

PM900 SERIES

Single and dual output



[2 YEAR WARRANTY]

- Extremely tight line and load regulation
- Short circuit protection
- Pi input filter
- Low ripple output current
- Conducted noise EN55022, EN55011 level B
- Linear topology for high output accuracy and regulation

The PM900 Series of 5 and 6 Watt DC/DC converters are a broad line of high performance modules with many important features and specifications as standard. All models contain Pi-type input filters to minimise reflected ripple current. They are packaged in low profile 2.0 x 2.0 x 0.4 inch cases with standard and two alternate pin-outs designed for direct PC card mounting. The units also feature output current limiting, short-circuit protection and input/output isolation of 500VDC. Other specifications include: an efficiency of 65%; line regulation of $\pm 0.02\%$; load regulation of $\pm 0.04\%$ for single output models and $\pm 0.05\%$ for dual output models; low ripple and noise (10mV pk-pk for single output models and 6mV pk-pk for dual output models); and an output voltage accuracy of $\pm 1.0\%$. PM900 Series DC/DC converters are intended for a wide variety of general industrial applications, especially where low noise performance is required.

SPECIFICATION All specifications are typical at nominal input, full load at 25°C unless otherwise stated

| OUTPUT SPECIFICATIONS | | |
|--|---|---|
| Voltage accuracy | | $\pm 1.0\%$, max. |
| Line regulation | NL to FL | $\pm 0.02\%$ |
| Load regulation | FL to NL, Single outputs FL to NL, Dual outputs | $\pm 0.04\%$ $\pm 0.05\%$ |
| Cross regulation | Dual outputs (Voltage balance) | $\pm 0.5\%$, max |
| Ripple and noise 20MHz BW | Single output Dual output | 10mV pk-pk, typical, 65mV pk-pk, max. 6mV pk-pk, typical, 35mV pk-pk, max. |
| Transient recovery time to 0.1% of final value | NL to FL, all outputs FL to NL, single output FL to NL, dual output | 10 μ s 200 μ s 20 μ s |
| Temperature coefficient | Single output Dual output | $\pm 0.02\%/^{\circ}\text{C}$ $\pm 0.01\%/^{\circ}\text{C}$ |
| Current limit | | 130% to 180% Iout |
| Short circuit protection | See Note 4 | Thermal limit |
| INPUT SPECIFICATIONS | | |
| Input voltage range | See table on facing page | |
| Input filter | See Note 3 | Pi network |

| EMC CHARACTERISTICS | | |
|------------------------------|--|---|
| Conducted emissions | EN55022, EN55011, FCC 15 | Level B |
| GENERAL SPECIFICATIONS | | |
| Efficiency | Single output Dual output | 61%, min. 62%, min. |
| Isolation voltage | | 500VDC, min. |
| Switching frequency | Fixed | 20kHz, min. |
| Case material | UL94V-0 | Non-conductive black plastic |
| Weight | | 57g (2oz) |
| MTBF | | 680,000 hours |
| ENVIRONMENTAL SPECIFICATIONS | | |
| Thermal performance | Operating ambient Non-operating amb. Case Derating Cooling | -25°C to +71°C -40°C to +125°C +95°C, max None required Free-air convection cooled |
| Relative humidity | Non-condensing | 20% to 95% RH |
| Altitude | Operating Non operating | 10,000 feet max. 40,000 feet max. |
| Vibration | 5Hz to 500Hz | 2.4G rms (approx.) |

5 to 6 Watt Nominal input DC/DC converters

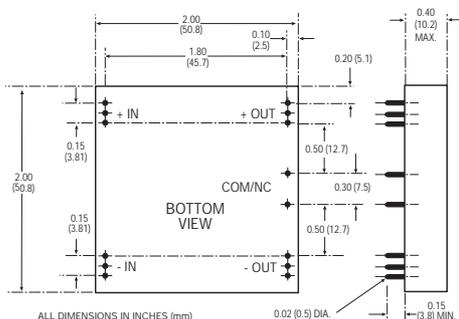
| INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT | | REFLECTED RIPPLE CURRENT (1) | REGULATION | | ALT. PIN-OUT (2) | MODEL NUMBER |
|---------------|----------------|----------------|---------------|-----------|------------------------------|------------|--------|------------------|--------------|
| | | | NO LOAD | FULL LOAD | | LINE | LOAD | | |
| 5VDC | 5VDC | 1000mA | 125mA | 1.54A | 54mA | ±0.02% | ±0.04% | A, B | PM901 |
| 5VDC | 12VDC | 470mA | 140mA | 1.73A | 61mA | ±0.02% | ±0.04% | | PM903 |
| 5VDC | 15VDC | 400mA | 150mA | 1.84A | 64mA | ±0.02% | ±0.04% | | PM904 |
| 5VDC | ±12VDC | ±230mA | 130mA | 1.65A | 58mA | ±0.02% | ±0.05% | A | PM951 |
| 5VDC | ±15VDC | ±190mA | 135mA | 1.7A | 60mA | ±0.02% | ±0.05% | B | PM952 |
| 12VDC | 5VDC | 1000mA | 50mA | 0.64A | 22mA | ±0.02% | ±0.04% | | PM911 |
| 12VDC | 12VDC | 470mA | 60mA | 0.72A | 26mA | ±0.02% | ±0.04% | | PM913 |
| 12VDC | ±12VDC | ±230mA | 55mA | 0.69A | 24mA | ±0.02% | ±0.05% | | PM961 |
| 12VDC | ±15VDC | ±190mA | 55mA | 0.71A | 25mA | ±0.02% | ±0.05% | B | PM962 |
| 24VDC | 5VDC | 1000mA | 25mA | 0.32A | 22mA | ±0.02% | ±0.04% | | PM921 |
| 24VDC | 12VDC | 470mA | 30mA | 0.36A | 25mA | ±0.02% | ±0.04% | | PM923 |
| 24VDC | 15VDC | 400mA | 30mA | 0.38A | 27mA | ±0.02% | ±0.04% | | PM924 |
| 24VDC | ±12VDC | ±230mA | 25mA | 0.34A | 24mA | ±0.02% | ±0.05% | A | PM971 |
| 24VDC | ±15VDC | ±190mA | 30mA | 0.35A | 25mA | ±0.02% | ±0.05% | B | PM972 |
| 48VDC | 5VDC | 1000mA | 13mA | 0.16A | 22mA | ±0.02% | ±0.04% | | PM941 |
| 48VDC | ±12VDC | ±230mA | 14mA | 0.17A | 24mA | ±0.02% | ±0.05% | | PM991 |

Notes

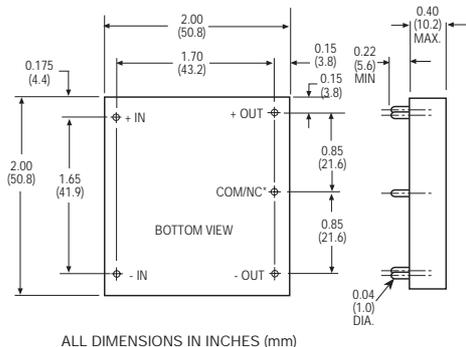
- Figures are peak-to-peak.
- Alternate pin-out versions, if available, are designated by the suffixes shown. For example, model PM901 is available in two alternate pin-out versions, i.e. PM901A and PM901B. See case drawings below.
- Fixed frequency design provides for easier input filtering and better noise performance.
- Short circuit protection is achieved using a thermal limit at 130°C max. An extended short circuit of >8 hours will affect the units reliability.

| INPUT VOLTAGE | 60% FL | 80% FL | 100% FL |
|---------------|----------------|---------------|----------------|
| 5V | 4.4 to 6.5V | 4.5 to 6.0V | 4.65 to 5.5V |
| 12V | 10.56 to 15.6V | 10.8 to 14.4V | 11.16 to 13.2V |
| 24V | 21.12 to 31.2V | 21.6 to 28.8V | 22.32 to 26.4V |
| 48V | 42.24 to 62.4V | 43.2 to 57.6V | 44.64 to 52.8V |

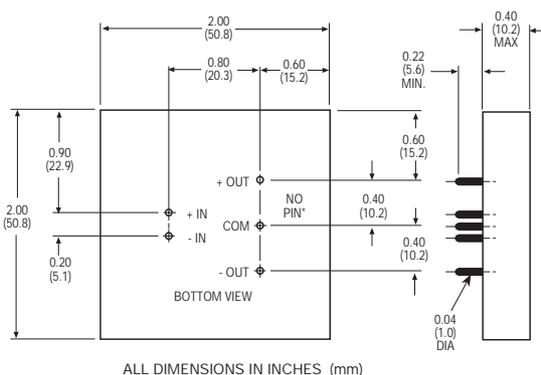
Alternate Pin Configuration - Suffix A



Alternate Pin Configuration-Suffix B



**CASE G
Standard Pin Configuration**



* On single output models this pin is either not present or should not be connected.