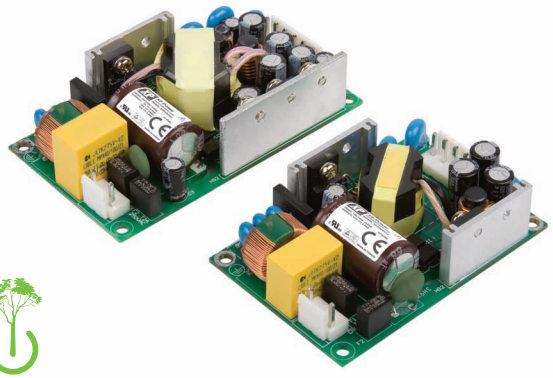
# 40 Watts
# ECP Series





GREEN XP POWER

- 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

## 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 µA 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: ±1% at 60% load, Multiple output: ±1% on V1, ±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 | • ±0.5% max |
| Load Regulation | • V1 & V3: ±2%, V2: ±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 µs for 50% step load change at 1 A/µs |
| 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 | • ±0.02%/°C max |

### 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 °C, GB |

### Environmental

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

### EMC & Safety

| | |
|---|---|
| Emissions | • EN55022, level B conducted & radiated |
| Harmonic Currents | • EN61000-3-2, class A |
| Voltage Flicker | • EN61000-3-3 |
| ESD Immunity | • EN61000-4-2, ±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 | • EN60950-1, cUL60950, IEC60950-1, EN60601-1, cUL60601-1, IEC60601-1 |

## Models and Ratings



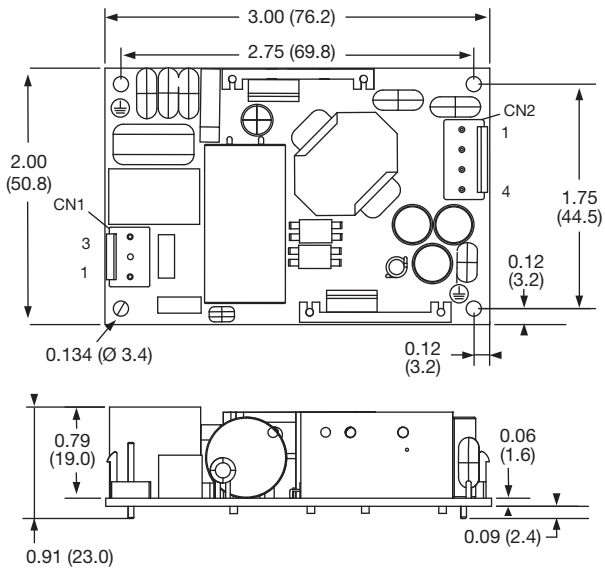
| Output Power | Output 1 | | | Output 2 | | | Output 3 | | Efficiency[2] | Model Number |
|---|---|---|---|---|---|---|---|---|---|---|
| | Voltage | Current | Peak[1] | Voltage | Current | Peak[1] | Voltage | Current | | |
| 30 W | 5.0 VDC | 6.00 A | 7.80 A | | | | | | 82% | ECP40US05 |
| 40 W | 12.0 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 |

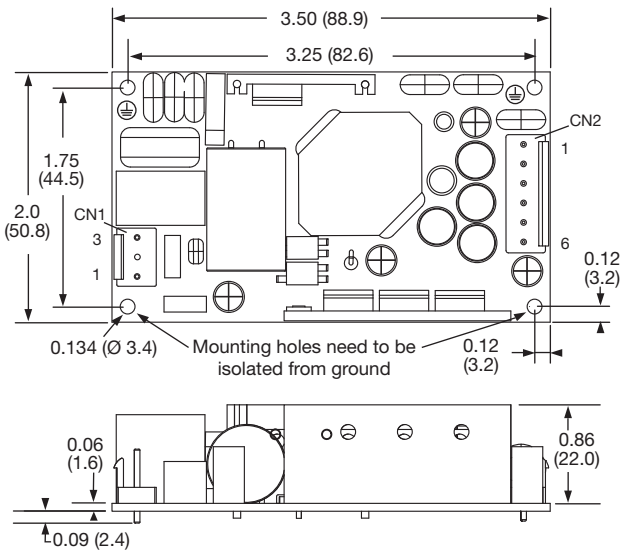
CN1 mates with JST housing VHR-3N and JST Series SVH-21T-P1.1 crimp terminals.

Mounting holes marked with ⏚ 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 ⏚ 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)