

## DESCRIPTION

The PU300 series comprising single and multiple output models for 200-300 watts of continuous output power is specially designed for ITE and industrial applications. They operate at 90-264 VAC input voltage without the need of a selector strap. All auxiliary outputs are with magnetic amplifier to keep regulation. The units are constructed on a printed circuit board with a U-bracket for mechanical support and heat sinking. A cover-and-fan assembly can be added during manufacturing.

## FEATURES

- EN61000-3-2 class A and D compliant
- Power Factor 0.98 typical
- Overvoltage protection
- Short-circuit protection
- Power Fail Detect (PFD) signal
- 100% burn-in at full rated load
- Remote sense on output #1 and output #2
- Remote inhibit – TTL high to disable output
- Compliant with RoHS requirements

## INPUT SPECIFICATIONS

|                        |  |
|------------------------|--|
| Input voltage:         | 90-264 VAC   |
| Input frequency:       | 47-63 Hz   |
| Input current:         | 4.7 A (rms) for 115 VAC<br>2.3 A (rms) for 230 VAC |
| Earth leakage current: | 300 µA max. @ 264 VAC, 63 Hz                       |

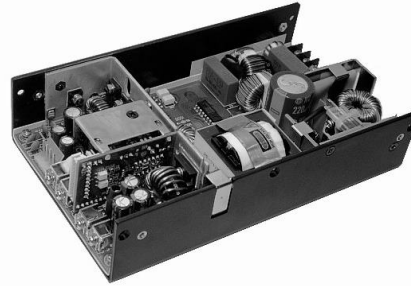
## OUTPUT SPECIFICATIONS

|                          |   |
|--------------------------|---|
| Output voltage/current:  | See rating chart.   |
| Maximum output power:    | See rating chart.   |
| Ripple and noise:        | 1% peak to peak maximum   |
| Overvoltage protection:  | Provided on output #1 only; set at 115-140% of its nominal output voltage   |
| Overcurrent protection:  | All outputs protected to short circuit conditions   |
| Temperature coefficient: | All outputs ±0.04% /°C maximum  |
| Transient response:      | Maximum excursion of 4% or better on all models, recovering to 1% of final value within 500 us after a 25% step load change |
| Fan power:               | 12 V at 350 mA maximum for B version,<br>12 V at 100 mA maximum for C version   |

## INTERFACE SIGNALS

|          |   |
|----------|---|
| PFD:     | TTL logic high for normal operation and TTL logic low upon loss of input power. This signal appears at least 1 ms prior to master output dropping 5% below its nominal value. This signal also provides a minimum delay of 100 ms after master output is within regulation. |
| Inhibit: | Requires an external TTL high level signal to inhibit outputs for standard models   |

## PU300 SERIES



CE (LVD)

RoHS

## SAFETY STANDARD APPROVALS



UL 60950-1, CSA C22.2 No. 60950-1  
File No. E137410



TÜV EN 60950-1

## ENVIRONMENTAL SPECIFICATIONS

|                        |   |
|------------------------|---|
| Operating temperature: | 0°C to +70°C  |
| Storage temperature:   | -40°C to +85°C  |
| Relative humidity:     | 5% to 95% non-condensing  |
| Temperature derating:  | Derate from 100% at +50°C, linearly to 50% at +70°C   |
| Cooling:               | 200 /250 /300 watts continuous output power at 35 CFM forced air cooling or 100 /125 /150 watts at convention cooling |

## GENERAL SPECIFICATIONS

|                      |   |
|----------------------|---|
| Switching frequency: | 70 KHz ±10 KHz  |
| Power factor:        | 0.98 typical  |
| Efficiency:          | 70% minimum on all models   |
| Hold-up time:        | 12 ms minimum at 110 VAC  |
| Line regulation:     | ±0.2% maximum at full load  |
| Inrush current:      | 30 A @ 115 VAC or 60A @ 230 VAC, at 25°C cold start   |
| Withstand voltage:   | 3000 VAC from input to output,<br>1500 VAC from input to ground,<br>500 VAC from output to ground |
| MTBF:                | 300,000 hours minimum at full load at 25°C ambient, calculated per MIL-HDBK-217F                  |
| EMC Performance      |   |
| EN55022:             | Class B conducted, Class B radiate  |
| EN61000-3-2:         | Harmonic distortion, Class A and D  |
| EN61000-3-3:         | Line flicker  |
| EN55024              |   |
| EN61000-4-2:         | ESD, ±8 KV air and ±4 KV contact  |
| EN61000-4-3:         | Radiated immunity, 3 V/m  |
| EN61000-4-4:         | Fast transient/burst, ±1 KV   |
| EN61000-4-5:         | Surge, ±1 KV diff., ±2 KV com.  |
| EN61000-4-6:         | Conducted immunity, 3 Vrms  |
| EN61000-4-8:         | Magnetic field immunity, 1 A/m  |
| EN61000-4-11:        | Voltage dip immunity, 30% reduction for 500 ms and >95% reduction for 10 ms                       |

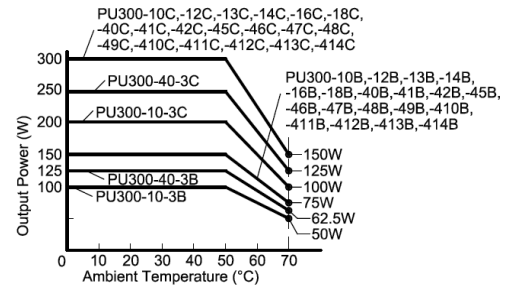
## OUTPUT VOLTAGE/CURRENT RATING CHART

| Model <sup>(1)(2)(6)</sup> | Output #1 <sup>(3)(5)</sup> |       |                   |      | Output #2 <sup>(3)(5)</sup> |       |                   |      | Output #3 <sup>(4)</sup> |       |                   |      | Output #4 <sup>(4)</sup> |       |                   |      | Max. Output Power <sup>(5)</sup> |
|----------------------------|-----------------------------|-------|-------------------|------|-----------------------------|-------|-------------------|------|--------------------------|-------|-------------------|------|--------------------------|-------|-------------------|------|----------------------------------|
|                            | V1                          | Imin. | I <sub>max.</sub> | Tol. | V2                          | Imin. | I <sub>max.</sub> | Tol. | V3                       | Imin. | I <sub>max.</sub> | Tol. | V4                       | Imin. | I <sub>max.</sub> | Tol. |                                  |
| PU300-10-3B                | 3.3 V                       | 3.0 A | 60.0 A            | ±3%  | (N/A)                       |       |                   |      | (N/A)                    |       |                   |      | (N/A)                    |       |                   |      | 100 W / 200 W                    |
| PU300-10B                  | 5.1 V                       | 3.0 A | 60.0 A            | ±2%  | (N/A)                       |       |                   |      | (N/A)                    |       |                   |      | (N/A)                    |       |                   |      | 150 W / 300 W                    |
| PU300-12B                  | 12 V                        | 1.2 A | 25.0 A            | ±2%  | (N/A)                       |       |                   |      | (N/A)                    |       |                   |      | (N/A)                    |       |                   |      | 150 W / 300 W                    |
| PU300-13B                  | 15 V                        | 1.0 A | 20.0 A            | ±2%  | (N/A)                       |       |                   |      | (N/A)                    |       |                   |      | (N/A)                    |       |                   |      | 150 W / 300 W                    |
| PU300-14B                  | 24 V                        | 0.6 A | 12.5 A            | ±2%  | (N/A)                       |       |                   |      | (N/A)                    |       |                   |      | (N/A)                    |       |                   |      | 150 W / 300 W                    |
| PU300-16B                  | 30 V                        | 0.5 A | 10.0 A            | ±2%  | (N/A)                       |       |                   |      | (N/A)                    |       |                   |      | (N/A)                    |       |                   |      | 150 W / 300 W                    |
| PU300-18B                  | 48 V                        | 0.5 A | 6.3 A             | ±2%  | (N/A)                       |       |                   |      | (N/A)                    |       |                   |      | (N/A)                    |       |                   |      | 150 W / 300 W                    |
| PU300-40-3B                | 3.3 V                       | 3.0 A | 35.0 A            | ±3%  | 5.1 V                       | 2.0 A | 22 A              | ±2%  | 12 V                     | 0 A   | 4 A               | ±4%  | 12 V                     | 0 A   | 4 A               | ±4%  | 125 W / 250 W                    |
| PU300-40B                  | 5.1 V                       | 2.0 A | 35.0 A            | ±2%  | 12 V                        | 1.0 A | 10 A              | ±2%  | 12 V                     | 0 A   | 4 A               | ±4%  | 5.1 V                    | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |
| PU300-41B                  | 5.1 V                       | 2.0 A | 35.0 A            | ±2%  | 15 V                        | 0.8 A | 8 A               | ±2%  | 15 V                     | 0 A   | 4 A               | ±4%  | 24 V                     | 0 A   | 2.5 A             | ±4%  | 150 W / 300 W                    |
| PU300-42B                  | 5.1 V                       | 2.0 A | 35.0 A            | ±2%  | 12 V                        | 1.0 A | 10 A              | ±2%  | 12 V                     | 0 A   | 4 A               | ±4%  | 12 V                     | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |
| PU300-45B                  | 5.1 V                       | 2.0 A | 35.0 A            | ±2%  | 12 V                        | 1.0 A | 10 A              | ±2%  | 12 V                     | 0 A   | 4 A               | ±4%  | 24 V                     | 0 A   | 2.5 A             | ±4%  | 150 W / 300 W                    |
| PU300-46B                  | 5.1 V                       | 2.0 A | 35.0 A            | ±2%  | 12 V                        | 1.0 A | 10 A              | ±2%  | 12 V                     | 0 A   | 4 A               | ±4%  | 15 V                     | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |
| PU300-47B                  | 5.1 V                       | 2.0 A | 35.0 A            | ±2%  | 24 V                        | 0.5 A | 5 A               | ±2%  | 12 V                     | 0 A   | 4 A               | ±4%  | 12 V                     | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |
| PU300-48B                  | 5.1 V                       | 2.0 A | 35.0 A            | ±2%  | 24 V                        | 0.5 A | 5 A               | ±2%  | 5.1 V                    | 0 A   | 4 A               | ±4%  | 15 V                     | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |
| PU300-49B                  | 5.1 V                       | 2.0 A | 35.0 A            | ±2%  | 12 V                        | 1.0 A | 10 A              | ±2%  | 5.1 V                    | 0 A   | 4 A               | ±4%  | 24 V                     | 0 A   | 2.5 A             | ±4%  | 150 W / 300 W                    |
| PU300-410B                 | 24 V                        | 0.5 A | 6.3 A             | ±2%  | 12 V                        | 1.0 A | 10 A              | ±2%  | 5.1 V                    | 0 A   | 4 A               | ±4%  | 12 V                     | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |
| PU300-411B                 | 24 V                        | 0.5 A | 6.3 A             | ±2%  | 12 V                        | 1.0 A | 10 A              | ±2%  | 5.1 V                    | 0 A   | 4 A               | ±4%  | 24 V                     | 0 A   | 2.5 A             | ±4%  | 150 W / 300 W                    |
| PU300-412B                 | 24 V                        | 0.5 A | 6.3 A             | ±2%  | 12 V                        | 1.0 A | 10 A              | ±2%  | 12 V                     | 0 A   | 4 A               | ±4%  | 12 V                     | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |
| PU300-413B                 | 24 V                        | 0.5 A | 6.3 A             | ±2%  | 24 V                        | 0.5 A | 5 A               | ±2%  | 5.1 V                    | 0 A   | 4 A               | ±4%  | 15 V                     | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |
| PU300-414B                 | 24 V                        | 0.5 A | 6.3 A             | ±2%  | 24 V                        | 0.5 A | 5 A               | ±2%  | 12 V                     | 0 A   | 4 A               | ±4%  | 12 V                     | 0 A   | 4 A               | ±4%  | 150 W / 300 W                    |

### NOTES:

- Suffix "B" in model numbers denotes U-bracket form. Change "B" to "C" for enclosed form with cover-and-fan assembly, e.g. PU300-45C.
- All outputs are floating. They can be connected externally for positive or negative output.
- Output #1 & #2 can be adjusted within ±5% of their nominal voltage.
- Output #3 & #4 can be adjusted within ±15% of their nominal voltage.
- 300 watts for "C" version with cover-and-fan assembly, 150 watts for "B" version without moving air (maximum current of output #1 & #2 derated to 50%), or 300 watts with 35 CFM forced air provided by user.
- PU300-10-3B is rated 200 watts with 35 CFM forced air cooling or 100 watts convection cooled. PU300-40-3B is rated 250 watts with 35 CFM forced air cooling (maximum current of output #1 & #2 derated to 50%) or 125 watts convection cooled.
- Single output models may be operated at no-load. At no-load, output voltage tolerance increases to ±10%.
- Ripple and noise is maximum peak-to-peak voltage value measured at output within 20 MHz bandwidth, at rated line voltage and output load ranges, and with a 10 μF tantalum capacitor in parallel with a 0.1 μF ceramic capacitor across the output.

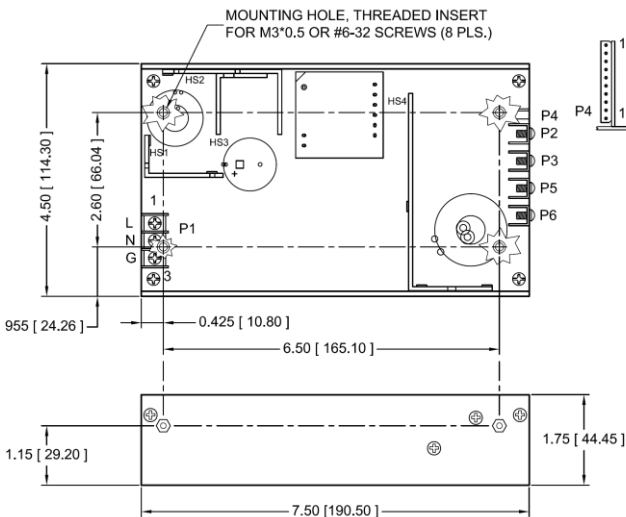
### OUTPUT POWER DERATING CURVE



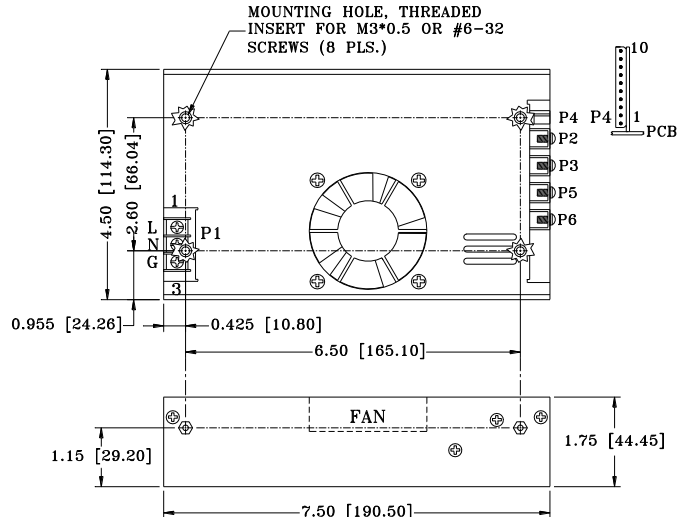
## MECHANICAL SPECIFICATIONS

### Single Output Models

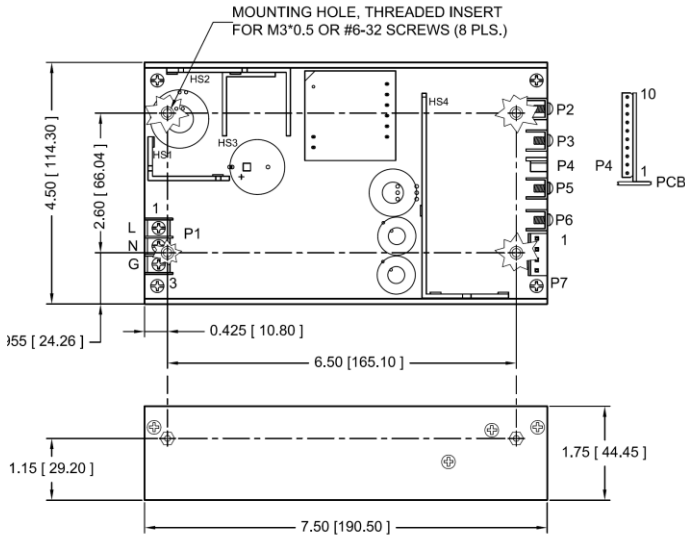
#### U-bracket Form



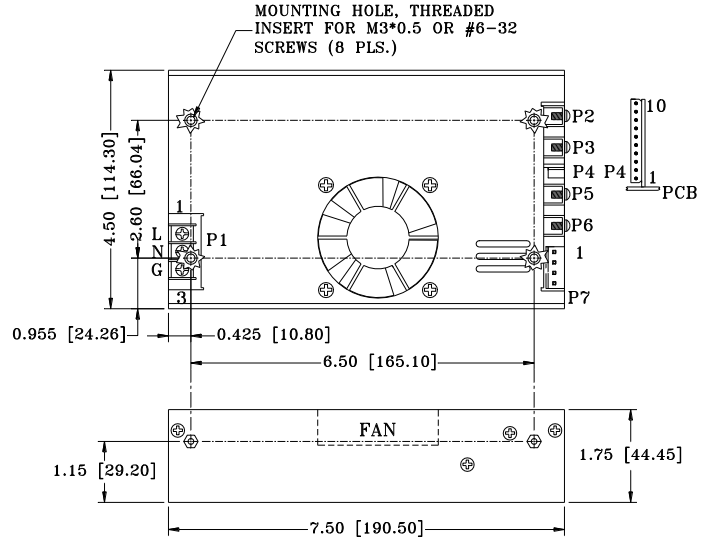
#### Enclosed Form



## Multiple Output Models U-bracket Form



## Enclosed Form



### NOTES:

1. Dimensions shown in inches [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT-35-B01W-03 with M3, nickel-plated screws.
4. Connector P4 mates with Molex housing 50-37-5103 and pins 5263.
5. Connectors P2, P3, P5 and P6: M3\*0.5 screw connections
6. Output connector P7 mates with Molex housing 09-50-3041 and Molex 2878 series crimp terminal.
7. Weight: 1.10 Kgs. (2.42 lbs.) approx. for U-bracket form, 1.24 Kgs. (2.73 lbs.) approx. for Enclosed form.
8. Maximum penetration depth of fixing screws is 4 mm from the outer surface of chassis.

### PIN CHART

| MODEL   | CONN<br>PIN  | P1 (AC) |         |        | P2  | P3        | P5        | P6        | P7  |           |     |           |  |
|---|--|---------|---------|--------|-----|-----------|-----------|-----------|-----|-----------|-----|-----------|--|
|   |  | 1       | 2       | 3      |     |           |           |           | 1   | 2         | 3   | 4         |  |
| PU300-10-3B<br>PU300-10B<br>PU300-12B<br>PU300-13B  | PU300-14B<br>PU300-16B<br>PU300-18B  | Live    | Neutral | Ground | +V1 |           | V1 Return |           |     |           |     |           |  |
| PU300-40-3B<br>PU300-40B<br>PU300-41B<br>PU300-42B<br>PU300-45B<br>PU300-46B<br>PU300-47B | PU300-48B<br>PU300-49B<br>PU300-410B<br>PU300-411B<br>PU300-412B<br>PU300-413B<br>PU300-414B | Live    | Neutral | Ground | +V1 | V1 Return | +V2       | V2 Return | +V3 | V3 Return | +V4 | V4 Return |  |

| MODEL   | CONN<br>PIN  | P4                         |           |           |     |            |      |           |           |            |          |
|---|--|----------------------------|-----------|-----------|-----|------------|------|-----------|-----------|------------|----------|
|   |  | 1                          | 2         | 3         | 4   | 5          | 6    | 7         | 8         | 9          | 10       |
| PU300-10-3B<br>PU300-10B<br>PU300-12B<br>PU300-13B  | PU300-14B<br>PU300-16B<br>PU300-18B  | Signal<br>Common<br>Return | +V1 Sense | -V1 Sense | PFD | Inhibit +V | N.C. | N.C.      | N.C.      | Fan Return | +12V Fan |
| PU300-40-3B<br>PU300-40B<br>PU300-41B<br>PU300-42B<br>PU300-45B<br>PU300-46B<br>PU300-47B | PU300-48B<br>PU300-49B<br>PU300-410B<br>PU300-411B<br>PU300-412B<br>PU300-413B<br>PU300-414B | Signal<br>Common<br>Return | +V1 Sense | -V1 Sense | PFD | Inhibit +V | N.C. | +V2 Sense | -V2 Sense | Fan Return | +12V Fan |