Emerson IC695MDL664

01 Supply-relative thresholds

Input switching thresholds are proportional to the field supply. A sensor output with inadequate high-state voltage can become marginal as supply conditions change.

The two field groups provide a useful boundary for wiring and supply supervision. Preserve that distinction in drawings and diagnostics so a common supply fault can be separated from an individual sensor state.

Inputs	16 positive-logic inputs; 2 isolated groups of 8
Input supply	24 V DC nominal; 18–32 V DC

Technical basis: Emerson PACSystems RX3i System Manual, GFK-2314AG. This Apter Power technical reference organizes applicable manufacturer data.

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02 Diagnostic circuit design

Sense resistors support differentiation of circuit states. Short-to-positive detection also needs the specified pull-up arrangement; merely enabling a software diagnostic does not create the field network.

Diagnostic configuration must agree with the actual external circuit. Define the intended sensor and supporting network together; changing only software can produce a misleading fault interpretation.

Typical input current	12.2 mA at 24 V DC
Input impedance	1966 Ω

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03 Thermal population

At higher field voltages, simultaneous ON-input population must be evaluated against ambient-temperature limits. The electrical range alone is not a guarantee of full-channel loading at every temperature.

Filtering determines which transitions become valid input events. Specify the shortest useful pulse and the expected disturbance duration before selecting a filter, then retain that decision with the application requirements.

Configurable filter	0.5–100 ms; 20 ms default
ON threshold	0.5 × field supply voltage

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04 Status hierarchy

Module OK, the two supply indicators and individual channel indicators describe different levels of the input path. Inspect the shared group conditions before diagnosing many simultaneous field failures.

Process state, wiring condition and field-power status should lead to the appropriate application response. Avoid collapsing these different indications into one unexplained input state when the process requires fault discrimination.

OFF threshold	0.3 × field supply voltage
Isolation	250 V AC continuous; 1500 V AC for 1 minute

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05 Program fault response

Decide what the control application does when a channel is diagnosed faulty. Preserve the raw state for diagnosis while applying the engineered fault response instead of silently accepting an invalid process state.

Group demand follows the real connected field circuits. Compare the intended sensor population and supply arrangement with the module operating limits before accepting the complete input assembly.

Status indication	16 channel LEDs, 2 field-supply LEDs and Module OK

Related product navigation

- General Electric IC693CPU351
- General Electric IC693MDL740

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