1794-IV16

FLEX I/O sourcing input / wiring and acceptance

Use the full 1794-IV16 marking, installed terminal base and adapter as the starting configuration. Isolate both field and backplane power before opening the station.

Signal path and decision points

FIELD DEVICE
2-wire or 3-wire sourcing signal

>

TERMINAL BASE
A signal / B common / C power

>

1794-IV16
Filter and input-image mapping

>

FLEX ADAPTER
Controller-visible input words

Pre-installation sequence

01 Match the station

Record the adapter catalog, module series, terminal-base type and channel labels.

02 Preserve a baseline

Capture the current input image, filter word and observed process states.

03 Separate power paths

Verify the 24 V DC field circuit and Flexbus are de-energized before handling hardware.

04 Inspect the mating parts

Check straight pins, keyed position, groove alignment and the Flexbus connector.

05 Define acceptance

Select representative short and sustained input events before restoring operation.

Identity boundary

The 1794-IV16 is a sourcing input module. The shared Rockwell publication also covers 1794-OV16 and 1794-OV16P sinking output modules; use only the IV16 wiring and ratings for this item.

Station record before work

Review item	Record from the installed system
Adapter and series	Catalog code, series and network role
Terminal base	Full base code and wiring arrangement
Field circuits	Device type, supply, common and each used A terminal
Filter setting	Configuration word 3 bits and test event length

Sixteen channels, three terminal rows

1794-TB3 / TB3S wiring map

Channel-to-terminal matrix

Input	A signal	B common	C device power	Input	A signal	B common	C device power
0	A-0	B-17	C-35	8	A-8	B-25	C-43
1	A-1	B-18	C-36	9	A-9	B-26	C-44
2	A-2	B-19	C-37	10	A-10	B-27	C-45
3	A-3	B-20	C-38	11	A-11	B-28	C-46
4	A-4	B-21	C-39	12	A-12	B-29	C-47
5	A-5	B-22	C-40	13	A-13	B-30	C-48
6	A-6	B-23	C-41	14	A-14	B-31	C-49
7	A-7	B-24	C-42	15	A-15	B-32	C-50

Two-wire device: A signal and B common. Three-wire device: A signal, B common and C power. Confirm the individual device diagram before connecting the field lead.

Shared supply and return rails

Connection	Terminal / relationship
24 V DC supply	C-34; C-34 through C-51 are internally common
DC common	B-16; B-16 through B-33 are internally common
Daisy-chain supply	C-51 to C-34 on the next terminal base, if used
Daisy-chain common	B-33 to B-16 on the next terminal base, if used

The terminal base is limited to 10 A total current. Plan separate power feeds when the connected field-device load would exceed the base limit.

Electrical acceptance

Input voltage

Compare measured field on and off states with the documented input voltage range and the actual device leakage.

Shared rails

Verify C-row supply and B-row common continuity without bridging unrelated field circuits.

Operating environment

Review cabinet temperature, field-supply voltage and mounting orientation against the IV16 derating curve.

Filter timing and input image

Choose recognition time from actual field events

Input filter selection

Bits 10 09 08	Filter time	Use in review
000	0.25 ms	Default; fastest documented filtering
001	0.5 ms	Short transitions
010	1 ms	Short transitions
011	2 ms	Moderate filtering
100	4 ms	Moderate filtering
101	8 ms	Longer event validation
110	16 ms	Longer event validation
111	32 ms	Longest documented filtering

The setting applies to inputs 0-15 through configuration word 3. It affects off-to-on and on-to-off recognition. Measure the shortest real pulse and test both transitions before accepting a longer value.

Controller image boundary

Ordinary input bits

Read word 0 carries I0 through I15. Compare the field LED and controller bit for each tested channel.

Input 15 counter path

Read word 1 can carry a counter value, with fast/filtered and reset controls in the documented image.

Adapter exception

The counter, reset and fast-data controls are unavailable with any series 1794-ASB or 1794-ASB2 remote I/O adapter.

Fault-isolation map

Observation	First comparison	Next check
No LED transition	A signal and B common	Device supply and wiring
LED on; bit stable	Filter and adapter image	Pulse length and mapped bit
Input 15 count absent	Adapter model	ASB/ASB2 restriction
Multiple inputs lost	Shared field rails	Base current and supply

Controlled test and handover

Compare field, module and controller observations

Five-step release sequence

01 **Confirm identity**

Read the full IV16 and terminal-base markings and the adapter series from the installed station.

02 **Prove one channel**

Use a sustained signal to compare the field voltage, yellow indicator and mapped input bit.

03 **Prove timing**

Apply the shortest valid process event and check both filter directions at the chosen setting.

04 **Check the special path**

If input 15 counting is used, confirm adapter support and the expected counter/fast-data fields.

05 **Record the result**

Retain measured values, filter bits, image mapping and the accepted machine response.

Handover boundary

A field module with the same footprint may differ in signal direction, image layout and terminal-base support. Evaluate related catalog entries as separate station components rather than direct substitutes.

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

Manufacturer reference: Rockwell Automation 1794-IN095D-EN-P, March 2024. Installation verification guide prepared by Apter Power.

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