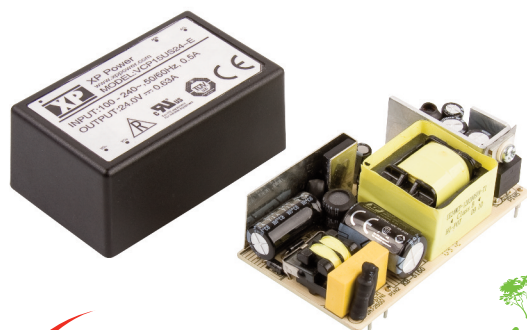


24 Watts

VCP Series



- Low Cost
- Output Voltages from 5 to 24 V
- PCB Mount
- Open Frame & Encapsulated Versions
- IT & Medical Approvals
- Class II Construction
- No Load Input Power <0.3 W

Specification

Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-63 Hz
Input Current	• 0.6 A max at 90 VAC
Inrush Current	• 40 A max at 240 VAC, cold start at 25 °C
Power Factor	• EN61000-3-2, class A
No Load Input Power	• <0.3 W
Input Protection	• Internal T2.0A/250 V fuse in line

Output

Output Voltage	• See table
Initial Set Accuracy	• $\pm 2\%$ at 50% load
Minimum Load	• No minimum load required
Start Up Delay	• 2 s max
Start Up Rise Time	• 50 ms typical
Hold Up Time	• 5 ms typical at full load and 115 VAC
Line Regulation	• $\pm 0.5\%$ max
Load Regulation	• 2% max, 0-100% load
Transient Response	• 10% max. deviation, recovery to <1% within 500 μ s for a 50% step load change at 0.2 A/ μ s
Ripple & Noise	• See table
Overvoltage Protection	• See table
Overload Protection	• 120-280 %, auto recovery
Short Circuit Protection	• Trip and restart (hiccup mode)
Temperature Coefficient	• 0.2 %/°C

General

Efficiency	• See table
Isolation	• 4000 VAC Input to Output
Switching Frequency	• 65 kHz typical
MTBF	• 250 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• 0 °C to +70 °C, derate from 100% load at 50 °C to 50% load at 70 °C
Cooling	• Natural convection
Operating Humidity	• 5-90% RH, non-condensing
Storage Temperature	• -20 °C to +80 °C
Vibration	• 10-300 Hz, 2 g 15 mins/sweep. 30 mins for each of 3 axes

EMC & Safety

Emissions	• EN55011/22, 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, ± 8 kV air, Perf Criteria A
Radiated Immunity	• EN61000-4-3, 3 V/m, Perf Criteria A
EFT/Burst	• EN61000-4-4, level 2, Perf Criteria A
Surge	• EN61000-4-5, installation class 3, Perf Criteria A
Conducted Immunity	• EN61000-4-6, 3 V, Perf Criteria A
Magnetic Field	• EN61000-4-8, 1 A/m, 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, cUL60950-1, IEC60950-1, EN60601-1, cUL60601-1, IEC60601-1

Models and Ratings

VCP24 **XP**

Output Power	Output Voltage ⁽²⁾	Output Current	Ripple & Noise ⁽¹⁾	OVP Setting ⁽³⁾	Efficiency ⁽⁵⁾	Model Number ⁽⁴⁾
12.5 W	5.0 V	2.5 A	100 mV	10.0 V	73%	VCP24US05†^
24.0 W	12.0 V	2.0 A	100 mV	20.0 V	80%	VCP24US12†^
24.0 W	15.0 V	1.6 A	150 mV	25.0 V	81%	VCP24US15†^
24.0 W	24.0 V	1.0 A	200 mV	35.0 V	82%	VCP24US24†^

Notes

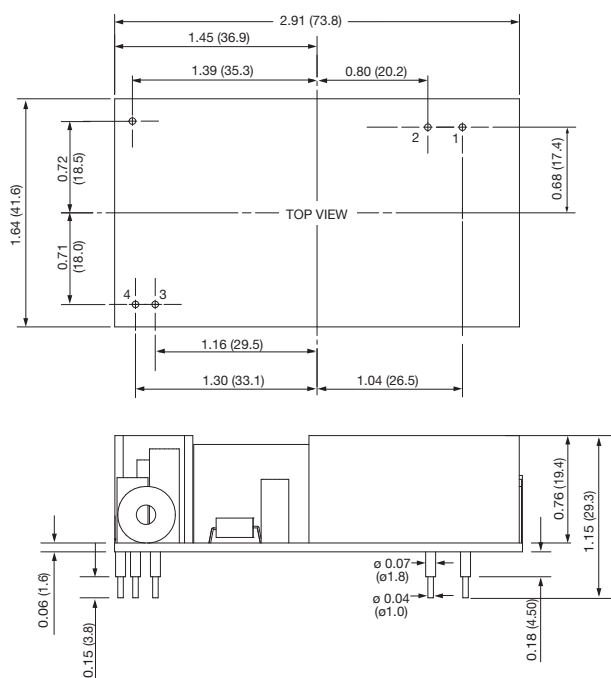
1. Measured at DC output connectors using 20 MHz bandwidth and 0.1 μ F ceramic capacitor in parallel with 10 μ F electrolytic capacitor placed at connector terminals.
2. Other voltages between 5.0 V and 24.0 V are available, consult sales for details.
3. Typical trip point.
4. For encapsulated versions, add suffix '-E' to the model number, e.g. VCP24US12-E
5. Average of efficiencies measured at 25%, 50%, 75% & 100% load and 230 VAC input.

† Available from Farnell & element14. See page 28.

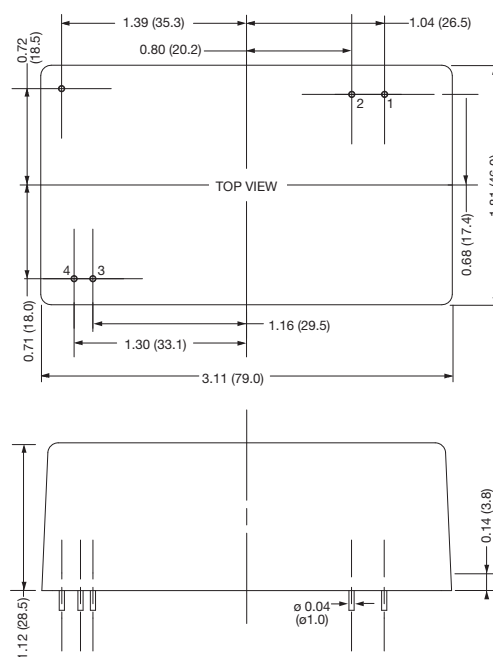
^ Available from Newark. See page 28.

Mechanical Details

Open Frame Version



Encapsulated Version (-E)



Pin	Designation
1	Live
2	Neutral
3	Output +VE
4	Output -VE

Notes

1. All dimensions are in inches (mm).
2. Weight: open frame versions: 0.165 lbs (75 g) approx, encapsulated versions 0.32 lbs (150 g) approx.
3. Tolerance: x.xx = ± 0.04 (x.x = ± 0.1); x.xxx = ± 0.2 (x.xx = ± 0.5)