
NI-9350

Specifications

2022-10-07

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NI-9350 Datasheet



The image shows the NI-9350 Functional Safety module, a yellow and grey device with a spring terminal connector on the right. The front panel features a terminal block with 12 channels, each with a status LED. The module is labeled with 'NI 9350' and '8-Ch 24 V Sinking DI' and '8-Ch 24 V Sourcing DO'. It also displays a 'CERTIFIED SIL3' logo and various safety and compliance symbols.

- Certified SIL3 capable
- Safety response time <250 μ s
- Contains user-programmable and automatic self-diagnostics
- 60 V DC, CAT I, channel-to-earth isolation
- Spring terminal connectivity
- Only compatible with CompactRIO Scan Mode on CompactRIO Controllers and CompactRIO ENET Chassis

The NI-9350 is a C Series Functional Safety module for any NI CompactRIO controller system. The NI-9350 employs self-contained logic operations supporting Boolean logic with state machines. This module drives a 24 V digital signal to control safety devices such as contactors, gate switches, and control valves.

Caution This icon denotes a caution advising you to take precautions to avoid injury.

Note The Functional Safety Editor only runs on 64-bit Windows 7, Windows 8.1, or later. The application is not compatible with 32-bit Windows versions.

C Series Functional Safety Module Kit Contents



- NI-9350
- NI-9350 Getting Started Guide
- Strain Relief and Protection with Connector for 26-Position Connector Blocks (Connector Backshell), NI part number 785525-01

Recommended Accessories



- 3 k Ω external pull-down resistors
- NI PS-14 power supply

C Series Functional Safety Overview



C Series Functional Safety modules can connect to sensors or final elements and allow for fast safety response that meets the demands of the process industry and production engineering.

- SIL3 capability and measurement class I/O in a single module
- Combine safety automation with monitoring and control applications using the same platform
- -40 °C to 70 °C temperature range to meet a variety of application and environmental needs

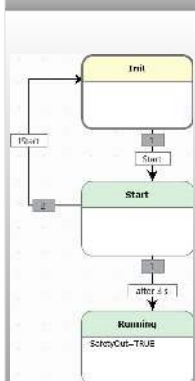
CompactRIO



CompactRIO combines an open-embedded architecture with small size, extreme ruggedness, and C Series modules in a platform powered by the NI LabVIEW reconfigurable I/O (RIO) architecture. Each system contains an FPGA for custom timing, triggering, and processing with a wide array of available modular I/O to meet any embedded application requirement.

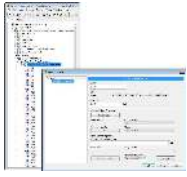
Functional Safety Software

Functional Safety Editor



- Design state machines to monitor and control safety systems
- Configure Fail-safe diagnostics
- Define output behavior by state
- Connect states with Boolean text-based transitions and wait timers
- Create and compile User Programs that download to C Series Functional Safety modules

LabVIEW Professional Development System for Windows



- Create projects to monitor C Series Functional Safety modules
- Download User Programs to C Series Functional Safety modules
- Read faults and module operating modes

NI LabVIEW Real-Time Module



- Develop VIs to monitor safety modules
- Read Boolean diagnostics and operating modes
- Read inputs and variables from the C Series Functional Safety module
- Configure non-safety digital output

NI-9350 Input/Output Circuitry

