TMC500F Series
450-500 Watts Class II Medical Power Supplies

FEATURES
- Universal 80 to 264 VAC Input
- BF Rated Class II Insulation
- Designed for Home Health Care Applications
- Low Leakage Current
- 5V/2A Standby Power
- PFD, Remote On/Off & Remote Sense

INPUT SPECIFICATIONS
- Input Voltage Range .............. 80-264 VAC
- Input Frequency ..................... 47-63 Hz
- Power Derating ...................... Derate linearly from 100% @ 90V to 90% @ 85V and 85% @ 80V
- Input Current .......................... 5.2A rms @ 115 VAC, 60 Hz, 2.6A rms @ 230 VAC, 50 Hz
- Inrush Current ....................... 30A @ 115 VAC, or 60A @ 230 VAC, at 25°C cold start
- Touch Current ........................ 100 µA max. @ 264 VAC, 63Hz

OUTPUT SPECIFICATIONS
- Output Power Ratings ........... See table
- Ripple and Noise* .................. 1% peak to peak max.
- Line Regulation ..................... ±0.5% max. @ full load
- Output Tolerance ................... ±2%
- Over Voltage Protection ......... Set at 112-140% of its nominal output voltage
- Over Current Protection ............ Protected to short-circuit conditions
- Thermal Shutdown ................... Protected to over temperature conditions
- Temperature Coefficient ........... ±0.04%/°C max.
- Remote Sense ......................... Compensation for cable losses up to 0.5V
- Transient Response ................ Max. excursion of 4% or better on all models, recovering to 1% of final value within 500 µs after a 25% step load change
- Standby Power ....................... 5V@2A max.
- Fan Power/Aux. Output .......... 12V@300mA max.

GENERAL SPECIFICATIONS
- Switching Frequency .............. 85 KHz typical
- Efficiency ............................ 92% typical
- Operating Altitude .............. 5,000 meters max.
- Hold-up Time ....................... 20 ms min. @ 110 VAC
- Operating Temperature ........... -10°C to +70°C
- Derating .................................. Derate from 100% @ +50°C linearly to 50% @ +70°C; applicable to convection and forced-air cooling conditions
- Storage Temperature .............. -40°C to +85°C
- Relative Humidity ................. 5% to 95% non-condensing
- Withstand Voltage ................. 4,000 VAC, input-output (2MOPP), 4,000 VAC, input-case (2MOPP), 1,500 VAC, output-case (1MOPP)
- MTBF .................................... 100 kHrs minimum at full load, 25°C ambient, calculated per MIL-HDBK-217F

STANDARDS & COMPLIANCE
- UL/IEC/EN 60601-1-2, Ed. 4 .. EMC & Immunity Performance
- EN55011 ................................ Class B conducted, Class B radiated
- FCC .................................... Class B conducted, Class B radiated
- VCCI ................................... Class B conducted, Class B radiated
- EN61000-3-2 ..................... Harmonic distortion, Class A & D
- EN61000-3-3 ..................... Line flicker
- EN61000-4-2 ..................... ESD, ±15 KV air and ±8 KV contact
- EN61000-4-3 ..................... Radiated immunity, 10V/m
- EN61000-4-4 ..................... Fast transient/burst, ±2 KV
- EN61000-4-5 ..................... Surge, ±1 KV diff., ±2 KV com.
- EN61000-4-6 ..................... Conducted immunity, 10 Vrms
- EN61000-4-8 ..................... Magnetic field immunity, 30A/m
- EN61000-4-11 .................. Voltage dip immunity, 30% reduction for 500 ms, 100% reduction for 10 ms

NOTES:
1. Standard form factor is PCB. Add suffix “B” for U-bracket and change suffix to “C” for enclosed frame with cooling fan, e.g. TMC500F-24C.
2. R&N is maximum peak-to-peak voltage value measured at output within 20 MHz bandwidth, at rated linevoltage and output load ranges, and with a 10µF tantalum capacitor in parallel with a 0.1µF ceramic capacitor across the output.

MODELS LIST

<table>
<thead>
<tr>
<th>Product No.</th>
<th>Voltage @ Convection</th>
<th>@ 30 CFM Forced Air</th>
<th>Ripple &amp; Noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMC500F-12</td>
<td>12V</td>
<td>20.83A</td>
<td>250W</td>
</tr>
<tr>
<td>TMC500F-15</td>
<td>15V</td>
<td>16.67A</td>
<td>250W</td>
</tr>
<tr>
<td>TMC500F-18</td>
<td>18V</td>
<td>13.89A</td>
<td>250W</td>
</tr>
<tr>
<td>TMC500F-24</td>
<td>24V</td>
<td>10.42A</td>
<td>250W</td>
</tr>
<tr>
<td>TMC500F-28</td>
<td>28V</td>
<td>8.93A</td>
<td>250W</td>
</tr>
<tr>
<td>TMC500F-30</td>
<td>30V</td>
<td>8.34A</td>
<td>250W</td>
</tr>
<tr>
<td>TMC500F-36</td>
<td>36V</td>
<td>6.94A</td>
<td>250W</td>
</tr>
<tr>
<td>TMC500F-48</td>
<td>48V</td>
<td>5.21A</td>
<td>250W</td>
</tr>
<tr>
<td>TMC500F-57</td>
<td>57V</td>
<td>4.38A</td>
<td>250W</td>
</tr>
</tbody>
</table>

MORE FEATURES
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MECHANICAL SPECIFICATIONS

NOTES:
1. Dimensions: inches [mm]
2. Tolerance: 0.02 [0.5] maximum
3. Input connector P1: Dinkle terminal P/N DT-35C-B01W-02 with M3, nickel plated screws.
4. Output connectors P2 & P3: M4 x 0.7 screw connectors
5. Output connector P4: Molex header 87833-08 or equivalent, mating with Molex housing 51110-0850 or equivalent.
6. Fan connector P5: JST header S2B-ZR-3.4 or equivalent, mating with JST housing ZHR-2 or equivalent.
7. Weight: 1 KG approx. (2.23 lbs) for U-bracket form factor, 1.14 KGS approx. (2.52 lbs) for enclosed form factor.
8. Maximum penetration depth of fixing screws is 4mm from the outer chassis surface.

CONNECTOR | PIN | FUNCTION
--- | --- | ---
P1 | 1 | LIVE
| 2 | NEUTRAL
P2 | +V
P3 | COMMON RETURN
P4 | 1 | COMMON RETURN
| 2 | +V SENSE
| 3 | -V SENSE
| 4 | PFD
| 5 | INHIBIT
| 6 | +5V STANDBY
| 7 | +5V STANDBY
| 8 | COMMON RETURN
P5 | 1 | COMMON RETURN
| 2 | +12V FAN

CONTROL SIGNALS:
PFD | TTL high for normal operation, low upon loss of input power, turn-on delay time 100-1000ms, turn-off delay time 1 ms minimum
INHIBIT | Requires an external TTL high level signal to inhibit outputs for standard models.