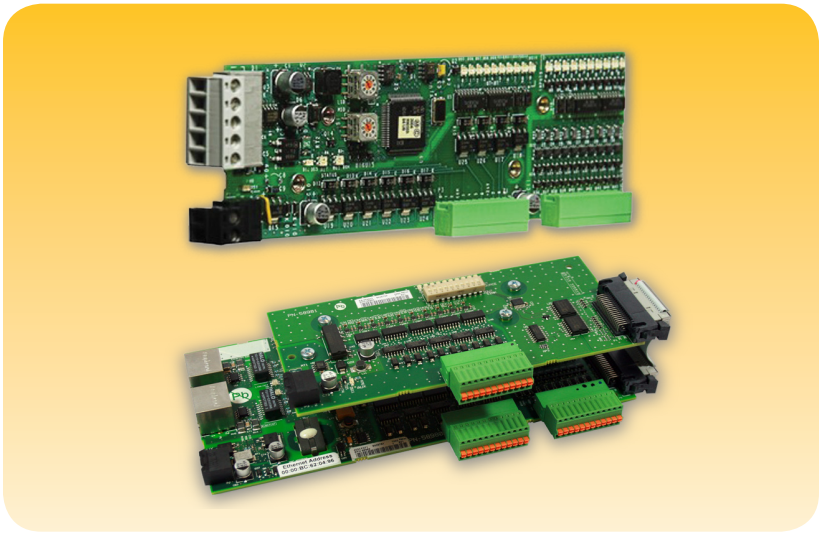
Embedded I/O Modules

Allen-Bradley

With embedded I/O, you can buy just what you need to develop your machines. If you're a machine builder who uses internal engineering resources, embedded I/O presents a cost-effective alternative. Quickly incorporate off-the-shelf printed circuit boards into your development cycle and save the packaging dollars typically associated with providing panels and existing enclosures.

Now, with support for EtherNet/IP and Device Level Ring (DLR) topology, you gain added cost savings and redundant communications for improved system availability.



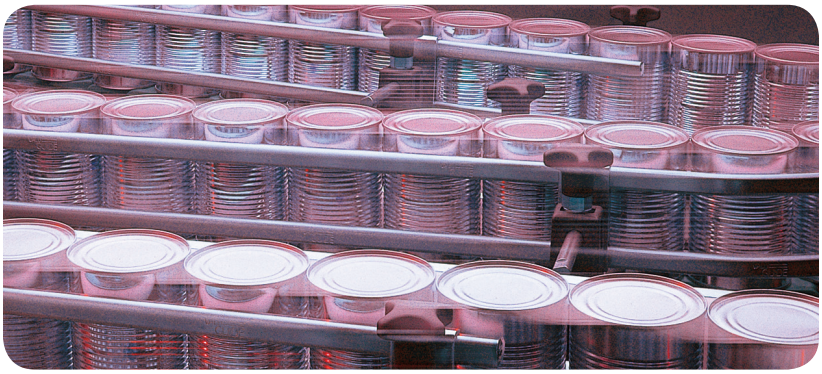
Leverage Proven Design Technology at a Lower Cost

Embedded printed circuit boards provide you with a standard interface between the input device and machine actuators. You can leverage proven Rockwell Automation design technology and reliability without the cost of custom-packaged solutions — critical for cost-sensitive machine-embedded applications.

An available expansion board and universal I/O reduce your initial material investment, minimize inventory, reduce cost per I/O expansion, and maximize I/O utilization for each application.

Use Embedded I/O in Diverse Application Types

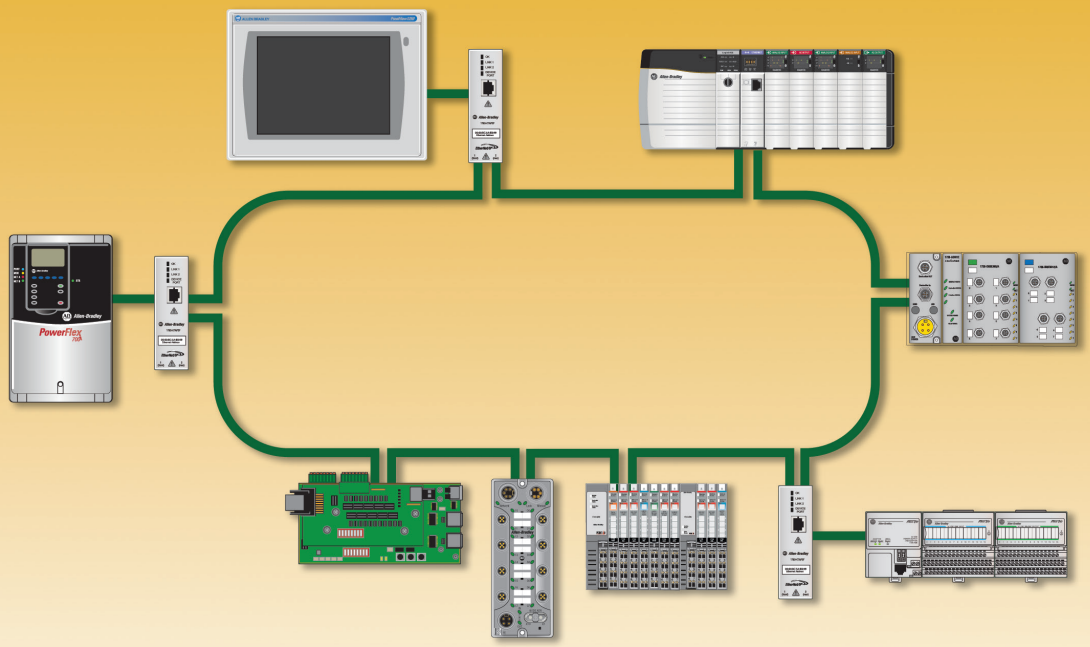
Machine embedded I/O circuit boards are ideal in conveyor and sortation automation, robotics I/O operator interface panels, packaging machines, highly distributed lift applications, semiconductor material handling, and warehouse automation conveyors.



LISTEN. THINK. SOLVE.®

Improve System Resilience

With the 1756-EN2TR supervisor-capable device, dual port adapters enable the use of the ring topology for greater system resilience.



Communicate with EtherNet/IP or DeviceNet

Rockwell Automation embedded I/O modules communicate via both DeviceNet and EtherNet/IP protocols, unlike many packaged I/O solutions. Dual Port EtherNet/IP embedded I/O products can make your I/O wiring more efficient by eliminating the use of external Ethernet switches and the expensive cabling required in star topologies, while using the DLR topology provides redundancy for enhanced system performance.

DeviceNet embedded I/O products link your machine to your controller for speed and efficiency with change-of-state functionality. DeviceNet, combined with removable I/O connectors lets you reduce wiring, installation costs start-up time and down time.

Embed I/O Directly Into or Onto a Machine

Compact size and extended temperature specifications let you embed I/O directly into or onto a machine.

Better Utilize I/O Availability

Rockwell Automation embedded I/O modules offer universal inputs and user-selectable sink/source output types so you don't need to buy a higher mix of I/O modules that offers only limited combinations of input and/ or output types.

Locally Control the Cards' Outputs

DeviceLogix Smart Component Technology provides local control of the embedded I/O cards' outputs. Using the status of local inputs along with network inputs and network and module status bits, these printed circuit boards control the operation of both local and network outputs using a Function Block Editor or DeviceLogix Ladder Logic Editor that is part of RSNetWorx for DeviceNet v6.0. Using DeviceLogix in the embedded I/O cards provides you with quicker response, reduced network traffic and a smaller control program.

Direct Communication With Zone Control I/O Cards

New Zone Control I/O (ZCIO) cards provide Zone Interlocking Parameters (ZIP). ZIP lets one card consume data directly from as many as four other ZCIO cards without going through a scanner. These direct communications between conveyor zones are beneficial in a merge or divert application such as high-speed sortation.

Embedded I/O Modules

Features	Benefits
Removable Terminal Block Connectors	Quick installation and repair
10 to 30V Operation	Meets broad application needs including interface with sensors, valves, etc.
Input delay times	Assures proper contact closure
Output overload/over-temp and short circuit protection	Eliminates failures due to wiring mistakes or damaged loads and thus maximizes system run time
Output over-voltage protection	Same as above
Isolation between I/O and DeviceNet	Maintains network power quality and reduces network power requirements
Watchdog circuit de-energizes outputs if hardware faults	Adds protection for reliable operations
Autobaud detection provides automatic network synchronization	Eliminates start-up/replacement network baud rate conflicts and hence reduces maintenance/replacement time
HW or SW settable node address	Reduces installation costs with node address flexibility
DeviceLogix Technology (DeviceNet only)	Provides high speed "smart I/O" local control functions
10x10 DeviceNet Card Dimensions	162.56 mm x 50.8 mm x 32 mm
16x16 DeviceNet Card Dimensions	187.96 mm x 77.85 mm x 25 mm
10x10 Ethernet Card Dimensions	188 mm x 89.9 mm x 20 mm
Ethernet Expansion Card	149.9 mm x 67.1 mm x 18 mm
I/O Module	**Description**
1799-D10U10B	24V DC, 10 Universal Input/10 Sourcing Output Module
1799-D10U10V	24V DC, 10 Universal Input/10 Sinking Output Module
1799-D16U16B	24V DC, 16 Universal Input/16 Sourcing Output Module
1799-D16U16BL	24V DC, 16 Universal Input/16 Sourcing Output Module with Device Logix
1799-D16U16V	24V DC, 16 Universal Input/16 Sinking Output Module
1799-D16U16VL	24V DC, 16 Universal Input/16 Sinking Output Module with DeviceLogix
1799ER-IQ10XOQ10	24 V DC, 10 Universal Input/10 User-Configurable Output, Ethernet
1799-OQ10X	24 V DC, Expansion Module/10 User-Configurable Output, Ethernet

Zone Control Cards	Description
Zone Control I/O cards include Zone Interlocking Parameters (ZIP) and DeviceLogix Smart Component Technology and ship with a DeviceNet connector, auxiliary power connector, and mounting plate. Input signal delay is user-selectable for 0, 2, 4, 8 or 16 ms, off-to-on or on-to-off. The delay time is set through RSNetWorx for DeviceNet,DeviceNet Manager software or a similar configuration tool.	
1799-ZCIOB	1799 Embedded I/O for DeviceNet – 10 Input/10 Sourcing Output ZCIO Card
1799-ZCIOV	1799 Embedded I/O for DeviceNet – 10 Input/10 Sinking Output ZCIO Card
1799-D10U10BZC	1799 Embedded I/O for DeviceNet – 10 Input/10 Sourcing Output ZCIO Card with Relative Node Addressing
1799-D10U10VZC	1799 Embedded I/O for DeviceNet – 10 Input/10 Sinking Output ZCIO Card with Relative Node Addressing
Accessories	**Options Description**
1799-BRKD	DIN rail brackets with screws (2 brackets; 4 screws)
1799-COV20	Clear plastic cover for 20 pt. board; 4 stand-offs/4 screws for DeviceNet
1799-MP20	Plastic mounting plate/4 screws for 20 pt. board for DeviceNet
1799-COV20E	Clear plastic cover for 20 pt. board; 4 stand-offs/4 screws for Ethernet
1799-MP20E	Plastic mounting plate/4 screws for 20 pt. board for Ethernet
1799-12SPCON	12-position gold-plated I/O mating connector (2 per package)
1799-DNETCON	DeviceNet 5-pin connector without mounting screws
1799-DNETSCON	DeviceNet 5-pin connector with mounting screws
1799-DNC5MMS	DeviceNet 5-pin to M12 connector with mounting screws
1799-AUXCON	2-position plug for auxiliary power

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