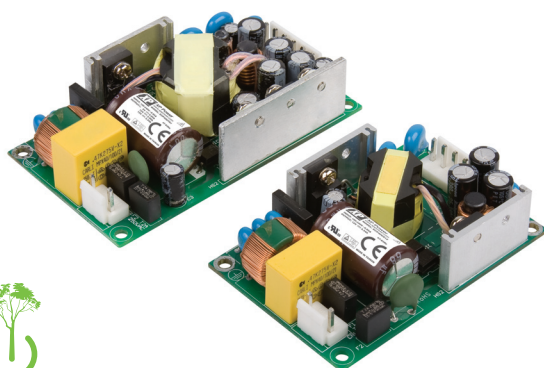


# 40 Watts

## ECP Series



### Specification

#### Input

|                       |                                                |
|-----------------------|------------------------------------------------|
| Input Voltage         | • 85-264 VAC                                   |
| Input Frequency       | • 47-63 Hz                                     |
| Input Current         | • 0.85 A max at 115 VAC                        |
| Inrush Current        | • 65 A max at 230 VAC                          |
| Power Factor          | • EN61000-3-2, Class A                         |
| No Load Input Power   | • <0.3 W                                       |
| Earth Leakage Current | • <250 $\mu$ A at 264 VAC, 60 Hz               |
| Input Protection      | • Internal T2 A/250 V fuse in line and neutral |

#### Output

|                          |                                                                                                            |
|--------------------------|------------------------------------------------------------------------------------------------------------|
| Output Voltage           | • See table                                                                                                |
| Initial Set Accuracy     | • Single output: $\pm 1\%$ at 60% load, Multiple output: $\pm 1\%$ on V1, $\pm 5\%$ on V2 & V3 at 60% load |
| Minimum Load             | • 10% minimum load required on V1 & V2 of multi output versions                                            |
| Start Up Delay           | • 1.3 s max                                                                                                |
| Start Up Rise Time       | • 15 ms typical                                                                                            |
| Hold Up Time             | • 10 ms min at full load at 115 VAC                                                                        |
| Line Regulation          | • $\pm 0.5\%$ max                                                                                          |
| Load Regulation          | • V1 & V3: $\pm 2\%$ , V2: $\pm 4\%$ (see note 3)                                                          |
| Cross Regulation         | • V2: 5%, 10-100% load change on V1 (see note 4)                                                           |
| Transient Response       | • 4% max deviation, recovering to less than 1% within 500 $\mu$ s for 50% step load change at 1 A/ $\mu$ s |
| Ripple & Noise           | • 1% pk-pk, measured with 20 MHz bandwidth                                                                 |
| Overvoltage Protection   | • 110-140% of nominal output voltage on V1 only, recycle input to reset                                    |
| Overload Protection      | • Single output: 140-160% of nominal power Multiple output: 120-150% of nominal power on V1 and V2 only    |
| Short Circuit Protection | • Trip and restart (hiccup mode)                                                                           |
| Temperature Coefficient  | • $\pm 0.02\%/^{\circ}\text{C}$ max                                                                        |

- Low Profile Design
- Ultra Compact Size from 3"x 2"x 0.9"
- IT & Medical Approvals
- Single, Dual and Triple Output
- <0.3 W No Load Input Power
- Peak Load Capability
- 3 Year Warranty

#### General

|                     |                                                                                    |
|---------------------|------------------------------------------------------------------------------------|
| Efficiency          | • See tables                                                                       |
| Isolation           | • 4000 VAC Input to Output<br>1500 VAC Input to Ground<br>500 VAC Output to Ground |
| Switching Frequency | • 40-130 kHz variable                                                              |
| MTBF                | • >400 kHrs to MIL-HDBK-217F at 25 $^{\circ}\text{C}$ , GB                         |

#### Environmental

|                       |                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature | • -10 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$ , derate from 100% load at 50 $^{\circ}\text{C}$ to 50% load at 70 $^{\circ}\text{C}$ |
| Cooling               | • Natural convection                                                                                                                     |
| Operating Humidity    | • 5% to 95% RH, non condensing                                                                                                           |
| Storage Temperature   | • -40 $^{\circ}\text{C}$ to +85 $^{\circ}\text{C}$                                                                                       |
| Shock                 | • 30 g pk, half sine, 6 axes                                                                                                             |
| Vibration             | • 2 g rms, 5 Hz to 500 Hz, 3 axes                                                                                                        |

#### EMC & Safety

|                      |                                                                                                                                           |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Emissions            | • EN55032, level B conducted & radiated                                                                                                   |
| Harmonic Currents    | • EN61000-3-2, class A                                                                                                                    |
| Voltage Flicker      | • EN61000-3-3                                                                                                                             |
| ESD Immunity         | • EN61000-4-2, $\pm 4$ kV indirect contact, Perf Criteria A                                                                               |
| Radiated Immunity    | • EN61000-4-3, level 2, Perf Criteria A                                                                                                   |
| EFT / Burst          | • EN61000-4-4, level 3 Perf Criteria A                                                                                                    |
| Surge                | • EN61000-4-5, installation class 3, Perf Criteria A                                                                                      |
| Conducted Immunity   | • EN61000-4-6, level 3, Perf Criteria A                                                                                                   |
| Dips & Interruptions | • EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B                                                                |
| Safety Approvals     | • UL62368-1, IEC62368-1, EN62368-1, ANSI/AAMI ES 60601-1, IEC60601-1, EN60601-1, CE & UKCA meets all applicable directives & legislation. |

## Models and Ratings

ECP40 **XP**

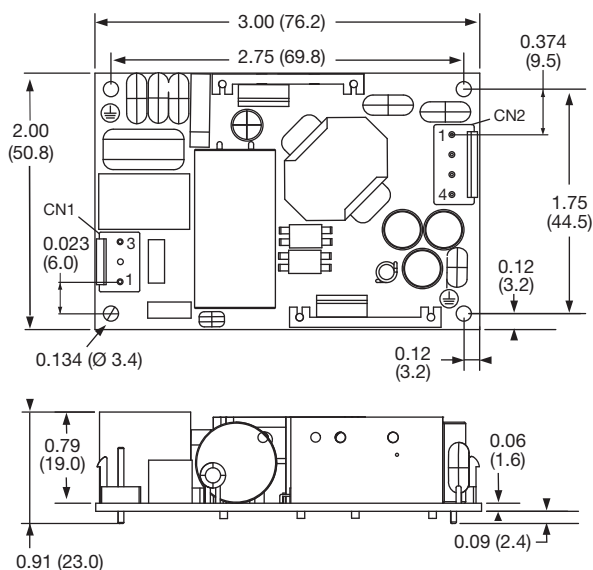
| Output Power | Output 1 |         |                     | Output 2  |         |                     | Output 3  |         | Efficiency <sup>(2)</sup> | Model Number |
|--------------|----------|---------|---------------------|-----------|---------|---------------------|-----------|---------|---------------------------|--------------|
|              | Voltage  | Current | Peak <sup>(1)</sup> | Voltage   | Current | Peak <sup>(1)</sup> | Voltage   | Current |                           |              |
| 30 W         | 5.0 VDC  | 6.00 A  | 7.80 A              |           |         |                     |           |         | 82%                       | ECP40US05    |
| 40 W         | 12.0 VDC | 3.34 A  | 4.34 A              |           |         |                     |           |         | 89%                       | ECP40US12    |
| 40 W         | 15.0 VDC | 2.67 A  | 3.47 A              |           |         |                     |           |         | 89%                       | ECP40US15    |
| 40 W         | 18.0 VDC | 2.22 A  | 2.89 A              |           |         |                     |           |         | 90%                       | ECP40US18    |
| 40 W         | 24.0 VDC | 1.67 A  | 2.17 A              |           |         |                     |           |         | 90%                       | ECP40US24    |
| 40 W         | 30.0 VDC | 1.34 A  | 1.74 A              |           |         |                     |           |         | 91%                       | ECP40US30    |
| 40 W         | 48.0 VDC | 0.84 A  | 1.09 A              |           |         |                     |           |         | 92%                       | ECP40US48    |
| 40 W         | +5.0 VDC | 5.00 A  | 7.80 A              | +12.0 VDC | 2.0 A   | 2.60 A              |           |         | 89%                       | ECP40UD01    |
| 40 W         | +5.0 VDC | 5.00 A  | 7.80 A              | +15.0 VDC | 1.5 A   | 1.95 A              |           |         | 90%                       | ECP40UD02    |
| 40 W         | +5.0 VDC | 5.00 A  | 7.80 A              | +24.0 VDC | 1.0 A   | 1.30 A              |           |         | 90%                       | ECP40UD03    |
| 40 W         | +5.0 VDC | 5.00 A  | 7.80 A              | +12.0 VDC | 2.0 A   | 2.60 A              | -12.0 VDC | 0.5 A   | 89%                       | ECP40UT01    |
| 40 W         | +5.0 VDC | 5.00 A  | 7.80 A              | +15.0 VDC | 1.5 A   | 1.95 A              | -15.0 VDC | 0.5 A   | 90%                       | ECP40UT02    |
| 40 W         | +5.0 VDC | 5.00 A  | 7.80 A              | +24.0 VDC | 1.0 A   | 1.30 A              | +12.0 VDC | 0.5 A   | 90%                       | ECP40UT03    |
| 40 W         | +5.0 VDC | 5.00 A  | 7.80 A              | +24.0 VDC | 1.0 A   | 1.30 A              | -12.0 VDC | 0.5 A   | 90%                       | ECP40UT04    |

## Notes

1. Peak load lasting <30 s with a maximum duty cycle of 10%, average output power not to exceed nominal.
2. Typical efficiency at 230 VAC and full load at 25 °C.
3. For multiple output units, load regulation is given for load change of 10% to 100% with other outputs set to 60% adjustment load.
4. When V2 load is 15-100%

## Mechanical Details

## ECP40USXX



| Input Connector CN1 |            |
|---------------------|------------|
| Pin 1               | Neutral    |
| Pin 2               | Not Fitted |
| Pin 3               | Line       |

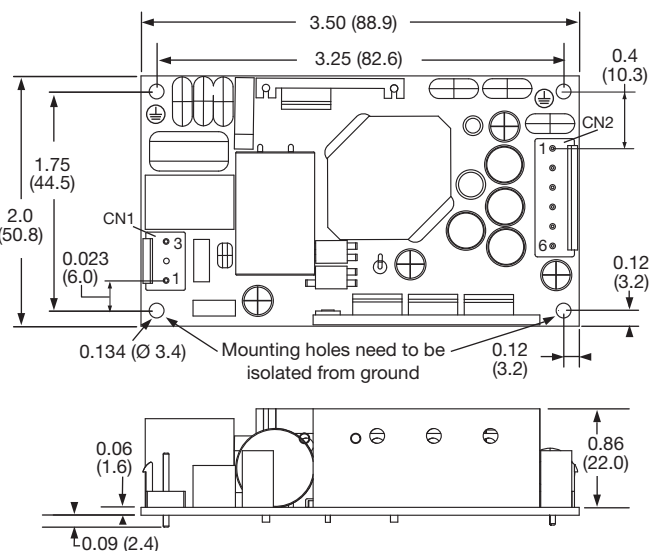
CN1 mates with JST housing VHR-3N and JST Series SVH-21T-P1.1 crimp terminals.

Mounting holes marked with  $\oplus$  must be connected to safety earth

| Output Connector CN2 |        |
|----------------------|--------|
| Pin 1                | + Vout |
| Pin 2                | + Vout |
| Pin 3                | - Vout |
| Pin 4                | - Vout |

CN2 mates with JST housing VHR-4N and JST Series SVH-21T-P1.1 crimp terminals.

## ECP40UDXX / ECP40UTXX



| Input Connector CN1 |            |
|---------------------|------------|
| Pin 1               | Neutral    |
| Pin 2               | Not Fitted |
| Pin 3               | Line       |

CN1 mates with JST housing VHR-3N and JST Series SVH-21T-P1.1 crimp terminals.

Mounting holes marked with  $\oplus$  must be connected to safety earth

| Output Connector CN2 |     |
|----------------------|-----|
| Pin 1                | V2  |
| Pin 2                | V1  |
| Pin 3                | V1  |
| Pin 4                | RTN |
| Pin 5                | RTN |
| Pin 6                | V3  |

CN2 mates with JST housing VHR-6N and JST Series SVH-21T-P1.1 crimp terminals.

## Notes

1. All dimensions are in inches (mm).
2. Weight: ECP40USXX: 0.18 lbs (80 g) approx, ECP40UD/UTXX: 0.24 lbs (110 g)