

 Cathedy GmbH		REVISION	A0
		DATE	2022.06.18
PART NUMBER	Q45M TYPE-C	CUSTOMER NAME AND MODEL	

SPECIFICATION FOR APPROVAL

SKU Q45M1-470-PD45W

CUSTOMER : _____

CUSTOMER MODEL NO.: _____

SAMPLE NO.: _____

SERIES PRODUCTS: Q

PRODUCT NAME: _____

OUR MODEL NO.: Q45M TYPE-C

Color: Black

DATE: 2022.06.18

CUSTOMER APPROVED SIGNATURE		

Designed by	Checked by	Approved by

Please sign back after confirmation

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Rev. List			
Rev.	Date	Description	Design
A0	2022.06.18	New Rev.	

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1. Scope

The specification shall be applied to the field of IT and AV equipment.

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2. Quote Criterion

2.1 Safety:accord with

- ①IEC 62368-1:2014;
- ②EN 62368-1:2014/A11:2017, EK1 557-13, AfPS GS 2019:01 PAK;
- ③EN 62368-1:2014/A11:2017, BS EN 62368-1:2014/A11:2017;
- ④UL 62368-1,2nd Ed, 2014-12-01(Audio Video, information and communication technology equipment Part 1: Safety requirements) , CAN/CSA C22.2 No. 62368-1-14, 2nd Ed, Issued: 2014-12-01(Audio video, information and communication technology equipment Part 1: Safety requirements)
- ⑤GB 4943.1-2011,
- ⑥AS/NZS62368-1-2018,
- ⑦JP 62368-1(2020),
- ⑧KC62368-1

2.2 EMI STANDARD EMI

- ①EN 55032:2015/A11:2020, EN IEC 61000-3-2:2019/A1:2021, EN 61000-3-3:2013/A1:2019, EN 55035:2017/A11:2020, BS EN 55032:2015/A11:2020, BS EN IEC 61000-3-2:2019/A1:2021, BS EN 61000-3-3:2013/A1:2019, BS EN 55035:2017/A11:2020
- ②EN 55032:2015/A11:2020, EN IEC 61000-3-2:2019, EN 61000-3-3:2013/A1:2019, EN 55035:2017/A11:2020
- ③GB/T9254:2008, GB17625.1:2012
- ④47 CFR FCC Part 15, Subpart B, ANSI C63.4-2014
- ⑤EN 55032, EN IEC 61000-3-2, EN 61000-3-3, EN 55035, BS EN 55032, BS EN IEC 61000-3-2, BS EN 61000-3-3 and BS EN 55035
- ⑥EN 55032,EN 55035, EN IEC 61000-3-2, EN 61000-3-3
- ⑦AS/NZS CISPR 32:2015+A1:2020
- ⑧KN 32, KN 35
- ⑨J55032(H29)

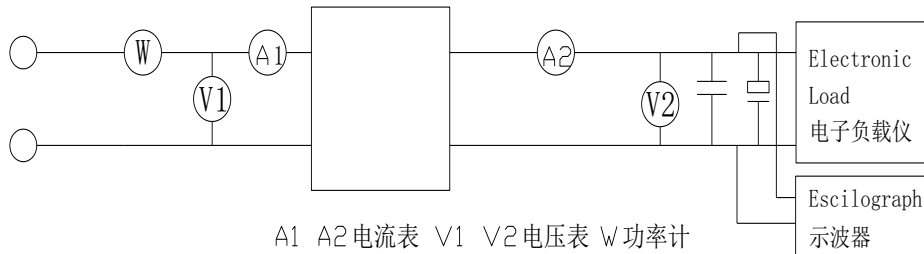
3. Electrical Characteristic

Test Circuit

If the test is to be made on a specified circuit, be sure to use the following circuit.

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4. Input Characteristics

4.1. Rated Input Voltage

It is normal for 100Vac to 240Vac input AC voltage.

4.2. Input Voltage Range

The adapter shall operate from 90 to 264 Vac and the range switching is unnecessary.

4.3. Rated Frequency

It is normal for 50Hz or 60Hz and single phase.

4.4. Empty loaded wasting

The Input power is 75mW(0.075W) or less in empty loaded. **(Output Voltage:5V)**

4.5. Frequency Range

The adapter shall operate with an input frequency from 47Hz to 63Hz.

4.6. Steady AC Current

Maximum steady state input current is 1.1A (Max) Measured at 100Vac input and maximum load.

4.7. Input Inrush Current

With cold starting, the Input Inrush current should less than 80A.

5. Output Characteristics

5.1. Rated Output Voltage Current

Model	5.1 Output Voltage	5.1 Min Load	5.1 Output Current	5.1 Load Regulatio	5.1 Line Regulation	5.1 Output Voltage Range	5.2 Rated Power	5.3 Ripple/Noise (p-p)	5.4 average efficiency	5.5.1 Over Current Protection
Q45MTYPE-C	5V	0A	3A	-5%~+8%	±1%	4.75V-5.40V	15W	200mV Max	81.84% Min	4.3A Max
	9V	0A	3A	±5%	±1%	8.55V-9.45V	27W	200mV Max	87.30% Min	4.3A Max

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	12V	0A	3A	±5%	±1%	11.4V-12.6V	36W	200mV Max	88.30% Min	4.3A Max
	15V	0A	3A	±5%	±1%	14.25V-15.75V	45W	200mV Max	88.85% Min	4.3A Max
	20V	0A	2.25A	±5%	±1%	19.0V-21.0V	45W	240mV Max	88.85% Min	3.1A Max

5.2. Rated Power

This adapter is capable to support Rated Max Power continuously at all specified conditions. Note: the test shall be made under the following conditions, unless otherwise specified: Ambient Temperature 25°C, Relative Humidity 35~85%RH Air Pressure 86~106kPa

5.3. Output Ripple and Noise

5.3.1 AC Input 115V/60Hz,230V/50Hz. Output ripple voltage is less Measured methods:Performed by 20MHz bandwidth in oscilloscope. Applied 0.1uF ceramic capacitor and 10uF electrolytic capacitor across output connector terminals Measured at the end of DC cable.

5.3.2 Turn on delay time/:

3Second Max.at 115Vac input and output Max.load.

5.3.3 Rise time/:

40 mS Max.at 115Vac input and output Max load.

5.3.4 Hold up time/:

5 mS Min.at 115Vac input and output Max.Load.

5.4. Average Efficiency

measured at 115 Vac and 230 Vac input voltage, maximum load. DOE or ERP (level VI). All data was measured at pcb end.

5.5. Protection

5.5.1. Over Current Protection

Output over current protection current is limited and less than the maximum value

5.5.2. Short Circuit Protection

When the output is shorted, the input power is reduced and will not damage, there will be (burp state). When the fault condition is removed, the product will be automatically returned to normal

5.5.3. Over voltage protection

The power supply will auto recovered when faults remove 120%~150%.

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6. Reliability Items

6.1. Electrostatic Discharge

At 150pF: 330Ω, for each point, 10 shots of direct discharge or air discharge. (1 MΩ/SHOT), have no malfunction. Direct discharge: ±4kV, Air discharge: ±8kV

6.2. Hi-Pot Test

After AC 3000V1min between input plug-DC plug. cutoff current 5mA, the adapter have no failures like damages, arch, insulation damage etc. (at 25° C)

6.3. Insulation Resistance

At 25° C after DC 500V 1min between input plug- DC plug, insulation resistance 7MΩ/min)

6.4. Leakage Current

0.25mA maximum, at nominal AC input voltage and frequency

6.5. Temperature Rise

At 25°C with the rated input 100-240Vac charged to the primary a rated load on the secondary ,every parts of the case surface rise 77°C or less,

7. Environmental Requirement

7.1. Operating Temperature

-10°C TO 40°C Full load, Normal operation.

7.2. Storage Temperature (8H)

-25°C TO +70°C with package

7.3. Operating Humidity

5%(0°C)~90%(40°C),RH,72Hrs,Full load, Normal operating.

7.4. Storage Humidity

5% ~ 95% RH. Non-condensing

8. Mechanical Requirement

8.1. Input plug type

Wall-mount UL.UK.EU type (with holes) . 2 Conductors,<Live.Neutral>

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8.2. Drop Test

from 100cm height to the most likely to cause adverse results to the horizontal position of the surface drop test bed three times, the adapter in addition to surface scratches, it should be no dysfunction can cause the adapter and other potentially the harm. (Horizontal surface of the test rig shall be composed of at least 13mm thick hardwood installed in two layers of plywood, each layer of plywood thickness 19-20mm, and then placed on a cement base or equivalent on the ground inelastic)

8.3. Salty Fog Test for Metal Part

Experiment condition, Salty water thickness: 5%, Equipment Temperature: 35 ~ 40 °C ,put the adapter(unpacking)in the test equipment for 24h, after 24h recovery at 25°C checking the appearance, the metal parts have no erode and rust.

9. Mechanical Characteristics

9.1. Appearance

Visual inspection the case have no visual abnormality, no obvious scratch, burr and other mechanical damage, outer metal have no rust. Use limit sample to check for any failures.

9.2. Case/Resin Materials

Flame resistance applies to UL94-V1

10. Environmental Performances

10.1. Operating at the Lower temperature

At $-10\pm 2^{\circ}\text{C}$, with the rated voltage 100-240Vac charged to the primary and unloaded and full load on the secondary, no abnormality in electric and mechanical characteristic, after 2 hours recovery at the room temperature.

10.2. Operating at the High Temperature

At $40\pm 2^{\circ}\text{C}$, with the rated voltage100-240Vac charged to the primary and unloaded and full load on the secondary. No abnormality in electric and mechanical characteristic after 2 hours recovery at the room temperature.

10.3. Storage at the Lower Temperature

At $-25\pm 2^{\circ}\text{C}$, test of non-operated, No abnormality in electric and mechanical characteristic after 2hours recovery at the room temperature.

10.4. Storage at the Higher Temperature

At $70\pm 2^{\circ}\text{C}$, test of non-operated, No abnormality in electric and mechanical characteristic after 2hours recovery at the room temperature.

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10.5. Storage at High Temperature and High Humidity with the Adaptor Turned on

At $40 \pm 2^\circ\text{C}$, 90~95%RH, test of operating 48hours, no abnormality in electric and mechanical characteristic, after 4hours recovery at the room temperature.

10.6. Storage at low Temperature and Low Humidity with the Adaptor Turned on

At $-10^\circ\text{C} \pm 2^\circ\text{C}$, 10%~40%RH, test of operating 48hours, no abnormality in electric and mechanical characteristic, after 4hours recovery at the room temperature.

11. Photograph of the Product

11.1 Enclosure/:

The power supply size: L60x W60x H30.5mm;



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