

QK-A013 Low Noise 12.0V to 5.0V Power Converter With 12.0V Battery Indicator Manual



Designed in UK



Features

- High performance 12.0V to 5.0V voltage converter
- Low RMS noise: 0.8 μ VRMS (10Hz to 100kHz)
- High PSRR: 79dB (at 1MHz)
- Accurate and stable output current
- Maximum output current: 500mA
- Ideal for noise-sensitive RF applications
- LEDs indicates 12.0V battery capacity (check voltage level)
- Wire measures 45cm

* If you are looking for 12V to 5V DC power supply for the digital circuit or just want to charge the battery of your devices, please go with A013-1.5A, which provides a higher current while keep the standard power ripple level.

Contents

- 1. Introduction 3
- 2. Location 3
- 3. Connection 3
- 4. Battery indicator and Status LEDs 3
- 5. Specification 4
- 6. Limited Warranty and Notices 4

1. Introduction

The A013 is a 12.0V to 5.0V low noise power converter which converts 12.0V (or 24.0V) battery power into a stable 5.0V USB power source.

Originally designed for marine use (where radio interference needs to be kept to a minimum). It's specifically designed to create very low amounts of noise and interference. This makes it ideal for all applications and locations.

The A013 can easily be connected to different types of batteries. It is most frequently used on boats, cars and caravans, when a stable 5.0V power source is needed for sensitive equipment requiring a USB connection (marine electronic devices, mobile phones, etc.).

The A013 has a

- low 0.8 μ Voltage Root Mean Square Value (VRMS)
- high 1 Mhz Power Supply Rejection Ratio (PSRR)

This combination results in a very accurate and stable output current.

If you are looking for 12V to 5V DC power supply for the digital circuit or just want to charge the battery of your devices, please go with A013-1.5A, which provides a higher current while keep the standard power ripple level.

2. Location

A013 is designed to be securely positioned in an indoor environment and needs to be placed where it is well protected from humidity and water.

The A013 has a single hole for mounting to a strong and sturdy location.

3. Connection

To connect your device, simply plug in your USB device to the USB side of the A013, on the other side of the A013 connect the power source to your 12.0V or 24.0V battery.

Connect the red cable to the positive end of your battery and the black end to the negative end of the battery.

4. Battery indicator and Status LEDs



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The LED's on the device indicate power levels of the battery when connected to a 12.0V battery. The corresponding LEDs will light up as the power in your battery is reduced. The table below explains what power level the LEDs indicate in relation to battery.

This is an added feature to help when using liquid or charged batteries.

This function is designed for 12.0V batteries and does not work when used with a 24.0V battery.

LEDs	Power level
100% LED	≥12.55V
80% LED	12.1V--12.55V
50% LED	11.3V--12.1V
10% LED	10.6V--11.3V
0% LED	10.6V

5. Specification

Item	Specification
Operating temperature	-25°C to +80°C
Storage temperature	-25°C to +85°C
DC input supply	24.2V-10.5.0V
DC output voltage	5.0V (+/-0.2V)
Maximum supply current	500mA
Battery indicator	≥12.55V 100% LED on 12.1V--12.55V 80% LED on 11.3V--12.1V 50% LED on 10.6V--11.3V 10% LED on ≤10.6V 0% All LEDs off

6. Limited Warranty and Notices

Quark-elec warrants this product to be free from defects in materials and manufacture for one year from the date of purchase. Quark-elec will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts and labour. The customer is, however, responsible for any transportation costs incurred in returning the unit to Quark-Elec. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs. A returns number must be given before any unit is sent back for repair. The above does not affect the statutory rights of the consumer.

Disclaimer

It is the user's responsibility to use this product prudently. Neither Quark-elec, nor their distributors or dealers accept responsibility or liability either to the products user or their estate for any accident, loss, injury or damage whatsoever arising out of the use or of liability to use this product.

Accuracy of this manual

Quark- products may be upgraded from time to time and future versions may therefore not correspond exactly with this manual. The manufacturer of this product disclaims any liability for consequences arising from omissions or inaccuracies in this manual and any other documentation provided with this product.

Document history

Issue	Date	Changes / Comments
1.0	14/08/2018	Product Release
2.1	14/06/2022	Add A013-1.5A version

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