



Caution for CE Mark certified systems:

Base units containing differential digital input modules configuration with hazardous input voltages (>30 V RMS, 42.4 V peak, or 60 VDC) listed below must include a hazardous voltage warning label (1B30025H01) on that base unit. Hazardous voltage will be present on the individual module terminal blocks and module connector(s).

Configuration	E _{mod}	P _{mod}
125VAC/VDC Digital Input (Diff)	1C31107G02	1C31110G02
125VAC/VDC Compact Digital Input (Diff)	1C31232G03	1C31238H01
125VDC Sequence of Events (Diff)	1C31157G02	1C31110G02
125VDC Compact Sequence of Events (Diff)	1C31233G03	1C31238H01

Base units containing single ended or fused digital input modules with hazardous voltages (>30 V RMS, 42.4 V peak, or 60 VDC) listed below must include a hazardous voltage warning label (1B30025H01) on the base unit as well as **ALL** base units of the branch. Hazardous voltage will be present on terminal block and module connectors of bases on an entire branch. In addition, auxiliary power fuses must be removed and a fuse cover kit should be added. See [Appendix D](#) (Using an External Power Supply) for details

Configuration	E _{mod}	P _{mod}
125VAC/VDC Digital Input (Sing)	1C31107G02	1C31110G01
125VAC/VDC Compact Digital Input (Fused)	1C31232G03	5X00034G01
125VDC Sequence of Events (Sing)	1C31157G02	1C31110G01
125VDC Compact Sequence of Events (Fused)	1C31233G03	5X00034G01

Hazardous labels must be placed in a visible location on the base unit, preferable above the spare fuse location. This information must be indicated in the application specific project drawings.

Table 3-1. Ovation Module Choices (Cont'd)

Module Type	Channel	Electronic Module	Personality Module
Compact Seq. of Events contact input w/48V auxiliary	16	1C31233G04	Cavity Insert ²
Serial Link Controller RS232	1	1C31166G01	1C31169G01
Serial Link Controller RS485 4 wire	1	1C31166G01	1C31169G02
Servo Driver with Readback (1 KHz LVT Output, 19VPP)	6	1C31199G02	1C31201G02
Servo Driver with Readback (3 KHz LVT Output, 19VPP)	6	1C31199G03	1C31201G02
Servo Driver with Readback (16V DC LVDT Output)	6	1C31199G01	1C31201G01
Speed Detector Interface	8	1C31189G01	1C31192G01
Valve Positioner (17 Volt LVDT: 24.8 mA)	8	1C31194G01 or 1C31194G02	1C31197G01
Valve Positioner (23.75 Volt LVDT: 16.8 mA)	8	1C31194G01 or 1C31194G02	1C31197G02
Valve Positioner (23.75Volt LVDT: 8.3 mA)	8	1C31194G01 or 1C31194G02	1C31197G03
Valve Positioner (23.75Volt LVDT: 36 mA)	8	1C31194G01 or 1C31194G02	1C31197G04
¹ A ninth channel is provided when using the Analog Input module with temperature sensor. This ninth point is needed for the CJ Compensation field of the Point Builder Instrumentation Tab when defining the eight other thermocouple points for the AI module (refer to Section 4 for additional information). ² Cavity insert (1C31238H01) that fits into the Personality module position providing a wiring schematic label for the module. Typically, there is no actual Personality module required for this module type. ³ Raise and Lower Runback inputs can be disabled and used as user-defined input points. Configuration instructions are included in Kit 1C31174G20.			

The Compact Contact Input module is applicable for CE Mark certified systems.

Note

See **Section 3. I/O Modules** for environmental, installation, wiring, and fuse information.

9-2. Module Groups

9-2.1. Electronics Module

There is one Electronics module group for the Compact Contact Input module:

- 1C31234G01 provides 48 VDC on-card auxiliary power for 16 contact inputs with common return.

9-2.2. Foam Insert

There is no Personality module for the Compact Contact Input module. A foam insert is available that fits into the Personality module cavity in the Base Unit and provides wiring information.

- 1C31238H01

Table 9-1. Compact Contact Input Subsystem

Range	Channels	Electronic Module	Cavity Insert ¹
48 VDC On-Card wetting supply	16	1C31234G01	1C31238H01
¹ This is an insert that fits into the Personality module position and provides a wiring schematic label for the module. There is no actual Personality module required for this module type.			

All Configurations are CE Mark Certified.

11-2. Module Groups

11-2.1. Electronics Modules

There are three Electronics module groups for the Compact Digital Input Module:

- 1C31232G01 provides for 24/48 VDC single-ended inputs.
- 1C31232G02 provides for 24/48 VAC/VDC differential inputs and supports the 16 point individually fused option.
- 1C31232G03 provides for 125 VAC/VDC differential inputs and supports the 16 point individually fused option.

11-2.2. Personality Module

There is one Personality module group for the Compact Digital Input Module:

- 5X00034G01 provides for 16 point individual fusing with a common supply.

This is an optional Personality module that is available for use with the differential input Electronics modules (1C31232G02, 1C31232G03) for applications requiring individual point fusing with a common supply.

Note

This Personality Module is not available for use with Single Ended Electronics Module 1C3123G01.

11-2.3. Foam Insert

In the event that individual fusing is not required, a foam insert is available that fits into the Personality module cavity in the Base Unit and provides wiring information.

- 1C31238H01

Table 11-1. Compact Digital Input Subsystem

Range	Channels	Electronic Module	Personality Module or Cavity Insert ¹
24/48 VDC Single-ended	16	1C31232G01	1C31238H01 ¹ (Cavity Insert)
24/48 VAC/VDC & 24VAC Differential	16	1C31232G02	1C31238H01 ¹ (Cavity Insert)
Individually fused with common power supply	16	1C31232G02	5X00034G01 (Fused Pmod)
125 VAC/VDC Differential	16	1C31232G03	1C31238H01 ¹ (Cavity Insert)
Individually fused with common power supply	16	1C31232G03	5X00034G01 (Fused Pmod)
1 This is an insert that fits into the Personality module position and provides a wiring schematic label for the module.			

All Configurations are CE Mark Certified.

When the 125VAC/VDC Compact Digital Input Emod (1C31232G03) is used in applications without the Fused Pmod (5X00034G01), additional external fusing or other current limiting devices are recommended on the hazardous inputs to provide additional protection to the external wiring and power source.

11-2.4. Field Wiring Considerations for the Compact Digital Input Configuration

The following maximum resistances of the cable and the interfaced device apply:

24/48VDC - 175 K Ω

24 VAC - 50 K Ω

125 VDC - 225 K Ω

125 VAC - 50 K Ω

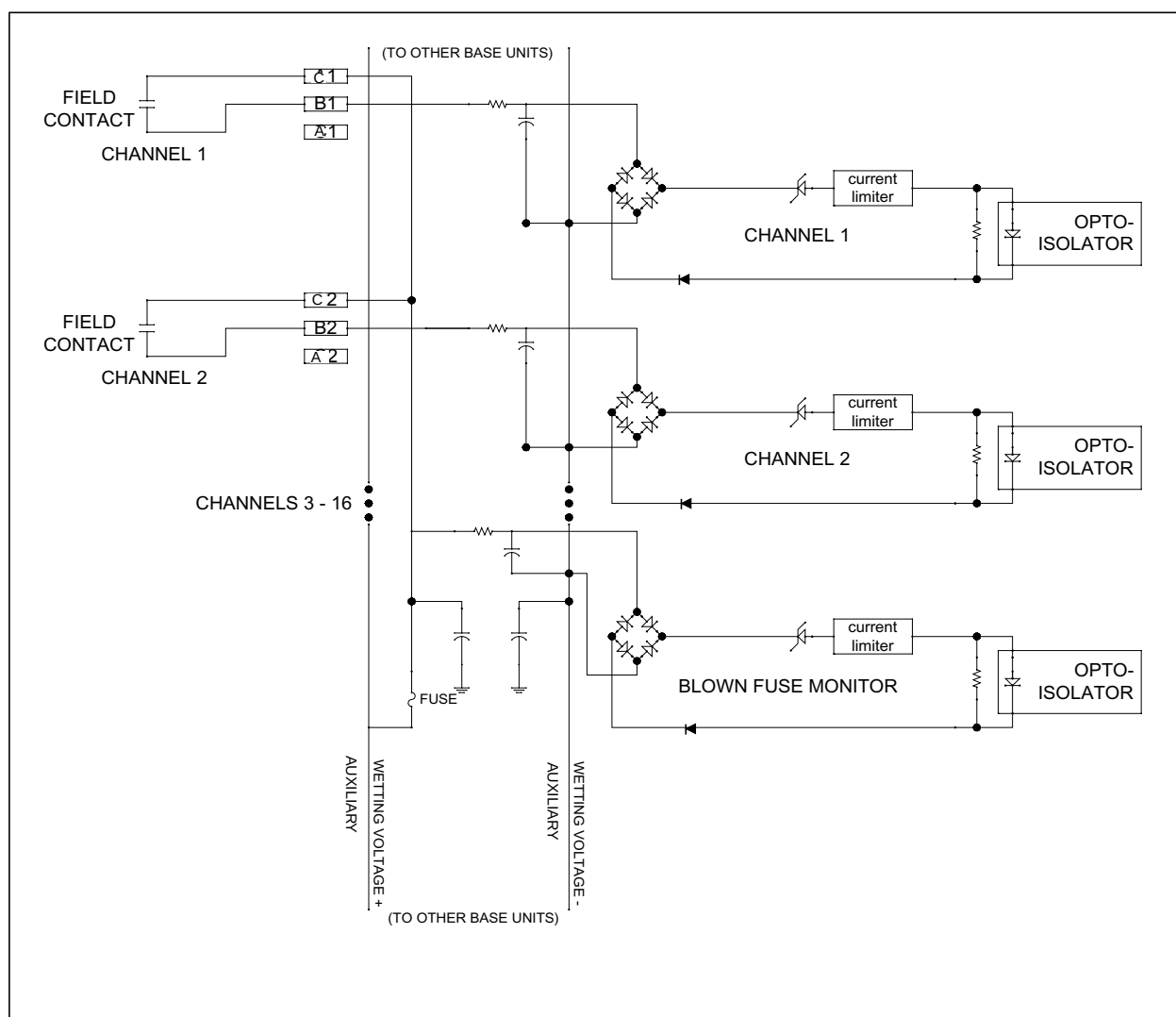


Figure 11-1. Single-Ended Compact Digital Input Front End



Caution for CE Mark certified systems:

Any base unit that contains a 125VAC/DC Compact Digital Input Electronics module (1C31232G03) with foam insert (1C31238H01) and interfaces to hazardous voltage (>30 V RMS, 42.4 V peak, or 60 VDC) must include a hazardous voltage warning label (1B30025H01) on that base unit.

Any base unit that contains a 125VAC/DC Compact Digital Input Electronics module (1C31232G03) with the individually fused Personality Module (5X00034G01) and interfaces to hazardous voltage (>30 V RMS, 42.4 V peak, or 60 VDC) must include a hazardous voltage warning label (1B30025H01) on **ALL** base units on the branch.

This label must be placed in a visible location on the base unit, preferably above the spare fuse location. The project drawings must indicate this.

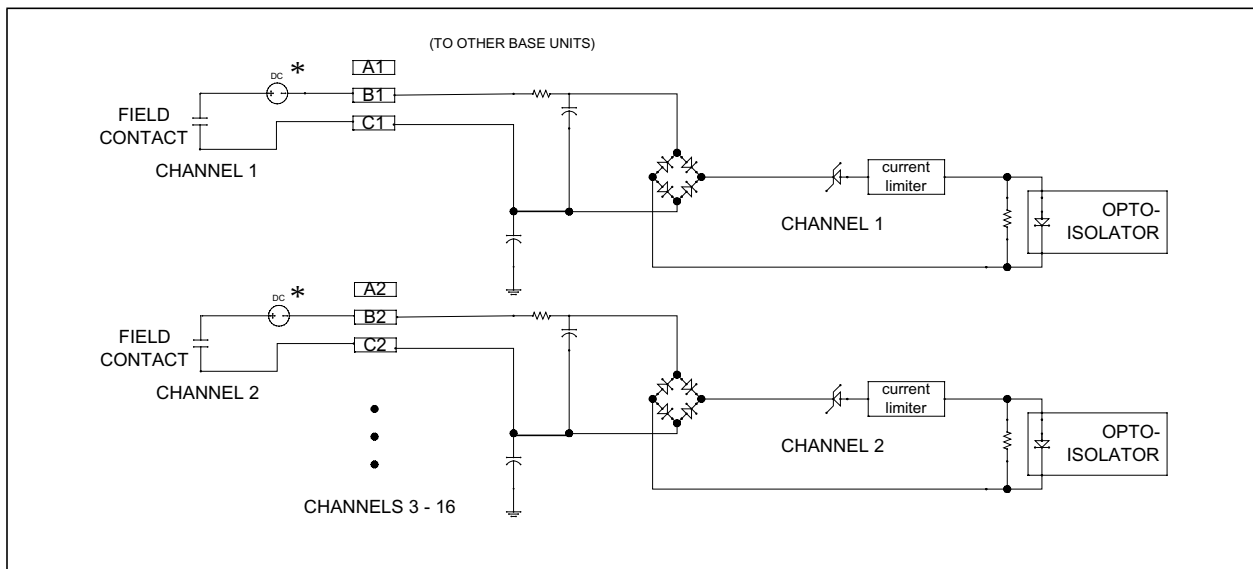


Figure 11-2. Differential Compact Digital Input Front End

* Auxiliary power supply may be AC or DC. If a DC supply is used, the polarity can be opposite of what is shown.

There are two 32 event buffers. This allows the event tagging and chatter control function to be writing into one event buffer while the Ovation Controller is reading the other event buffer. The Ovation Controller only reads each module a small portion of the loop time. This allows both event buffers to be available the rest of the loop time.

Each event buffer contains 64 words with up to 32 Channel-IDs and 32 Event-Times. The event buffers are memories. The memory control circuit controls which event buffer to write into and which event buffer to read from. Before reading the event buffer, the buffer status register must be read to determine the number of words to read.

Time synchronization is accomplished by the Ovation Controller writing a time reference simultaneously to all Sequence of Events modules with a 1 millisecond resolution. The Compact Sequence of Event Module is CE Mark applicable.

Note

All SOE modules in a Controller **MUST** be connected to the IOIC card that is configured as the Time Keeper.



Caution

Do NOT mix the Compact Sequence of Events module (1C31233) with the Sequence of Events module (1C31157) in the same system.

Cautions for CE Mark certified systems:

Any base unit that contains a 125VDC Compact Sequence of Events Electronics module (1C31233G03) with Foam Insert (1C31238H01) and interfaces to hazardous voltage (>60 VDC) must include a hazardous voltage warning label (1B30025H01) on that base unit.

Any base unit containing a 125VDC Compact Sequence of Events Electronics module (1C31233G03) with Fused Digital Input Personality module (5X00034G01) and interfaces to hazardous voltage (>60 VDC) must include a hazardous voltage warning label (1B30025H01) on **ALL** base units on the branch.

This label must be placed in a visible location on the base unit, preferably above the spare fuse location. The project drawings must indicate this.

21-2. Module Groups

21-2.1. Electronics Modules

There are four Electronics module groups for the Compact Sequence of Events Module:

- 1C31233G01 provides for 24/48 VDC single-ended inputs.
- 1C31233G02 provides for 24/48 VDC differential inputs and supports the 16 point individually fused option.
- 1C31233G03 provides for 125 VDC differential inputs and supports the 16 point individually fused option.
- 1C31233G04 (Contact Input) provides for 48 VDC on-card auxiliary power.

21-2.2. Personality Module

There is one Personality module group for the Compact Sequence of Events Module:

- 5X00034G01 provides for 16 point individual fusing with a common supply.

This is an optional Personality module that is available for use with the differential input Electronics modules (1C31233G02, 1C31233G03) for applications requiring individual point fusing with a common supply.

21-2.3. Foam Insert

There is no Personality module required for use with the Compact Digital Input subsystem (except for the 16 point individually fused option 5X00034G01). A foam insert is available that fits into the Personality module cavity in the Base Unit and provides wiring information.

- 1C31238H01

Table 21-1. Compact Sequence of Events Subsystem

Range	Channels	Electronic Module	Personality Module or Cavity Insert ¹
24/48 VDC (Single-ended) Digital input	16	1C31233G01	1C31238H01 ¹
24/48 VDC (Differential)	16	1C31233G02	1C31238H01 ¹ (Cavity Insert)
Individually fused with common power supply	16	1C31233G02	5X00034G01 (Fused Pmod)
125 VDC (Differential)	16	1C31233G03	1C31238H01 ¹ (Cavity Insert)
Individually fused with common power supply	16	1C31233G03	5X00034G01 (Fused Pmod)
48 VDC On-Card wetting supply	16	1C31233G04	1C31238H01 ¹
¹ This is an insert that fits into the Personality module position and provides a wiring schematic label for the module.			

All Configurations are CE Mark certified.

When the 125VAC/VDC Compact Digital Input Emod (1C31233G03) is used in applications without the Fused Pmod (5X00034G01), additional external fusing or other current limiting devices are recommended on the hazardous inputs to provide additional protection to the external wiring and power source.

21-3. External Power Supplies

When using the 1C31233G01 single-ended module, or 1C31233G02/G03 with Personality module 5X00034G01, the required voltage source may be obtained from the internal auxiliary power supply (Controller backplane) or it may be obtained from an external power supply.