

Installation Instructions for Emergency Stop Units



Description

The Emergency Stop units are designed to fit in manufacturing areas. The ES units can come with or without a padlockable shroud. The ES1 & ES2 can be operated by pressing the emergency stop button (Red), it can then be reset by twisting the emergency stop button.

The ES1 & ES2 uses force guided contacts, which allows it to be safely guarded and adhere to the machinery directive.

The ES1 & ES2 units are available in ABS, or 316 Stainless Steel housing. They are easy to install with correct installation, these safety switches comply with the guidelines given in EN60947-5-1.

Emergency Stop units are designed to be used as part of safety related control system. A risk assessment should take place to establish that the specifications of these emergency stop buttons are suitable for the application required. See Technical Specifications below or contact Mechan Controls for further information.

KEEP THIS GUIDE FOR FUTURE REFERENCE

The information is designed to help suitably qualified personnel install and operate Mechan Controls safety equipment. Before using this product, read this guide thoroughly along with any relevant European and/or National Standards E.g. Machinery Directive 2006/42/EC and its Amendments, Provision and Use of Work Equipment Regulations. Further information can be obtained from Mechan Controls Ltd.

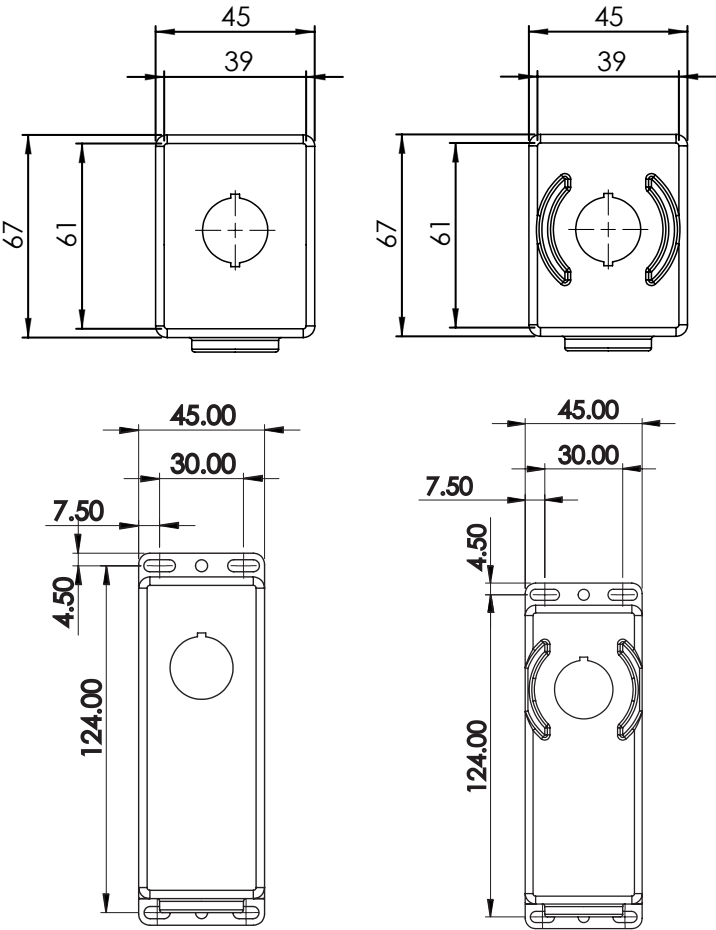
Technical Specifications	ES1 & ES2	ES1-SS & ES2-SS
Contacts	Maximum 2 NC + 1 NO or 2NC	Maximum 2 NC + 1 NO or 2 NC
Short-circuit protection	10A cartridge fuse type gG conforming to EN 60947-5-1	10A cartridge fuse type gG conforming to EN 60947-5-1
[Ui] Rated insulation voltage	600V (pollution degree 3) conforming to EN 60947-1	600V (pollution degree 3) conforming to EN 60947-1
[Uimp] Rated impulse withstand voltage	6 KV conforming to EN 60947-1	6 KV conforming to EN 60947-1
[Ie] Rated operational current	3A at 240V, AC-15, A600 conforming to EN 60947-5-1 6A at 120V, AC-15, A600 conforming to EN 60947-5-1 0.1A at 600V, DC-13, Q600 conforming to EN 60947-5-1 0.27A at 250V, DC-13, Q600 conforming to EN 60947-5-1 0.55A at 125V, DC-13, Q600 conforming to EN 60947-5-1 1.2A at 600V, AC-15 A600 conforming to EN 60947-5-1	3A at 240V, AC-15, A600 conforming to EN 60947-5-1 6A at 120V, AC-15, A600 conforming to EN 60947-5-1 0.1A at 600V, DC-13, Q600 conforming to EN 60947-5-1 0.27A at 250V, DC-13, Q600 conforming to EN 60947-5-1 0.55A at 125V, DC-13, Q600 conforming to EN 60947-5-1 1.2A at 600V, AC-15 A600 conforming to EN 60947-5-1
Electrical Durability	1000000 Cycles, AC-15, 2A at 230V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1 1000000 Cycles, AC-15, 3A at 120V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1 1000000 Cycles, AC-15, 4A at 24V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1 1000000 Cycles, DC-13, 0.2A at 110V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1 1000000 Cycles, DC-13, 0.5A at 24V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1	1000000 Cycles, AC-15, 2A at 230V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1 1000000 Cycles, AC-15, 3A at 120V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1 1000000 Cycles, AC-15, 4A at 24V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1 1000000 Cycles, DC-13, 0.2A at 110V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1 1000000 Cycles, DC-13, 0.5A at 24V, operating rate <3600 cyc/h, load factor: 0.5 conforming to EN 60947-5-1
Construction	Yellow ABS	316 Stainless Steel
IP Rating	IP65 AB	IP65 Stainless Steel
Operating Temperature	-40°C to +70°C	-40°C to +70°C
Fixing	M4 Torx security screws (Tightening Torque 1.0NM)	M4 Torx security screws (Tightening Torque 1.0NM)
Break Contact Force min	20N	20N
Actuation Speed, Max	160 mm/s	160 mm/s

Safety Related Data			
B10d	2,000,000	PFH	6.52 x 10 ⁻⁸
TM (Mission Time)	> 20 Years	PFHd	4.3 x 10 ⁻⁸ See Note 1
DC	99%	SFF	98%
MTTFd	High > 100 Years (Based on usage rate of 360 Days/Year, 24 Hours/Day, 10 Operations/Hour)		
Note 1: Based on dual channel wiring according to CAT 4. Diagnostic coverage provided by downstream control logic. DC - medium, MTTFd = 100 Years. Suitable for performance level applications PLe according to ISO 13849-1. (SIL 3 or SIL 2 according to IEC 62061)			

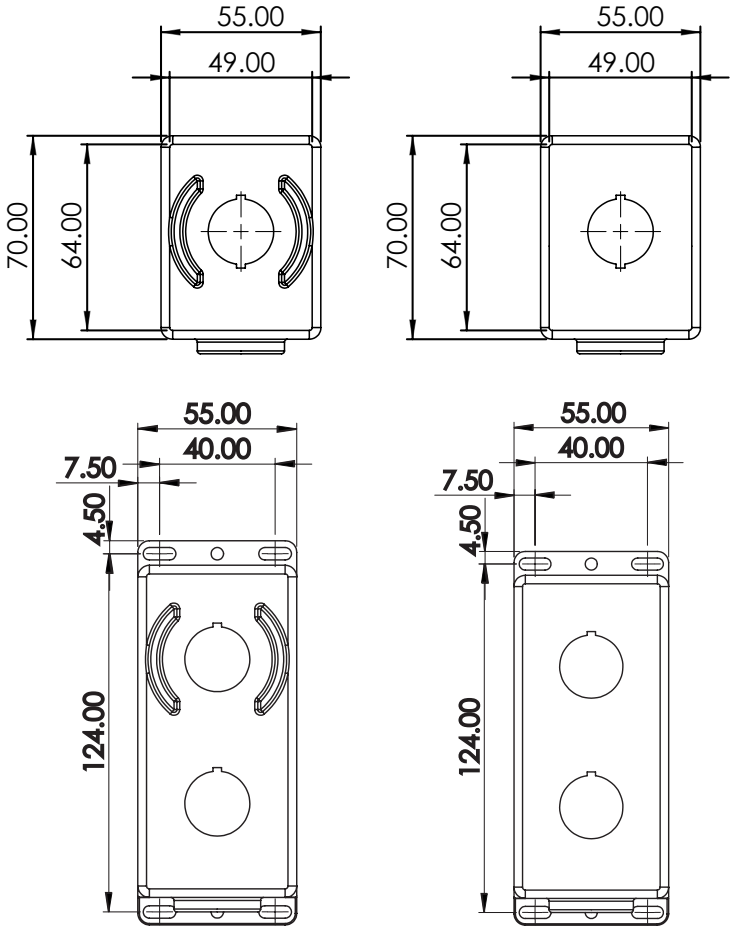
Safety Standards	
Approvals	CE Complies with all relevant sections of the CE Marking Directive
	cULus 508 Industrial Control
International Directives	Machinery Directive 2006/42/EC, Low Voltage Directive 2014/35/EU; EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU
International Standards	EN 12100 Safety of Machinery. General principles for design.
	EN ISO 13849 Safety of Machinery. Safety related parts of control systems.
	EN ISO 14119 Safety of Machinery. Interlocking devices associated with guards. Principles for design and selection.
	EN 60204 Safety of Machinery. Electrical equipment of machines.
	EN 60947-5-1 Low-voltage switchgear and controlgear.
	EN 60947-5-3 Low-voltage switchgear and controlgear.
	EN ISO 14118:2018 Safety of Machinery: Prevention of unexpected start-up
	EN ISO 13850:2015 Safety of machinery - Emergency Stop Function

Dimensions

ABS E/Stop



Stainless Steel E/Stop



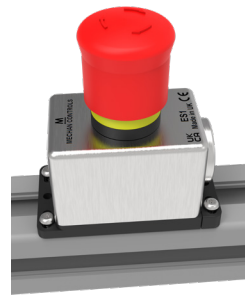
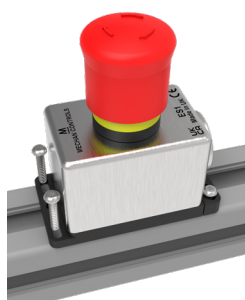
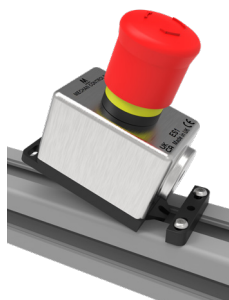
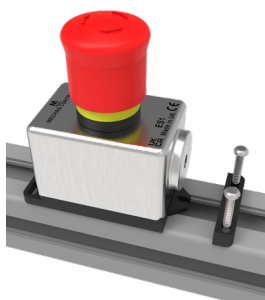
Mounting

The Foot of the E/Stop base needs to be screwed down first.

The E/stop can now be slid into position under the foot.

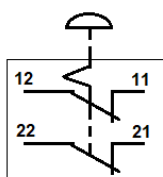
Now the top part of the E/stop can be screwed into position.

Now the E/stop device is fitted securely into position.

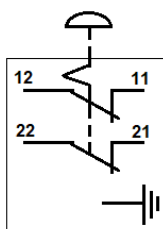


Connections & Fuses

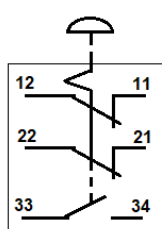
ES1&2-20



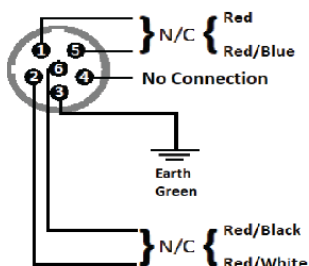
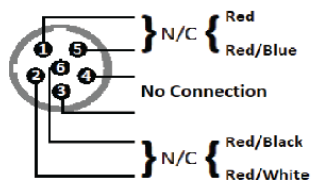
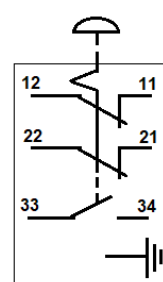
ES1&2-SS-20



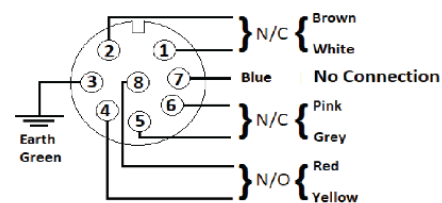
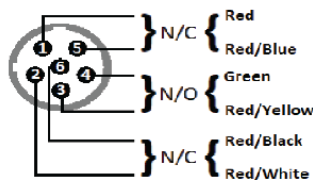
ES1&2-21



ES1&2-SS-21



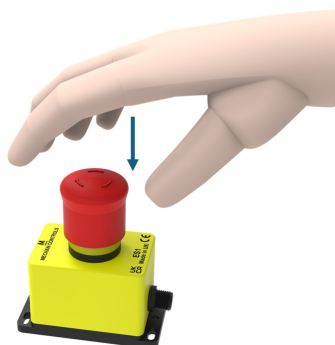
M12 6 Pin Dual Key way



M12 8 Pin Single Key way

Operation

The ES1 operates by the pressing of the red button into the switch to cause the contacts to switch simultaneously.



By twisting or pulling the red button, the user can achieve positive actuation.

An ES1 with a shroud is available in ABS or stainless steel, this is to stop nuisance activation of the E-stop and to padlock the E-stop so that it cannot be restarted.



Installation Instructions for Emergency Stop Units

Product Selection

ES1 - SS - 21 - SH - 6QD

Product Type	
ES1	Emergency Stop Single Unit
ES2	Emergency Stop Double Unit

Housing Material	
Blank	Yellow ABS
SS	316 Stainless Steel

Button Protection	
Blank	Without Shroud
SH	With Shroud

Connection Type	
Blank	Customer Wired
6QD	6 Pin M12 QD Connector
8QD	8 Pin M12 QD Connector

Contact Configuration	
2	2NC

Contact Configuration	
1	1NO

IMPORTANT

All control contacts should be externally fused.

Recommended Safety Control Unit Mechan Part Number: SRL-1 24VAC/DC or EM1 & ESM

Maintenance

It is recommended to check the safe operation of the switches and look for signs of damage or excessive wear on a weekly basis. Damaged units should be replaced or returned to the manufacturer for repair where practical.

Notes

In the interest of product development specifications are subject to change without notice. It is the responsibility of the user to ensure compliance with any acts or by-laws in place. All information regarding Mechan equipment is believed to be accurate at the time of printing. Responsibility cannot be accepted for errors or omissions.

Contact Details

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