

S-series DeviceNet Interface Card



The DeltaV™ S-series DeviceNet Interface Card provides the solution for interfacing to discrete actuators and sensors.

- Offers freedom to choose appropriate bus for application
- Supports standard device-level busses
- Reduces wiring costs
- Features native controller level interface
- Able to mix and match bus technologies to meet application requirements

Introduction

The DeltaV™ DeviceNet interface is a field-proven interface for discrete actuators and sensors. It is easy to install, reliable, and simple to use.

High data throughput, simple installation, good diagnostic capabilities and error-free proven transmission technology make the DeltaV DeviceNet a good interface solution for complex devices.

Benefits

Offers freedom to choose appropriate bus for application.

The DeltaV system supports sensor, device, and fieldbus technologies. Choose the most efficient and effective DeltaV interface for your needs, based on your operating philosophy and plant constraints.

Supports standard device-level busses. The DeltaV system gives a seamless interface with CENELEC or IEC standard device busses. Our support of standards ensures your freedom to use the devices you prefer.

Reduces wiring costs. The DeltaV DeviceNet interface decreases the number of wiring diagrams and cable and clamp labeling needed. The modular designs reduce network creation time. And, it takes less time to install and test the DeviceNet than Classic I/O for the equivalent number of discrete signals.

Features native controller-level interface. DeltaV DeviceNet cards communicate directly to the controller, without the need for a serial interface and other intermediate converters. This greatly simplifies the configuration and maintenance. You can rely on DeltaV DeviceNet cards to provide real-time, consistently accurate inputs and outputs. As the network of field devices grows, maintenance remains constant.

Able to mix and match bus technologies to meet application requirements. The DeltaV system makes it easy to configure and activate the devices. For devices not in the library, users can add devices and customize signal labeling according to specific plant standards.

DeviceNet, AS-i bus, Profibus DP, FOUNDATION fieldbus, HART, and traditional I/O can be easily intermixed on an I/O card basis on the same DeltaV controller. The same configuration, diagnostic, and operator interface techniques are used to configure the system.

Product Description

The DeltaV DeviceNet card uses standard DeviceNet cabling. The interface is based on the master/slave principle. Sixty-one slaves may run on a cable.

One DeviceNet segment is supported on a single interface. Temperature and certification specifications are the same as other DeltaV I/O.

The DeviceNet transmission technology is easy to install.

The bus structure permits addition and removal of stations or step-by-step commissioning of the system without influencing the other stations. Future expansions have no effect on stations already in operation.

Transmission speeds between 125 kbit/sec and 500 kbit/sec can be selected. One unique transmission speed is selected for all devices on the bus when the system is commissioned.

It should be noted that signals connected to the controller through the DeviceNet interface are not as fast as signals that are directly wired to DeltaV discrete I/O cards.

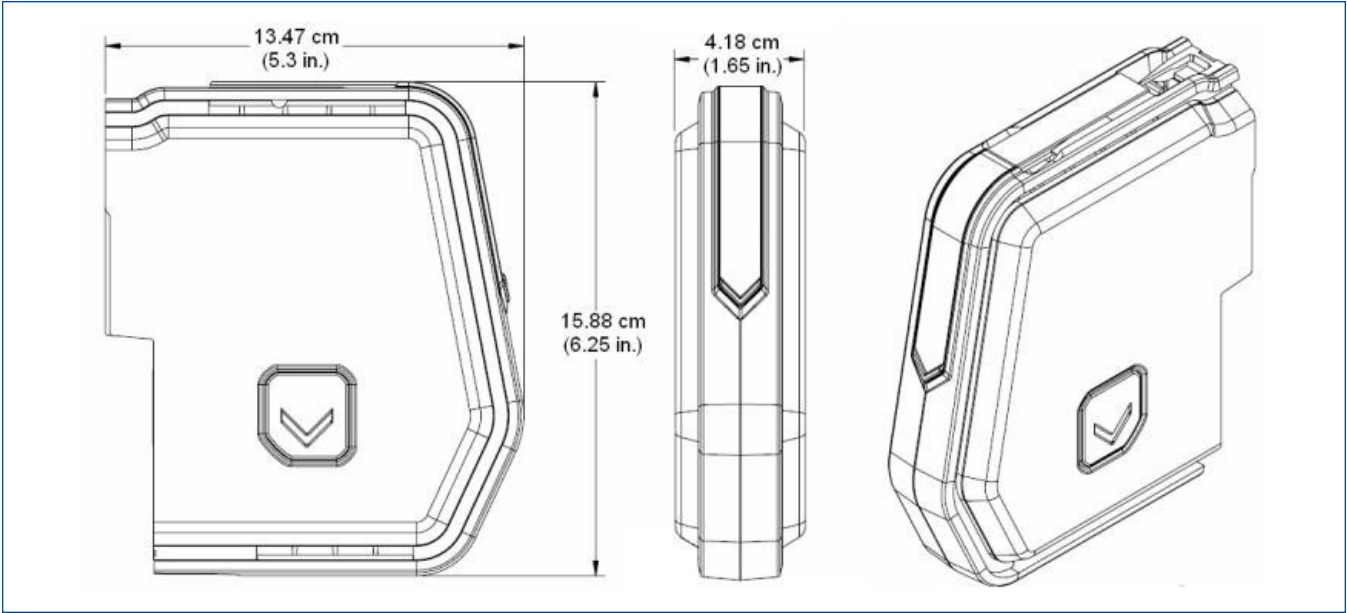
In DeltaV v12 and later, the number of DSTs per connected DeviceNet device will be 1 DST in most cases. The DST type counted will be the most valuable type used to reference a signal for each device. If references are made to more than 16 signals from a device, additional signal references beyond the 16th reference will each count as a DST. A motor starter, for example, with 4 to 5 signal references, will consume 1 DST (typical an AI or DO DST). A remote I/O island will consume 1 DST for the first 16 signal references, and 1 DST for each additional signal reference beyond the 16th signal reference. For DeltaV versions prior to v12, each signal referenced from a connected DeviceNet device will count as 1 DST each.

Performance of the DeviceNet segment will be a function of the number of devices connected and the baud rate; typically, an additional 80–100mS latency will be introduced rather than directly connecting the signal.

DeviceNet Slave

A DeviceNet slave is a peripheral device (I/O device, drive, HMI, valve, etc.) that collects input information and sends output information to the master. There are also devices that supply only input or only output information. The amount of input and output information depends on the device type.

Only slave devices that support polling may be used. The DeltaV DeviceNet card (master) cyclically reads the input information from the slaves and cyclically writes the output information to the slaves. In addition to cyclic user data transmission, DeviceNet provides powerful functions for diagnostics and configuration.



S-series DeviceNet Card dimensions.

Hardware Specifications

DeviceNet transmission speeds and cable lengths			
Baud rate (kbit/sec)	125	250	500
Distance/segment	500m	250m	100m
S-series DeviceNet Interface Specifications			
Category	Specifications		
Number of ports	1		
Number of Devices	61		
Environmental Specifications			
Storage Temperature	-40 to 85 °C (-40 to 185 °F)		
Operating Temperature *	-40 to 70 °C (-40 to 158 °F)		
Relative Humidity	5 to 95%, non-condensing		
Airborne Contaminants	ISA-S71.04-1985 Airborne Contaminants Class G3 Conformal coating		
Protection Rating	IP 20		
Shock	10 g ½-sine wave for 11 ms		
Vibration	1 mm peak-to-peak from 5 to 13.2 Hz; 0.7 g from 13.2 to 150 Hz		

*Operating any electronics at the higher end of its temperature range for long periods of time will shorten its expected lifetime, see **Effects of Heat and Airflow Inside an Enclosure White Paper** for more information.

DeviceNet Interface Specifications	
Number of ports	1

Certifications

The following certifications are available on the S-series DeviceNet Interface card (see actual certificates for exact certifications).

■ **CE:**

EMC- EN 61326-1

■ **FM:**

FM 3600

FM 3611

■ **CSA:**

CSA C22.2 No. 213

CSA C22.2 No. 1010-1

■ **ATEX:**

EN 60079-0

EN 60079-7

■ **IEC Ex:**

IEC60079-0

IEC60079-7

■ **Marine Certifications:** IACSE10

ABS Certificate of Design Assessment

DNV Type Approval Certificate

Hazardous Area/Locations

The DeltaV S-series AS-I card can be installed and used based on the following standards (see actual certificates for exact product markings):

■ **FM (USA):**

Class I, Division 2, Groups A, B, C, D, T4

■ **cFM (Canada):**

Class I, Division 2, Groups A, B, C, D, T4

■ **ATEX:**

II 3G Ex ec IIC T4 Gc

■ **IEC Ex:**

II 3G Ex ec IIC T4 Gc

*Regarding the installation instructions please refer to the following documents:
Class 1 Division 2 Installation Instructions DeltaV S-Series (12P5402)
Zone 2 Installation Instructions DeltaV S-series (12P5404)*

Ordering Information

Description	Model Number
S-series DeviceNet Interface Card	SE4016

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