

Series 04 | Failsafe Switching Element



EAO, the expert partner for Human Machine Interfaces, guarantees 100% switching reliability with the new Series 04 Failsafe Switching Element.

The element is self-monitoring and will detect if an E-stop or Stop Switch actuator becomes disconnected by accidental damage, negligent assembly or misuse. In such an event, the failsafe contact opens and an emergency shutdown routine takes place. The EAO Failsafe Switching Element fits any Series 04 Emergency-stop or Stop Switch and is easily fitted or retrofitted by snapping it onto the actuator.

Main features

- Self-monitoring switching element
- Switching element with 2 NC contacts (1 normal NC and 1 failsafe NC)
- 50 000 operating cycles
- Plug-in, double plug-in, screw and push-in terminals

Typical applications

- All E-stop applications
- All stop applications

Materials

Switching element Polycarbonate (PC)

Switching system

Switching element Slow-make switching element
 Contact arrangement 1 failsafe (NC) and 1 NC
 Contact material Hardsilver, gold-silver, silver-palladium
The failsafe operation only relates to the Failsafe Switching Element itself and not to any other switching elements within a combination.

Mechanical characteristics

Tightening torque (Ncm)	Screws at switching element max. 50
Rebound time	≤ 1 ms
Actuating travel	5.8 mm ±0.2 mm
Actuating force	3 ... 8 N
Terminals	Screw terminals Push-in terminals (PIT) Plug-in terminals 6.3 x 0.8 mm - max. wire cross-section 2 x 2.5 mm ² - max. wire cross-section of stranded cable 2 x 1.5 mm ²

For switches with plug-in terminals, it is necessary to provide insulation sleeves and to maintain a spacing of 65 mm between rows (mounting cut-outs).

Mechanical lifetime

Emergency-stop switch	50 000 cycles of operation
Stop Switch	50 000 cycles of operation

Environmental conditions

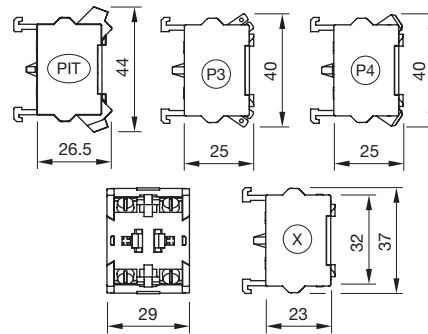
Storage temperature	-40 °C ... +85 °C
Operating temperature	-40 °C ... +55 °C
Shock resistance	300 m/s ² puls width 11 ms, as per EN IEC 60068-2-27
Vibration resistance	100 m/s ² at 10 Hz ... 500 Hz, amplitude 0.75 mm, as per EN IEC 60068-2-6
Approvals	UL, CB (IEC 60947), CCC, CE, CSA, Germanischer Lloyd, GOST, NFF 16-102

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Electrical characteristics

Rated Insulation Voltage U _i	500 VAC/600 VDC, as per EN IEC 60947-5-1												
Contact resistance	New state ≤ 50mΩ as per DIN IEC 60512-2-4												
Electrical life	6 050 cycles of operations												
Isolation resistance	≥ 10 MΩ between open contacts at 500 VDC, as per DIN IEC 60512-3-1												
Switch rating AC	For gold-silver, silver-palladium and hard silver contacts, service category AC-15, as per EN IEC 60947-5-1 (cos 0.3) <table border="0"> <tr> <td>Voltage</td> <td>Current</td> </tr> <tr> <td>230 VAC</td> <td>7 A</td> </tr> <tr> <td>400 VAC</td> <td>5 A</td> </tr> <tr> <td>500 VAC</td> <td>4 A</td> </tr> </table>	Voltage	Current	230 VAC	7 A	400 VAC	5 A	500 VAC	4 A				
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Switch rating DC	For gold-silver and hardsilver contacts, service category DC-13, as per EN IEC 60947-5-1 <table border="0"> <tr> <td>Voltage</td> <td>Current</td> </tr> <tr> <td>24 VDC</td> <td>10 A</td> </tr> <tr> <td>60 VDC</td> <td>5 A</td> </tr> <tr> <td>110 VDC</td> <td>2.5 A</td> </tr> <tr> <td>250 VDC</td> <td>0.6 A</td> </tr> </table>	Voltage	Current	24 VDC	10 A	60 VDC	5 A	110 VDC	2.5 A	250 VDC	0.6 A		
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Conventional free air thermal current I _{th}	10 A, as per EN IEC 60947-5-1 The maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.												
Recommended minimum operational data	Gold-silver contacts <table border="0"> <tr> <td>Voltage</td> <td>Current</td> </tr> <tr> <td>24 VDC</td> <td>10 mA</td> </tr> <tr> <td>110 VDC</td> <td>2 mA</td> </tr> </table> Hardsilver contacts <table border="0"> <tr> <td>Voltage</td> <td>Current</td> </tr> <tr> <td>24 VDC</td> <td>50 mA</td> </tr> <tr> <td>110 VDC</td> <td>10 mA</td> </tr> </table>	Voltage	Current	24 VDC	10 mA	110 VDC	2 mA	Voltage	Current	24 VDC	50 mA	110 VDC	10 mA
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Dimensions



Dimensions [mm]
 PIT = Push-in terminal
 P3 = Plug-in terminal 6.3 x 0.8 mm
 P4 = Double plug-in terminal 6.3 x 0.8 mm
 X = Screw terminal