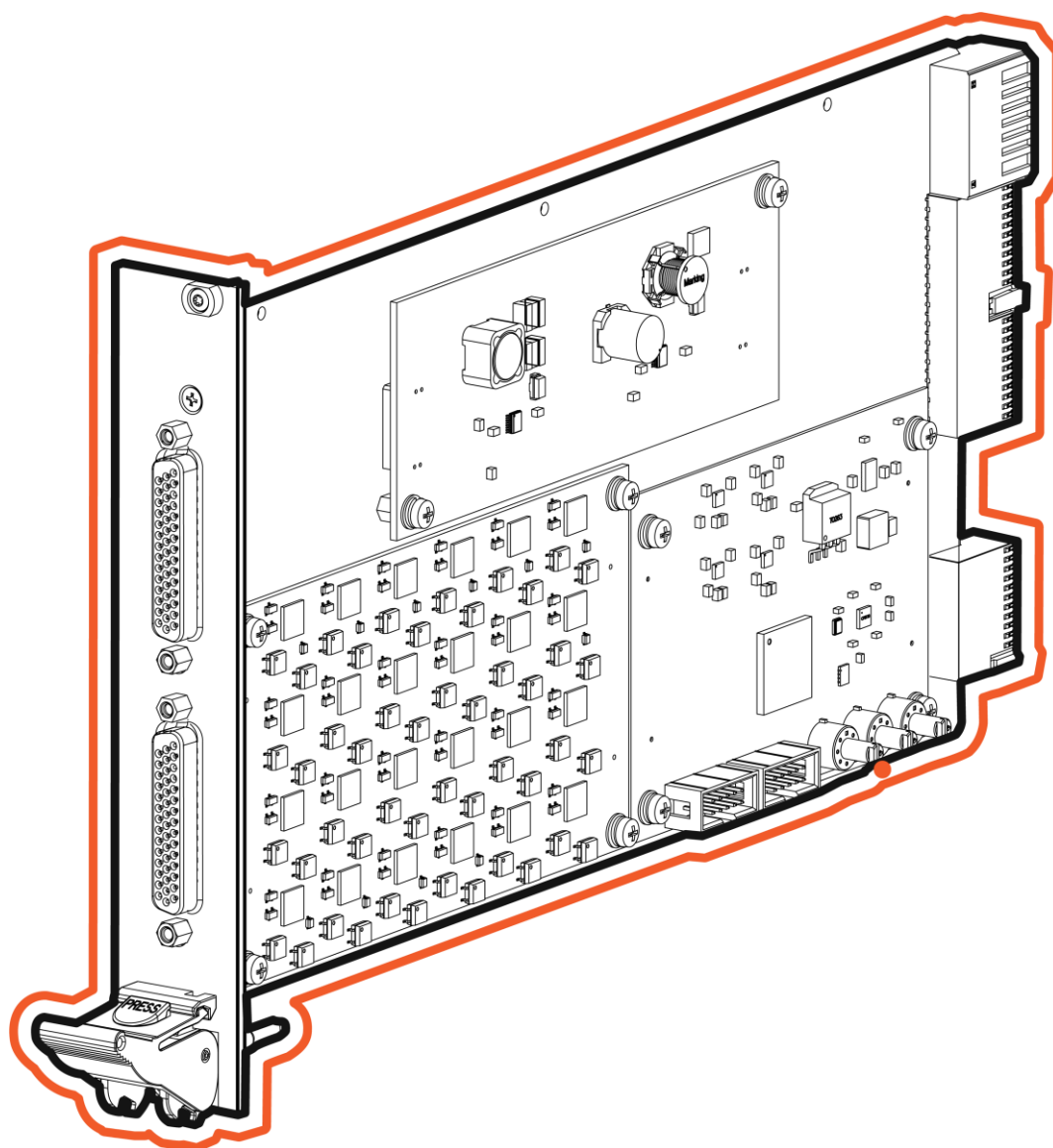


DE9004 DATASHEET

SLSC AMPLIFIER MODULE 20MA



 **DEICO**

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DESCRIPTION

DE9004 SLSC Amplifier Module 20MA is a 24-channel signal amplifier that is used in the SLSC chassis and connected to test equipment and DUTs. There are 6 types of amplifier block with different gain on it. Signal outputs are relay controlled. Relays are controlled by the controller block. SLSC chassis is necessary for module usage.

The general features of DE9004 are listed below:

- ⇒ 24 channels
- ⇒ Signal amplification with 6 different gains
- ⇒ High slew rate
- ⇒ Low signal noise
- ⇒ Wide bandwidth
- ⇒ Wide operating voltage
- ⇒ Relay controlled outputs
- ⇒ SLSC chassis compatible

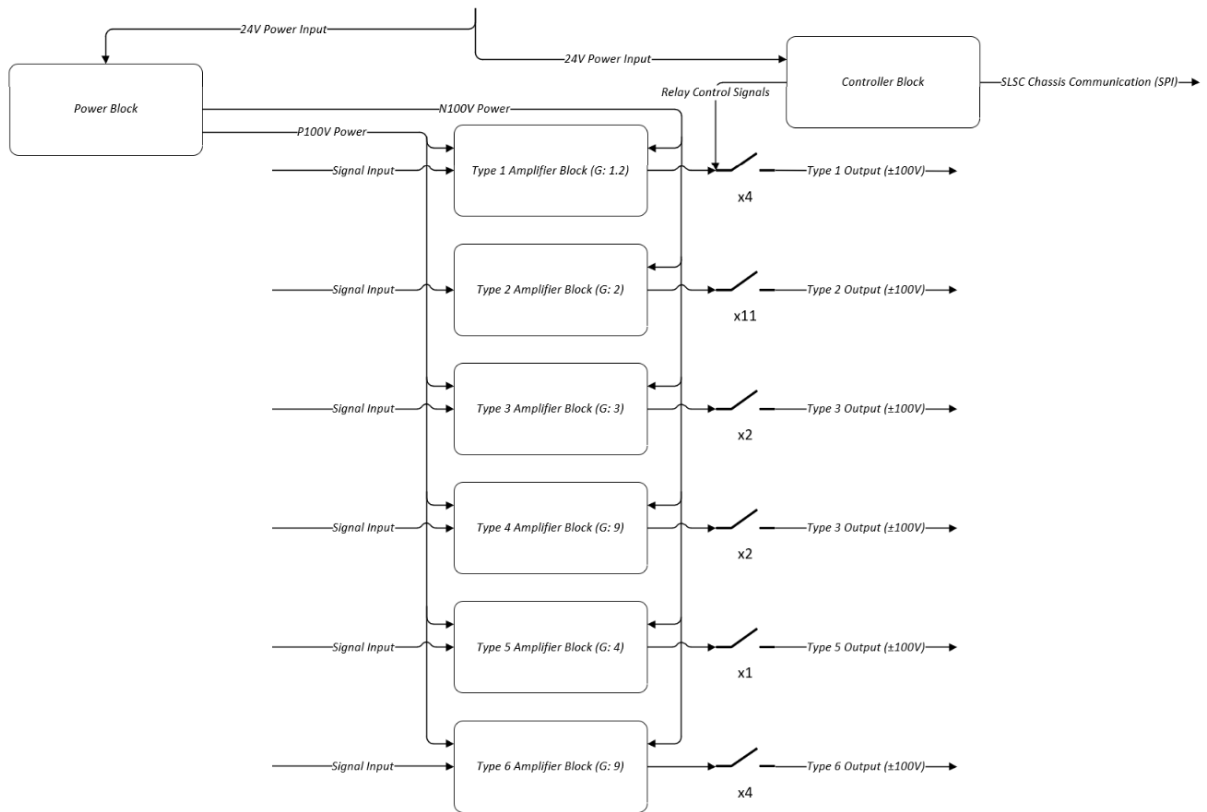
DE9004 is compatible with *IEC 60068-2-1/ IEC 60068-2-2/ IEC 60068-2-78/ IEC 60068-2-27/ IEC 60068-2-64/ EN 61326 (IEC 61326) / EN 55011 (CISPR 11) / AS/NZS CISPR 11/ FCC 47 CFR Part 15B/ ICES-001* standards.

Areas of application include:

- ⇒ HIL Testing
- ⇒ Signal Amplification

HARDWARE OVERVIEW

Circuitry



Hardware Specifications

Electrical

Specification	Minimum	Typical	Maximum	Notes
Input Voltage	10V	24V	50V	—
Input Current	—	—	2A	2A@30VDC 0.27A@220VDC 0.5A@125VAC
Slew Rate	—	24V/us	—	—
Total Harmonic Distortion + Noise	—	-120dB	—	—
Bandwidth	—	10MHz	—	—
Output Current per Channel	—	—	20mA	—
Amplifier Channel	—	4	—	Type1
		11		Type2
		2		Type3
		2		Type4
		1		Type5
		4		Type6
Amplifier Gain	—	1.324 (fixed)	—	Type1
		2 (fixed)		Type2
		3.14 (fixed)		Type3
		9 (fixed)		Type4
		4.16 (fixed)		Type5
		9 (fixed)		Type6
Amplifier Operating Voltage	-100V	—	100V	All Types

Physical

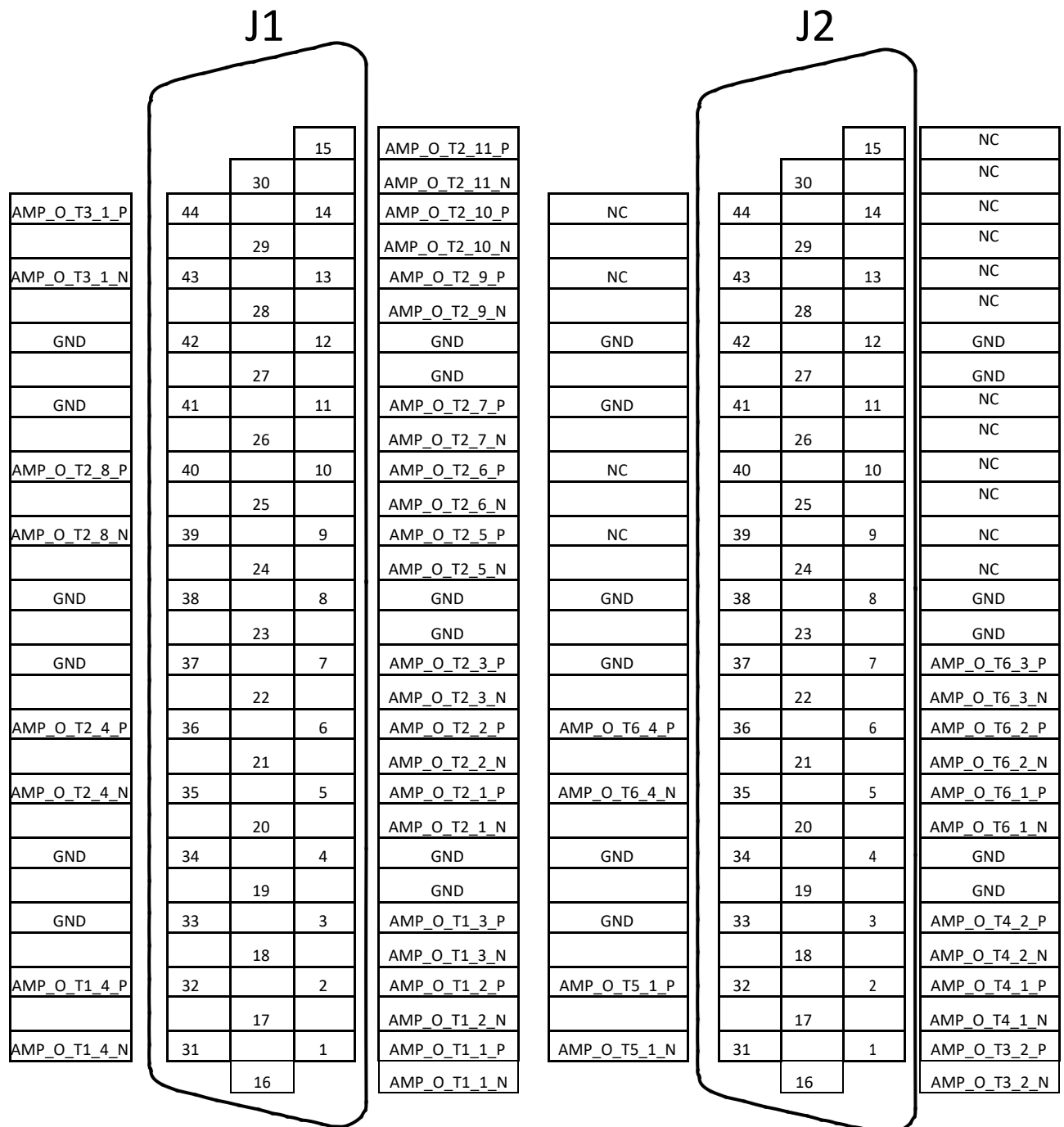
Specification	Typical	Notes
Dimensions	144.32mm x 30.48mm x 302mm (excluding ejector)	SLSC Standard Dimensions
Front panel connectors (x2)	HD44F	MPN: 2311770-1

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

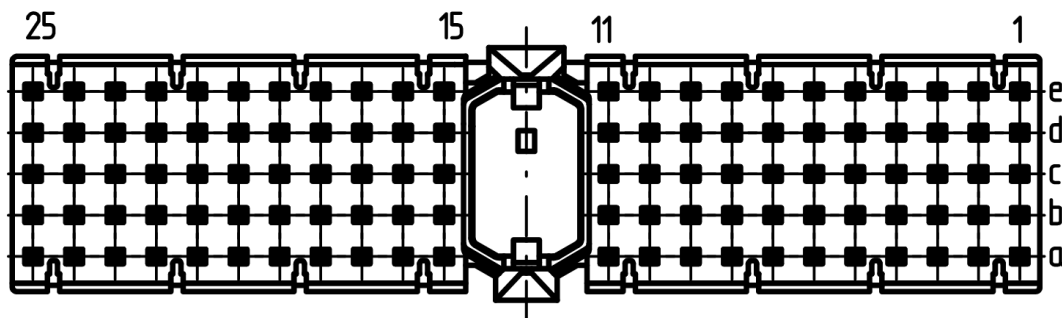
J1, J2 Pinout (Front)



J1, J2 Connector Pin Assignments

Signal	Description
AMP_O_Tx_y_P	Amplifier Output Type x Ch y Signal
AMP_O_Tx_y_N	Amplifier Output Type x Ch y Return
GND	Ground connection
NC	No connection

XJ2 Connector Pinout (Rear)



XJ2 Connector Pin Assignments

Row	a	b	c	d	e
1	AMP_I_T1_1_P	AMP_I_T1_1_N	NC	AMP_I_T1_2_P	AMP_I_T1_2_N
2	AMP_I_T1_3_P	AMP_I_T1_3_N	NC	AMP_I_T1_4_P	AMP_I_T1_4_N
3	GND	GND	GND	GND	GND
4	AMP_I_T2_1_P	AMP_I_T2_1_N	NC	AMP_I_T2_2_P	AMP_I_T2_2_N
5	AMP_I_T2_3_P	AMP_I_T2_3_N	NC	AMP_I_T2_4_P	AMP_I_T2_4_N
6	GND	GND	GND	GND	GND
7	AMP_I_T2_5_P	AMP_I_T2_5_N	NC	AMP_I_T2_6_P	AMP_I_T2_6_N
8	AMP_I_T2_7_P	AMP_I_T2_7_N	NC	AMP_I_T2_8_P	AMP_I_T2_8_N
9	GND	GND	GND	GND	GND
10	AMP_I_T2_9_P	AMP_I_T2_9_N	NC	AMP_I_T2_10_P	AMP_I_T2_10_N
11	AMP_I_T2_11_P	AMP_I_T2_11_N	NC	AMP_I_T3_1_P	AMP_I_T3_1_N
15	AMP_I_T3_2_P	AMP_I_T3_2_N	NC	AMP_I_T4_1_P	AMP_I_T4_1_N
16	AMP_I_T4_2_P	AMP_I_T4_2_N	NC	AMP_I_T5_1_P	AMP_I_T5_1_N
17	GND	GND	GND	GND	GND
18	AMP_I_T6_1_P	AMP_I_T6_1_N	NC	AMP_I_T6_2_P	AMP_I_T6_2_N
19	AMP_I_T6_3_P	AMP_I_T6_3_N	NC	AMP_I_T6_4_P	AMP_I_T6_4_N
20	GND	GND	GND	GND	GND
21	NC	NC	NC	NC	NC
22	NC	NC	NC	NC	NC
23	GND	GND	GND	GND	GND
24	NC	NC	NC	NC	NC
25	NC	NC	NC	NC	NC

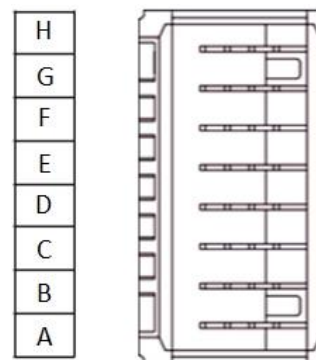
XJ2 Connector Signal Descriptions

Signal	Description
AMP_I_Tx_y_P	Amplifier Input Type x Channel y Signal
AMP_I_Tx_y_P	Amplifier Input Type x Channel y Return
GND	Ground connection
NC	No connection

XJ3 Connector Pinout (Rear)

XJ3 Connector Pin Assignments

Pins	Signal
A	NC
B	NC
C	NC
D	NC
E	GND
F	GND
G	NC
H	NC



CONFIGURATION

DE9004 control is based on NI-SLSC API. Before installing the device, NI-SLSC 19.5 or later must be installed. After installing 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 'Refresh' button on the Configuration VI for the SLSC Chassis.
- ⇒ Use 'Restart' button on the Configuration VI to restart the SLSC Chassis.
- ⇒ Power off and unplug the chassis, and install the device in a different slot.

PROGRAMMING THE DEVICE

Programming the Device in Software

To use DE9004 in software, DE9004 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>DE9004 palette in LabVIEW. Driver also provides programming examples. For more information on the subject, refer to the User Manual of DE9004.

SAFETY GUIDELINES



Caution Do not operate the DE9004 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.

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.)



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