

DeltaV™ VerticalPlus I/O Subsystem Carriers

- Designed for SIS
- Modular design allows flexible installation
- Allows you to expand online
- Increases I/O density for cabinet-mounted systems



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

Introduction

Get your I/O subsystem up and running efficiently with the DeltaV™ VerticalPlus I/O carriers. The VerticalPlus carriers allow you to integrate your DeltaV SIS Logic Solvers in a vertical orientation, giving you the flexibility you need in your cabinet design.

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

Designed for SIS. The redesigned carrier supports simplex and redundant SLS modules that communicate via a redundant safety bus, which is separate from the BPCS communications. VerticalPlus carriers can also communicate via redundant SISNet Repeaters to other SIS nodes on vertical and horizontal carriers.

Modular design allows flexible installation. A T-type DIN rail is all you need to mount the power/controller carrier into place. Bussed field power is now separate for each individual card. The DeltaV system's modular design approach allows you to add I/O carriers as you need them.

Allows you to expand online. Additional carriers may be added online as desired.

Increases density for cabinet-mounted systems. Six I/O carriers fit in one side of a standard 1200mm x 600mm x 2200mm cabinet.

Product Description

The VerticalPlus I/O interface carrier plugs on to the 4- wide power/controller carrier, which supplies the system power and communications between the I/O interfaces and the controller. The controller processes the I/O interface information with control modules.

The VerticalPlus I/O interface carrier provides individual connections to each I/O card for bussed field power. The carrier is designed to support the same terminal blocks used with horizontal carriers.

Carriers are mounted on a T-type DIN rail. Each I/O interface carrier is equipped with connectors that allow them to be directly plugged together. A total of eight 8- wide I/O interface carriers are supported by a single I/O subsystem allowing for up to 64 local I/O interface cards.

Cable extenders are used to connect carriers that cannot be mounted next to each other, allowing carriers to be arranged within standard equipment cabinets. Extenders have two, 22-pin D-Shell connectors which supports dual cables for a fault tolerant configuration. The A and B connectors are in parallel so either port may be used. The new dual carrier extenders also support the redundant Safety Bus coaxial connectors used by DeltaV SIS. The total length of the I/O bus is 6.5 m (21.3 ft).

The VerticalPlus carriers can also be used for Zone 2 remote I/O units to provide flexibility in installation.



Vertical Plus I/O carriers with DeltaV SIS hardware mounted in a standard-sized cabinet

The following table lists the environmental specifications for the new VerticalPlus (SIS-compatible):

Common Environmental Specifications	
Category	Category
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 16 Hz; 0.5 g from 16 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.

The following tables list the dimensional specifications for the VerticalPlus carrier options (SIS-compatible):

VerticalPlus Power/Controller Carrier Specifications		
Capacity	Two system power supplies and two controllers	
Dimensions	Centimeters	Inches
Height	17.86	7.03
Width	22.78	8.96
Depth	2.81	1.11

4-Wide VerticalPlus Power Carrier Specifications		
Capacity	Two redundant system power supplies	
Dimensions	Centimeters	Inches
Height	17.86	7.03
Width	22.78	8.96
Depth	2.81	1.11

4-Wide VerticalPlus SISNet Repeater Carrier Specifications		
Capacity	Two (primary and secondary) SISNet Repeaters	
Dimensions	Centimeters	Inches
Height	17.86	7.03
Width	22.78	8.96
Depth	2.81	1.11

8-Wide VerticalPlus I/O Carrier Specifications		
Capacity	Eight I/O cards with terminal blocks or Four Logic Solvers with terminal blocks	
Dimensions	Centimeters	Inches
Height	50.8	20.0
Width	22.78	8.96
Depth	2.81	1.11
Current Rating		
Backplane	15 A max(supplied to I/O cards)	
Bussed field power bus	3.25 A (for each card)	

Certifications

The following certifications are available for DeltaV VerticalPlus I/O Subsystem Carriers:

- **CE:**
 - EMC: EN 61326-1
- **FM:**
 - FM 3600
 - FM 3611
- **CSA:**
 - CSA C22.2 No. 213-M1987
 - CSA C22.2 No. 1010-1
- **ATEX:**
 - EN60079-0
 - EN60079-15
- **IEC-Ex:**
 - IEC60079-0
 - IEC60079-15
- **Marine Certifications:** IACS E10
ABS Certificate of Design Assessment
DNV-GL Marine Certificate

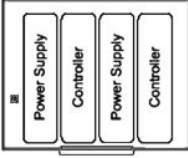
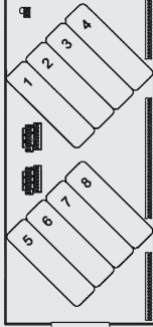
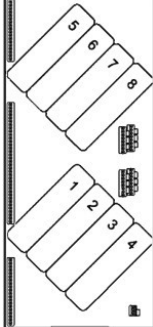




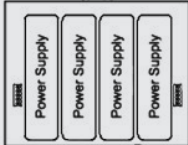
Hazardous Area/Location

DeltaV VerticalPlus I/O Subsystem 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 nA IIC T4 Gc
- **IEC-Ex:**
 - II 3G Ex nA IIC T4 Gc

*Regarding the Installation instructions please refer to the following Documents:
Class 1 Division 2 Installation Instructions DeltaV M-series 12P1293
Zone 2 Installation Instructions DeltaV M-series 12P2046*

Ordering Information

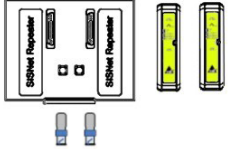
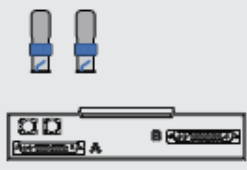
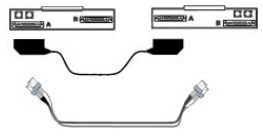
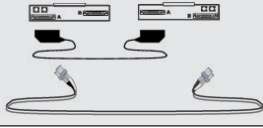

VerticalPlus Carriers	What You Get	Model Number
4-Wide VerticalPlus Power/Controller Carrier; SIS Compatible		VE3056
8-Wide VerticalPlus I/O Carrier; Left Side; SIS Compatible		VE4054S1C0
8-Wide VerticalPlus I/O Carrier; Right Side; SIS Compatible		VE4054S2C0
VerticalPlus I/O Carrier Extension Assembly, 0.4 Meter (consists of Start Extender, End Extender, 0.4-meter (17-inch) Railbus Cable)		VE4053R17
VerticalPlus I/O Carrier Extension Assembly, 1.1 Meter (consists of Start extender, End Extender, 1.1-meter (43-inch) Railbus Cable)		VE4053R43
VerticalPlus I/O Carrier Railbus Extender Cable, 0.4 Meter (17 inches)		VE4054R17
VerticalPlus I/O Carrier Railbus Extender Cable, 1.1 Meter (43 inches)		VE4054R43
VerticalPlus Power Carrier		VE5055

Each vertical DIN rail requires a DIN Rail stop to lock baseplates in position. Order VE4054DRS, which is a box of 5.

Spare Part Ordering Information

Spare Parts	Model Number
Start Extender (right side)	KJ4003X1-BE1
End Extender (left side)	KJ4003X1-BF1
Single VerticalPlus I/O Carrier Railbus Extender Cable, 0.8 Meter (31 inches)	KJ4003X1-BH3
Single VerticalPlus I/O Carrier Railbus Extender Cable, 1.5 Meter (58 inches)	KJ4003X1-BH4
Single VerticalPlus I/O Carrier Railbus Extender Cable, 1.9 Meter (77 inches)	KJ4003X1-BH5

The following table lists VerticalPlus carrier components for SIS-specific applications (SIS-compatible):

SIS-Specific VerticalPlus Carriers		Model Number
VerticalPlus Redundant SISNet Repeater with Safety Bus Terminators (consists of SISNet Carrier, pair of SISNet Repeaters, and pair of SISNet Terminators)		VS6005
VerticalPlus Termination with Safety Bus Terminators (consists of End Extender, pair of SISNet Terminators)		VS6053
VerticalPlus I/O Carrier Extension Assembly for SIS, 0.4 Meter (consists of Start Extender, End Extender, 0.4-meter (17-inch) Railbus Cable, Redundant Pair of 0.8-meter (33-inch) SISNet Coax Cables)		VS4015R17
VerticalPlus I/O Carrier Extension Assembly for SIS, 1.1 Meters (consists of Start Extender, End Extender, 1.1-meter (43-inch) Railbus Cable, Redundant Pair of 1.2-meter (46-inch) SISNet Coax Cables)		VS4015R43
SISNet Terminators, Redundant Pair		VS6054

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