Safedge™ Controllers

Description

The Safedge controllers are designed to operate with the Safedge profiles. The controller continuously monitors the profile for actuation and generates an output signal when the profile is depressed.

The Safedge controller provides a low voltage to the profile. When the profile is pressed, the controller detects a change in resistance and turns off its output relays. When pressure is released from the profile, the output relays of the controller return to an on state. The controller has redundant voltage free positively-guided output relays, which can be used to interface with a machine control system.

The 251 controller comes capable of operating at 24V AC/DC, or 120/230V AC from separate terminals. An internal switch changes the operating voltage from 120V AC to 230V AC. The 252 controller operates at 24V AC/DC.

An auxiliary output relay is available to provide a signal about the controller's status. Three LEDs indicate whether the controller is in RUN, STOP or OPEN condition. The controller operates in manual or automatic reset mode.

Features

- One N.O. or two N.O. safety outputs
- One N.C. auxiliary output
- 24V AC/DC or 120/240V AC
- Output monitoring
- LED indicators for RUN, STOP, and OPEN
- Automatic/manual reset

LED Indicators

Green	Run
Yellow	Open Circuit
Red	Stop

Specifications

Safety Ratings	
Standards	EN1760-2, EN954-1, ISO 13849-1, AS 4024.5, EN 954-1, ANSI B11.19
Safety Classification	Cat. 3 per EN 954-1
Certifications	CE Marked for all applicable directives, cULus, and TÜV
Power Supply	
Input Power Entry	251: 24V AC/DC or 115/230V AC 50/60 Hz; 252: 24V AC/DC 50/60 Hz
Power Consumption	251: < 6 VA 252: < 4 VA
Inputs	
Safety Inputs	Profile: 6 kΩ, 12V DC open circuit, 4V DC run condition Monitoring: 1 N.O.
Response Time	13 ms, max.
Outputs	
Safety Contacts	251: 2 N.O.; 252: 1 N.O.
Auxiliary Contacts	1 N.C.
Rated Impulse withstand Voltage	2500V
Switching Current @ Voltage, Min.	10 mA @ 10V
Fuses, Output	4 A on AC, 2 A on DC (external)
Electrical Life (Operations)	220V AC/4 A/880VA cosϕ = 0.3... 0.1 M 220V AC/1.7 A375VA cosϕ = 0.6...0.5 M 30V DC/2 A/60 W = 1 M 10V DC/0.01 A/0.1 W = 2 M
Environmental and Physical Characteristics	
Enclosure Type Rating/ Terminal Protection	251D, 252D: IP40 (NEMA 1); 251P: IP65 (NEMA 13)/ IP20 DIN 0470
Operating Temperature [C (F)]	-10...55° (-14...131°)
Vibration	0.15 mm, 10...55 Hz
Shock	10 g, 11 ms, half-sine
Mounting	Surface mount 35 mm or DIN Rail
Weight [g (lb)]	251D: 450 (1.0) 252D: 181 (0.4) 251P: 650 (1.4)
Conductor Size, Max.	251D, 252D: 1 x 4 mm2 (10 AWG) stranded, 1 x 4 mm2 (10 AWG) solid 251P: 1 x 1.1 mm2 (18 AWG) stranded, 1 x 1.5 mm2 (16 AWG) solid

⋆ Usable for ISO 13849-1:2006 and IEC 62061. Data is based on the following assumptions:
- Mission time/Proof test interval of 20 years
- Functional test at least once within six-month period

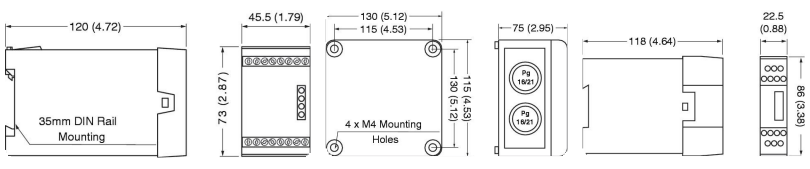
Product Selection

Inputs	Safety Outputs	Auxiliary Outputs	Terminals	Reset Type	Power Supply	Cat. No.
Safedge	2 N.O.	1 N.C.	Fixed	Automatic/Manual	24V AC/DC or 115/230V AC	440F-C251D
	1 N.O.				24V AC/DC	440F-C252D
	2 N.O.				24V AC/DC or 115/230V AC	440F-C251P

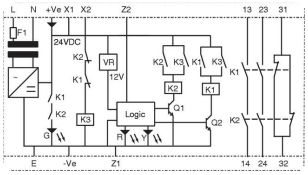
Approximate Dimensions

Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.

440F-C251D *440F-C251P* *440F-C252D*



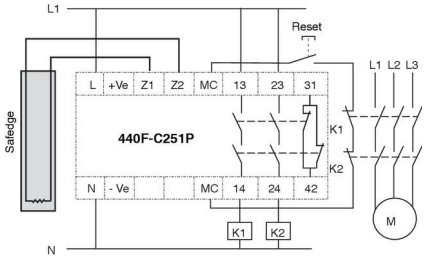
Block Diagram



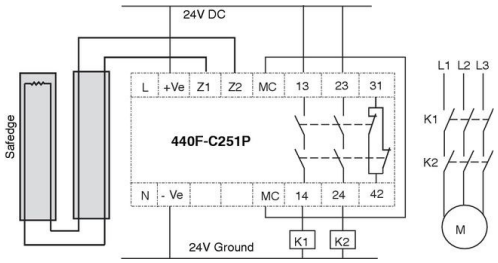
Accessories

Description	Cat. No.
500 mA fuse—Bussmann Cat. No. ETF-500 mA	440R-A31562
Fuse, 2 A—Bussmann Cat. No. ETF-2	440A-A09197

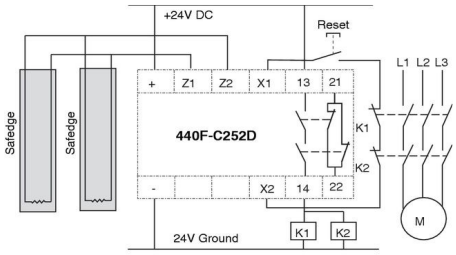
Typical Wiring Diagrams



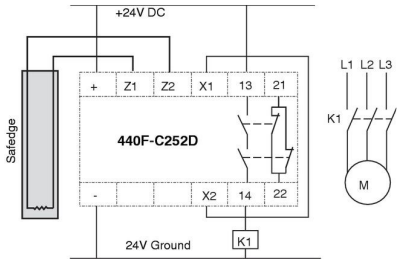
Series Terminated, Safedge Input, Manual Reset, Dual Channel Output, Monitored Output



Series Terminated, Cascaded, Safedge Input, Automatic Reset, Dual Channel Output, No Output Monitored



Parallel Terminated, Safedge Input, Manual Reset, Dual Channel Output, Monitored Output



Series Terminated, Safedge Input, Automatic Reset, Single Channel Output, No Output Monitored

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