Intermec

Quick Reference Guide

JANUS™ 2010 Battery Charger

P/N 058430-003

Federal Communications Commission Radio Frequency Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interferences that may cause undesired operation.

This equipment is intended for operation in a commercial environment, in compliance with the requirements for a Class A digital device, pursuant to Part 15 of the FCC Rules, and it must not be used in a residential environment; however, it has also been tested and found to comply with the more stringent requirements for a Class B device, pursuant to Part 15 of the FCC Rules. It generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions manual, it may cause interference to radio communications. If this equipment causes harmful interference, the user will be required to correct the interference at their own expense.

***Note**: In order to maintain compliance with FCC Rules, the I/O cables that interconnect between the device and any peripheral must be specified by Intermec.*

***Caution:** Changes or modifications not expressly approved by Intermec could void the user's authority to operate this equipment.*

Industry Canada Compliance

This digital apparatus does not exceed the Class B limits for radio emissions from digital apparatuses as set out in the radio interference regulations of Industry Canada.

Cet appareil numérique n'émet pas de bruits radioéléctriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioéléctrique édicté par Industrie Canada.

European Union Compliance

CE

This product complies with EN 55022, EN 50082-1, and EN 60950 as required by the EMC Directive 89/336/EEC as amended by 92/31/EEC and by the Low Voltage Directive 73/23/EEC as amended by 93/68/EEC.

Additional EMI/RFI Compliance

This device meets the Class B limit requirements of CISPR 22.

Agency Approvals

The JZ2010 is UL Listed (UL 1950), CSA Certified (C22.2 #950) and TUV "GS" Licensed (EN 60950 and DIN VDE 0805) for safety when powered by an external Intermec power supply. UL, CSA, and TUV have approved Intermec power supply 058399 for use with the JZ2010.

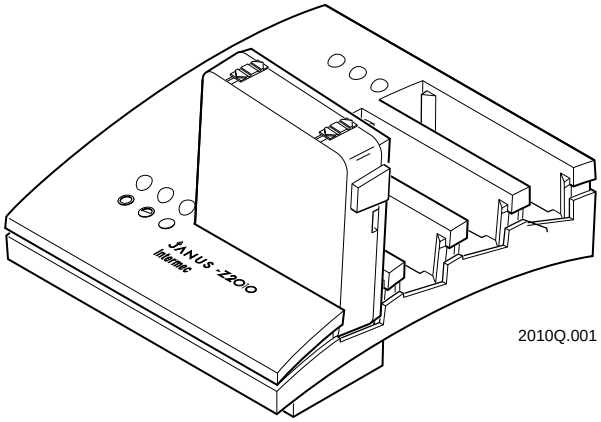
Contents

This quick reference guide describes the battery charger and explains how to install and use the charger.

Introduction

The JZ2010 battery charger is an accessory for the JANUS™ 2010 reader. The charger allows you to:

- charge up to four JANUS 2010 battery packs at one time.
- discharge up to four JANUS 2010 battery packs at one time.



Battery Charger Parts and Functions

Top Panel

The top panel of the battery charger has four battery slots to charge and discharge J2010 battery packs. Each battery slot has its own microprocessor and works independently of the other battery slots to control the charging and discharging of its own battery pack.

There are three LEDs for each battery slot to monitor the status of the battery pack:

Discharge The battery pack is discharging.

Charge The battery pack is charging.

Ready The battery pack is fully charged.

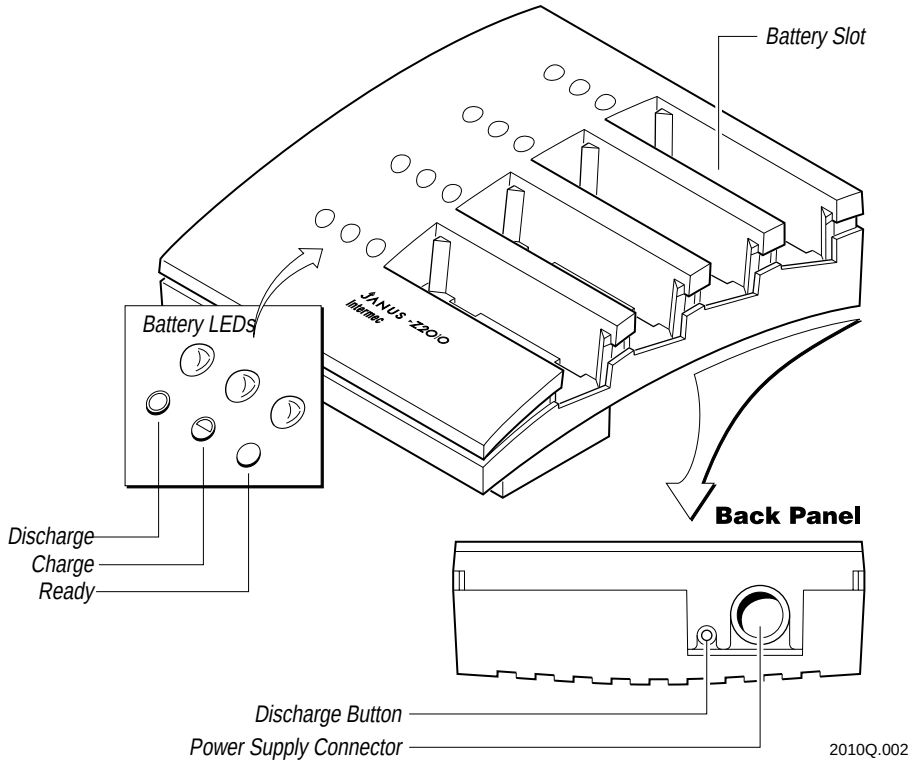
Back Panel

The back panel of the charger has two parts:

Discharge button Use this button to discharge one or more battery packs. You only need to discharge a battery pack that has lost its capacity to hold a charge.

Power supply connector Use this connector to attach a power supply to the charger. The power supply provides 9.4 VDC for battery charging and discharging.

Battery Charger Dock Details

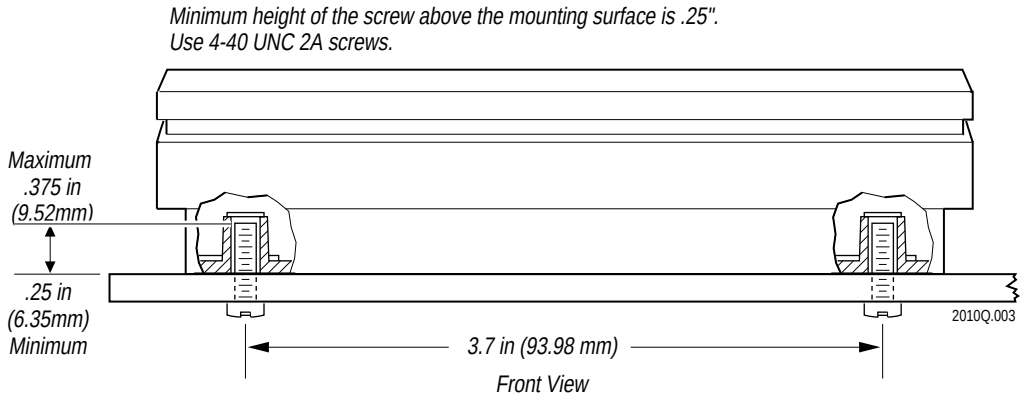


Installing the Battery Charger

1. Mount the charger on a desktop or board. (Optional.)
2. Connect the power supply to the charger.

Mounting the Battery Charger

You can permanently mount the battery charger on a desktop or board using two 4 - 40 UNC 2A screws as shown. Mount the charger before you connect the power supply.



Note: *If you mount the JZ2010 battery charger on a table top or shelf, make sure you have enough vertical clearance to insert and remove battery packs easily. Also remember to leave space behind the charger so that you can connect the power supply and reach the discharge button on the back panel.*

Connecting the Power Supply

The battery charger uses the Intermec Part No. 058399 power supply, which has a detachable power cord. The power supply operating range is 100 to 240 VAC at 47 to 63 Hz. To connect the power supply, attach the power supply to the connector on the back panel of the charger and plug the power supply into an AC outlet.

Using the Charger for the First Time

You are ready to use the battery charger once the power supply is connected and plugged in. If there are no J2010 battery packs inserted in the charger, the battery LEDs on the top panel are all turned off. To test the charger and make sure it is operational, insert a battery pack into an empty battery slot. One or more battery LEDs for that slot will turn on or start flashing, and you can begin using the battery charger.

If no LEDs turn on or start flashing, make sure the power supply is plugged into an AC outlet and there is power to the outlet. Check to make sure the power supply is connected to the battery charger. If the charger is installed correctly and still no LEDs light or flash with a battery pack inserted, there may be a problem with the power supply or the battery charger. Contact your Intermec representative for assistance.

Charging Battery Packs

You can charge up to four J2010 NiCad battery packs concurrently. Only use the battery charger to charge J2010 battery packs.

In this section, three LED icons that represent the state of each battery LED may appear next to the step.

Discharge	Charge	Ready
		
off	flashing	on

To charge a battery pack

1. Insert each battery pack into an empty battery slot on the charger.
2. 

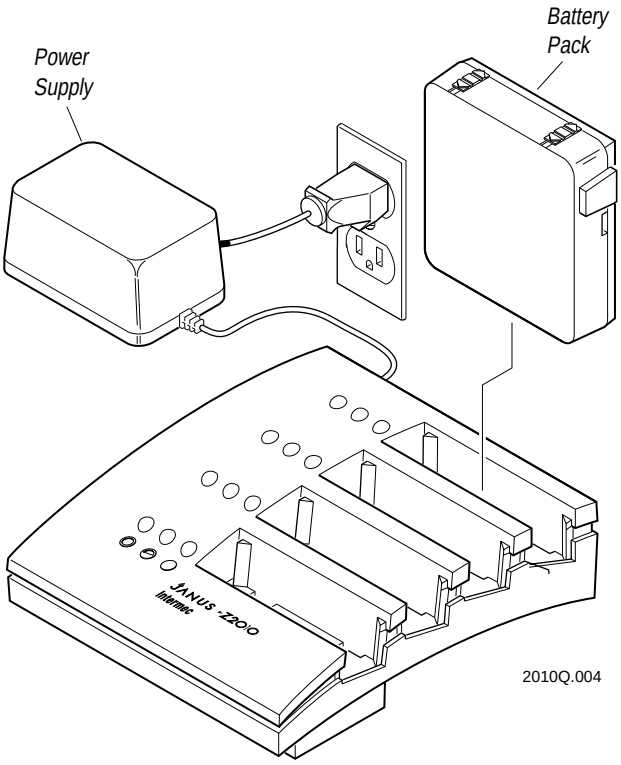
   If you are charging a battery pack for the first time, the Charge LED flashes to indicate that the charger is precharging the battery. Once a battery pack has been precharged or if you have charged the battery pack before, the Discharge and Charge LEDs start flashing.

   If none of the battery LEDs for the slot begin to flash, the battery pack is not fully inserted in the slot. Push the battery pack all the way into the slot.

   Note: *If you see any other combination of LED lights, there may be a problem with the battery pack. Refer to the "Battery Status Lights" section later in this quick reference guide to determine the problem.*

3. The charger begins charging the battery packs. Each battery slot works independently to completely charge its own battery pack within 2.5 hours.

Charging a Battery Pack



4. When a battery pack in a slot has been fully charged, the Charge LED flashes and the Ready LED is lit to indicate the charger has finished charging the battery pack. You can remove the battery pack from the slot.

   If you leave the battery pack in the slot, the charge current to the battery pack is reduced to maintain the full charge but not overcharge the battery pack.

If you lose power to the battery charger, all battery packs in the charger begin charging or maintaining their full charge when the power is returned.

Note: *The optimum battery temperature to begin charging battery packs is 68°F (20°C). Battery packs charged at 68°F (20°C) have a higher charge capacity and hold more charging cycles than battery packs charged at a higher temperature.*

Discharging Battery Packs

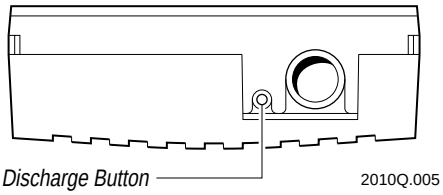
The battery charger is designed to maximize battery life and prevent the loss of battery capacity due to the memory effect associated with NiCad batteries. Usually it is not necessary to discharge a battery pack before charging it. If a battery pack is unable to hold a full charge, you can use the charger to discharge the battery pack before charging it.

The discharge button on the charger only activates the "discharge" cycle for each empty battery slot. If there are battery packs in one or more battery slots when the button is pressed, they continue their operation of charging or discharging.

To discharge a battery pack

1. Press the discharge button on the back panel of the charger before inserting the battery pack. The Discharge LED lights on each empty slot.

   Once the Discharge LED turns on for the empty slot, you have 15 seconds to insert a battery pack. If the Discharge LED goes out before you insert the battery, press the discharge button again.



2. Insert the battery pack into any empty slot on the charger. The Discharge LED flashes and the charger begins discharging the battery pack. Allow several hours to completely discharge the battery pack.

   Once the battery pack is discharged, the Discharge and Charge LEDs start flashing and the charger begins charging the battery pack.

If you lose power to the battery charger, all battery packs in the charger begin charging when the power is returned. If a battery was not completely discharged when the power was lost, remove the battery pack from the slot and repeat the steps above to discharge the battery pack.

Battery Status Lights

The battery LEDs allow you to monitor the status of the battery pack inserted in each battery slot. The following table shows the possible lighting combinations that you may see and the status each indicates. If you have any problems, refer to "Battery Troubleshooting" later in this quick reference guide.

Discharge	Charge	Ready	Indicates
			The charger is waiting for a battery or there is no power to the charger.
			The battery is about to begin charging.
			The battery is charging.
			The battery is charged and ready.
			The discharge button has been pushed and the slot is waiting for a battery to discharge.
			The battery is discharging.
			The battery did not charge in the allotted time. The battery may be damaged.
			The battery has poor contact with the charger contacts. (Discharge and Ready LEDs flash simultaneously)
			The battery has poor contact with the charger or the battery may be damaged. (Discharge and Ready LEDs flash alternately.)
			A battery has been inserted that is not supported by the charger. (All three LEDs flash in order.)
			The battery temperature is out of range. (Discharge and Ready LEDs flash alternately with Charge LED.)
			A battery has been inserted that may be damaged or has a very low voltage level. (All three LEDs flash together.)

 = off  = on  = flashing

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Battery Troubleshooting

Battery LEDs	Problem	Solution
 Discharge and Ready LEDs flash alternately with Charge LED.	The battery pack must always be between 50°F and 104°F (10°C and 40°C) to begin charging. If the battery pack temperature is outside this range, the charger stops charging the battery pack.	Remove the battery pack from the slot and make sure the battery pack is within the temperature range before you try to charge it again. To prevent temperature problems, keep the battery charger in a room that is within the temperature range and let the battery packs cool down before charging them.
 Discharge and Ready LEDs flash alternately.	There is bad contact between the battery pack and the charger, or the battery is damaged.	Take the battery pack out of the slot and disconnect the power supply to the charger. Use rubbing alcohol and cotton swabs to clean the contact points on the battery pack and in the charger battery slot. Connect the power supply to the charger and repeat the procedure to charge or discharge the battery pack. If that does not fix the problem, your battery pack may be damaged.
 All three LEDs flash at the same time.	The charger cannot raise the battery voltage to an adequate level.	Remove the battery pack, then put the same battery back into the slot. If all three LEDs flash again, discharge the battery pack as described earlier in this guide. If after discharging the battery pack all three LEDs flash again, you have a bad battery pack that needs to be replaced.
 The Ready LED flashes.	The charger cannot fully charge the battery pack within 2.5 hours.	There may be something wrong with the battery pack. Remove the battery pack and try discharging and then charging the battery pack. If the Ready LED flashes again, you have a bad battery pack that needs to be replaced.
 None of the LEDs turn on.	There is a power supply problem with the charger or the charger cannot charge the battery pack.	Make sure the power supply is connected to the charger and there is power to the AC outlet. Press the discharge button. The discharge LED should turn on and then begin flashing. If the discharge LED does not begin flashing and shuts off after 15 seconds, the battery pack may be damaged.
 All three LEDs flash in order.	You inserted a battery pack that is not supported by the battery charger.	Remove the battery pack from the slot. Insert a J2010 battery pack. You can only charge J2010 battery packs in the charger.