Industrial Power Supplies

TSPC Series, 50–480 Watt

EMC LVD | IEC 60950-1 | UL 60950-1 | EN 60950-1 EN 61558 EN 60204 | UL 508 | ATEX II3G

- Rugged metal case for harsh industrial environments
- Industrial operating temperature range: –25°C to +70°C
- Overload and and overtemperature protection
- Power boost up to 120 %
- Power-Good signal
- Shock and vibration proof
- International safety approval package
- ATEX certification for hazardous locations
- Decoupling module for redundant operation (optional)
- Wall mounting (opt.)
- 3-year product warranty

The TSPC series are high performance DIN-rail mount power supplies for harsh industrial environments. The design is based on the popular TRACOPOWER TSP series but with reduced electrical features to make these power supplies an easy to install and cost efficient but reliable solution for basic applications.
Excellent electrical specifications and high immunity against electrical disturbances makes these compact modules the best choice for reliable industrial systems and machines.
For system applications all models provide a Power-Good signal.
The TSPC series power supplies complies with the latest safety and EMC standards for industrial environments and include ATEX EN 60079 certification for applications in hazardous locations.

Models

Order code	Output power nominal	Output voltage nominal	Output current nominal
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

Input Specifications

Input voltage	– nominal ranges	TSPC 050	**100 – 240 VAC** universal input
		other models	**100 – 120 / 220 – 240 VAC** by selection switch
	– effective ranges	TSPC 050	**85 – 264 VAC** universal input
		other models	**85 – 132 / 187 – 264 VAC** by selection switch
	– output power derating at input <100 VAC		**3.3 %/V**
Input voltage frequency			**47 – 63 Hz**
Harmonic limits			**EN 61000-3-2**
Holdup time			**10 ms min.**
Inrush current			**40 A**
Recommended circuit breaker, characteristic C or fuse, slow blow type		– TSPC 080/120	**6.0 – 16.0 A**
		– TSPC 240	**10.0 – 16.0 A**
		– TSPC 480	**16.0 – 25.0 A**
Efficiency			**85 – 93 %**

Output Specifications

Output voltage adj. range		12 VDC models:	**12 – 14 VDC**
			output power derating above 12 VDC : **10 %/V**
		24 VDC models:	**24 – 28 VDC**
			output power derating above 24 VDC : **5 %/V**
		48 VDC models:	**48 – 56 VDC**
			output power derating above 48 VDC : **2.5 %/V**
Boost output current			**120 %** (at 24 VDC output voltage)
			continuous at <+50°C ambient temperature
	– power derating above 50°C ambient		**2 %/°C**
	– power derating at input <115 VAC		**1.3 %/V**
	– power derating at input <220 VAC		**0.6 %/V** (at upper input voltage range)
Regulation	– Input variation		**1 % max.**
	– Load variation (0–100 %)		**1 % max.**
Ripple and Noise (20MHz bandwidth)			**100 mVp-p typ.** (200 mVp-p max.)
Overload protection			**130 % min.** (of Iout nom., constant current)
Short circuit current			**90 % of Iout nom. (typ.), foldback**
Output overvoltage protection		12 VDC models:	**25 V max.**
		24 VDC models:	**40 V max.** (TSPC 120, TSPC 240, TSPC 480)
			45 V max. (TSPC 050, TSPC 080)
		48 VDC models:	**60 V max.**
Overtemperature protection			**switch off at overtemperature, automatic restart**
Power back immunity		12 VDC models:	**16 V** (18 V for 1 s)
		24 VDC models:	**35 V** (40 V for 1 s)
		48 VDC models:	**63 V** (65 V for 1 s)
Power OK signal	– trigger threshold	12 VDC models:	**10.0 – 11.5 V**
		24 VDC models:	**21.0 – 22.5 V**
		48 VDC models:	**42.0 – 45.0 V**
	– output signal	12 VDC models:	**open collector 20 mA max.**
		24 VDC models:	**open collector 10 mA max.**
		48 VDC models:	**open collector 5 mA max.**
			Active high: Connected to Vout in normal operation, high resistance at failure
Max. capacitive load			**unlimited**

General Specifications

Temperature range	– Operating	**–25°C to +70°C max. (with derating)**
	– Output current derating	**2.5 %/°C above 60°C**
	– Storage	**–40°C to +85°C**
Cooling		**convection cooling, no internal fan**
Humidity (non condensing)		**95 % rel. H max.**

General Specifications

Pollution degree		2
Altitude during operation		2'000 m max.
Temperature coefficient		0.02 %/K
Reliability, calculated MTBF at +25°C acc. to IEC 61709	– TSPC 080	2.4 Mio. h
	– TSPC 120	2.5 Mio. h
	– TSPC 240	1.7 Mio. h
	– TSPC 480	1.4 Mio. h
Isolation		according to IEC/EN 60950-1, UL 60950-1, UL 508
Safety standards	– Information technology equipment	IEC/EN 60950-1, UL 60950-1, CSA 22.2 No 60950-1-07
	– Measurement, Control & Laboratory	IEC/EN 61010-1, IEC/EN 61010-2-201
	– Industrial control equipment	UL 508, CSA-C22.2 No.107
	– Electrical equipment for machines	EN 60204-1
	– Electronic equipment for power installation	EN 50178
	– Safety of transformers	EN 61558-2-6, EN 61558-2-16
	– Control equipment for hazardous location	EN 60079-15 II3G EX nA IIC T4
	– ATEX (for IP 54 enclosure)	certificate no. EPS 10 ATEX 1 269 X
	– UL hazloc (TSPC 050-124HL only)	UL 121201 Class I; Div 2; Groups A,B,C & D; T4
	– Certification documents	www.tracopower.com/overview/tspc
Class of protection		safety class I (IEC 536)
Degree of protection		IP 20 (IEC/EN 60529)
Electromagnetic compatibility (EMC), Emissions		EN 61000-6-3, EN 61204-3
	– Conducted RI suppression on input	EN 55011 class B, EN 55022 class B,
	– Radiated RI suppression	EN 55011 class B, EN 55022 class B,
Electromagnetic compatibility (EMC), Immunity		EN 61000-6-2, EN 61204-3
	– Electrostatic discharge (ESD)	IEC/EN 61000-4-2 4 kV / 8 kV criteria B
	– Radiated RF field immunity	IEC/EN 61000-4-3 10 V / m criteria A
	– Electrical fast transient / burst immunity	IEC/EN 61000-4-4 2 kV criteria B
	– Surge immunity	IEC/EN 61000-4-5 1 kV / 2 kV criteria B
	– Immunity to conducted RF disturbances	IEC/EN 61000-4-6 10 V criteria A
	– Power frequency field immunity	IEC/EN 61000-4-8 30 A / m criteria A
	– Mains voltage dips and interruptions	IEC/EN 61000-4-11 criteria B/C
Environment	– Vibration acc. IEC 68-2-6;	3 axis, sine sweep, 10 – 55 Hz, 1 g, 1 oct/min
	– Shock acc. IEC 60068-2-27	3 axis, 15 g half sine, 11 ms
Enclosure material		aluminium (chassis) / stainless steel (cover)
Mounting	– DIN-rail mounting	for DIN-rails as per EN 50022-35x15/7.5 (snap-on with self-locking spring)
	– Wall mounting (option)	with wall mounting bracket - see page 12
Environmental compliance	– Reach	www.tracopower.com/info/reach-declaration.pdf
	– RoHS	RoHS directive 2011/65/EU
Connection	– Input / Output	screw terminals
	– Power Good signal (mating connector)	Phoenix contact MC 1,5/2-ST-3,5 (not included)
Installation instructions		www.tracopower.com/overview/tspc

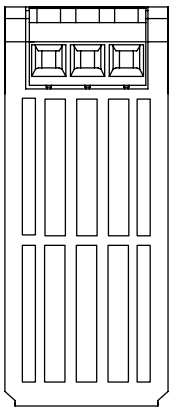
Accessories (optional)

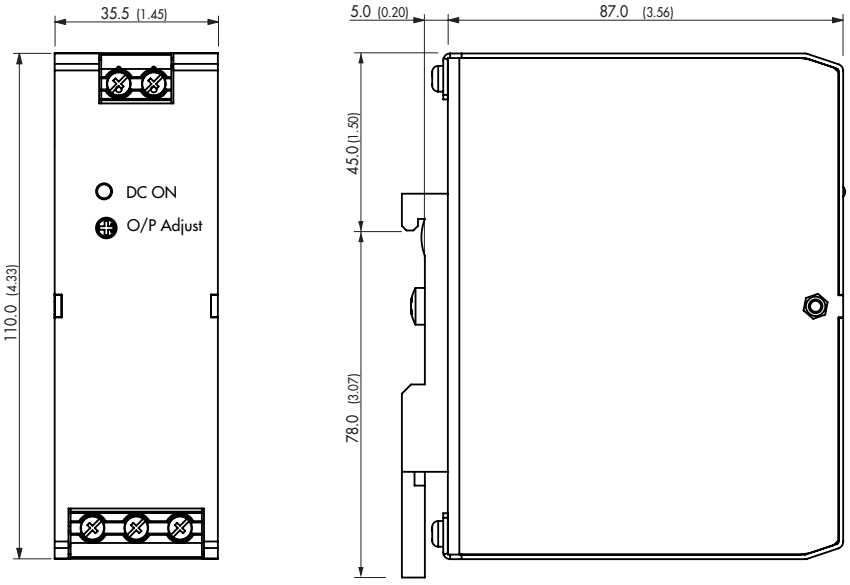
Decoupling module for redundant operation see:
www.tracopower.com/products/tspc-dcm.pdf

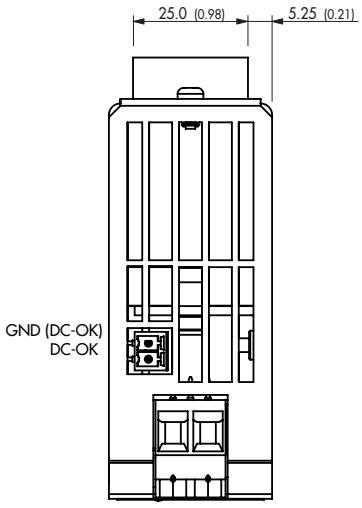
Wall mounting brackets: see last page

Outline Dimensions

TSPC 050-112
TSPC 050-124(HL*)





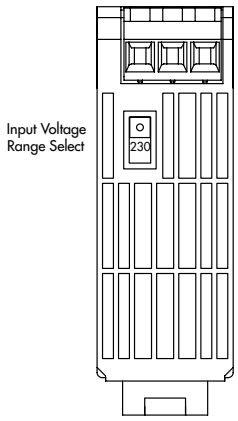


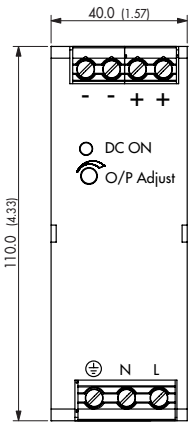
*TSPC 050-124HL contains mating plug on DC-OK connector fitted with cable tie which enlarges height of product 9mm max.

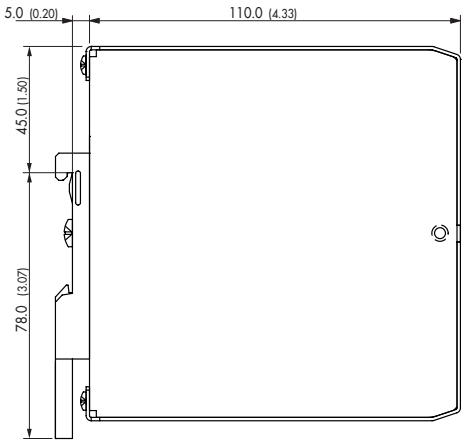
All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

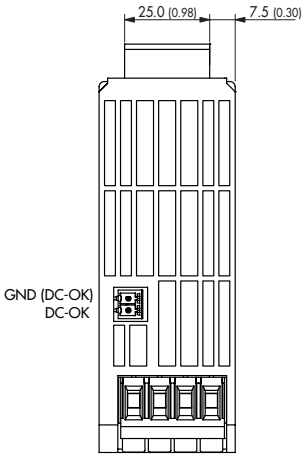
Outline Dimensions

TSPC 080-112
TSPC 080-124







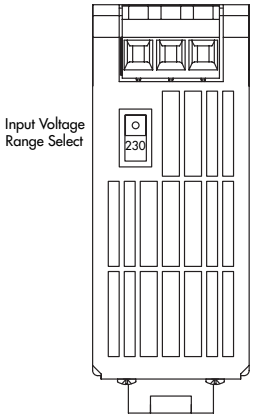


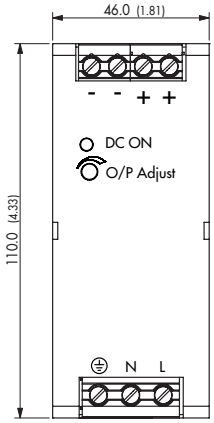
Weight: 400 g (14.1 oz)

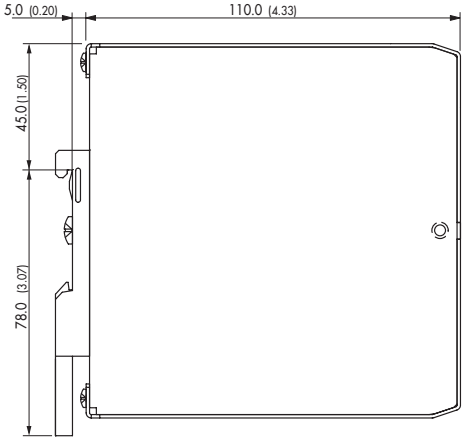
Dimensions in [mm], ( ) = Inch
Tolerances: ±0.5 mm (±0.02)

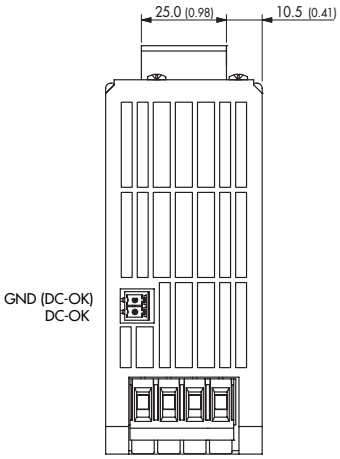
Outline Dimensions

TSPC 120-124
TSPC 120-148







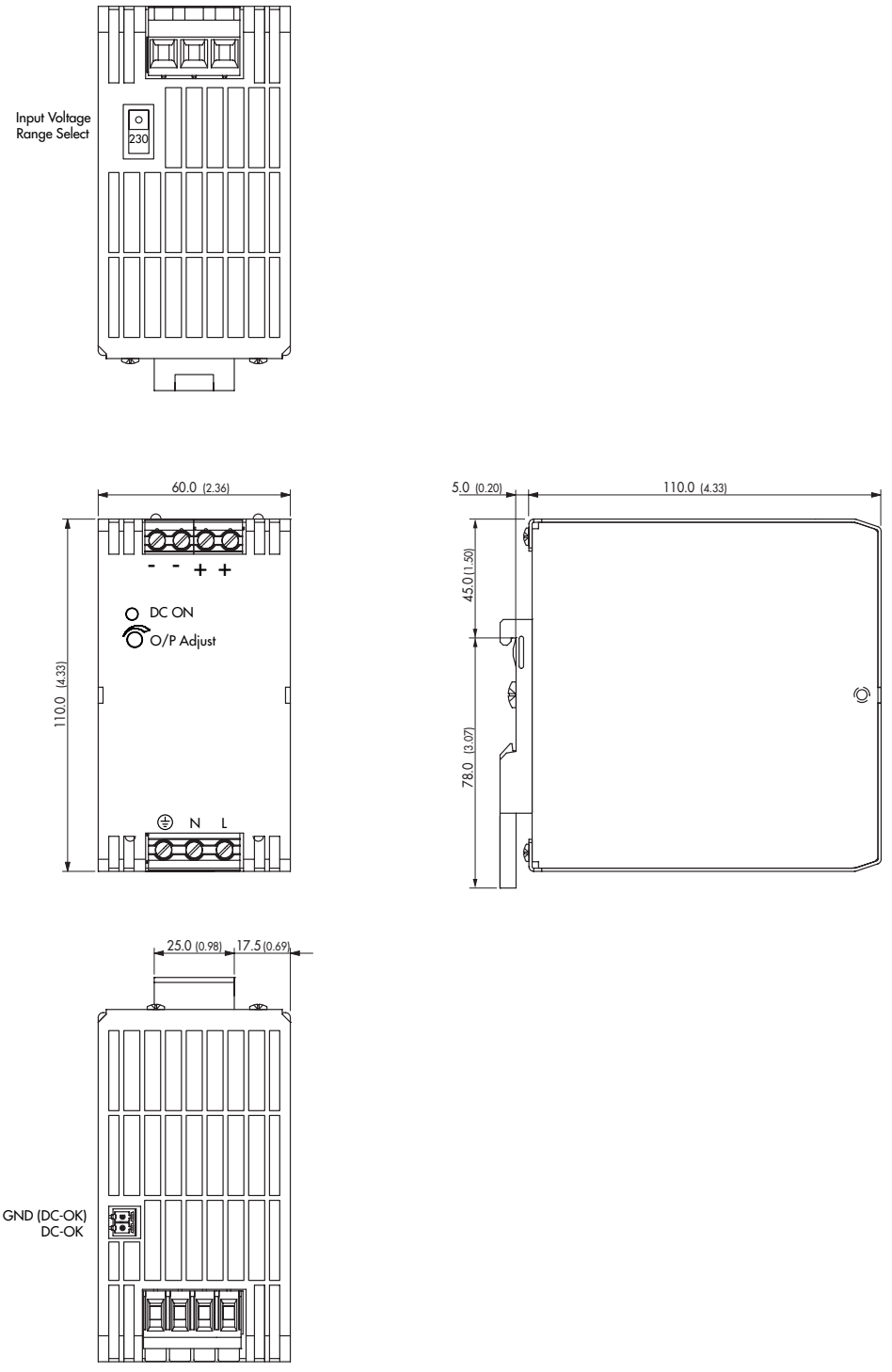


Weight: 500 g (17.7 oz)

Dimensions in [mm], ( ) = Inch
Tolerances: ±0.5 mm (±0.02)

Outline Dimensions

TSPC 240-124
TSPC 240-148

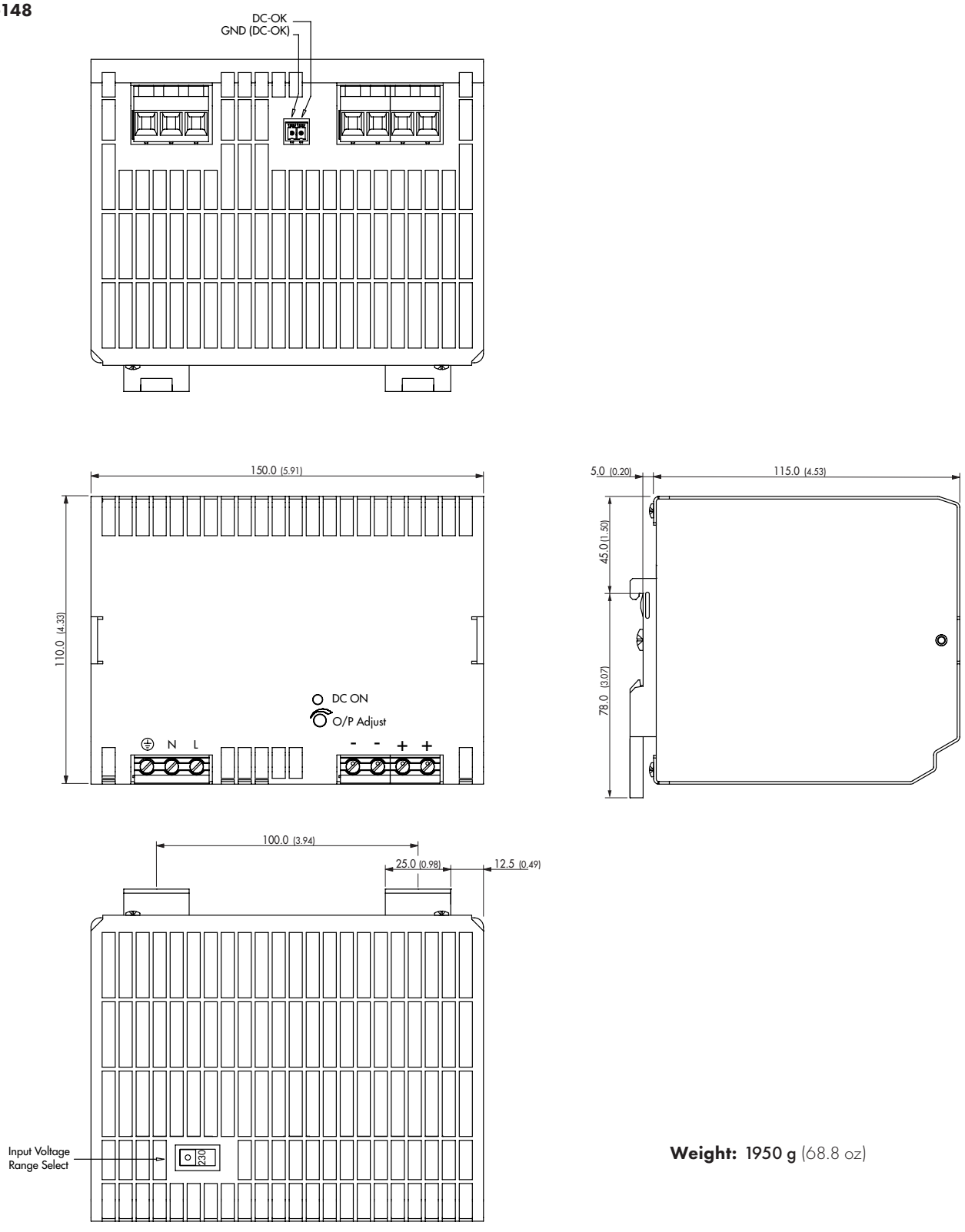


Weight: 750 g (26.5 oz)

Dimensions in [mm], ( ) = Inch
Tolerances: ±0.5 mm (±0.02)

Outline Dimensions

TSPC 480-124
TSPC 480-148



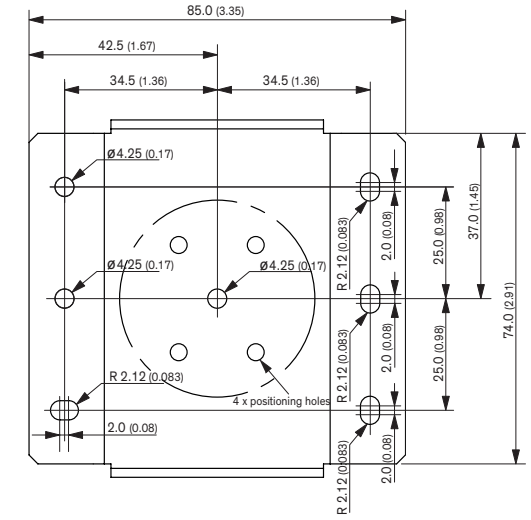
Weight: 1950 g (68.8 oz)

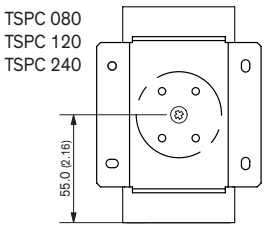
Dimensions in [mm], ( ) = Inch
Tolerances: ±0.5 mm (±0.02)

TSP–WMK Wall Mounting Bracket

order code	for models	content of kit
TSP-WMK03	TSPC 080, TSPC 120, TSPC 240, TSP-DCM600	1 bracket
TSP-WMK02	TSPC 480	2 brackets

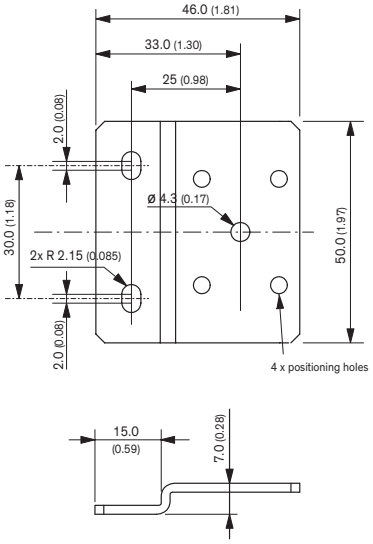
TSP-WMK03

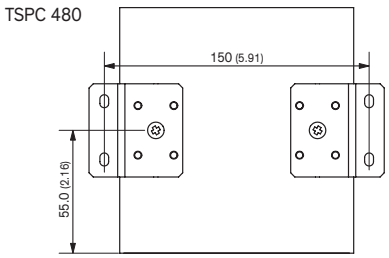




Material: 2 mm Mild Steel
Tolerance: ±0.1mm (± 0.004)

TSP-WMK02





Material: 2 mm Mild Steel
Tolerance: ±0.1mm (± 0.004)

Dimensions: [mm] ( ) = Inch

Dimensions in [mm], ( ) = Inch
Tolerances: ±0.5 mm (±0.02)