

# ER6022

For full product information, visit [www.sti.com](http://www.sti.com). Use the SpeedSPEC Code for quick access to the specific web page.

## Rope Pull Emergency Stop Switch

- Rope spans up to 80 m (262 ft.) means fewer number of switches required per application
- Tension indicator makes system setup and rope tension maintenance easy
- Contact arrangements of 2 N/C + 1 N/O, 3 N/C + 1 N/O or 2 N/C + 2 N/O
- IP67 (NEMA 6) enclosure enables the ER6022 switch to withstand water washdown cleaning
- Reset button—the blue reset button must be pushed in order to return to “machine run” condition following switch actuation by a pulled or slacked rope
- Indicator beacon—the optional dual indicator beacon, available in 24 VDC or 120 VAC, can be wired to flash red to indicate a tripped switch or glow a constant green to indicate a properly reset switch
- E-stop button—the ER6022 has two mounting positions where the optional E-stop button may be installed; the E-stop button may be added or replaced in the field
- Rubber bellows contain UV inhibitor making the switches suitable for outdoor applications



Conforms to IEC947-5-1, IEC947-5-5, EN418, UL508, BS5304  
UL and C-UL listed, TUV certified

## Specifications

Electrical	All Models
Contact Configurations:	2 N/C + 1 N/O, 3 N/C + 1 N/O, 2 N/C + 2 N/O
Safety Contacts:	2 N/C, 3 N/C
Switching Ability	AC: 240 V–3 A, 120 V–6 A, Inductive, DC: 24 V–2.5 A, Inductive
Auxiliary Contacts:	1 N/O, 2 N/O
Max Switching Current/Volt/Amp:	240 V/720 VA
Minimum Current:	5 V 5 mA DC
Electrical Life:	1 x 10 <sup>6</sup> minimum
Mechanical	
LED Indicator Beacon:	24 VDC, 120 VAC
Mechanical	1 million minimum
Mounting:	Any position
Mounting Hardware:	4 x M5 screws
Max Rope Span:	80 m (262 ft.)
Operation Force:	< 125 N (28 lb.)
Tensioning Force to Run Position:	130 N (23 lb.) typical
Case Material:	Die-cast aluminum alloy
Eye Nut Material:	Stainless Steel
Stainless Accessory Items:	304 Stainless Steel
Wiring Entry:	3 x M20 or 3 x 0.5 in. NPT
Weight:	880 g (31 oz.)
Color:	Yellow
Mechanical Life:	1 x 10 <sup>6</sup> minimum
Environmental	
Protection:	IP67 (NEMA 6)
Operating Temperature:	-25 to 80°C (-13 to 176°F)
Cleaning:	Water washdown
Compliance	
Standards:	IEC947-5-1, IEC947-5-5, EN418, UL508, BS5304
Approvals/Listings:	CE marked for all applicable directives, UL and C-UL, TUV

Specifications are subject to change without notice.

Note: The safety contacts of the STI switches are described as normally closed (N/C)—i.e., with the rope properly tensioned and the machine able to be started.

## Operation



### Blue Reset Knob

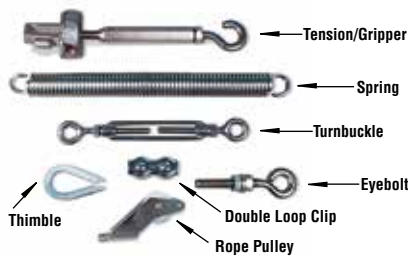
A blue reset button is provided to easily return the unit back to its machine-run position after actuation.



### Emergency Push Button

The emergency push button may be installed or repositioned in the field. The ER6022 has two possible mounting positions for the emergency stop button.

## Installation Hardware Available



### Installation Hardware

Individual hardware items may be purchased for specific installation requirements.



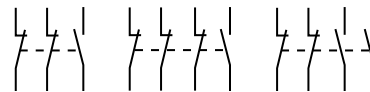
### RK Rope Tension Kit

The RK Rope Tension Kit comes with all of the required hardware for most installations. A spring is required as shown in the installation example below.

For up to 50 m rope span, one rope end is terminated with a thimble, permanent clamp, and quick link attached.

For over 50 m rope span, 2 Tension/Gripper assemblies are supplied (no quick link.)

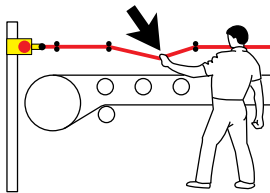
## Contact Arrangements



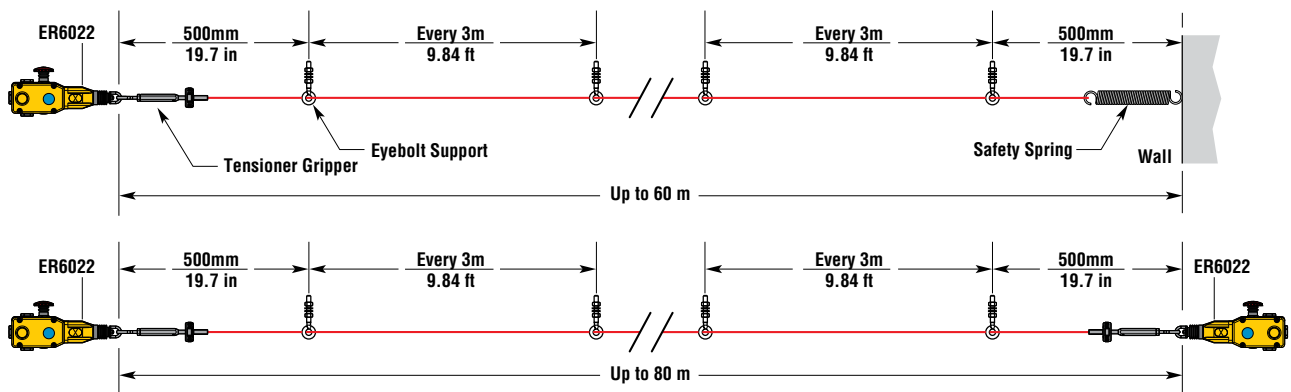
	0 mm 0 in	3.5 0.14	14.5 0.57	17.0 0.67
<b>2NC + 1NO Versions</b>	<b>Rope Slack</b>	<b>Tension Range</b>	<b>Rope Pulled</b>	
11/12				
21/22				
33/34				
<b>3NC + 1NO Versions</b>	<b>Rope Slack</b>	<b>Tension Range</b>	<b>Rope Pulled</b>	
11/12				
21/22				
33/34				
43/44				
<b>2NC + 2NO Versions</b>	<b>Rope Slack</b>	<b>Tension Range</b>	<b>Rope Pulled</b>	
11/12				
21/22				
33/34				
43/44				

Contact Open     Contact Closed

## Mounting Specification



For a guide to installing, see "Proper Installation of Rope or Wire Pull Emergency Stop Devices" in the Expert Area Section of this catalog on page A-78.

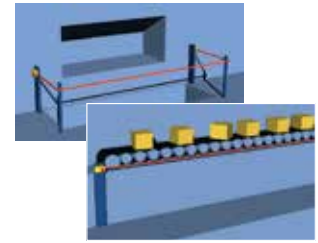
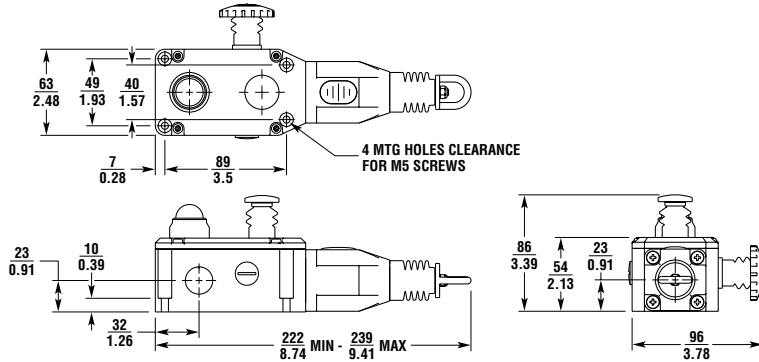


Dimensions

(mm/in.)

Applications

Typical applications are on conveyor systems and across rotating machinery, and around hazardous areas.



Ordering

Model	E-stop	Indicator Beacon	Contacts	Wiring Entry	Part No.
<b>ER Switches with 3 pole contact blocks</b>					
ER6022-021M	Not included	Not included	2 N/C + 1 N/O	3 x M20	44506-5010
ER6022-021N	Not included	Not included	2 N/C + 1 N/O	3 x 1/2 in. NPT	44506-5020
ER6022-021ME	Included	Not included	2 N/C + 1 N/O	3 x M20	44506-5210
ER6022-021NE	Included	Not included	2 N/C + 1 N/O	3 x 1/2 in. NPT	44506-5220
ER6022-021MEL	Included	Included	2 N/C + 1 N/O	3 x M20	44506-5410
ER6022-021NEL	Included	Included	2 N/C + 1 N/O	3 x 1/2 in. NPT	44506-5420
ER6022-021NELAC	Included	Included, 120 VAC	2 N/C + 1 N/O	1/2" NPT	44506-5423
<b>ER Switches with 4 pole contact blocks</b>					
ER6022-031M	Not included	Not included	3 N/C + 1 N/O	M20	44506-5050
ER6022-031N	Not included	Not included	3 N/C + 1 N/O	1/2 in. NPT	44506-5060
ER6022-022M	Not included	Not included	2 N/C + 2 N/O	M20	44506-5070
ER6022-022N	Not included	Not included	2 N/C + 2 N/O	1/2 in. NPT	44506-5080
ER6022-031ML	Not included	Included, 24 VDC	3 N/C + 1 N/O	M20	44506-5150
ER6022-031NL	Not included	Included, 24 VDC	3 N/C + 1 N/O	1/2 in. NPT	44506-5160
ER6022-022ML	Not included	Included, 24 VDC	2 N/C + 2 N/O	M20	44506-5170
ER6022-022NL	Not included	Included, 24 VDC	2 N/C + 2 N/O	1/2 in. NPT	44506-5180
ER6022-031ME	Included	Not included	3 N/C + 1 N/O	M20	44506-5250
ER6022-031NE	Included	Not included	3 N/C + 1 N/O	1/2 in. NPT	44506-5260
ER6022-022ME	Included	Not included	2 N/C + 2 N/O	M20	44506-5270
ER6022-022NE	Included	Not included	2 N/C + 2 N/O	1/2 in. NPT	44506-5280
ER6022-031MEL	Included	Included, 24 VDC	3 N/C + 1 N/O	M20	44506-5450
ER6022-031NEL	Included	Included, 24 VDC	3 N/C + 1 N/O	1/2 in. NPT	44506-5460
ER6022-022MEL	Included	Included, 24 VDC	2 N/C + 2 N/O	M20	44506-5470
ER6022-022NEL	Included	Included, 24 VDC	2 N/C + 2 N/O	1/2 in. NPT	44506-5480
ER6022-031NELAC	Included	Included, 120 VAC	3 N/C + 1 N/O	1/2 in. NPT	44506-5463
ER6022-022NELAC	Included	Included, 120 VAC	2 N/C + 2 N/O	1/2 in. NPT	44506-5483

Accessories					Part No.	
<b>Stainless Steel Rope Kits</b>	<b>Quick Link</b>	<b>Eye-bolts</b>	<b>Tension/ Gripper Assembly</b>	<b>Allen Wrench</b>		
	RK5, 5 m Kit	Yes	3	1	1	44506-2705
	RK10, 10 m Kit	Yes	5	1	1	44506-2710
	RK15, 15 m Kit	Yes	7	1	1	44506-2715
	RK20, 20 m Kit	Yes	9	1	1	44506-2720
	RK30, 30 m Kit	Yes	12	1	1	44506-2730
	RK50, 50 m Kit	Yes	20	1	1	44506-2750
	RK80, 80 m Kit	No	30	2	2	44506-2780
	RK100, 100 m Kit	No	37	2	2	44506-2711
	RK126, 126 m Kit	No	45	2	2	44505-2726
<b>Rope Only</b>						
R5M, 5 m Rope Only					44506-3705	
R10M, 10 m Rope Only					44506-3710	
R20M, 20 m Rope Only					44506-3720	
R30M, 30 m Rope Only					44506-3730	
R50M, 50 m Rope Only					44506-3750	
R80M, 80 m Rope Only					44506-3780	
R100M, 100 m Rope Only					44506-3711	
R126M, 126 m Rope Only					44506-3726	

Accessories	Part No.
SM06-SL500, Replacement Lid 24 VDC	44506-5700
SM06-SL510, Replacement Lid/LED 24 VDC	44506-5710
SM06-SL510AC, Replacement Lid/LED 120 VAC (consult factory for complete switch with 120 VAC beacon)	44506-5711
SM06-TK00, Tensioner Kit (Turnbuckle, 8 Rope Grips & 4 Thimbles)	44506-0700
SM06-TG00, Tensioner Gripper, Stainless Steel	44506-4700
SM06-EB10, Eye Bolt, Stainless Steel, 8 per pack	44506-4710
SM06-EB20, Eye Bolt, Galvanized	44506-0720
SM06-DL20, Double Loop Clip, Stainless Steel, 4 per pack	44506-4720
SM06-DL21, Double Loop Clip, Galvanized, 4 per pack	44506-4721
SM06-THS5, Thimble, Stainless Steel, 4 per pack	44506-4770
SM06-THGV, Thimble, Galvanized, 4 per pack	44506-4771
SM06-QLSS, Quick Link, Stainless Steel	44506-4772
SM06-TB30, Turnbuckle, Stainless Steel	44506-4730
SM06-TB31, Turnbuckle, Galvanized	44506-4731
SM06-SP30, Spring, Galvanized	44506-0730
SM06-SP50, Spring, Stainless Steel	44506-4750
SM06-RPSS, Rope Pulley, Stainless Steel	44506-4780
SM06-ES60, E-Stop Mechanism	44506-4760
SM06-LF40, Replacement LED Indicator Beacon, 24 VDC	44506-4740
SM06-LF41, Replacement LED Indicator Beacon, 120 VAC	44506-4741

## Safety Precautions

### Operating instructions

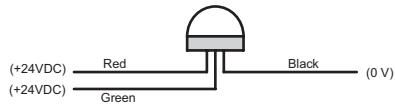
Installation must be in accordance with the following steps and stated specifications and should be carried out by suitably competent personnel. Adherence to the recommended maintenance instructions forms part of the warranty.

**WARNING** Do not defeat, tamper, remove or bypass this unit. Severe injury to personnel could result.

#### Optional 24 VDC Indicator Beacon

When +24VDC is applied to the **red** wire, the beacon will illuminate red and flash.

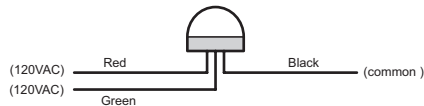
When +24 VDC is applied to the **green** wire, the beacon will illuminate green.



#### Optional 120 VAC Indicator Beacon

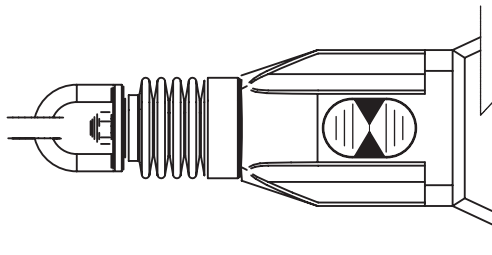
When +120VAC is applied to the **red** wire, the beacon will illuminate red and flash.

When +120 VAC is applied to the **green** wire, the beacon will illuminate green.



#### Tension Indicator

Indicator shown with steel rope properly adjusted.



### **WARNING**

1. Installation of all Safety Rope Switch systems must be in accordance with a risk assessment for the individual application. Installation must only be carried out by competent personnel and in accordance with these instructions.
2. Rope support eyebolts must be fitted at 2.5 m. min. to 3 m. max. intervals along all rope lengths between switches. The rope must be supported no more than 500 mm from the switch eyebolt or Safety Spring (if used). It is important that this first 500 mm is not used as part of the active protection coverage.
3. M5 mounting bolts must be used to fix the switches. Tightening torque for mounting bolts to ensure reliable fixing is 4 Nm. Tightening torque for the lid screws, conduit entry plugs and cable glands must be 1.5 Nm to ensure IP seal. Only use correct sizing glands for conduit entry and cable outside diameter.
4. Tensioning of rope is achieved by use of tensioner / gripper assemblies. Upon installation, tension to mid-position as indicated by the red arrows in the viewing window of each switch. Check operation for all switches and the control circuits by pulling the rope at various locations along the active protection area and resetting each switch by depressing the Blue Reset button. Ensure each time that the switches latch off and require manual resetting by depressing the Blue Reset button. Increase the system tension further, if required, depending upon the checks along the active length of coverage. If fitted with a Mushroom type E-Stop button (Red) then test and reset each switch to ensure function of control circuits. Typical operational conditions for successful operation of system is less than 75 N. pulling force and less than 150 mm deflection of rope between eyebolt supports. If the optional LED is fitted but is not used, ensure that the conductors remain coiled and tied to the tie hole in the LED flange.
5. Every week: Check correct operation of system at locations along all coverage length. Check for nominal tension setting, re-tension rope if necessary. Every 6 months: Isolate power and remove cover. Check screw terminal tightness and check for signs of moisture ingress. Never attempt to repair any switch.

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