

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) |

| 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 |

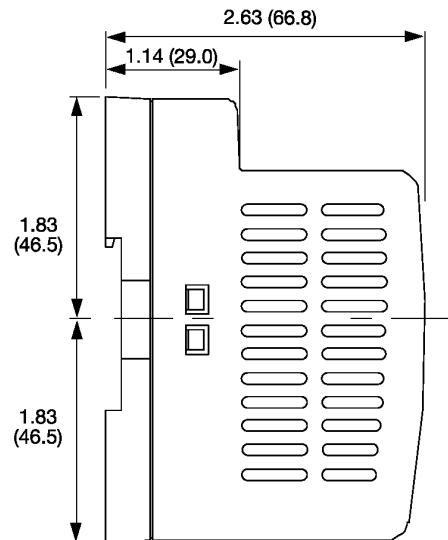
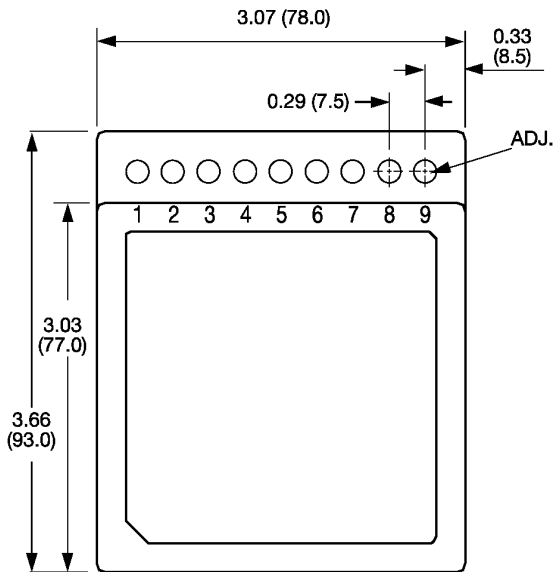
Notes

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

Mechanical Details

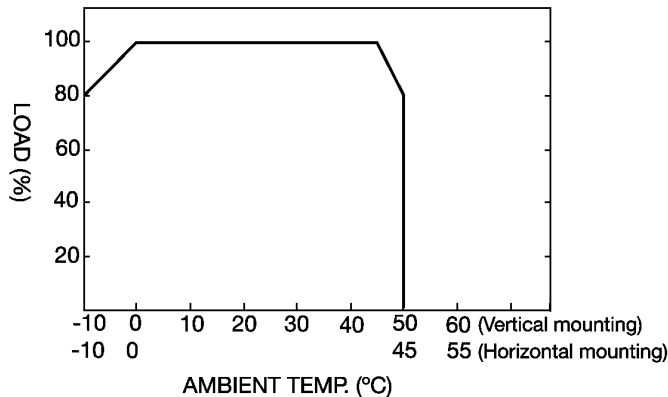
THF45 MODELS

| 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.

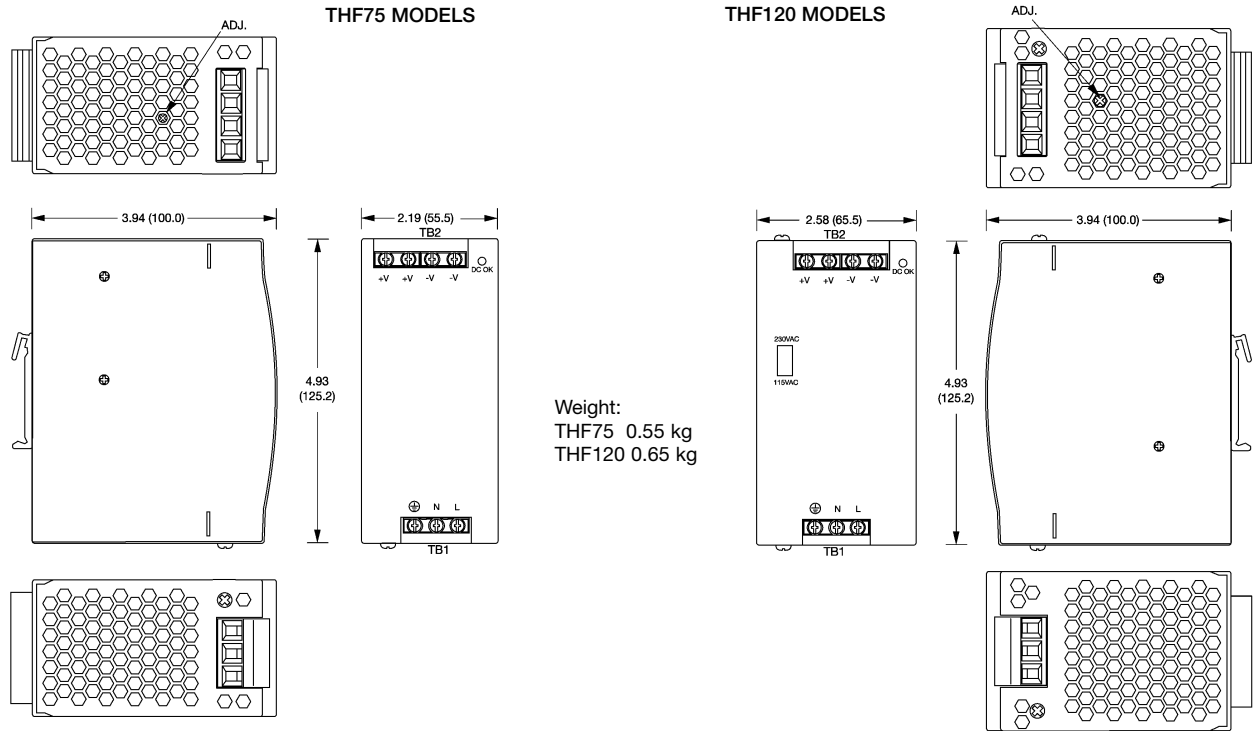
Models and Ratings

| 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 |

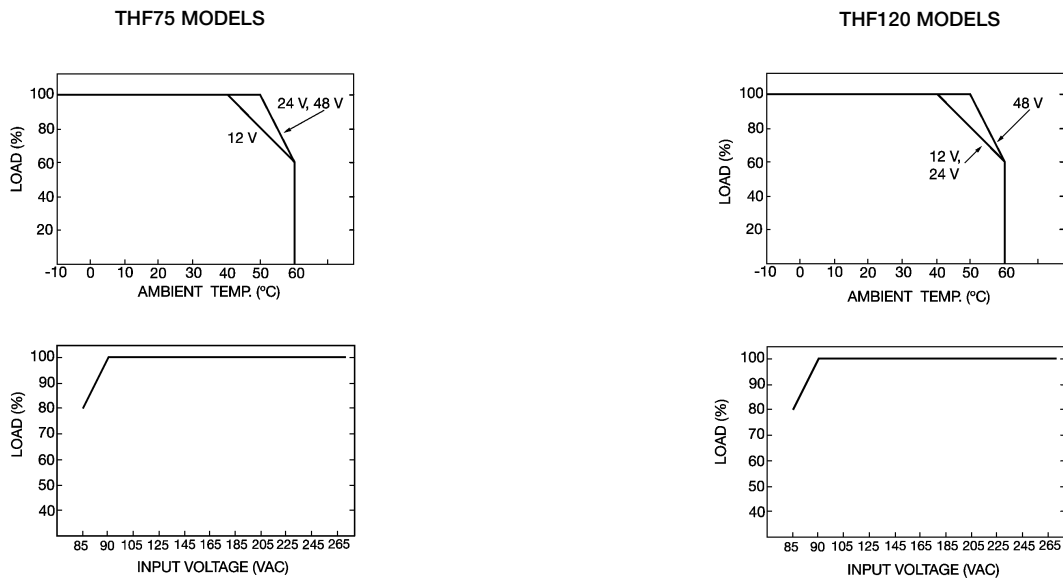
Notes

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

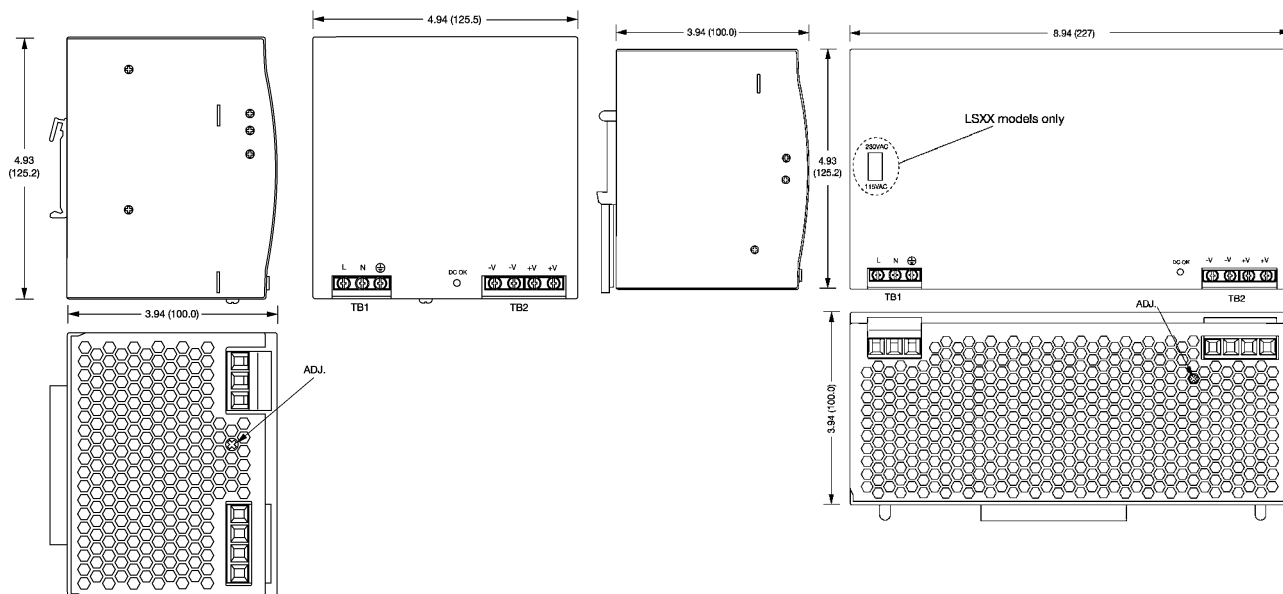
Notes

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

