



100 WATT SINGLE & DUAL OUTPUT

**Regulated,
2:1 Input Range
DC/DC Converters**

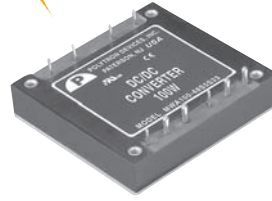
FEATURES

- **Input/Output Isolation (1600Vdc Min)**
- **Wide Input Voltage Range**
- **Industry Standard Footprint**
- **Compact 2.40" x 2.28" x 0.50"**
- **Adjustable Output Voltage**
- **No Minimum Load**
- **High Efficiency (Up to 90%)**
- **Short Circuit Protection**
- **Over Voltage Protection**
- **On/Off Control**

MWA100 Series

HIGH VOLTAGE
(HVPS) Condatas AG

Distribution
electronic
components



Specifications

All specifications are typical at nominal input, full load and 25°C, unless otherwise noted.

INPUT

| | |
|--|---|
| Input Voltages Range |36 - 72Vdc |
| UVLO Start-up Voltage |Single.....34V typ. Dual.....35V typ. |
| UVLO Shutdown Voltage |Single.....32V typ. Dual.....33V typ. |
| Input Filter (Note 3) |L-C type |
| Input Voltage Variation dv/dt |5V/ms, max. (Complies with ETS300 132 part 4.4) |
| Input Surge Voltage 100mS max. (Single) |100Vdc |
| Start up time | Nominal Vin and constant resistor load |
| |Single.....25mS typ. |
| Input Reflected Ripple Current (5Hz to 20MHz, 12µH source impedance) |Single.....20mA-p |
| Remote ON/OFF (Note 4) | Single (Positive Logic) .....ON=Open or 3.5V<V _F <15V, I _{IN} =50µA max. .....OFF=Short or 0V<V _F <1.2V, I _{IN} =1mA max. Single (Negative Logic) .....ON=Short or 0V<V _F <1.2V, I _{IN} =1mA max. .....OFF=Open or 3.5V<V _F <15V, I _{IN} =50µA max. Dual (Positive Logic) .....ON=Open or 3V<V _F <+Vin.....OFF=Short or 0V<V _F <1.2V Dual (Negative Logic) .....ON=Open or 3V<V _F <+Vin.....OFF=Open or 0V<V _F <1.2V |

OUTPUT

| | | |
|---|---|--------------------------------------|
| Output Power |Total output power |100 Watts max. |
| Voltage Accuracy |Full load and nominal Vin |Single.....±1.5% Dual.....±1.0% |
| Voltage Adjustability |Single (Note 1).....±10%, -20% | Dual for Each Outputs.....±10% |
| Minimum Load | ..... | .....0% |
| Line Regulation |LL to HL at FL |See Table |
| Load Regulation |Single (0% to 100% FL) Dual (0% to 100% FL) |See Table |
| |Dual for Each Outputs |See Table |
| Remote sense (Note 1) |Single |10% of Vout |
| Ripple and Noise |20 MHz bandwidth (Note 2) |100mVp-p |
| Temperature Coefficient | ..... | .....±0.02%/°C, max. |
| Transient Response Recovery Time 25% load step change | ..... | .....200µS |
| Over Voltage Protection Threshold |Single (Hiccup).....115%~130% of Vout | |
| |Dual 2.5V.....3.0V 3.3V.....3.9V 5V.....6.2V | |
| Over Current Protection Threshold |Single.....110%~140% of Iout Rated | |
| Short Circuit Protection | ..... | .....Hiccup, automatic recovery |

GENERAL

| | | |
|-----------------------|--|-----------------------------------|
| Efficiency | ..... | .....See Table |
| Isolation Voltage |Input to Output.....1600 Vdc, min. Input to Case.....1000 Vdc, min. .....Output to Case.....1000 Vdc, min. | |
| Isolation Resistance |Single.....10 ⁷ Ohms, min. Dual.....10 ⁹ Ohms, min. | |
| Isolation Capacitance |Single.....2500pF, max. Dual.....1500pF, max. | |
| Switching Frequency | ..... | .....300 KHz, typ |
| Approvals | ..... | .....IEC60950, UL60950, EN60950 |
| Case Material |Dual..... |Non-conductive black plastic |
| Base Material | ..... | .....Aluminum base-plate |
| Potting Material |Dual..... |Silicon (UL94-V0) |
| Weight |Single.....55g (1.94 oz) Dual.....105g (3.7 oz) | |
| MTBF (Note 5) |Single.....2 x 10 ⁶ hrs Dual.....1.004 x 10 ⁶ hrs | |

ENVIRONMENTAL

| | | |
|---|---|---|
| Operating Base-Plate Temperature Range (Note 6) | ..... | .....-40°C to +100°C |
| Over Temperature Protection |Single.....110°C Dual for base plate.....105°C | |
| Humidity max, Non-condensing | ..... | .....95% |
| Storage Temperature Range | ..... | .....-55°C to +125°C |
| Thermal Shock | ..... | .....MIL-STD-810D |
| Vibration | ..... | .....10-55Hz, 2G, 3 minutes period, 30 minutes along X, Y and Z |

EMC CHARACTERISTICS

| | | |
|---------------------|------------------|-----------------|
| Conducted emissions | EN55022 (Note 7) | Level A |
| | EN55022 (Note 7) | Level B |
| Radiated emissions | EN55022 | Level A |
| ESD (single) | EN61000-4-2 | Perf. Criteria2 |
| Radiated immunity | EN61000-4-3 | Perf. Criteria2 |
| Fast transient | EN61000-4-4 | Perf. Criteria2 |
| Surge | EN61000-4-5 | Perf. Criteria2 |
| Conducted immunity | EN61000-4-6 | Perf. Criteria2 |

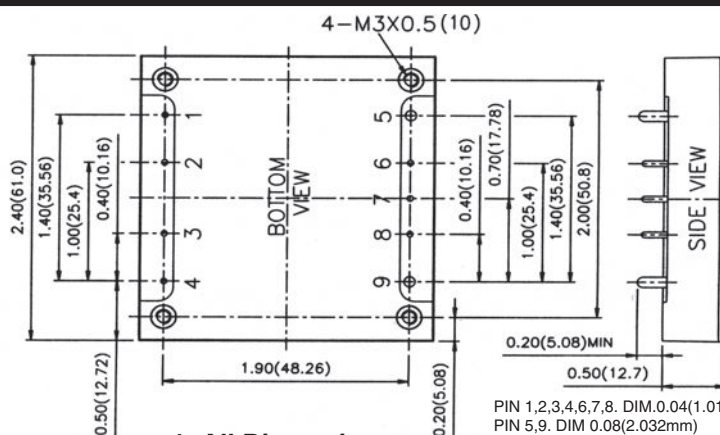
Selection Guide

(Continued)

| | Input Voltage Nominal (Range) (Vdc) | Output Voltage (Vdc) | Output Current (A) | Efficiency % | Model Number | Case |
|------------------------------|-------------------------------------|----------------------|--------------------|--------------|------------------|------|
| SINGLE OUTPUT VOLTAGE | 48 (36-72) | 1.8 | 25 | 86 | MWA100-48S1.8 | H |
| | | 2.5 | 25 | 87 | MWA100-48S2.5 | H |
| | | 3.3 | 25 | 90 | MWA100-48S33 | H |
| | | 5 | 20 | 90 | MWA100-48S5 | H |
| | | 15 | 6.66 | 90 | MWA100-48S15 | H |
| DUAL OUTPUT VOLTAGE | 48 (36-72) | 5/3.3 | 20/25 | 87 | MWA100-48S5S33 | H |
| | | 5/2.5 | 20/25 | 85 | MWA100-48S5S2.5 | H |
| | | 3.3/2.5 | 25/25 | 85 | MWA100-48S33S2.5 | H |

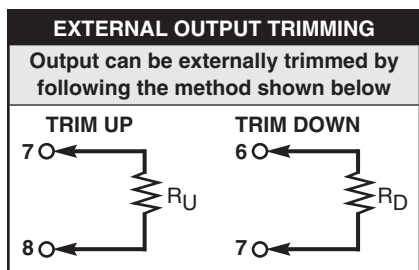
Mechanical Specifications / Single Output

| PIN CONNECTION | | |
|----------------|---------|-------------|
| PIN | DEFINE | Diameter |
| 1 | -INPUT | 0.04 Inches |
| 2 | CASE | 0.04 Inches |
| 3 | CTRL | 0.04 Inches |
| 4 | +INPUT | 0.04 Inches |
| 5 | -OUTPUT | 0.08 Inches |
| 6 | -SENSE | 0.04 Inches |
| 7 | TRIM | 0.04 Inches |
| 8 | +SENSE | 0.04 Inches |
| 9 | +OUTPUT | 0.08 Inches |



1. All Dimensions are in inches (mm)

PIN 1,2,3,4,6,7,8. DIM.0.04(1.016mm)
 PIN 5,9. DIM 0.08(2.032mm)
 Tolerance: x.xx±0.02(x.x±0.5)
 x.xxx±0.01(x.xxx±0.25)
 Dimensions: inches(mm)
 Pin pitch tolerance ± 0.014(0.35)



| PRODUCT OPTIONS TABLE | |
|---|--|
| OPTION | |
| Negative remote ON/OFF logic, 0.20" pin length (standard) | |
| Negative remote ON/OFF logic, 0.145" pin length | |
| Negative remote ON/OFF logic, 0.11" pin length | |
| Positive remote ON/OFF logic, 0.20" pin length | |
| Positive remote ON/OFF logic, 0.145" pin length | |
| Positive remote ON/OFF logic, 0.11" pin length | |

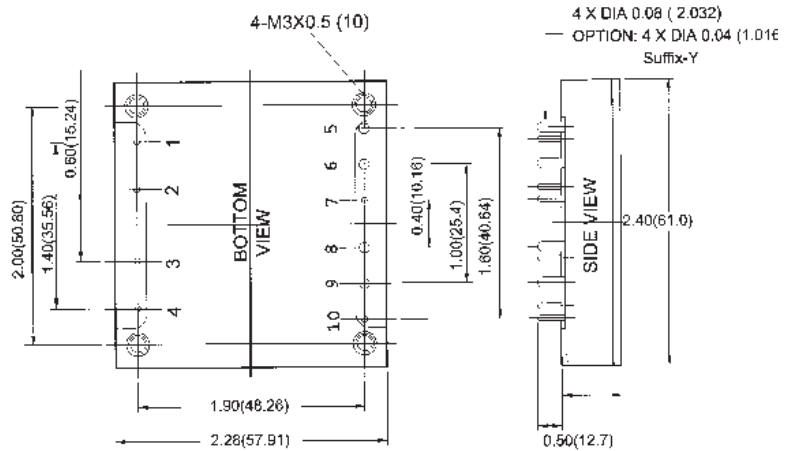
NOTE:

- Maximum output deviation is 10% inclusive of remote sense. If remote sense is not being used, the +Vsense should be connected to its corresponding +OUTPUT and likewise the -sense should be connected to its corresponding -OUTPUT.
- Single: Measured with a 1µF M/C and a 10µF T/C. Dual: For each outputs.
- An external filter capacitor is required for normal operation. The capacitor should be capable of handling 1A ripple current for 48V models. Suggest: Nippon chemi-con KMF series, 220µ F/100V, ESR 90mΩ.
- Single: The negative / positive logic and pin length are optional (see table). The pin voltage is referenced to negative input. Dual: The ON/OFF control function. There are positive logic (standard) and negative logic (option). The pin voltage is referenced to negative input. To order negative logic ON/OFF control add the suffix RE.
- BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. (Ground fixed and controlled environment)
- Heat sink is optional.
- The MWA100 meets level A & level B conducted emissions only with external components connected before the input pin to the converter.
- Maximum value at nominal input voltage and full load.
- Typical value at nominal input voltage and full load. The dual efficiency test condition: MWA100-48S5S33 @5V/12A and 3.3V/12A, MWA100-48S5S33 @5V/12A and 2.5V/16A, MWA100-48S5S33 @3.3V/18A and 2.5V/16A
- BASEPLATE GROUNDING: Base-plate should be grounded at one of the four screw bolts prior to operation.
- The converter is provided with basic insulation.

Mechanical Specifications / Dual Output

(Continued)

| PIN CONNECTION | | |
|----------------|-----------|-------------|
| PIN | DEFINE | Diameter |
| 1 | -INPUT | 0.04 Inches |
| 2 | CASE | 0.04 Inches |
| 3 | CTRL | 0.04 Inches |
| 4 | +INPUT | 0.04 Inches |
| 5 | +V2 | 0.08 Inches |
| 6 | -V2 (COM) | 0.08 Inches |
| 7 | V2 TRIM | 0.04 Inches |
| 8 | +V1 | 0.08 Inches |
| 9 | -V1 (COM) | 0.08 Inches |
| 10 | V1 TRIM | 0.04 Inches |



PIN 1,2,3,4,7,10. DIM. 0.04(1.016mm)
 PIN 6,8,9. DIM 0.08(2.032mm)
 Tolerance: x.xx±0.02(x.x±0.5)
 x.xxx±0.01(x.xx±0.25)
 Dimensions: inches(mm)
 Pin pitch tolerance ± 0.014(0.35)

1. All Dimensions are in inches (mm)

