TR70M SERIES

70W MEDICAL SWITCHING ADAPTER

E252331

Features

* Universal Input Range 80~264VAC
* Meets EN55011 Class B and CISPR/FCC Class B
* Continuous Short Circuit Protection
* Over Voltage Protection
* No Load Power Consumption <150mW
* IEC/EN 60601-1-11 for TR70MB
* Meets CoC Tier 2 & DoE Level VI
* Meets IEC/EN60335-1
* Meets 2 MOPP
* Altitude 5000m
* Class I (TR70MA) & Class II (TR70MB)

(TR70MA/B120: Output Cable Length≦1220mm 16AWG) (note7)
(TR70MA/B150: Output Cable Length≦1220mm 16AWG)
(TR70MA/B180: Output Cable Length≦1800mm 16AWG)
(Output Cable Length≦1800mm 18AWG)



Ordering information

TR70MXXXX	XX	X	XX
Model No.	DC Plug Type	OVP	DC Cable Length and Type
X: A or B A:CLASS I B:CLASS II		E: With OV	01: 720mm 02: 1220mm 03: 1800mm 11: 720mm with Ferrite Core 12:1220mm with Ferrite Core 13:1800mm with Ferrite Core *18AWG/UL1185 *16AWG/UL1185 for 12V

MODEL	OUTPUT VOLTAGE	OUTPUT CURRENT	RIPPLE & NOISE NOTE 2	VOLTAGE SETPOINT NOTE 1	LINE REGULATION NOTE 3	LOAD REGULATION NOTE 4	EFFICENCY (Typ.) NOTE 5
TR70MA120	12V	5.8A	120mVp-p	±2%	±1%	±5%	89%
TR70MA150	15V	4.65A	150mVp-p	±2%	±1%	±3%	89%
TR70MA180	18V	3.9A	180mVp-p	±2%	±1%	±2%	89%
TR70MA240	24V	3.0A	240mVp-p	±2%	±1%	±2%	90%
TR70MA360	36V	1.9A	360mVp-p	±2%	±1%	±2%	90%
TR70MA480	48V	1.5A	480mVp-p	±2%	±1%	±2%	91%
TR70MB120	12V	5.8A	120mVp-p	±2%	±1%	±5%	89%.
TR70MB150	15V	4.65A	150mVp-p	±2%	±1%	±3%	89%
TR70MB180	18V	3.9A	180mVp-p	±2%	±1%	±2%	89%
TR70MB240	24V	3.0A	240mVp-p	±2%	±1%	±2%	90%
TR70MB360	36V	1.9A	360mVp-p	±2%	±1%	±2%	90%
TR70MB480	48V	1.5A	480mVp-p	±2%	±1%	±2%	91%

Specifications are subject to change without notice.

Specifications

INPUT SPECIFICATIONS:

Voltage ..... 80~264Vac(80Vac with derating curve)
Frequency ..... 47 to 63Hz
Inrush Current ..... Cold Start @25℃ 100A max. @240Vac
Conducted EMI ..... CISPR/FCC Class B
Leakage Current ..... 90uA max.

OUTPUT SPECIFICATIONS:

Hold-up Time .....10ms typ. @115Vac
Short Circuit Protection.....Hiccup Mode (Auto Recovery)
Over Voltage Protection ..... IC Component to Clamp (Auto Recovery)
Temperature Coefficient ..... ±0.05%/℃ max.

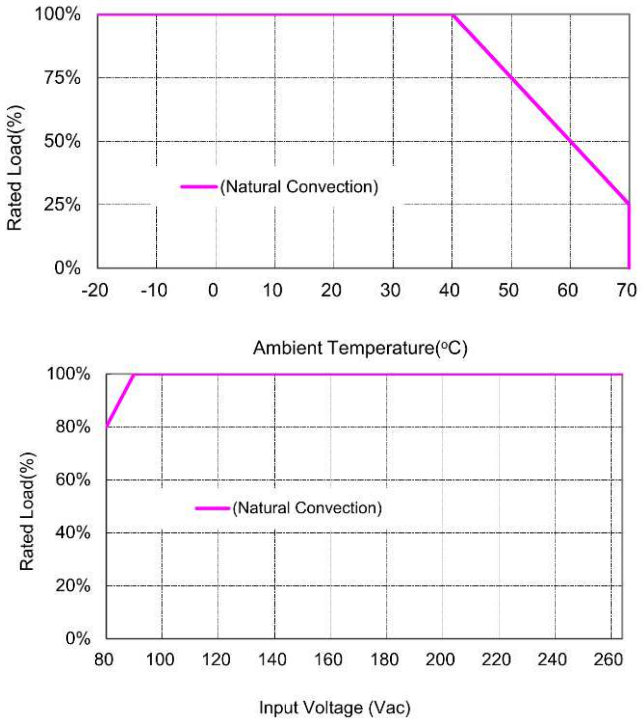
GENERAL SPECIFICATIONS:

Isolation ..... Input to Output = 4,400VAC
Operating Temperature ..... -20 ~ 70℃ (See Derating Curve, note6)
Storage Temperature ..... -40~85℃
Humidity ..... 93% RH max. Non Condensing
Cooling..... Natural Convection
Switching Frequency ..... 65KHz Typical
MTBF ..... MIL-HDBK-217F, GB, at 25℃/115VAC ..... 500Khrs min.
Altitude 5000m
Life Time ..... Ambient 40℃ 75% Load ..... >3years
AC Inlet .....IEC320/C14(TR70MA) / IEC320/C8(TR70MB)
Dimensions ..... 4.724x2.047x1.220 inches (120.00x52.00x31.00 mm)
Weight ..... 300g(0.66 Pounds)

SAFETY AND EMC:

Emissions and Immunity (Ed 4.0) ..... EN55011 Class B, EN61000-3-2,3 EN60601-1-2, IEC 61000-4-2, 3, 4, 5, 6, 8, 11
Safety Approved (Ed.3.1) ..... IEC/EN 60601-1, UL ANSI/AAMI ES60601-1 IEC/EN 60601-1-11 for TR70MB

TR70M Series Derating Curve

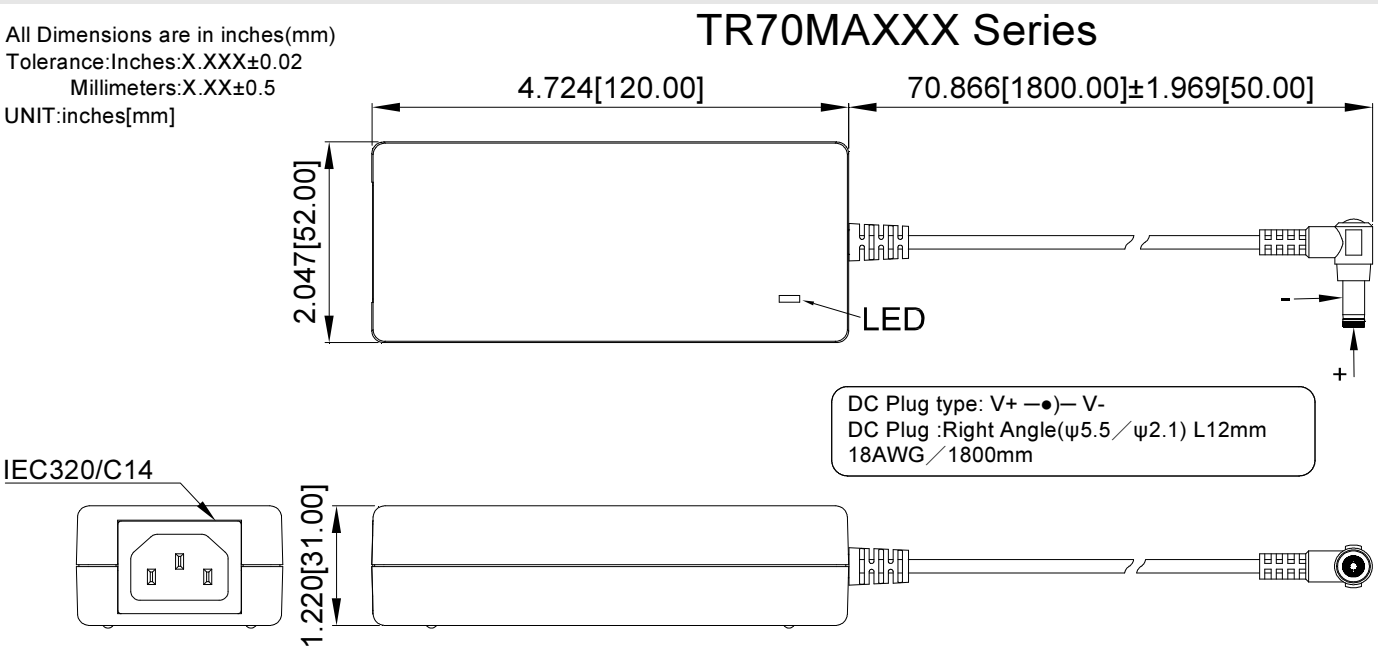


NOTE:

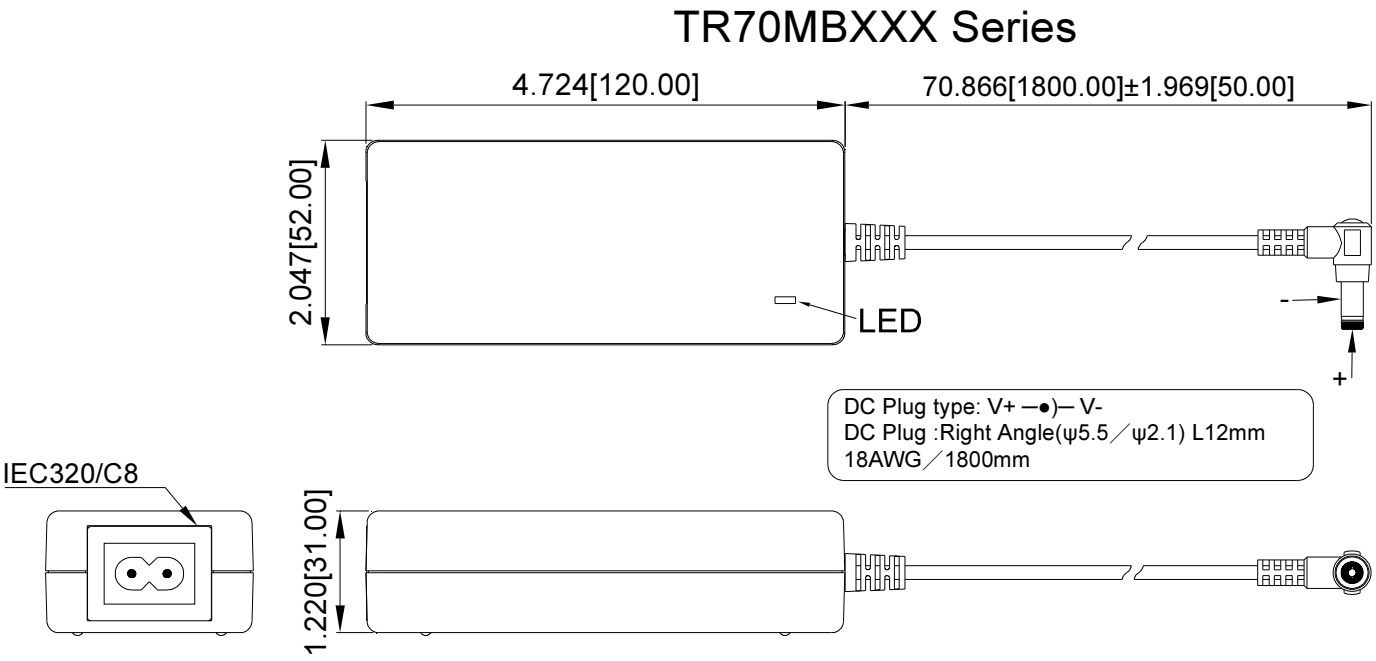
1. Voltage accuracy at 60% full load.
2. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to output for ripple&noise measurement @20MHz BW.
3. Line regulation is measured from 100Vac to 240Vac, full load.
4. Load regulation is measured from 60% to 100% full load and from 60% to 20% full load (60% +/- 40% full load).
5. Typical efficiency at 230VAC and 75% load at 25℃.
6. -30℃ can be start-up at full load.
7. TR70MA120 & TR70MB120 of 115VAC full load meet DoE Level VI and 230VAC full load meet CoC Tier 2

Mechanical Specification

All Dimensions are in inches(mm)
Tolerance:Inches:X.XXX±0.02
Millimeters:X.XX±0.5
UNIT:inches[mm]



Mechanical Specification



Typical at 25˚C, nominal line and 75% load, unless otherwise Specified