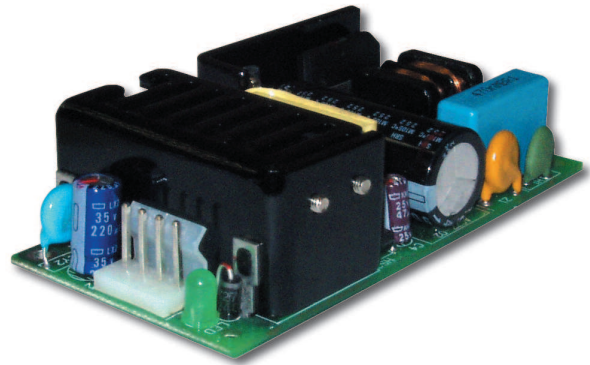


## 2 x 4" 40W to 60W AC-DC Power Supplies

### Features

- ◆ Single and Multiple Outputs
- ◆ Wide Range AC Input
- ◆ Low profile, Industry Standard Footprint
- ◆ Global Safety Agency Compliance
- ◆ EN61000-4 Immunity
- ◆ Up to 88% efficiency



### Key Market Segments & Applications



| Specifications              |        |                                                                                    |       |                           |
|-----------------------------|--------|------------------------------------------------------------------------------------|-------|---------------------------|
| Model                       |        | ZPS40                                                                              | ZPS60 | ZPD40 ZPT40               |
| Input Voltage range         | -      | 90 - 264VAC (47 - 440Hz) or 120 - 370VDC                                           |       |                           |
| Inrush Current (132/265VAC) | A      | 25 / 50 (cold start)                                                               |       |                           |
| Input Current (115/230VAC)  | A      | 1.6 / 1.0                                                                          |       |                           |
| Temperature Coefficient     | -      | ±0.05%/°C                                                                          |       |                           |
| Voltage Accuracy            | %      | ±1%                                                                                |       | V1: ±3%, V2: ±4%, V3: ±3% |
| Minimum Load                | A      | None                                                                               |       | V1: 0.4A, V2: 0.2A        |
| Load Regulation (1)         | %      | ±1%                                                                                |       | V1: ±3%, V2: ±5%, V3: ±1% |
| Line Regulation (2)         | %      | ±0.5%                                                                              |       | V1: ±1%, V2: ±2%, V3: ±1% |
| Ripple & Noise (3)(4)       | mV     | 1% or 50mV whichever is greater                                                    |       |                           |
| Short Circuit Protection    | -      | Continuous - hiccup mode                                                           |       |                           |
| Overvoltage Protection      | V      | Typically 110-130% of nominal                                                      |       |                           |
| Hold Up Time (Typ)          | ms     | 8ms at 115VAC input                                                                |       |                           |
| LED Indicator               | -      | Green LED = OK                                                                     |       | None                      |
| Operating Temperature (5)   | -      | 0 to +70°C, derate linearly to 50% load from 50°C to 70°C                          |       |                           |
| Storage Temperature         | -      | -20 to +85°C                                                                       |       |                           |
| Humidity (non condensing)   | -      | 10 - 95% RH                                                                        |       |                           |
| Cooling                     | -      | Convection                                                                         |       |                           |
| Withstand Voltage           |        | Input to Ground 1.5kVAC, Input to Output 3kVAC, Output to Ground 500VAC for 1 min. |       |                           |
| Isolation Resistance        |        | >100M at 25C & 70%RH, Output to Ground 500VDC                                      |       |                           |
| Vibration (non operating)   |        | 23.52m/s <sup>2</sup> (10 - 55Hz: constant sweep 1 min X, Y, Z for 1 hour)         |       |                           |
| Shock                       | -      | < 196.1 m/s <sup>2</sup> (20G)                                                     |       |                           |
| Safety Agency Approvals     | -      | UL60950, CSA60950, EN60950, CE Mark (LVD)                                          |       |                           |
| Conducted & Radiated EMI    | -      | EN55022-B, FCC Class B                                                             |       |                           |
| Immunity                    | -      | EN61000-4-2,-3,-4,-6,-8                                                            |       |                           |
| Weight (Typ)                | g (oz) | 170g (6oz)                                                                         |       |                           |
| Size (WxLxH)                | in     | 2 x 4 x 1.2 (including underside components )                                      |       |                           |
| Warranty                    | yrs    | One Year                                                                           |       |                           |

#### Notes:

- (1) ZPD, ZPT for a 60% to 100% or 100% to 60% change in load
- (2) ZPT40-3512N V2: ±3%, ZPS/ZPD40: 100-240VAC
- (3) Measured with 0.1uF ceramic & 10uF electrolytic at 20MHz BW
- (4) ZPT40-3512N, V1 & V2 100mV
- (5) ZPS40 (3.3V to 9V models), ZPS60 (3.3V to 12V models) derate linearly to 25% load from 40°C to 70°C

**ZPS40, 60 Not Recommended  
For New Designs - See ZPSA Series**

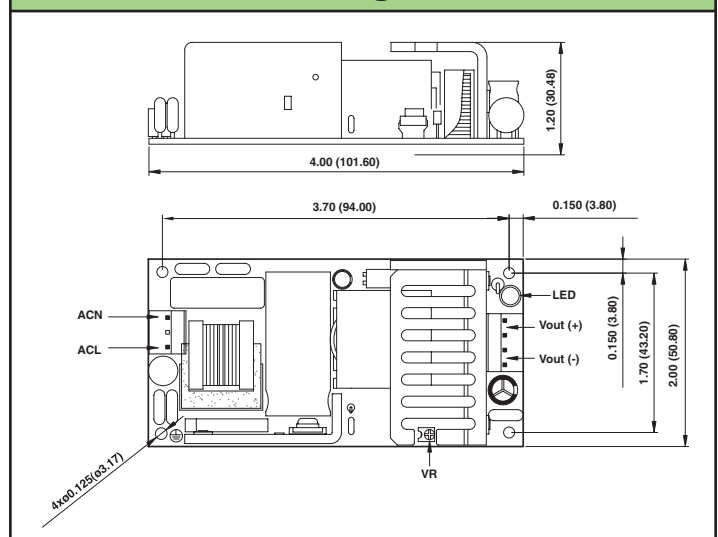
## 2 Output Module Codes

| Model                 |    | O/P(V) | Max.<br>O/P(A) | Peak<br>(A)(6) | Output<br>Pwr(W) | Eff.<br>(%) |
|-----------------------|----|--------|----------------|----------------|------------------|-------------|
| <b>Single Output</b>  |    |        |                |                |                  |             |
| ZPS40-3R3             | V1 | 3.3    | 6.0            | 7.2            | 20.0             | 74          |
| ZPS60-3R3             | V1 | 3.3    | 8.0            | 8.5            | 26.0             | 74          |
| ZPS40-5               | V1 | 5.0    | 6.0            | 7.2            | 30.0             | 78          |
| ZPS60-5               | V1 | 5.0    | 8.0            | 9.0            | 40.0             | 78          |
| ZPS40-9               | V1 | 9.0    | 4.45           | 5.34           | 40.0             | 82          |
| ZPS60-9               | V1 | 9.0    | 6.67           | 8.0            | 60.0             | 82          |
| ZPS40-12              | V1 | 12.0   | 3.34           | 4.0            | 40.0             | 84          |
| ZPS60-12              | V1 | 12.0   | 5.0            | 6.0            | 60.0             | 84          |
| ZPS40-15              | V1 | 15.0   | 2.67           | 3.2            | 40.0             | 85          |
| ZPS60-15              | V1 | 15.0   | 4.0            | 4.8            | 60.0             | 85          |
| ZPS40-24              | V1 | 24.0   | 1.67           | 2.0            | 40.0             | 86          |
| ZPS60-24              | V1 | 24.0   | 2.5            | 3.0            | 60.0             | 86          |
| ZPS40-30              | V1 | 30.0   | 1.33           | 1.6            | 40.0             | 86          |
| ZPS60-30              | V1 | 30.0   | 2.0            | 2.4            | 60.0             | 86          |
| ZPS40-36              | V1 | 36.0   | 1.11           | 1.33           | 40.0             | 87          |
| ZPS60-36              | V1 | 36.0   | 1.67           | 2.0            | 60.0             | 87          |
| ZPS40-48              | V1 | 48.0   | 0.834          | 1.0            | 40.0             | 88          |
| ZPS60-48              | V1 | 48.0   | 1.25           | 1.5            | 60.0             | 88          |
| <b>Dual Outputs</b>   |    |        |                |                |                  |             |
| ZPD40-512             | V1 | +5.0   | 3.2            | 5.0            | 40.0 (7)         | 77          |
|                       | V2 | +12.0  | 2.0            | 2.5            |                  |             |
| ZPD40-524             | V1 | +5.0   | 3.2            | 5.0            | 40.0 (7)         | 78          |
|                       | V2 | +24.0  | 1.0            | 1.5            |                  |             |
| <b>Triple Outputs</b> |    |        |                |                |                  |             |
| ZPT40-5125N           | V1 | +5.0   | 3.2            | 5.0            | 40.5 (7)         | 75          |
|                       | V2 | +12.0  | 2.0            | 2.5            |                  |             |
|                       | V3 | -5.0   | 0.3            | 0.5            |                  |             |
| ZPT40-51212N          | V1 | +5.0   | 3.2            | 5.0            | 42.6 (7)         | 75          |
|                       | V2 | +12.0  | 2.0            | 2.5            |                  |             |
|                       | V3 | -12.0  | 0.3            | 0.5            |                  |             |
| ZPT40-51515N          | V1 | +5.0   | 3.2            | 5.0            | 42.0 (7)         | 75          |
|                       | V2 | +15.0  | 1.5            | 2.3            |                  |             |
|                       | V3 | -15.0  | 0.3            | 0.5            |                  |             |
| ZPT40-52412N          | V1 | +5.0   | 3.2            | 5.0            | 42.6 (7)         | 75          |
|                       | V2 | +24.0  | 1.0            | 1.5            |                  |             |
|                       | V3 | -12.0  | 0.3            | 0.5            |                  |             |
| ZPT40-5245N           | V1 | +5.0   | 3.2            | 5.0            | 40.5 (7)         | 75          |
|                       | V2 | +24.0  | 1.0            | 1.5            |                  |             |
|                       | V3 | -5.0   | 0.3            | 0.5            |                  |             |
| ZPT40-52412P          | V1 | +5.0   | 3.2            | 5.0            | 42.6 (7)         | 75          |
|                       | V2 | +24.0  | 1.0            | 1.5            |                  |             |
|                       | V3 | +12.0  | 0.3            | 0.5            |                  |             |
| ZPT40-3512N           | V1 | +3.3   | 5.0            | 7.0            | 30.0             | 70          |
|                       | V2 | +5.0   | 2.0            | 3.5            |                  |             |
|                       | V3 | -12.0  | 0.3            | 0.5            |                  |             |

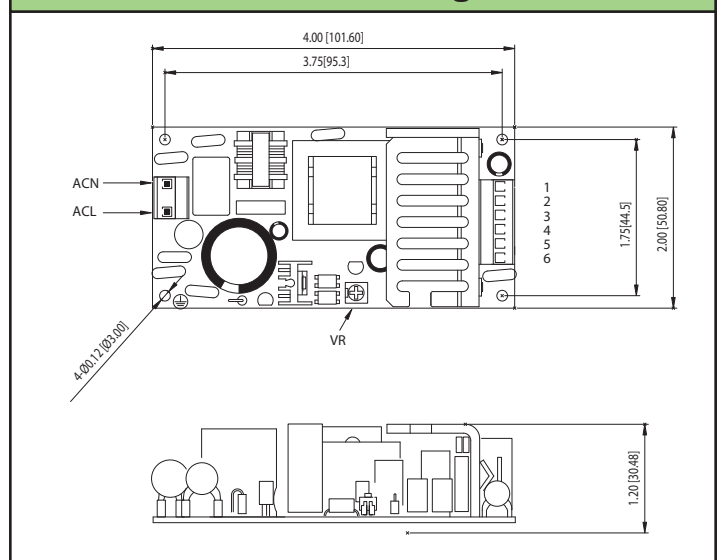
## Other Industrial Products

|         |                                |
|---------|--------------------------------|
| SC40/60 | 40 to 80W, 3x5", 1 - 3 outputs |
| NV175   | 175W, 3x5", 1-5 outputs        |
| ZWS     | 5 to 240W, single output       |

## ZPS Outline Drawing



## ZPD/ZPT Outline Drawing



## Pin Connection (ZPD/ZPT)

| PIN | Function |
|-----|----------|
| 1   | V2       |
| 2   | V1       |
| 3   | V1       |
| 4   | COM      |
| 5   | COM      |
| 6   | V3       |

Note: (6) Average not to exceed max power, <30s, 10% duty cycle  
(7) 50W with 30CFM forced air cooling, derate linearly to 35W from 50°C to 70°C

For Additional Information, please visit  
[us.tdk-lambda.com/lp/products/zp-series.htm](http://us.tdk-lambda.com/lp/products/zp-series.htm)

