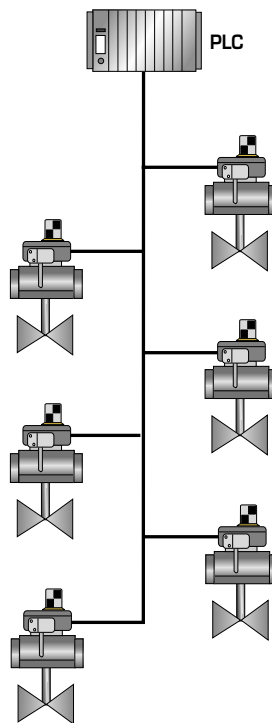




Network Monitors with DeviceNet® Capability

Intellis™ 7600

DeviceNet® Network Systems



DeviceNet®

Allen-Bradley is the originator of the DeviceNet® protocol. DeviceNet is a completely open device network based upon proven Controller Area Network (CAN) technology. Network Monitors with DeviceNet capability connect automated valves and external devices directly to the control system, reducing the I/O interfaces and wiring associated with a typical hardwired solution. A single DeviceNet Intellis System will accommodate up to two independent automated valve networks having a maximum of 63 valves per network. The DPAC provides for 378 programmable discrete I/O points on each network or 756 points per system.

Intellis™ DeviceNet® Overview

DeviceNet
CONFORMANCE TESTED



WESTLOCK
Network Systems Group

Physical Media	Twisted pair for communications and power
Maximum Distance	1600 ft.trunk + 512 ft. drop
Maximum Network Monitors per System	63/network 2 networks/system
Maximum I/O Points per System	378/network 756/system
Current Consumption Per Network Monitor	65 mA w/ solenoid energized
Interface Capability	Allen-Bradley, Omron, GE, Siemens, DeltaV
Communications Method	Master/slave multimaster, peer-to-peer
Error Checking	CRC check
Network Topology	Trunkline/dropline with branching
Transmission Speed	125 kbps, 250 kbps, 500 kbps
Redundancy	No
Valve Specific Diagnostics	Yes

Westlock reserves the right to change product designs and specifications without notice, and is not responsible for errors and omissions.

DeviceNet®

How The System Operates

Field Network

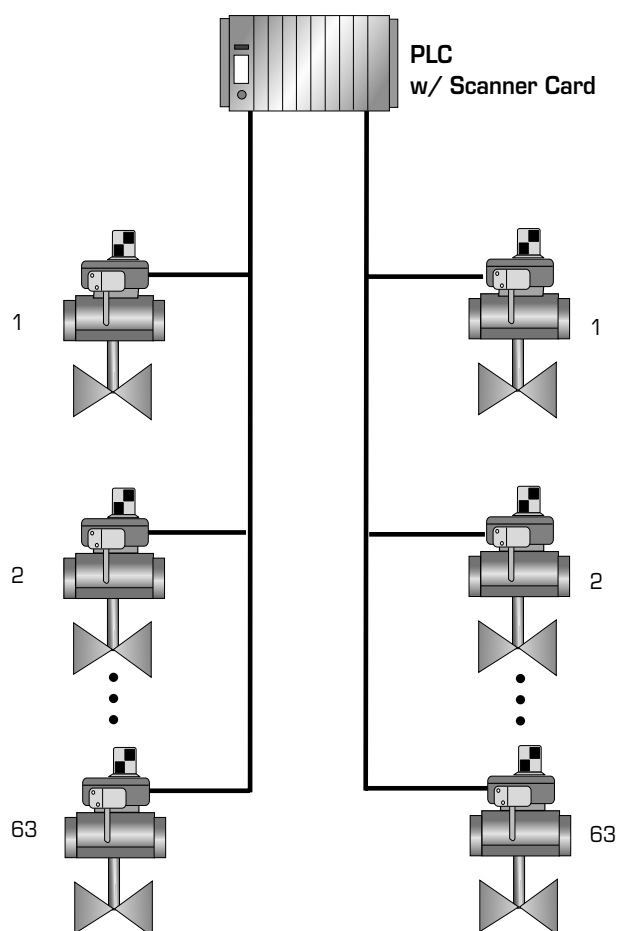
A DeviceNet® field network consists of a group of Network Monitors interconnected with a common communications protocol (DeviceNet). The communication link is a master/slave data exchange between the DeviceNet Network Monitor and the scanner.

Network Monitor

Each Network Monitor has an integrated I/O module onboard that is assigned and addressed from 0 to 63. The address number identifies one Network Monitor from all the other Monitors in the system.

Scanner Card

The Network Monitors interface with the PLC via a scanner card that resides in the PLC or DCS. Data gathered by the scanner from the DeviceNet field networks is communicated to PLC processors via discrete and/or block transfers over the chassis backplane.



Number of I/O points on a single network.

Because each network may connect up to 63 Network Monitors, the total number of programmable discrete I/O points comes to 378 (63 x 6).

Number of I/O points on a single system.

Since each scanner card for the Allen-Bradley PLC-5 series can accommodate two independent field networks, a single DeviceNet system will serially connect 126 Network Monitors or up to 756 I/O points.

Intellis™ 7600

DeviceNet® Network Systems

NETWORK MONITORS

A DeviceNet Network System is established by integrating an OnBoard I/O module directly within the Westlock Network Monitor. Each I/O module has the capability to accept input/output signals from automated valves, position sensors, solenoid valves, emissions monitors and external devices (level alarms, temperature and pressure sensors, flow switches, etc.)

Automated Valve Network Monitor



The Automated Valve Network Monitor couples directly to the pneumatic actuator. It houses three functional components; position sensors, low-power solenoid valve, and an OnBoard I/O module. The OnBoard I/O module is capable of accepting six input and two output devices.

ONBOARD I/O CARD

- INPUT 1:** Valve Position Sensor (closed)
- INPUT 2:** Valve Position Sensor (open)
- INPUT 3:** External Device or
Optional Pressure Monitor (supply air)
- INPUT 4:** External Device or
Optional Fugitive Emissions Monitor
- OUTPUT 1:** Solenoid Valve (actuation control)
- OUTPUT 2:** Dual Coil Application or External Device

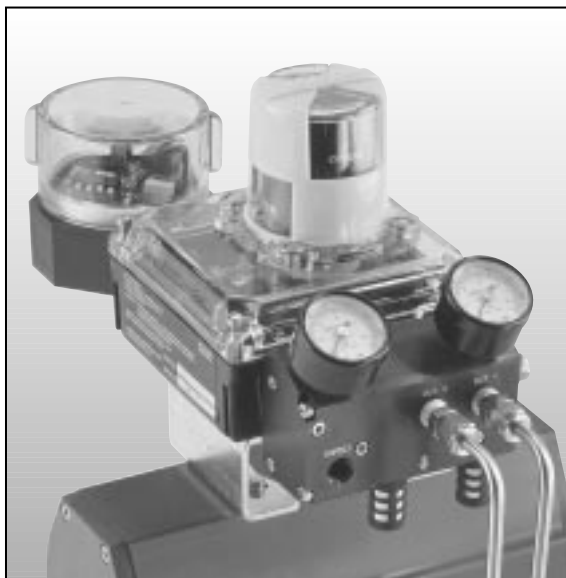
External Device Network Monitor



An External Device Network Monitor is available for control or monitoring of non-valve related devices (sensors, alarms, actuators, indicating lights, etc.).

Depending upon the process layout, a wide range of options exist. Standard units are supplied with protective diodes and optical isolation features. External Device Network Monitors are available in a **4 input/2 output** configuration with the DPAC. For I/O counts up to 16 input/8 output consult factory. Power requirements for each external device are considered within the design parameters of the overall system.

DeviceNet® 76DA



DeviceNet to Analog I/O Module

The Westlock Controls Corp. DeviceNet Slave Module operates as a Group 2 Only slave on a DeviceNet network. The unit supports Explicit Messages and Polled I/O Message of the predefined Master/Slave connection Set. The device does not support the Explicit Unconnected Message Manager (UCMM).

Analog output is a non-isolated 4-20 mA current source powered from the DeviceNet power. Analog input is a non-isolated 4-20 mA current measured on the "Input-" side, power is sourced from the DeviceNet power. Minimum input supply voltage is 16.5 VDC to assure 12 VDC on analog output. Input current is 50 mA with the analog inputs and outputs disconnected and 90mA with analog input and output at 20 mA.

DeviceNet Features

Device Type	Generic
Explicit Peer to Peer Messaging	N
I/O Peer Peer Messaging	N
Configuration Consistency Value	N
Faulted Node Recovery	N
Baud Rates	125K, 250K, 500K
Master/Slave	Y
I/O Slave Messaging	
• Bit Strobe	N
• Polling	Y
• Cyclic	N
• Change of States	N

ANALOG INPUT	TYPE	VALUE OF DATA (Class 10, Instance 1, Attribute 3)
Input 1	4-20 mA	0 to 32767 This value is the input current (in mA) multiplied by 1638.35. (Example: 10 mA input yields a value of 10 x 1638.35 = 16383.5 = 0 x 3 FFF)

ANALOG OUTPUT	TYPE	VALUE OF DATA (Class 10, Instance 1, Attribute 3)
Input 1	4-20 mA	0 to 32767 This value is the output current (in mA) multiplied by 1638.35. (Example: 14 mA input yields a value of 14 x 1638.35 = 22936.9 = 0 x 5998)

Interface Scanner

DeviceNet Scanner for 1771 Chassis (1771-SDN)

The 1771-SDN DeviceNet scanner is a single-slot module that resides in the 1771 I/O chassis and provides connection to two DeviceNet networks.

Multiple scanners can reside in the same I/O chassis, limited only by the I/O chassis size and power supply capacity.



DeviceNet Scanner for SLC Chassis (1747-SDN)

The 1747-SDN DeviceNet scanner is a single-slot module that resides in the SLC modular chassis and provides connection to the DeviceNet network.

Multiple scanners can reside in the same SLC chassis, limited only by the chassis size and power supply capacity.



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