

UPF150 Series Universal Input Power Factor Corrected 150 Watt Switchers

- Active Power Factor Correction (PFC)
- 75% typical efficiency
- EN55022-B conducted
- Up to 4 outputs
- Compact 6.8" x 3.8" x 1.5" size
- UL, cUL, TUV and CE
- Optional cover



The UPF150 series are economical, high efficiency open frame switchers that deliver up to 150W continuous or 180W peak power from one to four outputs. The supply includes active power factor correction and 90-250Vac universal input, making it ideal for use worldwide.

The UPF150 is one of the *flexibility* series. In addition to the models listed on this sheet, many potential models are available that include full safety agency approval and do not require any non-recurring engineering (NRE) charge. Prototype delivery is just a few weeks.

Flexibility options include a cover. Output voltage options are given in the table below. Fully custom models are also available. Contact the factory for details.

This 150W series is also available without power factor correction (US150) and with dc input (DP150). All have the same physical configuration.

Specifications are subject to change without prior notice.

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Available Models

| Model Number | Output | Output Voltage | Output Current Ratings | | | |
|--|--------|----------------------------|------------------------|------------------|------------------------------------|-------------------|
| | | | Min ¹ | Max ² | Max ³ (I _m) | Peak ⁴ |
| UPF150-105 | V1 | + 5V | 0.5A | 18A | 30A | 36A |
| UPF150-234 | V1 | + 3.3V | 0.5A | 15A | 30A | 36A |
| | V4 | + 5V | 0A | 4A | 8A | 10A |
| UPF150-301 | V1 | + 5V | 0.5A | 10A | 20A | 25A |
| | V3 | -12V | 0A | 1A | 1A | 1.5A |
| | V4 | +12V | 0A | 4A | 8A | 10A |
| UPF150-401 | V1 | + 5V | 0.5A | 10A | 15A | 20A |
| | V2 | - 5V | 0A | 0.5A | 1A | 1.5A |
| | V3 | -12V | 0A | 0.5A | 1A | 1.5A |
| | V4 | +12V | 0A | 4A | 6A | 8A |
| UPF150-404 | V1 | + 5V | 0.5A | 10A | 15A | 20A |
| | V2 | -12V | 0A | 0.5A | 1A | 1.5A |
| | V3 | +12V | 0A | 0.5A | 1A | 1.5A |
| | V4 | +24V | 0A | 2A | 5A | 6A |
| UPF150-408 | V1 | + 5V | 0.5A | 10A | 15A | 20A |
| | V2 | -15V | 0A | 0.5A | 1A | 1.5A |
| | V3 | +15V | 0A | 0.5A | 1A | 1.5A |
| | V4 | +24V | 0A | 2A | 3A | 4A |
| Modified standard <i>flexibility</i> output options ⁵ | V1 | ±2.5V to ±48V ⁶ | | 18A | 30A | |
| | V2 | ±2.0V to ±48V ⁷ | | 1A | 3A | |
| | V3 | ±2.0V to ±48V ⁷ | | 1A | 3A | |
| | V4 | ±2.0V to ±48V ⁷ | | 5A | 9.7A | |

¹ At least 20% of maximum output current (I_m) is required to maintain stated regulation. Supply remains on at zero load, but regulation is not guaranteed.

² Convection cooling, 90W maximum⁹

³ Forced air cooling, 150W maximum⁹

⁴ Peak output, 30 sec max

⁵ The UPF150 series allows very fast *flexible* modified standard design changes within these parameters without non-recurring engineering charges and while retaining safety agency approvals. Please contact the factory for details.

⁶ Can be specified in 0.1V increments

⁷ Can be specified in 0.75V increments

⁸ Operational extremes per safety agency testing

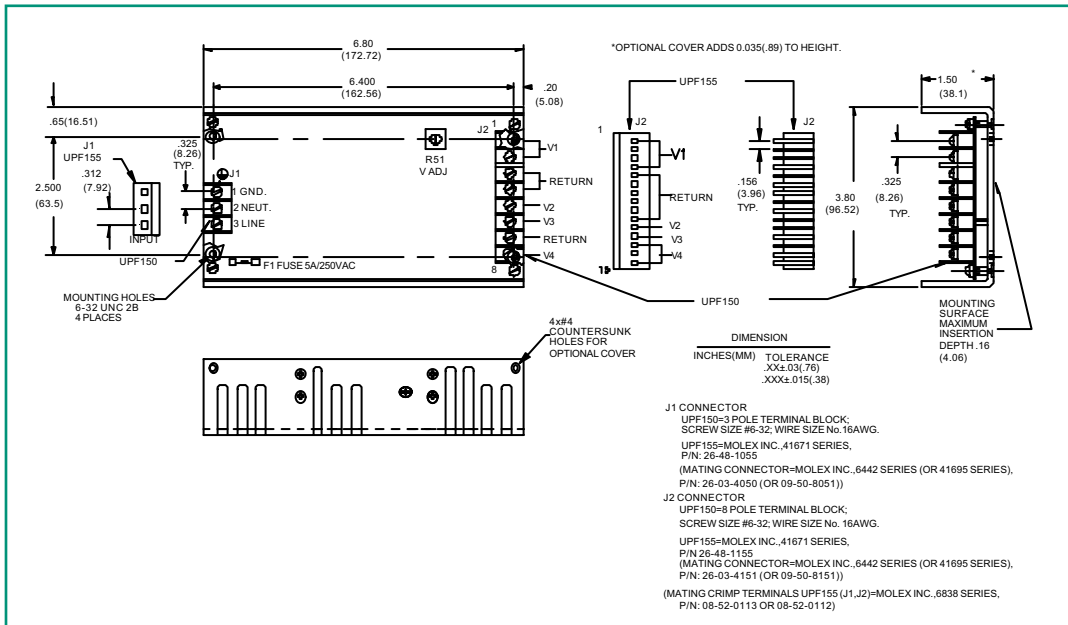
⁹ Cooling requirements may differ between models; contact the factory for details.

Specifications

Specifications are typical at 25°C unless otherwise designated.

| Parameter | Limits |
|-------------------------|--|
| Input | |
| Input Voltage Range | 90-250Vac rated 81-265Vac operation ⁸ |
| Input Frequency | 47 to 63Hz |
| Input Operating Current | 2.5A rms @ 90Vac input, 150W output |
| Input Surge Current | 25A max, cold start @ 25°C, 250Vac |
| Efficiency | 75% typ @ 115Vac input, full power |
| Power factor | 0.98 typ @ 230 Vac, 150W output |
| Output | |
| Output Power | 90W, natural convection cooling ⁹ 150W, 200LFM forced air cooling ⁹ 180W peak |
| Line Regulation | ±0.5%, V_{in} (min) to V_{in} (max) |
| Load Regulation | ±1% (V_1 , 20% to 100% I_m) ±5% (V_2, V_3, V_4 , 20% to 100% I_m) |
| Cross Regulation | ±0.5% (V_1 , 20% to 100% I_o on V_2 - V_4) ±5% (V_2, V_3, V_4 , 50% to 100% I_m on V_1) |
| Noise and Ripple | 25mV max RMS, 50mV max P-P, on $V_1=5.0V$ with full load 0.5% max RMS, 1% max P-P, on V_2, V_3 & V_4 with full load |
| Power up Overshoot | 5% max, all outputs |

| Parameter | Limits |
|--|--|
| Output (cont'd) | |
| Transient Response | V_1 , for 25% to 75% I_m change, 5% maximum deviation, with recovery to 1% within 500 μ S |
| Hold-up time | 10mS min @ 115Vac input, 150W output |
| Overvoltage Protection Threshold | 130% typical of V_{out} , all outputs |
| Power Limit Point | 125% typical of maximum rated power |
| Environmental | |
| Operating Temperature Range (full power) | 0°C to +50°C |
| Operating Temperature Range (extended range) | 0°C to +70°C, derate linearly from full power at +50°C to half power at 70°C |
| Storage Temperature Range | -25°C to +85°C |
| Relative Humidity Range | 5% to 95%, non-condensing |
| Vibration | 0.75G peak, 5Hz to 500Hz. Test three orthogonal axis at 1 octave/min, 5 min dwell at four major resonances |
| MTBF | 180,000 hours typical calculated per MIL STD 217F, 30°C ambient |
| Weight | 1.53 lb. (0.69 kg) |



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