

## Printing Instructions

This document is intended to be printed in **color** as a 5.5 (width) x 5.4 inch (length) booklet (use tall left setting) with stapled binding.

Use high-quality, glossy 20lb (75 g/m<sup>2</sup>) paper.

Print double-sided. Fold sheet of 8.5" x 11" in two, trim length and width, then staple spine.

European version can use A4 in place of 8.5" x 11".

**QUICK START GUIDE**

GFK-3000C

Feb 2025

# PACSystems™ RX3i

## RACKLESS ENERGY PACK

(IC695ACC403 / IC695ACC403SN)



## Contents

<b>Overview</b> .....	<b>1</b>
<b>Hardware Installation</b> .....	<b>3</b>
Mounting the Energy Pack on a DIN Rail.....	3
Panel-Mounting the Energy Pack .....	4
<b>Cable Connections</b> .....	<b>5</b>
Connect Input Power to Energy Pack.....	6
Connecting the Energy Pack to the Controller.....	8
Grounding .....	8
<b>Initial Power-up</b> .....	<b>10</b>
<b>LED and Status Indications</b> .....	<b>11</b>
LED Indications: Special Cases.....	12
Energy Pack Status Bit Operation .....	12
<b>Replacing the CAP Pack Module</b> .....	<b>13</b>
<b>Firmware Updates</b> .....	<b>15</b>
LED Indications for Firmware Updates.....	15
<b>Additional Information</b> .....	<b>16</b>

## Caution Notes as Used in this Publication

### **CAUTION**

Caution notices are used where equipment might be damaged if care is not taken.

---

**Note:** *Notes merely call attention to information that is especially significant to understanding and operating the equipment.*

*These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met during installation, operation, and maintenance. The information is supplied for informational purposes only, and Emerson makes no warranty as to the accuracy of the information included herein. Changes, modifications, and/or improvements to equipment and specifications are made periodically and these changes may or may not be reflected herein. It is understood that Emerson may make changes, modifications, or improvements to the equipment referenced herein or to the document itself at any time. This document is intended for trained personnel familiar with the Emerson products referenced herein.*

*Emerson may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not provide any license whatsoever to any of these patents.*

*Emerson provides the following document and the information included therein as-is and without warranty of any kind, expressed or implied, including but not limited to any implied statutory warranty of merchantability or fitness for particular purpose.*



**Ordering Information**

<b>IC695ACC403</b>	Energy Pack. Includes base, CapPack module and Energy Pack to Controller cable.
<b>IC695ACC413</b>	Replacement CapPack module.
<b>IC695CBL003</b>	Replacement 0.6m (24") Energy Pack to Controller cable.
<b>IC695ACC403SN</b>	Energy Pack. Includes base, CapPack module and Energy Pack to Controller cable for PACSystems Safety Controller.
<b>IC695ACC403SNCA</b>	Energy Pack. Includes base, CapPack module and Energy Pack to Controller cable for PACSystems Safety Controller conformal coated.
<b>IC695ACC413SN</b>	Replacement CapPack module for the PACSystems Safety Controller.



# Hardware Installation

The Energy Pack can be mounted on a standard EN50022 DIN rail or an equipment panel. It is designed to be mounted adjacent to the Controller and connected to the Controller using the provided cable (IC695CBL003).

**Heat dissipation:** When mounting the Energy Pack, allow a minimum clearance of 25.4mm (1 inch) on all four sides of the unit (right, left, top and the bottom).

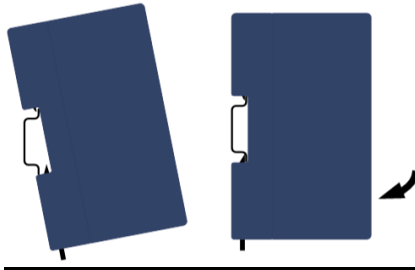
## Mounting the Energy Pack on a DIN Rail

The Energy Pack snaps easily onto the DIN rail. No tools are required.

1. Incline Energy Pack so that top edge of plastic recess (**Error! Reference source not found.**) engages top of DIN rail
2. Swivel the Energy Pack so that bottom spring-loaded plastic clip engages bottom of DIN rail.
3. Listen for click as plastic clip springs back, securing the Energy Pack onto the DIN rail.

---

**Figure 2: Snap Mount to DIN Rail**



---

## Panel-Mounting the Energy Pack

### *Recommended fasteners:*

Four M4-0.7 machine screws with minimum length of 25mm (or 8-32, 1" min. length) and nuts.

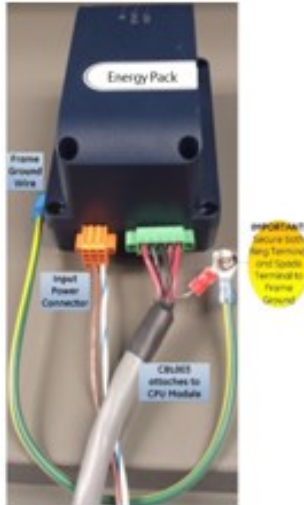
### **⚠ CAUTION**

- Over tightening the mounting screws could crack the plastic housing.



# Cable Connections

Figure 3: Input Power and Output Power/Control Connections



# Connect Input Power to Energy Pack

---

## IMPORTANT

*Before connecting input power, see complete installation instructions in the PACSystems Controllers: Battery and Energy Pack Manual, GFK-2741E or later.*

---

### You will need:

- A 24Vdc, 72W SELV power supply
  - A power cord with 18 AWG (0.82mm<sup>2</sup>) copper wires
  - An 18 AWG (0.82mm<sup>2</sup>) copper wire for frame ground
  - An input power terminal block – provided (Weidmuller part number 1748010000)
  - A small flat-head screwdriver (such as a 1.4mm jeweler's screwdriver)
1. Using the power cord, connect the power supply output to the Energy Pack's input power terminal block.
  2. To insert the wires in the power terminal block connector, you may need to use the small screwdriver to release the spring clamp on the terminal block.

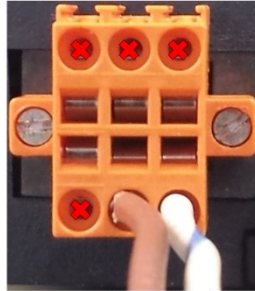
Recommended wire stripping length is 7mm (0.28 in).

---

**Figure 4: Energy Pack Input Power Mating Connector (bottom view)**



*These terminals are reserved.  
Do not connect them to power  
or to ground.*



0 Vdc 24Vdc

- 
3. Insert the plug into the Energy Pack's Input Power connector and securely tighten the attaching screws.

# Connecting the Energy Pack to the Controller

With power to the system turned off, use the supplied cable (IC695CBL003) to connect the output of the Energy Pack (green connector) to the 24Vdc input on the Controller (3-pin green connector) and to the serial communication link (using the 5-pin green connector). Refer to Figure 5.

## Grounding

Proper grounding of this device is essential. All ground wires must be as short as possible and terminated at the same grounding point.

---

**Figure 5: Frame Ground Connection**



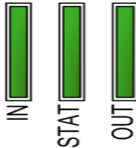
## Initial Power-up

When 24Vdc power is first applied to the Energy Pack, the power-up process goes through the following steps:

1. The IN LED turns on green.
2. The Energy Pack performs a self-diagnostic test. If this test passes, output power to the Controller is turned on and the OUT LED turns on green.
3. Charging of the CapPack begins and the STAT LED blinks green.

When charging of the CapPack is complete, the STAT LED turns on solid green and the Energy Pack signals to the controller that it can start run-time operation. The Controller will not start running its application until the Energy Pack signals that it is fully charged.

**Figure 6: LEDs on CAP Pack**



## LED and Status Indications

The LEDs on the Energy Pack indicate its status.

LED	LEDState	Energy Pack Status
IN	Green, solid	Input power is applied and within the specified range.
	Red, solid	Input power is outside the specified range.
	Off	Input power is not applied.
STAT	Green, blinking	CapPack Charging in progress. No faults.
	Green, solid	CapPack is fully charged and no faults.
	Amber, blinking	CapPack is nearing end-of-life. The CapPack must be replaced soon. Backup is still guaranteed.
	Red, blinking	Internal fault: Cycle power to the Energy Pack. If this does not clear the fault, contact Technical Support and replace the Energy Pack.

LED	LEDState	Energy Pack Status
	Red, solid	CapPack has reached end-of-life. Replace the CapPack. Backup is <b>not</b> guaranteed.
	Off	No power applied.
OUT	Green, solid	Output power is within the specified range.
	Red, solid	Output power is present but outside spec.
	Off	Output power is not present.

## LED Indications: Special Cases

**All LEDs blinking in unison:** See section Firmware Updates, page 15.

## Energy Pack Status Bit Operation

As shown in the table below, a CPU application program can automatically monitor the status of the attached Energy Pack via %S0014 (PLC\_BAT) and %SA0011 (LOW\_BAT). For more details, refer to the chapter on Diagnostics in PACSystems RX7i and RX3i CPU Programmer's Reference Manual, GFK-2950.





PLC_BAT (%S0014)	LOW_BAT (%SA0011)	Energy Pack Status
0	0	Energy Pack connected and operational (may be charging)
1	1	Energy Pack not connected or has failed
0	1	Energy Pack is nearing its end-of-life and should be replaced.

## Replacing the CAP Pack Module

The CAP Pack can be removed and replaced while power is applied to the Energy Pack (hot swapped.)

### CAUTION

- When hot swapping CapPacks, do not cycle power until the new CapPack is fully charged and operational. Cycling power before the STAT LED on the CapPack is solid green can result in Controller memory not being preserved.

Do not hot remove/insert the CapPack during the firmware update process.

1. Loosen the four screws on the CapPack and carefully pull the CapPack off the base.
2. Install the new CapPack on the base, first engaging the module-to-base connectors and then pressing the CapPack into place.

## CAUTION

Over tightening the mounting screws could crack the plastic housing.

3. Use the four screws provided to secure the CapPack to the base.
4. When the CapPack is first inserted, the STAT LED blinks green while the CapPack is charging. Do not remove power to the Energy Pack while the CapPack is charging because this could result in Controller memory not being preserved.
5. The Energy Pack LEDs and the Controller status bits indicate when charging is complete and the Energy Pack is ready to support backup.

6. To remove a Failed Battery fault and clear the battery status bits, clear the Controller fault table.
7. For details on status bit operation, refer to the *PACSystems RX7i and RX3i CPU Reference Manual*, GFK-2222 (rev. Y or later).

## Firmware Updates

The firmware for the Energy Pack is automatically updated by the Controller. At power-up, the Controller checks the version of Energy Pack firmware to verify compatibility with the Controller firmware. If an update is needed, the Controller performs it automatically.

## LED Indications for Firmware Updates

Firmware Update Mode	All three LEDs blink <b>green</b>
Failed to Load Firmware	All three LEDs blink <b>red</b>

## Additional Information

PACSystems RX3i CPU Reference Manual, GFK-2222Y or later

PACSystems Controllers: Battery and Energy Pack Manual, GFK-2741E or later

PACSystems RX3i / Series 90-30 Installation and Maintenance Requirements, GFK-2975

For user manuals, product updates and other information go to the Support website QR codes located at the end of this document.

Search our Knowledge Base	Open a Support Ticket	Register for a Customer Account
 <p><a href="https://pacsystems.co/knowledge">pacsystems.co/ knowledge</a></p>	 <p><a href="https://pacsystems.co/support">pacsystems.co/support</a></p>	 <p><a href="https://pacsystems.co/signup">pacsystems.co/ signup</a></p>
Customer Center Home Page	Commercial Website	Contact Information
 <p><a href="https://pacsystems.co/customercenter">pacsystems.co/ customercenter</a></p>	 <p><a href="https://pacsystems.co/commercial">pacsystems.co/ commercial</a></p>	 <p><a href="https://pacsystems.co/contactus">pacsystems.co/ contactus</a></p>