



Emergency Stop Devices

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Emergency stop ("E-stop") devices are wired to override all other machine controls and remove power from hazardous machine motion. Every machine with hazardous motion should be equipped with an E-stop push button and/or rope pull switch.

Emergency Stop Push Buttons (pages 293 to 296)



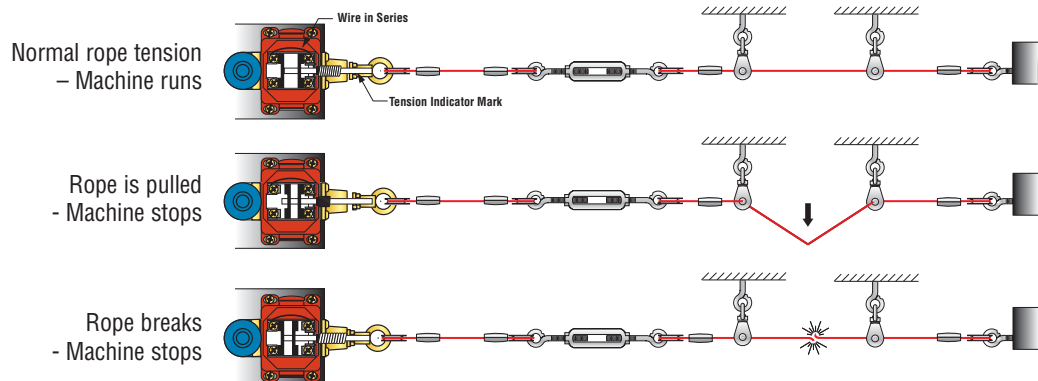
E-stop push buttons use a red, mushroom-style actuator against a yellow background, to distinguish them from other controls. They must be wired so that the machine motion does not restart, when they are reset. Refer to NFPA 79, ANSI/RIA R15.06, and ISO 13850 (EN 418) for additional E-stop design and application criteria.

Emergency Stop Rope Pull Switches (pages 279 to 292)

Emergency stop rope pull switches are used where E-stop control is required along long machines, such as conveyors.



Most models latch open when the rope is pulled, and require a manual reset. Like E-stop push buttons, E-stop rope pulls must be wired so that they do not restart the machine motion when they are reset. E-stop rope pull switches are also designed to stop machine motion when the rope (cable) is broken or becomes slack (see, below). More design and rope pull application information may be found in OSHA #29 CFR 1910.216, 261, 262, and 263.



New!



Emergency Stop Rope Pull Switches

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RP-LM40 Series Emergency Stop Rope Pull Switches



- Positive-opening safety contacts (IEC 60947-5-1), not dependent upon springs
- Standard limit switch housing (EN 50041)
- Heavy-duty diecast metal housing, rated IP65 and NEMA 4, suitable for demanding industrial environments
- Rope spans up to 6 m (20')
- Both contacts are closed with normal rope tension; one contact opens when rope is pulled, the other contact opens if rope breaks (or if tension is reduced from normal amount)
- Long life, switch rated at 1 million mechanical operations, minimum
- Two available models: trip and latch

NOTE: This symbol is used in the Switching Diagrams to identify the point in actuator travel where the normally-closed safety contact is fully open.

Emergency Stop Devices

RP-LM40 Series Emergency Stop Rope Pull Switches					
Models	Actuation	Run Position	Cable Pulled	Cable Break	Switching Diagram
RP-LM40D-6	Trip				
RP-LM40D-6L	Latch				

†Contacts: □ Open ■ Closed ▒ Transition

RP-LS42F-75 Series Emergency Stop Rope Pull Switches



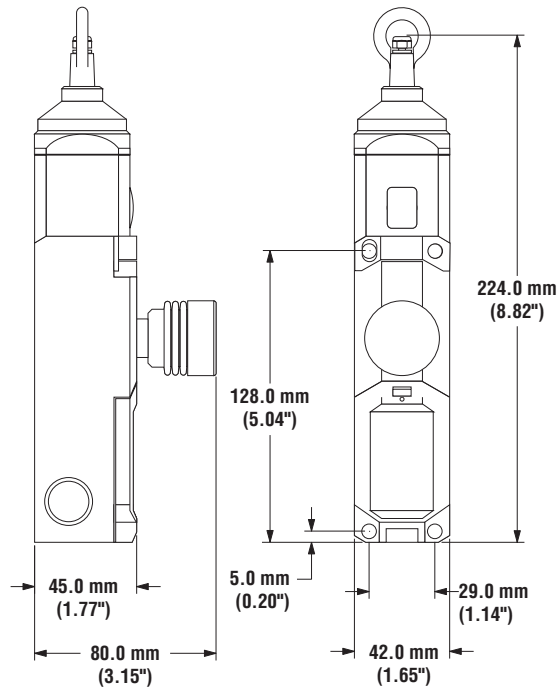
- Positive-opening safety contacts (IEC 60947-5-1), not dependent upon springs
- Contacts latch open when rope is pulled; requires manual reset
- Heavy-duty housing, rated IP67 and NEMA 4, suitable for demanding industrial environments
- Innovative design provides quick, easy rope fixing and tensioning on model RP-LS42F-75LE
- Rope spans up to 75 m (245')
- Both safety contacts are closed with normal rope tension, and open when rope is pulled or if rope breaks (or if tension is reduced from normal amount)
- Extra contacts for switch monitoring
- Indicator window on switch shows when rope has proper tension for operation
- Long life, switch rated at 1 million mechanical operations, minimum
- Two available models; one with E-stop button, both with latching outputs
- Insulated device (IEC 60947-5-1) on all models with plastic housings

NOTE: This symbol is used in the Switching Diagrams to identify the point in actuator travel where the normally-closed safety contact is fully open.

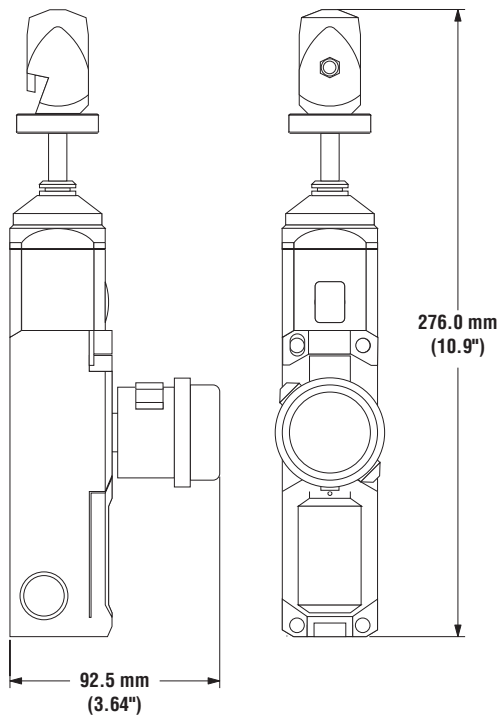
RP-LS42F-75L Series Emergency Stop Rope Pull Switches				
Models	Max. Rope Length	Run Position	Cable Pulled or Cable Break	Switching Diagram
RP-LS42F-75L RP-LS42F-75LE	75 m (245')			

†Contacts: Open Closed Transition

RP-LS42-75L Series Emergency Stop Rope Pull Switch Dimensions



RP-LS42-75LE Series Emergency Stop Rope Pull Switch Dimensions



RP-QM..72 Series Emergency Stop Rope Pull Switches



- Positive-opening safety contacts (IEC 60947-5-1), not dependent upon springs
- Contacts latch open when rope is pulled; requires manual reset
- Heavy-duty diecast metal housing, rated IP65 and NEMA 4, suitable for demanding industrial environments
- Rope spans up to 6 m, 12 m or 20 m (20', 40' or 66'), depending on model
- Both contacts are closed with normal rope tension; one contact opens when rope is pulled, the other contact opens if rope breaks (or if tension is reduced from normal amount)
- Some models include extra contacts for monitoring or to provide dual-channel input to a safety device
- Indicator mark on switch shows when rope has proper tension for operation
- Long life, switch rated at 1 million mechanical operations, minimum
- Five available models; all with latching outputs
- Protective Earth Terminal (IEC 60947-1)

NOTE: This symbol is used in the Switching Diagrams to identify the point in actuator travel where the normally-closed safety contact is fully open.

RP-QM..72 Series Emergency Stop Rope Pull Switches

Models	Max. Rope Length	Run Position	Cable Pulled	Cable Break	Switching Diagram
RP-QM72D-6L	6 m (20')				
RP-QM72D-12L	12 m (40')				

†Contacts: □ Open ■ Closed ▒ Transition

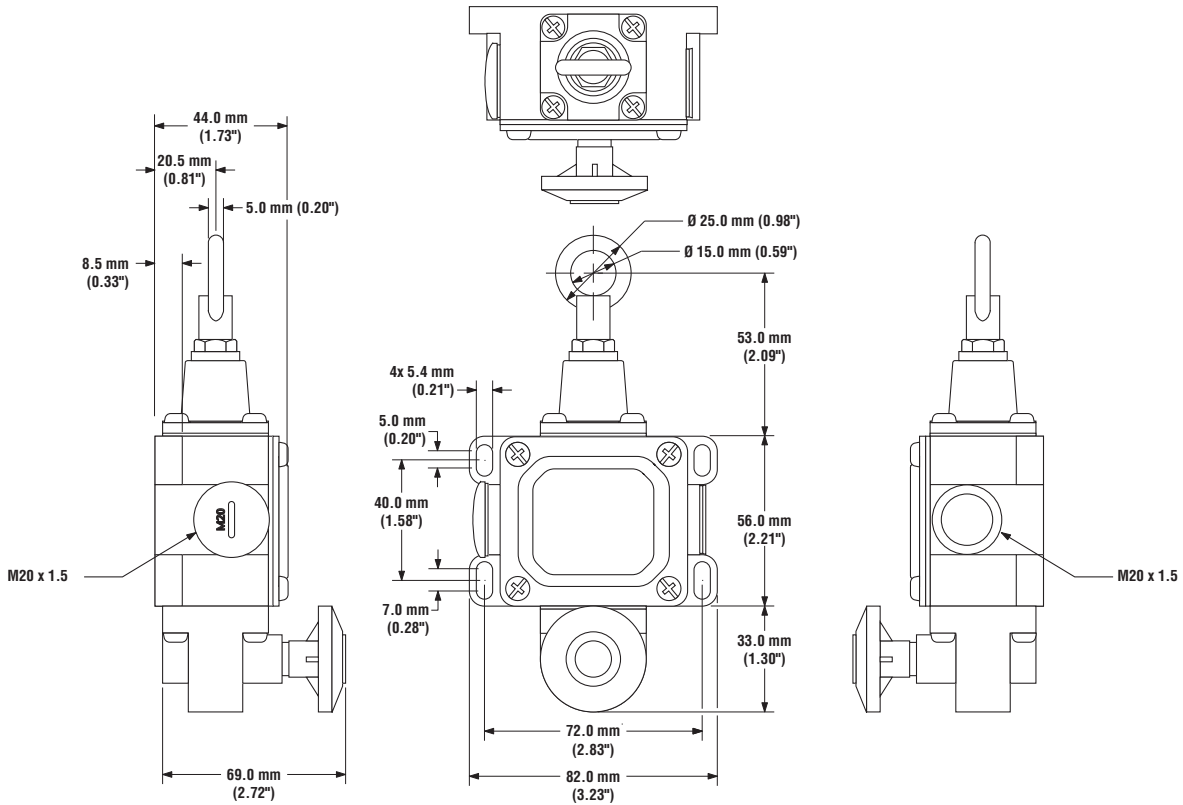
RP-QM..72 Series Emergency Stop Rope Pull Switches					
Model Number	Max. Rope Length	Run Position	Cable Pulled	Cable Break	Switching Diagram
RP-QMT72D-20L	20 m (65')				
RP-QMT72F-12L	12 m (40')				
RP-QMT72E-12L	12 m (40')				

*Contacts: □ Open ■ Closed ■ Transition

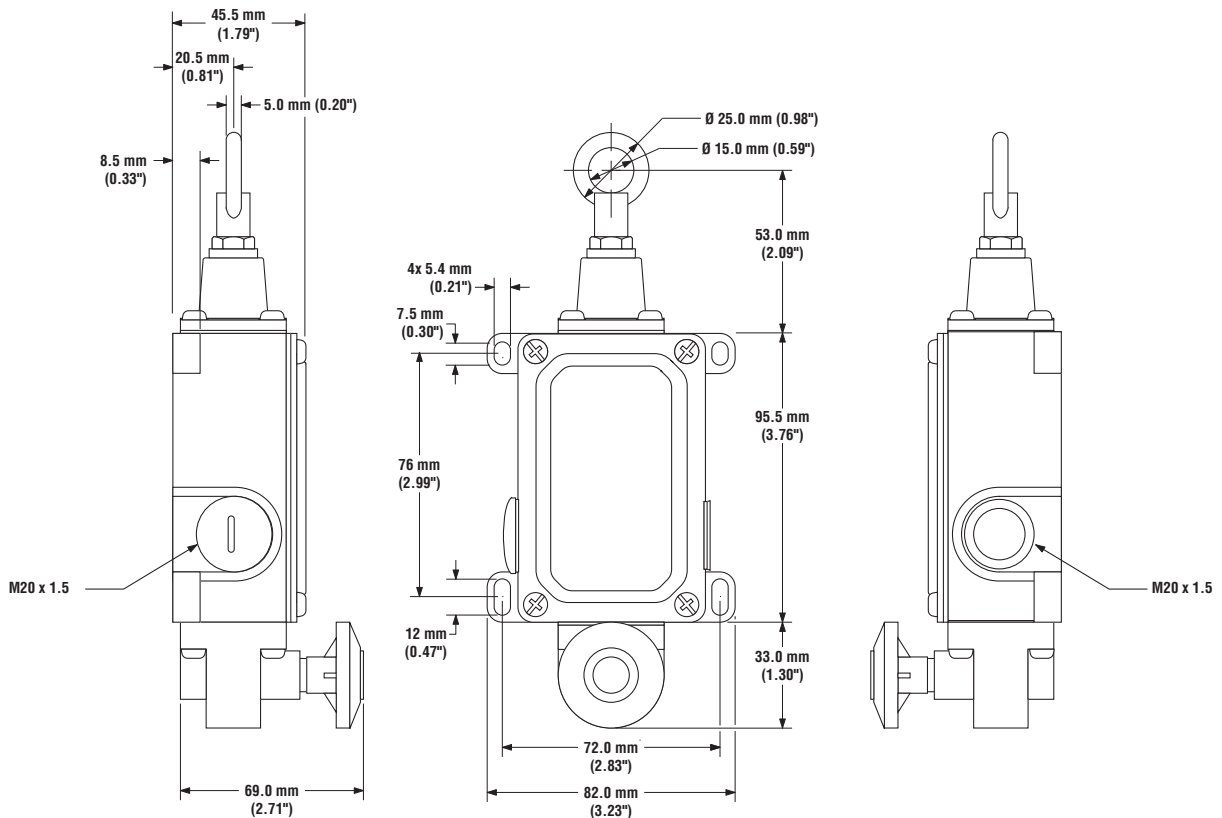
Emergency Stop Rope Pull Switches

72 mm Model Selection

RP-QM72D-6L/12L Series Emergency Stop Rope Pull Switch Dimensions



RP-QMT72DD-20L, RP-QMT72E-12L and RP-QMT72F-12L Series Emergency Stop Rope Pull Switch Dimensions



Emergency Stop Devices

Notes

RP-QM..90 Series Emergency Stop Rope Pull Switches



- Positive-opening safety contacts (IEC 60947-5-1), not dependent upon springs
- Contacts latch open when rope is pulled; requires manual reset
- Heavy-duty diecast metal housing, rated IP65 and NEMA 4, suitable for demanding industrial environments
- Rope spans up to 100 m (330'), with the switch mounted in the center of the span
- Both safety contacts are closed with normal rope tension; both contacts opens when rope is pulled, or if rope breaks (or if tension is reduced from normal amount)
- Extra contacts for switch monitoring
- Switch actuator position clearly indicates when rope has proper tension for operation
- Long life, switch rated at 1 million mechanical operations, minimum
- Protective Earth Terminal (IEC 60947-1)

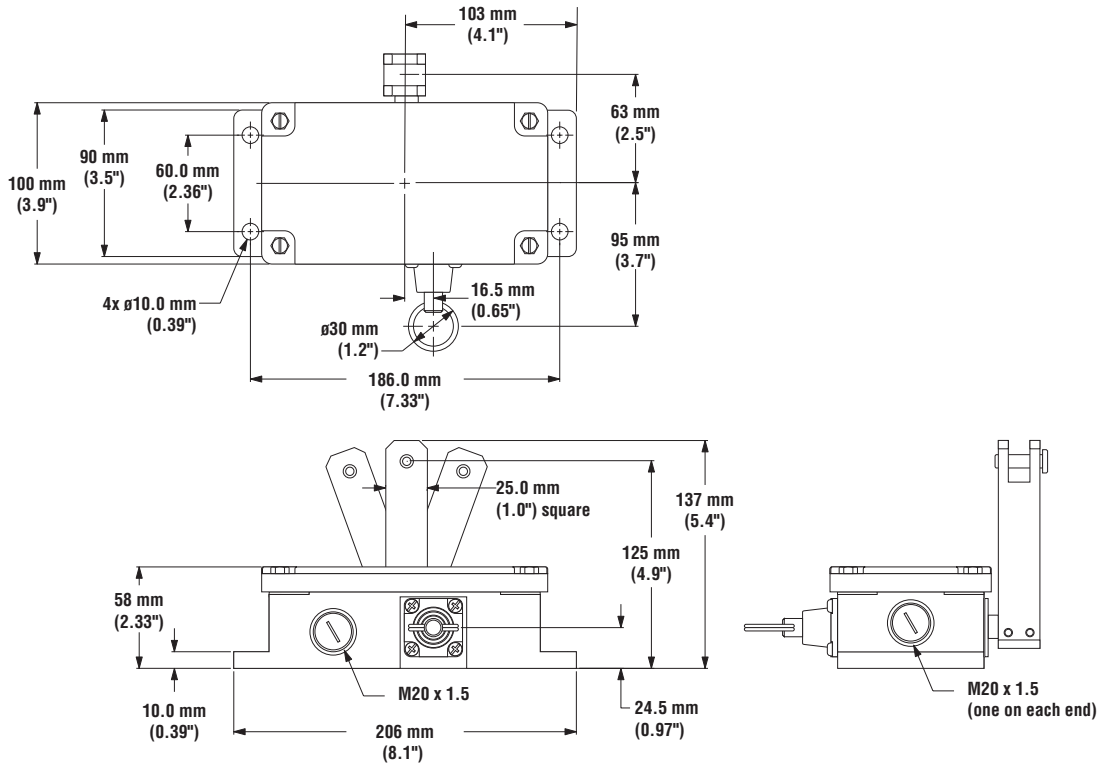
NOTE: This symbol for a positive opening safety contact (IEC 60947-5-1) is used in the Switching Diagrams to identify the point in actuator travel where the normally-closed safety contact is fully open.

RP-QM..90 Series Emergency Stop Rope Pull Switches

Models	Max. Rope Length	Run Position	Cable Pulled (either side)	Cable Break (either side)	Switching Diagram
RP-QM90F-100L	100 m (330')				




*Contacts: □ Open ■ Closed ▒ Transition

RP-QM..90 Series Emergency Stop Rope Pull Switch Dimensions



Emergency Stop Rope Pull Switches

Specifications

Emergency Stop Rope Pull Switch Specifications																			
Contact Rating	10A @ 24V ac, 10A @ 110V ac, 6A @ 230V ac 6A @ 24V dc 2.5 kV max. transient tolerance NEMA A300 P300																		
European Rating	Utilization categories: AC15 and DC13 $U_i = 500V$ ac $I_{th} = 10A$ <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3">40-60 Hz</th> </tr> <tr> <th>U_e</th> <th>$I_e/AC-15$</th> <th>$I_e/DC-13$</th> </tr> <tr> <th>V</th> <th>A</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>24</td> <td>10</td> <td>6</td> </tr> <tr> <td>110</td> <td>10</td> <td>1</td> </tr> <tr> <td>230</td> <td>6</td> <td>0.4</td> </tr> </tbody> </table>	40-60 Hz			U_e	$I_e/AC-15$	$I_e/DC-13$	V	A	A	24	10	6	110	10	1	230	6	0.4
40-60 Hz																			
U_e	$I_e/AC-15$	$I_e/DC-13$																	
V	A	A																	
24	10	6																	
110	10	1																	
230	6	0.4																	
Contact Material	Silver-nickel alloy																		
Maximum Switching Speed	50 operations per minute																		
Recommended Rope Size	40 mm Models: 2 mm diameter steel rope 42 mm & 72 mm Models: 3 mm diameter steel rope 90 mm Models: 4 mm diameter steel rope																		
Maximum Rope Pull Length	RP-LM40D-6(6L): 6 m (20') RP-QM72D-6L: 6 m (20') RP-QM72D-12L: 12 m (40') RP-QMT72D-20L: 20 m (65') RP-QMT72E-12L: 12 m (40') RP-QMT72F-12L: 12 m (40') RP-LS42-75L(75LE): 75 m (245') RP-QM90F-100L: 100 m (330'); equal lengths up to 50 m (165') on either side of switch																		
Short Circuit Protection	10 amp Slow Blow, 15 amp Fast Blow. Recommended external fusing or overload protection.																		
Mechanical Life	1 million operations																		
Wire Connections	Screw terminals with pressure plates accept the following wire sizes – Stranded and solid: 20 AWG (0.5 mm ²) to 16 AWG (1.5 mm ²) for one wire Stranded: 20 AWG (0.5 mm ²) to 18 AWG (1.0 mm ²) for two wires																		
Cable Entry	M20 x 1.5 threaded entrance Adapter supplied to convert M20 x 1.5 to 1/2" - 14 NPT threaded entrance																		
Construction	RP-LS42-75L(75LE): High impact thermoplastic housing; zinc die cast actuator All others: Aluminum alloy die cast																		
Environmental Rating	RP-LS42-75L(75LE): NEMA 4, IEC IP67 All other models: NEMA 4, IEC IP65																		
Operating Temperature	RP-LS42-75L(75LE): -25° to +70°C (-10° to +160°F) All other models: 30° to +80°C (-22° to +176°F)																		
Weight	RP-LM40D-6: 0.22 Kg (0.49 lbs) RP-LM40D-6L: 0.26 Kg (0.57 lbs) RP-QM72D-6L: 0.49 Kg (1.08 lbs) RP-QM72D-12L: 0.52 Kg (1.15 lbs) RP-QMT72D-20L, RP-QMT72E-12L and RP-QMT72F-12L : 0.64 Kg (1.41 lbs) RP-QMT72E-12L: 0.64 Kg (1.41 lbs) RP-LS42-75L: 0.48 Kg (1.05 lbs) RP-LS42-75LE: 0.65 Kg (1.43 lbs) RP-QM90F-100L: 3.8 Kg (8.4 lbs)																		
Certifications	  Except RP-LS42-75L/LE  Except RP-LS42-75L/LE																		

Components for Wire Rope Assembly			
Model	Package Quantity	Description	
RPA-C3-20 RPA-C3-100	20 m (66') 100 m (330')	4 mm steel wire rope with 0.5 mm red PVC jacket (unterminated)	
RPA-T3-4	4 pcs	Thimble for 4 mm wire rope	
RPA-CC3-4	4 pcs	Clamp for 4 mm wire rope	
RPA-TA2-1	1 pc	#5 Turnbuckle	
RPA-EB2-1	1 pc	5/16"-20 Eye bolt	
RPA-P1-1	1 pc	Pulley	
RPA-S1-1	1 pc	Tensioning Spring #1	
RPA-S2-1	1 pc	Tensioning Spring #2	

Emergency Stop Rope Pull Switches

Accessories

Cable Glands				
Model	Size	Used with Switch Models	For Cable Diameters	Dimensions
SI-QM-CGM20	M20 x 1.5 Metal	SI-QM100	5.0 to 12.0 mm (0.20" to 0.47")	
SI-QS-CGM20	M20 x 1.5 Plastic	SI-LS42	5.0 to 12.0 mm (0.20" to 0.47")	

Conduit Adapters				
Model	Size	Used with Switch Models	Thread Conversion	Dimensions
SI-QS-M20	1/2" - 14 NPT Plastic	31 mm, 83 mm and 100 mm limit switches with plastic housing	M20 x 1.5 to 1/2" - 14 NPT	
SI-QM-M20	1/2" - 14 NPT Metal	40 mm switches	M20 x 1.5 to 1/2" - 14 NPT	

Note: One conduit adapter is supplied with each switch.



Emergency Stop Push Buttons

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Emergency Stop Devices

Emergency Stop Push Buttons



- Choice of metal or plastic E-stop button
- Rugged modular construction for ease of assembly and installation
 - E-stop buttons attach to mounting adapter with a simple rotation
 - Up to four auxiliary contacts conveniently snap on to mounting adapter
 - Easily add enclosure to E-stop button, mounting adapter and auxiliary contacts using provided screws
- Maintained latch, twist-to-release function; mechanical latching ISO 13850 (EN 418) compliant
- Direct (positive) opening operation per IEC/EN 60947-5-1
- Choice of normally-open and/or normally closed contacts
- Kits available for easy selection and ordering

Emergency Stop Push Button Components		
Models	Description	Product
8-LP2T-B6644	22.5 mm plastic button* with mounting adapter (see Button Specifications on page 296 for more details)	
8-LM2T-B6644	22.5 mm metal button* (no mounting adapter)** (see Button Specifications on page 296 for more details)	
8-LM2T-AU120	Metal mounting adapter (see Button Specifications on page 296 for more details)	
8-LM2T-C01	N.C. positively-driven contact¹ (red) element (see Contact Specifications on page 296 for more details)	 8 LM2T C01 8 LM2T C10
8-LM2T-C10	N.O. auxiliary contact (green) element (see Contact Specifications on page 296 for more details)	
8-L2PP-1A5	One-button enclosure <ul style="list-style-type: none"> • Control stations have wire entry through the top or the bottom • 21.3 mm (0.84") entry diameter. • IP65 rating 	
8-LM2T-AU115	60 mm (2.4") diameter, non-adhesive plastic legend with "Emergency Stop" inscription	

* Twist to release, mechanical latching ISO 13850 (EN 418) compliant. Diameter 40 mm (1.6") (without mounting adapter).

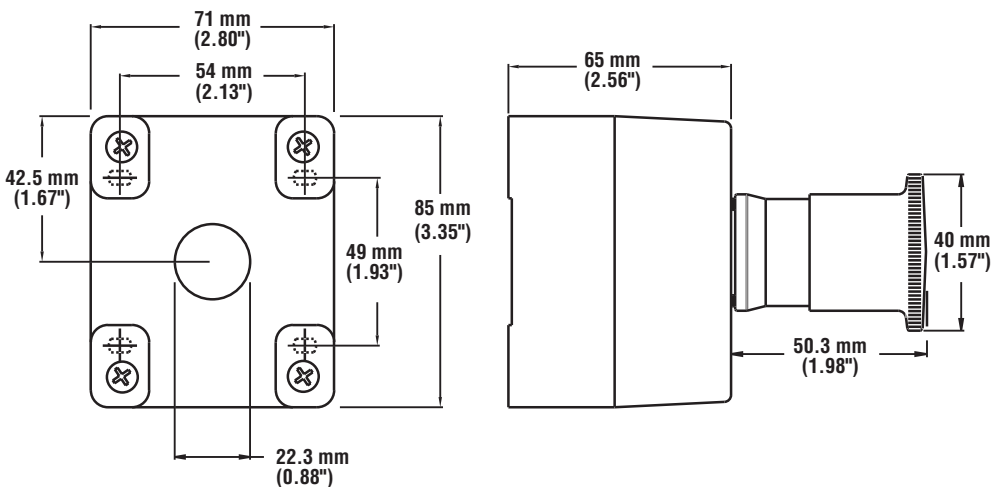
** Must purchase mounting adapter separately

¹ Direct (positive) opening operation per IEC/EN 60947-5-1

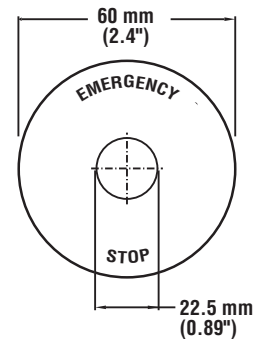
Emergency Stop Push Button Kits				
Models	E-Stop Button	Contacts	Enclosure	Legend
SSA-EBM-02L	Metal	2 N.C.	No	Yes
SSA-EBM-11L	Metal	1 N.C. & 1 N.O.	No	Yes
SSA-EBM-12L	Metal	2 N.C. & 1 N. O.	No	Yes
SSA-EBP-02L	Plastic	2 N.C.	No	Yes
SSA-EBP-11L	Plastic	1 N.C. & 1 N.O.	No	Yes
SSA-EBP-12L	Plastic	2 N.C. & 1 N. O.	No	Yes
SSA-EBM-02E	Metal	2 N.C.	Yes	No
SSA-EBM-11E	Metal	1 N.C. & 1 N.O.	Yes	No
SSA-EBM-12E	Metal	2 N.C. & 1 N. O.	Yes	No
SSA-EBP-02E	Plastic	2 N.C.	Yes	No
SSA-EBP-11E	Plastic	1 N.C. & 1 N.O.	Yes	No
SSA-EBP-12E	Plastic	2 N.C. & 1 N. O.	Yes	No

Emergency Stop Push Button Dimensions

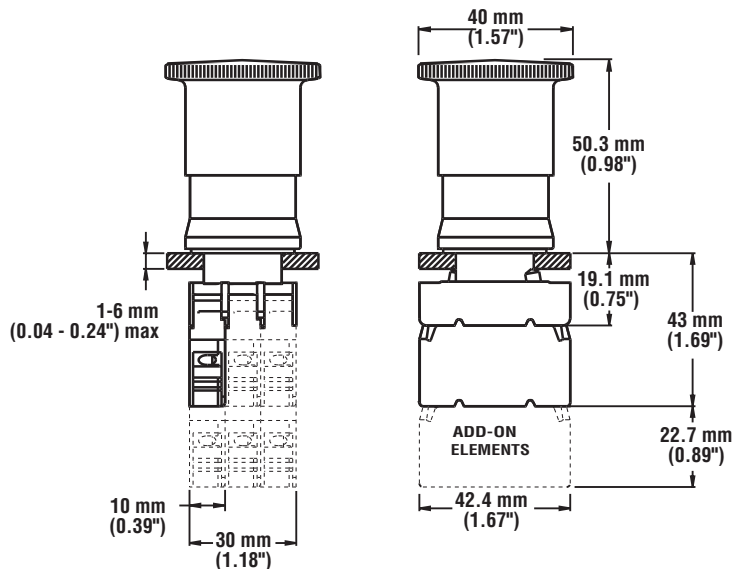
Push Button with Enclosure



Plastic Legend




Push Button with Mounting Adapter and Contacts



Emergency Stop Push Buttons

Specifications

E-Stop Button Specifications	
Mechanical Life	300,000 operations
Operating Force	0.8 kg (1.76 lb)
Mounting Adapter	<p>Plastic button: the adapter is fixed to the mounting surface by means of incorporated screws ($T_{max} = 0.6 \text{ Nm}$ (7.14" lb))</p> <p>Metal button: the adapter is fixed to the mounting surface by means of incorporated screws ($T_{max} = 0.8 \text{ Nm}$ (5.4" lb))</p>
Construction	<p>Plastic parts: Polyamide and polycarbonate</p> <p>Metal parts: Aluminum and zinc alloy</p>
Environmental Rating	IP65, NEMA 4, 13
Operating Temperature	-25° to +60°C (-10° to +140°F)
Certifications	

Contact Specifications	
European Rating	<p>Utilization categories: AC15 and DC13</p> <p>$U_i = 690\text{V ac}$</p> <p>$I_{th} = 10\text{A}$</p> <p>UL designation: = A600 Q600</p>
Mechanical Life	1,000,000 operations
Connections	(1 or 2) 12 AWG (2.5 mm ²) maximum wire size
Construction	Polyamide and polycarbonate
Environmental Rating	IP20
Operating Temperature	-25° to +60°C (-10° to +140°F)
Certifications	