

# Industrial Power Supplies

**TSL** SERIES

**30-480 Watts**



*CE Marked - LVD & EMC*

•

*Din Rail Mounting*

•

*Power Factor Corrected Versions*

•

*Adjustable Outputs*

•

*Low Noise*

•

*High Efficiency*

•

*Parallelable Units*

## **Specification**

(All specifications are typical at nominal input voltage; full load and 25 °C unless stated otherwise)

|                        |                                                                                                                                                                               |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input Voltage          | <ul style="list-style-type: none"><li>93-264 V AC - TSL30 &amp; TSL60</li><li>93-132 V AC/187-264 auto-ranging TSL120, TSL240 &amp; TSL480</li></ul>                          |
| Input Frequency        | <ul style="list-style-type: none"><li>47-63 Hz</li></ul>                                                                                                                      |
| Inrush Current         | <ul style="list-style-type: none"><li>See Table</li></ul>                                                                                                                     |
| Input Current          | <ul style="list-style-type: none"><li>See Table</li></ul>                                                                                                                     |
| Hold Up Time           | <ul style="list-style-type: none"><li>Minimum 15 ms at 115 V AC, minimum 25 ms at 230 V AC</li></ul>                                                                          |
| Output Voltage         | <ul style="list-style-type: none"><li>See Table</li></ul>                                                                                                                     |
| Output Adjustment      | <ul style="list-style-type: none"><li>12 V models: 12-14 V DC, 24 V models: 24-28 V DC &amp; 48 V models: 48-52 V DC</li></ul>                                                |
| Line Regulation        | <ul style="list-style-type: none"><li>±0.2%</li></ul>                                                                                                                         |
| Load Regulation        | <ul style="list-style-type: none"><li>±0.3% for load variation 10-90%</li></ul>                                                                                               |
| Ripple & Noise         | <ul style="list-style-type: none"><li>&lt;50 mV pk-pk 20 MHz bandwidth</li></ul>                                                                                              |
| Overload Protection    | <ul style="list-style-type: none"><li>110%</li></ul>                                                                                                                          |
| Overvoltage Protection | <ul style="list-style-type: none"><li>140% of V out typically</li></ul>                                                                                                       |
| Efficiency             | <ul style="list-style-type: none"><li>85% minimum</li></ul>                                                                                                                   |
| Operating Temperature  | <ul style="list-style-type: none"><li>-25 °C to 70 °C, derating above 50 °C at 2%/°C</li></ul>                                                                                |
| Storage Temperature    | <ul style="list-style-type: none"><li>-25 °C to 85 °C</li></ul>                                                                                                               |
| Relative Humidity      | <ul style="list-style-type: none"><li>95%</li></ul>                                                                                                                           |
| Isolation              | <ul style="list-style-type: none"><li>3000 V AC - input to output, 1 minute</li><li>2000 V AC - input to case, 1 minute</li><li>500 V AC - output to case, 1 minute</li></ul> |
| EMI/RFI                | <ul style="list-style-type: none"><li>EN55011, EN55022, FCC class B</li><li>TSL120, TSL240 &amp; TSL480 (P version) with PFC-EN61000-3-2</li></ul>                            |
| Safety Approvals       | <ul style="list-style-type: none"><li>EN60950, IEC950, cUL/UL 1950, UL508</li></ul>                                                                                           |
| Immunity               | <ul style="list-style-type: none"><li>EN61000-4-4 2 kV</li></ul>                                                                                                              |
| MTBF                   | <ul style="list-style-type: none"><li>200,000 hours</li></ul>                                                                                                                 |
| Switching Frequency    | <ul style="list-style-type: none"><li>80 kHz typical</li></ul>                                                                                                                |

## Output Voltage & Current Ratings

| Output Power Max. | Output Voltage Nom. | Output Current Max. | Input Current @ Full Load |          | In-rush Current Max. <sup>(4)</sup> |          | Model Number               |
|-------------------|---------------------|---------------------|---------------------------|----------|-------------------------------------|----------|----------------------------|
|                   |                     |                     | 115 V AC                  | 230 V AC | 115 V AC                            | 230 V AC |                            |
| 30 W              | 12 V DC             | 2.50 A              | 0.5 A                     | 0.30 A   | 17.5 A                              | 35.0 A   | TSL30-112                  |
|                   | 24 V DC             | 1.25 A              | 0.5 A                     | 0.30 A   | 17.5 A                              | 35.0 A   | TSL30-124                  |
| 60 W              | 12 V DC             | 5.00 A              | 1.1 A                     | 0.65 A   | 24.0 A                              | 48.0 A   | TSL60-112                  |
|                   | 24 V DC             | 2.50 A              | 1.1 A                     | 0.65 A   | 24.0 A                              | 48.0 A   | TSL60-124                  |
| 120 W             | 24 V DC             | 5.00 A              | 1.9 A                     | 1.20 A   | 24.0 A                              | 48.0 A   | TSL120-124                 |
|                   | 24 V DC             | 5.00 A              | 1.9 A                     | 1.20 A   | 24.0 A                              | 48.0 A   | TSL120-124P <sup>(1)</sup> |
|                   | 48 V DC             | 2.50 A              | 1.9 A                     | 1.20 A   | 24.0 A                              | 48.0 A   | TSL120-148                 |
|                   | 48 V DC             | 2.50 A              | 1.9 A                     | 1.20 A   | 24.0 A                              | 48.0 A   | TSL120-148P <sup>(1)</sup> |
| 240 W             | 24 V DC             | 10.00 A             | 3.5 A                     | 1.70 A   | 35.0 A                              | 69.0 A   | TSL240-124                 |
|                   | 24 V DC             | 10.00 A             | 3.5 A                     | 1.70 A   | 35.0 A                              | 69.0 A   | TSL240-124P <sup>(1)</sup> |
|                   | 48 V DC             | 5.00 A              | 3.5 A                     | 1.70 A   | 35.0 A                              | 69.0 A   | TSL240-148                 |
|                   | 48 V DC             | 5.00 A              | 3.5 A                     | 1.70 A   | 35.0 A                              | 69.0 A   | TSL240-148P <sup>(1)</sup> |
| 480 W             | 24 V DC             | 20.00 A             | 7.2 A                     | 3.50 A   | 33.0 A                              | 65.0 A   | TSL480-124                 |
|                   | 24 V DC             | 20.00 A             | 7.2 A                     | 3.50 A   | 33.0 A                              | 65.0 A   | TSL480-124P <sup>(1)</sup> |
|                   | 48 V DC             | 10.00 A             | 7.2 A                     | 3.50 A   | 33.0 A                              | 65.0 A   | TSL480-148                 |
|                   | 48 V DC             | 10.00 A             | 7.2 A                     | 3.50 A   | 33.0 A                              | 65.0 A   | TSL480-148P <sup>(1)</sup> |

### NOTES:

1. Power Factor Correction (EN61000-3-2) models.
2. Output current characteristic, suitable for battery charging applications.
3. Parallel operation available for 5 units maximum, user selectable by jumper on PCB.
4. Inrush current is the peak current flowing into a power supply at the instant AC power is applied. This peak (max. 2ms) may be much higher than the steady state input current due to the charging of the input capacitors.

## Mechanical Details

