NI SCXI™-1167 Specifications

64-Channel Relay Driver Module

This document lists specifications for the NI SCXI-1167 relay driver module. All specifications are subject to change without notice. Visit `ni.com/manuals` for the most current specifications.

Configuration ..... 64 channels, non-latching

Channels are in a bank arrangement, with 8 banks of 8 channels.

Note Using two channels per relay, the module also can control 32 two-coil latching relays.

Input Characteristics

Maximum drive voltage,
external power..... 50 VDC

Maximum drive current

Per channel..... 600 mA

Per module ..... 25 A

Internal drive power ..... 5 V at 0.75 A

Per-channel protection circuitry

Over-voltage protection activates at 80 V maximum

Over-current protection activates at 1.5 A minimum

Over-temperature protection activates at 150 °C junction temperature

Internal drive power protection circuitry

The 5 V internal power supply has a fuse for over-current protection. This fuse is customer replaceable. Refer to the *Accessories* section for fuse ratings.

NATIONAL INSTRUMENTS

Dynamic Characteristics

Single channel operate time
(typical at 25 °C).....60 µs

Note The operate time is measured from an input trigger to 90% activation of a 500 Ω resistor or between consecutive channel operations.

During power-on or reset, all relay drivers disconnect (power down).

Trigger Characteristics

Input trigger

- Sources .....SCXI trigger lines 0–7, Front panel, Rear connector
- Minimum pulse width.....150 ns
- Front panel input voltage
  - Minimum.....–0.5 V
  - VL maximum .....+0.7 V
  - VH minimum.....+2.0 V
  - Nominal.....+3.3 V
  - Maximum .....+5.5 V

Output trigger

- Destinations .....SCXI trigger lines 0–7, Front panel, Rear connector
- Pulse width .....Programmable (1 µs to 62 µs)
- Front panel nominal voltage.....3.3 V TTL, 8 mA

Physical Characteristics

I/O connector..... 78-pin D-subminiature

Power requirement, including optional internal drive power..... 6.3 W at ±18.5 V
200 mW at 5 V

Dimensions (W × H × D)..... 3.0 cm × 17.3 cm × 19.8 cm
(1.2 in. × 6.7 in. × 7.8 in.)

Weight..... 700 g (1 lb 9 oz)

Environment

Operating temperature..... 0 °C to 55 °C

Storage temperature ..... –20 °C to 70 °C

Relative humidity..... 5% to 85% noncondensing

Pollution Degree 2

Approved at altitudes up to 2,000 m.

Indoor use only.

Accessories

Visit `ni.com` for more information about the following accessories.

The module comes with one mating connector and backshell kit. Replacement fuses and additional mating connectors are available through general electronics catalogs.

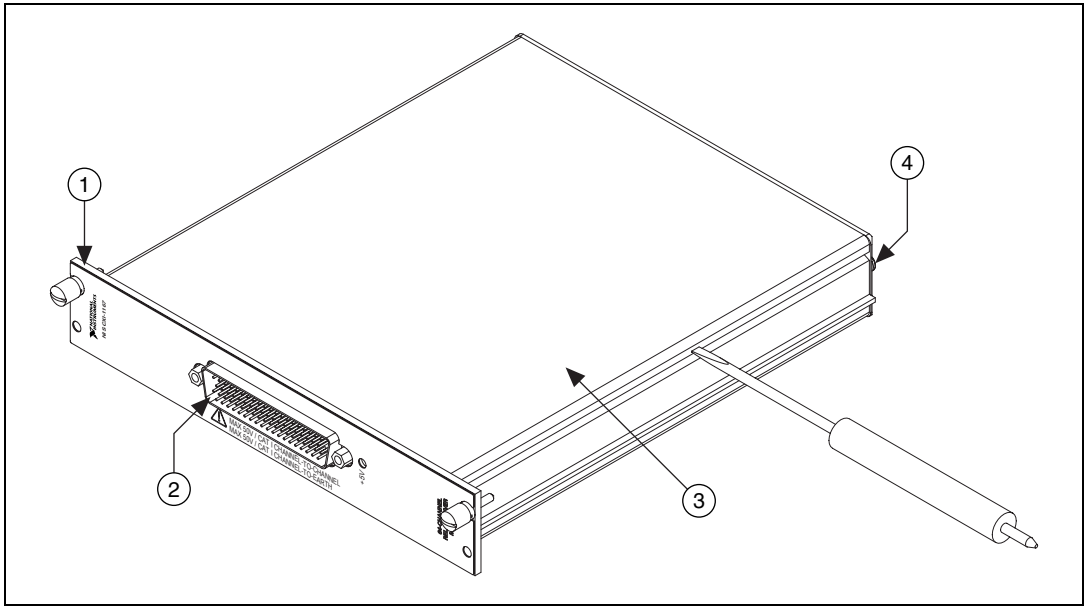
Table 1. Third-Party Accessories for the NI SCXI-1167

Accessory	Rating	Manufacturer and Part Number
5 V Internal Supply Fuse	F2 A, 125 V	Littlefuse, NANO^2, 154.002
78-Pin D-subminiature, Female, Vertical or Right-Angle	60 V, 5 A	Any

How to Replace the Fuse

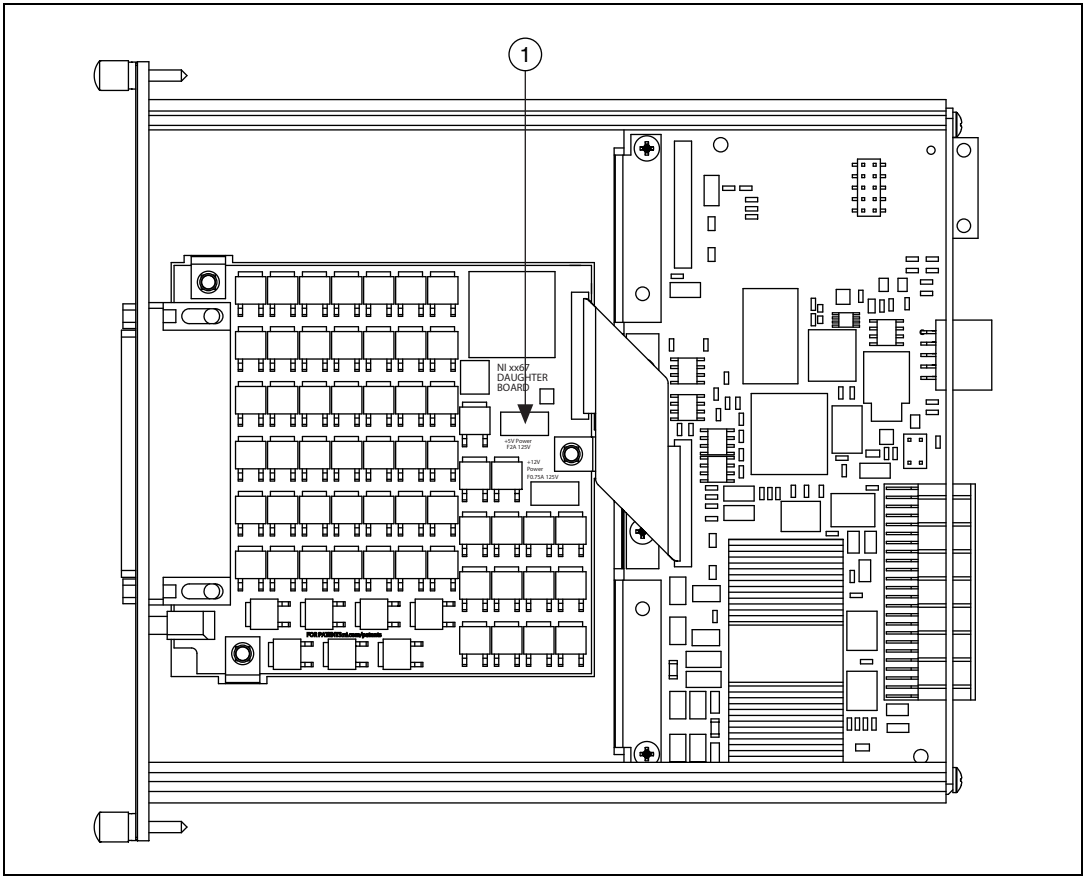
The front panel LED shows the status of the +5 V fuse. If the LED is on, the fuse is intact. To replace a fuse, refer to Figure 1 as you complete the following steps.

1. Ground yourself with a grounding strap or with a ground connected to your SCXI chassis. Proper grounding prevents damage to your SCXI module from electrostatic discharge.
2. Power off the SCXI chassis, and remove the module with the blown fuse.
3. Remove the grounding screw of the top cover.
4. Snap out the top cover of the shield by placing a screwdriver in the groove at the bottom of the module and pushing down on the screwdriver to lift out the fuse.
5. Replace the blown fuse, as shown in Figure 2.
6. Reinstall the top cover and grounding screw.



1 Top of Module	3 Removable Cover
2 Front Connector	4 Grounding Screw

Figure 1. Removing the SCXI Module Cover



1 +5 V Fuse

Figure 2. NI SCXI-1167 Daughterboard Diagram with Fuse Location

Note The +12 V fuse is not used on the SCXI-1167. However, it is only rated for 0.75 A and should not be used as a replacement for the +5 V fuse.

Compliance and Certifications

Safety

This product is designed to meet the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 3111-1, UL 61010B-1
- CAN/CSA C22.2 No. 1010.1

Note For UL and other safety certifications, refer to the product label or to `ni.com`.

Electromagnetic Compatibility

Emissions	EN 55011 Class A at 10 m FCC Part 15A above 1 GHz
Immunity	EN 61326:1997 + A2:2001, Table 1
EMC/EMI	CE, C-Tick, and FCC Part 15 (Class A) Compliant

Note For EMC compliance, you *must* operate this device with shielded cabling.

CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE marking, as follows:

Low-Voltage Directive (safety)	73/23/EEC
Electromagnetic Compatibility Directive (EMC)	89/336/EEC

Note Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, visit `ni.com/hardref.nsf`, search by model number or product line, and click the appropriate link in the Certification column.

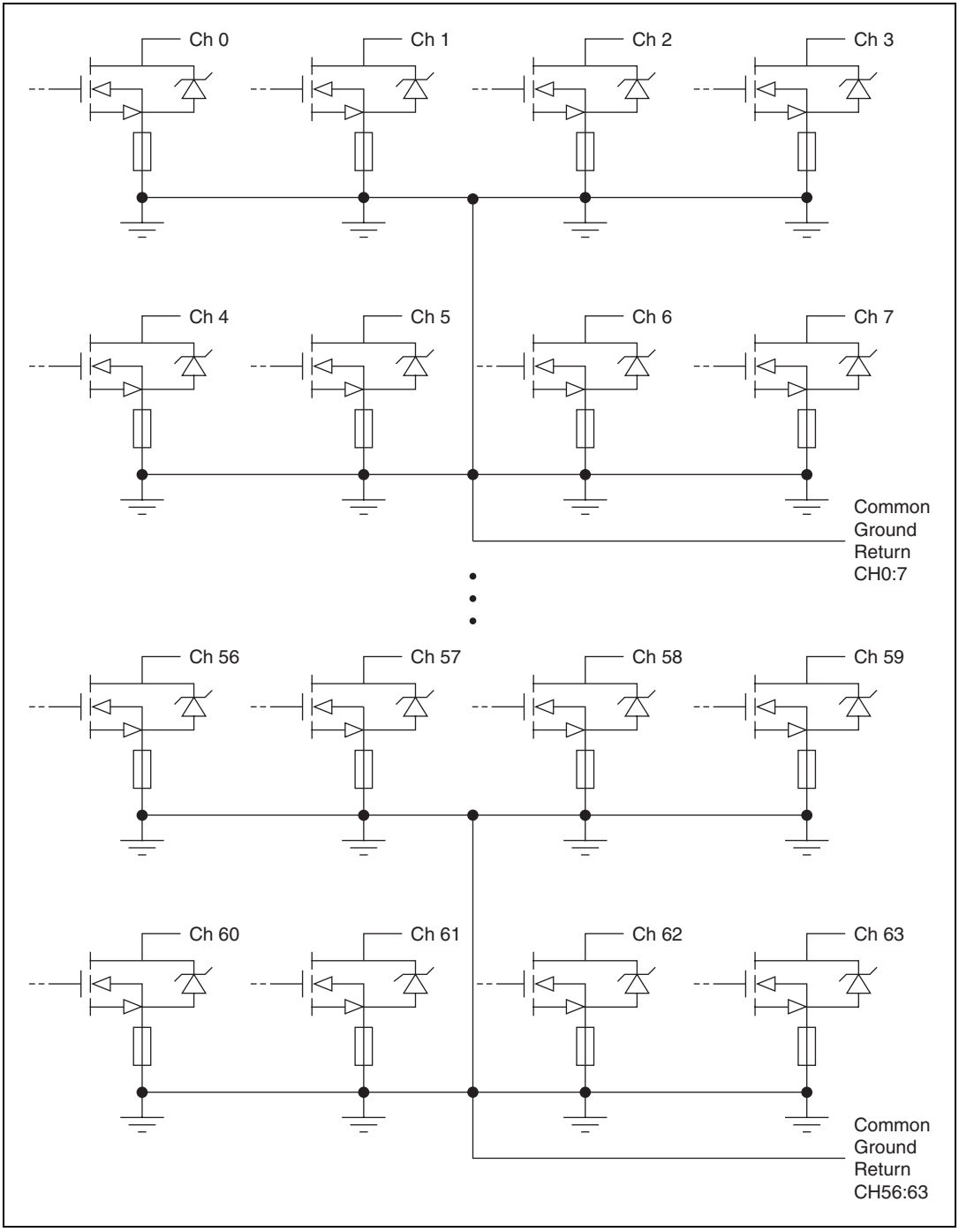


Figure 3. SCXI-1167 Relay Driver Output Topology

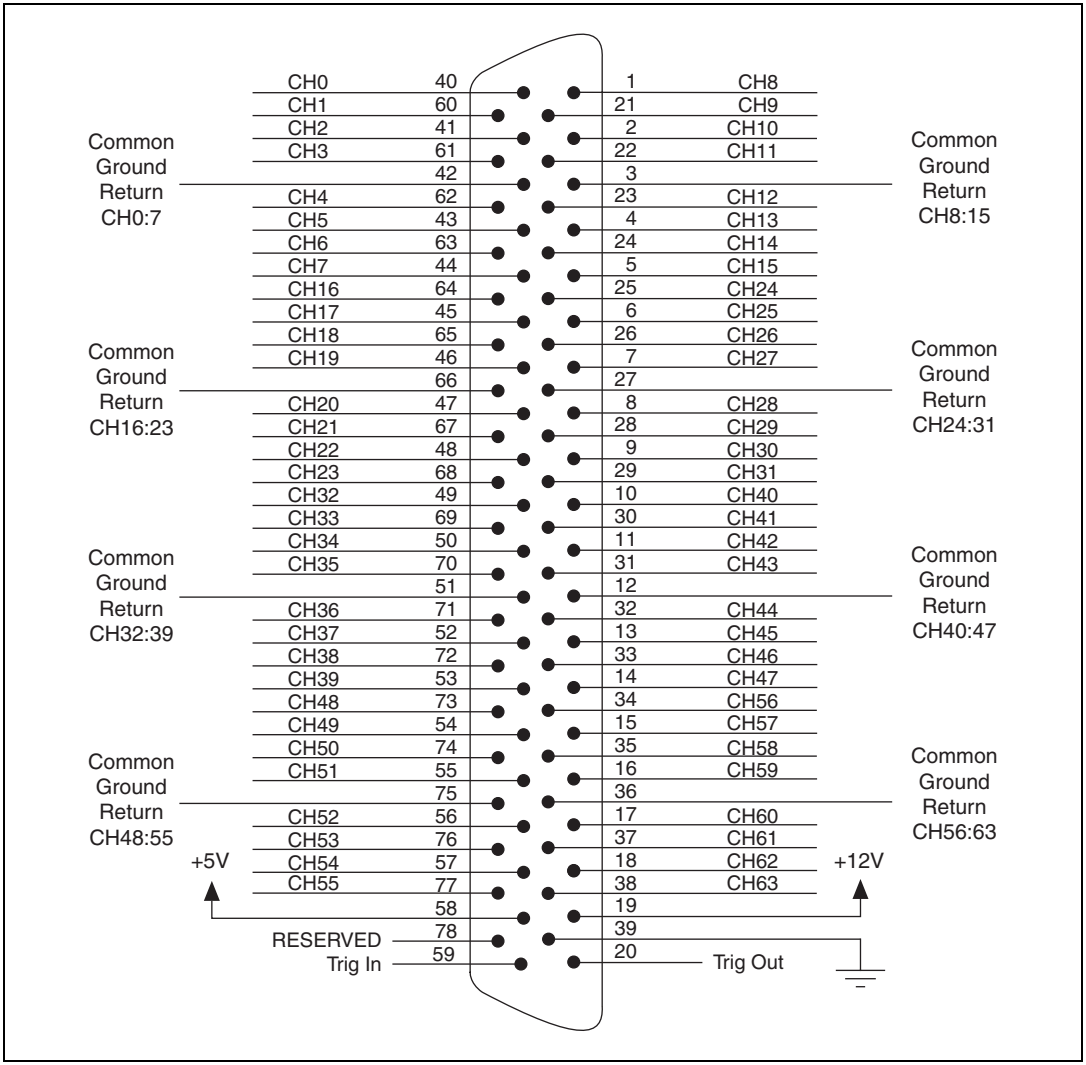


Figure 4. NI SCXI-1167 Front Panel Pinout

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