NIPPON BETA POWER Co., Ltd

www.beta-power.com

AC/DC Switching Adapter - Single Output

ITE/Medical AC/DC Power Adapter
A10400 Series 400Watts
DOE level VI Efficiency Compliant

FEATURES

- ITE & Medical Approvals
- 3-prong IEC320-C14, Class I AC inlet
- Medical safety approved (2x MOPP between primary to secondary)
  Suitable for BF application with appropriate system consideration
- ITE/Medical up to 5000 meter altitude during operation
- < 0.5W No Load Input Power
- Approval IP42
- Touch current less than 100uA
- 3 year warranty

ELECTRICAL SPECIFICATIONS

- Input range : 90 - 264VAC
- Frequency : 47 - 63Hz
- Power Factor : > 0.95 @115VAC; > 0.90 @230VAC @full load
- Input current (rms) : 4.2A @115VAC; 2.1A @230VAC max.
- Efficiency : > 92% @80% Full load, 230VAC
- Efficiency : > 87.5% @Average efficiency, 115/230VAC
- Touch current: < 100uA @264VAC
- Hold-up time : > 10ms typical @full load, 115VAC
- Short circuit protection : Auto-recovery
- Over load protection : Auto-recovery
- Over voltage protection : Auto-recovery
- Over temperature protection : Auto-recovery
- Maximum output power (Po) : 380/400 Watts convection cooling
- Inrush current; cold start @25C: < 35A peak @115VAC
  < 70A peak @230VAC

RoHS compliant

Dimension : L 222×W 112×H45 mm (8.74"x4.4"x1.77")
Weight : 1.63 kgs. (3.59 lbs.)

SAFETY STANDARDS

UL/cUL 60601-1
TUV EN 60601-1
CB IEC 60601-1
UL/cUL UL 62368-1
TUV EN 62368-1
CB IEC 62368-1

EMC STANDARDS

EN 60601-1-2
EN 55011 Class B
EN 55032 Class B
EN 55035 Class B
FCC Part 15 Class B
FCC Part 18 Class B
CE

ENVIRONMENTAL

- Operating temperature : -20 to +60°C (Refer to derating curve)
- Operating Humidity: 10% to 95%, Non-condensing.
- Storage temperatur -20°C to +85°C, Non-condensing.
- Storage Humidity: 0% to 95%, Non-condensing.
- MTBF : > 230,000 hours @full load and 25°C ambient temperature based on Bellcore TR-332

DC OUTPUT & FEATURES

Model No.	Output Rating		Po	Output Regulation	Peak power (3s)		Ripple & Noise (Vp-p)	Efficiency Level
					115VAC	230VAC		
DTMF-400-12SX-F-W6	+12V	31.66A	380W	±5%	480W	520W	120mV	VI
DTMF-400-19SX-F-W6	+19V	21.05A	400W	±5%			190mV	VI
DTMF-400-24SX-F-W6	+24V	16.66A	400W	±5%			240mV	VI
DTMF-400-28SX-F-W6	+28V	14.28A	400W	±5%			300mV	VI
DTMF-400-48SX-F-W6	+48V	8.33A	400W	±5%			300mV	VI

Note: 1. Ripple and noise are measured at oscilloscope 20MHz bandwidth by a 47uF electrolytic capacitor and a 0.1uF ceramic capacitor in parallel at output connector.

2. (-1 to -20°C ambient temperature and EMS Immunity worse case O/P Regulation ≦ +/-10%)
3. The switching frequency of this series is set within 56 to 85KHz at full load.
4. The ripple and noise of this series is tested under full load condition.

SAFETY AGENCY CERTIFICATIONS

Safety and EMC Performance

Description	Safety	EMC
Medical equipment	IEC 60601-1:2005+A1:2012 EN 60601-1:2006+A1:2013 ANSI/AAMI ES60601-1:2005/(R)2012+A1:2012, C1:2009/(R)2012+A2:2010/(R)2012 CSA C22.2 NO. 60601-1:14, 3rd Ed.	EN 60601-1-2:2015 EN 55011:2009+A1:2010 FCC 47 CFR Part 18
Audio / Video, ITE equipment	IEC 62368-1:2018 EN IEC 62368-1:2020+A11:2020 UL 62368-1, 3rd Ed CAN/CSA C22.2 No. 62368-1:19, 3rd Ed	EN 55032:2015+A11:2020 EN 55035:2017+A11:2020 FCC 47 CFR Part 15B ICES-003 Issue 7

Tests for conformance to this equirement will be performed with final system

(*) FCC PART 15 compliance information and warnings :

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions :

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Insulation level and dielectric withstand (HI-POT)

Audio / Video, ITE equipment	Isolation voltage	Grade insulation
Primary circuits to secondary circuits	4242Vdc (3000Vac)	Reinforced
Primary circuits to earth ground	2121Vdc (1500Vac)	Basic
Secondary circuits to earth ground	2121Vdc (1500Vac)	Basic

Medical equipment	Isolation voltage	Means of patient protection
Primary circuits to secondary circuits	5656Vdc (4000Vac)	2 MOPP
Primary circuits to earth ground	2121Vdc (1500Vac)	1 MOPP
Secondary circuits to earth ground	2121Vdc (1500Vac)	1 MOPP

Note : Production testing use dc voltage test 4 Sec.

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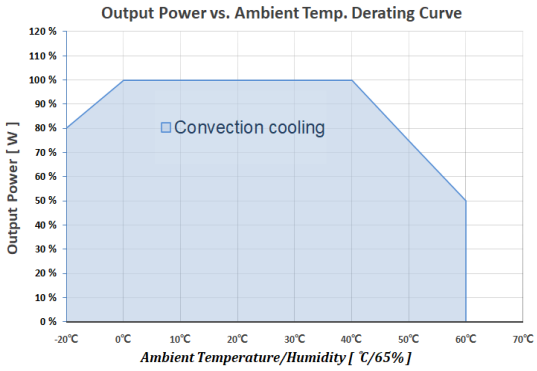
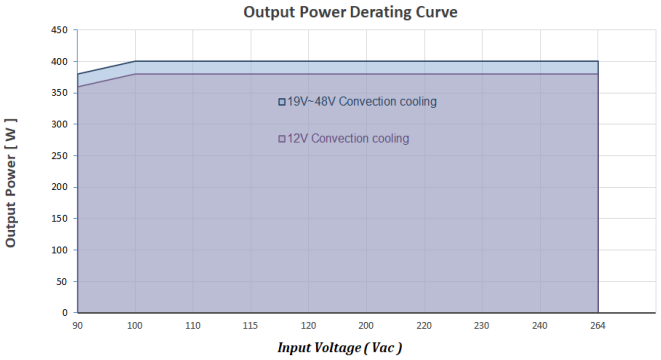
ENVIRONMENTAL

DERATING CURVE:

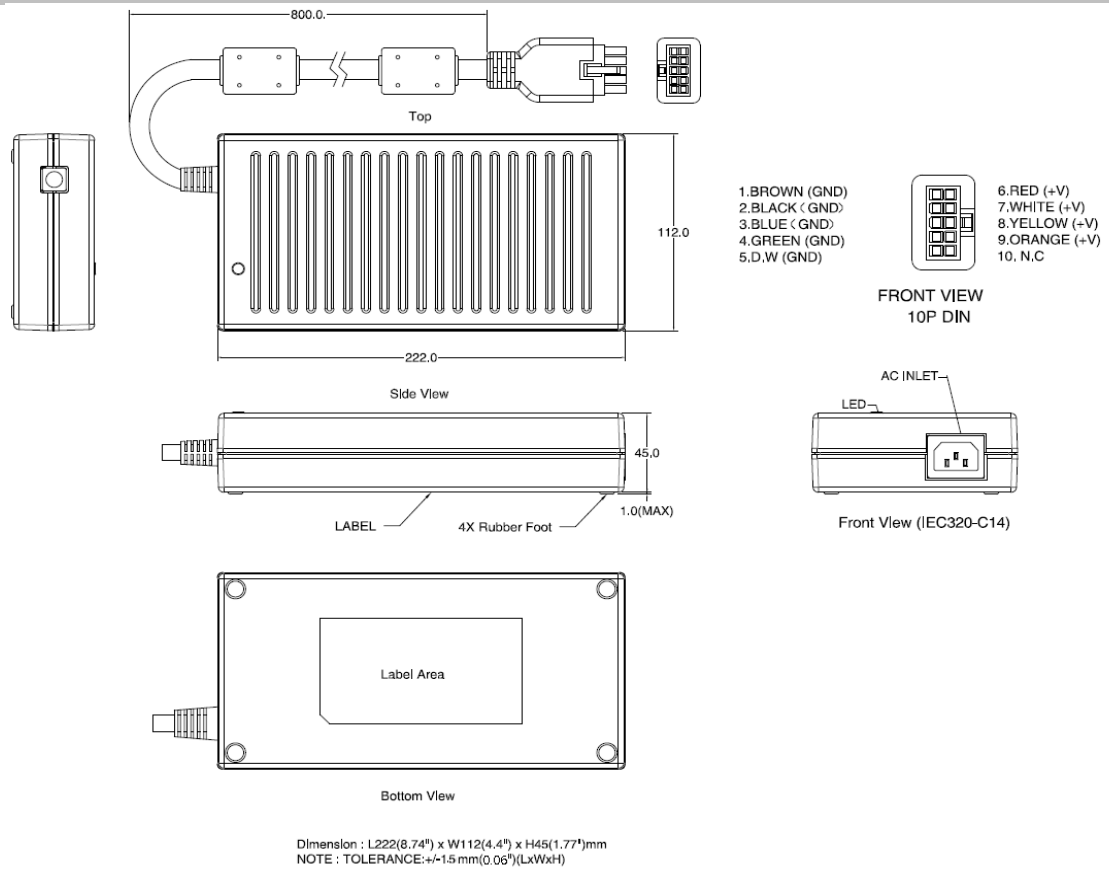




380W / 400W Convection cooling :
Derate linearly 2.5% per°C from 41 to 60°C.
Derate linearly 1% per°C from -1 to -20°C.

12V Convection cooling max output 380W
19V~48V Convection cooling max output 400W
Derate linearly 0.5% per Vac from 100 to 90Vac

MECHANICAL SPECIFICATION

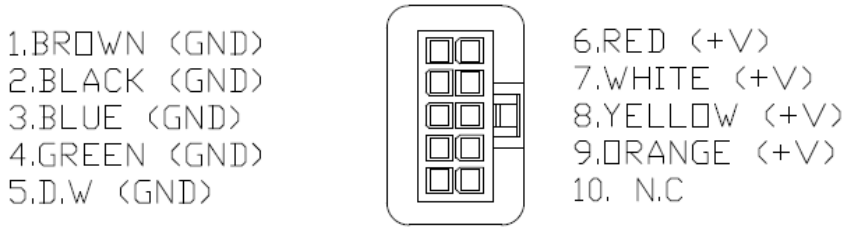


Dimension : L222(8.74") x W112(4.4") x H45(1.77")mm
NOTE : TOLERANCE:+/-1.5 mm(0.06")(LxWxH)

MECHANICAL SPECIFICATION

MATCHING CONNECTORS

DC Output Connector
Standard male plug(power supply side): 10 PIN Mini Fit Pitch:4.2mm
Mating Connector : Molex P/N: 39-28-1123 or equivalent.
DC output cable: 8C+1, UL2464, 16AWG, VW-1, 80℃, 300V



FRONT VIEW
10P DIN