Emerson IC695ALG608

01 Non-Isolated Differential Analog Input Module / system role

Product function

Differential mode uses paired terminals; it does not provide galvanic isolation between field channels. The module belongs in an RX3i Universal Backplane.

Selected configuration

Acquisition timing follows the selected filter and the number of acquisition cycles. Lower filter frequencies improve line-frequency rejection at the expense of scan time. Scaling, offset and alarm processing are channel settings and must remain consistent with the receiving program data format.

Integration checkpoints

- Retain channel definitions
- Trace returns and shields
- Budget acquisition latency
- Confirm data handling

Channel assignment	select paired or common-referenced acquisition
Signal conditioning	balance noise rejection against response time
Diagnostics	separate terminal presence, signal faults and process alarms

Module OK, Field Status and terminal-block indicators distinguish module configuration from field-side faults. Open-circuit detection, rate-of-change alarms and threshold alarms provide different diagnostic information; the program should interpret them separately instead of converting every abnormal reading into the same process alarm.

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02 Technical operating envelope

Input channels	8 single-ended or 4 differential
Current ranges	0–20 mA; 4–20 mA; ±20 mA
Voltage ranges	±10 V; 0–10 V; ±5 V; 0–5 V; 1–5 V
Input impedance	>100 kΩ in voltage mode
Current input resistance	249 Ω ±1%

Input filters	8, 12, 16, 40, 200 or 500 Hz
Open-circuit detection	1 s maximum
Continuous input limits	±60 V DC or ±28 mA maximum
Data representation	32-bit IEEE float or 16-bit integer in a 32-bit field

Values retain their individual conditions and interface boundaries. Technical values apply to IC695ALG608 with the stated operating conditions. Check supplied revision and the configured installation.

What must change in the program when IC695ALG608 switches from integer to floating-point data?

The program must interpret the complete configured 32-bit field correctly. Reading a floating-point value as a single integer word produces an invalid engineering value.

When is an IC695ALG608 rate-of-change alarm more useful than a high-limit alarm?

A rapid developing change can be significant before the signal reaches a fixed threshold. Configure the rate limit and sampling interval to suit the actual process dynamics.

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03 System integration and applications

Mixed analog measurements

Assign each enabled channel to the intended voltage or current signal in a compatible RX3i rack.

Paired signal acquisition

Use differential pairs where the circuit benefits from paired measurement while respecting the non-isolated reference boundary.

Slow, noisy process signals

Select stronger filtering when mains rejection is more important than rapid acquisition.

Developing process changes

Channel rate alarms can support monitoring of rapid changes in addition to fixed engineering limits.

System and supply context

The IC695ALG608 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 filter change on IC695ALG608 delay an otherwise fast control loop?

The filter changes acquisition-cycle duration. Calculate the module scan from the selected filter and active cycles before combining it with CPU and network timing.

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04 Engineering selection decisions

Does differential wiring make IC695ALG608 channels electrically isolated?

No. Differential acquisition measures between paired inputs but is not channel-to-channel galvanic isolation. Keep all signal common-mode conditions within the permitted module interface.

Why can IC695ALG608 show a healthy module indicator and a field fault simultaneously?

The module can be configured and operational while a channel has an alarm, an open circuit or a terminal-related fault. Inspect Field Status and channel diagnostics rather than replacing the CPU.

Why should IC695ALG608 scaling be checked after changing a transmitter range?

Input electrical range and engineering-unit scaling are separate settings. Reconcile both endpoints and alarms so a valid current does not map to the wrong process quantity.

Why should the hardware revision of IC695ALG608 be included in a power-budget check?

Earlier and later revisions have different backplane-current and dissipation limits. Apply the limits for the actual revision instead of treating one base-model value as universal.

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05 Configuration boundary and references

Lifecycle and support

The current production and manufacturer-support stage of IC695ALG608 is unconfirmed. Replacement planning must preserve the supported system and the supplied hardware execution.

Replacement assessment

Export input modes, differential pairing, engineering ranges and alarm limits. Mark which channels are enabled and how their data is consumed by the control program.

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

- Emerson IC695ALG728
- Emerson IC695CPE400

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

Product enquiries