

BP-1 Battery Pack

This guide describes how to use the BP-1 battery pack with any of the DAQPad Series DAQ units. The BP-1 battery pack is a portable power supply for the DAQPad Series units.

Introduction

The BP-1 is a rechargeable battery pack that you can use to power any of the DAQPad Series DAQ units instead of the A/C power supply adapter that is in the DAQPad unit kit.

The BP-1 battery pack contains a 12 V sealed lead-acid battery and a solid-state dual-stage charger for recharging. You can use the Velcro strap that is in the kit to strap the battery pack and a DAQPad unit together to facilitate carrying and stacking them.

You cannot simultaneously charge the battery pack and power a DAQPad unit using the supplied charger. However, in a standby application, you can use the SCXI-1383 power supply and float charger to simultaneously charge the battery pack and power the DAQPad unit.

What Your Kit Should Contain

There are two versions of the BP-1 battery pack kit. Each kit has a different wall-mount battery charger: one charger is for 120 VAC; the other is for 230 VAC. In addition to the battery charger, each version of the BP-1 kit contains the BP-1 battery pack, a Velcro strap, and the *BP-1 Battery Pack Installation Guide*. If your kit is missing any of the components or if you received the wrong version, contact National Instruments.

Detailed specifications of the BP-1 battery pack are in the *Specifications* section of this guide.

Recharging the BP-1 Battery Pack

Warning: *Charge the BP-1 battery pack only with the enclosed battery charger. National Instruments is NOT liable for any damage or injuries resulting from charging the BP-1 battery pack with any other battery charger or from using the enclosed battery charger in any other application.*

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You must charge the BP-1 battery pack when you first receive the BP-1 kit and after each use of the battery pack with a DAQPad unit. Use the following steps to charge the BP-1 battery pack with the enclosed charger.

1. If the BP-1 battery pack and DAQPad unit are connected to each other, disconnect them.
2. Verify that the voltage rating on the battery charger matches the voltage supplied in your area.
3. Connect one end of the battery charger into P1, the rear panel plug of the BP-1 battery pack. Plug the other end of the battery charger into an electrical outlet.
4. The red FAST CHARGE LED on the battery charger should light up immediately.

Note: *In some cases of extreme discharge, the green FLOAT LED may light up when the battery charger is first connected to the battery pack. If the battery pack is not damaged, the FAST CHARGE LED eventually lights up and a normal charge cycle occurs.*

A normal fast charge cycle takes up to four hours depending on the discharge state of the battery pack. After the battery pack is charged to approximately 97% of full capacity, the FAST CHARGE LED will turn off and the green FLOAT LED will light up. When the green FLOAT LED lights up, continue charging the battery pack for three hours to fully charge it. After the FLOAT LED lights up, leaving the battery pack and the charger connected for longer than three hours will not harm the battery pack.

If neither LED on the battery charger remains lit while the battery charger is connected to the battery pack and a live electrical outlet, check the battery pack fuse, which is accessible at the rear panel of the battery pack. Use a screwdriver to twist open the fuse holder and check the fuse. If the fuse has blown, replace it with a slow-blow 5 by 20 mm 2.5 A fuse, which is available from National Instruments. If the fuse is not blown, check the wall outlet. If both battery charger LEDs still remain unlit, contact National Instruments.

Powering the DAQPad Series Units with the BP-1 Battery Pack

Use the following steps to connect the BP-1 battery pack to a DAQPad unit.

1. Connect the battery pack rear panel plug P1 to the power jack on the rear panel of a DAQPad unit.
2. Power on the DAQPad unit. The power LED on the DAQPad unit should light up immediately.

The power LED does not indicate the charge status of the battery pack. Therefore, it is important to always start with a fully charged battery pack and to time the battery usage with the DAQPad unit to avoid losing data and possibly damaging the BP-1 battery pack. The recommended discharge time for your particular DAQPad unit is in your DAQPad user manual.

Taking Care of the BP-1 Battery Pack

There are several precautions that you can take to ensure a long life for your battery pack.

1. Do not discharge the battery pack for longer than the recommended discharge time given in your particular DAQPad user manual. Repeated deep discharge of the battery pack can reduce the life expectancy of the lead-acid batteries.

Note: *As the battery pack ages, the capacity, and therefore the recommended discharge time, diminishes.*

2. Recharge the battery pack soon after using it, especially if you deep discharge your battery pack. Failing to do this may result in extended recharging times.
3. Recharge the battery pack completely. Repeated incomplete recharging of the battery pack reduces the capacity of the battery pack.
4. We recommend that you recharge your battery pack every 18 months of storage if the battery pack has been stored in a low humidity, 20° C atmosphere. For less ideal storage conditions, recharge more often.

Caution: *The battery pack has a sealed lead-acid battery that contains toxic material (lead) and corrosive fluid (sulfuric acid). Charge the battery in a well-ventilated area away from sparks, flames, or smoke. Do not puncture, disassemble, mutilate, or incinerate the battery pack. Dispose of the battery pack with automotive battery scrap.*

BP-1 Battery Pack Specifications

Battery type	Sealed lead acid
Voltage	12 VDC
Capacity	3.2 Ah at 20 hr rate
Dimensions	1.5 by 5.8 by 8.4 in (3.8 by 14.6 by 21.3 cm)
Fuse	Internally fused at 2.5 A with a slow-blow 5 by 20 mm fuse
Weight	4 lb 3.5 oz
Storage temperature	-15° to 40° C (5° to 104° F)
Operating temperature	-15° to 50° C (5° to 122° F)
Charging temperature	0° to 35° C (32° to 95° F)