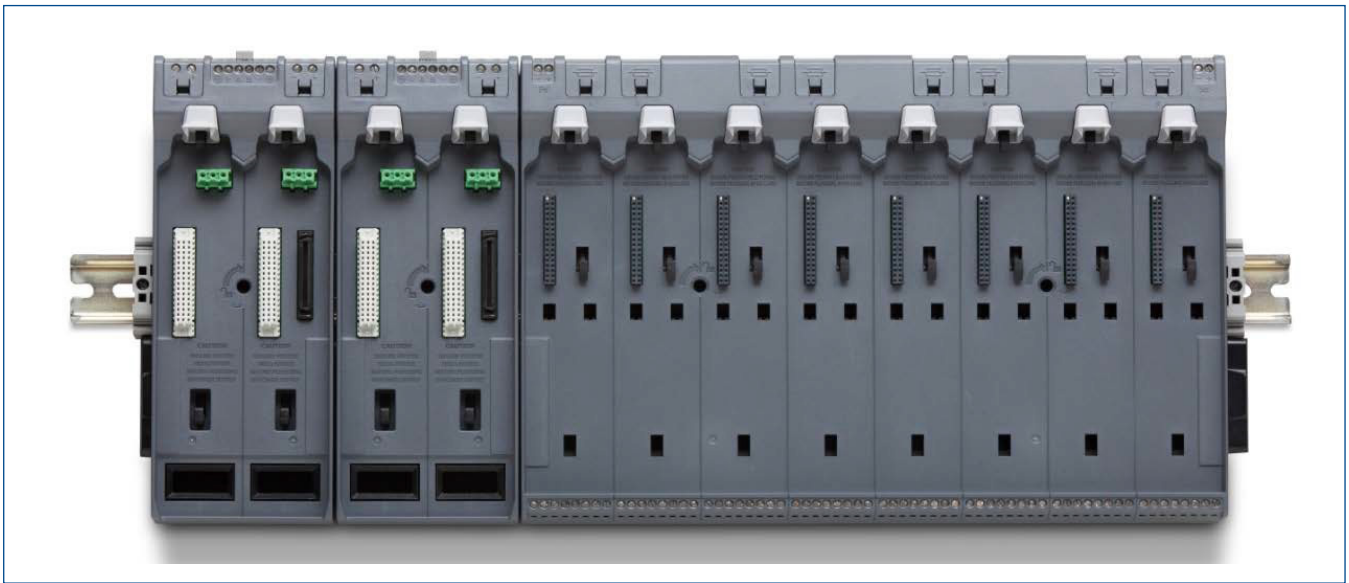# S-series Horizontal Carriers

The DeltaV™ modular I/O subsystem is easy to install and maintain.

- Modular design allows flexible installation

- Allows you to expand online

- Integrated power distribution

- Snap in assembly

Introduction

The DeltaV™ S-series hardware takes the proven DeltaV hardware to a new level of robustness and ease of use. Assembly is faster and power distribution is easier, with fewer connections using the integrated field power distribution and increased capacity of I/O bus power.

The modular design allows you to purchase only what you need with the ability to expand online later simply by adding the power/controller and I/O carriers are modular. Purchase only what you need but be assured that as your system grows you can add *plug-and-play carriers—Easy!*

Benefits

Modular design allows flexible installation. A T- type DIN rail is all you need to mount the power/controller carrier into place. Snap the I/O interface carriers to the rail and slide to connect it to the carrier on the left. Add as many carriers as needed, or use extender cables to move to a new rail. The DeltaV system's modular design approach allows you to add I/O carriers as you need them.

Allows you to expand online. Additional 8-wide carriers may be added online as desired. Bus extenders provide dual cabling for robustness, allowing up to 8 I/O carriers for a total of 64 simplex cards or 32 redundant cards.

Integrated power distribution. Controller and I/O interface power distribution is integrated into the carriers to reduce and simplify power and grounding. I/O Carriers have an integrated shield ground bar to isolate and drain field noise away from system power. They also provide an integrated redundant 24V DC bussed field power distribution to reduce installation wiring and provide fused, isolated power to each I/O interface, using Power Buss Plugs. Alternatively, the I/O carriers can be ordered with Power Terminal Plugs to bring dedicated power to each card, which can be either 24V DC or 120/230V AC. Power Buss Plugs and Power Terminal Plugs can be mixed on one I/O Carrier.

A single Power Terminal Plug will come with any 120V AC DI or 120/230V AC DO card.

Snap In Assembly. All components snap into place without the use of special tools. The design supports and "easy on" design to speed up installation and reduce maintenance turnaround. Carriers snap onto T-DIN Rails. All interfaces and system power supplies snap into place, eliminating retention screws.

Product Description

The S-series IO subsystem has been redesigned with a focus on fast assembly and simplified power connections. The system uses only 24V DC bulk power supplies. All power is connected to system carriers. Bus connectors have been upgraded to support additional 12V DC power to the IO cards, allowing additional power carriers to be inserted anywhere along the bus.

Carriers mount to standard t-type DIN rail with latches that require no tools for quick installation. The latches can be released using a blade screw driver. Simply snap the carrier to the rail and slide adjacent carriers together to engage the bus connector.

The I/O carrier supports 8 IO modules. Each card can be connected to an internal 24V DC bus using the Power Buss Plugs, or it can be individually powered by using the Power Terminal Plugs. The internal 24V DC bus is divided into primary and secondary power, with primary power distributed to odd numbered slots and redundant power distributed to even numbered slots using the Power Buss Plugs.
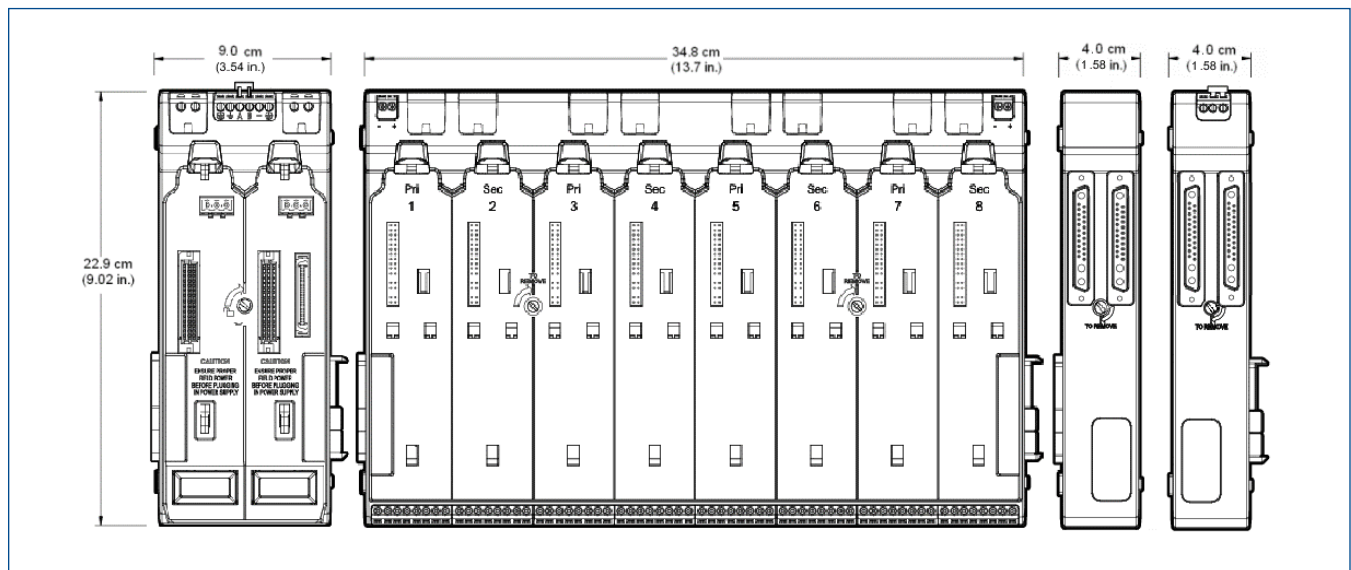
The DeltaV modular I/O subsystem is easy to install and maintain

Hardware Specifications

Specifications for S-series Power/Controller carriers	
24V DC Power Input	8 amps
Power/Controller Carrier	2 Power supplies or 1 power supply with 1 Controller
Specifications for S-series Horizontal I/O carriers	
Backplane Current	15 Amps
Power Terminal Plug	12 Amps
Power Buss Plug (fused)	5 Amps
Primary/Secondary 24V DC Bussed Power Distribution	12 Amps per bus (Max 3 A per card)
IO Carrier Capacity	8 IO modules
Environmental specifications	
Operating Temperature*	-40 to 70°C (-40 to 158 °F)
Storage Temperature	-40 to 85°C (-40 to 185 °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.

System Compatibility

S-series carriers support S-series controllers, power supplies and I/O cards. M-series I/O cards are not supported on S-series controllers.

DeltaV SIS logic solvers can be installed under an S- series controller using SIS horizontal and vertical carriers. The DeltaV SIS S-series adapter enables M-series horizontal carriers to be connected to S-series controllers. This enables logic solvers to be installed on the same nodes with S-series controllers and I/O.

S-series hardware is designed around 24V DC bulk power, for both controller and I/O interfaces. 12V DC bulk are not supported on the 2-wide Power/Controller carriers.

Certifications

The following certifications are available for the S-series Horizontal Carriers (see actual certificates for exact certifications for each product):

- **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:**

    IEC 60079-0

    IEC 60079-7

- **Marine Certifications:** IACS E10

ABS Certificate of Design Assessment

DNV Marine Certificate

Hazardous Area/Location

The S-series Horizontal Carriers can be installed and used based on the following standards (see actual certificates for exact product markings for each product):

- **FM (USA):**

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

- **cFM (Canada):**

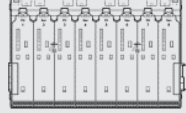   Class I, Division 2, Groups A, B, C, D, T4
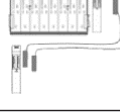
- **ATEX:**
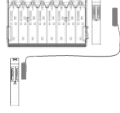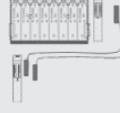
    II 3G Ex ec IIC T4 Gc

- **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	View	Model Number
2-Wide Power/Controller Carrier		SE3051C0
2-Wide Power/Controller Carrier with Dual Extender Cables 1.1m (43 in)		SE3051C2
2-Wide Power/Controller Carrier with Single Extender Cable 1.1m (43 in)		SE3051C3
8-Wide I/O Interface Carrier with 8 Power Buss Plugs and a Carrier Shield Bar		SE4050E0C0
8-Wide I/O Interface Carrier with 8 Power Buss Plugs, a Carrier Shield Bar, and a Single Carrier Extender Cable 1.1m (43 in)		SE4050E1C0
8-Wide I/O Interface Carrier with 8 Power Buss Plugs, a Carrier Shield Bar, and Dual Carrier Extender Cables 1.1m (43 in)		SE4050E2C0
8-Wide I/O Interface Carrier with 8 Power Terminal Plugs and a CarrierShield Bar		SE4059E0C0
8-Wide I/O Interface Carrier with 8 Power Terminal Plugs, a Carrier Shield Bar and a Single Carrier Extender Cable 1.1m (43 in)		SE4059E1C0
8-Wide I/O Interface Carrier with 8 Power Terminal Plugs, a Carrier Shield Bar and Dual Carrier Extender Cables 1.1m (43 in)		SE4059E2C0
DeltaV SIS S-series Adapter		SE4058

Any horizontal DIN rail mounted combination of carriers and extenders requires two DIN Rail stops to prevent carriers from disconnecting. Order VE4054DRS, which is a box of 5

Carrier Blank Cap Information

Description	Model Number
Carrier Blank Cap (for 8-Wide I/O Interface Carrier only)	SE6101
Carrier Blank Cap (for 2-Wide Power and Controller Carrier only)	SE6102

Spare Extender and Cable ordering Information

Spare Parts	
Description	**Model Number**
Left Extender 1-Wide	KJ4005X1-BB1
Right Extender 1-Wide	KJ4005X1-BC1
Single Carrier Extender Cable 0.4m (17in)	KJ4003X1-BH2
Single Carrier Extender Cable 0.8m (31in)	KJ4003X1-BH3
Single Carrier Extender Cable 1.1m (43in)	KJ4003X1-BH1
Single Carrier Extender Cable 1.5m (58in)	KJ4003X1-BH4
Single Carrier Extender Cable 1.9m (77in)	KJ4003X1-BH5

Spare Extender and Cable ordering Information

Spare Parts	
Description	**Model Number**
Power Terminal Plug for 2-Wide and 8-Wide Carriers	KJ4005X1-BF1
Power Buss Plug for 8-Wide Carriers	KJ4005X1-BG1
Power Terminal Plugs for 2-Wide and 8-Wide Carriers; package of 8 plugs	SE6197
Power Buss Plugs for 8-Wide Carriers; package of 8 plugs	SE6198

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