Technical Specifications

PSU 24V8WA3

Fly Back Switching Power Supplier

REV 1.0

Rev.Data	Description	Author	Approval
1.0 29/04/17	First Edition	M. Guelfo	Pippo Anastasi

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Revision history:

1.0:

– first edition: technical specifications

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1 Introduction

This document describes a 8W continous universal input, single output power supply capable of delivering as peak up to 10W.

The purpose of the following project is the design of an external insulated switching power supply to be used in a fridge to power a small air fan.

Starting from the electrical and environment requirements, the development will consider the following constraints in order of importance:

- Mechanical constraints
- Efficiency constraints

Finally the device will be submitted to the a certification lab in order to produce all the required compatibility test reports and safety marks.

2 Document target

This document aims the target of contain all the technical details of the activity.

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1 Power Supply Specification

○ *Input*

• Voltage range	100-240 VAC	(2 Wire – no P.E.)
• Frequency	50/60 Hz	
• No-load Input Power	250 mW	(@ 230 VAC)

○ *Output*

• Voltage	24 V DC	
• Output voltage Tolerance	± 10 %	
• max Output Ripple Voltage	250 mV	20 MHz bandwidth
• Output Current	330 mA	
• max impulse Output Current	400 mA	
• Continuous Output Power	8 W	
• Peak Output Power	10 W	

○ *Efficiency*

• Full Load	73 %	Average POUT, 25 °C (230Vac)

○ *Environmental*

• Conducted EMI	Meets CISPR22B / EN55022B	
• Safety	Designed to meet IEC950, UL1950 Class II	
• *Ambient Temperature*	0°C +45°C	Open frame, sea level
• *MTBF at 25°C*	100.000 hrs	

- All the materials and processes involved in the supplying of this power supply will follow the vigent ROHS normative.

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2 Features

- Revolutionary control concept provides very low cost, low part count solution
- Primary side control eliminates secondary side control and opto-coupler
- Provides +/-5% CV
- Over-temperature protection
- tight tolerance (+/-5%) with hysteretic recovery for safe PCB temperature under all conditions
- Auto-restart output short circuit and open-loop protection
- ***E-Shield***™ winding technique dramatically reduces EMI filtering
- ***EcoSmart***® – Easily meets all current international energy efficiency standards
  - China (CECP) / CEC / ENERGY STAR 1.1 / EU CoC
- No-load consumption <250 mW at 265 VAC

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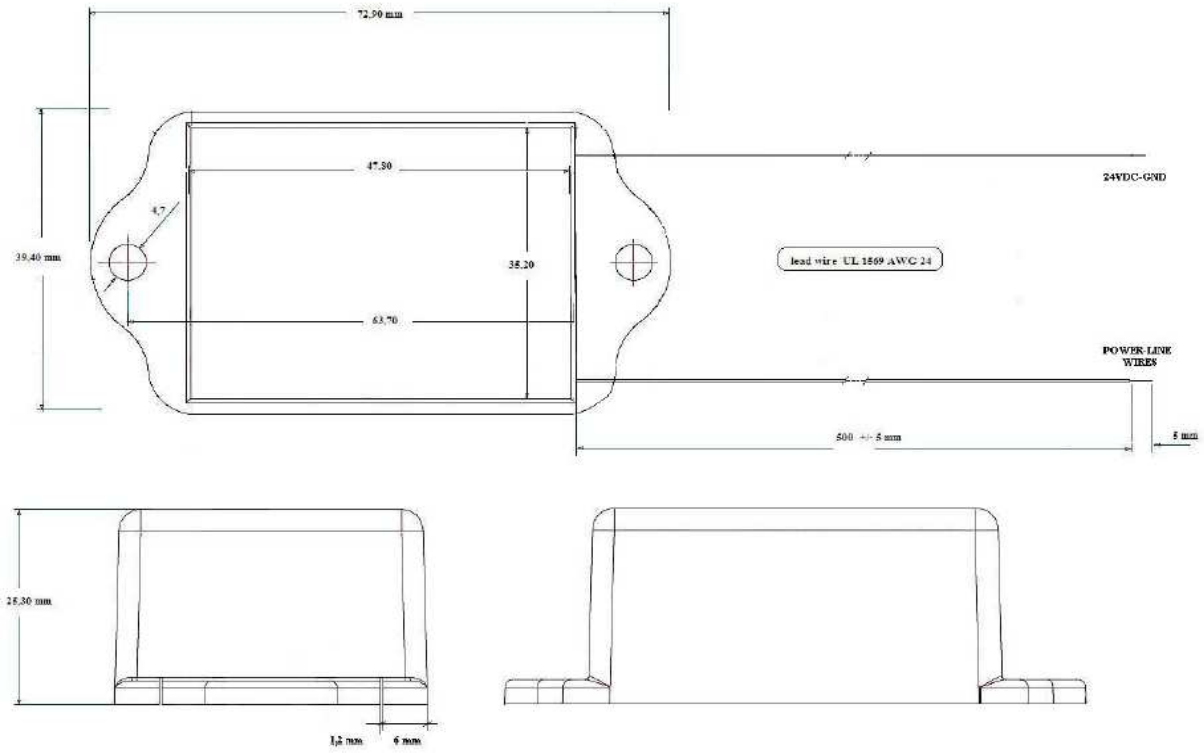
3 Mechanical Requirements

The following picture show the ABS plastic enclosure that hosts the PSU ultrasound sealed.
In some configuration the wiring terminations can be with connector.
Actually the first configuration (24V8WA3) has a 4-wires cable 375 mm long outside the enclosure with 4 pin connector JST ELP-04NV (see sketch below).



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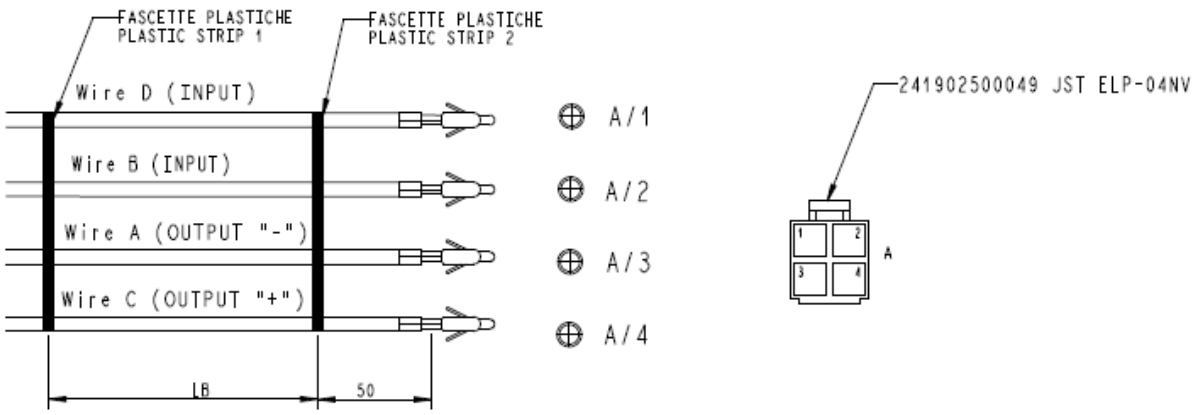
4 Cabling sketch



Pri. input wire	Suzhou Jinlianli Wire & Cable Co., Ltd.	1569	300V, 105°C, Min. 24AWG	UL	UL E228191
Insulated tube on pri. Input wire	Shenzhen Woer Heat-Shrinkable Material Co., Ltd.	RSFR-H	VW-1, 125°C	UL	UL E203950
Sec. output wire	Suzhou Jinlianli Wire & Cable Co., Ltd.	1569	300V, 105°C, Min. 24AWG	UL	UL E228191

Cabling designed for the 24V8WA3 PSU module.

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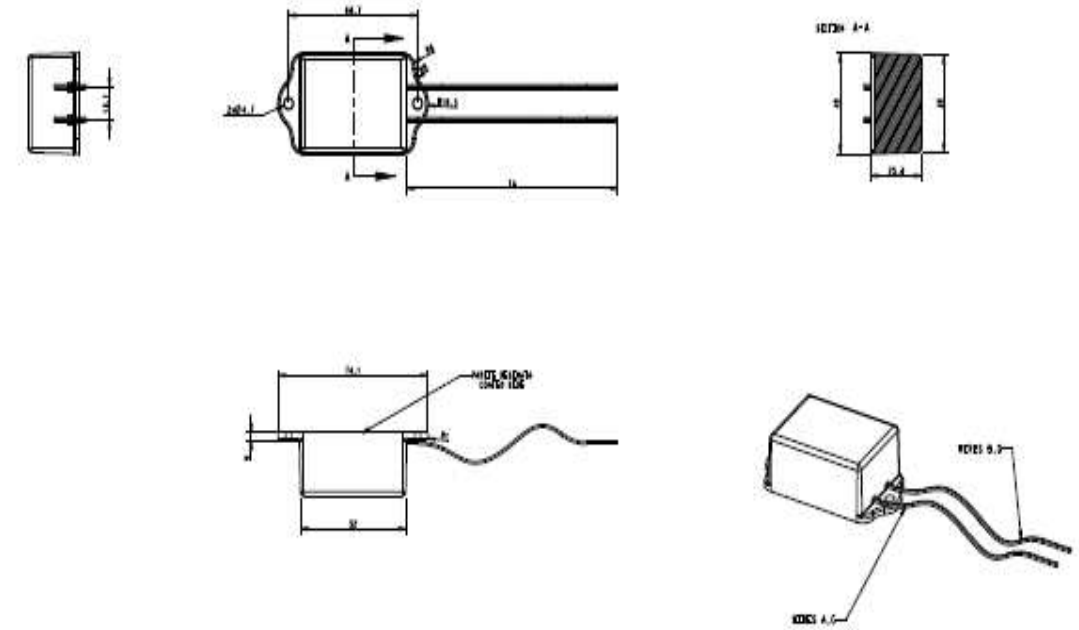
5 Assembly drawing



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6 Efficiency Requirements

The efficiency is higher than 70%.

7 CE – EN60335.2.24 – UL1310

The power supply will pass through a certification lab in order to produce the necessary conformity test reports for CE, the EN60335.2.24 and UL1310 normative.
Based on the collected information we will release the following test reports:
CEN55014-1 , CEN55014-2 , CEN61000-3-2 , CEN61000-3-3
simulating a load based on a resistor of 18 Ohm .

8 Certificate of Compliance

The following products have been tested by us with the listed standards and found in compliance with the council LVD directive 2006/95/EC as last amended by EEC Directive 93/68/EEC.
It is possible to use CE marking to demonstrate the compliance with this LVD Directive.

No.: ACSS1212220

Test Standards:

EN 60335-1: 2012	Safety of household and similar electrical appliances
EN 60335-2-24: 2010	Part 2: Particular requirements for refrigerating appliances, ice-cream appliances and ice-makers.
Glow-wire test	IEC 60695-2-11 at 550°C and Plastic enclosure 650°C No ignition, no flame.

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11 PSU Label

30.2	TABLE: Glow wire	P
Part	Test temperature (°C)	Test result
Plastic enclosure	550	No ignition, no flame
Transformer (T1) bobbin	650	No ignition, no flame
Note(s): --		

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12 CE-LVD compliance

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD

TEST REPORT EN 60335-2-24 Safety of household and similar electrical appliances Part 2: Particular requirements for refrigerating appliances, ice-cream appliances and ice-makers	
Report Reference No.....:	ACSS1508076
Tested by (name + signature) .....:	Guo Lu .....
Reviewed by (name + signature).....:	Ditto Yu .....
Approved by (name + signature) .....:	Carolyn Kang .....
Date of issue.....:	
Contents .....:	Report: 87 pages, Attachment: A to C: 15 pages
Testing Laboratory ..... :	Audix Technology (Shenzhen) Co., Ltd.
Address.....:	No. 6, Kefeng Rd., 52 Block Shenzhen Science & Industry Park, Nantou, Shenzhen, Guangdong, China.
Testing location/ address.....:	Same as above
Applicant's name..... :	Suzhou Duozheng Electronics Co., Ltd.
Address.....:	No. 1888 Taowu Road, Taoyuan Town, Wujiang, Suzhou City, Jiangshu Province, China
Manufacturer's name.....:	Suzhou Duozheng Electronics Co., Ltd.
Address.....:	No. 1888 Taowu Road, Taoyuan Town, Wujiang, Suzhou City, Jiangshu Province, China
Test specification: Standard .....: EN 60335-1:2012 + A11:2014 Test procedure.....: Procedure deviation.....: Non-standard test method.....:	 EN 60335-2-24:2010 in conjunction with CE-LVD N/A N/A
Test Report Form No. ..... :	V1.1
Test item description ..... :	Power Supply
Trade Mark/Brand name.....:	
Model/Type reference .....:	12V8WA, 24V8WA
Ratings.....:	For 12V8WA Input: 100-240V , 50/60Hz, 0.2A; Output: 12Vdc, 667mA For 24V8WA: Input: 100-240V , 50/60Hz, 0.2A; Output: 24Vdc, 330mA

TRF No. : V1.1

13 CE-LVD compliance

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD

Test item particulars:	
Classification of installation and use ..... :	Built-in power supply
Supply Connection ..... :	Lead wire
Operation condition ..... :	[x] continuous [] rated operating / resting time:
Over voltage category (OVC) ..... :	[] OVC I [x] OVC II [] OVC III [] OVC IV [] other
Tested for IT power systems ..... :	[] Yes [x] No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	[] Class I [x] Class II [] Class III [] Not classified
Pollution degree (PD) ..... :	[] PD 1 [x] PD 2 [] PD 3
IP protection class ..... :	IP20
Altitude during operation (m) ..... :	Up to 2000m
Altitude of test laboratory (m) ..... :	Up to 2000m
Mass of equipment (kg) ..... :	Approx. 0.05Kg
Maximum operation ambient ..... :	45°C (tropic climatic class)
Possible test case verdicts:	
- Test case does not apply to the test object..... :	N (Not Applicable)
- Test object does meet the requirement..... :	P (Pass)
- Test object does not meet the requirement..... :	F (Fail)
Testing:	
Date of receipt of test item..... :	May 11, 2015; Aug. 17, 2015
Date(s) of performance of tests ..... :	May 20 - Jun. 10, 2015; Aug. 21-31, 2015
General remarks:	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(See Attachment #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. Throughout this report, a point is used as the decimal separator. List of test equipment must be kept on file and available for review.	

TRF No. : V1.1