



Total Power International, Inc.

UNIVERSAL INPUT AC-DC MEDICAL APPLICATION OPEN FRAME SINGLE & MULTI-OUTPUT 19-20 WATTS INTERNAL SWITCHING POWER SUPPLIES TPMI19 SERIES



FEATURES:

- ACCOMMODATE UNIVERSAL AC SOURCES
- MEET MEDICAL STANDARD EN 60601-1/UL 2601-1
- EMI MEET EN 55011 & FCC CLASS B
- CE MARKING COMPLIANCE

SPECIFICATION

INPUT SPECIFICATION

Input Voltage: 90-264Vac typical.
Input Connector: Molex 5273 or equivalent.
Input Frequency: 47-63Hz.
Inrush Current: 16A @ 230Vac.
Input Current: 0.4A@115Vac & 0.22A@230Vac.
Dielectric Withstand: Meet IEC 60601-1.
EMI: Meet EN55011 & FCC Class B.
Hold-up Time: Typ. 14mS @ 115Vac.
 Typ. 70mS @ 230Vac.
Earth Leakage: Less than 0.10 mA.

OUTPUT SPECIFICATION

Output Voltage: See Ratings Chart.
Output Current: See Ratings Chart.
Output Wattage: Typ. 19-20W.
Output Connector: Molex 5273 or 41671.
Line Regulation: Typ. 0.2-1.0%.
Load Regulation: Main VO1 typ. $\pm 1.0\%$.
 Aux. VO2 typ. $\pm 2-3.0\%$ (Stacked).
 Aux. VO3 typ. $\pm 1-2.0\%$ (P.R.).
Noise & Ripple: Typ. 1% peak to peak.
OVP: Built-in at main output VO1.
Adjustability: Factory set.
Over Load Protection (OLP):
 Fully protected against overload or short circuit.
 Typ. 120-150% max. load.
 Consult the factory for special OLP setting.

GENERAL SPECIFICATION

Efficiency: Typ. 73%.
Switching Frequency: Typ. 67K Hz.
Circuit Topology: Fixed-frequency Flyback Circuit.
Transient Response: Output voltage returns in less than 0.2mS following a 25% load change.
Safety standard: Meet Medical standards UL2601-1/EN 60601-1 Class I.
Operating Temperature: 0 to +50°C.
Storage Temperature: -20 to +85°C.
Temperature Coefficient: Typ. 0.04% /°C.
Cooling: Free air convection.
Construction: L-Bracket open frame format.
Power Density: 3.3 Watts / Cubic Inch.

Note: Due to requests in market and advances in technology, specifications subject to change without notification.



In application



Total Power International, Inc.

OUTPUT VOLTAGE/CURRENT RATINGS CHART

SINGLE OUTPUT

| MODEL NO. | MAIN VO1@★ | | |
|----------------|------------|--------|------|
| | Typ. | Volt. | Max. |
| TPMI19-S033050 | 5.0A | +3.3V | 6.0A |
| TPMI19-S050043 | 4.3A | +5.0V | 5.0A |
| TPMI19-S120017 | 1.7A | +12.0V | 2.0A |
| TPMI19-S240009 | 0.9A | +24.0V | 1.0A |

DUAL OUTPUT

| MODEL NO. | MAIN VO1@★ | | | AUX. VO2 † or ● | | | |
|--------------|------------|-------|------|-----------------|-------|------|-----|
| | Typ. | Volt. | Max. | Typ. | Volt. | Max. | Pk. |
| TPMI19-D033I | 4.0A | +3.3V | 5.0A | 0.3A | +12V | 0.6A | 1A |
| TPMI19-D033M | 4.0A | +3.3V | 5.0A | 0.3A | +24V | 0.5A | 1A |
| TPMI19-D050M | 4.0A | +5.0V | 5.0A | 0.3A | +24V | 0.5A | 1A |
| TPMI19-D050I | 4.0A | +5.0V | 5.0A | 0.3A | +12V | 0.6A | 1A |

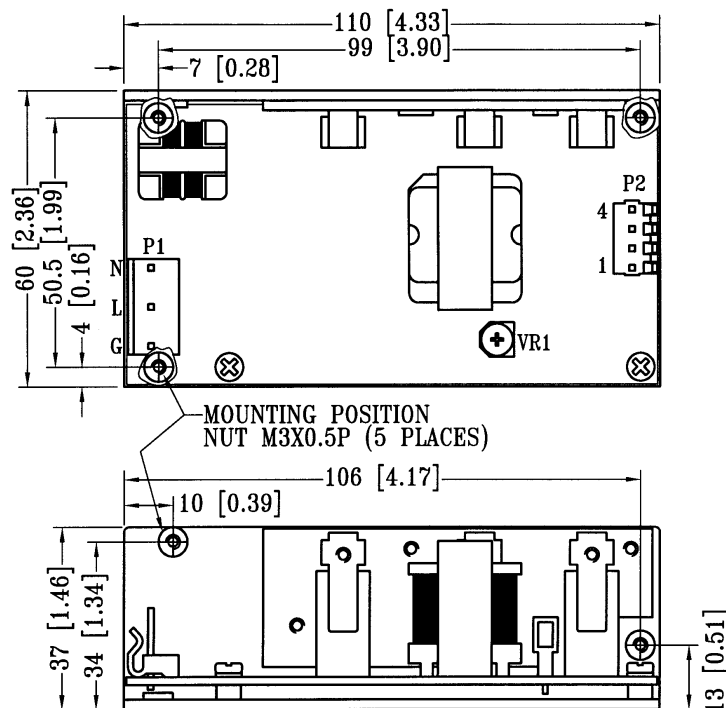
TRIPLE OUTPUT

| MODEL NO. | MAIN VO1@★ | | | AUX. VO2 † | | | | AUX. VO3 ● | | | |
|---------------|------------|-------|------|------------|-------|------|-----|------------|-------|------|-----|
| | Typ. | Volt. | Max. | Typ. | Volt. | Max. | Pk. | Typ. | Volt. | Max. | Pk. |
| TPMI19-T033II | 4.0A | +3.3V | 5.0A | 0.5A | +12V | 1.0A | 2A | 0.3A | +12V | 0.6A | 1A |
| TPMI19-T033MI | 4.0A | +3.3V | 5.0A | 0.3A | +24V | 0.5A | 1A | 0.3A | +12V | 0.6A | 1A |
| TPMI19-T050II | 3.0A | +5.0V | 4.0A | 0.5A | +12V | 1.0A | 2A | 0.3A | +12V | 0.6A | 1A |
| TPMI19-T050MI | 3.0A | +5.0V | 4.0A | 0.3A | +24V | 0.5A | 1A | 0.3A | +12V | 0.6A | 1A |
| TPMI19-T050KK | 3.0A | +5.0V | 4.0A | 0.4A | +15V | 0.8A | 1A | 0.3A | -15V | 0.6A | 1A |

Symbol: "★" OVP built-in. "@@" Adjustable. "●" Installed with Post Regulator (P.R.). "†" Stacked-on main O/P.

MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 373.0g (13.2 Oz.)



INPUT & OUTPUT CONNECTORS PIN ASSIGNMENT

| ASSIGNMENT | AC INPUT | | | SINGLE OUTPUT | | | DUAL OUTPUT | | | | TRIPLE OUTPUT | | | |
|-------------|----------|------|------|---------------|--------|---------|-------------|------|------|---------|---------------|------|------|---------|
| | AC-L | AC-N | AC-G | VO1 | N/A | DC COM. | VO1 | VO2 | N/A | DC COM. | VO1 | VO2 | VO3 | DC COM. |
| CNTR & PIN# | P1-L | P1-N | P1-G | P2-2 | P2-3,4 | P2-1 | P2-2 | P2-4 | P2-3 | P2-1 | P2-2 | P2-3 | P2-4 | P2-1 |

Mating connector: P1: Molex 5195 or 5239 series. P2: Molex 5195 or 5239 series/ 3069 series.