KJ4001X1-BE1 8-Wide I/O Carrier

Hazardous Atmosphere

II 3G Ex ec IIC Gc
FM16ATEX0056U
FM21UKEX0017U

CL. I Div. 2 GP. A,B,C,D
CL. I Zone 2 AEx/Ex ec IIC Gc
FM17US0286U
FM17CA0145U

Power Specifications

Local Bus Power	12.6 VDC at 8 A
Bussed field Power	30 VDC at 6.5 A

Environmental Specifications

Ambient Temperature	-40°C to +70°C
Shock	10g ½ Sinewave for 11msec
Vibration	1mm Peak to Peak from 2 to 13.2Hz; 0.7g from 13.2 to 150Hz
Airborne Contaminants	ISA-S71.04 –1985 Airborne Contaminants Class G3
Relative Humidity	5 to 95% Non-Condensing

Note: Refer to the product label for serial number and location and date of manufacture.

Warning: This product has specific instructions for installation, removal and operation in hazardous areas. Refer to document 12P2046 *"DeltaV™ Scalable Process System Zone 2 Installation Instructions".* Other installation instructions are available in the *"DeltaV™ M-Series Hardware Installation and Reference"* manual.

Removal and Insertion

This unit cannot be removed or inserted with system power energized. Power must be de-energized before disconnecting any carriers or LocalBus Extender cables.

Bussed field power must not be connected to a supply that generates or contains a source of potential in excess of 30 VDC.

Field power supplied to this device either at the field terminal or as bussed field power via the I/O carrier must be removed before removing or connecting this device.

A module cover (KJ4001X1-FA1) must be fitted to any permanently unoccupied location on a carrier. (Permanently unoccupied implies no I/O card is intended for that location.)

No combination of I/O carriers and LocalBus Extenders must exceed a length of 6.5 meters. Interconnecting cable between enclosures must be in conduit.

Maintenance and Adjustment

This unit contains no user serviceable parts and should not be disassembled for any reason. Calibration is not required.

Other Safety Approvals

LR87534

Model	Ref. Fig. 1	Description	Removal or Insertion with System Power Energized	Key Pos.	Field Circuit Class For Definitions please refer to Item 10.
KJ3222X1 - BA1	G	Analog Input Card with HART, Series-2 2-Wire	YES[1]	A 1	Energy limited field circuits Uo = 28.7V, Io = 33mA, Po = 607mW Co=.17uF, Lo=11mH
		Analog Input Card with HART, Series-2 4-Wire	YES[1,2]		NON-SPARKING
KJ3222X1 - EA1	C	Redundant Analog Input Terminal Block	N/A		N/A
KJ3223X1 - BA1	G	Analog Input, 16-Channel 4-20mA, 2-Wire with HART, Series-2	YES[1]	A 2	Energy limited field circuits Uo = 28.7V, Io = 33mA, Po = 607mW Co=.17uF, Lo=11mH
KJ3223X1 - EA1	C	16-Channel Analog Terminal Block	N/A1		N/A
KJ3224X1 - BA1	G	Thermocouple Card 8 Channel, Series-2	YES[1]	C 1	Energy limited field circuits Uo = 5.5, Io = 0.3mA/Ch, 0.3 mA/Card Po = 0.8mW Co=1000µF, Lo=1000mH
KJ3224X1 - EA1	C	Series-2 Thermocouple Terminal Block	N/A		N/A
KJ3225X1 - BA1	G	RTD Card 8 Channel, Series-2	YES[1]	C 1	Energy limited field circuits Uo = 5.5, Io = 0.6mA/Ch, 4.8 mA/Card Po = 0.4mW Co=1000µF, Lo=1000mH
KJ3231X1 - BA1	H	Isolated Analog Input Card, Series-2	NO	C 2	Energy limited field circuits Uo = 5.5, Io = 0.3mA/Ch, 0.3 mA/Card Po = 0.8mW Co=1000µF, Lo=1000mH
KJ3231X1 - EA1	C	Isolated Terminal Block	N/A		N/A
KJ3241X1 - BA1	H	Serial Interface Card, Series-2	NO	D 4	NON-SPARKING
KJ3241X1 - EA1	C	Redundant Serial Interface Terminal Block	N/A		N/A
KJ3242X1 - BA1	H	Fieldbus H1 Card, Series-2	NO	D 6	Energy limited field circuits Ui = 40, Ii = 165 mA, Ci = 0.022 uF, Li = 480 uH Pi = 520mW (Groups A, B, C, D) [3] Ui = 40, Ii = 225 mA, Ci = 0.022 uF, Li = 480 uH (Groups A, B) [3]
		When used with KJ3242X1-GA1 Term. Block			NON-SPARKING
		When used with KJ3242X1-HA1 Term. Block			NON-SPARKING
KJ3242X1 - GA1	C	Simplex H1 Terminal Block	N/A	D 6	NON-SPARKING
KJ3242X1 - HA1	C	Redundant H1 Terminal Block	N/A	D 6	NON-SPARKING
KJ3242X1 - EA1	C	Simplex Fieldbus H1 Terminal Block	N/A	D 6	N/A
KJ3242X1 - FA1	C	Redundant Fieldbus H1 Terminal Block	N/A	D 6	N/A
KJ3243X1 - BA1	H	Profibus DP Card Series 2	NO	D 3	NON-SPARKING
KJ3243X1 - BB1	H	Redundant Profibus DP Card, Series 2	NO	D 3	NON-SPARKING
KJ3243X1 -EA1	C	Redundant Profibus Terminal Block	N/A	D 3	NON-SPARKING
KJ3244X1 - BA1	H	DeviceNet Card Series 2	NO	D 5	NON-SPARKING
KJ3245X1 - BA1	H	AS-i Card, Series 2 (-25°C to +70°C)	NO	D1	NON-SPARKING
KJ4001X1 - BA2	A	2 wide Carrier	NO	N/A	N/A
KJ4001X1 - BA3	A	2 wide Carrier	NO	N/A	N/A
KJ4001X1 - BB1	B	8-Wide I/O Interface Carrier	NO	N/A	N/A
KJ4001X1 - BE1	B	8-Wide I/O Interface Carrier with Shield Bar	NO	N/A	N/A
KJ4001X1 - BH1	A	2-Wide Power Carrier	NO	N/A	N/A
KJ4001X1 - CA1	C	I/O Terminal Block	N/A		N/A
KJ4001X1 - CB1	C	Fused I/O Terminal Block	N/A		N/A
KJ4001X1 - CC1	C	4- Wire I/O Terminal Block	N/A	A 1	N/A
KJ4001X1 - CD1	C	Mass Termination 10 Pin Assembly	N/A	B 6	N/A
KJ4001X1 - CE1	C	Mass Termination 16 Pin Assembly	N/A	A 1	N/A
KJ4001X1 - CF1	C	Mass Termination 24 Pin Assembly	N/A	A 1	N/A

Hardware Specifications

Specifications for the I/O Subsystem Horizontal Carriers		
2-Wide Power/Controller Carrier		
Capacity	One system power supply and one controller or two system power supplies	
Dimensions	**Centimeters**	**Inches**
Height	16.5	6.5
Width	8.4	3.3
Depth	3.1	1.2
Connector to connector width	9.1	3.6
8-Wide I/O Carrier with field power per two I/O cards Specifications		
Capacity	Eight I/O cards and eight terminal blocks	
Dimensions	**Centimeters**	**Inches**
Height	16.5	6.5
Width	33.6	13.2
Depth	3.1	1.2
Current Ratings		
Backplane	8 A max (supplied to I/O cards)	
Bussed field power bus	6.5 A max (supplied to field terminals) per two I/O cards	
8-Wide I/O Carrier with separate field power for each I/O cards Specifications		
Capacity	Eight I/O cards and eight terminal blocks	
Dimensions	**Centimeters**	**Inches**
Height	16.9	6.7
Width	33.6	13.2
Depth	3.1	1.2
Current Ratings		
Backplane	8 A max (supplied to I/O cards)	
Bussed field power bus	3.2 A max (supplied to field terminals) per I/O card	

4-Wide I/O Carrier Specifications		
Capacity	Four I/O cards and four terminal blocks	
Dimensions	**Centimeters**	**Inches**
Height	16.9	6.7
Width	17.0	6.7
Depth	3.1	1.2
Current Ratings		
Backplane	8 A max (supplied to I/O cards)	
Bussed field power bus	3.2 A max (supplied to field terminals) per I/O card	
1-Wide I/O Carrier Extender (Left and Right) Specifications		
Capacity	Single or dual cables with SIS safety bus coax cables	
Dimensions	**Centimeters**	**Inches**
Height	16.5	6.5
Width	4.2	1.7
Depth	3.1	1.2
Current Ratings		
Backplane	8 A max (supplied to I/O cards)	
Injected Power connector (Left extender only)	8 A max (supplied to I/O cards)	

Environmental specifications (All Carrier components)	
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
Shock (normal operating conditions)	10 g ½-sine wave for 11 ms
Vibration (operative limit)	1 mm peak-to-peak from 5 Hz to 16 Hz, 0.5 g from 16 Hz 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.*

Certifications

The following certifications are available on the M-series Horizontal Carriers.

- **CE:**

  EMC: EN 61326-1

- **FM:**

  FM 3600

  FM 3611

- **CSA:**

  CSA C22.2 No. 213

  CSA C22.2 No. 61010-1

- **ATEX:**

  EN 60079-0

  EN 60079-7

  EN 60079-15

- **Marine Certifications: IACS E10**

  ABS Certificate of Design Assessment

  DNV Type Approval Certificate

Hazardous Area/Location

The M-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):**

  Installation:

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

- **cFM (Canada):**

  Installation:

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

- **ATEX:**

  II 3G Ex nA IIC T4 Gc

  II 3G Ex ec IIC T4 Gc

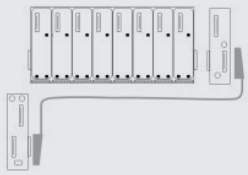
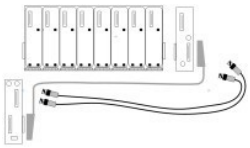
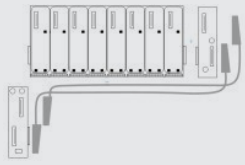
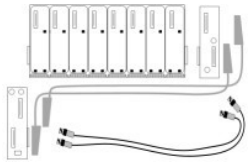
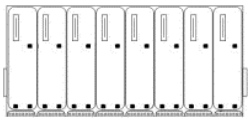
Regarding the Installation instructions please refer to the following Documents: Class 1 Division 2 Installation Instructions DeltaV M-series (12P1293) Zone 2 Installation Instructions DeltaV M-series (12P2046)

System Compatibility

M-series I/O carriers are not physically compatible with S-series controller carriers, except when used with the DeltaV SIS Adapter.

The M-series controllers cannot detect the difference between an 8-wide and a 4-wide carrier. If a 4-wide carrier is used, the four I/O slots after the slots on the carrier will be lost to an M-series controller. If either a 4-wide or 8 wide carrier is connected after a 4-wide carrier, the first slot number will be 5 numbers higher than the last slot on the 4-wide carrier. For example, if a controller has a 4-wide carrier followed by an 8-wide carrier, the slots on the 4-wide carrier will be 1, 2, 3, and 4, and the slots on the 8-wide carrier will be slots 9, 10, 11, 12, 13, 14, 15, 16. The PK Controller does not have this behavior because it can distinguish between a 4-wide and an 8-wide carrier. However, there is still a limit of 8 total carriers (4-wides and/or 8-wides) on any controller.

Ordering Information

Description	View	Model Number
8-Wide I/O Interface Carrier with Carrier Shield Bar		VE4050S2K1C0
8-Wide I/O Interface Carrier with Carrier Shield Bar and Single Enhanced Carrier Extender Cable. Cable is 1.2m		VE4050E1C0
8-Wide I/O Interface Carrier with Carrier Shield Bar, Single Enhanced Carrier Extender Cable, and Redundant SISNet Coax Cables. Cables are 1.2m.		VE4050E1C2
8-Wide I/O Interface Carrier with Dual Carrier Extension Cable and Carrier Shield Bar. Cables are 1.2m.		VE4050E2C0
8-Wide I/O Interface Carrier with Carrier Shield Bar, Dual Enhanced Carrier Extender Cables, and Redundant SISNet Coax Cables. Cables are 1.2m.		VE4050E2C2
4-Wide I/O Interface Carrier with Carrier Shield Bar and individual field power per card		VE4040E0C0
8-Wide I/O Interface Carrier with Carrier Shield Bar and individual field power per card		VE4050S2K1C2