

Cable (Rope) Pull Switches

Bulletin Number 440E

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Lifeline 5

The Lifeline™ 5 switch is a microprocessor-based solution that brings advanced features and diagnostics that help enhance safety while improving productivity. The Lifeline 5 switch offers features and functions that simplify setup and allow for efficient maintenance and troubleshooting. The Lifeline 5 switch performs at the highest safety ratings (TÜV certified to Ple, cat. 4, SIL 3).

The solid-state Lifeline 5 switch is offered in stainless steel (IP69K) or die cast aluminum (IP66) housings with an optional emergency stop (E-stop) button. With constant access to the E-stop function, the Lifeline 5 switch has up to a 100 m (328 ft.) span with the ability to stop a machine hazard through a simple pull of the attached cable. With operating temperature ranges from -20 °C...+75 °C (-4 °F...+167 °F), the Lifeline 5 switch constantly monitors cable tension and compensates for thermal expansion, cable sag, and nuisance trips due to objects or personnel inadvertently striking the cable. The 270° visible status indicators help in cable tensioning for quick, precise setup and provide switch status and diagnostics during operation.

The Lifeline 5 switch is suited for applications that require uninterrupted access to an E-stop. Key applications and industries include material handling equipment, distribution centers, and food and beverage applications.



Aluminum Housing Standard Switch without E-stop



Aluminum Housing Standard Switch with E-stop



Stainless Steel Switch without E-stop



Features

- Solid-state operation
- Enhanced safety and productivity with microprocessor-based reliability and advanced diagnostics
- Performs at the highest safety ratings, even in series connection
 - TÜV Approved
 - Ple, cat. 4 according to EN ISO 13849-1, SIL CL3 per IEC 62061 and IEC 61508, EN ISO 13850 and IEC 60947-5-5
 - NFPA 79
- Rugged stainless steel (IP69K) or die cast aluminum (IP66) housings with optional E-stop button
- Supports long cable spans up to 100 m (328 ft.)
- Wide operating temperature range -20 °C...+75 °C (-4 °F...+167 °F)
- Electronic rope monitoring system monitors the cable span and compensates for thermal expansion
- 270° visible status indicator indicators offer diagnostic for switch and tensioning setup
- Built in margin indication helps reduce down time
- OSSD outputs
 - 2 OSSDs for safety
 - 1 Auxiliary
 - 1 Tension/margin (8-pin model only)

Specifications

Attribute	Value		
	Aluminum Housing with E-stop	Aluminum Housing without E-stop	Stainless Steel Housing without E-stop
Safety ratings			
Standards	IEC 60947-5-5, ISO 13850, IEC 60947-5-1 Emergency stop device in accordance with ISO 13850 Ple, cat. 4 according to ISO 13849-1, SIL 3 per IEC 62061 and IEC 61508		
Functional safety data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf		
Certifications	c-UL-us Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page		
Outputs			
Safe state	De-energized (2 x PNP, 0V), AUX energized (1 x PNP, 24V)		
Run state	Energized (2 x PNP, 24V), AUX de-energized (1 x PNP, 0V)		
Tension	Energized (1 x PNP, 24V)		
No-load supply current	< 50 mA		
Load current	200 mA maximum		
Voltage drop	< 2V		

Attribute	Value		
	Aluminum Housing with E-stop	Aluminum Housing without E-stop	Stainless Steel Housing without E-stop
Operating characteristics			
Cable span	100 m (328 ft)		
Tension force to run position	135 N (30.35 lbs)		
Tension force to lockout	195 N (43.84 lb)		
Operating voltage	24V DC +10%/-15% Class 2 SELV or PELV power supply		
Response time (off)	60 ms		
Switches connected in series	Response time-off is 5 ms for each additional switch		
Utilization category			
DC-12 and DC-13 (Ue)	24V		
DC-12 and DC-13 (Ie)	200 mA		
Frequency of operating cycle	0.25 Hz		
Off-state output current	< 0.5 mA		
Environmental			
Operating temperature	-20...+75 °C (-4...+167 °F)		
Operating humidity	5...95% relative		
Housing material	Aluminum	Stainless Steel 304	
Washdown rating	IP66	IP66, IP69K	
Shock and vibration	IEC 60068-2-27: 30 g (1.05 oz), 11 ms IEC 60068-2-6: 10...500 Hz		
Pollution degree	IEC 60947-1: 3		
Electromagnetic compatibility (EMC)			
Electrostatic discharge (ESD)	IEC 61000-4-2: air discharge Per IEC 61326-1 (functional): 8 kV Per IEC 61000-6-7 (fail-safe): 8 kV		
	IEC 61000-4-2: contact discharge Per IEC 61326-1 (functional): 4 kV Per IEC 61000-6-7 (fail-safe): 6 kV		
Radiated EMF immunity	IEC 61000-4-3 Per IEC 61326-1 (functional): 10V/m Per IEC 61000-6-7 (fail-safe): 20V/m		
Electrical fast transient/burst immunity	IEC 61000-4-4 Per IEC 61326-1 (functional): 2 kV/5 kHz Per IEC 61000-6-7 (fail-safe): 2 kV/5 kHz		
Conducted immunity	IEC 61000-4-6 Per IEC 61326-1 (functional): 10V Per IEC 61000-6-7 (fail-safe): 20V		
Rated impulse withstand voltage	IEC 60947-1: 1 kV		
Protection	Short circuit, overload, reverse polarity, overvoltage, loss of ground		

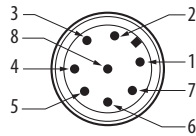
Product Selection

Description	Cat. No. ⁽¹⁾	Outputs	Connection	Connection Cable ⁽²⁾
Lifeline 5 with E-stop	440E-LL5SE5	2 OSSD Outputs, 1 Aux Output	5-pin Micro (M12)	889D-F5AC-2
			5-pin Micro (M12) Connect to ArmorBlock Guard I/O	889D-F4ACDM-2
	440E-LL5SE8	2 OSSD Inputs, 2 OSSD Outputs, 1 Aux Output, 1 Tension Output	8-Pin Micro (M12)	889D-F8AB-2
Lifeline 5 without E-stop	440E-LL5SN5	2 OSSD Outputs, 1 Aux Output	5-pin Micro (M12)	889D-F5AC-2
			5-pin Micro (M12) Connect to ArmorBlock Guard I/O	889D-F4ACDM-2
	440E-LL5SN8	2 OSSD Inputs, 2 OSSD Outputs, 1 Aux Output, 1 Tension Output	8-Pin Micro (M12)	889D-F8AB-2
Lifeline 5 Stainless Steel without E-stop	440E-LL5SS5	2 OSSD Outputs, 1 Aux Output	5-pin Micro (M12)	889DS-F5AC-2
			5-pin Micro (M12) Connect to ArmorBlock Guard I/O	889D-F4ACDM-2
	440E-LL5SS8	2 OSSD Inputs, 2 OSSD Outputs, 1 Aux Output, 1 Tension Output	8-Pin Micro (M12)	889DS-F8AB-2

(1) Tension spring included.

(2) Replace the 2 with 5 (5 m [16.4 ft]) or 10 (10 m [32.8 ft]) for standard cable lengths.

Table 1 - 8-Pin Connection

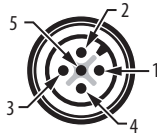


Pin Number	Wire Color	Signal
1	White	Auxiliary Output
2	Brown	24V DC
3	Green	Tension Output
4	Yellow	Safety OSSD 2 Input
5	Gray	Safety OSSD 1 Output
6	Pink	Safety OSSD 2 Output
7	Blue	0V
8	Red	Safety OSSD 1 Input

Table 2 - M12 8-Pin Cordset

Description	Temperature Rating	Jacket Material	Coupling Nut	Cat. No. ⁽¹⁾
M12 8-pin cordset	-20...+105 °C (-4...+221 °F)	PVC	Epoxy-coated zinc	889D-F8AB-2
			Stainless steel	889DS-F8AB-2

(1) Replace the 2 with 5 (5 m [16.4 ft]) or 10 (10 m [32.8 ft]) for standard cable lengths.

Table 3 - 5-pin Connection

Pin Number	Wire Color	Signal
1	Brown	+24V
2	White	Safety OSSD 1 Output
3	Blue	0V
4	Black	Safety OSSD 2 Output
5	Gray	Auxiliary Output

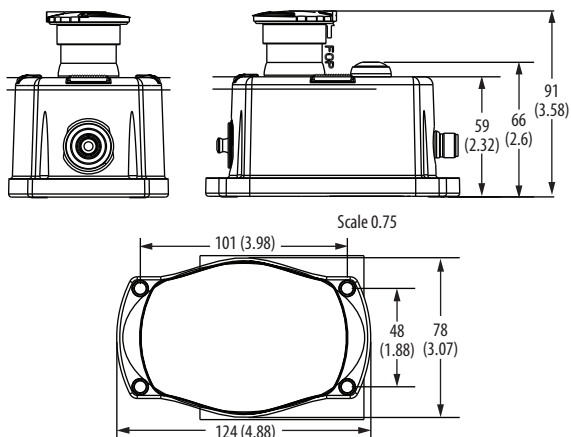
Table 4 - M12 4-Pin and 5-pin Cordset

Description	Temperature Rating	Jacket Material	Coupling Nut	Cat. No. ^{(1) (2)}
M12 5-pin cordset	-20...+105 °C (-4...+221 °F)	PVC	Epoxy-coated zinc	889D-F5AC-2
			Stainless steel	889DS-F5AC-2
M12 4-pin cordset	-50...+105 °C (-58...+221 °F)	TPE	Stainless steel	889DS-F4HJ-2

- (1) Replace the 2 with 5 (5 m [16.4 ft]) or 10 (10 m [32.8 ft]) for standard cable lengths.
 (2) If you do not require the auxiliary signal, a 4-pin cordset (catalog number 889D-F4AC-2) can be used.
 For low temperature applications, use a 4-pin cordset (catalog number 889DS-F4HJ-2).

The recommended patchcord for use with ArmorBlock® Guard I/O™ is 2 m (6.5 ft) - 889D-F4ACDM-2. Replace the 2 with 0M3 (0.3 m [0.98 ft]), 1 (1 m [3.28 ft]), 5 (5 m [16.4 ft]), or 10 (10 m [32.8 ft]) for standard cable lengths.

Approximate Dimensions

Figure 1 - Approximate Dimensions: Standard Housing

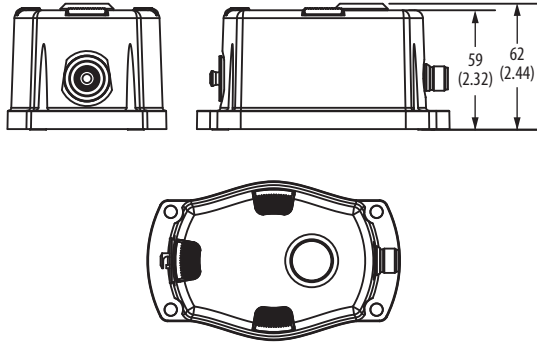
The spring rate is 2.1 N/mm (12 lbf/in.) and the material is carbon steel/spring steel.

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

Mounting

It is recommended that you use M5 or 10-32 bolts to mount the sensor to the frame of the machine.

Figure 2 - Approximate Dimensions: Stainless Steel Housing



The spring rate is 2.1 N/mm (12 lbf/in.) and the material is 302 stainless steel.
Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.

Lifeline 3

The Lifeline 3 switch is a cable (rope) operated emergency stop device that is 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.

It is recommended that the LRTS be used with the Lifeline 3 cable rope switch.



Features

- 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 helps protect against nuisance tripping and the effects of thermal expansion.
- The cable-status indicator makes the system easy to build and maintain for spans up to 30 m (98 ft).
- Four sets of contacts are provided: 2 N.C. + 2 N.O., or 3 N.C. + 1 N.O. contacts.
- Sealed to IP67 with rugged construction that uses die-cast alloy and stainless steel to withstand harsh conditions.
- Universal mounting and operation
- Switch lockout on cable pulled and cable slack
- Industry standard fixing centers to DIN/EN 50041
- Quick disconnect styles available

Specifications

Attribute	Value	
Safety ratings		
Standards	IEC 60947-5-5, ISO 13850, IEC 60947-5-1 Emergency stop device in accordance with ISO 13850	
Functional safety data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf	
Certifications	c-UL-us Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page	
Outputs		
Safety contacts ^{(1) (2)} Direct opening action	2 N.C. direct-opening action	3 N.C. direct-opening action
Auxiliary contacts ⁽²⁾	2 N.O. direct-opening action	1 N.O. direct-opening action
Thermal current/ I_{th}	10 A	
Rated insulation voltage (Ui)	500V	
Switching current @ voltage, min	3 mA @ 18V DC	

Attribute	Value			
Utilization category				
A600/AC-15 (Ue)	600V	500V	240V	120V
A600/AC-15 (Ie)	1.2 A	1.4 A	3.0 A	6.0 A
DC-13 (Ue)	24V			
DC-13 (Ie)	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 (11.81 in.) deflection			
Actuation frequency, max	1 cycle/s			
Mechanical life	1,000,000 operations			
Environmental				
Enclosure type rating	IP67			
Operating temperature	-20...+80 °C (-4...+176 °F)			
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			

- (1) The safety contacts are described as normally closed (N.C.) that is, with the guard closed, actuator in place (where relevant) and the machine able to be started.
- (2) See [Product Selection](#) on page 9.

Product Selection

Contacts		Cat. No.				
Safety	Auxiliary	Conduits		Connectors ⁽¹⁾		
		M20	1/2 inch NPT	12-Pin M23	8-Pin Micro (M12) ⁽²⁾	Connect to ArmorBlock Guard I/O 5-pin Micro (M12) ⁽³⁾
2 N.C.	2 N.O.	440E-D13118	440E-D13120	440E-D13132	440E-D21BNYH	440E-D2NNNYS
3 N.C.	1 N.O.	440E-D13112	440E-D13114	440E-D13124	—	—

(1) For connector ratings, see [Table 5](#).

(2) With an 8-pin micro (M12) connector, not all contacts are connected. See [Typical Wiring Diagrams](#) on page 11.

(3) For connection to ArmorBlock Guard I/O. With a 5-pin micro (M12) connector, not all contacts are connected. See [Typical Wiring Diagrams](#) on page 11.

Table 5 - Connector Ratings

	Max Ratings		Applicable Standards
	AC	DC	
4-Pin Micro (M12)	250V, 4 A	250V, 4 A	IEC 61076-2-101:2003
5-pin Micro (M12)	60V, 4 A	60V, 4 A	IEC 61076-2-101:2003
8-Pin Micro (M12)	30V, 2 A	30V, 2 A	IEC 61076-2-101:2003
12-Pin M23	63V, 6 A	63V, 6 A	IEC 61984:2001

Table 6 - Connection Systems

Description	5-pin Micro (M12) ⁽¹⁾	8-Pin Micro (M12)	12-Pin M23
Cordset	—	889D-F8AB-x ⁽³⁾	889M-F12X9AE-x ⁽³⁾
Patchcord	889D-F5ACDM-y ⁽²⁾	889D-F8ABDM-y ⁽²⁾	889M-F12AHMU-z ⁽⁴⁾

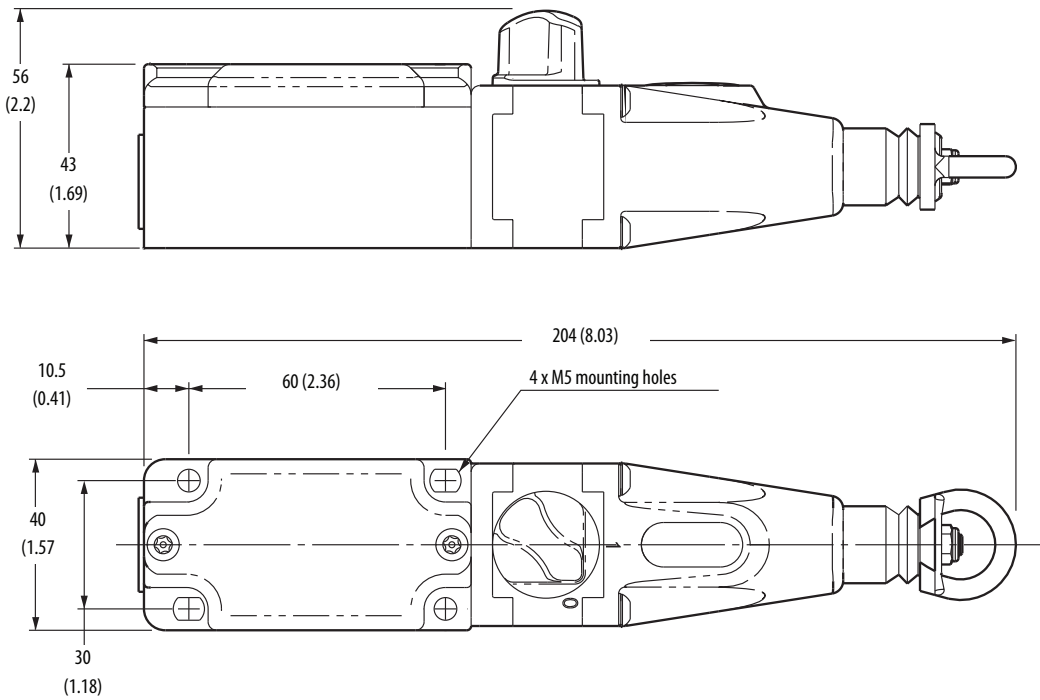
(1) To connect to ArmorBlock Guard I/O.

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

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

(4) Replace z with 0M3 (0.3 m), 0M6 (0.6 m), 1 (1 m), 2 (2 m) or 3 (3 m) for standard lengths.

Approximate Dimensions



Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes. 2D, 3D, and electrical drawings are available on <https://ab.rockwellautomation.com/>.

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 Cordset Pins 2, 5, and 11 are 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

Typical Wiring Diagrams (Continued)

Description		2 N.C. & 2 N.O.	3 N.C. & 1 N.O.
8-Pin Cordset 889D-F8AB-x ⁽¹⁾	Grey Red	Safety A	
	Yellow Pink	Safety B	
	White Blue	Aux A	
	Green	Ground	
	Brown	Not Used	
12-Pin Cordset 889M-F12X9AE-y ⁽²⁾	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

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

(2) Replace y with 0F5 (0.5 ft) or 1F (1 ft) for standard cable lengths.

Lifeline 4

The Lifeline 4 cable/push button operated system can be installed along or around awkward machinery such as conveyors and provide a constant emergency stop access.

The Lifeline 4 is the only device of its kind to incorporate the following features in one unit, which makes it the most versatile cable switch on the market.

It is recommended that the LRTS used with the Lifeline 4 cable rope switch.



Standard Model
75 m (246 ft)

Extended Length Model
75...125 m (146...410 ft)

Features

- 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.
- A mushroom head emergency stop button is included on the unit to provide E-stop access even at the extreme ends of the span.
- The cable status indicator makes the system easy to build and maintain for spans up to 125 m (410 ft).
- Four sets of contacts are provided: 2 N.C. + 2 N.O. or 3 N.O. + 1 N.O. contacts.
- Sealed to IP66 with rugged construction using die-cast alloy and stainless steel to withstand harsh conditions.
- Universal mounting and operation
- Switch lockout on cable pulled and cable slack
- Cable status indicator on switch lid

Specifications

Attribute	Value	
Safety ratings		
Standards	IEC 60947-5-5, ISO 13850, IEC 60947-5-1 Emergency stop device in accordance with ISO 13850	
Functional safety data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf	
Certifications	c-UL-us Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page	
Outputs		
Safety contacts ^{(1) (2)}	2 N.C. direct-opening action	3 N.C. direct-opening action
Auxiliary contacts ⁽²⁾	2 N.O. direct-opening action	1 N.O. direct-opening action
Thermal current/ I_{th}	10 A	
Rated insulation voltage (Ui)	500V	
Switching current @ voltage, min	3 mA @ 18V DC	

Attribute	Value			
Utilization category				
A600/AC-15 (Ue)	600V	500V	240V	120V
A600/AC-15 (Ie)	1.2 A	1.4 A	3.0 A	6.0 A
DC-13 (Ue)	24V			
DC-13 (Ie)	2 A			
Operating characteristics				
Cable span between switches, max	Standard model 75 m (246 ft), Extended length model 75 . . . 125 m (146 . . . 410 ft)			
Tensioning force to run position	103 N (23.17 lbf) typical 6			
Tensioning force to lockout	188 N (42.3 lbf) typical			
Operating force, min	<125 N (28.1 lbf) at 300 mm deflection			
Actuation frequency, max	1 cycle/s			
Mechanical life	1,000,000 operations			
Environmental				
Enclosure type rating	IP66			
Operating temperature	-25 . . . +80 °C (-13 . . . +176 °F)			
Physical characteristics				
Housing material	Heavy-duty painted zinc-based die-cast alloy (LM24)			
Indicator material	Glass-filled nylon			
Eye nut material	Stainless steel			
Weight [g (lb)]	630 (1.38)			
Color	Yellow body, blue reset button			

- (1) The safety contacts are described as normally closed (N.C.) that is, with the guard closed, actuator in place (where relevant) and the machine able to be started.
- (2) See [Product Selection](#) on page 15.

Product Selection

Cable Span	Safety Contacts	Auxiliary Contacts	Cat. No.				
			Conduits		Connectors ⁽¹⁾		
			M20	1/2 inch NPT	12-Pin M23	8-Pin Micro (M12) ⁽²⁾	Connect to ArmorBlock Guard I/O 5-pin Micro (M12) ⁽³⁾
75 m (246 ft)	2 N.C.	2 N.O.	440E-L13137	440E-L13133	440E-L13140	440E-L21BNYH	440E-L2NNNYS
	3 N.C.	1 N.O.	440E-L13042	440E-L13043	440E-L13141	—	—
75...125 m (146...410 ft)	2 N.C.	2 N.O.	440E-L13153	440E-L13155	440E-L13163	440E-L21BTYH	—
	3 N.C.	1 N.O.	440E-L13150	440E-L13152	440E-L13164	—	—

(1) For connector ratings, see [Table 5](#).

(2) With an 8-pin micro (M12) connector, not all contacts are connected. See [Typical Wiring Diagrams](#) on page 17.

(3) For connection to ArmorBlock Guard I/O. With a 5-pin micro (M12) connector, not all contacts are connected. See [Typical Wiring Diagrams](#) on page 17.

Table 7 - Connection Systems

Description	5-pin Micro (M12)	8-Pin Micro (M12)	12-Pin M23
Cordset	—	889D-F8AB-w ⁽²⁾	889M-F12X9AE-w ⁽²⁾
Patchcord	889D-F5ACDM-x ⁽¹⁾	889D-F8ABDM-y ⁽³⁾	889M-F12AHMU-z ⁽⁴⁾

(1) Replace x with OM3 (0.3 m), 1 (1 m), 2 (2 m), 3 (3 m), 5 (5 m), or 10 (10 m) for standard lengths.

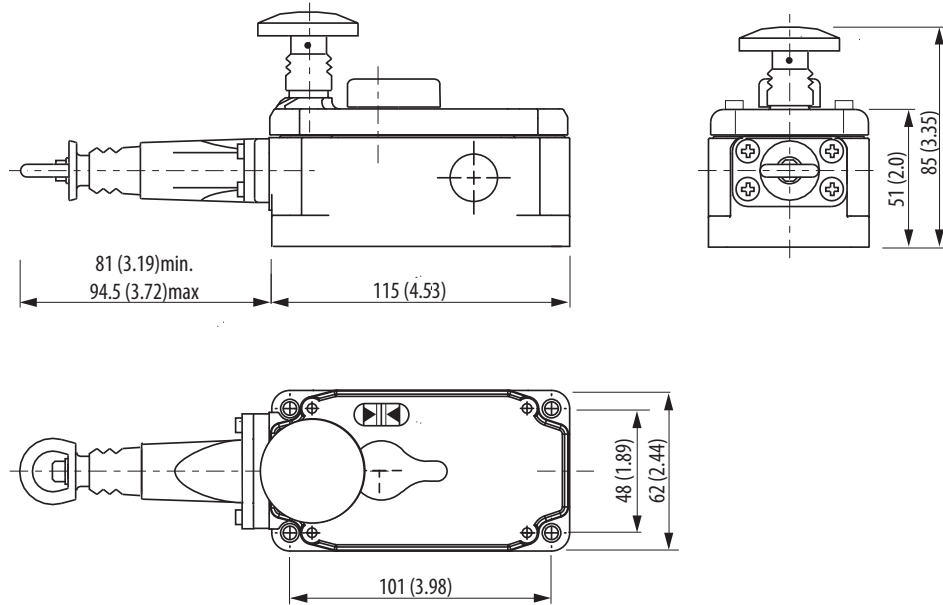
(2) Replace w with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.

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

(4) Replace z with OM3 (0.3 m), OM6 (0.6 m), 1 (1 m), 2 (2 m), or 3 (3 m) for standard cable lengths.

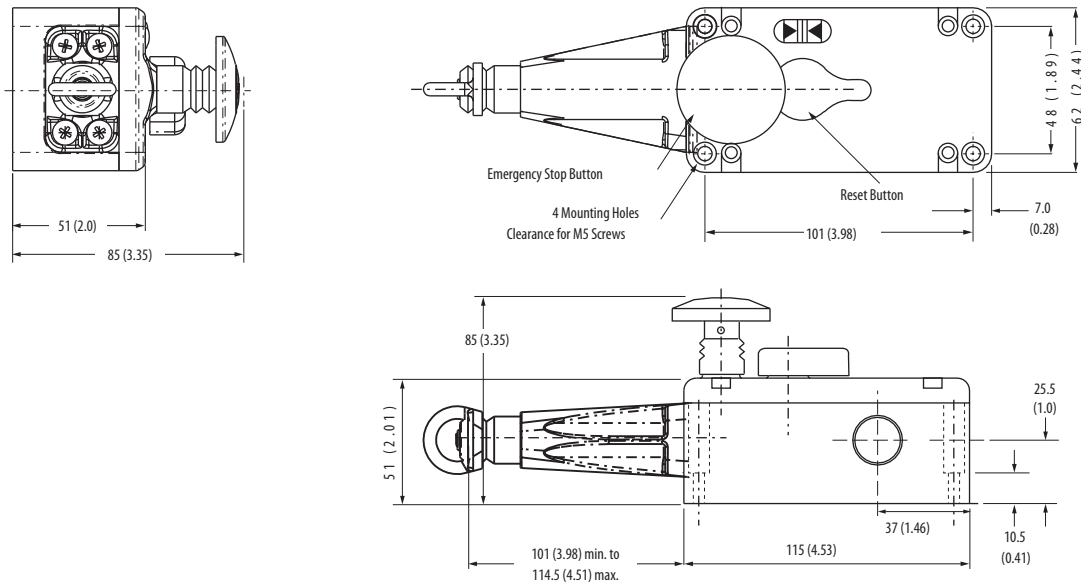
Approximate Dimensions

Figure 3 - Approximate Dimensions: Standard Model



Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes. 2D, 3D, and electrical drawings are available on <https://ab.rockwellautomation.com/>.

Figure 4 - Approximate Dimensions: Extended Length Models (75...125 m cable span)



Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes. 2D, 3D, and electrical drawings are available on <https://ab.rockwellautomation.com/>.

Typical Wiring Diagrams

Description		2 N.C. & 2 N.O.	3 N.C. & 1 N.O.
Contact Configuration			
Contact Action □ Open ■ Closed			
8-Pin Micro (M12)			—
12-Pin Cordset Pins 2, 5, and 11 are 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
5-pin Micro for ArmorBlock Guard I/O			—

Typical Wiring Diagrams (Continued)

Description		2 N.C. & 2 N.O.	3 N.C. & 1 N.O.
8-Pin Cordset 889D-F8AB-x ⁽¹⁾	Grey Red	Safety A	—
	Yellow Pink	Safety B	—
	White Blue	Aux A	—
	Green	Ground	—
	Brown	Not Used	—
12-Pin Cordset 889M-F12X9AE-x ⁽¹⁾	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

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

Lifeline 4 Stainless Steel

The stainless steel Lifeline 4 cable/push button operated system can be installed along or around awkward machinery such as conveyors and provide a constant emergency stop access. This switch is made from stainless steel 316 and is suitable for external use, applications where there are hygiene requirements and other situations where a level of corrosion resistance is required.

The Lifeline 4 switch is the only device of its kind to incorporate the following features in one unit making it the most versatile cable switch on the market.



Stainless Steel Switch
without E-stop

Stainless Steel Switch
with E-stop

Features

- 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.
- A mushroom head emergency stop button is included on the unit to provide E-stop access even at the extreme ends of the span.
- The cable status indicator makes the system easy to build and maintain for spans up to 75 m (246 ft).
- Four sets of contacts are provided: 2 N.C. + 2 N.O.
- Sealed to IP66 and IP69K with rugged construction that uses stainless steel 316 to withstand harsh conditions.
- Universal mounting and operation
- Switch lockout on cable pulled and cable slack
- Made from stainless steel 316
- IP69 environmental rating

It is recommended that the stainless steel installation kit be used with the stainless steel Lifeline 4 because it is made of suitable materials for harsh conditions.

Specifications

Attribute	Value
Safety Ratings	
Standards	IEC 60947-5-5, ISO 13850, IEC 60947-5-1 Emergency stop device in accordance with ISO 13850
Functional safety data	Visit http://literature.rockwellautomation.com/idc/groups/literature/documents/sr/safety-sr001_-en-e.pdf
Certifications	c-UL-us Listed, TÜV Certified, and CE Marked for all applicable directives www.rockwellautomation.com/certification/overview.page
Outputs	
Safety contacts ⁽¹⁾	2 N.C. direct-opening action
Auxiliary contacts	2 N.O.
Thermal current/ I_{th}	10 A
Rated insulation voltage (Ui)	500V
Switching current @ voltage, min	3 mA @ 18V DC
Utilization category	
A600/AC-15 (Ue)	600V 500V 240V 120V

Attribute	Value			
A600/AC-15 (le)	1.2 A	1.4 A	3.0 A	6.0 A
DC-13 (Ue)	24V			
DC-13 (le)	2 A			
Operating characteristics				
Cable span between switches, max	75 m (246 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			
Mechanical life	1,000,000 operations			
Environmental				
Enclosure type rating	IP66, IP67, IP69K			
Operating temperature	-25...+80 °C (-13...+176 °F)			
Physical characteristics				
Housing material	Stainless steel 316			
Indicator material	Acetal			
Eye nut material	Stainless steel			
Weight [g (lb)]	1442 (3.17)			
Color	Unpainted metal			

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

Product Selection

E-stop	Safety Contacts	Auxiliary Contacts	Cat. No.		
			Conduits		Connectors ⁽¹⁾
			M20	1/2 inch NPT	12-Pin M23
Yes	2 N.C.	2 N.O.	440E-L22BNSM	440E-L22BNST	440E-L22BNSL
No			440E-L22BNSMNH	440E-L22BNSR	—

(1) For connector ratings, see [Table 5](#).

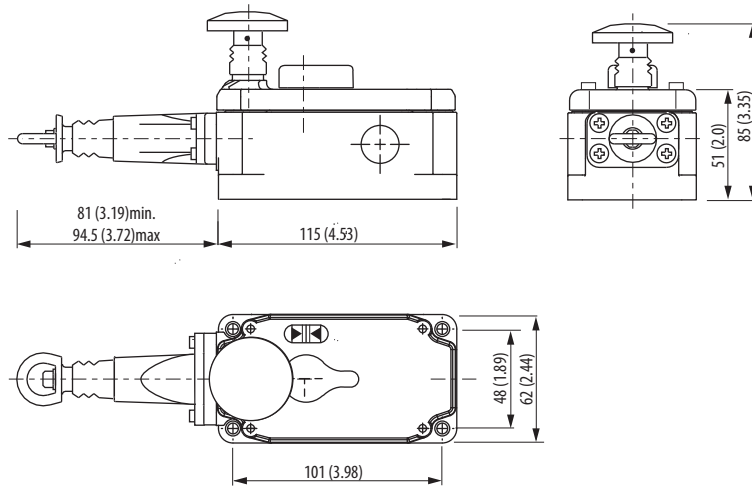
Table 8 - Connection Systems

Description	12-Pin M23
Cordset	889M-F12X9AE-w ⁽¹⁾
Patchcord	889M-F12AHMU-z ⁽²⁾

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

(2) Replace z with 0M3 (0.3 m), 0M6 (0.6 m), 1 (1 m), 2 (2 m), or 3 (3 m) for standard cable lengths.

Approximate Dimensions: Standard Model

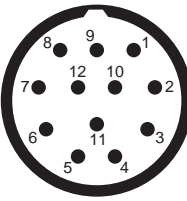


Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes. 2D, 3D, and electrical drawings are available on <https://ab.rockwellautomation.com/>.

Typical Wiring Diagrams

Description	2 N.C. & 2 N.O.																																			
Contact Configuration	<p>Wiring diagram showing terminal connections for Safety A, Safety B, Aux B, and Aux A. The diagram includes a pull switch mechanism with four sets of contacts labeled 11-12, 21-22, 33-34, and 43-44. Safety A and Safety B are normally closed (N.C.) contacts, while Aux B and Aux A are normally open (N.O.) contacts.</p>																																			
Contact Action □ Open ■ Closed	<p>Contact action matrix showing the state of Safety A, Safety B, Aux A, and Aux B contacts at different cable slack and tension levels. The matrix is defined by cable slack (0 mm, 3.5 mm, 6 mm, 9 mm, 12.5 mm, 13.5 mm) and contact action (Open/Closed).</p> <table border="1"> <thead> <tr> <th></th> <th>0 mm</th> <th>3.5</th> <th>6</th> <th>9</th> <th>12.5</th> <th>13.5</th> </tr> </thead> <tbody> <tr> <td>Safety A</td> <td>Open</td> <td>Closed</td> <td>Closed</td> <td>Closed</td> <td>Closed</td> <td>Open</td> </tr> <tr> <td>Safety B</td> <td>Open</td> <td>Closed</td> <td>Closed</td> <td>Closed</td> <td>Closed</td> <td>Open</td> </tr> <tr> <td>Aux A</td> <td>Open</td> <td>Open</td> <td>Open</td> <td>Open</td> <td>Open</td> <td>Open</td> </tr> <tr> <td>Aux B</td> <td>Open</td> <td>Open</td> <td>Open</td> <td>Open</td> <td>Open</td> <td>Open</td> </tr> </tbody> </table> <p>Labels for Cable Slack Lockout, Cable Tension Range, and Cable Pulled Lockout are shown below the matrix.</p>		0 mm	3.5	6	9	12.5	13.5	Safety A	Open	Closed	Closed	Closed	Closed	Open	Safety B	Open	Closed	Closed	Closed	Closed	Open	Aux A	Open	Open	Open	Open	Open	Open	Aux B	Open	Open	Open	Open	Open	Open
	0 mm	3.5	6	9	12.5	13.5																														
Safety A	Open	Closed	Closed	Closed	Closed	Open																														
Safety B	Open	Closed	Closed	Closed	Closed	Open																														
Aux A	Open	Open	Open	Open	Open	Open																														
Aux B	Open	Open	Open	Open	Open	Open																														

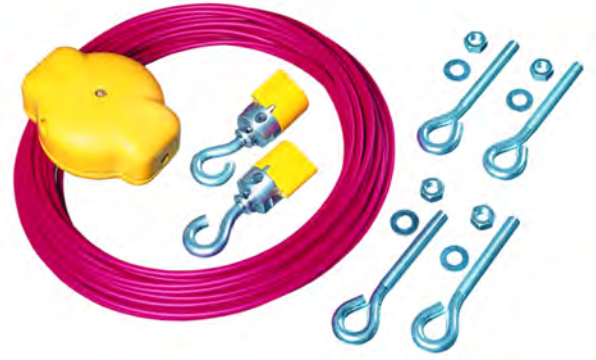
Typical Wiring Diagrams (Continued)

Description	2 N.C. & 2 N.O.	
 <p data-bbox="152 537 337 588">Pins 2, 5, and 11 are not connected.</p>	1-3	Safety A
	4-6	Safety B
	7-8	Aux A
	9-10	Aux B
	12	Ground
<p data-bbox="152 743 298 793">12-Pin Cordset 889M-F12X9AE-x⁽¹⁾</p>	Brown Blue	Safety A
	White Green	Safety B
	Yellow Grey	Aux A
	Pink Red	Aux B
	Green/ Yellow	Ground

(1) Replace x with 0F5 (0.5 ft) or 1F (1 ft) for standard cable lengths.

Lifeline Rope Tensioner System

The Lifeline Rope Tensioner System (LRTS) is a unique cable (rope) tensioning system, which enables quick installation of cable actuated systems. Other methods are usually time consuming and sometimes awkward to fit.



Features







- Cable adjustment up to 300 mm (11.8 in.), (150 mm (5.9 in.) on either side of tensioner)
- Quick thread and grip of cable with cable grip
- Cable tidy incorporated into the cable grips
- Simple tensioning via the tensioner with Allen key
- Can be installed and commissioned in approximately 3 minutes
- Ease of installation, no specialty tools required

Due to the appeal of quick installation and universal use, the LRTS can also be used for applications other than cable actuated emergency stop systems.

Specifications

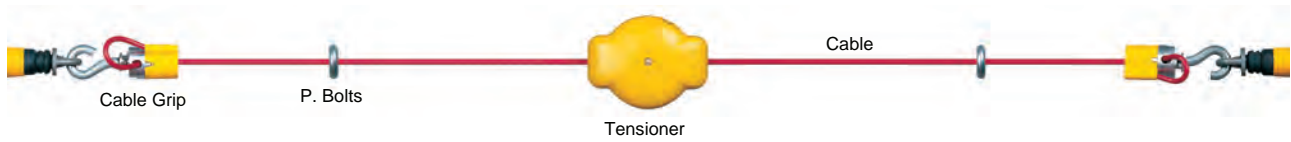
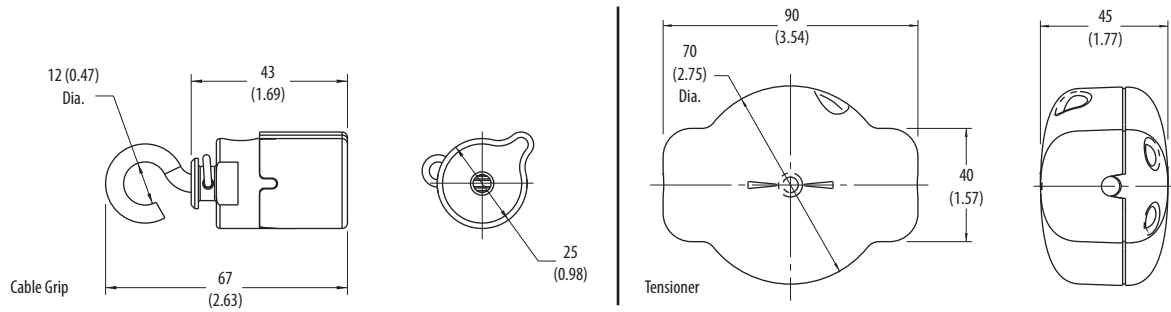
Attribute	Value
Material	
Tensioner	Glass-filled nylon
Cable gripper	Acetal, zinc alloy, stainless steel
Cable gripper gears	Stainless steel
Cable	Cable to BS 302:1987, wire Ø4.0, Steel Core with polypropylene sheath
P. Bolt	Stainless steel
Color	
Tensioner	Yellow
Cable gripper	Yellow/natural
Cable	Red
P. Bolt	Natural
Weight [g (lb)]	
Tensioner	140 (0.31)
Cable gripper	80 (0.17)
Operating temperature	-25...+80 °C (-13...+176 °F)
Cable O.D.	4 mm (0.15 in.)
Cable adjustment range, max	300 mm (11.8 in.)
Tensioner holding force, max	500 N (112.5 lbf)
Gripper holding force, Max	280 N (63.0 lbf)
Enclosure type rating	IP30
Tensioner adjustment tool	5 mm (.20 in.)A/F Allen key

Product Selection

Description	No. of P-Bolts	Cat. No.
	Installation Kit—5 m (16.4 ft)	3 440E-A13079
	Installation Kit—10 m (32.8 ft)	6 440E-A13080
	Installation Kit—15 m (49.2 ft)	8 440E-A13081
	Installation Kit—20 m (65.6 ft)	10 440E-A13082
	Installation Kit—30 m (98.4 ft)	14 440E-A13083
	Installation Kit—50 m (164 ft)	22 440E-A13084
	Installation Kit—75 m (246 ft)	32 440E-A13085
	Lifeline tensioner and hex key only 440E-A17105	
	Lifeline gripper two pack 440E-A17107	
	Lifeline gripper 20 pack 440E-A17106	
	Lifeline tensioner, two grippers and Allen wrench 440E-A17112	
	Two Lifeline tensioners, two grippers and Allen wrench 440E-A17140	
 <p data-bbox="386 1423 457 1449">Red Cable</p>	Polypropylene covered steel cable	
	15 m (49.2 ft)	440E-A17026
	30 m (98.4 ft)	440E-A17027
	100 m (328 ft)	440E-A17028
	125 m (410 ft)	440E-A17129
	300 m (984 ft)	440E-A17095
	500 m (1640 ft)	440E-A17032
	UV resistant polypropylene covered steel cable	
100 m (328 ft)	440E-A14739	
300 m (984 ft)	440E-A14740	

A stainless steel tensioner kit is available for use with the Lifeline 4 Stainless Steel, see [Lifeline Rope Tensioner System](#).













Approximate Dimensions



Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.
 2D, 3D, and electrical drawings are available on <https://ab.rockwellautomation.com/>.

Accessories

	Description	Cat. No.
Lifeline 5		
	Steel Replacement Spring	440E-ASPRING
	Stainless Steel Replacement Spring	440E-ASPRING-SS
Lifeline 3 and Lifeline 4		
	Lifeline P bolt M8 x 1.25 thread size, 60 mm (2.36 in.) threaded length, 12 mm (0.47 in.) diameter eye, 80 mm (3.15 in.) overall length, stainless steel	440E-A17191
	Lifeline eyebolt M8 x 1.25 thread size, 60 mm (2.36 in.) threaded length, 12 mm (0.47 in.) diameter eye, 75 mm (2.95 in.) overall length, mild steel	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

Description	Cat. No.
Lifeline 4 (additional accessories also used with Lifeline 3 listed previously)	
	Replacement cover for Lifeline 4 cable/push button 440E-A13054
	Replacement cover for Lifeline 4 cable/push button, no E-stop 440E-A17115
	Mounting bracket for Lifeline 4 cable/push button 440E-A17130
	Indicator, M20 Conduit Pilot Light—Amber Lens T-3 1/4 Insert Use T-3 1/4 Bulb (Sold Separately) 440A-A19001
	Indicator, 1/2 inch NPT Conduit Pilot Light—Amber Lens T-3 1/4 Insert Use T-3 1/4 Bulb (Sold Separately) 440A-A19005
	Indicator, M20 Conduit Pilot Light—Amber Lens Bayonet Style Insert Use LED Bulb (Sold Separately) 440A-A17124
	Indicator, 1/2in NPT Conduit Pilot Light—Amber Lens Bayonet Style Insert Use LED Bulb (Sold Separately) 440A-A17122
	Indicator, M20 Conduit Pilot Light—Red Lens T-3 1/4 Insert Use T-3 1/4 Bulb (Sold Separately) 440A-A19002
	Indicator, 1/2 inch NPT Conduit Pilot Light—Red Lens T-3 1/4 Insert Use T-3 1/4 Bulb (Sold Separately) 440A-A19007
	Indicator, M20 Conduit Pilot Light—Red Lens Bayonet Style Insert Use LED Bulb (Sold Separately) 440A-A17125
	Indicator, 1/2in NPT Conduit Pilot Light—Red Lens Bayonet Style Insert Use LED Bulb (Sold Separately) 440A-A17123
	Bulb, 24V for Conduit Pilot Light 2.8 W T-3 1/4 Bulb, Miniature Screw Base 440A-A09056
	Bulb, 110V for Conduit Pilot Light 2.6 W T-3 1/4 Bulb, Miniature Screw Base 440A-A09055
	Bulb, 240V for Conduit Pilot Light 0.75 W T-3 1/4 Bulb, Miniature Screw Base 440A-A09054
	Red LED Bulb, 24V AC/DC for Conduit Pilot Light Bayonet Style Insert 800T-N419R
	White LED Bulb, 24V AC/DC for Conduit Pilot Light Bayonet Style Insert 800T-N419W
	Red LED Bulb, 120V AC for Conduit Pilot Light Bayonet Style Insert 800T-N421R
	White LED Bulb, 120V AC for Conduit Pilot Light Bayonet Style Insert 800T-N421W

Description		Cat. No.
Lifeline 4 Stainless Steel		
 <p>Polypropylene Covered Steel Cable</p>	Stainless steel installation kit—5 m (16.4 ft)	4 eyebolts ⁽¹⁾ 440E-A13194
	Stainless steel installation kit—10 m (32.8 ft)	4 eyebolts 440E-A13195
	Stainless steel installation kit—15 m (49.2 ft)	7 eyebolts 440E-A13196
	Stainless steel installation kit—20 m (65.6 ft)	8 eyebolts 440E-A13197
	Stainless steel installation kit—30 m (98.4 ft)	12 eyebolts 440E-A13198
	Stainless steel installation kit—50 m (164 ft)	20 eyebolts 440E-A13199
	Stainless steel installation kit—75 m (246 ft)	30 eyebolts 440E-A13200
 <p>UV Resistant Polypropylene-Covered Steel Cable</p>	Stainless steel installation kit—5 m (16.4 ft)	4 eyebolts 440E-A13220
	Stainless steel installation kit—10 m (32.8 ft)	4 eyebolts 440E-A13221
	Stainless steel installation kit—15 m (49.2 ft)	7 eyebolts 440E-A13222
	Stainless steel installation kit—20 m (65.6 ft)	8 eyebolts 440E-A13223
	Stainless steel installation kit—30 m (98.4 ft)	12 eyebolts 440E-A13224
	Stainless steel installation kit—50 m (164 ft)	20 eyebolts 440E-A13225
	Stainless steel installation kit—75 m (246 ft)	30 eyebolts 440E-A13226
	Stainless steel turn buckle kit (no cable)	440E-A13227
	Lifeline 4 stainless steel P bolt, M8 x 1.25 thread size, 60 mm (2.36 in.) threaded length, 12 mm (0.47 in.) diameter eye, 80 mm (3.15 in.) overall length	440E-A17191
	Lifeline 4 stainless steel eye bolt, M8 x 1.25 thread size, 58 mm (2.28 in.) threaded length, 12 mm (0.47 in.) diameter eye, 75 mm (2.95 in.) overall length	440E-A13201
	Stainless steel 316 tensioner spring, 19 mm (0.75 in) diameter. 210 mm (8.27 in) overall length	440E-A13202
	Replacement Cover	440E-A13203
	Replacement cover no E-stop	440E-A13550
	Stainless steel 316 inside corner pulley	440E-A13205
	Stainless steel outside corner pulley	440E-A13206

(1) Installation Kits include the following parts: one rope, one turnbuckle tensioner, four thimbles, eight rope grips and eyebolts, nuts and washers depending on the length of the rope.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Cordsets and Field Attachables Technical Data, publication 889-TD002	Provides an overview of cordsets and field attachables that Rockwell Automation provides.
LifeLine 5 Cable-pull Safety Switch Installation Instructions, publication 440E-IN008D-EN-P	Provides general guidelines for installing LifeLine 5 Cable-pull Safety Switch.
Lifeline 4 Installation Instructions, publication 14753/1	Provides general guidelines for installing Lifeline 4 Cable-pull Safety Switch.
Stainless Steel Lifeline 4 Installation Instructions, publication 440E-IN004A-EN-P	Provides general guidelines for installing Lifeline 4 Stainless Steel Cable-pull Safety Switch.
Lifeline 4 Installation Instructions, publication 14585/9	Provides general guidelines for installing Lifeline 4 Cable-pull Safety Switch.
Dual Lifeline 4 Installation Instructions, publication 13870/8	Provides general guidelines for installing Dual Lifeline 4 Cable-pull Safety Switch.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at [rok.auto/literature](#).

Rockwell Automation Support

Use the following resources to access support information.

Technical Support Center	Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.	www.rockwellautomation.com/knowledgebase
Local Technical Support Phone Numbers	Locate the phone number for your country.	www.rockwellautomation.com/global/support/get-support-now.page
Direct Dial Codes	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	www.rockwellautomation.com/global/support/direct-dial.page
Literature Library	Installation Instructions, Manuals, Brochures, and Technical Data.	www.rockwellautomation.com/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	www.rockwellautomation.com/global/support/pcdc.page

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Rockwell Automation maintains current product environmental information on its website at rok.auto/pec.

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