



# Power Supplies - Switching CPS ECO Series 1-Phase



CPSB1-120-24E

## Overview

LUTZE ECO series power supplies were developed with technical innovations in mind. The Compact economy series power supplies are efficiently sized and offer up to 91% power conversion efficiency. Adjustable voltage outputs and DC Ok contacts are standard.

## Features

- Compact footprint
- Aluminum housing
- 35mm DIN rail mount
- IP20
- 5 year warranty



## Power Supplies - Switching CPS ECO Series 1-Phase Selection Chart

| Part Number                     | Price    | Output Voltage | Output Current | Output Power | Input Voltage | Power Boost  | Dimensions (W x H x D)                      | Drawing Link        |
|---------------------------------|----------|----------------|----------------|--------------|---------------|--------------|---------------------------------------------|---------------------|
| <a href="#">CPSB1-120-24E</a>   | \$97.00  | 24VDC          | 5A             | 120W         | 120/240 VAC   | 140% for 5s  | 40 x 115 x 110mm<br>[1.57 x 4.52 x 4.33 in] | <a href="#">PDF</a> |
| <a href="#">CPSB1-240-24E</a>   | \$150.00 |                | 10A            | 240W         |               | 135% for 30s | 63 x 140 x 139mm<br>[2.48 x 5.51 x 5.47 in] | <a href="#">PDF</a> |
| <a href="#">CPSB1-480-24E *</a> | \$275.00 |                | 20A            | 480W         | 200/240 VAC   | 140% for 5s  | 73 x 140 x 149mm<br>[2.87 x 5.51 x 5.86 in] | <a href="#">PDF</a> |

\* Requires an external fuse.

## Power Supplies - Switching CPS ECO Series 1-Phase Input Specifications

| Part Number                 | CPSB1-120-24E                    | CPSB1-240-24E                            | CPSB1-480-24E                     |
|-----------------------------|----------------------------------|------------------------------------------|-----------------------------------|
| Operation Voltage Range     | 85–264 VAC<br>110–345 VDC        | 90–132 VAC<br>187–264 VAC<br>270–345 VDC | 187–264 VAC<br>250–375 VDC        |
| Frequency Range             | 47–63Hz                          |                                          |                                   |
| Rated Current               | 2.1 A @ 120VAC<br>1.2 A @ 240VAC | 4A @ 120VAC<br>2A @ 240VAC               | 2.9 A @ 200VAC<br>2.5 A @ 240 VAC |
| Inrush Current              | ≤ 30A / 0.72 A²s                 | < 40A                                    | ≤ 29A / 0.61 A²s                  |
| Power Factor Correction     | > 0.6                            | > 0.6                                    | > 0.90 enabled                    |
| Recommended Circuit Breaker | C-curve 6A                       | C-curve 10A                              | C-curve 6A or D-curve 4A          |

## Power Supplies - Switching CPS ECO Series 1-Phase Output Specifications

| Part Number                             | CPSB1-120-24E                     | CPSB1-240-24E                    | CPSB1-480-24E                         |
|-----------------------------------------|-----------------------------------|----------------------------------|---------------------------------------|
| Overload Limit In Constant Current Mode | –                                 | –                                | 50A                                   |
| Max. Output Current                     | 7A, 5s                            | 13.5 A, 30s                      | 28A 5s @ Hiccup mode                  |
| Power Dissipation                       | < 18W                             | < 35W                            | < 48W                                 |
| Setting Range                           | 23–28 VDC                         | 23–27.5 VDC                      | 23–28 VDC                             |
| Load Regulation                         | < 1%                              | < 1%                             | ≤ 1%                                  |
| Ripple And Noise                        | 60mV                              | < 100mV pp                       | ≤ 50mV rms                            |
| Hold-Up Time                            | > 20ms @ 120VAC<br>50ms @ 230VAC  | > 60ms @ 120VAC<br>70ms @ 230VAC | ≥ 50ms @ 230VAC                       |
| Parallel / Redundant Mode               | Yes via external decoupling diode |                                  |                                       |
| Efficiency (Typical)                    | > 87% @ 120VAC                    | > 87% @ 120VAC                   | > 91% @ 240VAC                        |
| Short-Circuit                           | Hiccup mode                       |                                  |                                       |
| MTBF                                    | –                                 | –                                | 500,000 h @<br>25°C ambient full load |

# Power Supplies - Switching

## CPS Series

### Power Supplies - Switching CPS 3-Phase Series General Specifications

| Series                     | ECO Series<br>1-Phase                                     | Ultra Series<br>1-Phase | Universal Series -<br>1/2/3 Phase                                                                                                                                       | 3-Phase Series                                                                                                                                                                                    |
|----------------------------|-----------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overvoltage Protection     | ≤ 33VDC                                                   |                         |                                                                                                                                                                         | CPSB3-120-24 <32V<br>CPSB3-240-24 <32V<br>CPSB3-960-24 <33VDC                                                                                                                                     |
| Overtemperature Protection | Yes                                                       |                         |                                                                                                                                                                         |                                                                                                                                                                                                   |
| Status Indicators          | DC ON LED (green): ≥ 21.6 V<br>DC LOW LED (red): ≤ 21.6 V |                         | CPSB-123-240-24<br>DC ON LED (green): ≥ 21.6 V<br>DC LOW LED (red): ≥ 21.6 V<br>CPSB-123-480-24<br>DC ON LED (green): ≥ 21.6 V<br>DC LOW LED (red): $I_{out} > 1.1 I_n$ | CPSB3-120-24<br>CPSB3-240-24<br>DC OK LED (green)<br>ON $U_{out} > 95\% U_{set}$<br>OFF $U_{out} > 90\% U_{set}$<br><br>CPSB3-960-24<br>DC ON LED (green): ≥ 21.6 V<br>DC LOW LED (red): ≥ 21.6 V |
| Humidity                   | 5 to 95%, non-condensing                                  |                         |                                                                                                                                                                         |                                                                                                                                                                                                   |
| Vibration                  | IEC 60068-2-6                                             |                         |                                                                                                                                                                         |                                                                                                                                                                                                   |
| Shock                      | IEC 60068-2-27                                            |                         |                                                                                                                                                                         |                                                                                                                                                                                                   |
| Protection Rating          | IP20                                                      |                         |                                                                                                                                                                         |                                                                                                                                                                                                   |
| Mounting                   | 35mm DIN rail (vertical)                                  |                         |                                                                                                                                                                         |                                                                                                                                                                                                   |
| Housing Material           | Aluminum (enclosed)                                       |                         |                                                                                                                                                                         |                                                                                                                                                                                                   |
| Agency Approval            | CE, UKCA, cULus E249179                                   |                         |                                                                                                                                                                         |                                                                                                                                                                                                   |

### Additional Data

| Part Number     | Weight<br>kg [lb] | Operating<br>Temperature      | Storage<br>Temperature        | Terminal<br>Type | Solid Wire Size*              |                               | Tightening Torque                    |
|-----------------|-------------------|-------------------------------|-------------------------------|------------------|-------------------------------|-------------------------------|--------------------------------------|
|                 |                   |                               |                               |                  | Output                        | Input                         |                                      |
| CPSB1-120-24E   | 0.45 [0.99]       | -40 to 70°C<br>[-40 to 158°F] | -40 to 80°C<br>[-40 to 176°F] | Screw            | 0.20 – 2.5 mm²<br>[AWG 24-14] | 0.20 – 2.5 mm²<br>[AWG 24-14] | 0.5 – 0.6 N•m<br>[4.42 – 5.30 lb•ft] |
| CPSB1-240-24E   | 0.75 [1.65]       |                               |                               |                  |                               |                               |                                      |
| CPSB1-480-24E   | 1 [2.20]          |                               |                               |                  |                               |                               |                                      |
| CPS2B1-120-24   | 0.45 [0.99]       | -35 to 70°C<br>[-31 to 158°F] | -40 to 80°C<br>[-40 to 176°F] | Screw            | 0.20 – 2.5 mm²<br>[AWG 24-14] | 0.20 – 2.5 mm²<br>[AWG 24-14] | 0.5 – 0.6 N•m<br>[4.42 – 5.30 lb•ft] |
| CPS2B1-240-24   | 0.75 [1.65]       |                               |                               |                  |                               |                               |                                      |
| CPS2B1-480-24   | 1.1 [2.42]        |                               |                               |                  |                               |                               |                                      |
| CPSB-123-240-24 | 0.65 [1.43]       | -40 to 70°C<br>[-40 to 158°F] | -40 to 80°C<br>[-40 to 176°F] | Screw            | 0.20 – 2.5 mm²<br>[AWG 30-12] | 0.20 – 2.5 mm²<br>[AWG 30-12] | 0.5 – 0.6 N•m<br>[4.42 – 5.30 lb•ft] |
| CPSB-123-480-24 | 1 [2.20]          |                               |                               |                  | 0.20 – 2.5 mm²<br>[AWG 24-14] | 0.20 – 2.5 mm²<br>[AWG 24-14] |                                      |
| CPSB3-120-24    | 0.66 [1.45]       | -25 to 70°C<br>[-13 to 158°F] | -40 to 85°C<br>[-40 to 185°F] | Push-in          | 0.20 – 2.5 mm²                | 0.20 – 2.5 mm²                | –                                    |
| CPSB3-240-24    | 0.78 [1.71]       |                               |                               |                  | 0.20 – 2.5 mm²                | 0.20 – 2.5 mm²                | –                                    |
| CPSB3-960-24    | 1.3 [2.86]        | -40 to 70°C<br>[-40 to 158°F] | -40 to 80°C<br>[-40 to 176°F] | Screw            | 0.20 – 10mm²<br>[AWG 24-14]   | 0.20 – 10mm²<br>[AWG 24-14]   | max. 62 N•m                          |

\* For other types of wire please see the insert.