1794-IV16

Allen-Bradley / FLEX I/O 16-Point Sourcing Input Module

Allen-Bradley 1794-IV16 is a 16-point DC sourcing input module for a FLEX I/O station. It reports field input states through the Flexbus and provides selectable input filtering for the connected controller.

Product details

Field	Published information
Manufacturer	Allen-Bradley
Manufacturer part number	1794-IV16
Product category	FLEX I/O sourcing input module
Function	Sixteen 24 V DC field inputs
Shipping	Swift global dispatch
Condition	New, original product
Document scope	Product summary; engineering files in Downloads

How the input reaches the controller

01 DEVICE
24 V DC field state

02 TERMINAL
A / B / optional C rows

03 MODULE
Filtered input image

04 ADAPTER
Controller data

The 1794-IV16 converts 16 compatible field states into input-image bits. Its selected filter time and the installed adapter determine which short events or counter-related fields the controller can use.

Overview

The module reads DC field devices through a compatible 1794 terminal base. On 1794-TB3 and 1794-TB3S wiring, channel n uses A-n for its signal and the corresponding B-row terminal for common; a three-wire device can also use the corresponding C-row power terminal. The base supplies the backplane connection to the FLEX I/O adapter.

All 16 input bits enter the adapter's input image. Configuration word 3 selects one filter time for the input group, so a longer setting can suppress brief transitions but delays recognition of valid changes. Select the setting against the process pulse length and the controller scan behavior, then test both rising and falling events.

Input 15 also has a counter-related value and fast/filtered selection in the documented image map. Those counter controls are unavailable with any series 1794-ASB or 1794-ASB2 remote I/O adapter. Verify the installed adapter and program image before reusing a configuration that depends on those fields.

Alternative Names

1794 IV16 | Allen-Bradley 1794-IV16

Electrical, terminal and control data

Use values with the installed base and adapter

Input circuit

Attribute	1794-IV16 value
Input channels	16 nonisolated sourcing DC inputs
Nominal input voltage	24 V DC
On-state voltage	10 to 31.2 V DC
Off-state voltage	5 V DC maximum
On-state current	8 mA nominal at 24 V DC; 2 to 11 mA range
Input filter	0.25, 0.5, 1, 2, 4, 8, 16 or 32 ms; 0.25 ms default

Control and station

Attribute	1794-IV16 value
Filter configuration	Configuration word 3, bits 08–10; applies to inputs 0–15
Input image	Read word 0 contains I0–I15
Counter option	Input 15 counter value in read word 1; adapter-dependent
Flexbus current	30 mA
Input isolation	2121 V DC for 1 s between user and system; no channel-to-channel isolation
Status indicators	16 yellow field-side input indicators
Terminal bases	1794-TB3, 1794-TB3K, 1794-TB3S or 1794-TB3SK
Enclosure type	Open-style equipment; suitable cabinet required
Operating temperature	−20 to +55 °C, subject to supply and mounting derating

Manufacturer applicability: 1794-IN095D-EN-P separates IV16 input data from the output variants. Check the installed terminal-base and adapter configuration before applying the tabulated relationships.

Connection pattern

Signal	Terminal reference	Meaning
Input n	A-n	Channel signal, n = 0-15
Common	B-(n+17)	Return for the matching input
Device power	C-(n+35)	Three-wire field device supply

Lifecycle Status

1794-IV16 status: Rockwell Automation classifies Allen-Bradley 1794-IV16 as Active Mature.

Support and replacement: Maintain the FLEX I/O adapter, series and terminal-base configuration when reviewing continued support. A different FLEX input catalog number must be evaluated for signal direction, wiring and image mapping before substitution.

Apter Power availability: The offered unit quantity and dispatch timing are confirmed separately in the Apter Power quotation.

Available Unit Details

Offered reference: Allen-Bradley 1794-IV16. Condition: New, original product. Confirm included terminal base and accessories in the quotation.

Applications and acceptance checks

Model-specific interpretation of the published page

Applications / Compatibility

Discrete device collection

Bring sixteen compatible DC field signals into one FLEX I/O station. Group related input tags so the field terminal, input bit and process state can be tested together.

Two-wire and three-wire devices

Wire a two-wire device to input and common, or provide the corresponding C-row power terminal for a three-wire device on the documented terminal bases.

Noise-sensitive signals

Apply the shortest filter that rejects measured interference while passing the shortest valid process event. Check both change directions under operating conditions.

Input 15 event counting

Use the documented counter/fast-data path only after confirming adapter support; 1794-ASB and 1794-ASB2 arrangements do not expose those controls.

Product Precautions

Isolate both power paths

De-energize the adapter/backplane and field supply before handling the module or terminal base. Confirm the area is nonhazardous where applicable.

Check terminal-base fit

Compare the installed base catalog, keyed position and fully extended Flexbus connector with the module before seating it.

Map each input circuit

Trace the signal, common and optional device-power conductor for every used channel; do not apply output-module wiring from the shared publication.

Limit base current

Include all devices fed through the base in the terminal-base current calculation; provide separate supply connections if the 10 A limit would be exceeded.

Confirm supply derating

Compare actual field supply voltage, cabinet temperature and mounting orientation with the manufacturer's derating curve before release.

Prove the image and filter

Toggle representative short and sustained inputs with loads safely inhibited, and compare LEDs, input-image bits and configured filter response.

Technical notes

Wiring relationship: The 1794-IV16 connects a sourcing field input to its A-row signal and B-row common. C-row device power applies to the documented three-wire arrangement.

Adapter boundary: Counter-related controls for input 15 are unavailable with 1794-ASB and 1794-ASB2 remote I/O adapters; ordinary input bits remain a separate configuration question.

Technical reference: FLEX I/O Digital Sourcing Input and Sinking Output Modules Installation Instructions, 1794-IN095D-EN-P, March 2024.

Diagnosis, change control and related listings

Read with the installed station record

Eight technical questions

How should I map a three-wire sensor to a 1794-IV16 input?
Use the selected channel's A-row signal, corresponding B-row common and corresponding C-row power terminal on a documented 1794-TB3/TB3S arrangement. Trace each lead against the sensor's actual wiring diagram, then prove the channel LED and input bit before releasing the machine.

Why can a 1794-IV16 LED change while the controller bit appears stable?
Check the adapter input image and selected filter time. A pulse shorter than the configured filter period may not become a recognized state; compare the physical LED transition, image bit and actual pulse width under controlled operation.

How do I select the 1794-IV16 input filter for a short event?
Measure the shortest valid on and off durations and the observed noise. Choose a filter value that still recognizes the valid event, then test both directions at the fastest process cycle rather than assuming the default is suitable.

Can the 1794-IV16 input 15 counter be used with a 1794-ASB adapter?
The documented counter, reset and fast-data controls are unavailable with any series 1794-ASB or 1794-ASB2 remote I/O adapter. Verify the adapter marking and program image before selecting a counting design.

What should I inspect if only one 1794-IV16 channel fails?
Compare the failing channel's A-row signal and B-row common with a known working channel, including the field device and cable. Check its LED and input-image bit separately; do not bridge an unverified supply into the input.

What changes when replacing a 1794-IV16 with another FLEX input type?
Check sourcing versus sinking direction, accepted voltage, terminal-base wiring, input-image mapping and filter behavior. Keep the existing program and field drawings as the acceptance reference; a matching channel count alone does not establish compatibility.

How can I confirm a 1794-IV16 is seated correctly after maintenance?
With power isolated, confirm straight connector pins, keying, aligned groove and a latched module on the compatible terminal base. Restore power under site procedure, then verify adapter recognition and representative input indications.

How should I test a 1794-IV16 after changing its filter setting?
Record the original configuration word, apply the selected timing, and exercise the shortest real input event plus a sustained state. Compare field waveform, LED, controller image and process response; restore the approved setting if recognition is lost.

Related FLEX I/O listings

Related station parts and I/O families for navigation only; confirm each installed configuration before ordering.

Allen-Bradley 1794-ACN15
FLEX I/O network adapter

Allen-Bradley 1794-OF4I
Analog output module

Allen-Bradley 1794-OE4XT
FLEX I/O analog output

Allen-Bradley 1794-IE4XOE2
Mixed analog I/O

Allen-Bradley 1794-IE8
Analog input module

Allen-Bradley 1794-OB8EP
Protected output module

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