Emerson IC694MDL645

01 Identify the common reference

Identify the shared common and trace the installed sensor supply arrangement. Label the field conductors by physical input and program address before removal, preserving the distinction between signal wires and group reference wiring.

Trace the common conductor through every sensor circuit in the group. Record whether the installed arrangement sources or sinks current; verify that no replacement sensor has introduced an incompatible return path.

Record to retain	Identify the common reference
Circuit or system boundary	PACSystems RX3i

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02 Verify field excitation

Check the applicable external isolated supply and its return. On a Universal Backplane, confirm the required TB1 feed for the field 24 V arrangement.

Compare the external supply and any auxiliary supply connection with the retained wiring diagram. Check the powered field circuit independently of the backplane indication before interpreting a dark input LED as a failed sensor.

Record to retain	Verify field excitation
Circuit or system boundary	PACSystems RX3i

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03 Test sensor leakage

Measure the OFF condition at the input with the real sensor connected. Resolve excessive residual voltage or current before accepting the channel.

Measure the residual voltage at an input when its sensor is off. If the input does not release, isolate the source of leakage or backfeed before changing program logic or adding an unverified field component.

Record to retain	Test sensor leakage
Circuit or system boundary	PACSystems RX3i

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04 Compare raw state and logic

Exercise each input long enough to cover input response and the controller scan. Confirm that the correct raw bit changes before checking higher-level interlocks.

Operate each sensor through a controlled state change and compare terminal voltage, module indication and the mapped program bit. This separates field wiring faults from address or logic errors without assuming that an LED verifies the whole path.

Record to retain	Compare raw state and logic
Circuit or system boundary	PACSystems RX3i

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05 Restore the common-group record

Inspect the common terminal, channel assignments and field-power documentation. Remove test signals and release the process only after both electrical states are accepted.

Restore the original group reference and remove temporary instrument connections. Record the final sensor states and their mapped addresses so the next maintenance action starts with a verified common-group assignment.

Technical basis: Emerson PACSystems RX3i System Manual, GFK-2314AG.

Related product navigation

- General Electric IC693PWR331
- General Electric IC693ALG392

These are related references, not confirmed substitutes or an automatically approved assembly.