

## PCM Series



- 4000 VAC Isolation
- Low Leakage Current
- Single, Dual and Triple Outputs
- Worldwide Medical Approvals
- CCC Approved (PCM80)
- Both Line and Neutral Fused
- Non-standard Connectors Available

## Specification

## Input

|                       |                                                                |
|-----------------------|----------------------------------------------------------------|
| Input Voltage         | • 90-264 VAC                                                   |
| Input Frequency       | • 47-63 Hz                                                     |
| Input Current         | • PCM50: 1.35 A max<br>PCM80: 1.30 A max<br>PCM120: 1.60 A max |
| Inrush Current        | • 30 A at 115 VAC or<br>60 A at 230 VAC at 25 °C cold start    |
| Power Factor          | • PCM50: 0.55 typical<br>PCM80/120: 0.94 min                   |
| Earth Leakage Current | • 180 µA max at 132 VAC/60Hz<br>300 µA max at 264 VAC/50Hz     |

## Output

|                         |                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------|
| Output Voltage          | • See tables                                                                            |
| Minimum Load            | • No minimum load required for single output models. See tables for multi output models |
| Start Up Delay          | • 2 s max                                                                               |
| Hold Up Time            | • 10 ms min at low line                                                                 |
| Line Regulation         | • ±1% max at full load                                                                  |
| Load Regulation         | • ±5% max                                                                               |
| Transient Response      | • 5% max. deviation, 500 µs recovery time for a 50% load change                         |
| Ripple & Noise          | • 2% pk-pk, 20MHz BW                                                                    |
| Overvoltage Protection  | • 112-132%                                                                              |
| Overcurrent Protection  | • 110-200% with auto recovery on all outputs                                            |
| Temperature Coefficient | • ±0.05% /°C                                                                            |

## General

|                     |                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------|
| Efficiency          | • Single output models: 80% typical<br>Multi output models: 75% typical<br>230 VAC 100% load       |
| Isolation           | • 4000 VAC Input to Output<br>1500 VAC Input to Ground<br>500 VAC Output to Ground                 |
| Switching Frequency | • PCM50: 64 kHz typical<br>PCM80: 55 kHz typical<br>PCM120: 120 kHz typical (PWM),<br>70 kHz (PFC) |
| MTBF                | • 100 kHrs at full load and 25 °C ambient per MIL-HDBK-217F                                        |

## Environmental

|                       |                                                                                                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature | • PCM50: 0 °C to +70 °C, derate from 100% load at 50 °C to 50% load at +70 °C<br>PCM80: 0 °C to +70 °C, derate from 100% load at 40 °C to 50% load at +70 °C<br>PCM120: 0 °C to +60 °C, derate from 100% load at +40 °C to 50% load at +60 °C |
| Storage Temperature   | • PCM50/80: -40 °C to +80 °C<br>PCM120: -20 °C to +85 °C                                                                                                                                                                                      |

## EMC &amp; Safety

|                                 |                                                                                                                |
|---------------------------------|----------------------------------------------------------------------------------------------------------------|
| Emissions                       | • EN55022, level B conducted & radiated                                                                        |
| Harmonic Currents               | • EN61000-3-2, class A                                                                                         |
| Voltage Flicker                 | • EN61000-3-3                                                                                                  |
| ESD Immunity                    | • IEC61000-4-2, level 3<br>Perf Criteria A                                                                     |
| Radiated Immunity               | • IEC61000-4-3 10 V/m, level 3<br>Perf Criteria A                                                              |
| EFT/Burst                       | • IEC61000-4-4, level 3, Perf Criteria A                                                                       |
| Surge                           | • IEC61000-4-5, level 3, Perf Criteria A                                                                       |
| Conducted Immunity              | • IEC61000-4-6 10 V/m, level 3<br>Perf Criteria A                                                              |
| Power Frequency Magnetic Fields | • IEC61000-4-8 10 A/m, Perf Criteria A                                                                         |
| Dips & Interruptions            | • IEC61000-4-11, 30% 500 ms,<br>60% 100 ms, 100 % 5000 ms<br>Perf Criteria A, B, B                             |
| Safety Approvals                | • PCM80/120: UL60601-1, CSA C22.2<br>No. 601.1 per cUL<br>PCM50: ANSI/AMMI ES60601-1<br>EN60601-1, CCC (PCM80) |

## Models and Ratings

PCM50 **XP**

| Maximum Output Power | Output Voltage | Output Current | Regulation <sup>(1)</sup> | Model Number |
|----------------------|----------------|----------------|---------------------------|--------------|
| 40 W                 | 3.3 V          | 8.00 A         | 5%                        | PCM50US3V3   |
| 40 W                 | 5.0 V          | 8.00 A         | 5%                        | PCM50US05    |
| 42 W                 | 7.0 V          | 6.00 A         | 5%                        | PCM50US07    |
| 45 W                 | 9.0 V          | 5.00 A         | 4%                        | PCM50US09    |
| 45 W                 | 12.0 V         | 3.75 A         | 3%                        | PCM50US12    |
| 45 W                 | 15.0 V         | 3.00 A         | 3%                        | PCM50US15    |
| 50 W                 | 18.0 V         | 2.77 A         | 3%                        | PCM50US18    |
| 50 W                 | 24.0 V         | 2.08 A         | 2%                        | PCM50US24    |
| 50 W                 | 28.0 V         | 1.78 A         | 2%                        | PCM50US28    |
| 50 W                 | 36.0 V         | 1.38 A         | 2%                        | PCM50US36    |
| 50 W                 | 48.0 V         | 1.04 A         | 2%                        | PCM50US48    |

| Output Power | Output 1 |       |       |                     | Output 2 |                        |       |                     | Output 3 |       |       |                     | Model Number |
|--------------|----------|-------|-------|---------------------|----------|------------------------|-------|---------------------|----------|-------|-------|---------------------|--------------|
|              | Vnom     | Imin  | Imax  | Tol. <sup>(1)</sup> | Vnom     | Imin <sup>(4, 5)</sup> | Imax  | Tol. <sup>(1)</sup> | Vnom     | Imin  | Imax  | Tol. <sup>(1)</sup> |              |
| 26.5 W       | +3.3 V   | 1.0 A | 5.0 A | 7%                  | +5.0 V   | 0.4 A                  | 2.0 A | 5%                  |          |       |       |                     | PCM50UD00    |
| 42.0 W       | +3.3 V   | 0.5 A | 5.0 A | 7%                  | +12.0 V  | 0.2 A                  | 2.0 A | 5%                  |          |       |       |                     | PCM50UD01    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | +12.0 V  | 0.2 A                  | 2.0 A | 5%                  |          |       |       |                     | PCM50UD03    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | +15.0 V  | 0.2 A                  | 1.5 A | 6%                  |          |       |       |                     | PCM50UD04    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | +24.0 V  | 0.1 A                  | 1.0 A | 5%                  |          |       |       |                     | PCM50UD05    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | -24.0 V  | 0.1 A                  | 1.0 A | 5%                  |          |       |       |                     | PCM50UD06    |
| 42.0 W       | +12.0 V  | 0.5 A | 3.0 A | 5%                  | -12.0 V  | 0.2 A                  | 1.0 A | 5%                  |          |       |       |                     | PCM50UD07    |
| 42.0 W       | +15.0 V  | 0.5 A | 2.0 A | 5%                  | -15.0 V  | 0.2 A                  | 1.0 A | 5%                  |          |       |       |                     | PCM50UD08    |
| 42.0 W       | +3.3 V   | 0.5 A | 5.0 A | 7%                  | +12.0 V  | 0.2 A                  | 2.0 A | 5%                  | -12.0 V  | 0.0 A | 0.8 A | 5%                  | PCM50UT02    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | +12.0 V  | 0.2 A                  | 2.0 A | 5%                  | -5.0 V   | 0.0 A | 0.8 A | 5%                  | PCM50UT03    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | +12.0 V  | 0.2 A                  | 2.0 A | 5%                  | -12.0 V  | 0.0 A | 0.8 A | 5%                  | PCM50UT04    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | +15.0 V  | 0.2 A                  | 2.0 A | 6%                  | -15.0 V  | 0.0 A | 0.8 A | 5%                  | PCM50UT05    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | +24.0 V  | 0.1 A                  | 1.0 A | 5%                  | -12.0 V  | 0.0 A | 0.8 A | 5%                  | PCM50UT06    |
| 42.0 W       | +5.0 V   | 0.5 A | 5.0 A | 5%                  | +24.0 V  | 0.1 A                  | 1.0 A | 5%                  | -24.0 V  | 0.0 A | 0.5 A | 5%                  | PCM50UT07    |

## Notes

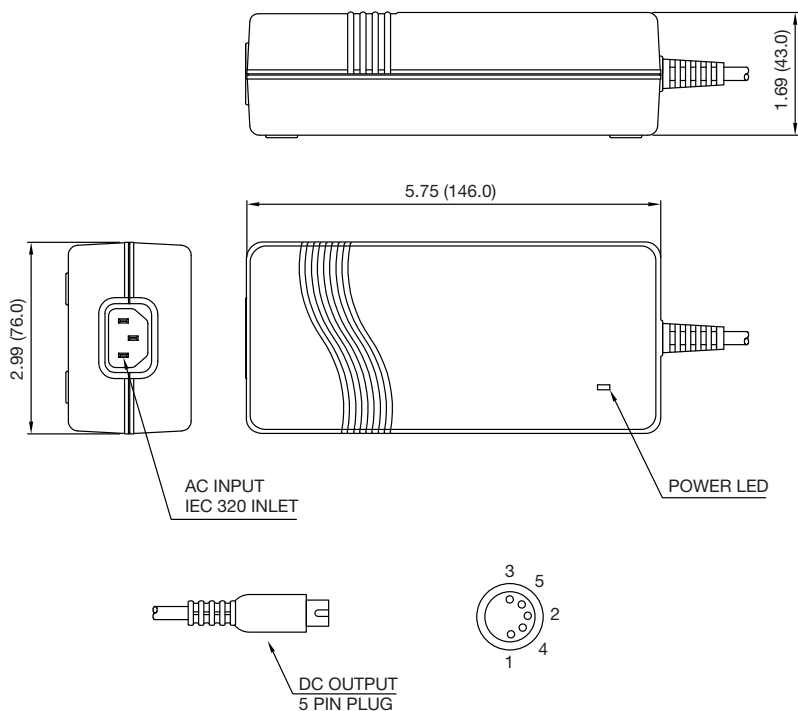
1. Regulation includes initial set tolerance, line regulation and load regulation.

## Mechanical Details

All dimensions are in inches (mm)

Weight: 0.88-1.21 lb (400-550 g) approx.

Tolerance: 0.04 (1.0) maximum



| PIN CONNECTIONS |        |          |          |
|-----------------|--------|----------|----------|
| Pin             | Single | Dual     | Triple   |
| 1               | Common | Common   | Common   |
| 2               | Common | Common   | Common   |
| 3               | Output | Output 1 | Output 1 |
| 4               | Common | Common   | Output 3 |
| 5               | Output | Output 2 | Output 2 |

## Notes:

1. Cable length is 48.0" (1.22m) approx.
2. For mating connector, use standard 5 pin din 180° socket.
3. Optional output connectors available, contact sales office.
4. Multi output models include a ferrite bead on the output connector.

## Models and Ratings

| Output Power | Output 1 |       |        |                     | Output 2 |                       |       |                     | Output 3 |       |       |                     | Model Number |
|--------------|----------|-------|--------|---------------------|----------|-----------------------|-------|---------------------|----------|-------|-------|---------------------|--------------|
|              | Vnom     | Imin  | Imax   | Tol. <sup>(1)</sup> | Vnom     | Imin <sup>(4,5)</sup> | Imax  | Tol. <sup>(1)</sup> | Vnom     | Imin  | Imax  | Tol. <sup>(1)</sup> |              |
| 50.0 W       | 3.3 V    | 0.0 A | 15.1 A | 7%                  |          |                       |       |                     |          |       |       |                     | PCM80PS3V3   |
| 65.0 W       | 5.0 V    | 0.0 A | 13.0 A | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS05    |
| 70.0 W       | 7.0 V    | 0.0 A | 10.0 A | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS07    |
| 75.0 W       | 9.0 V    | 0.0 A | 8.3 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS09    |
| 75.0 W       | 10.0 V   | 0.0 A | 7.5 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS10    |
| 80.0 W       | 12.0 V   | 0.0 A | 6.7 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS12    |
| 80.0 W       | 13.5 V   | 0.0 A | 5.9 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS13V5  |
| 80.0 W       | 15.0 V   | 0.0 A | 5.3 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS15    |
| 80.0 W       | 16.0 V   | 0.0 A | 5.0 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS16    |
| 80.0 W       | 17.5 V   | 0.0 A | 4.6 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS17V5  |
| 80.0 W       | 18.0 V   | 0.0 A | 4.4 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS18    |
| 80.0 W       | 24.0 V   | 0.0 A | 3.3 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS24    |
| 80.0 W       | 27.0 V   | 0.0 A | 3.0 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS27    |
| 80.0 W       | 30.0 V   | 0.0 A | 2.7 A  | 5%                  |          |                       |       |                     |          |       |       |                     | PCM80PS30    |
| 80.0 W       | 36.0 V   | 0.0 A | 2.2 A  | 3%                  |          |                       |       |                     |          |       |       |                     | PCM80PS36    |
| 80.0 W       | 48.0 V   | 0.0 A | 1.7 A  | 3%                  |          |                       |       |                     |          |       |       |                     | PCM80PS48    |
| 38.0 W       | 3.3 V    | 0.5 A | 7.0 A  | 5%                  | 5.0 V    | 0.3 A                 | 3.0 A | 5%                  |          |       |       |                     | PCM80PD00    |
| 53.0 W       | 3.3 V    | 0.5 A | 7.0 A  | 5%                  | 12.0 V   | 0.2 A                 | 2.5 A | 5%                  |          |       |       |                     | PCM80PD01    |
| 60.0 W       | 5.0 V    | 0.5 A | 7.0 A  | 5%                  | 12.0 V   | 0.2 A                 | 2.5 A | 5%                  |          |       |       |                     | PCM80PD02    |
| 60.0 W       | 5.0 V    | 0.5 A | 7.0 A  | 5%                  | 15.0 V   | 0.2 A                 | 2.0 A | 5%                  |          |       |       |                     | PCM80PD03    |
| 60.0 W       | 5.0 V    | 0.5 A | 7.0 A  | 5%                  | 24.0 V   | 0.2 A                 | 2.0 A | 5%                  |          |       |       |                     | PCM80PD04    |
| 60.0 W       | 5.0 V    | 0.5 A | 7.0 A  | 5%                  | -24.0 V  | 0.2 A                 | 2.0 A | 5%                  |          |       |       |                     | PCM80PD05    |
| 65.0 W       | 12.0 V   | 0.5 A | 5.0 A  | 5%                  | -12.0 V  | 0.1 A                 | 0.8 A | 5%                  |          |       |       |                     | PCM80PD06    |
| 65.0 W       | 15.0 V   | 0.5 A | 4.0 A  | 5%                  | -15.0 V  | 0.1 A                 | 0.8 A | 5%                  |          |       |       |                     | PCM80PD07    |
| 65.0 W       | 24.0 V   | 0.5 A | 2.1 A  | 5%                  | -24.0 V  | 0.1 A                 | 0.8 A | 5%                  |          |       |       |                     | PCM80PD08    |
| 51.0 W       | 3.3 V    | 0.5 A | 7.0 A  | 5%                  | 12.0 V   | 0.2 A                 | 2.0 A | 5%                  | -5.0 V   | 0.1 A | 0.8 A | 5%                  | PCM80PT01    |
| 60.0 W       | 5.0 V    | 0.5 A | 6.0 A  | 5%                  | 12.0 V   | 0.2 A                 | 2.5 A | 5%                  | -5.0 V   | 0.1 A | 0.5 A | 5%                  | PCM80PT03    |
| 60.0 W       | 5.0 V    | 0.5 A | 6.0 A  | 5%                  | 12.0 V   | 0.2 A                 | 2.1 A | 5%                  | -12.0 V  | 0.1 A | 0.5 A | 5%                  | PCM80PT04    |
| 65.0 W       | 5.0 V    | 0.5 A | 6.0 A  | 5%                  | 15.0 V   | 0.2 A                 | 2.1 A | 5%                  | -15.0 V  | 0.1 A | 0.5 A | 5%                  | PCM80PT05    |
| 60.0 W       | 5.0 V    | 0.5 A | 6.0 A  | 5%                  | 24.0 V   | 0.1 A                 | 1.2 A | 5%                  | -12.0 V  | 0.1 A | 0.5 A | 5%                  | PCM80PT06    |
| 65.0 W       | 5.0 V    | 0.5 A | 7.0 A  | 5%                  | 24.0 V   | 0.2 A                 | 2.0 A | 5%                  | -24.0 V  | 0.1 A | 0.5 A | 5%                  | PCM80PT07    |

## Notes

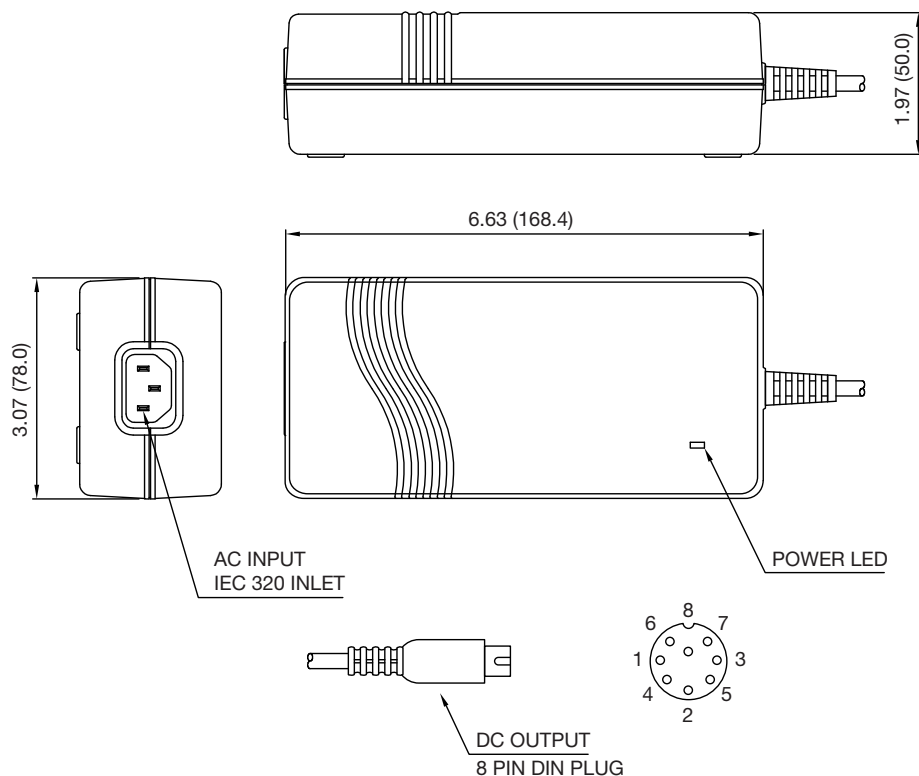
1. Regulation includes initial set tolerance, line regulation and load regulation.

## Mechanical Details

All dimensions are in inches (mm)

Weight: 1.76-1.98 lb (800-900 g) approx.

Tolerance: 0.04 (1.0) maximum



| PIN CONNECTIONS |          |          |          |
|-----------------|----------|----------|----------|
| Pin             | Single   | Dual     | Triple   |
| 1               | Common   | Common   | Common   |
| 2               | Common   | Output 2 | Output 3 |
| 3               | Output 1 | Output 1 | Output 1 |
| 4               | Common   | Output 2 | Output 2 |
| 5               | Output 1 | Output 1 | Output 2 |
| 6               | Common   | Common   | Common   |
| 7               | Output 1 | Output 1 | Output 1 |
| 8               | Output 1 | Common   | Output 3 |
| Shell           | Ground   | Ground   | Ground   |

## Notes:

1. Cable length is 48.0" (1.22m) approx.
2. Optional output connectors available, contact sales office.
3. Multi output models include a ferrite bead on the output connector.

## Models and Ratings

PCM120 **XP**

| Maximum Output Power | Output Voltage | Output Current | Peak Current <sup>(1)</sup> | Model Number |
|----------------------|----------------|----------------|-----------------------------|--------------|
| 108 W                | 12.0 V         | 9.00 A         | 15.00 A                     | PCM120PS12   |
| 113 W                | 15.0 V         | 7.50 A         | 10.00 A                     | PCM120PS15   |
| 120 W                | 18.0 V         | 6.50 A         | 9.00 A                      | PCM120PS18   |
| 120 W                | 24.0 V         | 5.00 A         | 7.00 A                      | PCM120PS24   |
| 120 W                | 48.0 V         | 2.50 A         | 4.00 A                      | PCM120PS48   |

## Notes

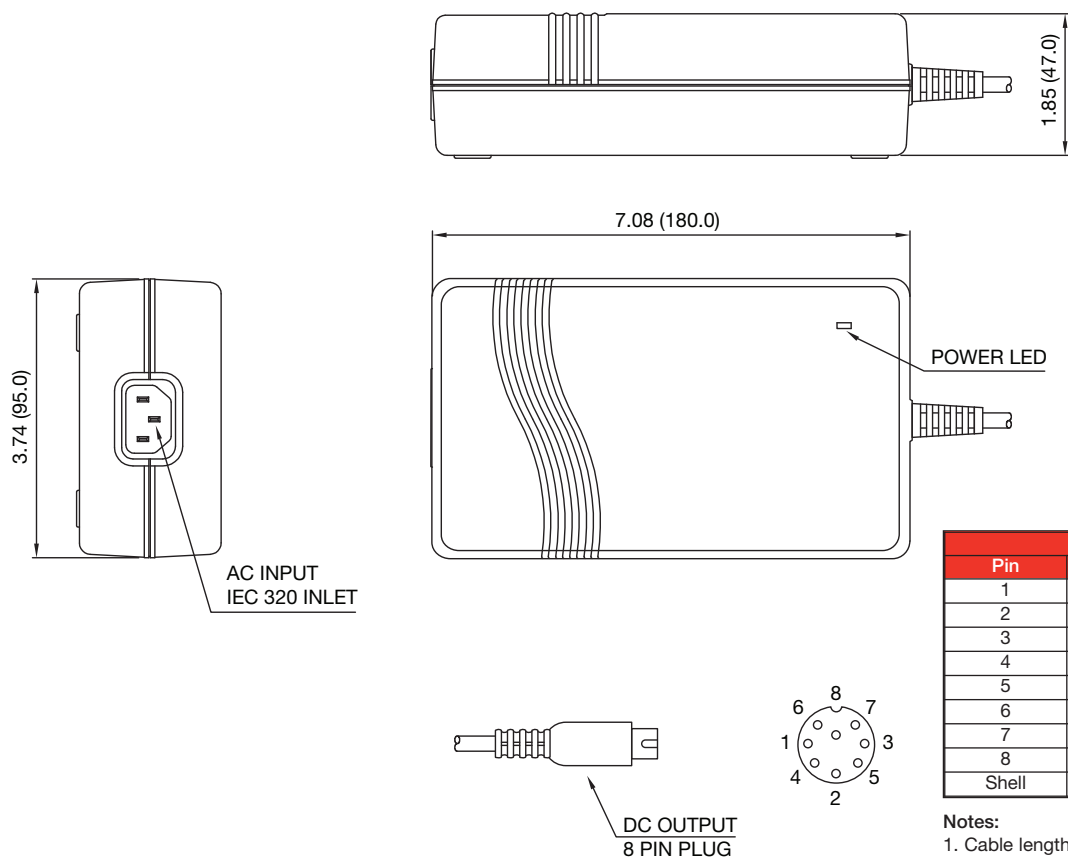
1. Peak current is 5 seconds maximum duration with a 10% duty cycle.

## Mechanical Details

All dimensions are in inches (mm)

Weight: 1.90 lb (860 g) approx.

Tolerance: 0.04 (1.0) maximum



| PIN CONNECTIONS |            |
|-----------------|------------|
| Pin             | All models |
| 1               | Return     |
| 2               | Return     |
| 3               | Output +V  |
| 4               | Return     |
| 5               | Output +V  |
| 6               | Return     |
| 7               | Output +V  |
| 8               | Output +V  |
| Shell           | Ground     |

## Notes:

1. Cable length is 72.0" (1.83m) approx.
2. Optional output connectors available, contact sales office.

## Derating Curve

