

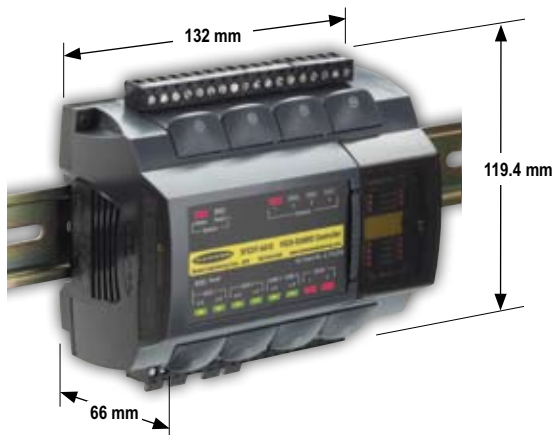
CONTROLLERS

PICO-GUARD™ Fiber Optic

- Four optical channels protect personnel from hazardous equipment and to protect critical tooling or processes.
- Controller signals the machine control circuit to stop when the system detects a loss in light signal or receives a safety stop request from its Universal Safety Stop Interface (USSI) input.
- Each channel can control several optical elements in the same fiber loop.
- Each channel can monitor a separate part of a machine, such as doors, points of entry and E-stops.
- USSI connects multiple PICO-GUARD™ Controllers and other safety devices in a single safety circuit, when required.
- Controllers are available with optical channel auxiliary outputs and muting.
- Controllers interface with PICO-GUARD Grids, Points, Interlock Switches and Optical E-Stop Buttons to solve numerous applications.
- Diverse-redundant and self-checking design exceeds OSHA/ANSI Control Reliability requirements and meets Category 4 per ISO 13849-1(EN 954-1) and IEC 61496-1 Type 4 requirements.



ACCESSORIES
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PICO-GUARD™ Controller Models, 24V dc

Inputs	Safety Outputs	Output Rating	Aux. Outputs	Muting	Output Response Time	Models
4 Optical Channels & 2 NC USSI (dual)	2 PNP OSSD	0.5 amps	3 PNP (Aux., Fault, Weak)	—	13 ms (optical channels)	SFCDT-4A1
			7 PNP (Aux., Fault, Weak & Ch 1-4)	—	7 ms (USSIs)	SFCDT-4A1C
4 Optical Channels, Mute Inputs, Mute Enable			7 PNP (Aux./Mute lamp, Fault, Weak & Ch 1-4)	Yes	13 ms (optical channels)	SFCDT-4A1CM1

NOTE: A complete system requires a controller and optical elements, such as Interlocking Switches (see page 515), Grids and Points (see page 511), or E-Stop buttons (see page 518).

PICO-GUARD™ Controller Specifications (cont'd)

Enclosure Rating	IEC IP20	
Operating Conditions	Temperature: 0° to +50° C	Relative humidity: 95% maximum (non-condensing)
Design Standards	Designed to comply with Type 4 per IEC 61496-1; Type 4 per UL 61496-1; Category 4 per EN 954-1	
Certifications	    	Important Notice: European Community Machinery Directive 2006/42/EC The PICO-GUARD Controllers comply with Machine Directive 98/37/EC and are certified to EN954-1(1996). After December 31, 2011, these safety devices can only be installed as a replacement component within the European Union (EU). For more information, please see www.bannerengineering.com/144763 or call 1-888-373-6767.
Wiring Diagrams	WD023, WD024, WD025, WD026, WD027, WD028 (pp. 788-791)	

WD023



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Models

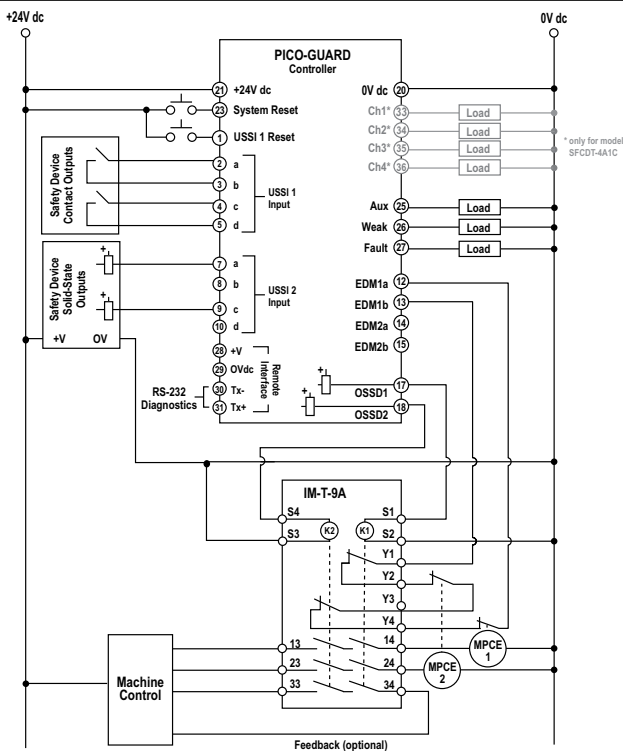
- SFCDT-4A1
- SFCDT-4A1C

IM-T-9A Terminal Locations



PICO-GUARD™ Controller

One PICO-GUARD System with 1-Channel EDM of IM-T-9A Interface Module



Wiring diagrams are for information only. See appropriate manuals for all specific warnings, cautions and information for use.

WD024



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Models

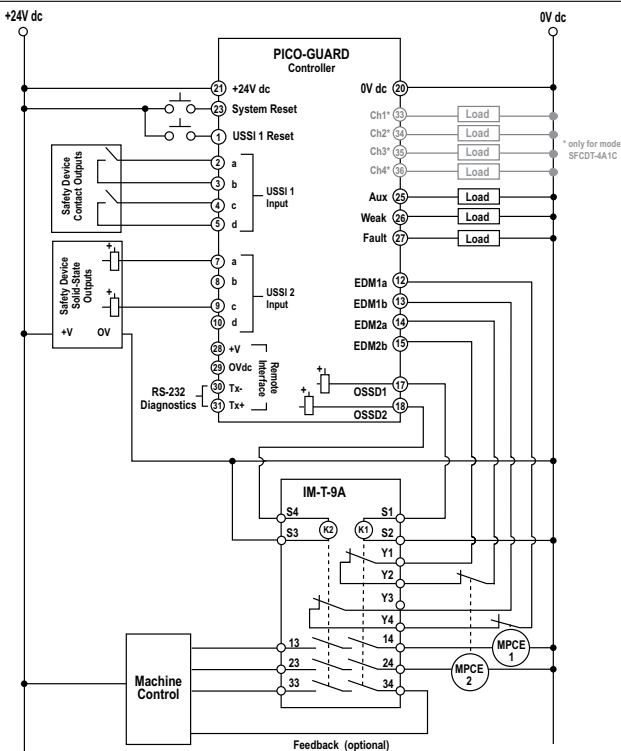
- SFCDT-4A1
- SFCDT-4A1C

IM-T-9A Terminal Locations



PICO-GUARD™ Controller

One PICO-GUARD System with 2-Channel EDM of IM-T-9A Interface Module



Wiring diagrams are for information only. See appropriate manuals for all specific warnings, cautions and information for use.

More on next page

PICO-GUARD™ Controller

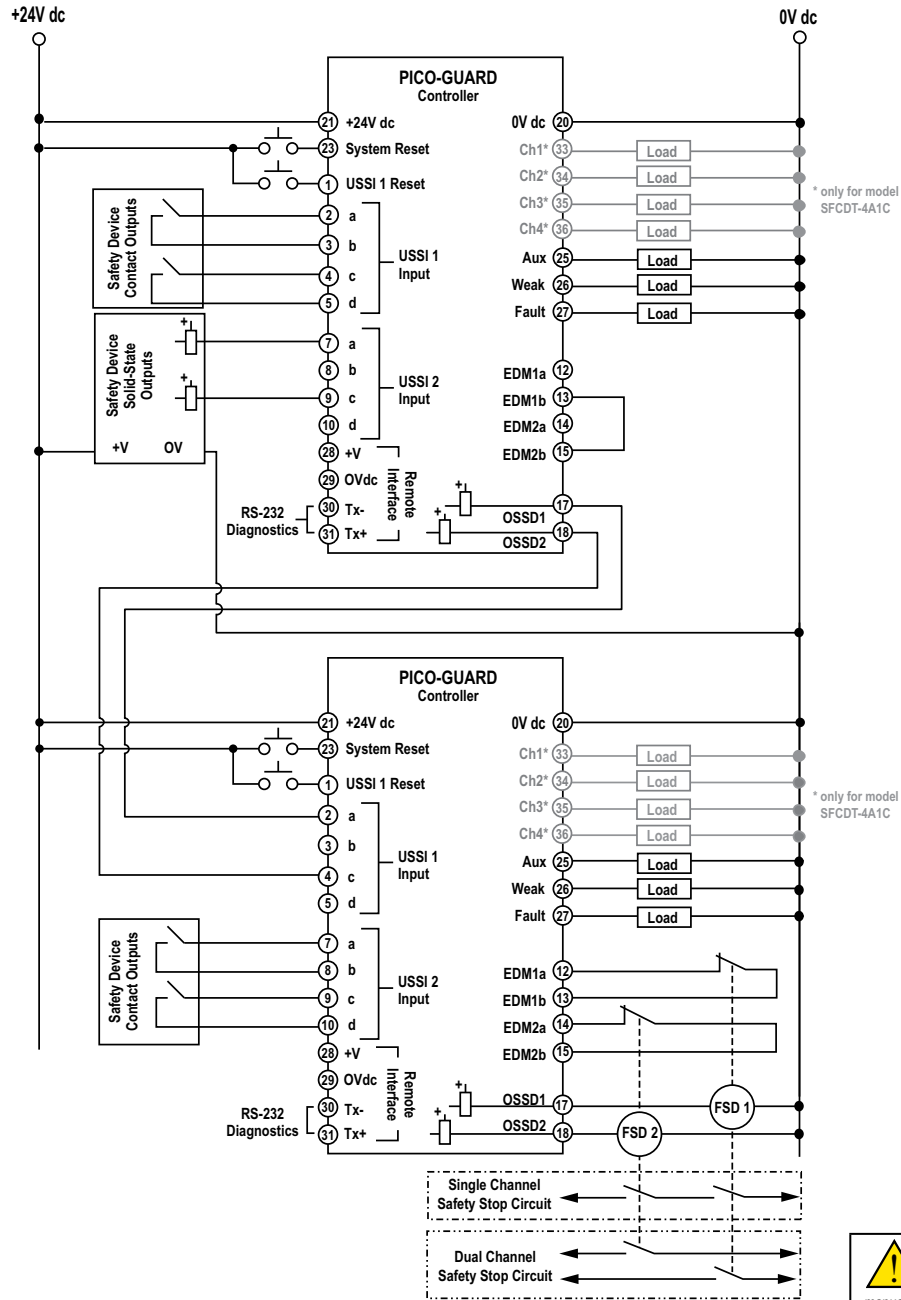
Two PICO-GUARD Systems with 2-Channel EDM



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Models

- SFCDT-4A1
- SFCDT-4A1C



Wiring diagrams are for information only. See appropriate manuals for all specific warnings, cautions and information for use.

More on next page

WD026



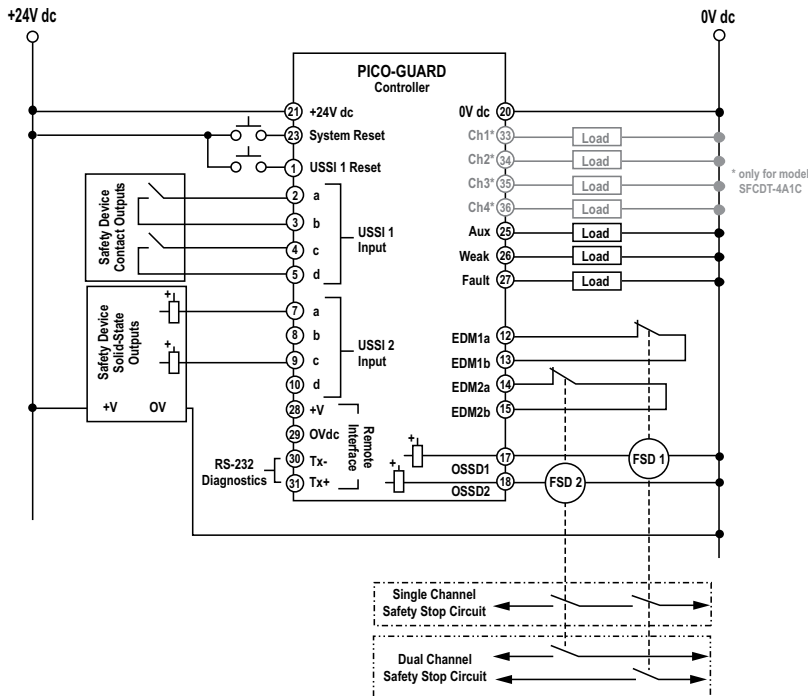
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Models

- SFCDT-4A1
- SFCDT-4A1C

PICO-GUARD™ Controller

One PICO-GUARD System with 2-Channel EDM and 2 Generic FSDs



! Wiring diagrams are for information only. See appropriate manuals for all specific warnings, cautions and information for use.

WD027



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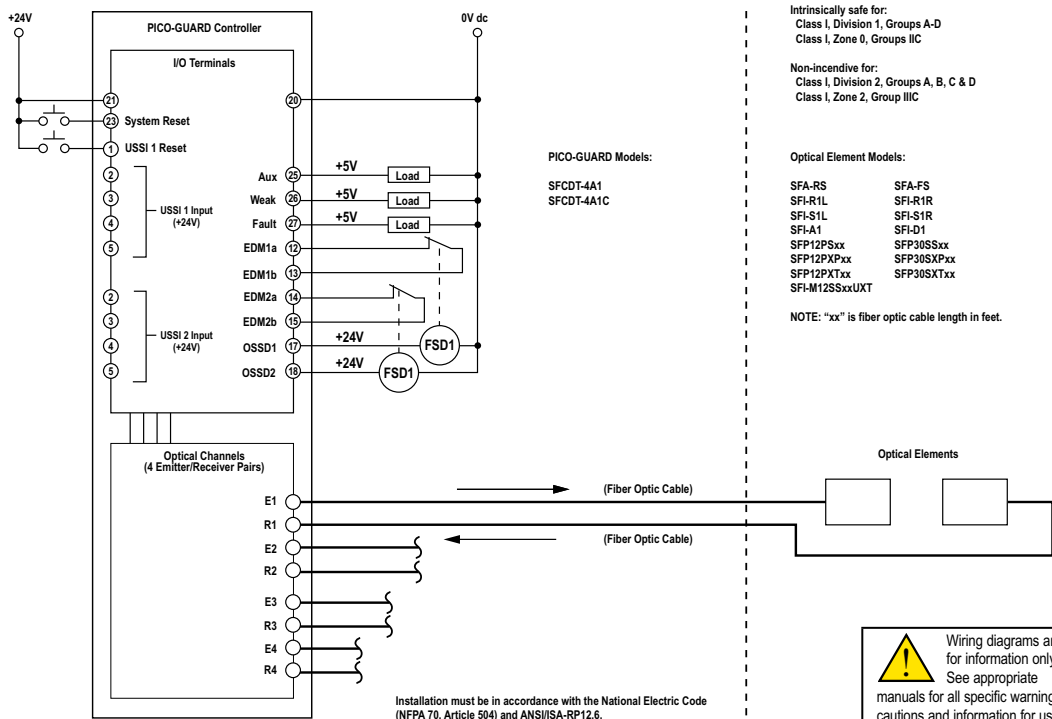
Models

- SFCDT-4A1
- SFCDT-4A1C

Unclassified or Class I, Division 2, Groups A, B, C and D Hazardous (Classified) Locations Class I, Zone 2, Group IIC. For information on compliance and classification according to Directive 94/9/EC (ATEX).

PICO-GUARD™ EXI/ATEX Controller

Hazardous Environment Application to Optical Elements



Intrinsically safe for:
Class I, Division 1, Groups A-D
Class I, Zone 0, Groups IIC

Non-incendive for:
Class I, Division 2, Groups A, B, C & D
Class I, Zone 2, Group IIC

- PICO-GUARD Models:
SFCDT-4A1
SFCDT-4A1C
- Optical Element Models:
SFA-RS SFA-FS
SFI-R1L SFI-R1R
SFI-S1L SFI-S1R
SFI-A1 SFI-D1
SFP12PSxx SFP30SSxx
SFP12PXPxx SFP30SXPxx
SFP12PXTxx SFP30SXTxx
SFI-M12SSxxUXT

NOTE: "xx" is fiber optic cable length in feet.

Installation must be in accordance with the National Electric Code (NFPA 70, Article 504) and ANSI/ISA-RP12.6.

! Wiring diagrams are for information only. See appropriate manuals for all specific warnings, cautions and information for use.

More on next page

WD028

PICO-GUARD™ Controller with Muting

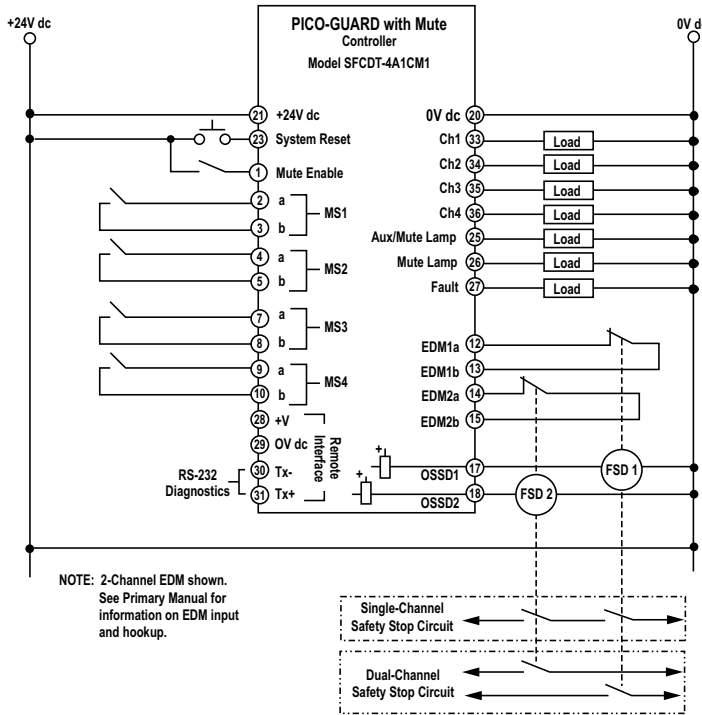
One PICO-GUARD with Muting and 2-Channel EDM and 2 Generic FSDs



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Models

- SFCDT-4A1CM1



NOTE: 2-Channel EDM shown. See Primary Manual for information on EDM input and hookup.

See Primary Manual for information on interfacing of safety stop circuits

Wiring diagrams are for information only. See appropriate manuals for all specific warnings, cautions and information for use.

- Accessories
- Reference
- Hookups
- Wiring Diagrams
- Glossary
- International Reps

WD029

SC22-3 Safety Controller

1-Channel, 2-Channel and No EDM



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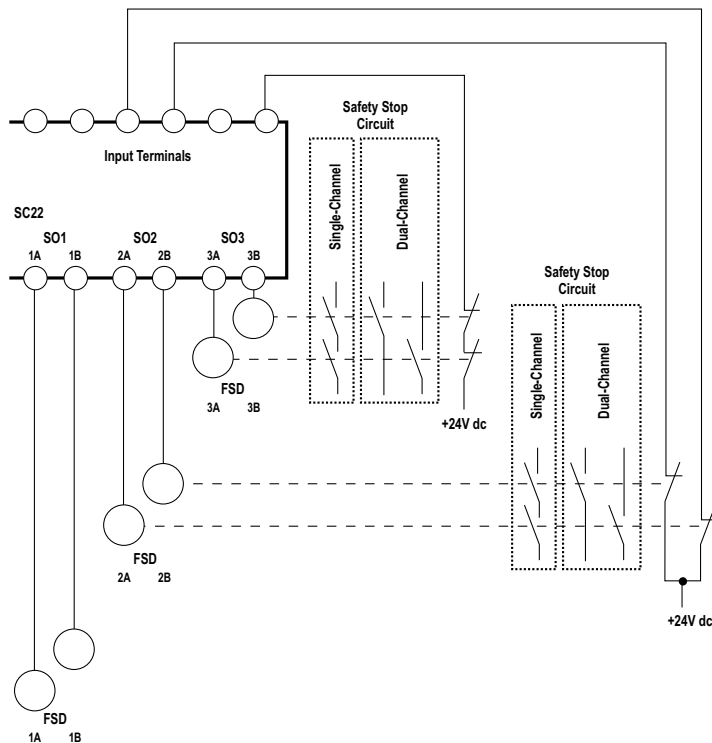
Models

- SC22-3
- SC22-3E

The figure shown is generic in nature and represents all three EDM options:

- Safety Output SO1 is shown with NO EDM configured (typically used with self-monitored devices).
- Safety Output SO2 is shown with Two-Channel EDM configured.
- Safety Output SO3 is shown with One-Channel EDM configured.
- Any particular Safety Controller configuration may use any combination of external device monitoring options, depending on the application.

See product manual for information on external device monitoring and interfacing safety circuits.



Wiring diagrams are for information only. See appropriate manuals for all specific warnings, cautions and information for use.

More on next page