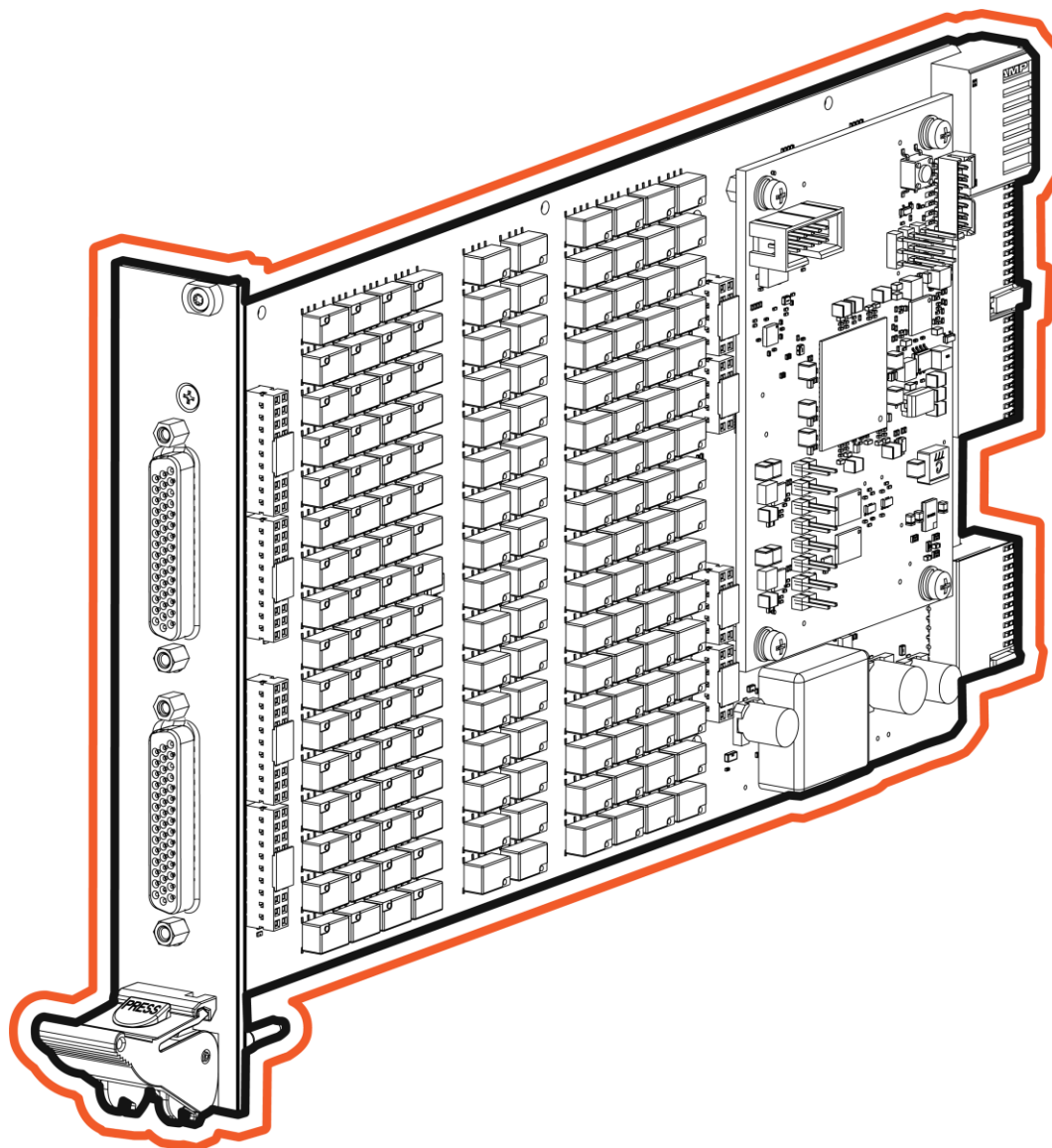


# DE9001 DATASHEET

SLSC 32/64 CHANNEL ROUTING MODULE



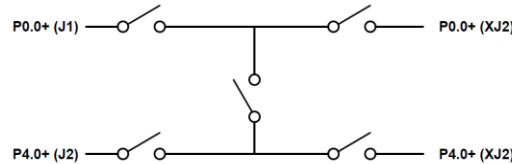
 **DEICO**

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## DESCRIPTION

DE9001 SLSC 32/64 Channel Routing Module is a switch matrix module that allows the most challenging Signal Routing options with its flexible hardware/software, the high number of channels, and wide range of Voltage/Current ratings. In SLSC Form-Factor, the module has 32 Differential or 64 Single-Ended channels configurable in any routing scenario. Example switching combinations for a single group are shown below. Note that all of the channels can achieve these combinations independently.



*Switching Combination Example*



**Note** DE9001 is compatible with DE9002 SLSC Instrument Expansion Module and DE9010 SLSC Fault Insertion Module and able to measure all of the routed channels when used together.

The general features of DE9001 are listed below:

- ⇒ 32 differential or 64 single-ended channels
- ⇒ Independent channel configurations
- ⇒ 220VDC, 250VAC switching voltage, 2A rated current per channel
- ⇒ 60W switching power per channel
- ⇒ SLSC chassis compatible
- ⇒ 2 Slots for SLSC Instrument Expansion or SLSC Fault Insertion Modules

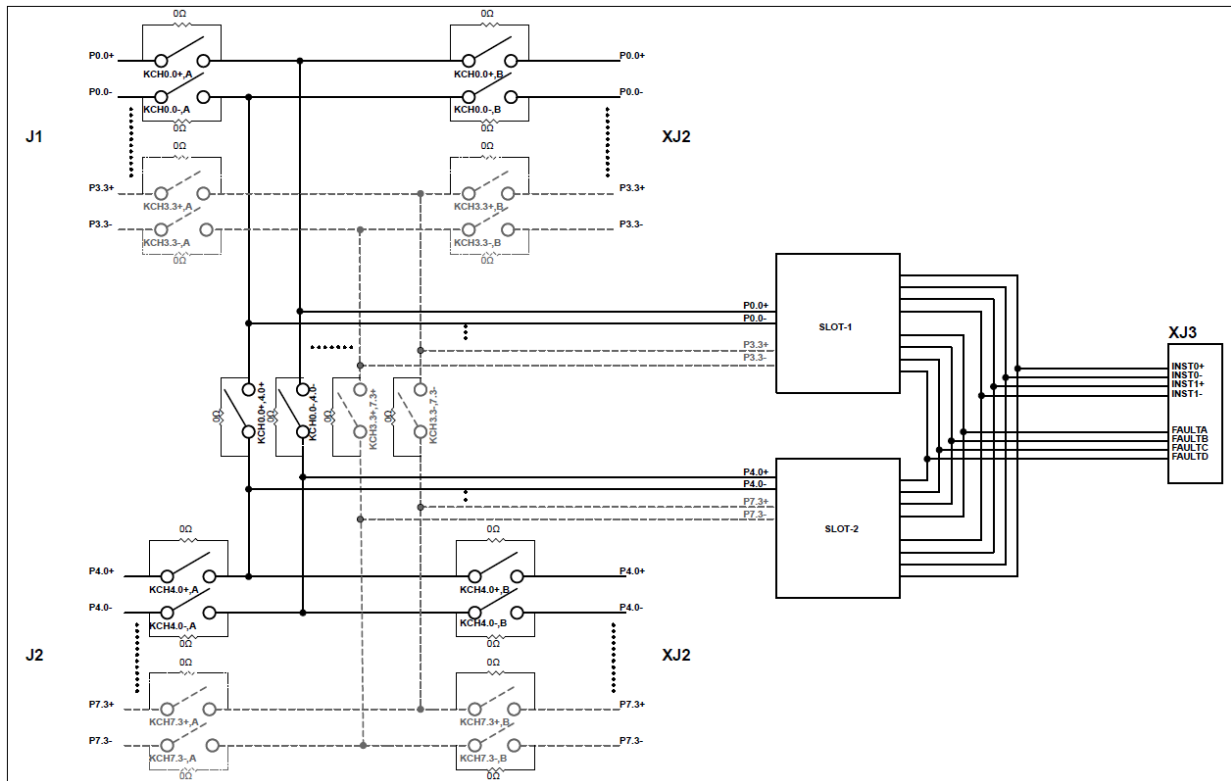
DE9001 is compatible with *IEC 60068-2-1/ IEC 60068-2-2/ IEC 60068-2-78/ IEC 60068-2-27/ IEC 60068-2-64/ EN 61326 (IEC 61326) / EN 55011 (CISPR 11) / AS/NZS CISPR 11/ FCC 47 CFR Part 15B/ ICES-001* standards.

Areas of application include:

- ⇒ HIL Testing
- ⇒ Signal Routing
- ⇒ Signal Conditioning
- ⇒ Fault Simulation

# HARDWARE OVERVIEW

## Circuitry



## Hardware Specifications

### Electrical

Specification	Minimum	Maximum	Notes
Switching Voltage	—	220VDC 250VAC	—
Rated Current	—	2A	2A@30VDC, 0.27A@220VDC 0.5A@125VAC
Switching Power	—	60W	—
Update Time	3ms	13ms	Operate time: 1ms typ. Release time: 3ms typ. Bounce time: 1ms typ.
Contact Resistance	50mΩ	150mΩ	Max: Longest path is chosen.
Lifetime	1x10 <sup>5</sup> operations 5x10 <sup>5</sup> operations	—	@60W applications @30W applications
Bandwidth	—	20MHz	—

### Physical

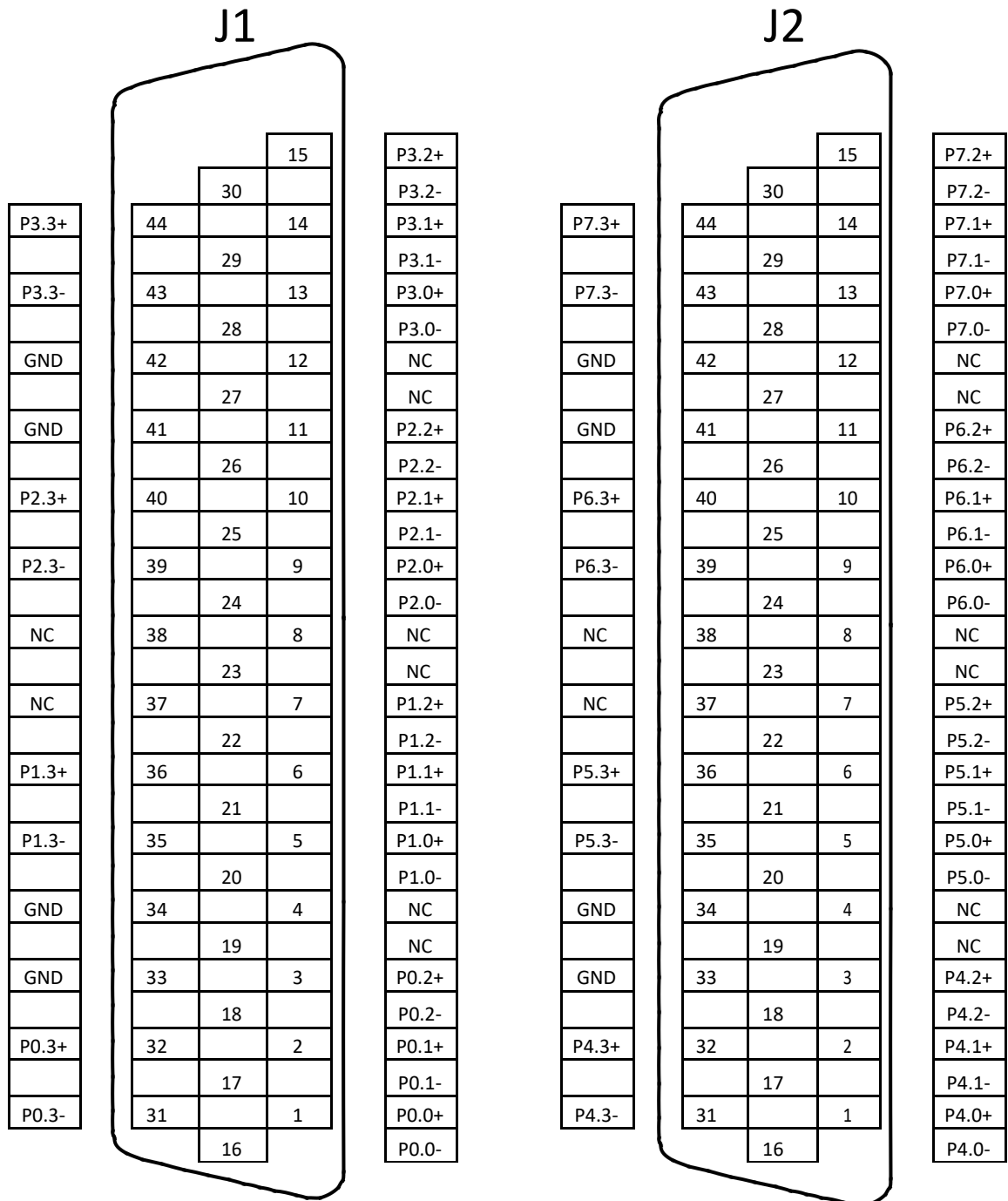
Specification	Typical	Notes
Dimensions	144.32mm x 30.48mm x 302mm (excluding ejector)	SLSC Standard Dimensions
Front panel connectors (x2)	HD44F	MPN: 2311770-1

### Environmental

Specification	Condition	Value
Operating Humidity	Relative, non-condensing	10% - 90%
Storage Humidity	Relative, non-condensing	5% - 95%
Operating Temperature	Forced-air cooling from chassis	0°C - 40°C
Storage Temperature	Non-operational	-40°C - 85°C

## SIGNAL CONNECTIONS

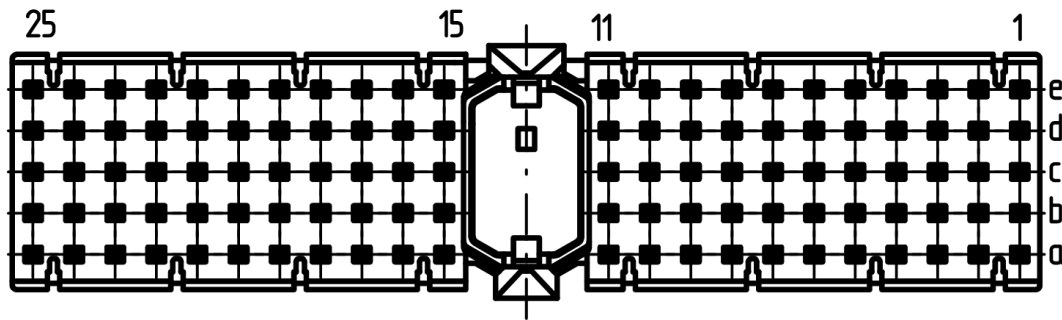
### J1, J2 Pinout (Front)



### J1, J2 Connector Pin Assignments

Signal	Description
Px.y	Line y in Port x
GND	Ground connection
NC	No connection

## XJ2 Connector Pinout (Rear)



### XJ2 Connector Pin Assignments

Row	a	b	c	d	e
1	P0.0+	P0.0-	NC	P0.1+	P0.1-
2	P0.2+	P0.2-	NC	P0.3+	P0.3-
3	GND	GND	GND	GND	GND
4	P1.0+	P1.0-	NC	P1.1+	P1.1-
5	P1.2+	P1.2-	NC	P1.3+	P1.3-
6	GND	GND	GND	GND	GND
7	P2.0+	P2.0-	NC	P2.1+	P2.1-
8	P2.2+	P2.2-	NC	P2.3+	P2.3-
9	GND	GND	GND	GND	GND
10	P3.0+	P3.0-	NC	P3.1+	P3.1-
11	P3.2+	P3.2-	NC	P3.3+	P3.3-
15	P4.0+	P4.0-	NC	P4.1+	P4.1-
16	P4.2+	P4.2-	NC	P4.3+	P4.3-
17	GND	GND	GND	GND	GND
18	P5.0+	P5.0-	NC	P5.1+	P5.1-
19	P5.2+	P5.2-	NC	P5.3+	P5.3-
20	GND	GND	GND	GND	GND
21	P6.0+	P6.0-	NC	P6.1+	P6.1-
22	P6.2+	P6.2-	NC	P6.3+	P6.3-
23	GND	GND	GND	GND	GND
24	P7.0+	P7.0-	NC	P7.1+	P7.1-
25	P7.2+	P7.2-	NC	P7.3+	P7.3-

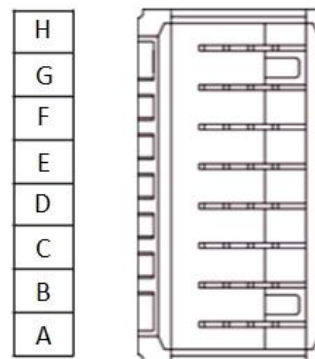
### XJ2 Connector Signal Descriptions

Signal	Description
Px.y	Line y in Port x
GND	Ground connection
NC	No connection

## XJ3 Connector Pinout (Rear)

### XJ3 Connector Pin Assignments

Pins	Signal
A	FAULTD
B	FAULTC
C	FAULTB
D	FAULTA
E	INST1-
F	INST1+
G	INST0-
H	INST0+



## CONFIGURATION

DE9001 control is based on NI-SLSC API. Before installing the device, NI-SLSC 19.5 or later must be installed. After installing the software & the device, the device appears in the <LabVIEW Folder>\examples\ SLSC\Configuration.vi front panel under the related SLSC Chassis when the VI is executed. If the device does not appear in Configuration VI, use the following troubleshooting guidelines:

- ⇒ Verify that the related SLSC Chassis is present on NI MAX and Configuration VI.
- ⇒ Use the 'Refresh' button on Configuration VI for the SLSC Chassis.
- ⇒ Use the 'Restart' button on Configuration VI to restart the SLSC Chassis.
- ⇒ Power off, unplug the chassis, and install the device in a different slot.

## PROGRAMMING THE DEVICE

### Programming the Device in Software

To use DE9001 in software, DE9001 LabVIEW Driver must also be installed on the system. After the driver is installed, device control VIs can be found on Instrument I/O>Instr Drivers>DE9001 palette in LabVIEW. The driver also provides programming examples. For more information on the subject, refer to the User Manual of DE9001.

## SAFETY GUIDELINES



**Caution** Do not operate the DE9001 in a manner not specified in this document. Product misuse can result in a hazard. You can compromise the safety protection built into the product if the product is damaged in any way. If the product is damaged, return it for repair.



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## COMPATIBILITY GUIDELINES

### Electromagnetic Compatibility Guidelines

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC). These requirements and limits provide reasonable protection against harmful interference when the product is operated in the intended operational electromagnetic environment.

This product is intended for use in industrial locations. However, harmful interference may occur in some installations, if the product is connected to a peripheral device or test object, or if the product is used in residential or commercial areas. To minimize interference with radio and television reception and prevent unacceptable performance degradation, install and use this product in strict accordance with the instructions specified in the product documentation.

Furthermore, any changes or modifications to the product not expressly approved by DEICO could void your authority to operate it under your local regulatory rules.



**Caution** To ensure the specified EMC performance, operate this product only with shielded cables and accessories.

**Caution** To ensure the specified EMC performance, the length of any cable attached to connectors J1 and J2 must not be longer than 3 m (10 ft.)





## Contact

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