

POINT Guard I/O Modules in CIP Safety Systems

POINT Guard I/O modules are used in the POINT I/O platform and implement CIP Safety™ protocol extensions over EtherNet/IP and DeviceNet networks to communicate safety messages. POINT Guard I/O modules connect to EtherNet/IP or DeviceNet networks via these network adapters.

Table 2 - Network Adapters

Network	System	Adapter ⁽¹⁾
EtherNet/IP	GuardLogix	1734-AENT (Firmware Revision 3 or later)
		1734-AENTR
DeviceNet	SmartGuard or GuardLogix	1734-PDN

(1) Not compatible with 1734-ADN, 1734-ADNX, 1734-APB, or 1734-ACNR adapters.

Distributed I/O communication for safety I/O data is performed through safety connections that support CIP Safety over an EtherNet/IP or DeviceNet network. Data processing is performed in the safety controller. A control monitors the status and fault diagnostics of POINT Guard I/O modules.

In addition to I/O state data, the modules include status data for monitoring I/O faults within each circuit.

A password can help protect the configuration information of the modules.

1734-IB8S Digital Input Module Features

- Safety digital inputs
 - Safety devices, such as Emergency Stop Push Button, gate switches, and safety light curtains, can be connected.
 - Dual-channel mode evaluates consistency between two input signals (channels), which allows use of the module for safety Category 3 and 4 and in applications that are rated up to and including Performance Level e/SIL CL3 when both channels' Point Mode configurations are set to Safety Pulse Test.
 - Single-channel mode evaluates one input signal (channel), which allows use of the module for safety Category 2 and in applications that are rated up to and including Performance Level d/SIL CL 2 when the channel's Point Mode configuration is set to Safety Pulse Test.
 - You can configure a discrepancy time to control how long two channels are allowed to be discrepant before a fault is declared.
 - An external wiring short circuit check is possible when inputs are wired in combination with test outputs. The module must be wired in combination with test outputs when this function is used.
 - Independently adjustable on and off delays are available per channel.

- Test outputs (digital input modules only)
 - Separate test outputs are provided for short circuit detection of a safety input (or inputs).
 - Power (24V) can be supplied to devices, such as safety sensors.
 - Test outputs can be configured as standard outputs.
 - Specific test outputs can be used for broken-wire detection of a muting lamp.

1734-OB8S Safety Digital Output Module Features

- Solid-state outputs
- Dual-channel mode provides redundant control by using two output signals (channels), which allows use of the module for safety Category 3 and 4, and applications that are rated up to and including Performance Level e/SIL CL3 when both channels' Point Mode configurations are set to Safety Pulse Test.
- Single-channel mode provides control by using one output signal (channel), which allows use of the module for safety Category 2, and applications that are rated up to and including Performance Level d/SIL CL2 when the channel's Point Mode configuration is set to Safety Pulse Test.

IMPORTANT 1734-OB8S Single-channel mode is only certified for functional safety applications with process safety times greater than or equal to 600 ms; or, applications with demand rates less than or equal to 1 demand per minute.

- Safety outputs can be pulse-tested to detect field wiring short circuits to 24V DC.

1734-OBV2S POINT Guard I/O Module Features

- 4 bipolar outputs (2 pairs)
- Dual-channel mode provides redundant control by using two output signals (channels), which allows use of the module for safety Category 3 and 4, and applications that are rated up to and including Performance Level e/SIL CL3 when both channels' Point Mode configurations are set to Safety Pulse Test.
- Safety outputs can be pulse-tested to detect field wiring short circuits to 24V DC (for the sourcing output of the bipolar pair) and ground (for the sinking output of the bipolar pair).

1734-IE4S Safety Analog Input Module Features

- Connection of up to four voltage or current sensors.
- Sensor power outputs are individually current-limited and monitored.
- Measurement of process variables, such as temperature, pressure, or flow rate.
- Seven configurable input ranges ($\pm 10V$, $\pm 5V$, $0 \dots 5V$, $0 \dots 10V$, $4 \dots 20 \text{ mA}$, $0 \dots 20 \text{ mA}$, Tachometer).
- Tachometer mode converts 24V DC switching signals into pulses per second.
- Single-channel or dual-channel for SIL 3-rated safety devices and applications.
- Dual-channel mode evaluates the consistency between two input signals (channels), which allows use of the module in applications that are rated up to and including SIL CL3/PLe/Cat. 4.
- You can configure a discrepancy time to control how long two channels are allowed to be discrepant before a fault is declared.

Programming Requirements

Use the minimum Software Versions listed here.

Cat. No.	Studio 5000® Environment Version ⁽¹⁾	RSLogix 5000® Software Version ⁽¹⁾ (EtherNet/IP Network)	RSNetWorx for DeviceNet Software Version ⁽¹⁾ (DeviceNet Network)
1734-IB8S, 1734-OB8S	21	17 ⁽²⁾	9
1734-OBV2S	21	18	21
1734-IE4S	21	18 ⁽³⁾	10

(1) This version or later.

(2) If you are using digital POINT Guard I/O modules with the analog POINT Guard I/O module, you must update the Add-on Profiles to version 2.02.004 or later for the modules to be compatible with version 18 or later of RSLogix 5000 software and the Studio 5000 Environment. To find Add-on Profiles, go to <http://www.rockwellautomation.com/support>.

(3) Dual-channel Analog (DCA) safety application instruction is available in RSLogix 5000 software, version 20 or later and Studio 5000 Environment, version 21 and later.

CIP Safety Architectures

Use POINT Guard I/O modules in EtherNet/IP or DeviceNet safety architectures. Safety controllers control the safety outputs. Safety or standard PLC controllers can control the standard outputs.

Figure 1 - POINT Guard I/O Modules in EtherNet/IP Safety Architecture

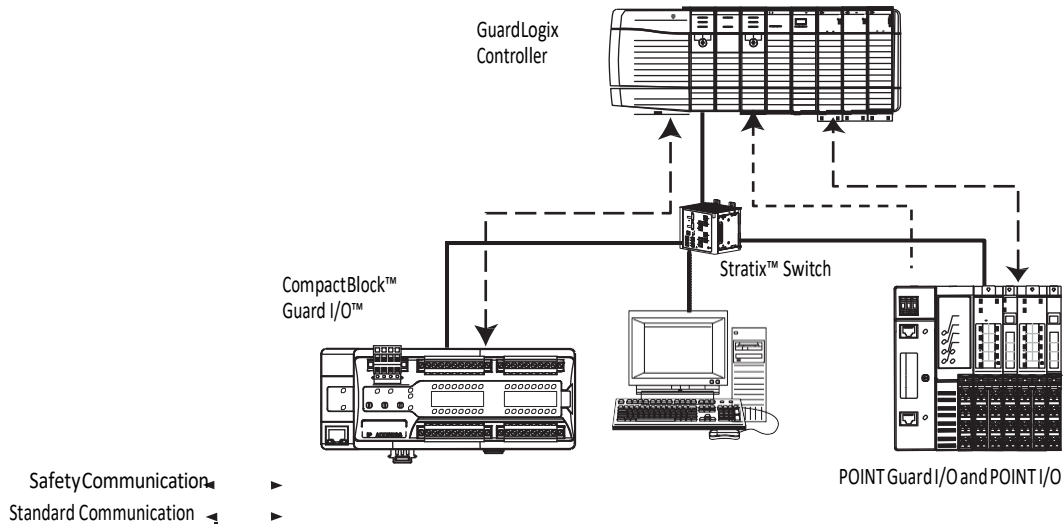


Figure 2 - POINT Guard I/O Modules in DeviceNet Safety Architectures

