

# Rope Pull Emergency Stop Switch ER6022-SS

- Long rope spans up to 100 m means fewer number of switches required per application
- Tension indicator—the tension indicator makes the system easy to set up and to maintain the proper rope tension
- Contact arrangements of 3 N/C + 1 N/O or 2 N/C + 2 N/O
- IP69K enclosure enables the switch to withstand water washdown cleaning
- 316 stainless steel housing and accessories makes the switch suitable for demanding industrial applications
- 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
- Vibration tolerant—the snap-acting switch contacts protect against nuisance tripping due to vibration
- Indicator beacon—the optional dual indicator beacon, available in 24 VDC, 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-SS 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



## Operation

### Blue Reset Button



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.

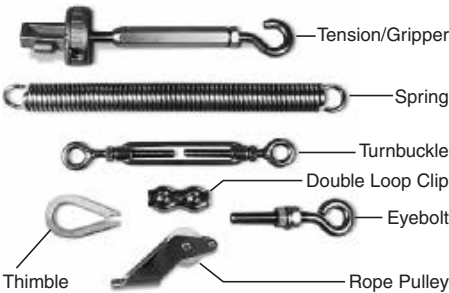
## Installation Hardware Available

### RK Rope Tension Kit



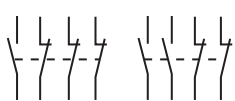
The RK Rope Tension Kit comes with all of the required hardware for most installations. A spring is required as shown in the installation example below.

### Installation Hardware



Individual hardware items may be purchased for specific installation requirements.

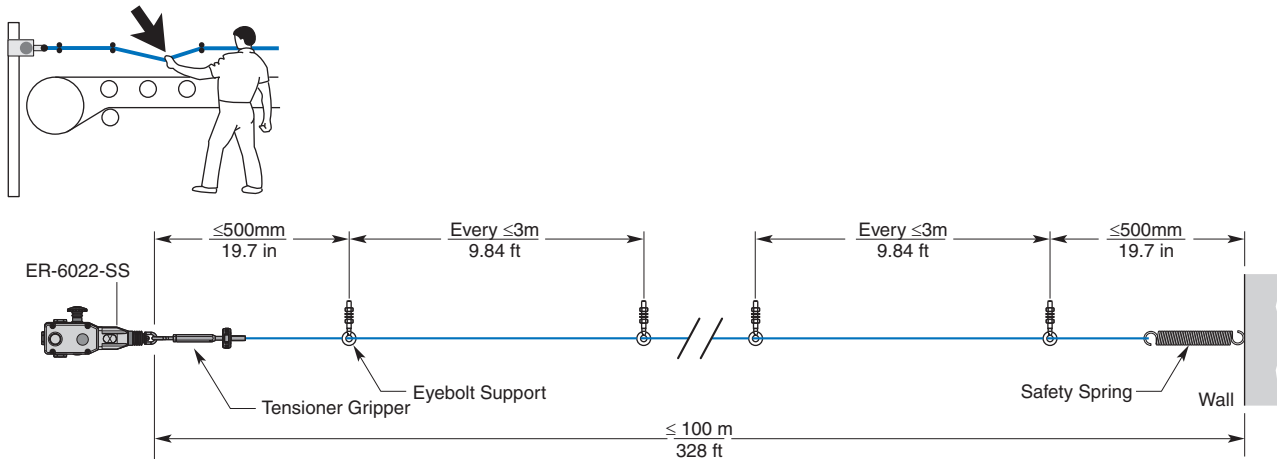
## Contact Arrangements



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

□ Contact Open   ■ Contact Closed

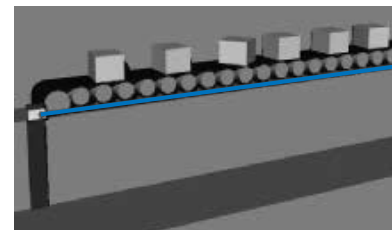
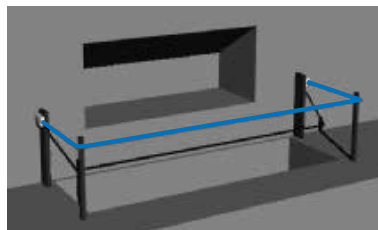
## Mounting Specification



**Note:** Some installations may require a ER6022-SS on each end.

## Applications

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



## Ordering information

### Rope Pull Emergency Stop Switch

| E-Stop       | Indicator Beacon  | Contacts      | Wiring Entry | Model                      |
|--------------|-------------------|---------------|--------------|----------------------------|
| Not included | Not included      | 2 N/C + 2 N/O | 3 x M20      | 44506-5810 ER6022-022MSS   |
| Not included | Not included      | 3 N/C + 1 N/O | 3 x M20      | 44506-5830 ER6022-031MSS   |
| Not included | Included (24 VDC) | 2 N/C + 2 N/O | 3 x M20      | 44506-5910 ER6022-022MLSS  |
| Not included | Included (24 VDC) | 3 N/C + 1 N/O | 3 x M20      | 44506-5930 ER6022-031MLSS  |
| Included     | Not included      | 2 N/C + 2 N/O | 3 x M20      | 44506-5850 ER6022-022MESS  |
| Included     | Not included      | 3 N/C + 1 N/O | 3 x M20      | 44506-5870 ER6022-031MESS  |
| Included     | Included (24 VDC) | 2 N/C + 2 N/O | 3 x M20      | 44506-5950 ER6022-022MELSS |
| Included     | Included (24 VDC) | 3 N/C + 1 N/O | 3 x M20      | 44506-5970 ER6022-031MELSS |

### Accessories

| Item   | Model                       |
|--|-----------------------------|
| Replacement Lid stainless steel without LED                      | 44506-5730 SM06-SLXER6022SS |
| Replacement Lid stainless steel with LED indicator Beacon 24 VDC | 44506-5740 SM06-SLER6022LSS |
| Replacement LED indicator beacon, 24 VDC                         | 44506-4740 SM06-LF40        |
| Yellow E-Stop Background label                                   | 44506-4791 SM06-YLES        |
| Rope Kit, 5 m, Stainless Steel                                   | 44506-2705 RK5              |
| Rope Kit, 10 m, Stainless Steel                                  | 44506-2710 RK10             |
| Rope Kit, 20 m, Stainless Steel                                  | 44506-2720 RK20             |
| Rope Kit, 50 m, Stainless Steel                                  | 44506-2750 RK50             |

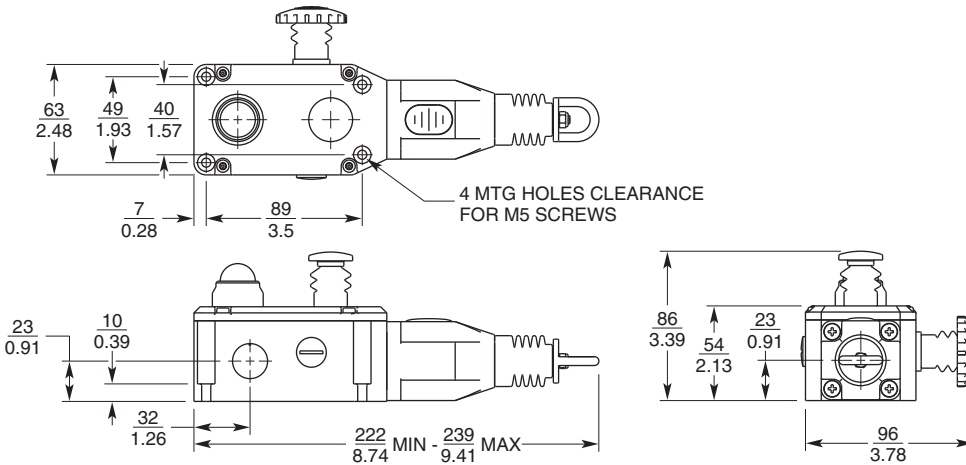
| Item  | Model                |
|---|----------------------|
| Rope Kit, 80 m, Stainless Steel               | 44506-2780 RK80      |
| Rope Kit, 100 m, Stainless Steel              | 44506-2711 RK100     |
| Rope Only, 5 m                                | 44506-3705 R5M       |
| Rope Only, 10 m                               | 44506-3710 R10M      |
| Rope Only, 20 m                               | 44506-3720 R20M      |
| Rope Only, 50 m                               | 44506-3750 R50M      |
| Rope Only, 100 m                              | 44506-3711 R100M     |
| Rope Only, 126 m                              | 44506-3726 R126M     |
| Tensioner Gripper, Stainless Steel            | 44506-4700 SM06-TG00 |
| Eye Bolt Stainless Steel, 8 per pack          | 44506-4710 SM06-EB10 |
| Double Loop Clip, Stainless Steel, 4 per pack | 44506-4720 SM06-DL20 |
| Thimble Stainless Steel, 4 per pack           | 44506-4770 SM06-THSS |
| Turnbuckle, Stainless Steel                   | 44506-4730 SM06-TB30 |
| Spring, Stainless Steel                       | 44506-4750 SM06-SP50 |
| Rope Pulley, Stainless Steel                  | 44506-4780 SM06-RPSS |
| E-Stop Mechanism                              | 44506-4760 SM06-ES60 |

## Specifications

|                      |                                      |  |
|----------------------|--------------------------------------|--|
| Electrical           | Contact Configurations               | 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,<br>DC: 24 V–2.5 A, Inductive        |
|                      | Contact material                     | Silver   |
|                      | Terminals                            | up to 2,5 mm <sup>2</sup> conductors                                     |
|                      | 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                      | 1,000,000 minimum  |
| LED Indicator Beacon | 24 VDC                               |  |
| Mechanical           | Mounting                             | Any position   |
|                      | Mounting Hardware                    | 4 x M5 screws  |
|                      | Actuator Travel for Positive Opening | See diagrams on previous page  |
|                      | Max Rope Span                        | 100 m  |
|                      | Operation Force                      | < 125 N  |
|                      | Tensioning Force to Run Position     | 130 N typical  |
|                      | Case Material                        | Die-cast aluminum alloy, Die-cast 316 stainless steel casing             |
|                      | Eye Nut Material                     | Stainless steel  |
|                      | Wiring Entry                         | 3 x M20  |
|                      | Weight                               | 880 g  |
|                      | Color                                | Natural  |
| Mechanical Life      | 1,000,000 minimum                    |  |
| Environmental        | Protection                           | IP67 and IP69K   |
|                      | Operating Temperature                | -25 to 80°C  |
|                      | Cleaning                             | Water washdown   |
| Compliance           | Standards                            | EN60947-5-1:2004, EN60947-5-5:1997+A1:2005; EN60204-1; EN ISO 13850:2006 |
|                      | Approvals/Listings                   | CE marked for all applicable directives, UL and C-UL                     |

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

Dimensions



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.

Wiring diagram for the optional 24 VDC indicator beacon. It shows a red wire connected to (+24VDC), a green wire connected to (+24VDC), a black wire connected to (0 V), and a (+24VDC) source connected to the red wire.

**Tension Indicator**  
 Indicator shown with steel rope properly adjusted.

Diagram of the tension indicator showing a steel rope properly adjusted. The indicator is shown in a cross-section view, with the rope passing through a spring mechanism and a viewing window.

**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.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.  
 To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.