

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 new 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 (384 classic I/O) 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.

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



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

| 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 |
| Hazardous area/location | ATEX EEx nA IIC T4 Class I, Div 2, Groups A, B, C, D, T4 hazardous locations. |
| 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 new VerticalPlus carrier options (SIS-compatible):


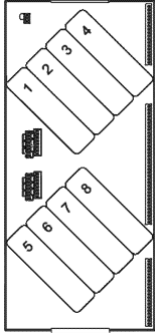
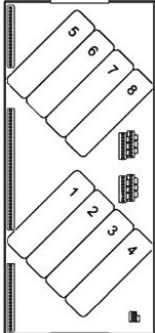




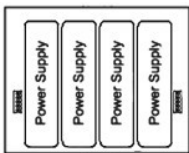
| VerticalPlus Power/Controller Carrier Specifications | | |
|--|---|--------|
| Capacity | Two system power supplies and two controllers | |
| Dimensions | Centimeters | Inches |
| Height | 17.86 | 7.03 |
| Width | 22.78 | 8.96 |
| Depth | 2.81 | 1.11 |

| 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) | |

Ordering Information

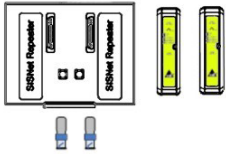
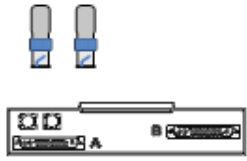
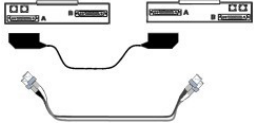
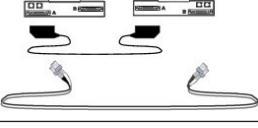

| VerticalPlus Carriers | What You Get | Model Number |
|--|--|--------------|
| 4-Wide VerticalPlus Power/Controller Carrier; SIS Compatible |  | VE3056 |
| 8-Wide VerticalPlus I/O Carrier; Left Side; SIS Compatible |  | VE4054S1C0 |
| 8-Wide VerticalPlus I/O Carrier; Right Side; SIS Compatible |  | 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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