Emerson IC695MDL664

01 Diagnostic DC Discrete Input Module / system role

Product function

The module combines discrete state acquisition with wiring diagnostics so the control application can distinguish a process state from a defective input circuit.

Selected configuration

Open-wire and short-circuit functions depend on the specified field resistor arrangement. A bare contact connected without the diagnostic components cannot be assumed to provide every diagnostic mode. Filter configuration adds deliberate input delay and must suit the pulse durations of the application.

Integration checkpoints

- Map groups and sensors
- Restore diagnostic networks
- Set filtering deliberately
- Review group loading

Fault discrimination	process state and wiring health are separate inputs to logic
Group architecture	independent field-supply supervision
Response selection	configurable filtering matched to valid signal duration

Channel LEDs, supply LEDs and the Module OK indicator report different conditions. The group supply and terminal-block arrangement should be checked when several channels fail together; an isolated channel fault requires inspection of that field circuit and its resistor network.

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02 Technical operating envelope

Inputs	16 positive-logic inputs; 2 isolated groups of 8
Input supply	24 V DC nominal; 18–32 V DC
Typical input current	12.2 mA at 24 V DC
Input impedance	1966 Ω
Configurable filter	0.5–100 ms; 20 ms default

ON threshold	0.5 × field supply voltage
OFF threshold	0.3 × field supply voltage
Isolation	250 V AC continuous; 1500 V AC for 1 minute
Status indication	16 channel LEDs, 2 field-supply LEDs and Module OK

Values retain their individual conditions and interface boundaries. Technical values apply to IC695MDL664 with the stated operating conditions. Check supplied revision and the configured installation.

How should IC695MDL664 short-to-positive detection be commissioned?

Use the required sense and pull-up network, then simulate the defined fault under a protected test arrangement. Confirm that the channel diagnostic is distinct from a normal ON command.

Why must IC695MDL664 thresholds be evaluated with the actual supply voltage?

The ON and OFF thresholds track the field supply. A marginal sensor output must be assessed against that supply-dependent threshold, not an assumed fixed 24 V comparison.

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03 System integration and applications

Supervised contact circuits

Use the required resistor arrangement when the application must distinguish contact state from cable faults.

Separated sensor groups

Assign field supplies and commons by group to retain the intended diagnostic boundaries.

Filtered machine events

Select response settings from valid event duration and the actual electrical noise conditions.

Fault-aware control logic

Consume channel diagnostic states separately from the normal discrete process bit.

System and supply context

The IC695MDL664 belongs to the PACSystems RX3i arrangement with its specified field interfaces.

Application boundary

Applications must satisfy the module or transducer boundary and the actual controller, receiver or target conditions.

How can a long input filter on IC695MDL664 hide a valid pulse?

A short signal may disappear before the configured filter accepts it. Compare the shortest valid field pulse with total filtering and module response delay.

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04 Engineering selection decisions

Why does IC695MDL664 need external resistors for some wiring diagnostics?

The resistor network produces distinguishable electrical states for an open wire or short circuit. Without the specified sense and pull-up arrangement, those conditions can resemble a normal input state.

What does a fault affecting eight IC695MDL664 inputs suggest?

Inspect the associated group supply and shared wiring first. A common supply or terminal problem can affect a whole group without sixteen independent sensor failures.

Can IC695MDL664 operate at its maximum field voltage with every input on at every ambient temperature?

Do not assume so. The allowed number of ON inputs is thermally restricted above the lower supply range; evaluate the applicable voltage and ambient derating curve.

How should IC695MDL664 fault status be used in application logic?

Keep wiring health separate from the raw input bit. A diagnosed circuit failure should invoke the designed fault response instead of silently being interpreted as a valid OFF condition.

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05 Configuration boundary and references

Lifecycle and support

The current production and manufacturer-support stage of IC695MDL664 is unconfirmed. Replacement planning must preserve the supported system and the supplied hardware execution.

Replacement assessment

Record the two field supplies and channel assignments. Capture any sense and pull-up resistor values with the circuit drawings before disconnection.

Document roles

The separate technical reference organizes manufacturer specifications by function and interface. This product brief explains selection and system context. The independent installation guide covers preparation, connection, tests and handover. All three are authored by Apter Power using the applicable manufacturer data.

Technical basis

Emerson PACSystems RX3i System Manual, GFK-2314AG.

Related product navigation

- General Electric IC693CPU351
- General Electric IC693MDL740

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

Product enquiries