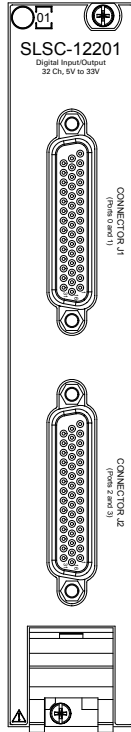


GETTING STARTED GUIDE

SLSC-12201

32 Channel, 5 V to 33 V, Digital Input/Output



This document explains how to connect the SLSC-12201.



Note Before you begin, complete the software and hardware installation procedures applicable to your application.



Note The guidelines in this document are specific to the SLSC-12201. The other components in the system might not meet the same safety ratings. Refer to the documentation of each component in the system to determine the safety and EMC ratings for the entire system.

Safety Guidelines



Caution Observe all instructions and cautions in the user documentation. Using the model in a manner not specified can damage the model and compromise the built-in safety protection. Return damaged models to NI for repair.



Attention Suivez toutes les instructions et respectez toutes les mises en garde de la documentation utilisateur. L'utilisation d'un modèle de toute autre façon que celle spécifiée risque de l'endommager et de compromettre la protection de sécurité intégrée. Renvoyez les modèles endommagés à NI pour réparation.

Safety Voltages

Measurement category	O
Isolation	
Channel-to-channel	None
Channel-to-earth ground	None



Caution Do not connect the SLSC-12201 to signals or use for measurements within Measurement Categories II, III, or IV.



Attention Ne connectez pas le SLSC-12201 à des signaux et ne l'utilisez pas pour effectuer des mesures dans les catégories de mesure II, III ou IV.

Measurement Category I is for measurements performed on circuits not directly connected to the electrical distribution system referred to as *MAINS* voltage. *MAINS* is a hazardous live electrical supply system that powers equipment. This category is for measurements of voltages from specially protected secondary circuits. Such voltage measurements include signal levels, special equipment, limited-energy parts of equipment, circuits powered by regulated low-voltage sources, and electronics.



Note Measurement Categories CAT I and CAT O are equivalent. These test and measurement circuits are for other circuits not intended for direct connection to the *MAINS* building installations of Measurement Categories CAT II, CAT III, or CAT IV.

EMC Guidelines

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC) stated in the product specifications. 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, when 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 in the product documentation.

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



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



Notice To ensure the specified EMC performance, the length of all I/O cables must be no longer than 3 m (10 ft).

Preparing the Environment

Ensure that the environment in which you are using the SLSC-12201 meets the following specifications.

Module operating temperature (IEC 60068-2-1, IEC 60068-2-2)	0 °C to 85 °C ¹
Operating humidity (IEC 60068-2-78)	10% RH to 90% RH, noncondensing
Pollution Degree	2
Maximum altitude	2,000 m

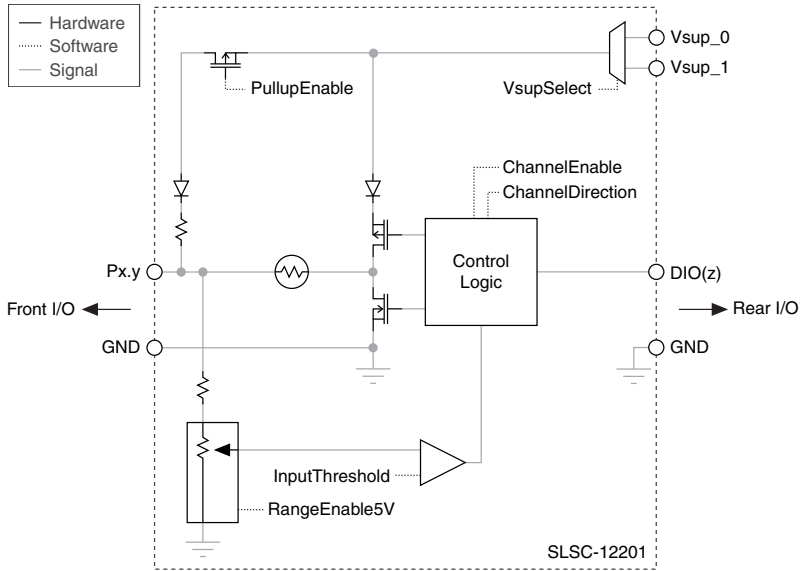
Indoor use only.




Note Refer to the device specifications on ni.com/manuals for complete specifications.


¹ The chassis internal ambient temperature may reach 85 °C with all slots at the maximum allowed power dissipation.

Circuitry



 **Note** Diagram only shows one channel.

All voltages are relative to GND unless otherwise noted.

 **Note** You can configure the power-on configuration in the software. The factory default power-on configuration sets the front I/O channels to sinking input and rear I/O channels to input.

SLSC-12201 Pinout

Front Panel Pinout



Table 1. Front Panel Signal Descriptions

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

XJ2 Connector Pinout

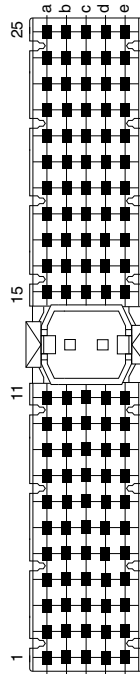


Table 2. XJ2 Connector Pin Assignments

Row	a	b	c	d	e
25	NC	NC	NC	NC	NC
24	NC	NC	NC	NC	NC
23	NC	NC	NC	NC	NC
22	NC	NC	NC	NC	NC
21	NC	NC	NC	NC	NC
20	NC	NC	NC	NC	NC
19	NC	NC	NC	NC	NC
18	NC	NC	NC	NC	NC
17	NC	NC	NC	NC	NC
16	NC	NC	NC	NC	NC

Table 2. XJ2 Connector Pin Assignments (Continued)

Row	a	b	c	d	e
15	NC	NC	NC	NC	NC
11	DIO28	DIO29	NC	DIO30	DIO31
10	DIO24	DIO25	NC	DIO26	DIO27
9	GND	GND	GND	GND	GND
8	DIO20	DIO21	NC	DIO22	DIO23
7	DIO16	DIO17	NC	DIO18	DIO19
6	GND	GND	GND	GND	GND
5	DIO12	DIO13	NC	DIO14	DIO15
4	DIO8	DIO9	NC	DIO10	DIO11
3	GND	GND	GND	GND	GND
2	DIO4	DIO5	NC	DIO6	DIO7
1	DIO0	DIO1	NC	DIO2	DIO3

Table 3. XJ2 Connector Signal Descriptions

Signal	Description
DIO	Digital input/output signal connection
GND	Ground connection
NC	No connection

XJ3 Connector Pinout

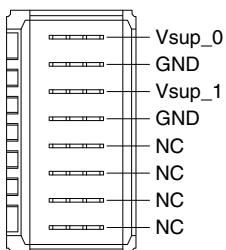
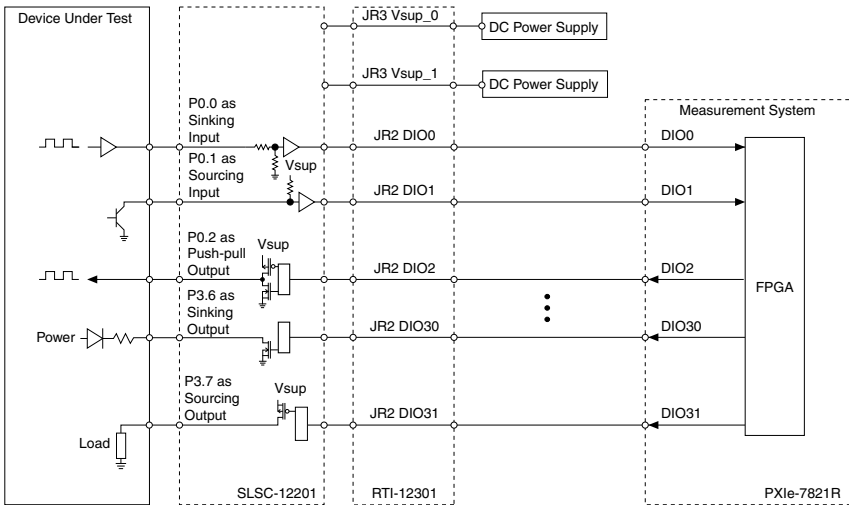


Table 4. XJ3 Connector Signal Descriptions

Signal	Description
Vsup_<0, 1>	Voltage supply connection for Bank 0 and Bank 1. You can select either for a given bank.
GND	Ground connection
NC	No connection

Connecting Digital Devices to the SLSC-12201

The SLSC-12201 has 32 digital input/output channels that allow the direction to be configured for each channel. The 32 channels are organized into two banks of 16 channels each. Each bank can be powered from either of the Vsup connections. The banks are further organized into two ports of eight channels each. In the example shown below, the SLSC-12201 connects to the PXIe-7821R through the RTI-12301.



Short-Circuit Protection

Digital output channels are protected against short-circuit faults.



Note The SLSC-12201 supports up to 10 channels in simultaneous short-circuit fault.

Worldwide Support and Services

The NI website is your complete resource for technical support. At ni.com/support, you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

Visit ni.com/services for information about the services NI offers.

Visit ni.com/register to register your NI product. Product registration facilitates technical support and ensures that you receive important information updates from NI.

NI corporate headquarters is located at 11500 North Mopac Expressway, Austin, Texas, 78759-3504. NI also has offices located around the world. For support in the United States, create your service request at ni.com/support or dial 1 866 ASK MYNI (275 6964). For support outside the United States, visit the *Worldwide Offices* section of ni.com/niglobal to access the branch office websites, which provide up-to-date contact information.

Information is subject to change without notice. Refer to the *NI Trademarks and Logo Guidelines* at ni.com/trademarks for information on NI trademarks. Other product and company names mentioned herein are trademarks or trade names of their respective companies. For patents covering NI products/technology, refer to the appropriate location: **Help»Patents** in your software, the `patents.txt` file on your media, or the *National Instruments Patent Notice* at ni.com/patents. You can find information about end-user license agreements (EULAs) and third-party legal notices in the `readme` file for your NI product. Refer to the *Export Compliance Information* at ni.com/legal/export-compliance for the NI global trade compliance policy and how to obtain relevant HTS codes, ECCNs, and other import/export data. NI MAKES NO EXPRESS OR IMPLIED WARRANTIES AS TO THE ACCURACY OF THE INFORMATION CONTAINED HEREIN AND SHALL NOT BE LIABLE FOR ANY ERRORS. U.S. Government Customers: The data contained in this manual was developed at private expense and is subject to the applicable limited rights and restricted data rights as set forth in FAR 52.227-14, DFAR 252.227-7014, and DFAR 252.227-7015.

© 2017—2018 National Instruments. All rights reserved.

377035B-01 May 17, 2018