

THF Series



- Wide Adjustment Range
- Rugged for Industrial Use
- High Efficiency
- Overvoltage Protection
- Overcurrent Protection
- Overtemperature Protection
- Lightweight Design

Specification

Input

Input Voltage	<ul style="list-style-type: none"> • 90-264 VAC except: 90-132/176-264 VAC switch-selectable (THF120 and THF480LSxx models) and 180-264 VAC (THF480PS models)
Input Frequency	<ul style="list-style-type: none"> • 47-63 Hz
Input Current	<ul style="list-style-type: none"> • 0.5 A at 230 VAC 45 W models, 0.8 A at 230 VAC 75 W models, 1.4 A at 230 VAC 120 W models, 1.8 A at 230 VAC 240 W models, 4.0 A at 230 VAC 480 W models
Inrush Current	<ul style="list-style-type: none"> • 60 A max
Power Factor	<ul style="list-style-type: none"> • All units EN61000-3-2 compliant, ≥ 0.95 THF240, ≥ 0.70 THF480
Earth Leakage Current	<ul style="list-style-type: none"> • < 1.0 mA max 45 and 75 W models, < 3.5 mA max 120, 240 & 480 W models at 240 VAC

Output

Output Voltage	<ul style="list-style-type: none"> • See tables
Output Voltage Trim	<ul style="list-style-type: none"> • $\pm 10\%$
Initial Set Accuracy	<ul style="list-style-type: none"> • $\pm 2\%$ max
Start Up Delay	<ul style="list-style-type: none"> • 800 ms max 45 and 240 W models, 1000 ms 75 W models, 500 ms 120 W models, 1200 ms 480 W models
Start Up Rise Time	<ul style="list-style-type: none"> • 60 ms max 45 & 75 W models, 70 ms max 120 W models, 40 ms max 240 W & 480 W models
Hold Up Time	<ul style="list-style-type: none"> • 50 ms at 230 VAC 45 & 75 W models, 30 ms at 230 VAC 120 W models, 20 ms at 230 VAC max 240 W models, 16 ms at 230 VAC max 480 W models
Line Regulation	<ul style="list-style-type: none"> • $\pm 1.0\%$ max 45 W models, $\pm 0.5\%$ 75, 120, 240 & 480 W models
Load Regulation	<ul style="list-style-type: none"> • $\pm 0.5\%$ max, $\pm 1\%$ max 45 W models
Ripple & Noise	<ul style="list-style-type: none"> • See tables
Overvoltage Protection	<ul style="list-style-type: none"> • 115-135%
Overload Protection	<ul style="list-style-type: none"> • 105-150%, constant current with auto recovery
Temperature Coefficient	<ul style="list-style-type: none"> • 0.03% /$^{\circ}\text{C}$

General

Efficiency	<ul style="list-style-type: none"> • 72-89% (see tables)
Isolation	<ul style="list-style-type: none"> • 3000 VAC Input to Output • 1500 VAC Input to Ground • 500 VAC Output to Ground
Switching Frequency	<ul style="list-style-type: none"> • 100 kHz typical 45 & 240 W models • 70 kHz typical 480 W models • 50 kHz typical 75 & 120 W models

Environmental

Operating Temperature	<ul style="list-style-type: none"> • See derating curves
Operating Humidity	<ul style="list-style-type: none"> • 90% RH, non-condensing
Storage Temperature	<ul style="list-style-type: none"> • -20°C to $+85^{\circ}\text{C}$
Vibration	<ul style="list-style-type: none"> • 2 G, 10 Hz to 500 kHz, 10 min/cycle for 60 minutes each axis

EMC & Safety

Emissions	<ul style="list-style-type: none"> • EN55022/55011, Class B conducted and radiated, EN61000-3-2, 3
Voltage Flicker	<ul style="list-style-type: none"> • EN61000-3-3
ESD Immunity	<ul style="list-style-type: none"> • EN61000-4-2, level 3 air, Perf Criteria B
Radiated Immunity	<ul style="list-style-type: none"> • EN61000-4-3, 10 V/m, Perf Criteria B
EFT/Burst	<ul style="list-style-type: none"> • EN61000-4-4, level 3, Perf Criteria B
Surge	<ul style="list-style-type: none"> • EN61000-4-5, level 3, Perf Criteria B
Conducted Immunity	<ul style="list-style-type: none"> • EN61000-4-6, 10 V rms, Perf Criteria B
Safety Approvals	<ul style="list-style-type: none"> • EN60950, UL508, (UL60950 on 120, 240 & 480 W models)

Models and Ratings

Maximum Output Power	Output Voltage Nominal	Output Voltage Adjustment	Output Current Maximum	Ripple and Noise ⁽¹⁾	Efficiency	Model Number
25 W	5.0 V	4.75-5.50 V	5.0 A	100 mV	72%	THF45US05
42 W	12.0 V	10.80-12.20 V	3.5 A	200 mV	77%	THF45US12
42 W	15.0 V	13.50-16.50 V	2.8 A	240 mV	77%	THF45US15
48 W	24.0 V	21.60-26.40 V	2.0 A	480 mV	80%	THF45US24

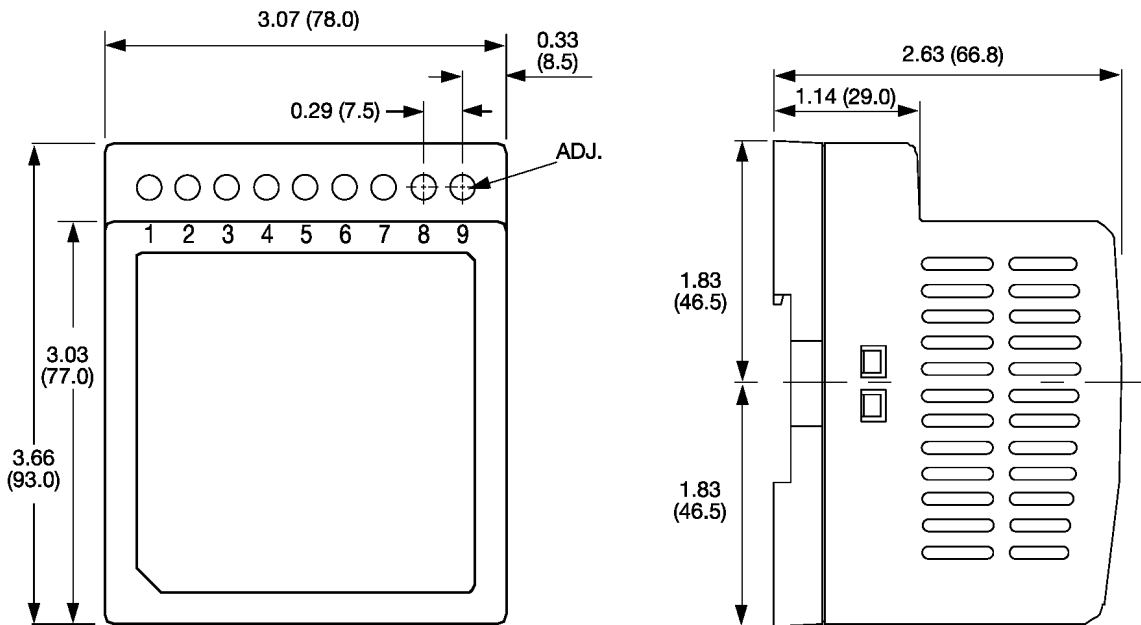
Notes

1. Measured at 20 MHz bandwidth using a 12" twisted pair terminated with a 0.1 μF/47 μF capacitor.

Mechanical Details

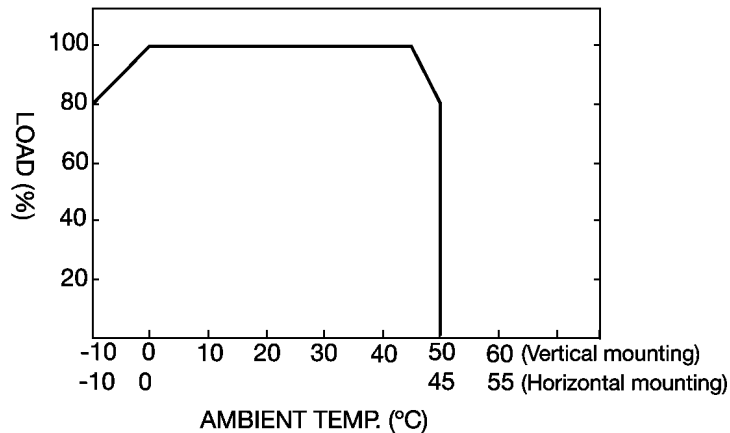
THF45 MODELS

PINOUT	
Pin	Function
1	AC Input
2	AC Input
3	Earth
4	DC Output -V
5	DC Output -V
6	DC Output +V
7	DC Output +V
8	LED
9	+V Adj



Weight 0.40 kg

Derating Curve



NB: The THF45 will operate at full load from 85-264 VAC input.

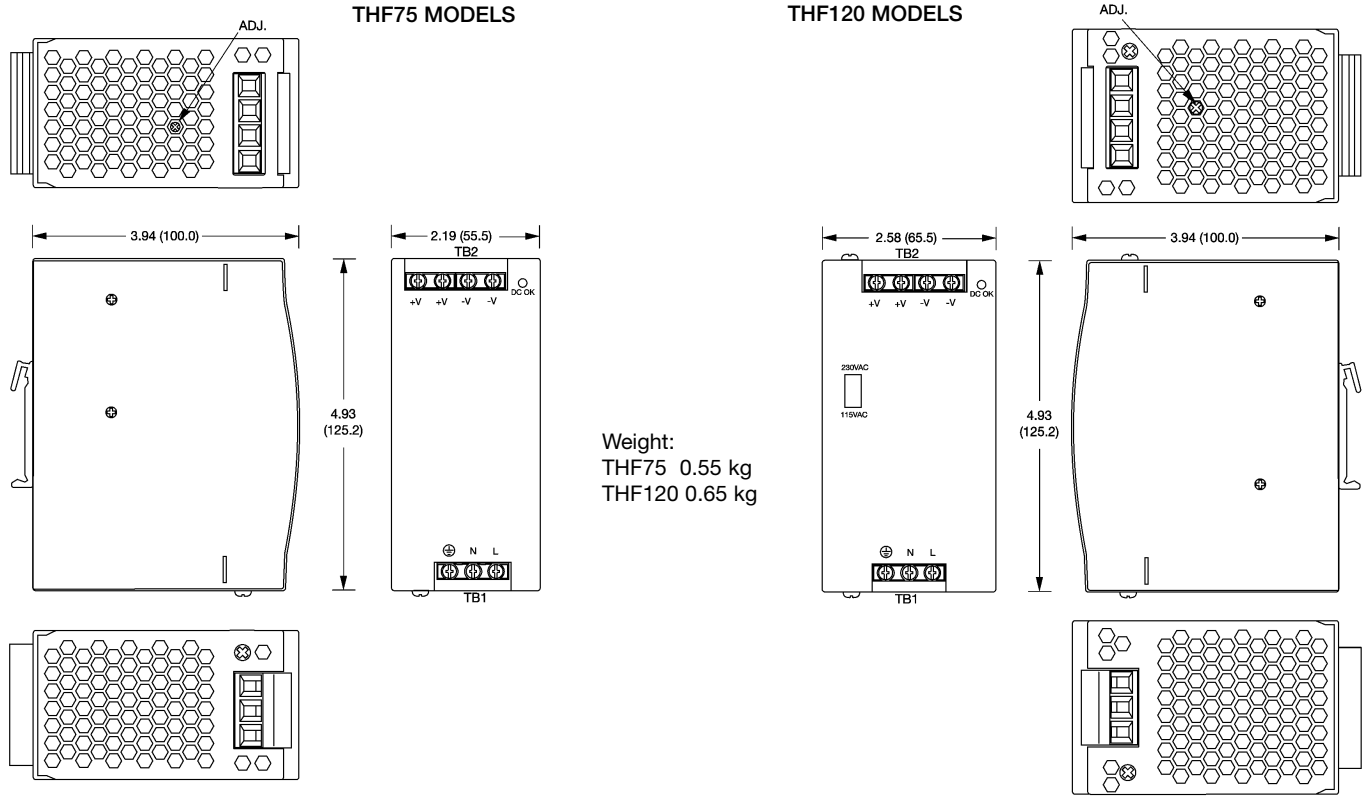
Models and Ratings

Maximum Output Power	Output Voltage Nominal	Output Voltage Adjustment	Output Current Maximum	Ripple and Noise ⁽¹⁾	Efficiency	Model Number
76 W	12.0 V	12.00-14.00 V	6.3 A	100 mV	76%	THF75US12
77 W	24.0 V	24.00-27.00 V	3.2 A	150 mV	80%	THF75US24
77 W	48.0 V	48.00-53.00 V	1.6 A	240 mV	81%	THF75US48
120 W	12.0 V	12.00-14.00 V	10.0 A	80 mV	80%	THF120LS12
120 W	24.0 V	24.00-28.00 V	5.0 A	80 mV	84%	THF120LS24
120 W	48.0 V	48.00-53.00 V	2.5 A	100 mV	85%	THF120LS48

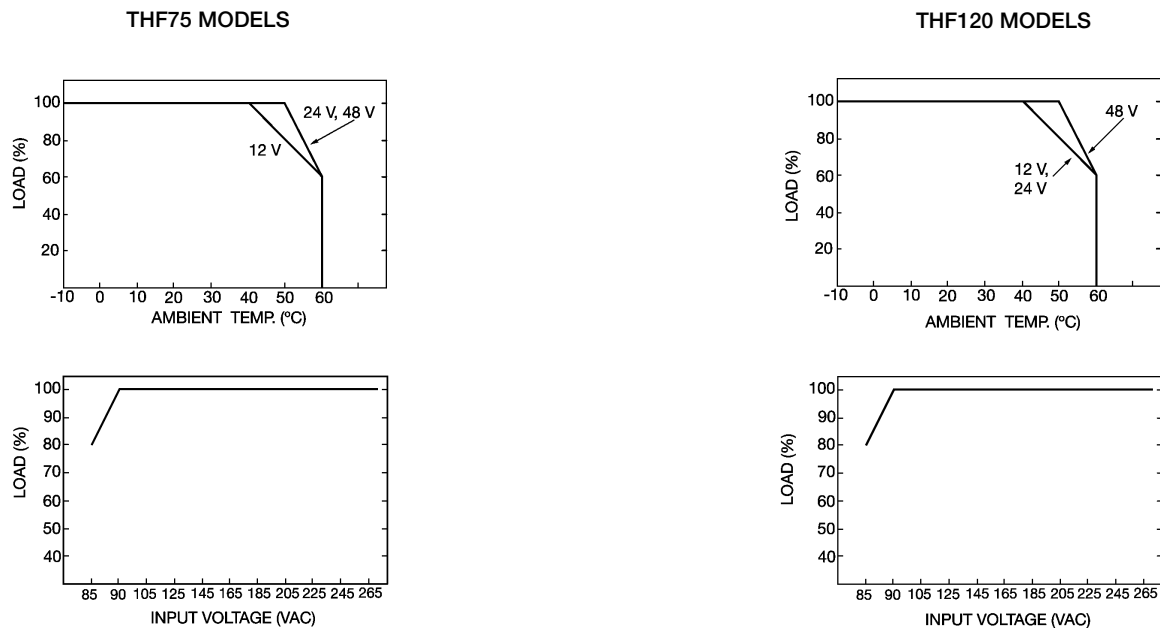
Notes

1. Measured at 20 MHz bandwidth using a 12" twisted pair terminated with a 0.1 μF/47 μF capacitor.

Mechanical Details



Derating Curves



Models and Ratings

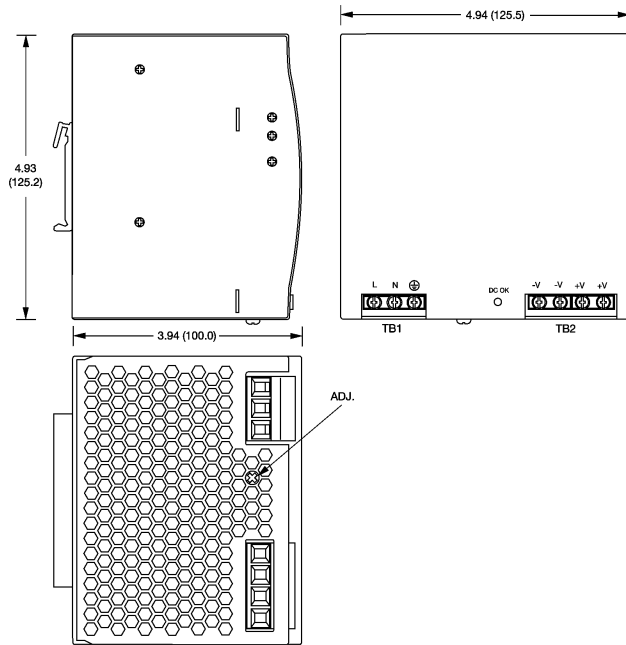
Maximum Output Power	Output Voltage Nominal	Output Voltage Adjustment	Output Current Maximum	Ripple and Noise ⁽¹⁾	Efficiency	Model Number
240 W	24.0 V	24.00-28.00 V	10.0 A	80 mV	84%	THF240PS24
240 W	48.0 V	48.00-53.00 V	5.0 A	150 mV	85%	THF240PS48
480 W	24.0 V	24.00-28.00 V	20.0 A	240 mV	89%	THF480LS24
480 W	48.0 V	48.00-53.00 V	10.0 A	480 mV	89%	THF480LS48
480 W	24.0 V	24.00-28.00 V	20.0 A	240 mV	89%	THF480PS24
480 W	48.0 V	48.00-53.00 V	10.0 A	480 mV	89%	THF480PS48

Notes

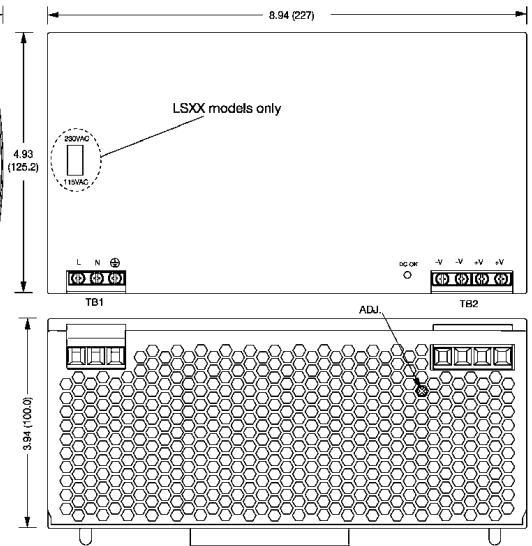
1. Measured at 20 MHz bandwidth using a 12" twisted pair terminated with a 0.1 μ F/47 μ F capacitor.

Mechanical Details

THF240 MODELS

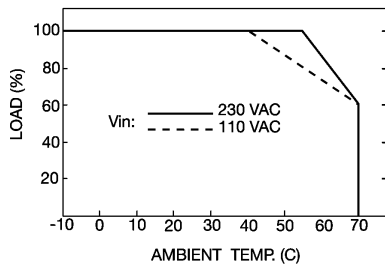


THF480 MODELS

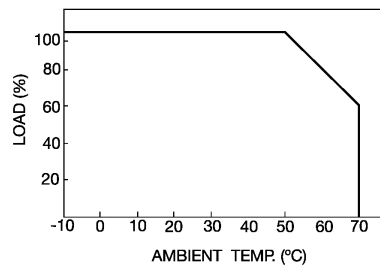


Derating Curves

THF240 MODELS



THF480PSXX MODELS



THF480LSXX MODELS

