Emerson IC694ALG223

01 Analog Current Input Module / system role

Product function and operating context

Its common-referenced inputs share a field reference, so transmitter grounding must be evaluated at circuit level rather than assuming isolation between channels.

Enhanced 4–20 mA mode extends the numerical representation below the normal live-zero point. The program can therefore interpret an under-range current without treating it as a normal zero process value. Alarm status is mapped separately from the analog input words.

Integration checkpoints

- Capture contiguous channel allocation
- Check common references
- Verify current endpoints
- Restore filtered process operation

Signal evaluation	live-zero current measurement with optional under-range representation
Program interface	analog values and alarm status use separate mappings
Circuit boundary	common-referenced channels require coordinated transmitter grounding

Input conversion, low-pass filtering and CPU execution each affect the final response. Status-reference allocation and the number of scanned channels are configuration choices. Disabling status data or leaving an alarm unmapped can hide useful diagnostic information even when analog values continue to update.

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02 Technical operating envelope

Input channels	16 single-ended
Input ranges	0–20 mA; 4–20 mA; enhanced 4–20 mA
Resolution	4 µA/count at 4–20 mA; 5 µA/count at 0–20 mA
Module update	6 ms
Input resistance	250 Ω

Input filter	19 Hz low-pass
Accuracy	±0.25% full scale at 25 °C
External supply	20–30 V DC
Input data	16-bit value per configured channel

Values retain their individual conditions and interface boundaries. Technical values apply to IC694ALG223 with the stated operating conditions. Check supplied revision and the configured installation.

Why does IC694ALG223 need a grounding review for transmitters on different supplies?

The inputs are single-ended with a common reference. Different reference potentials can create unwanted current paths or exceed the intended common-mode arrangement.

Can the 6 ms IC694ALG223 update rate be used as the entire measurement response?

No. The analog low-pass filter and controller or network timing also affect a signal change. Evaluate the complete acquisition-to-action path.

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03 System integration and applications

Live-zero transmitters

Acquire current-loop measurements with a configuration that preserves the process electrical endpoints.

Under-range supervision

Enhanced current mode can support separate interpretation of values below the live-zero point.

Multi-loop process acquisition

Assign contiguous channels and coordinate transmitter common references.

Status-aware analog programs

Map diagnostic bits alongside process values when the control logic requires alarm information.

System and supply context

The IC694ALG223 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.

What can happen if IC694ALG223 status-reference length is set to zero?

The associated status mapping is disabled. Analog data can still be present while the application loses access to the configured module alarm indications.

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04 Engineering selection decisions

Why use enhanced 4–20 mA mode on IC694ALG223 for a live-zero transmitter?

It represents current below 4 mA as negative raw values, reaching −8000 at 0 mA. That allows the program to distinguish under-range behavior from the normal measurement zero.

How should IC694ALG223 raw values be converted after changing from 0–20 to 4–20 mA?

Recalculate the electrical endpoints and engineering scaling together. The same raw full-scale span can represent different current origins in the two modes.

What should be checked if only the first few IC694ALG223 channels update?

Review the configured number of channels to scan and their contiguous allocation, then compare the field wiring and input-reference mapping.

Why should IC694ALG223 alarms be tested separately from normal process readings?

A valid analog conversion does not prove alarm thresholds or status-bit mapping. Exercise the applicable under-range and alarm conditions while the process response is safely controlled.

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05 Configuration boundary and references

Lifecycle and support

The current production and manufacturer-support stage of IC694ALG223 is unconfirmed. Replacement planning must preserve the supported system and the supplied hardware execution.

Replacement assessment

Record the configured scan count, input addresses and status-reference length. Identify the electrical range and engineering endpoints for every active channel.

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 IC695NIU001-ADAD
- General Electric IC693PWR330

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

Product enquiries