin connectors			
Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1–3	-Vout
3	AC (N)	4–6	+Vout

Fan (CON3)	
Pin	Function
1	-Fan
2	+Fan

Output Current max. (Natural convection):
 8340 mA
 7340 mA
 4590 mA
 3930 mA
 3060 mA
 2090 mA

* Terminal rated for 7 A max. (at higher current connection has to be split)

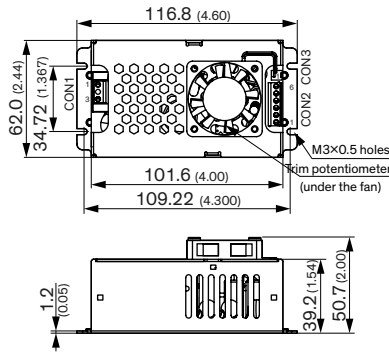
CON1: JST series mates with JST crimp terminal: SVH-21T-P.1 and terminal housing: VHR-3N

CON2: JST series mates with JST crimp terminal: SVH-21T-P.1 and terminal housing: VHR-6N

CON3: Molex series mates with Molex crimp terminals: 2759 and Molex housing: 22-01-1022



TPP 150 | 150 W



- Encased 150 W power supply with screw connection 2.44" × 4.6" package
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Low leakage current <100 µA rated for BF applications
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Active power factor correction >0.95
- Protection class I and II prepared
- Operating up to 5000 m altitude
- 5-year product warranty

Connections			
Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (L)	1-3	-Vout
3	AC (N)	4-6	+Vout

Fan (CON3)	
Pin	Function
1	-Fan
2	+Fan

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 150-112	12 VDC (10.8–13.2 VDC)	12500 mA	91%
TPP 150-115	15 VDC (13.5–16.5 VDC)	10000 mA	92%
TPP 150-124	24 VDC (21.6–26.4 VDC)	6250 mA	92%
TPP 150-128	28 VDC (25.2–30.8 VDC)	5360 mA	92%
TPP 150-136	36 VDC (32.4–39.6 VDC)	4170 mA	92%
TPP 150-148	48 VDC (43.2–52.8 VDC)	3130 mA	92%

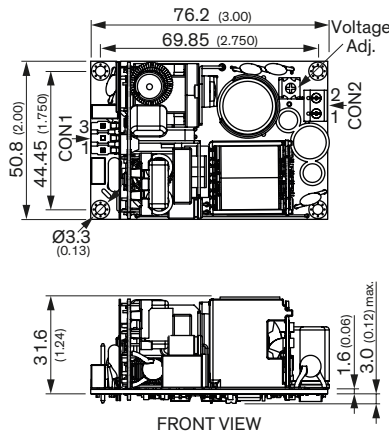
* Terminal rated for 7 A max. (at higher current connection has to be split)

CON1: Screw Terminal

CON2: Screw Terminal

CON3: Molex series mates with Molex crimp terminals: 2759 and Molex housing: 22-01-1022

TPP 180A-M | 180 W



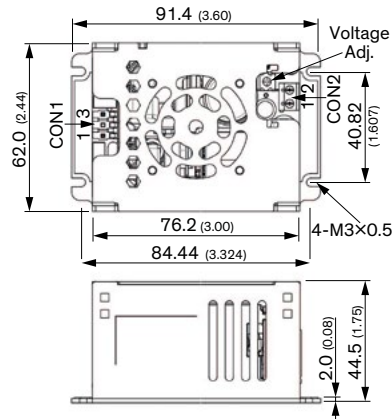
- High power-density: 180 Watt in 3" × 2" package (open frame)
- I/O isolation 4000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Peak power operation up to 220 Watt for 5s
- Operating temperature –40°C to 85°C
- Active power factor correction >0.9
- Operating up to 5000 m altitude
- 5-year product warranty

Pin connectors			
Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	AC (N) / DC-	1	+Vout
3	AC (L) / DC+	2	-Vout

Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPP 180-112A-M	12 VDC (11.0–13.0 VDC)	15 A	92%
TPP 180-115A-M	15 VDC (13.8–16.2 VDC)	12 A	92%
TPP 180-124A-M	24 VDC (22.1–25.9 VDC)	7.5 A	94%
TPP 180-136A-M	36 VDC (33.1–38.9 VDC)	5 A	93%
TPP 180-148A-M	48 VDC (44.2–51.8 VDC)	3.75 A	93%
TPP 180-153A-M	53 VDC (48.8–57.2 VDC)	3.40 A	93%



TPP 180-M | 180 W

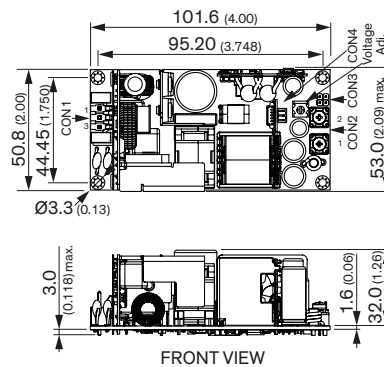


- High power-density: 180 Watt in 3.6" × 2.44" package (encased)
- I/O isolation 4000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Peak power operation up to 220 Watt for 5s
- Operating temperature –40°C to 85°C
- Active power factor correction >0.9
- Operating up to 5000 m altitude
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 180-112-M	12 VDC (11.0–13.0 VDC)	15 A	92%
TPP 180-115-M	15 VDC (13.8–16.2 VDC)	12 A	92%
TPP 180-124-M	24 VDC (22.1–25.9 VDC)	7.5 A	94%
TPP 180-136-M	36 VDC (33.1–38.9 VDC)	5 A	93%
TPP 180-148-M	48 VDC (44.2–51.8 VDC)	3.75 A	93%
TPP 180-153-M	53 VDC (48.8–57.2 VDC)	3.40 A	93%

Pinout			
Input (CON1)		Output (CON2)	
Pin	Function	Pin	Function
1	AC (N) / DC–	1	+Vout
3	AC (L) / DC+	2	–Vout

TPP 300A-M | 300 W



- High power-density: 300 Watt in 4" × 2" package (open frame)
- I/O isolation 4000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Peak power operation up to 360 Watt for 5s
- Operating temperature –40°C to 85°C
- Active power factor correction >0.9
- Operating up to 5000 m altitude
- 5-year product warranty

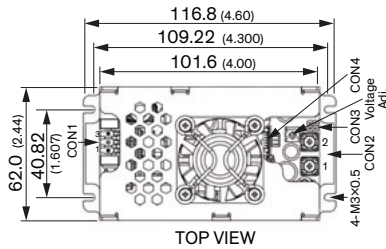
Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 300-112A-M	12 VDC (10.8–13.2 VDC)	25 A	91%
TPP 300-115A-M	15 VDC (13.5–16.5 VDC)	20 A	92%
TPP 300-124A-M	24 VDC (21.6–26.4 VDC)	12.5 A	93%
TPP 300-136A-M	36 VDC (32.4–39.6 VDC)	8.3 A	93%
TPP 300-148A-M	48 VDC (43.2–52.8 VDC)	6.25 A	93%
TPP 300-153A-M	53 VDC (47.7–58.3 VDC)	5.67 A	93%

Input		Output	
CON1		CON2	
Pin	Function	Pin	Function
1	AC (L) / DC (+)	1	+Vout
3	AC (N) / DC (–)	2	–Vout

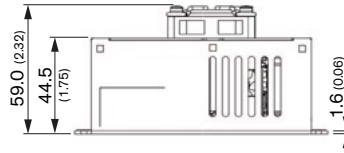
Auxiliary		Auxiliary	
CON3		CON4	
Pin	Function	Pin	Function
1	+Fan	1	+Standby
2	–Fan	2	–Standby
3	+Sense	3	PG
4	–Sense	4	–Remote
		5	+Remote



TPP 300-M | 300 W CE UK CA MOPP US CB EAC



TOP VIEW



- High power-density: 300 Watt in 4.6" x 2.44" package (encased)
- I/O isolation 4000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition for 2 x MOPP
- Risk management process according to ISO 14971 incl. risk management file
- Acceptance criteria for electronic assemblies acc. to IPC-A-610 Level 3
- Peak power operation up to 360 Watt for 5s
- Operating temperature -40°C to 80°C
- Active power factor correction >0.9
- Operating up to 5000 m altitude
- 5-year product warranty

Input	
CON1	
Pin	Function
1	AN (N)
2	-
3	AC (L)

Output	
CON2	
Pin	Function
1	+Vout
2	-Vout

Auxiliary	
CON3	
Pin	Function
1	+Fan
2	-Fan
3	+Sense
4	-Sense

Auxiliary	
CON4	
Pin	Function
1	+Standby
2	-Standby
3	PG
4	Control
5	Remote

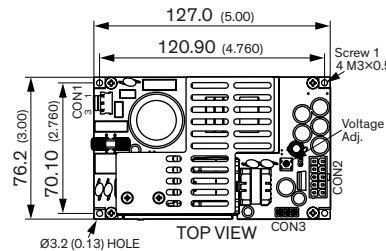
Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 300-112-M	12 VDC (10.8–13.2 VDC)	25 A	91%
TPP 300-115-M	15 VDC (13.5–16.5 VDC)	20 A	91%
TPP 300-124-M	24 VDC (21.6–26.4 VDC)	12.5 A	93%
TPP 300-136-M	36 VDC (32.4–39.6 VDC)	8.3 A	93%
TPP 300-148-M	48 VDC (43.2–52.8 VDC)	6.25 A	93%
TPP 300-153-M	53 VDC (47.7–58.3 VDC)	5.67 A	93%

Max. screw penetration depth: 3.3 (0.130)

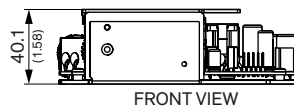
Setup screw locked torque: max. 2.5 kgfcm / 0.25 Nm

CON2 screw locked torque: max. 16.8 kgfcm / 1.65 Nm wires 24–14 AWG

TPP 450BA | 450 W EAC CE UK CA MOPP US CB



TOP VIEW



FRONT VIEW

- 450 Watt open frame power supply in 5" x 3" package
- 450 Watt with forced air cooling, up to 320 Watt convection cooled without derating up to 50°C
- Industrial (62368-1) and Medical (60601-1, 2 x MOPP) approvals
- EMC compliance to IEC/EN 60601-1-2 4th edition
- Protection Class II prepared
- Risk management process according to ISO 14971 incl. risk management file
- Isolation (4000 VAC) and leakage current (<100 µA) rated for BF applications
- 5 V standby output, Remote On/Off, DC-OK Signal, variable fan speed
- Operating up to 5000 m altitude
- 5-year product warranty

Input	
CON1	
Pin	Function
1	AC (L)
3	AC (N)

Auxiliary	
CON3	
Pin	Function
1	+Fan
2	+Sense
3	+Remote
4	PG
5	+Standby
6	-Fan
7	-Sense
8	-Remote
9	No Pin
10	-Standby

Output	
CON2	
Pin*	Function
1-5	+Vout
6-10	-Vout

Model	Output Voltage nom. (adjustable)	Output Current max. (Forced air cooling)	Efficiency typ.
TPP 450-112BA-M	12 VDC (11.0–13.0 VDC)	37500 mA	91%
TPP 450-115BA-M	15 VDC (13.8–16.2 VDC)	30000 mA	92%
TPP 450-124BA-M	24 VDC (22.1–25.9 VDC)	18750 mA	93%
TPP 450-128BA-M	28 VDC (25.8–30.2 VDC)	16100 mA	93%
TPP 450-136BA-M	36 VDC (33.1–38.9 VDC)	12500 mA	93%
TPP 450-148BA-M	48 VDC (44.2–51.8 VDC)	9400 mA	94%
TPP 450-153BA-M	53 VDC (48.8–57.2 VDC)	8550 mA	94%

Output Current max. (Natural convection):

- 20800 mA
- 16600 mA
- 13300 mA
- 11400 mA
- 8900 mA
- 6650 mA
- 6050 mA

* Terminal rated for 13 A max. (at higher current connection has to be split)

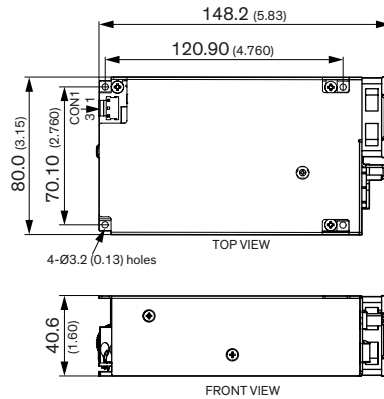
CON1:
Molex housing:
09-50-8031
Molex crimp terminals:
2478,6838,45570

CON2:
Molex housing:
39-01-2105
Molex crimp terminals:
5556,45750

CON3:
Molex housing:
90143-0010
Molex crimp terminals:
90119



TPP 450B | 450 W



- 450 Watt encased power supply in 5.8" x 3" package
- 450 Watt with forced air cooling, up to 320 Watt convection cooled without derating up to 50°C
- Industrial (62368-1) and Medical (60601-1, 2 x MOPP) approvals
- EMC compliance to IEC/EN 60601-1-2 4th edition
- Protection Class II prepared
- Risk management process according to ISO 14971 incl. risk management file
- Isolation (4000 VAC) and leakage current (<100 µA) rated for BF applications
- 5 V standby output, Remote On/Off, DC-OK Signal, variable fan speed
- Operating up to 5000 m altitude
- 5-year product warranty

Input CON1	
Pin	Function
1	AC (L)
3	AC (N)

Output CON2	
Pin*	Function
1-5	-Vout
6-10	+Vout

Auxiliary CON3	
Pin	Function
1	+Fan
2	+Sense
3	+Remote
4	PG
5	+Standby
6	-Fan
7	-Sense
8	-Remote
9	No Pin
10	-Standby

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 450-112B-M	12 VDC (11.0-13.0 VDC)	37500 mA	91%
TPP 450-115B-M	15 VDC (13.8-16.2 VDC)	30000 mA	92%
TPP 450-124B-M	24 VDC (22.1-25.9 VDC)	18750 mA	93%
TPP 450-128B-M	28 VDC (25.8-30.2 VDC)	16100 mA	93%
TPP 450-136B-M	36 VDC (33.1-38.9 VDC)	12500 mA	93%
TPP 450-148B-M	48 VDC (44.2-51.8 VDC)	9400 mA	94%
TPP 450-153B-M	53 VDC (48.8-57.2 VDC)	8550 mA	94%

* Terminal rated for 13 A max. (at higher current connection has to be split)

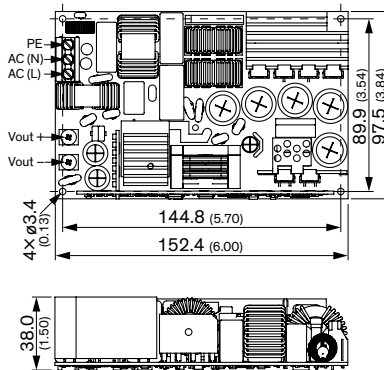
CON1:
Molex housing:
09-50-8031
Molex crimp terminals:
2478,6838,45570

CON2:
Molex housing:
39-01-2105
Molex crimp terminals:
5556,45750

CON3:
Molex housing:
90143-0010
Molex crimp terminals:
90119

TPX 850L | 850 W

NEW
under
development



- 850 Watt open frame power supply in 6" x 4" package
- Industrial (62368-1), Medical (60601-1, 2 x MOPP) and Household (60335-1) approvals
- EMC compliance to IEC/EN 60601-1-2 4th edition
- Operating temperature range -40°C to +70°C
- Active PFC > 0.95
- High efficiency up to 94%
- Isolation (4000 VAC) and leakage current (<100 µA) rated for BF applications
- Operating up to 5000 m altitude
- 5-year product warranty

Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 850-124L	24 VDC (24-24.72 VDC)	35.4 A	tbd
TPP 850-128L	28 VDC (28-28.84 VDC)	30.4 A	tbd
TPP 850-136L	36 VDC (36-37.08 VDC)	23.6 A	tbd
TPP 850-148L	48 VDC (48-49.44 VDC)	17.7 A	tbd

TRACO POWER dedicated to design and production of high quality, state-of-the-art DC/DC & AC/DC power conversion products. 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 25+ 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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Product Portfolio



Railway Power Solutions



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