

Flex I/O™ and Flex I/O XT™ Modules

In-Cabinet Modular I/O Platform

Advantages

Reduced Space: Wire directly from sensor to terminal base and eliminate the terminal strip

Functionality: From two point to 32-point modules offer functions of larger rack-based I/O

Increased Productivity: Easy configuration and setup of I/O modules using wizards speeds engineering and installation

Reduced Downtime: Removal and Insertion Under Power (RIUP) and module level diagnostics

Exceptional Choices: More than 90 varieties and specialty modules meet the needs of a wide variety of applications

Network Flexibility: Communicates on EtherNet/IP, ControlNet, DeviceNet, Remote I/O and other open networks

Improved Plant Operations: HART analog modules pass through HART data to asset management software or controller for improved plant operations



FLEX I/O offers all the functions of larger rack-based I/O without the space requirements. Its cost effectiveness, flexibility, modularity, and reliability have made it the most popular distributed I/O platform with more than four million modules sold.

FLEX I/O helps eliminate multiple long wiring runs, reduces terminations, decreases engineering and installation costs and time, and substantially reduces down time. It complements all Rockwell Automation controller platforms for a distributed I/O solution.

The FLEX I/O system can communicate on EtherNet/IP™, ControlNet™, DeviceNet™, and many other open networks including, but not limited to, Remote I/O, PROFIBUS DP, and Interbus-S. You can independently select the I/O, termination style, and network to meet your application needs.

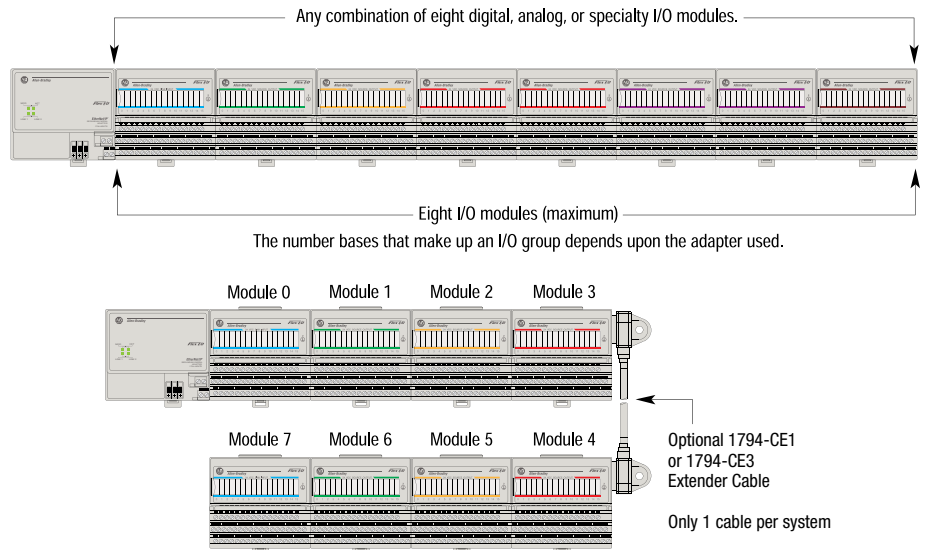
LISTEN.
THINK.
SOLVE.®

The FLEX I/O system contains a network adapter, terminal bases, and I/O modules. You can power the system with a FLEX power supply or any other compatible power source. You can use as many as eight terminal bases per adapter, allowing a wide variety of I/O channels per adapter, or mix and match digital, analog and specialty I/O modules to meet your specific needs. For instance,

- 256 digital inputs/outputs with 32-point modules
- 96 analog inputs

FLEX I/O can be mounted horizontally or vertically on standard 35mm DIN rail or panel mounted without derating. These modules also come in an XT version, which are conformally coated, and operate in extreme environments. These modules operate in a temperature range from -20C/-25C to 70C.

FLEX Ex™, an intrinsically safe line extension is also in the FLEX I/O family. FLEX Ex is designed to be distributed throughout hazardous areas without the use of bulky explosion proof or purged enclosures.



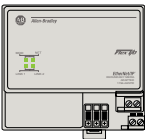
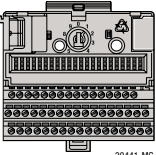
When using the optional extender cable, module groups are numbered sequentially along the length of the system.

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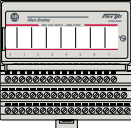
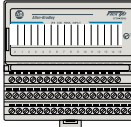
FLEX I/O Products


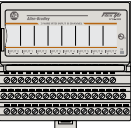
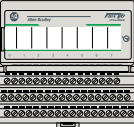
The following table lists the available FLEX I/O products.

| General Specifications | | Operating Temperature | | | |
|---|---|--|---|------------------------|--|
| • FLEX I/O | | 0...55 °C (32...131 °F) | | | |
| • FLEX I/O-XT | | -20/-25...70 °C (-4...185 °F) | | | |
| Storage Temperature | | -40...85 °C (-40...185 °F) | | | |
| Relative Humidity | | 5...95% non-condensing | | | |
| Shock, Operating ¹ | | 30 g peak acceleration, 11(±1) ms pulse width | | | |
| Shock, Non-Operating ¹ | | 50 g peak acceleration, 11(±1) ms pulse width | | | |
| Vibration ¹ | | Tested 5 g @ 10...500 Hz per IEC 68-2-6 | | | |
| | | Dimensions (HxWxD), Approx. | Weight | | |
| I/O Modules | | 46 x 94 x 53 mm (1.8 x 3.7 x 2.1 in) | 0.1 kg (0.3 lb) | | |
| I/O Adapters | | 87 x 68 x 69 mm (3.4 x 2.7 x 2.7 in) | 0.2 kg (0.4 lb) | | |
| Terminal Bases | | 94 x 94 x 69 mm (3.4 x 3.7 x 2.7 in) | 0.2 kg (0.5 lb) | | |
| Power Supplies | 1794-PS13 | 87 x 68 x 69 mm (3.4 x 2.7 x 2.7 in) | 0.2 kg (0.5 lb) | | |
| | 1794-PS3 | 87 x 94 x 69 mm (3.4 x 3.7 x 2.7 in) | 0.4 kg (0.8 lb) | | |
| The dimensions for 1794-AENT are 87 x 94 x 69 mm (3.4 x 3.7 x 2.7 in) | | | | | |
| 1794-AENTR, 1794-ACN15, and 1794-ACNR15 adapters have the following dimensions: 87.4 x 94 x 92 mm (3.4 x 3.7 x 3.6 in) | | | | | |
| | Product | Catalog Number | Description | | |
| Communications Components  | Adapter | 1794-ACN15 | 24Vdc ControlNet Adapter | | |
| | | 1794-ACNR15 | 24Vdc ControlNet Redundant Media Adapter | | |
| | | 1794-ACNR15XT | 24Vdc ControlNet Redundant Media Adapter, XTEMP (-20C to 70C) | | |
| | | 1794-ADN | 24Vdc DeviceNet Adapter | | |
| | | 1794-AENT | 24Vdc EtherNet I/P Adapter | | |
| | | 1794-AENTR | 24Vdc EtherNet I/P, 2-Port, Twisted-Pair Media | | |
| | | 1794-AENTRXT | 24Vdc EtherNet I/P, 2-Port, Twisted-Pair Media, XTEMP (-25C to 70C) | | |
| | | 1794-APB | 12Mbps PROFIBUS DP Adapter | | |
| | | 1794-APBDV1 | 12Mbps PROFIBUS DP –V1 Adapter | | |
| | | 1794-ASB | 24Vdc Remote I/O Adapter (to 8 modules) | | |
| | | 1794-ASB2 | 24Vdc Remote I/O Adapter (to 2 modules) | | |
| | | Termination Styles  | Terminal Base Units | 1794-TB2 | 2-Wire Cage Clamp Terminal Base Unit |
| | | | | 1794-TB3 ² | 3-Wire Cage Clamp Terminal Base Unit |
| | | | | 1794-TB3S ² | 3-Wire Spring Clamp Terminal Base Unit |
| 1794-TB32 | 32-Point Cage Clamp Terminal Base Unit | | | | |
| 1794-TB32S | 32-Point Spring Clamp Terminal Base Unit | | | | |
| 1794-TB3T ² | Terminal Base Unit | | | | |
| 1794-TB3TS ² | Spring Clamp Temperature Terminal Base Unit | | | | |
| 1794-TB3G ² | Cage Clamp Grounded Terminal Base Unit | | | | |
| 1794-TB3GS ² | Spring Clamp Grounded Terminal Base Unit | | | | |
| 1794-TBN ² | Terminal Base Unit (NEMA-style) | | | | |
| 1794-TBNF | Fused Terminal Base Unit (NEMA-style) | | | | |
| 1794-TBKD | Knifeswitch Disconnect Terminal Base Unit | | | | |
| 1794-TB37DS | 37 Pin D-Shell Termination (digital & analog modules) | | | | |
| 1794-TB62DS | 62 Pin D-Shell Termination (32pt. I/O modules) | | | | |

¹ To maintain these specifications, you must use DIN rail locks specifications, you must use DIN rail locks

² When product is marked. See specific module installation instructions for details

| | Product | Catalog Number | Description | |
|--|----------------|-----------------------|---|-------------------------------|
| AC I/O  | 120Vac Modules | 1794-IA8 | 120Vac 8 Input Module | |
| | | 1794-IA8I | 120Vac 8 Isolated Input Module | |
| | | 1794-IA16 | 120Vac 16 Input Module | |
| | | 1794-OA8 | 120Vac Output Module | |
| | | 1794-OA8I | 120Vac 8 Isolated Output Module | |
| | | 1794-OA16 | 120Vac 16 Output Module | |
| | 220Vac Modules | 1794-IM8 | 220Vac 8 Input Module | |
| | | 1794-IM16 | 220Vac 16 Input Module | |
| | | 1794-OM8 | 220Vac 8 Output Module | |
| | | 1794-OM16 | 220Vac 16 Output Module | |
| DC I/O  | 5Vdc Modules | 1794-IG16 | 5Vdc 16 TTL Input Module | |
| | | 1794-OG16 | 5Vdc 16 TTL Output Module | |
| | 24Vdc Modules | 1794-IB8 | 24Vdc 8 Sink Input Module | |
| | | 1794-IB10X0B6 | 24Vdc 10 Sink Input/6 2A Source Output Module | |
| | | 1794-IB10X0B6XT | 24Vdc 10 Sink Input/6 2A Source Output Module, XTEMP (-20C to 70C) | |
| | | 1794-IB16 | 24Vdc 16 Sink Input Module | |
| | | 1794-IB16XT | 24Vdc 16 Sink Input Module, XTEMP (-20C to 70C) | |
| | | 1794-IB16D | 24Vdc 16 Sink Input Module, with Diagnostics | |
| | | 1794-IB16X0B16P | 24Vdc Combo Module, 16 Sink Inputs/16 Source Ouputs, Protected Module | |
| | | 1794-IB32 | 24Vdc 32 Sink Input Module | |
| | | 1794-IV16 | 24Vdc 16 Source Input Module | |
| | | 1794-IV32 | 24Vdc 32 Source Input Module | |
| | | 1794-OB8 | 24Vdc 8 Source Output Module | |
| | | 1794-OB8EP | 24Vdc Electronically Fused 8 2A Output Module, Protected | |
| | | 1794-OB8EPXT | 24Vdc Electronically Fused 8 2A Output Module, XTEMP (-20C to 70C) | |
| | | 1794-OB16 | 24Vdc 16 Source Output Module | |
| | | 1794-OB16D | 24Vdc 16 Source Output Module, with Diagnostics | |
| | | 1794-OB16P | 24Vdc 16 Source Output Module, Protected | |
| | | 1794-OB16PXT | 24Vdc 16 Source Output Module, Protected, XTEMP (-20C to 70C) | |
| | | 1794-OB32P | 24Vdc 32 Source Output Module, Protected | |
| | | 1794-OV32 | 24Vdc 32 Source Output Module | |
| | | 1794-OV16 | 24Vdc 16 Sink Output Module | |
| | | 1794-OV16P | 24Vdc 16 Sink Output Module, Protected | |
| | | 48Vdc | 1794-IC16 | 48Vdc 16 Sink Input Module |
| | | | 1794-OC16 | 48Vdc 16 Source Output Module |
| | | 125Vdc | 1794-IH16 | 125Vdc 16 Sink Input Module |

| | Product | Catalog Number | Description |
|---|--------------------------------|-----------------------|--|
| Analog I/O  | 24Vdc Analog Modules | 1794-IE4XOE2 | 24Vdc 4 Input/2 Output Analog Combo Module |
| | | 1794-IE4XOE2XT | 24Vdc 4 Input/2 Output Analog Combo Module, XTEMP (-20C to 70C) |
| | | 1794-IE8 | 24Vdc Selectable Analog 8 Input Module |
| | | 1794-IE8XT | 24Vdc Selectable Analog 8 Input Module, XTEMP (-20C to 70C) |
| | | 1794-IE8H | 24V dc Selectable Analog, 8 Input, with HART pass-thru |
| | | 1794-IE8XOE4 | 24Vdc 8 Input/4 Output Selectable Analog Module |
| | | 1794-IE12 | 24Vdc Selectable Analog 12 Input Module |
| | | 1794-OE4 | 24Vdc Selectable Analog 4 Output Module |
| | | 1794-OE4XT | 24Vdc Selectable Analog 4 Output Module, XTEMP (-20C to 70C) |
| | | 1794-OE8H | 24Vdc Selectable Analog 8 Output, with HART pass-thru |
| | | 1794-OE12 | 24Vdc Selectable Analog 12 Output Module |
| Isolated Analog I/O  | Analog Modules | 1794-IF4I | 24Vdc Source Isolated 4 Input Module |
| | | 1794-IF4IXT | 24Vdc Source Isolated 4 Input Module, XTEMP (-20C to 70C) |
| | | 1794-IF2XOF2I | 24Vdc 2 Input/2 Output Isolated Analog Combo Module |
| | | 1794-IF2XOF2IXT | 24Vdc 2 Input/2 Output Isolated Analog Combo Module, XTEMP (-20C to 70C) |
| | | 1794-OF4I | 24Vdc Source Isolated 4 Output Module |
| | | 1794-OF4IXT | 24Vdc Source Isolated 4 Output Module, XTEMP (-20C to 70C) |
| | | 1794-IF8IH | FLEX Isolated HART Analog Input |
| | | 1794-OF8IH | FLEX Isolated HART Analog Output |
| Relay Specialty I/O  | Relay Module | 1794-OW8 | 8 Isolated Relay Output Module |
| | | 1794-OW8XT | 8 Channel Relay Output Module, XTEMP (-20C to 70C) |
| | Encoder Input Module | 1794-ID2 | 24Vdc 2 Channel Incremental Encoder Input Module |
| | Frequency Input Module | 1794-IJ2 | 24Vdc 2 Input Frequency Module |
| | | 1794-IJ2XT | 2 Channel Counter Module, XTEMP (-20C to 70C) |
| | Pulse Counter Input Module | 1794-IP4 | 24Vdc 4 Channel Pulse Counter Module |
| | RTD Input Module | 1794-IR8 | 24Vdc RTD Input Module |
| | Thermocouple/RTD Input Module | 1794-IRT8 | 24Vdc Thermocouple/RTD/mV Module |
| | | 1794-IRT8XT | 24Vdc Thermocouple/RTD/mV Module, XTEMP (-20C to 70C) |
| | Thermocouple/mV Input Module | 1794-IT8 | 24Vdc Thermocouple/mV Module |
| | Very High Speed Counter Module | 1794-VHSC | 24Vdc 4 Digital Output Module |
| Power Supply | Power Supply | 1794-PS13 | 24Vdc, 1.3A |
| | | 1794-PS3 | 24Vdc, 3.0A |

| Product | Catalog Number | Description |
|--|---|--|
| Accessories | 1794-CE1 | Extender Cable, 0.3m (1 ft.) |
| | 1794-CE3 | Extender Cable, 0.9m (3 ft.) |
| | 1794-CJC2 | Cold Junction Compensator Kit |
| | 1794-N2 | FLEX Dummy Filler Module |
| | 1794-NM1 | Mounting Kit for panel mounting |
| | 1794-LBL | Label Kit for terminal bases |
| | 1492-EA35 | DIN Rail Locks (for vertical mounting) |
| | eCADWorks (ABECAD) free at: http://www.rockwellautomation.com/en/e-tools/drawings.html | |
| Integrated Architecture Builder 4.0 free at: http://www.rockwellautomation.com/en/e-tools/configuration.html | | |
| Product | | |
| Certifications ² | UL Listed Industrial Control Equipment | |
| | UL Listed for Class I, Division 2 Groups A, B, C, D Hazardous Locations | |
| | CE Marked for all applicable directives ³ | |
| | CSA Certified Process Control Equipment for Class I, Division 2 Group A, B, C, D Hazardous Locations | |
| | C-Tick Marked for all applicable acts | |
| | Marine Certification ⁴ | |
| SIL 2 Certification ⁵ | | |
| XT Products | FLEX I/O conformal coated products meet or exceed the following standards: | |
| | ANSI / ISA-S71.04-1985, Class G1, G2, G3 environments | |
| | CEI IEC 6065A-4 Class 1 and 2 environments | |
| | UL 746E | |
| Publications | 1794-SG002_-EN-P FLEX Selection Guide | |
| | ACIG-BR002_-EN-P Distributed I/O Products Brochure | |
| | 1797-PP001H-EN-P Flex Ex I/O Product Profile | |
| | XT-PP001F-EN-E Extreme Environment System | |
| ³ CE Marking - Declaration of Conformity: http://www.rockwellautomation.com/products/certification/ce/index.html | | |
| ⁴ See the Certification for Marine and Off-shore Applications web site for details | | |
| ⁵ See the SIL 2: http://www.rockwellautomation.com/products/certification/ce/index.html | | |



Encompass Partner Products

| Company | Product | Description | Connectivity |
|--------------------------|---|--|--|
| ProSoft Technology, Inc. | "C" Programmable Solutions | "C" Programmable, Application Development and other application dependent interfaces available. | Backplane |
| ProSoft Technology, Inc. | FLEX-Communication Adapters 3170 Family | Allows Rockwell Automation FLEX I/O modules to interface to various protocols. | RS-232/422/485, Other Networks, Remote I/O |
| ProSoft Technology, Inc. | FLEX Communication Adapters MVI 94 Family | The FLEX communication modules are designed to connect the FLEX platform to any serial field device. | RS-232/422/485, Other Networks, Serial/DF1 |
| Spectrum Controls Inc. | I/O Modules - Analog/Discrete | | |

For more information go to www.rockwellautomation.com/encompass and search for referenced products under the platform FLEX I/O.

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www.rockwellautomation.com

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