

## **LINEAR ENCAPSULATED AC-DC POWER MODULES**

### **REGULATED, 5VDC-250VDC, PC CARD OR CHASSIS MOUNT**

*EXTRA LOW NOISE, 2 MOPP MEDICAL APPLICATIONS*



#### **FEATURES**

- Meets IEC 60601-1 3<sup>rd</sup> Edition
- Up to 5700Vdc I/O Isolation
- Reinforced Insulation
- 2 MOPP
- 2 $\mu$ A Patient Leakage Current
- CE Certified
- Regulation Line and Load 0.02% to 0.2%
- Short Circuit Protection
- Single, Dual and Triple Outputs
- International Input Voltages Available Including Dual/Switchable Input Voltages
- Very Low RMS Output Noise (See Selection Guide)
- Optional Wide Operating Temperature Range
- Built for In-Device Operation
- Packages Available: PC Mount, Chassis Mount with Screw Terminals

# MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

| SELECTION GUIDE (SINGLE) All specifications are typical at nominal input, full load and 25°C, unless otherwise noted. |                     |                |      |                         |        |               |               |
|-----------------------------------------------------------------------------------------------------------------------|---------------------|----------------|------|-------------------------|--------|---------------|---------------|
| Output (Vdc)                                                                                                          | Output Current (mA) | Regulation (%) |      | Ripple & Noise (mV rms) | Case   | Model Number  | Slow Blow (A) |
|                                                                                                                       |                     | Line           | Load |                         |        |               |               |
| 5                                                                                                                     | 200                 | 0.20           | 0.20 | 1.0                     | G, 1GT | P34-5SM/MHIA  | 1/32          |
|                                                                                                                       | 500                 | 0.20           | 0.20 | 0.5                     | B, 1BT | P37/MHIA      | 1/16          |
|                                                                                                                       | 500                 | 0.02           | 0.05 | 0.5                     | B, 1BT | P37-1/MHIA    | 1/16          |
|                                                                                                                       | 1000                | 0.20           | 0.20 | 1.0                     | B, 1BT | P38/MHIA      | 1/8           |
|                                                                                                                       | 1000                | 0.02           | 0.05 | 1.0                     | B, 1BT | P38-1/MHIA    | 1/8           |
|                                                                                                                       | 1000                | 0.02           | 0.05 | 0.5                     | C, 1CT | P38-1.56/MHIA | 1/8           |
|                                                                                                                       | 2000                | 0.02           | 0.10 | 1.0                     | C, 1CT | P39/MHIA      | 1/4           |
|                                                                                                                       | 3000                | 0.02           | 0.15 | 1.0                     | D, 1DT | P39-3/MHIA    | 3/8           |
| 10                                                                                                                    | 120                 | 0.10           | 0.10 | 1.0                     | E, 1ET | P33-10SM/MHIA | 1/32          |
|                                                                                                                       | 150                 | 0.10           | 0.10 | 1.0                     | B, 1BT | P33-10S/MHIA  | 1/16          |
|                                                                                                                       | 250                 | 0.10           | 0.10 | 1.0                     | B, 1BT | P34-10S/MHIA  | 1/16          |
|                                                                                                                       | 500                 | 0.02           | 0.05 | 0.5                     | C, 1CT | P37-10S/MHIA  | 1/8           |
|                                                                                                                       | 1000                | 0.02           | 0.05 | 0.5                     | D, 1DT | P38-10S/MHIA  | 3/8           |
|                                                                                                                       | 1500                | 0.02           | 0.05 | 0.5                     | D, 1DT | P38-10SA/MHIA | 1/4           |
| 12                                                                                                                    | 100                 | 0.10           | 0.10 | 1.0                     | E, 1ET | P32-12SM/MHIA | 1/32          |
|                                                                                                                       | 120                 | 0.02           | 0.10 | 1.0                     | B, 1BT | P33-12S/MHIA  | 1/16          |
|                                                                                                                       | 200                 | 0.10           | 0.10 | 1.0                     | B, 1BT | P34-12S/MHIA  | 1/16          |
|                                                                                                                       | 500                 | 0.02           | 0.10 | 0.5                     | C, 1CT | P37-12S/MHIA  | 1/5           |
|                                                                                                                       | 1000                | 0.10           | 0.10 | 1.0                     | D, 1DT | P38-12S/MHIA  | 3/10          |
|                                                                                                                       | 2000                | 0.10           | 0.10 | 1.0                     | H, 1HT | P39-12S/MHIA  | 3/10          |
| 15                                                                                                                    | 80                  | 0.10           | 0.10 | 1.0                     | E, 1ET | P33-15SM/MHIA | 1/32          |
|                                                                                                                       | 120                 | 0.02           | 0.10 | 1.0                     | B, 1BT | P33-12S/MHIA  | 1/16          |
|                                                                                                                       | 200                 | 0.10           | 0.10 | 1.0                     | B, 1BT | P34-15S/MHIA  | 1/10          |
|                                                                                                                       | 300                 | 0.10           | 0.10 | 1.0                     | C, 1CT | P35-15S/MHIA  | 1/8           |
|                                                                                                                       | 500                 | 0.02           | 0.10 | 0.5                     | C, 1CT | P37-15S/MHIA  | 1/5           |
|                                                                                                                       | 800                 | 0.02           | 0.10 | 1.0                     | D, 1DT | P38-15S/MHIA  | 3/10          |
| 18                                                                                                                    | 50                  | 0.10           | 0.10 | 1.0                     | E, 1ET | P32-18SM/MHIA | 1/32          |
|                                                                                                                       | 50                  | 0.02           | 0.05 | 1.0                     | B, 1BT | P32-18S/MHIA  | 1/32          |
|                                                                                                                       | 100                 | 0.02           | 0.05 | 1.0                     | B, 1BT | P33-18S/MHIA  | 1/16          |
| 24                                                                                                                    | 50                  | 0.10           | 0.10 | 1.0                     | E, 1ET | P32-24SM/MHIA | 1/32          |
|                                                                                                                       | 100                 | 0.10           | 0.10 | 1.0                     | B, 1BT | P33-24S/MHIA  | 1/16          |
|                                                                                                                       | 200                 | 0.10           | 0.10 | 1.0                     | B, 1BT | P34-24S/MHIA  | 1/8           |
|                                                                                                                       | 300                 | 0.10           | 0.10 | 1.0                     | C, 1CT | P35-24S/MHIA  | 1/5           |
|                                                                                                                       | 500                 | 0.10           | 0.10 | 1.0                     | D, 1DT | P37-24S/MHIA  | 1/4           |
|                                                                                                                       | 800                 | 0.10           | 0.10 | 1.0                     | H, 1HT | P38-24S/MHIA  | 3/8           |
|                                                                                                                       | 1000                | 0.10           | 0.10 | 1.0                     | H, 1HT | P39-24S/MHIA  | 1/2           |
| 48                                                                                                                    | 50                  | 0.20           | 0.20 | 2.0                     | B, 1BT | P32-48S/MHIA  | 1/16          |
|                                                                                                                       | 100                 | 0.20           | 0.20 | 2.0                     | B, 1BT | P33-48S/MHIA  | 1/8           |
|                                                                                                                       | 200                 | 0.20           | 0.20 | 2.0                     | C, 1CT | P34-48S/MHIA  | 1/4           |
| 50                                                                                                                    | 50                  | 0.05           | 0.20 | 2.0                     | B, 1BT | P32-50S/MHIA  | 1/16          |
|                                                                                                                       | 100                 | 0.05           | 0.20 | 2.0                     | B, 1BT | P33-50S/MHIA  | 1/8           |
|                                                                                                                       | 200                 | 0.05           | 0.20 | 2.0                     | C, 1CT | P34-50S/MHIA  | 1/4           |
|                                                                                                                       | 300                 | 0.20           | 0.20 | 3.0                     | D, 1DT | P35-50S/MHIA  | 3/8           |
| 75                                                                                                                    | 35                  | 0.05           | 0.20 | 2.0                     | B, 1BT | P32-75S/MHIA  | 1/10          |
|                                                                                                                       | 70                  | 0.05           | 0.20 | 2.0                     | B, 1BT | P33-75S/MHIA  | 1/5           |
|                                                                                                                       | 150                 | 0.05           | 0.20 | 2.0                     | C, 1CT | P34-75S/MHIA  | 3/10          |
|                                                                                                                       | 200                 | 0.10           | 0.20 | 3.0                     | D, 1DT | P35-75S/MHIA  | 3/8           |
| 100                                                                                                                   | 25                  | 0.05           | 0.20 | 2.0                     | B, 1BT | P32-100S/MHIA | 1/16          |
|                                                                                                                       | 50                  | 0.05           | 0.20 | 2.0                     | B, 1BT | P33-100S/MHIA | 1/8           |
|                                                                                                                       | 100                 | 0.05           | 0.20 | 3.0                     | C, 1CT | P34-100S/MHIA | 1/4           |
|                                                                                                                       | 150                 | 0.10           | 0.20 | 3.0                     | D, 3DT | P35-100S/MHIA | 3/8           |
| 150                                                                                                                   | 17                  | 0.05           | 0.20 | 2.0                     | B, 1BT | P32-150S/MHIA | 1/16          |
|                                                                                                                       | 35                  | 0.05           | 0.20 | 3.0                     | B, 1BT | P33-150S/MHIA | 2/10          |
|                                                                                                                       | 70                  | 0.05           | 0.20 | 3.0                     | C, 1CT | P34-150S/MHIA | 1/4           |
|                                                                                                                       | 100                 | 0.20           | 0.20 | 3.0                     | D, 1DT | P35-150S/MHIA | 3/8           |
| 180                                                                                                                   | 15                  | 0.05           | 0.20 | 3.0                     | B, 1BT | P32-180S/MHIA | 1/16          |
|                                                                                                                       | 30                  | 0.05           | 0.20 | 3.0                     | B, 1BT | P33-180S/MHIA | 1/5           |
|                                                                                                                       | 55                  | 0.05           | 0.20 | 3.0                     | C, 1CT | P34-180S/MHIA | 1/4           |
|                                                                                                                       | 80                  | 0.10           | 0.20 | 3.0                     | D, 1DT | P35-180S/MHIA | 3/8           |
| 200                                                                                                                   | 12                  | 0.05           | 0.20 | 3.0                     | B, 1BT | P32-200S/MHIA | 1/16          |
|                                                                                                                       | 25                  | 0.05           | 0.20 | 3.0                     | B, 1BT | P33-200S/MHIA | 1/8           |
|                                                                                                                       | 50                  | 0.05           | 0.20 | 3.0                     | C, 1CT | P34-200S/MHIA | 1/4           |
|                                                                                                                       | 75                  | 0.10           | 0.20 | 3.0                     | D, 1DT | P35-200S/MHIA | 3/8           |
| 250                                                                                                                   | 10                  | 0.05           | 0.20 | 3.0                     | B, 1BT | P32-250S/MHIA | 1/16          |
|                                                                                                                       | 20                  | 0.05           | 0.20 | 3.0                     | B, 1BT | P33-250S/MHIA | 1/8           |
|                                                                                                                       | 40                  | 0.05           | 0.20 | 3.0                     | C, 1CT | P34-250S/MHIA | 1/4           |
|                                                                                                                       | 60                  | 0.10           | 0.20 | 3.0                     | D, 1DT | P35-250S/MHIA | 3/8           |

## MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

### SELECTION GUIDE (DUAL) All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

| Output (Vdc) | Output Current (mA) | Regulation (%) |      | Ripple & Noise (mV rms) | Case   | Model Number | Slow Blow (A) |
|--------------|---------------------|----------------|------|-------------------------|--------|--------------|---------------|
|              |                     | Line           | Load |                         |        |              |               |
| ±5           | ±50                 | 0.02           | 0.02 | 1.0                     | B, 2BT | P32-5/MHIA   | 1/32          |
|              | ±100                | 0.10           | 0.10 | 1.0                     | B, 2BT | P33-5/MHIA   | 1/32          |
|              | ±200                | 0.10           | 0.10 | 1.0                     | B, 2BT | P34-5/MHIA   | 1/16          |
|              | ±300                | 0.02           | 0.05 | 0.5                     | C, 2CT | P35-5/MHIA   | 1/10          |
|              | ±500                | 0.02           | 0.05 | 0.5                     | C, 2CT | P37-5/MHIA   | 1/8           |
|              | ±1000               | 0.01           | 0.10 | 1.0                     | D, 2DT | P38-5/MHIA   | 1/4           |
| ±8           | ±500                | 0.10           | 0.10 | 2.0                     | D, 2DT | P37-8/MHIA   | 1/5           |
| ±10          | ±100                | 0.02           | 0.05 | 2.0                     | B, 2BT | P33-10/MHIA  | 1/16          |
| ±12          | ±25                 | 0.10           | 0.10 | 2.0                     | G, 2GT | P31-12M/MHIA | 1/32          |
|              | ±25                 | 0.02           | 0.05 | 0.5                     | B, 2BT | P31-12/MHIA  | 1/32          |
|              | ±50                 | 0.02           | 0.05 | 0.5                     | B, 2BT | P32-12/MHIA  | 1/32          |
|              | ±100                | 0.10           | 0.10 | 1.0                     | B, 2BT | P33-12/MHIA  | 1/16          |
|              | ±200                | 0.10           | 0.10 | 1.0                     | B, 2BT | P34-12/MHIA  | 1/8           |
|              | ±300                | 0.10           | 0.10 | 1.0                     | C, 2CT | P35-12/MHIA  | 1/5           |
|              | ±500                | 0.10           | 0.10 | 1.0                     | D, 2DT | P37-12/MHIA  | 3/10          |
|              | ±800                | 0.10           | 0.10 | 1.0                     | D, 2DT | P38-12/MHIA  | 2/5           |
|              | ±25                 | 0.10           | 0.10 | 2.0                     | G, 2GT | P31-M/MHIA   | 1/32          |
|              | ±25                 | 0.20           | 0.20 | 1.0                     | B, 2BT | P31/MHIA     | 1/32          |
| ±15          | ±25                 | 0.02           | 0.02 | 0.5                     | B, 2BT | P31-1/MHIA   | 1/32          |
|              | ±50                 | 0.20           | 0.20 | 1.0                     | B, 2BT | P32/MHIA     | 1/16          |
|              | ±50                 | 0.02           | 0.02 | 0.5                     | B, 2BT | P32-1/MHIA   | 1/16          |
|              | ±100                | 0.20           | 0.20 | 1.0                     | B, 2BT | P33/MHIA     | 1/10          |
|              | ±100                | 0.02           | 0.02 | 1.0                     | B, 2BT | P33-1/MHIA   | 1/10          |
|              | ±200                | 0.20           | 0.20 | 1.0                     | B, 2BT | P34/MHIA     | 1/5           |
|              | ±200                | 0.02           | 0.05 | 1.0                     | B, 2BT | P34-1/MHIA   | 1/5           |
|              | ±350                | 0.20           | 0.20 | 1.0                     | C, 2CT | P35/MHIA     | 1/4           |
|              | ±350                | 0.02           | 0.05 | 1.0                     | C, 2CT | P35-1/MHIA   | 1/4           |
|              | ±500                | 0.10           | 0.10 | 1.0                     | D, 2DT | P37-15/MHIA  | 3/8           |
| ±18          | ±800                | 0.10           | 0.10 | 1.0                     | D, 2DT | P38-15/MHIA  | 1/2           |
|              | ±50                 | 0.10           | 0.10 | 1.0                     | B, 2BT | P32-18/MHIA  | 1/16          |
|              | ±100                | 0.10           | 0.10 | 1.0                     | B, 2BT | P33-18/MHIA  | 1/10          |
| ±24          | ±50                 | 0.10           | 0.10 | 1.0                     | B, 2BT | P32-24/MHIA  | 1/16          |
|              | ±100                | 0.10           | 0.20 | 1.0                     | B, 2BT | P33-24/MHIA  | 1/8           |
|              | ±200                | 0.10           | 0.20 | 1.0                     | C, 2CT | P34-24/MHIA  | 1/4           |

### SELECTION GUIDE (TRIPLE) All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

| Output (Vdc) | Output Current (mA) | Regulation (%) |      | Ripple & Noise (mV rms) | Case   | Model Number  | Slow Blow (A) |
|--------------|---------------------|----------------|------|-------------------------|--------|---------------|---------------|
|              |                     | Line           | Load |                         |        |               |               |
| 5/±12        | 250/±60             | 0.02           | 0.10 | 1.0                     | C, 3CT | P51-12/MHIA   | 1/10          |
|              | 250/±120            | 0.02           | 0.10 | 1.0                     | C, 3CT | P52-12/MHIA   | 1/10          |
|              | 300/±180            | 0.02           | 0.10 | 1.0                     | C, 3CT | P53-12L/MHIA  | 1/5           |
|              | 500/±120            | 0.02           | 0.10 | 1.0                     | C, 3CT | P53-12/MHIA   | 1/5           |
|              | 1000/±150           | 0.02           | 0.10 | 1.0                     | D, 3DT | P53-1280/MHIA | 1/4           |
| 5/±15        | 250/±50             | 0.02           | 0.10 | 1.0                     | C, 3CT | P51-15/MHIA   | 1/10          |
|              | 250/±100            | 0.02           | 0.10 | 1.0                     | C, 3CT | P52-15/MHIA   | 1/10          |
|              | 300/±150            | 0.02           | 0.10 | 1.0                     | C, 3CT | P53-15L/MHIA  | 1/5           |
|              | 500/±100            | 0.02           | 0.10 | 1.0                     | C, 3CT | P53-15/MHIA   | 1/5           |
|              | 1000/±150           | 0.02           | 0.10 | 1.0                     | D, 3DT | P53-1580/MHIA | 1/4           |

#### Note:

- Case style ending with letter "T" (Chassis mounted units with terminal barrier strip) are designated by the suffix "T". Case styles A,B,C,D,G and E (PC card mounting) do not require suffixing.
- Most competitors pinouts available--contact factory.
- For 400HZ, use suffix "04" after model number.
- For wide operating temperature range, use "W" suffix after model number.

**CAUTION:** This power module is not internally fused. An input line fuse must always be used.

## MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

### Input Specifications

|                                      |                                                  |                 |
|--------------------------------------|--------------------------------------------------|-----------------|
| Input voltage range, Vac             | 105-125                                          | 50-60Hz         |
|                                      |                                                  | 400Hz available |
|                                      | See chart on pg. 5                               |                 |
|                                      | International and dual input voltages available. |                 |
| Output voltage regulation point, Vac | 90                                               |                 |
| Maximum operating voltage, Vac       | 130                                              |                 |
| Start up time, ms                    | Instantaneous                                    |                 |
| Input surge voltage, Vdc             | 1000                                             |                 |

### Output Specifications

|                                      |                          |                            |
|--------------------------------------|--------------------------|----------------------------|
| Output power, Watts                  | Varies by unit           |                            |
| Voltage accuracy, %                  | ±1                       | @ FL for Singles           |
| Line regulation, %                   | ±0.2                     | Single Output              |
| Load regulation, %                   | ±0.2                     | Single Output              |
| Ripple and noise, mV RMS             | 1 Typ.                   |                            |
| Temperature coefficient, %/°C        | ±0.02 Typ.               |                            |
| Transient response recovery time, µs | 0.02                     |                            |
| Over voltage protection, V           | 5                        | Standard                   |
|                                      | 5.75                     | Maximum                    |
|                                      | Other                    | Specify OVP on part number |
| Output current, %                    | 130                      |                            |
| Protection                           | Short circuit protection |                            |

### General Specifications

|                             |                                    |      |              |  |
|-----------------------------|------------------------------------|------|--------------|--|
| Leakage current, µA         | 2                                  |      |              |  |
| Isolation voltage, Vac      |                                    | 4000 | Input/Output |  |
| Isolation resistance, Mohms | 50                                 |      |              |  |
| Operating frequency, hz     | 50-60                              |      |              |  |
|                             | 400 available                      |      |              |  |
| Clearance/creepage          | 2 MOPP                             |      |              |  |
| Design meet safety standard | UL 60601-1 3rd Edition, 2 MOPP, CE |      |              |  |

### Environmental Specifications

|                                 |                     |          |          |          |
|---------------------------------|---------------------|----------|----------|----------|
| Operating temperature range, °C |                     | -25 Min. | +71 Max. |          |
|                                 | Optional            | -40 Min. |          | +85 Max. |
| Storage temperature range, °C   |                     | -25 Min. | +85 Max. |          |
| Cooling                         | Free Air Convection |          |          |          |
| Relative humidity, %            | Non-condensing      |          | 99       |          |

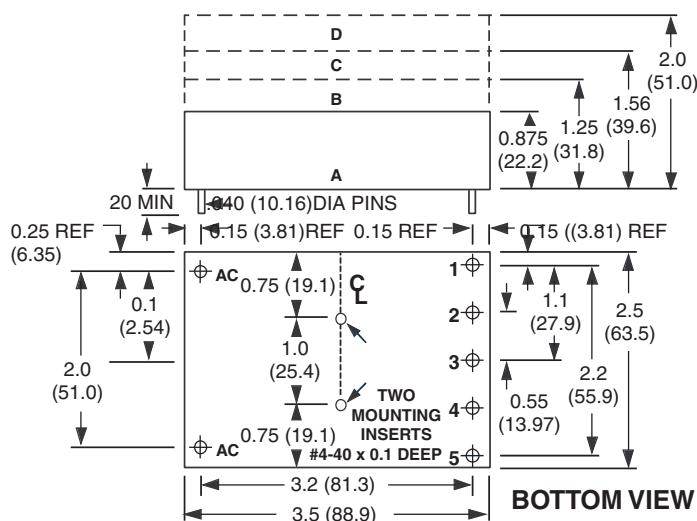
### Physical Specifications

|                  |                              |  |  |  |
|------------------|------------------------------|--|--|--|
| Case material    | Phenolic plastic             |  |  |  |
| Base material    | Fr-4                         |  |  |  |
| Potting material | Silicon, UL 94VO QMF22       |  |  |  |
| Weight           | Varies by unit, call factory |  |  |  |
| Dimensions       | See pages 5-6                |  |  |  |
| MTBF, Hrs.       | 200,000                      |  |  |  |

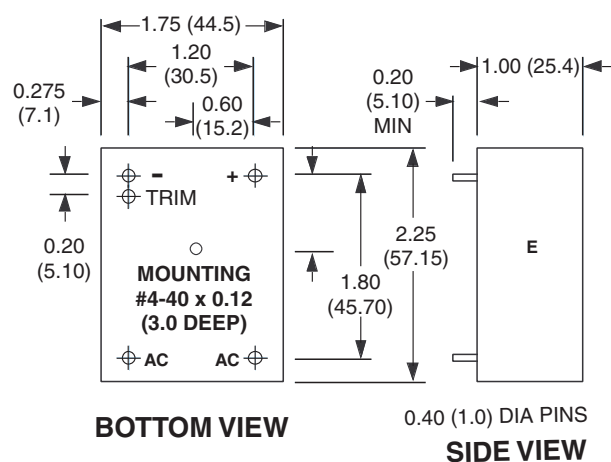
## MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

## Mechanical Drawing

### Case A, B, C, D



## Case E



## I/O CONNECTIONS

| PIN | SINGLE | DUAL   | TRIPLE      |
|-----|--------|--------|-------------|
| 1   | -Vdc*  | -Vdc*  | Com (5)     |
| 2   | No Pin | No Pin | +5Vdc       |
| 3   | Com*   | Com*   | -12/-15     |
| 4   | No Pin | No Pin | CMN (12/15) |
| 5   | +Vdc   | +Vdc   | +12/+15     |

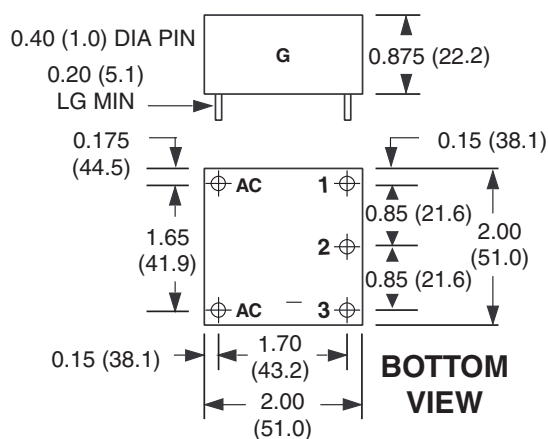
\* Vdc internally connected to COM for single output units

## OPTIONS

| INPUT VOLTAGE | SUFFIX |
|---------------|--------|
| 220Vac        | X      |
| 230Vac        | XA     |
| 240Vac        | XE     |
| 100Vac        | Q      |
| 100/220Vac    | QX     |
| 115/220       | AX     |

| OPTIONS AVAILABLE                                                                   |     |
|-------------------------------------------------------------------------------------|-----|
| Alternate Pin-Out                                                                   | 22  |
| Chassis mounting with terminal barrier strip (case styles ending with letter ("T")) | T   |
| Finger Safe Chassis Mount Terminal Barrier Strip                                    | FST |
| Wide Operating Temperature Range                                                    | W   |
| 400Hz                                                                               | 04  |

## Case G

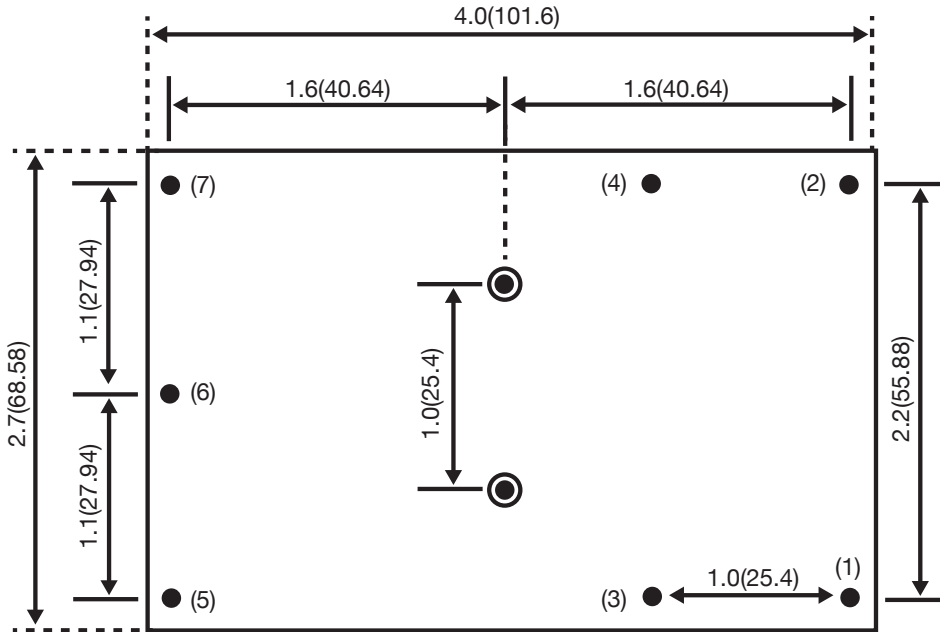


**P34-5SM: ① + 5VDC ② and ③ COM**  
**P31-M + P31-12M: ① - 15VDC ② COM**  
**③ + 15VDC**

1. All dimensions in inch (mm)
2. Most competitors pinouts available- contact factory

**Mechanical Drawing (cont.)**

**Case H**  
**Single and Dual Output PC Mount**  
**115/220Vac Input**



1. All dimensions in inch (mm)

**Connections**

|               |                         |
|---------------|-------------------------|
| PIN 1         | Start Winding 1         |
| PIN 2         | Finish Winding 1        |
| PIN 3         | Finish Winding 2        |
| PIN 4         | Start Winding 2         |
| PIN 5 + PIN 6 | Common Out for Single V |
| PIN 5         | For Dual Vout -Vout     |
| PIN 6         | For Dual Vout CMN       |
| PIN 7         | For Single/ Dual +Vout  |

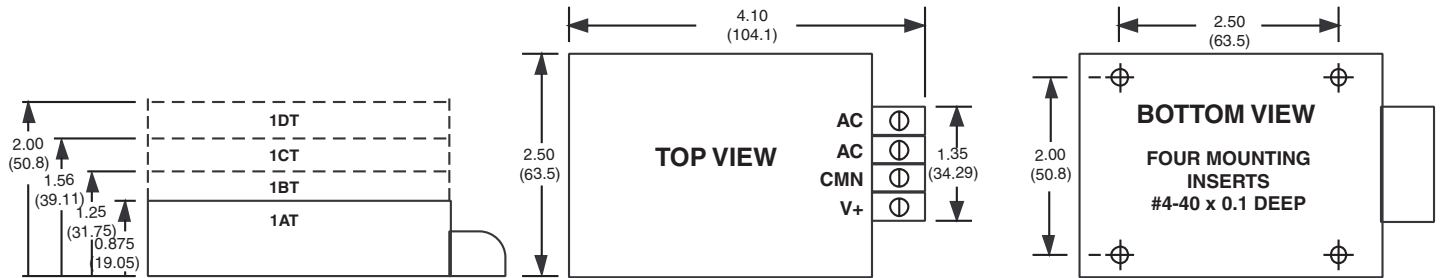
1. Case height: 2.0"

1. All dimensions in inch (mm)
2. Most competitors pinouts available-contact factory

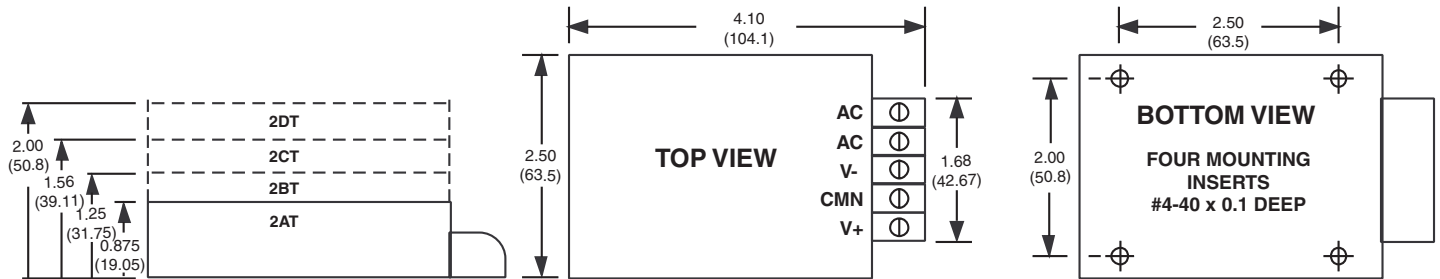
# MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

## Power Supply Options, Chassis

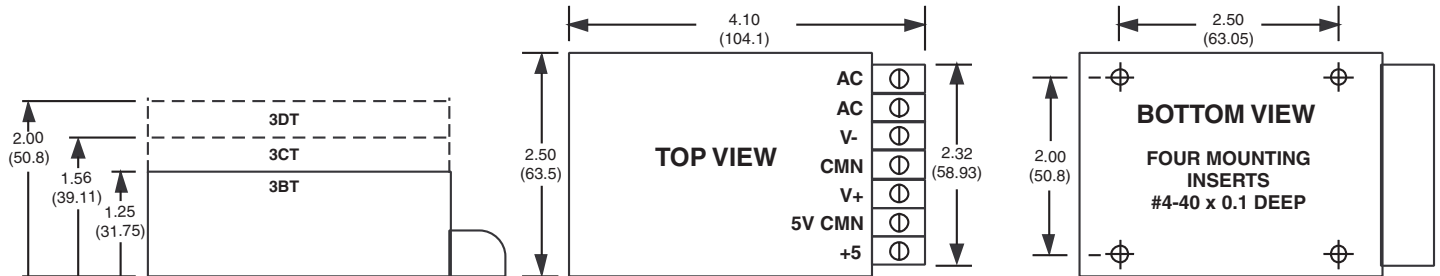
### Single Output



### Dual Output



### Triple Output

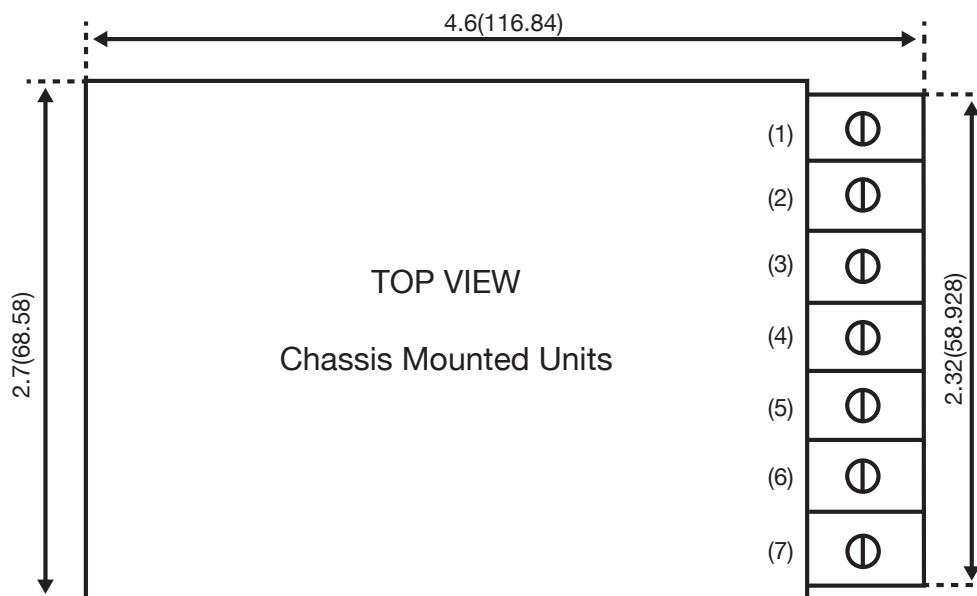


1. All dimensions in inch (mm)

# MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

## Power Supply Options, Chassis (cont.)

### Single and Dual Output Chassis Mount (Case 1HT) 115Vac Input



1. Case height: 2.0"

| Terminal | Single Voltage | Dual Voltage |
|----------|----------------|--------------|
| 1        | AC             | AC           |
| 2        | AC             | AC           |
| 3        | NC             | NC           |
| 4        | NC             | NC           |
| 5        | NC             | -V0          |
| 6        | CMN            | CMN          |
| 7        | +Vout          | +V0          |

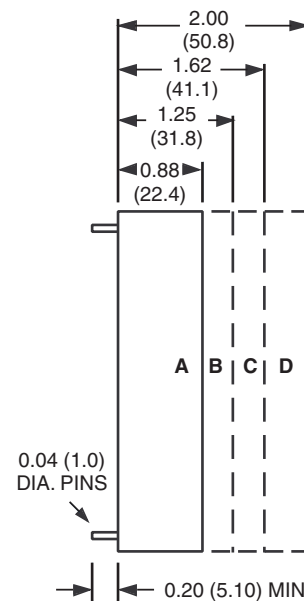
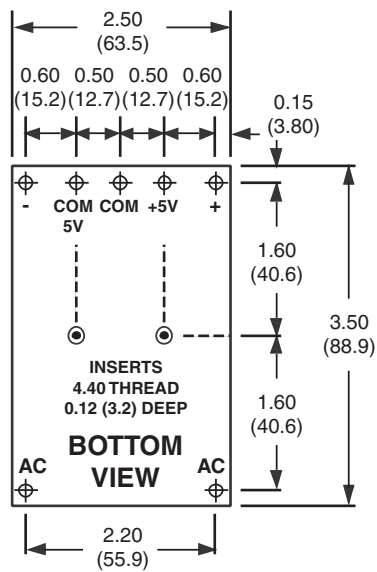
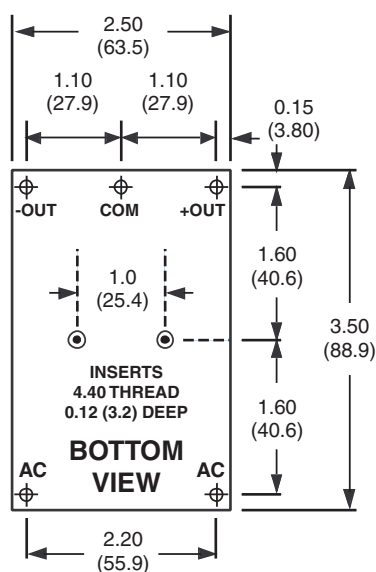
1. All dimensions in inch (mm)

## Power Supply Options (Alternate Pin-Out)

### Single and Dual Output

### Triple Output

### Side View



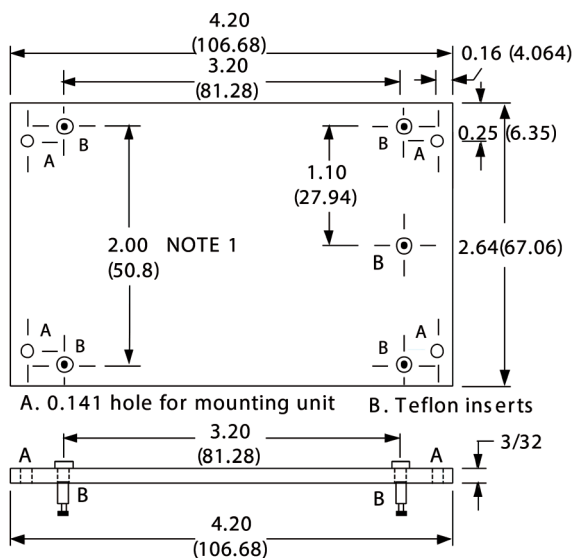
1. All dimensions in inch (mm)
2. No connection for single output units
3. To specify alternate pin-out use suffix "22"



## MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

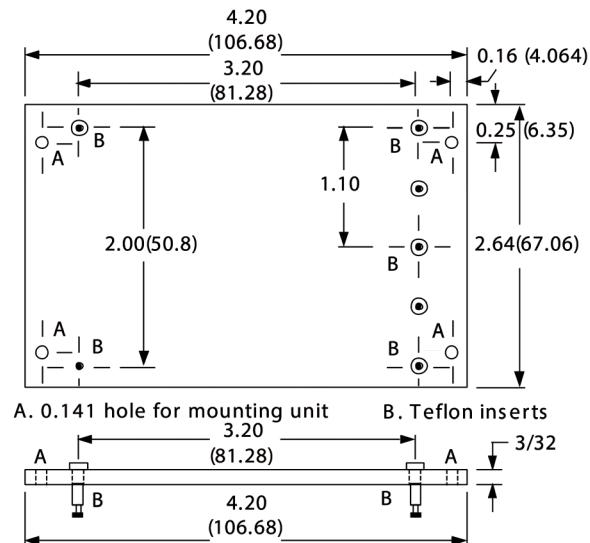
## Sockets

**S-5**



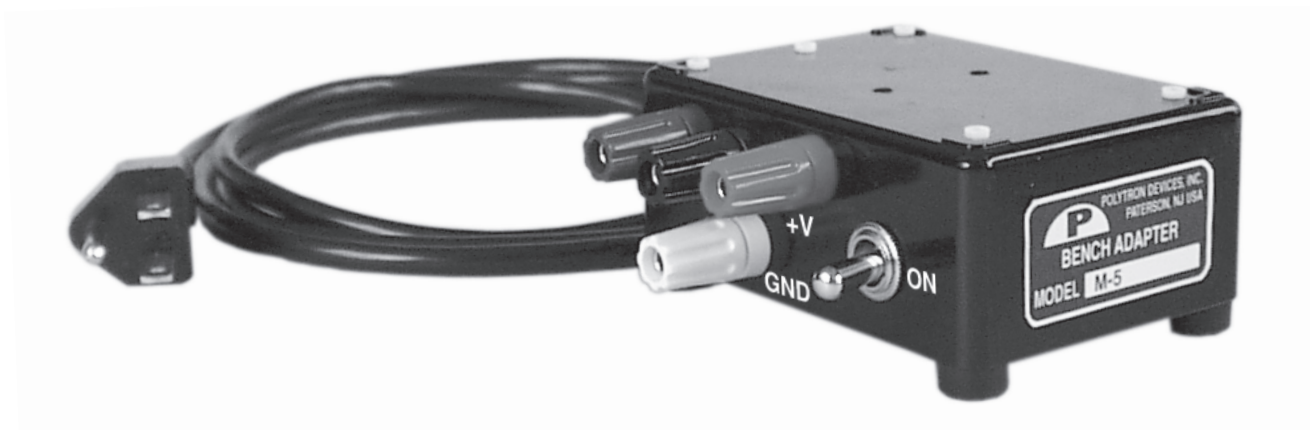
1. All dimensions in inch (mm)
2. For 2.2" AC pin spacing specify S-5/22

**S-7**



1. All dimensions in inch (mm)
2. For 2.2" AC pin spacing specify S-7/22

## Bench Adapter

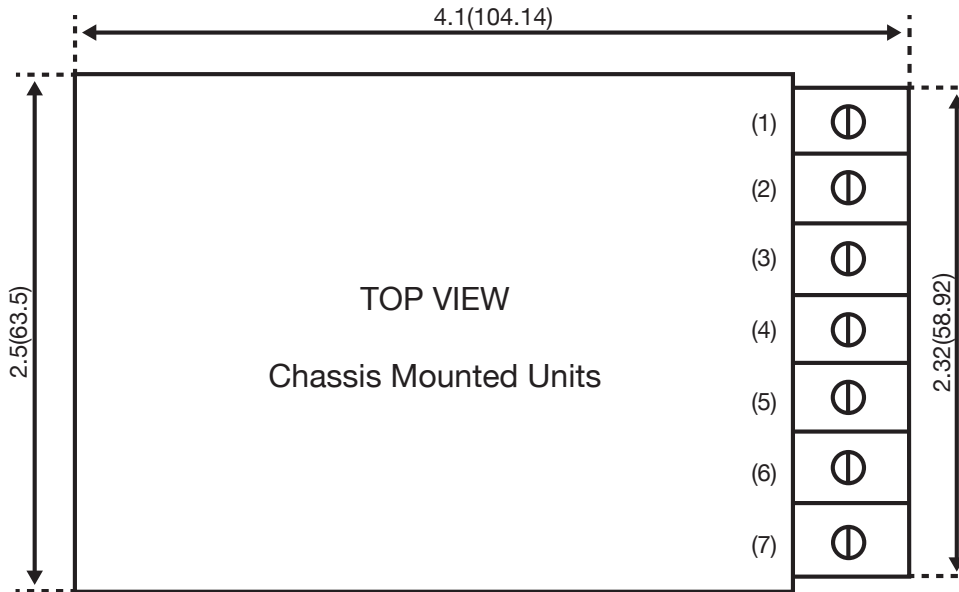


1. **Designed for all Single and Dual Linear Power Supplies in Cases A, B, C and D.**
2. **Model M-5 (2.0" AC Pin Spacing)**
3. **Model M-5/22 (2.2" AC Pin Spacing)**

## MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

### Wiring Instructions for AC-DC Linear Power Modules with Dual/Switchable AC Input Voltages

#### Single and Dual Output Chassis Mount (Case A, B, C, D) 115/220Vac Input

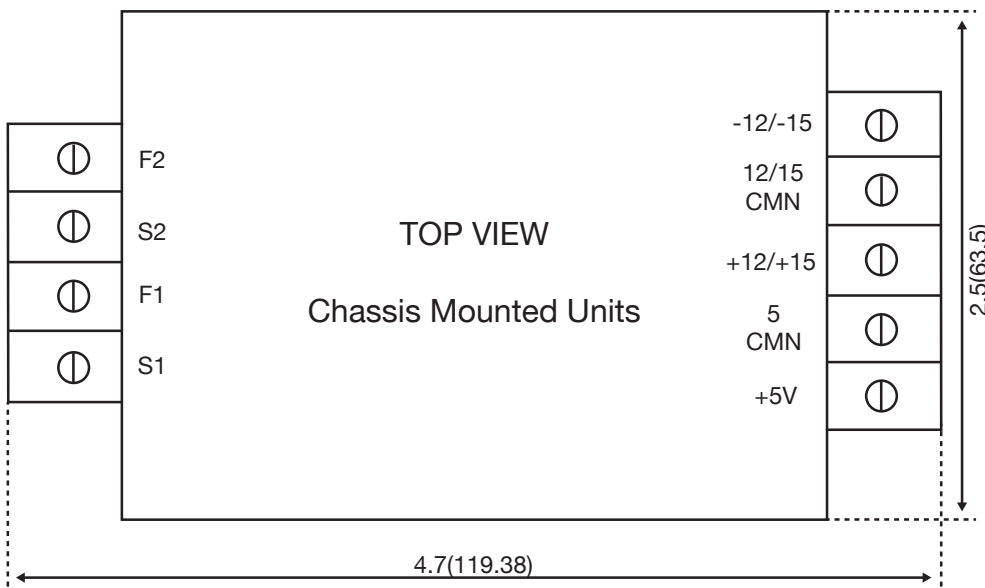


1. All dimensions in inch (mm)

1. Case Height dimensions can be: 1.25", 1.56" or 2.0" depending on model
2. For 220V Operation Jumper "f1" to S2"
3. Apply 220V Excitation Across "S1" and "F2"
4. For 115V Operation Jumper "S1" to "S2" and "F1" to F2"
5. Apply 115V excitation across "S1" and "F1"

| Terminal | Single Voltage | Dual V0 |
|----------|----------------|---------|
| 1        | S1             | S1      |
| 2        | F1             | F1      |
| 3        | S2             | S2      |
| 4        | F2             | F2      |
| 5        | NC             | -V0     |
| 6        | CMN            | CMN     |
| 7        | +Vout          | +V0     |

#### Triple Output Chassis Mount 115/220Vac Input



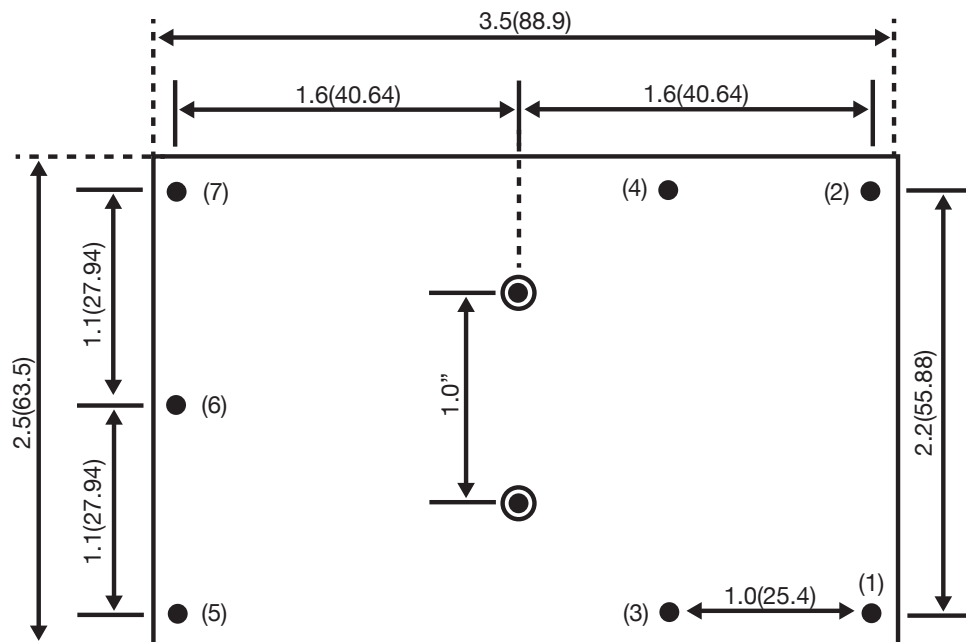
1. All dimensions in inch (mm)

1. Case Height dimensions can be: 1.56" or 2.0" depending on model
2. Wire primaries in parallel for 115Vin Series for 220Vin
3. S = Start of Primary Winding
4. F = Finish of Primary Winding
5. For lower voltage operation wire AC Input in parallel and connect S1 and S2 and F1 and F2 together and excite across
6. For higher voltage operation put winding in series, wire F1 to S2 and excite S1 and F2

## MEDICAL APPLICATIONS: P3/MHIA, P5/MHIA SERIES

### Wiring Instructions for AC-DC Linear Power Modules with Dual/Switchable AC Input Voltages (cont.)

#### Single and Dual Output PC Mount 115/220Vac Input



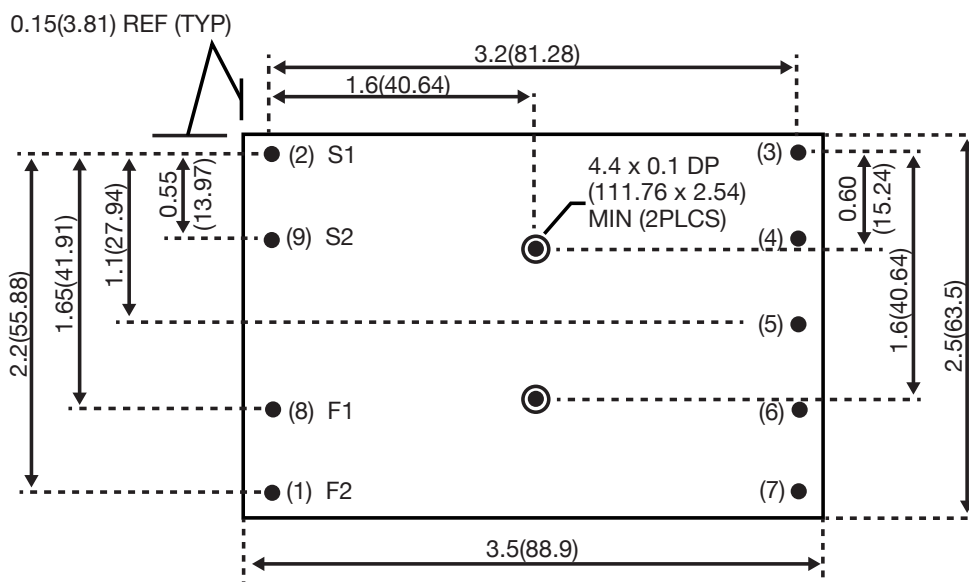
- Case height dimensions can be: 1.25", 1.56" or 2.0" depending on model

#### Connections

|               |                         |
|---------------|-------------------------|
| PIN 1         | Start Winding 1         |
| PIN 2         | Finish Winding 1        |
| PIN 3         | Finish Winding 2        |
| PIN 4         | Start Winding 2         |
| PIN 5 + PIN 6 | Common Out for Single V |
| PIN 5         | For Dual Vout -Vout     |
| PIN 6         | For Dual Vout CMN       |
| PIN 7         | For Single/ Dual +Vout  |

- All dimensions in inch (mm)

#### Triple Output PC Mount 115/220Vac Input



- Case height: 2.0"
- Pin 5-15 VDC Output -12 or -15
- Pin 6±15 VDC Return CMN 12/15
- Pin 7+15 VDC Output +12 or +15
- For 115V Input jumper 2 to 9 and 1 to 8
- For 220V Input jumper 8 to 9

#### Connections

|       |                 |
|-------|-----------------|
| Pin 1 | F/N Winding 2   |
| Pin 2 | Start Winding 1 |
| Pin 3 | 5 VDC Return    |
| Pin 4 | +5 VDC Output   |
| Pin 8 | FIN Winding 1   |
| Pin 9 | Start Winding 2 |

- All dimensions in inch (mm)