ER-Series
Operating Instructions

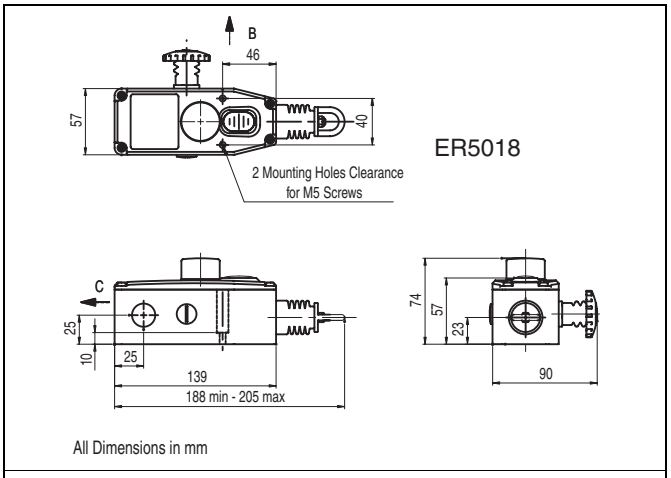
OMRON Corporation

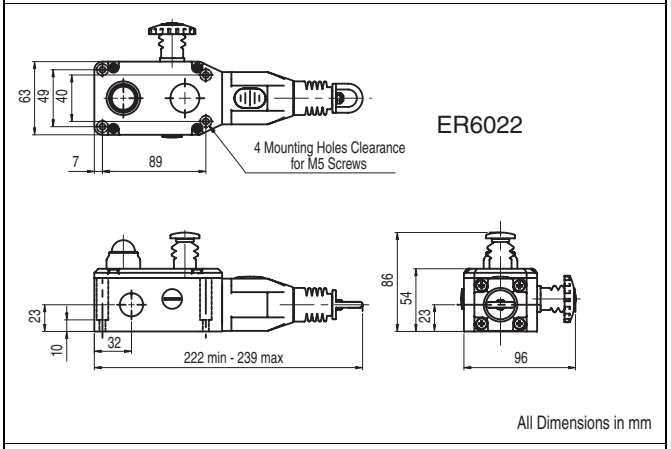
Thank you for purchasing an OMRON ER5018, ER6022, ER1022 or ER1032 Rope Pull Emergency Switch. To ensure safe operation, please be sure to read the safety precautions provided in this document along with all of the operation manuals. Please be sure you are using the most recent versions of the operation manuals. Contact your nearest OMRON representative to obtain manuals. Keep these safety precautions and all operation manuals in a safe location and be sure that they are readily available to the final user of the products.

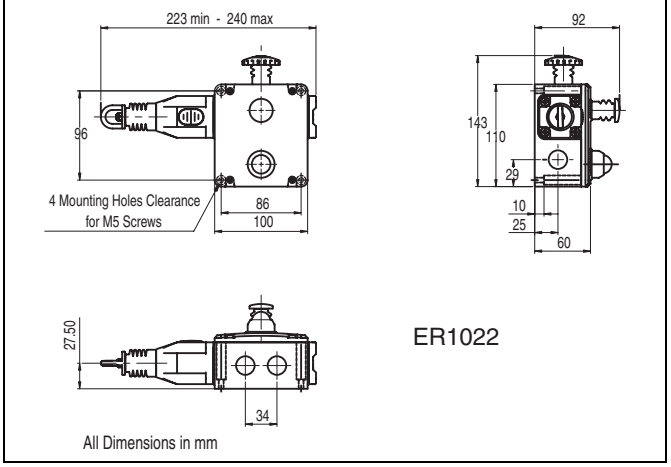
■ Operating Instructions

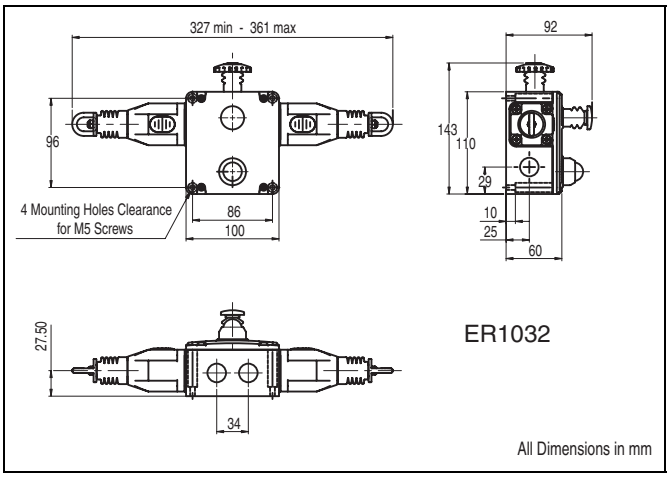
Installation must be in accordance with the following steps and stated specifications and should be carried out by suitably competent personnel. Adherence to the recommended maintenance instructions forms part of the warranty.

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





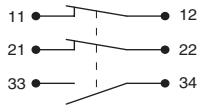




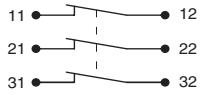
ER5018

2NC 1NO versions	Rope Slack	Tension Range	Rope Pulled
11/12			
21/22			
33/34			

0mm 3.5mm 14.5mm 17.0mm



3NC versions	Rope Slack	Tension Range	Rope Pulled
11/12			
21/22			
31/32			

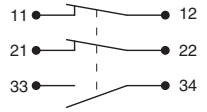


Contact open
Contact closed

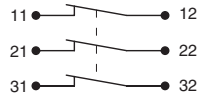
ER6022

2NC 1NO versions	Rope Slack	Tension Range	Rope Pulled
11/12			
21/22			
33/34			

0mm 4.0mm 14.5mm 17.0mm



3NC versions	Rope Slack	Tension Range	Rope Pulled
11/12			
21/22			
31/32			



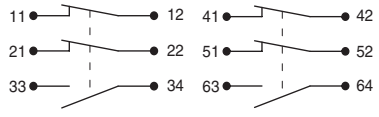
Contact open
Contact closed

ER1022/ER1032

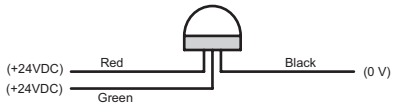
4NC 2NO		Rope Slack	Tension Range	Rope Pulled
11/12	41/42			
21/22	51/52			
32/34	63/64			

0mm 4.0mm 15.0mm 17.0mm

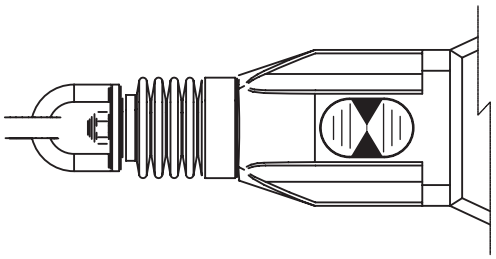
Contact open
Contact closed



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.



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 puling 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.

■ Specifications

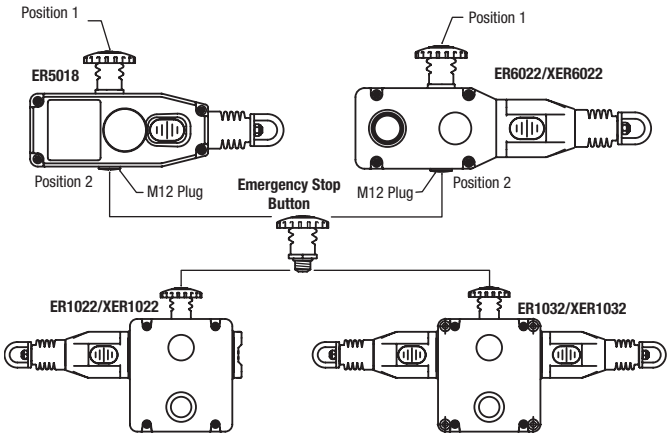
Mechanical Features	
Enclosure / Cover	Die-Cast – Painted Yellow
External Parts	Steel
IP Rating	IP67
Rope Spans Max	ER1022, ER1032 (Heavy Duty), Dual Head 200 m., Single Head 125 m ER6022 (Standard Duty) = 80 m ER5018 (Mini Duty) = 40 m
Mounting	4 x M5 or 2 x M5 (ER5018)
Mounting position	Any
Conduit entries	ER1022, ER1032 (Heavy Duty) = 4 x M20 ER6022 (Standard Duty) = 3 x M20 ER5018 (Mini Duty) = 3 x M20

Mechanical Features	
Torque settings	Mounting = M5 4.0 Nm Lid = Torx M4 1.5 Nm Terminals = 1.0 Nm
Ambient Operating Temperature	-25°C to 80°C.
Vibration resistance	10-500 Hz 0.35 mm
Shock resistance	15g 11ms
Tension Force (typical mid setting)	ER1022, ER1032 (Heavy Duty) 130 N ER6022 (Standard Duty) 130 N ER5018 (Mini Duty) 100 N
Typical Operating Force (Rope pulled)	< 125 N < 300 mm Deflection
Mechanical Life	1,000,000 operations
Weight	ER1022, ER1032 (Heavy Duty) Dual 1,320 g, Single 1,100 g. ER6022 (Standard Duty) 880 g. ER5018 (Mini Duty) 675 g.

Electrical	
Contact type	IEC 947-5-1 Double break Type Zb Snap Action up to 4NC (Safety positive break) 2NO (Auxiliary)
Contact Material	Silver
Termination	Clamp up to 2.5 mm² conductors
Switching Ability	AC = 240 V 3 A, 120 V 6 A, Inductive DC = 24 V 2.5 A, Inductive
Max Switching Current / Volt / Amp	240 V / 720 VA Break
Information with regard to UL 508	Use polymeric conduit only. Use copper conductors only. Electrical rating: A300. Type 1 enclosures

■ Installation

Emergency Stop Button



The ER-Series and XER-Series Rope Pull E-Stop Switches are designed to allow the Emergency Stop Button to be re-positioned, replaced, or added in the field. The ER5018, ER6022 and XER6022 have two positions in which the Emergency Stop Button may be mounted. Only one Emergency Stop Button may be installed per switch. The ER/XER1022 and ER/XER1032 have only one position to install the Emergency Stop Button.

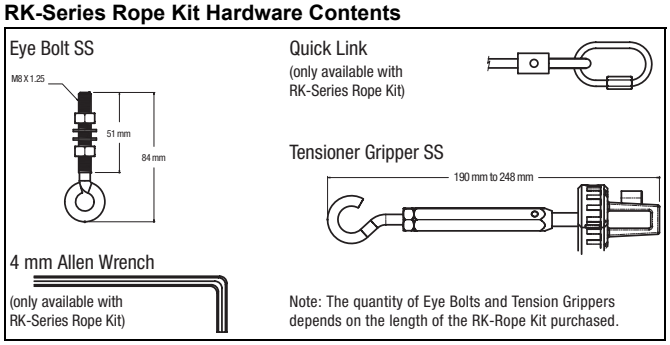
To install the Emergency Stop Button complete the following steps:

1. Remove the M12 threaded plug from the mounting port.
2. Apply thread-lock solution to threads of E-Stop Button.
3. Insert the Emergency Stop Button into the mounting port.
4. Tighten the Emergency Stop Button (torque 10 in. lb).
5. After installation of the Emergency Stop Button, reset and check to make sure that all safety circuits are working properly.

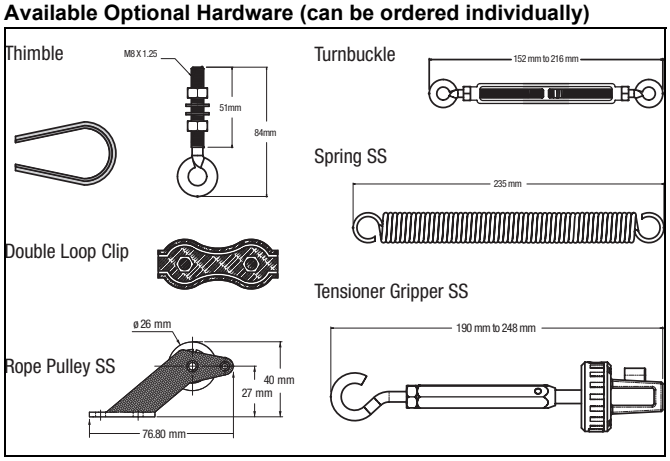
Note: The IP67 Enclosure Rating of the switch is dependant on the M12 plug and Emergency E-Stop Button being installed and torqued properly. Never leave the M12 port unplugged.

RK-Series Rope Tension Kits and Accessories

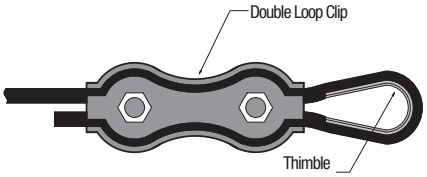
RK-Series Rope Kit Hardware Contents



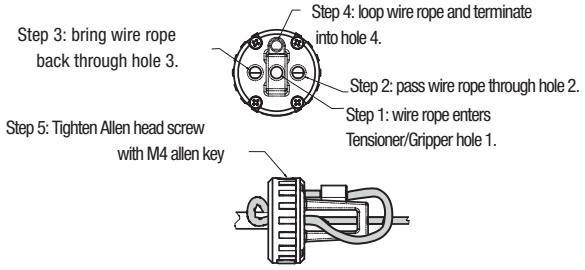
Available Optional Hardware (can be ordered individually)

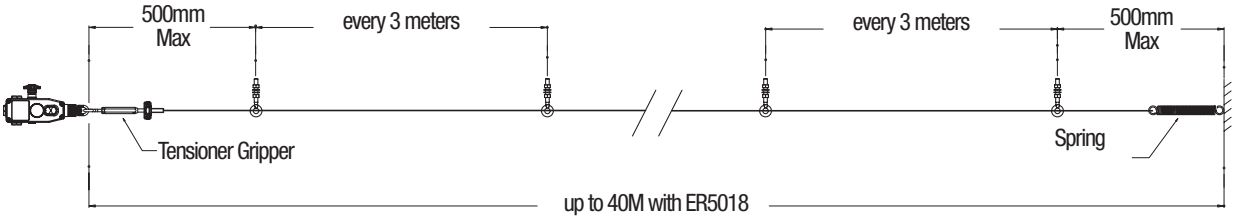


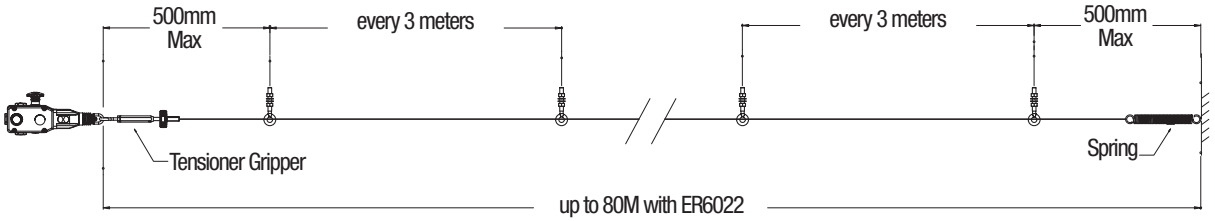
The Double Loop Clilp is used to connect to tensioning hardware or to terminate rope span.

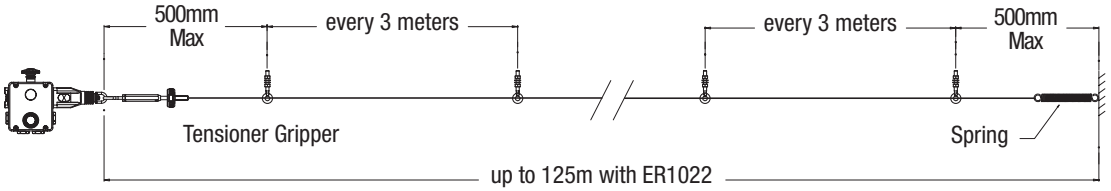


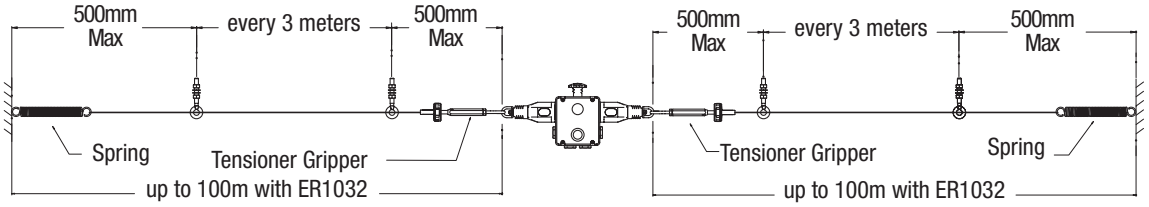
Follow steps 1 through 5 in the illustration below to attach the wire rope to the Tensioner Gripper Assembly.











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