



10W Ultraminiature Medical Grade Switching Power Supplies

EFM10/M series



1.66"W x 2.46"L x 0.91"H

- Universal 90-264VAC Input
- High Efficiency
- Improved EMI Performance
- 4000V Isolation
- Single, Dual & Triple Outputs
- UL60601-1, EN60601-1



Model Number Output Voltage Output Amps(max)

SINGLE OUTPUT

EFM-0100/M	3.3 Volts(DC)	2.5Amps
EFM-0101/M	5 Volts(DC)	2Amps
EFM-0122/M	9 Volts(DC)	1.1Amps
EFM-0102/M	12 Volts(DC)	0.85Amps
EFM-0103/M	15 Volts(DC)	0.67Amps
EFM-0118/M	18 Volts(DC)	0.55Amps
EFM-0105/M	24 Volts(DC)	0.42Amps

DUAL OUTPUT

EFM-0106/M	±12 Volts(DC)	±0.42Amps
EFM-0107/M	±15 Volts(DC)	±0.34Amps
EFM-0108/M	5 / 12volts(DC)	1.3/0.6Amps

TRIPLE OUTPUT

EFM-0109/M	5 / ±12 Volts(DC)	1.8 / ±0.13Amps
EFM-0111/M	5 / ±15 Volts(DC)	1.8 / ±0.13Amps



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INPUT SPECIFICATIONS

Table with 2 columns: Input Voltage Range (90-264 VAC), Frequency Range (47-63 Hz), Inrush Current (115/230Vin) (20/40Amps, typ.), Leakage Current (<500UA @ 264VAC, 50Hz)

OUTPUT SPECIFICATIONS

Table with 2 columns: Voltage and Current (Note 5) (See Selection Chart), Load Regulation (20%-FL)(Note 6) (Singles: ± 3%, Duals: ± 3% (EFM-0108/M: 0.5/3%), Triple: 0.2 / ±0.3%), Line Regulation, typ (Note 7) (Singles ± 0.1~1%, Duals ± 0.3~1%, Triple: 0.3 / ±0.1%), Cross Regulation (Note 10) (Duals 2% (EFM-0108/M: 0.5/3%), Triple: NA/ ±0.1%), Preset Accuracy (Note 8) (Single/Duals 1%, Triple: 1 / ±5%), DC Voltage Adjust (typ) (± 6% of FS (Primary)), Temperature Coefficient (±0.03%/°C), Ripple/Noise, typ (Note 1, 9) (Single/Dual: 100mVpk-pk, EFM-0108/M: 50/50mVpk-pk, Triple: 50 / ±75mVpk-pk), Over Voltage Protection (Clamp), Over Temp. Protection (Latching, recov after cooling and power restored), Short Circuit Protection (Note 2) (Continuous, self-recovering), Hold Up Time (30 mS, typ), DC Output Power (10 Watts, max)

PHYSICAL SPECIFICATIONS

Table with 2 columns: Size (1.66" x 2.46" x 0.91"), Construction (Open Frame), Weight (1.6oz (44g))

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

* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.

GENERAL SPECIFICATIONS

Table with 2 columns: Isolation (Note 3) (4KVAC Input-Output, 2500VAC Input-Ground, 1000VAC Output-Ground), Efficiency (Single/Dual 75% typ, Triple 70%), Switching Frequency (100Khz, (fixed, typical)), Safety (UL60601-1, EN60601-1), EMC (EN55011)

ENVIRONMENTAL SPECIFICATIONS

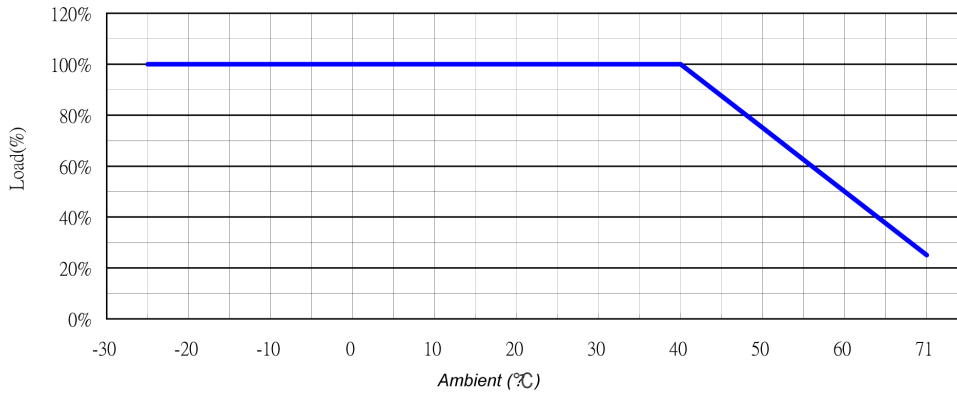
Table with 3 columns: Oper. Temperature (Note 4) (-0 to +40°C (See Derate)), Storage Temperature (-25 to +71°C *), Relative Humidity (0 to + 95%, non-cond *), MTBF ((Mil Std 217, 25°C) 575,000 Hrs)

NOTES

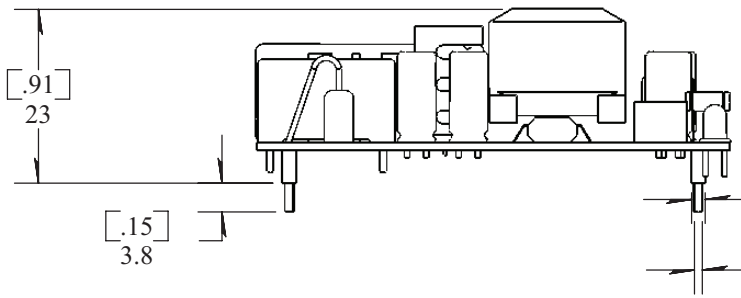
- 1. Ripple and Noise depend upon output voltage as specified per particular model.
2. Short Circuit Protection is self-recovering when overcurrent condition is removed.
3. Isolation for up to 1 minute duration.
4. Specified for free-air convection cooling.
5. Minimum load is NOT required for proper operation. However, auxiliary outputs should be reduced as a function of primary output minimum load or load regulation will be higher.
6. Load regulation measured from 20% to full load.
7. Line regulation measured from 90VAC to 264VAC.
8. Preset accuracy measured at nominal load, 120VAC input.
9. O/P noise measured directly at pins/terminals at nom. load, 0.1uF bypass, pk-pk @20MHz bandwidth.
10. Cross Reg-Duals: Measured at nom. load with the other output varied between 60% and 100% inom.

Astrodyne products are not authorized or warranted for use as critical components in life support systems, equipment used in hazardous environments, nuclear controls systems, or other mission-critical applications.

OUTPUT DERATING CURVE

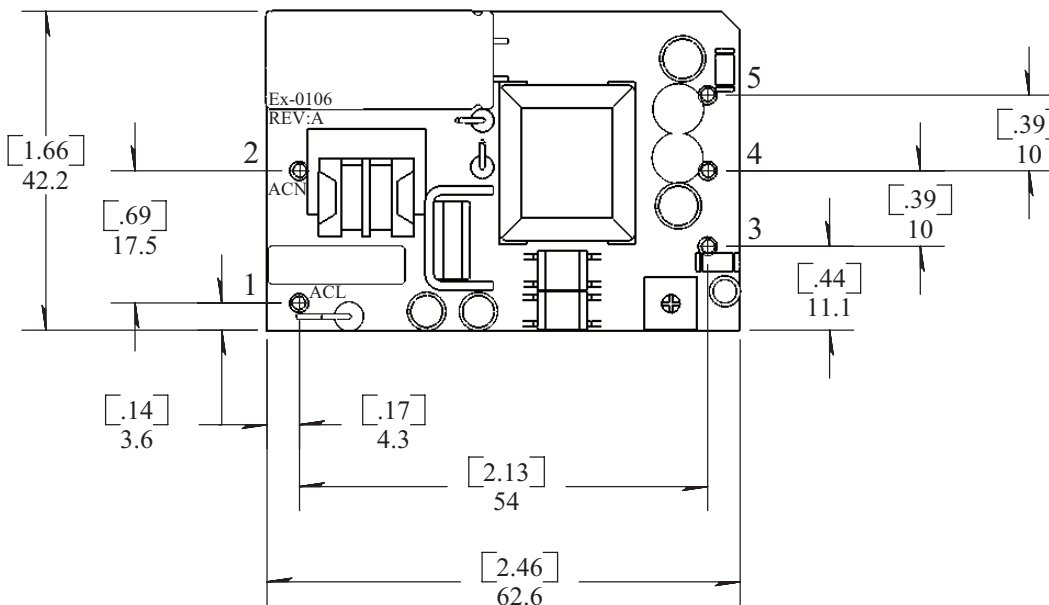


MECHANICAL DIMENSIONS - SINGLE + DUAL OUTPUTS



Pin#	Single	Dual	Dual(0108)
1	ACL	ACL	ACL
2	ACN	ACN	ACN
3	+Vout	+Vout	+12V
4	NC	Com	+5V
5	-Vout	-Vout	Com

Dimensions are in inches



MECHANICAL DIMENSIONS - TRIPLE OUTPUTS

