QPSU

QDevil Power Supply

User's manual

Power supply with worldwide AC input capabilities: 100V, 120V, 220V, 240V. The instrument has three fixed output voltages which provides +5V, +15V and -15V.

Author AK/JvH
Date 2025-08-12
Doc version: 1.01

Table of contents

1 Introduction

Description and usage

The QDevil Power Supply Unit (QPSU) is a triple-output low noise power supply dedicated for powering the QDevil low noise voltage sources. It consists of three power supplies: A fixed nominal 5 volt supply rated at 5.0 amps maximum and two fixed, +15 volt and -15 volt supplies each rated at 1.5 amps. The supplies are completely isolated from mains/cabinet ground. The unit is entirely passively ventilated, to prevent any noise from a rotating fan.

The device is not suitable for biomedical applications, as component failure, incorrect grounding, or use outside specifications may result in hazardous conditions for the subject.

Included accessories

- Power cable
- Printed manual

Specifications

Converter type	Linear
Efficiency	55%
Voltage input	100, 120, 220, 240 VAC
Input power (max)	150 W
Voltage outputs	0V, +5V, -15V, +15V
Current output (max)	5A, 1.5A, 1.5A
Output power (max)	75W
Output connector	1 pc 4 pole Amphenol
Operating environemt	5 - 40°C, 20-80% relative humidity non condensing
Size / Dimension	Depth: 300mm, Width: 367mm, Height: 134.5mm
Weight	6.1kg + power cord

Maintenance

No special maintenance of the instrument is necessary. There are no user-serviceable parts, apart from the fuses (see section 3). Contact Quantum Machines for service or spare parts if necessary: QM Technologies ApS, Lautrupvang 2, DK-2750 Ballerup, Denmark, or on quantum-machines.co/contact-us/.

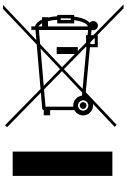
Declaration of Conformity

CE

The device has been tested according to EN 55011 class B (electromagnetic disturbance characteristics).

Disposal

Important environmental information about this product.



This symbol on the device or the package indicates that disposal of the device after its lifecycle could harm the environment. Do not dispose of the unit as unsorted municipal waste; It should be taken to a specialized company for recycling. This device should be returned to your distributor or to a local recycling service. Respect the local environmental rules. **If in doubt contact your local waste disposal authorities.**

2 Safety

CE This device has been tested and has been supplied in a safe condition. This manual contains some information and warnings which have to be followed by the user to ensure safe operation and to retain the instrument in a safe condition.

This device has been designed for indoor use in the temperature range 5°C to 40°C, 20% - 80% RH (non-condensing). Do not operate while condensation is present. When bringing the device from a cold environment to a warm environment, please allow the unit to thermalize (2-4 hours) before taking it out of its shipping box and attempting to power it on.

WARNING

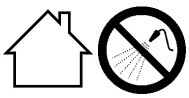
To avoid electric shock, or damage to the instrument, never allow water to get inside the case. To avoid damage to the case never clean with solvents.

A power cord with ground is provided with the instrument. The instrument must be connected to a power outlet with ground. Please make sure that the power cord is undamaged and in good condition.

WARNING

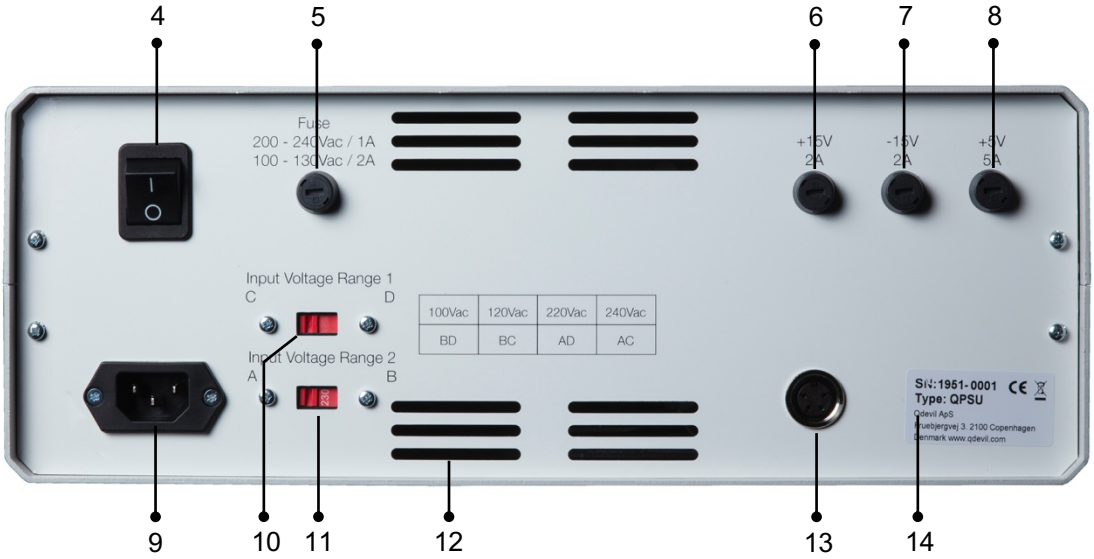
This instrument must be earthed (grounded) through the mains cable.

Use of this instrument in a manner not specified by these instructions may impair the safety protection provided. Do not operate the instrument outside its rated supply voltages or environmental range.

	Keep this device away from children and unauthorized users.
	**Indoor use only.** Keep this device away from rain, moisture, splashing and dripping liquids. Never put objects filled with liquids on top of or close to the device.
	**DO NOT** disassemble or open the cover under any circumstances. Touching live wires can cause life-threatening electroshocks. There are no user-serviceable parts inside the device. Refer to an QDevil for service and/or spare parts.
	**Caution:** Device heats up during use. Make sure the ventilation openings are clear at all times. For sufficient air circulation, leave at least 1” (+/- 2.5cm) in front of the openings. Place the device on a flat, heat resistant surface, do not place the device on carpets, fabrics etc.
	**Always** disconnect mains power when device not in use or when servicing or maintenance activities are performed. Handle the power cord by the plug only.
	Keep this device away from dust and extreme temperatures.
	Protect this device from shocks and abuse. Avoid brute force when operating the device.
	Do not use the device when damage to housing or cables is noticed. Do not attempt to service the device yourself but contact QDevil.

3 Description

Front panel



Rear panel

1 LED indicator for +15 V.

2 LED indicator for -15 V.

3 LED indicator for +5 V.

4 Power on/off switch.

5 Inlet fuse.
   100 – 130 VAC should have a 250V, 2A Slow, 5 x 20mm.
   200 – 240 VAC should have a 250V, 1A Slow, 5 x 20mm.
   Usage in North American countries fuse type: 3AG, must be UL listed and CSA certified to maintain safety approvals.
   Usage in European countries must be IEC Pub. 127 approved to maintain safety approvals.

6 Output fuse +15 Volt, 250V fuses, 2A Slow, 5 x 20mm.

7 Output fuse -15 Volt, 250V fuses, 2A Slow, 5 x 20mm.

8 Output fuse + 5 Volt, 250V fuses, 5A Slow, 5 x 20mm.

9 IEC socket for mains cord.

10 Input voltage range selector 1 (C - D)

11 Input voltage range selector 2 (A - B)

12 Vent holes

13 Output connector for cable going to device (4 pole Amphenol)

14 CE marking and serial number

4 Operation

Preparing the device

This device has been designed for indoor use in the temperature range of 5°C to 40°C, 20% - 80% RH (non-condensing). Do not operate while condensation is present. When bringing the device from a cold environment to a warm environment, please allow the unit to thermalize (2-4 hours) before taking it out of its shipping box and attempting to power it on.

Before inserting the power plug ensure that the Input Voltage Range selector switches are positioned corresponding to the power outlet in your country, and that the fuses are correct for the given setting.

Input voltage (VAC)	Example of countries	Input Voltage Range 1	Input Voltage Range 2
100	JP	D	B
110-120	US, TW	C	B
220	KR	D	A
230-240	EU-countries, AU, IL, IN, SG, TR, UK	C	A

See more technical details in section 5

Powering on

1. After making sure that the Input Voltage Range selector switches are set correctly, make sure that the power switch on the rear panel of the power supply is OFF.
2. Next the unit is connected to the power outlet using the power cord which is provided with the device. The instrument must be connected to a power outlet with ground.
3. When used together with a QDevil QDAC voltage source use the power cable that came with the QDAC. The male end of the Amphenol is connected to the power supply while the female end is connected to the QDAC.
4. Finally turn on the power supply by flipping the switch on the rear panel to its ON position and the LEDs should light up green indicating that the voltage is correct.

Powering off

Power the unit off by toggling the power switch on the rear panel to the OFF position.
Always wait at least 5 seconds before switching the unit back on.

5 Technical data

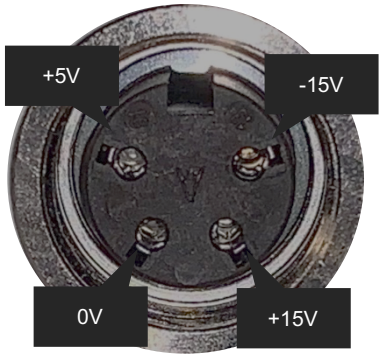
Input specifications

Parameter	Conditions / Description		MIN	NOM	MAX	Units
AC input voltages	Switch selectable. All power supplies must be externally fused for proper operation. Fuse ratings are marked on each unit. Consult QDevil for each unit's fuse requirements.	Switch: BD BC AD AC	 87 104 191 209	 100 120 220 240	 110 132 242 264	VAC
Input frequency	AC input.		47		63	Hz
Line regulation			-0.05		+0.05	%

Output specifications

Parameter	Conditions / Description	MIN	NOM	MAX	Units
Efficiency	+/- 15 Volt outputs + 5 Volt output		55 45		%
Ripple and noise (Full load, 20MHz BW)	5 Volt and +/- 15 Volt			5.0	mV pk-pk
Load regulation		-0.05		+0.05	%
Transient response	Recovery time, to within 1% of initial set point due to a 50% load change			50	us

Voltage output (Amphenol 3303-000 4 way).



6 Contact information

For any inquiries or to request service of the product, please contact:

QM Technologies ApS
Lautrupvang 2
DK-2750 Ballerup
Denmark
Website: quantum-machines.co/contact-us/