



TR60M SERIES

60W MEDICAL SWITCHING ADAPTER



Features

- * Universal Input Range 90~264VAC
- * Meets EN60601-1 and EN55011 Class B
- * Continuous Short Circuit Protection
- * Over Voltage Protection
- * Meet CEC Level IV
(Output Cable Length \leq 1800mm)
(TR60M Series meets CEC IV except TR60M05 is Non-CEC Compliant)
(TR60M12: Output Cable Length \leq 1220mm 16AWG)
- * Efficiency & Standby Power Meet Level V (Option)
(Output Cable Length \leq 1800mm)
(TR60M12 : Output Cable Length \leq 720mm 16AWG)
(TR60M15 : Output Cable Length \leq 1220mm 16AWG)
(TR60M18,TR60M19 : Output Cable Length \leq 1500mm 18AWG)
- * Meets 2MOPP



Ordering information

| TR60MXX- Model No. | XX DC Plug Type | X OVP E: With OVP | XX DC Cable Length and Type |
|-----------------------|--------------------|-------------------------|--------------------------------|
| | | | 01: 720mm |
| | | | 02: 1220mm |
| | | | 03: 1800mm |
| | | | 11: 720mm with Ferrite Core |
| | | | 12: 1220mm with Ferrite Core |
| | | | 13: 1800mm with Ferrite Core |
| | | | *18AWG/UL1185 |

| MODEL | OUTPUT VOLTAGE | OUTPUT CURRENT | RIPPLE & NOISE NOTE 2 | VOLTAGE ACCURACY NOTE 1 | LINE REGULATION NOTE 3 | LOAD REGULATION NOTE 4 | % EFF. (Typ.) NOTE 5 |
|---------|-------------------|-------------------|-----------------------------|-------------------------------|------------------------------|------------------------------|-------------------------|
| TR60M05 | 5V | 6A | 50mVp-p | $\pm 4\%$ | $\pm 1\%$ | $\pm 6\%$ | 75% |
| TR60M12 | 12V | 5A | 120mVp-p | $\pm 2\%$ | $\pm 1\%$ | $\pm 5\%$ | 85% |
| TR60M15 | 15V | 4A | 150mVp-p | $\pm 2\%$ | $\pm 1\%$ | $\pm 3\%$ | 85% |
| TR60M18 | 18V | 3.33A | 180mVp-p | $\pm 2\%$ | $\pm 1\%$ | $\pm 2\%$ | 86% |
| TR60M19 | 19V | 3.15A | 190mVp-p | $\pm 2\%$ | $\pm 1\%$ | $\pm 2\%$ | 86% |
| TR60M24 | 24V | 2.5A | 240mVp-p | $\pm 2\%$ | $\pm 1\%$ | $\pm 2\%$ | 87% |
| TR60M36 | 36V | 1.66A | 360mVp-p | $\pm 2\%$ | $\pm 1\%$ | $\pm 2\%$ | 87% |
| TR60M48 | 48V | 1.25A | 480mVp-p | $\pm 2\%$ | $\pm 1\%$ | $\pm 2\%$ | 87% |

Specifications

INPUT SPECIFICATIONS:

Voltage 90~264Vac
 Frequency 47 to 63Hz
 Inrush Current Cold Start @25°C 80A max. @240Vac
 Conducted EMI CISPR/FCC Class B
 Leakage Current 0.1mA max.

OUTPUT SPECIFICATIONS:

Holdup Time 8ms typ. @115Vac
 Short Circuit Protection Continuous
 Over Voltage Protection Yes
 Temperature Coefficient ±0.05%/°C

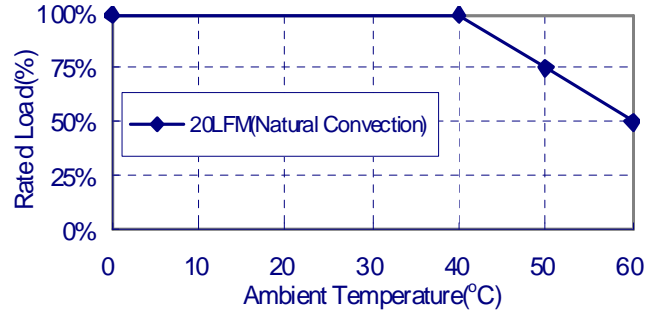
GENERAL SPECIFICATIONS:

Isolation Input to output =5,656VDC
 Operating Temperature 0 ~ 60°C (see derating curve)
 Storage Temperature -20 ~ 85°C
 Humidity 93% RH max. Non condensing
 Cooling Natural Convection
 Switching Frequency 100KHz Typical
 MTBF MIL-HDBK-217F, GB, at 25°C/115VAC 200K hrs min.
 Altitude 3000m
 Dimensions 5.197x2.283x1.201inches (132.00x58.00x30.50mm)
 Weight 345g(0.76 Pounds)

SAFETY AND EMC:

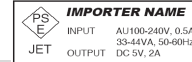
Emission and Immunity EN55011, EN60601-1-2, EN61000-3-2
 EN61000-3-3
 Safety IEC60601-1, EN60601-1, UL ANSI/AAMI ES60601-1:2005

TR60M Series Derating Curve



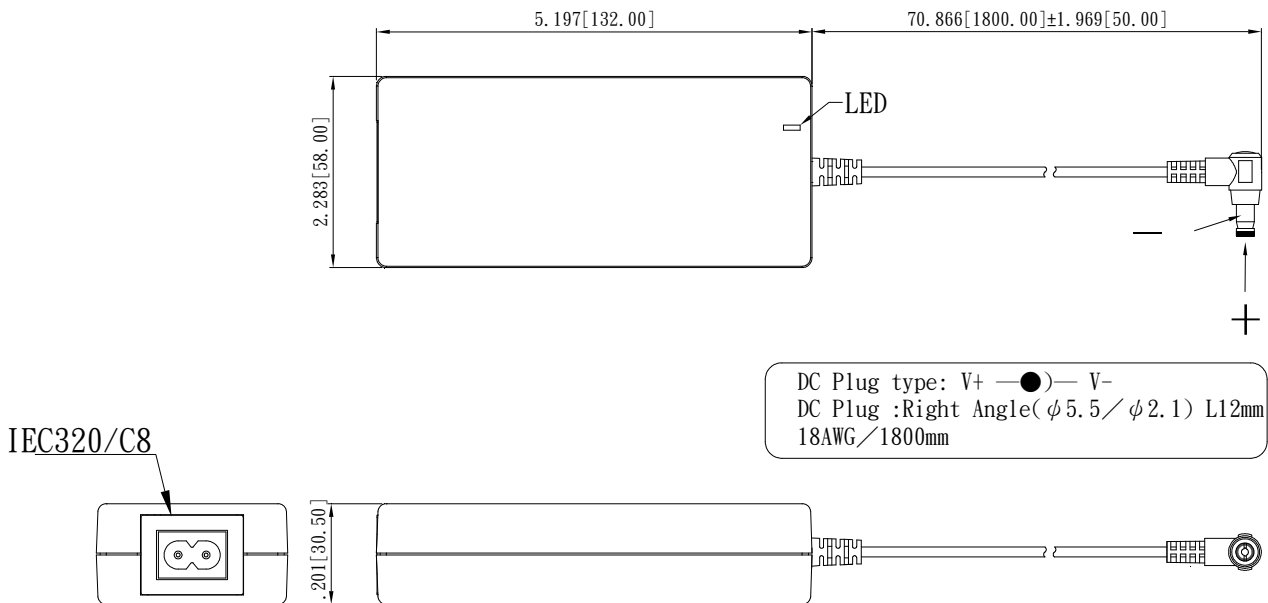
NOTE:

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 measured from 100Vac to 240Vac, full load.
4. Load regulation measured from 60% to 100% full load and from 60% to 20% full load (60% +/- 40% full load).
5. Typical efficiency at 230VAC and full load at 25°C.
6. "Various TR Series adapters are PSE certified. PSE certification alone is not sufficient for importation into Japan. A valid PSE mark must contain the name of the importer as shown in the example below. If PSE mark is required, the name of the registered importer must be supplied to Cincon on order placement. Product labels will not contain PSE mark if importer name is not supplied. Consult factory or local representative for details".



Mechanical Specification

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



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

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