Select a Network

You can configure your system for information exchange between a range of field devices and a specific scanner. You select the communication adapters for the networks that meet your needs:

Network Comparison by Application Requirement

Application Requirements	Network[1]	Communication Adapter
• Plant management (material handling) • Configuration, data collection, and control on a single, high-speed network • Time-critical applications with no established schedule • Data sent regularly • Internet/Intranet connection • Built-in switch, or high availability requirement (2-port AENTR)	EtherNet/IP	1794-AENT 1794-AENTR 1794-AENTRXT
• High-speed transfer of time-critical data between controllers and I/O devices • Deterministic and repeatable data delivery • Media redundancy	ControlNet	1794-ACN15 1794-ACN15K[2] 1794-ACNR15[3] 1794-ACNR15XT[4]
• Connections of low-level devices to plant floor controllers • More diagnostics for improved data collection and fault detection • Less wiring and reduced start-up time than a traditional, hard-wired system	DeviceNet	1794-ADN 1794-ADNK
• Connections to Remote I/O networks	Remote I/O	1794-ASB 1794-ASB2
• Connection to PROFIBUS DP and DPV1 networks	PROFIBUS DP PROFIBUS DPV1	1794-APB 1794-APBDPV1

(1) Communication adapters and other components are available for adding to your system as your specific application requirements change. For more information, go to www.rockwellautomation.com/encompass and search for products under the FLEX I/O platform.

(2) Modules that have the letter K in the last position of the catalog number, before the series designation, refer to conformal coated versions of the standard modules. These modules meet the following certifications: ANSI / ISA-S71.04-1985, Class G1, G2, and G3 environments; CEI IEC 6065A-4 Class 1 and 2 environments; UL 746E

(3) Modules that have the letter R in the catalog number, before the series designation, refer to redundancy versions of the standard modules and are meant for redundancy networks.

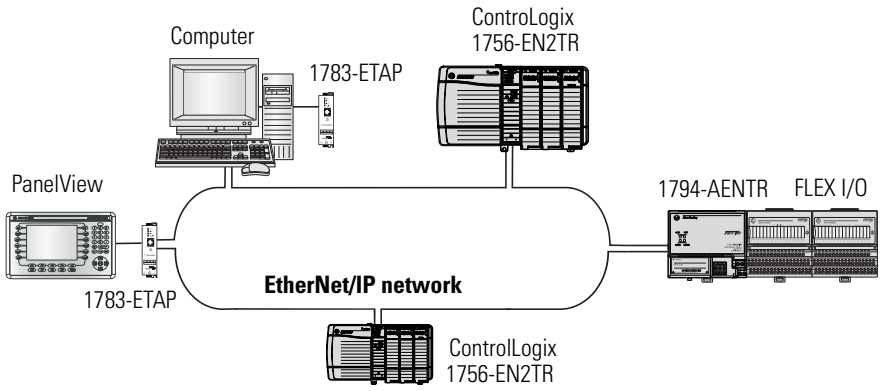
(4) Modules that have the letters XT in the catalog number, before the series designation, refer to extended temperatures version of the standard modules.

EtherNet/IP Network

EtherNet/IP is a network suitable for use in industrial environment and time-critical applications. EtherNet/IP uses standard Ethernet and TCP/IP technologies and an open application layer protocol called the Control and Information Protocol (CIP). CIP is also the application layer used in DeviceNet and ControlNet networks. The open Application Layer protocol makes interoperability and interchangeability of industrial automation and control devices on EtherNet/IP a reality for automation and control applications.

The 1794-AENT and 1794-AENTR connect FLEX I/O to Ethernet/IP enabled controllers such as ControlLogix or CompactLogix.

DLR network using EtherNet/IP taps. The following is an illustration of how FLEX I/O systems can be integrated into a DLR topology.



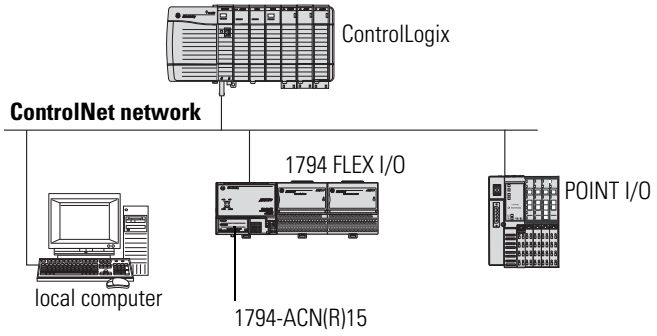
ControlNet Network

ControlNet is a real-time control network that provides high-speed transport of both time-critical I/O and interlocking data and messaging data, including upload/download of programming and configuration data on a single physical media link. The ControlNet network's highly efficient data transfer capability significantly enhances I/O performance and peer-to-peer communication in any system or application where it is used.

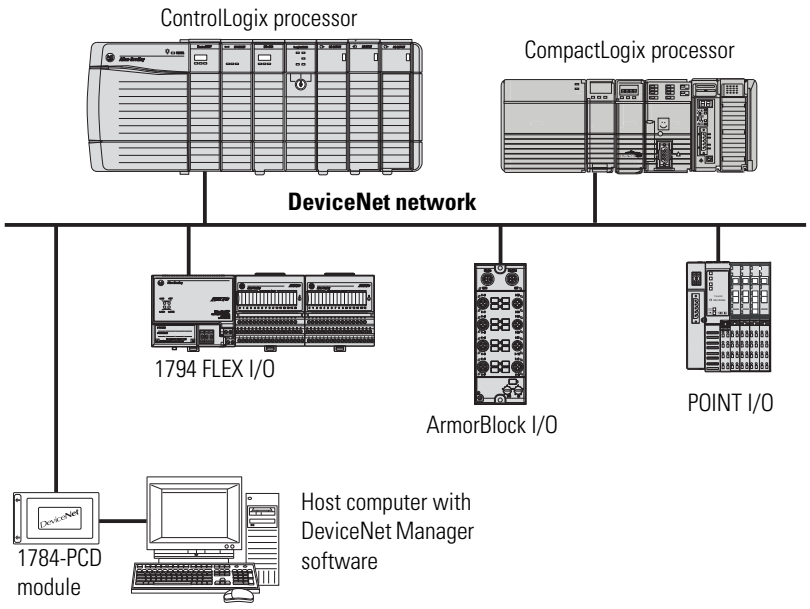
The 1794-ACNR15 adapter is capable of accepting redundant ControlNet cable media. The 1794-ACN15 is a non-redundant version.

The following diagram shows the FLEX I/O platform on a ControlNet network.

Figure 2 - ControlNet Communication



DeviceNet Communication



FLEX I/O DeviceNet Adapter Specifications

Attribute	1794-ADN, 1794-ADNK
I/O module capacity	8
Communication rate	125 Kbps 250 Kbps 500 Kbps
Power consumption at 24V	7.9 W
Inrush current at 24V	23 A for 2 ms
Power dissipation, max	4.6 W @ 19.2V DC
Thermal dissipation	15.7 BTU/hr @ 19.2V DC
Power supply 24V current load	330 mA
Power supply 24V output current, max	450 mA
Power supply input voltage, nom	24V DC
Operating voltage range	19.2…31.2V DC (includes 5% AC ripple)
DeviceNet cable	Allen-Bradley part no. 1485C-P1-Cxxx. Refer to publication 198-UM001 for more information. Extended Local Cable: 1794-CE1 (0.3 m) or 1794-CE3 (0.9 m)
Isolation voltage	Tested @ 850V DC for 1 s, user power to system
Dimensions (HxWxD), approx	87 x 68 x 69 mm 3.4 x 2.7 x 2.7 in.

Other Networks – Remote I/O

The 1794-ASB and 1794-ASB2 adapters provide connection to the Remote I/O network.

HART Enabled Isolated Analog 8 Output Module

Specification	1794-OF8IH
Thermal dissipation, max	16 BTU/hr @ 31.2V DC
Wire size	0.34... 2.5 mm^2 (22...12 AWG) solid or stranded shielded copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max
Wire category	2 – on signal ports 3 – on power ports(1)
Dimensions (HxWxD), approx	46 x 94 x 75 mm (1.8 x 3.7 x 2.95 in.) 94 x 94 x 91 mm (3.7 x 3.7 x 3.6 in.) installed

(1) Use this Conductor Category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.