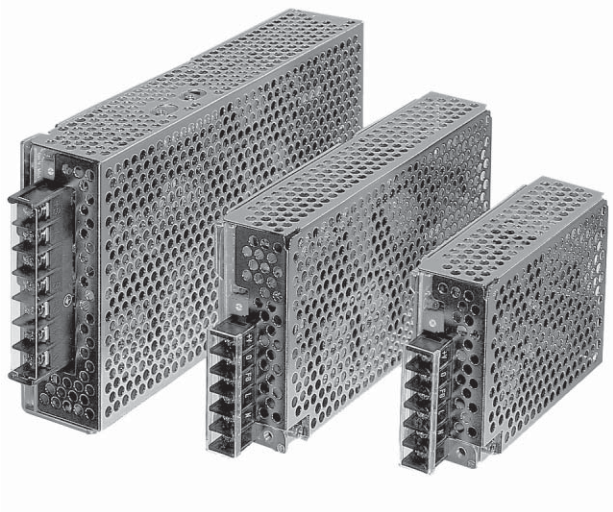
TRACO POWER®

Switching Power Supplies

ESP Series 18 - 150 Watt

Features

- Compact boxed Power Supplies with Screw Terminal Block
- Universal Input 85-264 VAC, 50/60 Hz
- EMI / EMC Compliance with EN 50081-1 and EN 50082-1
- Short Circuit and Overvoltage Protection
- High Efficiency
- International Safety Approvals
- Industrial Grade Components
- 3 Year Product Warranty



This range of very compact switching power supplies are designed for all applications, where high reliability and long lifetime are important. They provide excellent electric specifications and full compliance to the European EMC and Low Voltage Directive. Universal input and international safety approvals qualify these power supplies for worldwide use. With their low profile case and screw terminal block they are easy to install in any equipment.

Models with Single Output

Ordercode	Output Power	Output Voltage	Output Current max. 230VAC (115 VAC)
ESP 18-05SN	18 Watt	5 VDC	3.6 A (3.0A)
ESP 18-12SN		12 VDC	1.5 A (1.3A)
ESP 18-15SN		15 VDC	1.2 A (1.0A)
ESP 18-24SN		24 VDC	0.8 A (0.7A)
ESP 18-48SN		48 VDC	0.4 A (0.35A)
ESP 36-05SN	36 Watt	5 VDC	6.0 A
ESP 36-12SN		12 VDC	3.0 A (2.6A)
ESP 36-15SN		15 VDC	2.5 A (2.1A)
ESP 36-24SN		24 VDC	1.5 A (1.4A)
ESP 36-48SN		48 VDC	0.8 A (0.7A)
ESP 60-05SN	60 Watt	5 VDC	10.0 A
ESP 60-12SN		12 VDC	5.0 A (4.3A)
ESP 60-15SN		15 VDC	4.0 A (3.5A)
ESP 60-24SN		24 VDC	2.5 A (2.2A)
ESP 60-48SN		48 VDC	1.1 A

Models with Single Output

Ordercode	Output Power	Output Voltage	Output Current max.
ESP 75-05S	**75 Watt**	5 VDC	15.0 A
ESP 75-12S		12 VDC	6.5 A
ESP 75-15S		15 VDC	5.2 A
ESP 75-24S		24 VDC	3.2 A
ESP 75-48S		48 VDC	1.6 A
ESP 100-05S	**100 Watt**	5 VDC	20.0 A
ESP 100-12S		12 VDC	8.6 A
ESP 100-15S		15 VDC	7.0 A
ESP 100-24S		24 VDC	4.4 A
ESP 100-48S		48 VDC	2.2 A
ESP 150-05S	**150 Watt**	5 VDC	30.0 A
ESP 150-12S		12 VDC	13.0 A
ESP 150-15S		15 VDC	10.0 A
ESP 150-24S		24 VDC	6.5 A
ESP 150-48S		48 VDC	3.3 A

Input Specifications

Input voltage range		85 – 264 VAC (all models) 110 – 350 VDC (only ESP 18/36/60)	
Input frequency		47 – 63 Hz	
Input current (at full load)		Vin = 115 VAC	Vin = 230 VAC
	ESP 18	0.33 A typ.	0.23 A typ.
	ESP 36	0.65 A typ.	0.40 A typ.
	ESP 60	1.10 A typ.	0.72 A typ.
	ESP 75	0.95 A typ.	0.45 A typ.
	ESP 100	1.3 A typ.	0.65 A typ.
	ESP 150	1.9 A typ.	0.85 A typ.
Recommended circuit breaker (characteristic C) or slow blow fuse	ESP 18/36/60/75	5 A	
	ESP 100/150	10 A	
Start-up time		Vin = 115 VAC	Vin = 230 VAC
	ESP 18	100 ms max.	100 ms max.
	ESP 36	100 ms max.	100 ms max.
	ESP 60	100 ms max.	100 ms max.
	ESP 75	1700 ms max.	800 ms max.
	ESP 100	1600 ms max.	800 ms max.
	ESP 150	1600 ms max.	740 ms max.

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

Output Specifications

Output voltage adjustment range		± 10 %
Regulation	– Input variation	0.1 % max. (0.2% max. for 5 VDC model)
	– Load variation (0 – 100%)	0.4 % max. (0.8% max. for 5 VDC model)
Ripple and noise (20Mhz Bandwidth)		75 mV pk-pk max.
Output current limitation		> 105 % Inom.
Overload protection mode	ESP 18 – 150	Constant current
Over voltage protection (only output 1)		115 – 150 % Vout nom.
Capacitive load		< 10'000 µF

General Specifications

Temperature ranges	– Operating	0 °C...+60 °C
	– Derating above 50°C all models	2.0% /K
	– Storage (non operating)	– 20 °C...+85 °C
Temperature coefficient		0.02 % /K
Efficiency		73 – 87 % (depending on model)
Humidity (non condensing)		85 % rel max.

Switching frequency	Vin = 115 VAC	Vin = 230 VAC
ESP 18 (FM modulation)	~100 kHz	~150 kHz
ESP 36 (FM modulation)	~ 80 kHz	~130 kHz
ESP 60 (FM modulation)	~ 50 kHz	~100 kHz
ESP 75 (PWM modulation)	~120 kHz	~120 kHz
ESP 100 (PWM modulation)	~140 kHz	~140 kHz
ESP 150 (PWM modulation)	~135 kHz	~135 kHz

Hold-up time	Vin = 115 VAC	Vin = 230 VAC
ESP 18	20 ms typ.	120 ms typ.
ESP 36	20 ms typ.	120 ms typ.
ESP 60	20 ms typ.	120 ms typ.
ESP 75	50 ms typ.	40 ms typ.
ESP 100	50 ms typ.	50 ms typ.
ESP 150	50 ms typ.	40 ms typ.

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

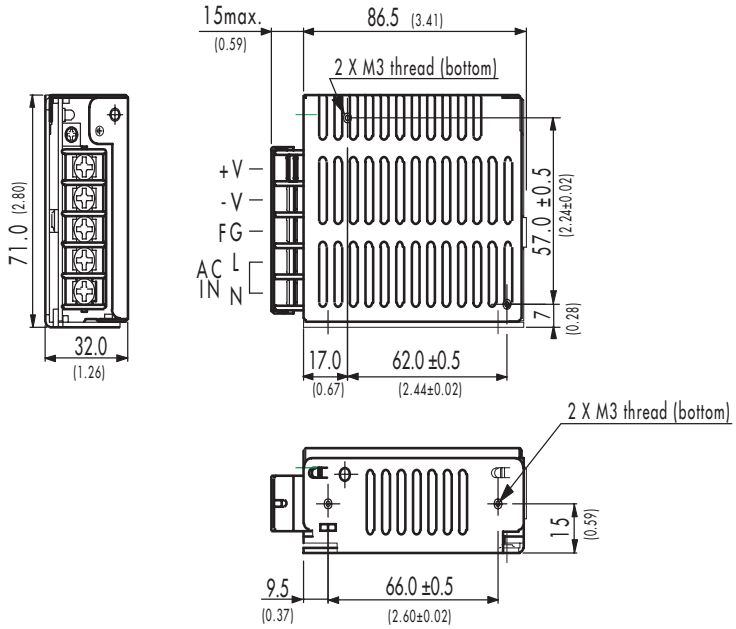
General Specifications

Isolation voltage	– Input/ Output	3'000 VAC
	– Input/ Case	1'500 VAC
	– Outpu/ Case	500 VAC
Reliability /calculated MTBF (MIL-HDBK-217E)		
	– ESP 18/ 36	> 200'000 h @ 25°C
	– ESP 60	> 170'000 h @ 25°C
	– ESP 75/ 100/ 150	> 90'000 h @ 25°C
ELectromagnetic compatibility (EMC), Emissions		
	– Conducted RI suppression	EN 55022, class B, FCC part 15, level B
	– Harmonic current emissions	IEC / EN 61000-3-2, class D equipment (ESP 75/ 100/ 150 only)
ELectromagnetic compatibility (EMC), Immunity (all single output models)		
	– Electrostatic discharge ESD	IEC / EN 61000-4-2 4 kV / 8 kV
	– RF field immunity	IEC / EN 61000-4-3 10 V / m
	– Electrical fast transients/burst immunity	IEC / EN 61000-4-4 1 kV
	– Surge Immunity	IEC / EN 61000-4-5 1/2 kV
	– Voltage dips, short int. and voltage variation	IEC / EN 61000-4-11
Safety standards		UL 60950, IEC/EN 60950
Safety approval		cUL /UL (E141988)
Case material		stainless steel

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

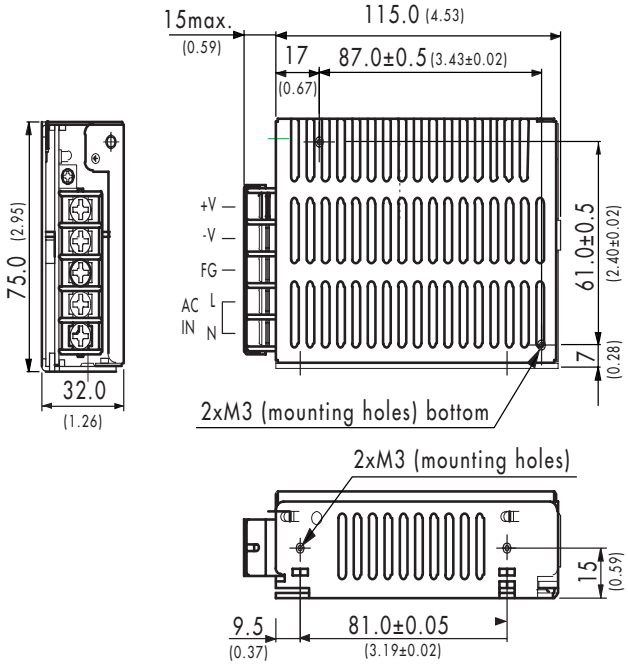
Outline Dimensions mm (inches)

ESP 18



Weight **ESP 18** 200 g (0.44 lb)
ESP 36 300 g (0.66 lb)

ESP 36

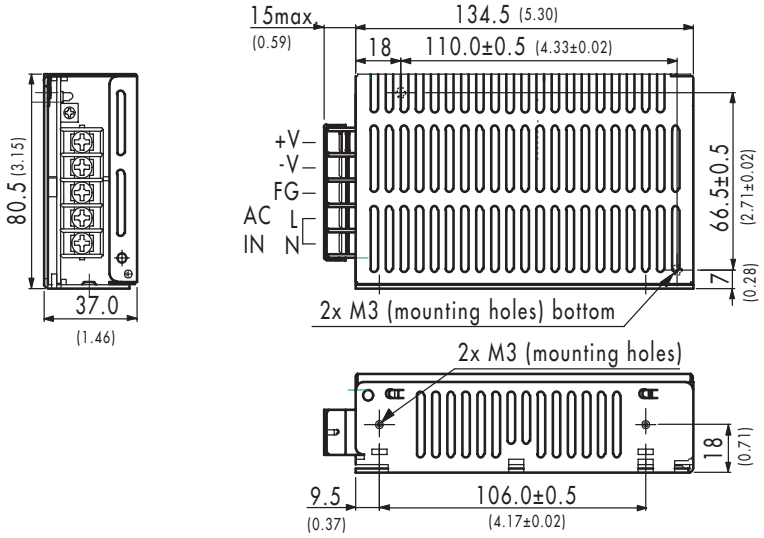


Tolerance ±1 (±0.04)

Specifications can be changed without notice

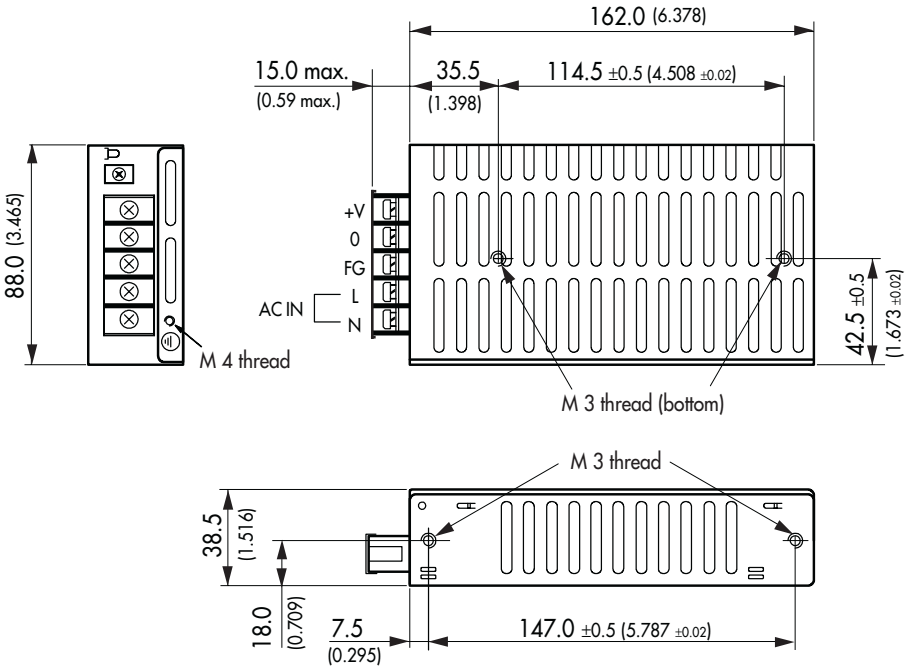
Outline Dimensions mm (inches)

ESP 60



Weight **ESP 60** 480 g (1.06 lb)
ESP 75 540 g (1.19 lb)

ESP 75

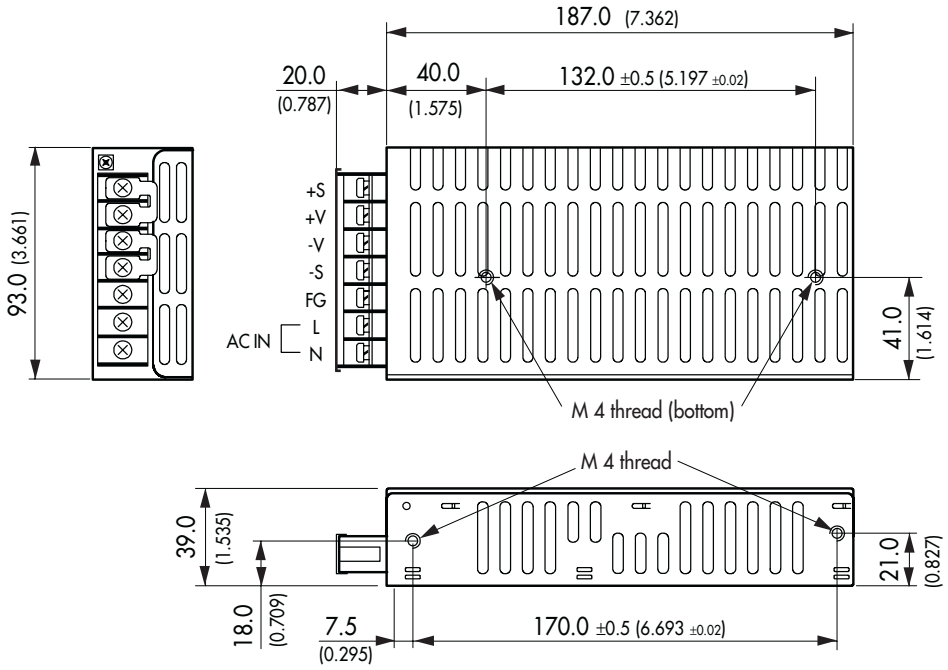


Tolerance ±1 (±0.04)

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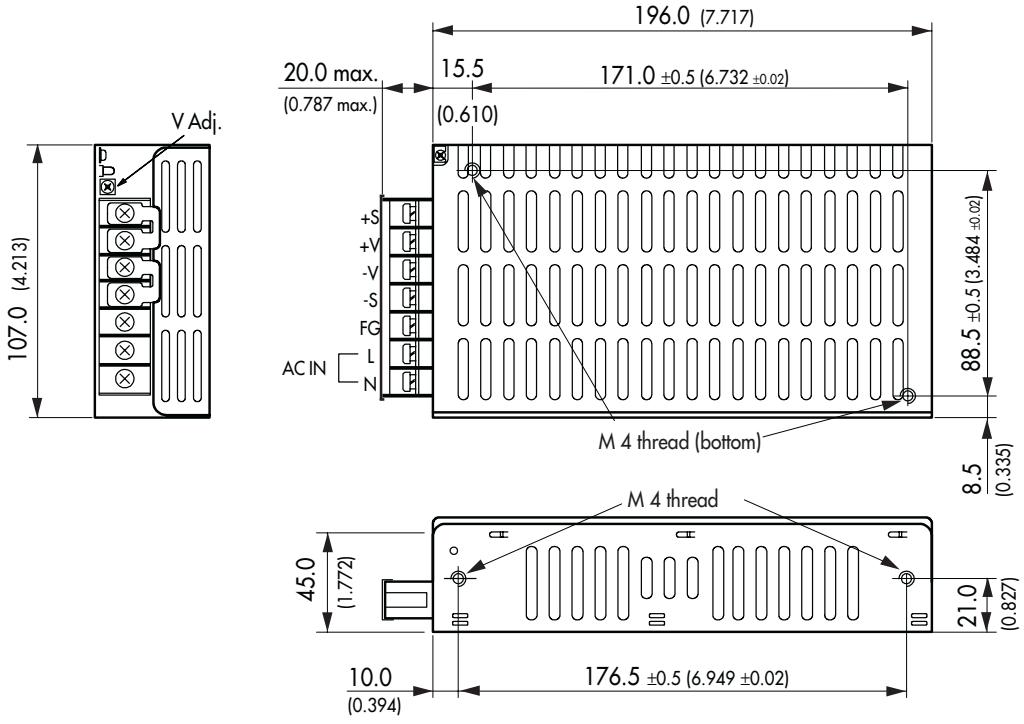
Outline Dimensions mm (inches)

ESP 100



Weight **ESP 100** 740 g (1.63 lb)
ESP 150 980 g (2.16 lb)

ESP 150



Tolerance ±1 (±0.04)

Specifications can be changed without notice

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