Wall Industries, Inc.

# PSMP10 SERIES

**85~264VAC (125~373VDC) Input Voltage Range**
**Single Outputs, Isolation Class II**
**10 Watts, Open Frame**
**Medical AC/DC Switching Power Supplies**

E324816

## FEATURES

- Isolation Class II
- 2.56” x 1.77” x 0.87” Open Frame Package
- Single Outputs
- 100% Full Load Burn-in Tested
- Cooling by Free Air Convection
- ±10% Voltage Adjustment
- RoHS Compliant
- Energy Star Compliant
- Green Design, No-Load Power Consumption < 0.3W
- Withstand 2G Vibration Test
- Universal Input Voltage: 85~264VAC or 125~373VDC
- 10 Watts Output Power
- All Using 105°C Long Life Electrolytic Capacitors
- -20°C ~ +70°C Wide Operating Temperature Range
- Short Circuit, Over Load, Over Voltage, and Brown-out (Low AC Input Voltage) Protection
- UL60601-1, TUV EN60601-1, and IEC60601-1 Medical Approvals

## DESCRIPTION

The PSMP10 series of Medical AC/DC switching mode power supplies provides 10 Watts of continuous output power in a 2.56” x 1.77” x 0.87” open frame package. This series consists of 5V, 12V, 15V, and 24VDC output models with a universal input voltage range of 85~264VAC or 125~373VDC. These power supplies are protected against short circuit, over load, over voltage, and brown-out (low AC input voltage) conditions and have an MTBF of 210,200 hours using MIL-HDBK-217F. This series also has UL60601-1, TUV EN60601-1, and IEC60601-1 medical approvals. All models have been 100% full load burn-in tested and are RoHS and Energy Star compliant.

# SPECIFICATIONS: PSMP10 Series

All specifications are based on 25°C, Nominal Input Voltage, and Maximum Output Current unless otherwise noted.
We reserve the right to change specifications based on technological advances.

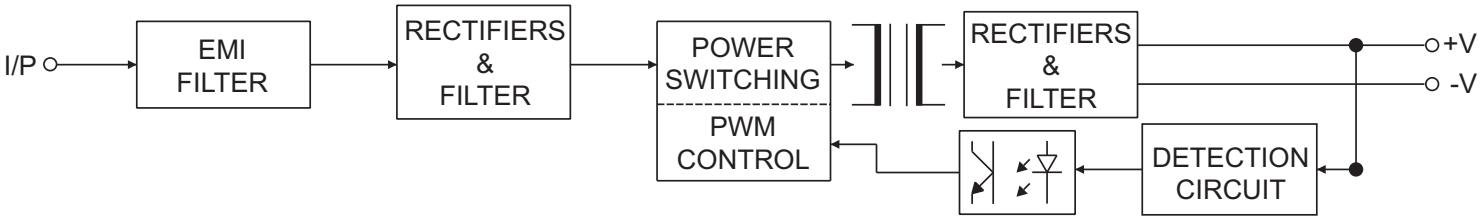
| SPECIFICATION | | TEST CONDITIONS | | Min | Nom | Max | Unit |
|---|---|---|---|---|---|---|---|
| **INPUT SPECIFICATIONS** | | | | | | | |
| Input Voltage Range | | AC Input Voltage Range | | 85 | | 264 | VAC |
| | | DC Input Voltage Range | | 125 | | 373 | VDC |
| Input Frequency | | | | 47 | | 63 | Hz |
| Input Current | Low Line | Full Load, Vin = 115VAC | | | 0.25 | | A |
| | High Line | Full Load, Vin = 230VAC | | | 0.15 | | |
| Inrush Current | Low Line | Cold Start, Vin = 115VAC | | | 25 | | A |
| | High Line | Cold Start, Vin = 230VAC | | | 45 | | |
| No Load Power Consumption | | | | | | 0.3 | W |
| **OUTPUT SPECIFICATIONS** | | | | | | | |
| Output Voltage | | | | See Table | | | |
| Voltage Tolerance | | 5VDC output model | | -2 | | +2 | % |
| | | 12V, 15V, & 24VDC output models | | -1 | | +1 | |
| Voltage Adjustment Range | | | | -10 | | +10 | % |
| Load Regulation | | 5VDC output model | 0% to 100% rated load | -1 | | +1 | % |
| | | 12V, 15V, & 24VDC output models | | -0.5 | | +0.5 | |
| Line Regulation | | Low Line to High Line at rated load | | -0.5 | | +0.5 | % |
| Output Power | | | | 0 | | 10 | W |
| Output Current | | | | See Table | | | |
| Ripple & Noise *(See Note 1)* | | | | See Table | | | |
| Hold-Up Time | Low Line | Full Load, Vin = 115VAC | | | 25 | | ms |
| | High Line | Full Load, Vin = 230VAC | | | 100 | | |
| Setup Time *(See Note 3)* | | Full Load, Vin = 115/230VAC | | | 100 | | ms |
| Rise Time | | Full Load, Vin = 115/230VAC | | | 25 | | ms |
| Temperature Coefficient | | 0~50°C | | -0.03 | | +0.03 | %/°C |
| **PROTECTION** | | | | | | | |
| Over Voltage Protection | | Latch-off mode | | 115 | | 145 | % |
| Over Load Protection | | Hiccup mode, recovers automatically after fault condition is removed | | 110 | | | % |
| Short Circuit | | | | yes | | | |
| Brown-out (Low AC Input Voltage) | | | | yes | | | |
| **GENERAL SPECIFICATIONS** | | | | | | | |
| Efficiency | | Vin = 230VAC | | See Table | | | |
| Withstand Voltage | | Input to output | | 4000 | | | VAC |
| Isolation Resistance | | 500VDC | | 100 | | | MΩ |
| **ENVIRONMENTAL SPECIFICATIONS** | | | | | | | |
| Operating Temperature | | With derating (see derating curve) | | -20 | | +70 | °C |
| Storage Temperature | | | | -40 | | +85 | °C |
| Operating Humidity | | Non-condensing | | 20 | | 90 | % RH |
| Storage Humidity | | | | 10 | | 95 | % RH |
| Vibration | | 10~500Hz, 2G 10min/1cycle, period for 60 min each along X, Y, and Z axes | | | | | |
| Cooling | | | | Free air convection | | | |
| MTBF | | MIL-HDBK-217F | | 210,200 hours | | | |
| **PHYSICAL SPECIFICATIONS** | | | | | | | |
| Weight | | | | Approximately 1.6oz (45g) | | | |
| Dimensions (L x W x H) | | | | 2.56 x 1.77 x 0.87 inches<br>(65 x 45 x 22 mm) | | | |
| **SAFETY & EMC** | | | | | | | |
| Safety Approvals | | UL60601-1, TUV EN60601-1, and IEC60601-1 | | | | | |
| EMI Conduction & Radiation | | EN55011: 2007+A2: 2007 Class B | | | | | |
| Harmonic Current | | EN61000-3-2: 2006 Class A, EN61000-3-3: 1995+A1: 2001+A2: 2005 | | | | | |
| EMS Immunity | | EN60601-1-2: 2001+A1: 2006, IEC61000-4-2,3,4,5,6,8,11 light industry level, criteria A | | | | | |

| MODEL SELECTION TABLE | | | | | | |
|---|---|---|---|---|---|---|
| **Model Number** | **Input Voltage Range** | **Output Voltage** | **Output Current** | **Ripple & Noise** | **Efficiency** | **Output Power** |
| PSMP-10-05 | 85 ~ 264 VAC or 125 ~ 373 VDC | 5 VDC | 2A | 80mVp-p | 77% | 10W |
| PSMP-10-12 | | 12 VDC | 0.83A | 150mVp-p | 79% | 10W |
| PSMP-10-15 | | 15 VDC | 0.66A | 150mVp-p | 80% | 10W |
| PSMP-10-24 | | 24 VDC | 0.42A | 240mVp-p | 82% | 10W |

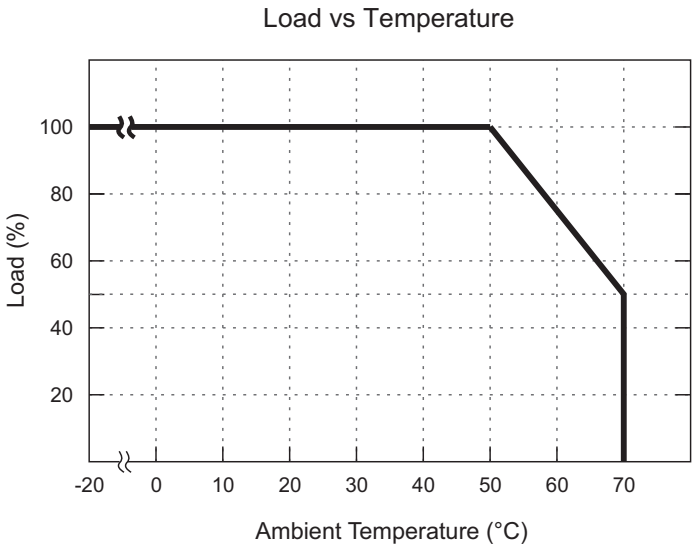
## NOTES

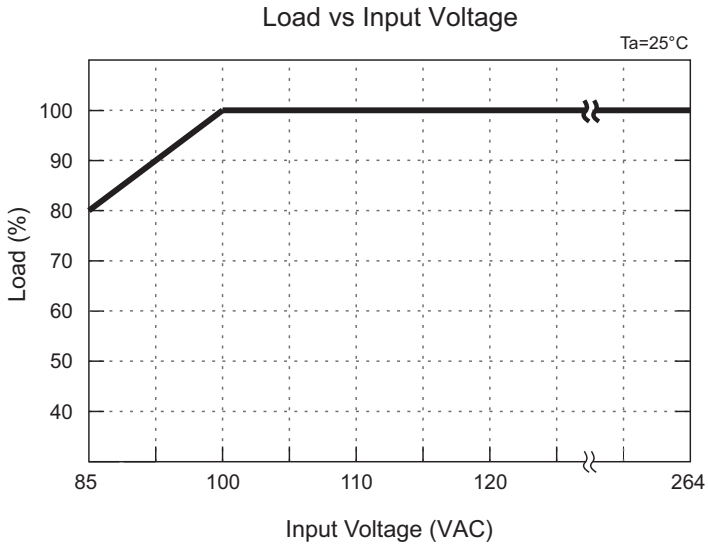
1. Ripple & noise is measured at 20MHz bandwidth by using 12" twisted pair-wire terminated with 0.1µF and 47µF capacitors in parallel.
2. Tolerance includes set up tolerance, line regulation, and load regulation.
3. The length of the setup time is measured a first cold start. Turning the power supply ON and OFF very quickly may lead to an increase in the setup time.
4. The power supply is considered a component which will be installed into final equipment. The final equipment must be re-confirmed that it still meets EMC directives.

## BLOCK DIAGRAM

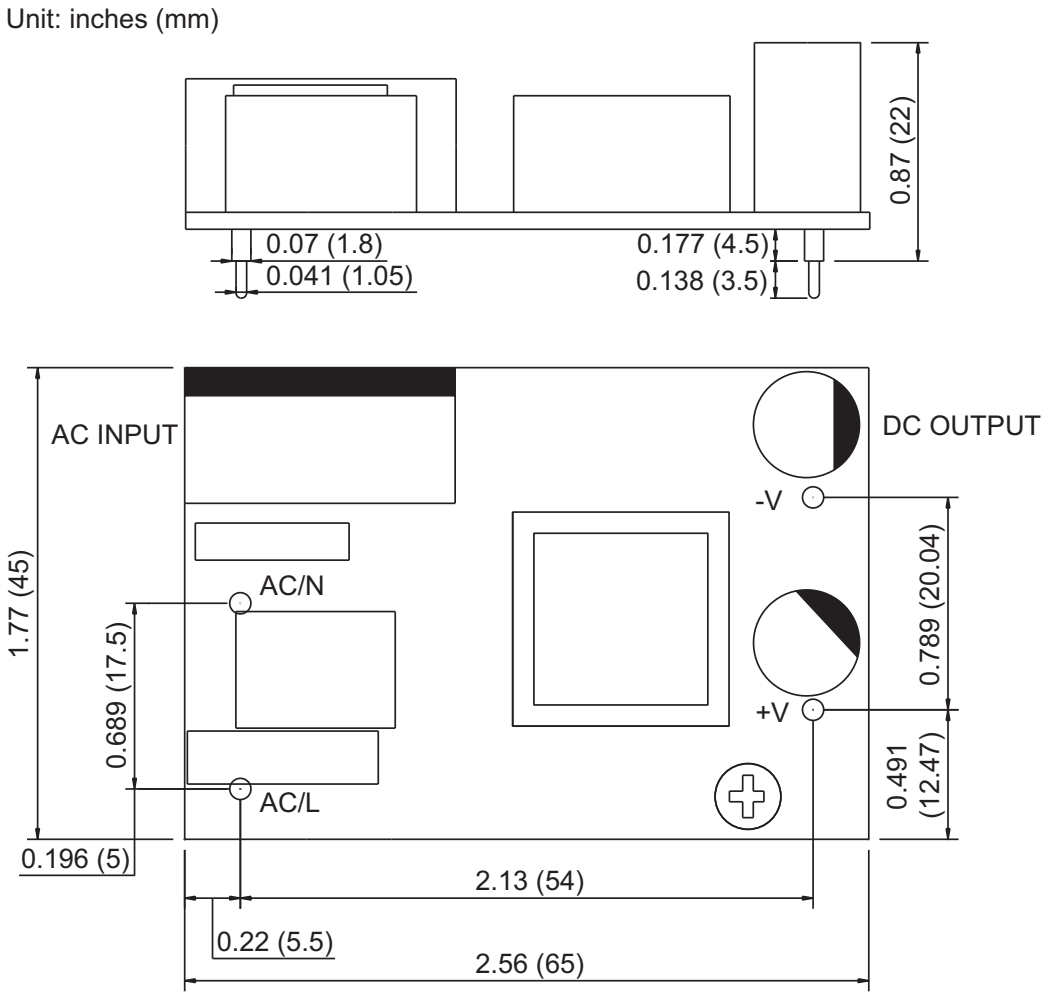



## DERATING CURVE




## MECHANICAL DRAWING




## COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact **Wall Industries** for further information:

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