

DeltaV PK Controller

May 2026

Product Description

The DeltaV PK Controller executes control logic based on the process signals derived from the I/O and Ethernet Device subsystems.

Control modules are automatically scheduled by the controller, based on their assigned scan rates. This allows each control function to be optimized based on the process dynamics. Modules scan times can be set as fast as 25ms, and as slow as 60 seconds. The number of control modules that can be assigned to a controller depends on the complexity and scan rate of each modules. For the fastest loop execution time, use the supported High Density cards in a simplex configuration.

Each controller node can be installed as a simplex or redundant node. Redundancy is provided by adding a second controller, mounted adjacent to the primary controller. Controllers may be connected to DeltaV traditional I/O carriers, which are mounted to the right of the controller carrier. Up to 8 carriers with 8 cards each can be connected to the local bus I/O, for a total of 64 traditional I/O cards. 4-wide I/O carriers may be used in combination with 8-wide I/O carriers, and in this case, the maximum of 8 total I/O carriers is retained.

In addition to traditional I/O cards, the local bus supports fieldbus technologies, including FOUNDATION Fieldbus, DeviceNet, Profibus DP, and AS-I protocols, as well as Serial interface cards. These various I/O products provide a wide range of interfaces to meet the needs of your control application. The DeltaV PK Controller also supports CHARMS and WirelessHART I/O cards. The CHARM I/O Card (CIOC) connects via the redundant Ethernet ports of the controller carrier to provide Electronic Marshalling capabilities. A DeltaV PK Controller can communicate with up to 16 CIOCs. Starting in v15.FP3, the limit is increased to 32, but going beyond 16 requires the use of CIOC2s. Each CIOC provides up to 96 individually configurable signal types (limited by the DST capacity of the installed DeltaV PK Controller). The WirelessHART I/O card (WIOC) provides redundant communication for up to 100 WirelessHART devices, providing high availability and reliability of wireless data. DeltaV PK Controller can communicate with up to 16 WIOCs.

The DeltaV PK Controller is designed for harsh environments and is rated for G3 corrosive environments, with an operating temperature range from -40 to 60°C. It is ideally suited for remote installation close to the process

equipment. For more traditional installations with central marshalling cabinets, the PK Controller can utilize any DeltaV I/O solution, including Electronic Marshalling and traditional I/O, providing the flexibility to install it wherever the application requires.

Sizing

The DeltaV PK Controller can be installed as simplex or redundant node, and can be used for applications of a wide variety of sizes, depending on which capacity controller is selected. For Ethernet Device Control, the DeltaV PK Controller can be used with a variety of Ethernet Devices, supporting Modbus TCP client or EtherNet/IP interface on port P01 and PROFINET on port PN1. Port P01 and PN1 can be enabled at the same time for greater functionality. DeltaV PK Controller is offered in 4 sizes with the following capacities:

Sizing	#DSTs	#Ethernet Devices (P01)	#PROFINET Devices (PN1) v15.FP1/FP2	#PROFINET Devices (PN1) v15.FP3 or later	# Batch Units (Standalone)
PK100	100	16	50	100	2
PK300	300	32	100	250	4
PK750	750	64	150	250	8
PK1500	1500	128	250	250	12



Simplex DeltaV PK Controller.

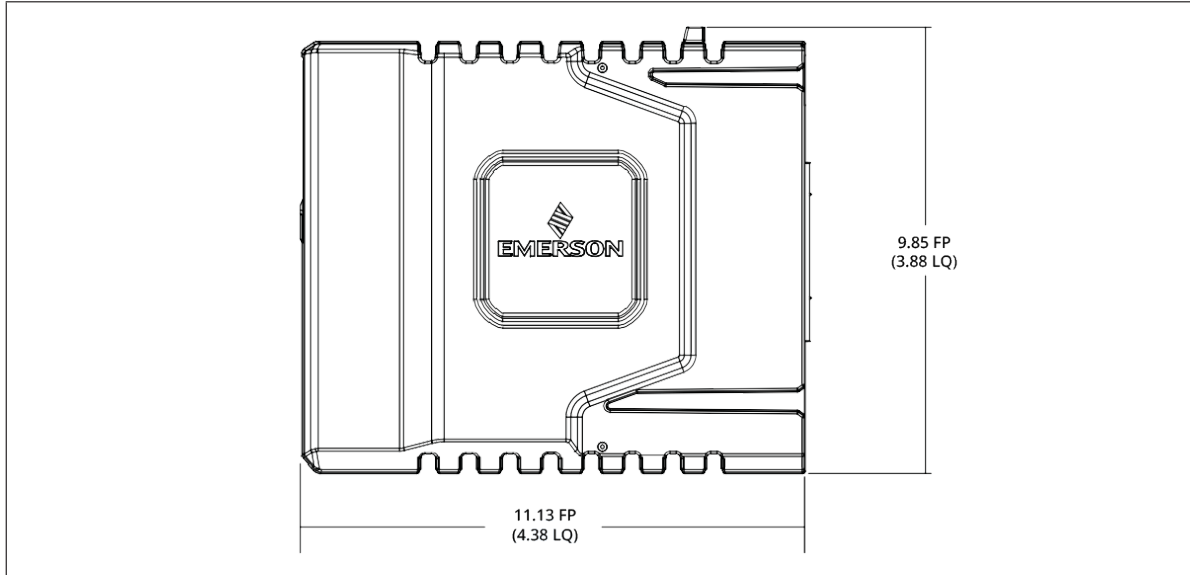
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PK Power Module Dimensions



PK Power Module Dimensions.

PK Controller Specifications

Item	Specification
Input power requirement through the PK Controller carrier	+24 VDC $\pm 10\%$ at 350 mA maximum; 700 mA maximum for redundant.
Externally applied backup power for real-time clock	+5.0 to +12.6 VDC at 15 μ A typical for a simplex controller. Double the consumption for redundant PK Controllers.
Power dissipation	7.5 W simplex; 15 W redundant.
Isolation	None. All circuits are referenced to the +24 VDC return.
SD card interface	Supports a removable SDHC version 2.0 memory card of either 2 GB or 8 GB capacity. The memory card is physically accessible only when the PK Controller is removed from the carrier.

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Specifications for the DeltaV PK Controller	
DST Limit	100, 300, 750, or 1500
Module Execution Rates	25ms, 50ms, 100ms, 200ms, 500ms, 1s, 2s, 5s, 10s, 30s, 60s
User Memory	Controller memory SD-Card memory
Input Power Required	+24 VDC $\pm$ 10% at 2.75 A maximum
Protocols Supported	Protocols Supported Natively on the PK Controller: Modbus TCP (Server & Client), EtherNet/IP (Client: Class 1 & Class 3), PROFINET controller (real time cyclic data) and OPC UA Server (real time data). Non-native protocols available through dedicated Bussed cards or the DeltaV Virtual I/O Module 2 (VIM2).
Environmental Specifications	
Operating Temperature	-40° to 60°C (-40° to 140°F)
Storage Temperature	-40° to 85°C (-40° to 185°F)
Relative Humidity	5 to 95%, non-condensing
Protection Rating	IP20, NEMA 12
Airborne Contaminants	ISA-S71.04-1985 Airborne Contaminants Class G3 Conformal Coating
Shock (Normal Operating Conditions)	10g ½-sine wave for 11ms
Vibration (Operative Limit)	1mm peak-to-peak from 5Hz to 13.2Hz, 0.7g from 13.2Hz to 150Hz
LED Indicators ¹	
Power – Green V	Indicates DC power is available
Error – Red Continuous	Indicates an internal error condition
Error – Red Flashing	Indicates the controller is decommissioned
Active – Green	Indicates the controller is operating as the primary controller
Active – Green Flashing	Indicates the active controller is not configured or a download is in progress
Standby – Green	Indicates the controller is operating as the backup controller
Standby – Green Flashing	Indicates the standby controller is not configured or a download from the active is in progress

¹ For additional information refer to DeltaV Books Online.

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PK Controller Spare Part Ordering Information

Description	Model Number
PK100 Controller	KL2002X1-BA1
PK300 Controller	KL2002X1-BB1
PK750 Controller	KL2002X1-BC1
PK1500 Controller	KL2002X1-BD1
PK Controller Protection Cover	KL4002X1-DA1
Power Module for PK Controller Carrier	KL1502X1-BA1
Power Module Protection Cover; for PK Controller Carrier	KL1502X1-BB1
I/O Port Switch Module; Copper; for PK Controller Carrier	KL1605X1-BA2
PK Controller Carrier	KL4002X1-BA1

Related Products

- Workstation and Server Hardware for the DeltaV DCS
- DeltaV M-Series Traditional I/O
- DeltaV M-Series Intrinsically Safe I/O (support starting in v15.FP2)
- DeltaV S-Series Traditional I/O
- DeltaV M-Series I/O Subsystem Horizontal Carriers
- DeltaV Live
- DeltaV Operate
- S-Series Horizontal Carriers
- M-series Virtual I/O Module 2
- S-series Virtual I/O Module 2
- DeltaV PK Flex controller
- DeltaV OPC UA servers and clients
- DeltaV Safety Instrumented System (SIS) with Electronic Marshalling

Prerequisites

- For each DeltaV PK Controller (or pair of redundant controllers), a PK Controller carrier is required.
- Each PK Controller requires a dedicated system bulk power supply. Please refer to DeltaV Bulk Power Supplies product data sheet for details.
- The DeltaV PK Controller requires PK Controller Engineering Software, or DeltaV software.
- For PROFINET S1 Functionality, DeltaV v15.FP1 or later is required.
- For PROFINET S2 Functionality, DeltaV v15.FP3 or later is required.

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