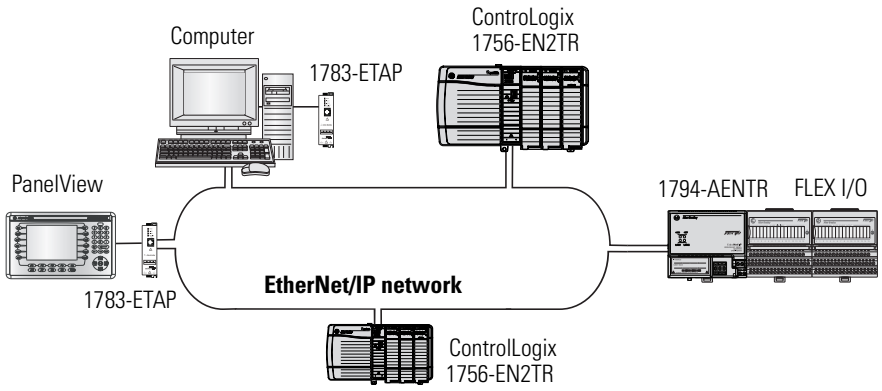
DLR network using EtherNet/IP taps. The following is an illustration of how FLEX I/O systems can be integrated into a DLR topology.



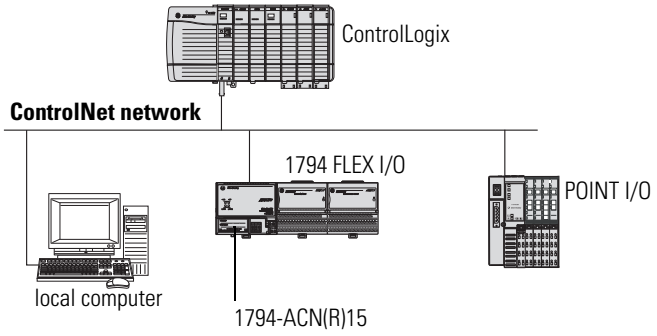
ControlNet Network

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.

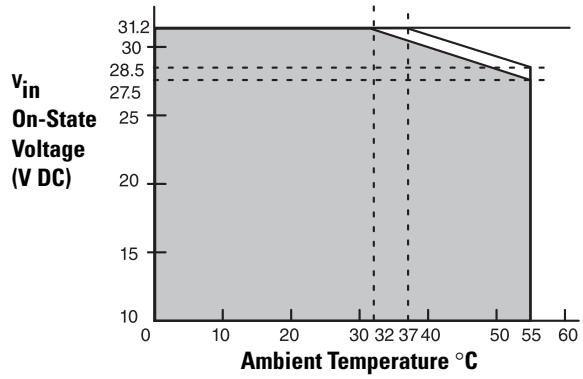
The 1794-ACNR15 adapter is capable of accepting redundant ControlNet cable media. The 1794-ACN15 is a non-redundant version.

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

Figure 2 - ControlNet Communication



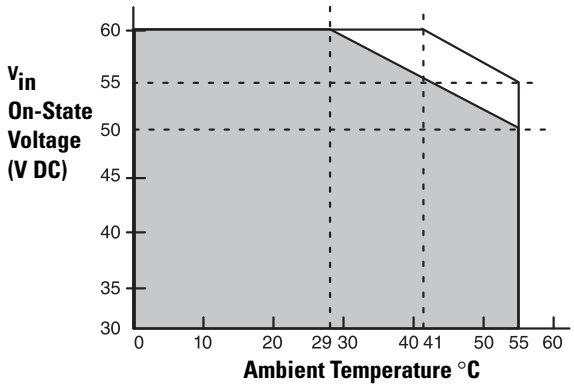
1794-IB32 Derating Curve



The area within the curve represents the safe operating range for the module under various conditions of user supplied 24V DC supply voltages and ambient temperatures.

□ = Normal mounting safe operating range ▒ included
▒ = Other mounting positions (including inverted horizontal, vertical) safe operating range

1794-IC16 Derating Curve



The area within the curve represents the safe operating range for the module under various conditions of user supplied 48V DC supply voltages and ambient temperature.

□ = Normal mounting safe operating range ▒ included
▒ = Other mounting positions (including inverted horizontal) safe operating range

FLEX I/O Digital DC Output Modules

- 1794-OB8 and 1794-OB16 provide 16 sourcing 1/2 Amp outputs (8 for the 1794-OB8) over a wide 10...31.2V DC input voltage range.
- 1794-OV16 is the sinking version of the 1794-OB16.
- 1794-OV32 is the 32 output version of the 1794-OV16.
- 1794-OC16 is the 48V DC version of the 1794-OB16.
- These modules are not fused. External fusing is strongly recommended or use protected output modules. Module outputs are not fused. Fusing of outputs is recommended. If fusing is desired, you must provide external fusing.

  For 1794-OB8, 1794-OB16, and 1794-OV16 use SAN-O MQ4-800 mA fuse.

  For 1794-OC16 use 2 A, 150V AC MQ2 normal fuse.

Digital DC Output Comparison

Specification	1794-OB8	1794-OB16	1794-OV16	1794-OV32	1794-OG16	1794-OC16
Voltage, on-state output, nom	24V DC, sourcing		24V DC, sinking		0V DC	48V DC, sourcing
Voltage, on-state output, min	10V DC				0V DC	30V DC
Voltage, on-state input, max	31.2V DC				0.4V DC	60V DC @ 45 °C 55V DC @ 55 °C
Voltage drop, on-state output, max	0.5V DC		0.2V DC		—	1.0V DC @ 0.5 A
Terminal base unit	1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3K, 1794-TB3SK		1794-TB3, 1794-TB3S, 1794-TB3K, 1794-TB3SK			1794-TB2, 1794-TB3, 1794-TB3S, 1794-TB3K, 1794-TB3SK
Current, on-state output, min	1.0 mA per channel				0.15 mA per channel	2.0 mA per channel
Current, off-state output, max	500 mA per channel 4 A per module	500 mA per channel 8 A per module		500 mA	24.0 mA per channel	500 mA per channel 8 A per module
Leakage current, off-state output, max	0.5 mA				1 mA	1.0 mA
Output surge current, max	2 A for 50 ms, repeatable every 2 s				—	4 A for 10 ms, repeatable every 2 s
Output delay time, OFF to ON, max	0.5 ms				0.25 ms	0.5 ms[(1)]
Output delay time, ON to OFF, max	1.0 ms				0.5 ms	1.0 ms @ 25 °C 2.0 ms @ 55 °C[(2)]
External DC supply voltage range	10…31.2V DC (5% ripple)				4.5...5.5V DC (includes 50 mV p-p ripple)	30…60V DC (5% ripple)
External DC supply current range	10…35 mA	20…65 mA		50 mA	100 mA @ 5V DC	13…27 mA
Power dissipation, max	3.3 W @ 31.2V DC	5.3 W @ 31.2V DC	4.2 W @ 31.2V DC	4.4 W @ 31.2V DC	0.8 W @ 5.5V DC	3.7 W @ 60V DC

FLEX I/O Counter Modules

In order to decide which FLEX I/O counter module would best suit your application needs, you should identify the following:

- What type of application the module will be used for
- What field devices, signal levels, and signal type are being connected to the counter module

Counter Module Comparison

Catalog Number	Application	Network Capability	Number of Inputs/ Outputs	External DC Supply Current, Nom	Power Dissipation, Max	Thermal Dissipation, Max
1794-IJ2 1794-IJ2XT	Rational control, including: • turbine generators • motors • drives • gears • shaft	All networks supported by FLEX I/O	2 Input 2 Output	220 mA @ 19.2V DC 180 mA @ 24V DC 140 mA @ 31.2V DC	4.5 W @ 31.2V DC	15.3 BTU/hr @ 31.2V DC
1794-VHSC	Applications including: • packaging • material handling • flow monitoring • cut-to-length • motor speed control • monitoring	ControlNet: • 1794-ACN15 • 1794-ACNR15 EtherNet/IP: • 1794-AENT • 1794-AENTR	2 Input 2 Output	100 mA @ 24V DC(1)	5W @ 31.2V DC	17.1 BTU/hr @ 31.2V DC
1794-ID2	Applications including: • quality counting • positioning • speed calculations	All networks supported by FLEX I/O	2 Input	150 mA @ 12V DC 75 mA @ 24V DC	5.0 W @ 26.4V DC	17.1 BTU/hr @ 26.4V DC
1794-IP4	Applications including: • counting pulse from flow meters • counting pulse from density meters • quality counting • speed calculations		4 Input			

(1) Does not represent power required to supply the inputs or outputs