

PM650 Series

650-700 WATTS SINGLE & MULTIPLE OUTPUT AC/DC MEDICAL

Features

- EN61000-3-2 class A and D compliant.
- Power factor 0.98 typical.
- Remote sense on output 1 and output 2.
- Overvoltage protection.
- Overcurrent protection.
- Power fail detection (PFD) signal.
- 100% burn-in at full rated load.
- Remote inhibit - TTL high disables output.
- Short circuit protection
- Thermal protection.



Specifications

INPUT

| | |
|-----------------|---|
| Input Voltage | 90-264Vac |
| Frequency | 47Hz–67Hz |
| Input Current | 7.1A (rms) for 115Vac. 3.5A (rms) for 230Vac. |
| Leakage current | 100µA max. @ 115Vac. 60Hz. 165µA max. @ 230Vac. 50Hz. |
| Isolation | Input – Output: 4000VAC Input – Ground: 1500VAC Output – Ground: 500VAC |
| Inrush Current | 40A @ 115V, 80A @ 230V |

OUTPUT

| | |
|-------------------------|--|
| Output Voltage | See table |
| Output Current | See table |
| Ripple & Noise | 2% peak to peak |
| Line Regulation | ±0.2% maximum at full load. |
| Load Regulation | See table |
| Transient Response | Max. deviation 4% recovering to 1% within 500µs after 25% load charge |
| Overvoltage Protection | Provided on V1 only. Set at 115%–140% of nominal. |
| Overcurrent Protection | All outputs protected for short circuit conditions |
| Temperature Coefficient | All outputs ±0.04% per °C. |
| Holdup Time | Typically 12ms at 110VAC. |
| PFD Signal | Power fail detection signal. TTL logic low upon loss of input power. |
| Remote inhibit | Requires an external TTL high level signal to inhibit outputs for standard models. |

OPERATING

| | |
|------------|--------------------|
| MTBF | 300,000 hrs @ 25°C |
| Efficiency | 70% minimum. |

ENVIRONMENTAL

| | |
|-----------------------|-----------------------|
| Operating Temperature | 0°C to 70°C |
| Derating | Derate to 50% at 70°C |
| Storage Temperature | -40°C to 85°C |
| Relative Humidity | 5%–95% non-condensing |

STANDARDS AND APPROVALS

| | |
|------------------|--|
| Safety standards | UL2601-1, CSA C22.2, TUV EN60601-1 |
| C-Tick | AS/NZS CISPR11 Group 1, Class A |
| EMC standards | EN60601-1-2: 2001, EN61000-3-2, -3, EN61000-4-2, -3, -4, -5, -6, -8, -11 |
| EMI standards | EN55011 Class B |

MECHANICAL

| | |
|------------|------------------|
| Dimensions | 266.7x127x63.5mm |
| Weight | TBA. |

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Selection Table

| MODEL NUMBER | OUTPUT #1 | | | | OUTPUT #2 | | | | OUTPUT #3 | | | | MAX. |
|--------------|-----------|-------|-------|-----|-----------|------|------|-----|-----------|------|------|-----|--------------|
| | VNOM | IMIN | IMAX | TOL | VNOM | IMIN | IMAX | TOL | VNOM | IMIN | IMAX | TOL | OUTPUT POWER |
| PM650-12 | 12V | 0A | 54.2A | 2% | | | | | | | | | 650W |
| PM650-13 | 15V | 0A | 43.4A | 2% | | | | | | | | | 650W |
| PM650-14 | 24V | 0A | 27.1A | 2% | | | | | | | | | 650W |
| PM650-15 | 27V | 0A | 24.1A | 2% | | | | | | | | | 650W |
| PM650-16 | 30V | 0A | 21.7A | 2% | | | | | | | | | 650W |
| PM650-18 | 48V | 0A | 14.9A | 2% | | | | | | | | | 700W |
| PM650-20 | 24V | 1.5A | 18A | 3% | 12V | 1.2A | 22A | 5% | | | | | 650W |
| PM650-21 | 24V | 1.5A | 18A | 2% | 15V | 1.0A | 18A | 5% | | | | | 650W |
| PM650-22 | 48V | 0.75A | 9A | 2% | 24V | 0.6A | 12A | 5% | | | | | 650W |
| PM650-23 | 48V | 0.75A | 9A | 2% | 12V | 1.2A | 22A | 5% | | | | | 650W |
| PM650-24 | 48V | 0.75A | 9A | 2% | 15V | 1.0A | 18A | 5% | | | | | 650W |
| PM650-30 | 24V | 1.5A | 18A | 2% | 12V | 1.2A | 22A | 5% | 3.3V | 0A | 10A | 3% | 650W |
| PM650-31 | 24V | 1.5A | 18A | 3% | 15V | 1.0A | 18A | 5% | 3.3V | 0A | 10A | 3% | 650W |
| PM650-32 | 24V | 1.5A | 18A | 2% | 12V | 1.2A | 22A | 5% | 5.1V | 0A | 10A | 3% | 650W |
| PM650-33 | 24V | 1.5A | 18A | 2% | 15V | 1.0A | 18A | 5% | 5.1V | 0A | 10A | 3% | 650W |
| PM650-34 | 48V | 0.75A | 9A | 2% | 12V | 1.2A | 22A | 5% | 3.3V | 0A | 10A | 3% | 650W |
| PM650-35 | 48V | 0.75A | 9A | 2% | 15V | 1.0A | 18A | 5% | 3.3V | 0A | 10A | 3% | 650W |
| PM650-36 | 48V | 0.75A | 9A | 2% | 12V | 1.2A | 22A | 5% | 5.1V | 0A | 10A | 3% | 650W |
| PM650-37 | 48V | 0.75A | 9A | 2% | 15V | 1.0A | 18A | 5% | 5.1V | 0A | 10A | 3% | 650W |

- NOTES: (1) Add suffix "B" for U-bracket format and "C" for enclosed format.
 (2) All outputs are floating. It can be connected externally for positive or negative output.
 (3) Output 1 and 2 can be adjusted within $\pm 5\%$ of their nominal voltage.
 (4) Output 3 can be adjusted within $\pm 15\%$ of their nominal voltage.
 (5) 650 watts for "C" version with a cover and fan assembly 325 watts for "B" version without moving air (maximum current of output #1 & #2 derated to 70%), or 450 watts with 50 CFM forced air provided by user.
 (6) Single output models may be operated at no-load. At no-load, output voltage tolerance increases to 10%.

Pin Chart

| MODEL/PIN | P1(AC) | | | P2 | P3 | P4 | | | | | | | | | | |
|----------------------------------|----------------------------------|------|---------|--------|----|----|----------------------|---------|---------|-----|-------------|-------------|------|------|----------|-----|
| | 1 | 2 | 3 | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| PM650-12 PM650-14 PM650-17 | PM650-13 PM650-16 PM650-18 | Live | Neutral | Ground | +V | -V | Signal Ground (-V01) | +S(V01) | -S(V01) | PFD | Inhibit +ve | Inhibit -ve | N.C. | N.C. | 0V (Fan) | Fan |

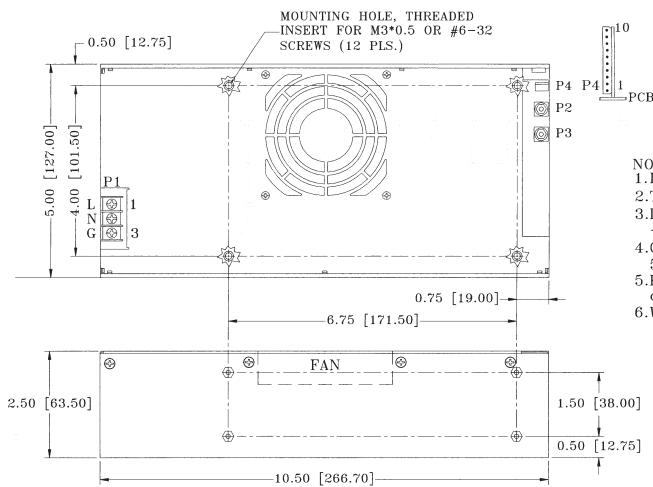
| MODEL/PIN | P1(AC) | | | P2 | P3 | P4 | | | | | | | | | | |
|--|--|------|---------|--------|------|------|----------------------|---------|---------|-----|---------|-------------|---------|---------|----------|-----|
| | 1 | 2 | 3 | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| PM650-20 PM650-22 PM650-24 PM650-31 PM650-33 PM650-35 PM650-37 | PM650-21 PM650-23 PM650-30 PM650-32 PM650-34 PM650-36 | Live | Neutral | Ground | +V01 | +V01 | Signal Ground (-V01) | +S(V01) | -S(V01) | PFD | Inhibit | Inhibit -ve | -S(V02) | -S(V02) | 0V (Fan) | Fan |

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| | | P5 | | | | | |
|-----------|----------|-----|-----|-----|-----|------|------|
| MODEL/PIN | | 1 | 2 | 3 | 4 | 5 | 6 |
| PM650-20 | PM650-21 | | | | | | |
| PM650-22 | PM650-23 | +V2 | +V2 | -V2 | -V2 | N.C. | N.C. |
| PM650-24 | | | | | | | |
| PM650-30 | PM650-31 | | | | | | |
| PM650-32 | PM650-33 | +V2 | +V2 | -V2 | -V2 | +V3 | -V3 |
| PM650-34 | PM650-35 | | | | | | |
| PM650-36 | PM650-37 | | | | | | |

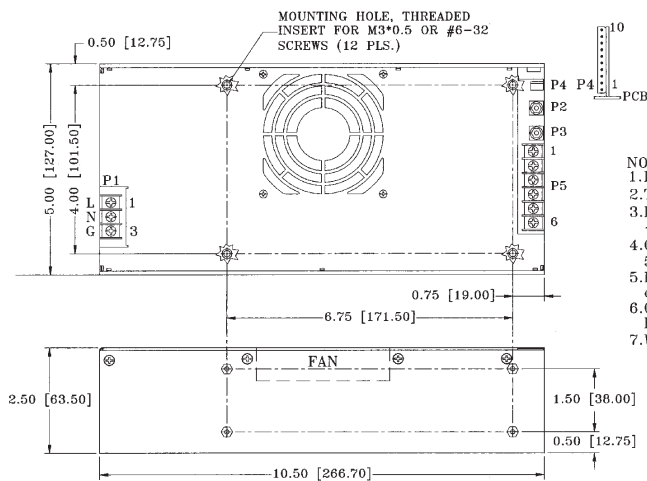
Technical Illustration



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT-35-B01W -03 screws are M3, Nickel plated.
4. Connector P4 mates with Molex housing 50-37-5103 and pins 5263.
5. P2,P3: Output studs are nickel plated copper, M5*0.8mm threaded.
6. Weight:

SINGLE



NOTES:

1. Dimensions shown in inch [mm]
2. Tolerance 0.02 [0.5] maximum
3. Input connector P1 is Dinkle DT-35-B01W -03 screws are M3, Nickel plated.
4. Connector P4 mates with Molex housing 50-37-5103 and pins 5263.
5. P2,P3: Output studs are nickel plated copper, M5*0.8mm threaded.
6. Output connector P5 is Dinkle DT-35-B01W-06 screws are M3, Nickel plated.
7. Weight:

MULTIPLE