Emerson KJ3221X1-BA1 12P2531X122

DeltaV 8-Channel 4-20 mA HART Analog Output Module



Emerson KJ3221X1-BA1 12P2531X122 is an eight-channel 4–20 mA HART analog output module for DeltaV M-series I/O. It supplies continuously variable current commands from the control system to compatible field equipment, with HART capability for the connected smart devices. The module serves the output side of a process-control loop, converting the required control action into an analog field signal across eight channels. Its analog-output identity, HART function and matching terminal-block key distinguish it from DeltaV input cards and discrete-output modules when selecting a spare.

Technical Specifications

Product Identity	
Product type	Analog output module
Functional Configuration	
Output channels	8
Signal type	4–20 mA with HART
Terminal-block key	A4
Performance & Power	
Local-bus rating	12 VDC at 150 mA
Bussed-field rating	24 VDC at 300 mA
Field-circuit rating	24 VDC at 23 mA/channel
Environment	
Ambient temperature	-40 to +70 °C
Relative humidity	5–95%, non-condensing
Protection rating	IP20
Airborne contaminants	ISA-S71.04-1985 Class G3
Shock	10 g half-sine, 11 ms
Vibration	1 mm peak-to-peak, 2–13.2 Hz; 0.7 g, 13.2–150 Hz

Selected original manufacturer material follows on page 3.

Compatibility & Selection Guide

System compatibility. For KJ3221X1-BA1 12P2531X122, check the complete part number and hardware revision against the installed DeltaV M-series assembly. Emerson specifies A4 terminal-block keying for this I/O card. An eight-channel card with a different signal type, keying or part-number suffix should not be assumed to be interchangeable.

Wiring & Installation Reference

Power and terminal-block checks

Local bus · 12 VDC, 150 mA · Follow the applicable system-power isolation rule

Bussed field · 24 VDC, 300 mA · Do not confuse with local-bus power

Field circuit · 24 VDC, 23 mA/channel · De-energize non-sparking field circuits before handling

Terminal-block key · A4 · Match the terminal keys to the card before insertion

Module handling

1. Confirm the assembly Check the complete KJ/KC type, 12P part number, hardware revision and matching terminal block.

2. Isolate the required circuits De-energize non-sparking field circuits, including the fused terminal block, before insertion or removal.

3. Check keying and connections Set the terminal-block keys for this card and follow the current DeltaV hardware instructions for the installed assembly.

Installation precautions

De-energize non-sparking field circuits, including the fused terminal block, before insertion or removal.

Do not insert or remove with system power energized unless the area is known to be non-hazardous; the July 2021 instructions permit only one unit at a time under that condition.

For nL installations, assess every energy-limited node and apply Emerson document 12P2046.

No user-serviceable parts are provided. Do not disassemble the unit.

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KJ3221X1-BA1 AO 4-20 mA HART 8-Channel

Hazardous Atmosphere

II 3G Ex nA IIC Gc
FM12ATEX0090U
IECEx FMG 12.0035U
II 3G EEx nL IIC
Nemko 02ATEX431U

Power Specifications

Local Bus Power	12 VDC at 150 mA
Bussed Field Power	24 VDC at 300 mA
Field Circuit	24 VDC at 23 mA/Channel

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 IP 20 Rating
Terminal Block key Position	A4

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 unless the area is known to be non-hazardous and only one unit at a time may be removed or inserted.

Non-sparking field circuits MUST be de-energized before removing and inserting including the fused terminal block.

For “nL” installation, an I/O loop assessment must be completed on all energy-limited nodes.

A rotary keying system ensures compatibility between I/O cards and terminal blocks after installation is complete. The terminal block must have the keys set for the I/O card with which it is used.

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

FM APPROVED
CL. I Div. 2 GP.A,B,C,D T4

LR87534

EMERSON