



Description

The Lifeline 3 is a cable (rope) operated emergency stop device designed to meet the stringent requirements of ISO 13850 (Safety of Machinery—Emergency Stop Equipment). The Lifeline 3 system can be installed along or around awkward machinery such as conveyors and provides a constant-access emergency-stop facility.

1. The positive-mode mechanism helps ensure that the contacts are immediately latched open on actuation and can only be reset by the intentional action of turning the blue reset knob. The design also protects against nuisance tripping and the effects of thermal expansion.
2. The cable-status indicator makes the system easy to set up and maintain for spans up to 30 m (98 ft).
3. Four sets of contacts are provided: 2 N.C. + 2 N.O., or 3 N.C. + 1 N.O. contacts.
4. Sealed to IP 67 with rugged construction using die-cast alloy and stainless steel to withstand harsh conditions.

Features

- Switches up to 30 m (98 ft) span
- Universal mounting and operation
- Switch lockout on cable pulled and cable slack
- Cable-status indicator on switch lid
- Industry standard fixing centers to DIN/EN 50041
- Quick disconnect styles available

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Specifications

| Safety Ratings | | | | | |
|-----------------------------------|--|------------------------------|-------|------|------|
| Standards | ISO 13850, EN ISO 12100, IEC 60947-5-1, IEC 60947-5-5 | | | | |
| Safety Classification | Cat. 1 device per EN 954-1 May be suitable for use in Cat 3 or Cat 4 systems depending on the architecture and application characteristics | | | | |
| Functional Safety Data * | B10d: > 2 x 10 ⁶ operations at min. load PFHD: < 3 x 10 ⁻⁷ MTTFd: > 385 years May be suitable for use in performance levels Pl _e or Pl _d systems (according to ISO 13849-1:2006) and for use in SIL2 or SIL3 systems (according to IEC 62061) depending on the architecture and application characteristics | | | | |
| Certifications | CE Marked for all applicable directives, cULus, TÜV, and CCC | | | | |
| Outputs | | | | | |
| Safety Contacts * | 2 N.C. direct-opening action | 3 N.C. direct-opening action | | | |
| Auxiliary Contacts | 2 N.O. direct-opening action | 1 N.O. direct-opening action | | | |
| Thermal Current I _{th} | 10 A | | | | |
| Rated Insulation Voltage | (U _i) 500V | | | | |
| Switching Current @ Voltage, Min. | 5 mA @ 5V DC | | | | |
| Utilization Category | | | | | |
| A600/AC-15 | (U _e) | 600V | 500V | 240V | 120V |
| | (I _e) | 1.2 A | 1.4 A | 3 A | 6 A |
| DC-13 | (U _e) | 24V | | | |
| | (I _e) | 2 A | | | |
| Operating Characteristics | | | | | |
| Cable Span Between Switches, Max. | 30 m (98 ft) | | | | |
| Tensioning Force to Run Position | 103 N (23.17 lbf) typical | | | | |
| Tensioning Force to Lockout | 188 N (42.3 lbf) typical | | | | |
| Operating Force, Min. | <125 N (28.1 lb) at 300 mm deflection | | | | |
| Actuation Frequency, Max. | 1 cycle/s | | | | |
| Operating Life @ 100 mA load | 1 x 10 ⁶ | | | | |
| Environmental | | | | | |
| Enclosure Type Rating | IP67 | | | | |
| Operating Temperature [C (F)] | -25...80° (-13...176°) | | | | |
| Physical Characteristics | | | | | |
| Housing Material | Heavy-duty painted zinc-based die-cast alloy | | | | |
| Indicator Material | Glass-filled nylon | | | | |
| Eye Nut Material | Stainless steel | | | | |
| Weight [g (lb)] | 610 (1.34) | | | | |
| Color | Yellow body, blue reset button | | | | |

* Usable for ISO 13849-1:2006 and IEC 62061. Data is based on the B10d value given and:

- Usage rate of 1op/10 mins., 24 hrs/day, 360 days/year, representing 51840 operations per year
- Mission time/Proof test interval of 38 years

* The safety contacts are described as normally closed (N.C.) i.e., with the guard closed, actuator in place (where relevant) and the machine able to be started.

Note: It is recommended that the LRTS (Lifeline Rope Tensioning System) should be used with the Lifeline 3 cable rope switch.

Product Selection

| Contacts | | Cat. No. | | | | |
|----------|-----------|--------------------|--------------------|-------------|--------------------|---|
| Safety | Auxiliary | Conduits | | Connectors* | | |
| | | M20 | 1/2 inch NPT | 12-Pin M23 | 8-Pin Micro (M12)* | Connect to ArmorBlock Guard I/O 5-Pin Micro (M12)‡ |
| 2 N.C. | 2 N.O. | 440E-D13118 | 440E-D13120 | 440E-D13132 | 440E-D21B9YH | 440E-D2NNYS |
| 3 N.C. | 1 N.O. | 440E-D13112 | 440E-D13114 | 440E-D13124 | — | — |

* For connector ratings, see page 3-9.

* With an 8-pin micro (M12) connector, not all contacts are connected. See *Typical Wiring Diagram* on page 4-9 for wiring details.

‡ For connection to ArmorBlock Guard I/O. With a 5-pin micro (M12) connector, not all contacts are connected. See *Typical Wiring Diagram* on page 4-9 for wiring details.

Recommended Logic Interfaces

| Description | Safety Outputs | Auxiliary Outputs | Terminals | Reset Type | Power Supply | Cat. Page No. | Cat. No. |
|--|---------------------------------|---------------------------------|-------------------|-------------------------------------|------------------------------|---------------|--------------------|
| Single-Function Safety Relays for 2 N.C. Contact Switch | | | | | | | |
| MSR127RP | 3 N.O. | 1 N.C. | Removable (Screw) | Monitored Manual | 24V AC/DC | 5-26 | 440R-N23135 |
| MSR127TP | 3 N.O. | 1 N.C. | Removable (Screw) | Auto./Manual | 24V AC/DC | 5-26 | 440R-N23132 |
| MSR126T | 2 N.O. | None | Fixed | Auto./Manual | 24V AC/DC | 5-24 | 440R-N23117 |
| MSR30RT | 2 N.O. Solid State | 1 N.O. Solid State | Removable | Auto./Manual or Monitored Manual | 24V DC | 5-16 | 440R-N23198 |
| Modular Safety Relays | | | | | | | |
| MSR210P Base 2 N.C. only | 2 N.O. | 1 N.C. and 2 PNP Solid State | Removable | Auto./Manual or Monitored Manual | 24V DC from the base unit | 5-82 | 440R-H23176 |
| MSR220P Input Module | — | — | Removable | — | 24V DC | 5-86 | 440R-H23178 |
| MSR310P Base | MSR300 Series Output Modules | 3 PNP Solid State | Removable | Auto./Manual Monitored Manual | 24V DC | 5-102 | 440R-W23219 |
| MSR320P Input Module | — | 2 PNP Solid State | Removable | — | 24V DC from the base unit | 5-106 | 440R-W23218 |

Note: For additional Safety Relays connectivity, see the Safety Relays section (page 5-8) of this catalog.

For additional Safety I/O and Safety PLC connectivity, see the Programmable Safety System section (page 5-115) of this catalog.

For application and wiring diagrams, see the Safety Applications section (page 10-1) of this catalog.

Connection Systems

| Description | 5-Pin Micro (M12)* | 8-Pin Micro (M12) | 12-Pin M23 |
|-------------|-----------------------|----------------------|----------------|
| Cordset | — | 889D-F8AB-§ | 889M-FX9AE-§ |
| Patchcord | 889D-F5ACDM-♣ | 889D-F8ABDM-♣ | 889M-F12AHMU-> |






§ Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.

♣ Replace symbol with 1 (1 m), 2 (2 m), 3 (3 m), 5 (5 m), or 10 (10 m) for standard cable lengths.

> Replace symbol with OM3 (0.3 m), OM6 (0.6 m), 1 (1 m), 2 (2 m) or 3 (3 m) for standard lengths.

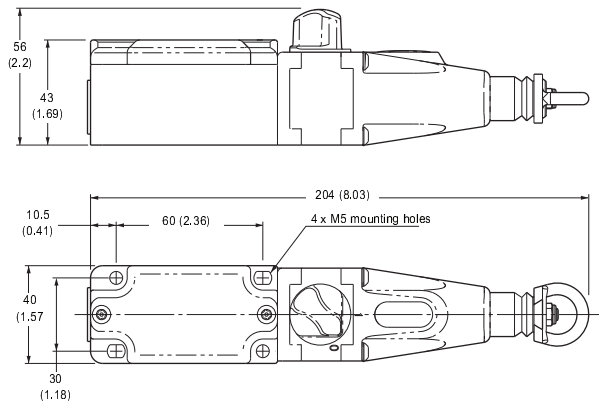
* To connect to ArmorBlock Guard I/O.

Accessories

| | Description | Cat. No. |
|--|---|-------------|
|  | Lifeline P. bolt M8 x 1.25 thread size, 58 mm (2.28 in.) threaded length, 12 mm (0.47 in.) dia. eye, 95 mm (3.74 in.) overall length | 440E-A17003 |
|  | Lifeline tensioner spring 19 mm (0.75 in.) diameter, 210 mm (8.27 in.) overall length, 50 N force | 440E-A13078 |
|  | Lifeline inside corner pulley Internal diameter 16 mm (0.64 in.) zinc-plated mild steel | 440A-A17101 |
|  | Lifeline outside corner pulley Outside diameter 38 mm (1.5 in.) zinc-plated mild steel | 440A-A17102 |
|  | Blanking plug, M20 conduit | 440A-A07265 |
|  | Cable grip, M20 conduit, accommodates cable diameter 7...10.5 mm (0.27...0.41 in.) | 440A-A09028 |
|  | Adaptor, conduit, M20 to 1/2 inch NPT, plastic | 440A-A09042 |
|  | Screwdriver including security bit | 440A-A09018 |

Approximate Dimensions

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



Note: 2D, 3D and electrical drawings are available on www.ab.com.

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Typical Wiring Diagrams

| Description | | 2 N.C. & 2 N.O. | 3 N.C. & 1 N.O. |
|---|--------------|-----------------|-----------------|
| Contact Configuration | | | |
| Contact Action □ Open ■ Closed | | | |
| 5-Pin Micro (M12) for ArmorBlock Guard I/O | | | — |
| 8-Pin Micro (M12) | | | — |
| 12-Pin M23 Pins 2, 5, 11 not connected | 1-3 | Safety A | Safety A |
| | 4-6 | Safety B | Safety B |
| | 7-8 | Aux A | Safety C |
| | 9-10 | Aux B | Aux A |
| | 12 | Ground | Ground |
| 8-Pin Cordset 889D-F8AB-* | Grey Red | Safety A | |
| | Yellow Pink | Safety B | |
| | White Blue | Aux A | |
| | Green | Ground | |
| | Brown | Not Used | |
| 12-Pin Cordset 889M-FX9AE-* | Brown Blue | Safety A | Safety A |
| | White Green | Safety B | Safety B |
| | Yellow Grey | Aux A | Safety C |
| | Pink Red | Aux B | Aux A |
| | Green Yellow | Ground | Ground |

* Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
 * Replace symbol with 0F5 (0.5 ft) or 1F (1 ft) for standard cable lengths.

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