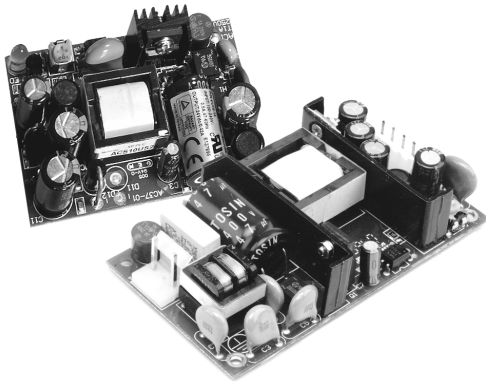


## CU10-20 Series



- Low Cost
- Small Size
- PCB Mount & Open Frame
- 15 Watt Medical Version Available
- Single Output 3-24 V
- Peak Load Capability
- Non-standard Outputs Available

## Specification

## Input

Input Voltage	• 85-264 VAC (120-370 VDC)
Input Frequency	• 47-63 Hz
Input Current	• 0.13 A rms at 230 VAC (CU10) • 0.20 A rms at 230 VAC (CU15) • 0.25 A rms at 230 VAC (CU20)
Inrush Current	• 20 A at 115 VAC, 40 A at 230 VAC, cold start 25 °C
Earth Leakage Current	• Class 2 (CU10/15/15-M) • Class 1 <1.5 mA (CU20)
Input Protection	• 1A fuse (CU10) • 2A fuse (CU15, CU15-M, CU20)

## Output

Output Voltage	• See table
Output Voltage Trim	• $\pm 5\%$
Initial Set Accuracy	• $\pm 1\%$
Minimum Load	• No minimum load required
Start Up Delay	• 1.5 s max
Start Up Rise Time	• 14 ms max
Hold Up Time	• 16 ms typical at full load and 115 VAC
Drift	• 0.6%
Line Regulation	• 0.5% max
Load Regulation	• 1.0% max 10% load to full load
Transient Response	• 4% max deviation, recovery to within 1% within 500 $\mu$ s for 25% load change
Ripple & Noise	• 1% max pk-pk (see note 1)
Overvoltage Protection	• 130-150% of Vnom, recycle input to reset
Short Circuit Protection	• Trip and restart (Hiccup mode)
Temperature Coefficient	• 0.05%/°C

## General

Efficiency	• See tables
Isolation	• 4000 VAC Input to Output (CU15-M) • 3000 VAC Input to Output (CU10/15/20) • 1500 VAC Input to Ground (CU20) • 500 VAC Output to Ground (CU20)
Switching Frequency	• 100 kHz typical for 10 W models • 67 kHz typical for 15/20 W models
Power Density	• 2.43 W/in <sup>3</sup> (CU10); 3.17 W/in <sup>3</sup> (CU15); • 2.92 W/in <sup>3</sup> (CU15-M); 3.91 W/in <sup>3</sup> (CU20)
MTBF	• >500 kHrs per MIL-HDBK-217F (15 & 24 V units >400 kHrs)

## Environmental

Operating Temperature	• CU10/15/20: 0 °C to +65 °C, derate from full load at +45 °C to no load at +65 °C • CU15-M: 0 °C to +70 °C, derate from full load at +50 °C to 50% load at +70 °C
Cooling	• Convection-cooled
Operating Humidity	• 95% RH, non-condensing
Storage Temperature	• -20 °C to +85 °C
Operating Altitude	• 3000 m
Vibration	• 10 Hz to 500 Hz, 2 G for 10 mins/cycle • 60 min each cycle

## EMC &amp; Safety

Emissions	• CU15-M: EN55011 Level B conducted • Others: FCC20780 Level B, EN55022 Class B conducted
ESD Immunity	• EN61000-4-2, level 3, Perf Criteria B
Radiated Immunity	• EN61000-4-3, level 3, Perf Criteria B
EFT/Burst	• EN61000-4-4, level 2, Perf Criteria B
Surge	• EN61000-4-5, level 3, Perf Criteria B
Conducted Immunity	• EN61000-4-6, 10 V, Perf Criteria B
Dips & interruptions	• EN61000-4-11, 30% 10 ms, 60% 1000 ms, 100% 5000 ms, Perf Criteria A, B, B
Safety Approvals	• CU15-M: EN60601, UL2601-1, CSA22.2 No. 601.1 per cUL • Others: EN60950, UL1950, CSA22.2 No. 234 per cUL

**Models and Ratings**

Output Power	Output Voltage <sup>(3)</sup>	Output Current		Efficiency	Model Number
		Nominal	Peak <sup>(2)</sup>		
8.25 W	3.3 VDC	2.50 A	3.80 A	65%	CU10-00 †*
10 W	5.0 VDC	2.00 A	2.80 A	70%	CU10-10 †*
	9.0 VDC	1.12 A	1.50 A	72%	CU10-09
	12.0 VDC	0.84 A	1.20 A	75%	CU10-12 †*
	15.0 VDC	0.67 A	1.00 A	75%	CU10-13 †*
	24.0 VDC	0.42 A	0.65 A	78%	CU10-14 †*

Output Power	Output Voltage <sup>(3)</sup>	Output Current		Efficiency	Model Number <sup>(4)</sup>
		Nominal	Peak <sup>(2)</sup>		
10 W	3.3 VDC	3.00 A	4.50 A	70%	CU15-00 †*
15 W	5.0 VDC	3.00 A	4.50 A	73%	CU15-10 †*
	9.0 VDC	1.67 A	3.00 A	75%	CU15-09
	12.0 VDC	1.25 A	1.80 A	80%	CU15-12 †*
	15.0 VDC	1.00 A	1.50 A	80%	CU15-13 †*
	24.0 VDC	0.63 A	0.95 A	82%	CU15-14 †*

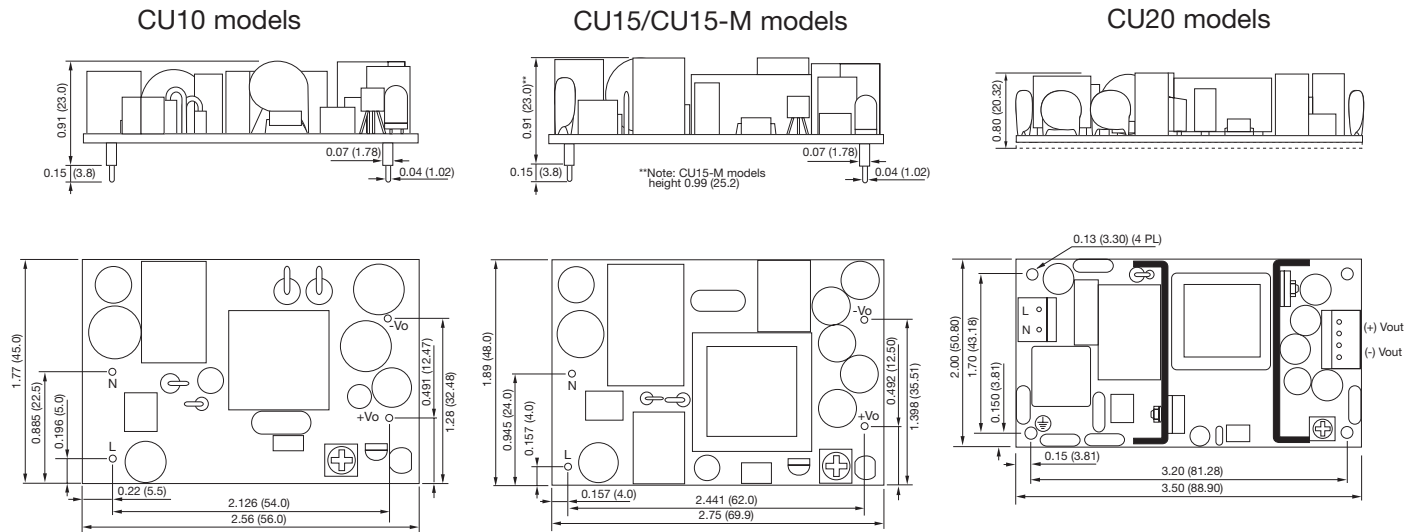
  

Output Power	Output Voltage <sup>(3)</sup>	Output Current		Efficiency	Model Number
		Nominal	Peak <sup>(2)</sup>		
15 W	3.3 VDC	4.40 A	6.60 A	70%	CU20-00 †*
20 W	5.0 VDC	4.40 A	6.60 A	73%	CU20-10 †*
	9.0 VDC	2.44 A	4.00 A	77%	CU20-09
	12.0 VDC	1.80 A	2.70 A	80%	CU20-12 †*
	15.0 VDC	1.40 A	2.10 A	80%	CU20-13 †*
	24.0 VDC	0.92 A	1.40 A	82%	CU20-14 †*

**Notes**

1. Measured at 20 MHz bandwidth. 3.3 V models are 50 mV maximum.
  2. Peak load lasting <30 s with a maximum duty cycle of 10%.
  3. Alternative output voltages available. Consult sales.
  4. Medical approved 15 W version available. Add suffix '-M' to part number.
- † Available from Farnell InOne. (Farnell series ACS10-20)      \*Available from Newark InOne.

**Mechanical Details**



**NOTES:**

1. All dimensions shown in inches (mm).
2. CU20 input connector mates with Molex housing 09-50-3031 and Molex 2878 series crimp terminal. Output connector mates with Molex housing 90-50-3041 and Molex 2878 series crimp terminal.
3. CU20 cable harnesses with 300mm wire available. Order part number **CU20 LOOM KIT †**.
4. For mating connectors only, order part number **CU20-60 CONKIT †**.
5. CU20 models only. Covers available. Order part number **CU20 COVER †** - 4.02" x 2.52" x 1.34" (102 x 64 x 34mm). To receive unit with cover fitted, add suffix '-C' to model number.