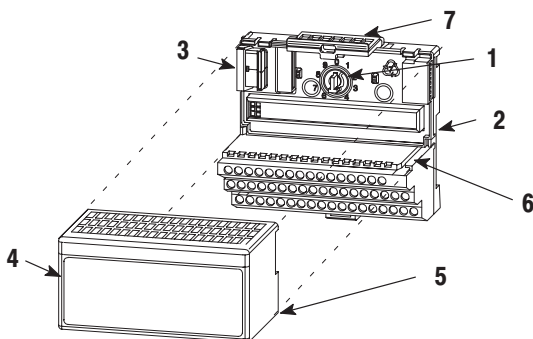




Installation Instructions

English

24V dc FLEX I/O 8 Sink Input Module (Cat. No. 1794-IB8)



Module Installation

This module mounts on a 1794 terminal base unit.

1. Rotate keyswitch (1) on terminal base unit (2) clockwise to position as required for this type of module.
2. Make certain the flexbus connector (3) is pushed all the way to the left to connect with the neighboring terminal base/adapter. **You cannot install the module unless the connector is fully extended.**
3. Make sure that the pins on the bottom of the module are straight so they will align properly with the connector in the terminal base unit.
4. Position the module (4) with its alignment bar (5) aligned with the groove (6) on the terminal base.
5. Press firmly and evenly to seat the module in the terminal base unit. The module is seated when the latching mechanism (7) is locked into the module.



ATTENTION: To use this module in a complementary I/O system, refer to your Remote I/O adapter module documentation.



ATTENTION: Remove field-side power before removing or inserting this module. This module is designed so you can **remove and insert it under backplane power**. When you remove or insert a module with field-side power applied, an electrical arc may occur. An electrical arc can cause personal injury or property damage by:

- sending an erroneous signal to your system's field devices causing unintended machine motion
- causing an explosion in a hazardous environment

Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance.

European Union Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) and the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC – Generic Emission Standard, Part 2 – Industrial Environment
- EN 50082-2 EMC – Generic Immunity Standard, Part 2 – Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 – Equipment Requirements and Tests.

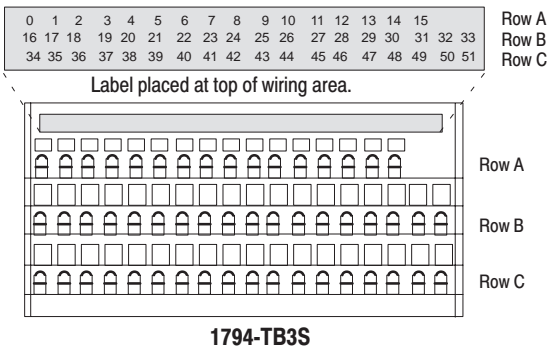
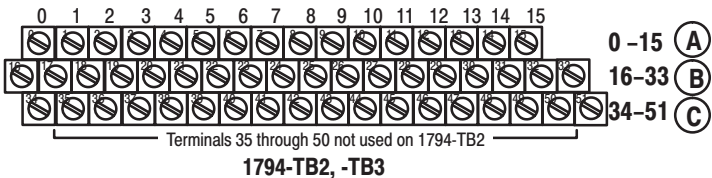
For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the following Allen-Bradley publications:

- Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1
- Automation Systems Catalog, publication B111

This equipment is classified as open equipment and must be mounted in an enclosure during operation to provide safety protection.

Wiring to a 1794-TB3 or -TB3S Terminal Base Unit

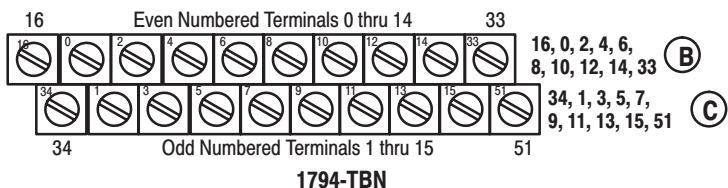
1. Connect individual wiring to numbered terminals on the **0–15** row (**A**) as indicated in the table below.
2. Connect the associated input common (3-wire devices only) to the corresponding terminal on the 16-33 row (**B**) for each input as indicated in the table below. (Commons are internally connected together.)
3. Connect +24V dc power to terminal 34 on the **34–51** row (**C**).
4. Connect dc return to terminal 16 on the **16–33** row (**B**).
5. If continuing power to the next terminal base unit, connect a jumper from terminal 51 (+24V dc) on this base unit to terminal 34 on the next base unit.
6. If continuing common to the next terminal base unit, connect a jumper from terminal 33 (common) on this base unit to terminal 16 on the next base unit.



ATTENTION: Total current draw through the terminal base unit is limited to 10A. Separate power connections to the terminal base unit may be necessary.

Wiring to a 1794-TBN Terminal Base Unit

1. Connect individual input wiring to the even numbered terminals on row (B) as indicated in the table below.
2. Connect the associated input common to the corresponding odd numbered terminal on row (C) for each input as indicated in the table below.
3. Connect 24V dc to terminal 34 on row (C).
4. Connect 24V dc common to terminal 16 on row (B).
5. If continuing power to the next terminal base unit, connect a jumper from terminal 51 (24V dc) on this base unit to terminal 34 on the next base unit.
6. If continuing common to the next terminal base unit, connect a jumper from terminal 33 (24V dc common) on this base unit to terminal 16 on the next base unit.



Input	1794-TB3, -TB3S, -TB3TS		1794-TBN, -TBNF	
	Input Terminal	Voltage Terminal	Input Terminal	Voltage Terminal
Input 0	A-0	C-35	B-0	C-1
Input 1	A-1	C-36	B-2	C-3
Input 2	A-2	C-37	B-4	C-5
Input 3	A-3	C-38	B-6	C-7
Input 4	A-4	C-39	B-8	C-9
Input 5	A-5	C-40	B-10	C-11
Input 6	A-6	C-41	B-12	C-13
Input 7	A-7	C-42	B-14	C-15
Common	B-16 thru B-33		B-16 and B-33	
+24v dc	C-34 thru C-51 (1794-TB3, -TB3S) C-33 and C-51 (1794-TB2)		C-34 and C-51 (Odd numbered pins are connected together in the module)	

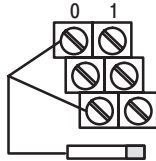
2-wire and 3-wire Inputs to the 1794-IB8 FLEX I/O Module (-TB3 shown)

0 - 15 (A)
16 - 33 (B)
34 - 51 (C)

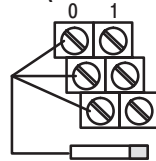
(A) = Sink Input

(B) = Common

(C) = 24V dc

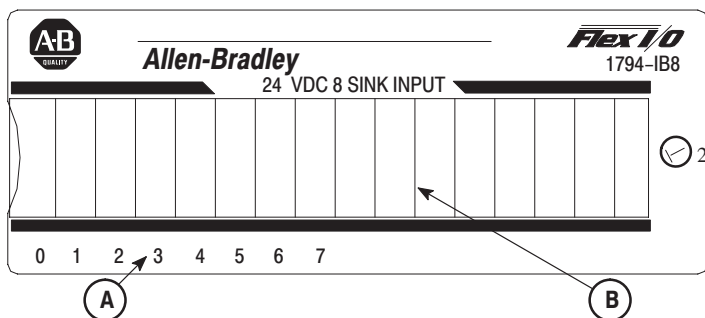


**2-Wire Device
(Sourcing Output)**



**3-Wire Device
(Sourcing Output)**

Indicators



A = Status indicators – yellow – show status of individual inputs.

B = Insertable label for writing individual input designations.

Memory Map

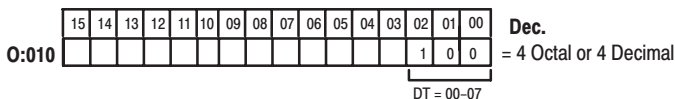
Dec.	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01	00
Read	Not used								D	D	D	D	D	D	D	D
Write	Not used													DT 00-07		

Where: D = Input
DT = Input Delay Time

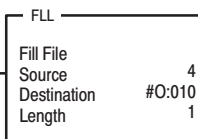
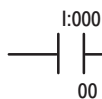
Setting the Input Delay Time

You can select the input delay time (DT) for channels 00 through 07. Select the input delay time by setting the corresponding bits in the **output** image table (complementary word) for the module.

For example, to set a delay time of 4ms for a dc input module at address rack 1, module group 0, set bits, 02, 01, and 00 as shown below.



Write Delay Time on system startup.



Write DT to complement of input module.

Input Delay Times

Bits			Description	Selected Filter Time
02	01	00	Filter Time for Inputs 00-07	
0	0	0	Filter Time 0 (default)	256 μ s
0	0	1	Filter Time 1	512 μ s
0	1	0	Filter Time 2	1ms
0	1	1	Filter Time 3	2ms
1	0	0	Filter Time 4	4ms
1	0	1	Filter Time 5	8ms
1	1	0	Filter Time 6	16ms
1	1	1	Filter Time 7	32ms

Specifications - 24V dc Input Module Cat. No. 1794-IB8

Number of Inputs	8 non-isolated, sinking
Module Location	Cat. No. 1794-TB2, -TB3, -TB3S Terminal Base
ON-state Voltage	10V dc minimum; 24V dc nominal; 31.2V dc maximum
ON-state Current	2.0mA minimum; 8.0mA nominal at 24V dc; 11.0mA maximum
OFF-state Voltage	5.0V dc maximum
OFF-state Current	1.5mA minimum
Input Impedance	4.6K ohms maximum
Isolation Voltage	100% tested at 850V dc for 1s between user and system No isolation between individual channels
Input Delay Time	Off to On On to Off
	256 μ s, 512 μ s, 1ms, 2ms, 4ms, 8ms, 16ms, 32ms 256 μ s, 512 μ s, 1ms, 2ms, 4ms, 8ms, 16ms, 32ms 256 μ s default - Selectable thru output image table
Flexbus Current (maximum)	20mA
Power Dissipation	3.5W Maximum @ 31.2V dc
Thermal Dissipation	11.9 BTU/hr Maximum @ 31.2V dc
Indicators (field side indication, customer device driven)	8 yellow status indicators
Keyswitch Position	2

Specifications continued on next page.

Specifications – 24V dc Input Module Cat. No. 1794-IB8**General Specifications**

External dc Power Supply Voltage Voltage Range		24V dc nominal 19.2 to 31.2V dc (includes 5% ac ripple)
Dimensions	Inches (Millimeters)	1.8H x 3.7W x 2.1D (45.7 x 94.0 x 53.3)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Vibration	Operating Non-operating	0 to 55°C (32 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30 g peak acceleration, 11(±1)ms pulse width 50 g peak acceleration, 11(±1)ms pulse width Tested 5 g @ 10–500Hz per IEC 68-2-6
Conductors	Wire Size Category	12 gauge (4mm ²) stranded maximum 3/64 inch (1.2mm) insulation maximum 2 ¹
Agency Certification (when product or packaging is marked)		<ul style="list-style-type: none"> • CSA certified • CSA Class I, Division 2 Groups A, B, C, D certified • UL listed • CE marked for all applicable directives

¹ Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines for Noise Immunity."



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