

## Emergency Stop Devices

# Cable (Rope) Pull Switches

### Stainless Steel 316 Lifeline 4



### Description

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 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.

1. The positive mode mechanism ensures 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. A mushroom head emergency stop button is included on the unit to provide E-Stop access even at the extreme ends of the span.
3. The cable status indicator makes the system easy to set up and maintain for spans up to 75 meters.
4. Four sets of contacts are provided: 2 N.C. + 2 N.O.
5. Sealed to IP 66 and IP67 with rugged construction using stainless steel 316 to withstand harsh conditions.

### Features

- Switches up to 75m (246ft) span
- Universal mounting and operation
- Lid mounted emergency stop button, designed to conform to EN418
- Switch lockout on cable pulled and cable slack
- Cable status indicator on switch lid
- Made from stainless steel 316

### Specifications

Standards	EN60947-5-5, ISO13850, ISOTR 12100, IEC 60947-5-1, EN 418
Approvals	CE marked for all applicable directive, cULus and TUV
Safety Contact	2 N.C. direct opening action
Designation/Utilization Cat.	
A600/AC-15 (Ue) (Ie)	600V 500V 240V 120V 1.2A 1.4A 3A 6A
N600/DC-13 (Ue) (Ie)	600V 500V 250V 125V 0.4A 0.55A 1.1A 2.2A
Thermal Current (Ith)	10A
Minimum Current	5V 5mA
Safety Contact Gap	>2 x 2mm (0.078in)
Rtd. Insulation Voltage	(Ui) 500V
Rtd. Impulse withstand Voltage	(Uimp) 2500V
Pollution Degree	3
Max. Actuation Frequency	1 Cycle per sec
Case Material	Stainless steel 316
Eye Nut Material	Stainless Steel
Emergency Stop & Indicator Material	Acetal
Protection	IP66/IP67
Conduit Entry	3 x M20, 3 x 1/2in NPT, quick-disconnect style
Operating Temperature	-25°C to 80°C (-13°F to 176°F)
Operation Force	<125N (300mm deflection; 28.1lb deflection)
Max Cable Span Between Switches	75m (246ft)
Fixing	4 x M5
Mounting	Any position
Mechanical Life	1,000,000
Weight	1442g (3.17lb)
Colour	Unpainted metal

**Important:** It is recommended that the stainless steel installation kit should be used with the stainless steel Lifeline 4 as it is made of suitable materials for harsh conditions.

#### Lid mounted E-Stop button

A mushroom head emergency stop button is included on the unit to provide total E-Stop access even at the extreme ends of the span.



#### Cable status indicator on lid

The cable status indicator makes the system easy to setup and maintain for spans up to 75m (246ft).




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### Product Selection

Cable Span	Safety Contacts	Auxiliary Contacts	Catalogue Number		
			1/2in NPT Conduit	M20 Conduit	Quick Disconnect
Up to 75m	2 N.C.	2 N.O.	440E-L22BNST	440E-L22BNSM	440E-L22BNSL
	Recommended Standard Cable Connector/Cordset (2m (6.5ft) (see page 15-13).				889M-F12X9AE-2

### Accessories

Description	Material	Catalogue Number
	Stainless steel installation kit—5m (16.4ft)	440E-A13194
	Stainless steel installation kit—10m (32.8ft)	440E-A13195
	Stainless steel installation kit—15m (49.2ft)	440E-A13196
	Stainless steel installation kit—20m (65.6ft)	440E-A13197
	Stainless steel installation kit—30m (98.4ft)	440E-A13198
	Stainless steel installation kit—50m (164ft)	440E-A13199
	Stainless steel installation kit—75m (264ft)	440E-A13200
	Eye Bolt complete M8 x 1.25 Thread Size 58mm (2.28in) Threaded Length 12mm (0.47in) Dia. Eye 95mm (3.74in) Overall Length	Stainless steel 304 440E-A13201
	Tensioner spring 19mm (0.75in) Diameter 210mm (8.27in) Overall Length	Stainless steel 316 440E-A13202
	Replacement cover	Stainless steel 316 440E-A13203
	Replacement cover no E-Stop	Stainless steel 316 440E-A13204
	Inside corner pulley	Stainless steel 316 440E-A13205
	Outside corner pulley	Stainless Steel 304 440E-A13206

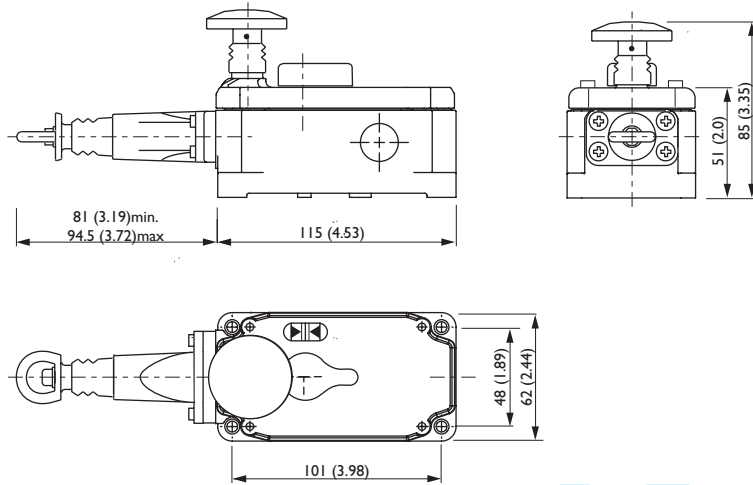
#### Notes:

**Installation Kits** include the following parts: 1 x rope, 1 x turnbuckle tensioner, 4 x thimbles, 8 x rope grips and eyebolts, nuts and washers depending on the length of the rope.

**Indicator Lamps** that are suitable for the standard Lifeline 4 are also suitable for the Stainless Steel Lifeline.

**Approximate Dimensions—mm (inches)**

Dimensions are not intended to be used for installation purposes.

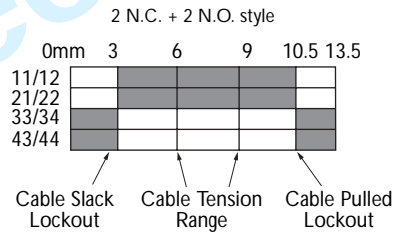


**Typical Wiring Diagrams**

Connector Pinout		2 N.C. + 2 N.O.	
		Terminal	Contact
	1	11	N.C.
	3	12	N.C.
	4	21	N.C.
	6	22	N.C.
	7	33	N.O.
	8	34	N.O.
	9	43	N.O.
	10	44	N.O.
	12	Ground	

**Contact Action**

Contact Open    Contact Closed



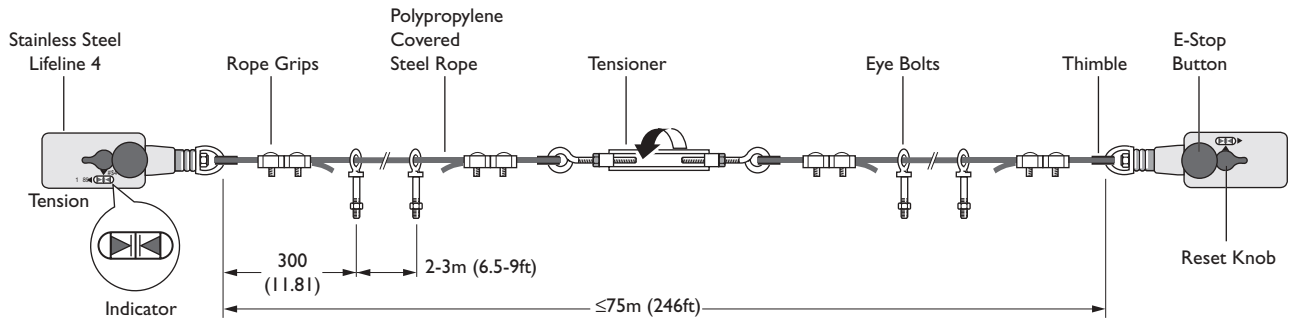
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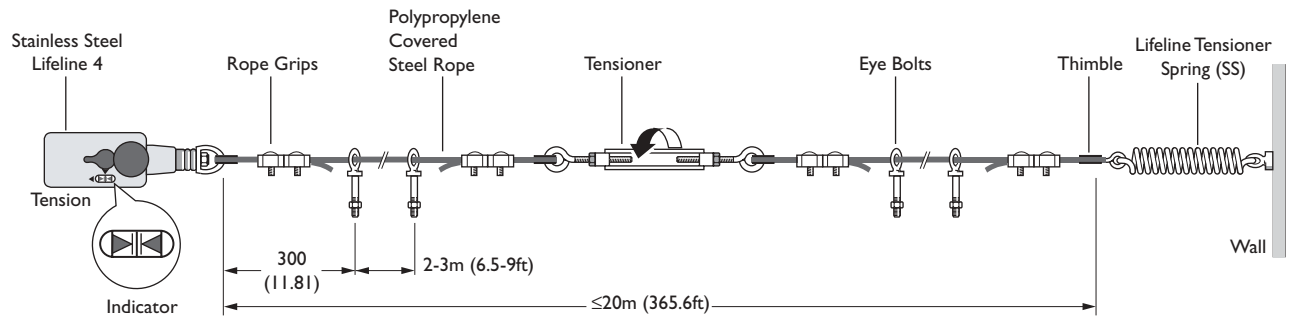
### Stainless Steel 316 Lifeline 4

#### Application Detail—mm (inches)

#### Mounting Specifications



#### Mounting Specifications with Spring Tensioner



#### Notes:

1. The first and last **eyebolt** must be located as close as possible to the switch eyelet while maintaining adequate clearance (300mm/11.8in) from the cable grips to allow free movement. This ensures a straight and efficient pulling action on the switches.
2. Additional **eyebolts**, spaced 2-3m (6-9ft) apart, help keep the perpendicular pull force, F, and distance, d, within IEC60947-5-5 specifications of 200N (45lbs) and 400mm (15.75in).
3. We recommend using a switch at both cable ends, especially in applications with long cable runs or cable runs going around bends. This helps ensure that the safety function is fulfilled upon actuation of the cable in any direction.
4. ISO13850 (EN418) requires that the full length of cable to be within view when the reset is turned to the run position or the machine must be inspected over the whole length of the cable, both before and after resetting.
5. On shorter cable runs (max 20m (65.6ft)), a Lifeline tensioner spring may be used at one end of the span. The installation must be such that the above requirements can be met. When a spring is used, the last **eyebolt** must be located as close as possible to the spring while maintaining adequate clearance (300mm/11.8in) from the cable grips to allow free movement. This is intended to help ensure that a pull near the end of the cable will be between **eyebolts**. This should result in operation of the switch contacts instead of only the spring moving.
6. Careful attention is required for the design of the installation to ensure that the cable is not likely to become trapped or snagged. This is especially important when using a tensioner spring because a cable snag between the location of the pull and the switch could prevent the actuation of the safety function.
7. It is essential that when the installation is complete, a thorough functional test is made. This should include checking all types and directions of pull over the length of the cable as well as checking for slack-cable tripping.