

## 2.4.3 IC698ACC701C (& Later Revisions)

The IC698ACC701C smart coin cell battery pack is an enhanced version of the IC698ACC701B battery pack. In addition to providing volatile memory backup for PACSystems CPUs, the smart coin cell battery pack has a battery monitoring circuit that enables the user to detect the low battery state before it is completely drained. Once an IC698ACC701C smart coin cell battery pack is connected to a CPU model, it must be used with only that specific CPU model for the remainder of its life to insure proper Low Battery indication

### Specifications

Parameter	Specification
Battery capacity	3.0 amp-hours
Lithium content	0.87 grams (3 cells at 0.29grams/cell)
Physical dimensions	76.2 long x 26.92 wide x 12.25 high mm (3" long x 1.059" wide x 0.4822" high)
Weight	29.94 grams
Connection	60cm (2 ft) twisted red/black 22 AWG (0.326mm <sup>2</sup> ) cable with female two-pin connector compatible with the battery connector on PAC Systems CPUs.
Operating temperature range	0 to +60°C (32 to 140°F)
Nominal shelf life	5 years at 20°C (68°F) without the enabling adapter cable attached

## 2.5 Rechargeable Batteries

### 2.5.1 IC690RBT001

The IC690RBT001 Rechargeable Battery provides an extended backup time for volatile memory on PACSystems CPUs compared to that of the standard memory backup battery (IC698ACC701).

### Specifications

Parameter	Specification
Battery capacity	7.0 amp-hours
Battery construction	3-cell, nickel-metal hydride
Lithium content	None
Physical dimensions	175.3 x 80.0 x 46.2mm (6.902" long x 3.150" wide x 1.819" high) ( )
Case material	Black, flame-retardant ABS plastic
Connection	60cm (2ft) twisted red/black 22 AWG (0.326mm <sup>2</sup> ) cable with female two-pin connector compatible with the battery connector on PACSystems CPUs.

Operating temperature range	0 to +50°C (32 to 122°F)
Nominal shelf life	3 years at 20°C (68°F)
Operating life @ 50°C	12 months or 60 charge-discharge cycles
Compatible Charger	IC690CRG001

## Nominal Battery Life

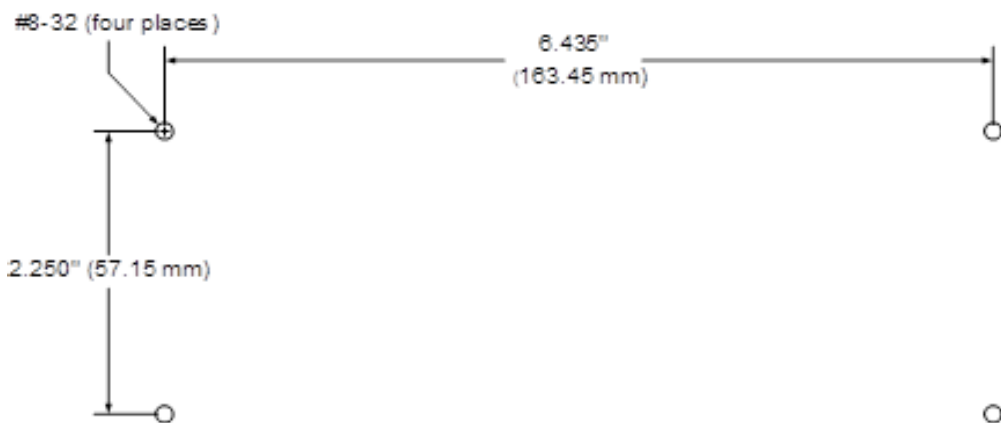
The nominal battery life at 50°C (122 °F) is 12 months or 60 charge/discharge cycles. Battery life is negatively affected by higher temperatures, and can be significantly improved by operating closer to room temperature (25°C, 77 °F). When deciding where to mount the battery, consider how the mounting location will affect the battery temperature. For most industrial installations, mounting the battery below the PLC rack will result in a temperature closer to 25°C (77 °F) and will help improve battery life. Do not operate the battery at less than 0°C (32 °F) or greater than 50°C (122 °F).

The battery will continue to operate after 12 months or 60 charge/discharge cycles; however, the battery capacity will decline, and the times listed in the Battery Compatibility and Memory Retention Time in Days at 20°C (68 °F) chart will no longer be valid.

## Battery Mounting

With power removed from the equipment, drill four #29 (0.136") (3.45mm) holes in the panel mounting surface, and tap for #8-32 threads, according to the hole pattern shown in the following figure. Use care to keep metal chips from falling into other equipment. Securely attach the rechargeable battery module to the panel mounting surface using four #8-32 x 1/2" (M4x0.7x12mm) flat head machine screws.

**Figure 3: Mounting Diagram for IC690RBT001 Rechargeable Battery**



## CPU Battery Low Indication

The rechargeable battery will not reliably provide the CPU with a battery low indication. User logic should not rely on any of the battery status bits when using this battery.

## Diagnostics

This unit is not user-serviceable. The IC690RBT001 contains a self-resetting thermal protection device that disconnects the battery if the cell temperature exceeds 90°C (194 °F).

## 2.5.2 IC690CRG001

The IC690CGR001 Battery Charger is intended for use only with the IC690RBT001 rechargeable battery.

### Specifications

Parameter	Specification
Input Power	100–240Vac, 50–60Hz, 0.35A maximum
Maximum output power	8W
Physical dimensions	90 x 45 x 32mm (3.55" long x 1.77" wide x 1.26" high)
Weight	115 grams
Operating Temperature range	0 to +60°C (32 to 140°F)

### Operation

Charging begins when a battery pack is connected to the charger. The LED is initially orange, and changes to red when the fast charge starts. When the cells are fully charged, the charger goes into top-off charge mode before switching to trickle charge mode. During the top-off charge, the LED is green with short, intermittent orange flashes. When the top-off charge is complete, the charger goes into trickle charge mode, and the LED color changes to green.

If the charger detects a fault, the charger will stop the fast charge current and switch to trickle charge mode. The LED will then indicate error by blinking green and red. The fault condition can be caused by the battery pack, wiring, or the charger.

If input power is turned off, the charger will reset. The charger starts a new charge cycle when the power is turned back on.

### Indicators

LED	Mode
Orange	No battery / Initialization
Red	Fast charge
Green/Orange	Top-off charge
Green	Trickle charge (fully charged)
Red/Green	Error