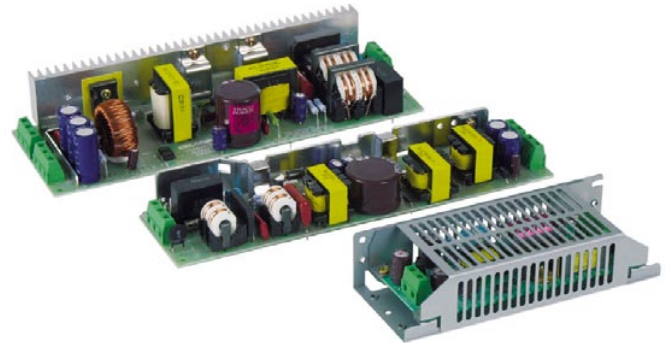




Features

- ◆ Ultracompact Open-Frame Switching Power Supply
- ◆ Easy Connection via Screw Terminal Block or Molex Pin Connector Terminal
- ◆ Universal Input 85–264 VAC, 50/60Hz
- ◆ Industrial Grade Components
- ◆ Low Ripple and Noise
- ◆ Overload Protection
- ◆ EMI meets EN55022, Class B
- ◆ Optional with Chassis / Cover
- ◆ Low Profile
- ◆ Lead free Design, RoHS compliant
- ◆ 3 Year Product Warranty



The TOF Series switching power supplies are the best choice for all space critical applications. They feature ultra-compact dimensions and a low profile.

A further new feature is the connection via screw terminals which makes installation very simple. Also as an accessory a chassis and cover kit for self-installation is available. Compliance with international safety standards (CE /UL) and EMC specifications qualify this product for worldwide use. A very high reliability is guaranteed by the use of industrial quality grade components.

Single Output Models			
Ordercode Screw Terminal Block	Output Power	Output Voltage	Output Current max.
TOF 10-05S TOF 10-12S TOF 10-15S TOF 10-24S	10 Watt	5 VDC	2.0 A
		12 VDC	0.9 A
		15 VDC	0.7 A
		24 VDC	0.5 A
TOF 15-05S TOF 15-12S TOF 15-15S TOF 15-24S	15 Watt	5 VDC	3.0 A
		12 VDC	1.3 A
		15 VDC	1.0 A
		24 VDC	0.7 A
TOF 30-05S TOF 30-12S TOF 30-15S TOF 30-24S	30 Watt	5 VDC	6.0 A
		12 VDC	2.5 A
		15 VDC	2.0 A
		24 VDC	1.3 A
TOF 50-05S TOF 50-12S TOF 50-15S TOF 50-24F	50 Watt	5 VDC	10.0 A
		12 VDC	4.3 A
		15 VDC	3.5 A
		24 VDC	2.1 A (3.0 A)*
TOF 75-05S TOF 75-12S TOF 75-15S TOF 75-24F	75 Watt	5 VDC	15.0 A
		12 VDC	6.3 A
		15 VDC	5.0 A
		24 VDC	3.2 A (4.5 A)*
TOF 100-05S TOF 100-12S TOF 100-15S TOF 100-24F	100 Watt	5 VDC	20.0 A
		12 VDC	8.5 A
		15 VDC	6.7 A
		24 VDC	4.2 A (6.3 A)*
TOF 150-05S TOF 150-12S TOF 150-15S TOF 150-24F	150 Watt	5 VDC	30.0 A
		12 VDC	12.5 A
		15 VDC	10.0 A
		24 VDC	6.3 A (9.1 A)*

* () = Peak current for max. 10 sec.

Triple Output Models			
Ordercode Screw Terminal Block	Output Power max.	*Output 1	*Output 2/3
TOF 15-0522T TOF 15-0533T	15 Watt	5 VDC/2A 5 VDC/2A	±12 VDC/0.5A ±15 VDC/0.45A
TOF 30-0522T TOF 30-0533T	30 Watt	5 VDC/4A 5 VDC/4A	+12 VDC/1.2A –12 VDC/0.5A +15 VDC/1.0A –15 VDC/0.5A

* Total power should not exceed nominal power

Order Codes for Chassis/Cover Kit					
Code	for Models	Code	for Models	Code	for Models
TOL 10-MC	TOF 10-xx	TOL 50-MC	TOF 50-xx	TOL 150-MC	TOF 150-xx
TOL 15-MC	TOF 15-xx	TOL 75-MC	TOF 75-xx	TOF 15T-MC	TOF 15-xxxT
TOL 30-MC	TOF 30-xx	TOL 100-MC	TOF 100-xx	TOF 30T-MC	TOF 30-xxxT

Input Specifications

Input voltage range	85 – 264 VAC 110 – 370 VDC (10...50 W single output models)
Input frequency	47 – 63 Hz
Recommended circuit breaker (characteristic C) or slow blow fuse	– 10...75 Watt models 5.0 A – 100 & 150 Watt models 10.0 A

Output Specifications

Output voltage adjustment range	– 10...50 Watt single output models ± 5 % – 75...150 Watt single output models ± 10% – 15...30 Watt multi output models ± 15 % on output 1 ± 2.5 % on output 2&3
Regulation	– Input variation 0.5 % max. – Load variation single output mod. (10–90%) 0.5 % max. – Load variation multi output mod. (10–90%) 2.0 % on output 1 1.0 % on output 2&3
Ripple and noise (20Mhz Bandwidth)	<1% Vout +50 mVp-p
Overload protection by current limit at	>105 % Inom.
Short circuit protection	indefinite (automatic recovery)
Overvoltage protection	115 – 140 % Vout nom.
Capacitive load	10'000 µF max.

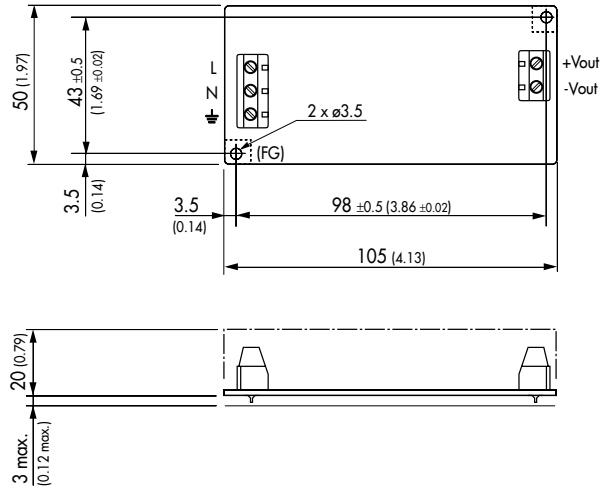
General Specifications

Temperature ranges	<ul style="list-style-type: none"> – Operating – Derating above 50°C – Storage (non operating) 	<ul style="list-style-type: none"> – 10 °C...+60 °C 5 %/ K – 20 °C...+75 °C
Temperature coefficient		0.02 %/ K
Efficiency	<ul style="list-style-type: none"> – Single output models – Multi output models 	<ul style="list-style-type: none"> 78 % typ. 70 % typ.
Humidity (non condensing)		85 % rel H max.
Switching frequency	<ul style="list-style-type: none"> – Single output models – Multi output models 	<ul style="list-style-type: none"> 140 kHz typ. (puls width modulation) 150 kHz typ. at 50% load (frequency modulation)
Hold-up time	<ul style="list-style-type: none"> – Single output models Vin = 115/230 VAC – Multi output models Vin = 115/230 VAC 	<ul style="list-style-type: none"> 30 ms typ. 20 ms typ.
I/O-Isolation voltage (60sec)		3'000 VAC
Leakage current		0.75 mA RMS typ. / 230 VAC / 50 Hz
Electromagnetic compatibility (EMC), Emissions	<ul style="list-style-type: none"> – Conducted input RI suppression – Harmonic current emissions 	<ul style="list-style-type: none"> EN 55022, class B, FCC part 15, level B IEC / EN 61000-3-2, class A (75-150 Watt models)
Electromagnetic compatibility (EMC), Immunity	<ul style="list-style-type: none"> – Electrostatic discharge ESD – RF field susceptibility 	<ul style="list-style-type: none"> IEC / EN 61000-4-2 level 2 4 kV / 4 kV IEC / EN 61000-4-3 level 2 3 V /m
	<ul style="list-style-type: none"> – Electrical fast transients/bursts on mainsline – Surge – Voltage dip 	<ul style="list-style-type: none"> IEC / EN 61000-4-4 level 2 1 kV IEC / EN 61000-4-5 level 2 0.5 kV / 1kV IEC / EN 61000-4-11
Safety standards		IEC/ EN 60950, UL /cUL 1950 (File E141988)
Reliability, calculated MTBF (MIL-HDBK-217E ground benign)		> 250'000 h @ 25°C
Vibration		10-55 Hz 0.5 mm width/ 1 minute cycle (3 directions each 30 minutes)
Shock		20 G (3 directions each 3 times)

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

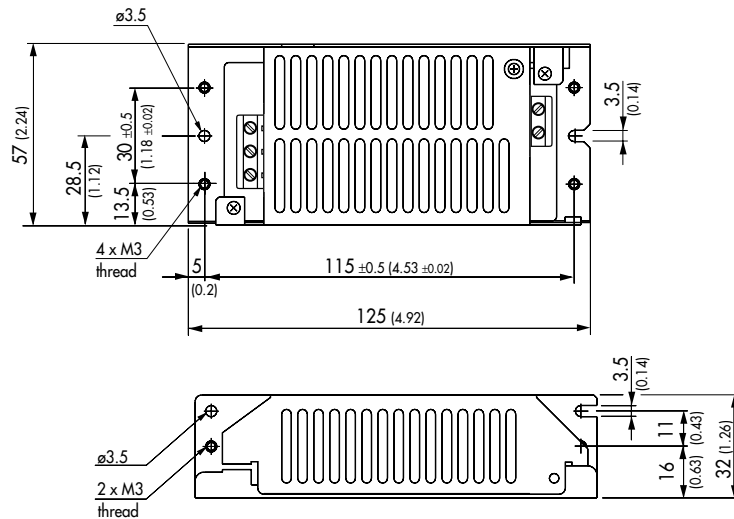
Outline Dimensions mm (inches)

TOF 10 standard open frame version



Weight: 75 g (2.6 oz)

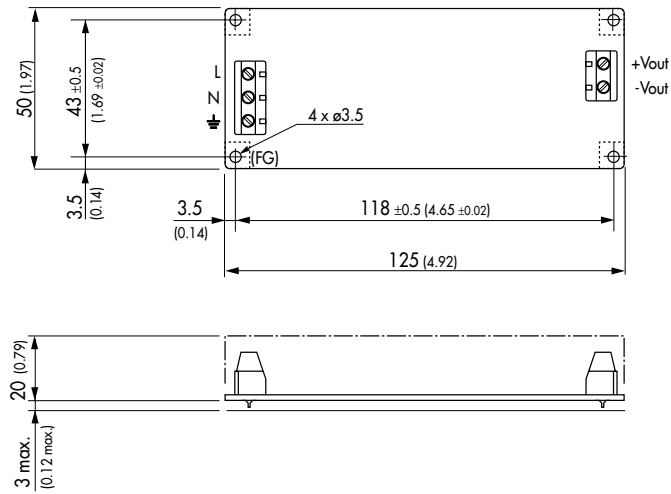
TOF 10 with chassis / cover option



Weight: 175g (6.2 oz)

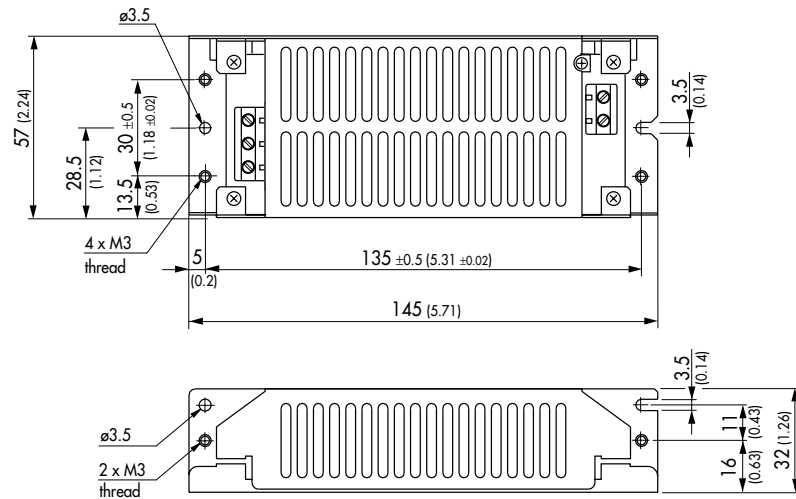
Outline Dimensions mm (inches)

TOF 15 standard open frame version



Weight: 90 g (3.2 oz)

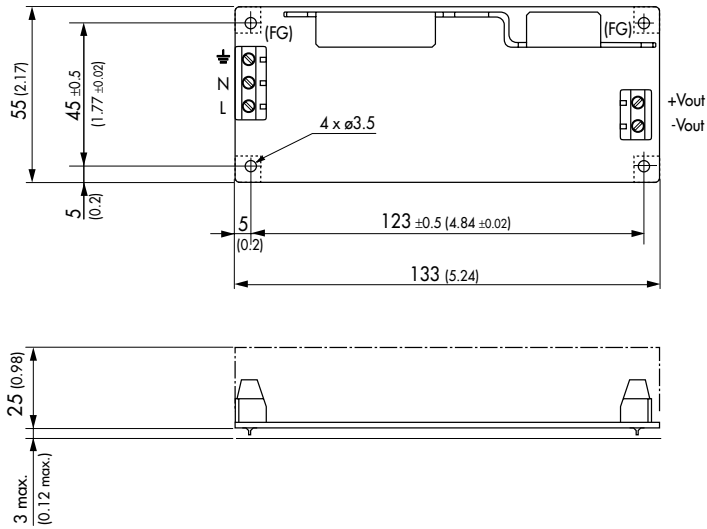
TOF 15 with chassis / cover option



Weight: 210 g (7.4 oz)

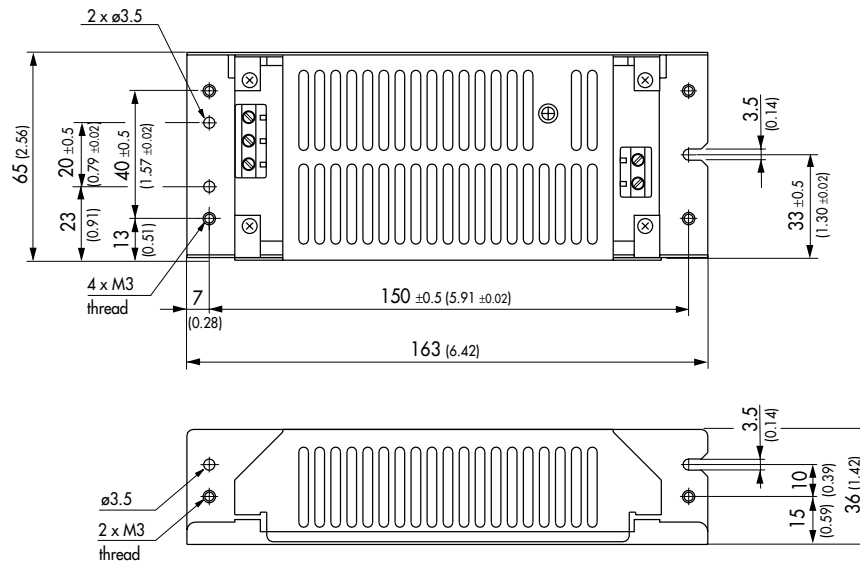
Outline Dimensions mm (inches)

TOF 30 standard open frame version



Weight: 170 g (6 oz)

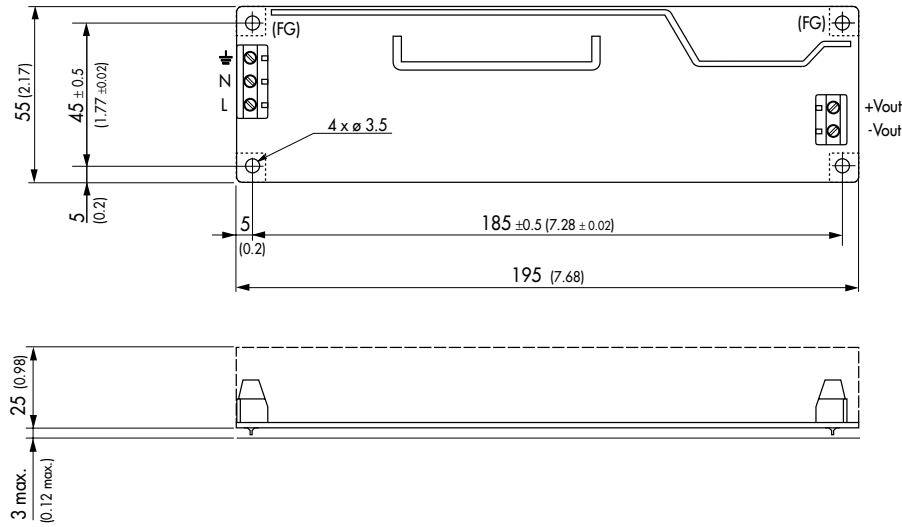
TOF 30 with chassis / cover option



Weight: 320 g (11.3 oz)

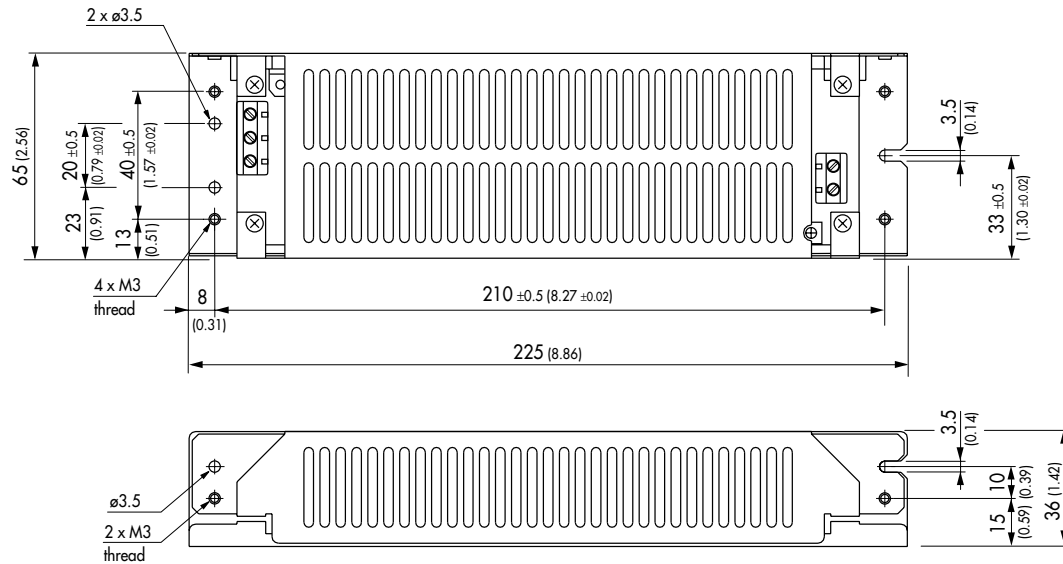
Outline Dimensions mm (inches)

TOF 50 standard open frame version



Weight: 245 g (8.6 oz)

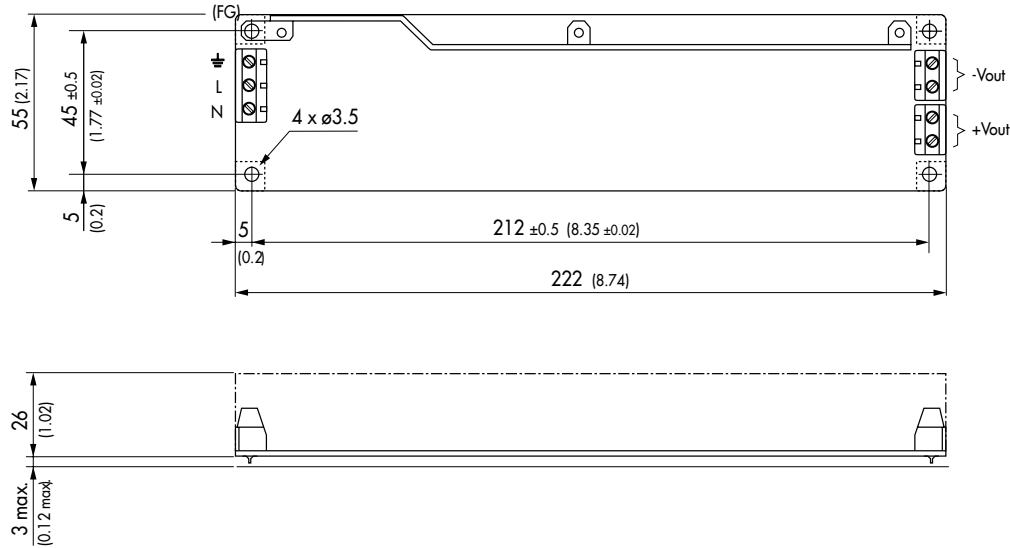
TOF 50 with chassis / cover option



Weight: 455 g (16.0 oz)

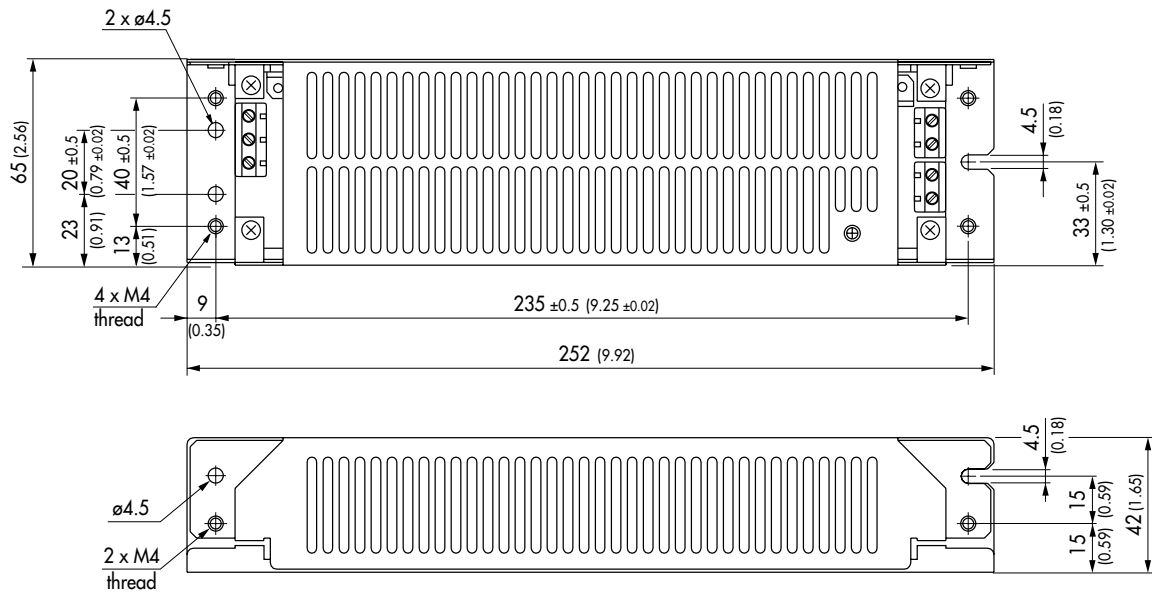
Outline Dimensions mm (inches)

TOF 75 standard open frame version



Weight: 280 g (9.9 oz)

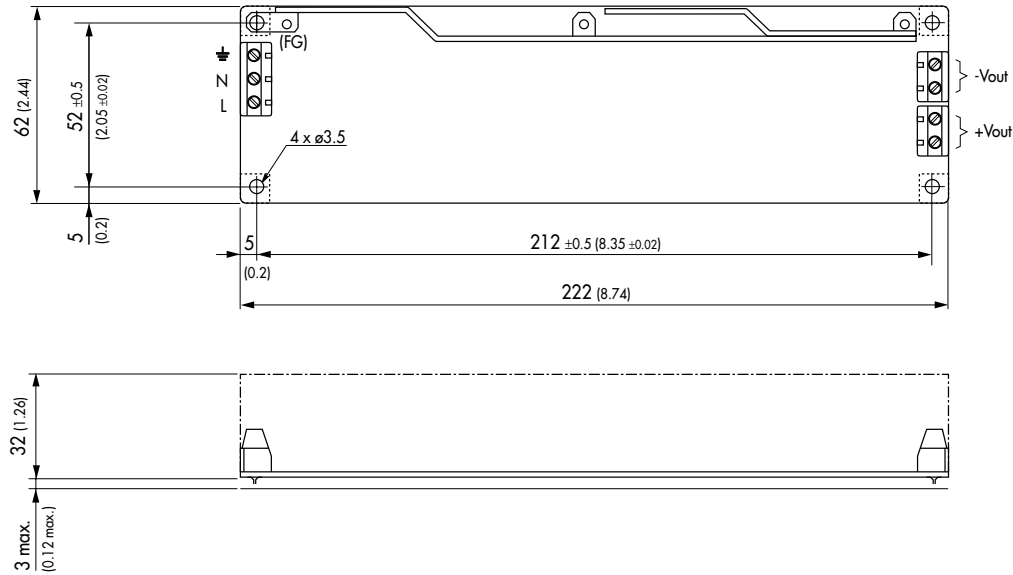
TOF 75 with chassis / cover option



Weight: 525 g (18.5 oz)

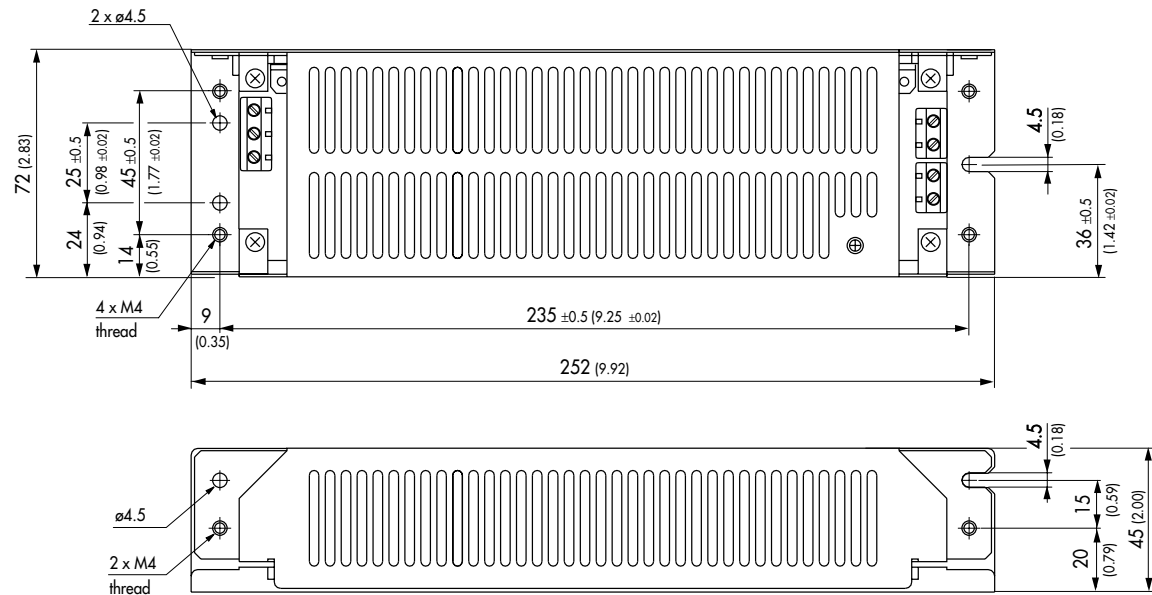
Outline Dimensions mm (inches)

TOF 100 standard open frame version



Weight: 380 g (13.4 oz)

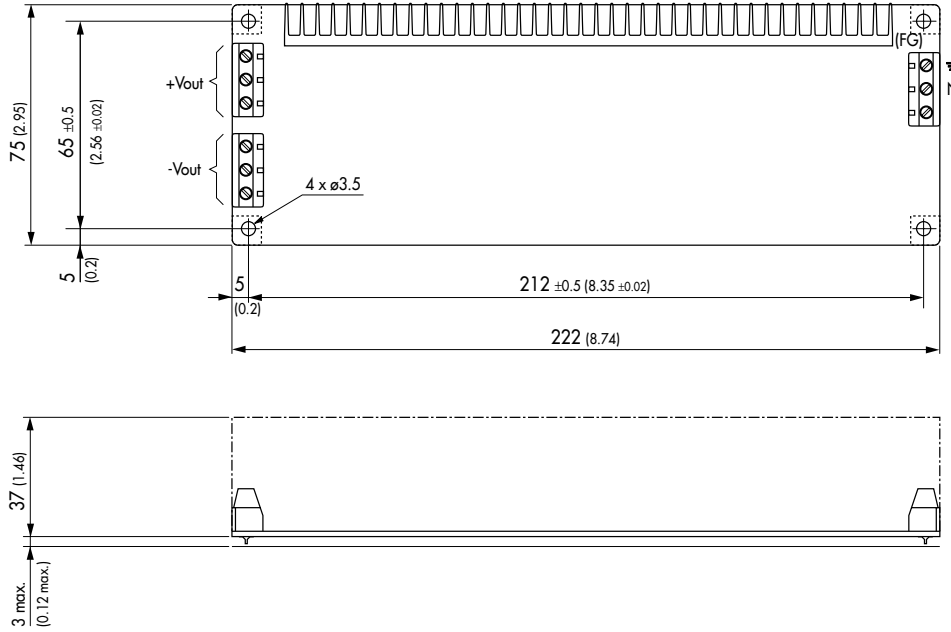
TOF 100 with chassis / cover option



Weight: 655 g (23.1 oz)

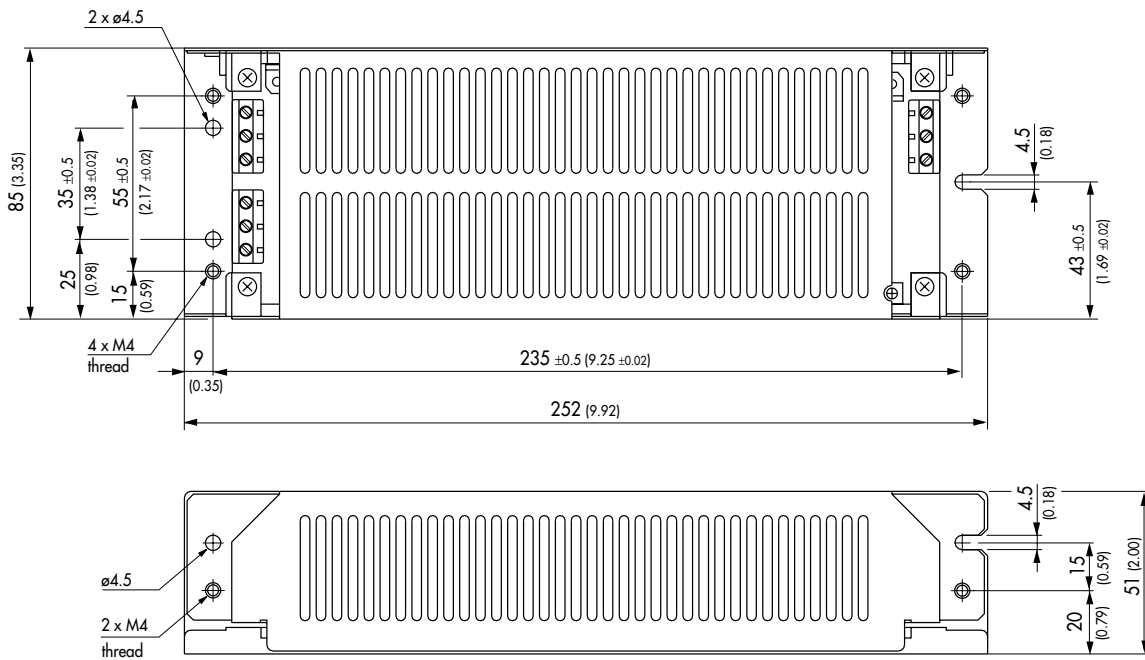
Outline Dimensions mm (inches)

TOF 150 standard open frame version



Weight: 540 g (19.0 oz)

TOF 150 with chassis / cover option

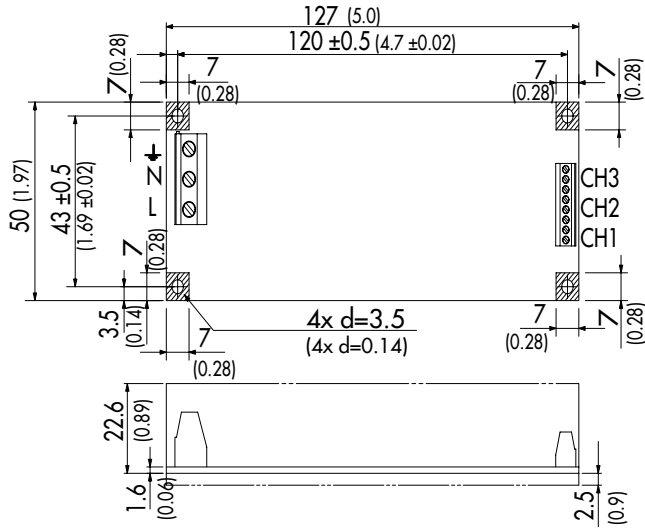


Tolerances: ±1.0 mm (±0.04)

Weight: 865 g (30.5 oz)

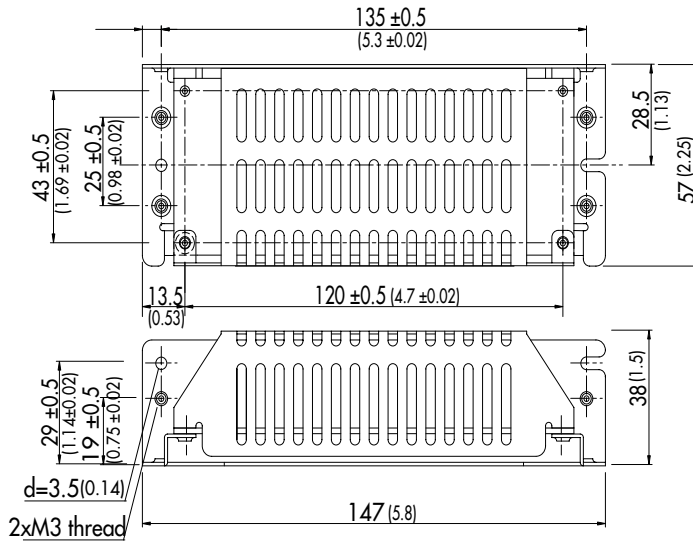
Outline Dimensions mm (inches)

TOF 15-T standard open frame version



Weight: 107g (3.8 oz)

TOF 15-T with chassis / cover option

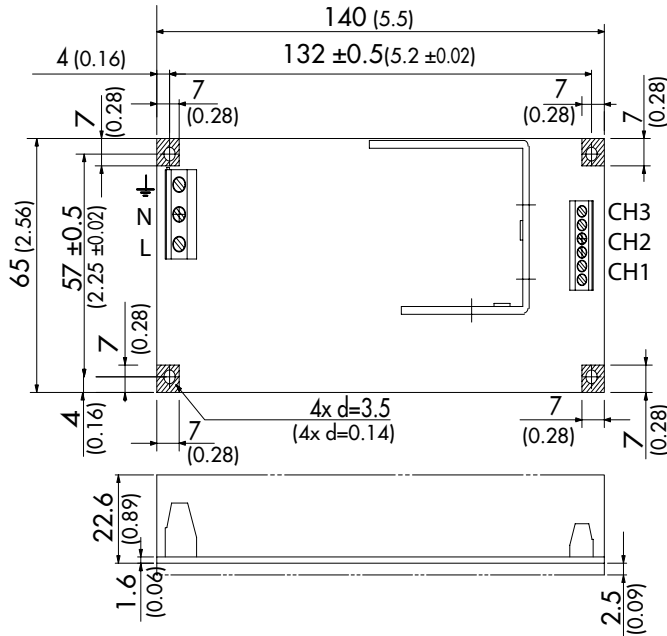


Weight: 226g (8 oz)

Tolerances: ± 1.0 mm (± 0.04)

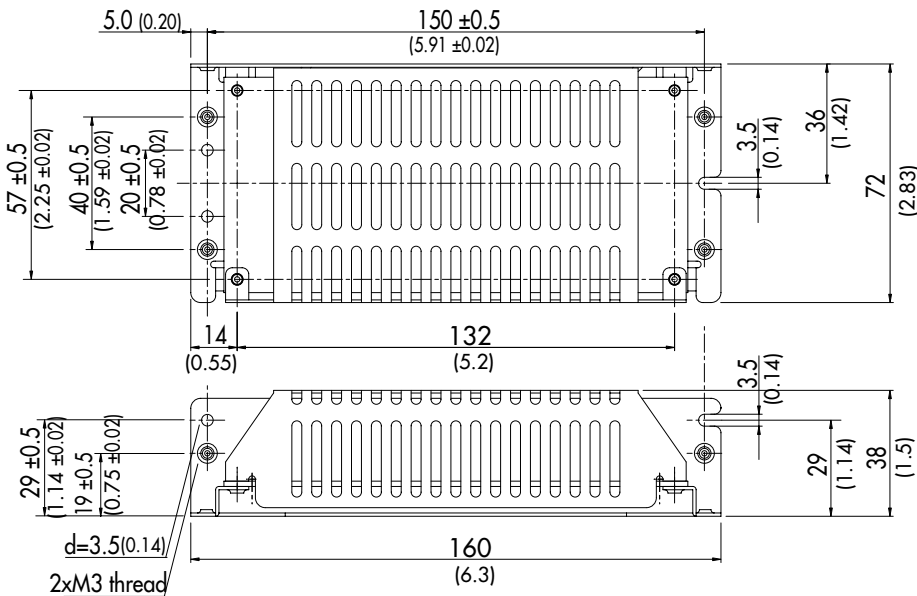
Outline Dimensions mm (inches)

TOF 30-T standard open frame version



Weight: 170g (6 oz)

TOF 30-T with chassis / cover option



Weight: 337g (11.9 oz)

Specifications can be changed any time without notice