General Electric 8121-DI-DC-01

Engineering Installation, Diagnostic and Acceptance Guide

8121-DI-DC-01 is a 16-channel, 24 Vdc non-isolated PAC8000 discrete input module for dry-contact status collection and pulse counting. The complete -01 suffix remains the offered identity while electrical values are applied from the published 8121-DI-DC base module.

01 Job scope and identity

Complete model	8121-DI-DC-01
Product type	PAC8000 16-Channel DC Discrete Input Module
Manufacturer	General Electric
Technical source	GE Intelligent Platforms PAC8000 8121-DI-DC datasheet

Field decisions

1 Verify the delivered identity

Record the complete 8121-DI-DC-01 marking and the installed assembly before removal.

2 Preserve the decisive interface

Retain the E1 keyed slot, 8617-FT-NI terminal, 24 Vdc field power, common-return design and sixteen-channel configuration.

3 Check the selected limits

Sixteen 24 Vdc dry-contact channels with internally commoned returns

4 Prove the intended function

Apply known contact states and pulse trains to all configured channels, then verify states, counts, filtering and Railbus diagnostics.

5 Retain the acceptance record

Record state and pulse-count results for every used channel.

Installation relationships

Threshold check	Confirm OFF current remains below 0.3 mA and ON current exceeds 1.2 mA at the installed contact.
Pulse check	Test the shortest accepted pulse and confirm the configured count increments once.
Channel record	Save channel name, contact source, filter, latch/polarity and count enable for all sixteen points.

Pre-work evidence

Verified field	Input channels: 16
Verified field	Nominal field voltage: 24 Vdc
Verified field	Input isolation: Non-isolated; returns commoned internally
Verified field	OFF-state threshold: Less than 0.3 mA
Verified field	ON-state threshold: Greater than 1.2 mA
Verified field	Typical wetting current: 2.8 mA
Verified field	Minimum pulse width: 5 ms

02 Pre-installation readiness

Model-specific installation decisions

Exact identity

8121-DI-DC-01 and every delivered revision or approval marking must be recorded before removal.

Installed system

GE PAC8000 Remote I/O discrete input modules companion components, channel assignment and approved machine reference must remain traceable.

Mechanical baseline

Record the as-found mounting datum, reach, lock position, target clearance, routing and connector support.

Electrical baseline

Record the applicable stopped-machine gap, bias, continuity or channel value together with test conditions.

As-left configuration

Document the final mechanical position, cable protection, connector condition and complete companion-component identities.

Functional release

Compare the final monitor indication and controlled operating response with the approved baseline before handover.

Installation precautions

Respect common returns

Confirm that connected contacts may share the module return and do not require channel isolation.

Check field power

Verify 18-30 Vdc polarity and the published 60 mA module demand.

Preserve filter settings

Archive the configured filter, latch, polarity and count settings before removal.

Protect fast pulses

Do not enable debounce that suppresses the shortest required pulse.

Match key and terminal

Confirm E1 keying and 8617-FT-NI wiring before insertion.

Prove every channel

Stimulate all sixteen inputs and compare state/count response with the control database.

Pre-installation release gates

Release gate	Respect common returns: Confirm that connected contacts may share the module return and do not require channel isolation.
Release gate	Check field power: Verify 18-30 Vdc polarity and the published 60 mA module demand.
Release gate	Preserve filter settings: Archive the configured filter, latch, polarity and count settings before removal.
Release gate	Protect fast pulses: Do not enable debounce that suppresses the shortest required pulse.
Release gate	Match key and terminal: Confirm E1 keying and 8617-FT-NI wiring before insertion.
Release gate	Prove every channel: Stimulate all sixteen inputs and compare state/count response with the control database.

03 Installation and commissioning

Controlled installation sequence

01 Dry-contact status collection	Monitor switches, auxiliary contacts and relay contacts supplied by the module's 24 Vdc wetting circuit.
02 Pulse accumulation	Enable counting on selected channels whose pulse width and frequency remain within 5 ms and 100 Hz.
03 Filtered alarm inputs	Set the 0-512 ms filter per module to reject documented contact bounce without hiding required events.
04 PAC8000 sequence inputs	Use the 5 ms Railbus response with the configured latch and polarity settings for plant event logic.

Commissioning acceptance criteria

Acceptance point	Threshold check: Confirm OFF current remains below 0.3 mA and ON current exceeds 1.2 mA at the installed contact.
Acceptance point	Pulse check: Test the shortest accepted pulse and confirm the configured count increments once.
Acceptance point	Channel record: Save channel name, contact source, filter, latch/polarity and count enable for all sixteen points.

04 Diagnostics and escalation

How many inputs are provided by 8121-DI-DC-01?	The base module provides 16 discrete input channels.
Are the input channels of 8121-DI-DC-01 isolated from one another?	No; the channel returns are commoned internally.
What contact current thresholds apply to 8121-DI-DC-01?	OFF is below 0.3 mA and ON is above 1.2 mA.
Can 8121-DI-DC-01 count pulses?	Yes, up to 100 Hz with at least 5 ms pulse width and no debounce that masks the event.

Additional diagnostic decisions

What filter range is available on 8121-DI-DC-01?	The configurable filter range is 0 to 512 ms in 2 ms steps.
Which terminal unit is specified for 8121-DI-DC-01?	The published terminal unit is 8617-FT-NI.
What does suffix -01 mean on 8121-DI-DC-01?	It is retained as part of the offered marking; no unsupported electrical interpretation is assigned.

How should 8121-DI-DC-01 be accepted after replacement?	Stimulate every used input and verify state, filtering, latching, pulse count and Railbus diagnostics.

05 Handover and evidence package

Model-specific handover evidence

Source revision	Record the revision of GE Intelligent Platforms PAC8000 8121-DI-DC datasheet used for the review.
Applicability	The public datasheet defines the 8121-DI-DC base module; -01 is retained as the complete offered marking and is not assigned unsupported option meanings.
Installed evidence	Retain the E1 keyed slot, 8617-FT-NI terminal, 24 Vdc field power, common-return design and sixteen-channel configuration.
Functional evidence	Apply known contact states and pulse trains to all configured channels, then verify states, counts, filtering and Railbus diagnostics.

Model-specific application limits

Wiring record	Photograph the E1 key, terminal unit and channel wiring.
Configuration record	Export channel filters, latches, polarities and counter enables.
Test record	Record state and pulse-count results for every used channel.

Product-specific acceptance records

Selected engineering value	Maximum count frequency: 100 Hz without debounce
Selected engineering value	Configurable filter: 0 to 512 ms in 2 ms steps
Selected engineering value	Channel-to-Railbus isolation: 250 Vac
Selected engineering value	Railbus current: 90 mA typical; 135 mA maximum
Selected engineering value	Field-power current: 60 mA at 18 to 30 Vdc
Selected engineering value	Module key: E1
Acceptance record	Threshold check: Confirm OFF current remains below 0.3 mA and ON current exceeds 1.2 mA at the installed contact.
Acceptance record	Pulse check: Test the shortest accepted pulse and confirm the configured count increments once.
Acceptance record	Channel record: Save channel name, contact source, filter, latch/polarity and count enable for all sixteen points.
Lifecycle decision	Exact offered identity: The complete marking is 8121-DI-DC-01; the accessible GE datasheet is for base module 8121-DI-DC.
Lifecycle decision	Evidence boundary: No electrical meaning is assigned to suffix -01 without an exact option record.
Lifecycle decision	Replacement rule: Match channel count, common-return architecture, keying, terminal unit, filters and pulse functions.

Verified related product references

Related product	General Electric DS200DSPCH1AEA
Related product	General Electric IS220PTURH1A
Related product	General Electric 531X133PRUALG1
Related product	General Electric IS420ESWBH3AX

Engineering contact

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