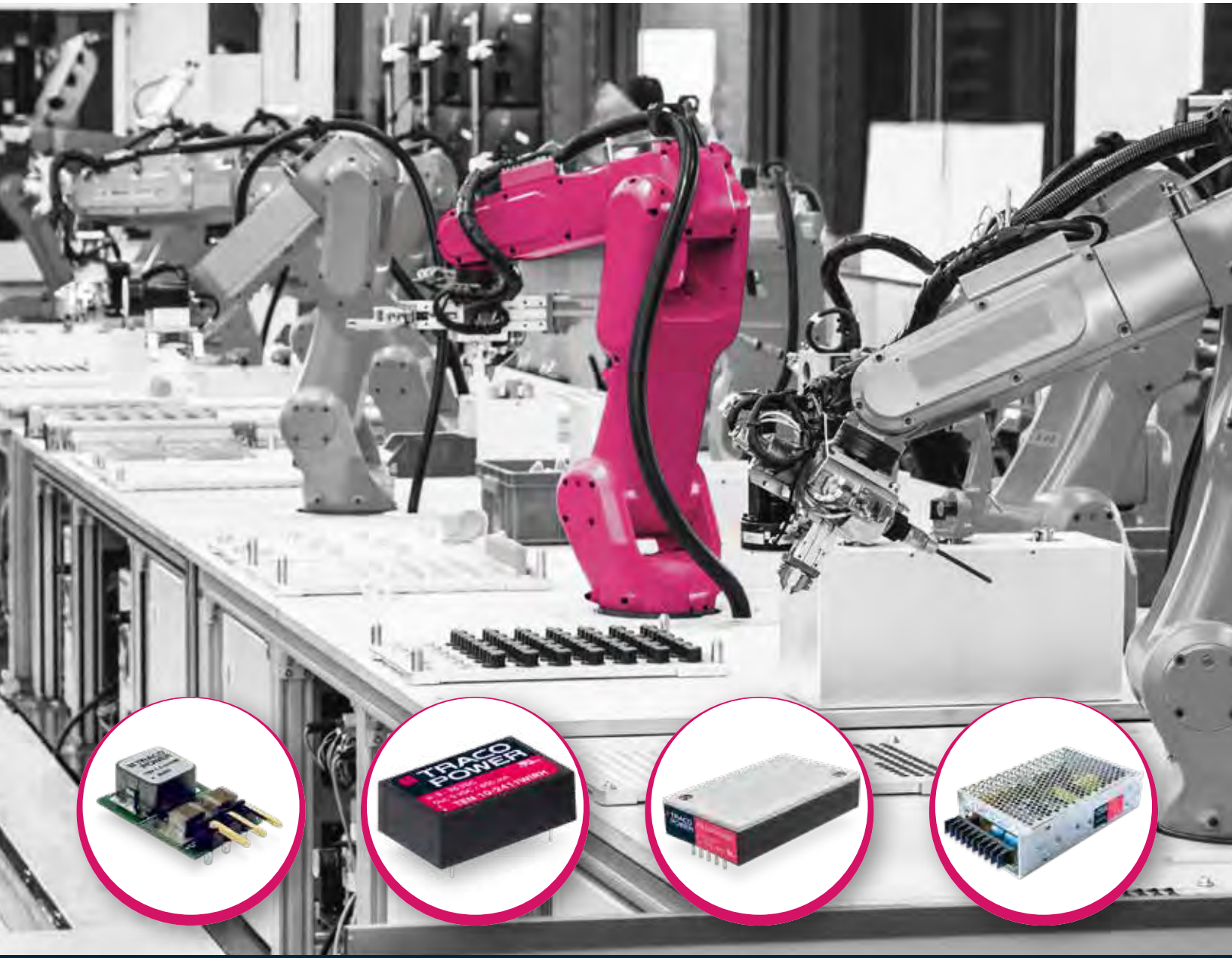
TRACO POWER

2022~2023 | Industrial Power Solutions

Product Portfolio



www.tracopower.com

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.

Product Range

TRACO POWER's product range focuses on the four vertical markets: **Industrial, Medical & Healthcare, Railway / Ruggedized and Building Technology & Household.**

Within these markets TRACO offers one of the most comprehensive programs for standard products in application areas such as: Test & Measurement, Automation & Control, Robotics, Machinery, Therapy, Diagnostic, Laboratory, Home & Office Automation, White Goods, Transportation, Construction & Farming, Information Technology, Smartgrid, Renewable Energy, Oil & Gas.

Detailed product data can be downloaded from our website: **www.tracopower.com**

Icons used throughout the catalog

High isolation products for medical applications

- Product certification according to IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
- EMC emission according to IEC 60601-1-2 ed. 4
- Risk management process according to ISO 14971 including risk management file
- 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

Ruggedized DC/DC converters for railway, mobility and industrial applications

- Approved to EN 50155 for electronic equipment used on rolling stock
- Shock and vibration test according EN 61373
- Qualification for the fire behavior of components according to EN 45545-2

Building & Household Automation / IoT

- Product certification according to IEC/EN 60335-1

Harsh Industrial Environments

- EN 60079-15 II3G EX for
- HAZLOC UL 121201 Class I; Div 2 (options)

INDEX

EACH CATEGORY INCLUDES A DETAILED SUB-INDEX

ICONS USED THROUGHOUT CATALOG

All isolated products >5 watts in this in catalog are **IEC/EN/UL 62368-1** approved for ITE/IoT/ industrial applications. The icons listed below are used to highlight products with additional safety approvals.

- IEC/EN/ES 60601-1 3rd Edition (BF rated | 2×MOPP)
- EN60335-1 Approved (household appliance)
- EN50155 / EN61373 (railway / rugged applications)
- UL508 LISTED (industrial / DIN rail applications)
- HAZARDOUS LOCATION (ATEX / UL HazLoc Class I Div 2)

All TRACO POWER Products

We offer one of the most comprehensive portfolios of standard products with above-average availability from both factory stock and our network of stocking distributors. All our products offer industry leading performance characteristics and are safety qualified for general use in applications around the globe.

All Products

for General ITE / IoT / Industrial applications

- RoHS and Reach compliance
- ISO 9001 / ISO 14001 processes
- Industry-leading performance
- 3-year product warranty

IEC/EN/UL 62368-1 Approvals & CE Mark

STANDARD /DC DC CONVERTERS:


Medical / Reinforced 1 - 60 Watt


Railway / Ruggedized 3 - 300 Watt


Brick Converters 40 - 200 Watt


DIN Rail Industrial 20 - 200 Watt


Chassis Mount 6 - 60 Watt


Surface Mount 1 - 15 Watt


SIP Converters up to 12 Watts / 30 Amps


DIP Converters 1 - 60 Watt

STANDARD AC/DC POWER SUPPLIES:


Harsh Industry and Ex 50 - 600 Watt


Encapsulated Switchers 2 - 100 Watt


Metal Enclosure 15 - 1000 Watt


Building Automation 6 - 150 Watt


Medical Reinforced 5 - 850 Watt


Open Frame Design 15 - 850 Watt


Outdoor Supply 120 Watt


DIN Rail 6 - 600 Watt

Visit our website for documentation with links to our distributors for pricing and availability:

TRACO POWER Industry Specific Solutions

**our specialized products offer additional features
to enhance performance and satisfy the safety requirements
for industry-specific applications and environments**

Medical / Healthcare

Applied parts & BF rated applications

- Increased creepage & clearance
- Secondary / reinforced insulation
- EMC to IEC 60601-1-2 ed. 4
- Extended 5 year warranty

IEC/EN/ES 60601-1 3rd edition for 2 × MOPP
IEC/EN/UL 62368-1 Approvals & CE Mark

Railway / Ruggedized

Ruggedized DC/DC Converters

- Withstand thermal and mechanical shock
- Wide input ranges with brownout protection
- Increased reliability and longer lifetimes
- Inscreased galvanic Isolation

EN 50155 and EN 61373 Certified
IEC/EN/UL 62368-1 Approvals & CE Mark

Building Automation

Household, smart buildings and office applications.

- ErP Ready - low standby power
- Power conversion efficiency up to 94%
- Compact designs with highest power density
- Protection class II prepared

EN 60335-1 Approvals
IEC/EN/UL 62368-1 Approvals & CE Mark

Industrial Automation

For harsh and demanding environments.

- Metal case (shock and vibration proof)
- Remote On/Off and alarm output
- Optional modules for redundancy, extended hold-up and battery control

EN 60079-15 II3G EX
HAZLOC UL 121201 Class I; Div 2 (options)
IEC/EN/UL 62368-1 Approvals & CE Mark

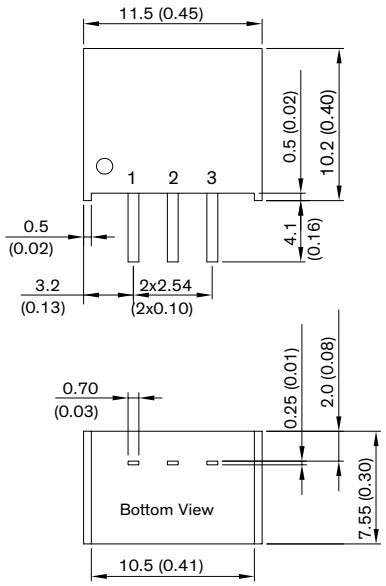
Non-Isolated / Point-of-Load Regulators (SIP-3 / TO-220 Pinout)

Our SIP-3 non-isolated / point-of-load regulators provide output currents up to 3 Amps with high-efficiency operation. Convection-cooled operation combined with the standard SIP 3 / TO-220 pinout, make these true alternatives to less efficient linear regulators.

SERIES	AMPS	DESCRIPTION	STATUS	PAGE
TSR 0.5	0.5	SIP-3 package, 4.75-32 Vin, pos.-pos. circuit, LM78 compatible	ACTIVE	6
TSR 0.6WI	0.6	SIP-3 package, 9-72 Vin, pos.-pos. circuit, LM78 compatible	**NEW**	6
TSN 1	1	SIP-3 package, -7.0 to -32 Vin, neg.-neg. circuit, LM78 compatible	ACTIVE	7
TSR 1	1	SIP-3 package, 4.6-36 Vin, pos.-pos. circuit, LM78 compatible	ACTIVE	7
TSR 1E	1	SIP-3 package, 6-36 Vin, pos.-pos. circuit, cost efficient, LM78 compatible	**NEW**	8
TSR 1WI	1	SIP-3 package, 9-72 Vin, pos.-pos. circuit, LM78 compatible	**NEW**	8
TSRN 1	1	SIP-3 package, 4.6-42 Vin, pos.-neg. circuit, LM78 compatible	ACTIVE	9
TSR 2	2	SIP-3 package, 3.0-36 Vin, pos.-pos. circuit, LM78 compatible	ACTIVE	9
TSR 3	3	SIP-3 package, 2.5-30 Vin, pos.-pos. circuit, open frame, LM78 compatible	ACTIVE	10

DC/DC: Non-Isolated / Point-of-Load Regulators (SIP-3 / TO-220 Pinout)

TSR 0.5 — 0.5 Amp

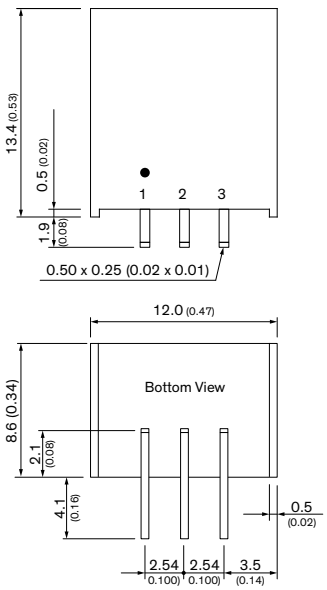


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSR 0.5-2415	4.75 - 32 VDC	1.5 VDC	500 mA	73 %
TSR 0.5-2418		1.8 VDC		82 %
TSR 0.5-2425		2.5 VDC		87 %
TSR 0.5-2433		3.3 VDC		91 %
TSR 0.5-2450	6.5 - 32 VDC	5 VDC		94 %
TSR 0.5-2465	8 - 32 VDC	6.5 VDC		95 %
TSR 0.5-2490	11 - 32 VDC	9 VDC		96 %
TSR 0.5-24120	15 - 32 VDC	12 VDC		97 %
TSR 0.5-24150	18 - 32 VDC	15 VDC		97 %

- 0.45 x 0.40 x 0.30” SIP-3 package
- Very high efficiency up to 97%
- Excellent line/load regulation
- Low standby current
- Temperature range -40 to 90°C
- Over-temperature protection
- Short circuit protection
- 3 year product warranty

Pinout	
Pin	Function
1	+Vin
2	GND
3	+Vout

TSR 0.6WI NEW! — 0.6 Amp

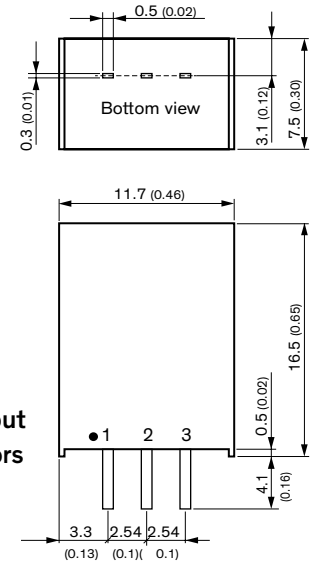


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSR 0.6-4833WI	9 - 72 VDC	3.3 VDC	600 mA	85 %
TSR 0.6-4850WI		5 VDC		89 %
TSR 0.6-4865WI		6.5 VDC		91 %
TSR 0.6-4890WI	14 - 72 VDC	9 VDC		92 %
TSR 0.6-48120WI	17 - 72 VDC	12 VDC		93 %
TSR 0.6-48150WI	20 - 72 VDC	15 VDC		94 %
TSR 0.6-48240WI	33 - 72 VDC	24 VDC	400 mA	94 %

- 0.53 x 0.47 x 0.34” SIP-3 Package
- Ultra-wide 8:1 input range: 9-72 VDC
- Covers a majority of standard bus- and battery voltages
- Up to 94% efficiency - No heatsink required
- Pin compatible with LMxx linear regulators
- Temperature range -40 to +85°C
- Low standby current
- Excellent line/load regulation
- Protection against short circuit, overvoltage and overtemperature
- 3 year product warranty

Pinout	
Pin	Function
1	+Vin
2	GND
3	+Vout

TSN 1 — 1 Amp

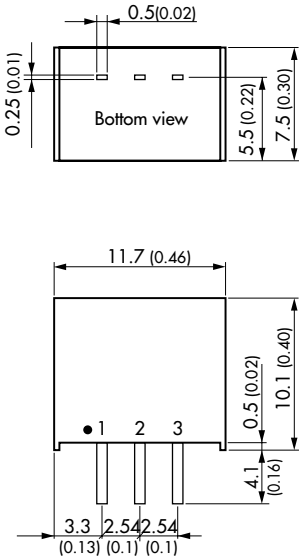


- 0.55 x 0.45 x 0.30” SIP-3 Package
- Non-isolated converter for negative output
- Pin compatible with LM79xx linear regulators
- No heatsink required
- High efficiency up to 96%
- Operation temp. range -40°C to +85°C
- Overload, short circuit and over-temperature protection
- Fixed switching frequency
- Wide input range up to -32 VDC
- Excellent line / load regulation
- Low standby current
- 3 year product warranty

Pinout	
Pin	**Single**
1	GND
2	-Vin
3	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSN 1-2450	-7.0 - -32 VDC	-5.0 VDC		91.5 %
TSN 1-2452	-7.0 - -32 VDC	-5.2 VDC		92.0 %
TSN 1-2460	-8.0 - -32 VDC	-6.0 VDC		92.5 %
TSN 1-2480	-10.5 - -32 VDC	-8.0 VDC	-1.0 A	94.0 %
TSN 1-2490	-11.5 - -32 VDC	-9.0 VDC		94.5 %
TSN 1-24120	-15 - -32 VDC	-12.0 VDC		96.0 %
TSN 1-24150	-18 - -32 VDC	-15.0 VDC		96.0 %

TSR 1 — 1 Watt



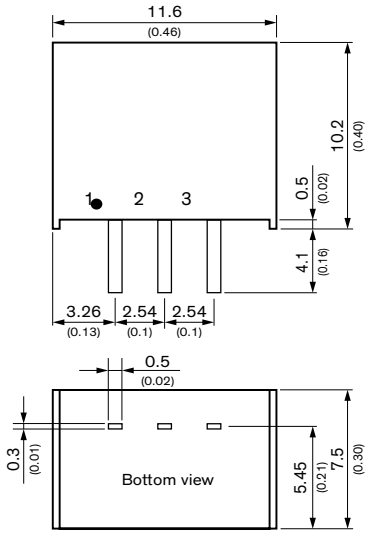
- 0.46 x 0.40 x 0.30” SIP 3 package
- Up to 96% efficiency – No heat-sink required
- Pin compatible with LMxx linear regulators
- SIP-package fits existing TO-220 footprint
- Built in filter capacitors
- Operation temp. range –40°C to +85°C
- Short circuit protection
- Wide input operating range
- Excellent line / load regulation
- Low standby current
- 3 year product warranty

Pinout	
Pin	**Single**
1	+Vin
2	GND
3	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSR1-2412	4.6 - 36 VDC	1.2 VDC	1 Amp	74%
TSR1-2415		1.5 VDC		78%
TSR1-2418		1.8 VDC		82%
TSR1-2425		2.5 VDC		87%
TSR1-2433	4.75 - 36 VDC	3.3 VDC		91%
TSR1-2450	6.5 - 36 VDC	5 VDC		94%
TSR1-2465	9 - 36 VDC	6.5 VDC		93%
TSR1-2490	12 - 36 VDC	9 VDC		95%
TSR1-2412	15 - 36 VDC	12 VDC		95%
TSR1-2415	18 - 36 VDC	15 VDC		96%

DC/DC: Non-Isolated / Point-of-Load Regulators (SIP-3 / TO-220 Pinout)

TSR 1E NEW! 1 Amp

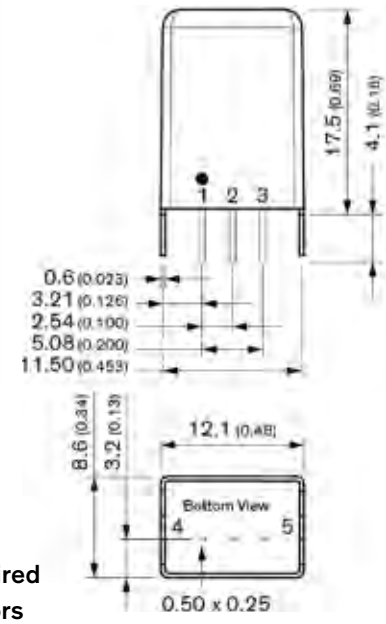


Model	Input Voltage Range	Output Voltage	Output Current max.	Efficiency
TSR 1-2433E	6-36 VDC	3.3 VDC	1000 mA	88 %
TSR 1-2450E	7-36 VDC	5 VDC	1000 mA	92 %

- 0.45 x 0.40 x 0.30" SIP-3 package
- Cost efficient design
- Up to 92% efficiency - No heat-sink required
- Pin compatible with LMxx linear regulators
- Built in filter capacitors
- Operation temp. range -40°C to +85°C
- Short circuit protection
- Wide input operating range
- Excellent line / load regulation
- Low standby current
- 3 year product warranty

Pinout	
Pin	Function
1	+ Vin
2	GND
3	+ Vout

TSR 1WI NEW! 1 Amp

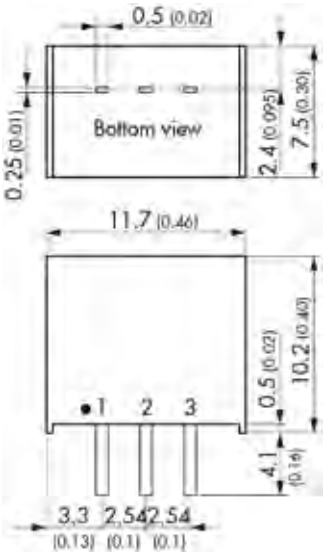


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSR 1-4833WI	9 - 72 VDC	3.3 VDC	1000 mA	83 %
TSR 1-4850WI		5 VDC		87 %
TSR 1-4865WI		6.5 VDC		88 %
TSR 1-4890WI	14 - 72 VDC	9 VDC		90 %
TSR 1-48120WI	17 - 72 VDC	12 VDC		93 %
TSR 1-48150WI	21 - 72 VDC	15 VDC		93 %
TSR 1-48240WI	33 - 72 VDC	24 VDC	700 mA	92 %

- 0.69 x 0.48 x 0.34" SIP-3 package
- Ultra-wide 8:1 input range: 9-72 VDC
- Covers a majority of standard bus and battery voltages
- Up to 93% efficiency - No heatsink required
- Pin compatible with LMxx linear regulators
- Temperature range -40 to +80°C
- Low standby current
- Excellent line/load regulation
- Protection against short circuit, overvoltage and overtemperature
- 3 year product warranty

Pinout	
Pin	Function
1	+Vin
2	GND
3	+Vout
4	Case pin
5	Case pin

TSRN 1 — 1 Amp

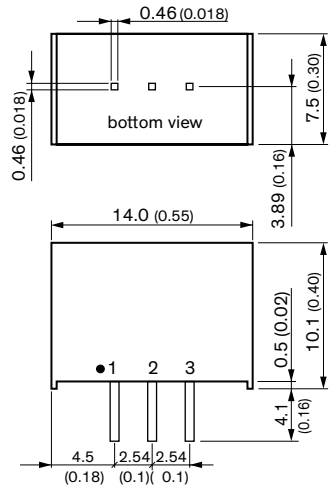


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSRN 1-2415	4.6 - 42 VDC	1.5 VDC	1000 mA	77 %
TSRN 1-2418		1.8 VDC		81 %
TSRN 1-2425		2.5 VDC		84 %
TSRN 1-2433		3.3 VDC		88 %
TSRN 1-2450	6.5 - 42 VDC	5 VDC		92 %
TSRN 1-2465	8 - 42 VDC	6.5 VDC		93 %
TSRN 1-2490	10.5 - 42 VDC	9 VDC		95 %
TSRN 1-24120	13.5 - 42 VDC	12 VDC		95 %
TSRN 1-24150	16.5 - 42 VDC	15 VDC		95 %

- 0.46 x 0.40 x 0.30 SIP-3 package
- Fits existing TO-220 footprint
- Suitable for positive & negative output circuit
- Pin compatible with LMxx linear regulators
- Built in filter capacitors
- Operation temp. range -40°C to +85°C
- No heat-sink required
- Over-temperature & short circuit protection
- Wide input range up to 42 VDC
- Excellent line/load regulation
- 3 year product warranty

Pinout	
Pin	Function
1	+Vin
2	GND
3	+Vout

TSR 2 — 2 Amp

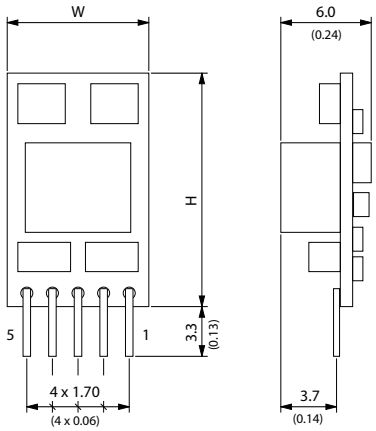


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSR 2-0512	3 - 5.5 VDC	1.2 VDC	2000 mA	90%
TSR 2-0515		1.5 VDC		91%
TSR 2-0518		1.8 VDC		92%
TSR 2-0525	3.8 - 5.5 VDC	2.5 VDC		95%
TSR 2-2412	4.6 - 36 VDC	1.2 VDC		84%
TSR 2-2415		1.5 VDC		86%
TSR 2-2418		1.8 VDC		87%
TSR 2-2425		2.5 VDC		89%
TSR 2-2433	4.75 - 36 VDC	3.3 VDC		91%
TSR 2-2450	6.5 - 36 VDC	5 VDC		94%
TSR 2-2465	9 - 36 VDC	6.5 VDC		94%
TSR 2-2490	12 - 36 VDC	9 VDC		95%
TSR 2-24120	15 - 36 VDC	12 VDC		95%
TSR 2-24150	18 - 36 VDC	15 VDC		96%

- 0.55 x 0.30 x 0.40” SIP-3 Package
- Up to 96% efficiency - No heat-sink required
- Pin compatible with LMxx linear regulators
- Built in filter capacitors
- Temperature range -40°C to +85°C
- Excellent line / load regulation
- Short circuit protection
- 3 year product warranty

Pinout	
Pin	Function
1	+Vin
2	GND
3	+Vout

TSR 3 — 3 Amp



5 & 12Vin models measure 0.61 x 0.37”
24 Vin models measure 0.65 x 0.41”

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSR 3-0533	2.5 - 5.5 VDC	0.6 - 3.3V	3.00 A	95%
TSR 3-1250	4.5 - 14 VDC	0.6 - 6.0 V		93%
TSR3-2450	10 - 30 VDC	3.0 - 6.0 V		91%
TSR 3-24150	10 - 30 VDC	5.0 - 15 V		95%

- High performance
- 3Amp switching regulator
- Suitable for positive & negative output
- High efficiency up to 95%
- Adjustable output voltages
- Wide input voltage ranges
- Short circuit protection
- Remote On/Off
- Low output ripple &noise
- 3 year product warranty

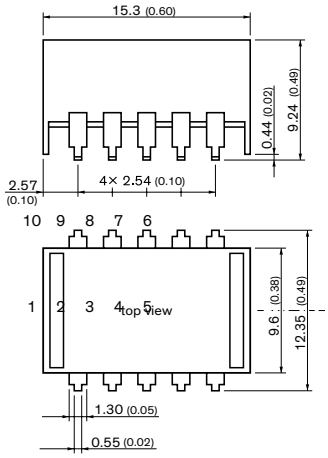
Pinout		
Pin	positive	negative
1	Remote On/Off	
2	+Vin (Vcc)	
3	GND	–Vout
4	+Vout	GND
5	Trim	

Non-Isolated / Point-of-Load Regulators (Surface Mount)

Our SMD non-isolated / point of load regulators provide output currents up to 1 Amp with high efficiency operation. Convection-cooled operation surface mount packaging make these ideal power solutions for a broad range of applications.

SERIES	AMPS	DESCRIPTION	STATUS	PAGE
TSR 0.5SM	0.5	SMD (DIP-10) package, 4.75-32 VDC input, pos.-pos. circuit	ACTIVE	11
TSR 1SM	1	SMD (DIP-10) package, 3.0-36 VDC input, pos.-pos. circuit	ACTIVE	12
TSRN 1SM	1	SMD (DIP-10) package, 3.0-42 VDC input, pos.-neg. circuit	ACTIVE	12

TSR 0.5SM — 0.5 Amp



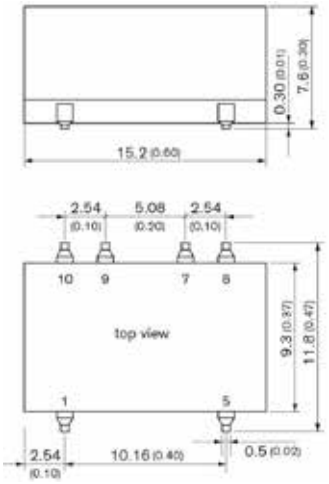
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSR 0.5-2415SM	**4.75 - 32 VDC**	1.5 VDC	500 mA	73 %
TSR 0.5-2418SM		1.8 VDC		82 %
TSR 0.5-2425SM		2.5 VDC		87 %
TSR 0.5-2433SM		3.3 VDC		91 %
TSR 0.5-2450SM	**6.5 - 32 VDC**	5 VDC		94 %
TSR 0.5-2465SM	**8 - 32 VDC**	6.5 VDC		95 %
TSR 0.5-2490SM	**11 - 32 VDC**	9 VDC		96 %
TSR 0.5-24120SM	**15 - 32 VDC**	12 VDC		97 %
TSR 0.5-24150SM	**18 - 32 VDC**	15 VDC		97 %

- 0.60 x 0.49 x 0.49” SMD package
- Very high efficiency up to 97%
- Excellent line / load regulation
- Low standby current
- Operating temperature range -40 to 90°C
- Over-temperature and short circuit protection
- Remote On/Off input
- Adjustable output voltage
- Moisture sensitivity level 2 as per IPC J-STD-033C
- 3 year product warranty

Pinout	
Pin	**Function**
1	+Vin
2	+Vin
3	GND
4	+Vout
5	+Vout
6	Trim
7	GND
8	GND
9	GND
10	Remote On/Off

Visit our website for documentation with links to our distributors for pricing and availability:

TSR 1SM — 1 Amp

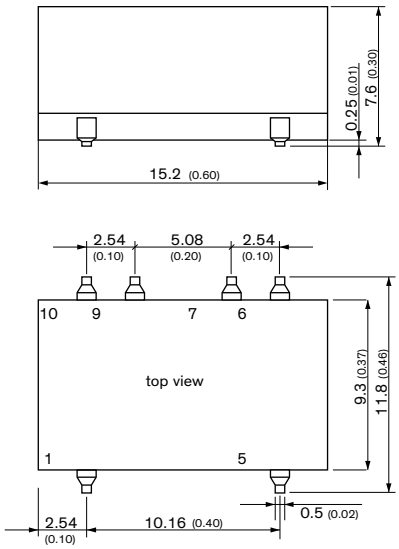


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSR 1-0512SM	3 - 5.5 VDC	1.2 VDC	1000 mA	91 %
TSR 1-0515SM		1.5 VDC		92 %
TSR 1-0518SM		1.8 VDC		93 %
TSR 1-0525SM	3.8 - 5.5 VDC	2.5 VDC		95 %
TSR 1-2412SM	4.6 - 36 VDC	1.2 VDC		74 %
TSR 1-2415SM		1.5 VDC		79 %
TSR 1-2418SM		1.8 VDC		82 %
TSR 1-2425SM		2.5 VDC		87 %
TSR 1-2433SM	4.75 - 36 VDC	3.3 VDC		91 %
TSR 1-2450SM	6.5 - 36 VDC	5 VDC		94 %
TSR 1-2465SM	9 - 36 VDC	6.5 VDC		94 %
TSR 1-2490SM	12 - 36 VDC	9 VDC		95 %
TSR 1-24120SM	15 - 36 VDC	12 VDC		95 %
TSR 1-24150SM	18 - 36 VDC	15 VDC		96 %

- 0.60 x 0.47 x0.30” SMD package
- Up to 96% efficiency
- No thermal layer required
- Built in filter capacitors
- Operation temp. range -40°C to +85°C
- Short circuit protection
- Wide input operating range
- Excellent line / load regulation
- Low standby current
- 3 year product warranty

Pinout	
Pin	Function
1	+Vin
5	+Vout
6	Trim
7	GND
9	GND
10	Remote On/Off

TSRN 1SM — 1 Amp



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TSRN 1-0525SM	3 - 5.5 VDC	2.5 VDC	1000 mA	96 %
TSRN 1-2433SM	4.6 - 42 VDC	3.3 VDC		88 %
TSRN 1-2450SM	6.5 - 42 VDC	5 VDC		92 %
TSRN 1-2490SM	10.5 - 42 VDC	9 VDC		95 %
TSRN 1-2490SM	13.5 - 42 VDC	12 VDC		95 %
TSRN 1-24150SM	16.5 - 42 VDC	15 VDC		96 %

- 0.60 x 0.46 x 0.30” SMD package
- Positive & negative output circuit
- Adjustable output voltage
- Wide input up to 42 VDC
- Remote On/Off input
- Built in filter capacitors
- Operation temp. range -40°C to +85°C
- Excellent line/load regulation
- Low standby current
- 3 year product warranty

Pinout	
Pin	Function
1	+Vin
5	+Vout
6	Trim
7	GND
9	GND
10	Remote On/Off

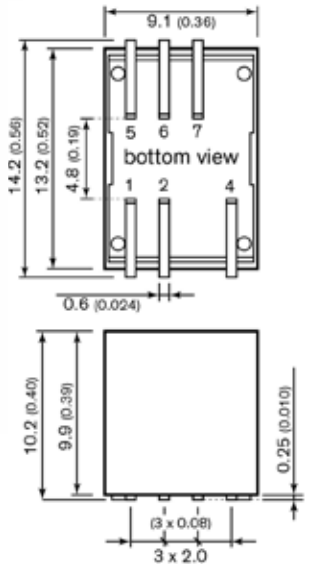
DC/DC: Isolated Surface Mount Package

TRACO POWER's range of isolated DC/DC converters in SMD package consists of products from 1 to 5W with unregulated or regulated outputs. All models provide high pin accuracy and are qualified for automated pick-and-place machines and withstand lead-free reflow solder processes and comply with IPC J-STD-020D standard.

SERIES	DESCRIPTION		STATUS	WATTS	PAGE
TDN 1WISM	4:1 input, regulated, high power density, encapsulated		ACTIVE	1	14
TES 1	DIP-10,±10% input, unregulated		ACTIVE	1	14
TES 1N	SMD (DIP-10) package, ±10% input, unregulated		**IN DEVELOPMENT**	1	15
TES 1V	DIP-12,±10% input, unregulated, 3000 VDC I/O-isolation,plastic case		ACTIVE	1	15
TMR 1SM	DIP-14,2:1 input, regulated		ACTIVE	1	16
TRI 1SM	±10% input, regulated, 480 VAC working voltage, encapsulated	⊕	ACTIVE	1	16
TRN 1SM	2:1 input, regulated, cost efficient, encapsulated		**IN DEVELOPMENT**	1	17
TDR 2SM	DIP-14,2:1 input, regulated, overmold (washable)		ACTIVE	2	17
TDR 2WISM	DIP-14,4:1 input, regulated, overmold (washable)		ACTIVE	2	18
TES 2H	DIP-10,±10% input, unregulated		ACTIVE	2	18
TES 2M	DIP-16,±10% input, unregulated, 4000 VAC I/O-isolation(reinforced)	⊕	ACTIVE	2	19
TIM 2SM	DIP-16, 2:1 input, 5000 VAC I/O-isolation, encapsulated	⊕	ACTIVE	2	19
TMR 2 WISM	SMD (DIP-14) package, 4:1 input, regulated		ACTIVE	2	20
TRS 2	2:1 input, regulated, cost efficient, encapsulated		ACTIVE	2	20
TDN 3WISM	4:1 input, regulated, high power density, encapsulated		ACTIVE	3	21
TDR 3SM	DIP-14,2:1 input, regulated, overmold (washable)		ACTIVE	3	21
TDR 3WISM	DIP-14,4:1 input, regulated, overmold (washable)		ACTIVE	3	22
TMR 3WIM	SMD (DIP-14) package, 4:1 input, regulated		ACTIVE	3	22
TRN 3SM	2:1 input, regulated, cost efficient, encapsulated		ACTIVE	3	23
TIM 3.5SM	DIP-16, 2:1 input, 5000 VAC I/O-isolation, encapsulated	⊕	ACTIVE	3.5	23
TDN 5WISM	4:1 input, regulated, high power density, encapsulated		ACTIVE	5	24

APPS KEY: ⊕ = IEC/EN/ES 60601-1 (2×MOPP Approved)

TDN 1WISM — 1 Watt



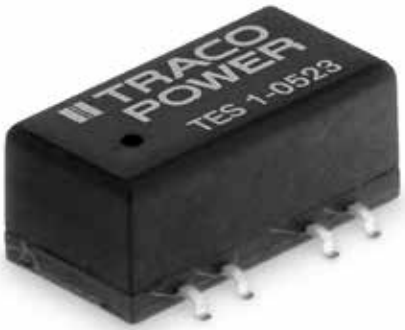
- 0.56 x 0.36 x 0.40” SMD package
- Fully regulated outputs
- I/O-isolation 1600 VDC
- Temperature range -40°C to +90°C without derating
- Short circuit protection
- Remote On/Off
- 3 year product warranty
- Designed to meet UL 62368-1
- 3 year product warranty

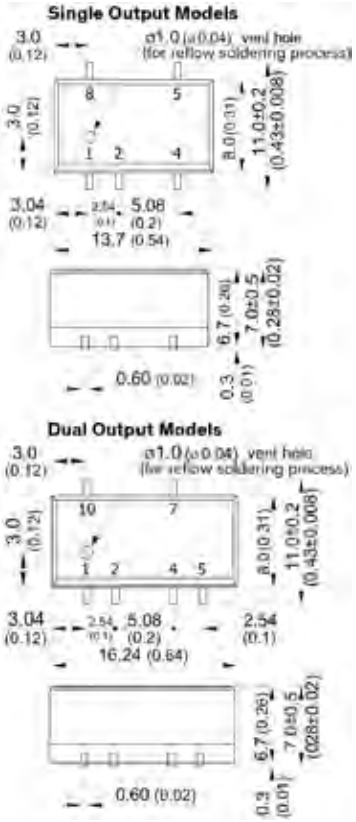
Pinout

Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
4	On/Off	On/Off
5	no con.	-Vout
6	-Vout	Common
7	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDN 1-1210WISM	4.5 - 18 VDC (12 VDC nominal)	3.3 VDC	300 mA	77 %
TDN 1-1211WISM		5.0 VDC	200 mA	79 %
TDN 1-1219WISM		9.0 VDC	112 mA	79 %
TDN 1-1212WISM		12 VDC	90 mA	81 %
TDN 1-1213WISM		15 VDC	70 mA	81 %
TDN 1-1215WISM		24 VDC	45 mA	80 %
TDN 1-1221WISM		± 5.0 VDC	±100 mA	77 %
TDN 1-1222WISM		±12 VDC	±45 mA	80 %
TDN 1-1223WISM		±15 VDC	±35 mA	81 %
TDN 1-2410WISM	9 - 36 VDC (24 VDC nominal)	3.3 VDC	300 mA	76 %
TDN 1-2411WISM		5.0 VDC	200 mA	78 %
TDN 1-2419WISM		9.0 VDC	112 mA	79 %
TDN 1-2412WISM		12 VDC	90 mA	81 %
TDN 1-2413WISM		15 VDC	70 mA	81 %
TDN 1-2415WISM		24 VDC	45 mA	80 %
TDN 1-2421WISM		± 5.0 VDC	±100 mA	77 %
TDN 1-2422WISM		±12 VDC	±45 mA	80 %
TDN 1-2423WISM		±15 VDC	±35 mA	81 %
TDN 1-4810WISM	18 - 75 VDC (48 VDC nominal)	3.3 VDC	300 mA	75 %
TDN 1-4811WISM		5.0 VDC	200 mA	78 %
TDN 1-4819WISM		9.0 VDC	112 mA	79 %
TDN 1-4812WISM		12 VDC	90 mA	81 %
TDN 1-4813WISM		15 VDC	70 mA	81 %
TDN 1-4815WISM		24 VDC	45 mA	80 %
TDN 1-4821WISM		± 5.0 VDC	±100 mA	77 %
TDN 1-4822WISM		±12 VDC	±45 mA	80 %
TDN 1-4823WISM		±15 VDC	±35 mA	81 %

TES 1 — 1 Watt





- 0.54 x 0.43 x 0.26” Single Outputs
- 0.64 x 0.43 x 0.26” Dual Outputs
- I/O isolation 1500 VDC
- Unregulated device
- Single and dual output models
- Input voltage 5, 12 and 24 VDC
- High efficiency up to 80%
- Temperature range -40°C to +90°C
- High accuracy of pin co-planarity
- Qualified for leadfree reflow solder process according IPC/JEDEC (J-STD-020C)
- Available in tape and reel package
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TES 1-0510	5 VDC ±10% (nominal 5 VDC)	3.3 VDC	300 mA	73 %
TES 1-0511		5 VDC	200 mA	78 %
TES 1-0519		9 VDC	110 mA	78 %
TES 1-0512		12 VDC	85 mA	78 %
TES 1-0513		15 VDC	65 mA	79 %
TES 1-0521		±5 VDC	±100 mA	74 %
TES 1-0522		±12 VDC	±40 mA	78 %
TES 1-0523		±15 VDC	±35 mA	78 %
TES 1-1211	12 VDC ±10% (nominal 12 VDC)	5 VDC	200 mA	76 %
TES 1-1219		9 VDC	110 mA	78 %
TES 1-1212		12 VDC	85 mA	79 %
TES 1-1213		15 VDC	65 mA	80 %
TES 1-1221		±5 VDC	±100 mA	74 %
TES 1-1222		±12 VDC	±40 mA	78 %
TES 1-1223		±15 VDC	±35 mA	79 %
TES 1-2411	24 VDC ±10% (nominal 24 VDC)	5 VDC	200 mA	78 %
TES 1-2419		9 VDC	110 mA	77 %
TES 1-2412		12 VDC	85 mA	77 %
TES 1-2413		15 VDC	65 mA	79 %
TES 1-2421		±5 VDC	±100 mA	73 %
TES 1-2422		±12 VDC	±40 mA	78 %
TES 1-2423		±15 VDC	±35 mA	78 %

Pinout

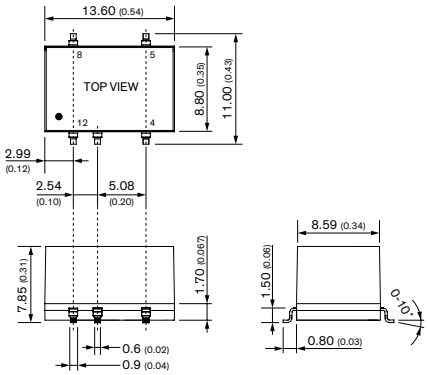
Pin	Single	Pin	Dual
1	-Vin (GND)	1	-Vin (GND)
2	+Vin (Vcc)	2	+Vin (Vcc)
4	-Vout	4	Common
5	+Vout	5	-Vout
8	*NC	7	+Vout
-		10	*NC

* Pin to be isolated from circuitry

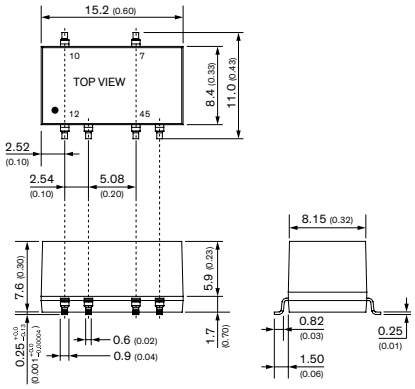
TES 1N — IN DEVELOPMENT — 1 Watt

- Singles: 0.54 x 0.43 x 0.31” package
- Duals: 0.60 x 0.33 x 0.30” package
- Cost efficient design
- Unregulated device
- I/O isolation 1500 VDC
- -40°C to +95°C without derating
- Efficiency up to 78%
- Short circuit protection
- IPC/JEDEC J-STD-020C lead free reflow solder process
- 3-year product warranty

Single Output Models



Dual Output Models



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TES 1-0511N	5 VDC ±10% (nominal 5VDC)	5 VDC	200 mA	72%
TES 1-0519N		9 VDC	110 mA	77%
TES 1-0512N		12 VDC	83mA	78%
TES 1-0513N		15 VDC	67 mA	78%
TES 1-0521N		±5 VDC	±100 mA	72%
TES 1-0522N		±12 VDC	±42 mA	78%
TES 1-0523N		±15 VDC	±34 mA	78%
TES 1-1211N	12 VDC ±10% (nominal 12VDC)	5 VDC	200 mA	73%
TES 1-1219N		9 VDC	110 mA	75%
TES 1-1212N		12 VDC	83mA	77%
TES 1-1213N		15 VDC	67 mA	77%
TES 1-1221N		±5 VDC	±100 mA	73%
TES 1-1222N		±12 VDC	±42 mA	77%
TES 1-1223N		±15 VDC	±34 mA	77%
TES 1-2411N	24 VDC ±10% (nominal 24VDC)	5 VDC	200 mA	73%
TES 1-2419N		9 VDC	110 mA	75%
TES 1-2412N		12 VDC	83mA	77%
TES 1-2413N		15 VDC	67 mA	77%
TES 1-2421N		±5 VDC	±100 mA	73%
TES 1-2422N		±12 VDC	±42 mA	77%
TES 1-2423N		±15 VDC	±34 mA	77%

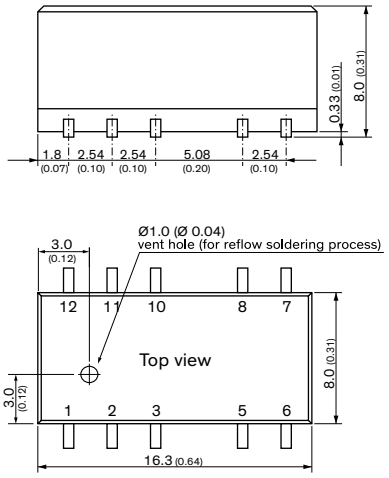
Pinout

Pin	Single	Dual
1	–Vin	–Vin
2	+Vin	+Vin
3	no Pin	no Pin
4	–Vout	Common
5	+Vout	–Vout
6	no Pin	no Pin
7	no Pin	+Vout
8	NC	no Pin
9	–	no Pin
10	–	NC

* Pin to be isolated from circuitry

TES 1V — 1 Watt

- 0.64 x 0.31 x 0.31” SMD package
- I/O isolation voltage 3000 VDC
- Unregulated device
- Single and dual output models
- High efficiency up to 80%
- Temperature range -40°C to +85°C
- High accuracy of pin co-planarity
- Qualified for leadfree reflow solder according IPC/JEDEC J-STD-020D
- Available in tape and reel package
- 3 year product warranty

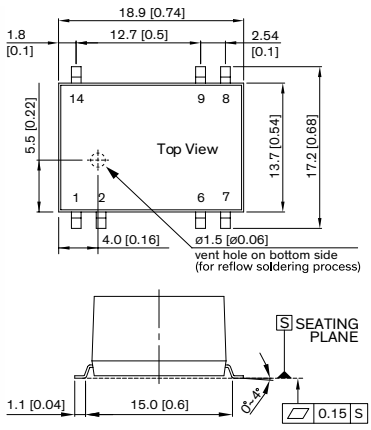


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TES 1-0510V	5 VDC ±10% (nominal 5 VDC)	3.3 VDC	260 mA	72 %
TES 1-0511V		5.0 VDC	200 mA	75 %
TES 1-0512V		12 VDC	84 mA	79 %
TES 1-0513V		15 VDC	67 mA	80 %
TES 1-0521V		±5 VDC	±100 mA	75 %
TES 1-0522V		±12 VDC	±42 mA	79 %
TES 1-0523V		±15 VDC	±34 mA	80 %
TES 1-1210V	12 VDC ±10% (nominal 12 VDC)	3.3 VDC	260 mA	73 %
TES 1-1211V		5.0 VDC	200 mA	76 %
TES 1-1212V		12 VDC	84 mA	80 %
TES 1-1213V		15 VDC	67 mA	81 %
TES 1-1221V		±5 VDC	±100 mA	76 %
TES 1-1222V		±12 VDC	±42 mA	80 %
TES 1-1223V		±15 VDC	±34 mA	80 %
TES 1-2410V	24 VDC ±10% (nominal 24 VDC)	3.3 VDC	260 mA	70 %
TES 1-2411V		5.0 VDC	200 mA	73 %
TES 1-2412V		12 VDC	84 mA	79 %
TES 1-2413V		15 VDC	67 mA	79 %
TES 1-2421V		±5 VDC	±100 mA	73 %
TES 1-2422V		±12 VDC	±42 mA	79 %
TES 1-2423V		±15 VDC	±34 mA	79 %

Pinout

Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
2	+Vin	+Vin
3	No con.	No con.
5	-Vout	Common
6	No con.	-Vout
7	No con.	No con.
8	+Vout	+Vout
10	No con.	No con.
11	No con.	No con.
12	No con.	No con.

TMR 1SM — 1 Watt

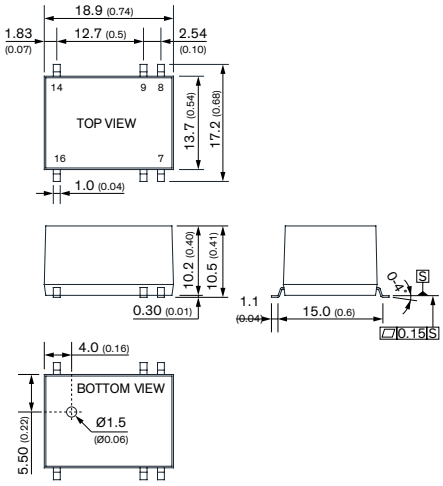


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 1-0511SM	**4.5 - 9 VDC** (5 VDC nom.)	5 VDC	200 mA	78 %
TMR 1-0512SM		12 VDC	83 mA	79 %
TMR 1-0513SM		15 VDC	67 mA	81 %
TMR 1-0522SM		+12 VDC	42 mA	79 %
TMR 1-0523SM		+15 VDC	33 mA	80 %
TMR 1-1211SM	**9 - 18 VDC** (12 VDC nom.)	5 VDC	200 mA	79 %
TMR 1-1212SM		12 VDC	83 mA	79 %
TMR 1-1213SM		15 VDC	67 mA	82 %
TMR 1-1222SM		+12 VDC	42 mA	81 %
TMR 1-1223SM		+15 VDC	33 mA	80 %
TMR 1-2411SM	**18 - 36 VDC** (24 VDC nom.)	5 VDC	200 mA	79 %
TMR 1-2412SM		12 VDC	83 mA	82 %
TMR 1-2413SM		15 VDC	67 mA	82 %
TMR 1-2422SM		+12 VDC	42 mA	82 %
TMR 1-2423SM		+15 VDC	33 mA	82 %
TMR 1-4811SM	**36 - 75 VDC** (48 VDC nom.)	5 VDC	200 mA	79 %
TMR 1-4812SM		12 VDC	83 mA	80 %
TMR 1-4813SM		15 VDC	67 mA	80 %
TMR 1-4822SM		+12 VDC	42 mA	81 %
TMR 1-4823SM		+15 VDC	33 mA	81 %

- 0.74 x 0.54 x 0.33” SMD package
- Wide 2:1 input voltage range
- Fully regulated outputs
- Cost optimised design
- No minimum load required
- Continuous short circuit protection
- Temperature range -40°C to +85°C
- I/O isolation 1500 VDC
- Remote On/Off control
- 3 year product warranty

Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	Remote	Remote
6	NTC	Common
7	NTC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin	+Vin

TRI 1SM — IN DEVELOPMENT — 1 Watt



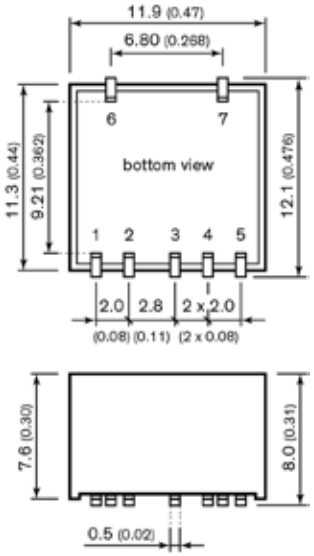
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRI 1-0511SM	5 VDC ±10% (nominal 5VDC)	5 VDC	200 mA	76%
TRI 1-0512SM		12 VDC	84 mA	80%
TRI 1-0513SM		15 VDC	68 mA	83%
TRI 1-0522SM		±12 VDC	±42 mA	80%
TRI 1-0523SM		±15 VDC	±33 mA	84%
TRI 1-1211SM	12 VDC ±10% (nominal 12VDC)	5 VDC	200 mA	76%
TRI 1-1212SM		12 VDC	84 mA	79%
TRI 1-1213SM		15 VDC	68 mA	80%
TRI 1-1222SM		±12 VDC	±42 mA	79%
TRI 1-1223SM		±15 VDC	±33 mA	80%
TRI 1-2411SM	24 VDC ±10% (nominal 24VDC)	5 VDC	200 mA	76%
TRI 1-2412SM		12 VDC	84 mA	80%
TRI 1-2413SM		15 VDC	68 mA	80%
TRI 1-2422SM		±12 VDC	±42 mA	80%
TRI 1-2423SM		±15 VDC	±33 mA	80%

- 0.74 x 0.68 x 0.41” SMD package
- Reinforced I/O-isolation 3000 VAC
- 480 VAC working voltage
- Ultra-high isolation peak voltage 8000 VDC (1s)
- Operating temperature range –40 to +85 °C without derating
- Unregulated device
- ±10% Input 5 to 24 VDC
- Efficiency up to 84%
- Short circuit protection
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin	–Vin
6	NC	Common
7	NC	–Vout
8	+Vout	+Vout
9	–Vout	Common
14	+Vin	+Vin

* Pin to be isolated from circuitry

TRN 1SM — 1 Watt



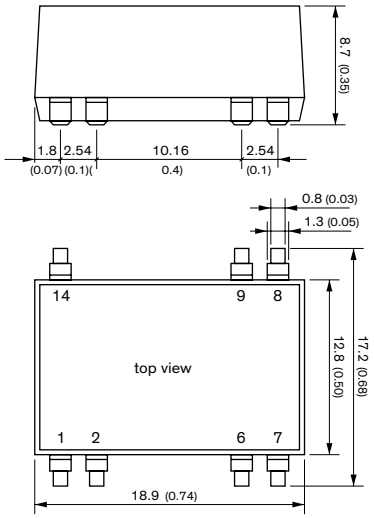
- 0.47 x 0.31 x 0.45” SMD package
- Fully regulated outputs
- 2:1 Input Voltage range
- I/O-isolation 1600 VDC
- Temperature range -40°C to +90°C without derating
- Short circuit protection
- 3 year product warranty
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout

Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	+Vout	+Vout
4	no pin	common
5	-Vout	-Vout
6	NC	NC
7	NC	NC

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRN 1-0510SM	**4.5 - 13.2 VDC** (9 VDC nominal)	3.3 VDC	300 mA	77 %
TRN 1-0511SM		5.0 VDC	200 mA	79 %
TRN 1-0512SM		12 VDC	90 mA	81 %
TRN 1-0513SM		15 VDC	70 mA	82 %
TRN 1-0515SM		24 VDC	45 mA	83 %
TRN 1-0521SM		± 5.0 VDC	±100 mA	79 %
TRN 1-0522SM		±12 VDC	±45 mA	83 %
TRN 1-0523SM		±15 VDC	±35 mA	80 %
TRN 1-1210SM	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	300 mA	77 %
TRN 1-1211SM		5.0 VDC	200 mA	80 %
TRN 1-1212SM		12 VDC	90 mA	81 %
TRN 1-1213SM		15 VDC	70 mA	83 %
TRN 1-1215SM		24 VDC	45 mA	83 %
TRN 1-1221SM		± 5.0 VDC	±100 mA	79 %
TRN 1-1222SM		±12 VDC	±45 mA	83 %
TRN 1-1223SM		±15 VDC	±35 mA	80 %
TRN 1-2410SM	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	300 mA	77 %
TRN 1-2411SM		5.0 VDC	200 mA	81 %
TRN 1-2412SM		12 VDC	90 mA	82 %
TRN 1-2413SM		15 VDC	70 mA	83 %
TRN 1-2415SM		24 VDC	45 mA	82 %
TRN 1-2421SM		± 5.0 VDC	±100 mA	79 %
TRN 1-2422SM		±12 VDC	±45 mA	82 %
TRN 1-2423SM		±15 VDC	±35 mA	80 %
TRN 1-4810SM	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	300 mA	77 %
TRN 1-4811SM		5.0 VDC	200 mA	78 %
TRN 1-4812SM		12 VDC	90 mA	80 %
TRN 1-4813SM		15 VDC	70 mA	81 %
TRN 1-4815SM		24 VDC	45 mA	81 %
TRN 1-4821SM		± 5.0 VDC	±100 mA	78 %
TRN 1-4822SM		±12 VDC	±45 mA	81 %
TRN 1-4823SM		±15 VDC	±35 mA	79 %

TDR 2SM — 2 Watt



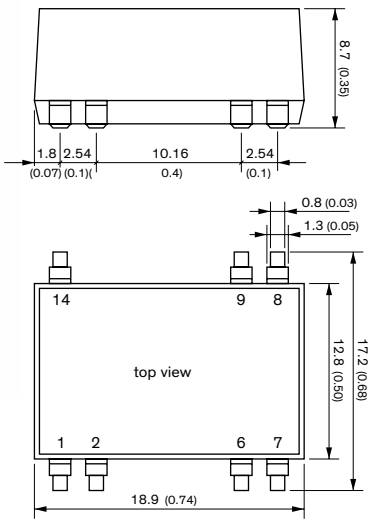
- 0.74 x 0.50 x 0.35” SMD package
- Wide 2:1 input voltage range
- Fully regulated outputs
- Low ripple and noise
- No minimum load required
- Temperature range -40°C to +85°C without derating
- I/O isolation 1600 VDC
- Continuous short-circuit protection
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty

Pinout

Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDR 2-0511SM	**4.5 - 9.0 VDC** (5 VDC nominal)	5.0 VDC	400 mA	80 %
TDR 2-0512SM		12 VDC	167 mA	81 %
TDR 2-0513SM		15 VDC	134 mA	83 %
TDR 2-0522SM		±12 VDC	±83 mA	81 %
TDR 2-0523SM		±15 VDC	±67 mA	82 %
TDR 2-1211SM	**9 - 18 VDC** (12 VDC nominal)	5.0 VDC	400 mA	81 %
TDR 2-1212SM		12 VDC	167 mA	81 %
TDR 2-1213SM		15 VDC	134 mA	84 %
TDR 2-1222SM		±12 VDC	±83 mA	83 %
TDR 2-1223SM		±15 VDC	±67 mA	82 %
TDR 2-2411SM	**18 - 36 VDC** (24 VDC nominal)	5.0 VDC	400 mA	81 %
TDR 2-2412SM		12 VDC	167 mA	84 %
TDR 2-2413SM		15 VDC	134 mA	84 %
TDR 2-2422SM		±12 VDC	±83 mA	84 %
TDR 2-2423SM		±15 VDC	±67 mA	84 %
TDR 2-4811SM	**36 - 75 VDC** (48 VDC nominal)	5.0 VDC	400 mA	81 %
TDR 2-4812SM		12 VDC	167 mA	82 %
TDR 2-4813SM		15 VDC	134 mA	82 %
TDR 2-4822SM		±12 VDC	±83 mA	83 %
TDR 2-4823SM		±15 VDC	±67 mA	83 %

TDR 2WISM — 2 Watt

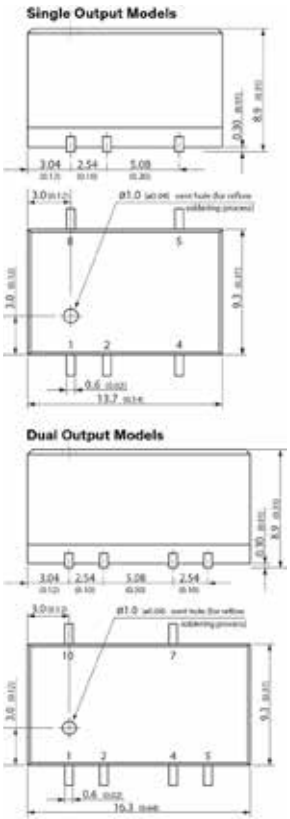


- 0.74 x 0.50 x 0.35” DIP package
- Ultra-wide 4:1 input voltage range
- Fully regulated outputs
- Low ripple and noise 30mV pk-pk
- No minimum load required
- Temperature range -40°C to +85°C without derating
- I/O isolation 1600 VDC
- Continuous short-circuit protection
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDR 2-1211WISM	**4.5 - 18 VDC** (12 VDC nominal)	5.0 VDC	400 mA	79 %
TDR 2-1212WISM		12 VDC	167 mA	80 %
TDR 2-1213WISM		15 VDC	134 mA	81 %
TDR 2-1222WISM		±12 VDC	±83 mA	81 %
TDR 2-1223WISM		±15 VDC	±67 mA	81 %
TDR 2-2411WISM	**9 - 36 VDC** (24 VDC nominal)	5.0 VDC	400 mA	79 %
TDR 2-2412WISM		12 VDC	167 mA	80 %
TDR 2-2413WISM		15 VDC	134 mA	82 %
TDR 2-2422WISM		±12 VDC	±83 mA	81 %
TDR 2-2423WISM		±15 VDC	±67 mA	81 %
TDR 2-4811WISM	**18 - 75 VDC** (48 VDC nominal)	5.0 VDC	400 mA	78 %
TDR 2-4812WISM		12 VDC	167 mA	81 %
TDR 2-4813WISM		15 VDC	134 mA	82 %
TDR 2-4822WISM		±12 VDC	±83 mA	81 %
TDR 2-4823WISM		±15 VDC	±67 mA	81 %

TES 2H — 2 Watt



- Singles: 0.54 x 0.37 x 0.35” package
- Duals: 0.64 x 0.37 x 0.35” package
- I/O isolatoin voltage 1500 VDC
- Unregulated device
- Single and dual output models
- Input voltage 5, 12 and 24 VDC
- High efficiency up to 80%
- Operating Temperature range -40 to +85°C
- High accuracy of pin co-planarity
- Qualified for leadfree reflow solder process according IPC/JEDEC J-STD-020D
- Available in tape and reel package
- 3 year product warranty

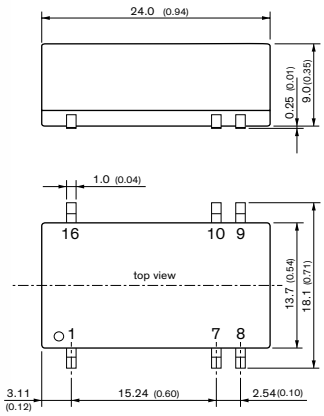
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TES 2-0510H	**5 VDC ±10%** (5 VDC nominal)	3.3 VDC	500 mA	70 %
TES 2-0511H		5.0 VDC	400 mA	73 %
TES 2-0512H		12 VDC	165 mA	77 %
TES 2-0521H		±5 VDC	±200 mA	74 %
TES 2-0522H		±12 VDC	±83 mA	76 %
TES 2-0523H		±15 VDC	±66 mA	76 %
TES 2-1210H	**12 VDC ±10%** (12 VDC nominal)	3.3 VDC	500 mA	72 %
TES 2-1211H		5.0 VDC	400 mA	75 %
TES 2-1212H		12 VDC	165 mA	79 %
TES 2-1222H		±12 VDC	±83 mA	80 %
TES 2-1223H		±15 VDC	±66 mA	80 %
TES 2-2410H	**24 VDC ±10%** (24 VDC nominal)	3.3 VDC	500 mA	72 %
TES 2-2411H		5.0 VDC	400 mA	75 %
TES 2-2412H		12 VDC	165 mA	79 %
TES 2-2422H		±12 VDC	±83 mA	79 %
TES 2-2423H		±15 VDC	±66 mA	79 %

Pinout			
Pin	**Single**	**Pin**	**Dual**
1	-Vin (GND)	1	-Vin (GND)
2	+Vin (Vcc)	2	+Vin (Vcc)
4	-Vout	4	Common
5	+Vout	5	-Vout
8	*NC	7	+Vout
-		10	*NC

* Pin to be isolated from circuitry

TES 2M — 2 Watt

IEC/EN/ES 60601-1 (2×MOOP)



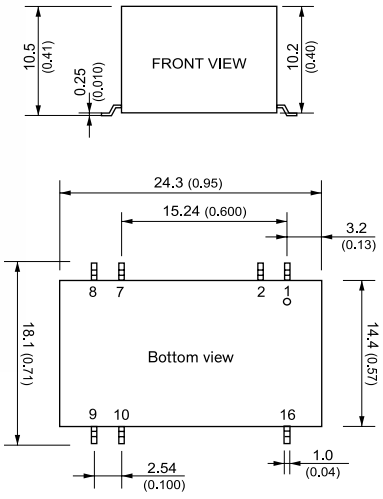
- 0.94 x 0.54 x 0.35” SMD package
- Supplementary and reinforced insulation
- I/O isolation 4000 VACrms rated for 300 Vrms working voltage
- Unregulated device
- 2xMOOP
- Industrial safety to UL/IEC/EN 60950-1
- Ultracompact SMD-package
- Operating temp. range -25°C to +80°C
- Qualified for lead-free reflow solder process
- Available in tape & reel package
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TES 2-0511M	5.0 VDC ±10% (nominal 05 VDC)	5 VDC	400 mA	66 %
TES 2-0512M		12 VDC	165 mA	66 %
TES 2-0513M		15 VDC	133 mA	66 %
TES 2-0522M		±12 VDC	±83 mA	72 %
TES 2-0523M		±15 VDC	±66 mA	73 %
TES 2-1211M	12.0 VDC ±10% (nominal 12 VDC)	5 VDC	400 mA	66 %
TES 2-1212M		12 VDC	165 mA	66 %
TES 2-1213M		15 VDC	133 mA	66 %
TES 2-1222M		±12 VDC	±83 mA	74 %
TES 2-1223M		±15 VDC	±66 mA	75 %
TES 2-2411M	24 VDC ±10% (nominal 24 VDC)	5 VDC	400 mA	66 %
TES 2-2412M		12 VDC	165 mA	66 %
TES 2-2413M		15 VDC	133 mA	66 %
TES 2-2422M		±12 VDC	±83 mA	74 %
TES 2-2423M		±15 VDC	±66 mA	75 %

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

TIM 2SM — 2 Watt

IEC/EN/ES 60601-1 (2×MOPP)

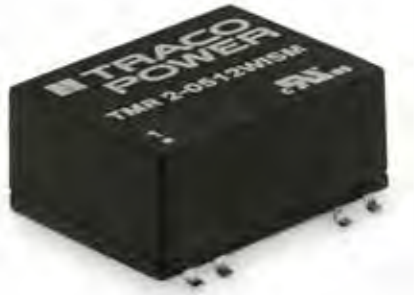


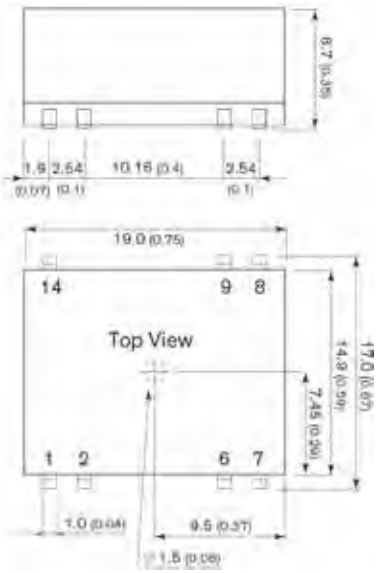
- 0.95 x 0.57 x 0.40” SMD-16-package
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- Certification according to IEC/EN/ES 60601-1 3rd edition (2 x MOPP)
- Low leakage current < 2 µA
- Extended operating temperature range -40°C to 95°C.
- EMC compliance to IEC 60601-1-2 4th edition and EN 55032 class A
- 5 year product warranty

Pinout / Connection		
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	Output Imax	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	9 - 18 VDC (12 VDC nom.)	3.3 VDC	600 mA	76 %
TIM 2-1211SM		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	36 - 75 VDC (48 VDC nom.)	3.3 VDC	600 mA	76 %
TIM 2-4811SM		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 %

TMR 2WISM — 2 Watt





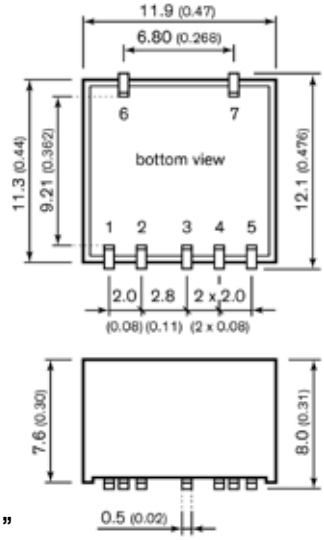
- 0.75 x 0.67 x 0.35" SMD package
- Ultra wide 4:1 Input: 4.5–12, 9–36 and 18–75 VDC
- I/O-isolation 1500 VDC
- Fully regulated outputs
- Operating temperature range –40°C to +80°C
- Protection against short circuit and overload
- Remote On/Off
- 3-year product warranty

Pinout

Pin	Single Output	Dual Output
1	–Vin (GND)	–Vin (GND)
2	Remote	Remote
6	NC	Common
7	NC	–Vout
8	+Vout	+Vout
9	–Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 2-0511WISM	**4.5 – 12 VDC** (9 VDC nom.)	5 VDC	400 mA	80%
TMR 2-0512WISM		12 VDC	167 mA	84%
TMR 2-0513WISM		15 VDC	134 mA	83%
TMR 2-0515WISM		24 VDC	83 mA	84%
TMR 2-0522WISM		±12 VDC	83 mA	83%
TMR 2-0523WISM		±15 VDC	67 mA	82%
TMR 2-2411WISM	**9 – 36 VDC** (24 VDC nom.)	5 VDC	400 mA	80%
TMR 2-2412WISM		12 VDC	167 mA	84%
TMR 2-2413WISM		15 VDC	134 mA	85%
TMR 2-2415WISM		24 VDC	83 mA	85%
TMR 2-2422WISM		±12 VDC	83 mA	83%
TMR 2-2423WISM		±15 VDC	67 mA	83%
TMR 2-4811WISM	**18 – 75 VDC** (48 VDC nom.)	5 VDC	400 mA	78%
TMR 2-4812WISM		12 VDC	167 mA	82%
TMR 2-4813WISM		15 VDC	134 mA	83%
TMR 2-4815WISM		24 VDC	83 mA	84%
TMR 2-4822WISM		±12 VDC	83 mA	82%
TMR 2-4823WISM		±15 VDC	67 mA	82%

TRS 2 — 2 Watt



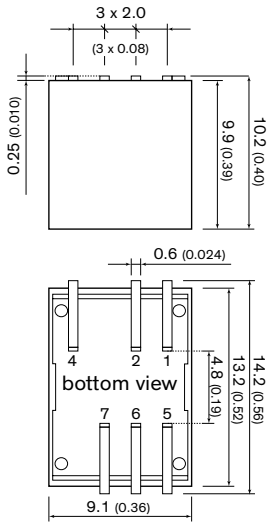
- Most compact package - 0.47 x 0.44 x 0.31"
- Cost-efficient design
- 1600 VDC I/O isolation (functional)
- High efficiency for low thermal loss
- Temperature range -40°C to +90°C
- Designed to met UL 62368-1
- No minimum load required
- Protection against short circuit
- 3 year product warranty

Pinout

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

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRS 2-0910	**4.5 - 13.2 VDC** (9 VDC nominal)	3.3 VDC	500 mA	77 %
TRS 2-0911		5.0 VDC	400 mA	80 %
TRS 2-0919		9.0 VDC	222 mA	80 %
TRS 2-0912		12 VDC	167 mA	83 %
TRS 2-0913		15 VDC	134 mA	82 %
TRS 2-0915		24 VDC	83 mA	82 %
TRS 2-0921		±5.0 VDC	±200 mA	78 %
TRS 2-0922		±12 VDC	±83 mA	82 %
TRS 2-0923		±15 VDC	±67 mA	80 %
TRS 2-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	500 mA	77 %
TRS 2-1211		5.0 VDC	400 mA	80 %
TRS 2-1219		9.0 VDC	222 mA	80 %
TRS 2-1212		12 VDC	167 mA	84 %
TRS 2-1213		15 VDC	134 mA	83 %
TRS 2-1215		24 VDC	83 mA	83 %
TRS 2-1221		±5.0 VDC	±200 mA	79 %
TRS 2-1222		±12 VDC	±83 mA	83 %
TRS 2-1223		±15 VDC	±67 mA	81 %
TRS 2-2410	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	500 mA	77 %
TRS 2-2411		5.0 VDC	400 mA	78 %
TRS 2-2419		9.0 VDC	222 mA	80 %
TRS 2-2412		12 VDC	167 mA	84 %
TRS 2-2413		15 VDC	134 mA	84 %
TRS 2-2415		24 VDC	83 mA	82 %
TRS 2-2421		±5.0 VDC	±200 mA	80 %
TRS 2-2422		±12 VDC	±83 mA	83 %
TRS 2-2423		±15 VDC	±67 mA	82 %
TRS 2-4810	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	500 mA	76 %
TRS 2-4811		5.0 VDC	400 mA	79 %
TRS 2-4819		9.0 VDC	222 mA	80 %
TRS 2-4812		12 VDC	167 mA	83 %
TRS 2-4813		15 VDC	134 mA	83 %
TRS 2-4815		24 VDC	83 mA	82 %
TRS 2-4821		±5.0 VDC	±200 mA	78 %
TRS 2-4822		±12 VDC	±83 mA	82 %
TRS 2-4823		±15 VDC	±67 mA	80 %

TDN 3WISM — 3 Watt



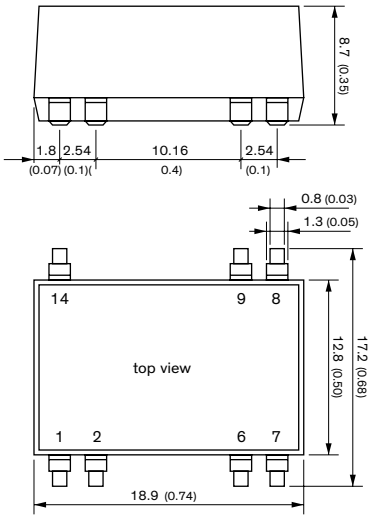
- 0.52 x 0.36 x 0.40” SMD package
- I/O-isolation 1600 VDC
- Fully regulated outputs
- Operating temperature range -40°C to +70°C without derating
- Short circuit protection
- Remote On/Off
- 3 year product warranty
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout

Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
4	On/Off	On/Off
5	no con.	-Vout
6	-Vout	Common
7	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDN 3-1210WISM	4.5 - 18 VDC (12 VDC nominal)	3.3 VDC	700 mA	76 %
TDN 3-1211WISM		5.0 VDC	600 mA	80 %
TDN 3-1219WISM		9.0 VDC	333 mA	81 %
TDN 3-1212WISM		12 VDC	250 mA	83 %
TDN 3-1213WISM		15 VDC	200 mA	84 %
TDN 3-1215WISM		24 VDC	125 mA	82 %
TDN 3-1221WISM		± 5.0 VDC	±300 mA	80 %
TDN 3-1222WISM		±12 VDC	±125 mA	82 %
TDN 3-1223WISM		±15 VDC	±100 mA	82 %
TDN 3-2410WISM	9 - 36 VDC (24 VDC nominal)	3.3 VDC	700 mA	77 %
TDN 3-2411WISM		5.0 VDC	600 mA	80 %
TDN 3-2419WISM		5.0 VDC	333 mA	81 %
TDN 3-2412WISM		12 VDC	250 mA	83 %
TDN 3-2413WISM		15 VDC	200 mA	83 %
TDN 3-2415WISM		24 VDC	125 mA	82 %
TDN 3-2421WISM		± 5.0 VDC	±300 mA	80 %
TDN 3-2422WISM		±12 VDC	±125 mA	82 %
TDN 3-2423WISM		±15 VDC	±100 mA	82 %
TDN 3-4810WISM	18 - 75 VDC (48 VDC nominal)	3.3 VDC	700 mA	77 %
TDN 3-4811WISM		5.0 VDC	600 mA	80 %
TDN 3-4819WISM		9.0 VDC	333 mA	81 %
TDN 3-4812WISM		12 VDC	250 mA	83 %
TDN 3-4813WISM		15 VDC	200 mA	83 %
TDN 3-4815WISM		24 VDC	125 mA	82 %
TDN 3-4821WISM		± 5.0 VDC	±300 mA	80 %
TDN 3-4822WISM		±12 VDC	±125 mA	82 %
TDN 3-4823WISM		±15 VDC	±100 mA	82 %

TDR 3SM — 3 Watt



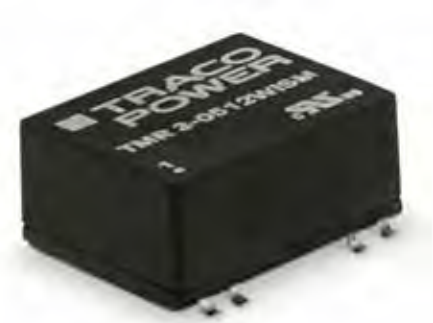
- 0.74 x 0.68 x 0.35 SMD package
- Wide 2:1 input voltage range
- Fully regulated outputs
- Low ripple and noise
- No minimum load required
- Temperature range -40°C to +85°C
- I/O isolation 1600 VDC
- Continuous short-circuit protection
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty

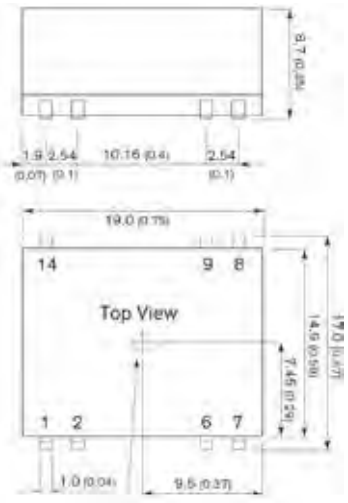
Pinout

Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDR 3-0511SM	4.5 - 9.0 VDC (5 VDC nominal)	5.0 VDC	600 mA	79 %
TDR 3-0512SM		12 VDC	250 mA	80 %
TDR 3-0513SM		15 VDC	200 mA	81 %
TDR 3-0522SM		±12 VDC	±125 mA	80 %
TDR 3-0523SM		±15 VDC	±100 mA	81 %
TDR 3-1211SM	9 - 18 VDC (12 VDC nominal)	5.0 VDC	600 mA	81 %
TDR 3-1212SM		12 VDC	250 mA	82 %
TDR 3-1213SM		15 VDC	200 mA	82 %
TDR 3-1222SM		±12 VDC	±125 mA	82 %
TDR 3-1223SM		±15 VDC	±100 mA	83 %
TDR 3-2411SM	18 - 36 VDC (24 VDC nominal)	5.0 VDC	600 mA	81 %
TDR 3-2412SM		12 VDC	250 mA	82 %
TDR 3-2413SM		15 VDC	200 mA	83 %
TDR 3-2422SM		±12 VDC	±125 mA	83 %
TDR 3-2423SM		±15 VDC	±100 mA	83 %
TDR 3-4811SM	36 - 75 VDC (48 VDC nominal)	5.0 VDC	600 mA	81 %
TDR 3-4812SM		12 VDC	250 mA	82 %
TDR 3-4813SM		15 VDC	200 mA	82 %
TDR 3-4822SM		±12 VDC	±125 mA	83 %
TDR 3-4823SM		±15 VDC	±100 mA	83 %

TMR 3WISM — 3 Watt



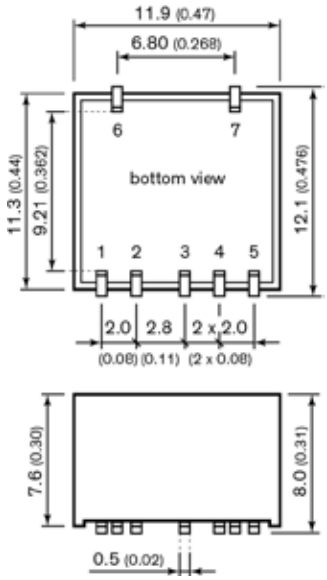


- 0.86 x 0.44 x 0.36" SMD package
- Ultra-wide 4:1 Input
- I/O-isolation 1500 VDC
- Fully regulated outputs
- Temperature range -40°C to +80°C
- Short circuit and overload protection
- Remote On/Off
- 3 year product warranty

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

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 3-0511WISM		5 VDC	600 mA	81 %
TMR 3-0512WISM		12 VDC	250 mA	84 %
TMR 3-0513WISM	**4.5 - 12 VDC**	15 VDC	200 mA	84 %
TMR 3-0515WISM	(9 VDC nom.)	24 VDC	125 mA	84 %
TMR 3-0522WISM		+12 VDC	125 mA	83 %
TMR 3-0523WISM		+15 VDC	100 mA	83 %
TMR 3-2411WISM		5 VDC	600 mA	80 %
TMR 3-2412WISM		12 VDC	250 mA	85 %
TMR 3-2413WISM	**9 - 36 VDC**	15 VDC	200 mA	85 %
TMR 3-2415WISM	(24 VDC nom.)	24 VDC	125 mA	85 %
TMR 3-2422WISM		+12 VDC	125 mA	84 %
TMR 3-2423WISM		+15 VDC	100 mA	84 %
TMR 3-4811WISM		5 VDC	600 mA	80 %
TMR 3-4812WISM		12 VDC	250 mA	84 %
TMR 3-4813WISM	**18 - 75 VDC**	15 VDC	200 mA	84 %
TMR 3-4815WISM	(48 VDC nom.)	24 VDC	125 mA	85 %
TMR 3-4822WISM		+12 VDC	125 mA	83 %
TMR 3-4823WISM		+15 VDC	100 mA	82 %

TRN 3SM — 3 Watt



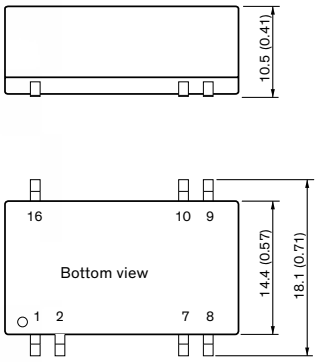
- 0.47 x 0.30 x 0.44" SMD package
- Fully regulated outputs
- 2:1 Input Voltage range
- I/O-isolation 1600 VDC
- Temperature range -40°C to +85°C
- Short circuit protection
- 3 year product warranty
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	+Vout	+Vout
4	no pin	common
5	-Vout	-Vout
6	NC	NC
7	NC	NC

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRN 3-0510SM		3.3 VDC	700 mA	75 %
TRN 3-0511SM		5.0 VDC	600 mA	78 %
TRN 3-0512SM		12 VDC	250 mA	82 %
TRN 3-0513SM	**4.5 - 13.2 VDC**	15 VDC	200 mA	80 %
TRN 3-0515SM	(9 VDC nominal)	24 VDC	125 mA	80 %
TRN 3-0521SM		± 5.0 VDC	±300 mA	77 %
TRN 3-0522SM		±12 VDC	±125 mA	80 %
TRN 3-0523SM		±15 VDC	±100 mA	80 %
TRN 3-1210SM		3.3 VDC	700 mA	76 %
TRN 3-1211SM		5.0 VDC	600 mA	79 %
TRN 3-1212SM		12 VDC	250 mA	84 %
TRN 3-1213SM	**9 - 18 VDC**	15 VDC	200 mA	83 %
TRN 3-1215SM	(12 VDC nominal)	24 VDC	125 mA	82 %
TRN 3-1221SM		± 5.0 VDC	±300 mA	78 %
TRN 3-1222SM		±12 VDC	±125 mA	82 %
TRN 3-1223SM		±15 VDC	±100 mA	81 %
TRN 3-2410SM		3.3 VDC	700 mA	76 %
TRN 3-2411SM		5.0 VDC	600 mA	78 %
TRN 3-2412SM		12 VDC	250 mA	84 %
TRN 3-2413SM	**18 - 36 VDC**	15 VDC	200 mA	84 %
TRN 3-2415SM	(24 VDC nominal)	24 VDC	125 mA	83 %
TRN 3-2421SM		± 5.0 VDC	±300 mA	79 %
TRN 3-2422SM		±12 VDC	±125 mA	83 %
TRN 3-2423SM		±15 VDC	±100 mA	82 %
TRN 3-4810SM		3.3 VDC	700 mA	75 %
TRN 3-4811SM		5.0 VDC	600 mA	79 %
TRN 3-4812SM		12 VDC	250 mA	83 %
TRN 3-4813SM	**36 - 75 VDC**	15 VDC	200 mA	83 %
TRN 3-4815SM	(48 VDC nominal)	24 VDC	125 mA	82 %
TRN 3-4821SM		± 5.0 VDC	±300 mA	77 %
TRN 3-4822SM		±12 VDC	±125 mA	82 %
TRN 3-4823SM		±15 VDC	±100 mA	80 %

TIM 3.5SM — 3.5 Watt

IEC/EN/ES 60601-1 (2×MOPP)

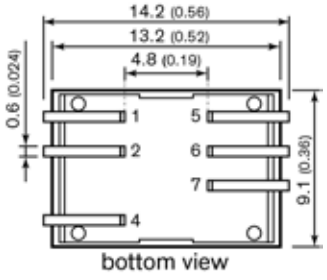


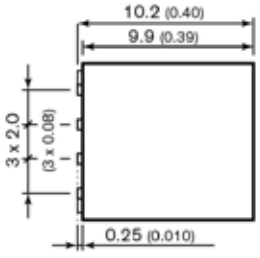
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TIM 3.5-0911SM	4.5 - 12 VDC (9 VDC nom.)	5 VDC	700 mA	77 %
TIM 3.5-0919SM		9 VDC	389 mA	78 %
TIM 3.5-0912SM		12 VDC	292 mA	82 %
TIM 3.5-0913SM		15 VDC	234 mA	82 %
TIM 3.5-0915SM		24 VDC	146 mA	82 %
TIM 3.5-0922SM		±12 VDC	146 mA	82 %
TIM 3.5-0923SM		±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 %

- 0.95 x 0.57 x 0.40” SMD-16-package
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- Low leakage < 2 µA for BF-applications
- Temperature range -40°C to 90°C.
- EMC compliance to IEC 60601-1-2 4th edition and EN 55032 class A
- 3 year product warranty

Pinout / Connection		
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)

TDN 5WISM — 5 Watt





Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDN 5-0910WISM	4.5 - 13.2 VDC (9 VDC nom.)	3.3 VDC	1000 mA	76 %
TDN 5-0911WISM		5.0 VDC	1000 mA	80 %
TDN 5-0919WISM		9.0 VDC	555 mA	81 %
TDN 5-0912WISM		12 VDC	420 mA	83 %
TDN 5-0913WISM		15 VDC	333 mA	83 %
TDN 5-0915WISM		24 VDC	210 mA	83 %
TDN 5-0921WISM		±5.0 VDC	±500 mA	80 %
TDN 5-0922WISM		±12 VDC	±210 mA	83 %
TDN 5-0923WISM		±15 VDC	±168 mA	83 %
TDN 5-2410WISM	9 - 36 VDC (24 VDC nom.)	3.3 VDC	1000 mA	76 %
TDN 5-2411WISM		5.0 VDC	1000 mA	80 %
TDN 5-2419WISM		9.0 VDC	555 mA	81 %
TDN 5-2412WISM		12 VDC	420 mA	83 %
TDN 5-2413WISM		15 VDC	333 mA	83 %
TDN 5-2415WISM		24 VDC	210 mA	83 %
TDN 5-2421WISM		±5.0 VDC	±500 mA	80 %
TDN 5-2422WISM		±12 VDC	±210 mA	83 %
TDN 5-2423WISM		±15 VDC	±168 mA	84 %
TDN 5-4810WISM	18 - 75 VDC (48 VDC nom.)	3.3 VDC	1000 mA	76 %
TDN 5-4811WISM		5.0 VDC	1000 mA	81 %
TDN 5-4819WISM		9.0 VDC	555 mA	81 %
TDN 5-4812WISM		12 VDC	420 mA	83 %
TDN 5-4813WISM		15 VDC	333 mA	83 %
TDN 5-4815WISM		24 VDC	210 mA	83 %
TDN 5-4821WISM		±5.0 VDC	±500 mA	80 %
TDN 5-4822WISM		±12 VDC	±210 mA	83 %
TDN 5-4823WISM		±15 VDC	±168 mA	84 %

- 0.52 x 0.36 x 0.39” SMD package
- I/O-isolation 1600 VDC
- Fully regulated outputs
- Temperature range -40°C to +75°C
- Short circuit protection
- Remote On/Off
- 3 year product warranty
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
4	On/Off	On/Off
5	NC	-Vout
6	-Vout	Common
7	+Vout	+Vout

DC/DC: Isolated SIP Package

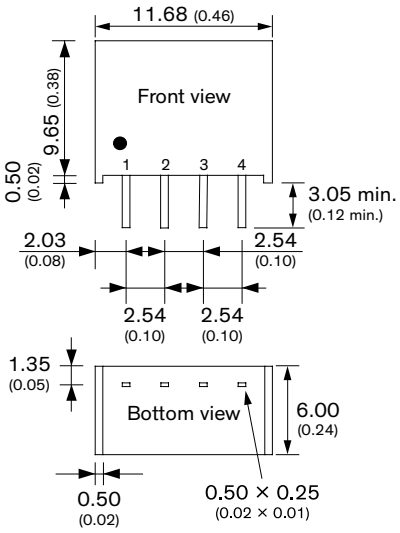
TRACO POWER's SIP package isolated DC/DC Converters provides a complete range of compact products from 1 to 9 watts with non-regulated, semi-regulated and fully regulated outputs.

SERIES	WATTS	DESCRIPTION	APPS	STATUS	PAGE
TBA 1	1	SIP-4 package, ±10% input, unregulated, short circuit protection, encapsulated		ACTIVE	26
TBA 1E	1	SIP-7 package, ±10% input, unregulated, short circuit protection, encapsulated		ACTIVE	26
TBA 1HI	1	SIP-7 package, ±10% input, unregulated, short circuit protection, 3000 VDC I/O iso.		ACTIVE	27
TEA 1	1	SIP-4 package, ±10% input, unregulated, cost optimized design, encapsulated		ACTIVE	27
TEA 1E	1	SIP-7 package, ±10% input, unregulated, cost optimized design, encapsulated		**NEW**	28
TEA 1HI	1	SIP-7 package, ±10% input, unregulated, 4000 VDC I/O isolation, encapsulated		ACTIVE	28
TMAP	1	SIP-7 package, ±10% input, unregulated, short circuit protection, 3000 VDC I/O iso.		ACTIVE	29
TMR 1	1	SIP-6 package, 2:1 input, regulated, encapsulated		ACTIVE	29
TMV-EN	1	SIP-7 package, ±10% input, unregulated, 3000 VAC I/O isolation(reinforced), encapsulated		ACTIVE	30
TMV-HI	1	SIP-7 package, ±10% input, unregulated, 5200 VDC I/O isolation, encapsulated		ACTIVE	30
TRI 1	1	SIP-7 package, ±10% input, regulated, 480 VAC working voltage, encapsulated	⊕	**IN DEVELOPMENT**	31
TRN 1	1	SIP-5 package, 2:1 input, regulated, cost efficient, compact, encapsulated		ACTIVE	31
TRV 1	1	SIP-7 package, ±10% input, semi-regulated, 3000 VDC I/O isolation, encapsulated		ACTIVE	32
TRV 1M	1	SIP-7 package, ±10% input, semi-regulated, 5000 VAC isolation, encapsulated	⊕	**NEW**	32
TBA 2	2	SIP-7 package, ±10% input, unregulated, short circuit protection, encapsulated		**NEW**	33
TEC 2	2	SIP-8 package, 2:1 input, regulated, cost efficient, encapsulated		ACTIVE	33
TEC 2WI	2	SIP-8 package, 4:1 input, regulated, cost efficient, encapsulated		ACTIVE	34
TMR 2	2	SIP-8 package, 2:1 input, regulated, encapsulated		ACTIVE	34
TMR 2WIN	2	SIP-8 package, 4:1 input, regulated, encapsulated		ACTIVE	35
TMV 2HI	2	SIP-7 package, 10% input, unregulated, 5200 VDC I/O-isolation, encapsulated		ACTIVE	35
TMU 2	2	SIP-4 package, ±10% input, unregulated, encapsulated		**IN DEVELOPMENT**	36
TRV 2M	2	SIP-9 package, ±10% input, semi-regulated, 5000 VAC isolation, 2 × MOPP	⊕	**NEW**	36
TEC 3	3	SIP-8 package, 2:1 input, regulated, cost efficient, encapsulated		ACTIVE	37
TEC 3WI	3	SIP-8 package, 4:1 input, regulated, cost efficient, encapsulated		ACTIVE	37
TMR 3	3	SIP-8 package, 2:1 input, regulated, encapsulated		ACTIVE	38
TMR 3HI	3	SIP-8 package, 2:1 input, regulated, 3000 VDC I/O-isolation (functional), encapsulated		ACTIVE	38
TMR 3WI	3	SIP-8 package, 4:1 input, regulated, encapsulated		ACTIVE	39
TMR 3WIR	3	SIP-8 package, 2:1 input, regulated, 3000 VDC I/O-isolation, railway, metal case	🚆	ACTIVE	39
TMU 3		SIP-4 package, ±10% input, unregulated, encapsulated		**NEW**	40
TRN 3	3	SIP-5 package, 2:1 input, regulated, cost efficient, compact, encapsulated		**NEW**	40
TVN 3	3	SIP-8 package, 2:1 input, regulated, ultra low ripple & noise, metal case		ACTIVE	41
TMR 4 (WI)	4	SIP-8 package, 2:1 or 4:1 input ranges, regulated, encapsulated		ACTIVE	41
TMR 6	6	SIP-8 package, 2:1 input, regulated, encapsulated		ACTIVE	42
TMR 6WI	6	SIP-8 package, 4:1 input, regulated, encapsulated		ACTIVE	42
TMR 6WIR	6	SIP-8 package, 2:1 input, regulated, 3000 VDC I/O-isolation, railway, metal case	🚆	ACTIVE	43
TMR 9	9	SIP-8 package, 2:1 input, regulated, ultra compact, encapsulated		ACTIVE	43
TMR 9WI	9	SIP-8 package, 4:1 input, regulated, ultra compact, encapsulated		ACTIVE	44
TMR 12WI	12	SIP-8 package, 4:1 input, regulated, ultra compact, encapsulated, metal case		**NEW**	44

APPS KEY: ⊕ = UL/EN60601-1 (2×MOPP) Approved 🚆 = EN50155 /EN61373 Approved

Visit our website for documentation with links to our distributors for pricing and availability.

TBA 1 — 1 Watt

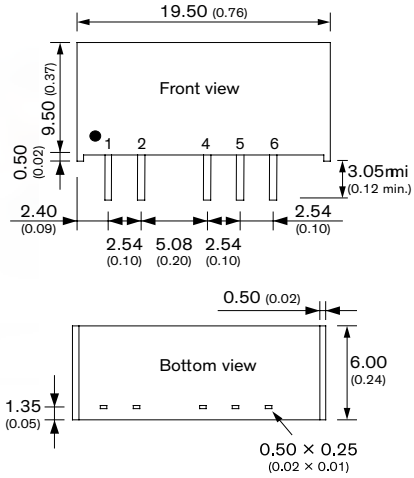


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TBA 1-0310	**2.97 - 3.63 VDC** (3.3 VDC nom.)	3.3 VDC	260 mA	73 %
TBA 1-0311		5 VDC	200 mA	76 %
TBA 1-0510	**4.5 - 5.5 VDC** (5 VDC nom.)	3.3 VDC	260 mA	75 %
TBA 1-0511		5 VDC	200 mA	79 %
TBA 1-0519		9 VDC	110 mA	80 %
TBA 1-0512		12 VDC	80 mA	82 %
TBA 1-0513		15 VDC	65 mA	82 %
TBA 1-1211	**10.8 - 13.2 VDC** (12 VDC nom.)	5 VDC	200 mA	79 %
TBA 1-1219		9 VDC	110mA	79 %
TBA 1-1212		12 VDC	80 mA	80 %
TBA 1-1213		15 VDC	65 mA	80 %
TBA 1-2411	**21.6 - 26.4 VDC** (24 VDC nom.)	5 VDC	200 mA	79 %
TBA 1-2419		9 VDC	110mA	80 %
TBA 1-2412		12 VDC	80 mA	82 %
TBA 1-2413		15 VDC	65 mA	82 %

- 0.45 x 0.38 x 0.24” SIP-4 package
- Cost-efficient design
- Continuous short circuit protection
- I/O isolation: 1500 VDC
- Temperature range -40 to +85 °C without derating
- ±10% input voltage ranges
- High efficiency up to 82%
- Unregulated outputs
- 3 year product waranty

Pinout	
Pin	**Function**
1	-Vin (GND)
2	+Vin (Vcc)
3	-Vout

TBA 1E — 1 Watt

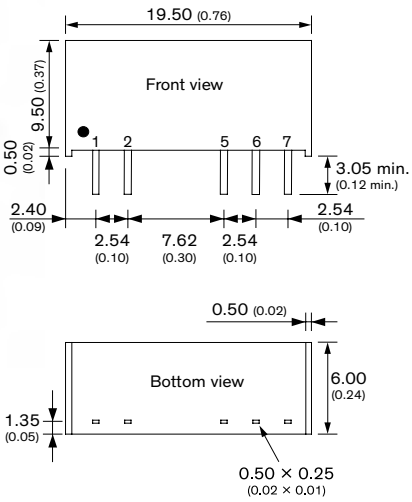


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TBA 1-0511E	**4.5 - 5.5 VDC** (5 VDC nom.)	5 VDC	200 mA	79 %
TBA 1-0512E		12 VDC	84 mA	82 %
TBA 1-0513E		15 VDC	66 mA	82 %
TBA 1-0521E		±5 VDC	100 mA	79 %
TBA 1-0522E		±12 VDC	41 mA	82 %
TBA 1-0523E		±15 VDC	33 mA	82 %
TBA 1-1211E	**10.8 - 13.2 VDC** (12 VDC nom.)	5 VDC	200 mA	79 %
TBA 1-1212E		12 VDC	84 mA	80 %
TBA 1-1213E		15 VDC	66 mA	80 %
TBA 1-1221E		±5 VDC	100 mA	79 %
TBA 1-1222E		±12 VDC	41 mA	80 %
TBA 1-1223E		±15 VDC	33 mA	80 %
TBA 1-2411E	**21.6 - 26.4 VDC** (24 VDC nom.)	5 VDC	200 mA	79 %
TBA 1-2412E		12 VDC	84 mA	82 %
TBA 1-2413E		15 VDC	66 mA	82 %
TBA 1-2421E		±5 VDC	100 mA	79 %
TBA 1-2422E		±12VDC	41 mA	82 %
TBA 1-2423E		±15 VDC	33 mA	82 %

- 0.75 x 0.37 x 0.24” SIP-7 package
- Cost-efficient design
- Continuous short circuit protection
- I/O isolation: 1500 VDC
- Operating temperature range -40 to +85 °C without derating
- ±10% input voltage ranges
- High efficiency up to 82%
- Unregulated outputs
- 3 year product waranty

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

TBA 1HI — 1 Watt

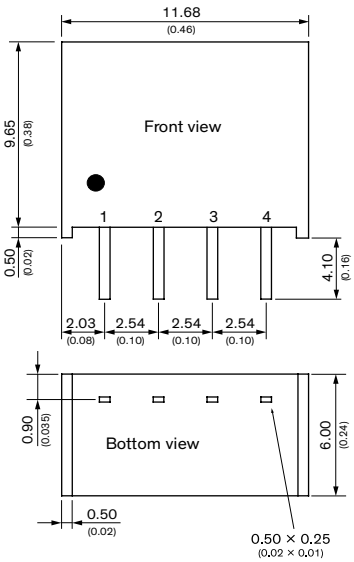


- 0.75 x 0.37 x 0.24” SIP-7 package
- Cost-efficient design
- Continuous short circuit protection
- I/O isolation: 3000 VDC
- Operating temperature range -40 to +85 °C without derating
- ±10% input voltage ranges
- High efficiency up to 82%
- Unregulated outputs
- 3 year product waranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TBA 1-0511HI	**4.5 - 5.5 VDC** (5 VDC nom.)	5 VDC	200 mA	79 %
TBA 1-0519HI		9 VDC	111 mA	80 %
TBA 1-0512HI		12 VDC	84 mA	82 %
TBA 1-0513HI		15 VDC	66 mA	82 %
TBA 1-0521HI		±5 VDC	100 mA	79 %
TBA 1-0522HI		±12 VDC	41 mA	82 %
TBA 1-0523HI		±15 VDC	33 mA	82 %
TBA 1-1211HI	**10.8 - 13.2 VDC** (12 VDC nom.)	5 VDC	200 mA	79 %
TBA 1-1219HI		9 VDC	111 mA	79 %
TBA 1-1212HI		12 VDC	84 mA	80 %
TBA 1-1213HI		15 VDC	66 mA	80 %
TBA 1-1221HI		±5 VDC	100 mA	79 %
TBA 1-1222HI		±12 VDC	41 mA	80 %
TBA 1-1223HI		±15 VDC	33 mA	80 %
TBA 1-2411HI	**21.6 - 26.4 VDC** (24 VDC nom.)	5 VDC	200 mA	79 %
TBA 1-2419HI		9 VDC	111 mA	80 %
TBA 1-2412HI		12 VDC	84 mA	82 %
TBA 1-2413HI		15 VDC	66 mA	82 %
TBA 1-2421HI		±5 VDC	100 mA	79 %
TBA 1-2422HI		±12 VDC	41 mA	82 %
TBA 1-2423HI		±15 VDC	33 mA	82 %

Pinout		
Pin	**Single**	**Dual**
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
5	-Vout	-Vout
6	No pin	Common
7	+Vout	+Vout

TEA 1 — 1 Watt

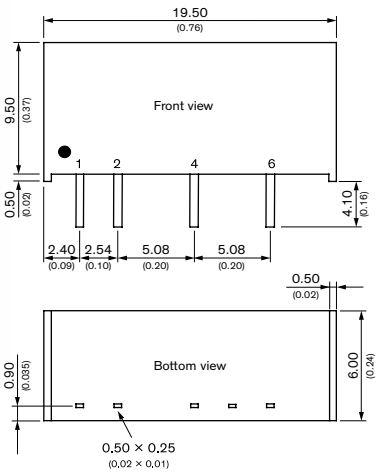


- 0.46 x 0.36 x 0.24” SIP-4 package
- Cost-efficient design
- I/O isolation: 1500 VDC
- Operating temperature range -40 to +85 °C without derating
- Extremely cost-efficient design
- High efficiency up to 82%
- Unregulated outputs
- 3 year product waranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEA 1-0505	**4.5 - 5.5 VDC**	5 VDC	200 mA	78 %

Pinout	
Pin	**Single**
1	-Vin
2	+Vin
3	-Vout
4	+Vout

TEA 1E NEW! 1 Watt

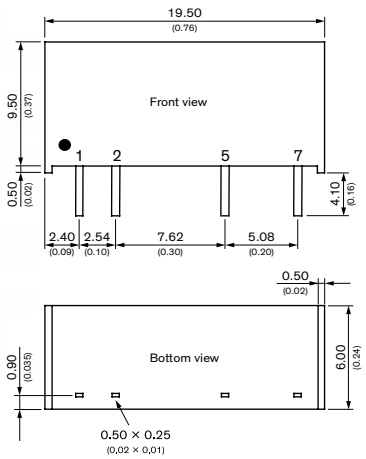


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEA 1-0505E	**4.5 - 5.5 VDC**	5 VDC	200 mA	78 %

- 0.75 x 0.37 x 0.24” SIP-7 package
- Cost-efficient design
- I/O isolation: 1500 VDC
- Operating temperature range -40 to +85 °C without derating
- Extremely cost-efficient design
- High efficiency up to 82%
- Unregulated outputs
- 3 year product waranty

Pinout	
Pin	**Single**
1	+Vin
2	-Vin
4	-Vout
5	No pin
6	+Vout

TEA 1HI 1 Watt

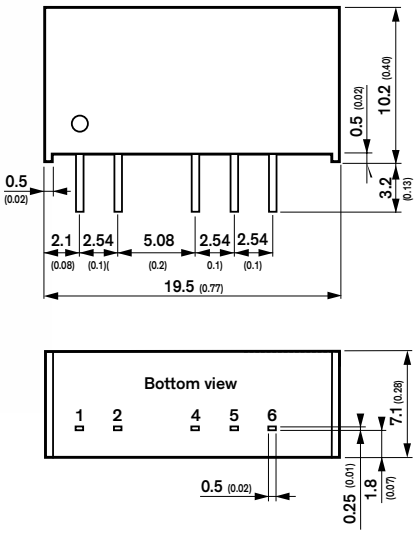


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEA 1-0505HI	**4.5 - 5.5 VDC**	5 VDC	200 mA	78 %

- 0.75 x 0.37 x 0.24” SIP-7 package
- Cost-efficient design
- I/O isolation: 3000 VDC
- Operating temperature range -40 to +85 °C without derating
- High efficiency up to 82%
- Extremely cost-efficient design
- Unregulated outputs
- 3 year product waranty

Pinout	
Pin	**Single**
1	+Vin
2	-Vin
5	-Vout
7	+Vout

TMAP — 1 Watt

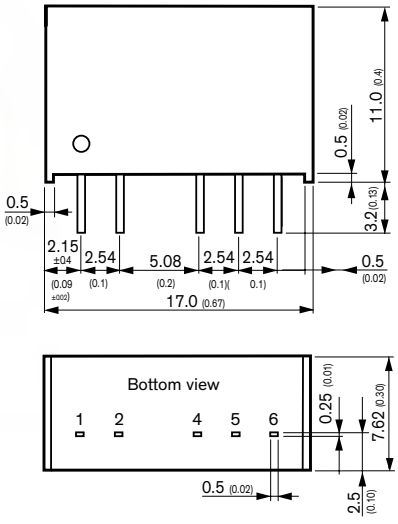


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMAP 0505S	**4.5 - 5.5 VDC** (5 VDC nominal)	5.0 VDC	200 mA	78 %
TMAP 0509S		9.0 VDC	110 mA	81 %
TMAP 0512S		12 VDC	84 mA	82 %
TMAP 0515S		15 VDC	68 mA	83 %
TMAP 0505D		±5.0 VDC	±100 mA	81 %
TMAP 0512D		±12 VDC	±42 mA	81 %
TMAP 0515D		±15 VDC	±34 mA	81 %
TMAP 1205S	**10.8 - 13.2 VDC** (12 VDC nominal)	5.0 VDC	200 mA	80 %
TMAP 1209S		9.0 VDC	110 mA	82 %
TMAP 1212S		12 VDC	84 mA	84 %
TMAP 1215S		15 VDC	68 mA	83 %
TMAP 1205D		±5.0 VDC	±100 mA	81 %
TMAP 1212D		±12 VDC	±42 mA	82 %
TMAP 1215D		±15 VDC	±34 mA	82 %
TMAP 2405S	**21.6 - 26.4 VDC** (24 VDC nominal)	5.0 VDC	200 mA	81 %
TMAP 2409S		9.0 VDC	110 mA	79 %
TMAP 2412S		12 VDC	84 mA	82 %
TMAP 2415S		15 VDC	68 mA	82 %
TMAP 2405D		±5.0 VDC	±100 mA	80 %
TMAP 2412D		±12 VDC	±42 mA	81 %
TMAP 2415D		±15 VDC	±34 mA	80 %

- 0.77 x 0.40 x 0.28” SIP-7 package
- Overload and short circuit protection
- I/O isolation 3000 VDC (functional)
- Extended operating temperature range -40°C to 85°C without derating
- High efficiency up to 84% typ.
- Industry standard pinout
- 3 year product warranty

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

TMR 1 — 1 Watt

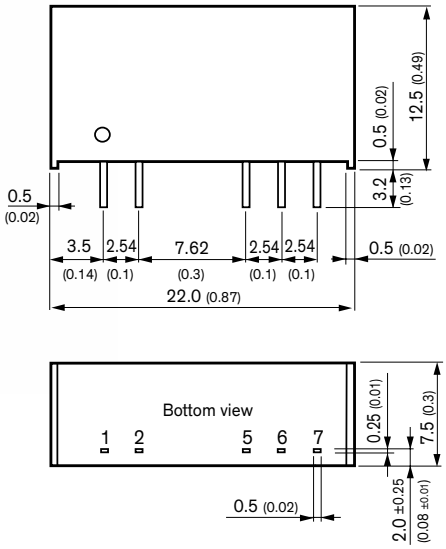


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 1-0511	**4.5 - 9 VDC** (5 VDC nom.)	5 VDC	200 mA	76 %
TMR 1-0512		12 VDC	83 mA	77 %
TMR 1-0513		15 VDC	67 mA	79 %
TMR 1-0515		24 VDC	42 mA	76 %
TMR 1-0522		+12 VDC	42 mA	77 %
TMR 1-0523		+15 VDC	33 mA	78 %
TMR 1-1211	**9 - 18 VDC** (12 VDC nom.)	5 VDC	200 mA	77 %
TMR 1-1212		12 VDC	83 mA	77 %
TMR 1-1213		15 VDC	67 mA	80 %
TMR 1-1215		24 VDC	42 mA	77 %
TMR 1-1222		+12 VDC	42 mA	79 %
TMR 1-1223		+15 VDC	33 mA	78 %
TMR 1-2411	**18 - 36 VDC** (24 VDC nom.)	5 VDC	200 mA	77 %
TMR 1-2412		12 VDC	83 mA	80 %
TMR 1-2413		15 VDC	67 mA	80 %
TMR 1-2415		24 VDC	42 mA	77 %
TMR 1-2422		+12 VDC	42 mA	80 %
TMR 1-2423		+15 VDC	33 mA	80 %
TMR 1-4811	**36 - 75 VDC** (48 VDC nom.)	5 VDC	200 mA	77 %
TMR 1-4812		12 VDC	83 mA	78 %
TMR 1-4813		15 VDC	67 mA	78 %
TMR 1-4815		24 VDC	42 mA	76 %
TMR 1-4822		+12 VDC	42 mA	79 %
TMR 1-4823		+15 VDC	33 mA	79 %

- 0.67 x 0.40 x 0.30” SIP-6 package
- Wide 2:1 input voltage range
- Fully regulated outputs
- Cost optimised design
- No minimum load required
- Continuous short circuit protection
- Temperature range -40°C to +95°C
- I/O isolation 1500 VDC
- 3 year product warranty

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

TMV-EN — 1 Watt

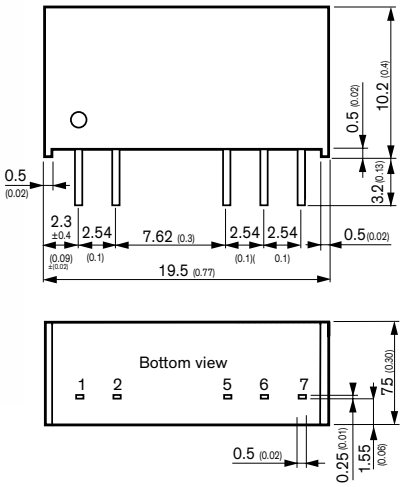


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMV 0505 EN	5 VDC ±10 %	5 VDC	200 mA	66 %
TMV 0512 EN		12 VDC	80 mA	66 %
TMV 0515 EN		15 VDC	65 mA	66 %
TMV 0505D EN		±5 VDC	±100 mA	66 %
TMV 0512D EN		±12 VDC	±40 mA	72 %
TMV 0515D EN		±15 VDC	±35 mA	73 %
TMV 1205 EN	12 VDC ±10 %	5 VDC	200 mA	66 %
TMV 1212 EN		12 VDC	80 mA	66 %
TMV 1215 EN		15 VDC	65 mA	66 %
TMV 1205D EN		±5 VDC	±100 mA	66 %
TMV 1212D EN		±12 VDC	±40 mA	74 %
TMV 1215D EN		±15 VDC	±35 mA	75 %

- 0.87 x 0.49 x 0.30” SIP-7 package
- I/O isolation voltage 3000 VACrms
- Reinforced insulation, rated for 300 VAC working voltage
- Unregulated device
- IEC/EN/UL 60950-1 approved
- Safety barrier 100 % production test
- Low coupling capacity
- Single-in-line package (SIP)
- Lead-free design, RoHS compliant
- 3 year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
5	-Vout	-Vout
6	No pin	Common
7	+Vout	+Vout

TMV-HI — 1 Watt

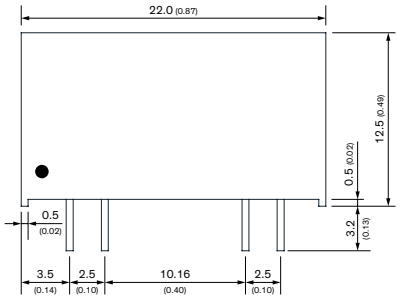


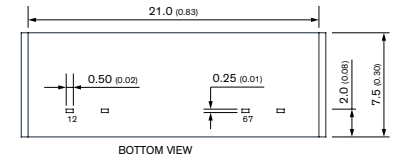
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMV 0503SHI	5 VDC ±10 %	3.3 VDC	303 mA	70 %
TMV 0505SHI		5.0 VDC	200 mA	70 %
TMV 0509SHI		9.0 VDC	111 mA	75 %
TMV 0512SHI		12 VDC	84 mA	77 %
TMV 0515SHI		15 VDC	66 mA	78 %
TMV 0505DHI		±5.0 VDC	±100 mA	71 %
TMV 0509DHI		±9.0 VDC	±56 mA	75 %
TMV 0512DHI		±12 VDC	±42 mA	77 %
TMV 0515DHI		±15 VDC	±33 mA	78 %
TMV 05159HI		+15/-9 VDC	+33/-55 mA	76 %
TMV 1203SHI	12 VDC ±10 %	3.3 VDC	303 mA	71 %
TMV 1205SHI		5.0 VDC	200 mA	71 %
TMV 1209SHI		9.0 VDC	111 mA	76 %
TMV 1212SHI		12 VDC	84 mA	78 %
TMV 1215SHI		15 VDC	66 mA	79 %
TMV 1205DHI		±5.0 VDC	±100 mA	72 %
TMV 1209DHI		±9.0 VDC	±56 mA	76 %
TMV 1212DHI		±12 VDC	±42 mA	78 %
TMV 1215DHI		±15 VDC	±33 mA	79 %
TMV 12159HI		+15/-9 VDC	+33/-55 mA	77 %
TMV 1503SHI	15 VDC ±10 %	3.3 VDC	303 mA	70 %
TMV 1505SHI		5.0 VDC	200 mA	70 %
TMV 1509SHI		9.0 VDC	111 mA	75 %
TMV 1512SHI		12 VDC	84 mA	75 %
TMV 1515SHI		15 VDC	66 mA	79 %
TMV 1505DHI		±5.0 VDC	±100 mA	71 %
TMV 1509DHI		±9.0 VDC	±56 mA	75 %
TMV 1512DHI		±12 VDC	±42 mA	78 %
TMV 1515DHI		±15 VDC	±33 mA	79 %
TMV 15159HI		+15/-9 VDC	+33/-55 mA	76 %
TMV 2403SHI	24 VDC ±10 %	3.3 VDC	303 mA	70 %
TMV 2405SHI		5.0 VDC	200 mA	70 %
TMV 2409SHI		9.0 VDC	111 mA	75 %
TMV 2412SHI		12 VDC	84 mA	78 %
TMV 2415SHI		15 VDC	66 mA	80 %
TMV 2405DHI		±5.0 VDC	±100 mA	71 %
TMV 2409DHI		±9.0 VDC	±56 mA	75 %
TMV 2412DHI		±12 VDC	±42 mA	77 %
TMV 2415DHI		±15 VDC	±33 mA	78 %
TMV 24159HI		+15/-9 VDC	+33/-55 mA	75 %

- 0.77 x 0.30 x 0.40” SIP-7 package
- Ultra compact SIP-7 package
- Very high I/O-isolation 5200 VDC
- Unregulated device
- Dedicated for IGBT applications
- Operating temperature range -40°C to +95°C
- Industry standard pinout
- 3 year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
5	-Vout	-Vout
6	No pin	Common
7	+Vout	+Vout

TRI 1 — IN DEVELOPMENT — 1 Watt



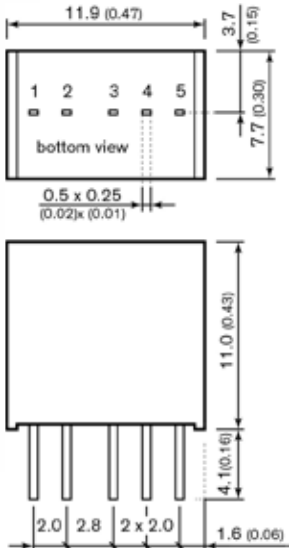


- 0.87 x 0.49 x 0.30” SIP-7 Package
- Reinforced I/O-isolation 3000 VAC rated for 480 VAC working voltage
- Ultra-high isolation peak voltage 8000 VDC (1s)
- Operating temperature range –40 to +85 °C without derating
- Unregulated device
- ±10% Input 5 to 24 VDC
- Efficiency up to 81%
- Short circuit protection
- 3-year product warranty

Pinout	
Pin	**Function**
1	+Vin
2	–Vin
3	–Vout
4	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRI 1-0511	5 VDC ±10% (nominal 5VDC)	5 VDC	200 mA	79%
TRI 1-0512		12 VDC	84 mA	80%
TRI 1-0513		15 VDC	68 mA	81%
TRI 1-1211	12 VDC ±10% (nominal 12VDC)	5 VDC	200 mA	79%
TRI 1-1212		12 VDC	84 mA	81%
TRI 1-1213		15 VDC	68 mA	79%
TRI 1-2411	24 VDC ±10% (nominal 24VDC)	5 VDC	200 mA	76%
TRI 1-2412		12 VDC	84 mA	79%
TRI 1-2413		15 VDC	68 mA	79%

TRN 1 — 1 Watt

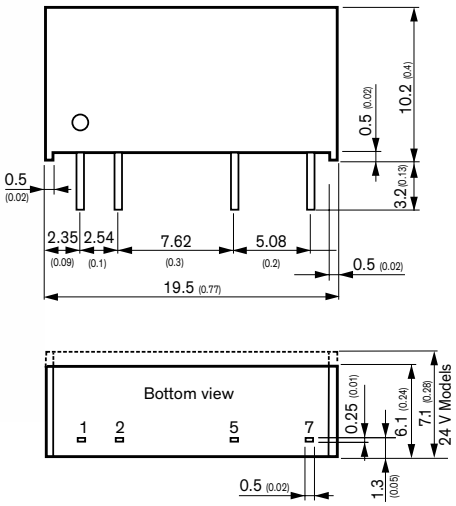


- 0.47 x 0.32 x 0.43” SIP-5 package
- Fully regulated outputs
- Input Voltage range 4.5-13.2, 9-18, 18-36, 36-75 VDC
- I/O-isolation 1600 VDC
- Operating temperature range -40°C to +90°C without derating
- Short circuit protection
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	+Vout	+Vout
4	no pin	common
5	-Vout	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRN 1-0510	**4.5 - 13.2 VDC** (9 VDC nominal)	3.3 VDC	300 mA	77 %
TRN 1-0511		5.0 VDC	200 mA	79 %
TRN 1-0512		12 VDC	90 mA	81 %
TRN 1-0513		15 VDC	70 mA	82 %
TRN 1-0515		24 VDC	45 mA	83 %
TRN 1-0521		± 5.0 VDC	±100 mA	79 %
TRN 1-0522		±12 VDC	±45 mA	83 %
TRN 1-0523		±15 VDC	±35 mA	80 %
TRN 1-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	300 mA	77 %
TRN 1-1211		5.0 VDC	200 mA	80 %
TRN 1-1212		12 VDC	90 mA	81 %
TRN 1-1213		15 VDC	70 mA	83 %
TRN 1-1215		24 VDC	45 mA	83 %
TRN 1-1221		± 5.0 VDC	±100 mA	79 %
TRN 1-1222		±12 VDC	±45 mA	83 %
TRN 1-1223		±15 VDC	±35 mA	80 %
TRN 1-2410	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	300 mA	77 %
TRN 1-2411		5.0 VDC	200 mA	81 %
TRN 1-2412		12 VDC	90 mA	82 %
TRN 1-2413		15 VDC	70 mA	83 %
TRN 1-2415		24 VDC	45 mA	82 %
TRN 1-2421		± 5.0 VDC	±100 mA	79 %
TRN 1-2422		±12 VDC	±45 mA	82 %
TRN 1-2423		±15 VDC	±35 mA	80 %
TRN 1-4810	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	300 mA	77 %
TRN 1-4811		5.0 VDC	200 mA	78 %
TRN 1-4812		12 VDC	90 mA	80 %
TRN 1-4813		15 VDC	70 mA	81 %
TRN 1-4815		24 VDC	45 mA	81 %
TRN 1-4821		± 5.0 VDC	±100 mA	78 %
TRN 1-4822		±12 VDC	±45 mA	81 %
TRN 1-4823		±15 VDC	±35 mA	79 %

TRV 1 — 1 Watt



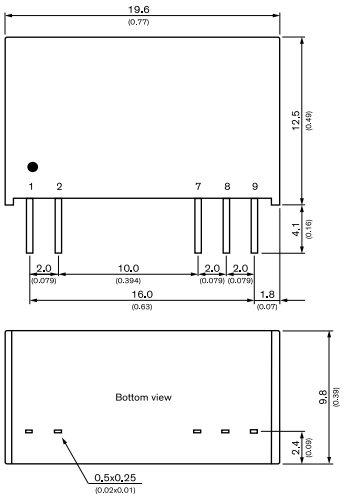
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRV 1-0511	**5 VDC ±10%**	5 VDC	200 mA	84%
TRV 1-0519		9 VDC	110 mA	86.5%
TRV 1-0512		12 VDC	84 mA	87%
TRV 1-0513		15 VDC	67 mA	87.5%
TRV 1-1211	**12 VDC ±10%**	5 VDC	200 mA	84%
TRV 1-1219		9 VDC	110 mA	86%
TRV 1-1212		12 VDC	84 mA	88%
TRV 1-1213		15 VDC	67 mA	88%
TRV 1-2411	**24 VDC ±10%**	5 VDC	200 mA	84%
TRV 1-2419		9 VDC	110 mA	86.5%
TRV 1-2412		12 VDC	84 mA	87.5%
TRV 1-2413		15 VDC	67 mA	87.5%

- 0.77 x 0.4 x 0.24” SIP-7 Package
- Semi-regulated output (load)
- Industry standard pinout
- High efficiency up to 88%
- I/O isolation voltage 3000 VDC
- Operationally reliable up to 5000m altitude
- Operating temperature range –40°C to +85°C
- 3-year product warranty

Pinout	
Pin	**Function**
1	+Vin (Vcc)
2	–Vin (GND)
5	–Vout
7	+Vout

TRV 1M — 1 Watt

IEC/EN/ES 60601-1 (2×MOPP)

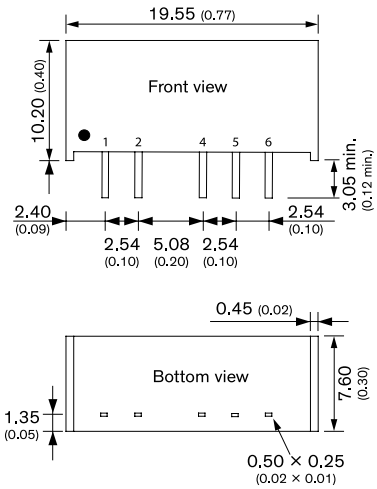


Model	Input	Vout	Iout	Efficiency
TRV 1-0510M	5 ± 10 VDC	3.3 VDC	303 mA	80 %
TRV 1-0511M		5 VDC	200 mA	82 %
TRV 1-0512M		12 VDC	83 mA	85 %
TRV 1-0513M		15 VDC	67 mA	84 %
TRV 1-0521M		±5 VDC	±100 mA	85 %
TRV 1-0522M		±12 VDC	±42 mA	85 %
TRV 1-0523M		±15 VDC	±34 mA	84 %
TRV 1-1210M	12 ± 20 VDC	3.3 VDC	303 mA	80 %
TRV 1-1211M		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	15 ± 20 VDC	3.3 VDC	303 mA	79 %
TRV 1-1511M		5 VDC	200 mA	83 %
TRV 1-1512M		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 %

- 0.77 x 0.49 x 0.39” SIP-7 package
- Semi regulated
- 2x MOPP / BF Compliant
- 5000 VAC I/O-isolation (reinforced)
- Operating temperature: -40°C to 95°C w/o derating
- ±10% Input 5 to 24 VDC
- 3.3 to 15 VDC output voltage
- 3 year product warranty

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

TBA 2 — 2 Watt

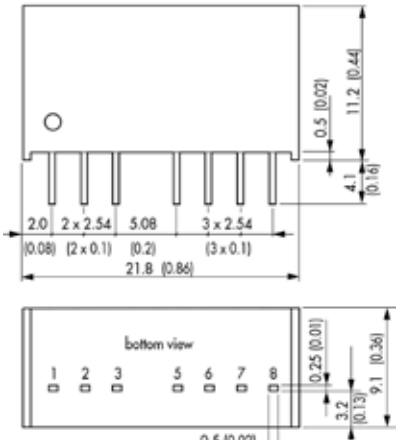


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TBA 2-0511	**4.5 - 5.5 VDC** (5 VDC nom.)	5 VDC	400 mA	78 %
TBA 2-0512		12 VDC	165 mA	82 %
TBA 2-0513		15 VDC	130 mA	82 %
TBA 2-0521		±5 VDC	200 mA	79 %
TBA 2-0522		±12 VDC	80 mA	82 %
TBA 2-0523		±15 VDC	65 mA	82 %
TBA 2-1211	**10.8 - 13.2 VDC** (12 VDC nom.)	5 VDC	400 mA	79 %
TBA 2-1212		12 VDC	165 mA	82 %
TBA 2-1213		15 VDC	130 mA	84 %
TBA 2-1221		±5 VDC	200 mA	79 %
TBA 2-1222		±12 VDC	80 mA	83 %
TBA 2-1223		±15 VDC	65 mA	84 %
TBA 2-2411	**21.6 - 26.4 VDC** (24 VDC nom.)	5 VDC	400 mA	78 %
TBA 2-2412		12 VDC	165 mA	84 %
TBA 2-2413		15 VDC	130 mA	84 %
TBA 2-2421		±5 VDC	200 mA	80 %
TBA 2-2422		±12 VDC	80 mA	84 %
TBA 2-2423		±15 VDC	65 mA	84 %

- 0.77 x 0.40 x 0.30” SIP-7 package
- Continuous short circuit protection
- I/O isolation: 1500 VDC
- Operating temperature range -40 to +80 °C without derating
- ±10% input voltage ranges
- High efficiency up to 84%
- Unregulated outputs
- 3 year product waranty

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

TEC 2 — 2 Watt

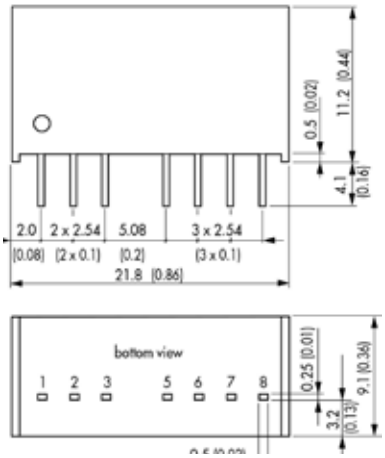


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEC 2-0910	**4.5 - 13.2 VDC** (9 VDC nominal)	3.3 VDC	500 mA	78 %
TEC 2-0911		5.0 VDC	400 mA	81 %
TEC 2-0919		9.0 VDC	222 mA	84 %
TEC 2-0912		12 VDC	167 mA	84 %
TEC 2-0913		15 VDC	134 mA	84 %
TEC 2-0915		24 VDC	83 mA	85 %
TEC 2-0921		±5.0 VDC	±200 mA	81 %
TEC 2-0922		±12 VDC	±83 mA	85 %
TEC 2-0923		±15 VDC	±67 mA	84 %
TEC 2-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	500 mA	78 %
TEC 2-1211		5.0 VDC	400 mA	82 %
TEC 2-1219		9.0 VDC	222 mA	84 %
TEC 2-1212		12 VDC	167 mA	85 %
TEC 2-1213		15 VDC	134 mA	85 %
TEC 2-1215		24 VDC	83 mA	85 %
TEC 2-1221		±5.0 VDC	±200 mA	82 %
TEC 2-1222		±12 VDC	±83 mA	85 %
TEC 2-1223		±15 VDC	±67 mA	84 %
TEC 2-2410	**18 - 36 VDC** (12 VDC nominal)	3.3 VDC	500 mA	78 %
TEC 2-2411		5.0 VDC	400 mA	83 %
TEC 2-2419		9.0 VDC	222 mA	85 %
TEC 2-2412		12 VDC	167 mA	86 %
TEC 2-2413		15 VDC	134 mA	85 %
TEC 2-2415		24 VDC	83 mA	85 %
TEC 2-2421		±5.0 VDC	±200 mA	83 %
TEC 2-2422		±12 VDC	±83 mA	85 %
TEC 2-2423		±15 VDC	±67 mA	86 %
TEC 2-4810	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	500 mA	76 %
TEC 2-4811		5.0 VDC	400 mA	80 %
TEC 2-4819		9.0 VDC	222 mA	82 %
TEC 2-4812		12 VDC	167 mA	84 %
TEC 2-4813		15 VDC	134 mA	85 %
TEC 2-4815		24 VDC	83 mA	85 %
TEC 2-4821		±5.0 VDC	±200 mA	80 %
TEC 2-4822		±12 VDC	±83 mA	85 %
TEC 2-4823		±15 VDC	±67 mA	83 %

- 0.86 x 0.36 x 0.44” SIP-8 package
- I/O-isolation voltage 1600 VDC
- Fully regulated outputs
- Operating temperature range -40°C to +95°C
- Short circuit protection
- Remote On/Off
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	+Vin (VCC)	+Vin (VCC)
3	On/Off	On/Off
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

TEC 2WI — 2 Watt

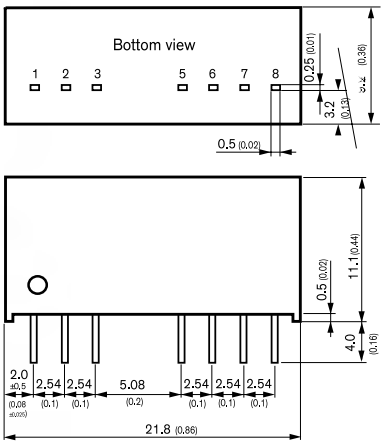


- 0.86 x 0.36 x 0.44" SIP-8 package
- I/O-isolation voltage 1600 VDC
- Ultra-wide 4:1 input voltage range
- Fully regulated outputs
- Operating temperature range -40°C to +93°C
- Continuos short circuit protection
- Remote On/Off
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	+Vin (VCC)	+Vin (VCC)
3	On/Off	On/Off
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEC 2-1210WI	**4.5 - 18 VDC** (12 VDC nominal)	3.3 VDC	500 mA	75 %
TEC 2-1211WI		5.0 VDC	400 mA	80 %
TEC 2-1219WI		9.0 VDC	222 mA	81 %
TEC 2-1212WI		12 VDC	167 mA	81 %
TEC 2-1213WI		15 VDC	134 mA	82 %
TEC 2-1215WI		24 VDC	83 mA	82 %
TEC 2-1221WI		±5.0 VDC	±200 mA	80 %
TEC 2-1222WI		±12 VDC	±83 mA	82 %
TEC 2-1223WI		±15 VDC	±67 mA	81 %
TEC 2-2410WI	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	500 mA	76 %
TEC 2-2411WI		5.0 VDC	400 mA	80 %
TEC 2-2419WI		9.0 VDC	222 mA	80 %
TEC 2-2412WI		12 VDC	167 mA	82 %
TEC 2-2413WI		15 VDC	134 mA	82 %
TEC 2-2415WI		24 VDC	83 mA	82 %
TEC 2-2421WI		±5.0 VDC	±200 mA	79 %
TEC 2-2422WI		±12 VDC	±83 mA	82 %
TEC 2-2423WI		±15 VDC	±67 mA	80 %
TEC 2-4810WI	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	500 mA	74 %
TEC 2-4811WI		5.0 VDC	400 mA	79 %
TEC 2-4819WI		9.0 VDC	222 mA	81 %
TEC 2-4812WI		12 VDC	167 mA	82 %
TEC 2-4813WI		15 VDC	134 mA	81 %
TEC 2-4815WI		24 VDC	83 mA	81 %
TEC 2-4821WI		±5.0 VDC	±200 mA	79 %
TEC 2-4822WI		±12 VDC	±83 mA	81 %
TEC 2-4823WI		±15 VDC	±67 mA	81 %

TMR 2 — 2 Watt



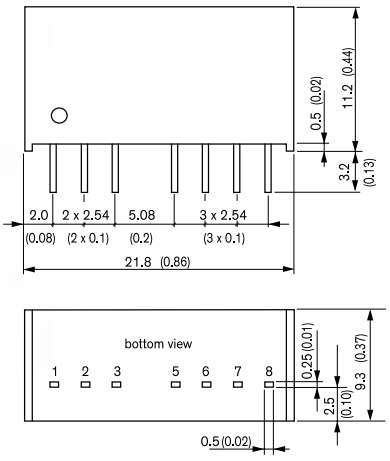
- 0.86 x 0.36 x 0.44" SIP-8 package
- Wide 2:1 input voltage range
- Small footprint
- Remote On/Off control
- Temperature range -40° to +85°C
- High efficiency
- Excellent load and line regulation
- Indefinite short-circuit protection
- I/O isolation 1500 VDC
- 3 year product warrenty

Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 0510	**4.5 - 9 VDC** (5 VDC nom.)	3.3 VDC	500 mA	76 %
TMR 0511		5 VDC	400 mA	80 %
TMR 0512		12 VDC	167 mA	81 %
TMR 0521		+5 VDC	200 mA	79 %
TMR 0522		+12 VDC	83 mA	82 %
TMR 0523		+15 VDC	67 mA	81 %
TMR 1210	**9 - 18 VDC** (12 VDC nom.)	3.3 VDC	500 mA	77 %
TMR 1211		5 VDC	400 mA	81 %
TMR 1212		12 VDC	167 mA	83 %
TMR 1221		+5 VDC	200 mA	81 %
TMR 1222		+12 VDC	83 mA	83 %
TMR 1223		+15 VDC	67 mA	84 %
TMR 2410	**18 - 36 VDC** (24 VDC nom.)	3.3 VDC	500 mA	78 %
TMR 2411		5 VDC	400 mA	81 %
TMR 2412		12 VDC	167 mA	83 %
TMR 2421		+5 VDC	200 mA	80 %
TMR 2422		+12 VDC	83 mA	83 %
TMR 2423		+15 VDC	67 mA	82 %
TMR 4810	**36 - 75 VDC** (48 VDC nom.)	3.3 VDC	500 mA	76 %
TMR 4811		5 VDC	400 mA	78 %
TMR 4812		12 VDC	167 mA	83 %
TMR 4821		+5 VDC	200 mA	80 %
TMR 4822		+12 VDC	83 mA	81 %
TMR 4823		+15 VDC	67 mA	81 %

DC/DC: Isolated / SIP Package

TMR 2WIN — 2 Watt

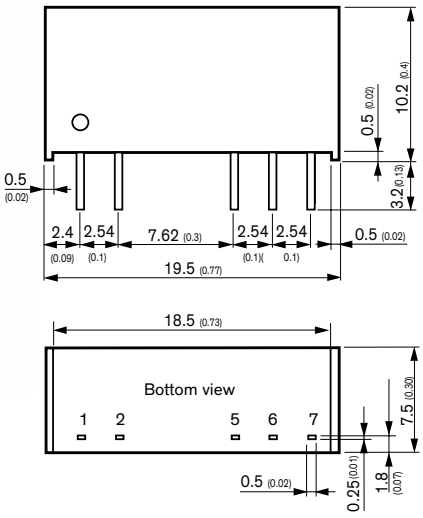


- 1.02 x 0.36 x 0.49” SIP-8 package
- Ultra-wide 4:1 input range
- Temperature range -40 to +90°C (up to +75°C at full load)
- High efficiency of 82%
- Excellent load and line regulation
- Continuouse short-circuit protection
- Overload protection
- I/O isolation 1500 VDC
- Remote On/Off control
- 3 year product warranty

Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 2-1210WIN	**4.5 - 18 VDC** (12 VDC nom.)	3.3 VDC	500 mA	75 %
TMR 2-1211WIN		5 VDC	400 mA	80 %
TMR 2-1212WIN		12 VDC	167 mA	82 %
TMR 2-1213WIN		15 VDC	134 mA	82 %
TMR 2-1221WIN		+5 VDC	200 mA	80 %
TMR 2-1222WIN		+12 VDC	83 mA	82 %
TMR 2-1223WIN		+15 VDC	67 mA	82 %
TMR 2-2410WIN	**9 - 36 VDC** (24 VDC nom.)	3.3 VDC	500 mA	75 %
TMR 2-2411WIN		5 VDC	400 mA	80 %
TMR 2-2412WIN		12 VDC	167 mA	82 %
TMR 2-2413WIN		15 VDC	134 mA	82 %
TMR 2-2421WIN		+5 VDC	200 mA	80 %
TMR 2-2422WIN		+12 VDC	83 mA	82 %
TMR 2-2423WIN		+15 VDC	67 mA	82 %
TMR 2-4810WIN	**18 - 75 VDC** (48 VDC nom.)	3.3 VDC	500 mA	74 %
TMR 2-4811WIN		5 VDC	400 mA	80 %
TMR 2-4812WIN		12 VDC	167 mA	82 %
TMR 2-4813WIN		15 VDC	134 mA	82 %
TMR 2-4821WIN		+5 VDC	200 mA	80 %
TMR 2-4822WIN		+12 VDC	83 mA	82 %
TMR 2-4823WIN		+15 VDC	67 mA	82 %

TMV 2HI — 2 Watt



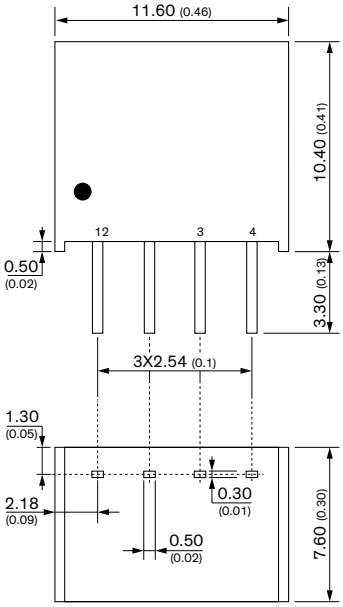
- 0.77 x 0.30 x 0.40” SIP-7 package
- I/O-isolation 5200 VDC (5700 Vpk)
- Unregulated device
- Dedicated for IGBT applications
- Operating temperature range -40°C to +85°C
- Industry standard pinout
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
5	-Vout	-Vout
6	No pin	Common
7	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMV 2-0503SHI	**5 VDC ±10 %**	3.3 VDC	500 mA	74 %
TMV 2-0505SHI		5.0 VDC	400 mA	80 %
TMV 2-0509SHI		9.0 VDC	222 mA	81 %
TMV 2-0512SHI		12 VDC	168 mA	82 %
TMV 2-0515SHI		15 VDC	132 mA	79 %
TMV 2-0505DHI		±5.0 VDC	±200 mA	78 %
TMV 2-0509DHI		±9.0 VDC	±112 mA	80 %
TMV 2-0512DHI		±12 VDC	±84 mA	80 %
TMV 2-0515DHI		±15 VDC	±66 mA	79 %
TMV 2-05159HI		+15/-9 VDC	+66/-110 mA	80 %
TMV 2-1203SHI	**12 VDC ±10 %**	3.3 VDC	500 mA	76 %
TMV 2-1205SHI		5.0 VDC	400 mA	79 %
TMV 2-1209SHI		9.0 VDC	222 mA	81 %
TMV 2-1212SHI		12 VDC	168 mA	83 %
TMV 2-1215SHI		15 VDC	132 mA	82 %
TMV 2-1205DHI		±5.0 VDC	±200 mA	79 %
TMV 2-1209DHI		±9.0 VDC	±112 mA	81 %
TMV 2-1212DHI		±12 VDC	±84 mA	82 %
TMV 2-1215DHI		±15 VDC	±66 mA	83 %
TMV 2-12159HI		+15/-9 VDC	+66/-110 mA	81 %
TMV 2-1503SHI	**15 VDC ±10 %**	3.3 VDC	500 mA	77 %
TMV 2-1505SHI		5.0 VDC	400 mA	79 %
TMV 2-1509SHI		9.0 VDC	222 mA	83 %
TMV 2-1512SHI		12 VDC	168 mA	83 %
TMV 2-1515SHI		15 VDC	132 mA	85 %
TMV 2-1505DHI		±5.0 VDC	±200 mA	81 %
TMV 2-1509DHI		±9.0 VDC	±112 mA	84 %
TMV 2-1512DHI		±12 VDC	±84 mA	82 %
TMV 2-1515DHI		±15 VDC	±66 mA	82 %
TMV 2-15159HI		+15/-9 VDC	+66/-110 mA	83 %
TMV 2-2403SHI	**24 VDC ±10 %**	3.3 VDC	500 mA	76 %
TMV 2-2405SHI		5.0 VDC	400 mA	77 %
TMV 2-2409SHI		9.0 VDC	222 mA	81 %
TMV 2-2412SHI		12 VDC	168 mA	82 %
TMV 2-2415SHI		15 VDC	132 mA	82 %
TMV 2-2405DHI		±5.0 VDC	±200 mA	77 %
TMV 2-2409DHI		±9.0 VDC	±112 mA	81 %
TMV 2-2412DHI		±12 VDC	±84 mA	81 %
TMV 2-2415DHI		±15 VDC	±66 mA	80 %
TMV 2-24159HI		+15/-9 VDC	+66/-110 mA	81 %

Visit our website for documentation with links to our distributors for pricing and availability:

TMU 2 — IN DEVELOPMENT — 2 Watt



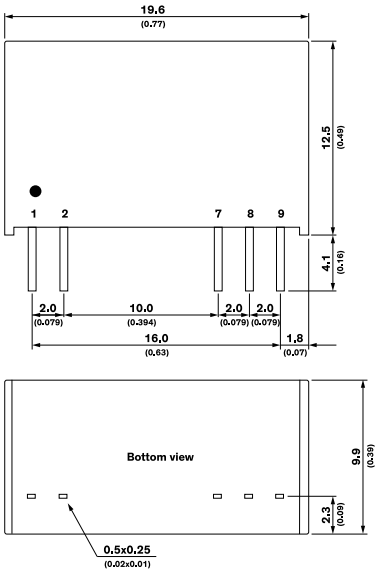
- 0.46 x 0.41 x 0.30” SIP-4 package
- Continuous short circuit protection
- I/O isolation: 1500 VDC
- Operating temperature range –40 to +85 °C without derating
- ±10% Input ranges (5, 12, 24 VDC)
- High efficiency up to 83%
- Unregulated outputs
- 3-year product warranty

Pinout	
Pin	**Function**
1	–Vin
2	+Vin
3	–Vout
4	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMU 2-0511	**5 VDC ±10%** (nominal 5 VDC)	5 VDC	400 mA	78%
TMU 2-0512		12 VDC	165 mA	82%
TMU 2-0513		15 VDC	130 mA	82%
TMU 2-0515		24 VDC	80 mA	83%
TMU 2-1211	**12 VDC ±10%** (nominal 12 VDC)	5 VDC	400 mA	78%
TMU 2-1212		12 VDC	165 mA	82%
TMU 2-1213		15 VDC	130 mA	82%
TMU 2-1215		24 VDC	80 mA	83%
TMU 2-2411	**24 VDC ±10%** (nominal 24 VDC)	5 VDC	400 mA	78%
TMU 2-2412		12 VDC	165 mA	82%
TMU 2-2413		15 VDC	130 mA	82%
TMU 2-2415		24 VDC	80 mA	83%

TRV 2M — NEW! — 2 Watt

IEC/EN/ES 60601-1 (2×MOPP)

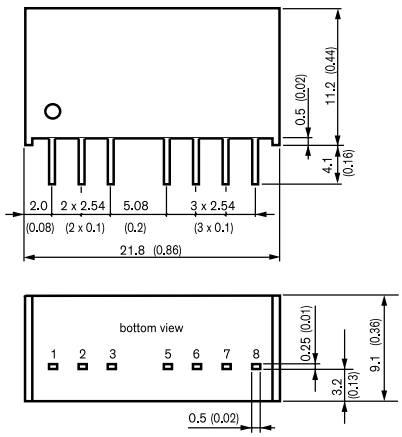


- 0.77 x 0.49 x 0.30” SIP-7 package
- I/O isolation 5000 VAC (reinforced)
- Short circuit protection
- Semi-regulated outputs
- ±10% Input 5 to 24 VDC
- Operating temperature range –40 to +75 °C without derating
- IEC/EN/ES 60601-1 (2 × MOPP) and IEC/EN/UL 62368-1
- Low leakage current < 2 µA
- Efficiency up to 84%
- Operation up to 5000 m altitude
- 5-year product warranty

Pinout / Connection		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	–Vin	–Vin
7	–Vout	–Vout
8	No Pin	Common
9	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Iout	Efficiency
TRV 2-0510M	**4.5 – 5.5 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	**10.8 – 13.2 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	**13.5 – 16.5 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	**21.6 – 26.4 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%

TEC 3 — 3 Watt

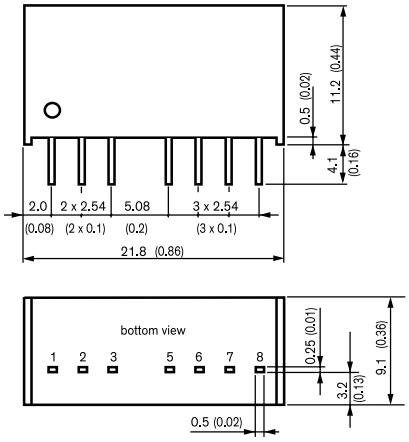


- 0.86 x 0.36 x 0.44” SIP-8 package
- I/O-isolation 1600 VDC
- Fully regulated outputs
- Operating temperature range -40°C to +90°C
- Short circuit protection
- Remote On/Off
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	+Vin (VCC)	+Vin (VCC)
3	On/Off	On/Off
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEC 3-0910	**4.5 - 13.2 VDC** (9 VDC nominal)	3.3 VDC	700 mA	75 %
TEC 3-0911		5.0 VDC	600 mA	78 %
TEC 3-0919		9.0 VDC	333 mA	81 %
TEC 3-0912		12 VDC	250 mA	83 %
TEC 3-0913		15 VDC	200 mA	84 %
TEC 3-0915		24 VDC	125 mA	82 %
TEC 3-0921		±5.0 VDC	±300 mA	79 %
TEC 3-0922		±12 VDC	±125 mA	82 %
TEC 3-0923		±15 VDC	±100 mA	82 %
TEC 3-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	700 mA	77 %
TEC 3-1211		5.0 VDC	600 mA	81 %
TEC 3-1219		9.0 VDC	333 mA	82 %
TEC 3-1212		12 VDC	250 mA	84 %
TEC 3-1213		15 VDC	200 mA	85 %
TEC 3-1215		24 VDC	125 mA	85 %
TEC 3-1221		±5.0 VDC	±300 mA	81 %
TEC 3-1222		±12 VDC	±125 mA	85 %
TEC 3-1223		±15 VDC	±100 mA	83 %
TEC 3-2410	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	700 mA	77 %
TEC 3-2411		5.0 VDC	600 mA	82 %
TEC 3-2419		9.0 VDC	333 mA	83 %
TEC 3-2412		12 VDC	250 mA	85 %
TEC 3-2413		15 VDC	200 mA	86 %
TEC 3-2415		24 VDC	125 mA	84 %
TEC 3-2421		±5.0 VDC	±300 mA	82 %
TEC 3-2422		±12 VDC	±125 mA	84 %
TEC 3-2423		±15 VDC	±100 mA	85 %

TEC 3WI — 3 Watt

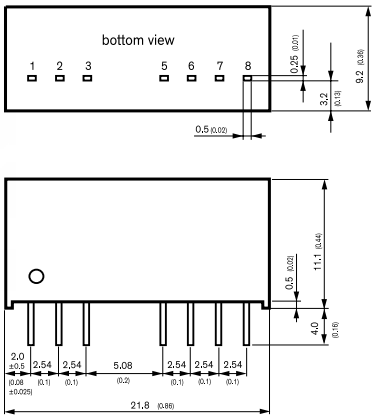


- 0.86 x 0.36 x 0.44” SIP-8 package
- I/O-isolation 1600 VDC
- Ultra-wide 4:1 input voltage range
- Fully regulated outputs
- Operating temperature range -40°C to +90°C
- Short circuit protection
- Remote On/Off
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	+Vin (VCC)	+Vin (VCC)
3	On/Off	On/Off
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEC 3-1210WI	**4.5 - 18 VDC** (12 VDC nominal)	3.3 VDC	700 mA	75 %
TEC 3-1211WI		5.0 VDC	600 mA	79 %
TEC 3-1219WI		9.0 VDC	333 mA	81 %
TEC 3-1212WI		12 VDC	250 mA	82 %
TEC 3-1213WI		15 VDC	200 mA	83 %
TEC 3-1215WI		24 VDC	125 mA	82 %
TEC 3-1221WI		±5.0 VDC	±300 mA	80 %
TEC 3-1222WI		±12 VDC	±125 mA	82 %
TEC 3-1223WI		±15 VDC	±100 mA	81 %
TEC 3-2410WI	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	700 mA	76 %
TEC 3-2411WI		5.0 VDC	600 mA	80 %
TEC 3-2419WI		9.0 VDC	333 mA	81 %
TEC 3-2412WI		12 VDC	250 mA	83 %
TEC 3-2413WI		15 VDC	200 mA	83 %
TEC 3-2415WI		24 VDC	125 mA	81 %
TEC 3-2421WI		±5.0 VDC	±300 mA	79 %
TEC 3-2422WI		±12 VDC	±125 mA	81 %
TEC 3-2423WI		±15 VDC	±100 mA	81 %
TEC 3-4810WI	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	700 mA	74 %
TEC 3-4811WI		5.0 VDC	600 mA	80 %
TEC 3-4819WI		9.0 VDC	333 mA	81 %
TEC 3-4812WI		12 VDC	250 mA	82 %
TEC 3-4813WI		15 VDC	200 mA	83 %
TEC 3-4815WI		24 VDC	125 mA	82 %
TEC 3-4821WI		±5.0 VDC	±300 mA	80 %
TEC 3-4822WI		±12 VDC	±125 mA	82 %
TEC 3-4823WI		±15 VDC	±100 mA	82 %

TMR 3 — 3 Watt

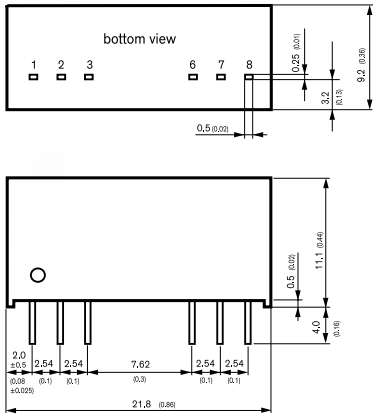


- 0.86 x 0.44 x 0.36” - SIP-8 package
- Wide 2:1 input voltage range
- Fully regulated output voltage
- 1600 VDC I/O isolation
- Small footprint
- Temperature range -40° to +85°C
- High efficiency up to 85%
- Short-circuit protection
- Remote On/Off control
- 3 year product warranty

Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 3-0510	4.5 - 9 VDC (5 VDC nom.)	3.3 VDC	700 mA	75 %
TMR 3-0511		5 VDC	600 mA	79 %
TMR 3-0512		12 VDC	250 mA	81 %
TMR 3-0513		15 VDC	200 mA	82 %
TMR 3-0521		+5 VDC	300 mA	78 %
TMR 3-0522		+12 VDC	125 mA	81 %
TMR 3-0523		+15 VDC	100 mA	81 %
TMR 3-1210	9 - 18 VDC (12 VDC nom.)	3.3 VDC	700 mA	77 %
TMR 3-1211		5 VDC	600 mA	81 %
TMR 3-1212		12 VDC	250 mA	83 %
TMR 3-1213		15 VDC	200 mA	83 %
TMR 3-1221		+5 VDC	300 mA	82 %
TMR 3-1222		+12 VDC	125 mA	83 %
TMR 3-1223		+15 VDC	100 mA	83 %
TMR 3-2410	18 - 36 VDC (24 VDC nom.)	3.3 VDC	700 mA	76 %
TMR 3-2411		5 VDC	600 mA	82 %
TMR 3-2412		12 VDC	250 mA	83 %
TMR 3-2413		15 VDC	200 mA	84 %
TMR 3-2421		+5 VDC	300 mA	80 %
TMR 3-2422		+12 VDC	125 mA	83 %
TMR 3-2423		+15 VDC	100 mA	85 %
TMR 3-4810	36 - 75 VDC (48 VDC nom.)	3.3 VDC	700 mA	74 %
TMR 3-4811		5 VDC	600 mA	79 %
TMR 3-4812		12 VDC	250 mA	81 %
TMR 3-4813		15 VDC	200 mA	82 %
TMR 3-4821		+5 VDC	300 mA	79 %
TMR 3-4822		+12 VDC	125 mA	82 %
TMR 3-4823		+15 VDC	100 mA	83 %

TMR 3HI — 3 Watt

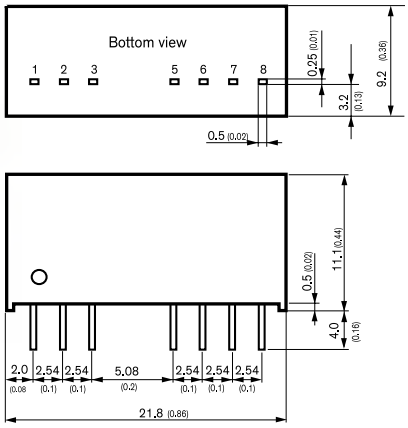


- 0.86 x 0.44 x 0.36” SIP-8 package
- Wide 2:1 input voltage range
- Fully regulated output voltage
- 3000 VDC I/O isolation
- Small footprint
- Temperature range -40° to +85°C
- High efficiency up to 85%
- Short-circuit protection
- Remote On/Off control
- 3 year product warranty

Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 3-0510HI	**4.5 - 9 VDC** (5 VDC nom.)	3.3 VDC	700 mA	75 %
TMR 3-0511HI		5 VDC	600 mA	79 %
TMR 3-0512HI		12 VDC	250 mA	81 %
TMR 3-0513HI		15 VDC	200 mA	82 %
TMR 3-0521HI		+5 VDC	300 mA	78 %
TMR 3-0522HI		+12 VDC	125 mA	81 %
TMR 3-0523HI		+15 VDC	100 mA	81 %
TMR 3-1210HI	**9 - 18 VDC** (12 VDC nom.)	3.3 VDC	700 mA	77 %
TMR 3-1211HI		5 VDC	600 mA	81 %
TMR 3-1212HI		12 VDC	250 mA	83 %
TMR 3-1213HI		15 VDC	200 mA	83 %
TMR 3-1221HI		+5 VDC	300 mA	82 %
TMR 3-1222HI		+12 VDC	125 mA	83 %
TMR 3-1223HI		+15 VDC	100 mA	83 %
TMR 3-2410HI	**18 - 36 VDC** (24 VDC nom.)	3.3 VDC	700 mA	76 %
TMR 3-2411HI		5 VDC	600 mA	82 %
TMR 3-2412HI		12 VDC	250 mA	83 %
TMR 3-2413HI		15 VDC	200 mA	84 %
TMR 3-2421HI		+5 VDC	300 mA	80 %
TMR 3-2422HI		+12 VDC	125 mA	83 %
TMR 3-2423HI		+15 VDC	100 mA	85 %
TMR 3-4810HI	**36 - 75 VDC** (48 VDC nom.)	3.3 VDC	700 mA	74 %
TMR 3-4811HI		5 VDC	600 mA	79 %
TMR 3-4812HI		12 VDC	250 mA	81 %
TMR 3-4813HI		15 VDC	200 mA	82 %
TMR 3-4821HI		+5 VDC	300 mA	79 %
TMR 3-4822HI		+12 VDC	125 mA	82 %
TMR 3-4823HI		+15 VDC	100 mA	83 %

TMR 3WI — 3 Watt



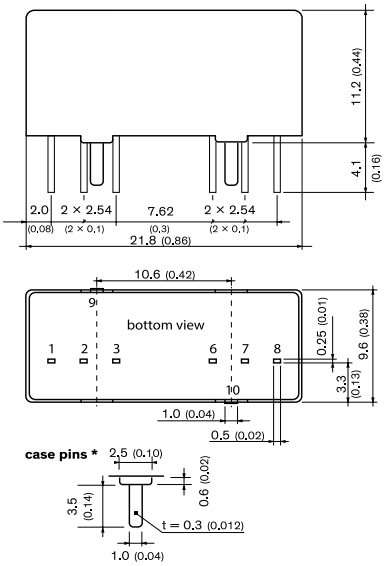
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 3-1210WI	4.5 - 18 VDC (12 VDC nom.)	3.3 VDC	700 mA	74 %
TMR 3-1211WI		5 VDC	600 mA	78 %
TMR 3-1212WI		12 VDC	250 mA	80 %
TMR 3-1213WI		15 VDC	200 mA	80 %
TMR 3-1221WI		+5 VDC	300 mA	80 %
TMR 3-1222WI		+12 VDC	125 mA	80 %
TMR 3-1223WI		+15 VDC	100 mA	80 %
TMR 3-2410WI	9 - 36 VDC (24 VDC nom.)	3.3 VDC	700 mA	75 %
TMR 3-2411WI		5 VDC	600 mA	80 %
TMR 3-2412WI		12 VDC	250 mA	82 %
TMR 3-2413WI		15 VDC	200 mA	82 %
TMR 3-2421WI		+5 VDC	300 mA	79 %
TMR 3-2422WI		+12 VDC	125 mA	81 %
TMR 3-2423WI		+15 VDC	100 mA	81 %
TMR 3-4810WI	18 - 75 VDC (48 VDC nom.)	3.3 VDC	700 mA	74 %
TMR 3-4811WI		5 VDC	600 mA	80 %
TMR 3-4812WI		12 VDC	250 mA	81 %
TMR 3-4813WI		15 VDC	200 mA	81 %
TMR 3-4821WI		+5 VDC	300 mA	79 %
TMR 3-4822WI		+12 VDC	125 mA	81 %
TMR 3-4823WI		+15 VDC	100 mA	81 %

- 0.86 x 0.44 x 0.36” SIP-8 package
- Ultra-wide 4:1 input range
- Small footprint: 21.8 x 9.2 mm
- Temperature range -40° to +85°C
- High efficiency up to 82%
- Excellent load and line regulation
- Short-circuit protection
- I/O isolation 1600 VDC
- Remote On/Off control
- 3 year product warranty

Pinout		
Pin	Single Output	Dual Output
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

TMR 3WIR — 3 Watt

EN50155 /EN61373 Approved

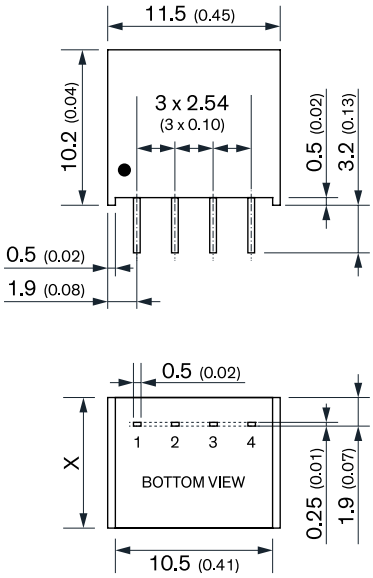


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 3-2410WIR	9 - 36 VDC (24 VDC nom.)	3.3 VDC	700 mA	76 %
TMR 3-2411WIR		5 VDC	600 mA	81 %
TMR 3-2419WIR		9VDC	333 mA	81 %
TMR 3-2412WIR		12 VDC	250 mA	83 %
TMR 3-2413WIR		15 VDC	200 mA	83 %
TMR 3-2415WIR		24 VDC	125 mA	82 %
TMR 3-2421WIR		± 5 VDC	300 mA	80 %
TMR 3-2422WIR		±12 VDC	125 mA	82 %
TMR 3-2423WIR		±15 VDC	100 mA	82 %
TMR 3-4810WIR	18 - 75 VDC (48 VDC nom.)	3.3 VDC	700 mA	75 %
TMR 3-4811WIR		5 VDC	600 mA	81 %
TMR 3-4819WIR		9VDC	333 mA	81 %
TMR 3-4812WIR		12 VDC	250 mA	82 %
TMR 3-4813WIR		15 VDC	200 mA	82 %
TMR 3-4815WIR		24 VDC	125 mA	82 %
TMR 3-4821WIR		± 5 VDC	300 mA	80 %
TMR 3-4822WIR		±12 VDC	125 mA	82 %
TMR 3-4823WIR		±15 VDC	100 mA	82 %

- 0.86 x 0.44 x 0.38” SIP-8 metal case
- Ultra-wide 4:1 Input
- I/O-isolation 3‘000 VDC
- Fully regulated outputs
- Operating temperature range -40°C to +90°C
- Short circuit protection and current limitation
- Remote On/Off
- 3 year product warranty

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

TMU 3 NEW! 3 Watt



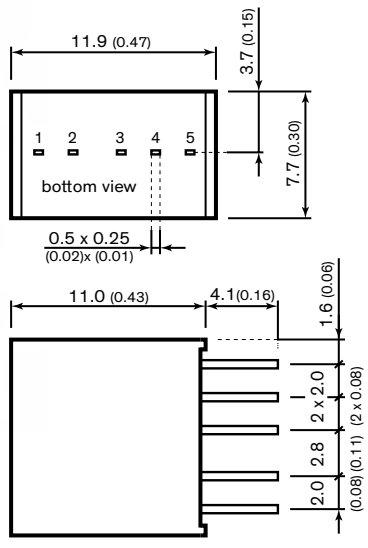
X = 8.6 (0.34) for 5 Vin & 12 Vin models
X = 9.6 (0.38) for 24 Vin models

- 0.45 x 0.40 x 0.34" SIP-4 package
- Continuous short circuit protection
- I/O isolation: 1500 VDC
- Operating temperature range –40 to +80 °C without derating
- ±10% Input ranges (5, 12, 24 VDC)
- High efficiency up to 86%
- Unregulated outputs
- 3-year product warranty

Pinout	
Pin	**Single**
1	–Vin
2	+ Vin
3	– Vout
4	+ Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMU 3-0511	**4.5 – 5.5 VDC** (5 VDC nom.)	5 VDC	600 mA	79%
TMU 3-0512		12 VDC	250 mA	83%
TMU 3-0513		15 VDC	200 mA	84%
TMU 3-1211	**10.8 – 13.2 VDC** (12 VDC nom.)	5 VDC	600 mA	81%
TMU 3-1212		12 VDC	250 mA	85%
TMU 3-1213		15 VDC	200 mA	85%
TMU 3-2411	**21.6 – 26.4 VDC** (24 VDC nom.)	5 VDC	600 mA	82%
TMU 3-2412		12 VDC	250 mA	86%
TMU 3-2413		15 VDC	200 mA	86%

TRN 3 3 Watt

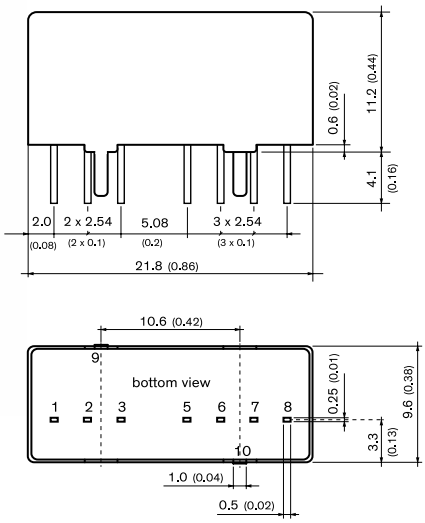


- 0.47 x 0.32 x 0.43" SIP-5 package
- Fully regulated outputs
- Input Voltage range 4.5-13.2, 9-18, 18-36, 36-75 VDC
- I/O-isolation 1600 VDC
- Operating temperature range -40°C to +85°C
- Short circuit protection
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	+Vout	+Vout
4	no pin	common
5	-Vout	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRN 3-0510	**4.5 - 13.2 VDC** (9 VDC nominal)	3.3 VDC	700 mA	75 %
TRN 3-0511		5.0 VDC	600 mA	78 %
TRN 3-0512		12 VDC	250 mA	82 %
TRN 3-0513		15 VDC	200 mA	80 %
TRN 3-0515		24 VDC	125 mA	80 %
TRN 3-0521		± 5.0 VDC	±300 mA	77 %
TRN 3-0522		±12 VDC	±125 mA	80 %
TRN 3-0523		±15 VDC	±100 mA	80 %
TRN 3-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	700 mA	76 %
TRN 3-1211		5.0 VDC	600 mA	79 %
TRN 3-1212		12 VDC	250 mA	84 %
TRN 3-1213		15 VDC	200 mA	83 %
TRN 3-1215		24 VDC	125 mA	82 %
TRN 3-1221		± 5.0 VDC	±300 mA	78 %
TRN 3-1222		±12 VDC	±125 mA	82 %
TRN 3-1223		±15 VDC	±100 mA	81 %
TRN 3-2410	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	700 mA	76 %
TRN 3-2411		5.0 VDC	600 mA	78 %
TRN 3-2412		12 VDC	250 mA	84 %
TRN 3-2413		15 VDC	200 mA	84 %
TRN 3-2415		24 VDC	125 mA	83 %
TRN 3-2421		± 5.0 VDC	±300 mA	79 %
TRN 3-2422		±12 VDC	±125 mA	83 %
TRN 3-2423		±15 VDC	±100 mA	82 %
TRN 3-4810	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	700 mA	75 %
TRN 3-4811		5.0 VDC	600 mA	79 %
TRN 3-4812		12 VDC	250 mA	83 %
TRN 3-4813		15 VDC	200 mA	83 %
TRN 3-4815		24 VDC	125 mA	82 %
TRN 3-4821		± 5.0 VDC	±300 mA	77 %
TRN 3-4822		±12 VDC	±125 mA	82 %
TRN 3-4823		±15 VDC	±100 mA	80 %

TVN 3 — 3 Watt

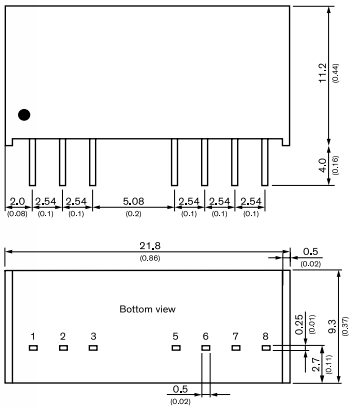


- 0.86 x 0.44 x 0.38” SIP-8 package
- Compact SIP-8 package
- Ultra-low ripple and noise
- Fully regulated outputs
- I/O-isolation 1600 VDC
- Operating temperature range -40°C to +90°C
- Short circuit protection
- No minimum load required
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	On/Off	On/Off
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout
9/10	Case	Case

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TVN 3-0910	**4.5 - 13.2 VDC** (9 VDC nominal)	3.3 VDC	700 mA	75 %
TVN 3-0911		5.0 VDC	600 mA	79 %
TVN 3-0919		9.0 VDC	333 mA	80 %
TVN 3-0912		12 VDC	250 mA	83 %
TVN 3-0913		15 VDC	200 mA	83 %
TVN 3-0915		24 VDC	125 mA	82 %
TVN 3-0921		± 5.0 VDC	±300 mA	78 %
TVN 3-0922		±12 VDC	±125 mA	82 %
TVN 3-0923		±15 VDC	±100 mA	81 %
TVN 3-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	700 mA	77 %
TVN 3-1211		5.0 VDC	600 mA	81 %
TVN 3-1219		9.0 VDC	333 mA	80 %
TVN 3-1212		12 VDC	250 mA	85 %
TVN 3-1213		15 VDC	200 mA	84 %
TVN 3-1215		24 VDC	125 mA	84 %
TVN 3-1221		± 5.0 VDC	±300 mA	82 %
TVN 3-1222		±12 VDC	±125 mA	84 %
TVN 3-1223		±15 VDC	±100 mA	83 %
TVN 3-2410	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	700 mA	76 %
TVN 3-2411		5.0 VDC	600 mA	82 %
TVN 3-2419		9.0 VDC	333 mA	82 %
TVN 3-2412		12 VDC	250 mA	85 %
TVN 3-2413		15 VDC	200 mA	85 %
TVN 3-2415		24 VDC	125 mA	84 %
TVN 3-2421		± 5.0 VDC	±300 mA	80 %
TVN 3-2422		±12 VDC	±125 mA	84 %
TVN 3-2423		±15 VDC	±100 mA	85 %

TMR 4 & TMR 4WI — 4 Watt



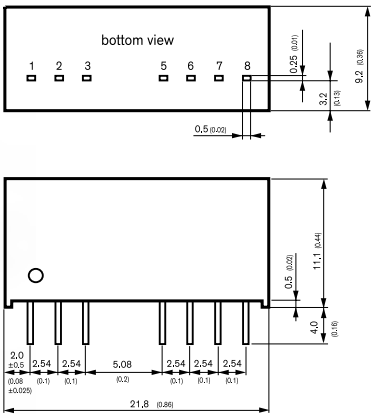
- 0.86 x 0.44 x 0.37” SIP-8 package
- 2:1 4:1 input voltage ranges
- Fully regulated output voltage
- 1600 VDC I/O isolation
- Small footprint
- Temperature range -40° to +85°C
- High efficiency up to 85%
- Short-circuit protection
- Remote On/Off control
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin	-Vin
2	+Vin	+Vin
3	Remote On/Off	Remote On/Off
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 4-1211	**9 -18 VDC** (12 VDC nom.)	5 VDC	800 mA	78 %
TMR 4-1212		12 VDC	333 mA	82 %
TMR 4-1213		15 VDC	266 mA	82 %
TMR 4-1215		24 VDC	166 mA	82 %
TMR 4-1222		±12 VDC	±166 mA	82 %
TMR 4-1223		±15 VDC	±133 mA	82 %
TMR 4-2411	**18 -36 VDC** (24 VDC nom.)	5 VDC	800 mA	79 %
TMR 4-2412		12 VDC	333 mA	83 %
TMR 4-2413		15 VDC	266 mA	83 %
TMR 4-2415		24 VDC	166 mA	83 %
TMR 4-2422		±12 VDC	±166 mA	83 %
TMR 4-2423		±15 VDC	±133 mA	83 %
TMR 4-4811	**18 -75 VDC** (48 VDC nom.)	5 VDC	800 mA	78 %
TMR 4-4812		12 VDC	333 mA	82 %
TMR 4-4813		15 VDC	266 mA	82 %
TMR 4-4815		24 VDC	166 mA	82 %
TMR 4-4822		±12 VDC	±166 mA	82 %
TMR 4-4823		±15 VDC	±133 mA	82 %

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 4-2411WI	**9 -36 VDC** (24 VDC nom.)	5 VDC	211 mA	79 %
TMR 4-2412WI		12 VDC	201 mA	83 %
TMR 4-2413WI		15 VDC	200 mA	83 %
TMR 4-2415WI		24 VDC	200 mA	83 %
TMR 4-2422WI		±12 VDC	200 mA	83 %
TMR 4-2423WI		±15 VDC	200 mA	83 %
TMR 4-4811WI	**18 -75 VDC** (48 VDC nom.)	5 VDC	107 mA	78 %
TMR 4-4812WI		12 VDC	102 mA	82 %
TMR 4-4813WI		15 VDC	101 mA	82 %
TMR 4-4815WI		24 VDC	101 mA	82 %
TMR 4-4822WI		±12 VDC	101 mA	82 %
TMR 4-4823WI		±15 VDC	101 mA	82 %

TMR 6 — 6 Watt

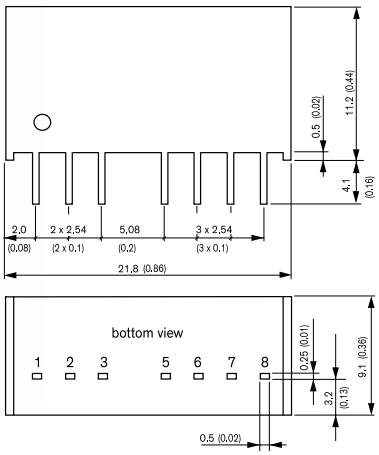


- 0.86 x 0.44 x 0.36” SIP-8 package
- Wide 2:1 input voltage range
- Continuous shor-circuit protection
- Temperature range -40° to +78°C
- High efficiency up to 86%
- I/O isolation 1600 VDC
- Remote On/Off control
- 3 year product warranty

Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 6-0510	**4.5 - 9 VDC** (5 VDC nom.)	3.3 VDC	1'300 mA	77 %
TMR 6-0511		5 VDC	1'200 mA	81 %
TMR 6-0519		9 VDC	666 mA	83 %
TMR 6-0512		12 VDC	500 mA	84 %
TMR 6-0513		15 VDC	400 mA	84 %
TMR 6-0515		24 VDC	250 mA	84 %
TMR 6-0521		+5 VDC	600 mA	81 %
TMR 6-0522		+12 VDC	250 mA	84 %
TMR 6-0523		+15 VDC	200 mA	84 %
TMR 6-1210	**9 - 18 VDC** (12 VDC nom.)	3.3 VDC	1'300 mA	78 %
TMR 6-1211		5 VDC	1'200 mA	83 %
TMR 6-1219		9 VDC	666 mA	85 %
TMR 6-1212		12 VDC	500 mA	85 %
TMR 6-1213		15 VDC	400 mA	85 %
TMR 6-1215		24 VDC	250 mA	84 %
TMR 6-1221		+5 VDC	600 mA	82 %
TMR 6-1222		+12 VDC	250 mA	84 %
TMR 6-1223		+15 VDC	200 mA	85 %
TMR 6-2410	**18 - 36 VDC** (24 VDC nom.)	3.3 VDC	1'300 mA	78 %
TMR 6-2411		5 VDC	1'200 mA	83 %
TMR 6-2419		9 VDC	666 mA	85 %
TMR 6-2412		12 VDC	500 mA	86 %
TMR 6-2413		15 VDC	400 mA	86 %
TMR 6-2415		24 VDC	250 mA	85 %
TMR 6-2421		+5 VDC	600 mA	82 %
TMR 6-2422		+12 VDC	250 mA	85 %
TMR 6-2423		+15 VDC	200 mA	85 %
TMR 6-4810	**36 - 75 VDC** (48 VDC nom.)	3.3 VDC	1'300 mA	78 %
TMR 6-4811		5 VDC	1'200 mA	82 %
TMR 6-4819		9 VDC	666 mA	84 %
TMR 6-4812		12 VDC	500 mA	85 %
TMR 6-4813		15 VDC	400 mA	86 %
TMR 6-4815		24 VDC	250 mA	84 %
TMR 6-4821		+5 VDC	600 mA	82 %
TMR 6-4822		+12 VDC	250 mA	84 %
TMR 6-4823		+15 VDC	200 mA	85 %

TMR 6WI — 6 Watt



- 0.86 x 0.44 x 0.36” SIP-8 package
- Wide 4:1 input voltage range
- Ultra-compact SIP-8 package
- Smallest footprint 6 W converter
- Temperature range -40° to +84°C
- High efficiency up to 88%
- Indefinite short-circuit protection
- I/O isolation 1600 VDC
- Remote On/Off control
- 3 year product warrenty

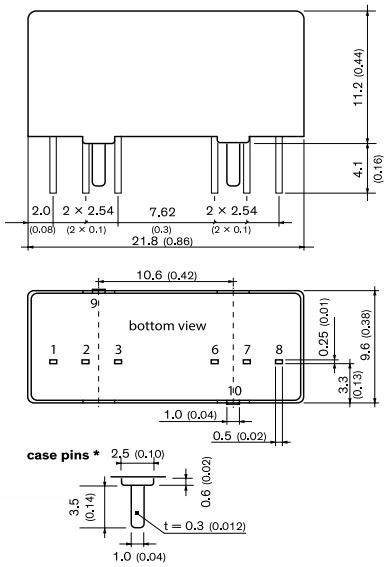
Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 6-2410WI	**9 - 36 VDC** (24 VDC nom.)	3.3 VDC	1'500 mA	81 %
TMR 6-2411WI		5 VDC	1'200 mA	84 %
TMR 6-2419WI		9 VDC	666 mA	86 %
TMR 6-2412WI		12 VDC	500 mA	87 %
TMR 6-2413WI		15 VDC	400 mA	88 %
TMR 6-2415WI		24 VDC	250 mA	87 %
TMR 6-2421WI		+5 VDC	600 mA	84 %
TMR 6-2422WI		+12 VDC	250 mA	87 %
TMR 6-2423WI		+15 VDC	200 mA	87 %
TMR 6-4810WI	**18 - 75 VDC** (48 VDC nom.)	3.3 VDC	1'500 mA	81 %
TMR 6-4811WI		5 VDC	1'200 mA	84 %
TMR 6-4819WI		9 VDC	666 mA	85 %
TMR 6-4812WI		12 VDC	500 mA	87 %
TMR 6-4813WI		15 VDC	400 mA	87 %
TMR 6-4815WI		24 VDC	250 mA	87 %
TMR 6-4821WI		+5 VDC	600 mA	84 %
TMR 6-4822WI		+12 VDC	250 mA	87 %
TMR 6-4823WI		+15 VDC	200 mA	87 %

TMR 6WIR — 6 Watt

EN50155 /EN61373 Approved

- 0.86 x 0.44 x 0.38" SIP-8 package
- EN 50155 railway approval
- Ultra-wide 4:1 Input: 9-36, 18-75 and 43-160 VDC
- I/O-isolation 3'000 VDC
- Fully regulated outputs
- Operating temperature range -40°C to +80°C
- Short circuit protection and current limitation
- Remote On/Off
- 3 year product warranty

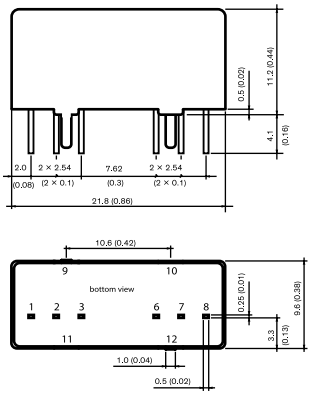


Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout
9, 10	Case	Case

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 6-2410WIR	9 - 36 VDC (24 VDC nom.)	3.3 VDC	1500 mA	81 %
TMR 6-2411WIR		5 VDC	1200 mA	84 %
TMR 6-2419WIR		9VDC	666 mA	86 %
TMR 6-2412WIR		12 VDC	500 mA	87 %
TMR 6-2413WIR		15 VDC	400 mA	88 %
TMR 6-2415WIR		24 VDC	250 mA	87 %
TMR 6-2421WIR		± 5 VDC	600 mA	84 %
TMR 6-2422WIR		±12 VDC	250 mA	87 %
TMR 6-2423WIR		±15 VDC	200 mA	87 %
TMR 6-4810WIR	18 - 75 VDC (48 VDC nom.)	3.3 VDC	1500 mA	81 %
TMR 6-4811WIR		5 VDC	1200 mA	84 %
TMR 6-4819WIR		9VDC	666 mA	85 %
TMR 6-4812WIR		12 VDC	500 mA	87 %
TMR 6-4813WIR		15 VDC	400 mA	87 %
TMR 6-4815WIR		24 VDC	250 mA	87 %
TMR 6-4821WIR		± 5 VDC	600 mA	84 %
TMR 6-4822WIR		±12 VDC	250 mA	87 %
TMR 6-4823WIR		±15 VDC	200 mA	87 %

TMR 9 — 9 Watt

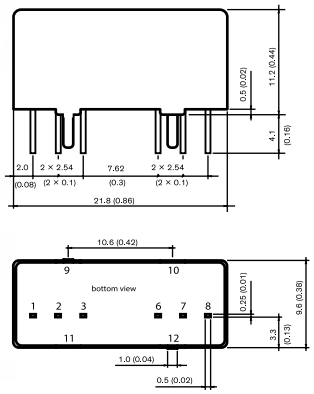
- 0.86 x 0.44 x 0.38" SIP-8 package
- Wide 2:1 input voltage range
- Temperature range -40° to +85°C
- High efficiency up to 89%
- Indefinite short-circuit protection
- I/O isolation 1600 VDC
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty



Pinout		
Pin	**Single Output**	**Dual Output**
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout
9	Case	Case
10	Stand Off	Stand Off
11	Stand Off	Stand Off
12	Case	Case

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 9-1210	9 - 18 VDC (12 VDC nom.)	3.3 VDC	2'000 mA	81 %
TMR 9-1211		5 VDC	1'600 mA	85 %
TMR 9-1219		9 VDC	1'000 mA	87 %
TMR 9-1212		12 VDC	750 mA	88 %
TMR 9-1213		15 VDC	600 mA	89 %
TMR 9-1215		24 VDC	375 mA	89 %
TMR 9-1221		+5 VDC	800 mA	85 %
TMR 9-1222		+12 VDC	375 mA	88 %
TMR 9-1223		+15 VDC	300 mA	89 %
TMR 9-2410	18 - 36 VDC (24 VDC nom.)	3.3 VDC	2'000 mA	82 %
TMR 9-2411		5 VDC	1'600 mA	85 %
TMR 9-2419		9 VDC	1'000 mA	88 %
TMR 9-2412		12 VDC	750 mA	89 %
TMR 9-2413		15 VDC	600 mA	90 %
TMR 9-2415		24 VDC	375 mA	90 %
TMR 9-2421		+5 VDC	800 mA	86 %
TMR 9-2422		+12 VDC	375 mA	89 %
TMR 9-2423		+15 VDC	300 mA	87 %
TMR 9-4810	36 - 75 VDC (48 VDC nom.)	3.3 VDC	2'000 mA	82 %
TMR 9-4811		5 VDC	1'600 mA	85 %
TMR 9-4819		9 VDC	1'000 mA	88 %
TMR 9-4812		12 VDC	750 mA	89 %
TMR 9-4813		15 VDC	600 mA	89 %
TMR 9-4815		24 VDC	375 mA	89 %
TMR 9-4821		+5 VDC	800 mA	86 %
TMR 9-4822		+12 VDC	375 mA	87 %
TMR 9-4823		+15 VDC	300 mA	87 %

TMR 9WI — 9 Watt

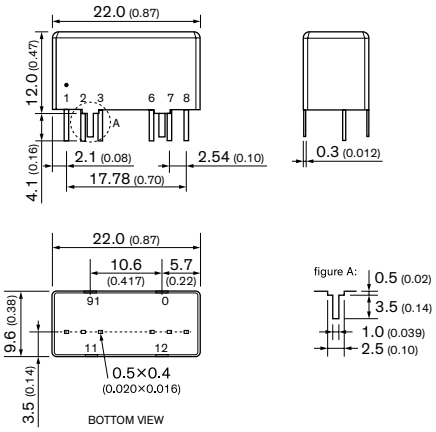


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 9-2410WI	9 - 36 VDC (24 VDC nom.)	3.3 VDC	2'000 mA	82 %
TMR 9-2411WI		5 VDC	1'600 mA	85 %
TMR 9-2419WI		9 VDC	1'000 mA	88 %
TMR 9-2412WI		12 VDC	750 mA	88 %
TMR 9-2413WI		15 VDC	600 mA	89 %
TMR 9-2415WI		24 VDC	375 mA	89 %
TMR 9-2421WI		+5 VDC	800 mA	86 %
TMR 9-2422WI		+12 VDC	375 mA	88 %
TMR 9-2423WI		+15 VDC	300 mA	88 %
TMR 9-4810WI	18 - 75 VDC (48 VDC nom.)	3.3 VDC	2'000 mA	82 %
TMR 9-4811WI		5 VDC	1'600 mA	85 %
TMR 9-4819WI		9 VDC	1'000 mA	89 %
TMR 9-4812WI		12 VDC	750 mA	89 %
TMR 9-4813WI		15 VDC	600 mA	89 %
TMR 9-4815WI		24 VDC	375 mA	89 %
TMR 9-4821WI		+5 VDC	800 mA	85 %
TMR 9-4822WI		+12 VDC	375 mA	88 %
TMR 9-4823WI		+15 VDC	300 mA	87 %

- 0.86 x 0.44 x 0.38” SIP-8 package
- Ultra-wide 4:1 input voltage range
- Temperature range -40° to +85°C
- High efficiency up to 89%
- Indefinite short-circuit protection
- I/O isolation 1600 VDC
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty

Pinout		
Pin	Single Output	Dual Output
1	-Vin (GND)	-Vin (GND)
2	+Vin (Vcc)	+Vin (Vcc)
3	Remote	Remote
6	+Vout	+Vout
7	-Vout	Common
8	NC	-Vout
9	Case	Case
10	Stand Off	Stand Off
11	Stand Off	Stand Off
12	Case	Case

TMR 12WI NEW! — 12 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMR 12-1210WI	4.5 – 18 VDC	3.3 VDC	3'000 mA	87%
TMR 12-1211WI		5.1 VDC	2'400 mA	88.5%
TMR 12-1219WI		9 VDC	1'333 mA	87%
TMR 12-1212WI		12 VDC	1'000 mA	89%
TMR 12-1213WI		15 VDC	800 mA	89%
TMR 12-1215WI		24 VDC	500 mA	90%
TMR 12-1221WI		±5 VDC	±1'200 mA	85.5%
TMR 12-1222WI		±12 VDC	±500 mA	89%
TMR 12-1223WI		±15 VDC	±400 mA	89%
TMR 12-2410WI	9 – 36 VDC	3.3 VDC	3'000 mA	87%
TMR 12-2411WI		5.1 VDC	2'400 mA	89%
TMR 12-2419WI		9 VDC	1'333 mA	87%
TMR 12-2412WI		12 VDC	1'000 mA	89%
TMR 12-2413WI		15 VDC	800 mA	89%
TMR 12-2415WI		24 VDC	500 mA	80%
TMR 12-2421WI		±5 VDC	±1'200 mA	86%
TMR 12-2422WI		±12 VDC	±500 mA	89%
TMR 12-2423WI		±15 VDC	±400 mA	89%
TMR 12-4810WI	18 – 75 VDC	3.3 VDC	3'000 mA	87%
TMR 12-4811WI		5.1 VDC	2'400 mA	89%
TMR 12-4819WI		9 VDC	1'333 mA	87%
TMR 12-4812WI		12 VDC	1'000 mA	89%
TMR 12-4813WI		15 VDC	800 mA	89%
TMR 12-4815WI		24 VDC	500 mA	90%
TMR 12-4821WI		±5 VDC	±1'200 mA	86%
TMR 12-4822WI		±12 VDC	±500 mA	89.5%
TMR 12-4823WI		±15 VDC	±400 mA	89%

- 0.87 x 0.47 x 0.38” SIP-8 metal package
- Ultra wide 4:1 input voltage range
- Temperature range –40° to +85°C
- High efficiency up to 90%
- Continuous short-circuit protection
- I/O isolation 3000 VDC
- Remote On/Off control
- Fully RoHS compliant
- 3-year product warranty

Pinout		
Pin	Single	Dual
1	–Vin	–Vin
2	+Vin	+Vin
3	Ctrl	Ctrl
6	+Vout	+Vout
7	–Vout	Common
8	NC	–Vout
9	Case	Case
10	Stand off	Stand off
11	Stand off	Stand off
12	Case	Case

DC/DC: Isolated DIP Package

TRACO POWER's DIP package isolated DC/DC Converters provide a complete range of compact products from 1 to 60 watts with non-regulated, semi-regulated and fully regulated outputs.

SERIES	WATTS	DESCRIPTION	APPS	STATUS	PAGE
TDN 1WI	1	DIP package, 4:1 input, regulated, encapsulated		ACTIVE	49
TDU 1		DIP-8 package, ±10% input, unregulated, encapsulated		IN DEVELOPMENT	49
TDL 2	2	DIP package, 2:1 input, regulated, compact design, encapsulated		ACTIVE	50
TDR 2		DIP-14 package, 2:1 input, regulated, overmold (washable), plastic case		ACTIVE	50
TDR 2WI		DIP-14 package, 4:1 input, regulated, overmold (washable), plastic case		ACTIVE	51
TEL 2		DIP-16 package, 2:1 input, regulated, encapsulated		ACTIVE	51
THI 2M		DIP-16 package, ±10% input, unregulated, 2 × MOOP, encapsulated		ACTIVE	52
TIM 2		DIP-16 package, 2 :1 input, regulated, 5000 VAC I/O-isolation, 2 xMOPP medical, encapsulated	⊕	ACTIVE	52
TDL 3	3	DIP package, 2:1 input, regulated, compact design, encapsulated		ACTIVE	53
TDN 3WI		DIP package, 4:1 input, regulated, high power density, encapsulated		ACTIVE	53
TDR 3		DIP-14 package, 2:1 input, regulated, overmold (washable), plastic case		ACTIVE	54
TDR 3WI		DIP-14 package, 4:1 input, regulated, overmold (washable), plastic case		ACTIVE	54
TEM 3N		DIP-24 package, ±10% input, regulated, cost efficient, encapsulated		ACTIVE	55
TEN 3N		DIP-24 package, 2:1 input, regulated, cost efficient, encapsulated		ACTIVE	55
TEN 3WIN		DIP-24 package, 4:1 input, regulated, cost efficient, encapsulated		ACTIVE	56
TEN 3WIRH		DIP-24 package, 4:1 input, regulated, 3000 VAC isolation (reinforced), railway	🚆	NEW	56
THI 3		DIP-24 package, 10% input, regulated, 4000 VAC isolation, 2 × MOOP medical, encapsulated	⊕	ACTIVE	57
THL 3WI		DIP-16 package, 4:1 input, regulated, encapsulated		ACTIVE	57
THM 3		DIP-24 package, 2:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	58
THM 3WI		DIP-24 package, 4:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	58
THP 3		DIP-24 package, 4:1 input, regulated, 3000 VAC isolation, 2 × MOOP medical, encapsulated	⊕	ACTIVE	59
THR 3WI		DIP-24 package, 4:1 input, regulated, 3000 VAC isolation (reinforced), encapsulated		NEW	59
TIM 3.5	3.5	DIP-16 package, 2 :1 input, regulated, 5000 VAC I/O isolation, 2 xMOPP medical, encapsulated		ACTIVE	60
TRI 3		DIP-24 package, 2:1 input, regulated, 5000 VAC I/O isolation, encapsulated		ACTIVE	60
TDN 5WI	5	DIP package, 4:1 input, regulated, highest power density, encapsulated		ACTIVE	61
TEL 5		DIP-24 package, 2:1 input, regulated, cost optimized, encapsulated		ACTIVE	61
TVN 5WI		DIP-24 package, 4:1 input, regulated, ultra low ripple & noise, encapsulated, metal case		ACTIVE	62
TEL 6	6	DIP-16 package, 2:1 input, regulated, encapsulated, metal case		IN DEVELOPMENT	62
TEL 6WI		DIP-16 package, 4:1 input, regulated, encapsulated, metal case		IN DEVELOPMENT	63
TEN 6N		DIP-24 package, 2:1 input, regulated, cost efficient, encapsulated		ACTIVE	63
TEN 6WIN		DIP-24 package, 4:1 input, regulated, cost efficient, encapsulated		ACTIVE	64
TEN 6WIN-HI		DIP-24 package, 4:1 input, regulated, cost efficient, 3000 VDC isolation, encapsulated		ACTIVE	64
TEN 6WIRH		DIP-24 package, 4:1 input, regulated, 3000 VAC isolation (reinforced), railway	🚆	NEW	65
THM 6		DIP-24 package, 2:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	65
THM 6WI		DIP-24 package, 4:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	66
TIM 6		DIP-24 package, 2:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	IN DEVELOPMENT	66
TRI 6		DIP-24 package, 2:1 input, regulated, 5000 VAC I/O isolation, encapsulated		ACTIVE	67
TEL 8	8	DIP-16 package, 2:1 input, regulated, high power density, encapsulated, metal case		ACTIVE	67
TEL 8WI		DIP-16 package, 4:1 input, regulated, high power density, encapsulated, metal case		ACTIVE	68
TEN 8		DIP-24 package, 2:1 input, regulated, encapsulated, metal case		ACTIVE	68
TEN 8WI		DIP-24 package, 4:1 input, regulated, encapsulated, railway, metal case		ACTIVE	69

APPS KEY: ⊕ = UL/EN60601-1 (2×MOPP) Approved 🚆 = EN50155 /EN61373 Approved

SERIES	WATTS	DESCRIPTION	APPS	STATUS	PAGE
TEL 10	10	DIP-16 package, 2:1 input, regulated, high power density, encapsulated, metal case		ACTIVE	69
TEL 10WI		DIP-16 package, 4:1 input, regulated, high power density, encapsulated, metal case		ACTIVE	70
TEN 10WIRH		DIP-24 package, 4:1 input, regulated, 3000 VAC isolation (reinforced), railway	🚆	NEW	70
THD 10N		DIP-24 package, 2:1 input, regulated, encapsulated, metal case		ACTIVE	71
THD 10WIN		DIP-24 package, 4:1 input, regulated, encapsulated, metal case		ACTIVE	71
THL 10		1" x 1" package, 2:1 input, regulated, cost efficient, encapsulated, metal case		ACTIVE	72
THM 10		DIP-24 package, 2:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	72
THM 10WI		DIP-24 package, 4:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	73
THN 10WIR		1" x 1" package, 4:1 input, regulated, 3000 VDC isolation, railway, encapsulated, metal case	🚆	ACTIVE	73
THR 10WI		2 × 1" package, 4:1 input, regulated, 3000 VAC isolation (reinforced), encapsulated		NEW	74
TRI 10		DIP-24 package, 2:1 input, regulated, 5000 VAC I/O isolation, encapsulated		ACTIVE	74
TEL 12	12	DIP-16 package, 2:1 input, regulated, high power density, encapsulated, metal case		NEW	75
TEL 12WI		DIP-16 package, 4:1 input, regulated, high power density, encapsulated, metal case		NEW	75
THD 12		DIP-24 package, 2:1 input, regulated, encapsulated, metal case		ACTIVE	76
THD 12WI		DIP-24 package, 4:1 input, regulated, encapsulated, metal case		ACTIVE	76
TEL 15N	15	DIP-16 package, 2:1 input, regulated, high power density, encapsulated, metal case		IN DEVELOPMENT	77
TEL 15N-HS		DIP-16 package, 2:1 input, regulated, great thermal performance, encapsulated, metal case		IN DEVELOPMENT	77
TEL 15WIN		DIP-16 package, 4:1 input, regulated, high power density, encapsulated, metal case		NEW	78
TEL 15 WIN-HS		DIP-16 package, 4:1 input, regulated, great thermal performance, encapsulated, metal case		IN DEVELOPMENT	78
THD 15N		DIP-24 package, 2:1 input, regulated, encpasulated, metal case		ACTIVE	79
THD 15WIN		DIP-24 package, 4:1 input, regulated, encpasulated, metal case		ACTIVE	79
THL 15WI		1" x 1" package, 4:1 input, regulated, cost optimized, encpasulated, metal case		ACTIVE	80
THM 15		1.6" x 1" package, 2:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	80
THM 15WI		1.6" x 1" package, 4:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	81
THN 15N		1" x 1" package, 2:1 input, regulated, encpasulated, metal case, integrated EN 55032 Class A filter		ACTIVE	81
THN 15WI		1" x 1" package, 4:1 input, regulated, encpasulated, metal case		ACTIVE	82
THN 15WIR		1" x 1" package, 4:1 input, regulated, 3000 VDC isolation, railway, encpasulated, metal case	🚆	ACTIVE	82
TRI 15		2" x 1" package, 2:1 input, regulated, 1000 VAC working voltage, encpasulated		ACTIVE	83
TEN 20WIN	20	2" × 1" package, 4:1 input, regulated, encpasulated, metal case			83
TEN 20WIR		2" x 1" package, 4:1 input, regulated, 2250 VDC isolation, railway, encpasulated	🚆	ACTIVE	84
TEN 20WIRH		1.6" × 1" package, 4:1 input, regulated, 3000 VAC isolation (reinforced), railway	🚆	NEW	84
THM 20		1.6" x 1" package, 2:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	85
THM 20WI		1.6" x 1" package, 4:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	85
THN 20		1" x 1" package, 2:1 input, regulated, encpasulated, metal case		ACTIVE	86
THN 20WI		1" x 1" package, 4:1 input, regulated, encpasulated, metal case		ACTIVE	86
THN 20WIR		1" x 1" package, 4:1 input, regulated, 3000 VDC isolation, railway, encpasulated	🚆	ACTIVE	87
THR 20WI		2" x 1" package, 4:1 input, regulated, 3000 VAC isolation (reinforced), encapsulated		NEW	87
TRI 20		2" x 1" package, 2:1 input, regulated, 1000 VAC working voltage, encpasulated		ACTIVE	88
THL 25	25	1" x 1" package, 2:1 input, regulated, cost optimized, encpasulated, metal case		ACTIVE	88
THL 25WI		1" x 1" package, 4:1 input, regulated, cost optimized, encpasulated, metal case		ACTIVE	89
TEN 30	30	2" x 1" package, 2:1 input, regulated, encpasulated, metal case		ACTIVE	89
TEN 30WIN		2" x 1" package, 4:1 input, regulated, encpasulated, metal case		ACTIVE	90
THL 30WI		1" × 1" package, 4:1 input, regulated, cost efficient, encpasulated, metal case		NEW	90
THM 30		2" x 1" package, 2:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	91
THM 30WI		2" x 1" package, 4:1 input, regulated, 5000 VAC isolation, 2 × MOPP medical, encapsulated	⊕	ACTIVE	91
THN 30		1" x 1" package, 2:1 input, regulated, encpasulated, metal case		ACTIVE	92
THN 30WI		1" x 1" package, 4:1 input, regulated, encpasulated, metal case		ACTIVE	92
THN 30WIR		1" x 1" package, 4:1 input, regulated, 3000 VDC isolation, railway, encpasulated	🚆	NEW	93
TEN 40E	40	2" x 1" package, 2:1 input, regulated, cost efficient, encpasulated, metal case		ACTIVE	93
TEN 40WIE		2" x 1" package, 4:1 input, regulated, cost efficient, encpasulated, metal case		ACTIVE	94
TEN 40WIR		2" x 1" package, 4:1 input, regulated, 2250 VDC isolation, railway, encpasulated	🚆	ACTIVE	94
TEN 40WIRH		2" × 1" package, 4:1 input, regulated, 3000 VAC isolation (reinforced), railway	🚆	NEW	95
THR 40WI		2" x 1" package, 4:1 input, regulated, 3000 VAC isolation (reinforced), encapsulated		NEW	95
TEN 50	50	2" x 1" package, 2:1 input, regulated, encpasulated, metal case		ACTIVE	96
TEN 50WI		2" x 1" package, 4:1 input, regulated, encpasulated, metal case		ACTIVE	96
TEN 60N	60	2" x 1" package, 2:1 input, regulated, encpasulated, metal case		ACTIVE	97
TEN 60WIN		2" x 1" package, 4:1 input, regulated, encpasulated, metal case		ACTIVE	97
TEN 60WIR		2" x 1" package, 4:1 input, regulated, 3000 VDC isolation, railway, encpasulated	🚆	ACTIVE	98

APPS KEY: ⊕ = UL/EN60601-1 (2×MOPP) Approved 🚆 = EN50155 /EN61373 Approved

Quality that Saves Lives

The TRACO POWER power supply solutions are ideally suited for any situations that require the highest reliability with a limited amount of available space.

MEDICAL TECHNOLOGY

When developing medical devices, special emphasis is placed on the protection of both the patient and the operator. Therefore, the uncompromising reliability of all components is of particular importance. Our carefully developed products meet all important medical safety standards, thereby ensuring the protection of the patient in accordance with MOPP (Means of Patient Protection) as well as the medical personnel in accordance with MOOP (Means of Operator Protection).

CERTIFIED RELIABILITY

- Wide-ranging portfolio of AC/DC power supplies (5 to 850 watts) and DC/DC converters (1 to 60 watts)
- Certified according to IEC/EN/ES 60601-1 (medical electrical devices, 3rd edition) and IEC/EN/ES 60601-1-2 (EMC for medical devices, 4th edition)
- Risk management according to ISO 14971 (including product-oriented Risk Management File)
- Design and production according to ISO 13485 Quality Management System
- 5-year warranty

https://tracopower.com/us

2XMOPP Rated & BF Compliant Medical Grade DC/DC Converters

18 Product Families, 1 ~ 60 Watt Converters
Industry Leading Performance and Packaging

Electrical Characteristics

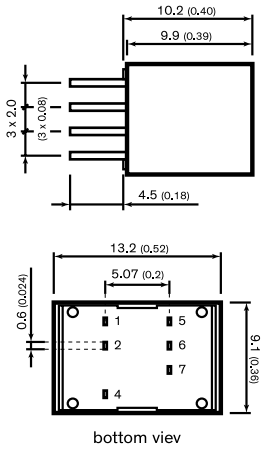
- I/O isolation 5000 VACrms | 250 VACrms working voltage
- Low leakage current < 2.5 µA
- Extended operating temperature range -40°C to +80°C
- Operating up to 5000m altitude
- 5 year product warranty

Safety + Compliance

- 2×MOPP | BF Compliant Applications
- IEC/EN/ES 60601-1 3rd Edition Approved
- EMC to IEC 60601-1-2 4th ed. and EN55032 class A
- Risk management file according to ISO 14971

Watts	Series	Footprint	Mounting	Input	Housing	I/O isolation		Status	Page
1	TRV 1M	SIP-9	PCB	±10%	Encapsulated	5000 VAC	2 × MOPP		32
2	TRV 2M	SIP-9	PCB	±10%	Encapsulated	5000 VAC	2 × MOPP	NEW	36
2	TIM 2	DIP-16	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP		52
2	TIM 2SM	DIP-16	SMD	2:01	Encapsulated	5000 VAC	2 × MOPP		19
3	THM 3	DIP-24	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP		58
3	THM 3WI	DIP-24	PCB	4:01	Encapsulated	5000 VAC	2 × MOPP		58
3.5	TIM 3.5	DIP-16	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP		60
3.5	TIM 3.5SM	DIP-16	SMD	2:01	Encapsulated	5000 VAC	2 × MOPP		23
6	THM 6	DIP-24	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP		65
6	TIM 6	DIP-24	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP	in development	66
6	THM 6WI	DIP-24	PCB	4:01	Encapsulated	5000 VAC	2 × MOPP		66
10	THM 10	DIP-24	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP		72
10	THM 10WI	DIP-24	PCB	4:01	Encapsulated	5000 VAC	2 × MOPP		73
15	THM 15	1.60 × 1.00"	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP		80
15	THM 15WI	1.60 × 1.00"	PCB	4:01	Encapsulated	5000 VAC	2 × MOPP		81
20	THM 20	1.60 × 1.00"	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP		85
20	THM 20WI	1.60 × 1.00"	PCB	4:01	Encapsulated	5000 VAC	2 × MOPP		85
30	THM 30	2.00 × 1.00"	PCB	2:01	Encapsulated	5000 VAC	2 × MOPP		91
30	THM 30WI	2.00 × 1.00"	PCB	4:01	Encapsulated	5000 VAC	2 × MOPP		91
60	THM 60WI	2.28 × 1.45"	PCB	4:01	Encapsulated	5000 VAC	2 × MOPP	NEW	100

TDN 1WI — 1 Watt



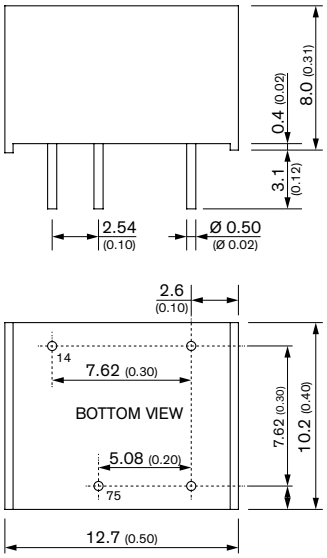
bottom viev

- 0.52 x 0.36 x 0.40” package
- Ultra-wide 4 : 1 input range
- Fully regulated outputs
- I/O-isolation 1600 VDC
- Operating temperature range -40°C to +90°C without derating
- Short circuit protection
- Remote On/Off
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
4	On/Off	On/Off
5	no con.	-Vout
6	-Vout	Common
7	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDN 1-1210WI	**4.5 - 18 VDC** (12 VDC nominal)	3.3 VDC	300 mA	77 %
TDN 1-1211WI		5.0 VDC	200 mA	79 %
TDN 1-1219WI		9.0 VDC	112 mA	79 %
TDN 1-1212WI		12 VDC	90 mA	81 %
TDN 1-1213WI		15 VDC	70 mA	81 %
TDN 1-1215WI		24 VDC	45 mA	80 %
TDN 1-1221WI		± 5.0 VDC	±100 mA	77 %
TDN 1-1222WI		±12 VDC	±45 mA	80 %
TDN 1-1223WI		±15 VDC	±35 mA	81 %
TDN 1-2410WI	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	300 mA	76 %
TDN 1-2411WI		5.0 VDC	200 mA	78 %
TDN 1-2419WI		9.0 VDC	112 mA	79 %
TDN 1-2412WI		12 VDC	90 mA	81 %
TDN 1-2413WI		15 VDC	70 mA	81 %
TDN 1-2415WI		24 VDC	45 mA	80 %
TDN 1-2421WI		± 5.0 VDC	±100 mA	77 %
TDN 1-2422WI		±12 VDC	±45 mA	80 %
TDN 1-2423WI		±15 VDC	±35 mA	81 %
TDN 1-4810WI	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	300 mA	75 %
TDN 1-4811WI		5.0 VDC	200 mA	78 %
TDN 1-4819WI		9.0 VDC	112 mA	79 %
TDN 1-4812WI		12 VDC	90 mA	81 %
TDN 1-4813WI		15 VDC	70 mA	81 %
TDN 1-4815WI		24 VDC	45 mA	80 %
TDN 1-4821WI		± 5.0 VDC	±100 mA	77 %
TDN 1-4822WI		±12 VDC	±45 mA	80 %
TDN 1-4823WI		±15 VDC	±35 mA	81 %

TDU 1 — IN DEVELOPMENT — 1 Watt

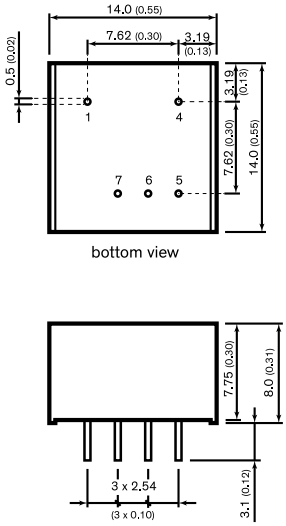


- 0.5 x 0.40 x 0.31” package
- Cost efficient design
- I/O-isolation 1500 VDC
- Unregulated device
- ±10% Input ranges (5, 12, 24 VDC)
- Operating temperature range –40°C to +85°C without derating
- Short circuit protection
- 3-year product warranty

Pinout	
Pin	**Function**
1	–Vin
2	+Vin
3	+Vout
4	–Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDU 1-0511	**5 VDC ±10%** (nominal 5 VDC)	5 VDC	200 mA	80%
TDU 1-0512		12 VDC	84 mA	82%
TDU 1-0513		15 VDC	67 mA	83%
TDU 1-1211	**12 VDC ±10%** (nominal 12 VDC)	5 VDC	200 mA	79%
TDU 1-1212		12 VDC	84 mA	81%
TDU 1-1213		15 VDC	67 mA	82%
TDU 1-2411	**24 VDC ±10%** (nominal 24 VDC)	5 VDC	200 mA	78%
TDU 1-2412		12 VDC	84 mA	80%
TDU 1-2413		15 VDC	67 mA	81%

TDL 2 — 2 Watt

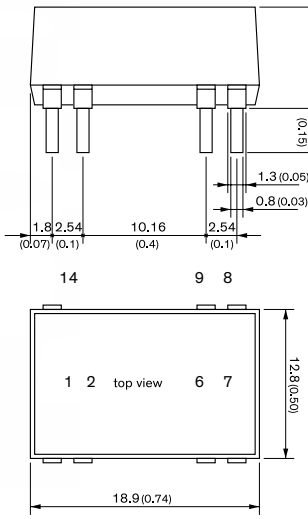


- 0.55 x 0.55 x 0.31” package
- I/O-isolation 1500 VDC
- Fully regulated outputs
- Wide 2 : 1 input voltage range
- Operating temperature range –40°C to +80°C
- Short circuit protection
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin (GND)	–Vin (GND)
4	+Vin (Vcc)	+Vin (Vcc)
5	+Vout	+Vout
6	no pin	Common
7	–Vout	–Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDL 2-0510	**4.5 – 10 VDC** (5 VDC nominal)	3.3 VDC	400 mA	79%
TDL 2-0511		5.0 VDC	400 mA	81%
TDL 2-0512		12 VDC	167 mA	85%
TDL 2-0513		15 VDC	134 mA	87%
TDL 2-0521		±5.0 VDC	±200 mA	83%
TDL 2-0522		±12 VDC	±83 mA	85%
TDL 2-0523		±15 VDC	±67 mA	85%
TDL 2-1210	**9 – 18 VDC** (12 VDC nominal)	3.3 VDC	400 mA	80%
TDL 2-1211		5.0 VDC	400 mA	83%
TDL 2-1212		12 VDC	167 mA	87%
TDL 2-1213		15 VDC	134 mA	87%
TDL 2-1221		±5.0 VDC	±200 mA	84%
TDL 2-1222		±12 VDC	±83 mA	86%
TDL 2-1223		±15 VDC	±67 mA	86%
TDL 2-2410	**18 – 36 VDC** (24 VDC nominal)	3.3 VDC	400 mA	79%
TDL 2-2411		5.0 VDC	400 mA	84%
TDL 2-2412		12 VDC	167 mA	86%
TDL 2-2413		15 VDC	134 mA	87%
TDL 2-2421		±5.0 VDC	±200 mA	84%
TDL 2-2422		±12 VDC	±83 mA	86%
TDL 2-2423		±15 VDC	±67 mA	86%
TDL 2-4810	**36 – 75 VDC** (48 VDC nominal)	3.3 VDC	400 mA	79%
TDL 2-4811		5.0 VDC	400 mA	83%
TDL 2-4812		12 VDC	167 mA	85%
TDL 2-4813		15 VDC	134 mA	86%
TDL 2-4821		±5.0 VDC	±200 mA	82%
TDL 2-4822		±12 VDC	±83 mA	84%
TDL 2-4823		±15 VDC	±67 mA	84%

TDR 2 — 2 Watt

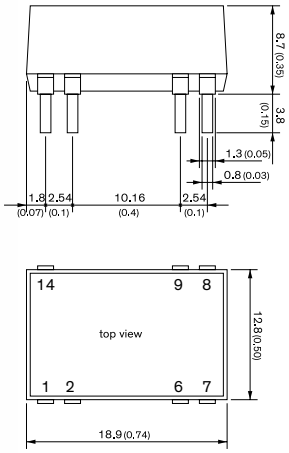


- 0.74 x 0.50 x 0.35” package
- Wide 2:1 input voltage range
- Fully regulated outputs
- Low ripple and noise
- No minimum load required
- Temperature range -40°C to +85°C without derating
- I/O isolation 1600 VDC
- Continuous short-circuit protection
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDR 2-0511	**4.5 - 9.0 VDC** (5 VDC nominal)	5.0 VDC	400 mA	80 %
TDR 2-0512		12 VDC	167 mA	81 %
TDR 2-0513		15 VDC	134 mA	83 %
TDR 2-0522		±12 VDC	±83 mA	81 %
TDR 2-0523		±15 VDC	±67 mA	82 %
TDR 2-1211	**9 - 18 VDC** (12 VDC nominal)	5.0 VDC	400 mA	81 %
TDR 2-1212		12 VDC	167 mA	81 %
TDR 2-1213		15 VDC	134 mA	84 %
TDR 2-1222		±12 VDC	±83 mA	83 %
TDR 2-1223		±15 VDC	±67 mA	82 %
TDR 2-2411	**18 - 36 VDC** (24 VDC nominal)	5.0 VDC	400 mA	81 %
TDR 2-2412		12 VDC	167 mA	84 %
TDR 2-2413		15 VDC	134 mA	84 %
TDR 2-2422		±12 VDC	±83 mA	84 %
TDR 2-2423		±15 VDC	±67 mA	84 %
TDR 2-4811	**36 - 75 VDC** (48 VDC nominal)	5.0 VDC	400 mA	81 %
TDR 2-4812		12 VDC	167 mA	82 %
TDR 2-4813		15 VDC	134 mA	82 %
TDR 2-4822		±12 VDC	±83 mA	83 %
TDR 2-4823		±15 VDC	±67 mA	83 %

TDR 2WI — 2 Watt

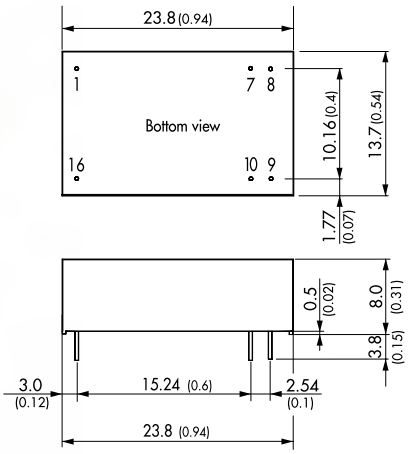


- 0.74 x 0.50 x 0.35” package
- Ultra-wide 4:1 input voltage range
- Fully regulated outputs
- Low ripple and noise 30mV pk-pk
- No minimum load required
- Temperature range -40°C to +85°C without derating
- I/O isolation 1600 VDC
- Continuous short-circuit protection
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDR 2-1211WI	**4.5 - 18 VDC** (12 VDC nominal)	5.0 VDC	400 mA	79 %
TDR 2-1212WI		12 VDC	167 mA	80 %
TDR 2-1213WI		15 VDC	134 mA	81 %
TDR 2-1222WI		±12 VDC	±83 mA	81 %
TDR 2-1223WI		±15 VDC	±67 mA	81 %
TDR 2-2411WI	**9 - 36 VDC** (24 VDC nominal)	5.0 VDC	400 mA	79 %
TDR 2-2412WI		12 VDC	167 mA	80 %
TDR 2-2413WI		15 VDC	134 mA	82 %
TDR 2-2422WI		±12 VDC	±83 mA	81 %
TDR 2-2423WI		±15 VDC	±67 mA	81 %
TDR 2-4811WI	**18 - 75 VDC** (48 VDC nominal)	5.0 VDC	400 mA	78 %
TDR 2-4812WI		12 VDC	167 mA	81 %
TDR 2-4813WI		15 VDC	134 mA	82 %
TDR 2-4822WI		±12 VDC	±83 mA	81 %
TDR 2-4823WI		±15 VDC	±67 mA	81 %

TEL 2 — 2 Watt

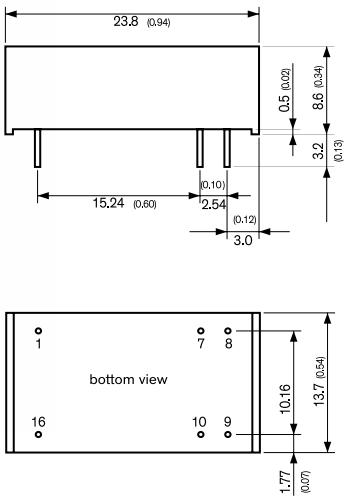


- 0.94 x 0.54 x 0.31” DIP-16 package
- Wide 2:1 input range
- Regulated output
- I/O isolation 1500V
- Input filter meets EN55032, class A without ext. components
- Low ripple and noise
- Indefinite shortcircuit protection
- Operating temperature range –40°C to +80°C
- Lead free design, RoHS compliant
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin (GND)	–Vin (GND)
7	No con.	No con.
8	No con.	Common
9	+Vout	+Vout
10	–Vout	–Vout
16	+Vin	+Vin

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 2-0510	**4.5 – 9 VDC** (nominal 5 VDC)	3.3 VDC	500 mA	70%
TEL 2-0511		5 VDC	400 mA	73%
TEL 2-0512		12 VDC	165 mA	75%
TEL 2-0513		15 VDC	135 mA	73%
TEL 2-0521		±5 VDC	±200 mA	64%
TEL 2-0522		±12 VDC	±85 mA	69%
TEL 2-0523		±15 VDC	±65 mA	71%
TEL 2-1210	**9 – 18 VDC** (nominal 12 VDC)	3.3 VDC	500 mA	73%
TEL 2-1211		5 VDC	400 mA	77%
TEL 2-1212		12 VDC	165 mA	80%
TEL 2-1213		15 VDC	135 mA	80%
TEL 2-1221		±5 VDC	±200 mA	73%
TEL 2-1222		±12 VDC	±85 mA	78%
TEL 2-1223		±15 VDC	±65 mA	78%
TEL 2-2410	**18 – 36 VDC** (nominal 24 VDC)	3.3 VDC	500 mA	72%
TEL 2-2411		5 VDC	400 mA	77%
TEL 2-2412		12 VDC	165 mA	80%
TEL 2-2413		15 VDC	135 mA	81%
TEL 2-2421		±5 VDC	±200 mA	74%
TEL 2-2422		±12 VDC	±85 mA	78%
TEL 2-2423		±15 VDC	±65 mA	80%
TEL 2-4810	**36 – 75 VDC** (nominal 48 VDC)	3.3 VDC	500 mA	71%
TEL 2-4811		5 VDC	400 mA	73%
TEL 2-4812		12 VDC	165 mA	79%
TEL 2-4813		15 VDC	135 mA	79%
TEL 2-4821		±5 VDC	±200 mA	71%
TEL 2-4822		±12 VDC	±85 mA	77%
TEL 2-4823		±15 VDC	±65 mA	77%

THI 2M — 2 Watt



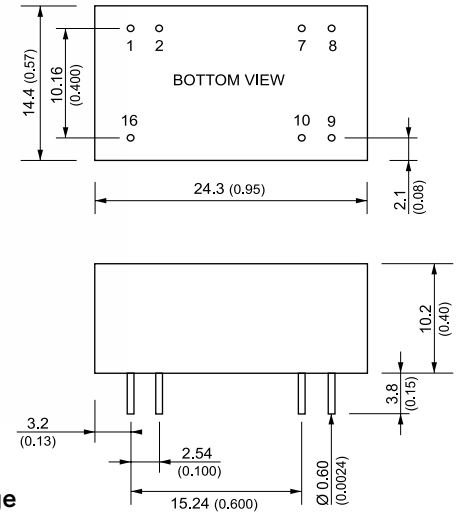
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THI 2-0511M	5.0 VDC ± 10% (nominal 5 VDC)	5 VDC	400 mA	66 %
THI 2-0512M		12 VDC	165 mA	66 %
THI 2-0513M		15 VDC	133 mA	66 %
THI 2-0522M		±12 VDC	±83 mA	72 %
THI 2-0523M		±15 VDC	±66 mA	73 %
THI 2-1211M	12.0 VDC ± 10% (nominal 12 VDC)	5 VDC	400 mA	66 %
THI 2-1212M		12 VDC	165 mA	66 %
THI 2-1213M		15 VDC	133 mA	66 %
THI 2-1222M		±12 VDC	±83 mA	74 %
THI 2-1223M		±15 VDC	±66 mA	75 %
THI 2-2411M	24 VDC ± 10% (nominal 24 VDC)	5 VDC	400 mA	66 %
THI 2-2412M		12 VDC	165 mA	66 %
THI 2-2413M		15 VDC	133 mA	66 %
THI 2-2422M		±12 VDC	±83 mA	74 %
THI 2-2423M		±15 VDC	±66 mA	75 %

- 0.94 x 0.54 x 0.34” DIP-16 package
- I/O isolation 3000 VACrms rated for 300 Vrms working voltage
- IEC/EN/UL 60601-1 3rd edition, 2 x MOOP
- IEC/EN/UL 62368-1
- Temp. range -40°C to +71°C
- 3 year product warranty

Pinout		
Pin	Single	Dual
1	-Vin (GND)	-Vin (GND)
7	No con.	No con.
8	No con.	Common
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin	+Vin

TIM 2 — 2 Watt

IEC/EN/ES 60601-1 (2×MOPP)

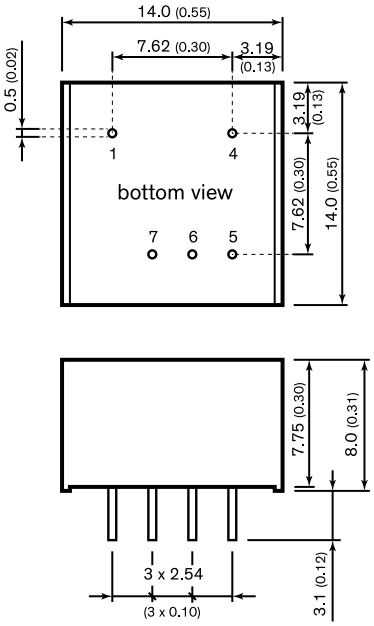


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TIM 2-0910	4.5 - 12 VDC (9 VDC nom.)	3.3 VDC	600 mA	75 %
TIM 2-0911		5 VDC	400 mA	78 %
TIM 2-0919		9 VDC	222 mA	78 %
TIM 2-0912		12 VDC	167 mA	82 %
TIM 2-0913		15 VDC	134 mA	82 %
TIM 2-0915		24 VDC	83 mA	82 %
TIM 2-0922		±12 VDC	83 mA	82 %
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 %

- 0.95 x 0.57 x 0.40” DIP-16 package
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2 x MOPP / BF Compliant
- Low leakage current < 2 µA
- Extended operating temperature range -40°C to 95°C
- EMC compliance to IEC 60601-1-2 4th edition and EN 55032 class A
- 5 year product warranty

Pinout / Connection		
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)

TDL 3 — 3 Watt

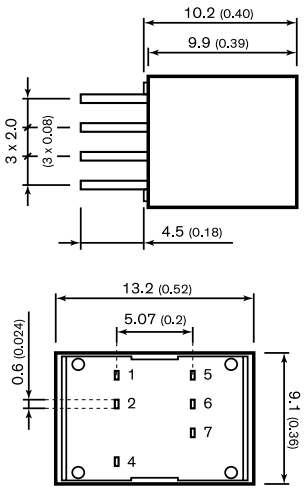


- 0.55 x 0.55 x 0.31” package
- I/O-isolation 1500 VDC
- Fully regulated outputs
- Wide 2:1 input voltage range
- Operating temperature range –40°C to +80°C
- Short circuit protection
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin (GND)	–Vin (GND)
4	+Vin (Vcc)	+Vin (Vcc)
5	+Vout	+Vout
6	no pin	Common
7	–Vout	–Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDL 3-0510	**4.5 – 10 VDC** (5 VDC nominal)	3.3 VDC	600 mA	79%
TDL 3-0511		5.0 VDC	600 mA	81%
TDL 3-0512		12 VDC	250 mA	85%
TDL 3-0513		15 VDC	200 mA	85%
TDL 3-0521		±5.0 VDC	±300 mA	82%
TDL 3-0522		±12 VDC	±125 mA	84%
TDL 3-0523		±15 VDC	±100 mA	85%
TDL 3-1210	**9 – 18 VDC** (12 VDC nominal)	3.3 VDC	600 mA	80%
TDL 3-1211		5.0 VDC	600 mA	83%
TDL 3-1212		12 VDC	250 mA	87%
TDL 3-1213		15 VDC	200 mA	87%
TDL 3-1221		±5.0 VDC	±300 mA	84%
TDL 3-1222		±12 VDC	±125 mA	86%
TDL 3-1223		±15 VDC	±100 mA	87%
TDL 3-2410	**18 – 36 VDC** (24 VDC nominal)	3.3 VDC	600 mA	80%
TDL 3-2411		5.0 VDC	600 mA	83%
TDL 3-2412		12 VDC	250 mA	87%
TDL 3-2413		15 VDC	200 mA	87%
TDL 3-2421		±5.0 VDC	±300 mA	84%
TDL 3-2422		±12 VDC	±125 mA	86%
TDL 3-2423		±15 VDC	±100 mA	87%
TDL 3-4810	**36 – 75 VDC** (48 VDC nominal)	3.3 VDC	600 mA	79%
TDL 3-4811		5.0 VDC	600 mA	82%
TDL 3-4812		12 VDC	250 mA	86%
TDL 3-4813		15 VDC	200 mA	86%
TDL 3-4821		±5.0 VDC	±300 mA	82%
TDL 3-4822		±12 VDC	±125 mA	85%
TDL 3-4823		±15 VDC	±100 mA	85%

TDN 3WI — 3 Watt



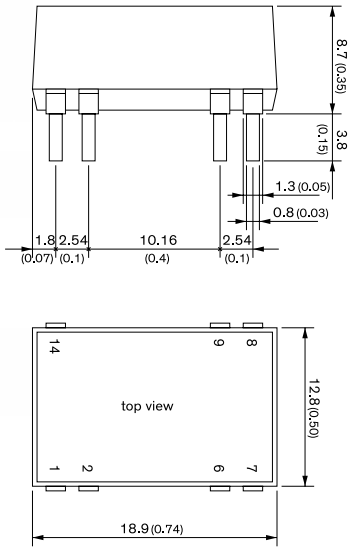
bottom viev

- 0.52 x 0.36 x 0.40 package
- Ultra-wide 4 : 1 input range
- I/O-isolation 1600 VDC
- Fully regulated outputs
- Operating temperature range -40°C to +70°C without derating
- Short circuit protection
- Remote On/Off
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
4	On/Off	On/Off
5	no con.	-Vout
6	-Vout	Common
7	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDN 3-1210WI	**4.5 - 18 VDC** (12 VDC nominal)	3.3 VDC	700 mA	76 %
TDN 3-1211WI		5.0 VDC	600 mA	80 %
TDN 3-1219WI		9.0 VDC	333 mA	81 %
TDN 3-1212WI		12 VDC	250 mA	83 %
TDN 3-1213WI		15 VDC	200 mA	84 %
TDN 3-1215WI		24 VDC	125 mA	82 %
TDN 3-1221WI		±5.0 VDC	±300 mA	80 %
TDN 3-1222WI		±12 VDC	±125 mA	82 %
TDN 3-1223WI		±15 VDC	±100 mA	82 %
TDN 3-2410WI	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	700 mA	77 %
TDN 3-2411WI		5.0 VDC	600 mA	80 %
TDN 3-2419WI		9.0 VDC	333 mA	81 %
TDN 3-2412WI		12 VDC	250 mA	83 %
TDN 3-2413WI		15 VDC	200 mA	83 %
TDN 3-2415WI		24 VDC	125 mA	82 %
TDN 3-2421WI		±5.0 VDC	±300 mA	80 %
TDN 3-2422WI		±12 VDC	±125 mA	82 %
TDN 3-2423WI		±15 VDC	±100 mA	82 %
TDN 3-4810WI	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	700 mA	77 %
TDN 3-4811WI		5.0 VDC	600 mA	80 %
TDN 3-4819WI		9.0 VDC	333 mA	81 %
TDN 3-4812WI		12 VDC	250 mA	83 %
TDN 3-4813WI		15 VDC	200 mA	83 %
TDN 3-4815WI		24 VDC	125 mA	82 %
TDN 3-4821WI		±5.0 VDC	±300 mA	80 %
TDN 3-4822WI		±12 VDC	±125 mA	82 %
TDN 3-4823WI		±15 VDC	±100 mA	82 %

TDR 3 — 3 Watt

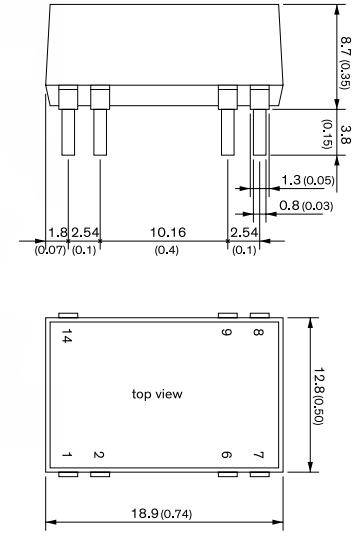


- 0.74 x 0.50 x 0.35” DIP-14 package
- Wide 2:1 input voltage range
- Fully regulated outputs
- Low ripple and noise
- No minimum load required
- Temperature range -40°C to +85°C
- I/O isolation 1600 VDC
- Continuous short-circuit protection
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDR 3-0511	**4.5 - 9.0 VDC** (5 VDC nominal)	5.0 VDC	600 mA	79 %
TDR 3-0512		12 VDC	250 mA	80 %
TDR 3-0513		15 VDC	200 mA	81 %
TDR 3-0522		±12 VDC	±125 mA	80 %
TDR 3-0523		±15 VDC	±100 mA	81 %
TDR 3-1211	**9 - 18 VDC** (12 VDC nominal)	5.0 VDC	600 mA	81 %
TDR 3-1212		12 VDC	250 mA	82 %
TDR 3-1213		15 VDC	200 mA	82 %
TDR 3-1222		±12 VDC	±125 mA	82 %
TDR 3-1223		±15 VDC	±100 mA	83 %
TDR 3-2411	**18 - 36 VDC** (24 VDC nominal)	5.0 VDC	600 mA	81 %
TDR 3-2412		12 VDC	250 mA	82 %
TDR 3-2413		15 VDC	200 mA	83 %
TDR 3-2422		±12 VDC	±125 mA	83 %
TDR 3-2423		±15 VDC	±100 mA	83 %
TDR 3-4811	**36 - 75 VDC** (48 VDC nominal)	5.0 VDC	600 mA	81 %
TDR 3-4812		12 VDC	250 mA	82 %
TDR 3-4813		15 VDC	200 mA	82 %
TDR 3-4822		±12 VDC	±125 mA	83 %
TDR 3-4823		±15 VDC	±100 mA	83 %

TDR 3WI — 3 Watt

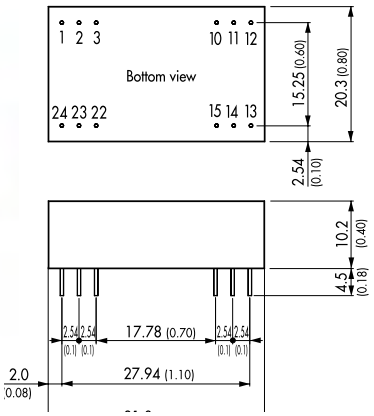


- 0.74 x 0.50 x 0.35” DIP-14 package
- Ultra-wide 4:1 input voltage range
- Fully regulated outputs
- Low ripple and noise
- No minimum load required
- Temperature range -40°C to +85°C
- I/O isolation 1600 VDC
- Continuous short-circuit protection
- Remote On/Off control
- Fully RoHS compliant
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin (GND)	-Vin (GND)
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDR 3-1211WI	**4.5 - 18 VDC** (12 VDC nominal)	5.0 VDC	600 mA	81 %
TDR 3-1212WI		12 VDC	250 mA	82 %
TDR 3-1213WI		15 VDC	200 mA	82 %
TDR 3-1222WI		±12 VDC	±125 mA	82 %
TDR 3-1223WI		±15 VDC	±100 mA	81 %
TDR 3-2411WI	**9 - 36 VDC** (24 VDC nominal)	5.0 VDC	600 mA	80 %
TDR 3-2412WI		12 VDC	250 mA	82 %
TDR 3-2413WI		15 VDC	200 mA	82 %
TDR 3-2422WI		±12 VDC	±125 mA	82 %
TDR 3-2423WI		±15 VDC	±100 mA	81 %
TDR 3-4811WI	**18 - 75 VDC** (48 VDC nominal)	5.0 VDC	600 mA	80 %
TDR 3-4812WI		12 VDC	250 mA	83 %
TDR 3-4813WI		15 VDC	200 mA	82 %
TDR 3-4822WI		±12 VDC	±125 mA	82 %
TDR 3-4823WI		±15 VDC	±100 mA	81 %

TEM 3N — 3 Watt



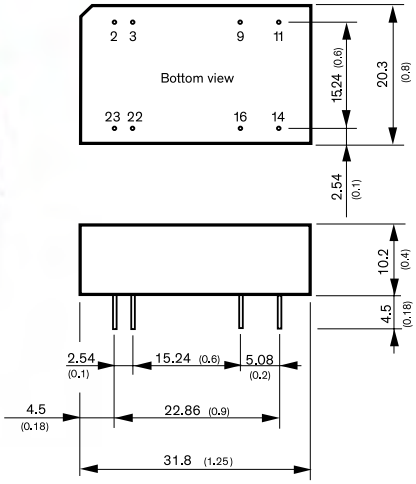
- 1.26 x 0.80 x 0.40” DIP-24 package
- Fully regulated output
- Output ripple & noise 30 mVp-p typ.
- Short circuit protection
- Operating temperature range -40°C to +75°C at full load
- I/O isolation 1500 VDC
- Input filter meet EN 55032, class A
- No minimum load required
- Industry standard pinout
- 3 year product warranty

Pinout

Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	ntc.	-Vout
3	ntc.	Common
10	-Vout	Common
11	+Vout	+Vout
12	-Vin (GND)	-Vin (GND)
13	-Vin (GND)	-Vin (GND)
14	+Vout	+Vout
15	-Vout	Common
22	ntc.	Common
23	ntc.	-Vout
24	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEM 3-0511N	**5 VDC ±10%**	5 VDC	600 mA	70 %
TEM 3-0512N		12 VDC	250 mA	78 %
TEM 3-0513N		15 VDC	200 mA	78 %
TEM 3-0522N		±12 VDC	±125 mA	78 %
TEM 3-0523N		±15 VDC	±100 mA	78 %
TEM 3-1211N	**12 VDC ±10%**	5 VDC	600 mA	74 %
TEM 3-1212N		12 VDC	250 mA	80 %
TEM 3-1213N		15 VDC	200 mA	80 %
TEM 3-1222N		±12 VDC	±125 mA	81 %
TEM 3-1223N		±15 VDC	±100 mA	82 %
TEM 3-2411N	**24 VDC ±10%**	5 VDC	600 mA	75 %
TEM 3-2412N		12 VDC	250 mA	80 %
TEM 3-2413N		15 VDC	200 mA	80 %
TEM 3-2422N		±12 VDC	±125 mA	81 %
TEM 3-2423N		±15 VDC	±100 mA	82 %

TEN 3N — 3 Watt



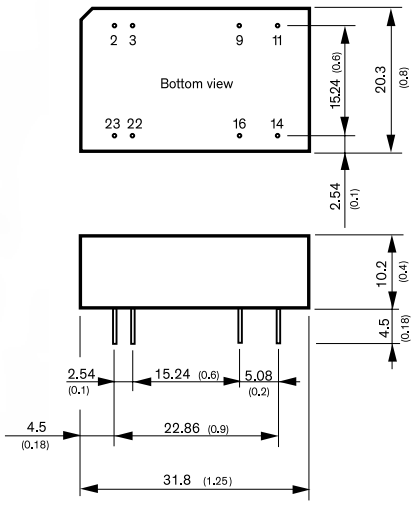
- 1.25 x 0.80 x 0.40” DIP-24 package
- Wide 2 : 1 input range
- EN 55032 class A and FCC level A without external components
- Temperature range -40°C to +85°C
- Models with 1500 VDC and 3000 VDC I/O isolation (functional insulation)
- High reliability, MTBF >1.0 Mio. h
- 3 year product warranty

Pinout

Pin	Single	Dual
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	ntc	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 3-0510N	**4.5 - 9.0 VDC** (nominal 5 VDC)	3.3 VDC	750 mA	77 %
TEN 3-0511N		5.0 VDC	600 mA	80 %
TEN 3-0512N		12 VDC	250 mA	82 %
TEN 3-0513N		15 VDC	200 mA	82 %
TEN 3-0515N		24 VDC	125 mA	81 %
TEN 3-0521N		±5.0 VDC	±250 mA	80 %
TEN 3-0522N		±12 VDC	±125 mA	82 %
TEN 3-0523N		±15 VDC	±100 mA	82 %
TEN 3-1210N	**9 - 18 VDC** (nominal 12 VDC)	3.3 VDC	750 mA	79 %
TEN 3-1211N		5.0 VDC	600 mA	81 %
TEN 3-1212N		12 VDC	250 mA	85 %
TEN 3-1213N		15 VDC	200 mA	85 %
TEN 3-1215N		24 VDC	125 mA	84 %
TEN 3-1221N		±5.0 VDC	±250 mA	80 %
TEN 3-1222N		±12 VDC	±125 mA	84 %
TEN 3-1223N		±15 VDC	±100 mA	84 %
TEN 3-2410N	**18 - 36 VDC** (nominal 24 VDC)	3.3 VDC	750 mA	79 %
TEN 3-2411N		5.0 VDC	600 mA	81 %
TEN 3-2412N		12 VDC	250 mA	85 %
TEN 3-2413N		15 VDC	200 mA	85 %
TEN 3-2415N		24 VDC	125 mA	84 %
TEN 3-2421N		±5.0 VDC	±250 mA	80 %
TEN 3-2422N		±12 VDC	±125 mA	84 %
TEN 3-2423N		±15 VDC	±100 mA	84 %
TEN 3-4810N	**36 - 75 VDC** (nominal 48 VDC)	3.3 VDC	750 mA	79 %
TEN 3-4811N		5.0 VDC	600 mA	81 %
TEN 3-4812N		12 VDC	250 mA	85 %
TEN 3-4813N		15 VDC	200 mA	85 %
TEN 3-4815N		24 VDC	125 mA	84 %
TEN 3-4821N		±5.0 VDC	±250 mA	80 %
TEN 3-4822N		±12 VDC	±125 mA	84 %
TEN 3-4823N		±15 VDC	±100 mA	84 %

TEN 3WIN — 3 Watt



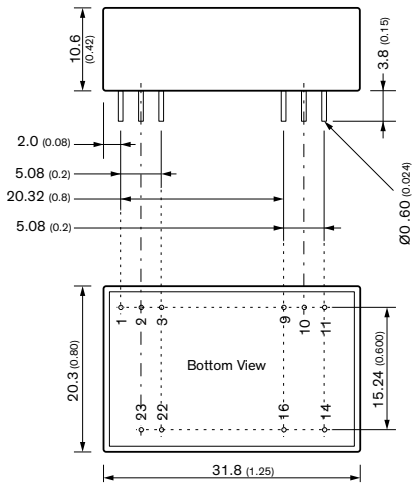
Model	Input Voltage Range	Output Vnom	Output Imax	Effi-ciency
TEN 3-2410WIN	**9.0 - 36 VDC** (nominal 24 VDC)	3.3 VDC	750 mA	77 %
TEN 3-2411WIN		5.0 VDC	600 mA	79 %
TEN 3-2412WIN		12 VDC	250 mA	82 %
TEN 3-2413WIN		15 VDC	200 mA	83 %
TEN 3-2415WIN		24 VDC	125 mA	81 %
TEN 3-2421WIN		±5.0 VDC	±250 mA	80 %
TEN 3-2422WIN		±12 VDC	±125 mA	82 %
TEN 3-2423WIN		±15 VDC	±100 mA	82 %
TEN 3-4810WIN	**18 - 75 VDC** (nominal 48 VDC)	3.3 VDC	750 mA	77 %
TEN 3-4811WIN		5 VDC	600 mA	80 %
TEN 3-4812WIN		12 VDC	250 mA	83 %
TEN 3-4813WIN		15 VDC	200 mA	84 %
TEN 3-4815WIN		24 VDC	125 mA	82 %
TEN 3-4821WIN		±5.0 VDC	±250 mA	80 %
TEN 3-4822WIN		±12 VDC	±125 mA	82 %
TEN 3-4823WIN		±15 VDC	±100 mA	82 %

- 1.25 x 0.80 x 0.40” DIP-24 package
- Ultra-wide 4 : 1 input range
- EN 55032 Class A and FCC level A without external components
- Temperature range -40°C to 85°C
- Models with 1500 VDC and 3000 VDC I/O isolation (functional insulation)
- High reliability, MTBF >1.0 Mio. h
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	ntc	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

TEN 3WIRH — NEW! — 3 Watt

EN50155 /EN61373 Approved



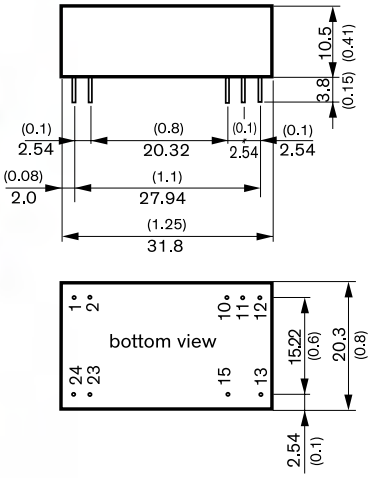
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 3-11010WIRH	**36 – 160 VDC**	3.3 VDC	1000 mA	80%
TEN 3-11011WIRH		5 VDC	600 mA	82%
TEN 3-11012WIRH		12 VDC	250 mA	85%
TEN 3-11013WIRH		15 VDC	200 mA	84%
TEN 3-11015WIRH		24 VDC	125 mA	85%
TEN 3-11021WIRH		±5 VDC	±300 mA	81%
TEN 3-11022WIRH		±12 VDC	±125 mA	84%
TEN 3-11023WIRH		±15 VDC	±100 mA	85%

- 1.25 x 0.80 x 0.42” DIP-24 package
- 3000 VAC reinforced I/O-isolation
- Wide 4:1 input range (36 – 160 VDC}
- EN 50155 approval for railway
- EN 61373 Thermal shock and vibration
- High efficiency up to 85%
- Operating temperature –40°C to +95°C
- Under voltage lock-out circuit
- Remote On/Off and Trim function
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	Ctrl	Ctrl
2	–Vin	–Vin
3	–Vin	–Vin
9	NC	Common
10	Trim (option)	Trim (option)
11	NC	–Vout
14	+ Vout	+ Vout
16	–Vout	Common
22	+ Vin	+ Vin
23	+ Vin	+ Vin

THI 3 — 3 Watt

IEC/EN/ES 60601-1 (2×MOPP)



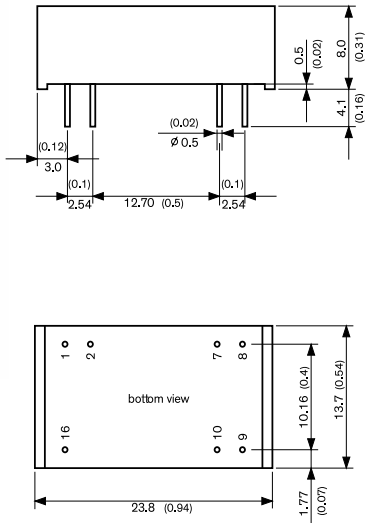
- 1.25 x 0.80 x 0.40” DIP-24 package
- Supplementary & reinforced insulation
- I/O isolation 4000 VACrms
- 300 VACrms working voltage
- 2 x MOOP / BF compliant
- Industrial safety to IEC/EN 60950-1
- Fully regulated output voltage
- EN 55032 class A and FCC, level A
- Operating temp. range -40°C to +75°C
- Low leakage current
- Short circuit protection
- 5 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THI 3-0511	**5.0 VDC ± 10%**	5 VDC	600 mA	60 %
THI 3-0512		12 VDC	250 mA	62 %
THI 3-0513		15 VDC	200 mA	62 %
THI 3-0522		±12 VDC	±125 mA	60 %
THI 3-0523		±15 VDC	±100mA	60 %
THI 3-1211	**12.0 VDC ± 10%**	5 VDC	600 mA	60 %
THI 3-1212		12 VDC	250 mA	62 %
THI 3-1213		15 VDC	200 mA	62 %
THI 3-1222		±12 VDC	±125 mA	60 %
THI 3-1223		±15 VDC	±100 mA	60 %
THI 3-2411	**24 VDC ± 10%**	5 VDC	600 mA	60 %
THI 3-2412		12 VDC	250 mA	64 %
THI 3-2413		15 VDC	200 mA	64 %
THI 3-2422		±12 VDC	±125 mA	60 %
THI 3-2423		±15 VDC	±100 mA	60 %

Pinout

Pin	Single	Dual
1	+Vin (VCC)	+Vin (VCC)
2	+Vin (VCC)	+Vin (VCC)
10	No pin	Common
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)

THL 3WI — 3 Watt



- 0.94 x 0.54 x 0.31” DIP-16 package
- Ultra wide 4:1 input voltage range
- Fully regulated outputs
- I/O isolation 1500 VDC
- SMD version qualfied for leadfree re flow solder process, MSL 2a
- Operating temp. range −40°C to +85°C
- Short circuit protection
- Remote On/Off control
- Input filter to meet EN 55032, class A without external components
- 3-year product warranty

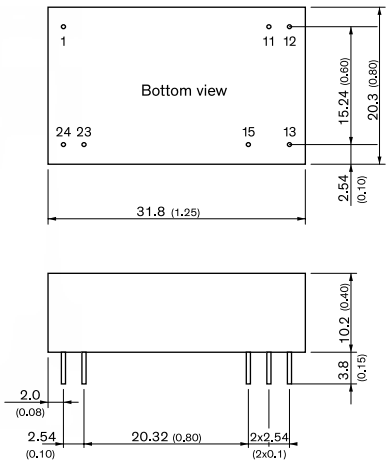
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THL 3-2410WI	**9 – 36 VDC** (24 VDC nominal)	3.3 VDC	600 mA	75%
THL 3-2411WI		5.0 VDC	600 mA	78%
THL 3-2412WI		12 VDC	250 mA	80%
THL 3-2413WI		15 VDC	200 mA	80%
THL 3-2415WI		24 VDC	125 mA	80%
THL 3-2421WI		±5 VDC	±300 mA	77%
THL 3-2422WI		±12 VDC	±125 mA	80%
THL 3-2423WI		±15 VDC	±100 mA	80%
THL 3-4810WI	**18 – 75 VDC** (48 VDC nominal)	3.3 VDC	600 mA	75%
THL 3-4811WI		5.0 VDC	600 mA	78%
THL 3-4812WI		12 VDC	250 mA	80%
THL 3-4813WI		15 VDC	200 mA	80%
THL 3-4815WI		24 VDC	125 mA	80%
THL 3-4821WI		±5 VDC	±300 mA	77%
THL 3-4822WI		±12 VDC	±125 mA	80%
THL 3-4823WI		±15 VDC	±100 mA	80%

Pinout

Pin	Single	Dual
1	–Vin (GND)	–Vin (GND)
2	Remote On/Off	Remote On/Off
7	ntc.	ntc.
8	ntc.	Common
9	+Vout	+Vout
10	–Vout	–Vout
16	+Vin (Vcc)	+Vin (Vcc)

THM 3 — 3 Watt

IEC/EN/ES 60601-1 (2×MOPP)



- 1.25 x 0.80 x 0.40” DIP-24 package
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance criteria 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

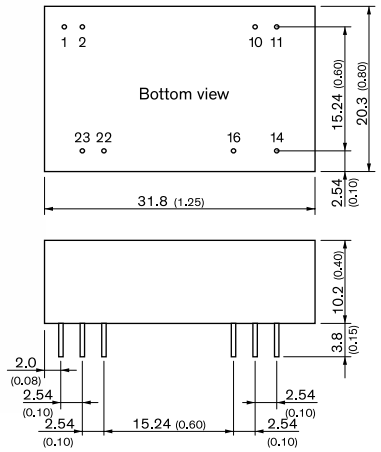
Pinout / Connection

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	Output Imax	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 Watt

IEC/EN/ES 60601-1 (2×MOPP)



- 1.25 x 0.80 x 0.40” DIP-24 package
- Ultra-wide 4:1 input voltage 3
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2 µA
- Operating temp.: -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- Operating up to 5000m altitude
- 5 year product warranty

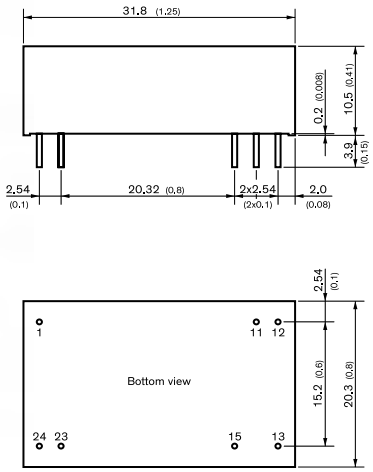
Pinout / Connection

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 Vnom	Output Imax	Efficiency
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	36 - 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 %

THP 3 — 3 Watt

IEC/EN/ES 60601-1 (2×MOPP)



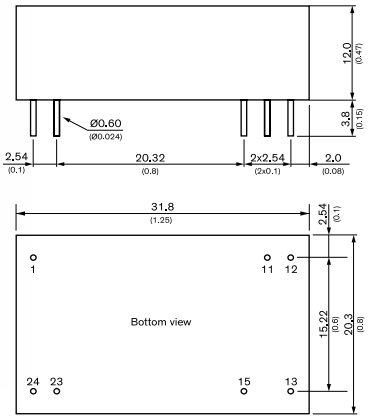
- 1.25 x 0.80 x 0.40” DIP-24 package
- Ultra-wide 4 : 1 input range
- Supplementary and reinforced insulation (3000 VACrms / 1000 Vrms working voltage)
- 2xMOPP / BF compliant
- Industrial safety to IEC/EN/UL 62368-1
- Temperature range -40°C to 85°C max.
- EN 55032 class A without ext. components
- Continuous short circuit protection
- High reliability, MTBF >1 Mio. hours
- Lead free design, RoHS compliant
- 5 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THP 3-2411	9 - 40 VDC (24 VDC nominal)	5 VDC	600 mA	78 %
THP 3-2412		12 VDC	250 mA	83 %
THP 3-2422		±12 VDC	±125 mA	83 %
THP 3-2423		±15 VDC	±100 mA	83 %
THP 3-4811	18 - 80 VDC (48 VDC nominal)	5 VDC	600 mA	78 %
THP 3-4812		12 VDC	250 mA	83 %
THP 3-4822		±12 VDC	±125 mA	83 %
THP 3-4823		±15 VDC	±100 mA	83 %
THP 3-7211	36 - 160 VDC (72 VDC nominal)	5 VDC	600 mA	78 %
THP 3-7212		12 VDC	250 mA	83 %
THP 3-7222		±12 VDC	±125 mA	83 %
THP 3-7223		±15 VDC	±100 mA	83 %

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)

THR 3WI — IN DEVELOPMENT — 3 Watt



- 1.25 x 0.80 x 0.40” DIP-24 package
- Ultra-wide 4 : 1 input range
- Reinforced I/O-isolation 3000 VAC
- Input filter to meet EN 55032, Class A
- High efficiency up to 85%
- Temperature range -40°C to 90°C
- 3 year product warranty

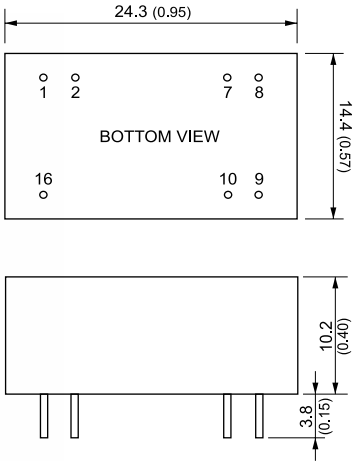
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THR 3-2411WI	9 - 36 VDC (24 VDC nom.)	5 VDC	600 mA	80 %
THR 3-2412WI		12 VDC	250 mA	84%
THR 3-2413WI		15 VDC	200 mA	85 %
THR 3-2422WI		±12 VDC	±125 mA	83 %
THR 3-2423WI		±15 VDC	±100 mA	84 %
THR 3-4811WI	18 - 75 VDC (48 VDC nom.)	5 VDC	600 mA	80 %
THR 3-4812WI		12 VDC	250 mA	83 %
THR 3-4813WI		15 VDC	200 mA	84 %
THR 3-4822WI		±12 VDC	±125 mA	83 %
THR 3-4823WI		±15 VDC	±100 mA	83 %
THR 3-7211WI	40 - 160 VDC (110 VDC nom.)	5 VDC	600 mA	80 %
THR 3-7212WI		12 VDC	250 mA	84 %
THR 3-7213WI		15 VDC	200 mA	84 %
THR 3-7222WI		±12 VDC	±125 mA	83 %
THR 3-7223WI		±15 VDC	±100 mA	85 %

Pinout

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

TIM 3.5 — 3.5 Watt

IEC/EN/ES 60601-1 (2×MOPP)



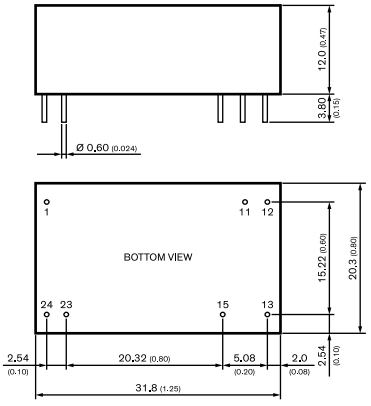
- 0.95 x 0.57 x 0.40” DIP-16 package
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- Low leakage < 2 µA for BF-applications
- Temperature range -40°C to 90°C.
- EMC compliance to IEC 60601-1-2 4th edition and EN 55032 class A
- 5 year product warranty

Pinout / Connection

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	Output Imax	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 %

TRI 3 — 3.5 Watt



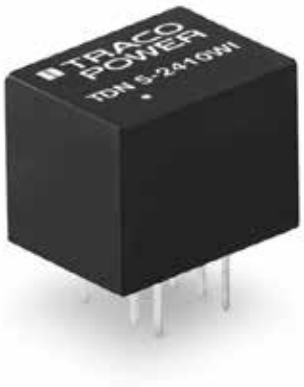
- 1.25 x 0.80 x 0.41” DIP-24 package
- Reinforced I/O-isolation 7071 VDC rated for 1000 VAC working voltage
- Isolation peak voltage 9000 VDC (1s)
- Common Mode Transient Immunity (dv/dt) 15 kV/µs
- Temperature range -40 to +90°C
- no-load power 96 - 192 mW
- Internal EN 55032 class A filter
- High efficiency up to 87%
- 2:1 input voltage range
- Protection against overload, overvoltage and short circuit
- 3 year product warranty

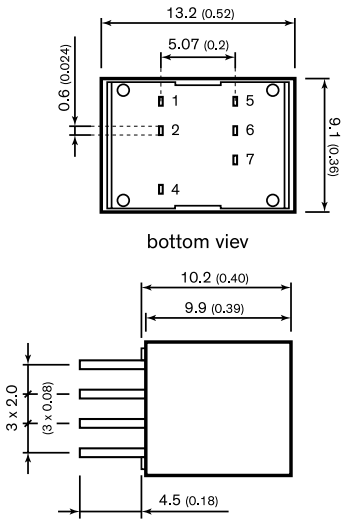
Pinout

Pin	Single Output	Dual Output
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	Output Imax	Efficiency
TRI 3-0511	4.5 - 9 VDC (5 VDC nom.)	5 VDC	700 mA	82 %
TRI 3-0512		12 VDC	290 mA	83 %
TRI 3-0513		15 VDC	235 mA	84 %
TRI 3-0515		24 VDC	146 mA	83 %
TRI 3-0522		±12 VDC	145 mA	84 %
TRI 3-0523		±15 VDC	115 mA	84 %
TRI 3-1211	9 - 18 VDC (12 VDC nom.)	5 VDC	700 mA	82 %
TRI 3-1212		12 VDC	290 mA	86 %
TRI 3-1213		15 VDC	235 mA	87 %
TRI 3-1215		24 VDC	146 mA	86 %
TRI 3-1222		±12 VDC	145 mA	87 %
TRI 3-1223		±15 VDC	115 mA	87 %
TRI 3-2411	18 - 36 VDC (24 VDC nom.)	5 VDC	700 mA	82 %
TRI 3-2412		12 VDC	290 mA	85 %
TRI 3-2413		15 VDC	235 mA	87 %
TRI 3-2415		24 VDC	146 mA	86 %
TRI 3-2422		±12 VDC	145 mA	87 %
TRI 3-2423		±15 VDC	115 mA	86 %
TRI 3-4811	36 - 75 VDC (48 VDC nom.)	5 VDC	700 mA	82 %
TRI 3-4812		12 VDC	290 mA	85 %
TRI 3-4813		15 VDC	235 mA	85 %
TRI 3-4815		24 VDC	146 mA	83 %
TRI 3-4822		±12 VDC	145 mA	84 %
TRI 3-4823		±15 VDC	115 mA	84 %

TDN 5WI — 5 Watt



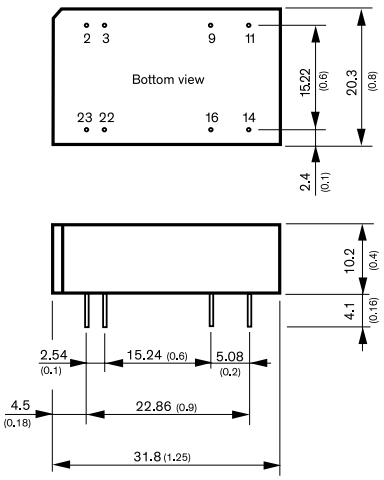


- 0.52 x 0.36 x 0.39” DIP-8 package
- Ultra-wide 4:1 input range
- I/O-isolation 1600 VDC
- Fully regulated outputs
- Temperature range -40°C to +75°C
- Short circuit protection
- Remote On/Off
- 3 year product warranty
- Designed to meet UL 62368-1
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
4	On/Off	On/Off
5	no con.	-Vout
6	-Vout	Common
7	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TDN 5-0910WI	**4.5 - 13.2 VDC** (9 VDC nominal)	3.3 VDC	1000 mA	76 %
TDN 5-0911WI		5.0 VDC	1000 mA	80 %
TDN 5-0919WI		9.0 VDC	555 mA	81 %
TDN 5-0912WI		12 VDC	420 mA	83 %
TDN 5-0913WI		15 VDC	333 mA	83 %
TDN 5-0915WI		24 VDC	210 mA	83 %
TDN 5-0921WI		± 5.0 VDC	±500 mA	80 %
TDN 5-0922WI		±12 VDC	±210 mA	83 %
TDN 5-0923WI		±15 VDC	±168 mA	83 %
TDN 5-2410WI	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	1000 mA	76 %
TDN 5-2411WI		5.0 VDC	1000 mA	80 %
TDN 5-2419WI		9.0 VDC	555 mA	81 %
TDN 5-2412WI		12 VDC	420 mA	83 %
TDN 5-2413WI		15 VDC	333 mA	83 %
TDN 5-2415WI		24 VDC	210 mA	83 %
TDN 5-2421WI		± 5.0 VDC	±500 mA	80 %
TDN 5-2422WI		±12 VDC	±210 mA	83 %
TDN 5-2423WI		±15 VDC	±168 mA	84 %
TDN 5-4810WI	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	1000 mA	76 %
TDN 5-4811WI		5.0 VDC	1000 mA	81 %
TDN 5-4819WI		9.0 VDC	555 mA	81 %
TDN 5-4812WI		12 VDC	420 mA	83 %
TDN 5-4813WI		15 VDC	333 mA	83 %
TDN 5-4815WI		24 VDC	210 mA	83 %
TDN 5-4821WI		± 5.0 VDC	±500 mA	80 %
TDN 5-4822WI		±12 VDC	±210 mA	83 %
TDN 5-4823WI		±15 VDC	±168 mA	84 %

TEL 5 — 5 Watt

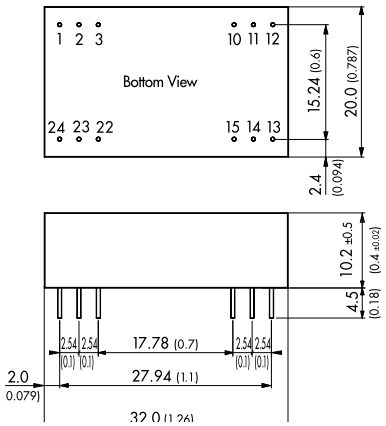


- 1.25 x 0.80 x 0.41” DIP-24 package
- Wide 2:1 input range
- High power density
- High efficiency up to 86%
- Regulated outputs
- I/O isolation 1500 VDC
- EN 55032, Class A and FCC level A without external components
- Indefinite short-circuit protection
- High reliability, MTBF >1 Mio. h
- Lead free design, RoHS compliant
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	No con.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 5-1210	**9 - 18 VDC** (nominal 12 VDC)	3.3 VDC	1200 mA	77 %
TEL 5-1211		5 VDC	1000 mA	81 %
TEL 5-1212		12 VDC	500 mA	84 %
TEL 5-1222		±12 VDC	±250 mA	84 %
TEL 5-1223		±15 VDC	±200 mA	84 %
TEL 5-2410	**18 - 36 VDC** (nominal 24 VDC)	3.3 VDC	1200 mA	79 %
TEL 5-2411		5 VDC	1000 mA	83 %
TEL 5-2412		12 VDC	500 mA	86 %
TEL 5-2422		±12 VDC	±250 mA	86 %
TEL 5-2423		±15 VDC	±200 mA	86 %

TVN 5WI — 5 Watt

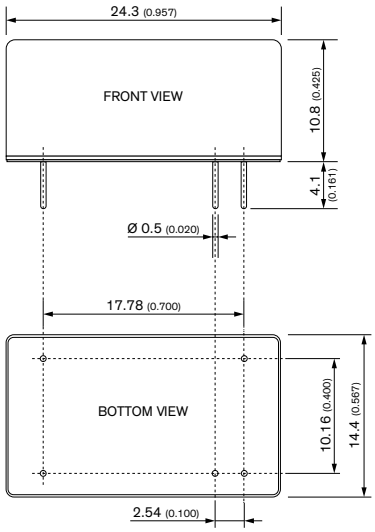


- 1.26 x 0.79 x 0.40” DIP-24 Package
- Ultra low ripple and noise 10 mVp-p typ.
- 6-side shielded DIP-24 metal package
- Input filter to meet EN 55032, class B
- Ultra-wide 4:1 input voltage range
- Temperature range -40°C to +90°C
- Undervoltage lockout
- I/O isolation 1600 VDC
- Adjustable output voltage
- No minimum load required
- Remote On/Off
- 3 year product warranty

Pinout		
Pin	Single	Dual
1	+Vin (Vcc)	
2	+Vin (Vcc)	
3	Case	
10	No pin	Common
11	No pin	+Vout 1
12	Case	
13	TRIM	
14	-Vout	-Vout 2
15	+Vout	Common
22	Remote On / Off	
23	-Vin	
24	-Vin	

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TVN 5-0910WI	4.5 - 12 VDC (9 VDC nominal)	3.3 VDC	1515 mA	79 %
TVN 5-0911WI		5.0 VDC	1000 mA	82 %
TVN 5-0912WI		12 VDC	416 mA	87 %
TVN 5-0913WI		15 VDC	333 mA	87 %
TVN 5-0915WI		24 VDC	208 mA	88 %
TVN 5-0921WI		±5.0 VDC	±500 mA	84 %
TVN 5-0922WI		±12 VDC	±208 mA	85 %
TVN 5-0923WI		±15 VDC	±166 mA	86 %
TVN 5-0925WI		±24 VDC	±104 mA	87 %
TVN 5-2410WI	9 - 36 VDC (24 VDC nominal)	3.3 VDC	1515 mA	81 %
TVN 5-2411WI		5.0 VDC	1000 mA	83 %
TVN 5-2412WI		12 VDC	416 mA	88 %
TVN 5-2413WI		15 VDC	333 mA	88 %
TVN 5-2415WI		24 VDC	208 mA	89 %
TVN 5-2421WI		±5.0 VDC	±500 mA	84 %
TVN 5-2422WI		±12 VDC	±208 mA	85 %
TVN 5-2423WI		±15 VDC	±166 mA	86 %
TVN 5-2425WI		±24 VDC	±104 mA	87 %
TVN 5-4810WI	18 - 75 VDC (48 VDC nominal)	3.3 VDC	1515 mA	80 %
TVN 5-4811WI		5.0 VDC	1000 mA	83 %
TVN 5-4812WI		12 VDC	416 mA	86 %
TVN 5-4813WI		15 VDC	333 mA	87 %
TVN 5-4815WI		24 VDC	208 mA	88 %
TVN 5-4821WI		±5.0 VDC	±500 mA	83 %
TVN 5-4822WI		±12 VDC	±208 mA	85 %
TVN 5-4823WI		±15 VDC	±166 mA	86 %
TVN 5-4825WI		±24 VDC	±104 mA	87 %

TEL 6 — IN DEVELOPMENT — 6 Watt

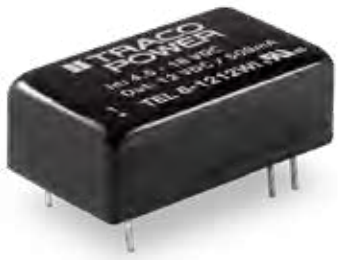


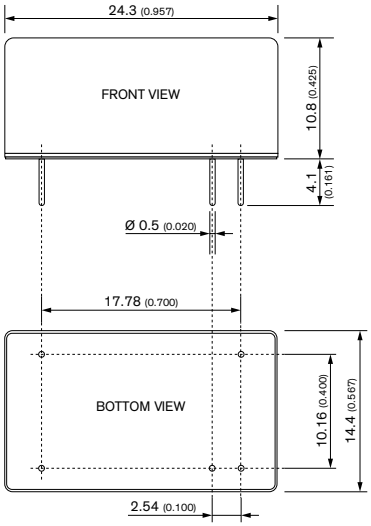
- 0.96 x 0.57 x 0.43” DIP-16 package
- 6-side shielded metal case with insulated base plate
- Wide 2:1 input voltage range
- High efficiency for low thermal loss
- Operating temperature range of –40°C to +85°C
- Built-in EN 55032 class A filter
- Current limitation and protection against short circuit
- 3-year product warranty

Pinout		
Pin	Single	Dual
1	–Vin	–Vin
8	NC	Common
9	+Vout	+Vout
10	–Vin	–Vout
16	+Vin	+Vin

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 6-0911	4.5 – 12 VDC	5 VDC	1200 mA	82%
TEL 6-0912		12 VDC	500 mA	85%
TEL 6-0913		15 VDC	400 mA	86%
TEL 6-0915		24 VDC	250 mA	87%
TEL 6-0922		±12 VDC	±250 mA	85%
TEL 6-0923		±15 VDC	±200 mA	86%
TEL 6-1211	9 – 18 VDC	5 VDC	1200 mA	79%
TEL 6-1212		12 VDC	500 mA	83%
TEL 6-1213		15 VDC	400 mA	83%
TEL 6-1215		24 VDC	250 mA	85%
TEL 6-1222		±12 VDC	±250 mA	85%
TEL 6-1223		±15 VDC	±200 mA	86%
TEL 6-2411	18 – 36 VDC	5 VDC	1200 mA	81%
TEL 6-2412		12 VDC	500 mA	85%
TEL 6-2413		15 VDC	400 mA	85%
TEL 6-2415		24 VDC	250 mA	85%
TEL 6-2422		±12 VDC	±250 mA	85%
TEL 6-2423		±15 VDC	±200 mA	84%
TEL 6-4811	36 – 75 VDC	5 VDC	1200 mA	81%
TEL 6-4812		12 VDC	500 mA	85%
TEL 6-4813		15 VDC	400 mA	85%
TEL 6-4815		24 VDC	250 mA	85%
TEL 6-4822		±12 VDC	±250 mA	86%
TEL 6-4823		±15 VDC	±200 mA	86%

TEL 6WI — IN DEVELOPMENT — 6 Watt



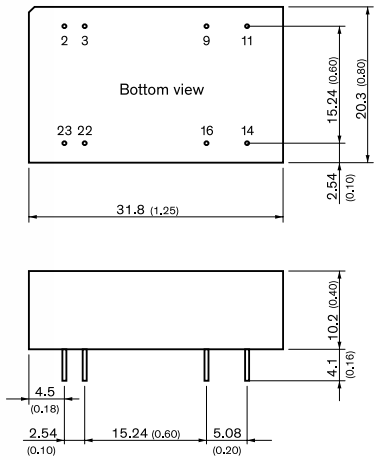


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 6-1211WI	**4.5 – 18 VDC**	5 VDC	1200 mA	82%
TEL 6-1212WI		12 VDC	500 mA	85%
TEL 6-1213WI		15 VDC	400 mA	86%
TEL 6-1215WI		24 VDC	250 mA	87%
TEL 6-1222WI		±12 VDC	±250 mA	85%
TEL 6-1223WI		±15 VDC	±200 mA	86%
TEL 6-2422WI	**9 – 36 VDC**	5 VDC	1200 mA	81%
TEL 6-2423WI		12 VDC	500 mA	84%
TEL 6-2411WI		15 VDC	400 mA	84%
TEL 6-2412WI		24 VDC	250 mA	85%
TEL 6-2413WI		±12 VDC	±250 mA	85%
TEL 6-2415WI		±15 VDC	±200 mA	84%
TEL 6-4822WI	**18 – 75 VDC**	5 VDC	1200 mA	81%
TEL 6-4823WI		12 VDC	500 mA	85%
TEL 6-4811WI		15 VDC	400 mA	85%
TEL 6-4812WI		24 VDC	250 mA	85%
TEL 6-4813WI		±12 VDC	±250 mA	86%
TEL 6-4815WI		±15 VDC	±200 mA	86%

- 0.96 x 0.46 x 0.43” DIP-16 package
- 6-side shielded metal case with insulated base plate
- Wide 4:1 input voltage range
- High efficiency for low thermal loss
- Operating temperature range of –40°C to +85°C
- Built-in EN 55032 class A filter
- Current limitation and protection against short circuit
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin	–Vin
8	NC	Common
9	+Vout	+Vout
10	–Vin	–Vout
16	+Vin	+Vin

TEN 6N — 6 Watt

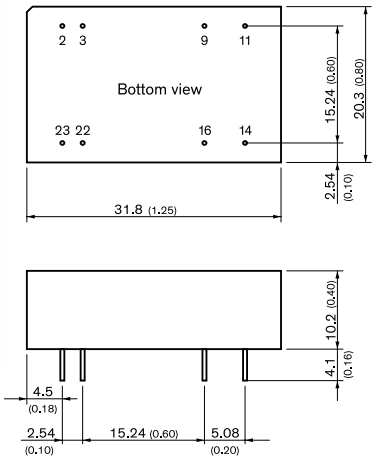


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 6-1210N	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	1200 mA	75 %
TEN 6-1211N		5 VDC	1200 mA	78 %
TEN 6-1212N		12 VDC	500 mA	82 %
TEN 6-1213N		15 VDC	400 mA	82 %
TEN 6-1215N		24 VDC	250 mA	84 %
TEN 6-1221N		±5 VDC	±500 mA	78 %
TEN 6-1222N		±12 VDC	±250 mA	82 %
TEN 6-1223N		±15 VDC	±200 mA	82 %
TEN 6-2410N	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	1200 mA	77 %
TEN 6-2411N		5 VDC	1200 mA	80 %
TEN 6-2412N		12 VDC	500 mA	84 %
TEN 6-2413N		15 VDC	400 mA	84 %
TEN 6-2415N		24 VDC	250 mA	84 %
TEN 6-2421N		±5 VDC	±500 mA	80 %
TEN 6-2422N		±12 VDC	±250 mA	84 %
TEN 6-2423N		±15 VDC	±200 mA	84 %
TEN 6-4810N	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	1200 mA	77 %
TEN 6-4811N		5 VDC	1200 mA	80 %
TEN 6-4812N		12 VDC	500 mA	84 %
TEN 6-4813N		15 VDC	400 mA	84 %
TEN 6-4815N		24 VDC	250 mA	84 %
TEN 6-4821N		±5 VDC	±500 mA	80 %
TEN 6-4822N		±12 VDC	±250 mA	84 %
TEN 6-4823N		±15 VDC	±200 mA	84 %

- 1.25 x 0.80 x 0.40” DIP-24 package
- 2:1 input voltage range
- High efficiency
- Temperature range -40°C to +85°C
- No minimum load required
- Input filter meets EN 55032, class A
- Overload protection
- I/O-isolation 1500 VDC
- DIP-24 plastic package
- Industry standard pinout
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	No function	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

TEN 6WIN — 6 Watt

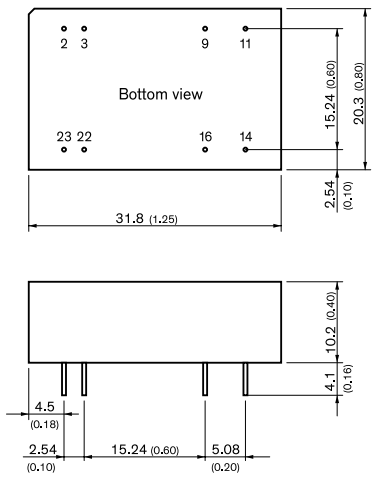


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 6-2410WIN	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	1200 mA	77 %
TEN 6-2411WIN		5 VDC	1200 mA	80 %
TEN 6-2412WIN		12 VDC	500 mA	84 %
TEN 6-2413WIN		15 VDC	400 mA	84 %
TEN 6-2415WIN		24 VDC	250 mA	84 %
TEN 6-2421WIN		±5 VDC	±500 mA	80 %
TEN 6-2422WIN		±12 VDC	±250 mA	84 %
TEN 6-2423WIN		±15 VDC	±200 mA	84 %
TEN 6-4810WIN	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	1200 mA	77 %
TEN 6-4811WIN		5 VDC	1200 mA	80 %
TEN 6-4812WIN		12 VDC	500 mA	84 %
TEN 6-4813WIN		15 VDC	400 mA	84 %
TEN 6-4815WIN		24 VDC	250 mA	84 %
TEN 6-4821WIN		± 5 VDC	±500 mA	80 %
TEN 6-4822WIN		±12 VDC	±250 mA	84 %
TEN 6-4823WIN		±15 VDC	±200 mA	84 %

- 1.25 x 0.80 x 0.40” DIP-24 package
- Ultra-wide 4:1 input range
- High efficiency
- Temperature range -40°C to +85°C
- No minimum load required
- 1500 VDC I/O Isolation
- Input filter meets EN 55032, class A
- Overload protection
- DIP-24 plastic package
- Industry standard pinout
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	No function	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

TEN 6WIN-HI — 6 Watt



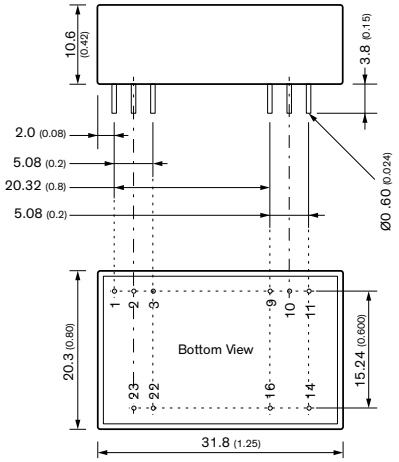
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 6-2410WIN-HI	**9 – 36 VDC** (24 VDC nominal)	3.3 VDC	1200 mA	77%
TEN 6-2411WIN-HI		5 VDC	1200 mA	80%
TEN 6-2412WIN-HI		12 VDC	500 mA	84%
TEN 6-2413WIN-HI		15 VDC	400 mA	84%
TEN 6-2415WIN-HI		24 VDC	250 mA	84%
TEN 6-2421WIN-HI		±5 VDC	±500 mA	80%
TEN 6-2422WIN-HI		±12 VDC	±250 mA	84%
TEN 6-2423WIN-HI		±15 VDC	±200 mA	84%
TEN 6-4810WIN-HI	**18 – 75 VDC** (48 VDC nominal)	3.3 VDC	1200 mA	77%
TEN 6-4811WIN-HI		5 VDC	1200 mA	80%
TEN 6-4812WIN-HI		12 VDC	500 mA	84%
TEN 6-4813WIN-HI		15 VDC	400 mA	84%
TEN 6-4815WIN-HI		24 VDC	250 mA	84%
TEN 6-4821WIN-HI		± 5 VDC	±500 mA	80%
TEN 6-4822WIN-HI		±12 VDC	±250 mA	84%
TEN 6-4823WIN-HI		±15 VDC	±200 mA	84%

- 1.25 x 0.80 x 0.40” DIP-24 package
- Wide 4:1 input voltage range
- High efficiency
- Operating temperature -40°C to +85°C
- No minimum load required
- 3000 VDC I/O isolation
- Input filter meets EN 55032, class A
- Overload protection
- DIP-24 plastic package
- Industry standard pinout
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
2	–Vin (GND)	–Vin (GND)
3	–Vin (GND)	–Vin (GND)
9	No pin	Common
11	No function	–Vout
14	+Vout	+Vout
16	–Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

TEN 6WIRH **NEW!** 6 Watt

EN50155 /EN61373 Approved



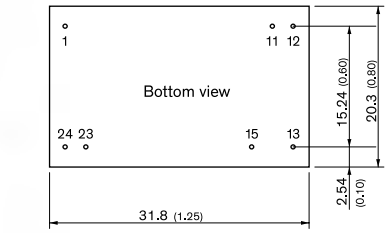
- 1.25 x 0.8 x 0.40" DIP-24 package
- 3000 VAC reinforced I/O-isolation
- Wide 4:1 input range (36-160 VDC)
- EN 50155 approval for railway
- EN 61373 thermal shock & vibration
- High efficiency up to 87%
- Operating temperature –40°C to +85°C
- Under voltage lock-out circuit
- Remote On/Off and Trim function
- 3-year product warranty

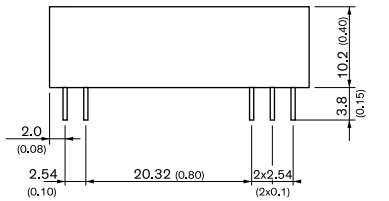
Pinout		
1	Ctrl	Ctrl
2	–Vin	–Vin
3	–Vin	–Vin
9	NC	Common
10	Trim (option)	Trim (option)
11	NC	–Vout
14	+ Vout	+ Vout
16	–Vout	Common
22	+ Vin	+ Vin
23	+ Vin	+ Vin

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 6-11010WIRH	**36 – 160 VDC**	3.3 VDC	1800 mA	83%
TEN 6-11011WIRH		5 VDC	1200 mA	86%
TEN 6-11012WIRH		12 VDC	500 mA	87%
TEN 6-11013WIRH		15 VDC	400 mA	86%
TEN 6-11015WIRH		24 VDC	250 mA	86%
TEN 6-11021WIRH		±5 VDC	±600 mA	83%
TEN 6-11022WIRH		±12 VDC	±250 mA	86%
TEN 6-11023WIRH		±15 VDC	±200 mA	86%

THM 6 6 Watt

IEC/EN/ES 60601-1 (2×MOPP)





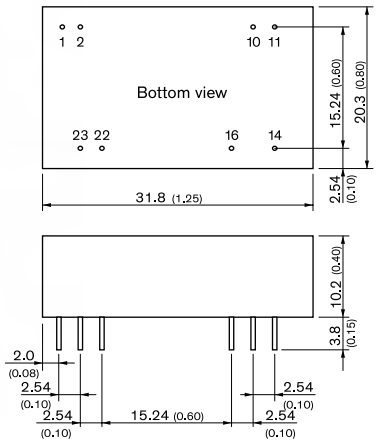
- 1.25 x 0.80 x 0.40" DIP-24 package
- Wide 2:1 input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2 µA
- Operating temp.: -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 3 year product warranty

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

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
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 %

THM 6WI — 6 Watt

IEC/EN/ES 60601-1 (2×MOPP)



- 1.25 x 0.80 x 0.40” DIP-24 package
- Ultrawide 4:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF Compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2 µA
- Operating temp.: -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

Pinout / Connection		
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 Vnom	Output Imax	Efficiency
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		± 5 VDC	600 mA	84 %
THM 6-0522WI		±12 VDC	250 mA	87 %
THM 6-0523WI		±15 VDC	200 mA	88 %
THM 6-2410WI	**9 - 36 VDC** (24 VDC nom.)	3.3 VDC	1800 mA	83 %
THM 6-2411WI		5 VDC	1200 mA	86 %
THM 6-2412WI		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	**18 - 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		± 5 VDC	600 mA	85 %
THM 6-4822WI		±12 VDC	250 mA	88 %
THM 6-4823WI		±15 VDC	200 mA	87 %

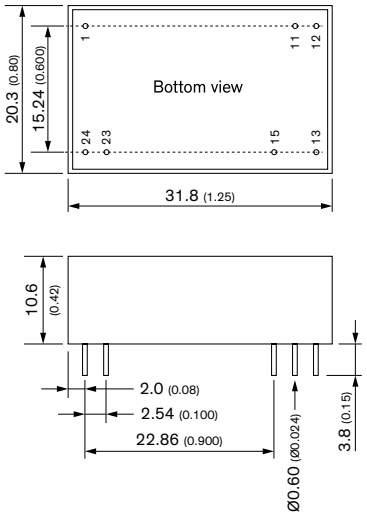
NC: No connection

* 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.

TIM 6 — NEW – under development — 6 Watt

IEC/EN/ES 60601-1 (2×MOPP)

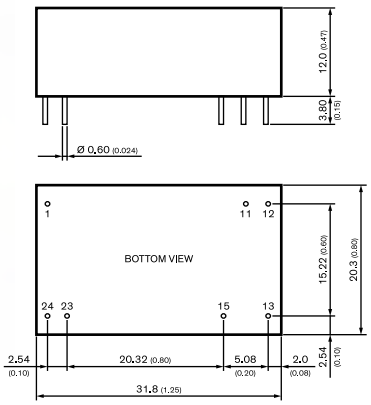


- 1.25 x 0.80 x 0.40” DIP-24 package
- I/O isolation 5000 VAC
- Rated for 250 VAC working voltage
- IEC 60601-1 certification for 2 × MOPP
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptamce criteria
- Low leakage current <2 µA
- Operating temp.: –40°C to 95°C
- EMC to IEC 60601-1-2 4th edition and EN 55032 class A
- 5 year product warranty

Pinout / Connection		
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 Vnom	Output Imax	Efficiency
TIM 6-1211	**9 – 18 VDC**	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**	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**	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%

TRI 6 — 6 Watt



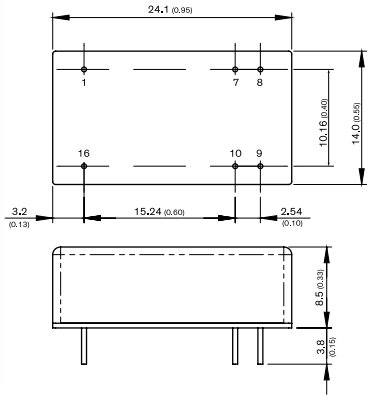
- 1.25 x 0.80 x 0.40” DIP-24 package
- Reinforced I/O-isolation 7071 VDC rated for 1000 VAC working voltage
- Peak voltage 9000 VDC (1s)
- Common Mode Transient Immunity (dv/dt) 15 kV/µs
- Temperature range -40 to +85°C
- No-load power 120 - 240 mW
- Internal EN 55032 class A filter
- High efficiency up to 89%
- 2:1 input voltage range: Protection against overload, overvoltage and short circuit
- 3 year product warranty

Pinout

Pin	Single Output	Dual Output
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	Output Imax	Efficiency
TRI 6-1211	9 - 18 VDC (12 VDC nom.)	5 VDC	1'200 mA	83 %
TRI 6-1212		12 VDC	500 mA	86 %
TRI 6-1213		15 VDC	400 mA	86 %
TRI 6-1222		±12 VDC	250 mA	87 %
TRI 6-1223		±15 VDC	200 mA	87 %
TRI 6-2411	18 - 36 VDC (24 VDC nom.)	5 VDC	1'200 mA	83 %
TRI 6-2412		12 VDC	500 mA	86 %
TRI 6-2413		15 VDC	400 mA	87 %
TRI 6-2422		±12 VDC	250 mA	86 %
TRI 6-2423		±15 VDC	200 mA	87 %
TRI 6-4811	36 - 75 VDC (48 VDC nom.)	5 VDC	1'200 mA	83 %
TRI 6-4812		12 VDC	500 mA	86 %
TRI 6-4813		15 VDC	400 mA	89 %
TRI 6-4822		±12 VDC	250 mA	87 %
TRI 6-4823		±15 VDC	200 mA	88 %

TEL 8 — 8 Watt



- 0.95 x 0.55 x 0.33” DIP-16 package
- Temperature range -40°C to +80°C
- Wide 2:1 input range
- Built-in EN 55032 class A filter
- Protection against short circuit
- 3 year product warranty

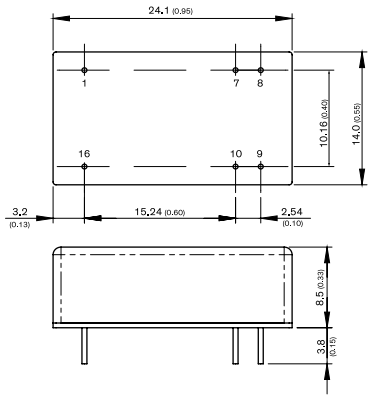
Pinout

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

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 8-1210	9 - 18 VDC (12 VDC nom.)	3.3 VDC	1'600 mA	78 %
TEL 8-1211		5 VDC	1'600 mA	81 %
TEL 8-1212		12 VDC	665 mA	84 %
TEL 8-1213		15 VDC	535 mA	84 %
TEL 8-1215		24 VDC	335 mA	85 %
TEL 8-1222		±12 VDC	335 mA	85 %
TEL 8-1223		±15 VDC	265 mA	84 %
TEL 8-2410	18 - 36 VDC (24 VDC nom.)	3.3 VDC	1'600 mA	78 %
TEL 8-2411		5 VDC	1'600 mA	82 %
TEL 8-2412		12 VDC	665 mA	85 %
TEL 8-2413		15 VDC	535 mA	85 %
TEL 8-2415		24 VDC	335 mA	86 %
TEL 8-2422		±12 VDC	335 mA	85 %
TEL 8-2423		±15 VDC	265 mA	86 %
TEL 8-4810	36 - 75 VDC (48 VDC nom.)	3.3 VDC	1'600 mA	78 %
TEL 8-4811		5 VDC	1'600 mA	81 %
TEL 8-4812		12 VDC	665 mA	85 %
TEL 8-4813		15 VDC	535 mA	85 %
TEL 8-4815		24 VDC	335 mA	86 %
TEL 8-4822		±12 VDC	335 mA	86 %
TEL 8-4823		±15 VDC	265 mA	86 %

Visit our website for documentation with links to our distributors for pricing and availability:

TEL 8WI — 8 Watt

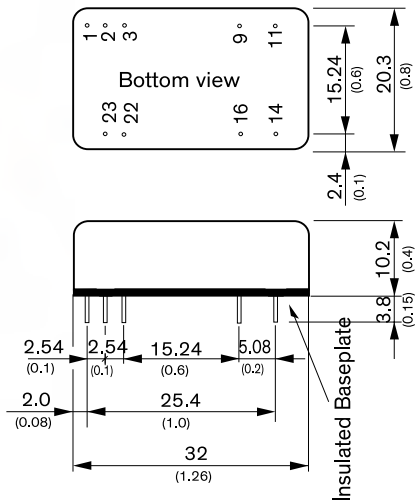


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 8-2410WI	**9 - 36 VDC** (24 VDC nom.)	3.3 VDC	2000 mA	78 %
TEL 8-2411WI		5 VDC	1600 mA	82 %
TEL 8-2412WI		12 VDC	665 mA	85 %
TEL 8-2413WI		15 VDC	535 mA	85 %
TEL 8-2415WI		24 VDC	335 mA	86 %
TEL 8-2422WI		±12 VDC	335 mA	85 %
TEL 8-2423WI		±15 VDC	265 mA	86 %
TEL 8-4810WI	**18 - 75 VDC** (48 VDC nom.)	3.3 VDC	2000 mA	78 %
TEL 8-4811WI		5 VDC	1600 mA	81 %
TEL 8-4812WI		12 VDC	665 mA	85 %
TEL 8-4813WI		15 VDC	535 mA	85 %
TEL 8-4815WI		24 VDC	335 mA	86 %
TEL 8-4822WI		±12 VDC	335 mA	86 %
TEL 8-4823WI		±15 VDC	265 mA	86 %

- 0.95 x 0.55 x 0.33” DIP-16 package
- Temperature range -40°C to +80°C
- Ultra-wide 4:1 input range
- Built-in EN 55032 class A filter
- Protection against short circuit
- 3 year product warranty

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

TEN 8 — 8 Watt

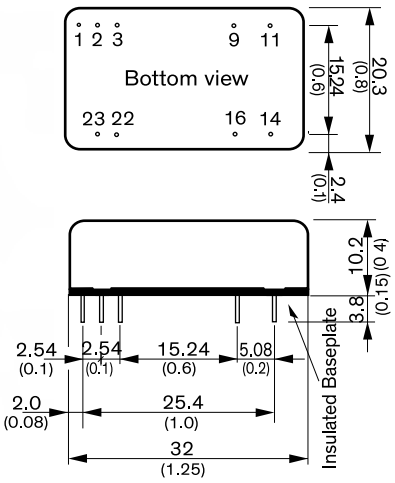


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 8-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	2000 mA	80 %
TEN 8-1211		5 VDC	1500 mA	83 %
TEN 8-1212		12 VDC	665 mA	88 %
TEN 8-1213		15 VDC	535 mA	87 %
TEN 8-1221		±5 VDC	±800 mA	83 %
TEN 8-1222		±12 VDC	±335 mA	87 %
TEN 8-1223		±15 VDC	±265 mA	85 %
TEN 8-2410	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	2000 mA	80 %
TEN 8-2411		5 VDC	1500 mA	83 %
TEN 8-2412		12 VDC	665 mA	86 %
TEN 8-2413		15 VDC	535 mA	85 %
TEN 8-2421		±5 VDC	±800 mA	82 %
TEN 8-2422		±12 VDC	±335 mA	86 %
TEN 8-2423		±15 VDC	±265 mA	85 %
TEN 8-4810	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	2000 mA	80 %
TEN 8-4811		5 VDC	1500 mA	83 %
TEN 8-4812		12 VDC	665 mA	86 %
TEN 8-4813		15 VDC	535 mA	86 %
TEN 8-4821		±5 VDC	±800 mA	85 %
TEN 8-4822		±12 VDC	±335 mA	87 %
TEN 8-4823		±15 VDC	±265 mA	87 %

- 1.26 x 0.80 x 0.40” DIP-24 package
- Wide 2:1 input voltage range
- Input filter meets EN 55032, class A
- Extended operating temperature range: -40°C to +85°C
- Remote On/Off
- Shielded metal casing with insulated baseplate
- Lead free design, RoHS compliant
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No con.	Common
11	No con.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

TEN 8WI — 8 Watt



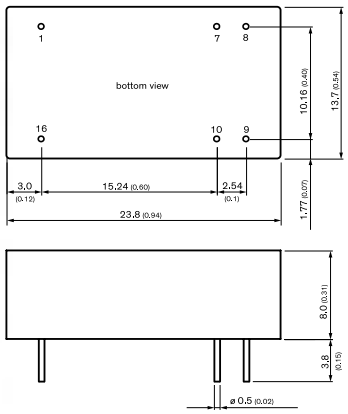
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 8-2410WI	9 - 36 VDC (24 VDC nom.)	3.3 VDC	2400 mA	85 %
TEN 8-2411WI		5 VDC	1600 mA	87 %
TEN 8-2412WI		12 VDC	666 mA	86 %
TEN 8-2413WI		15 VDC	533 mA	86 %
TEN 8-2421WI		± 5 VDC	±800 mA	84 %
TEN 8-2422WI		±12 VDC	±333 mA	86 %
TEN 8-2423WI		±15 VDC	±267 mA	86 %
TEN 8-4810WI	18 - 75 VDC (48 VDC nom.)	3.3 VDC	2400 mA	85 %
TEN 8-4811WI		5 VDC	1600 mA	87 %
TEN 8-4812WI		12 VDC	666 mA	87 %
TEN 8-4813WI		15 VDC	533 mA	88 %
TEN 8-4821WI		± 5 VDC	±800 mA	84 %
TEN 8-4822WI		±12 VDC	±333 mA	87 %
TEN 8-4823WI		±15 VDC	±267 mA	87 %
TEN 8-7210WI	43 - 160 VDC (110 VDC nom.)	3.3 VDC	2400 mA	84 %
TEN 8-7211WI		5 VDC	1600 mA	85 %
TEN 8-7212WI		12 VDC	666 mA	86 %
TEN 8-7213WI		15 VDC	533 mA	86 %
TEN 8-7221WI		± 5 VDC	±800 mA	82 %
TEN 8-7222WI		±12 VDC	±333 mA	85 %
TEN 8-7223WI		±15 VDC	±267 mA	85 %

- 1.26 x 0.80 x 0.40” DIP-24 package
- Ultra-wide 4:1 input voltage range
- High efficiency up to 88 %
- No minimum load required
- Operating temperature range -40°C to +85°C
- Remote On/Off
- Under voltage lock-out circuit
- Shielded metal case with insulated base plate
- Lead free design, RoHS compliant
- 3 year product warranty

Pinout

Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	ntc	Common
11	ntc	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

TEL 10 — 10 Watt



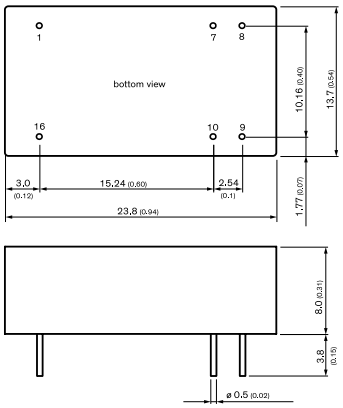
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 10-1210	9 - 18 VDC (12 VDC nom.)	3.3 VDC	2'700 mA	79 %
TEL 10-1211		5.1 VDC	2'000 mA	82 %
TEL 10-1212		12 VDC	833 mA	86 %
TEL 10-1213		15 VDC	666 mA	87 %
TEL 10-1215		24 VDC	416 mA	87 %
TEL 10-1222		±12 VDC	416 mA	86 %
TEL 10-1223		±15 VDC	333 mA	86 %
TEL 10-2410	18 - 36 VDC (24 VDC nom.)	3.3 VDC	2'700 mA	80 %
TEL 10-2411		5.1 VDC	2'000 mA	83 %
TEL 10-2412		12 VDC	833 mA	87 %
TEL 10-2413		15 VDC	666 mA	88 %
TEL 10-2415		24 VDC	416 mA	88 %
TEL 10-2422		±12 VDC	416 mA	87 %
TEL 10-2423		±15 VDC	333 mA	87 %
TEL 10-4810	36 - 75 VDC (48 VDC nom.)	3.3 VDC	2'700 mA	80 %
TEL 10-4811		5.1 VDC	2'000 mA	83 %
TEL 10-4812		12 VDC	833 mA	87 %
TEL 10-4813		15 VDC	666 mA	88 %
TEL 10-4815		24 VDC	416 mA	88 %
TEL 10-4822		±12 VDC	416 mA	87 %
TEL 10-4823		±15 VDC	333 mA	87 %

- 0.94 x 0.54 x 0.31” DIP-16 package
- Highest power density of 3.83 W/cm³
- 6-side shielded metal case with insulated base plate
- Wide 2:1 input voltage range
- High efficiency for low thermal loss
- Operating temperature range of -40°C to +88°C
- Built-in EN 55032 class A filter
- Current limitation and protection against short circuit
- 3 year product warranty

Pinout

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

TEL 10WI — 10 Watt



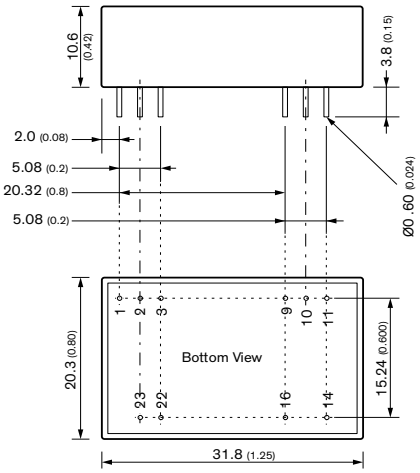
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 10-2410WI	**9 - 36 VDC** (24 VDC nom.)	3.3 VDC	2'700 mA	80 %
TEL 10-2411WI		5.1 VDC	2'000 mA	83 %
TEL 10-2412WI		12 VDC	833 mA	87 %
TEL 10-2413WI		15 VDC	666 mA	88 %
TEL 10-2415WI		24 VDC	416 mA	88 %
TEL 10-2422WI		±12 VDC	416 mA	87 %
TEL 10-2423WI		±15 VDC	333 mA	87 %
TEL 10-4810WI	**18 - 75 VDC** (48 VDC nom.)	3.3 VDC	2'700 mA	80 %
TEL 10-4811WI		5.1 VDC	2'000 mA	83 %
TEL 10-4812WI		12 VDC	833 mA	87 %
TEL 10-4813WI		15 VDC	666 mA	88 %
TEL 10-4815WI		24 VDC	416 mA	88 %
TEL 10-4822WI		±12 VDC	416 mA	87 %
TEL 10-4823WI		±15 VDC	333 mA	87 %

- 0.94 x 0.54 x 0.31” DIP-16 package
- Highest power density of 3.83 W/cm³
- 6-side shielded metal case with insulated base plate
- Ultra-wide 4:1 input voltage range
- High efficiency for low thermal loss
- Operating temperature range of -40°C to +88°C
- Built-in EN 55032 class A filter
- Protection against short circuit and overload
- 3 year product warranty

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

TEN 10WIRH — NEW! — 10 Watt

EN50155 /EN61373 Approved

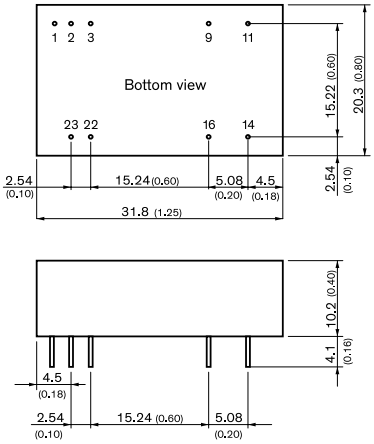


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 10-11010WIRH	**36 – 160 VDC**	3.3 VDC	2500 mA	83%
TEN 10-11011WIRH		5 VDC	2000 mA	87%
TEN 10-11012WIRH		12 VDC	830 mA	88%
TEN 10-11013WIRH		15 VDC	670 mA	88%
TEN 10-11015WIRH		24 VDC	416 mA	88%
TEN 10-11021WIRH		±5 VDC	±1000 mA	84%
TEN 10-11022WIRH		±12 VDC	±416 mA	87%
TEN 10-11023WIRH		±15 VDC	±333 mA	87%

- 1.25 x 0.80 x 0.40” DIP-24 package
- 3000 VAC reinforced I/O-isolation
- Wide 4:1 input range (36 – 160 VDC)
- EN 50155 approval for railway
- EN 61373 thermal shock and vibration
- High efficiency up to 88%
- Operating temperature -40°C to +85°C
- Under voltage lock-out circuit
- Remote On/Off and Trim function
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	Ctrl	Ctrl
2	– Vin	– Vin
3	– Vin	– Vin
9	NC	Common
10	Trim (option)	Trim (option)
11	NC	– Vout
14	+ Vout	+ Vout
16	– Vout	Common
22	+ Vin	+ Vin
23	+ Vin	+ Vin

THD 10N — 10 Watt

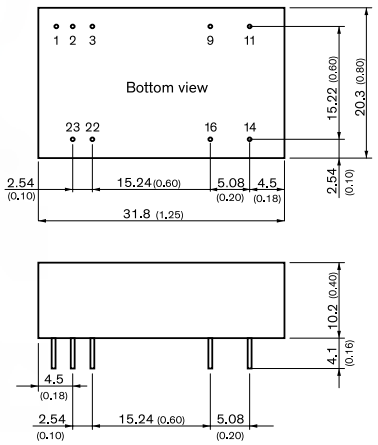


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THD 10-1210N	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	2700 mA	86 %
THD 10-1211N		5.1 VDC	2000 mA	85 %
THD 10-1212N		12 VDC	833 mA	88 %
THD 10-1213N		15 VDC	666 mA	89 %
THD 10-1222N		±12 VDC	±416 mA	88 %
THD 10-1223N		±15 VDC	±333 mA	89 %
THD 10-2410N	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	2700 mA	86 %
THD 10-2411N		5.1 VDC	2000 mA	85 %
THD 10-2412N		12 VDC	833 mA	89 %
THD 10-2413N		15 VDC	666 mA	89 %
THD 10-2422N		±12 VDC	±416 mA	88 %
THD 10-2423N		±15 VDC	±333 mA	89 %
THD 10-4810N	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	2700 mA	86 %
THD 10-4811N		5.1 VDC	2000 mA	85 %
THD 10-4812N		12 VDC	833 mA	87 %
THD 10-4813N		15 VDC	666 mA	88 %
THD 10-4822N		±12 VDC	±416 mA	87 %
THD 10-4823N		±15 VDC	±333 mA	88 %

- 1.25 x 0.8 x 0.4” DIP-24 Package
- Wide 2:1 input voltage range
- EN 55032, class A
- High efficiency up to 89%
- Temperature range -40°C to +85°C
- No minimum load required
- I/O isolation 1500 VDC
- Overload protection
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	No function	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

THD 10WIN — 10 Watt

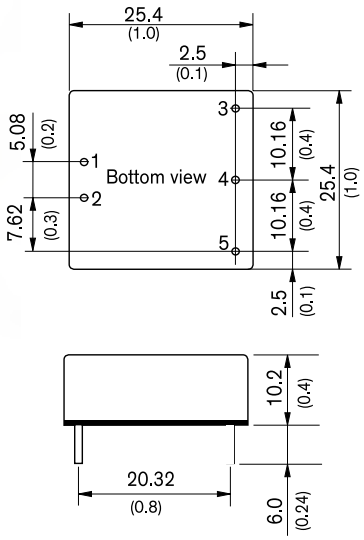


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THD 10-2410WIN	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	2700 mA	86 %
THD 10-2411WIN		5.1 VDC	2000 mA	85 %
THD 10-2412WIN		12 VDC	833 mA	87 %
THD 10-2413WIN		15 VDC	666 mA	87 %
THD 10-2415WIN		24 VDC	416 mA	87 %
THD 10-2422WIN		±12 VDC	±416 mA	87 %
THD 10-2423WIN		±15 VDC	±333 mA	87 %
THD 10-4810WIN	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	2700 mA	86 %
THD 10-4811WIN		5.1 VDC	2000 mA	85 %
THD 10-4812WIN		12 VDC	833 mA	87 %
THD 10-4813WIN		15 VDC	666 mA	87 %
THD 10-4815WIN		24 VDC	416 mA	87 %
THD 10-4822WIN		±12 VDC	±416 mA	87 %
THD 10-4823WIN		±15 VDC	±333 mA	87 %

- 1.25 x 0.8 x 0.4” DIP-24 Package
- Ultra wide 4:1 input voltage range
- EN 55032 class A
- High efficiency up to 87%
- Temperature range -40°C to +85°C
- No minimum load required
- I/O isolation 1500 VDC
- Overload protection
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	No function	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

THL 10 — 10 Watt



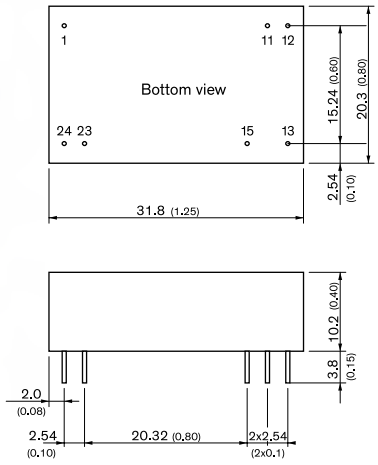
- 1.00 x 1.00 x 0.40" package
- Metal case + isolated baseplate
- Wide 2:1 input voltage ranges
- Temp. range -40°C to +80°C and up to +85°C with heat-sink
- I/O isolation voltage 1500 VDC
- Input filter meets EN 55032 class A without external components
- Cost optimized design
- Industry standard pinout
- 3 year product warranty

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

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THL 10-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	2500 mA	82 %
THL 10-1211		5.1 VDC	2000 mA	85 %
THL 10-1212		12 VDC	830 mA	87 %
THL 10-1213		15 VDC	670 mA	88 %
THL 10-1221		±5.0 VDC	±1000 mA	84 %
THL 10-1222		±12 VDC	±416 mA	87 %
THL 10-1223		±15 VDC	±333 mA	87 %
THL 10-2410	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	2500 mA	83 %
THL 10-2411		5.1 VDC	2000 mA	85 %
THL 10-2412		12 VDC	830 mA	87 %
THL 10-2413		15 VDC	670 mA	89 %
THL 10-2421		±5.0 VDC	±1000 mA	85 %
THL 10-2422		±12 VDC	±416 mA	88 %
THL 10-2423		±15 VDC	±333 mA	89 %
THL 10-4810	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	2500 mA	83 %
THL 10-4811		5.1 VDC	2000 mA	85 %
THL 10-4812		12 VDC	830 mA	89 %
THL 10-4813		15 VDC	670 mA	89 %
THL 10-4821		±5.0 VDC	±1000 mA	86 %
THL 10-4822		±12 VDC	±416 mA	87 %
THL 10-4823		±15 VDC	±333 mA	88 %

THM 10 — 10 Watt

IEC/EN/ES 60601-1 (2×MOPP)



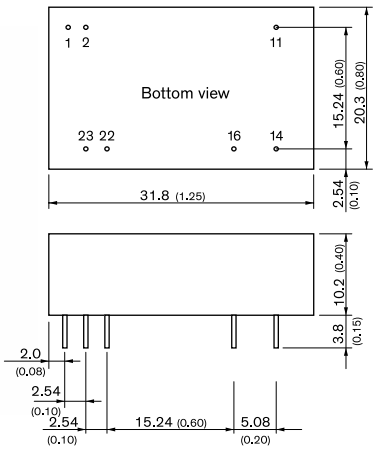
- 1.25 x 0.80 x 0.40" DIP-24 package
- Wide 2:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2 µA
- Operating temp.: -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

Pinout / Connection		
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	Output Imax	Efficiency
THM 10-0510	**4.5 - 9 VDC** (5 VDC nom.)	3.3 VDC	2500 mA	80 %
THM 10-0511		5 VDC	2000 mA	84 %
THM 10-0512		12 VDC	830 mA	87 %
THM 10-0513		15 VDC	670 mA	87 %
THM 10-0515		24 VDC	416 mA	86 %
THM 10-0521		± 5 VDC	1000 mA	83 %
THM 10-0522		±12 VDC	416 mA	86 %
THM 10-0523		±15 VDC	333 mA	87 %
THM 10-1210	**9 - 18 VDC** (12 VDC nom.)	3.3 VDC	2500 mA	83 %
THM 10-1211		5 VDC	2000 mA	86 %
THM 10-1212		12 VDC	830 mA	88 %
THM 10-1213		15 VDC	670 mA	89 %
THM 10-1215		24 VDC	416 mA	89 %
THM 10-1221		± 5 VDC	1000 mA	84 %
THM 10-1222		±12 VDC	416 mA	89 %
THM 10-1223		±15 VDC	333 mA	88 %
THM 10-2410	**18 - 36 VDC** (24 VDC nom.)	3.3 VDC	2500 mA	83 %
THM 10-2411		5 VDC	2000 mA	87 %
THM 10-2412		12 VDC	830 mA	89 %
THM 10-2413		15 VDC	670 mA	89 %
THM 10-2415		24 VDC	416 mA	89 %
THM 10-2421		± 5 VDC	1000 mA	85 %
THM 10-2422		±12 VDC	416 mA	89 %
THM 10-2423		±15 VDC	333 mA	88 %
THM 10-4810	**36 - 75 VDC** (48 VDC nom.)	3.3 VDC	2500 mA	83 %
THM 10-4811		5 VDC	2000 mA	87 %
THM 10-4812		12 VDC	830 mA	89 %
THM 10-4813		15 VDC	670 mA	89 %
THM 10-4815		24 VDC	416 mA	89 %
THM 10-4821		± 5 VDC	1000 mA	85 %
THM 10-4822		±12 VDC	416 mA	88 %
THM 10-4823		±15 VDC	333 mA	88 %

THM 10WI — 10 Watt

IEC/EN/ES 60601-1 (2×MOPP)



- 1.25 x 0.80 x 0.40” DIP-24 package
- Ultrawide 4:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2 µA
- Operating temp.: -40°C to 90°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

Pinout / Connection		
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)

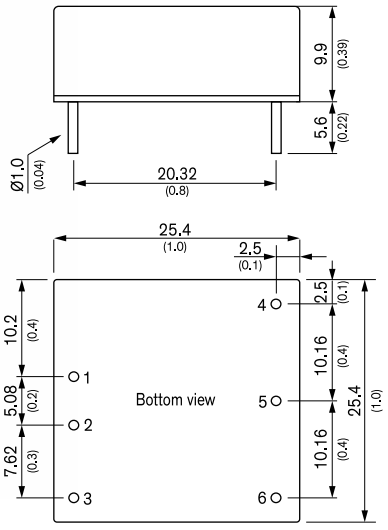
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THM 10-0510WI	4.5 - 9 VDC (5 VDC nom.)	3.3 VDC	2500 mA	80 %
THM 10-0511WI		5 VDC	2000 mA	84 %
THM 10-0512WI		12 VDC	830 mA	87 %
THM 10-0513WI		15 VDC	670 mA	87 %
THM 10-0515WI		24 VDC	416 mA	86 %
THM 10-0521WI		± 5 VDC	1000 mA	83 %
THM 10-0522WI		±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.

THN 10WIR — 10 Watt

EN50155 /EN61373 Approved

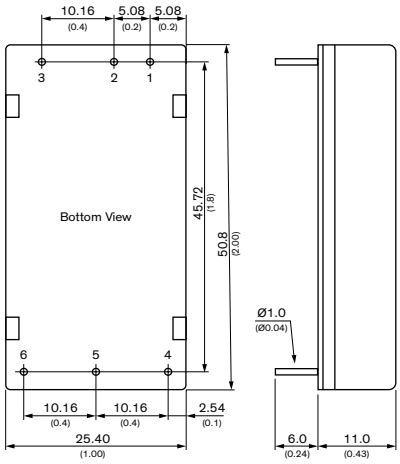


- 1.00 x 1.00 x 0.40” package
- Ultra-wide 4:1 input voltage range
- Qualification for fire behaviour according to EN 45545-2
- I/O-isolation 3‘000 VDC
- High efficiency up to 90%
- Temperature range -40°C to +90°C
- Under-voltage lock out circuit
- Adjustable output voltage & Remote On/Off
- 3 year product warranty

Pinout / Conecction		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	+Vout	+Vout
5	Trim	Common
6	-Vout	-Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 10-2410WIR	9 - 36 VDC (24 VDC nom.)	3.3 VDC	3000 mA	87 %
THN 10-2411WIR		5 VDC	2000 mA	89 %
THN 10-2412WIR		12 VDC	830 mA	89 %
THN 10-2413WIR		15 VDC	670 mA	90 %
THN 10-2415WIR		24 VDC	420 mA	90 %
THN 10-2421WIR		± 5 VDC	±1000 mA	86 %
THN 10-2422WIR		±12 VDC	±416 mA	89 %
THN 10-2423WIR		±15 VDC	±333 mA	89 %
THN 10-2425WIR		±24 VDC	±210 mA	90 %
THN 10-4810WIR	18 - 75 VDC (48 VDC nom.)	3.3 VDC	3000 mA	87 %
THN 10-4811WIR		5 VDC	2000 mA	89 %
THN 10-4812WIR		12 VDC	830 mA	89 %
THN 10-4813WIR		15 VDC	670 mA	90 %
THN 10-4815WIR		24 VDC	420 mA	90 %
THN 10-4821WIR		± 5 VDC	±1000 mA	86 %
THN 10-4822WIR		±12 VDC	±416 mA	89 %
THN 10-4823WIR		±15 VDC	±333 mA	89 %
THN 10-4825WIR		±24 VDC	±210 mA	90 %
THN 10-7210WIR	36 - 160 VDC (110 VDC nom.)	3.3 VDC	3000 mA	87 %
THN 10-7211WIR		5 VDC	2000 mA	88 %
THN 10-7212WIR		12 VDC	830 mA	89 %
THN 10-7213WIR		15 VDC	670 mA	89 %
THN 10-7215WIR		24 VDC	420 mA	89 %
THN 10-7221WIR		± 5 VDC	±1000 mA	85 %
THN 10-7222WIR		±12 VDC	±416 mA	89 %
THN 10-7223WIR		±15 VDC	±333 mA	89 %
THN 10-7225WIR		±24 VDC	±210 mA	89 %

THR 10WI NEW! 10 Watt

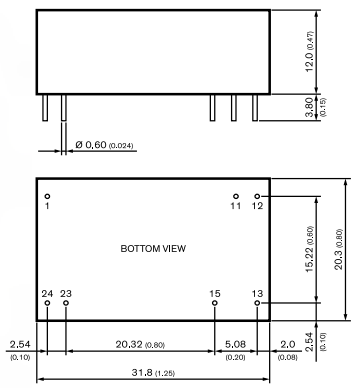


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THR 10-2411WI	9 - 36 VDC (24 VDC nom.)	5 VDC	2000 mA	84 %
THR 10-2412WI		12 VDC	835 mA	86 %
THR 10-2413WI		15 VDC	670 mA	87 %
THR 10-2415WI		24 VDC	417 mA	88 %
THR 10-2422WI		±12 VDC	±417 mA	86 %
THR 10-2423WI		±15 VDC	±335 mA	87 %
THR 10-4811WI	18 - 75 VDC (48 VDC nom.)	5 VDC	2000 mA	85 %
THR 10-4812WI		12 VDC	835 mA	87 %
THR 10-4813WI		15 VDC	670 mA	87 %
THR 10-4815WI		24 VDC	417 mA	86 %
THR 10-4822WI		±12 VDC	±417 mA	89 %
THR 10-4823WI		±15 VDC	±335 mA	88 %
THR 10-7211WI	40 - 160 VDC (110 VDC nom.)	5 VDC	2000 mA	82 %
THR 10-7212WI		12 VDC	835 mA	85 %
THR 10-7213WI		15 VDC	670 mA	85 %
THR 10-7215WI		24 VDC	417 mA	85 %
THR 10-7222WI		±12 VDC	±417 mA	86 %
THR 10-7223WI		±15 VDC	±335 mA	86 %

- 2.00 x 1.00 x 0.43” package
- Ultra-wide 4 : 1 input range
- Reinforced I/O-isolation 3000 VAC
- Input filter meets EN 55032 Class A
- High efficiency up to 85%
- Temperature range -40°C to 90°C
- 3 year product warranty

Pinout		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	+Vout	+Vout
5	Trim	Common
6	-Vout	-Vout

TRI 10 10 Watt

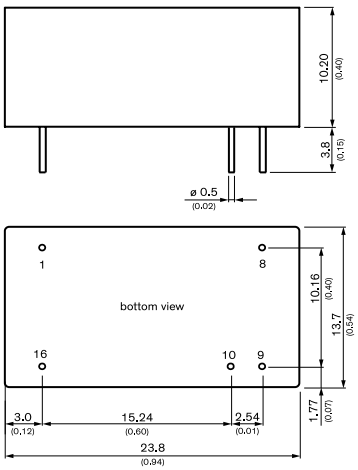


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRI 10-1210	9 - 18 VDC (12 VDC nom.)	3.3 VDC	2'700 mA	81 %
TRI 10-1211		5.1 VDC	2'000 mA	83 %
TRI 10-1212		12 VDC	833 mA	86 %
TRI 10-1213		15 VDC	666 mA	88 %
TRI 10-1215		24 VDC	416 mA	88 %
TRI 10-1222		±12 VDC	416 mA	88 %
TRI 10-1223		±15 VDC	333 mA	87 %
TRI 10-2410	18 - 36 VDC (24 VDC nom.)	3.3 VDC	2'700 mA	81 %
TRI 10-2411		5.1 VDC	2'000 mA	84 %
TRI 10-2412		12 VDC	833 mA	87 %
TRI 10-2413		15 VDC	666 mA	88 %
TRI 10-2415		24 VDC	416 mA	88 %
TRI 10-2422		±12 VDC	416 mA	88 %
TRI 10-2423		±15 VDC	333 mA	87 %
TRI 10-4810	36 - 75 VDC (48 VDC nom.)	3.3 VDC	2'700 mA	81 %
TRI 10-4811		5.1 VDC	2'000 mA	84 %
TRI 10-4812		12 VDC	833 mA	87 %
TRI 10-4813		15 VDC	666 mA	88 %
TRI 10-4815		24 VDC	416 mA	87 %
TRI 10-4822		±12 VDC	416 mA	87 %
TRI 10-4823		±15 VDC	333 mA	87 %

- 1.25 x 0.80 x 0.40” DIP-24 package
- Reinforced I/O-isolation 7071 VDC rated for 1000 VAC working voltage
- Peak isolation of 9000 VDC (1s)
- Common Mode Transient Immunity (dv/dt) 15 kV/µs
- Temperature range -40 to +85°C
- No-load power 144 - 288 mW
- Internal EN 55032 class A filter
- High efficiency up to 88%
- 2:1 input voltage range: Protection against overload, overvoltage and short circuit
- 3 year product warranty

Pinout		
Pin	Single Output	Dual Output
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)

TEL 12 NEW! 12 Watt

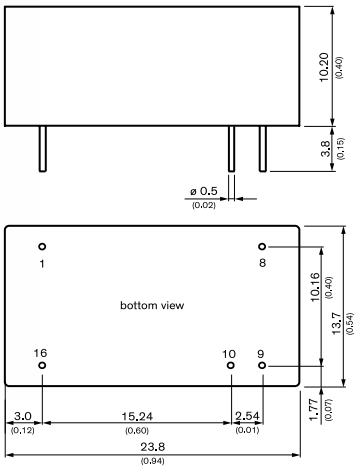


	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 12-1211		5.1 VDC	2400 mA	83 %
TEL 12-1212		12 VDC	1000 mA	87 %
TEL 12-1213	**9 - 18DC**	15 VDC	800 mA	88 %
TEL 12-1215	(12 VDC nominal)	24 VDC	500 mA	88 %
TEL 12-1222		±12 VDC	±500 mA	87 %
TEL 12-1223		±15 VDC	±400 mA	87 %
TEL 12-2411		5.1 VDC	2400 mA	83 %
TEL 12-2412		12 VDC	1000 mA	87 %
TEL 12-2413	**18- 36 VDC**	15 VDC	800 mA	88 %
TEL 12-2415	(24 VDC nominal)	24 VDC	500 mA	88 %
TEL 12-2422		±12 VDC	±500 mA	87 %
TEL 12-2423		±15 VDC	±400 mA	87 %
TEL 12-4811		5.1 VDC	2400 mA	83 %
TEL 12-4812		12 VDC	1000 mA	87 %
TEL 12-4813	**36 - 75 VDC**	15 VDC	800 mA	88 %
TEL 12-4815	(48 VDC nominal)	24 VDC	500 mA	88 %
TEL 12-4822		±12 VDC	±500 mA	87 %
TEL 12-4823		±15 VDC	±400 mA	87 %

- 0.94 x 0.54 x 0.31” DIP-16 package
- Highest power density of 3.61 W/cm³
- Shielded metal case with insulated base plate
- Wide 2:1 input range
- High efficiency for low thermal loss
- Temperature range of -40°C to +85°C
- Built-in EN 55032 class A filter
- Protection against short circuit and overload
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin	-Vin
8	NC	Common
9	+Vout.	+Vout
10	-Vout.	-Vout
16	+Vin	+Vin

TEL 12WI NEW! 12 Watt

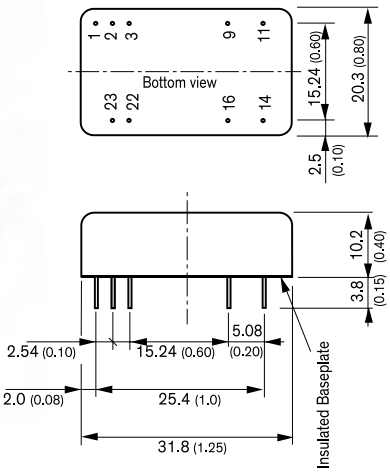


	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 12-2411WI		5.1 VDC	2400 mA	83 %
TEL 12-2412WI		12 VDC	1000 mA	87 %
TEL 12-2413WI	**9 - 36 VDC**	15 VDC	800 mA	88 %
TEL 12-2415WI	(24 VDC nominal)	24 VDC	500 mA	88 %
TEL 12-2422WI		±12 VDC	±500 mA	87 %
TEL 12-2423WI		±15 VDC	±400 mA	87 %
TEL 12-4811WI		5.1 VDC	2400 mA	83 %
TEL 12-4812WI		12 VDC	1000 mA	87 %
TEL 12-4813WI	**18 - 75 VDC**	15 VDC	800 mA	88 %
TEL 12-4815WI	(48 VDC nominal)	24 VDC	500 mA	88 %
TEL 12-4822WI		±12 VDC	±500 mA	87 %
TEL 12-4823WI		±15 VDC	±400 mA	87 %

- 0.94 x 0.54 x 0.31” DIP-16 package
- Highest power density of 3.61 W/cm³
- Shielded metal case with insulated base plate
- Ultra-wide 4:1 input range
- High efficiency for low thermal loss
- Temperature range of -40°C to +85°C
- Built-in EN 55032 class A filter
- Protection against short circuit and overload
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	-Vin	-Vin
8	NC	Common
9	+Vout.	+Vout
10	-Vout.	-Vout
16	+Vin	+Vin

THD 12 — 12 Watt



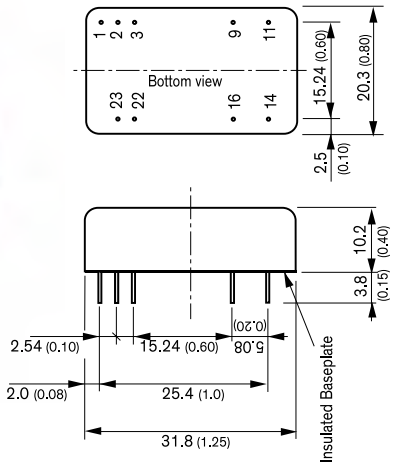
- 1.25 x 0.80 x 0.40" DIP-24 package
- High power density
- Wide 2:1 input range
- Very high efficiency up to 88%
- I/O isolation 1500V
- Input filter to meet EN 55032, class A
- Remote On/Off
- Under voltage lock-out circuit
- Shielded metal case with insulated Baseplate
- Continuous short-circuit protection
- Operating temp. range -40°C to +85°C (with derating)
- Lead free design, RoHS compliant
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THD 12-1209	9 - 18 VDC (nominal 12 VDC)	2.5 VDC	3500 mA	82 %
THD 12-1210		3.3 VDC	3500 mA	84 %
THD 12-1211		5.1 VDC	2400 mA	86 %
THD 12-1212		12 VDC	1000 mA	86 %
THD 12-1222		±12 VDC	±500 mA	87 %
THD 12-1223		±15 VDC	±400 mA	87 %
THD 12-2409	18 - 36 VDC (nominal 24 VDC)	2.5 VDC	3500 mA	83 %
THD 12-2410		3.3 VDC	3500 mA	85 %
THD 12-2411		5.1 VDC	2400 mA	87 %
THD 12-2412		12 VDC	1000 mA	87 %
THD 12-2422		±12 VDC	±500 mA	88 %
THD 12-2423		±15 VDC	±400 mA	88 %
THD 12-4809	36 - 75 VDC (nominal 48 VDC)	2.5 VDC	3500 mA	83 %
THD 12-4810		3.3 VDC	3500 mA	85 %
THD 12-4811		5.1 VDC	2400 mA	87 %
THD 12-4812		12 VDC	1000 mA	87 %
THD 12-4822		±12 VDC	±500 mA	88 %
THD 12-4823		±15 VDC	±400 mA	88 %

Pinout

Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	ntc.	Common
11	ntc.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

THD 12WI — 12 Watt



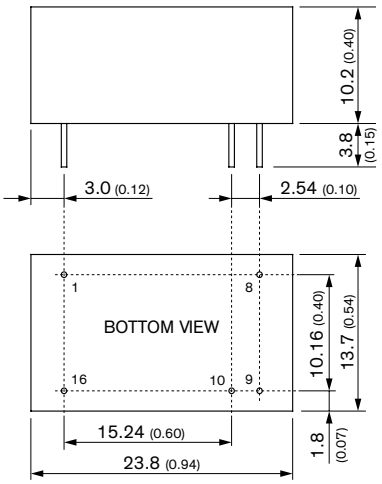
- 1.25 x 0.80 x 0.40" DIP-24 package
- Ultra-wide 4:1 input range
- Very high efficiency up to 85%
- I/O isolation 1500V
- Input filter meets EN 55032A
- Remote On/Off
- Under voltage lock-out circuit
- Shielded metal case with insulated baseplate
- Continuous short-circuit protection
- Operating temp. range -40°C to +85°C
- Lead free design, RoHS compliant
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THD 12-2410WI	9 - 36 VDC (24 VDC nominal)	3.3 VDC	3500 mA	84 %
THD 12-2411WI		5.1 VDC	2400 mA	85 %
THD 12-2412WI		12 VDC	1000 mA	85 %
THD 12-2413WI		15 VDC	800 mA	85 %
THD 12-2421WI		±5 VDC	±1200 mA	82 %
THD 12-2422WI		±12 VDC	±500 mA	85 %
THD 12-2423WI		±15 VDC	±400 mA	85 %
THD 12-4810WI	18 - 75 VDC (48 VDC nominal)	3.3 VDC	3500 mA	84 %
THD 12-4811WI		5.1 VDC	2400 mA	85 %
THD 12-4812WI		12 VDC	1000 mA	85 %
THD 12-4813WI		15 VDC	800 mA	85 %
THD 12-4821WI		±5 VDC	±1200 mA	82 %
THD 12-4822WI		±12 VDC	±500 mA	85 %
THD 12-4823WI		±15 VDC	±400 mA	85 %

Pinout

Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	ntc.	Common
11	ntc.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

TEL 15N — IN DEVELOPMENT — 15 Watt

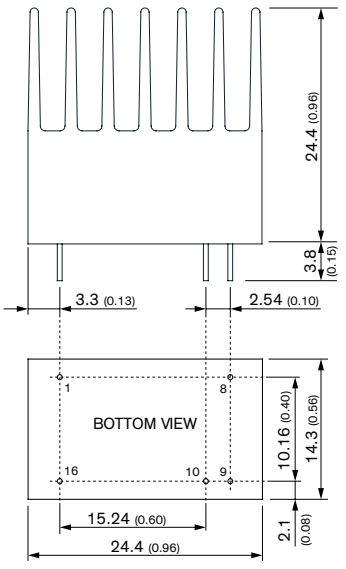


- 0.94 x 0.54 x 0.40" DIP-16 package
- Highest power density of 4.51 W/cm³
- 6-side shielded metal case with insulated base plate
- Wide 2:1 input voltage range
- High efficiency for low thermal loss
- Operating temperature range of –40°C to +85°C
- Built-in EN 55032 class A filter
- Current limitation and protection against short circuit
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin (Vcc)	–Vin (Vcc)
8	NC	Common
9	+Vout	+Vout
10	–Vout	–Vout
16	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 15-1211N	9 – 18 VDC	5.1 VDC	2940 mA	86%
TEL 15-1212N		12 VDC	1250 mA	87%
TEL 15-1213N		15 VDC	1000 mA	87%
TEL 15-1215N		24 VDC	625 mA	87%
TEL 15-1222N		±12 VDC	±625 mA	87%
TEL 15-1223N		±15 VDC	±500 mA	87%
TEL 15-2411N	18 – 36 VDC	5.1 VDC	2940 mA	86%
TEL 15-2412N		12 VDC	1250 mA	87%
TEL 15-2413N		15 VDC	1000 mA	87%
TEL 15-2415N		24 VDC	625 mA	87%
TEL 15-2422N		±12 VDC	±625 mA	87%
TEL 15-2423N		±15 VDC	±500 mA	87%
TEL 15-4811N	36 – 75 VDC	5.1 VDC	2940 mA	86%
TEL 15-4812N		12 VDC	1250 mA	87%
TEL 15-4813N		15 VDC	1000 mA	87%
TEL 15-4815N		24 VDC	625 mA	87%
TEL 15-4822N		±12 VDC	±625 mA	87%
TEL 15-4823N		±15 VDC	±500 mA	87%

TEL 15N-HS — IN DEVELOPMENT — 15 Watt

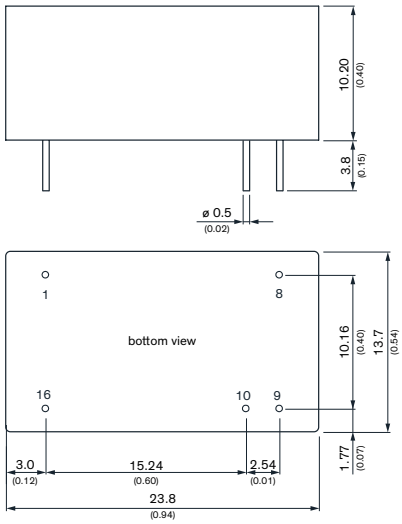


- 0.96 x 0.56 x 0.96" DIP-16 package with embedded heat sink
- to +70°C operation without derating
- 6-side shielded metal case with insulated base plate
- Wide 2:1 input voltage range
- High efficiency for low thermal loss
- Operating temperature range of –40°C to +85°C
- Built-in EN 55032 class A filter
- Current limitation and protection against short circuit
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin (Vcc)	–Vin (Vcc)
8	NC	Common
9	+Vout	+Vout
10	–Vout	–Vout
16	+Vout	+Vout

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 15-1211N-HS	9 – 18 VDC	5.1 VDC	2940 mA	86%
TEL 15-1212N-HS		12 VDC	1250 mA	87%
TEL 15-1213N-HS		15 VDC	1000 mA	87%
TEL 15-1215N-HS		24 VDC	625 mA	87%
TEL 15-1222N-HS		±12 VDC	±625 mA	87%
TEL 15-1223N-HS		±15 VDC	±500 mA	87%
TEL 15-2411N-HS	18 – 36 VDC	5.1 VDC	2940 mA	86%
TEL 15-2412N-HS		12 VDC	1250 mA	87%
TEL 15-2413N-HS		15 VDC	1000 mA	87%
TEL 15-2415N-HS		24 VDC	625 mA	87%
TEL 15-2422N-HS		±12 VDC	±625 mA	87%
TEL 15-2423N-HS		±15 VDC	±500 mA	87%
TEL 15-4811N-HS	36 – 75 VDC	5.1 VDC	2940 mA	86%
TEL 15-4812N-HS		12 VDC	1250 mA	87%
TEL 15-4813N-HS		15 VDC	1000 mA	87%
TEL 15-4815N-HS		24 VDC	625 mA	87%
TEL 15-4822N-HS		±12 VDC	±625 mA	87%
TEL 15-4823N-HS		±15 VDC	±500 mA	87%

TEL 15WIN — NEW! — 15 Watt

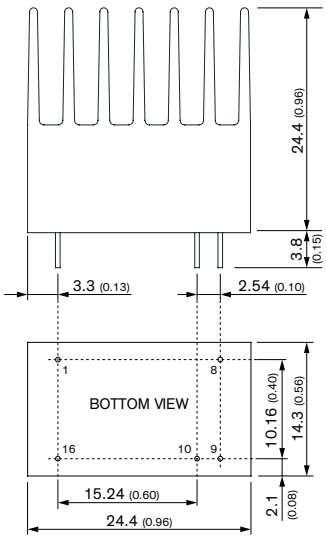


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 15-2411WIN	**9 – 36 VDC** (24 VDC nom.)	5.1 VDC	3000 mA	86%
TEL 15-2412WIN		12 VDC	1250 mA	87%
TEL 15-2413WIN		15 VDC	1000 mA	87%
TEL 15-2415WIN		24 VDC	625 mA	87%
TEL 15-2422WIN		±12 VDC	±625 mA	87%
TEL 15-2423WIN		±15 VDC	±500 mA	87%
TEL 15-4811WIN	**18 – 75 VDC** (48 VDC nom.)	5.1 VDC	3000 mA	86%
TEL 15-4812WIN		12 VDC	1250 mA	87%
TEL 15-4813WIN		15 VDC	1000 mA	87%
TEL 15-4815WIN		24 VDC	625 mA	87%
TEL 15-4822WIN		±12 VDC	±625 mA	87%
TEL 15-4823WIN		±15 VDC	±500 mA	87%

- 0.94 x 0.54 x 0.40” DIP-16 package
- Highest power density of 4.51 W/cm³
- 6-side shielded metal case with insulated base plate
- Wide 4:1 input voltage range
- High efficiency for low thermal loss
- Operating temperature range of –40°C to +85°C
- Built-in EN 55032 class A filter
- Current limitation and protection against short circuit
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin	–Vin
8	NC	Common
9	+Vout	+Vout
10	–Vout	–Vout
16	+Vin	+Vin

TEL 15WIN-HS — IN DEVELOPMENT — 15 Watt

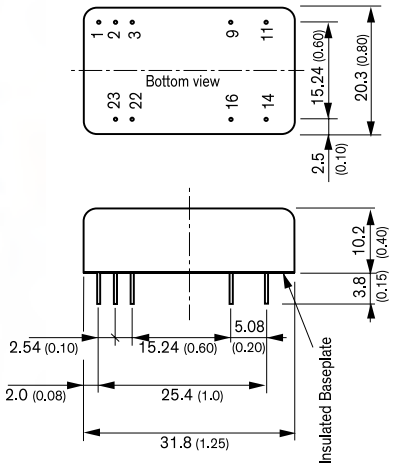


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEL 15-2411WIN-HS	9 – 36 VDC	5.1 VDC	2940 mA	86%
TEL 15-2412WIN-HS		12 VDC	1250 mA	87%
TEL 15-2413WIN-HS		15 VDC	1000 mA	87%
TEL 15-2415WIN-HS		24 VDC	625 mA	87%
TEL 15-2422WIN-HS		±12 VDC	±625 mA	87%
TEL 15-2423WIN-HS		±15 VDC	±500 mA	87%
TEL 15-4811WIN-HS	18 – 75 VDC	5.1 VDC	2940 mA	86%
TEL 15-4812WIN-HS		12 VDC	1250 mA	87%
TEL 15-4813WIN-HS		15 VDC	1000 mA	87%
TEL 15-4815WIN-HS		24 VDC	625 mA	87%
TEL 15-4822WIN-HS		±12 VDC	±625 mA	87%
TEL 15-4823WIN-HS		±15 VDC	±500 mA	87%

- 0.96 x 0.56 x 0.96” DIP-16 package with embedded heat sink
- to +70°C operation without derating
- 6-side shielded metal case with insulated base plate
- Wide 4:1 input voltage range
- High efficiency for low thermal loss
- Operating temperature range of –40°C to +85°C
- Built-in EN 55032 class A filter
- Current limitation and protection against short circuit
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	–Vin (Vcc)	–Vin (Vcc)
8	NC	Common
9	+Vout	+Vout
10	–Vout	–Vout
16	+Vout	+Vout

THD 15N — 15 Watt



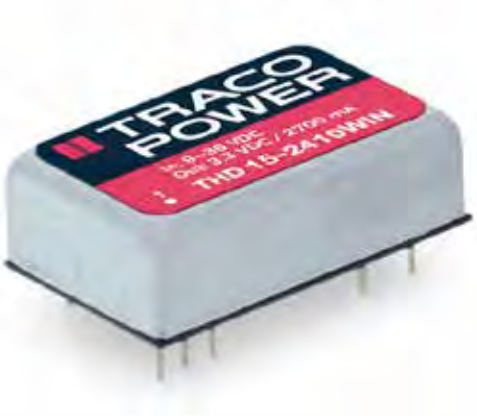
- 1.25 x 0.80 x 0.40” DIP-24 package
- Shielded metal case with isolated baseplate
- Very high efficiency up to 91%
- Wide 2:1 input ranges
- No minimum load required
- EN 55032 class A without external components
- I/O isolation voltage 1500 VDC
- Operating temp. range: -40°C to +85°C
- Remote On/Off control
- Industry standard pinout
- 3 year product warranty

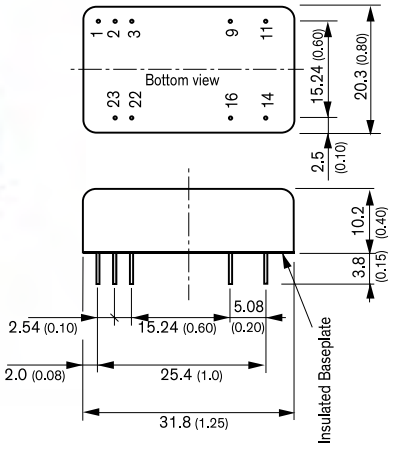
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THD 15-1210N	9 - 18 VDC (12 VDC nominal)	3.3 VDC	4000 mA	87 %
THD 15-1211N		5.1 VDC	3000 mA	90 %
THD 15-1212N		12 VDC	1250 mA	90 %
THD 15-1213N		15 VDC	1000 mA	90 %
THD 15-1221N		±5 VDC	±1500 mA	86 %
THD 15-1222N		±12 VDC	±625 mA	90 %
THD 15-1223N		±15 VDC	±500 mA	90 %
THD 15-2410N	18 - 36 VDC (24 VDC nominal)	3.3 VDC	4000 mA	88 %
THD 15-2411N		5.1 VDC	3000 mA	90 %
THD 15-2412N		12 VDC	1250 mA	91 %
THD 15-2413N		15 VDC	1000 mA	91 %
THD 15-2421N		±5 VDC	±1500 mA	87 %
THD 15-2422N		±12 VDC	±625 mA	90 %
THD 15-2423N		±15 VDC	±500 mA	90 %
THD 15-4810N	36 - 75 VDC (48 VDC nominal)	3.3 VDC	4000 mA	88 %
THD 15-4811N		5.1 VDC	3000 mA	90 %
THD 15-4812N		12 VDC	1250 mA	90 %
THD 15-4813N		15 VDC	1000 mA	91 %
THD 15-4821N		±5 VDC	±1500 mA	87 %
THD 15-4822N		±12 VDC	±625 mA	90 %
THD 15-4823N		±15 VDC	±500 mA	90 %

Pinout

Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	NC	Common
11	NC.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

THD 15WIN — 15 Watt





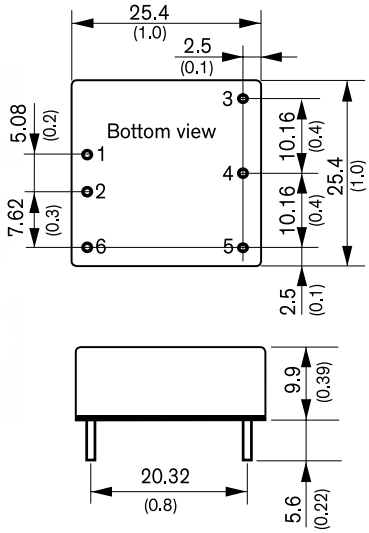
- 1.25 x 0.80 x 0.40” DIP-24 package
- Shielded metal case with isolated baseplate
- Very high efficiency up to 90%
- Ultra-wide 4:1 input ranges
- No minimum load required
- EN 55032 class A without external components
- I/O isolation voltage 1500 VDC
- Operating temp. range: -40°C to +85°C
- Remote On/Off control
- Industry standard pinout
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THD 15-2410WIN	9 - 36 VDC (24 VDC nominal)	3.3 VDC	4000 mA	88 %
THD 15-2411WIN		5.1 VDC	3000 mA	90 %
THD 15-2412WIN		12 VDC	1250 mA	90 %
THD 15-2413WIN		15 VDC	1000 mA	90 %
THD 15-2421WIN		±5 VDC	±1500 mA	86 %
THD 15-2422WIN		±12 VDC	±625 mA	89 %
THD 15-2423WIN		±15 VDC	±500 mA	90 %
THD 15-4810WIN	18 - 75 VDC (48 VDC nominal)	3.3 VDC	4000 mA	89 %
THD 15-4811WIN		5.1 VDC	3000 mA	89 %
THD 15-4812WIN		12 VDC	1250 mA	90 %
THD 15-4813WIN		15 VDC	1000 mA	90 %
THD 15-4821WIN		±5 VDC	±1500 mA	86 %
THD 15-4822WIN		±12 VDC	±625 mA	89 %
THD 15-4823WIN		±15 VDC	±500 mA	90 %

Pinout

Pin	Single	Dual
1	Remote On/Off	Remote On/Off
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	NC	Common
11	NC.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

THL 15WI — 15 Watt



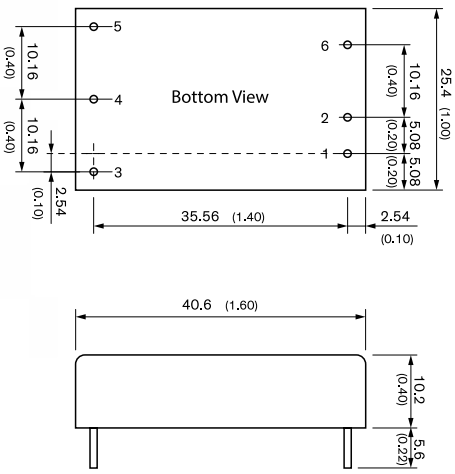
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THL 15-2410WI	9 - 36 VDC (24 VDC nominal)	3.3 VDC	3400 mA	86 %
THL 15-2411WI		5.0 VDC	3000 mA	88 %
THL 15-2412WI		12 VDC	1250 mA	88 %
THL 15-2413WI		15 VDC	1000 mA	89 %
THL 15-2415WI		24 VDC	625 mA	91 %
THL 15-2422WI		±12 VDC	±625 mA	89 %
THL 15-2423WI		±15 VDC	±500 mA	89 %
THL 15-4810WI	18 - 75 VDC (48 VDC nominal)	3.3 VDC	3400 mA	86 %
THL 15-4811WI		5.0 VDC	3000 mA	88 %
THL 15-4812WI		12 VDC	1250 mA	88 %
THL 15-4813WI		15 VDC	1000 mA	89 %
THL 15-4815WI		24 VDC	625 mA	91 %
THL 15-4822WI		±12 VDC	±625 mA	90 %
THL 15-4823WI		±15 VDC	±500 mA	89 %

- 1.00 x 1.00 x 0.40” metal package
- Cost efficient design
- Ultra-wide 4:1 input voltage range
- Temperature range -40 to +70 °C without derating
- Internal EN 55032 class A filter
- 1500 VDC I/O-isolation
- Protection against overload, overvoltage and short circuit
- Remote On/Off and Trim function
- Optional heatsink for increased temperature capabilities
- 3 year product warranty

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

THM 15 — 15 Watt

⊕ IEC/EN/ES 60601-1 (2×MOPP)



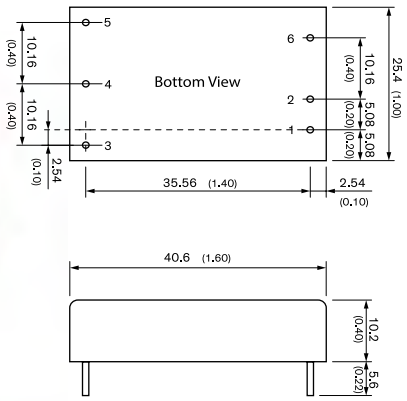
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THM 15-1211	9 - 18 VDC (12 VDC nom.)	5 VDC	3000 mA	89 %
THM 15-1212		12 VDC	1250 mA	89 %
THM 15-1213		15 VDC	1000 mA	89 %
THM 15-1215		24 VDC	625 mA	89 %
THM 15-1221		± 5 VDC	1500 mA	86 %
THM 15-1222		±12 VDC	625 mA	89 %
THM 15-1223		±15 VDC	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 %

- 1.60 x 1.00 x 0.40” package
- Wide 2:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2.5 µA
- Operating temp.: -40°C to 85°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

Pinout / Connection		
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

THM 15WI — 15 Watt

IEC/EN/ES 60601-1 (2×MOPP)



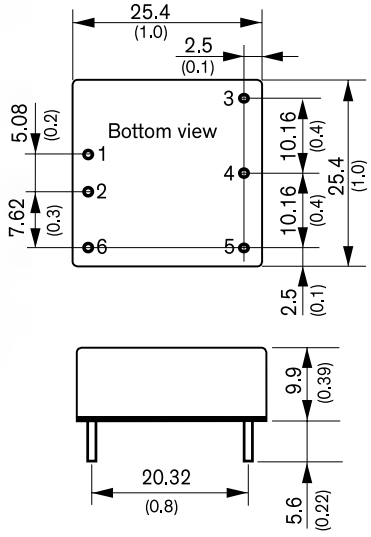
- 1.60 x 1.00 x 0.40” package
- Ultra-Wide 4:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2.5 µA
- Operating temp.: -40°C to 85°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

Pinout / Connection

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	Output Imax	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 %

THN 15N — 15 Watt



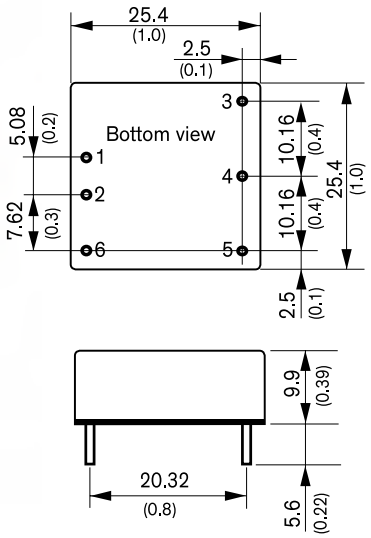
- 1.00 x 1.00 x 0.39” metal package
- Wide 2:1 input voltage
- Internal EN 55032 class A filter
- Operating temperature range -40 to +70 °C without derating
- Low no-load power 96 - 336 mW
- High efficiency up to 91%
- I/O-isolation voltage 1600 VDC
- Protection against overload, overvoltage and short circuit
- Remote On/Off and Trim function
- 3 year product warranty

Pinout

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

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 15-1210N	9 - 18 VDC (nominal 12 VDC)	3.3 VDC	4500 mA	88 %
THN 15-1211N		5 VDC	3000 mA	90 %
THN 15-1212N		12 VDC	1300 mA	89 %
THN 15-1213N		15 VDC	1000 mA	90 %
THN 15-1215N		24 VDC	625 mA	91 %
THN 15-1221N		±5 VDC	±1500 mA	86 %
THN 15-1222N		±12 VDC	±625 mA	89 %
THN 15-1223N		±15 VDC	±500 mA	90 %
THN 15-1225N		±24 VDC	±315 mA	90 %
THN 15-2410N	18 - 36 VDC (nominal 24 VDC)	3.3 VDC	4500 mA	88 %
THN 15-2411N		5 VDC	3000 mA	90 %
THN 15-2412N		12 VDC	1300 mA	89 %
THN 15-2413N		15 VDC	1000 mA	90 %
THN 15-2415N		24 VDC	625 mA	91 %
THN 15-2421N		±5 VDC	±1500 mA	86 %
THN 15-2422N		±12 VDC	±625 mA	90 %
THN 15-2423N		±15 VDC	±500 mA	90 %
THN 15-2425N		±24 VDC	±315 mA	90 %
THN 15-4810N	36 - 75 VDC (nominal 48 VDC)	3.3 VDC	4500 mA	87 %
THN 15-4811N		5 VDC	3000 mA	89 %
THN 15-4812N		12 VDC	1300 mA	89 %
THN 15-4813N		15 VDC	1000 mA	89 %
THN 15-4815N		24 VDC	625 mA	90 %
THN 15-4821N		±5 VDC	±1500 mA	85 %
THN 15-4822N		±12 VDC	±625 mA	89 %
THN 15-4823N		±15 VDC	±500 mA	89 %
THN 15-4825N		±24 VDC	±315 mA	89 %

THN 15WI — 15 Watt



- 1.00 x 1.00 x 0.39” metal package
- Metal case with isolated baseplate
- Ultrawide 4:1 input ranges
- Output voltage Trim
- -A1 models have 5VDC adjustment to 6VDC for LDO Regulators
- I/O isolation voltage 1500 VDC
- Very high efficiency up to 87%
- Temp. range: -40°C to +85°C
- Remote On/Off control
- Industry standard pinout
- 3 year product warranty

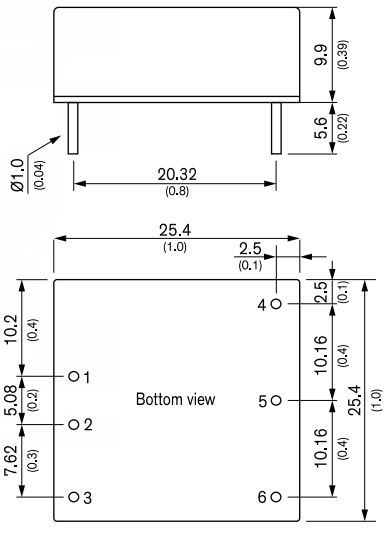
Pinout		
Pin	**Single**	**Dual**
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+ Vout	+ Vout
4	Trim	Common
5	-Vout	-Vout
6	Remote On/Off	

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 15-2410WI	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	4000 mA	86 %
THN 15-2411WI		5.0 VDC	3000 mA	86 %
THN 15-2411WI-A1		5.0 VDC *1	3000 mA	86 %
THN 15-2412WI		12 VDC	1300 mA	87 %
THN 15-2413WI		15 VDC	1000 mA	87 %
THN 15-2415WI		24 VDC	625 mA	90 %
THN 15-2421WI		±5 VDC	±1500 mA	85 %
THN 15-2422WI		±12 VDC	±625 mA	87 %
THN 15-2423WI		±15 VDC	±500 mA	88 %
THN 15-2425WI		±24 VDC (48 VDC)*2	±315 mA	91 %
THN 15-4810WI	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	4000 mA	86 %
THN 15-4811WI		5.0 VDC	3000 mA	87 %
THN 15-4811WI-A1		5.0 VDC*1	3000 mA	87 %
THN 15-4812WI		12 VDC	1300 mA	87 %
THN 15-4813WI		15 VDC	1000 mA	87 %
THN 15-4815WI		24 VDC	625 mA	91 %
THN 15-4821WI		±5 VDC	±1500 mA	85 %
THN 15-4822WI		±12 VDC	±625 mA	86 %
THN 15-4823WI		±15 VDC	±500 mA	87 %
THN 15-4825WI		±24 VDC (48 VDC)*2	±315 mA	90 %

*1 Adjustable output up to 6 VDC, suitable for low ripple & noise applications in conjunction with an LDO line regulator
*2 The outputs can also be used in serial circuit for single 48 VDC operation

THN 15WIR — 15 Watt

EN50155 /EN61373 Approved

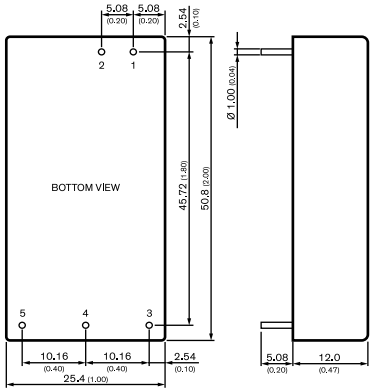


- 1.00 x 1.00 x 0.39” metal package
- Ultra-wide 4:1 input voltage range
- Qualification for fire behaviour according to EN 45545-2
- I/O-isolation 3‘000 VDC
- High efficiency up to 91%
- Temperature range -40°C to +90°C
- Under-voltage lock out circuit
- Adjustable output voltage & Remote On/Off
- 3 year product warranty

Pinout / Conecction		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	Trim	Common
5	-Vout	-Vout
6	On/Off	On/Off

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 15-2410WIR	**9 - 36 VDC** (24 VDC nom.)	3.3 VDC	4500 mA	88 %
THN 15-2411WIR		5 VDC	3000 mA	89 %
THN 15-2412WIR		12 VDC	1300 mA	89 %
THN 15-2413WIR		15 VDC	1000 mA	89 %
THN 15-2415WIR		24 VDC	625 mA	90 %
THN 15-2421WIR		± 5 VDC	±1500 mA	86 %
THN 15-2422WIR		±12 VDC	±625 mA	89 %
THN 15-2423WIR		±15 VDC	±500 mA	89 %
THN 15-2425WIR		±24 VDC	±315 mA	91 %
THN 15-4810WIR	**18 - 75 VDC** (48 VDC nom.)	3.3 VDC	4500 mA	88 %
THN 15-4811WIR		5 VDC	3000 mA	89 %
THN 15-4812WIR		12 VDC	1300 mA	89 %
THN 15-4813WIR		15 VDC	1000 mA	89 %
THN 15-4815WIR		24 VDC	625 mA	91 %
THN 15-4821WIR		± 5 VDC	±1500 mA	86 %
THN 15-4822WIR		±12 VDC	±625 mA	90 %
THN 15-4823WIR		±15 VDC	±500 mA	89 %
THN 15-4825WIR		±24 VDC	±315 mA	90 %
THN 15-7210WIR	**36 - 160 VDC** (110 VDC nom.)	3.3 VDC	4500 mA	88 %
THN 15-7211WIR		5 VDC	3000 mA	89 %
THN 15-7212WIR		12 VDC	1300 mA	89 %
THN 15-7213WIR		15 VDC	1000 mA	89 %
THN 15-7215WIR		24 VDC	625 mA	90 %
THN 15-7221WIR		± 5 VDC	±1500 mA	85 %
THN 15-7222WIR		±12 VDC	±625 mA	89 %
THN 15-7223WIR		±15 VDC	±500 mA	89 %
THN 15-7225WIR		±24 VDC	±315 mA	90 %

TRI 15 — 15 Watt



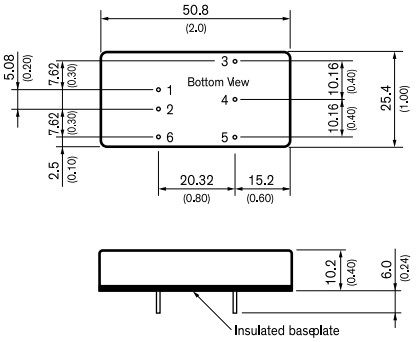
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRI 15-1211	**9 - 18 VDC** (12 VDC nom.)	5.1 VDC	3'000 mA	85 %
TRI 15-1212		12 VDC	1'250 mA	88 %
TRI 15-1213		15 VDC	1'000 mA	88 %
TRI 15-1215		24 VDC	625 mA	88 %
TRI 15-1222		±12 VDC	625 mA	88 %
TRI 15-1223		±15 VDC	500 mA	89 %
TRI 15-2411	**18 - 36 VDC** (24 VDC nom.)	5.1 VDC	3'000 mA	87 %
TRI 15-2412		12 VDC	1'250 mA	88 %
TRI 15-2413		15 VDC	1'000 mA	89 %
TRI 15-2415		24 VDC	625 mA	90 %
TRI 15-2422		±12 VDC	625 mA	90 %
TRI 15-2423		±15 VDC	500 mA	89 %
TRI 15-4811	**36 - 75 VDC** (48 VDC nom.)	5.1 VDC	3'000 mA	87 %
TRI 15-4812		12 VDC	1'250 mA	87 %
TRI 15-4813		15 VDC	1'000 mA	90 %
TRI 15-4815		24 VDC	625 mA	89 %
TRI 15-4822		±12 VDC	625 mA	89 %
TRI 15-4823		±15 VDC	500 mA	88 %

- 2.00 x 1.00 x 0.47” package
- Reinforced I/O-isolation 5940 VDC
- rated for 1000 VAC working voltage
- Ultra-high isolation peak voltage 8000 VDC (1s)
- Common Mode Transient Immunity (dv/dt) 15 kV/µs
- Operating temperature range -40 to +85°C
- Low no-load power consumption 240 - 480 mW
- Internal EN 55032 class A filter
- High efficiency up to 90%
- 2:1 input voltage range
- Protection against overload, overvoltage and short circuit
- 3 year product warranty

Pinout

Pin	Single Output	Dual Output
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	No pin	Common
5	-Vout	-Vout

TEN 20WIN — 20 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 20-2410WIN	**9 – 36 VDC** (24 VDC nominal)	3.3 VDC	5500 mA	85%
TEN 20-2411WIN		5 VDC	4000 mA	88%
TEN 20-2412WIN		12 VDC	1670 mA	86%
TEN 20-2413WIN		15 VDC	1330 mA	86%
TEN 20-2421WIN		±5 VDC	±2000 mA	88%
TEN 20-2422WIN		±12 VDC	±835 mA	87%
TEN 20-2423WIN		±15 VDC	±665 mA	87%
TEN 20-4810WIN	**18 – 75 VDC** (48 VDC nominal)	3.3 VDC	5500 mA	85%
TEN 20-4811WIN		5 VDC	4000 mA	88%
TEN 20-4812WIN		12 VDC	1670 mA	87%
TEN 20-4813WIN		15 VDC	1330 mA	87%
TEN 20-4821WIN		±5 VDC	±2000 mA	89%
TEN 20-4822WIN		±12 VDC	±835 mA	88%
TEN 20-4823WIN		±15 VDC	±665 mA	88%

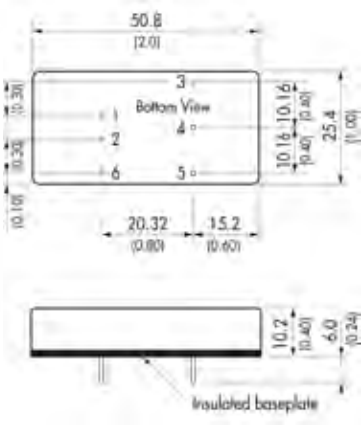
- 2.00 x 1.00 x 0.40” package
- Ultra wide 4:1 input range
- Extended operating temperature range –40°C to +85°C max.
- No minimum load required
- I/O isolation 1500 VDC
- Remote On/Off
- Adjustable output voltage
- Industry standard footprint
- Shielded metal case with insulated baseplate
- Optional heatsink
- Lead free design – RoHS compliant
- 3-year product warranty

Pinout

Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	–Vin (GND)	–Vin (GND)
3	+Vout	+Vout
4	Trim	Common
5	–Vout	–Vout
6	Remote On/Off	

TEN 20WIR — 20 Watt

EN50155 /EN61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 20-2410WIR	**9 - 36 VDC** (24 VDC nom.)	3.3 VDC	4500 mA	85 %
TEN 20-2411WIR		5 VDC	4000 mA	88 %
TEN 20-2412WIR		12 VDC	1670 mA	89 %
TEN 20-2413WIR		15 VDC	1330 mA	88 %
TEN 20-2422WIR		±12 VDC	±833 mA	88 %
TEN 20-2423WIR		±15 VDC	±667 mA	99 %
TEN 20-4810WIR	**18 - 75 VDC** (48 VDC nom.)	3.3 VDC	4500 mA	85 %
TEN 20-4811WIR		5 VDC	4000 mA	88 %
TEN 20-4812WIR		12 VDC	1670 mA	89 %
TEN 20-4813WIR		15 VDC	1330 mA	89 %
TEN 20-4822WIR		±12 VDC	±833 mA	88 %
TEN 20-4823WIR		±15 VDC	±667 mA	89 %
TEN 20-7210WIR	**43 - 160 VDC** (110 VDC nom.)	3.3 VDC	4500 mA	85 %
TEN 20-7211WIR		5 VDC	4000 mA	87 %
TEN 20-7212WIR		12 VDC	1670 mA	88 %
TEN 20-7213WIR		15 VDC	1330 mA	88 %
TEN 20-7222WIR		±12 VDC	±833 mA	88 %
TEN 20-7223WIR		±15 VDC	±667 mA	89 %

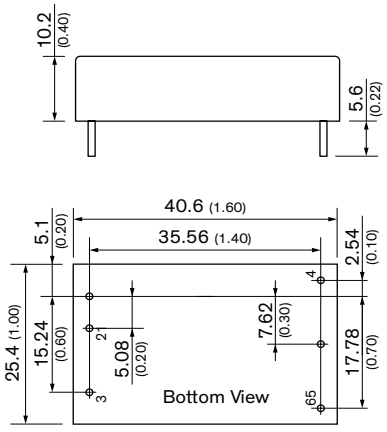
- 2.00 x 1.00 x 0.40” package
- Ultra-wide 4:1 input voltage range
- EN 55032 class B without external components
- High efficiency up to 89%
- No minimum load required
- Operating temperature range -40°C to +85°C
- Under voltage lock-out circuit
- Remote On/Off
- Output voltage adjustable
- Lead free design, RoHS compliant
- 3 year product warranty

Pinout / Conecction

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

TEN 20WIRH — NEW! — 20 Watt

EN50155 /EN61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 20-11011WIRH	**36 – 160 VDC**	5.1 VDC	4000 mA	89%
TEN 20-11012WIRH		12 VDC	1670 mA	88.5%
TEN 20-11013WIRH		15 VDC	1330 mA	89%
TEN 20-11015WIRH		24 VDC	833 mA	88.5%
TEN 20-11021WIRH		±5 VDC	±2000 mA	86%
TEN 20-11022WIRH		±12 VDC	±833 mA	88.5%
TEN 20-11023WIRH		±15 VDC	±667 mA	89%

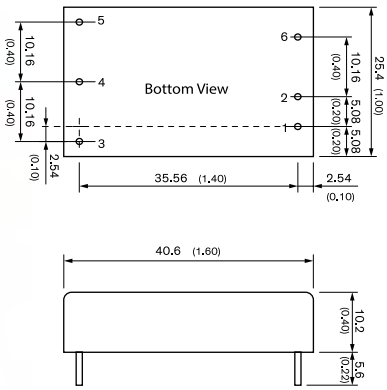
- Compact 1.6" × 1" plastic package
- 3000 VAC reinforced I/O-isolation
- Wide 4:1 input voltage range: 36 – 160 VDC
- EN 50155 approval for railway applications
- Thermal shock and vibration resistant according EN 61373
- High efficiency up to 89%
- Operating temperature range –40°C to +85°C
- Under voltage lock-out circuit
- Remote On/Off and Trim function
- 3-year product warranty

Pinout

Pin	Single	Dual
1	+Vin	+Vin
2	–Vin	–Vin
3	Ctrl	Ctrl
4	+Vout	+Vout
5	–Vout	–Vout
6	Trim	–Vout

THM 20 — 20 Watt

IEC/EN/ES 60601-1 (2×MOPP)



- 1.60 x 1.00 x 0.40” package
- Wide 2:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2.5 µA
- Operating temp.: -40°C to 80°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

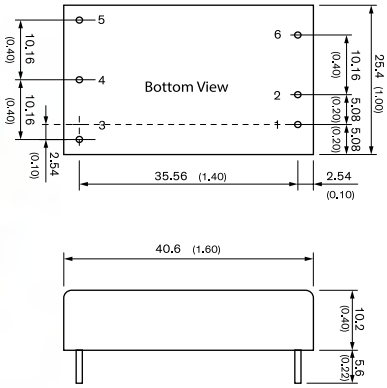
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THM 20-1211	9 - 18 VDC (12 VDC nom.)	5 VDC	4000 mA	89 %
THM 20-1212		12 VDC	1670 mA	89 %
THM 20-1213		15 VDC	1330 mA	89 %
THM 20-1215		24 VDC	833 mA	89 %
THM 20-1221		± 5 VDC	2000 mA	86 %
THM 20-1222		±12 VDC	833 mA	89 %
THM 20-1223		±15 VDC	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 %

Pinout / Connection

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

THM 20WI — 20 Watt

IEC/EN/ES 60601-1 (2×MOPP)



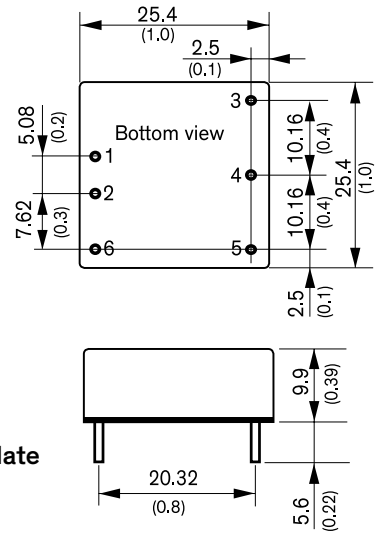
- 1.60 x 1.00 x 0.40” package
- Ultra-Wide 4:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2.5 µA
- Operating temp.: -40°C to 80°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	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 %

Pinout / Connection

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

THN 20 — 20 Watt



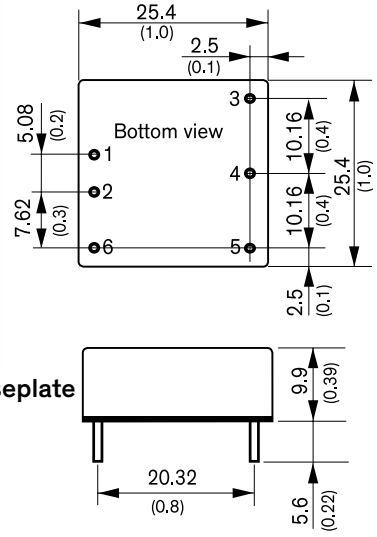
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 20-1210	**9 - 18 VDC** (12 VDC nominal)	3.3 VDC	4500 mA	86 %
THN 20-1211		5.0 VDC	4000 mA	90 %
THN 20-1212		12 VDC	1670 mA	89 %
THN 20-1213		15 VDC	1330 mA	89 %
THN 20-1222		±12 VDC	±833 mA	89 %
THN 20-1223		±15 VDC	±667 mA	89 %
THN 20-2410	**18 - 36 VDC** (24 VDC nominal)	3.3 VDC	4500 mA	86 %
THN 20-2411		5.0 VDC	4000 mA	90 %
THN 20-2412		12 VDC	1670 mA	90 %
THN 20-2413		15 VDC	1330 mA	90 %
THN 20-2422		±12 VDC	±833 mA	90 %
THN 20-2423		±15 VDC	±667 mA	90 %
THN 20-4810	**36 - 75 VDC** (48 VDC nominal)	3.3 VDC	4500 mA	86 %
THN 20-4811		5.0 VDC	4000 mA	90 %
THN 20-4812		12 VDC	1670 mA	90 %
THN 20-4813		15 VDC	1330 mA	90 %
THN 20-4822		±12 VDC	±833 mA	90 %
THN 20-4823		±15 VDC	±667 mA	90 %

- 1.0" x 1.0" x 0.4" package
- Shielded metal case with isolated baseplate
- Wide 2:1 input voltage ranges
- Very high efficiency up to 90%
- Output voltage adjustable
- Remote On/Off control
- Temp. range -40°C to +75°C (85 °C with heat-sink)
- I/O isolation voltage 1500 VDC
- EN 55032 class A without external components
- No minimum load required
- Lead free design, RoHS compliant
- 3 year product warranty

Pinout

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

THN 20WI — 20 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 20-2410WI	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	4500 mA	86 %
THN 20-2411WI		5.0 VDC	4000 mA	89 %
THN 20-2411WI-A1		5.0 VDC*1	4000 mA	89 %
THN 20-2412WI		12 VDC	1670 mA	89 %
THN 20-2413WI		15 VDC	1330 mA	89 %
THN 20-2415WI		24 VDC	833 mA	91 %
THN 20-2422WI		±12 VDC	±833 mA	89 %
THN 20-2423WI		±15 VDC	±667 mA	89 %
THN 20-2425WI		±24 VDC (48 VDC)*2	±417 mA	91 %
THN 20-4810WI	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	4500 mA	86 %
THN 20-4811WI		5.0 VDC	4000 mA	89 %
THN 20-4811WI-A1		5.0 VDC*1	4000 mA	89 %
THN 20-4812WI		12 VDC	1670 mA	89 %
THN 20-4813WI		15 VDC	1330 mA	90 %
THN 20-4815WI		24 VDC	833 mA	91 %
THN 20-4822WI		±12 VDC	±833 mA	89 %
THN 20-4823WI		±15 VDC	±667 mA	89 %
THN 20-4825WI		±24 VDC (48 VDC)*2	±417 mA	91 %

*1 Adjustable output up to 6 VDC
*2 The outputs can also be used in serial circuit for single 48 VDC operation

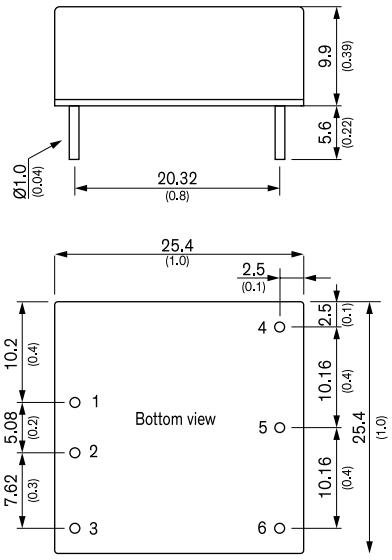
- 1.0" x 1.0" x 0.4" package
- Shielded metal case with isolated baseplate
- Ultrawide 4:1 input voltage ranges
- Very high efficiency up to 90%
- Output voltage adjustable
- -A1 models have 5VDC adjustment to 6VDC for LDO Regulators"
- Remote On/Off control
- Temp. range -40°C to +75°C (85 °C with heat-sink)
- I/O isolation voltage 1500 VDC
- EN 55032 class A without external components
- No minimum load required
- Lead free design, RoHS compliant
- 3 year product warranty

Pinout

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

THN 20WIR — 20 Watt

EN50155 /EN61373 Approved



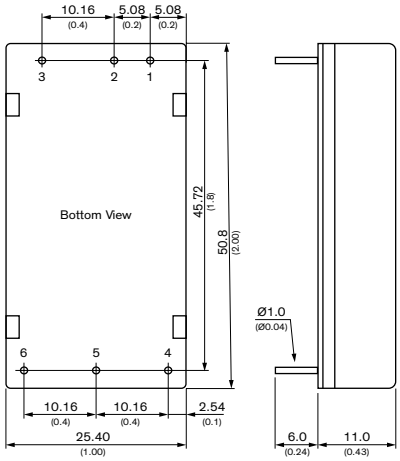
- 1.00 x 1.00 x 0.40” package
- Ultra-wide 4:1 input voltage range
- Qualification for fire behaviour according to EN 45545-2
- I/O-isolation 3‘000 VDC
- High efficiency up to 91%
- Temperature range -40°C to +90°C
- Under-voltage lock out circuit
- Adjustable output voltage & Remote On/Off
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 20-2410WIR	9 - 36 VDC (24 VDC nom.)	3.3 VDC	5500 mA	88 %
THN 20-2411WIR		5 VDC	4000 mA	89 %
THN 20-2412WIR		12 VDC	1670 mA	89 %
THN 20-2413WIR		15 VDC	1330 mA	89 %
THN 20-2415WIR		24 VDC	833 mA	91 %
THN 20-2422WIR		±12 VDC	±833 mA	89 %
THN 20-2423WIR		±15 VDC	±667 mA	90 %
THN 20-2425WIR		±24 VDC	±417 mA	91 %
THN 20-4810WIR	18 - 75 VDC (48 VDC nom.)	3.3 VDC	5500 mA	89 %
THN 20-4811WIR		5 VDC	4000 mA	90 %
THN 20-4812WIR		12 VDC	1670 mA	89 %
THN 20-4813WIR		15 VDC	1330 mA	90 %
THN 20-4815WIR		24 VDC	833 mA	91 %
THN 20-4822WIR		±12 VDC	±833 mA	89 %
THN 20-4823WIR		±15 VDC	±667 mA	90 %
THN 20-4825WIR		±24 VDC	±417 mA	91 %
THN 20-7210WIR	36 - 160 VDC (110 VDC nom.)	3.3 VDC	5500 mA	89 %
THN 20-7211WIR		5 VDC	4000 mA	90 %
THN 20-7212WIR		12 VDC	1670 mA	90 %
THN 20-7213WIR		15 VDC	1330 mA	90 %
THN 20-7215WIR		24 VDC	833 mA	91 %
THN 20-7222WIR		±12 VDC	±833 mA	90 %
THN 20-7223WIR		±15 VDC	±667 mA	90 %
THN 20-7225WIR		±24 VDC	±417 mA	91 %

Pinout / Conecction

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	+Vout	+Vout
5	Trim	Common

THR 20WI — 20 Watt



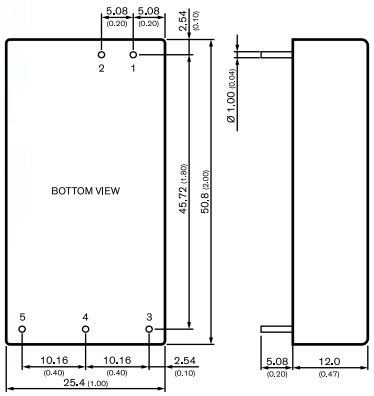
- 2.00 x 1.00 x 0.40” package
- Ultra-wide 4:1 input range
- Reinforced I/O-isolation 3000 VAC
- Input filter to meet EN 55032, Class A
- High efficiency up to 85%
- Temperature range -40°C to 88°C
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THR 20-2411WI	9 - 36 VDC (24 VDC nom.)	5 VDC	4000 mA	87 %
THR 20-2412WI		12 VDC	1670 mA	87 %
THR 20-2413WI		15 VDC	1330 mA	87 %
THR 20-2415WI		24 VDC	833 mA	87 %
THR 20-2422WI		±12 VDC	±833 mA	86 %
THR 20-2423WI		±15 VDC	±667 mA	86 %
THR 20-4811WI	18 - 75 VDC (48 VDC nom.)	5 VDC	4000 mA	87 %
THR 20-4812WI		12 VDC	1670 mA	88 %
THR 20-4813WI		15 VDC	1330 mA	88 %
THR 20-4815WI		24 VDC	833 mA	88 %
THR 20-4822WI		±12 VDC	±833 mA	87 %
THR 20-4823WI		±15 VDC	±667 mA	87 %
THR 20-7211WI	40 - 160 VDC (110 VDC nom.)	5 VDC	4000 mA	84 %
THR 20-7212WI		12 VDC	1670 mA	86 %
THR 20-7213WI		15 VDC	1330 mA	86 %
THR 20-7215WI		24 VDC	833 mA	86 %
THR 20-7222WI		±12 VDC	±833 mA	86 %
THR 20-7223WI		±15 VDC	±667 mA	86 %

Pinout

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	+Vout	+Vout
5	Trim	Common
6	-Vout	-Vout

TRI 20 NEW! 20 Watt



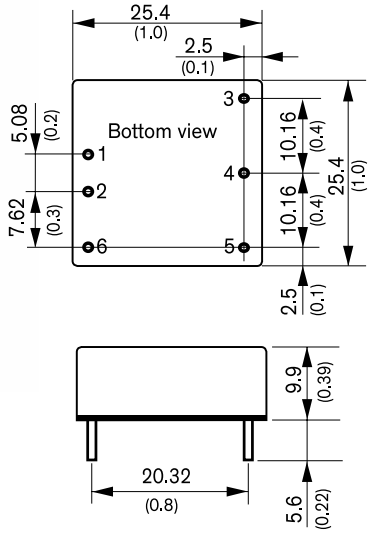
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TRI 20-1211	9 - 18 VDC (12 VDC nom.)	5.1 VDC	4'000 mA	85 %
TRI 20-1212		12 VDC	1'670 mA	88 %
TRI 20-1213		15 VDC	1'333 mA	88 %
TRI 20-1215		24 VDC	840 mA	89 %
TRI 20-1222		±12 VDC	840 mA	89 %
TRI 20-1223		±15 VDC	670 mA	89 %
TRI 20-2411	18 - 36 VDC (24 VDC nom.)	5.1 VDC	4'000 mA	87 %
TRI 20-2412		12 VDC	1'670 mA	88 %
TRI 20-2413		15 VDC	1'333 mA	89 %
TRI 20-2415		24 VDC	840 mA	90 %
TRI 20-2422		±12 VDC	840 mA	90 %
TRI 20-2423		±15 VDC	670 mA	90 %
TRI 20-4811	36 - 75 VDC (48 VDC nom.)	5.1 VDC	4'000 mA	87 %
TRI 20-4812		12 VDC	1'670 mA	88 %
TRI 20-4813		15 VDC	1'333 mA	90 %
TRI 20-4815		24 VDC	840 mA	89 %
TRI 20-4822		±12 VDC	840 mA	89 %
TRI 20-4823		±15 VDC	670 mA	90 %

- 2.00 x 1.00 x 0.41” package
- Reinforced I/O-isolation 5940 VDC rated for 1000 VAC working voltage
- Peak voltage 8000 VDC (1s)
- Common Mode Transient Immunity (dv/dt) 15 kV/µs
- Operating temperature range -40 to +76°C
- Low no-load power consumption 240 - 480 mW
- Internal EN 55032 class A filter
- High efficiency up to 90%
- 2:1 input voltage range
- Protection against overload, overvoltage and short circuit
- 3 year product warranty

Pinout

Pin	Single Output	Dual Output
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	+Vout	+Vout
4	No pin	Common
5	-Vout	-Vout

THL 25 25 Watt



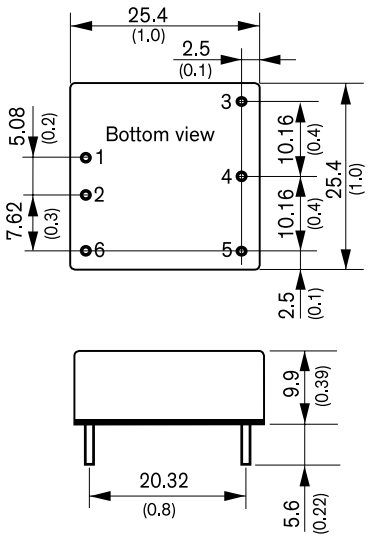
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THL 25-1210	9 - 18 VDC (12 VDC nominal)	3.3 VDC	6000 mA	87 %
THL 25-1211		5.0 VDC	5000 mA	89 %
THL 25-1212		12 VDC	2090 mA	89 %
THL 25-1213		15 VDC	1670 mA	89 %
THL 25-1222		±12 VDC	±1040 mA	89 %
THL 25-1223		±15 VDC	±840 mA	89 %
THL 25-2410	18 - 36 VDC (24 VDC nominal)	3.3 VDC	6000 mA	88 %
THL 25-2411		5.0 VDC	5000 mA	90 %
THL 25-2412		12 VDC	2090 mA	90 %
THL 25-2413		15 VDC	1670 mA	90 %
THL 25-2422		±12 VDC	±1040 mA	89 %
THL 25-2423		±15 VDC	±840 mA	89 %
THL 25-4810	36 - 75 VDC (48 VDC nominal)	3.3 VDC	6000 mA	88 %
THL 25-4811		5.0 VDC	5000 mA	90 %
THL 25-4812		12 VDC	2090 mA	90 %
THL 25-4813		15 VDC	1670 mA	90 %
THL 25-4822		±12 VDC	±1040 mA	89 %
THL 25-4823		±15 VDC	±840 mA	89 %

- 1.00 x 1.00 x 0.40” package
- Shielded metal case with isolated baseplate
- Wide 2:1 input voltage ranges
- Very high efficiency up to 90%
- Output voltage adjustable
- Remote On/Off control
- Temp. range -40°C to +80°C (+85°C with heat-sink)
- I/O isolation voltage 1500 VDC
- 3 year product warranty

Pinout

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

THL 25WI — 25 Watt

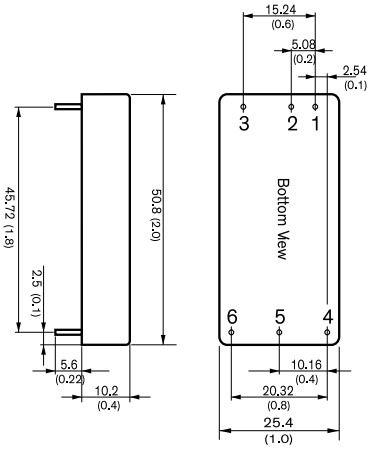


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THL 25-2410WI	9 - 36 VDC (24 VDC nominal)	3.3 VDC	6000 mA	87 %
THL 25-2411WI		5.0 VDC	5000 mA	89 %
THL 25-2412WI		12 VDC	2090 mA	89 %
THL 25-2413WI		15 VDC	1670 mA	90 %
THL 25-2422WI		±12 VDC	±1040 mA	89 %
THL 25-2423WI		±15 VDC	±840 mA	89 %
THL 25-4810WI	18 - 75 VDC (48 VDC nominal)	3.3 VDC	6000 mA	88 %
THL 25-4811WI		5.0 VDC	5000 mA	90 %
THL 25-4812WI		12 VDC	2090 mA	90 %
THL 25-4813WI		15 VDC	1670 mA	90 %
THL 25-4822WI		±12 VDC	±1040 mA	89 %
THL 25-4823WI		±15 VDC	±840 mA	89 %

- 1.00" x 1.00" x 0.40" package
- Shielded metal case with isolated baseplate
- Ultra-wide 4:1 input voltage ranges
- Very high efficiency up to 90%
- Output voltage adjustable
- Remote On/Off control
- Temp. range -40°C to +80°C (+85°C with heat-sink)
- I/O isolation voltage 1500 VDC
- 3 year product warranty

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

TEN 30 — 30 Watt

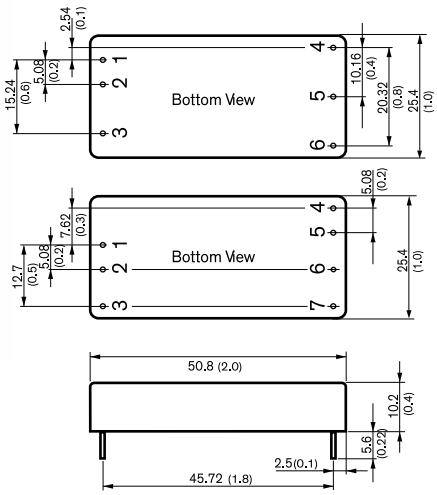


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 30-1210	9 - 18 VDC (nominal 12 VDC)	3.3 VDC	8000 mA	85 %
TEN 30-1211		5.1 VDC	6000 mA	87 %
TEN 30-1212		12 VDC	2500 mA	89 %
TEN 30-1213		15 VDC	2000 mA	89 %
TEN 30-1221		±5 VDC	±3000 mA	87 %
TEN 30-1222		±12 VDC	±1250 mA	87 %
TEN 30-1223		±15 VDC	±1000 mA	87 %
TEN 30-2410	18 - 36 VDC (nominal 24 VDC)	3.3 VDC	8000 mA	87 %
TEN 30-2411		5.1 VDC	6000 mA	90 %
TEN 30-2412		12 VDC	2500 mA	91 %
TEN 30-2413		15 VDC	2000 mA	91 %
TEN 30-2421		±5 VDC	±3000 mA	90 %
TEN 30-2422		±12 VDC	±1250 mA	89 %
TEN 30-2423		±15 VDC	±1000 mA	90 %
TEN 30-4810	36 - 75 VDC (nominal 48 VDC)	3.3 VDC	7500 mA	87 %
TEN 30-4811		5.1 VDC	6000 mA	89 %
TEN 30-4812		12 VDC	2500 mA	91 %
TEN 30-4813		15 VDC	2000 mA	91 %
TEN 30-4821		±5 VDC	±3000 mA	90 %
TEN 30-4822		±12 VDC	±1250 mA	88 %
TEN 30-4823		±15 VDC	±1000 mA	89 %

- 2.00" x 1.00" x 0.40" package
- Single and dual output models
- I/O isolation voltage 1500 VDC
- Excellent efficiency up to 91 %
- Operating temperature range -40°C to +85°C
- Remote On/Off
- Over-temperature protection
- 3 year product warranty

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

TEN 30WIN — 30 Watt



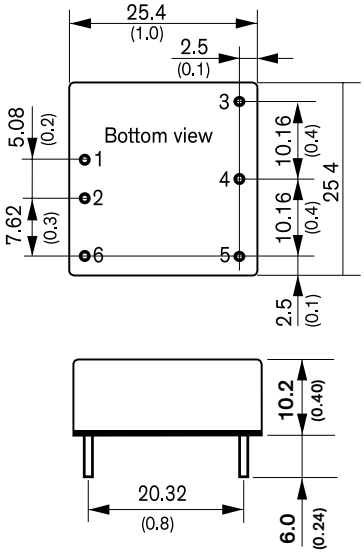
Model	Input Voltage Range	Output Vnom	Output Imax	Effi-ciency
TEN 30-2410WIN	**9 - 36 VDC** (24 VDC nominal)	3.3 VDC	7.5 A	86 %
TEN 30-2411WIN		5.1 VDC	6 A	88 %
TEN 30-2412WIN		12 VDC	2.5 A	89 %
TEN 30-2413WIN		15 VDC	2 A	89 %
TEN 30-2421WIN		± 5 VDC	3 A	88 %
TEN 30-2422WIN		±12 VDC	1.25 A	87 %
TEN 30-2423WIN		±15 VDC	1 A	87 %
TEN 30-2433WIN		3.3 / ±12 VDC	5 / 0.416 A	86 %
TEN 30-2434WIN		3.3 / ±15 VDC	5 / 0.333 A	86 %
TEN 30-2431WIN		5 / ±12 VDC	4 / 0.416 A	88 %
TEN 30-2432WIN		5 / ±15 VDC	4 / 0.333 A	88 %
TEN 30-4810 WIN	**18 - 75 VDC** (48 VDC nominal)	3.3 VDC	7.5 A	86 %
TEN 30-4811WIN		5.1 VDC	6 A	88 %
TEN 30-4812WIN		12 VDC	2.5 A	90 %
TEN 30-4813WIN		15 VDC	2 A	91 %
TEN 30-4821WIN		± 5 VDC	3 A	88 %
TEN 30-4822WIN		±12 VDC	1.25 A	88 %
TEN 30-4823WIN		±15 VDC	1 A	88 %
TEN 30-4833WIN		3.3 / ±12 VDC	5 / 0.416 A	86 %
TEN 30-4834WIN		3.3 / ±15 VDC	5 / 0.333 A	86 %
TEN 30-4831WIN		5 / ±12 VDC	4 / 0.416 A	88 %
TEN 30-4832WIN		5 / ±15 VDC	4 / 0.333 A	88 %

- 2.00' x 1.00' x 0.40" shielded metal package with isolated baseplate
- Single and dual output models
- I/O isolation voltage 1500 VDC
- Excellent efficiency up to 91 %
- Operating temperature range -40°C to +85°C
- Remote On/Off
- Over-temperature protection
- 3 year product warranty

Pinout

Pin	Single	Dual	Triple
1	+Vin (Vcc)	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)	-Vin (GND)
3	Remote On/Off	Remote On/Off	Remote On/Off
4	+Vout 1	Output 1	Output 2
5	-Vout 1	Common	Output 3
6	Trim	Output 2	Common
7	No pin	No pin	Output 1

THL 30WI — NEW! — 30 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THL 30-2410WI	**9 – 36 VDC** (24 VDC nom.)	3.3 VDC	7000 mA	87%
THL 30-2411WI		5 VDC	6000 mA	88%
THL 30-2412WI		12 VDC	2500 mA	88%
THL 30-2413WI		15 VDC	2000 mA	88%
THL 30-2415WI		24 VDC	1250 mA	88%
THL 30-2422WI		±12 VDC	±1250 mA	88%
THL 30-2423WI		±15 VDC	±1000 mA	88%
THL 30-4810WI	**18 – 75 VDC** (48 VDC nom.)	3.3 VDC	7000 mA	87%
THL 30-4811WI		5 VDC	6000 mA	88%
THL 30-4812WI		12 VDC	2500 mA	90%
THL 30-4813WI		15 VDC	2000 mA	90%
THL 30-4815WI		24 VDC	1250 mA	90%
THL 30-4822WI		±12 VDC	±1250 mA	90%
THL 30-4823WI		±15 VDC	±1000 mA	90%

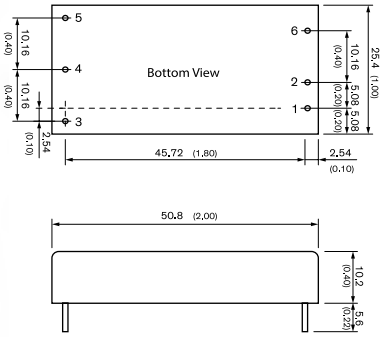
- 1.00 x 1.00 x 0.40" package
- Cost efficient design
- Wide 4:1 input voltage range: 9 – 36 and 18 – 75 VDC
- Operating temperature range –40 to +60 °C without derating
- Internal EN 55032 class A filter
- High efficiency up to 90%
- 1'500 VDC I/O-isolation
- Protection against overvoltage, overload and short circuit
- Remote On/Off and trim function
- 3-year product warranty

Pinout

Pin	Single	Dual
1	+Vin	+Vin
2	–Vin	–Vin
3	+Vout	+Vout
4	Trim	Common
5	–Vout	–Vout
6	Remote On/Off	Remot On/Off

THM 30 — 30 Watt

IEC/EN/ES 60601-1 (2×MOPP)



- 2.00 x 1.00 x 0.40” package
- Wide 2:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2.5 µA
- Operating temp.: -40°C to 80°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

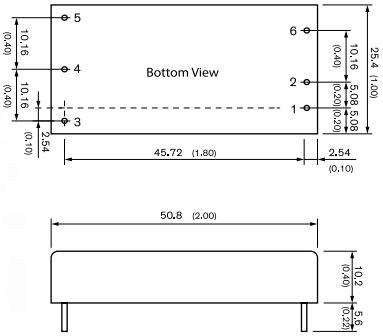
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THM 30-1211	9 - 18 VDC (12 VDC nom.)	5 VDC	6000 mA	89 %
THM 30-1212		12 VDC	2500 mA	89 %
THM 30-1213		15 VDC	2000 mA	90 %
THM 30-1215		24 VDC	1250 mA	89 %
THM 30-1221		± 5 VDC	3000 mA	86 %
THM 30-1222		±12 VDC	1250 mA	89 %
THM 30-1223		±15 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 %

Pinout / Connection

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

THM 30WI — 30 Watt

IEC/EN/ES 60601-1 (2×MOPP)



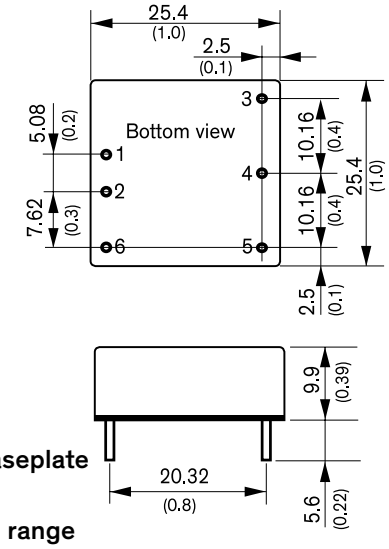
- 2.00 x 1.00 x 0.40” package
- Ultra-Wide 4:1 Input range
- I/O isolation 5000 VAC rated for 250 VAC working voltage
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- Low leakage current <2.5 µA
- Operating temp.: -40°C to 80°C
- EMC compliance to IEC 60601-1-2 4th edition and EN55032 class A
- 5 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	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 %

Pinout / Connection

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

THN 30 — 30 Watt



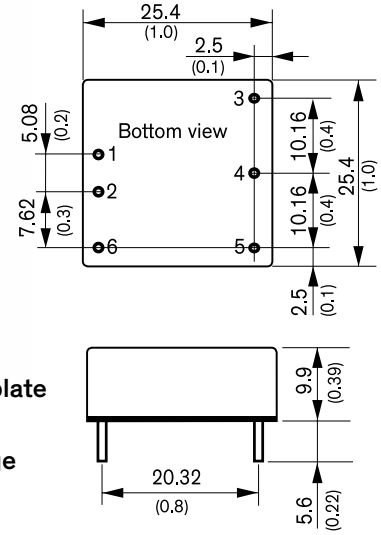
- 1.00 x 1.00 x 0.40” package
- Shielded metal case with isolated baseplate
- Wide 2:1 input voltage range
- Up to 92% efficiency across full load range
- Over temperature protection
- Temp. range -40°C to +80°C (85 °C with heat-sink)
- Ultra low no load input current
- Remote On/Off control
- Output voltage adjustable
- I/O isolation voltage 1500 VDC
- RoHS 2011/65/EU compliant
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 30-1210	9 - 18 VDC (12 VDC nominal)	3.3 VDC	7000 mA	86 %
THN 30-1211		5.0 VDC	6000 mA	89 %
THN 30-1212		12 VDC	2500 mA	89 %
THN 30-1213		15 VDC	2000 mA	89 %
THN 30-1215		24 VDC	1250 mA	89 %
THN 30-1222		±12 VDC	±1250 mA	89 %
THN 30-1223		±15 VDC	±1000 mA	90 %
THN 30-2410	18 - 36 VDC (24 VDC nominal)	3.3 VDC	7000 mA	87 %
THN 30-2411		5.0 VDC	6000 mA	90 %
THN 30-2412		12 VDC	2500 mA	91 %
THN 30-2413		15 VDC	2000 mA	91 %
THN 30-2415		24 VDC	1250 mA	91 %
THN 30-2422		±12 VDC	±1250 mA	91 %
THN 30-2423		±15 VDC	±1000 mA	91 %
THN 30-4810	36 - 75 VDC (48 VDC nominal)	3.3 VDC	7000 mA	87 %
THN 30-4811		5.0 VDC	6000 mA	89 %
THN 30-4812		12 VDC	2500 mA	90 %
THN 30-4813		15 VDC	2000 mA	91 %
THN 30-4815		24 VDC	1250 mA	91 %
THN 30-4822		±12 VDC	±1250 mA	91 %
THN 30-4823		±15 VDC	±1000 mA	92 %

Pinout

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

THN 30WI — 30 Watt



- 1.00 x 1.00 x 0.40” package
- Shielded metal case with isolated baseplate
- Ultrawide 4:1 input voltage range
- Very high efficiency across full load range
- No minimum load required
- Remote On/Off control
- -A1 models have 5VDC adjustment to 6VDC for LDO Regulators”
- Temp. range -40°C to +80°C (85 °C with heat-sink)
- Over temperature protection
- Output voltage adjustable
- I/O isolation voltage 1500 VDC
- RoHS 2011/65/EU compliant
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 30-2410WI	9 - 36 VDC (24 VDC nominal)	3.3 VDC	7000 mA	86 %
THN 30-2411WI		5.0 VDC	6000 mA	89 %
THN 30-2411WI-A1		5.0 VDC*1	6000 mA	89 %
THN 30-2412WI		12 VDC	2500 mA	89 %
THN 30-2413WI		15 VDC	2000 mA	89 %
THN 30-2415WI		24 VDC	1250 mA	89 %
THN 30-2425WI*2		48 VDC	625 mA	91 %
THN 30-2422WI		±12 VDC	±1250 mA	89 %
THN 30-2423WI		±15 VDC	±1000 mA	91 %
THN 30-2425WI		±24 VDC	±625 mA	91 %
THN 30-4810WI	18 - 75 VDC (48 VDC nominal)	3.3 VDC	7000 mA	87 %
THN 30-4811WI		5.0 VDC	6000 mA	90 %
THN 30-4811WI-A1		5.0 VDC*1	6000 mA	90 %
THN 30-4812WI		12 VDC	2500 mA	90 %
THN 30-4813WI		15 VDC	2000 mA	91 %
THN 30-4815WI		24 VDC	1250 mA	91 %
THN 30-4825WI*2		48 VDC	625 mA	91 %
THN 30-4822WI		±12 VDC	±1250 mA	91 %
THN 30-4823WI		±15 VDC	±1000 mA	92 %
THN 30-4825WI		±24 VDC	±625 mA	92 %

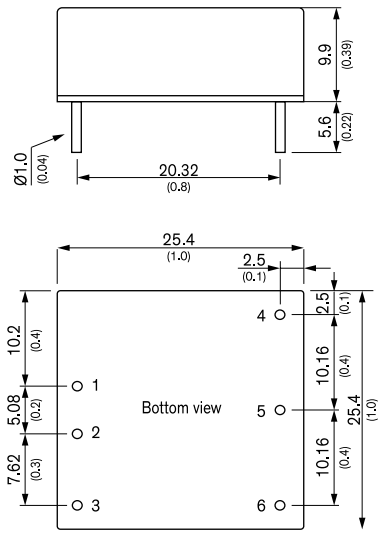
*1 Adjustable output up to 6 VDC
*2 This dual ±24 VDC converter can be used as single 48 VDC converter (open common contact)

Pinout

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

THN 30WIR — NEW — 30 Watt

EN50155 /EN61373 Approved



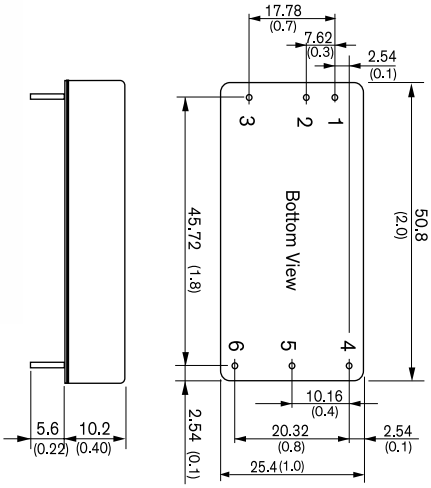
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THN 30-2410WIR	9 - 36 VDC (24 VDC nom.)	3.3 VDC	7000 mA	88 %
THN 30-2411WIR		5 VDC	6000 mA	89 %
THN 30-2412WIR		12 VDC	2500 mA	89 %
THN 30-2413WIR		15 VDC	2000 mA	89 %
THN 30-2415WIR		24 VDC	1250 mA	90 %
THN 30-2422WIR		±12 VDC	±1250 mA	89 %
THN 30-2423WIR		±15 VDC	±1000 mA	91 %
THN 30-2425WIR		±24 VDC	±625 mA	91 %
THN 30-4810WIR	18 - 75 VDC (48 VDC nom.)	3.3 VDC	7000 mA	88 %
THN 30-4811WIR		5 VDC	6000 mA	90 %
THN 30-4812WIR		12 VDC	2500 mA	90 %
THN 30-4813WIR		15 VDC	2000 mA	91 %
THN 30-4815WIR		24 VDC	1250 mA	92 %
THN 30-4822WIR		±12 VDC	±1250 mA	91 %
THN 30-4823WIR		±15 VDC	±1000 mA	91 %
THN 30-4825WIR		±24 VDC	±625 mA	92 %
THN 30-7210WIR	36 - 160 VDC (110 VDC nom.)	3.3 VDC	7000 mA	88 %
THN 30-7211WIR		5 VDC	6000 mA	90 %
THN 30-7212WIR		12 VDC	2500 mA	90 %
THN 30-7213WIR		15 VDC	2000 mA	90 %
THN 30-7215WIR		24 VDC	1250 mA	91 %
THN 30-7222WIR		±12 VDC	±1250 mA	90 %
THN 30-7223WIR		±15 VDC	±1000 mA	90 %
THN 30-7225WIR		±24 VDC	±625 mA	91 %

- 1.00 x 1.00 x 0.40” package
- Ultra-wide 4:1 input voltage range
- Qualification for fire behaviour according to EN 45545-2
- I/O-isolation 3‘000 VDC
- High efficiency up to 92%
- Operating temperature range -40°C to +90°C
- Under-voltage lock out circuit
- Adjustable output voltage & Remote On/Off
- 3 year product warranty

Pinout / Conecction

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	+Vout	+Vout
5	Trim	Common
6	-Vout	-Vout

TEN 40E — 40 Watt



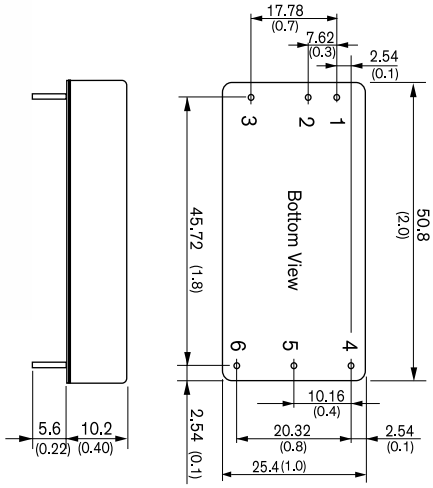
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 40-1210E	9 - 18 VDC (12 VDC nominal)	3.3 VDC	12'200 mA	89 %
TEN 40-1211E		5 VDC	8'000 mA	90 %
TEN 40-1212E		12 VDC	3'333 mA	91 %
TEN 40-1213E		15 VDC	2'666 mA	91 %
TEN 40-1215E		24 VDC	1'666 mA	90 %
TEN 40-1222E		±12 VDC	1'666 mA	90 %
TEN 40-1223E		±15 VDC	1'333 mA	90 %
TEN 40-1225E		±24 VDC	833 mA	91 %
TEN 40-2410E	18 - 36 VDC (24 VDC nominal)	3.3 VDC	12'200 mA	90 %
TEN 40-2411E		5 VDC	8'000 mA	92 %
TEN 40-2412E		12 VDC	3'333 mA	92 %
TEN 40-2413E		15 VDC	2'666 mA	93 %
TEN 40-2415E		24 VDC	1'666 mA	91 %
TEN 40-2422E		±12 VDC	1'666 mA	91 %
TEN 40-2423E		±15 VDC	1'333 mA	91 %
TEN 40-2425E		±24 VDC	833 mA	91 %
TEN 40-4810E	36 - 75 VDC (48 VDC nominal)	3.3 VDC	12'200 mA	90 %
TEN 40-4811E		5 VDC	8'000 mA	91 %
TEN 40-4812E		12 VDC	3'333 mA	92 %
TEN 40-4813E		15 VDC	2'666 mA	92 %
TEN 40-4815E		24 VDC	1'666 mA	92 %
TEN 40-4822E		±12 VDC	1'666 mA	91 %
TEN 40-4823E		±15 VDC	1'333 mA	91 %
TEN 40-4825E		±24 VDC	833 mA	92 %

- 2.00 x 1.00 x 0.40” package
- Developed to maximize quality in a cost efficient design
- Wide 2:1 input range
- Excellent temperature capabilities
- Operating temperature range -40 to +85°C
- 1600 VDC I/O-isolation
- Remote On/Off and Trim function
- Protection against short circuit, overvoltage and overtemperature
- 3 year product warranty

Pinout / Conecction

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

TEN 40WIE — 40 Watt



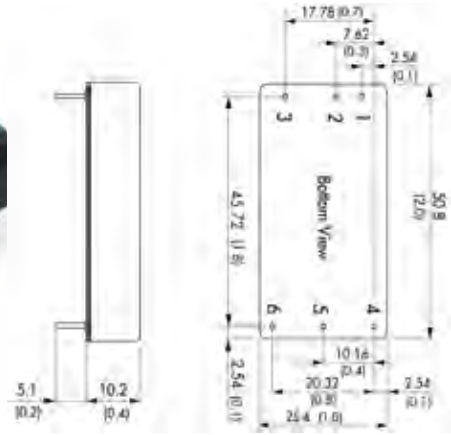
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 40-2410WIE	9 - 36 VDC (24 VDC nominal)	3.3 VDC	12'200 mA	90 %
TEN 40-2411WIE		5 VDC	8'000 mA	92 %
TEN 40-2412WIE		12 VDC	3'333 mA	92 %
TEN 40-2413WIE		15 VDC	2'666 mA	93 %
TEN 40-2415WIE		24 VDC	1'666 mA	91 %
TEN 40-2422WIE		±12 VDC	1'666 mA	91 %
TEN 40-2423WIE		±15 VDC	1'333 mA	91 %
TEN 40-2425WIE		±24 VDC	833 mA	91 %
TEN 40-4810WIE	18 - 75 VDC (48 VDC nominal)	3.3 VDC	12'200 mA	90 %
TEN 40-4811WIE		5 VDC	8'000 mA	91 %
TEN 40-4812WIE		12 VDC	3'333 mA	92 %
TEN 40-4813WIE		15 VDC	2'666 mA	92 %
TEN 40-4815WIE		24 VDC	1'666 mA	92 %
TEN 40-4822WIE		±12 VDC	1'666 mA	91 %
TEN 40-4823WIE		±15 VDC	1'333 mA	91 %
TEN 40-4825WIE		±24 VDC	833 mA	92 %

- 2.00 x 1.00 x 0.40” package
- Developed to maximize quality in a cost efficient design
- Ultra-wide 4:1 input range
- Excellent temperature capabilities
- Operating temperature range -40 to +85°C
- 1600 VDC I/O-isolation
- Remote On/Off and Trim function
- Protection against short circuit, overvoltage and overtemperature
- 3 year product warranty

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

TEN 40 WIR — 40 Watt

EN50155 /EN61373 Approved



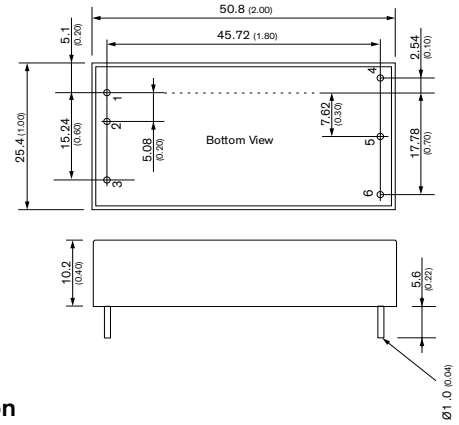
Model	Input Voltage Range	Output Vnom	Output Imax	Effi-ciency
TEN 40-2410WIR	9 - 36 VDC (24 VDC nom.)	3.3 VDC	10'000 mA	90 %
TEN 40-2411WIR		5 VDC	8000 mA	91 %
TEN 40-2412WIR		12 VDC	3333 mA	92 %
TEN 40-2413WIR		15 VDC	2666 mA	92 %
TEN 40-2415WIR		24 VDC	1666 mA	91 %
TEN 40-2422WIR		± 12 VDC	±1666 mA	90 %
TEN 40-2423WIR		±15 VDC	±1333 mA	90 %
TEN 40-2425WIR		±24 (48*) VDC	±833 mA	91 %
TEN 40-4810WIR	18 - 75 VDC (48 VDC nom.)	3.3 VDC	10'000 mA	90 %
TEN 40-4811WIR		5 VDC	8000 mA	91 %
TEN 40-4812WIR		12 VDC	3333 mA	92 %
TEN 40-4813WIR		15 VDC	2666 mA	92 %
TEN 40-4815WIR		24 VDC	1666 mA	91 %
TEN 40-4822WIR		± 12 VDC	±1666 mA	90 %
TEN 40-4823WIR		±15 VDC	±1333 mA	90 %
TEN 40-4825WIR		±24 (48*) VDC	±833 mA	91 %
TEN 40-7210WIR	43 - 160 VDC (110 VDC nom.)	3.3 VDC	10'000 mA	88 %
TEN 40-7211WIR		5 VDC	8000 mA	89 %
TEN 40-7212WIR		12 VDC	3333 mA	90 %
TEN 40-7213WIR		15 VDC	2666 mA	91 %
TEN 40-7215WIR		24 VDC	1666 mA	90 %
TEN 40-7222WIR		± 12 VDC	±1666 mA	89 %
TEN 40-7223WIR		±15 VDC	±1333 mA	89 %
TEN 40-7225WIR		±24 (48*) VDC	±833 mA	91 %

- 2.00 x 1.00 x 0.40” package
- Ultra-wide 4:1 input voltage range
- EN 50155 approval for railway applications
- Thermal shock and vibration resistant (EN 61373)
- High efficiency up to 92%
- No minimum load required
- Operating temperature range -40°C to +85°C
- Under voltage lock-out circuit
- Remote On/Off
- Output voltage adjustable
- Lead free design, RoHS compliant
- 3 year product warranty

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

TEN 40WIRH NEW! 40 Watt

EN50155 /EN61373 Approved

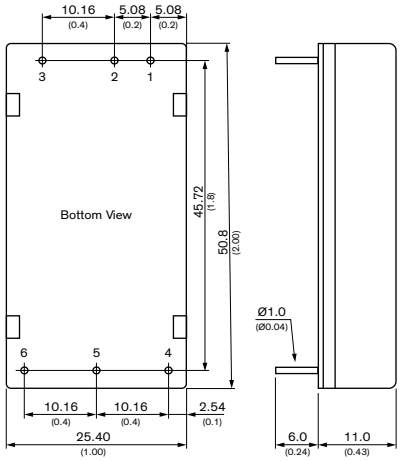


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 40-11011WIRH	**36 – 160 VDC** (110 VDC nom.)	5.1 VDC	8000 mA	88%
TEN 40-11012WIRH		12 VDC	3333 mA	89%
TEN 40-11013WIRH		15 VDC	2666 mA	90%
TEN 40-11015WIRH		24 VDC	1666 mA	89%
TEN 40-11022WIRH		±12 VDC	±1666 mA	88%
TEN 40-11023WIRH		±15 VDC	±1333 mA	89%

- Compact 2" × 1" plastic package
- 3000 VAC reinforced I/O-isolation
- Wide 4:1 input voltage range: 36 – 160 VDC
- EN 50155 approval for railway applications
- Thermal shock and vibration resistant according EN 61373
- High efficiency up to 90%
- Operating temperature range –40°C to +70°C
- Under voltage lock-out circuit
- Remote On/Off and Trim function
- 3-year product warranty

Pinout		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	–Vin	–Vin
3	Ctrl	Ctrl
4	+Vout	+Vout
5	–Vout	–Vout
6	Trim	–Vout

THR 40WI NEW 40 Watt

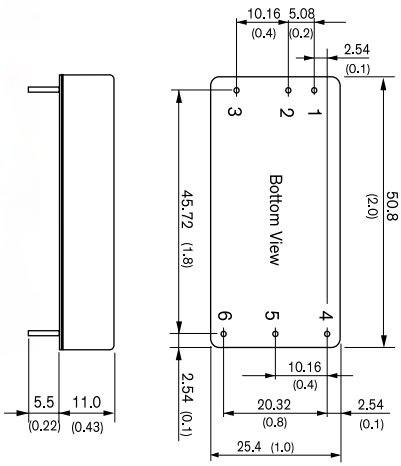


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THR 40-7211WI	**36 - 160 VDC** (110 VDC nom.)	5 VDC	8000 mA	88 %
THR 40-7212WI		12 VDC	3330 mA	89 %
THR 40-7213WI		15 VDC	2670 mA	89 %
THR 40-7215WI		24 VDC	1670 mA	89 %
THR 40-7222WI		±12 VDC	±1670 mA	89 %
THR 40-7223WI		±15 VDC	±1330 mA	89 %

- 2.00 x 1.00 x 0.43" package
- Ultra-wide 4:1 input range
- Reinforced I/O-isolation 3000 VAC
- Input filter to meet EN 55032, Class A
- High efficiency up to 85%
- Temperature range -40°C to 90°C
- 3 year product warranty

Pinout		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	-Vin	-Vin
3	Remote On/Off	Remote On/Off
4	+Vout	+Vout
5	-Vout	Common
6	Trim	-Vout

TEN 50 — 50 Watt

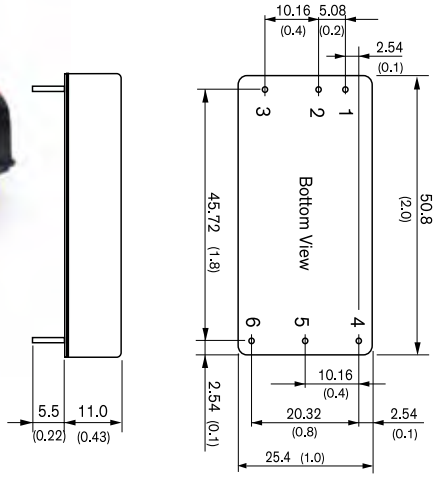


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 50-1210	9 - 18 VDC (nominal 12 VDC)	3.3 VDC	10000 mA	89 %
TEN 50-1211		5.0 VDC	10000 mA	90 %
TEN 50-1212		12 VDC	4170 mA	91 %
TEN 50-1213		15 VDC	3330 mA	91 %
TEN 50-1215		24 VDC	2080 mA	91 %
TEN 50-2410	18 - 36 VDC (nominal 24 VDC)	3.3 VDC	10000 mA	89 %
TEN 50-2411		5.0 VDC	10000 mA	92 %
TEN 50-2412		12 VDC	4170 mA	92 %
TEN 50-2413		15 VDC	3330 mA	92 %
TEN 50-2415		24 VDC	2080 mA	91 %
TEN 50-4810	36 - 75 VDC (nominal 48 VDC)	3.3 VDC	10000 mA	89 %
TEN 50-4811		5.0 VDC	10000 mA	92 %
TEN 50-4812		12 VDC	4170 mA	92 %
TEN 50-4813		15 VDC	3330 mA	92 %
TEN 50-4815		24 VDC	2080 mA	91 %

- 2.00 x 1.00 x 0.40” package
- Excellent efficiency up to 92 %
- Operating temperature range -40°C to +85°C
- No minimum load required
- Output voltage adjustable
- Remote On/Off
- I/O isolation 1500 VDC
- 3 year product warranty

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

TEN 50WI — 50 Watt

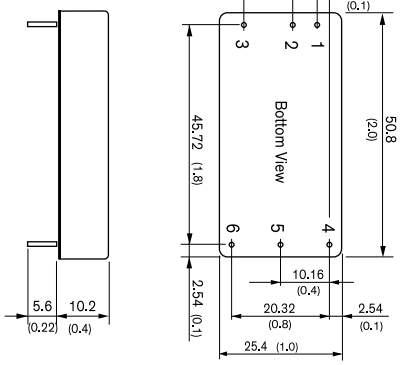


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 50-2410WI	9 - 36 VDC (nominal 24 VDC)	3.3 VDC	10000 mA	90 %
TEN 50-2411WI		5.0 VDC	10000 mA	91 %
TEN 50-2412WI		12 VDC	4170 mA	92 %
TEN 50-2413WI		15 VDC	3330 mA	92 %
TEN 50-2415WI		24 VDC	2080 mA	91 %
TEN 50-4810WI	18 - 75 VDC (nominal 48 VDC)	3.3 VDC	10000 mA	90 %
TEN 50-4811WI		5.0 VDC	10000 mA	91 %
TEN 50-4812WI		12 VDC	4170 mA	92 %
TEN 50-4813WI		15 VDC	3330 mA	92 %
TEN 50-4815WI		24 VDC	2080 mA	91 %

- 2.00 x 1.00 x 0.40” package
- Wide 4:1 input range
- Excellent efficiency up to 92 %
- Operating temperature range -40°C to +80°C
- Protection against over-temperature
- No minimum load required
- Output voltage adjustable
- Remote On/Off
- I/O isolation 1500 VDC
- 3 year product warranty

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

TEN 60N — 60 Watt



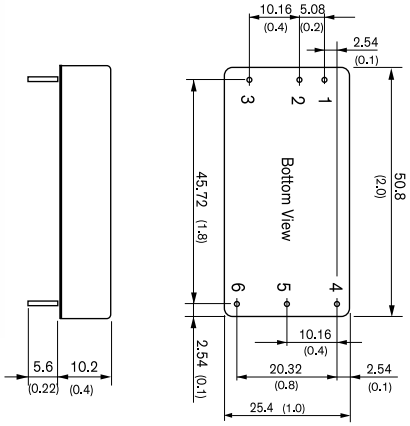
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 60-1211N	9 - 18 VDC (12 VDC nominal)	5.0 VDC	12000 mA	90.5 %
TEN 60-1212N		12 VDC	5000 mA	90.5 %
TEN 60-1213N		15 VDC	4000 mA	91.5 %
TEN 60-1215N		24 VDC	2500 mA	91.5 %
TEN 60-1222N		±12 VDC	±2500 mA	90 %
TEN 60-1223N		±15 VDC	±2000 mA	90 %
TEN 60-1225N		±24 VDC	±1250 mA	91 %
TEN 60-2411N	18 - 36 VDC (24 VDC nominal)	5.0 VDC	12000 mA	92 %
TEN 60-2412N		12 VDC	5000 mA	92 %
TEN 60-2413N		15 VDC	4000 mA	92 %
TEN 60-2415N		24 VDC	2500 mA	92 %
TEN 60-2422N		±12 VDC	±2500 mA	90 %
TEN 60-2423N		±15 VDC	±2000 mA	90 %
TEN 60-2425N		±24 VDC	±1250 mA	91 %
TEN 60-4811N	36 - 75 VDC (48 VDC nominal)	5.0 VDC	12000 mA	92 %
TEN 60-4812N		12 VDC	5000 mA	92 %
TEN 60-4813N		15 VDC	4000 mA	92 %
TEN 60-4815N		24 VDC	2500 mA	92 %
TEN 60-4822N		±12 VDC	±2500 mA	91 %
TEN 60-4823N		±15 VDC	±2000 mA	91 %
TEN 60-4825N		±24 VDC	±1250 mA	91 %

- 2.00 x 1.00 x 0.40” package
- Wide 2:1 input voltage range
- High efficiency up to 92%
- Adjustable output voltage
- No minimum load required
- Operating temperature range -40°C to +85°C
- Input filter to meet EN55032, class A
- Remote On/Off
- Under voltage lockout
- Lead free design, RoHS compliant
- 3 year product warranty

Pinout

Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	Remote On/Off	
4	+Vout	+Vout
5	-Vout	Common
6	TRIM	-Vout

TEN 60WIN — 60 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 60-2411WIN	9 - 36 VDC (24 VDC nominal)	5.0 VDC	12000 mA	92 %
TEN 60-2412WIN		12 VDC	5000 mA	92 %
TEN 60-2413WIN		15 VDC	4000 mA	92 %
TEN 60-2415WIN		24 VDC	2500 mA	92 %
TEN 60-2422WIN		±12 VDC	±2500 mA	91 %
TEN 60-2423WIN		±15 VDC	±2000 mA	91 %
TEN 60-2425WIN		±24 VDC	±1250 mA	91 %
TEN 60-4811WIN	18 - 75 VDC (48 VDC nominal)	5.0 VDC	12000 mA	92 %
TEN 60-4812WIN		12 VDC	5000 mA	92 %
TEN 60-4813WIN		15 VDC	4000 mA	92 %
TEN 60-4815WIN		24 VDC	2500 mA	91 %
TEN 60-4822WIN		±12 VDC	±2500 mA	91 %
TEN 60-4823WIN		±15 VDC	±2000 mA	91 %
TEN 60-4825WIN		±24 VDC	±1250 mA	91 %

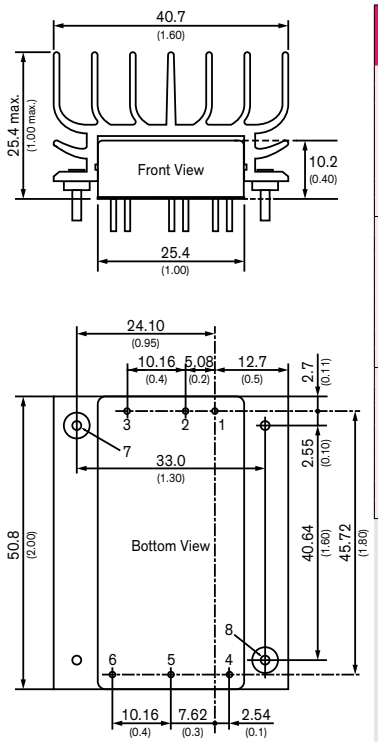
- 2.00 x 1.00 x 0.40” package
- Wide 4:1 input voltage range
- High efficiency up to 92%
- Adjustable output voltage
- No minimum load required
- Operating temperature range -40°C to +85°C
- Input filter to meet EN 55032, class A
- Remote On/Off
- Under voltage lockout
- Lead free design, RoHS compliant
- 3 year product warranty

Pinout

Pin	Single	Dual
1	+Vin (Vcc)	+Vin (Vcc)
2	-Vin (GND)	-Vin (GND)
3	Remote On/Off	
4	+Vout	+Vout
5	-Vout	Common
6	TRIM	-Vout

TEN 60WIR — 60 Watt

EN50155 /EN61373 Approved



- 2.00 x 1.60 x 1.00” package with heatsink
- Ultra-wide 4:1 input voltage range
- Qualification for fire behaviour according to EN 45545-2
- I/O-isolation 3‘000 VDC
- High efficiency up to 91%
- Full load operation from -40°C to +70°C
- Under-voltage lock out circuit
- Adjustable output voltage & Remote On/Off
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEN 60-2411WIR	**9 - 36 VDC**	5 VDC	12 A	91 %
TEN 60-2412WIR		12 VDC	5 A	93 %
TEN 60-2413WIR		15 VDC	4 A	93 %
TEN 60-2415WIR		24 VDC	2.5 A	90.5 %
TEN 60-2418WIR		48 VDC	1.25 A	91.5 %
TEN 60-2422WIR		±12 VDC	±2.5 A	90.5 %
TEN 60-2423WIR		±15 VDC	±2 A	90.5 %
TEN 60-2425WIR		±24 VDC	±1.25 A	91.5 %
TEN 60-4811WIR	**18 - 75 VDC**	5 VDC	12 A	91.5 %
TEN 60-4812WIR		12 VDC	5 A	92.5 %
TEN 60-4813WIR		15 VDC	4 A	94 %
TEN 60-4815WIR		24 VDC	2.5 A	91.5 %
TEN 60-4818WIR		48 VDC	1.25 A	92 %
TEN 60-4822WIR		±12 VDC	±2.5 A	91.5 %
TEN 60-4823WIR		±15 VDC	±2 A	91.5 %
TEN 60-4825WIR		±24 VDC	±1.25 A	92 %
TEN 60-7211WIR	**36 - 160 VDC**	5 VDC	12 A	91 %
TEN 60-7212WIR		12 VDC	5 A	92 %
TEN 60-7213WIR		15 VDC	4 A	92 %
TEN 60-7215WIR		24 VDC	2.5 A	90.5 %
TEN 60-7218WIR		48 VDC	1.25 A	91 %
TEN 60-7222WIR		±12 VDC	±2.5 A	90.5 %
TEN 60-7223WIR		±15 VDC	±2 A	90.5 %
TEN 60-7225WIR		±24 VDC	±1.25 A	91 %

Pinout

Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	+Vout	+Vout
5	-Vout	Common
6	Trim	-Vout

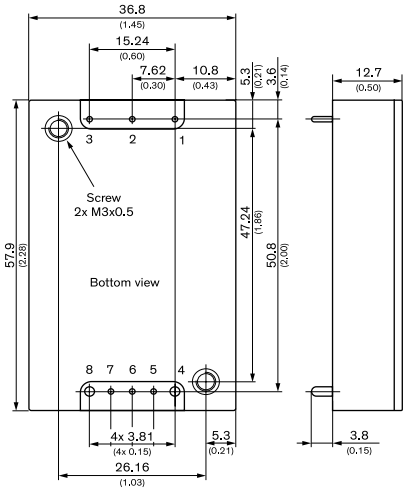
DC/DC: High-Power PCB Mount Brick Converters

SERIES	WATTS	DESCRIPTION	STATUS	APPS	PAGE
TEP 40UIR	40	1/4-Brick package, 12:1 input, 3000 VAC isolation	ACTIVE		99
TEP 60UIR	60	1/4-Brick package, 12:1 input, 3000 VAC isolation	ACTIVE		100
THM 60WI	60	2.28 × 1.45" package, 4:1 input, regulated, 5000 VAC isolation	ACTIVE		100
TEP 75WI	75	1/2-Brick package, 4:1 input, 2250 VDC isolation	ACTIVE		101
TEP 100	100	1/2-Brick package, 2:1 input, 2250 VDC isolation	ACTIVE		101
TEP 100UIR	100	1/4-Brick package, 12:1 input, 3000 VAC isolation	**NEW !**		102
TEP 100WIR	100	1/2-Brick package, 4:1 input, 2250 VDC isolation	ACTIVE		102
TEP 150UIR	150	1/4-Brick package, 10:1 input, 3000 VAC isolation	**NEW !**		103
TEP 160	160	1/2-Brick package, 2:1 input, 2250 VDC isolation	ACTIVE		103
TEP 200UIR	200	1/4-Brick package, 10:1 input, 3000 VAC isolation	**NEW !**		104
TEP 200WIR	180-240	1/2-Brick package, 4:1 input, 2250 VDC isolation	ACTIVE		104

APPS KEY: = EN50155 /EN61373 Approved = IEC/EN/ES 60601-1 (2×MOPP Approved)

TEP 40UIR — 40 Watt

EN 50155 / EN 61373 Approved



Pin (4, 8): 1.5 (0.06), Pin (other): 1.0 (0.04)

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 40-3611UIR	**9 - 75 VDC**	5VDC	8 A	89 %
TEP 40-3612UIR		12 VDC	3.33 A	91 %
TEP 40-3613UIR		15 VDC	2.67 A	90 %
TEP 40-3615UIR		24 VDC	1.67 A	90 %
TEP 40-3618UIR		48 VDC	0.83 A	92 %
TEP 40-7211UIR	**14 - 160 VDC**	5 VDC	8 A	89 %
TEP 40-7212UIR		12 VDC	3.33 A	90 %
TEP 40-7213UIR		15 VDC	2.67 A	90 %
TEP 40-7215UIR		24 VDC	1.67 A	90 %
TEP 40-7218UIR		48 VDC	0.83 A	90 %

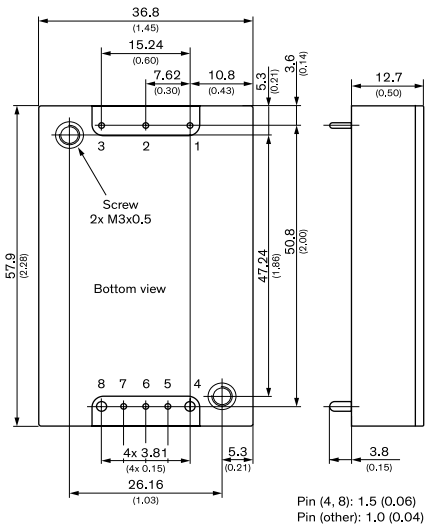
- 1/4 Brick package (2.30 x1.45 x 0.50")
- Ultra-wide 12:1 input voltage range
- Qualification for fire behavior according to EN 45545-2
- IEC/EN/UL 62368-1 approved
- I/O isolation 3000 VAC
- High efficiency up to 92%
- Operating temperature range -40°C to +85°C
- Under-voltage lock out circuit
- Vtrim (+10/-20%) , remote on/off & sense functions
- 3 year product warranty

Pin Connection

Pin	Function
1	-Vin
2	Ctrl
3	+Vin
4	-Vout
5	-Sense
6	Trim
7	+Sense
8	+Vout

TEP 60UIR — 60 Watt

EN 50155 / EN 61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 60-3611UIR	9 - 75 VDC	5VDC	12 A	89 %
TEP 60-3612UIR		12 VDC	5 A	89 %
TEP 60-3613UIR		15 VDC	4 A	89 %
TEP 60-3615UIR		24 VDC	2.5 A	90 %
TEP 60-3618UIR		48 VDC	1.25 A	92 %
TEP 60-7211UIR	14 - 160 VDC	5 VDC	12 A	89 %
TEP 60-7212UIR		12 VDC	5 A	89 %
TEP 60-7213UIR		15 VDC	4 A	89 %
TEP 60-7215UIR		24 VDC	2.5 A	90 %
TEP 60-7218UIR		48 VDC	1.25 A	90 %

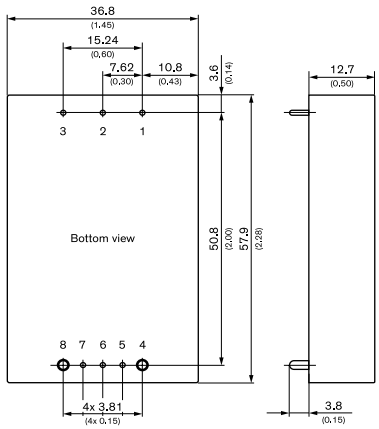
- 1/4 Brick package (2.3 x1.45 x 0.50")
- Ultra-wide 12:1 input voltage range
- Qualification for fire behavior according to EN 45545-2
- IEC/EN/UL 62368-1 approved
- I/O isolation 3000 VAC
- High efficiency up to 92%
- Operating temperature range -40°C to +85°C
- Under-voltage lock out circuit
- Vtrim (+10/-20%) , remote on/off & sense functions
- 3 year product warranty

Pin Connection

Pin	Function
1	-Vin
2	Ctrl
3	+Vin
4	-Vout
5	-Sense
6	Trim
7	+Sense
8	+Vout

THM 60WI — 60 Watt

IEC/EN/ES 60601-1 (2×MOPP Approved)



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
THM 60-2411WI	9 - 36 VDC (24 VDC nom.)	5.0 VDC	12.0 A	89 %
THM 60-2412WI		12.0 VDC	5.0 A	90 %
THM 60-2413WI		15.0 VDC	4.0 A	90 %
THM 60-2415WI		24.0 VDC	2.5 A	91 %
THM 60-2422WI		±12.0 VDC	±2.5 A	91 %
THM 60-2423WI		±15.0 VDC	±2.0 A	91 %
THM 60-4811WI	18 - 75 VDC (48 VDC nom.)	5.0 VDC	12.0 A	89 %
THM 60-4812WI		12.0 VDC	5.0 A	90 %
THM 60-4813WI		15.0 VDC	4.0 A	90 %
THM 60-4815WI		24.0 VDC	2.5 A	91 %
THM 60-4822WI		±12.0 VDC	±2.5 A	91 %
THM 60-4823WI		±15.0 VDC	±2.0 A	92 %

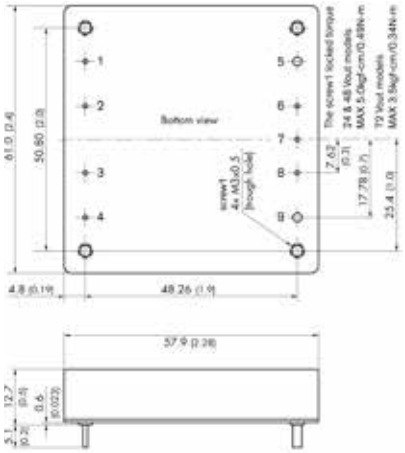
- 1/4 Brick package (2.30 x 1.45 x 0.50")
- Ultra-wide 4:1 input voltage
- Reinforced I/O isolation 5000 VAC
- 2xMOPP / BF compliant
- ISO 14971 risk management file
- IEC/EN/UL 62368-1 approved
- Low leakage current <4.5 µA
- Operating temp.: -40°C to +75°C
- Vtrim (+10/-20%) , remote on/off & sense functions
- IEC 60601-1-2 4th edition & EN55032 class A (EMC)
- 5 year product warranty

Pinout / Connection

Pin	Single	Dual
1	-Vin	-Vin
2	Ctrl	Ctrl
3	+Vin	+Vin
4	-Vout	-Vout
5	-Sense	-Sense
6	Trim	Common
7	+Sense	+Sense
8	+Vout	+Vout

TEP 75WI — 75 Watt

EN 50155 / EN 61373 Approved



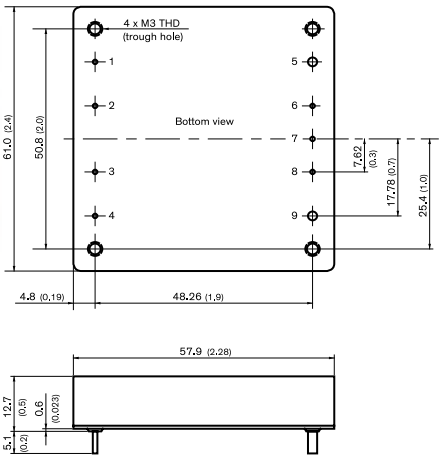
Model	Input Voltage Range	Output Vnom	Output Imax	Effi-ciency
TEP 75-2411WI	9 - 36 VDC (24 VDC nom.)	5 VDC	15'000 mA	88 %
TEP 75-2412WI		12 VDC	6300 mA	88 %
TEP 75-2413WI		15 VDC	5000 mA	88 %
TEP 75-2415WI		24 VDC	3200 mA	87 %
TEP 75-2416WI		28 VDC	2700 mA	87 %
TEP 75-2418WI		48 VDC	1600 mA	87 %
TEP 75-4811WI	18 - 75 VDC (48 VDC nom.)	5 VDC	15'000 mA	90 %
TEP 75-4812WI		12 VDC	6300 mA	90 %
TEP 75-4813WI		15 VDC	5000 mA	89 %
TEP 75-4815WI		24 VDC	3200 mA	88 %
TEP 75-4816WI		28 VDC	2700 mA	88 %
TEP 75-4818WI		48 VDC	1600 mA	87 %
TEP 75-7211WI	43 - 160 VDC (110 VDC nom.)	5 VDC	15'000 mA	91 %
TEP 75-7212WI		12 VDC	6300 mA	91 %
TEP 75-7213WI		15 VDC	5000 mA	91 %
TEP 75-7215WI		24 VDC	3200 mA	90 %
TEP 75-7216WI		28 VDC	2700 mA	90 %
TEP 75-7218WI		48 VDC	1600 mA	90 %

Pinout

Pin	Function
1	-Vin (GND)
2	Case
3	Remote
4	+Vin (Vcc)
5	-Vout
6	-Sense*
7	Trim
8	+Sense*
9	+Vout

- 2.40 x 2.28 x 0.50” half brick package
- Ultra-wide 4:1 input voltage range
- Full load operation up to +60°C (convection)
- Soft start, under voltage lockout & reverse input protection
- Vtrim (+10/-20%) , remote on/off & sense functions
- 2250 VDC I/O Isolation
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

TEP 100 — 100 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 100-1210	9 - 18 VDC (12 VDC nom.)	3.3 VDC	25'000 mA	90 %
TEP 100-1211		5 VDC	20'000 mA	91 %
TEP 100-1212		12 VDC	8'400 mA	91 %
TEP 100-1213		15 VDC	6'700 mA	91 %
TEP 100-1215		24 VDC	4'200 mA	90 %
TEP 100-1216		28 VDC	3'600 mA	90 %
TEP 100-1218		48 VDC	2'100 mA	90 %
TEP 100-2410	18 - 36 VDC (24 VDC nom.)	3.3 VDC	25'000 mA	91 %
TEP 100-2411		5 VDC	20'000 mA	93 %
TEP 100-2412		12 VDC	8'400 mA	93 %
TEP 100-2413		15 VDC	6'700 mA	93 %
TEP 100-2415		24 VDC	4'200 mA	92 %
TEP 100-2416		28 VDC	3'600 mA	92 %
TEP 100-2418		48 VDC	2'100 mA	92 %
TEP 100-4810	36 - 75 VDC (48 VDC nom.)	3.3 VDC	25'000 mA	91 %
TEP 100-4811		5 VDC	20'000 mA	93 %
TEP 100-4812		12 VDC	8'400 mA	93 %
TEP 100-4813		15 VDC	6'700 mA	93 %
TEP 100-4815		24 VDC	4'200 mA	92 %
TEP 100-4816		28 VDC	3'600 mA	92 %
TEP 100-4818		48 VDC	2'100 mA	92 %

Pinout

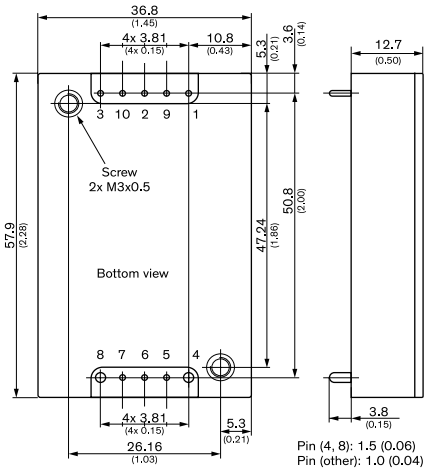
Pin	Function
1	-Vin (GND)
2	Case
3	Remote
4	+Vin (Vcc)
5	-Vout
6	-Sense*
7	Trim
8	+Sense*
9	+Vout

- 2.40 x 2.28 x 0.50” half brick package
- Wide 2:1 input voltage range
- Full load operation up to +60°C (convection)
- Soft start, under voltage lockout & reverse input protection
- Vtrim (+10/-20%) , remote on/off & sense functions
- 2250 VDC I/O Isolation
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

DC/DC: High Power PCB Mount Brick Converters

TEP 100UIR NEW! 100 Watt

EN 50155 / EN 61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 100-3611UIR	9 - 75 VDC	5VDC	20 A	87 %
TEP 100-3612UIR		12 VDC	8.35 A	88 %
TEP 100-3613UIR		15 VDC	6.7 A	88 %
TEP 100-3615UIR		24 VDC	4.2 A	88 %
TEP 100-3618UIR		48 VDC	2.1 A	89 %
TEP 100-7211UIR	14 - 160 VDC	5 VDC	20 A	87 %
TEP 100-7212UIR		12 VDC	8.35 A	88 %
TEP 100-7213UIR		15 VDC	6.7 A	88 %
TEP 100-7215UIR		24 VDC	4.2 A	88 %
TEP 100-7218UIR		48 VDC	2.1 A	89 %

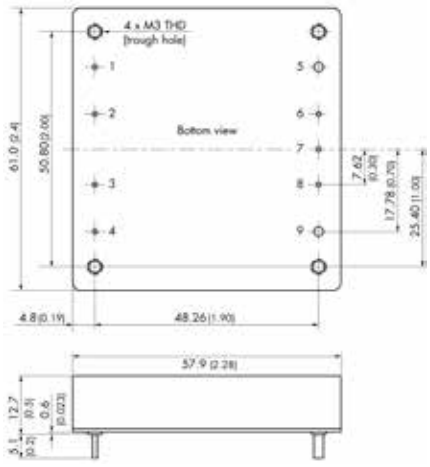
Pin Connection

Pin	Function
1	-Vin
2	Ctrl
3	+Vin
4	-Vout
5	-Sense
6	Trim
7	+Sense
8	+Vout
9	Bus (option)
10	UVLO (option)

- 1/4 Brick package (2.30x1.45 x 0.50")
- Ultra-wide 12:1 input range
- EN 45545-2 (fire behavior)
- IEC/EN/UL 62368-1 approved
- I/O isolation 3000 VAC
- High efficiency up to 92%
- Operating temperature range -40°C to +85°C
- Under-voltage lockout circuit
- Vtrim (+10/-20%) , remote on/off & sense functions
- 3 year product warranty

TEP 100WIR 100 Watt

EN 50155 / EN 61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Effi-ciency
TEP 100-2411WIR	9 - 36 VDC (24 VDC nom.)	5 VDC	20'000 mA	93 %
TEP 100-2412WIR		12 VDC	8400 mA	90 %
TEP 100-2415WIR		24 VDC	4200 mA	90 %
TEP 100-2416WIR		28 VDC	3600 mA	90 %
TEP 100-2418WIR		48 VDC	2100 mA	90 %
TEP 100-4812WIR	18 - 75 VDC (48 VDC nom.)	12 VDC	8400 mA	90 %
TEP 100-4815WIR		24 VDC	4200 mA	90 %
TEP 100-4816WIR		28 VDC	3600 mA	92 %
TEP 100-4818WIR		48 VDC	2100 mA	91 %
TEP 100-7212WIR	43 - 160 VDC (110 VDC nom.)	12 VDC	8400 mA	90 %
TEP 100-7215WIR		24 VDC	4200 mA	90 %
TEP 100-7216WIR		28 VDC	3600 mA	90 %
TEP 100-7218WIR		48 VDC	2100 mA	91 %

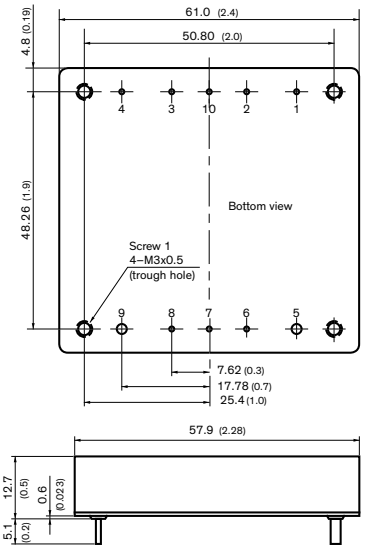
Pinout

Pin	Function
1	-Vin (GND)
2	Case
3	Remote
4	+Vin (Vcc)
5	-Vout
6	-Sense*
7	Trim
8	+Sense*
9	+Vout

- 2.40 x 2.28 x 0.50" half brick package
- Ultra-wide 4:1 input voltage range
- Full load operation up to +60°C (convection)
- Adjustable output voltage +10/-20%
- Soft start, under voltage lockout & reverse input protection
- Vtrim (+10/-20%) , remote on/off & sense functions
- 2250 VDC I/O Isolation
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

TEP 150UIR NEW! 150 Watt

EN 50155 / EN 61373 Approved



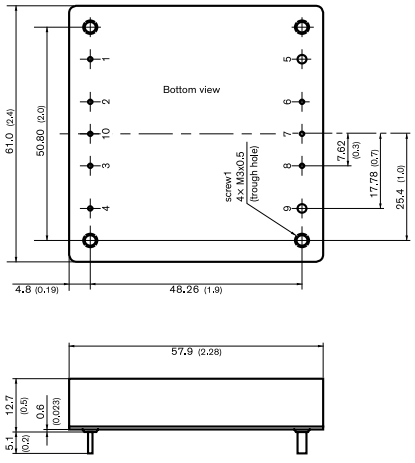
- 2.28 x 2.40 x 0.50" metal case
- Ultra-wide 10:1 input (16 – 160 VDC)
- Bus pin to easily extend hold-up time
- EN 50155 railway approved
- IEC/EN/UL 62368-1 approved
- EN 61373 thermal shock and vibration
- EN 45545-2 fire behavior
- –40°C to +75°C Operation
- Very high efficiency up to 93%
- I/O-isolation 3000 VAC
- No minimum load and soft start
- Under voltage lock-out circuit
- Adjustable under voltage lock-out
- Vtrim (+10/-20%), sense, remote on/off

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 150-7211UIR	16 – 160 VDC	5 VDC	30'000 mA	91%
TEP 150-7212UIR		12 VDC	12'500 mA	93%
TEP 150-7213UIR		15 VDC	10'000 mA	92%
TEP 150-7215UIR		24 VDC	6300 mA	89%
TEP 150-7218UIR		48 VDC	3200 mA	93%

Pinout

Pin	Function	Pin	Function
1	–Vin (GND)	6	–Sense*
2	Case	7	Trim
3	Remote	8	+Sense*
4	+Vin (Vcc)	9	+Vout
5	–Vout		

TEP 160 160 Watt



- 2.40 x 2.28 x 0.50” half brick package
- Wide 2:1 input (16.5-36, 33-75 VDC)
- Full load operation up to +60°C (convection)
- Adjustable output voltage +10/-20%
- Soft start, under voltage lockout & reverse input protection
- Vtrim (+10/-20%) , remote on/off & sense functions
- 2250 VDC I/O Isolation
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

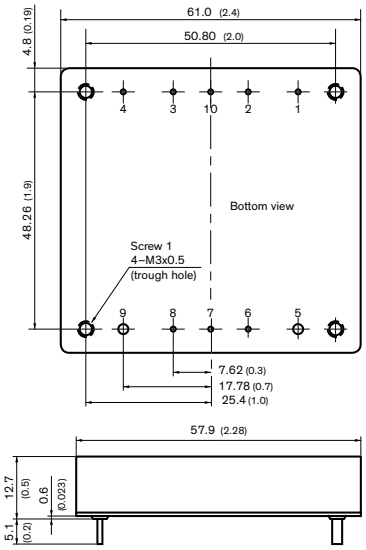
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 160-2412	16.5 - 36 VDC (24 VDC nom.)	12 VDC	13'000 mA	92 %
TEP 160-2413		15 VDC	10'000 mA	92 %
TEP 160-2415		24 VDC	6'500 mA	93 %
TEP 160-2416		28 VDC	5'500 mA	93 %
TEP 160-2418		48 VDC	3'300 mA	92 %
TEP 160-4812	33 - 75 VDC (48 VDC nom.)	12 VDC	16'000 mA	92 %
TEP 160-4813		15 VDC	13'000 mA	93 %
TEP 160-4815		24 VDC	8'000 mA	92 %
TEP 160-4816		28 VDC	7'000 mA	92 %
TEP 160-4818		48 VDC	4'000 mA	92 %
TEP 160-48153		53 VDC	3'700 mA	92 %

Pinout

Pin	Function
1	-Vin (GND)
2	Case
3	Remote
4	+Vin (Vcc)
5	-Vout
6	-Sense*
7	Trim
8	+Sense*
9	+Vout

TEP 200UIR NEW! 200 Watt

EN 50155 / EN 61373 Approved



- 2.28 x 2.40 x 0.50" metal case
- Ultra-wide 10:1 input (16 – 160 VDC)
- Bus pin to easily extend hold-up time
- EN 50155 railway approved
- IEC/EN/UL 62368-1 approved
- EN 61373 thermal shock and vibration
- EN 45545-2 fire behavior
- –40°C to +70°C Operation
- Very high efficiency up to 92%
- No minimum load and soft start
- Under voltage lock-out circuit
- Adjustable under voltage lock-out
- Vtrim (+10/-20%), sense, remote on/off

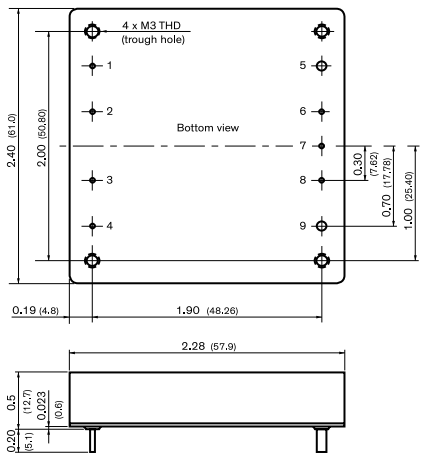
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 200-7211UIR	16 – 160 VDC	5 VDC	40'000 mA	90%
TEP 200-7212UIR		12 VDC	16'800 mA	92%
TEP 200-7213UIR		15 VDC	13'400 mA	91%
TEP 200-7215UIR		24 VDC	8400 mA	90%
TEP 200-7218UIR		48 VDC	4200 mA	92%

Pinout

Pin	Function	Pin	Function
1	–Vin (GND)	6	–Sense*
2	Case	7	Trim
3	Remote	8	+Sense*
4	+Vin (Vcc)	9	+Vout
5	–Vout		

TEP 200WIR 240 Watt

EN 50155 / EN 61373 Approved



- 2.40 x 2.28 x 0.50” half brick package
- Ultra-wide 4:1 input voltage range
- Full load operation up to +60°C (convection)
- Adjustable output voltage +10/-20%
- Soft start, under voltage lockout & reverse input protection
- Vtrim (+10/-20%) , remote on/off & sense functions
- 2250 VDC I/O Isolation
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 200-2412WIR	9 - 36 VDC (24 VDC nom.)	12 VDC	15'000 mA	89 %
TEP 200-2413WIR		15 VDC	12'000 mA	90 %
TEP 200-2415WIR		24 VDC	7500 mA	90 %
TEP 200-2416WIR		28 VDC	6500 mA	90 %
TEP 200-2418WIR		48 VDC	3700 mA	89 %
TEP 200-4812WIR	18 - 75 VDC (48 VDC nom.)	12 VDC	18'000 mA	90 %
TEP 200-4813WIR		15 VDC	14'000 mA	91 %
TEP 200-4815WIR		24 VDC	9000 mA	90 %
TEP 200-4816WIR		28 VDC	7500 mA	91 %
TEP 200-4818WIR		48 VDC	4500 mA	90 %
TEP 200-7212WIR	43 - 160 VDC (110 VDC nom.)	12 VDC	20'000 mA	89 %
TEP 200-7213WIR		15 VDC	16'000 mA	90 %
TEP 200-7215WIR		24 VDC	10'000 mA	89 %
TEP 200-7216WIR		28 VDC	8500 mA	90 %
TEP 200-7218WIR		48 VDC	5000 mA	89 %

Pinout

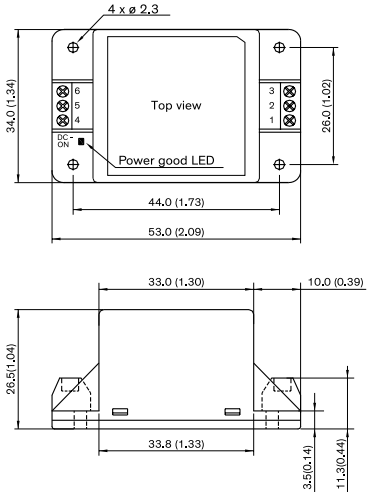
Pin	Function
1	-Vin (GND)
2	Case
3	Remote
4	+Vin (Vcc)
5	-Vout
6	-Sense*
7	Trim
8	+Sense*
9	+Vout

DC/DC: Isolated Chassis Mount

SERIES	WATTS	DESCRIPTION	STATUS	APPS	PAGE
TMDC 06	6	2.09 × 1.34 × 1.04", 4:1 input, harsh EMC compliance	ACTIVE		105
TMDC 06H	6	2.09 × 1.34 × 1.04", 2:1 input, harsh EMC compliance, 3000 VAC isolation, 80~160Vin Range	ACTIVE		106
TMDC 10	10	3.11 × 1.34 × 0.87", 4:1 input, harsh EMC compliance	ACTIVE		106
TMDC 10H	10	3.11 × 1.34 × 0.87", 2:1 input, harsh EMC compliance, 3000 VAC isolation , 80~160Vin Range	ACTIVE		107
TEQ 20WIR	20	4.00 × 2.30 × 1.03"" package, 4:1 input, regulated, 2250 VDC isolation, railway, encased	ACTIVE	🚆	107
TMDC 20	20	3.78 × 1.81 × 0.92", 4:1 input, harsh EMC compliance	ACTIVE		108
TMDC 20H	20	3.78 × 1.81 × 0.92", 2:1 input, harsh EMC compliance, 3000 VAC isolation , 80~160Vin Range	ACTIVE		108
TEQ 40WIR	40	4.00 × 2.30 × 1.03" package, 4:1 input, regulated, 2250 VDC isolation, encased	ACTIVE	🚆	109
TMDC 40	40	4.41 × 2.51 × 1.01", 4:1 input, harsh EMC compliance	ACTIVE		109
TMDC 40H	40	4.41 × 2.51 × 1.01", 2:1 input, harsh EMC compliance, 3000 VAC isolation , 80~160Vin Range	ACTIVE		110
TMDC 60	60	4.41 × 2.67 × 1.50", 4:1 input, harsh EMC compliance	ACTIVE		110
TMDC 60H	60	4.41 × 2.67 × 1.50", 2:1 input, harsh EMC compliance, 3000 VAC isolation , 80~160Vin Range	ACTIVE		111
TEQ 100WIR	100	3.00 × 4.00 × 3.50" package, 4:1 input, 2250 VDC isolation, rugged design	ACTIVE	🚆	111
TEP 150WI	150	3.86 × 2.56 × 1.60" package, 4:1 input, 2250 VDC isolation, rugged design	ACTIVE	🚆	112
TEQ 160WIR	160	3.00 × 4.00 × 3.50" package, 4:1 input, 2250 VDC isolation, rugged design	ACTIVE	🚆	112
TEQ 200WIR	200	3.00 × 4.00 × 3.50" package, 4:1 input,2250 VDC isolation, rugged design	ACTIVE	🚆	113
TEQ 300WIR	300	6.00 × 4.00 × 1.50" package, 4:1 input, 2250 VDC isolation, rugged design	ACTIVE	🚆	113

APPS KEY: 🚆 = EN50155 /EN61373 Approved

TMDC 06 — 6 Watt

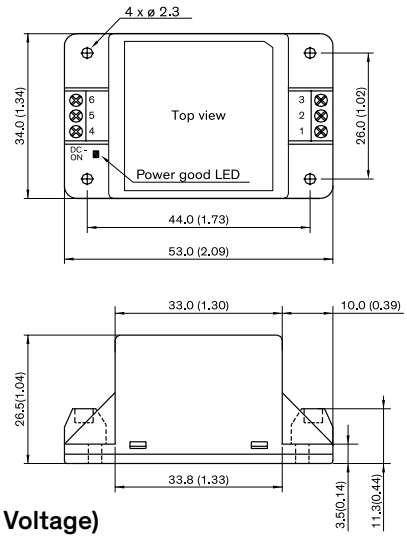


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 06-2411	9 - 36 VDC (24 VDC nom.)	5.1 VDC	1'200 mA	81 %
TMDC 06-2412		12 VDC	500 mA	84 %
TMDC 06-2413		15 VDC	400 mA	84 %
TMDC 06-2415		24 VDC	250 mA	85 %
TMDC 06-2418		48 VDC	125 mA	83 %
TMDC 06-2422		+12 VDC	250 mA	84 %
TMDC 06-2423		+15 VDC	200 mA	85 %
TMDC 06-2425		+24 VDC	125 mA	84 %
TMDC 06-4811	18 - 75 VDC (48 VDC nom.)	5.1 VDC	1'200 mA	80 %
TMDC 06-4812		12 VDC	500 mA	84 %
TMDC 06-4813		15 VDC	400 mA	84 %
TMDC 06-4815		24 VDC	250 mA	85 %
TMDC 06-4818		48 VDC	125 mA	83 %
TMDC 06-4822		+12 VDC	250 mA	85 %
TMDC 06-4823		+15 VDC	200 mA	85 %
TMDC 06-4825		+24 VDC	125 mA	84 %

- 2.09 x 1.34 x 1.04" package
- EN 55035 (EMC) & EN 55032 class A (EMI)
- Ultra-wide 4:1 input (9-36 & 18-75 VDC)
- -40 to +80 °C without derating
- I/O isolation 3000 VDC
- Protection overload, under voltage & short circuit
- DC-OK (LED) & Remote On/Off function
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

Pinout		
Pin	Single Output	Dual Output
1	Remote	Remote
2	-Vin (GND)	-Vin (GND)
3	+Vin (Vcc)	+Vin (Vcc)
4	-Vout	-Vout
5	NC	Common
6	+Vout	+Vout

TMDC 06H — 6 Watt

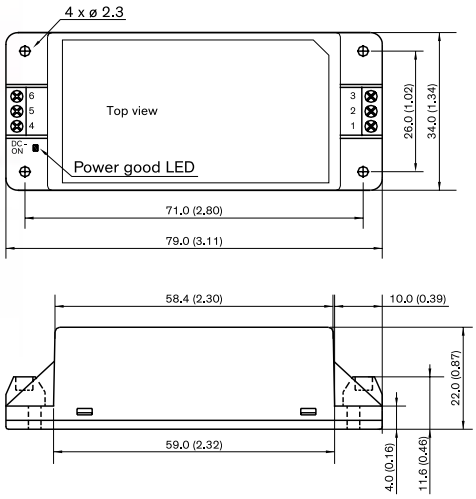


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 06-7211H		5.1 VDC	1'200 mA	79 %
TMDC 06-7212H		12 VDC	500 mA	83 %
TMDC 06-7213H		15 VDC	400 mA	83 %
TMDC 06-7215H	**80 - 160 VDC**	24 VDC	250 mA	84 %
TMDC 06-7218H	(110 VDC nom.)	48 VDC	125 mA	82 %
TMDC 06-7222H		±12 VDC	±250 mA	84 %
TMDC 06-7223H		±15 VDC	±200 mA	84 %
TMDC 06-7225H		± 24 VDC	±125 mA	83 %

- 2.09 x 1.34 x 1.04” package
- Wide 2:1 input range (80-160 VDC)
- 3000 VAC Isolation (250VAC Working Voltage)
- EN 55035 (EMC) & EN 55032 class A (EMI)
- Wide 2:1 input range (80-160V)
- Operating temperature range -40 to +80 °C without derating
- I/O isolation 3000 VAC reinforced
- Protection against overload, under voltage & short circuit
- IEC/EN/UL 62368-1 approved
- DC-OK (LED) & Remote On/Off function
- 3 year product warranty

Pinout		
Pin	**Single Output**	**Dual Output**
1	Remote	Remote
2	-Vin (GND)	-Vin (GND)
3	+Vin (Vcc)	+Vin (Vcc)
4	-Vout	-Vout
5	NC	Common
6	+Vout	+Vout

TMDC 10 — 10 Watt

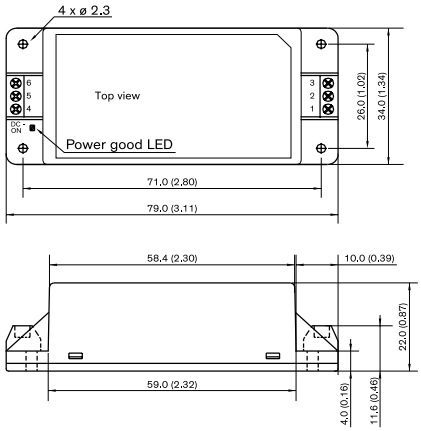


Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 10-2411		5.1 VDC	2'000 mA	84 %
TMDC 10-2412		12 VDC	833 mA	86 %
TMDC 10-2413		15 VDC	666 mA	86 %
TMDC 10-2415	**9 - 36 VDC**	24 VDC	416 mA	86 %
TMDC 10-2418	(24 VDC nom.)	48 VDC	208 mA	84 %
TMDC 10-2422		±12 VDC	416 mA	86 %
TMDC 10-2423		±15 VDC	333 mA	86 %
TMDC 10-2425		±24 VDC	208 mA	85 %
TMDC 10-4811		5.1 VDC	2'000 mA	84 %
TMDC 10-4812		12 VDC	833 mA	86 %
TMDC 10-4813		15 VDC	666 mA	86 %
TMDC 10-4815	**18 - 75 VDC**	24 VDC	416 mA	86 %
TMDC 10-4818	(48 VDC nom.)	48 VDC	208 mA	84 %
TMDC 10-4822		±12 VDC	416 mA	86 %
TMDC 10-4823		±15 VDC	333 mA	86 %
TMDC 10-4825		±24 VDC	208 mA	85 %

- 3.11 x 1.34 x 0.87” package
- EN 55035 (EMC) & EN 55032 class A (EMI)
- Ultra-wide 4:1 input (9-36 & 18-75 VDC)
- Operating temperature range -40 to +80°C without derating
- I/O isolation 3000 VDC
- Protection against overload, under voltage & short circuit
- DC-OK (LED) & remote on/off
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

Pinout		
Pin	**Single Output**	**Dual Output**
1	Remote	Remote
2	-Vin (GND)	-Vin (GND)
3	+Vin (Vcc)	+Vin (Vcc)
4	-Vout	-Vout
5	NC	Common
6	+Vout	+Vout

TMDC 10H — 10 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 10-7211H	**80 - 160 VDC** (110 VDC nom.)	5.1 VDC	2000 mA	83 %
TMDC 10-7212H		12 VDC	833 mA	85 %
TMDC 10-7213H		15 VDC	666 mA	85 %
TMDC 10-7215H		24 VDC	416 mA	85 %
TMDC 10-7218H		48 VDC	208 mA	83 %
TMDC 10-7222H		±12 VDC	±416 mA	85 %
TMDC 10-7223H		±15 VDC	±333 mA	85 %
TMDC 10-7225H		± 24 VDC	±208 mA	84 %

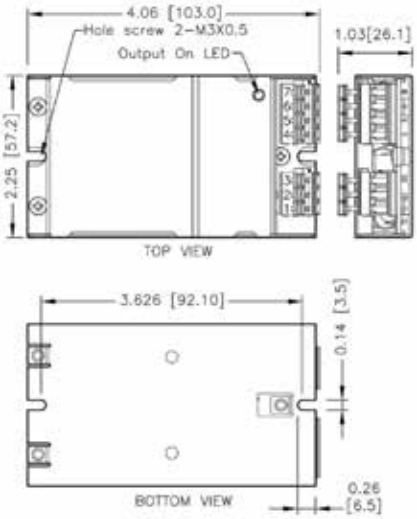
- 3.11 x 1.34 x 0.87” package
- Wide 2:1 input range (80-160 VDC)
- EN 55035 (EMC) & EN 55032 class A (EMI)
- Wide 2:1 input range
- Operating temperature range -40 to +87°C without derating
- Reinforced I/O isolation 3000 VAC
- Protection against overload, under voltage & short circuit
- IEC/EN/UL 62368-1 approved
- DC-OK (LED) & remote on/off function
- 3 year product warranty

Pinout

Pin	Single Output	Dual Output
1	Remote	Remote
2	-Vin (GND)	-Vin (GND)
3	+Vin (Vcc)	+Vin (Vcc)
4	-Vout	-Vout
5	NC	Common
6	+Vout	+Vout

TEQ 20WIR — 20 Watt

EN 50155 / EN 61373 Approved



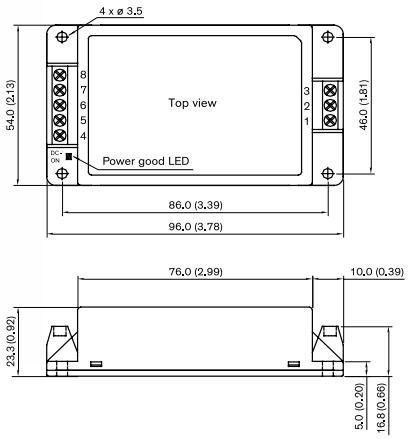
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEQ 20-2411WIR	**9 - 36 VDC** (24 VDC nom.)	5 VDC	4000 mA	87 %
TEQ 20-2412WIR		12 VDC	1670 mA	88 %
TEQ 20-2413WIR		15 VDC	1330 mA	87 %
TEQ 20-2415WIR		24 VDC	833 mA	87 %
TEQ 20-2422WIR		±12 VDC	833 mA	87 %
TEQ 20-2423WIR		±15 VDC	667 mA	88 %
TEQ 20-4811WIR	**18 - 75 VDC** (48 VDC nom.)	5 VDC	4500 mA	87 %
TEQ 20-4812WIR		12 VDC	1670 mA	88 %
TEQ 20-4813WIR		15 VDC	1330 mA	88 %
TEQ 20-4815WIR		24 VDC	833 mA	87 %
TEQ 20-4822WIR		±12 VDC	833 mA	87 %
TEQ 20-4823WIR		±15 VDC	667 mA	88 %
TEQ 20-7211WIR	**43 - 160 VDC** (110 VDC nom.)	5 VDC	4500 mA	86 %
TEQ 20-7212WIR		12 VDC	1670 mA	87 %
TEQ 20-7213WIR		15 VDC	1330 mA	87 %
TEQ 20-7215WIR		24 VDC	833 mA	87 %
TEQ 20-7222WIR		±12 VDC	833 mA	87 %
TEQ 20-7223WIR		±15 VDC	667 mA	88 %

- 4.06 x 2.25 x 1.03” package
- Temperature range -40°C to +93°C
- Ultra-wide 4:1 input voltage range
- Excellent efficiency up to 88%
- Input filter meet EN 55032 class B
- IEC/EN/UL 62368-1 approved
- I/O isolation 2250 VDC
- Under voltage lock-out circuit
- High power block with excellent thermal convection
- Protection against overload, under voltage & short circuit
- Output LED indicator
- 3 year product warranty

Pinout

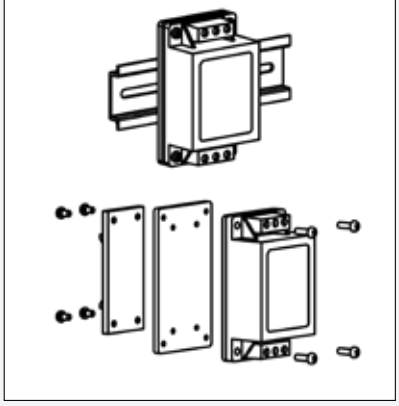
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin (GND)	-Vin (GND)
3	NC	NC
4	NC	-Vout
5	-Vout	Common
6	+Vout	Common
7	NC	+Vout

TMDC 20 — 20 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 20-2411	**9 - 36 VDC** (24 VDC nom.)	5.1 VDC	4'000 mA	90 %
TMDC 20-2412		12 VDC	1'670 mA	91 %
TMDC 20-2415		24 VDC	835 mA	91 %
TMDC 20-2418		48 VDC	420 mA	89 %
TMDC 20-4811	**18 - 75 VDC** (48 VDC nom.)	5.1 VDC	4'000 mA	90 %
TMDC 20-4812		12 VDC	1'670 mA	91 %
TMDC 20-4815		24 VDC	835 mA	91 %
TMDC 20-4818		48 VDC	420 mA	89 %

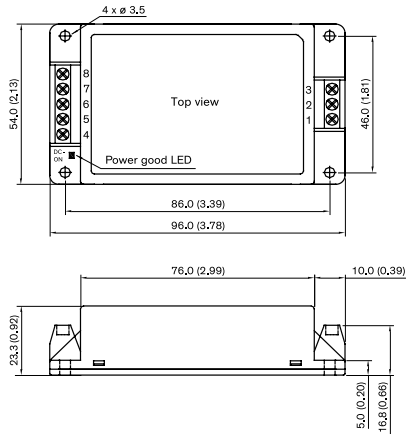
TMP-MK1: Optional DIN Rail Mopunting Clip



- 3.78 x 1.81 x 0.92” package
- Ultra-wide 4:1 input voltage range
- Temperature range -40°C to +90°C
- I/O isolation 2500 VDC
- Excellent efficiency up to 91 %
- EN 55032 class B filter
- Optional DIN-Rail mount adapter
- No minimum load required
- DC-OK (LED) & Remote On/Off
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

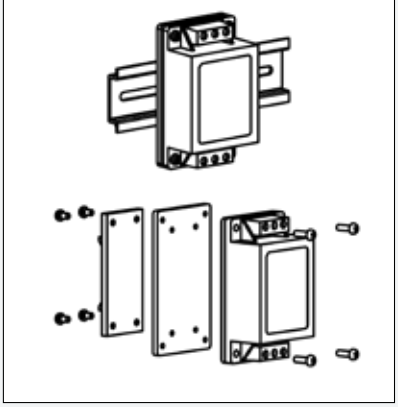
Pinout	
Pin	**Function**
1	Remote
2	-Vin (GND)
3	+Vin (Vcc)
4	NC
5	-Vout
6	NC
7	+Vout
8	NC

TMDC 20H — 20 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 20-7211H	**80 - 160 VDC** (110 VDC nom.)	5.1 VDC	4000 mA	87 %
TMDC 20-7212H		12 VDC	1670 mA	88 %
TMDC 20-7213H		15 VDC	1340 mA	88 %
TMDC 20-7215H		24 VDC	830 mA	88 %
TMDC 20-7218H		48 VDC	420 mA	86 %
TMDC 20-7222H		±12 VDC	±830 mA	87 %
TMDC 20-7223H		±15 VDC	±670 mA	87 %
TMDC 20-7225H		± 24 VDC	±420 mA	87 %

TMP-MK1: Optional DIN Rail Mopunting Clip

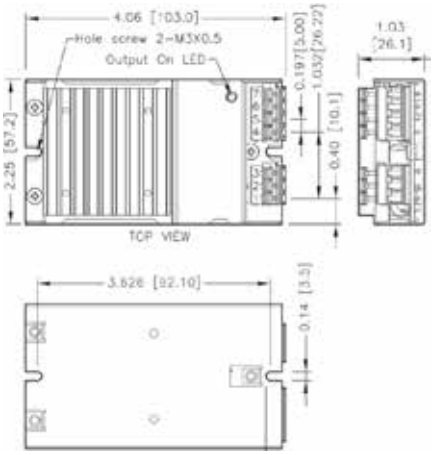


- 3.78 x 2.13 x 0.92” package
- Wide 2:1 input range (80-160 VDC)
- EN 55035 (EMC) & EN 55032 class A (EMI)
- Wide 2:1 input range
- Operating temperature range -40 to +95 °C
- Reinforced I/O isolation 3000 VAC
- Protection against overload, under voltage & short circuit
- IEC/EN/UL 62368-1 approved
- DC-OK (LED) & remote on/off function
- 3 year product warranty

Pinout	
Pin	**Function**
1	Remote
2	-Vin (GND)
3	+Vin (Vcc)
4	NC
5	-Vout
6	NC
7	+Vout
8	NC

TEQ 40WIR — 40 Watt

EN 50155 / EN 61373 Approved



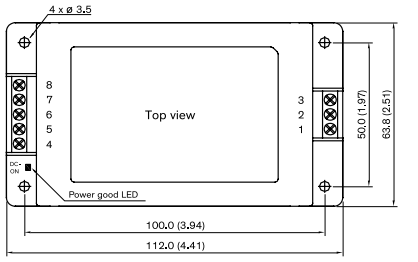
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEQ 40-2411WIR	9 - 36 VDC (24 VDC nom.)	5 VDC	8000 mA	90 %
TEQ 40-2412WIR		12 VDC	3330 mA	91 %
TEQ 40-2413WIR		15 VDC	2670 mA	91 %
TEQ 40-2415WIR		24 VDC	1670 mA	90 %
TEQ 40-2422WIR		±12 VDC	1670 mA	89 %
TEQ 40-2423WIR		±15 VDC	1330 mA	89 %
TEQ 40-2425WIR		±24 VDC	830 mA	90 %
TEQ 40-4811WIR	18 - 75 VDC (48 VDC nom.)	5 VDC	8000 mA	90 %
TEQ 40-4812WIR		12 VDC	3330 mA	91 %
TEQ 40-4813WIR		15 VDC	2670 mA	91 %
TEQ 40-4815WIR		24 VDC	1670 mA	90 %
TEQ 40-4822WIR		±12 VDC	1670 mA	89 %
TEQ 40-4823WIR		±15 VDC	1330 mA	89 %
TEQ 40-4825WIR		±24 VDC	830 mA	90 %
TEQ 40-7211WIR	43 - 160 VDC (110 VDC nom.)	5 VDC	8000 mA	88 %
TEQ 40-7212WIR		12 VDC	3330 mA	90 %
TEQ 40-7213WIR		15 VDC	2670 mA	90 %
TEQ 40-7215WIR		24 VDC	1670 mA	89 %
TEQ 40-7222WIR		±12 VDC	1670 mA	88 %
TEQ 40-7223WIR		±15 VDC	1330 mA	88 %
TEQ 40-7225WIR		±24 VDC	830 mA	90 %

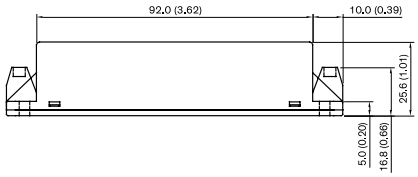
- 4.06 x 2.25 x 1.03” package
- -40°C to +92° operating temperature
- Ultra-wide 4:1 input voltage range
- IEC/EN/UL 62368-1 approved
- Excellent efficiency up to 91%
- Input filter meet EN 55032, class B
- I/O isolation of 3000 VDC
- Under voltage lock-out circuit
- High power block with excellent thermal convection
- Protection against overvoltage, overtemperature & short circuit
- Output LED indicator
- 3 year product warranty

Pinout

Pin	Single Output	Dual Output
1	+Vin	+Vin
2	-Vin (GND)	-Vin (GND)
3	NC	NC
4	NC	-Vout
5	-Vout	Common
6	+Vout	Common
7	NC	+Vout

TMDC 40 — 40 Watt





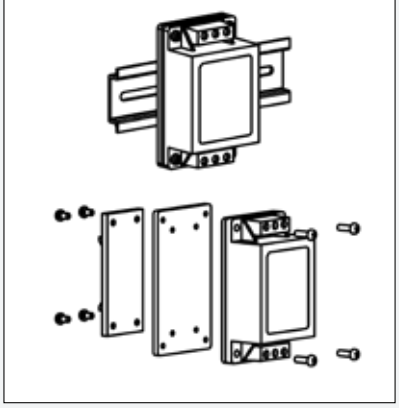
Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 40-2411	9 - 36 VDC (24 VDC nom.)	5.1 VDC	8'000 mA	90 %
TMDC 40-2412		12 VDC	3'330 mA	90 %
TMDC 40-2415		24 VDC	1'670 mA	90 %
TMDC 40-2418		48 VDC	835 mA	89 %
TMDC 40-4811	18 - 75 VDC (48 VDC nom.)	5.1 VDC	8'000 mA	89 %
TMDC 40-4812		12 VDC	3'330 mA	91 %
TMDC 40-4815		24 VDC	1'670 mA	92 %
TMDC 40-4818		48 VDC	835 mA	90 %

- 4.41 x 2.51 x 1.01” package
- Ultra-wide 4:1 input voltage range
- Temperature range -40°C to +85°C
- I/O isolation 2500 VDC
- Excellent efficiency up to 92 %
- EN 55032 class A filter
- Optional DIN-Rail mount adapter
- No minimum load required
- DC OK LED & remote on/off function
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

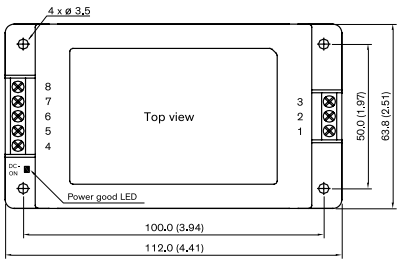
Pinout

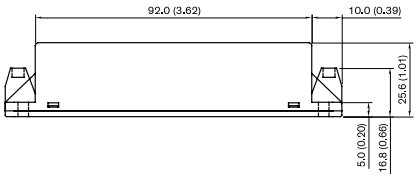
Pin	Function
1	Remote
2	-Vin (GND)
3	+Vin (Vcc)
4	+Vout
5	NC
6	-Vout
7	NC
8	NC

TMP-MK2: Optional DIN Rail Mopunting Clip



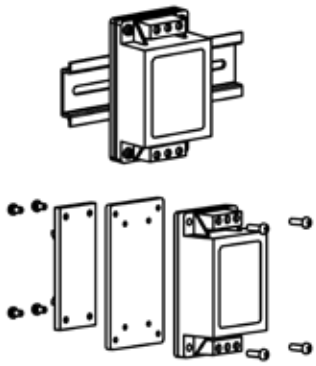
TMDC 40H — 40 Watt





Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 40-7211H	80 - 160 VDC (110 VDC nom.)	5.1 VDC	8000 mA	87 %
TMDC 40-7212H		12 VDC	3330 mA	89 %
TMDC 40-7213H		15 VDC	2670 mA	89 %
TMDC 40-7215H		24 VDC	1670 mA	89 %
TMDC 40-7218H		48 VDC	840 mA	87 %
TMDC 40-7222H		±12 VDC	±1670 mA	89 %
TMDC 40-7223H		±15 VDC	±1330 mA	89 %
TMDC 40-7225H		± 24 VDC	±830 mA	87 %

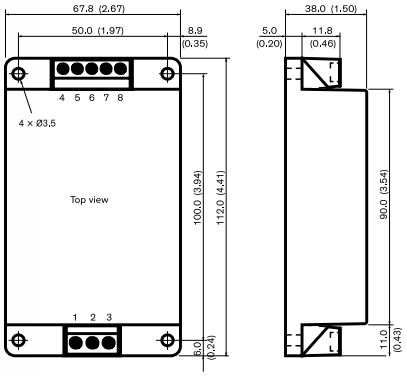
TMP-MK2: Optional DIN Rail Mopunting Clip



- 4.41 x 2.51 x 1.01” package
- Wide 2:1 input range (80-160 VDC)
- EN 55035 (EMC & EN 55032 class B (EMI)
- Temperature range -40 to +90 °C
- Reinforced I/O isolation 3000 VAC
- Overload, under voltage & short circuit protection
- IEC/EN/UL 62368-1 approved
- DC-OK (LED) & remote on/off function
- Optional DIN-Rail mount adapter
- 3 year product warranty

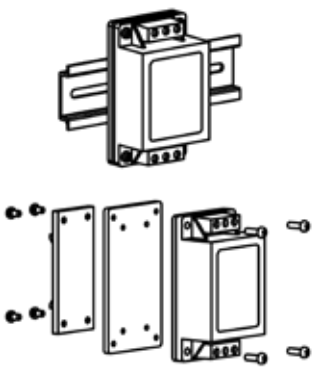
Pinout	
Pin	Function
1	Remote
2	-Vin (GND)
3	+Vin (Vcc)
4	+Vout
5	NC
6	-Vout
7	NC
8	NC

TMDC 60 — 60 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 60-2411	9 - 36 VDC (24 VDC nom.)	5.1 VDC	12'000 mA	90 %
TMDC 60-2412		12 VDC	5'000 mA	91 %
TMDC 60-2415		24 VDC	2'500 mA	91 %
TMDC 60-2418		48 VDC	1'250 mA	91 %
TMDC 60-4811	18 - 75 VDC (48 VDC nom.)	5.1 VDC	12'000 mA	91 %
TMDC 60-4812		12 VDC	5'000 mA	92 %
TMDC 60-4815		24 VDC	2'500 mA	91 %
TMDC 60-4818		48 VDC	1'250 mA	91 %

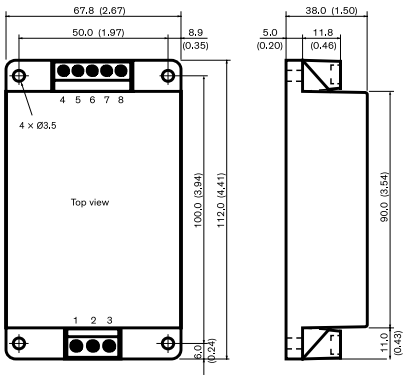
TMP-MK2: Optional DIN Rail Mopunting Clip



- 4.41 x 2.67 x 1.50” package
- Ultra-wide 4:1 input voltage range
- Operating temperature range -40°C to +85°C
- I/O isolation 2500 VDC
- Excellent efficiency up to 92 %
- EN 55032 class A filter
- Optional DIN-Rail mount adapter
- DC-OK (LED) & remote on/off function
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

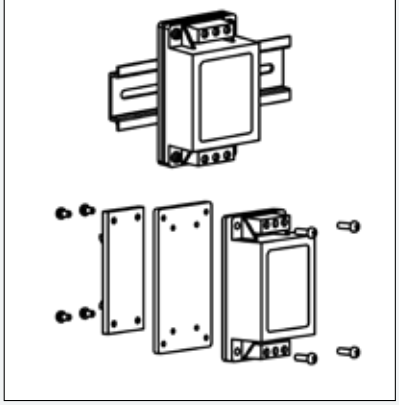
Pinout	
Pin	Function
1	Remote
2	-Vin (GND)
3	+Vin (Vcc)
4	NC
5	+Vout
6	NC
7	-Vout
8	NC

TMDC 60H — 60 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TMDC 60-7211H	80 - 160 VDC (110 VDC nom.)	5.1 VDC	12000 mA	88 %
TMDC 60-7212H		12 VDC	5000 mA	89 %
TMDC 60-7213H		15 VDC	4000 mA	89 %
TMDC 60-7215H		24 VDC	2500 mA	88 %
TMDC 60-7218H		48 VDC	1250 mA	88 %
TMDC 60-7222H		±12 VDC	±2500 mA	88 %
TMDC 60-7223H		±15 VDC	±2000 mA	88 %
TMDC 60-7225H		± 24 VDC	±1250 mA	88 %

TMP-MK2: Optional DIN Rail Mopunting Clip

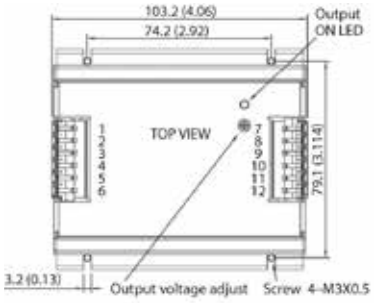


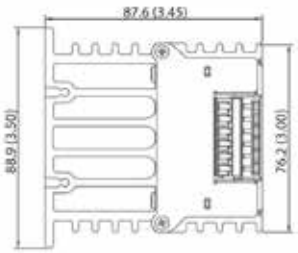
- 4.41 x 2.67 x 1.50” package
- Wide 2:1 input range (80-160 VDC)
- EN 55035 (EMC) & EN 55032 class B (EMI)
- Temperature range -40 to +90 °C
- Reinforced I/O isolation 3000 VAC
- Overload, under voltage & short circuit protection
- IEC/EN/UL 62368-1 approved
- DC-OK (LED) & remote on/off function
- Optional DIN-Rail mount adapter
- 3 year product warranty

Pinout	
Pin	Function
1	Remote
2	-Vin (GND)
3	+Vin (Vcc)
4	NC
5	+Vout
6	NC
7	-Vout
8	NC

TEQ 100WIR — 100 Watt

EN 50155 / EN 61373 Approved





Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency typ.
TEQ 100-2412WIR	10 - 36 VDC (24 VDC nom.)	12 VDC	8400 mA	90 %
TEQ 100-2415WIR		24 VDC	4200 mA	90 %
TEQ 100-2416WIR		28 VDC	3600 mA	90 %
TEQ 100-2418WIR		48 VDC	2100 mA	90 %
TEQ 100-4812WIR	19 - 75 VDC (48 VDC nom.)	12 VDC	8400 mA	90 %
TEQ 100-4815WIR		24 VDC	4200 mA	90 %
TEQ 100-4816WIR		28 VDC	3600 mA	90 %
TEQ 100-4818WIR		48 VDC	2100 mA	90 %
TEQ 100-7212WIR	43 - 160 VDC (110 VDC nom.)	12 VDC	8400 mA	89 %
TEQ 100-7215WIR		24 VDC	4200 mA	90 %
TEQ 100-7216WIR		28 VDC	3600 mA	90 %
TEQ 100-7218WIR		48 VDC	2100 mA	90 %

- 4.06 x 3.45 x 3.11” package
- -40°C to +85°C without derating
- Shock & vibration resistant
- Ultra-wide 4:1 input voltage range
- IEC/EN/UL 62368-1 approved
- High power block, excellent thermal convection
- Input filter meet EN 55032, class A
- I/O isolation 1591 VAC
- Under voltage lock-out & soft start circuit
- 3 year product warranty

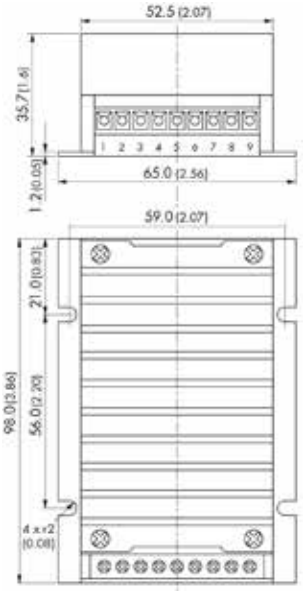
Pin Connection	
Terminal	Pin Function
1, 2	-Vin
3	NC
4	On/Off Ctrl
5, 6	+Vin
7, 8	-Vout
9	-Sense*
10	+Sense*
11, 12	+Vout

* Sense line to be connected to the output either at the module or at the load under regard of polarity.
• The current rating of the terminal block is 15 A/pole.
• Using 2 poles in parallel if the peak output current can exceed 15 A.
• Wire size shall be selected to Withstand the peak output current (Iout max + Current limitation).

DC/DC: Isolated Chassis Mount

TEP 150WI — 150 Watt

EN 50155 / EN 61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TEP 150-2412WI	9 - 36 VDC (24 VDC nom.)	12 VDC	12'500 mA	86 %
TEP 150-2413WI		15 VDC	10'000 mA	86 %
TEP 150-2415WI		24 VDC	6300 mA	87 %
TEP 150-2416WI		28 VDC	5400 mA	87 %
TEP 150-2418WI		48 VDC	3200 mA	86 %
TEP 150-4812WI	18 - 36 VDC (24 VDC nom.)	12 VDC	12'500 mA	88 %
TEP 150-4813WI		15 VDC	10'000 mA	89 %
TEP 150-4815WI		24 VDC	6300 mA	89 %
TEP 150-4816WI		28 VDC	5400 mA	89 %
TEP 150-4818WI		48 VDC	3200 mA	88 %
TEP 150-7212WI	36 - 75 VDC (48 VDC nom.)	12 VDC	12'500 mA	88 %
TEP 150-7213WI		15 VDC	10'000 mA	89 %
TEP 150-7215WI		24 VDC	6300 mA	89 %
TEP 150-7216WI		28 VDC	5400 mA	89 %
TEP 150-7218WI		48 VDC	3200 mA	88 %

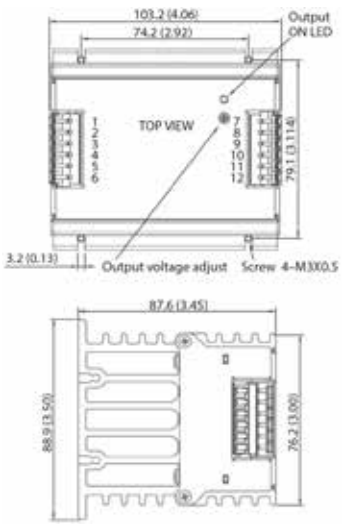
- 3.86 x 2.56 x 1.60” package
- Ultra-wide 4:1 input voltage ranges
- IEC/EN/UL 62368-1 approved
- Very high efficiency up to 89%
- Constant current output characteristic for battery load applications
- Optional EN 55032 class B filter
- -40°C to +75°C temperature range:
- Under voltage lock-out, overtemperature & reverse input protection
- Easy chassis & wall mounting
- 3 year product warranty

Pinout

Pin	Function
1	+ Vin
2	+ Vin
3	- Vin
4	- Vin
5	Remote
6	+ Vout
7	- Vout
8	Trim
9	Trim

TEQ 160WIR — 160 Watt

EN 50155 / EN 61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency typ.
TEQ 160-4812WIR	19 - 75 VDC (48 VDC nom.)	12 VDC	13'000 mA	90 %
TEQ 160-4815WIR		24 VDC	6500 mA	90 %
TEQ 160-4816WIR		28 VDC	5500 mA	90 %
TEQ 160-4818WIR		48 VDC	3200 mA	90 %
TEQ 160-7212WIR	43 - 160 VDC (110 VDC nom.)	12 VDC	15'000 mA	89 %
TEQ 160-7215WIR		24 VDC	7500 mA	89 %
TEQ 160-7216WIR		28 VDC	6500 mA	89 %
TEQ 160-7218WIR		48 VDC	3800 mA	89 %

- 4.06 x 3.45 x 3.11” package
- -40°C to +85°C without derating
- Shock & vibration resistant
- Ultra-wide 4:1 input voltage range
- IEC/EN/UL 62368-1 approved
- High power block, excellent thermal convection
- Input filter meet EN 55032, class A
- I/O isolation 1591 VAC
- Under voltage lock-out & soft start circuit
- 3 year product warranty

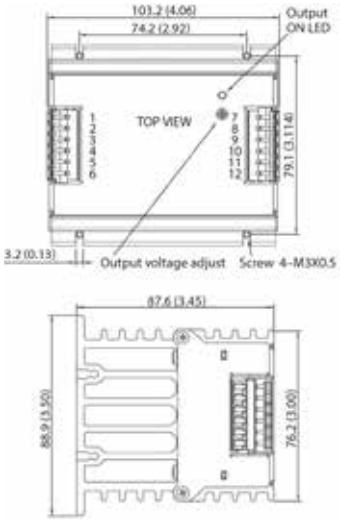
Pin Connection

Terminal	Pin Function
1, 2	-Vin
3	NC
4	On/Off Ctrl
5, 6	+Vin
7, 8	-Vout
9	-Sense*
10	+Sense*
11, 12	+Vout

* Sense line to be connected to the output either at the module or at the load under regard of polarity.
• The current rating of the terminal block is 15 A/pole.
• Using 2 poles in parallel if the peak output current can exceed 15 A.
• Wire size shall be selected to Withstand the peak output current (Iout max + Current limitation).

TEQ 200WIR — 200 Watt

EN 50155 / EN 61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency typ.
TEQ 200-4812WIR	**19 - 75 VDC** (48 VDC nom.)	12 VDC	18'000 mA	89 %
TEQ 200-4815WIR		24 VDC	9000 mA	89 %
TEQ 200-4816WIR		28 VDC	7500 mA	90 %
TEQ 200-4818WIR		48 VDC	4500 mA	89 %
TEQ 200-7212WIR	**43 - 160 VDC** (110 VDC nom.)	12 VDC	20'000 mA	88 %
TEQ 200-7215WIR		24 VDC	10'000 mA	88 %
TEQ 200-7216WIR		28 VDC	8500 mA	89 %
TEQ 200-7218WIR		48 VDC	5000 mA	88 %

Pin Connection

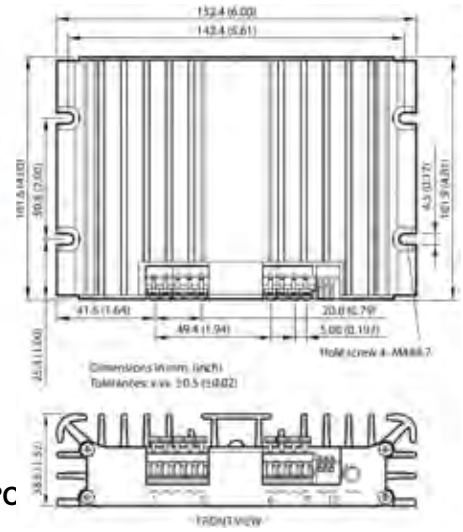
Terminal	Pin Function
1, 2	-Vin
3	NC
4	On/Off Ctrl
5, 6	+Vin
7, 8	-Vout
9	-Sense*
10	+Sense*
11, 12	+Vout

- 4.06 x 3.45 x 3.11” package
- -40°C to +85°C without derating
- Shock & vibration resistant
- Ultra-wide 4:1 input voltage range
- IEC/EN/UL 62368-1 approved
- High power block, excellent thermal convection
- Input filter meet EN 55032, class A
- I/O isolation 1591 VAC
- Under voltage lock-out & soft start circuit
- 3 year product warranty

* Sense line to be connected to the output either at the module or at the load under regard of polarity.
• The current rating of the terminal block is 15 A/pole.
• Using 2 poles in parallel if the peak output current can exceed 15 A.
• Wire size shall be selected to Withstand the peak output current (Iout max + Current limitation).

TEQ 300WIR — 300 Watt

EN 50155 / EN 61373 Approved



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency typ.
TEQ 300-4812WIR	**19 - 75 VDC** (48 VDC nom.)	12 VDC	25'000 mA	89 %
TEQ 300-4815WIR		24 VDC	12'500 mA	92 %
TEQ 300-4816WIR		28 VDC	10'800 mA	91 %
TEQ 300-4818WIR		48 VDC	6300 mA	92 %
TEQ 300-7212WIR	**43 - 160 VDC** (110 VDC nom.)	12 VDC	25'000 mA	89 %
TEQ 300-7215WIR		24 VDC	12'500 mA	91 %
TEQ 300-7216WIR		28 VDC	10'800 mA	91 %
TEQ 300-7218WIR		48 VDC	6300 mA	92 %

Pin Connection

Terminal	Pin Function
1, 2	+Vin
3, 4	-Vin (GND)
5	On/Off Ctrl
6, 7	+Vout
8, 9	-Vout
10	+Sense*
11	LS (Loadshare)
12	-Sense*

- 6.00 x 4.00 x 1.52” package
- Temperature range-40°C to +80°C
- Shock & vibration resistant
- Ultra-wide 4:1 input voltage range
- EN 50155 / EN 61373 approval railway applications
- IEC/EN/UL 62368-1 approved
- High power block, excellent thermal convection
- Constant current characteristic for battery loads
- Power sharing (up to 3 pcs in parallel)
- Input filter meet EN 55032, class A
- Under voltage lock-out circuit

* Sense line to be connected to the output either at the module or at the load under regard of polarity.
• Wire size shall be selected to Withstand the peak current (Iout max + Current limitation).

Surge | Filter for Railway Systems

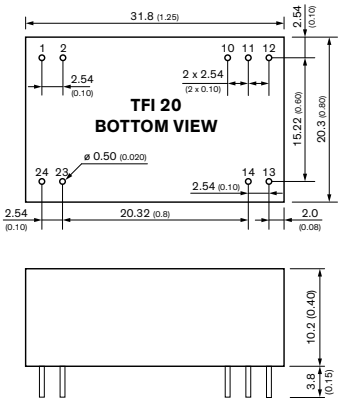
RIA12 - More aggressive than EN 50155,
1.5x for up to 1s - 3.5x for up to 20ms

Protection from potential surge sources such as:

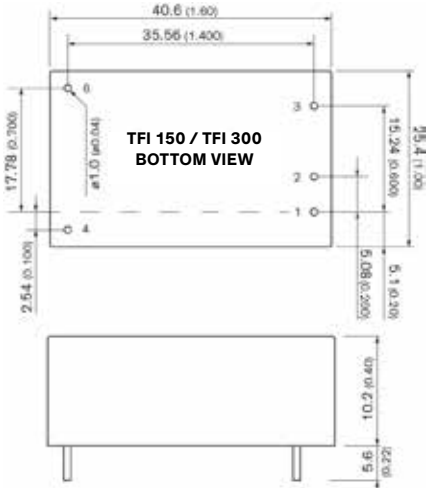
- Switchover between neutral & energized zones
- Arcing from momentary loss of contact
- Change from coasting to traction mode
- Lightning strikes
- Opening/Closing main switch
- Operations on the electrical grid

TFI — 20-300 Watt (RIA12 Surge | Filter Modules)

EN 50155 / EN 61373 Approved



Model	Input voltage	Power max.
TFI 20	43-160 VDC	20 W
TFI 150	43-160 VDC	150 W
TFI 300	43-160 VDC	300 W



Pin-Out	
Pin	Function
1	+Vin
2	+Vin
10	+Vout
11	+Vout
12	+Vout
13	– Vout
14	– Vout
23	– Vin
24	– Vin

Pinout			
Pin	Function	Pin	Function
1	+Vin	4	+Vout
2	NC	6	- Vout
3	- Vin		

- Clamps over voltage transients (up to 385 VDC) at 168 VDC
- Use with any DC/DC converter
- Complies with RIA12, NF F 01-510 Surge susceptibilities
- Wide 43-160 VDC input range
- Brownout voltage 36 VDC min.
- -40°C to +95°C temperature range
- 3 year product warranty

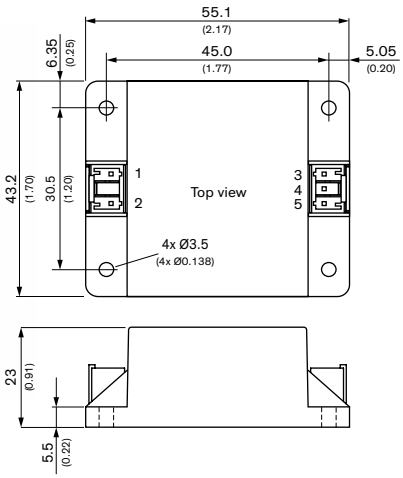
AC/DC: Encapsulated Chassis Mount

SERIES	WATTS	DESCRIPTION	STATUS	APPS	PAGE
TMPW 5-J	5	2.17 × 1.08 × 0.91" package, 90-305 VAC input, 4000 VAC isolation	ACTIVE		116
TIW 06	6	2.2" × 2.2" package, 4000 VAC isolation, household, flush box mounting (IP67)	ACTIVE		116
TMPW 10-J	10	2.17 × 1.08 × 0.91" package, 90-305 VAC input, 4000 VAC isolation	ACTIVE		117
TIW 12	12	2.2" × 2.2" package, 4000 VAC isolation, household, flush box mounting (IP67)	ACTIVE		117
TMP 15-C	15	4.41 × 2.51 × 1.01" package, 85-264 VAC input, 3000 VAC isolation	ACTIVE		118
TPP 15-J	15	2.82 × 1.14 × 0.82" package, 4000 VAC isolation	ACTIVE		118
TML 20-C	20	3.78 × 2.15 × 1.09" package, 90-264 VAC input, 3000 VAC isolation	ACTIVE		119
TIW 24	24	2.2" × 2.2" package, 4000 VAC isolation, household, flush box mounting (IP67)	ACTIVE		119
TMM 24-C	24	3.78 × 2.13 × 0.92" package, 85-264 VAC input, 4000 VAC isolation	ACTIVE		120
TMW 24	24	2.09" × 2.0", 4000 VAC isolation, household/medical, 2×MOPP, flush box mount (IP68)	NEW		120
TMPW 25-J	25	3.48 × 1.50 × 0.95" package, 90-305 VAC input, 4000 VAC isolation	ACTIVE		121
TMP 30-C	30	4.41 × 2.51 × 1.01" package, 85-264 VAC input, 3000 VAC isolation	ACTIVE		121
TPP 30-J	30	3.95 × 1.50 × 1.00" package, 4000 VAC isolation	NEW		122
TMW 36	36	2.09" × 2.0", 4000 VAC isolation, household/medical, 2×MOPP, flush box mount (IP68)	NEW		122
TML 40-C	40	4.41 × 2.50 × 1.25" package, 90-264 VAC input, 3000 VAC isolation	ACTIVE		123
TMM 40-C	40	4.41 × 2.51 × 1.34" package, 85-264 VAC input, 4000 VAC isolation	ACTIVE		123
TPP 40E-J	40	4.3" × 2.2" package, 4000 VAC isolation, medical 2×MOPP, encapsulated, chassis mount	ACTIVE		124
TMPW 50-J	50	3.81 × 1.90 × 1.00" package, 90-305 VAC input, 4000 VAC isolation	NEW		124
TMM 60-C	60	4.41 × 2.67 × 1.50" package, 85-264 VAC input, 4000 VAC isolation	ACTIVE		125
TMP 60-C	60	4.41 × 2.67 × 1.50" package, 85-264 VAC input, 3000 VAC isolation	ACTIVE		125
TPP 65E-J	65	4.3" × 2.2" package, 4000 VAC isolation, medical 2×MOPP, encapsulated, chassis mount	NEW		126
TML 100C	100	5.50 × 2.36 × 1.48" package, 3000 VAC isolation, active PFC	ACTIVE		126

APPS KEY: = EN 60355-1 Approved = UL/EN 60601-1 (2×MOPP) Approved = UL/cUL 508 Listed

TMPW 5-J — 5 Watt

EN 60335-1 Approved



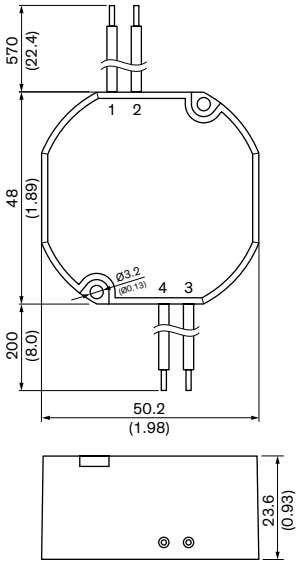
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPW 5-103-J	3.3 VDC	1515 mA	73 %
TMPW 5-105-J	5 VDC	1000 mA	77 %
TMPW 5-112-J	12 VDC	420 mA	81 %
TMPW 5-124-J	24 VDC	210 mA	83 %

- 2.17 x 1.70 x 0.91” package
- Wide 90-305 VAC input voltage range
- IEC/EN/UL 62368-1 approved
- I/O isolation 4000 VAC
- Temperature range -40°C to +70°C
- No load input power <0.1W (ErP ready)
- EMI meets EN 55032 class B
- High efficiency up to 89%
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- 3 year product warranty

Pin Connections	
Pin	**Single**
1	AC (L)
2	AC (N)
3	-Vout
4	NC
5	+Vout

TIW 06 — 6 Watt

EN 60335-1 Approved



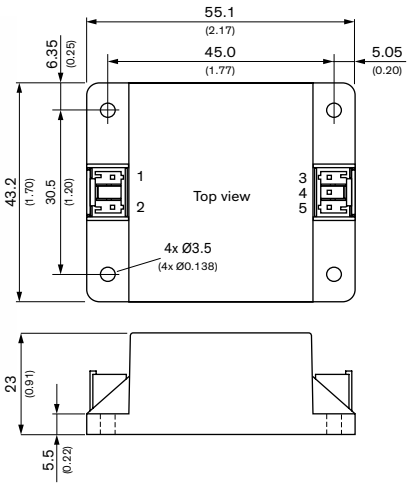
Model	Output Voltage	Output Current	Efficiency typ.
TIW 06-103	3.3 VDC	1.2 A	75%
TIW 06-105	5 VDC	1.0 A	75%
TIW 06-106	6 VDC	1.0 A	80%

- 1.98 x 1.89” package
- Easy installation into flush boxes
- Fully encapsulated plastic housing
- Dust and waterproof to IP 67
- Protection class II
- Approved for mounting onto wood
- Ready to meet ErP directive
- Universal input range 93 to 264 VAC
- Operating temp. -25°C to +50°C
- Short circuit and overload protection
- 3-year product warranty

Pinout				
Pin	**Wire TIW 6/12**	**Wire TIW 24**	**Color**	**Type**
1	AC (N)	Vac IN (N)	Blue	20AWG/0.52mm²
2	AC (L)	Vac IN (L)	Brown	20AWG/0.52mm²
3	–Vout	–Vout	Black	20AWG/0.52mm²
4	+Vout	+Vout	Red	20AWG/0.52mm²

TMPW 10-J — 10 Watt

EN 60335-1 Approved



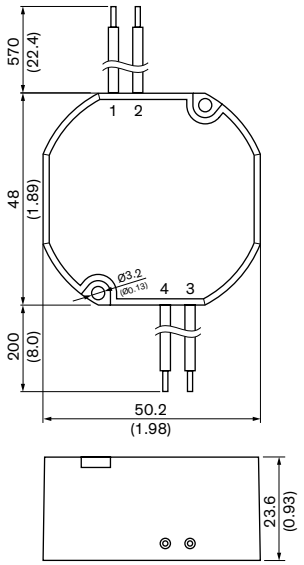
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPW 10-105-J	5 VDC	2000 mA	81 %
TMPW 10-112-J	12 VDC	833 mA	85 %
TMPW 10-115-J	15 VDC	667 mA	86 %
TMPW 10-124-J	24 VDC	417 mA	86 %

- 2.17 x 1.70 x 0.91” package
- Wide 90-305 VAC input voltage range
- IEC/EN/UL 62368-1 approved
- I/O isolation 4000 VAC
- Temperature range -40°C to +70°C
- No load input power <0.1W (ErP ready)
- EMI meets EN 55032 class B
- High efficiency up to 89%
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- 3 year product warranty

Pin Connections	
Pin	**Single**
1	AC (L)
2	AC (N)
3	-Vout
4	NC
5	+Vout

TIW 12 — 12 Watt

EN 60335-1 Approved



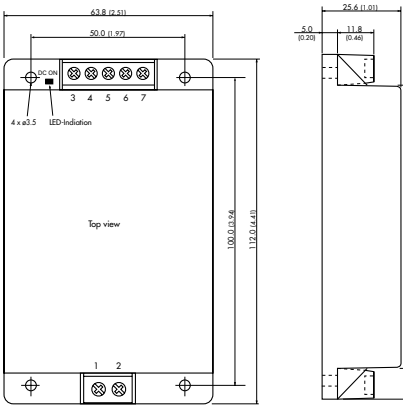
Model	Output Voltage	Output Current	Efficiency typ.
TIW 12-112	12 VDC	1.0 A	80%
TIW 12-115	15 VDC	0.8 A	80%
TIW 12-124	24 VDC	0.5 A	80%

- 1.98 x 1.89” package
- Easy installation into flush boxes
- Fully encapsulated plastic housing
- Dust and waterproof to IP 67
- Protection class II
- Approved for mounting onto wood
- Ready to meet ErP directive
- Universal input range 93 to 264 VAC
- Operating temp. -25°C to +50°C
- Short circuit and overload protection
- 3-year product warranty

Pinout				
Pin	**Wire TIW 6/12**	**Wire TIW 24**	**Color**	**Type**
1	AC (N)	Vac IN (N)	Blue	20AWG/0.52mm²
2	AC (L)	Vac IN (L)	Brown	20AWG/0.52mm²
3	–Vout	–Vout	Black	20AWG/0.52mm²
4	+Vout	+Vout	Red	20AWG/0.52mm²

TMP 15C — 15 Watt

UL/cUL 508 Listed



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMP 15105C	5 VDC	3000 mA	75%
TMP 15112C	12 VDC	1250 mA	79%
TMP 15115C	15 VDC	1000 mA	79%
TMP 15124C	24 VDC	625 mA	79%
TMP 15148C	48 VDC	310 mA	79%
TMP 15212C	±12 VDC	±650 mA	79%
TMP 15215C	±15 VDC	±500 mA	79%
TMP 15252C	5 / 12 VDC	1500 mA / 625 mA	72%
TMP 15512C	5 / ±12 VDC	2000 mA / +200 mA	74%
TMP 15515C	5 / ±15 VDC	2000 mA / ±150 mA	74%

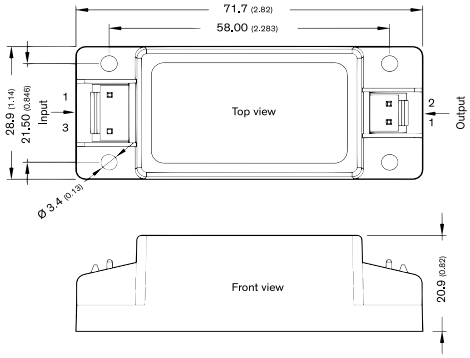
- 4.41 x 2.51 x 1.01” package
- Fully encapsulated (pollution/dust)
- Single-, dual- & triple output models
- DIN-rail mount adaptor (optional)
- Universal input 85-264 VAC, 47-440 Hz
- Protection class II prepared
- IEC/EN/UL 60950-1 approval
- IEC/EN/UL 62368-1 approval
- UI/cUL 508 Listed (single outputs only)
- Overtemperature protection
- Protection against short circuit & overload
- 3 year product warranty

Pin Connections

Pin	Single	Dual (sym)	Dual (asym)	Triple
1	AC (L)	AC (L)	AC (L)	AC (L)
2	AC (N)	AC (N)	AC (N)	AC (N)
3	NC	NC	NC	Vout 3
4	-Vout	Vout 2	-Vout 2	Comm
5	NC	Comm	+Vout 2	Vout 2
6	+Vout	Vout 1	-Vout 1	-Vout 1
7	NC	NC	+Vout 1	+Vout 1

TPP 15-J — 15 Watt

EN 60335-1 Approved
IEC/EN/ES 60601-1 Approved



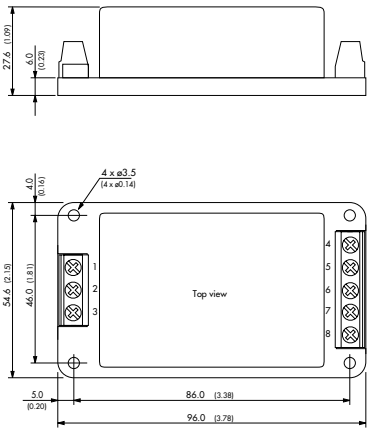
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPP 15-103-J	3.3 VDC	4‘000 mA	84 %
TPP 15-105-J	5 VDC	3‘000 mA	86 %
TPP 15-109-J	9 VDC	1‘670 mA	86 %
TPP 15-112-J	12 VDC	1‘250 mA	87 %
TPP 15-115-J	15 VDC	1‘000 mA	87 %
TPP 15-124-J	24 VDC	625 mA	88 %
TPP 15-136-J	36 VDC	417 mA	88 %
TPP 15-148-J	48 VDC	313 mA	89 %

- 2.82 x 1.14 x 0.82” package
- 2xMOPP / BF Compliant
- <75 µA Leakage (BF Rated)
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance to IPC-A-610 Level 3
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- ErP Ready (no load power <75 mW)
- 5 year product warranty

Pin Connectors

Input		Output	
Pin	Function	Pin	Function
1	Line	1	-Vout
3	Neutral	2	+Vout

TML 20C — 20 Watt



Model	Output Voltage nom.	Output Current max.
TML 20103C	3.3 VDC	4500 mA
TML 20105C	5.0 VDC	4000 mA
TML 20112C	12 VDC	1670 mA
TML 20115C	15 VDC	1340 mA
TML 20124C	24 VDC	840 mA
TML 20205C	±5 VDC	±2000 mA
TML 20212C	±12 VDC	±833 mA
TML 20215C	±12 VDC	±833 mA
TML 20512C	5 VDC / ±12 VDC	2800 mA / ±250 mA
TML 20515C	5 VDC / ±15 VDC	2800 mA / ±200 mA

- 3.78 x 2.15 x 1.09” package
- Single, dual & triple output models
- Universal input 90-264 VAC, 47-440 Hz
- EN 55022, class B & FCC, level B
- IEC/EN/UL 62368-1 approved
- Short circuit & overload protection
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

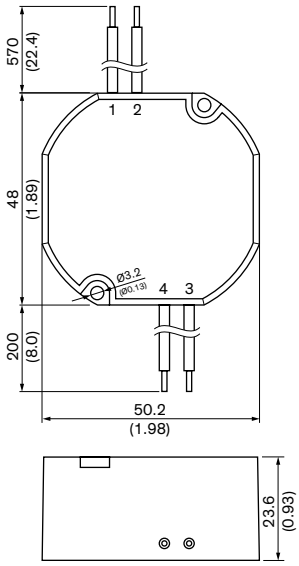
Pin Connections

Pin	Single	Dual	Triple
1	FG	FG	FG
2	AC (N)	AC (N)	AC (N)
3	AC (Line)	AC (Line)	AC (Line)
4	NC	NC	Vout3
5	-Vout	Vout2	Comm
6	NC	Comm	Vou2
7	+Vout	Vout1 1	-Vout1
8	NC	NC	+Vout1

TIW 24 — 24 Watt

Pinout

Pin	Wire TIW 6/12	Wire TIW 24	Color	Type
1	AC (N)	Vac IN (N)	Blue	20AWG/0.52mm²
2	AC (L)	Vac IN (L)	Brown	20AWG/0.52mm²
3	–Vout	–Vout	Black	20AWG/0.52mm²
4	+Vout	+Vout	Red	20AWG/0.52mm²



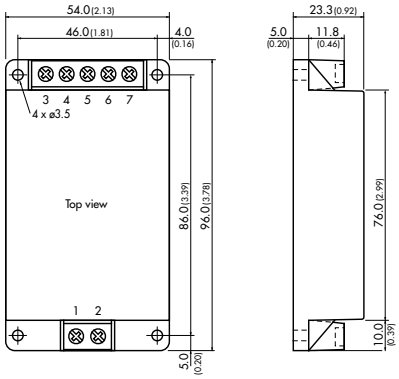
Model	Output Voltage	Output Current	Efficiency typ.
TIW 24-112	12 VDC	2.0 A	83%
TIW 24-124	24 VDC	1.0 A	85%

- 1.98 x 1.89” package
- Easy installation into flush boxes
- Fully encapsulated plastic housing
- Dust and waterproof to IP 67
- Protection class II
- Approved for mounting onto wood
- Ready to meet ErP directive
- Universal input range 93 to 264 VAC
- Operating temp. -25°C to +50°C
- Short circuit and overload protection
- 3-year product warranty

Visit our website for documentation with links to our distributors for pricing and availability

TMM 24C — 24 Watt

IEC/EN/ES 60601-1 Approved
UL/cUL 508 Listed



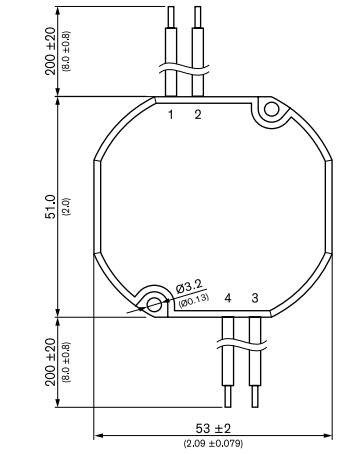
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMM 24105C	5 VDC	3'000 mA	77%
TMM 24112C	12 VDC	2'000 mA	83%
TMM 24115C	15 VDC	1'600 mA	82%
TMM 24124C	24 VDC	1'000 mA	85%
TMM 24212C	+12 VDC / -12 VDC	1'000 mA	84%
TMM 24215C	+15 VDC / -15 VDC	800 mA	84%

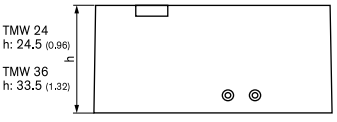
- 3.78 x 2.13 x 0.92” package
- 2xMOPP / BF Compliant
- IEC/EN/UL 62368-1 approved
- IEC/EN/UL 60950-1 approved
- UL 508 (Listed)
- ErP compliant <0.3 W no load power
- Protection class II prepared
- Protection against over-temperature, over-load & short circuit
- 3 year product warranty

Pin Connections		
Pin	Single	Dual
1	AC (N)	AC (N)
2	AC (L)	AC (L)
3	NC	NC
4	-Vout	-Vout
5	NC	Comm
6	+Vout	+Vout

TMW 24 NEW! — 24 Watt

IEC/EN/ES 60601-1 Approved





Model *	Output Voltage nom.	Output Current max.	Efficiency typ.
TMW 24-105	5 VDC	4000 mA	85%
TMW 24-112	12 VDC	2000 mA	85%
TMW 24-124	24 VDC	1000 mA	90%

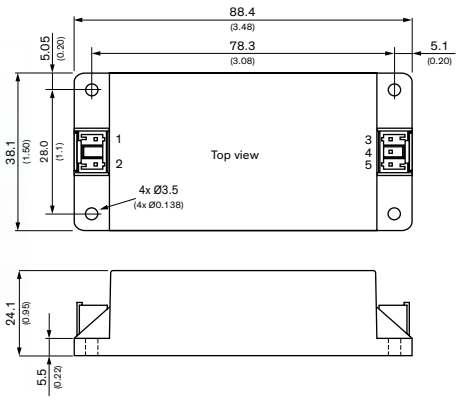
* Also available as pin version: suffix -P

- 2.00 x 2.00” psackage
- IP68 casing with flying leads
- Effortless flush box mounting
- Fire safety for furniture
- <100 µA leakage for BF applications
- –20°C to +80°C temperature range
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product waranty

Pinout / Conecction			
Pin	Wire	Color	Type
1	Vac IN (N)	Blue	20AWG/0.52mm²
2	Vac IN (L)	Brown	20AWG/0.52mm²
3	–Vout	Black	20AWG/0.52mm²
4	+Vout	Red	20AWG/0.52mm²

TMPW 25-J NEW! 25 Watt

EN 60335-1 Approved



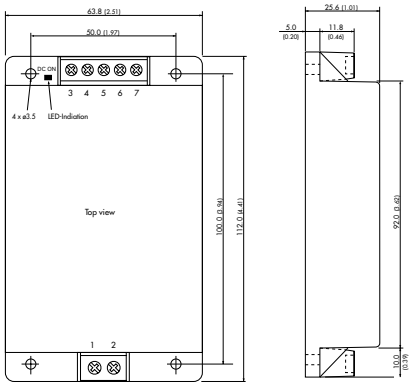
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPW 25-105-J	5.1 VDC	3922 mA	84 %
TMPW 25-112-J	12 VDC	2083 mA	88 %
TMPW 25-115-J	15 VDC	1666 mA	88 %
TMPW 25-124-J	24 VDC	1042 mA	87 %

- 3.48 x 1.50 x 0.95” package
- Wide 90-305 VAC input voltage range
- IEC/EN/UL 62368-1 approved
- I/O isolation 4000 VAC
- Temperature range -40° to +70°C
- No load input power <0.1W (Erp Ready)
- EMI meets EN 55032 class B
- High efficiency up to 89%
- Protection class II prepared
- 3 year product warranty

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

TMP 30C 30 Watt

UL/cUL 508 Listed



Model	Output Voltage nom.	Output Current max.	Eff typ.
TMP 30105C	5 VDC	6000 mA	78%
TMP 30112C	12 VDC	2500 mA	80%
TMP 30115C	15 VDC	2000 mA	80%
TMP 30124C	24 VDC	1250 mA	80%
TMP 30148C	48 VDC	625 mA	80%
TMP 30212C	±12 VDC	±1300 mA	80%
TMP 30215C	±15 VDC	±1000 mA	80%
TMP 30252C	5.0 VDC / ±12 VDC	3000 mA2) / ±1250 mA	76%
TMP 30316C	3.3 / +5 / +12 VDC	4000 / 1500 / 250 mA	71%
TMP 30317C	5 / +3.3 / +12 VDC	4500 / 1000 / 250 mA	71%
TMP 30512C	5 / ±12 VDC	3000 / ±600 mA	76%
TMP 30515C	5 / ±15 VDC	3000 / ±500 mA	76%
TMP 30522C	5 / ±12 VDC	3000 / +1000 / -250 mA	76%

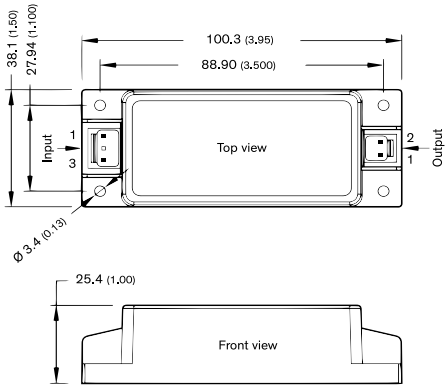
- 4.41 x 2.51 x 1.01” package
- Fully encapsulated (pollution/dust)
- Screw terminal block
- Optional pin-connector on request
- DIN-rail mount adaptor (optional)
- Universal input 85-264 VAC, 47-440 Hz
- Protection class II prepared
- IEC/EN/UL 60950-1 approval
- IEC/EN/UL 62368-1 approval
- UL/cUL 508 listed (single outputs only)
- Over-temperature protection
- Protection against short circuit & overload
- 3 year product warranty

Pin Connections				
Pin	Single	Dual (sym)	Dual (asym)	Triple
1	AC (L)	AC (L)	AC (L)	AC (L)
2	AC (N)	AC (N)	AC (N)	AC (N)
3	+Vout	Vout 1	+Vout 2	Vout2
4	NC	NC	+Vout 1	+Vout 1
5	-Vout	Comm	-Vout2	Comm
6	NC	NC	-Vout 1	-Vout 1
7	NC	Vout 2	NC	Vout 3

Visit our website for documentation with links to our distributors for pricing and availability

TPP 30-J — 30 Watt

EN 60335-1 Approved
IEC/EN/ES 60601-1 Approved

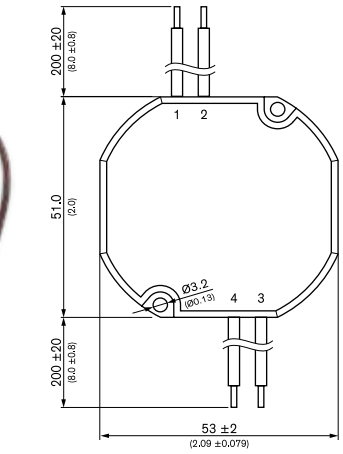


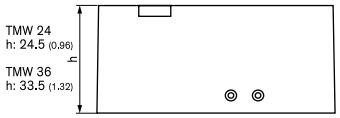
Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 30-103-J	3.3 VDC (2.97 - 3.63 VDC)	6'000 mA	84 %
TPP 30-105-J	5 VDC (4.5 - 5.5 VDC)	6'000 mA	87 %
TPP 30-109-J	9 VDC (8.1 - 9.9 VDC)	3'340 mA	88 %
TPP 30-112-J	12 VDC (10.8 - 13.2 VDC)	2'500 mA	91 %
TPP 30-115-J	15 VDC (13.5 - 16.5 VDC)	2'000 mA	91 %
TPP 30-124-J	24 VDC (21.6 - 26.4 VDC)	1'250 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 %

- 3.95 x 1.50 x 1.00" package
- 2xMOPP / BF Compliant
- <75 µA Leakage (BF rated)
- IEC 60601-1-2 4th edition EMC
- IEC/EN/UL 62368-1 approved
- Protection class II
- ISO 14971 risk management file
- Acceptance criteria to IPC-A-610 Level 3
- Operating up to 5000 m altitude
- ErP Ready (no load power <60 mW)
- 5 year product warranty

TMW 36 NEW! — 36 Watt

IEC/EN/ES 60601-1 Approved





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	88%

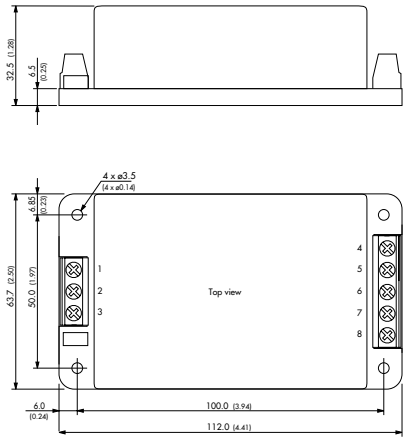
* Also available as pin version: suffix -P

- 2.00 x 2.00" psackage
- IP68 casing with flying leads
- Effortless flush box mounting
- Fire safety for furniture
- <100 µA leakage for BF applications
- –20°C to +80°C temperature range
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product waranty

Pinout / Conecction

Pin	Wire	Color	Type
1	Vac IN (N)	Blue	20AWG/0.52mm²
2	Vac IN (L)	Brown	20AWG/0.52mm²
3	–Vout	Black	20AWG/0.52mm²
4	+Vout	Red	20AWG/0.52mm²

TML 40C — 40 Watt



Model	Output Voltage nom.	Output Current max.
TML 40103C	3.3 VDC	8000 mA
TML 40105C	5.0 VDC	8000 mA
TML 40112C	12 VDC	3333 mA
TML 40115C	15 VDC	2666 mA
TML 40124C	24 VDC	1667 mA
TML 40205C	±5 VDC	±4000 mA
TML 40212C	±12 VDC	±1666 mA
TML 40215C	±15 VDC	±1333 mA
TML 40252C	5 / 12 VDC	5000 mA / 1250 mA
TML 40254C	5 / 24 VDC	5000 mA / 625 mA
TML 40512C	5 / ±12 VDC	5000 mA / ±600 mA
TML 40515C	5 / ±15	5000 mA / ±500 mA

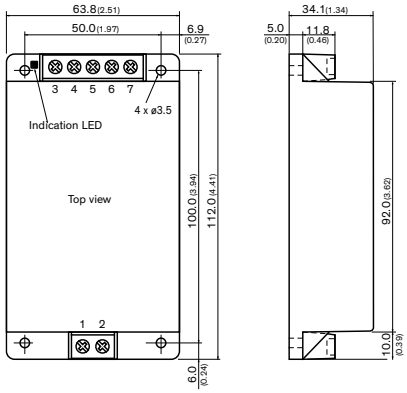
- 4.41 x 2.50 x 1.25” package
- Single, dual & triple outputs
- 90-264 VAC input, 47-440 Hz
- EMI meets EN 55022, class B & FCC, level B
- IEC/EN/UL 62368-1 approved
- Protection class II
- Short circuit & overload protection
- 3 year product warranty

Pin Connections

Pin	Single	Dual (sym)	Dual asym)	Triple
1	NC	NC	NC	NC
2	AC (L)	AC (L)	AC (L)	AC (L)
3	AC (N)	AC (N)	AC (N)	AC (N)
4	+Vout	Vout 1	Vout 2	Vout 2
5	NC	NC	Vout 1	Vout 1
6	-Vout	Comm	-Vout 2	Comm
7	NC	NC	-Vout 1	-Vout 1
8	NC	Vout 2	NC	Vout 3

TMM 40C — 40 Watt

IEC/EN/ES 60601-1 Approved & UL/cUL 508 Listed



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMM 40105C	5 VDC	8'000 mA	81%
TMM 40112C	12 VDC	3'330 mA	84%
TMM 40115C	15 VDC	2'660 mA	85%
TMM 40124C	24 VDC	1'660 mA	84%
TMM 40212C	+12 VDC / -12 VDC	1'660 mA	84%
TMM 40215C	+15 VDC / -15 VDC	1'330 mA	85%

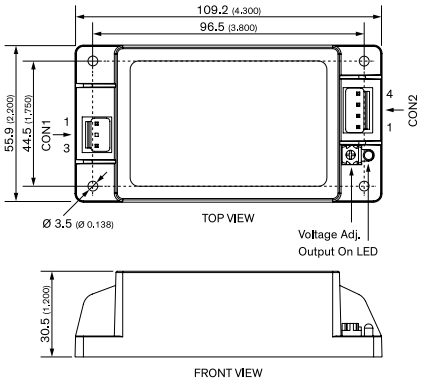
- 4.41 x 2.51 x 1.34” package
- 2xMOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Safety class II prepared
- ErP compliant <0.3 W no load power
- Protection against over-temperature, overload & short circuit
- 3 year product warranty

Pin Connections

Pin	Single	Dual
1	AC (N)	AC (N)
2	AC (L)	AC (L)
3	+Vout	+Vout
4	NC	NC
5	-Vout	Common
6	NC	NC
7	NC	-Vout

TPP 40E-J NEW! 40 Watt

IEC/EN/ES 60601-1 Approved

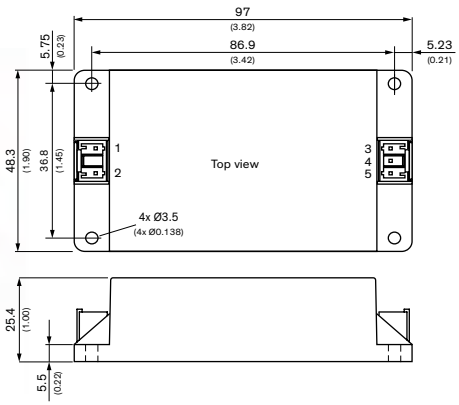


Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 40-105E-J	5 VDC (4.5 – 5.5 VDC)	8000 mA	90%
TPP 40-112E-J	12 VDC (10.8 – 13.2 VDC)	3340 mA	92%
TPP 40-115E-J	15 VDC (13.5 – 16.5 VDC)	2670 mA	92%
TPP 40-124E-J	24 VDC (21.6 – 26.4 VDC)	1670 mA	92%
TPP 40-136E-J	36 VDC (32.4 – 39.6 VDC)	1120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

- 4.30 x 2.20" encapsulated chassis mount
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- IEC/EN/UL 62368-1 approved
- Low leakage current <75 µA
- Rated for BF applications
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IPC-A-610 Level 2 criteria
- Protection class II
- Operating up to 5000m altitude
- Ready to meet ErP directive
- 5-year product warranty

TMPW 50-J 50 Watt

EN 60335-1 Approved



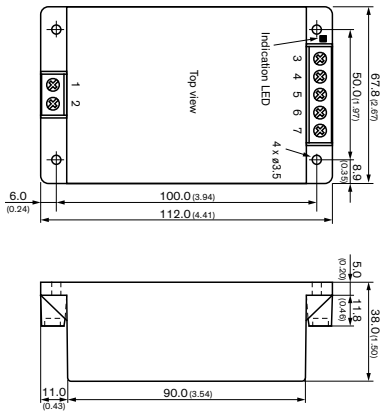
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPW 50-112-J	12 VDC	4167 mA	89 %
TMPW 50-115-J	15 VDC	3333 mA	88 %
TMPW 50-124-J	24 VDC	2083 mA	88 %

- 3.82 x 1.90 x 1.00” package
- 90-305 VAC input range
- IEC/EN/UL 62368-1 approved
- I/O isolation 4000 VAC
- -40°C to +70°C temperature range
- <0.1W no load power (ErP compliant)
- High efficiency up to 89%
- Internal EN55032 class B filter
- Protection class II prepared
- 3 year product warranty

Pin Connections	
Pin	**Single**
1	AC (N)
2	AC (L)
3	-Vout
4	NC
5	+Vout

TMM 60C — 60 Watt

IEC/EN/ES 60601-1 Approved
UL/cUL 508 Listed



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMM 60105C	5.1 VDC	10'000 mA	84%
TMM 60112C	12 VDC	5'000 mA	87%
TMM 60115C	15 VDC	4'000 mA	87%
TMM 60124C	24 VDC	2'500 mA	87%
TMM 60148C	48 VDC	1'250 mA	88%

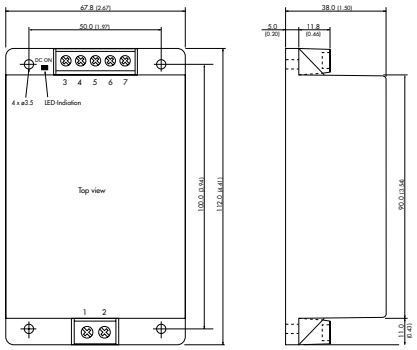
- 4.41 x 2.67 x 1.50” package
- 2xMOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- <0.5 W no load power (ErP Ready)
- Safety class II prepared
- Protection against over-temperature, overload & short circuit
- 3 year product warranty

Pin Connections	
Pin	Single
1	AC (N)
2	AC (L)
3	NC
4	+Vout
5	NC
6	-Vout
7	NC

TMP 60C — 60 Watt

UL/cUL 508 Listed

TMP 60 models for chassis mount:



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMP 60112C	12 VDC	5'000 mA	82%
TMP 60105C	5.1 VDC	10'000 mA	79%
TMP 60115C	15 VDC	4'000 mA	83%
TMP 60124C	24 VDC	2'500 mA	84%
TMP 60136C	36 VDC	1'665 mA	84%
TMP 60148C	48 VDC	1'250 mA	84%

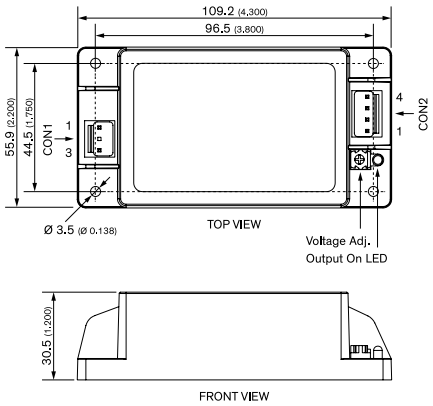
- 4.41 x 2.67 x 1.50” package
- Optional pin-connector on request
- DIN-rail mount adaptor (optional)
- Universal input 85-264 VAC, 47-440 Hz
- Protection class II
- IEC/EN/UL 60950-1 approval
- IEC/EN/UL 62368-1 approval
- Over-temperature protection
- Protection against short circuit & overload
- 3 year product warranty

Pin Connections	
Pin	Single
1	AC (N)
2	AC (L)
3	NC
4	-Vout
5	NC
6	-Vout
7	NC

Visit our website for documentation with links to our distributors for pricing and availability

TPP 65E-J NEW! 65 Watt

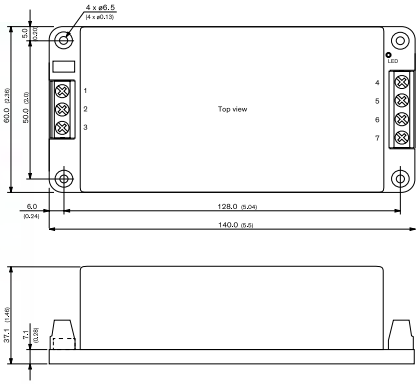
IEC/EN/ES 60601-1 Approved



Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 65-105E-J	5 VDC (4.5 – 5.5 VDC)	10'000 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%

- 4.30 x 2.20" encapsulated chassis mount
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- IEC/EN/UL 62368-1 approved
- Low leakage current <75 µA
- Rated for BF applications
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IPC-A-610 Level 2 criteria
- Protection class II
- Operating up to 5000m altitude
- Ready to meet ErP directive
- 5-year product warranty

TML 100C 100 Watt



Model	Input Voltage Range	Output Vnom	Output Imax	Efficiency
TML 100-112C	85	12 VDC	7080 mA	90 %
TML 100-115C	85	15 VDC	5660 mA	90 %
TML 100-124C	100	24 VDC	4200 mA	92 %
TML 100-148C	100	48 VDC	2100 mA	93 %

- 5.50 x 2.36 x 1.48" package
- Active PFC, power factor >0.95 (230VAC), >0.99 (115 VAC)
- High efficiency up to 93% typ.
- Remote On/Off input
- Adjustable output voltage ±5%
- LED output indicator
- Universal input 100-240 VAC
- Low leakage current
- EMI meets EN 55032, class B
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- 3 year product warranty

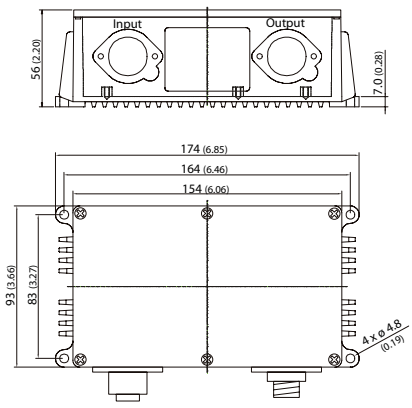
Pinout	
Pin	**Output**
1	AC in (L)
2	AC in (N)
3	FG
4	Remote On/Off
5	+Vout
6	-Vout
7	Trim

AC/DC Power Outdoor-Rated

These isolated power supplies have been designed particularly for applications in extreme environments. The rugged die-cast aluminium housing is water, ice, oil and dust resistant in compliance with IP67 and NEMA 4X standards. The metal case works as an efficient heatsink allowing full power operation at up to +60°C ambient temperature (no fan required). A shock and vibration proof construction allow these power supplies can be mounted directly on a machine. International safety approvals include CB scheme as well as ATEX certification for applications in hazardous locations (i.e. in chemical or food processing industries). The TEX series offers a cost efficient solution for de-centralized power systems in industrial automation applications with critical environment conditions

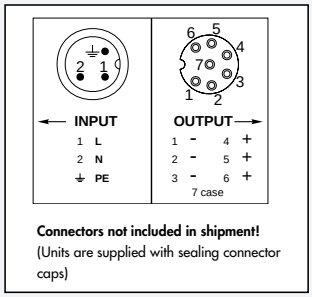
TEX 120 — 24 Watt

ATEX & UL Hazloc certified



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TEX 120-112	12 VDC	8 A	87%
TEX 120-124	24 VDC	5 A	87%

* Also available as pin version: suffix -P



Connectors not included in shipment!
(Units are supplied with sealing connector caps)

- 6.85 x 3.66 x 2.20" package
- Die-cast aluminium housing
- IP67 & NEMA 4X RATED (Dust, water, salt, ice & oil resistant enclosure)
- ATEX & UL Hazloc class 1, Div 2
- Waterproof I/O plug-connectors
- Shock & vibration proof construction
- Operating temp. -40°C to +85°C
- Universal input 85 to 264 VAC
- Output voltage adjustable
- Low ripple & noise
- 3 year product warranty

Pinout / Connection

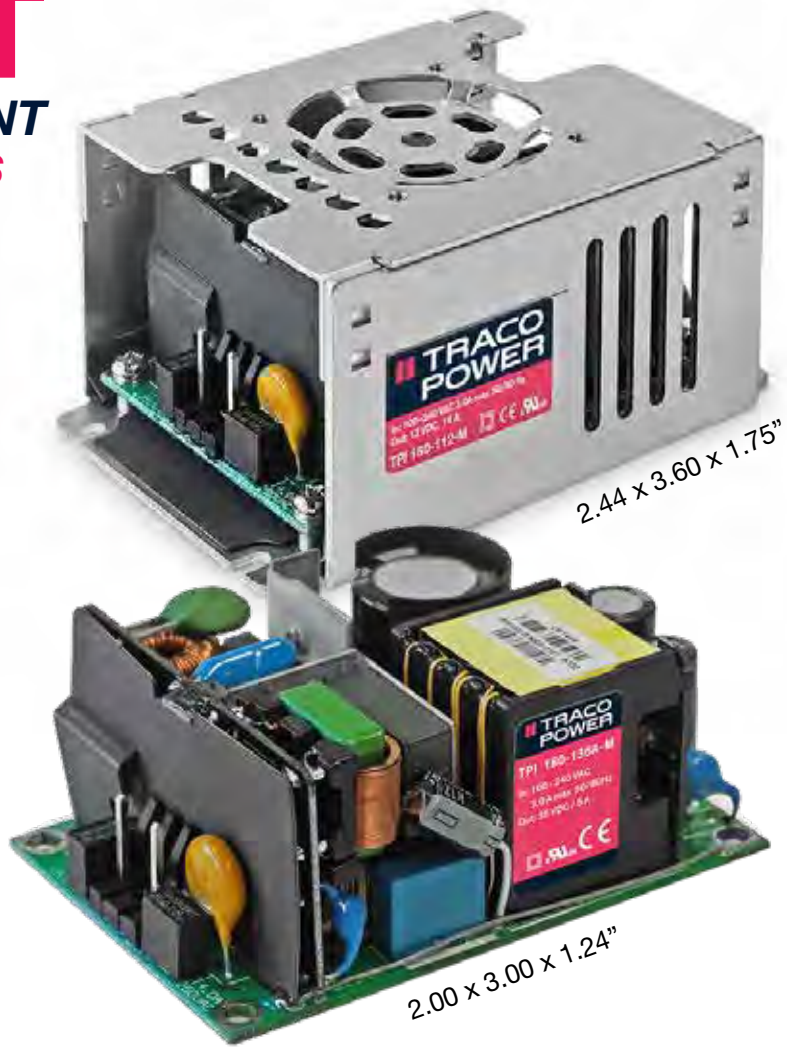
Pin	Wire	Color	Type
1	Vac IN (N)	Blue	20AWG/0.52mm²
2	Vac IN (L)	Brown	20AWG/0.52mm²
3	-Vout	Black	20AWG/0.52mm²
4	+Vout	Red	20AWG/0.52mm²

Visit our website for documentation with links to our distributors for pricing and availability

180 WATT

2 X 3” OPEN-FRAME FOOTPRINT

ITE & MEDICAL SAFETY APPROVALS



Features:

- Industry leading power density
- Open frame & enclosed packages
- Global Medical & ITE safety approvals
- –40°C to +85°C operating temperature
- 220W peak power for 5 seconds

INDUSTRIAL APPLICATIONS

TPI 180 Series

UL 62368-1 IEC 62368-1

Open Frame Model	Enclosed Model	Output Voltage	Output Current (convection)	Output Current (fan cooled)	Peak Power (5s)	Isolation & Leakage Current
TPI 180-112A-M	TPI 180-112-M	12VDC	12.50A	15.00A	18.34A	3,000VAC Input to Output 2,000VAC Input to Case 2,000VAC Output to Case <300 µA max
TPI 180-115A-M	TPI 180-115-M	15VDC	10.00A	12.00A	14.67A	
TPI 180-124A-M	TPI 180-124-M	24VDC	6.25A	7.50A	9.17A	
TPI 180-136A-M	TPI 180-136-M	36VDC	4.17A	5.00A	6.11A	
TPI 180-148A-M	TPI 180-148-M	48VDC	3.13A	3.75A	4.58A	
TPI 180-153A-M	TPI 180-153-M	53VDC	2.83A	3.40A	4.15A	

MEDICAL APPLICATIONS

TPP 180 Series

2xMOPP UL 60601-1 UL 62368-1 IEC 60601-1 IEC 62368-1

Open Frame Model	Enclosed Model	Output Voltage	Output Current (convection)	Output Current (fan cooled)	Peak Power (5s)	Isolation & Leakage Current 2xMOPP compliant
TPP 180-112A-M	TPP 180-112-M	12VDC	12.50A	15.00A	18.34A	4,000VAC Input to Output 2,500VAC Input to Case 2,500VAC Output to Case <100 µA max
TPP 180-115A-M	TPP 180-115-M	15VDC	10.00A	12.00A	14.67A	
TPP 180-124A-M	TPP 180-124-M	24VDC	6.25A	7.50A	9.17A	
TPP 180-136A-M	TPP 180-136-M	36VDC	4.17A	5.00A	6.11A	
TPP 180-148A-M	TPP 180-148-M	48VDC	3.13A	3.75A	4.58A	
TPP 180-153A-M	TPP 180-153-M	53VDC	2.83A	3.40A	4.15A	

AC/DC Power Encapsulated PCB Mount

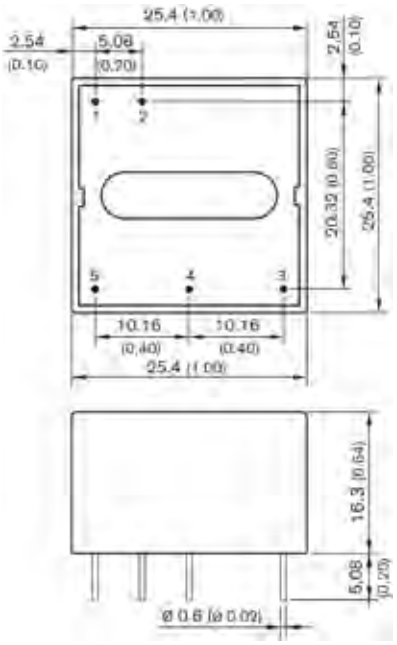
Traco Power offers a wide range of encapsulated power supplies with hundred of models available in PCB mount styles to suit a wide range of applications.

SERIES	POWER	DESCRIPTION	STATUS	APPS	PAGE
TMPS 03	3	1.00 × 1.00 × 0.64" package, 3000 VAC isolation, household	ACTIVE	⌂	130
TMLM 04	4	1.44 × 1.60 × 0.67" package, 3000 VAC isolation	ACTIVE		130
TMF 05	5	1.62 × 1.07 × 0.75" package, 4000 VAC isolation	ACTIVE	⊕	131
TMPS 05	5	1.00 × 1.00 × 0.64" package, 3000 VAC isolation	ACTIVE	⌂	131
TMPW 5	5	1.46 × 1.08 × 0.69" package, 90-305 VAC input, 4000 VAC isolation	ACTIVE	⌂	132
TMG 07	7	1.07 × 1.07 × 0.74" package, 85-264 VAC input, 3000 VAC isolation	ACTIVE		132
TMP 07	7	2.00 × 1.00 × 0.77" package, 85-264 VAC Input, 3000 VAC isolation	ACTIVE		133
TMF 10	10	2.06 × 1.06 × 0.75" package, 4000 VAC isolation, medical 2×MOPP	ACTIVE	⊕	133
TMPM 10	10	2.06 × 1.07 × 0.93" package, 85-264 VAC Input, 3000 VAC isolation	ACTIVE		134
TMPS 10	10	1.50 × 1.00 × 0.62" package, 4000 VAC isolation	ACTIVE	⌂	134
TMPW 10	10	1.46 × 1.08 × 0.79" package, 90-305 VAC input, 4000 VAC isolation	ACTIVE		135
TMG 15	15	1.62 × 1.07 × 0.75" package, 3000 VAC isolation	ACTIVE		135
TMP 15	15	2.91 × 2.13 × 0.76" package, 3000 VAC isolation, single/dual/triple outputs	ACTIVE		136
TMPS 15	15	2.06 × 1.07 × 0.93" package, 3000 VAC isolation	**NEW!**	⌂	136
TPP 15-D	15	1.65 × 1.14 × 0.85" package, 4000 VAC isolation	ACTIVE	⊕ ⌂	137
TMF 20	20	2.15 × 1.78 × 0.93" package, 4000 VAC isolation	ACTIVE	⊕	137
TML 20	20	2.74 × 1.87 × 0.85" package, 3000 VAC isolation	ACTIVE		138
TMLM 20	20	2.06 × 1.07 × 0.93", 85-264 VAC Input, 3000 VAC isolation	ACTIVE		138
TMM 24	24	2.91 × 2.13 × 0.77" package, 4000 VAC isolation	ACTIVE	⊕	139
TMW 24P	24	2.09 × 2.00 × 0.96", 4000 VAC isolation, flush box mount (IP68)	**NEW!**	⊕ ⌂	139
TMPW 25	25	2.07 × 1.08 × 0.93" package, 90-305 VAC input, 4000 VAC isolation	ACTIVE	⌂	140
TMF 30	30	2.52 × 1.78 × 0.93" package, 4000 VAC isolation	ACTIVE	⊕	140
TMG 30	30	2.51 × 1.77 × 0.93" package, 3000 VAC isolation, single/dual/triple outputs	ACTIVE		141
TMP 30	30	3.50 × 2.50 × 0.85" package, 3000 VAC isolation	ACTIVE		141
TPP 30-D	30	2.89 × 1.50 × 1.00" package, 4000 VAC isolation	ACTIVE	⊕ ⌂	142
TMW 36P	36	2.09 × 2.00 × 1.32", 4000 VAC isolation, flush box mount (IP68)	**NEW!**	⊕ ⌂	142
TML 40	40	3.20 × 2.52 × 0.98" package, 3000 VAC isolation	ACTIVE		143
TMM 40	40	3.50 × 2.50 × 1.18" package, 85-264 VAC Input, 4000 VAC isolation	ACTIVE	⊕	143
TPP 40E-D	40	4.3 × 2.20 × 1.20" package, 4000 VAC isolation	**NEW!**	⊕	144
TMG 50	50	2.91 × 2.12 × 0.86" package, 3000 VAC isolation	ACTIVE		144
TMPW 50	50	2.92 × 1.85 × 0.91" package, 90-305 VAC input, 4000 VAC isolation	**NEW!**	⌂	145
TMM 60	60	3.50 × 2.66 × 1.34" package, 4000 VAC isolation	ACTIVE	⊕	145
TMP 60	60	3.50 × 2.66 × 1.35" package, 3000 VAC isolation	ACTIVE		146
TPP 65E-D	65	3.20 × 2.20 × 1.20" package, 4000 VAC isolation	**NEW!**	⊕	146

APPS KEY: ⊕ = IEC/EN/ES 60601-1 (2×MOPP Approved) ⌂ = EN60335-1 Approved

TMPS 03 — 3 Watt

EN 60335-1 Approved



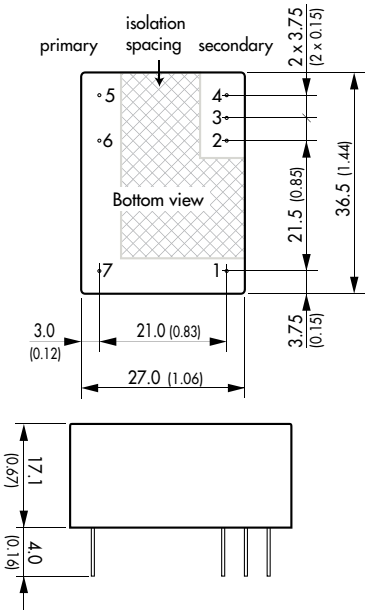
Model	Output Voltage nom.	Output Current max.	Output Current peak	Efficiency typ.
TMPS 03-103	3.3 VDC	900 mA	1'170 mA	70 %
TMPS 03-105	5 VDC	600 mA	780 mA	72 %
TMPS 03-109	9 VDC	333 mA	430 mA	77 %
TMPS 03-112	12 VDC	250 mA	320 mA	78 %
TMPS 03-115	15 VDC	200 mA	260 mA	78 %
TMPS 03-124	24 VDC	125 mA	160 mA	78 %

- 1.00 x 1.00 x 0.64" package
- No load input power <150 mW, to comply with ErP directive
- Operating temperature range -25°C to +70°C
- EMI meets EN 55032, class B
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- 3 year product warranty

Pin Connections

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

TMLM 04 — 4 Watt



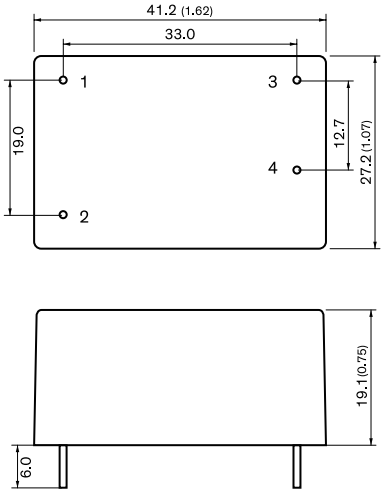
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMLM 04103	43.3 VDC	1200 mA	67%
TMLM 04105	5.0 VDC	800 mA	69%
TMLM 04109	9.0 VDC	444 mA	72%
TMLM 04112	12 VDC	333 mA	70%
TMLM 04115	15 VDC	267 mA	74%
TMLM 04124	24 VDC	167 mA	73%
TMLM 04253	+5.0 VDC / +3.3 VDC	600 mA / 150 mA	69%
TMLM 04225	+12 VDC / +5.0 VDC	250 mA / 120 mA	69%

- 1.44 x 1.06 x 0.67" package
- Fully encapsulated plastic case
- Universal input 90-264 VAC, 47-440 Hz
- High efficiency
- EMI meets EN 55022, class B & FCC, level B
- IEC/EN/UL 62368-1 approved
- Low ripple & noise
- Short circuit & overload protection
- 3 year product warranty

Pin Connections

Pin	Single	Dual
1	NC	NC
2	+Vout	Vout 1
3	-Vout	Common
4	NC	Vout 2
5	AC (L)	AC (L)
6	AC N)	AC (N)
7	NC	NC

TMF 05 — 5 Watt



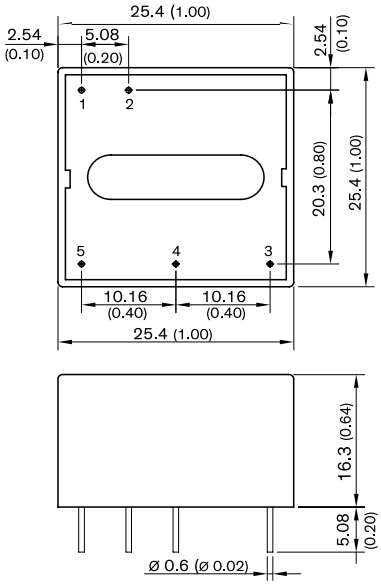
Model	Output Voltage	Output Current (max.)	Efficiency (typ.)
TMF 05105	5.0 VDC	1000 mA	77 %
TMF 05112	12 VDC	417 mA	82 %
TMF 05115	15 VDC	333 mA	82 %
TMF 05124	24 VDC	208 mA	82 %

- 1.6 x 1.07" encapsulated PCB mount
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptance criteria
- Low leakage current <100 µA
- Rated for BF applications
- Operating temperature –25°C to +70°C
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product waranty

Pinout / Connection	
Pin	Single
1	AC (N)
2	AC (L)
3	–Vout
4	+Vout

TMPS 05 — 5 Watt

EN 60335-1 Approved



Model	Output Voltage nom.	Output Current max.	Output Current peak	Efficiency typ.
TMPS 05-103	3.3 VDC	1‘515 mA	1‘970 mA	74 %
TMPS 05-105	5 VDC	1‘000 mA	1‘300 mA	80 %
TMPS 05-109	9 VDC	555 mA	721 mA	82 %
TMPS 05-112	12 VDC	416 mA	540 mA	82 %
TMPS 05-115	15 VDC	333 mA	433 mA	83 %
TMPS 05-124	24 VDC	208 mA	270 mA	83 %
TMPS 05-148	48 VDC	104 mA	135 mA	85 %

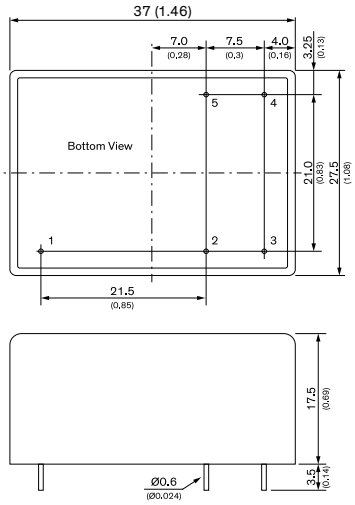
- 1.00 x 1.00 x 0.64” package
- IEC/EN/UL 62368-1 approved
- <300 mW no load power (ErP directive)
- Temperature range -25°C to +70°C
- EMI meets EN 55032 class B
- EN 55014-1
- Protection class II prepared
- 3 year product warranty

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

* Internally not connected but keep it isolated from primary circuit

TMPW 5 — 5 Watt

EN 60335-1 Approved

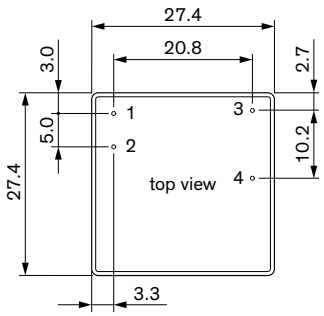


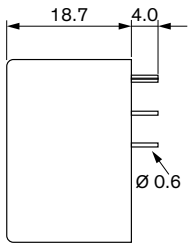
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPW 5-103	3.3 VDC	1515 mA	73 %
TMPW 5-105	5 VDC	1000 mA	77 %
TMPW 5-112	12 VDC	420 mA	81 %
TMPW 5-124	24 VDC	210 mA	83 %

- 1.46 x 1.08 x 0.69” package
- Wide 90-305 VAC input voltage range
- I/O isolation 4000 VAC
- Temperature range: -40° to +70°C
- <0.1W no load power (ErP directive)
- EMI meets EN 55032 class B
- IEC/EN/UL 62368-1 approved
- High efficiency up to 89%
- Protection class II prepared
- 3 year product warranty

Pin Connections	
Pin	**Single**
1	NC
2	+Vout
3	GND
4	AC (L)
5	AC (N)

TMG 07 — 7 Watt





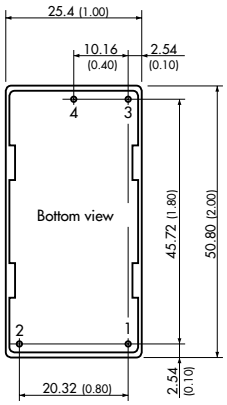
Dimensions in mm
Tolerances ±0.5 mm
Pin tolerances ±0.1 mm

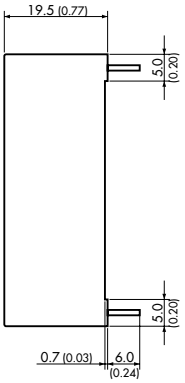
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMG 07105	5 VDC	1'260 mA	77%
TMG 07112	12 VDC	583 mA	80%
TMG 07115	15 VDC	466 mA	80%
TMG 07124	24 VDC	292 mA	80%

- 1.08 x 1.08 x 0.74” package
- Fully regulated outputs
- 3000 VAC I/O isolation
- High efficiency up to 80%
- Universal input range 90 to 264 VAC
- Temperature range: -40°C to +70°C
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- Short circuit over power & over voltage limitation
- 3 year product warranty

Pin Connections	
Pin	**Single**
1	AC (N)
2	AC (L)
3	+Vout
5	-Vout

TMP 07 — 7 Watt



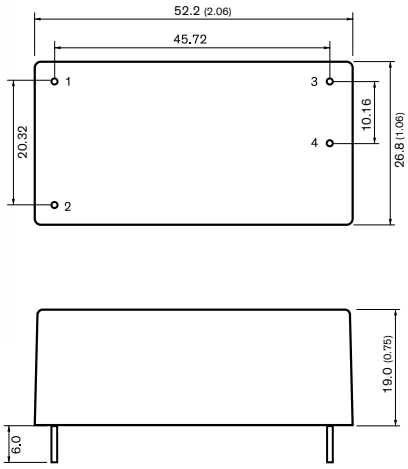


- 2.00 x 1.00 x 0.77” package
- Fully encapsulated (pollution/dust)
- DIN-rail mount adaptor (optional)
- Universal input 85-264 VAC, 47-440 Hz
- Protection class II prepared
- IEC/EN/UL 60950-1 approval
- IEC/EN/UL 62368-1 approval
- Over-temperature protection
- Protection against short circuit & overload
- 3 year product warranty

Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMP 07103	3.3 VDC	1400 mA	70%
TMP 07105	5.0 VDC	1400 mA	73%
TMP 07112	12 VDC	583 mA	78%
TMP 07115	15 VDC	466 mA	78%
TMP 07124	24 VDC	291 mA	78%

Pin Connections	
Pin	**Single**
1	AC (N)
2	AC (L)
3	+Vout
5	-Vout

TMF 10 — 10 Watt

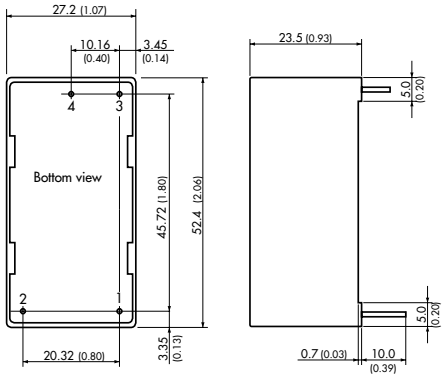


- 2.06 x 1.06" encapsulated PCB mount
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptance criteria
- Low leakage current <100 µA
- Rated for BF applications
- Operating temperature –25°C to +70°C
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product waranty

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 %

Pinout / Connection	
Pin	Single
1	AC (N)
2	AC (L)
3	+Vout
4	–Vout
5	No Pin

TMPM 10 — 10 Watt



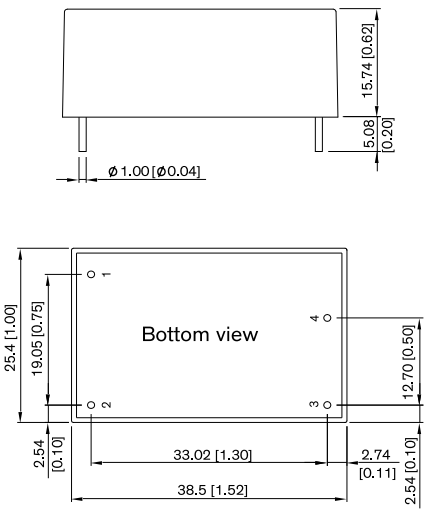
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPM 10103	3.3 VDC	2500 mA	70%
TMPM 10105	5.0 VDC	2000 mA	72%
TMPM 10112	12 VDC	833 mA	76%
TMPM 10115	15 VDC	667 mA	75%
TMPM 10124	24 VDC	417 mA	72%

- 2.06 x 1.07 x 0.93” package
- Fully encapsulated (pollution/dust)
- Universal input 85-264 VAC, 47-440 Hz
- Protection class II prepared
- IEC/EN/UL 60950-1 approval
- IEC/EN/UL 62368-1 approval
- Over-temperature protection
- Protection against short circuit & overload
- 3 year product warranty

Pin Connections	
Pin	**Single**
1	AC (N)
2	AC (L)
3	+Vout
5	-Vout

TMPS 10 — 10 Watt

EN 60335-1 Approved



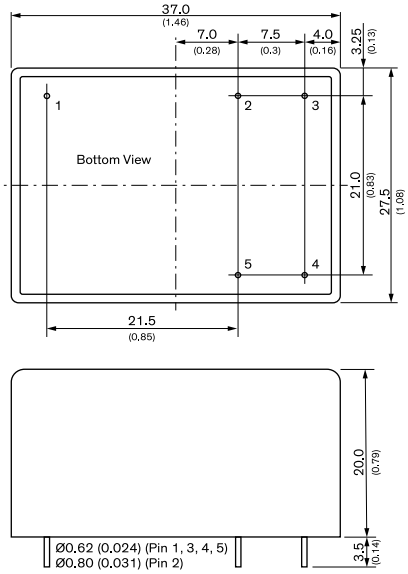
Model	Output Voltage nom.	Output Current max.	Output Current peak	Efficiency typ.
TMPS 10-103	3.3 VDC	2‘600 mA	3‘380 mA	77 %
TMPS 10-105	5 VDC	2‘000 mA	2‘600 mA	80 %
TMPS 10-109	9 VDC	1‘100 mA	1‘440 mA	83 %
TMPS 10-112	12 VDC	830 mA	1‘080 mA	84 %
TMPS 10-115	15 VDC	660 mA	860 mA	84 %
TMPS 10-124	24 VDC	410 mA	530 mA	86 %
TMPS 10-148	48 VDC	210 mA	270 mA	84 %

- 1.52 x 1.00 x 0.62” package
- IEC/EN/UL 62368-1 approved
- Reinforced I/O isolation 4000 VAC
- Temperature range -25°C to +70°C
- 130% peak current up to 30 s
- No load power <0.15 W (ErP directive)
- EN 55032 class B & EN 55014-1
- Protection class II prepared
- 3 year product warranty

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

TMPW 10 — 10 Watt

EN 60335-1 Approved



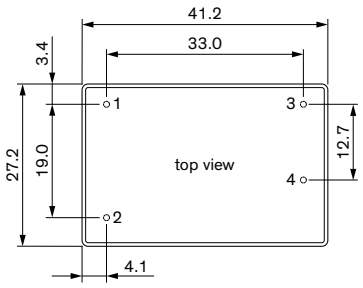
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPW 10-105	5 VDC	2000 mA	81 %
TMPW 10-112	12 VDC	833 mA	85 %
TMPW 10-115	15 VDC	667 mA	86 %
TMPW 10-124	24 VDC	417 mA	86 %

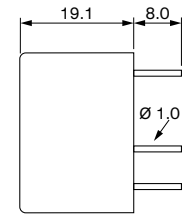
- 1.46 x 1.08 x 0.79” package
- 90-305 VAC input voltage range
- IEC/EN/UL 62368-1 approved
- I/O isolation 4000 VAC
- Temperature range: -40° to +70°C
- No load power <0.1 W (ErP directive)
- EMI meets EN 55032 class B
- High efficiency up to 89%
- Protection class II prepared
- 3 year product warranty

Pin Connections

Pin	Single
1	NC
2	AC (N)
3	AC (L)
4	GND
5	+Vout

TMG 15 — 15 Watt





Dimensions in mm
Tolerances ±0.5 mm
Pin tolerances ±0.1 mm

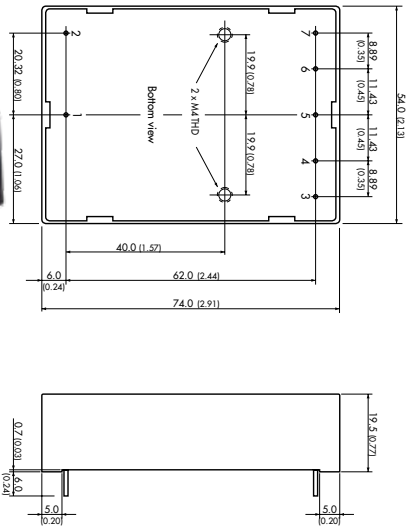
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMG 15105	5 VDC	2'700 mA	80%
TMG 15112	12 VDC	1'250 mA	84%
TMG 15115	15 VDC	1'000 mA	84%
TMG 15124	24 VDC	625 mA	85%

- 1.62 x 1.08 x 0.75” package
- 4000 VAC I/O isolation
- High efficiency up to 85%
- Universal input range 90 to 264 VAC
- Operating temperature range: -40°C to +70°C max.
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- Protection against short-circuit, over-power & over-voltage
- 3 year product warranty

Pin Connections

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

TMP 15 — 15 Watt



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMP 15105	5 VDC	3000 mA	75%
TMP 15112	12 VDC	1250 mA	79%
TMP 15115	15 VDC	1000 mA	79%
TMP 15124	24 VDC	625 mA	79%
TMP 15148	48 VDC	310 mA	79%
TMP 15212	±12 VDC	±650 mA	79%
TMP 15215	±15 VDC	±500 mA	79%
TMP 15252	5 / 12 VDC	1500 mA / 625 mA	72%
TMP 15512	5 / ±12 VDC	2000 mA / +200 mA	74%
TMP 15515	5 / ±15 VDC	2000 mA / ±150 mA	74%

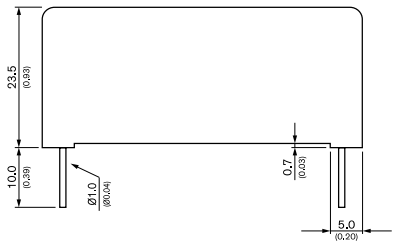
- 2.91 x 2.13 x 0.77” package
- Fully encapsulated (pollution/dust)
- Universal input 85-264 VAC, 47-440 Hz
- Protection class II prepared
- IEC/EN/UL 60950-1 approval
- IEC/EN/UL 62368-1 approval
- Over-temperature protection
- Protection against short circuit & overload
- 3 year product warranty

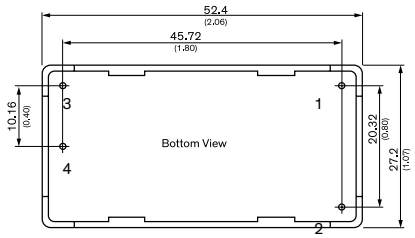
Pin Connections

Pin	Single	Dual (sym)	Dual (asym)	Triple
1	AC (L)	AC (L)	AC (L)	AC (L)
2	AC (N)	AC (N)	AC (N)	AC (N)
3	NC	NC	NC	Vout 3
4	-Vout	Vout 2	-Vout 2	Comm
5	NC	Comm	+Vout 2	Vout 2
6	+Vout	Vout 1	-Vout 1	-Vout 1
7	NC	NC	+Vout 1	+Vout 1

TMPS 15 — NEW! — 15 Watt

EN 60335-1 Approved





Model	Output Voltage nom.	Output Current max.	Output Current peak	Efficiency typ.
TMPS 15-103	3.3 VDC	3500 mA	4550 mA	75 %
TMPS 15-105	5 VDC	3000 mA	3900 mA	79 %
TMPS 15-112	12 VDC	1250 mA	1625 mA	82 %
TMPS 15-115	15 VDC	1000 mA	1300 mA	82 %
TMPS 15-124	24 VDC	625 mA	813 mA	84 %
TMPS 15-148	48 VDC	313 mA	407 mA	82 %

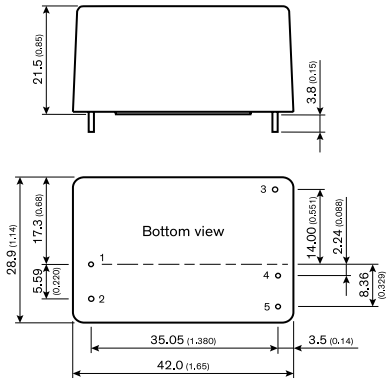
- 2.06 x 1.07 x 0.93” package
- EN 60335-1 for household appliance
- IEC/EN/UL 62368-1 approved
- I/O isolation 3000 VAC
- Temperature range -25°C to +70°C
- 130% peak current up to 30 s
- No load power <0.15 (ErP directive)
- EMI meets EN 55032 class B & EN 55014-1
- Protection class II prepared
- 3 year product warranty

Pin Connections

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

TPP 15-D — 15 Watt

EN 60335-1 Approved
IEC/EN/ES 60601-1 Approved

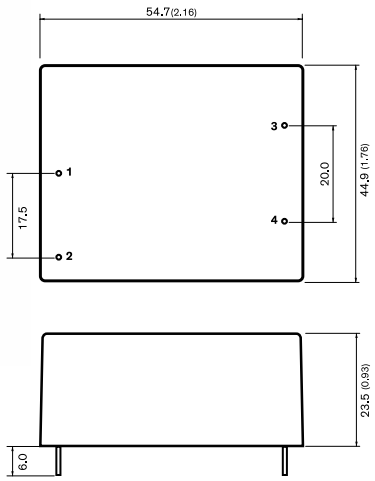


Model	Output Voltage nom. *	*adjustable	Output Current max.	Efficiency typ.
TPP 15-103-D	3.3 VDC	2.97 - 3.63 VDC	4'000 mA	84 %
TPP 15-105-D	5 VDC	4.5 - 5.5 VDC	3'000 mA	86 %
TPP 15-109-D	9 VDC	8.1 - 9.9 VDC	1'670 mA	86 %
TPP 15-112-D	12 VDC	10.8 - 13.2 VDC	1'250 mA	87 %
TPP 15-115-D	15 VDC	13.5 - 16.5 VDC	1'000 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 %

- 1.65 x 1.14 x 0.85" package
- 2xMOPP / BF Compliant
- <75 µA leakage
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance criteria to IPC-A-610 Level 3
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <75 mW (ERP compliant)
- 5 year product warranty

Pin Connections	
Pin	Function
1	Neutral
2	Line
3	Trim
4	-Vout
5	+Vout

TMF 20 — 20 Watt

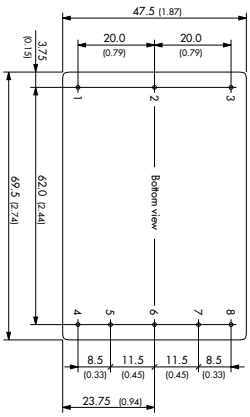


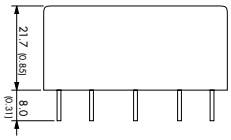
Model	Output Voltage	Output Current (max.)	Efficiency (typ.)
TMF 20105	5.0 VDC	3600 mA	78 %
TMF 20112	12 VDC	1667 mA	84 %
TMF 20115	15 VDC	1333 mA	84 %
TMF 20124	24 VDC	833 mA	84 %

- 2.16 x 1.76" encapsulated PCB mount
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- ISO 14971 risk management file
- IPC-A-610 Level 3 Criteria
- Low leakage current <100 µA
- Rated for BF applications
- Operating temperature –25°C to +70°C
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product waranty

Pinout / Connection	
Pin	Single
1	AC (N)
2	AC (L)
3	–Vout
4	+Vout

TML 20 — 20 Watt





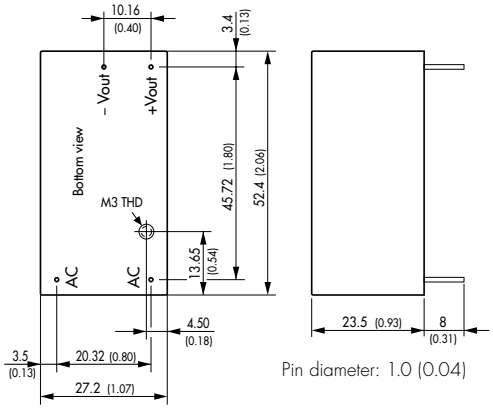
Model	Output Voltage nom.	Output Current max.
TML 20103	3.3 VDC	4500 mA
TML 20105	5.0 VDC	4000 mA
TML 20112	12 VDC	1670 mA
TML 20115	15 VDC	1340 mA
TML 20124	24 VDC	840 mA
TML 20205	±5.0 VDC	±2000 mA
TML 20212	±12 VDC	±833 mA
TML 20215	+12 VDC / -12 VDC	833 mA
TML 20512	5 VDC / ±12 VDC	2800 mA / ±250 mA
TML 20515	5 VDC / ±15 VDC	2800 mA / ±200 mA

Pin Connections

Pin	Single	Dual	Triple
1	FG	FG	FG
2	AC (N)	AC (N)	AC (N)
3	AC(L)	AC(L)	AC(L)
4	NC	NC	Vout 3
5	-Vout	Vout 2	Comm
6	NC	Comm	Vout 2
7	+Vout	+Vout 1	-Vout 1
8	NC	NC	+Vout 1

- 2.74 x 1.87 x 0.85” package
- Universal input 90-264 VAC, 47-440 Hz
- EMI meets EN 55022, class B & FCC, level B
- Short circuit & overload protection
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

TMLM 20 — 20 Watt



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMLM 20103	3.3 VDC	3600 mA	74%
TMLM 20105	5.0 VDC	3600 mA	78%
TMLM 20112	12 VDC	1660 mA	82%
TMLM 20115	15 VDC	1330 mA	83%
TMLM 20124	24 VDC	833 mA	83%

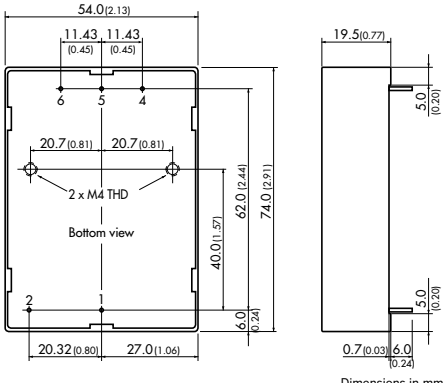
Pin Connections

Pin	Single
1	AC
2	AC
3	-Vout
4	+Vout

- 2.06 x 1.07 x 0.93” package
- Fully encapsulated plastic case
- Universal input 90-264 VAC, 47-440 Hz
- EMI meets EN 55022, class B &FCC, level B
- Protection class II prepared
- Low ripple & noise
- Protection against short circuit & overload
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

TMM 24 — 24 Watt

IEC/EN/ES 60601-1 Approved



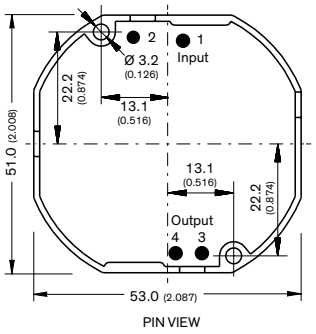
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMM 24105	5 VDC	3'000 mA	77%
TMM 24112	12 VDC	2'000 mA	83%
TMM 24115	15 VDC	1'600 mA	82%
TMM 24124	24 VDC	1'000 mA	85%
TMM 24212	±12 VDC	±1'000 mA	84%
TMM 24215	±15 VDC	±800mA	84%

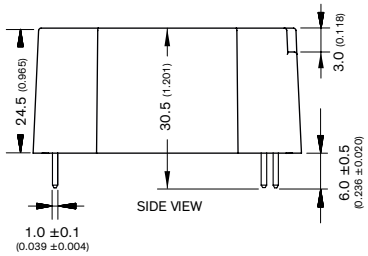
- 2.91 x 2.13 x 0.77” package
- 2xMOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- ErP Ready (<0.3 W no load power consumption)
- -40°C start-up temperature
- Protection class II prepared
- Protection against over temperature, overload & short circuit
- 3 year product warranty

Pin Connections		
Pin	**Single**	**Dual**
1	AC (N)	AC (N)
2	AC (L)	AC (L)
4	-Vout	-Vout
5	NC	Comm
6	+Vout	+Vout

TMW 24P — NEW! — 24 Watt

IEC/EN/ES 60601-1 Approved
EN 60335-1 Approved



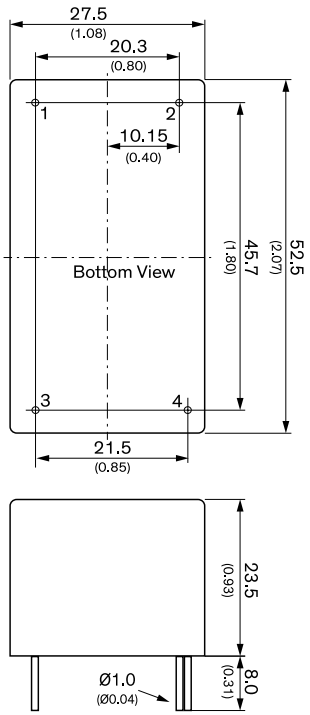


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMW 24-105P	5.1 VDC	4000 mA	85%
TMW 24-112P	12 VDC	2000 mA	88%
TMW 24-124P	24 VDC	1000 mA	90%

- 2.00 x 2.08” package
- IP68 casing (water & dust resistant)
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- ISO 14971 risk management file
- Effortless flush box mounting
- Fire safety for furniture
- Low leakage current <100 µA
- Rated for BF applications
- Operating temperature –20°C to +80°C
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product waranty

TMPW 25 — 25 Watt

EN 60335-1 Approved

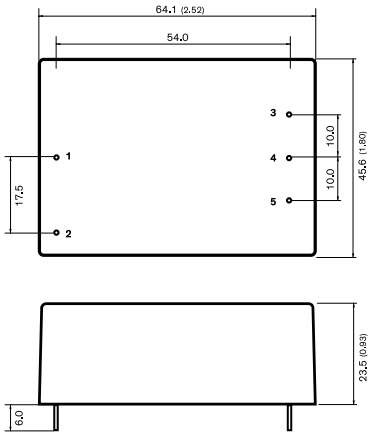


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPW 25-105	5.1 VDC	3922 mA	84 %
TMPW 25-112	12 VDC	2083 mA	88 %
TMPW 25-115	15 VDC	1666 mA	88 %
TMPW 25-124	24 VDC	1042 mA	87 %

- 2.07 x 1.08 x 0.93” package
- 90-305 VAC input voltage range
- IEC/EN/UL 62368-1 approved
- I/O isolation 4000 VAC
- Temperature range: -40°C to +70°C
- No load power <0.1W (ErP directive)
- EMI meets EN 55032 class B
- High efficiency up to 89%
- Protection class II prepared
- 3 year product warranty

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

TMF 30 — 30 Watt

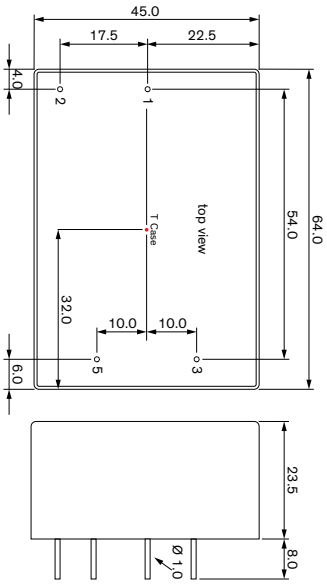


Model	Output Voltage	Output Current (max.)	Efficiency (typ.)
TMF 30105	5.0 VDC	5000 mA	82 %
TMF 30112	12 VDC	2500 mA	88 %
TMF 30115	15 VDC	2000 mA	86 %
TMF 30124	24 VDC	1250 mA	85 %

- 2.52 x 1.80" encapsulated PCB mount
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- ISO 14971 risk management file
- IPC-A-610 Level 3 Criteria
- Low leakage current <100 µA
- Rated for BF applications
- Operating temperature –25°C to +70°C
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product waranty

Pinout / Connection	
Pin	Single
1	AC (N)
2	AC (L)
3	–Vout
4	No Pin
5	+Vout

TMG 30 — 30 Watt



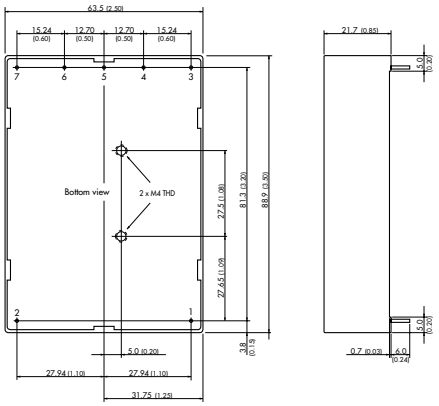
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMG 30103	3.3 VDC	5'000 mA	80%
TMG 30105	5 VDC	5'000 mA	84%
TMG 30112	12 VDC	2'500 mA	89%
TMG 30115	15 VDC	2'000 mA	86%
TMG 30124	24 VDC	1'250 mA	86%

- 2.52 x 1.77 x 0.93” package
- Fully regulated outputs
- I/O isolation 3000 VAC
- High efficiency up to 89%
- Universal input range 90 to 305 VAC
- -40°C to +70°C temperature range
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- Protection against short circuit, over power & over voltage
- 3 year product warranty

Pin Connections

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

TMP 30 — 30 Watt



Model	Output Voltage nom.	Output Current max.	Eff typ.
TMP 30105	5 VDC	6000 mA	78%
TMP 30112	12 VDC	2500 mA	80%
TMP 30115	15 VDC	2000 mA	80%
TMP 30124	24 VDC	1250 mA	80%
TMP 30148	48 VDC	625 mA	80%
TMP 30212	±12 VDC	±1300 mA	80%
TMP 30215	±15 VDC	±1000 mA	80%
TMP 30252	5.0 VDC / ±12 VDC	3000 mA2) / ±1250 mA	76%
TMP 30316	3.3 / +5 / +12 VDC	4000 / 1500 / 250 mA	71%
TMP 30317	5 / +3.3 / +12 VDC	4500 / 1000 / 250 mA	71%
TMP 30512	5 / ±12 VDC	3000 / ±600 mA	76%
TMP 30515	5 / ±15 VDC	3000 / ±500 mA	76%
TMP 30522	5 / ±12 VDC	3000 / +1000 / -250 mA	76%

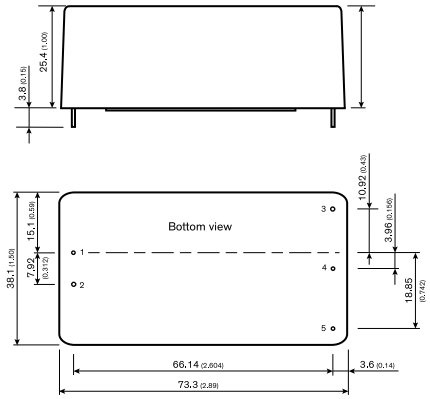
- 3.50 x 2.50 x 0.85” package
- Optional pin-connector on request
- DIN-rail mount adaptor (optional)
- Universal input 85-264 VAC, 47-440 Hz
- Protection class II prepared
- IEC/EN/UL 60950-1 approval
- IEC/EN/UL 62368-1 approval
- Over-temperature protection
- Protection against short circuit & overload
- 3 year product warranty

Pin Connections

Pin	Single	Dual (sym)	Dual (asym)	Triple
1	AC (L)	AC (L)	AC (L)	AC (L)
2	AC (N)	AC (N)	AC (N)	AC (N)
3	+Vout	Vout 1	+Vout 2	Vout2
4	NC	NC	+Vout 1	+Vout 1
5	-Vout	Comm	-Vout2	Comm
6	NC	NC	-Vout 1	-Vout 1
7	NC	Vout 2	NC	Vout 3

TPP 30-D — 30 Watt

EN 60335-1 Approved
IEC/EN/ES 60601-1 Approved



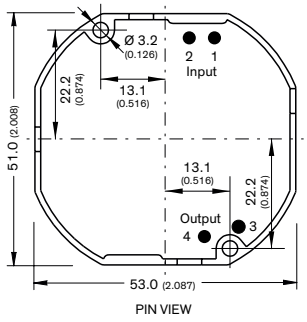
Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 30-103-D	3.3 VDC (2.97 - 3.63 VDC)	6'000 mA	84 %
TPP 30-105-D	5 VDC (4.5 - 5.5 VDC)	6'000 mA	87 %
TPP 30-109-D	9 VDC (8.1 - 9.9 VDC)	3'340 mA	88 %
TPP 30-112-D	12 VDC (10.8 - 13.2 VDC)	2'500 mA	91 %
TPP 30-115-D	15 VDC (13.5 - 16.5 VDC)	2'000 mA	91 %
TPP 30-124-D	24 VDC (21.6 - 26.4 VDC)	1'250 mA	90 %
TPP 30-136-D	36 VDC (32.4 - 39.6 VDC)	840 mA	92 %
TPP 30-148-D	48 VDC (43.2 - 52.8 VDC)	630 mA	92 %

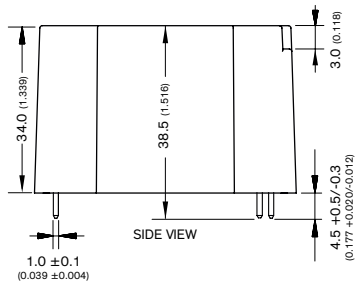
- 2.89 x 1.50 x 1.00" package
- 2xMOPP / BF Compliant
- <75 µA leakage
- IEC 60601-1-2 4th edition EMC
- IEC/EN/UL 62368-1 approved
- ISO 14971 risk management file
- IPC-A-610 Level 3 ccceptance criteria
- Protection class II prepared
- Operating up to 5000 m altitude
- no load power <60 mW (ErP compliant)
- 5 year product warranty

PCB Pinout	
Pin	Function
1	Neutral
2	Line
3	+Vout
4	-Vout
5	Trim

TMW 36P NEW! — 36 Watt

IEC/EN/ES 60601-1 Approved
EN 60335-1 Approved

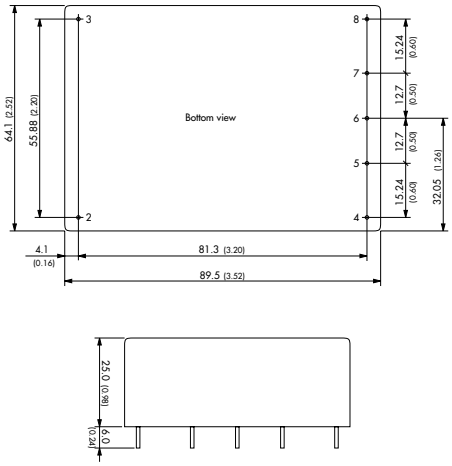




Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMW 36-112P	12 VDC	3.0 A	87%
TMW 36-124P	24 VDC	1.5 A	88%

- 2.00 x 2.08" package
- IP68 casing (water & dust resistant)
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- ISO 14971 risk management file
- Effortless flush box mounting
- Fire safety for furniture
- Low leakage current <100 µA
- Rated for BF applications
- Operating temperature –20°C to +80°C
- Protection against short-circuit, over load and over voltage
- Protection class II prepared
- 5 year product waranty

TML 40 — 40 Watt



Model	Output Voltage nom.	Output Current max.
TML 40103	3.3 VDC	8000 mA
TML 40105	5.0 VDC	8000 mA
TML 40112	12 VDC	3333 mA
TML 40115	15 VDC	2666 mA
TML 40124	24 VDC	1667 mA
TML 40205	±5 VDC	±4000 mA
TML 40212	±12 VDC	±1666 mA
TML 40215	±15 VDC	±1333 mA
TML 40252	5 / 12 VDC	5000 mA / 1250 mA
TML 40254	5 / 24 VDC	5000 mA / 625 mA
TML 40512	5 / ±12 VDC	5000 mA / ±600 mA
TML 40515	5 / ±15	5000 mA / ±500 mA

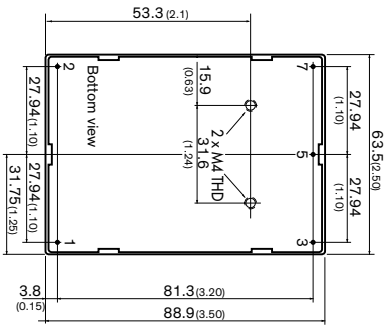
Pin Connections

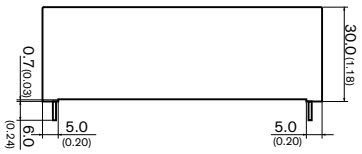
Pin	Single	Dual (sym)	Dual asym)	Triple
1	NC	NC	NC	NC
2	AC (L)	AC (L)	AC (L)	AC (L)
3	AC (N)	AC (N)	AC (N)	AC (N)
4	+Vout	Vout 1	Vout 2	Vout 2
5	NC	NC	Vout 1	Vout 1
6	-Vout	Comm	-Vout 2	Comm
7	NC	NC	-Vout 1	-Vout 1
8	NC	Vout 2	NC	Vout 3

- 3.20 x 2.52 x 0.98” package
- Universal input 90-264 VAC, 47-440 Hz
- Protection class II prepared
- EN 55022, class B & FCC, level B
- Short circuit & overload protection
- IEC/EN/UL 62368-1 approved
- 3 year product warranty

TMM 40 — 40 Watt

IEC/EN/ES 60601-1 Approved





Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMM 40105	5 VDC	8'000 mA	81%
TMM 40112	12 VDC	3'330 mA	84%
TMM 40115	15 VDC	2'660 mA	85%
TMM 40124	24 VDC	1'660 mA	84%
TMM 40212	±12 VDC	±1'660 mA	84%
TMM 40215	±15 VDC	±1'330 mA	85%

Pin Connections

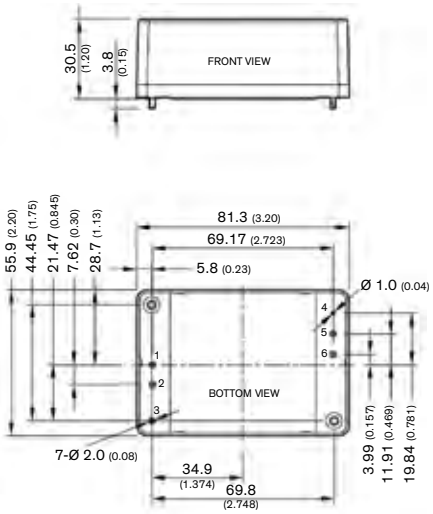
Pin	Single	Dual
1	AC (N)	AC (N)
2	AC (L)	AC (L)
3	+Vout	+Vout
4	NC	NC
5	-Vout	Common
6	NC	NC
7	NC	-Vout

- 3.50 x 2.50 x 1.18” package
- 85-264 VAC input voltage range
- 2xMOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- I/O isolation 4000 VAC
- Temperature range: -40° to +70°C
- No load power <0.1 W (ErP directive)
- EMI meets EN 55032 class B
- Protection class II prepared
- 3 year product warranty

Visit our website for documentation with links
to our distributors for pricing and availability

TPP 40E-D NEW! 40 Watt

IEC/EN/ES 60601-1 Approved

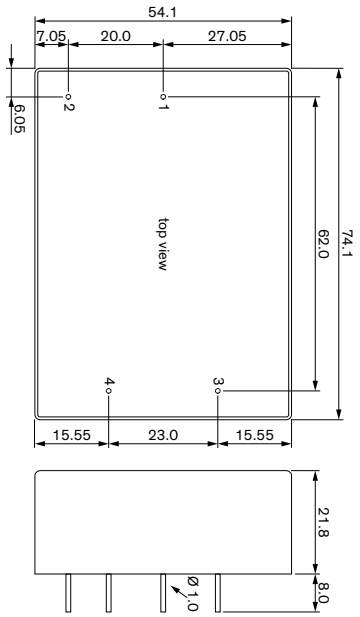


Model	Output Voltage nom. (adjustable)	Output 2	Efficiency
TPP 40-105E-D	5 VDC (4.5 – 5.5 VDC)	8000 mA	90%
TPP 40-112E-D	12 VDC (10.8 – 13.2 VDC)	3340 mA	92%
TPP 40-115E-D	15 VDC (13.5 – 16.5 VDC)	2670 mA	92%
TPP 40-124E-D	24 VDC (21.6 – 26.4 VDC)	1670 mA	92%
TPP 40-136E-D	36 VDC (32.4 – 39.6 VDC)	1120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

- 3.20 x 2.20" encapsulated PCB mount
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- IEC/EN/UL 62368-1 approved
- Low leakage current <75 µA
- Rated for BF applications
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IPC-A-610 Level 2 criteria
- Protection class II
- Operating up to 5000m altitude
- Ready to meet ErP directive
- 5-year product warranty

Pinout

TMG 50 50 Watt



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMG 50105	5 VDC	8'000 mA	86%
TMG 50112	12 VDC	4'167 mA	90%
TMG 50115	15 VDC	3'333 mA	87%
TMG 50124	24 VDC	2'083 mA	88%
TMG 50148	48 VDC	1'040 mA	89%

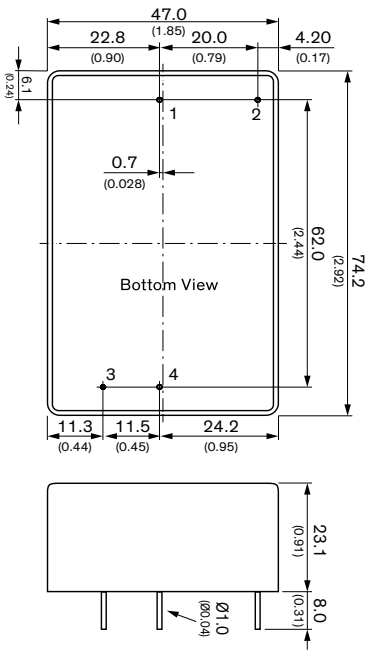
- 2.92 x 2.13 x 0.86" package
- Fully regulated outputs
- 3000 VAC I/O isolation
- High efficiency up to 90%
- Universal input range 90 to 264 VAC
- -40°C to +70°C temperature range
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- Protection against short circuit, over power & over voltage
- 3 year product warranty

Pin Connections

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

TMPW 50 NEW! 50 Watt

EN 60335-1 Approved



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMPW 50-112	12 VDC	4167 mA	89 %
TMPW 50-115	15 VDC	3333 mA	88 %
TMPW 50-124	24 VDC	2083 mA	88 %

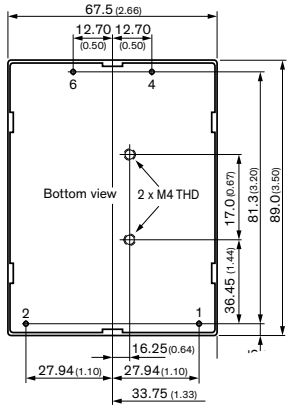
- 2.92 x 1.85 0.91” package
- Wide 90-305 VAC input voltage range
- EC/EN/UL 62368-1 approved
- I/O isolation 4000 VAC
- Temperature range: -40° to +70°C
- No load power <0.1W (ErP directive)
- EMI meets EN 55032 class B
- High efficiency up to 89%
- Protection class II prepared
- 3 year product warranty

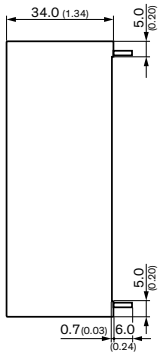
Pin Connections

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

TMM 60 60 Watt

IEC/EN/ES 60601-1 Approved





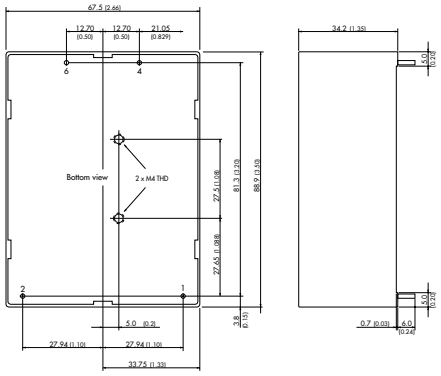
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMM 60105	5.1 VDC	10'000 mA	84%
TMM 60112	12 VDC	5'000 mA	87%
TMM 60115	15 VDC	4'000 mA	87%
TMM 60124	24 VDC	2'500 mA	87%
TMM 60148	48 VDC	1'250 mA	88%

- 3.50 x 2.66 x 1.34” package
- 2xMOPP / BF compliant
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IEC/EN/UL 60950-1 / 62368-1 approved
- <0.3 W no load power (ErP ready)
- Protection class II prepared
- Protection against over temperature, overload & short circuit
- 3 year product warranty

Pin Connections

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

TMP 60 — 60 Watt



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TMP 60112	12 VDC	5'000 mA	82%
TMP 60105	5.1 VDC	10'000 mA	79%
TMP 60115	15 VDC	4'000 mA	83%
TMP 60124	24 VDC	2'500 mA	84%
TMP 60136	36 VDC	1'665 mA	84%
TMP 60148	48 VDC	1'250 mA	84%

- 3.50 x 2.66 x 1.35" package
- Fully encapsulated (pollution/dust)
- Universal input 85-264 VAC, 47-440 Hz
- Protection class II prepared
- IEC/EN/UL 60950-1 approval
- IEC/EN/UL 62368-1 approval
- Over-temperature protection
- Protection against short circuit & overload
- 3 year product warranty

Pin Connections

Pin	Single
1	AC (N)
2	AC (L)
3	NC
4	-Vout
5	NC
6	-Vout
7	NC

AC/DC: Open-Frame Power Supplies

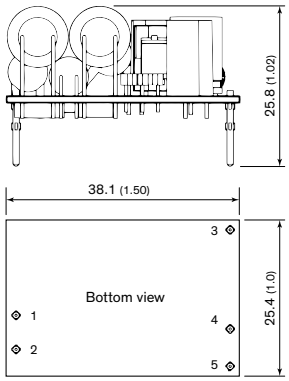
Traco Power offers a wide range of open-frame power supplies with hundreds of models available in PCB mount styles to suit a wide range of applications.

SERIES	POWER	DESCRIPTION	STATUS	APPS	PAGE
TPP 15A-D	15	1.50 × 1.00 × 1.02" open-frame package, 4000 VAC isolation, PCB mount	ACTIVE	⊕ ⌂	148
TPP 15A-J	15	2.60 × 1.00" x 0.72" open-frame package, 4000 VAC isolation	ACTIVE	⊕ ⌂	148
TPI 30A-J	30	3.34 × 1.36 × 0.77" open-frame package, 3000 VAC isolation, cost efficient	**NEW!**		149
TPP 30A-D	30	2.74 × 1.36 × 1.10" open-frame package, 4000 VAC isolation, PCB mount	ACTIVE	⊕ ⌂	149
TPP 30A-JP	30	3.34 × 1.34 × 0.88" open-frame package, 4000 VAC isolation	ACTIVE	⊕ ⌂	150
TPP 40A-J	40	3.00 × 2.00 × 0.94" open-frame package, 4000 VAC isolation	ACTIVE	⊕	150
TPI 50A-J	50	3" × 1.5" package, 3000 VAC isolation, cost efficient	**NEW!**		151
TPI 65A-JP	65	3.00 × 2.00 × 0.94" open-frame package, 3000 VAC isolation, cost efficient	ACTIVE		151
TPP 65A	65	3.00 × 2.00 × 0.94" open-frame package, 4000 VAC isolation	ACTIVE	⊕	152
TOP 100	100	4.00 × 2.00 × 1.25" package, 3000 VAC isolation	ACTIVE		152
TPI 100A-J	100	3.00 × 2.00 × 1.16" open-frame package, 3000 VAC isolation	ACTIVE		153
TPP 100A-J	100	3.00 × 2.00 × 1.16" open-frame package, 4000 VAC isolation	ACTIVE	⊕	153
TPI 125A-J	125	3.00 × 2.00 × 1.16" open-frame package, 3000 VAC isolation	ACTIVE		154
TPI 150A-J	150	4.00 × 2.00 × 1.16" open-frame package, 3000 VAC isolation	ACTIVE		154
TPP 150A-J	150	4.00 × 2.00 × 1.16" open-frame package, 4000 VAC isolation	ACTIVE	⊕	155
TP1 180A-M	180	3.00 × 2.00 × 1.16" open-frame package, 4000 VAC isolation	**NEW!**		155
TPP 180A-M	180	3.00 × 2.00 × 1.16" open-frame package, 4000 VAC isolation	**NEW!**	⊕	156
TOP 200	200	5.00 × 3.00 × 1.34" package, 3000 VAC isolation	ACTIVE		156
TPP 250A	250	4.00 × 2.00 × 1.25" open-frame package, 4000 VAC isolation	**IN DEVELOPMENT**	⊕	157
TPI 300L-M	300	4.60 × 2.44 × 1.60" open-frame package with base-plate, 3000 VAC isolation	ACTIVE		157
TPP 300A-M	300	4.00 × 2.00 × 1.16" open-frame package, 4000 VAC isolation	ACTIVE	⊕	158
TPP 450BA-M	450	5.00 × 3.00 × 1.58" open-frame + baseplate package, 4000 VAC isolation	ACTIVE	⊕	158
TPP 600A-M	600	5.00 × 3.00 × 1.50" open-frame package, 4000 VAC isolation	**IN DEVELOPMENT**	⊕	159
TPP 850A	850	4.00 × 6.00 × 1.50" open-frame package, 4000 VAC isolation	**NEW!**	⊕	159

APPS KEY: ⊕ = IEC/EN/ES 60601-1 (2×MOPP Approved) ⌂ = EN60335-1 Approved (Household Appliance)

TPP 15A-D — 15 Watt

EN 60335-1 Approved
IEC/EN/ES 60601-1 Approved



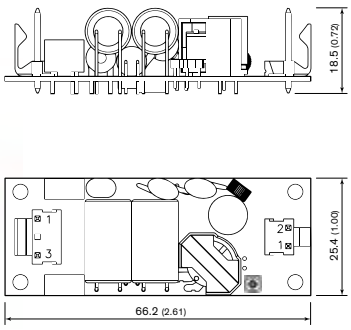
Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 15-103A-D	3.3 VDC (2.97 - 3.63 VDC)	4'000 mA	84 %
TPP 15-105A-D	5 VDC (4.5 - 5.5 VDC)	3'000 mA	86 %
TPP 15-109A-D	9 VDC (8.1 - 9.9 VDC)	1'670 mA	86 %
TPP 15-112A-D	12 VDC (10.8 - 13.2 VDC)	1'250 mA	87 %
TPP 15-115A-D	15 VDC (13.5 - 16.5 VDC)	1'000 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 %

- 1.50 x 1.00 x 1.02" package
- 2 x MOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- Low leakage <75 µA
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance criteria To IPC-A-610 Level 3
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <75 mW (ERP Ready)
- 5 year product warranty

PCB Pinout	
Pin	Function
1	Neutral
2	Line
3	Trim
4	-Vout
5	+Vout

TPP 15A-J — 15 Watt

EN 60335-1 Approved
IEC/EN/ES 60601-1 Approved

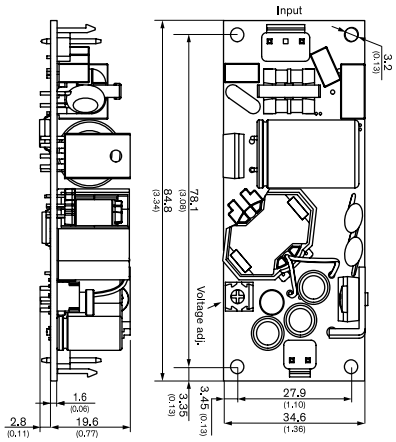


Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 15-103A-J	3.3 VDC (2.97 - 3.63 VDC)	4'000 mA	84 %
TPP 15-105A-J	5 VDC (4.5 - 5.5 VDC)	3'000 mA	86 %
TPP 15-109A-J	9 VDC (8.1 - 9.9 VDC)	1'670 mA	86 %
TPP 15-112A-J	12 VDC (10.8 - 13.2 VDC)	1'250 mA	87 %
TPP 15-115A-J	15 VDC (13.5 - 16.5 VDC)	1'000 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 %

- 2.61 x 1.00 x 0.72" package
- 2 x MOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- Low leakage <75 µA
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance criteria to IPC-A-610 Level 3
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <75 mW (ERP Ready)
- 5 year product warranty

Pin Connectors			
Input		Output	
Pin	Function	Pin	Function
1	Line	1	-Vout
3	Neutral	2	+Vout

TPI 30A-JP NEW! 30 Watt



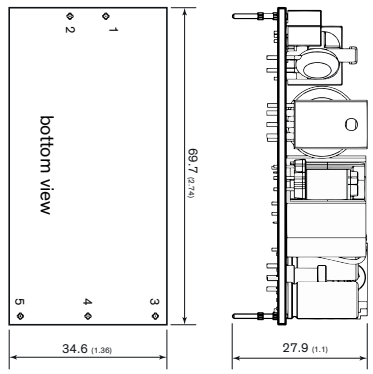
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPI 30-103A-JP	3.3 VDC	6'000 mA	83 %
TPI 30-105A-JP	5 VDC	6'000 mA	86 %
TPI 30-109A-JP	9 VDC	3'340 mA	87 %
TPI 30-112A-JP	12 VDC	2'500 mA	88.5 %
TPI 30-115A-JP	15 VDC	2'000 mA	88.5 %
TPI 30-124A-JP	24 VDC	1'250 mA	88 %
TPI 30-136A-JP	36 VDC	840 mA	89 %
TPI 30-148A-JP	48 VDC	630 mA	90.5 %

- 3.34 x 1.36 x 0.77" package
- I/O reinforced isolation 3000 VAC
- IEC/EN/UL 62368-1 approved
- 120% peak power for 5 secs
- < 0.3 W no load power (ErP ready)
- Efficiency up to 90%
- Protection class II prepared
- Operating up to 5000 m altitude
- Adjustable output voltage
- 3 year product warranty

Connectors - Connection	
CON1 - Input Connector	
Pin 1	Line
Pin 3	Neutral
CON2 - Output Connector	
Pin 1	+Vout
Pin 2	-Vout

TPP 30A-D 30 Watt

EN 60335-1 Approved
IEC/EN/ES 60601-1 Approved



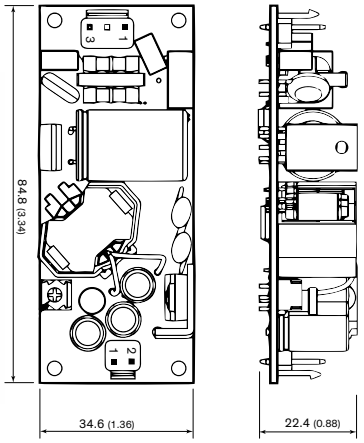
Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 30-103A-D	3.3 VDC (2.97 - 3.63 VDC)	6'000 mA	84 %
TPP 30-105A-D	5 VDC (4.5 - 5.5 VDC)	6'000 mA	87 %
TPP 30-109A-D	9 VDC (8.1 - 9.9 VDC)	3'340 mA	88 %
TPP 30-112A-D	12 VDC (10.8 - 13.2 VDC)	2'500 mA	91 %
TPP 30-115A-D	15 VDC (13.5 - 16.5 VDC)	2'000 mA	91 %
TPP 30-124A-D	24 VDC (21.6 - 26.4 VDC)	1'250 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 %

- 2.74 x 1.36 x 1.10" package
- 2 x MOPP / BF compliant
- Low leakage <75 µA
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance criteria to IPC-A-610 Level 3
- Protection class II prepared
- No load power <60 mW (ERP Ready)
- 5 year product warranty

PCB Pinout	
Pin	**Function**
1	Neutral
2	Line
3	+Vout
4	-Vout
5	Trim

TPP 30A-J — 30 Watt

EN 60335-1 Approved
IEC/EN/ES 60601-1 Approved



Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 30-103A-J	3.3 VDC (2.97 - 3.63 VDC)	6'000 mA	84 %
TPP 30-105A-J	5 VDC (4.5 - 5.5 VDC)	6'000 mA	87 %
TPP 30-109A-J	9 VDC (8.1 - 9.9 VDC)	3'340 mA	88 %
TPP 30-112A-J	12 VDC (10.8 - 13.2 VDC)	2'500 mA	91 %
TPP 30-115A-J	15 VDC (13.5 - 16.5 VDC)	2'000 mA	91 %
TPP 30-124A-J	24 VDC (21.6 - 26.4 VDC)	1'250 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 %

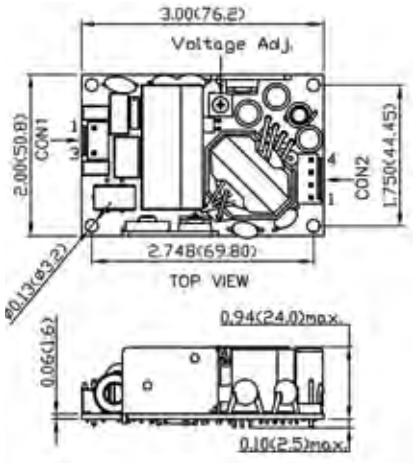
- 3.34 x 1.34 x 0.88" package
- 2 x MOPP / BF compliant
- Low leakage <75 µA
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance criteria to IPC-A-610 Level 3
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <60 mW (ERP Ready)
- 5 year product warranty

Pin Connectors

Input		Output	
Pin	**Function**	**Pin**	**Function**
1	Line	**1**	+Vout
3	Neutral	**2**	-Vout

TPP 40A-J — 40 Watt

IEC/EN/ES 60601-1 Approved



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.

- 3.00 x 2.00 x 0.94" package
- 2 x MOPP / BF compliant
- Low leakage <75 µA
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance criteria to IPC-A-610 Level 3
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <150 mW (ERP Ready)
- 5 year product warranty

Screw Terminal

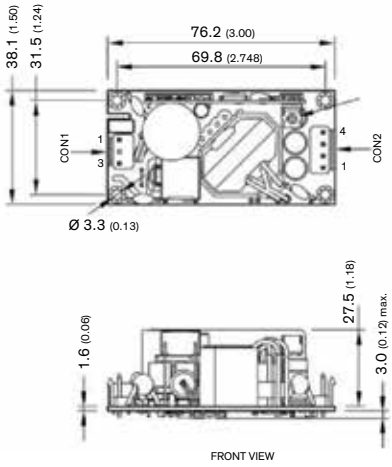
Input (CON1)		Output (CON2)	
Pin	**Function**	**Pin***	**Function**
1	Line	**1, 2**	-Vout
3	Neutral	**3, 4**	+Vout

*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
& terminal housing: VHR-3N

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

TPI 50A-J NEW! 50 Watt



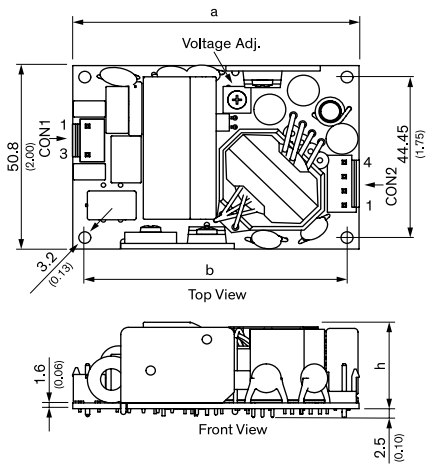
Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPI 50-105A-J	5 VAC (4.5 – 5.5 VAC)	8000 mA	90.5%
TPI 50-112A-J	12 VAC (9.6 – 14.4 VAC)	4170 mA	92.5%
TPI 50-115A-J	15 VAC (12 – 18 VAC)	3340 mA	92.5%
TPI 50-124A-J	24 VAC (19.2 – 28.8 VAC)	2085 mA	92.5%
TPI 50-136A-J	36 VAC (28.8 – 43.2 VAC)	1390 mA	91.5%
TPI 50-148A-J	48 VAC (38.4 – 57.6 VAC)	1045 mA	91.5%
TPI 50-153A-J	53 VAC (42.4 – 63.6 VAC)	950 mA	91.5%

- 3" × 1.5" package
- Compact and cost efficient design
- Peak power function up to 140%
- I/O reinforced isolation 3000 VAC
- Operating temperature range –40°C to +85°C
- No load input power < 0.3 W (acc. ErP directive)
- High efficiency up to 93%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 year product warranty

Connectors – Connection

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

TPI 65A-JP 65 Watt



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPI 65-105A-JP	5 VDC	10 A	90 %
TPI 65-109A-JP	9 VDC	7.23 A	91 %
TPI 65-112A-JP	12 VDC	5.42 A	92.5 %
TPI 65-115A-JP	15 VDC	4.34 A	93.5 %
TPI 65-124A-JP	24 VDC	2.71 A	93.5 %
TPI 65-136A-JP	36 VDC	1.81 A	92.5 %
TPI 65-148A-JP	48 VDC	1.36 A	93 %

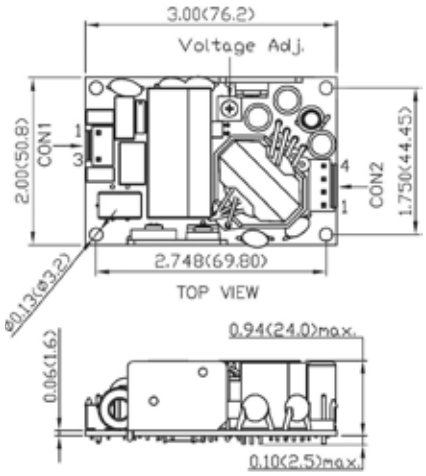
- 3.00 x 2.00 x 0.94" package
- I/O reinforced isolation 3000 VAC
- IEC/EN/UL 62368-1 approved
- 130% peak power up to 5 secs
- < 0.3 W no load power (Erp ready)
- Efficiency up to 93%
- Protection class II prepared
- Operating up to 5000 m altitude
- Adjustable output voltage
- 3 year product warranty

Connectors - Connection

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

TPP 65A-J — 65 Watt

IEC/EN/ES 60601-1 Approved



- 3.00 x 2.00 x 0.94” package
- 2xMOPP / BF compliant
- Low leakage <75 µA (BF rated)
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance criteria to IPC-A-610 Level 3
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <150 mW (ERP Ready)
- 5 year product warranty

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.

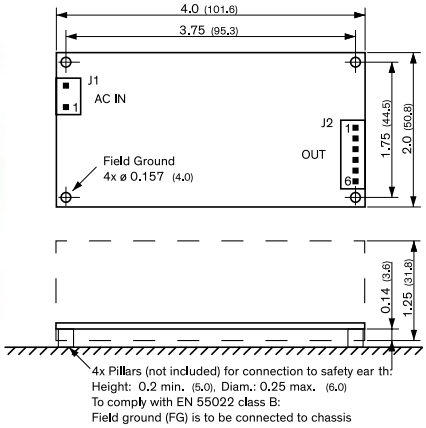
Connectors - Connection			
Input (CON1)		Output (CON2)	
Pin	**Function**	**Pin***	**Function**
1	Line	**1, 2**	-Vout
3	Neutral	**3, 4**	+Vout

*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
& terminal housing: VHR-3N

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

TOP 100 — 100 Watt



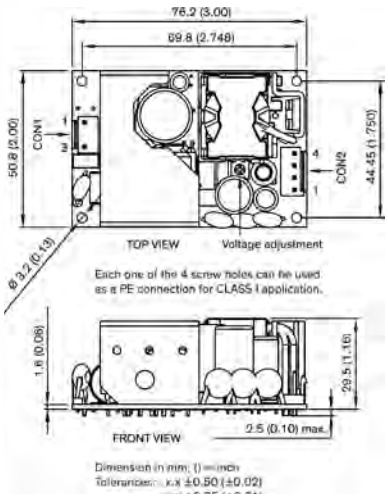
- 2.0" x 4.0" open-frame package
- Up to +50°C convection operation
- Highest efficiency, 90% typ.
- EMI filter meets EN 55032, level B
- Compliance with EN 61000-3-2
- Low leakage current
- Safety class I and class II operation
- 3-year product warranty

Model	Output Voltage (Adjustment Range)	Output Current max.
TOP 100-105	5.0 VDC (5.0 – 5.2)	20.0 A
TOP 100-112	12 VDC (12.0 – 13.0)	8.3 A
TOP 100-115	15 VDC (15.0 – 16.0)	6.7 A
TOP 100-124	24 VDC (24.0 – 26.0)	4.2 A
TOP 100-148	48 VDC (48.0 – 52.0)	2.1 A

Output	
Pin	**J2**
1	– Vout
2	– Vout
3	– Vout
4	+ Vout
5	+ Vout
6	+ Vout

Input	
Pin	**J1**
1	AC in
2	AC in

TPI 100A-J — 100 Watt



Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPI 100-112A-J	12 VDC (10.8 - 13.2 VDC)	8'340 mA	91 %
TPI 100-115A-J	15 VDC (13.5 - 16.5 VDC)	6'670 mA	92 %
TPI 100-124A-J	24 VDC (21.6 - 26.4 VDC)	4'170 mA	92 %
TPI 100-128A-J	28 VDC (25.2 - 30.8 VDC)	3'580 mA	92 %
TPI 100-136A-J	36 VDC (32.4 - 39.6 VDC)	2'780 mA	91 %
TPI 100-148A-J	48 VDC (43.2 - 52.8 VDC)	2'090 mA	91 %

- 3.00 x 2.00 x 1.16” package
- I/O reinforced isolation 3000 VAC
- IEC/EN/UL 62368-1 approved
- < 0.3 W no load power (ErP ready)
- High efficiency 91% - 92%
- Active power factor correction > 95
- Protection class II prepared
- Operating up to 5000 m altitude
- Adjustable output voltage
- 3 year product warranty

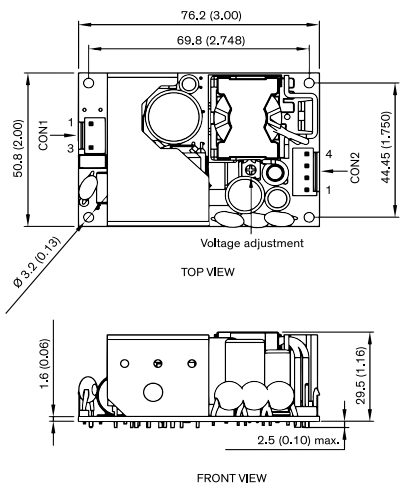
Pin connectors

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

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

TPP 100A-J — 100 Watt

IEC/EN/ES 60601-1 Approved



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 %

- 3.00 x 2.00 x 1.16” package
- 2xMOPP / BF compliant
- Low leakage <75 µA
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- Acceptance criteria. to IPC-A-610 Level 3
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <300 mW (ERP Ready)
- 5 year product warranty

Screw Terminal

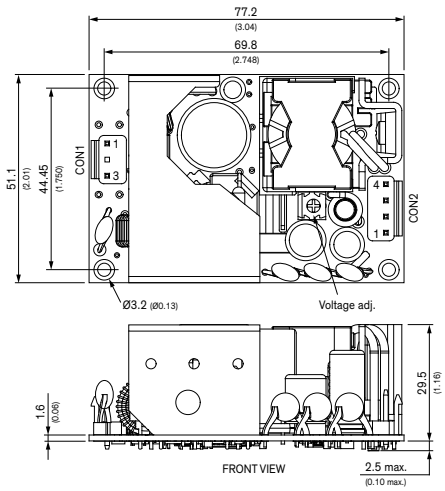
Input (CON1)		**Output (CON2)**	
Pin	**Function**	**Pin***	**Function**
1	Line	**1, 2**	-Vout
3	Neutral	**3, 4**	+Vout

*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
& terminal housing: VHR-3N

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

TPI 125A-J — 125 Watt

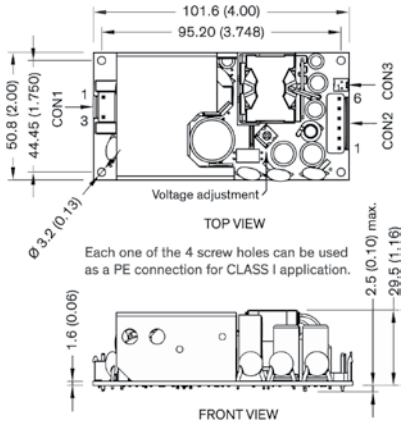


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPI 125-112A-J	12 VDC	10'420 mA	91 %
TPI 125-115A-J	15 VDC	8'340 mA	92 %
TPI 125-124A-J	24 VDC	5'210 mA	92 %
TPI 125-136A-J	36 VDC	3'480 mA	91 %
TPI 125-148A-J	48 VDC	2'610 mA	91 %

- 3.00 x 2.00 x 1.16” package
- Compact & cost efficient design
- Peak power function up to 120%
- I/O reinforced isolation 3000 VAC
- Temperature range -40°C to +85°C
- No load power <0.3W (ErP Ready)
- High efficiency up to 92%
- Internal EN 55032 class B filter
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- 3 year product warranty

Pin Connections	
Pin	**Single**
in 1	AC (L)
in 3	AC (N)
Out 1-2	-Vout
Out 3-4	+Vout

TPI 150A-J — 150 Watt



Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPI 150-112A-J	12 VDC (10.8 - 13.2 VDC)	12'500 mA	91 %
TPI 150-115A-J	15 VDC (13.5 - 16.5 VDC)	10'000 mA	92 %
TPI 150-124A-J	24 VDC (21.6 - 26.4 VDC)	6'250 mA	92 %
TPI 150-128A-J	28 VDC (25.2 - 30.8 VDC)	5'360 mA	92 %
TPI 150-136A-J	36 VDC (32.4 - 39.6 VDC)	4'170 mA	92 %
TPI 150-148A-J	48 VDC (43.2 - 52.8 VDC)	3'130 mA	92 %

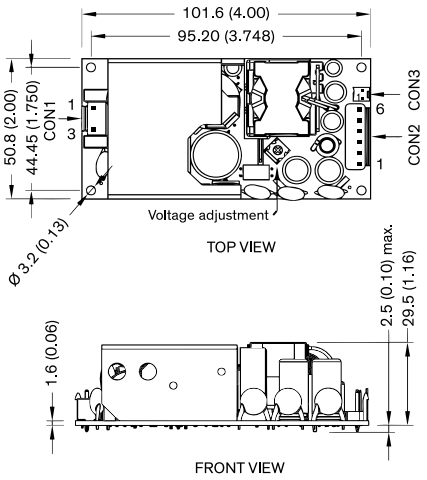
- 4.00 x 2.00 x 1.16” package
- I/O reinforced isolation 3000 VAC
- IEC/EN/UL 62368-1 approved
- < 0.3 W no load power (ErP Ready)
- High efficiency - 91-92%
- Active power factor correction > 95
- Protection class II prepared
- Operating up to 5000 m altitude
- Adjustable output voltage
- 3 year product warranty

Pin connectors					
Input (CON1)		**Output** (CON2)		**Fan** (CON3)	
Pin	**Function**	**Pin***	**Function**	**Pin**	**Function**
1	Line	**1-3**	-Vout	**1**	-Fan
3	Neutral	**4-6**	+Vout	**2**	+Fan

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

TPP 150A-J — 150 Watt

IEC/EN/ES 60601-1 Approved



Model	Output Voltage nom. (adjustable)	Output Current max. (Forced air cooling)	Efficiency typ.
TPP 150-112A-J	12 VDC (10.8 - 13.2 VDC)	12'500 mA	91 %
TPP 150-115A-J	15 VDC (13.5 - 16.5 VDC)	10'000 mA	92 %
TPP 150-124A-J	24 VDC (21.6 - 26.4 VDC)	6'250 mA	92 %
TPP 150-128A-J	28 VDC (25.2 - 30.8 VDC)	5'360 mA	92 %
TPP 150-136A-J	36 VDC (32.4 - 39.6 VDC)	4'170 mA	92 %
TPP 150-148A-J	48 VDC (43.2 - 52.8 VDC)	3'130 mA	92 %

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

- 4.00 x 2.00 x 1.16” package
- 2 x MOPP / BF compliant
- Low leakage <75 µA
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptance criteria
- IEC/EN/UL 62368-1 approved
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <300 mW (ERP Ready)
- 5 year product warranty

Pin connectors

Input (CON1)		Output (CON2)	
Pin	**Function**	**Pin***	**Function**
1	Line	**1-3**	-Vout
3	Neutral	**4-6**	+Vout

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

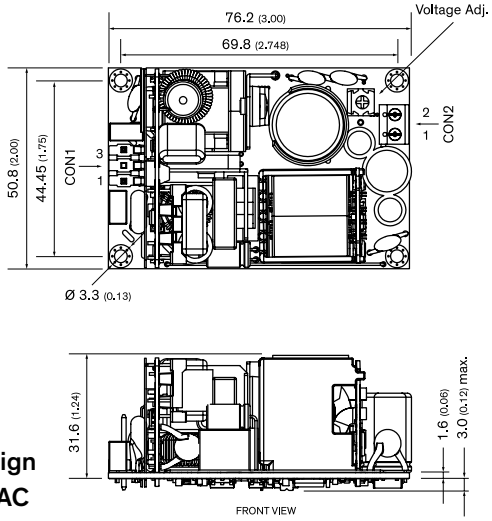
*Terminal rated for 7 A max. (at higher current connection has to be split)

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

CON2: JST series
mates with JST crimp terminal: SVH-21T-P1.1
& terminal housing: VHR-6N

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

TPI 180A-M NEW! — 180 Watt



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

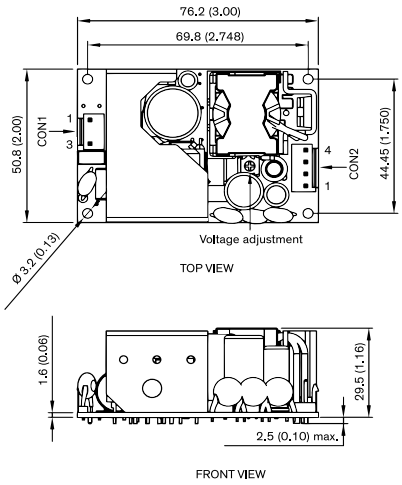
- 180 Watt open frame power supplies in a 3" × 2" package
- Compact and cost efficient design
- I/O reinforced isolation 3000 VAC
- IEC/EN/UL 62368-1 approvals
- Operating temperature range −40°C to +85°C
- No load input power < 0.3 W (acc. ErP directive)
- High efficiency up to 94%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 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

TPP 180A-M NEW! 180 Watt

IEC/EN/ES 60601-1 Approved

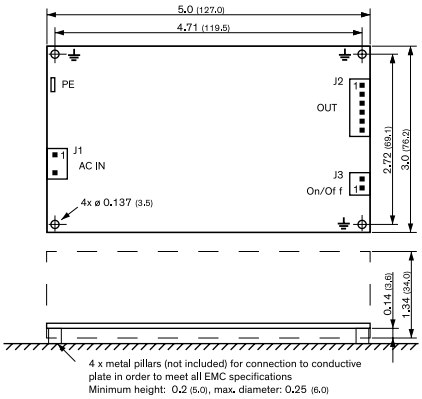


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPP 180-112A-M	12 VDC	15 A	92%
TPP-180-115A-M	15 VDC	12 A	92%
TPP 180-124A-M	24 VDC	7.5 A	94%
TPP 180-128A-M	28 VDC	6.4 A	93%
TPP 180-136A-M	36 VDC	5 A	93%
TPP 180-148A-M	48 VDC	3.75 A	93%

- 3.00 x 2.00 x 1.16” package
- 2xMOPP / BF compliant
- Low leakage <100 µA
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptance criteria
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <300 mW (ERP Ready)
- 5 year product warranty

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

TOP 200 200 Watt



Model	Output Power max.	Output Voltage (fixed)	Output Current max.
TOP 200-112	200 W	12 VDC	16 A
TOP 200-115		15 VDC	13 A
TOP 200-124		24 VDC	8.3 A
TOP 200-148		48 VDC	4.2 A

- Standard 5.0" × 3.0" footprint
- Supplies 200W (convection cooling!)
- Highest efficiency up to 95%
- Operating temperature range –25°C to +70°C
- Universal input 85 – 264 VAC
- Compliance with EN 61000-3-2
- Power Back immunity
- Low leakage current
- Protection class I and class II
- 3-year product warranty

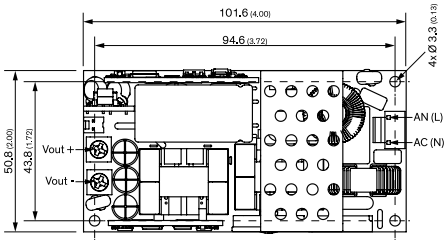
J1	
Pin	Input
1	AC in L
2	AC in N

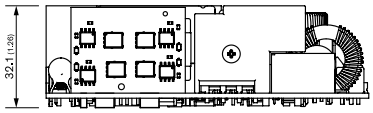
J2	
Pin	Output
1	+ Vout
2	+ Vout
3	+ Vout
4	– Vout
5	– Vout
6	– Vout

J3	
Pin	Remote
1	–
2	+

TPP 250A-M — In Development — 250 Watt

IEC/EN/ES 60601-1 Approved



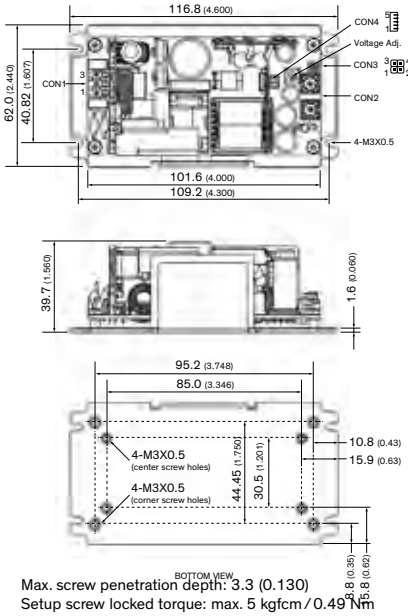


Model	Output Voltage nom.	Output Current max.
TPP 250-112A-M	12 VDC	20.8 A
TPP 250-115A-M	15 VDC	16.7 A
TPP 250-124A-M	24 VDC	10.4 A
TPP 250-128A-M	28 VDC	8.9 A
TPP 250-136A-M	36 VDC	6.9 A
TPP 250-148A-M	48 VDC	5.8 A

- 4.00 x 2.00 x 1.25” package
- 2 x MOPP / BF compliant
- Low leakage <100 µA
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptance criteria
- Protection class I & II prepared
- Operating up to 5000 m altitude
- No load power <500mW (ERP Ready)
- 12V Fan Output
- 5 year product warranty

Pin Connections	
Pin	**Single**
1	AC (L)
2	AC (N)
3	-Vout
4	NC
5	+Vout

TPI 300L-M — NEW! — 300 Watt



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

- 2.44 x 4.60" open-frame + baseplate package
- Compact and cost efficient design
- I/O reinforced isolation 3000 VAC
- IEC/EN/UL 62368-1 approvals
- Operating temperature range –40°C to +85°C
- No load input power < 0.3 W (acc. ErP directive)
- High efficiency up to 93%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 year product warranty

Max. screw penetration depth: 3.3 (0.130)
Setup screw locked torque: max. 5 kgfcm / 0.49 Nm
CON2 screw locked torque: max. 16.8 kgfcm / 1.65 Nm
wires 24 – 14 AWG

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

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

CON2:
KST ring terminal RVS2-3.7

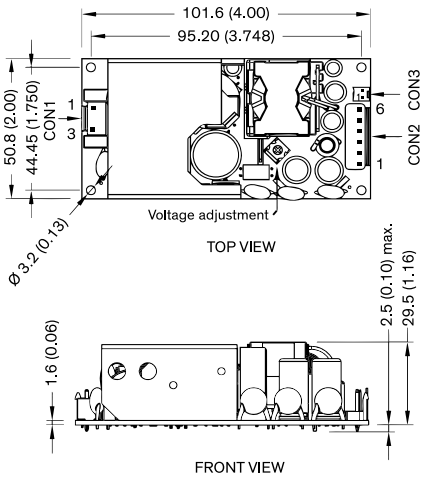
CON3:
Molex housing 90143-004
Molex crimp terminals 90119

CON4:
Molex housing 51021-0500
Molex crimp terminals 50058, 50078

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 300A-M — 300 Watt

IEC/EN/ES 60601-1 Approved



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPP 300-112A-M	12 VDC	25 A	91%
TPP 300-115A-M	15 VDC	20 A	91%
TPP 300-124A-M	24 VDC	12.5 A	92%
TPP 300-128A-M	28 VDC	10.7 A	92%
TPP 300-136A-M	36 VDC	8.3 A	93%
TPP 300-148A-M	48 VDC	6.25 A	93%

- 4.00 x 2.00 x 1.16” package
- 2xMOPP / BF compliant
- Low leakage <100 µA
- IEC/EN/UL 62368-1 approved
- IEC 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptance criteria
- Protection class II prepared
- Operating up to 5000 m altitude
- No load power <300mW (ERP Ready)
- 5 year product warranty

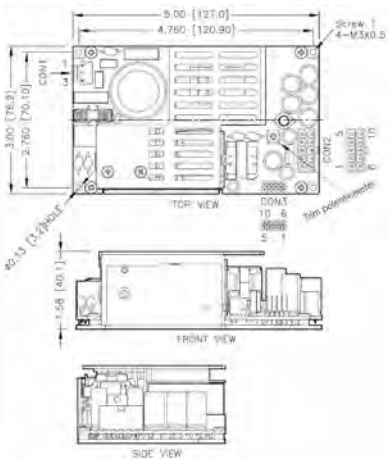
Pin connectors

Input (CON1)		Output (CON2)	
Pin	Function	Pin*	Function
1	Line	1-3	-Vout
3	Neutral	4-6	+Vout

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

TPP 450BA-M — 450 Watt

IEC/EN/ES 60601-1 Approved



Model	Output Voltage nom. (adjustable)	Output Current max. (Forced air cooling)	Efficiency typ.
TPP 450-112BA-M	12 VDC (11.0 - 13.0 VDC)	37'500 mA	91 %
TPP 450-115BA-M	15 VDC (13.8 - 16.2 VDC)	30'000 mA	92 %
TPP 450-124BA-M	24 VDC (22.1 - 25.9 VDC)	18'750 mA	93 %
TPP 450-128BA-M	28 VDC (25.8 - 30.2 VDC)	16'100 mA	93 %
TPP 450-136BA-M	36 VDC (33.1 - 38.9 VDC)	12'500 mA	93 %
TPP 450-148BA-M	48 VDC (44.2 - 51.8 VDC)	9'400 mA	94 %
TPP 450-153BA-M	53 VDC (48.8 - 57.2 VDC)	8'550 mA	94 %

- 5.00 x 3.00 x 1.58” package
- Safety Class II Prepared
- Open-Frame with baseplate style
- 450 Watt with forced air cooling (320 Watt convection)
- 2xMOPP / BF compliant
- IEC/EN/UL 62368-1 / 60950-1 approved
- IEC/EN 60601-1-2 4th edition EMC
- ISO 14971 risk management file
- IPC-A-610 class 3 Acceptance
- 5 V Standby ouput, 12 V fan output with variable fan speed, Remote On/Off, Power Good Signal
- 5 year product warranty

Input

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

Output

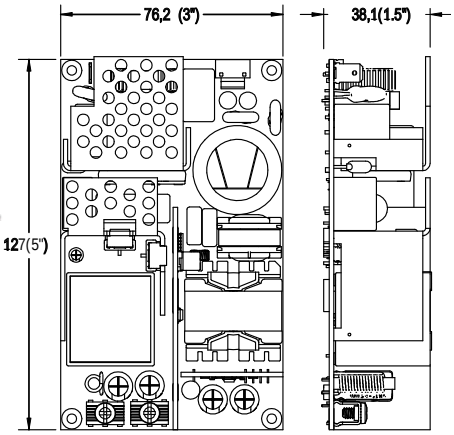
CON2	
Pin*	Function
1-5	+Vout
6-10	-Vout

Auxiliary

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

TPP 600A-M — In Development — 600 Watt

IEC/EN/ES 60601-1 Approved



- 3.00 x 5.00 x1.50” open frame
- 600W with forced air cooling
- Up to 300W convection cooled
- 2xMOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- IEC/EN 60601-1-2 4th ed. (EMC)
- ISO 14971 risk management file
- Protection class I / II prepared
- Low leakage current <100 µA
- ErP compliant (<0.5 W no load)
- 5Vsb, 12V smart fan, Remote On/Off, & DC OK signals
- 5 year product warranty

Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TPP 600-124A-M	24 VDC	25.0 A	94%
TPP 600-128A-M	28 VDC	21.4 A	
TPP 600-136A-M	36 VDC	16.7 A	
TPP 600-148A-M	48 VDC	12.5 A	

Input Connector:
J8 = Molex KK 396, PCB Header 41791
(PE : J1) = (PE 6.3×0.8mm DIN 46244 Vertical Tab)

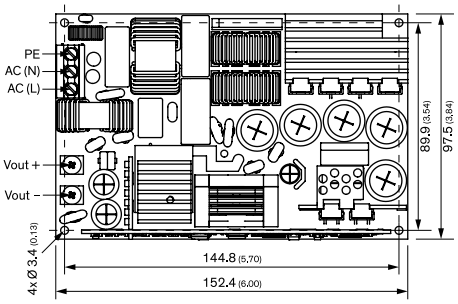
Output Connector(s) :
J5, J6 = Keystone 8199-X

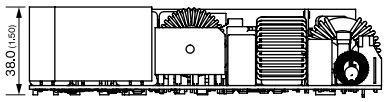
Signal Connector :
J3 = TE MTA-100, PCB Header 640457-4

FAN Connector
J4 = Molex KK 254, PCB Header 22-27-2021

TPP 850A — NEW! — 850 Watt

IEC/EN/ES 60601-1 Approved





- 4.00 x 6.00 x 1.50" open frame
- 850W with forced air cooling
- Up to 360W convection cooled
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- IEC/EN/UL 62368-1 approved
- IEC/EN 60601-1-2 4th ed. (EMC)
- ISO 14971 risk management file
- Typical efficiency 94%
- ErP compliant (<0.5 W no load)
- Protection class I / II prepared
- Class I Low leakage current <100 µA
- 5Vsb, 12V smart fan, Remote On/Off, AC OK and DC OK signals

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

ENGINEERED TO STAY COOL

High Performance, ultra-compact AC/DC power supplies with minimal heat disssipation

Features:

- Industrial, medical and household approvals
- Ultra-compact / high-density footprints
- High efficiencies with minimal heat dissipation
- -40 to +85°C extended operating temperatures
- Isolation (4kVAC) and leakage current (< 100 µA)
- 5 year product warranty

UL 60601-1 3rd edition / EMC 4th edition

UL62368-1

EN60335-1 (up to 30 watts)

ERP Ready

15 - 850 WATT AC/DC POWER SUPPLIES

FAMILY	WATTS	PACKAGE	FOOTPRINT	Page
TPP15-J	15	Encapsulated Chassis-Mount	2.82 x 1.14 x 0.85"	118
TPP 30-J	30		3.95 x 1.50 x 1.00"	122
TPP 40E-J	40		4.30 x 2.20 x 1.20"	124
TPP 65E-J	65		4.30 x 2.20 x 1.20"	126
TPP 15-D	15	Encapsulated PCB Mount	1.65 x 1.14 x 0.82"	137
TPP 30-D	30		2.89 x 1.50 x 1.00"	142
TPP 40E-D	40		3.20 x 2.01 x 1.20"	144
TPP 65E-D	65		3.20 x 2.20 x 1.20"	146
TPP 15A-D	15	Open-Frame PCB Mount	1.50 x 1.00 x 0.80"	148
TPP 30A-D	30		2.74 x 1.36 x 0.95"	149
TPP 15A-J	15	Open-Frame	2.61 x 1.00 x 0.64"	148
TPP 30A-J	30		3.34 x 1.36 x 0.81"	152
TPP 40A-J	40		3.00 x 2.00 x 0.94"	150
TPP 65A-J	65		3.00 x 2.00 x 0.94"	152
TPP 100A-J	100		3.00 x 2.00 x 1.16"	153
TPP 150A-J	150		4.00 x 2.00 x 1.16"	155
TPP 180A-M	180		3.00 x 2.00 x 1.16"	158
TPP 250A-M	250		4.00 x 2.00 x 1.25"	158
TPP 300A-M	300		4.00 x 2.00 x 1.22"	174
TPP 450BA-M	450		5.00 x 3.00 x 1.58"	158
TPP 600A-M	600		5..00 x 3.00 x 1.50"	159
TPP 850A	850		6.00 x 4.00 x 1.50"	159
TPP 40	40	Enclosed	3.53 x 2.38 x 1.31"	165
TPP 65	65	Enclosed	3.53 x 2.38 x 1.31"	167
TPP 100	100	Enclosed	3.60 x 2.44 x 1.54"	168
TPP 450B-M	450	Fan (End-Mount & Enclosed)	5.83 x 3.15 x 1.60"	175
TPP 150	150	Fan (Top Mount & Enclosed)	4.60 x 2.44 x 1.94"	170
TPP 600-FK	600	Fan (Top Mount)	5.00 x 3.00 x 1.62"	176
TPP 850-FK	800	Fan (Top Mount)	6.00 x 4.00 x 1.62"	177

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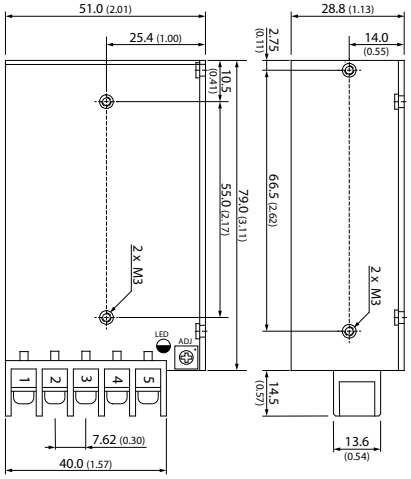
AC/DC: Enclosed Power Supplies

Traco Power offers a wide range of encapsulated power supplies with hundred of models available in PCB mount styles to suit a wide range of applications.

SERIES	POWER	DESCRIPTION	STATUS	APPS	PAGE
TXM 015	15	3.11 × 2.01 × 1.13" package, 3000 VAC isolation	ACTIVE		162
TXLN 018	18	2.99 × 2.00 × 1.10" package, 3000 VAC isolation	**NEW!**		162
TXLN 025	25	3.11 × 2.01 × 1.14" package, Metal case, 3000 VAC isolation	**NEW!**		163
TXM 025	25	3.11 × 2.01 × 1.13" package, 3000 VAC isolation	ACTIVE		163
TXLN 035	35	3.90 × 3.23 × 1.35" package, Metal case, 3000 VAC isolation	**NEW!**		164
TXM 035	35	4.02 × 2.52 × 1.30" package, 3000 VAC isolation	ACTIVE		164
TPP 40	40	3.53 × 2.38 × 1.31" package, 4000 VAC isolation, 4000 VAC isolation	ACTIVE	⊕	165
TXM 050	50	3.90 × 3.23 × 1.38" package, 3000 VAC isolation	ACTIVE		165
TXH 060	60	3.12 × 2.00 × 1.50" package, 3000 VAC isolation	ACTIVE		166
TXLN 060	60	3.90 × 3.23 × 1.38" package, Metal case, 3000 VAC isolation	**NEW!**		166
TPP 65	65	3.53 × 2.38 × 1.31" package, 4000 VAC isolation, 4000 VAC isolation	ACTIVE	⊕	167
TXM 075	75	5.08 × 3.90 × 1.50" package, 3000 VAC isolation	ACTIVE		167
TXLN 080	80	6.25 × 3.74 × 1.50" package, 3000 VAC isolation, single/dual/triple outputs	**NEW!**		168
TPP 100	100	3.60 × 2.44 × 1.20" package, 4000 VAC isolation, 4000 VAC isolation	ACTIVE	⊕	168
TXM 100	100	7.05 × 3.90 × 1.50" package, 3000 VAC isolation	ACTIVE		169
TXLN 110	110	6.26 × 3.74 × 1.50" package, 3000 VAC isolation	**NEW!**		169
TPP 150	150	4.60 × 2.44 × 1.94" package, 4000 VAC isolation, 4000 VAC isolation, top-mount fan	ACTIVE	⊕	170
TXLN 150	150	7.40 × 3.90 × 1.18" package, 3000 VAC isolation	**NEW!**		170
TXM 150	150	7.05 × 3.90 × 1.50" package, 3000 VAC isolation	ACTIVE		171
TPI 180-M	180	3.60 × 2.44 × 1.75" package, 3000 VAC isolation, cost efficient, top-mount fan	**NEW!**		171
TPP 180-M	180	3.60 × 2.44 × 1.75" package, 4000 VAC isolation, top-mount fan	**NEW!**	⊕	172
TXLN 200	200	8.74 × 4.52 × 1.18" package, 3000 VAC isolation	**NEW!**		172
TXM 200	200	7.83 × 3.90 × 1.98" package, 3000 VAC isolation	ACTIVE		173
TPP 250A-FK	250	2.00 × 4.00 × 1.60" package, 4000 VAC isolation, top-mount fan	**IN DEVELOPMENT**	⊕	173
TPI 300M	300	4.60 × 2.44 × 2.32" package, 3000 VAC isolation, cost-efficient, top-mount fan	**NEW!**		174
TPP 300M	300	4.60 × 2.44 × 2.32" package, 4000 VAC isolation, top-mount fan	**NEW!**	⊕	174
TXLN 320	320	8.74 × 4.53 × 1.18", 3000 VAC isolation, top-mount fan	**NEW!**		175
TPP 450B	450	5.83 × 3.15 × 1.62" package, 4000 VAC isolation, standby power, end-mount fan	ACTIVE	⊕	175
TXLN 500	500	9.67 × 5.00 × 1.61" package, 3000 VAC isolation, end-mount fan	**NEW!**		176
TPP 600-FK	600	5.00 × 3.00 × 1.62" package, 4000 VAC isolation, top-mount fan	**IN DEVELOPMENT**	⊕	176
TXLN 750	750	10.83 × 4.92 × 2.48" package, Metal case, 3000 VAC isolation, end-mount fan	**NEW!**		177
TPP 850-FK	850	4.00 × 6.00 × 1.62" package, 4000 VAC isolation, top-mount-fan	**NEW**	⊕	177
TXLN 960	960	10.82 × 4.92 × 3.28" package, 3000 VAC isolation, end-mount fan	**NEW!**		178

APPS KEY: ⊕ = IEC/EN/ES 60601-1 (2×MOPP Approved)

TXM 015 — 15 Watt

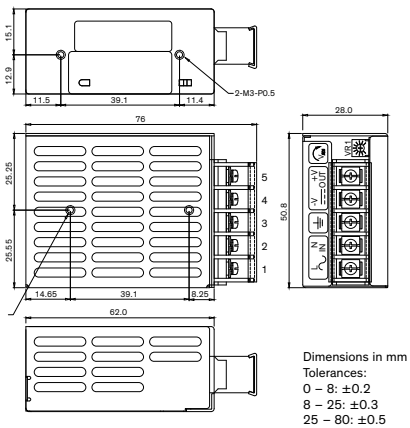


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXM 015-103	3.3VDC	4.0 A	71%
TXM 015-105	5VDC	3.0 A	78%
TXM 015-112	12VDC	1.3 A	82%
TXM 015-115	15VDC	1.0 A	83%
TXM 015-124	24VDC	0.7 A	85%

- 3.19 x 2.01 x 1.13” package
- High operating temperature up to 70°C
- Low no load power consumption <0.5W
- Screw terminal block
- Universal AC input
- Withstand 300 VAC surge input for 5 sec.
- IEC/EN/UL 62368-1 approved
- Adjustable output voltage
- 3 year product warranty

Pin-Out	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4	– Vout
5	+ Vout

TXLN 018 — NEW! — 18 Watt



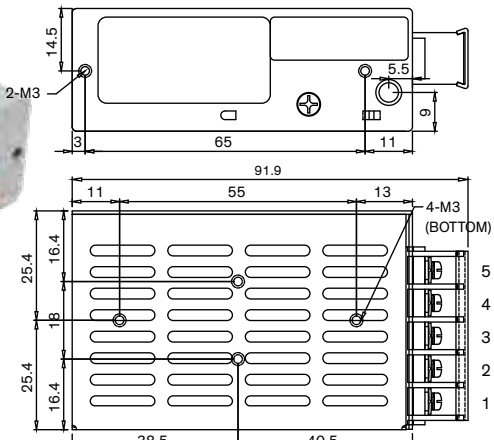
Dimensions in mm
Tolerances:
0 – 8: ±0.2
8 – 25: ±0.3
25 – 80: ±0.5

Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 018-103	3.3 VDC	3'000 mA	86%
TXLN 018-105	5 VDC	3'000 mA	86%
TXLN 018-112	12 VDC	1'500 mA	88%
TXLN 018-115	15 VDC	1'200 mA	88%
TXLN 018-124	24 VDC	750 mA	89%

- 2.99 x 2.00 x 1.10” package
- -20 °C to 70°C Operation
- Full-load convection operation to 50°C
- Screw terminal blocks
- 85-264 VAC universal AC input
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Screw Terminal	
Pin	**Function**
1	AC (L)
2	AC (N)
3	FG
4	–Vout
5	+Vout

TXLN 025 NEW! 25 Watt

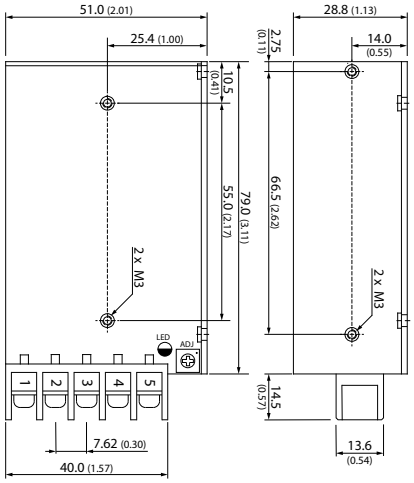


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 025-103	3.3 VDC	6'000 mA	72 %
TXLN 025-105	5 VDC	5'000 mA	79 %
TXLN 025-112	12 VDC	2'100 mA	84 %
TXLN 025-115	15 VDC	1'700 mA	85 %
TXLN 025-124	24 VDC	1'100 mA	86 %
TXLN 025-148	48 VDC	570 mA	88 %

- 3.11 x 2.00 x 1.10” package
- -20 °C to 70°C Operation
- Full-load convection operation to 50°C
- Screw terminal blocks
- 85-264 VAC universal AC input
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Screw Terminal	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4	–Vout
5	+Vout

TXM 025 25 Watt

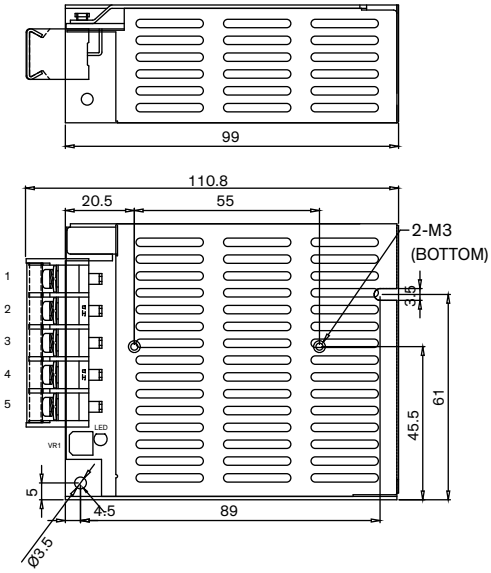


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXM 025-103	3.3VDC	6.0 A	71%
TXM 025-105	5VDC	5.0 A	77%
TXM 025-112	12VDC	2.1 A	82%
TXM 025-115	15VDC	1.7 A	83%
TXM 025-124	24VDC	1.1 A	84%

- 3.68 x 2.01 x 1.13” package
- High operating temperature up to 70°C
- Low no load power consumption <0.5W
- Screw terminal block
- No internal fan
- Universal AC input
- Withstand 300 VAC surge input for 5 sec.
- IEC/EN/UL 62368-1 approved
- Adjustable output voltage
- 3 year product warranty

Pin-Out	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4	– Vout
5	+ Vout

TXLN 035 NEW! 35 Watt



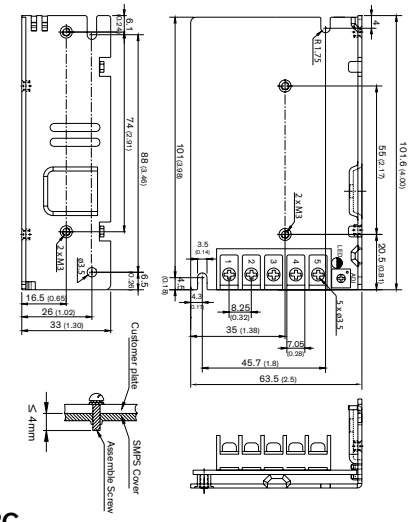
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 035-103	3.3 VDC	9'000 mA	74%
TXLN 035-112	5 VDC	7'000 mA	79%
TXLN 035-115	15 VDC	3'000 mA	82%
TXLN 035-124	24 VDC	2'400 mA	84%
TXLN 035-148	48 VDC	1'500mA	85%
TXLN 035-212	+5 / +12 BDC	800 mA	86%
TXLN 035-215	+5 / +24 VDC	4'000 / 2'500 mA	79%
TXLN 035-22M2	+12 / -12 VDC	4'000 / 1'300 mA	83%
TXLN 035-23M3	+15 / -15 VDC	2'400 / 1'500 mA	84%

- 3.89 x 3.23 x 1.38" package
- -20 °C to 70°C Operation
- Full-load convection operation to 50°C
- Screw terminal blocks
- 85-264 VAC universal AC input
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Single Output	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4	–Vout
5	+Vout

Multi Output	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4	GND
5	Output 1
6	Output 2

TXM 035 35 Watt



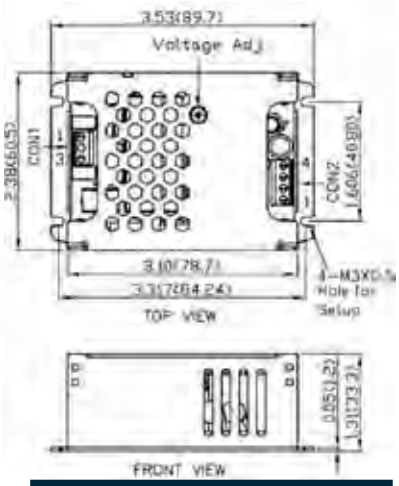
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXM 035-105	5VDC	6.0 A	80%
TXM 035-112	12VDC	3.0 A	84%
TXM 035-115	15VDC	2.4 A	86%
TXM 035-124	24VDC	1.5 A	87%
TXM 035-148	48VDC	0.75 A	88%

- 4.00 x 2.50 x 1.30" package
- High operating temperature up to 70°C
- Low no load power consumption <1.0W
- Screw terminal block
- No internal fan
- Universal AC input
- Withstand 300 VAC surge input for 5 sec.
- IEC/EN/UL 62368-1 approved
- Adjustable output voltage
- 3 year product warranty

Pin-Out	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4	– Vout
5	+ Vout

TPP 40 — 40 Watt

IEC/EN/ES 60601-1 Approved



- 3.53 x 2.38 x 1.31” package
- ErP compliant, No load < 150mW
- Constant power characteristics at 2W (no current limitation)
- Suitable to drive relays, solenoids, capacitive loads & LED,s
- Auxiliary outputs 3.3 & 5 VDC
- Operating temperature -30°C to +70°C
- EMI meets EN 55032, class B & FCC, level B
- IEC/EN/UL 62368-1 approved
- Short circuit, overload protection
- 3 year product warranty

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	96 %

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

Screw Terminal (Single Output Models)

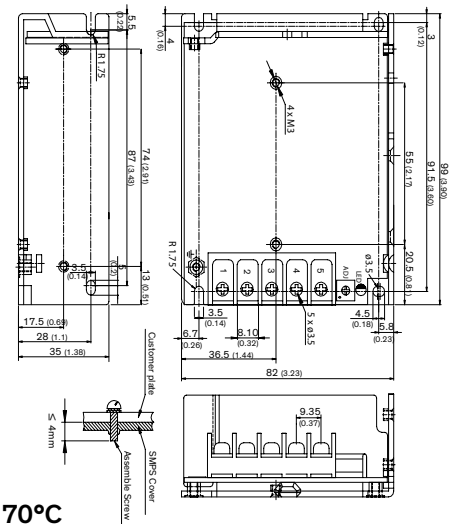
Input (CON1)		Output (CON2)	
Pin	**Function**	**Pin***	**Function**
1	Line	**1, 2**	-Vout
3	Neutral	**3, 4**	+Vout

Screw Terminal (Multi Output Models)

Input (CON1)		Output (CON2)	
Pin	**Function**	**Pin***	**Function**
1	Line	**1**	Vout 3
3	Neutral	**2, 3**	COM
		4, 5	Vout 2
		6	Vout 1

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

TXM 050 — 50 Watt



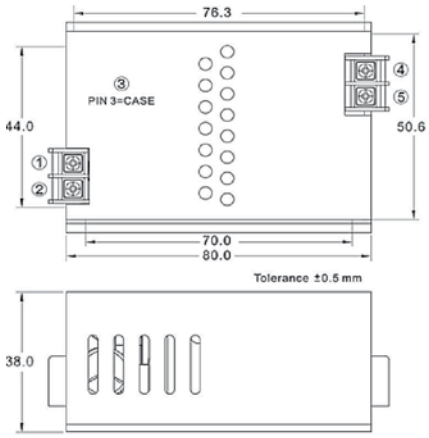
- 3.90 x 3.23 x 1.38” package
- High operating temperature up to 70°C
- Low no load power consumption <0.5W
- Screw terminal block
- No internal fan
- Universal AC input
- Withstand 300 VAC surge input for 5 sec.
- IEC/EN/UL 62368-1 approved
- Adjustable output voltage
- 3 year product warranty

Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXM 050-105	5VDC	8.0 A	80%
TXM 050-112	12VDC	4.2 A	85%
TXM 050-115	15VDC	3.4 A	86%
TXM 050-124	24 VDC	2.2 A	88%
TXM 050-148	48 VDC	1.1 A	89%

Pin-Out

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

TXH 060 — 60 Watt

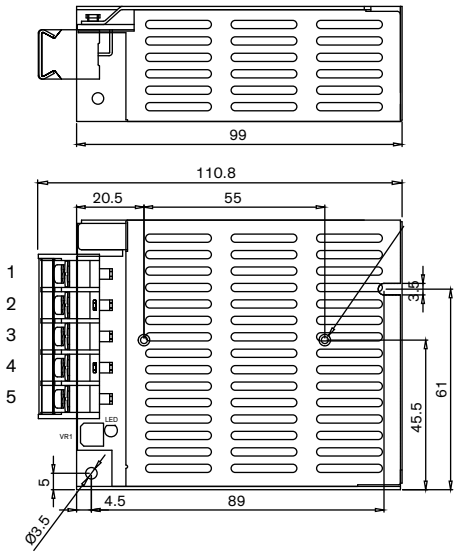


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXH 060-112	12 VDC	5'000 mA	87%
TXH 060-115	15 VDC	4'000 mA	87%
TXH 060-124	24 VDC	2'500 mA	88%
TXH 060-148	48 VDC	1'250 mA	88%

- 3.14 x 2.35 x 1.50” package
- Universal input range 90 to 264 VAC
- ErP compliant, < 0.3 W no load power
- Adjustable output voltage
- 4242 VDC I/O isolation
- High efficiency up to 88%
- -30°C to +70°C operating temperature
- IEC/EN/UL 62368-1 approved
- Short circuit & over voltage protection
- 3 year product warranty

Pin Connections	
Pin	**Function**
1	AC IN (N)
2	AC IN (L)
3	PE
4	+Vout
5	–Vout

TXLN 060 NEW! — 60 Watt



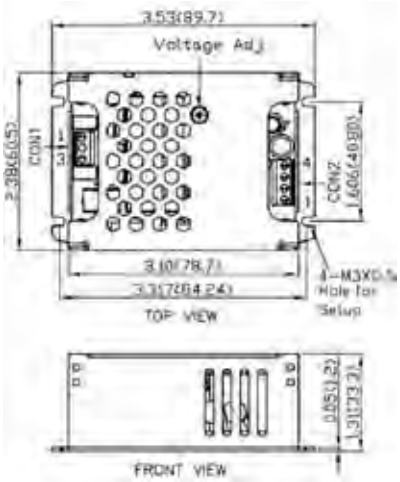
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 060-103	3.3 VDC	12'000 mA	72%
TXLN 060-105	5 VDC	10'000 mA	78%
TXLN 060-112	12 VDC	5'000 mA	81%
TXLN 060-115	15 VDC	4'000 mA	83%
TXLN 060-124	24 VDC	2'500 mA	84%
TXLN 060-148	48 VDC	1'300 mA	86%

- 3.89 x 3.23 x 1.38” package
- -20 °C to 70°C Operation
- Full-load convection operation to 50°C
- Screw terminal blocks
- 85-264 VAC universal AC input
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Screw Terminal	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4	–Vout
5	+Vout

TPP 65 — 65 Watt

IEC/EN/ES 60601-1 Approved



- 3.53 x 2.38 x 1.31” package
- IEC/EN/ES 60601-1 3rd ed. (2 x MOPP)
- <75 µA leakage (BF rated)
- IEC/EN/UL 62368-1 approved
- ISO 14971 risk management file
- Acceptance criteria to IPC-A-610 Level 3
- IEC 60601-1-2 ed. 4 EMC
- Protection class I & II
- Operating up to 5000 m altitude
- ErP ready (<0.15 W no load power)
- 5 year product warranty

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

Screw Terminal (Single Output Models)

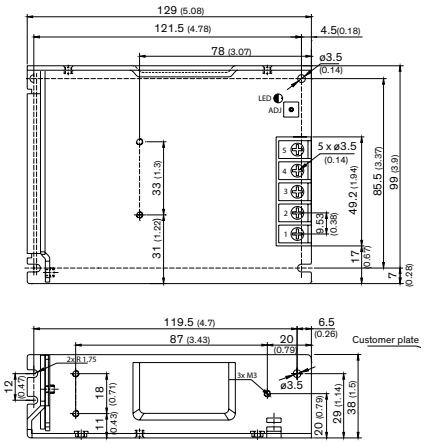
Input (CON1)		Output (CON2)	
Pin	**Function**	**Pin***	**Function**
1	Line	**1, 2**	-Vout
3	Neutral	**3, 4**	+Vout

Screw Terminal (Multi Output Models)

Input (CON1)		Output (CON2)	
Pin	**Function**	**Pin***	**Function**
1	Line	**1**	Vout 3
3	Neutral	**2, 3**	COM
		4, 5	Vout 2
		6	Vout 1

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

TXM 075 — 75 Watt



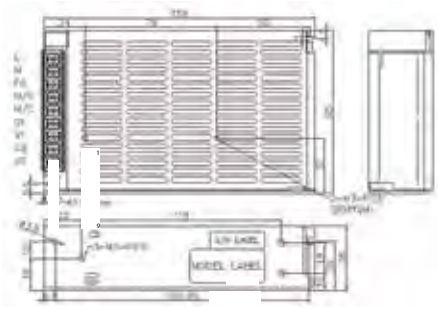
- 5.08 x 3.90 x 1.50” package
- High operating temperature up to 70°C
- Low no load power consumption <0.5W
- Screw terminal block
- No internal fan
- Universal AC input
- IEC/EN/UL 62368-1 approved
- Withstand 300 VAC surge input for 5 sec.
- Adjustable output voltage
- 3 year product warranty

Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXM 075-105	5 VDC	12.0 A	80%
TXM 075-112	12VDC	6.0 A	85%
TXM 075-115	15VDC	5.0 A	86%
TXM 075-124	24VDC	3.2 A	88%
TXM 075-148	48VDC	1.6 A	89%

Pin-Out

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

TXLN 080 NEW! 80 Watt



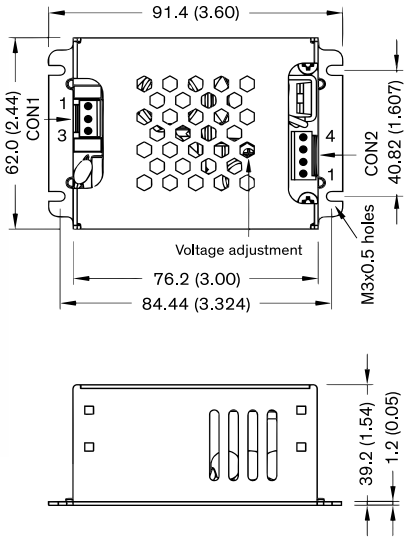
Model	Output Voltage nom.	Output Current max.	Eff typ.
TXLN 080-212	+5 / +12 VDC	9 / 4 A	79%
TXLN 080-215	+5 / +24 VDC	9 / 2 A	80%
TXLN 080-312M2	+5 / ±12 VDC	8 / 4 / 1 A	79%
TXLN 080-313M3	+5 / ±15 VDC	8 / 3.6 / 1 A	80%
TXLN 080-3125	+5 / +12 / +24 VDC	8 / 3.5 / 1.5 A	90%

- 6.26 x 3.74 x 1.50” metal case
- -20 °C to 70°C Operation
- Full-load convection operation to 45°C
- Screw terminal blocks
- 88-264 VAC universal AC input
- IEC/EN/UL 62368-1 Approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Screw Terminal		
Pin	Dual	Triple
1	AC (N)	
2	AC (L)	
3	FG	
4	NC	–Vout3
5	NC	+Vout2
6	–Vout1	–Vout1
7	+Vout1	+Vout1
8	–Vout2	–Vout2
9	+Vout2	+Vout2

TPP 100 100 Watt

IEC/EN/ES 60601-1 Approved

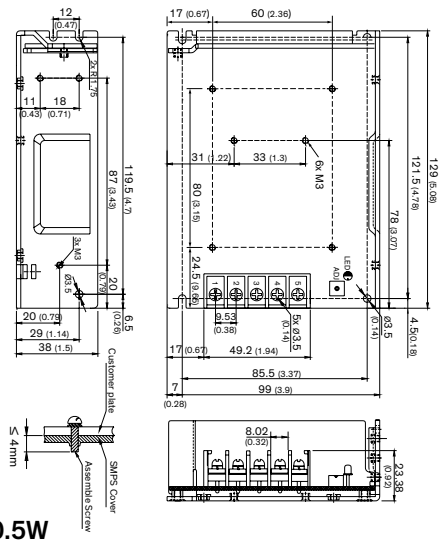


Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 100-112	12 VDC (10.8 - 13.2 VDC)	8340 mA	91 %
TPP 100-115	15 VDC (13.5 - 16.5 VDC)	6670 mA	92 %
TPP 100-124	24 VDC (21.6 - 26.4 VDC)	4170 mA	92 %
TPP 100-128	28 VDC (25.2 - 30.8 VDC)	3580 mA	92 %
TPP 100-136	36 VDC (32.4 -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

- 3.60 x 2.44 x 1.20” package
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- <75 µA leakage (BF rated)
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptance
- Active power factor correction >0.95
- IEC/EN/UL 62368-1 approved
- Protection class I & II prepared
- Operating up to 5000 m altitude
- <0.3 W no load power (ErP Ready)
- 5 year product warranty

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

TXM 100 — 100 Watt



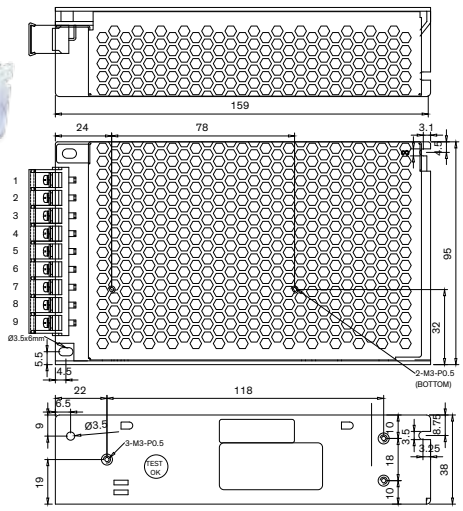
- 5.08 x 3.90 x 1.50” package
- Operating temperature up to 60°C
- Low no load power consumption <0.5W
- Screw terminal block
- No internal fan
- Universal AC input
- Active power factor correction >0.93
- Withstand 300 VAC surge input for 5 sec.
- IEC/EN/UL 62368-1 approved
- Adjustable output voltage
- 3 year product warranty

Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXM 100-105	5VDC	20.0 A	84%
TXM 100-112	12VDC	8.5 A	87%
TXM 100-115	15VDC	7.0 A	87%
TXM 100-124	24VDC	4.2 A	88%
TXM 100-148	48VDC	2.2 A	88%

Pin-Out

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

TXLN 110 NEW! — 110 Watt



- 6.26 x 3.74 x 1.50” metal case
- -20 °C to 70°C Operation
- Full-load convection operation to 45°C
- Screw terminal blocks
- 88-264 VAC universal AC input
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

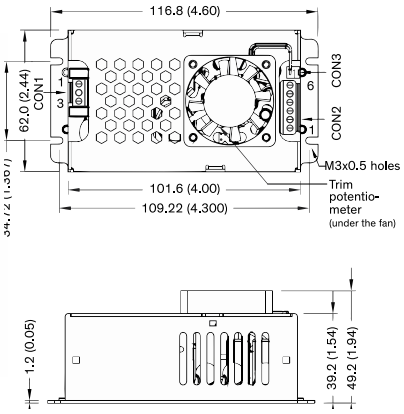
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 110-105	5 VDC	20'000 mA	86%
TXLN 110-112	12 VDC	9'200 mA	88%
TXLN 110-112	12 VDC	7'300 mA	88%
TXLN 110-124	24 VDC	4'800 mA	89%
TXLN 110-148	48 VDC	2'300 mA	90%

Screw Terminal

Pin	Function
1	AC (L)
2	AC (N)
3	FG
4-5	–Vout
6-7	+Vout

TPP 150 — 150 Watt

IEC/EN/ES 60601-1 Approved



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 %

- 4.60 x 2.44 x 1.94" package
- 2xMOPP / BF compliant
- Leakage current <100 µA
- IEC/EN/UL 62368-1 approved
- ISO 14971 risk management file
- IPC-A-610 Level 3 acceptance
- Active power factor correction >0.95
- Protection class I & II prepared
- Operating up to 5000 m altitude
- ErP ready (<0.3 W no load power)
- 5 year product warranty

Pin connectors

Input (CON1)		Output (CON2)	
Pin	**Function**	**Pin***	**Function**
1	Line	**1-3**	-Vout
3	Neutral	**4-6**	+Vout

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

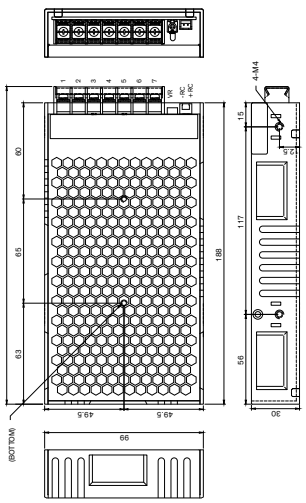
*Terminal rated for 7 A max. (at higher current connection has to be split)

CON1: Screw Terminal

CON2: Screw Terminal

CON3: Molex series
mates with Molex crimp terminals: 2759

TXLN 150 — NEW! — 150 Watt



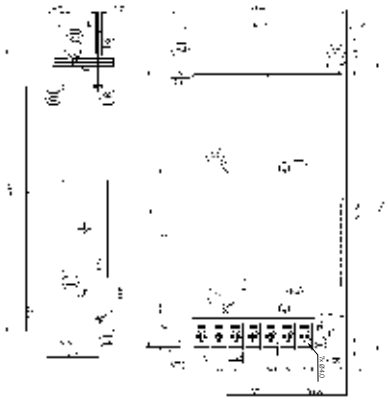
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 150-105	5 VDC	30'000 mA	86%
TXLN 150-112	12 VDC	12'500 mA	88%
TXLN 150-124	24 VDC	6'300 mA	89%
TXLN 150-148	48 VDC	3'200 mA	90%

- 7.40 x 3.90 x 1.18" metal case
- -30 °C to 70°C Operation
- Full-load convection operation to 50°C
- Screw terminal blocks
- 85-264 VAC universal AC input
- IEC/EN/UL 62368-1 Approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Screw Terminal	
Pin	**Function**
1	AC (L)
2	AC (N)
3	FG
4-5	–Vout
6-7	+Vout

JTS Connector	
Pin	**Function**
1	+Remote
2	–Remote

TXM 150 — 150 Watt

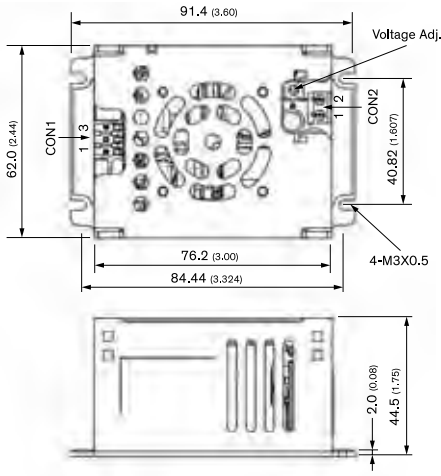


Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXM 150-112	12VDC	12.5A	86%
TXM 150-115	15VDC	10.0A	87%
TXM 150-124	24VDC	6.3A	88%
TXM 150-148	48VDC	3.2A	88%

- 6.30 x 3.55 x 1.50” package
- High operating temperature up to 60°C
- Low no load power consumption <0.5W
- Screw terminal block
- No internal fan
- Universal AC input
- Active power factor correction >0.95
- IEC/EN/UL 62368-1 approved
- Withstand 300 VAC surge input for 5 sec.
- Adjustable output voltage
- 3 year product warranty

Pin-Out	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4	– Vout
5	– Vout
6	+ Vout
7	+ Vout

TPI 180-M — NEW! — 180 Watt



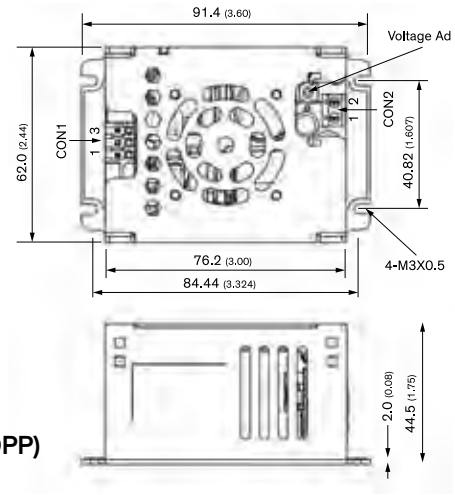
Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPI 180-112-M	12 VDC (11.0 - 13.0 VDC)	15 A	92%
TPI 180-115-M	15 VDC (13.8 - 16.2 VDC)	12 A	92%
TPI 180-124-M	24 VDC (22.1 - 25.9 VDC)	7.5 A	94%
TPI 180-136-M	36 VDC (33.1 - 38.9 VDC)	5 A	93%
TPI 180-148-M	48 VDC (44.2 - 51.8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

- 3.6" x 2.44" package
- Compact and cost efficient design
- I/O reinforced isolation 3000 VAC
- IEC/EN/UL 62368-1 approvals
- -40°C to +85°C Temperature range
- No load input < 0.3 W (ErP directive)
- High efficiency up to 94%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 year product warranty

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

TPP 180-M NEW! 180 Watt

IEC/EN/ES 60601-1 Approved



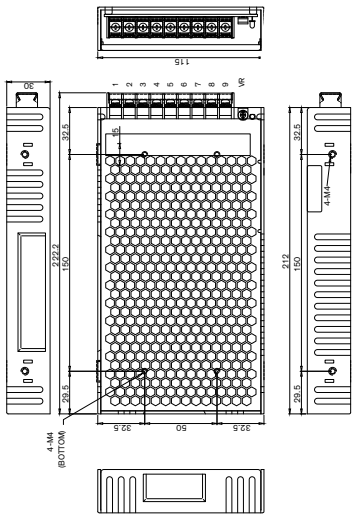
Model	Output Voltage nom. (ajustable)	Output Current max.	Efficiency typ.
TPP 180-112-M	12 VDC (11.0 – 13.0 VDC)	15 A	92%
TPP 180-115-M	15 VDC (13.8 – 16.2 VDC)	12 A	92%
TPP 180-124-M	24 VDC (22.1 – 25.9 VDC)	7.5 A	94%
TPP 180-136-M	36 VDC (33.1 – 38.9 VDC)	5 A	93%
TPP 180-148-M	48 VDC (44.2 – 51.8 VDC)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

- 3.60 x 2.44” enclosed package
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- IEC/EN/UL 62368-1 approved
- Protection Class I / II prepared
- Low leakage current <100 µA
- Rated for BF applications
- ISO 14971 risk management file
- IPC-A-610 Level 2 acceptance criteria
- Active power factor correction >0.95
- Ready to meet ErP directive
- Operating up to 5000m altitude
- 5-year product warranty

Pinout

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

TXLN 200 NEW! 200 Watt



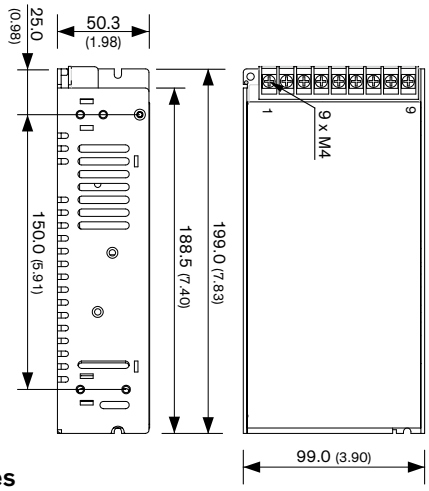
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 200-112	12 VDC	16'700 mA	89%
TXLN 200-124	24 VDC	8'400 mA	90%
TXLN 200-148	48 VDC	4'200 mA	90%

- 8.74 x 4.53 x 1.18” metal case
- -30 °C to 70°C Operation
- Full-load convection operation to 45°C
- Screw terminal blocks
- 85-264 VAC universal AC input
- IEC/EN/UL 62368-1 Approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Screw Terminal

Pin	Function
1	AC (L)
2	AC (N)
3	PE
4-6	–Vout
7-9	+Vout

TXM 200 — 200 Watt



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXM 200-112	12VDC	16.7A	87%
TXM 200-124	24VDC	8.4A	88%
TXM 200-148	48VDC	4.2A	88.50%

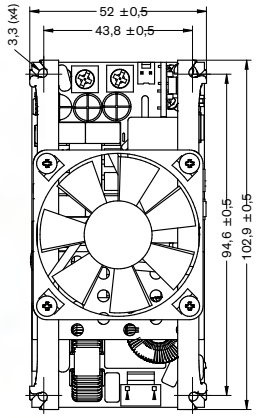
- 7.83 x 3.90 x 1.98” package
- Fully convection cooled power supplies
- Cost efficient design
- High operating temperature up to 65°C
- Universal AC input 90 - 264 VAC
- Active power factor correction >0.95
- IEC/EN/UL 62368-1 approved
- Withstand 300 VAC surge input for 5 sec.
- Adjustable output voltage
- Over current limit & short circuit protection
- 3 year product warranty

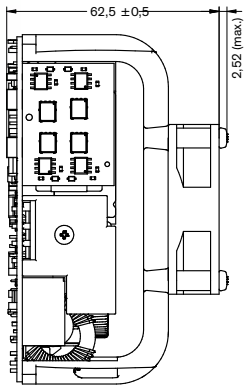
Pin-Out

Pin	Function
1	AC (N)
2	AC (L)
3	GND
4	–Vout
5	–Vout
6	–Vout
7	+Vout
8	+Vout
9	+Vout

TPP 250A-FK — In Development — 250 Watt

IEC/EN/ES 60601-1 Approved

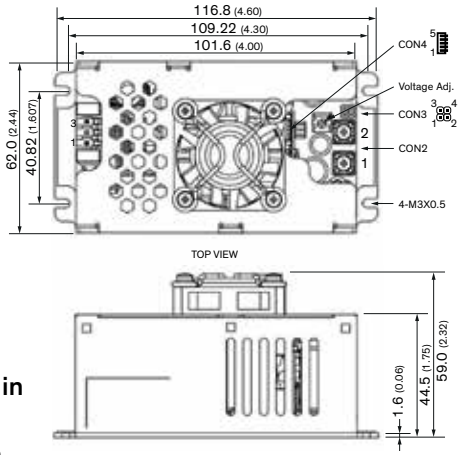




Model	Output Voltage nom.	Output Current max.
TPP 250-112-M	12 VDC	20.8 A
TPP 250-124-M	24 VDC	10.4 A
TPP 250-128-M	28 VDC	8.9 A
TPP 250-136-M	36 VDC	6.9 A
TPP 250-148-M	48 VDC	5.2 A

- 2.00 x 4.00 x 2.56” with top-mount fan
- Operating Temperature Range -40°C to +70°C
- ErP compliant (<0.5 W no load)
- 2xMOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- IEC/EN 60601-1-2 4th edition (EMC)
- High Reliability
- Class I & II prepared
- 5 year product warranty

TPI 300-M NEW! 300 Watt



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

- 300 Watt encased power supplies in a 4.6" × 2.44" package
- Compact and cost efficient design
- I/O reinforced isolation 3000 VAC
- IEC/EN/UL 62368-1 approvals
- Operating temperature range −40°C to +85°C
- No load input power < 0.3 W (acc. ErP directive)
- High efficiency up to 93%
- Internal EN 55032 class B filter
- Protection class II prepared
- 3 year product warranty

Input	
CON1	
Pin	Function
1	AC (L) / DC (+)
3	AC (N) / DC (–)

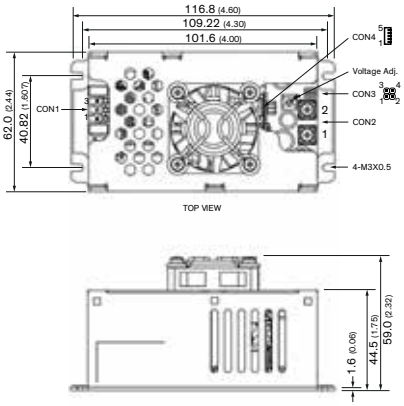
Output	
CON2	
Pin	Function
1	+ Vout
2	– Vout

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

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

TPP 300-M NEW! 300 Watt

IEC/EN/ES 60601-1 Approved



Model	Output Voltage nom. (ajustable)	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

- 2.40 x 4.60 enclosed with fan package
- <100 µA rated for BF applications
- Protection class II prepared
- Ready to meet ErP directive
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- IEC/EN/UL 62368-1 approved
- IEC/EN 60601-1-2 4th edition (EMC)
- ISO 14971 risk management file
- IPC-A-610 class 3 criteria
- 5 Vsb, 12 V fan, On/Off, Power Good Signal, variable fan speed
- Operating up to 5000m altitude
- 5-year product warranty

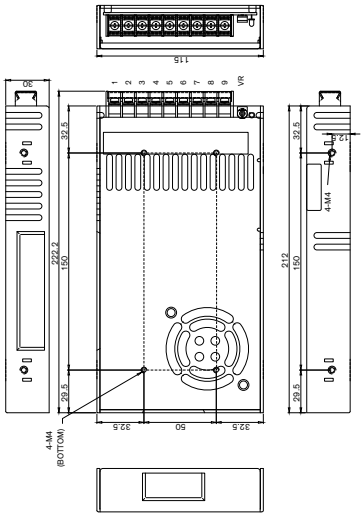
Input	
CON1	
Pin	Function
1	AN (N)
2	–
3	AC (L)

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

TXLN 320 NEW! 320 Watt



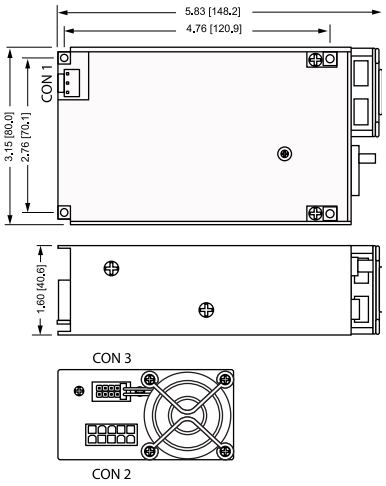
Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 320-124	24 VDC	13'400 mA	89%
TXLN 320-148	48 VDC	6'700 mA	90%

- 8.74 x 4.53 x 1.18" metal case
- -20 °C to 70°C Operation
- Full-load convection operation to 45°C
- Embedded top-mount fan
- Screw terminal blocks
- 85-264 VAC universal AC input
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Screw Terminal	
Pin	**Function**
1	AC (L)
2	AC (N)
3	PE
4-6	–Vout
7-9	+Vout

TPP 450B-M 450 Watt

IEC/EN/ES 60601-1 Approved



Model	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TPP 450-112B-M	12 VDC (11.0 - 13.0 VDC)	37'500 mA	91 %
TPP 450-115B-M	15 VDC (13.8 - 16.2 VDC)	30'000 mA	92 %
TPP 450-124B-M	24 VDC (22.1 - 25.9 VDC)	18'750 mA	93 %
TPP 450-128B-M	28 VDC (25.8 - 30.2 VDC)	16'100 mA	93 %
TPP 450-136B-M	36 VDC (33.1 - 38.9 VDC)	12'500 mA	93 %
TPP 450-148B-M	48 VDC (44.2 - 51.8 VDC)	9'400 mA	94 %
TPP 450-153B-M	53 VDC (48.8 - 57.2 VDC)	8'550 mA	94 %

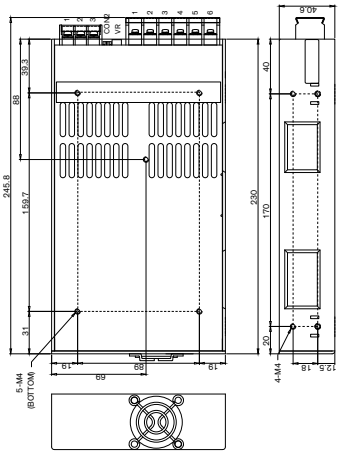
- 3.15 x 5.83 x 1.60" package
- Safety Class II Prepared
- 450W up to 65°C without derating
- 2xMOPP / BF compliant
- IEC/EN/UL 62368-1 approved
- IEC/EN 60601-1-2 4th edition (EMC)
- ISO 14971 risk management file
- IPC-A-610 class 3 criteria
- 5 Vsb, 12 V fan, On/Off, Power Good Signal, variable fan speed
- Operating up to 5000m 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

TXLN 500 NEW! 500 Watt



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 500-124	24 VDC	21'000 mA	89%
TXLN 500-148	48 VDC	10'500 mA	91%

- 9.68 x 5.00 x 1.61" metal case
- -30 °C to 70°C Operation
- Full-load convection operation to 45°C
- Embedded end-mount fan
- Screw terminal blocks
- Remote Sense Function
- 90-264 VAC universal AC input
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty

Input	
CN1	
Pin	**Function**
1	AC (L)
2	AC (N)
3	FG

Output	
CN3	
Pin	**Function**
1-3	–Vout
4-6	+Vout

Auxiliary	
CON2	
Pin	**Function**
1	–Remote
2	–Sense
3	+Remote
4	+Sense

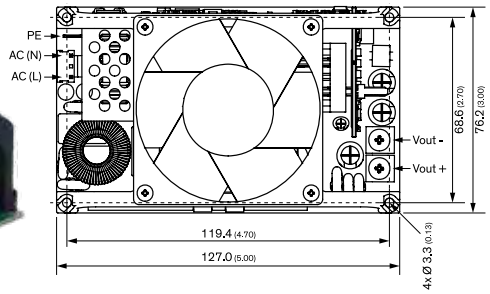
CN1:
3 pin, 9.5mm pitch
with PC cover

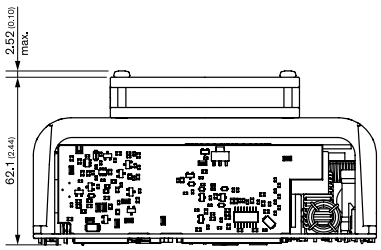
CN11:
6 pin, 11 mm pitch

CN3:
HRS DF11-04DP-2DS

TPP 600A-FK In Development 600 Watt

IEC/EN/ES 60601-1 Approved



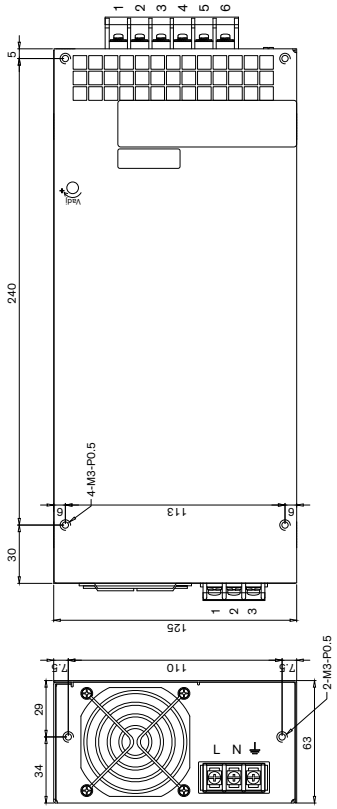


Model	Output Voltage nom. (ajustable)	Output Current max.	Efficiency typ.
TPP 600-124A-FK	24 VDC (24 – 24.72 VDC)	25 A	tbd
TPP 600-128A-FK	28 VDC (28 – 28.84 VDC)	21.4 A	tbd
TPP 600-136A-FK	36 VDC (36 – 37.08 VDC)	16.7 A	tbd
TPP 600-148A-FK	48 VDC (48 – 49.44 VDC)	12.5 A	tbd

- 3.00 x 5.00" open frame + top fan
- 600W with top-mount fan
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- IEC/EN/UL 62368-1 approved
- IEC/EN 60601-1-2 4th ed. (EMC)
- ISO 14971 risk management file
- Protection class I / II prepared
- Class I Low leakage current <100 µA
- Typical efficiency 94%
- ErP compliant (<0.5 W no load)
- 5Vsb, 12V smart fan, Remote On/Off, AC OK and DC OK signals

TXLN 750 NEW! 750 Watt

- 10.83 x 4.92 x 2.48” package + end-mount fan
- -20 °C to 65°C Operation
- Full-load convection operation to 45°C
- Screw terminal blocks
- 90-264 VAC universal AC input
- Remote sense, power good and remote on/off functions
- 12VDC @ 300MA auxilliary output
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 750-112	12 VDC	62'500 mA	88%
TXLN 750-124	24 VDC	31'300 mA	88%
TXLN 750-148	48 VDC	15'800 mA	90%

Input	
CN1	
Pin	**Function**
1	AC (L)
2	AC (N)
3	FG

Output	
CN3	
Pin	**Function**
1-3	+Vout
4-6	–Vout

Auxiliary	
CON2	
Pin	**Function**
1	CS
2	PG
3	+Sense
4	–Sense
5	–Remote
6	+Remote
7	Standby
8	GND

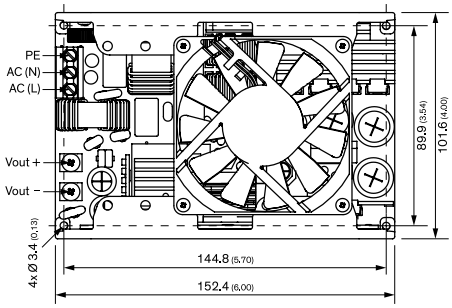
CN1:
3 pin, 10mm pitch
with PC cover

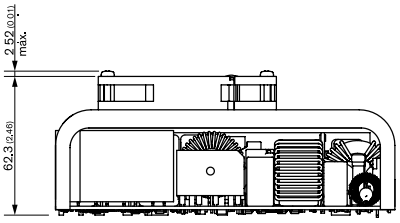
CN11:
6 pin, 11 mm pitch

CN3:
HRS DF11-8DP-2DSA

TPP 850A-FK NEW! 850 Watt

IEC/EN/ES 60601-1 Approved



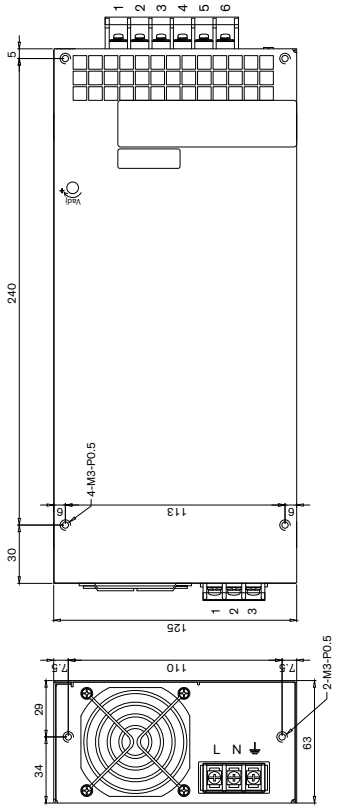


- 4.00 x 6.00" open frame + top fan
- 850W with top-mount fan
- IEC/EN/ES 60601-1 3rd ed. (2xMOPP)
- IEC/EN/UL 62368-1 approved
- IEC/EN 60601-1-2 4th ed. (EMC)
- ISO 14971 risk management file
- Typical efficiency 94%
- ErP compliant (<0.5 W no load)
- Protection class I / II prepared
- Class I Low leakage current <100 µA
- 5Vsb, 12V smart fan, Remote On/Off, AC OK and DC OK signals

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

TXLN 960 NEW! 960 Watt

- 10.83 x 4.92 x 2.48” package + end-mount fan
- -20 °C to 65°C Operation
- Full-load convection operation to 45°C
- Screw terminal blocks
- 90-264 VAC universal AC input
- Remote sense, power good and remote on/off functions
- 12VDC @ 300MA auxilliary output
- IEC/EN/UL 62368-1 approved
- EN 55032 class B emissions
- ±10% Adjustable output voltage
- 3 year product warranty



Model	Output Voltage nom.	Output Current max.	Efficiency typ.
TXLN 960-124	24 VDC	40'000 mA	89%
TXLN 960-148	48 VDC	20'000 mA	89%

Input	
CN1	
Pin	**Function**
1	AC (L)
2	AC (N)
3	FG

Output	
CN3	
Pin	**Function**
1-3	+Vout
4-6	–Vout

Auxiliary	
CON2	
Pin	**Function**
1	CS
2	PG
3	+Sense
4	–Sense
5	–Remote
6	+Remote
7	Standby
8	GND

CN1:
3 pin, 10mm pitch
with PC cover

CN11:
6 pin, 11 mm pitch

CN3:
HRS DF11-8DP-2DSA

DIN Rail Mount: AC/DC Power Supplies

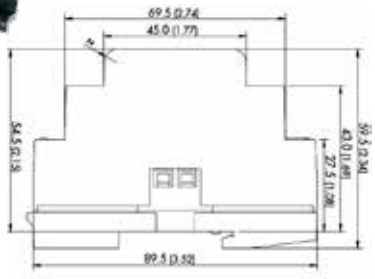
Traco Power offers a wide range of encapsulated power supplies with hundred of models available in PCB mount styles to suit a wide range of applications.

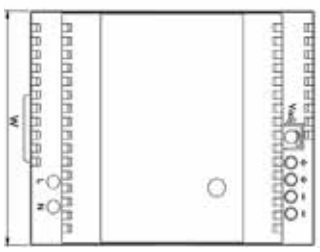
SERIES	POWER	DESCRIPTION	STATUS	APPS	PAGE
TBL	15-150	Low profile case (55mm depth), 85-264 VAC input, UL 1310, UL 508	ACTIVE		179
TBLC	6-90	Low profile case (55mm depth), 85-264 VAC input, EN 60355-1, UL 1310, UL 508	ACTIVE		180
TCL	24-240	Slim profile case, 85-264 VAC input, UL 508	ACTIVE		180
TPC	30-120	Slim profile case, 85-264 VAC input, robust design, ErP ready, UL 508	ACTIVE		181
TIB	80-480	Rugged metal case, 85-264 VAC input, cost efficient, UL 508	ACTIVE		181
TIB-EX	80-480	Rugged metal case, 85-264 VAC input, ATEX & UL HazLoc approvals, UL 508	ACTIVE	⚙	182
TSPC	50-480	Slim metal case, 85-264 VAC input, UL 508	ACTIVE		182
TSP	72-600	Rugged meal case, 85-264 VAC input, for harsh environments, UPS module options	ACTIVE	⚙	183
TSP-WR	180-600	Rugged metal case, wide range 100/230-500 VAC input, UL 508	ACTIVE		183

APPS KEY: ⚙ ATEX Certification (Class I, Zone 2)

TBL — 15-150 Watt

- Low profile - depth only 55mm
- Used in building automation panels
- Safety class II product
- UL 1310 class II, NEC class 2 (up to 90 W)
- UL 508 listed
- -25°C to +70°C temperature range
- Adjustable output voltage
- Short circuit & overload protection
- DC-OK indicator
- Wall mounting bracket (included)
- 3 year product warranty





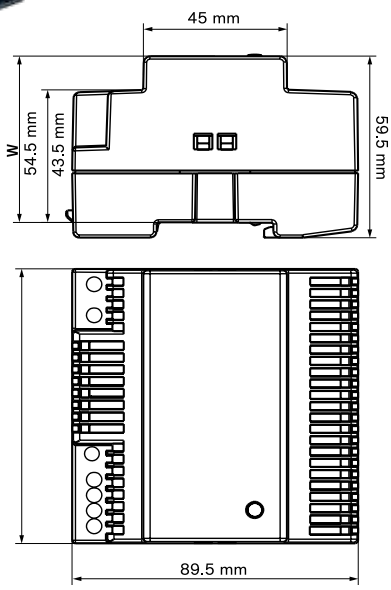
Model	Output Power (max.)	Output Voltage* (nom.)(adjust.)	Output Current (max.)	Efficiency (typ.)
TBL 015-105	12 W	5.0 VDC	2.4 A	73 %
TBL 015-112	15 W	12 VDC	1.25 A	79 %
TBL 015-124	15 W	24 VDC	0.63 A	81 %
TBL 030-112	30 W	12 VDC	2.5 A	81 %
TBL 030-124	30 W	24 VDC	1.25 A	83 %
TBL 060-112	54 W	12 VDC	4.5 A	83 %
TBL 060-124	60 W	24 VDC	2.5 A	85 %
TBL 090-112	72 W	12 VDC	6.0 A	84 %
TBL 090-124	90 W	24 VDC	3.75 A	86 %
TBL 150-112	120 W	12 VDC	10 A	84 %
TBL 150-124	150 W	24 VDC	6.25 A	87 %

Dimension Table		Weigth
TBL 015	26.3 mm	100
TBL 030	52.5 mm	160
TBL 060	70.0 mm	230
TBL 090	105 mm	340
TBL 150	175 mm	625

Visit our website for documentation with links to our distributors for pricing and availability

TBLC — 6-90 Watt

- Low profile, module depth only 55mm for mounting in domestic installation panels
- High efficiency & low Standby power (compliance to ECO-Standard)
- Low output ripples & spikes
- UL 1310 class II, NEC class 2 compliance
- UL 508 listed
- Operating temperature -25°C to +70°C
- Adjustable output voltage
- Short circuit & overload protection
- DC-OK indicator LED
- 3 year product warranty



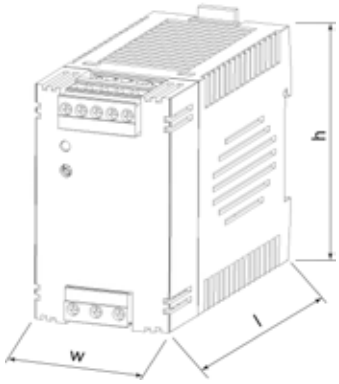
Model	Output Power (max.)	Output Voltage* (nom.)(adjust.)	Output Current (max.)	Efficiency (typ.)
TBLC 06-105	6 W	5.0 VDC	1.2 A	74 %
TBLC 06-112	6 W	12 VDC	0.5 A	81 %
TBLC 06-124	6 W	24 VDC	0.25 A	79 %
TBLC 15-105	12 W	5.0 VDC	2.4 A	81 %
TBLC 15-112	15 W	12 VDC	1.25 A	85 %
TBLC 15-124	15 W	24 VDC	0.63 A	85 %
TBLC 25-105	20 W	5.0 VDC	4.0 A	82 %
TBLC 25-112	24 W	12 VDC	2.0 A	86 %
TBLC 25-124	25 W	24 VDC	1.05 A	87 %
TBLC 50-112	48 W	12 VDC	4.0 A	88 %
TBLC 50-124	50 W	24 VDC	2.1 A	89 %
TBLC 75-112	72 W	12 VDC	6.0 A	89 %
TBLC 75-124	75 W	24 VDC	3.1 A	89 %
TBLC 90-112	90 W	12 VDC	7.5 A	90 %
TBLC 90-124	90 W	24 VDC	3.75 A	90 %

* Output voltage can be adjusted as indicated. However, output power has to be maintained at nominal value. This means the output nominal current has to be reduced in accordance with the increase of output voltage.

Dimension Table		Weigth
TBLC 06	18 mm	60
TBLC 15	27 mm	80
TBLC 25	36 mm	110
TBLC 50	54 mm	180
TBLC 75	72 mm	220
TBLC 90	90 mm	280

TCL — 24-240 Watt

- Ultracompact plastic housing
- Spring clamp terminals or detachable screw terminal block
- Adaptor for wall mounting
- Universal input 85-264 VAC, 50/60 Hz
- Models with 5, 12, 24 & 48 VDC output
- Output voltage adjustable
- Power OK signal
- Overload & short-circuit protection
- Parallel operation possible
- 3 year product warranty

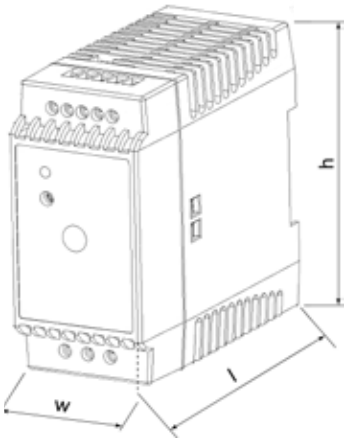


Model	Input Voltage Ranges	Output Power max.	Output Voltage nom.	Output Current (max.)	Connec-tion
TCL 024-105	85 - 264 VAC Universal Input 50/60 Hz 85 - 375 VDC	24 W	5 VDC	4.0 A	Detachable screw termi-nal blocks
TCL 024-112			12VDC	2.0 A	
TCL 024-124			24 VDC	1.0 A	
TCL 060-112		60 W	12 VDC	4.0 A	
TCL 060-124			24 VDC	2.5 A	
TCL 060-148			48 VDC	1.25 A	
TCL 120-112		120 W	12 VDC	8.0 A	
TCL 120-124			24 VDC	5.0 A	
TCL 240-124	85-132 / 187-264 VAC	240 W	24 VDC	10.0 A	
TCL 024-124C	85 - 264 VAC Universal Input 50/60 Hz 85 - 375 VDC	24 W	24 VDC	1.0 A	Spring clamp terminals
TCL 060-112C		60 W	12 VDC	4.0 A	
TCL 060-124C			24 VDC	2.5 A	
TCL 060-148C			48 VDC	1.25 A	
TCL 120-112C		120 W	12 VDC	8.0 A	
TCL 120-124C			24 VDC	5.0 A	

Dimension Table			
Model	Width [W]	Length[l]	Heigth[h]
TCL 024	27 mm	100 mm	75 mm
TCL 60	45 mm	100 mm	75 mm
TCL 120	85 mm	100 mm	75 mm
TCL 240	85 mm	125 mm	110 mm

TPC — 30-120 Watt

Model	Input Voltage Ranges	Output Power max.	Output Voltage nom./ adj. range	Output Current (max.)
TPC 030-105	85-264 VAC Universal Input 47/63 Hz 90-375 VDC	20 W	5.0 VDC / 5.0-6.0 VDC	4.0 A
TPC 030-112		26 W	12 VDC / 12-15 VDC	2.2 A
TPC 030-124		30 W	24 VDC / 24-28.8 VDC	1.25 A
TPC 030-148		30 W	48 VDC / 48-56 VDC	0.6 A
TPC 055-112		42 W	12 VDC / 12-15 VDC	3.5 A
TPC 055-124		55 W	24 VDC / 24-28.8 VDC	2.3 A
TPC 055-148		55 W	48 VDC / 48-56 VDC	1.15 A
TPC 080-112		72 W	12 VDC / 12-15 VDC	6.0 A
TPC 080-124		80 W	24 VDC / 24-28.8 VDC	3.3 A
TPC 080-148		80 W	48 VDC / 48-56 VDC	1.7 A
TPC 120-112		96 W	12 VDC / 12-15 VDC	8.0 A
TPC 120-124		120 W	24 VDC / 24-28.8 VDC	5.0 A
TPC 120-148		120 W	48 VDC / 48-56 VDC	2.5 A



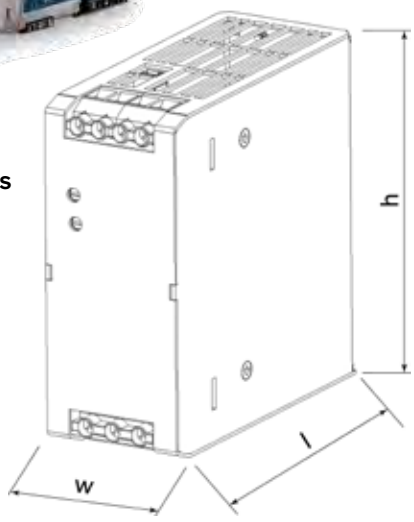
- <0.3 W no load power (ErP Ready)
- High efficiency across full load range
- Optional all mounting bracket
- Universal input 85-264 VAC, 47-63 Hz
- Output voltage adjustable
- Power good signal
- Low ripple & noise
- Overload & short-circuit protection
- 3 year product warranty

Dimension Table

Model	Width [W]	Length[l]	Heigth[h]
TPC 30	26.5 mm	96.5 mm	90 mm
TPC 55	45 mm	96.5 mm	90 mm
TPC 80	63 mm	96.5 mm	90 mm
TPC 120	72 mm	96.5 mm	90 mm

TIB NEW models — 80-480 Watt

Model	Output Voltage nom. Range	Output Current max.	Output Current peak	Effi-ciency
TIB 080-112	12 VDC	6'700 mA	10'050 mA	88 %
TIB 080-124	24 VDC	3'400 mA	5'100 mA	90 %
TIB 080-148	48 VDC	1'700 mA	2'550 mA	90 %
TIB 120-112	12 VDC	10'000 mA	15'000 mA	94 %
TIB 120-124	24 VDC	5'000 mA	7'500 mA	94 %
TIB 120-148	48 VDC	2'500 mA	3'750 mA	94 %
TIB 240-124	24 VDC	10'000 mA	15'000 mA	95 %
TIB 240-148	48 VDC	5'000 mA	7'500 mA	95 %
TIB 480-124	24 VDC	20'000 mA	30'000 mA	95 %
TIB 480-148	48 VDC	10'000 mA	15'000 mA	95 %



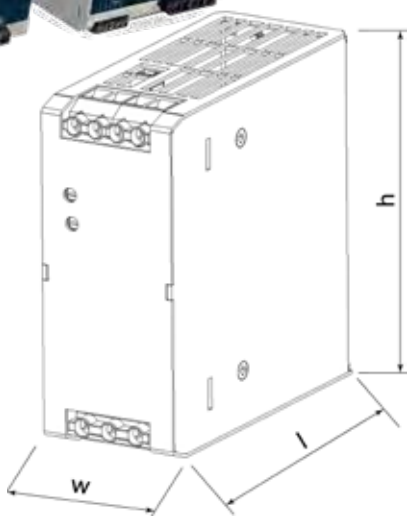
- Slim profile, for DIN-rail mounting
- Alternative side-mounting for flat panels
- Active power factor correction
- IEC / EN / UL 62368-1 approved
- Very high efficiency up to 94%
- Back power immunity
- 150% peak current for 4s
- -40°C to +60°C full load operation
- Adjustable output voltage
- Short circuit & overload protection
- 3 year product warranty

Dimension Table

TIB 080	32 mm	99 mm	114 mm
TIB 120	36 mm	119 mm	125 mm
TIB 240	48 mm	119 mm	125 mm
TIB 480	82 mm	119 mm	125 mm

TIB-EX NEW! 80-480 Watt

ATEX / UL Hazloc Certified



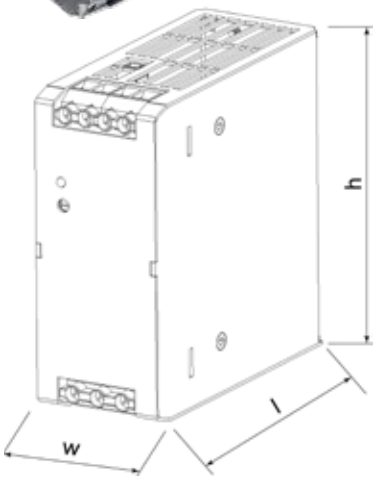
- ATEX & UL Hazloc class 1, Div 2
- IEC / EN / UL 62368-1 approved
- SEMI F47 (voltage sag immunity)
- Optional side-mounting for flat panels
- Back power immunity
- 150% peak current for 4s
- Operating Temp -40°C to +70°C (full load up to 60°C)
- Adjustable output voltage
- MTBF 1 mill. hrs per IEC 61709
- Short circuit & overload protection
- 5 year product warranty

Model	Output Voltage nom. Range	Output Current max.	Output Current peak	Effi-ciency
TIB 080-112EX	12 VDC	6'700 mA	10'050 mA	88 %
TIB 080-124EX	24 VDC	3'400 mA	5'100 mA	90 %
TIB 080-148EX	48 VDC	1'700 mA	2'550 mA	90 %
TIB 120-112EX	12 VDC	10'000 mA	15'000 mA	94 %
TIB 120-124EX	24 VDC	5'000 mA	7'500 mA	94 %
TIB 120-148EX	48 VDC	2'500 mA	3'750 mA	94 %
TIB 240-124EX	24 VDC	10'000 mA	15'000 mA	95 %
TIB 240-148EX	48 VDC	5'000 mA	7'500 mA	95 %
TIB 480-124EX	24 VDC	20'000 mA	30'000 mA	95 %
TIB 480-148EX	48 VDC	10'000 mA	15'000 mA	95 %

Dimension Table

TIB 080-EX	32 mm	99 mm	114 mm
TIB 120-EX	36 mm	119 mm	125 mm
TIB 240-EX	48 mm	119 mm	125 mm
TIB 480-EX	82 mm	119 mm	125 mm

TSPC 50-480 Watt



- Rugged metal case for harsh industrial environments
- -25°C to +70°C temperatuire range
- Overload & overtemperature protection
- Power boost up to 120 %
- Power-Good signal
- Shock & vibration proof
- International safety approval package
- ATEX certification (hazardous locations)
- Wall mounting (option)
- 3 year product warranty

Model	Output power nominal	Output voltage nominal	Output Current max.
TSPC 050-112	50 W	12 VDC	4.0 A
TSPC 050-124HL*	50 W	24 VDC	2.1 A
TSPC 050-124	50 W	24 VDC	2.1 A
TSPC 080-112	80 W	12 VDC	6.6 A
TSPC 080-124	80 W	24 VDC	3.3 A
TSPC 120-124	120 W	24 VDC	5.0 A
TSPC 120-148	120 W	48 VDC	2.5 A
TSPC 240-124	240 W	24 VDC	10 A
TSPC 240-148	240 W	48 VDC	5.0 A
TSPC 480-124	480 W	24 VDC	20 A
TSPC 480-148	480 W	48 VDC	10 A

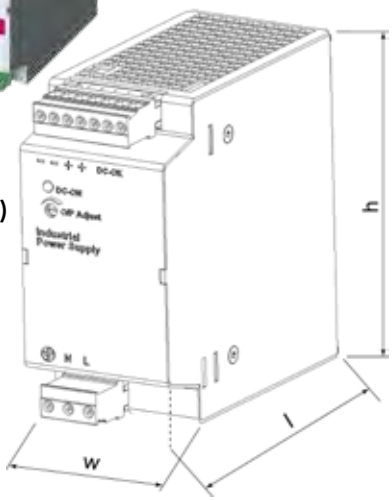
*Additionally complies with UL hazloc

Dimension Table

Model	Width [W]	Length[l]	Heigth[h]
TSPC 050	35 mm	87 mm	110 mm
TSPC 080	40 mm	110 mm	110 mm
TSPC 120	46 mm	110 mm	110 mm
TSPC 240	60 mm	110 mm	110 mm
TSPC 480	150 mm	115 mm	115 mm

TSP — 72-600 Watt

ATEX / UL Hazloc Certified (-EX option)



- For harsh environments
- Shock & vibration proof
- Worlwide Safety approval package.
- ATEX / UL Hazloc class I, div 2 (option -EX)
- TSP 090-124N meets NEC class 2
- Temperature range: -25°C to +70°C
- Adjustable output voltage
- Protection against short-circuit, overvoltage & over-temperature
- Power OK signal, Remote On/Off
- Wall mounting (opt.)
- 3 year product warranty

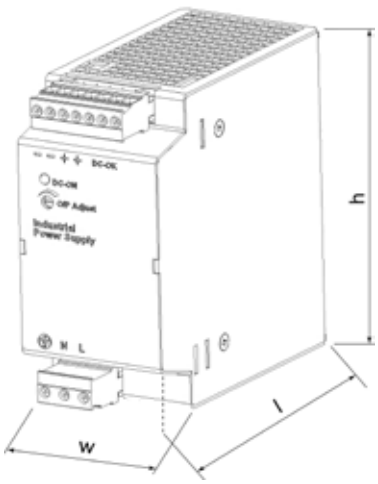
Model	Output Power (Pmax)	**Output Voltage (Vnom)	***Output Current (Imax)
TSP 070-112*	72 W	12 VDC	6.0 A
TSP 090-124*	90 W	24 VDC	3.75 A
TSP 090-124N	90 W	24 VDC	3.75 A
TSP 090-148*	96 W	48 VDC	2.0 A
TSP 140-112*	144 W	12 VDC	12.0 A
TSP 180-124*	180 W	24 VDC	7.5 A
TSP 180-148*	192 W	48 VDC	4.0 A
TSP 360-124*	360 W	24 VDC	15.0 A
TSP 360-148*		48 VDC	7.5 A
TSP 600-124*	600 W	24 VDC	25.0 A
TSP 600-136		36 VDC	16.5 A
TSP 600-148*		48 VDC	12.5 A

* For ATEX compliant models add appendix -EX to order code.

Dimension Table			
Model	Width [W]	Length[l]	Heigth[h]
TSP 070/090	35 mm	110 mm	110 mm
TSP 140/180	54 mm	110 mm	110 mm
TSP 360	80 mm	125 mm	125 mm
TSP 600	165 mm	125 mm	125 mm

TSP-WR — 180-600 Watt

ATEX / UL Hazloc Certified (-EX option)



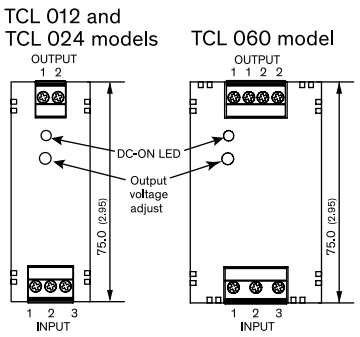
- Single- & two phase wide-range input 100/230-500 VAC
- ATEX / UL Hazloc class I, div 2 (option -EX)
- Temperature range: -25°C to +70°C
- Power OK / Remote On/Off
- Shock & vibration-proof
- Indefinite short circuit, overvoltage & overtemperature protection
- Buffer module for power backup
- Battery controller module
- 3 year product warranty

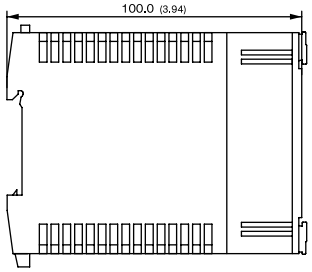
Model	Output Voltage (Vnom)	*Output Current (Imax)	Output Power (Pmax)
TSP 180-124WR	24 VDC (adjustable 24-28 VDC)	7.5 A	180 W
TSP 360-124WR		15.0 A	360 W
TSP 600-124WR		25.0 A	600 W

Dimension Table			
TSP 180-WR	54 mm	110 mm	110 mm
TSP 360-WR	80 mm	125 mm	125 mm
TSP 600-WR	190 mm	125 mm	125 mm

DIN Rail Power DC/DC Power Modules

TCL-DC — 24-60 Watt





- Ultra-wide input voltage range
- Output voltage adjustable
- Overload & short circuit protection
- Low ripple & noise
- I/O isolation 1500 VDC
- Compact, slim plastic case
- Bracket for wall mount included
- 3 year product warranty

Pinout		
Turminal	**Output**	**Input**
1	+ Vout	Functional Ground
2	- Vout	-Vin
3	-	+Vin

Model	Input VDC	Output Voltage	Output Current
TCL 012-124 DC	**9.5 - 18**	24 VDC	1.0 A
TCL 024-105 DC	**18 - 75**	5 VDC	5.0 A
TCL 024-112 DC		12 VDC	2.0 A
TCL 024-124 DC		24 VDC	1.0 A
TCL 060-112 DC	**18 - 75**	12 VDC	5.0 A
TCL 060-124 DC		24 VDC	2.5 A

TMDC + DIN RAIL CLIP — 20 / 40 / 60 Watt

- Encapsulated Chassis Mount DC/DC with DIN Rail Clip
- Ultra-wide 4 : 1 input voltage range
- Operating temperature: -40°C to +85°C, (TMDC 20 models operate up to +90°C)
- I/O isolation 2500 VDC
- Excellent efficiency up to 91%
- Input filter to meet EN 55022, class A
- Power good LED indicator
- Remote On/Off
- 3 year warranty

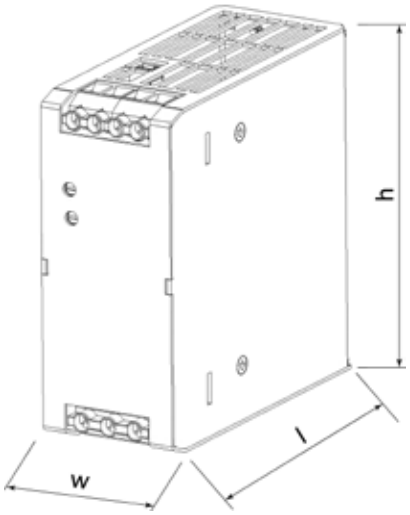
Models

DIN Rail Mount: Status & Control Modules

SERIES	DESCRIPTION	APPS	STATUS	PAGE
TIB-BCMU240	Universal battery controller module for uninterruptable 24 VDC bus voltage		**In Development**	185
TSPC 240-UPS	Compact universal power supply for uniterruptable 24 VDC output voltage	⚙	ACTIVE	186
TSP-BCMU360	Universal battery controller module for uninterruptable 24 VDC & 48 VDC bus		ACTIVE	186
TSP-BCM	Battery controller modules compatible with the TSP series		ACTIVE	187
TSP-BFM	Buffery moduel to increase hold-up time compatible with the TSP series		ACTIVE	187
TSPC-DCM	Decoupling module for redundant operation compatible with the TSPC series		ACTIVE	188
TCL-REM	Redundancy module compatible with the TCL series		ACTIVE	188
TPC-REM	Redundancy module compatible with the TPC series		ACTIVE	189
TSP-REM	Redundancy module compatible with the TSP series	⚙	ACTIVE	189

APPS KEY: ⚙ ATEX Certification (Class I, Zone 2)

BATTERY CONTROLLER MODULES TIB-BCMU240 — 240 Watt



Model	Input Voltage nom.	Output Voltage nom.	Output Current max.
TIB240-124UPS	24.0 – 28.0 VDC		10 A

- Universal battery controller module
- Highest efficiency –96%
- For industrial and medical applications
- Short circuit & reverse inputs protection
- Battery temperature compensation
- High & low battery charging modes
- Stabilized output in discharge mode
- Input/Output battery status monitor
- DC OK, LEDs & Status Relays
- Low output noise

Dimension Table

Model	Width [W]	Length[l]	Heigth[h]
TIB240-124UPS	48.0 mm	114.2 mm	124.2 mm

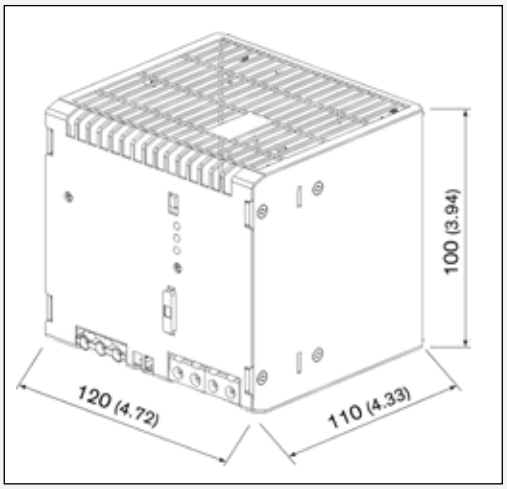
Visit our website for documentation with links to our distributors for pricing and availability

INTEGRATED UPS SYSTEM: TSPC-240-124UPS — 240 Watt

ATEX Certification (Class I, Zone 2)

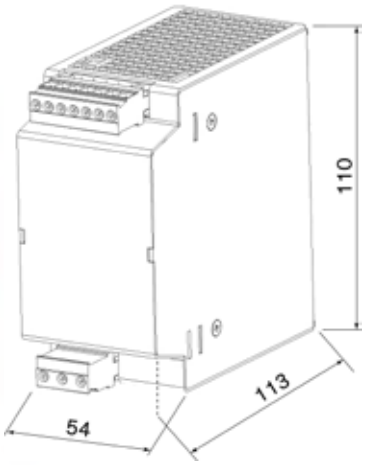
Model	Input Range	Output	Back up Battery
TSPC 240-124 UPS	Low Line: 85-132 VAC High Line: 187-264 VAC	24 VDC 12 A	12V lead acid battery (purchase in local market or use TRACO POWER battery pack)

* Maximum current at nominal Vout



- 240 watt/24VDC power supply + integrated UPS system
- ATEX / UL Hazloc class I, div 2
- Over-voltage, discharge, short-circuit & reverse connection protection
- Alarm outputs for input, output & battery condition
- Remote On/Off for UPS function & power supply
- Controlled end of charge voltage by battery temperature sensor
- International safety approval package
- Suitable for various external 12 VDC lead acid batteries
- 3 year product warranty

BATTERY CONTROL: TSP-BCMU360 — 360 Watt

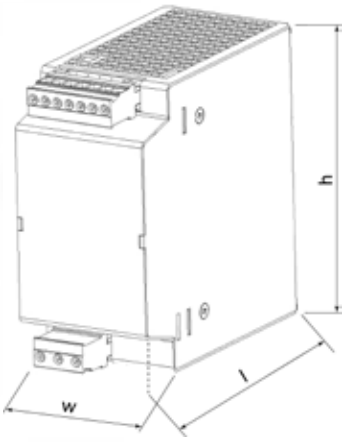


Model	Inputs	Input Voltage Range	Output Current max.*
TSP-BCMU360	2 × 360 W any single or two identical input sources	24-28 or 48-56 VDC (jumper-select)	24 VDC / 15 A 48 VDC / 7.5 A

* Maximum current at nominal Vout
** 12V lead acid battery (purchase locally or TRACO POWER battery pack)

- Battery controller module for uninterruptable 24 / 48 Vout
- Redundant inputs for two indepedant sources
- Over-voltage, discharge, short-circuit & reverse connection protection
- Alarm outputs for input, output & battery condition
- Remote On/Off for battery
- Controlled end of charge voltage by temperature sensor
- International safety approval package
- 3 year product warranty

BATTERY CONTROLLER MODULES: TSP-BCM 12-48 VDC

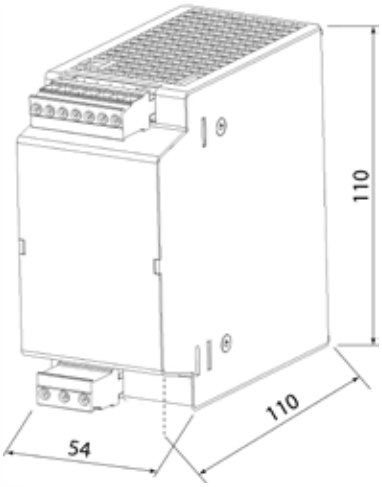


Model	Input	Max. Power per Input	Output Voltage	Output Current max.	Output Power max.
TSP-BCM12	12 VDC	144 W	12 VDC	12.0 A	144 W
TSP-BCM24	24 VDC	360 W	24 VDC	15.0 A	360 W
TSP-BCM48	48 VDC	360 W	48 VDC	7.5 A	360 W
TSP-BCM24A	24 VDC	600 W	24 VDC	25.0 A	600 W
TSP-BCM48A	48 VDC	600 W	48 VDC	12.5 A	600 W

- Professional battery management system to charge & monitor an external lead-acid battery
- Over-voltage, discharge, short-circuit & reverse connection protection
- Alarm outputs for input, output & battery condition
- Remote On/Off for battery & power supply
- Controlled end of charge voltage by temperature sensor
- International safety approval package
- 3 year product warranty

Dimension Table			
Model	W	L	H
TSP-BCM 144-360 Watt	35 mm	110 mm	110 mm
TSP-BCM 600 Watt	54 mm	110 mm	110 mm

BUFFER MODULE TSP-BFM 600 Watt

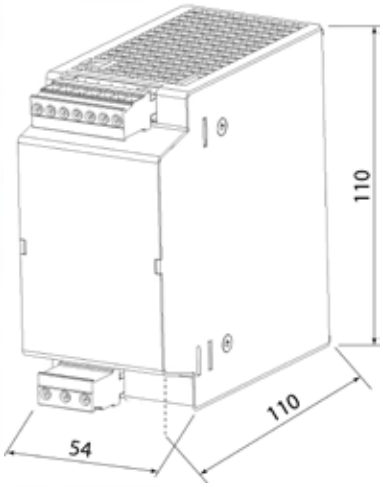


Model	Input	Buffer Time	Output Voltage adjust.	Output Current max.*	Output Power-max.
TSP-BFM24	24 VDC	200 ms typ. @ 25 A max. 4 s max. @ 1.2 A	24 VDC	25.0 A	600 W

* Maximum current at nominal Vout

- Capacitor bank for energy storage, no battery needed!
- Typical Hold-up-time ranging 200ms @ 25A through 4s @ 1.2A
- Output 24 to 28 VDC, 600W max.
- Active ready & inhibit signals
- Maintenance free, long lifetime
- Performance at low temperature
- 3 year product warranty

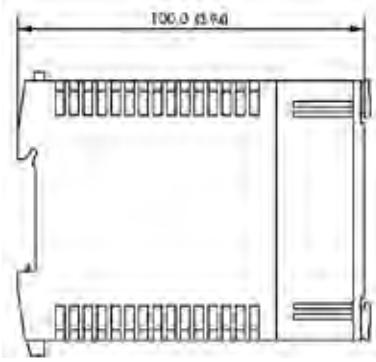
DECOUPLING MODULE TSPC-DCM — 600 Watt

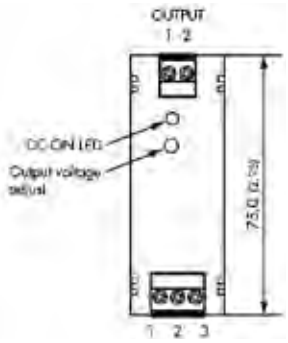


Model	Input Voltage	Input Current	Max reverse Voltage	Voltage drop across the diodes
TSPC-DCM600	**5 - 28 VDC** (24 VDC nom.)	20 mA min. 25 A max.	35 VDC	0.75 VDC typ. 1.2 VDC max.

- Module contains two diodes for redundant operation of two power supplies
- Hot swappable inputs
- International safety approval package
- 3 year product warranty

REDUNDANCY & CURRENT SHARE MODULES TCL-REM — 480 Watt

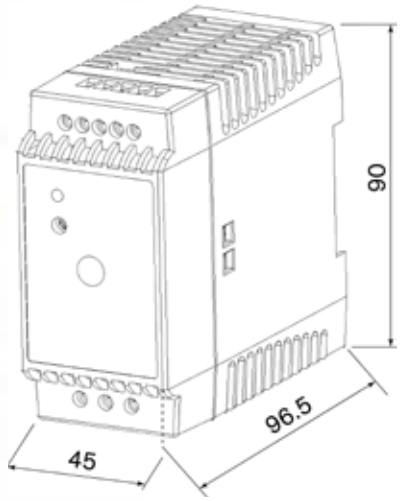




Model	Nominal Input Voltage	Input Voltage Range	Max Power per Input	Outplut Voltage	Output Current max.
TCL-REM240	5...48 VDC	5...60 VDC	200 W	Vin - 0.9 VDC	8 A

- Module enables redundant operation of any two TCL models
- Ultracompact plastic housing
- Spring clamp or detachable screw terminals
- Adaptor for wall mounting
- Output voltage adjustable
- Power OK signal
- Overload & short-circuit protection
- Parallel operation possible
- 3 year product warranty

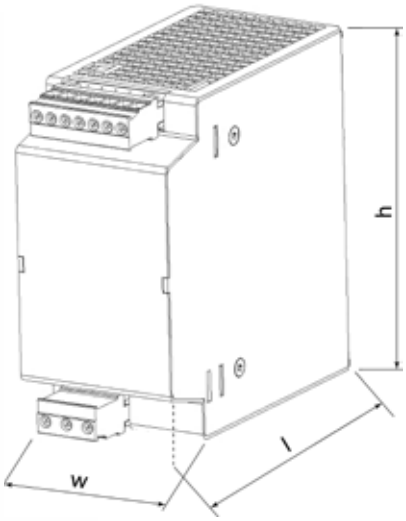
REDUNDANCY & CURRENT SHARE MODULES TPC-REM — 240 Watt



Model	Nominal Input Voltage	Max Power per Input	Output Voltage adjustable	Output Current max.
TPC-REM240-24	24 VDC	120 W	24 - 27 VDC	10 A
TPC-REM240-48	48 VDC		48 - 55 VDC	5 A

- Allows redundant operation for two TPC series power supplies with 24 VDC or 48 VDC, same model
- High efficiency across full load range
- Universal input 85-264 VAC, 47-63 Hz
- Output voltage adjustable
- Power good signal
- Overload & short-circuit protection
- 3 year product warranty

REDUNDANCY & CURRENT SHARE MODULES TSP-REM — 360-600 Watt



Model	Input Voltage Range	Max Power per Input	Output Voltage adjust.	Output Current max. **
TSP-REM360*	2 × 24 VDC	2 × 360 W	24 VDC	15.0 A
TSP-REM600*	2 × Control input	2 × 600 W	(24-27 VDC)	25.0 A

* For ATEX / IECEx compliant model add appendix -EX to order code.
** Maximum current at nominal Vout

- Allows same two TSP models redundant operation (no additional components)
- Module for true current sharing
- Alarm outputs, redundancy OK signal
- Hot swappable inputs
- Remote On/Off
- International safety approval package
- 3 year product warranty

Dimension Table

Model	Width [W]	Length[l]	Heigth[h]
TSP-REM360	35 mm	110 mm	110 mm
TSP-REM600	54 mm	110 mm	110 mm

ALPHANUMERIC INDEX

TRACO POWER

TRACO POWER is 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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