



SICK Sensor Intelligence.

**ELECTRO-MECHANICAL SAFETY SWITCHES** 

# **i110-SA223 | i110S** ELECTRO-MECHANICAL SAFETY SWITCHES



# Ordering information

| Туре       | Part no. |
|------------|----------|
| i110-SA223 | 6025074  |

The actuator has to be ordered separately. See "Accessories" for further details.

Other models and accessories -> www.sick.com/i110S

actuator not supplied with delivery



# Detailed technical data

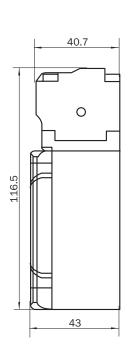
### Features

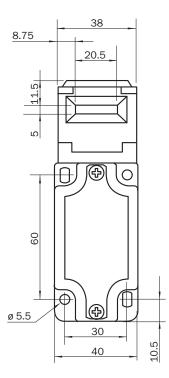
| reatures  |   |
|---|---|
| Positive action N/C contacts                              | 2   |
| N/O contacts  | 2   |
| Retaining force   | ≤ 12 N  |
| Actuation frequency                                       | ≤ 7,200 /h  |
| Actuation directions                                      | 5   |
| Approach speed  | ≤ 10 m/min  |
| Safety-related parameters                                 |   |
| B <sub>10d</sub> parameter                                | $2 \times 10^6$ switching cycles (with small load)  |
| Туре  | Type 2 (EN ISO 14119)   |
| Actuator coding level                                     | Low coding level (EN ISO 14119)   |
| Safe state in the event of a fault                        | The switch has no internal fault detection and is unable to assume a safe state in the event of a fault. Fault detection is performed by the connected safety-related logic unit. |
| Functions   |   |
| Safe series connections                                   | None, only individual wiring (with diagnostics)   |
| Interfaces  |   |
| Connection type   | Cable gland, 1 x M20  |
| Conductor cross section                                   | ≤ 1.5 mm²   |
| Electrical data   |   |
| Switching principle                                       | Slow action switching element   |
| Usage category  | AC-15/DC-13 (IEC 60947-5-1)   |
| Rated operating current (voltage)                         | 3 A (240 V AC)<br>2 A (24 V DC)   |
| Rated insulation voltage U <sub>i</sub>                   | 240 V   |
| Rated impulse withstand voltage $\mathbf{U}_{\text{imp}}$ | 2,500 V   |
|   |   |

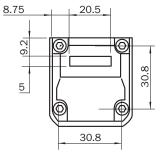
i110-SA223 | i110S ELECTRO-MECHANICAL SAFETY SWITCHES

| Enclosure ratingIP67 (IEC 60529)Ambient operating temperature-20 °C +80 °CStorage temperature-20 °C +80 °C   | <b>.</b>                              | 740/404                              |
|--|---------------------------------------|--------------------------------------|
| Switching courter (switching voltage)5 mA (5 V DC)Mechanical data0.54 kgWeight0.54 kgHousing material2 inc decastSurface treatmentVamishedMechanical life1 x 10 <sup>6</sup> switching cyclesAmbient dataP67 (ICC 60529)Ambient operating temperature-20 °C +80 °CStorage temperature-20 °C +80 °CStorage temperature-20 °C +80 °CStorage temperature17272602EcLASS 5.027272602EcLASS 5.1.427272602EcLASS 5.1.427272602EcLASS 6.027272602EcLASS 7.027272602EcLASS 8.127272602EcLASS 8.127272602EcLASS 8.127272602EcLASS 8.127272602EcLASS 8.127272602EcLASS 8.127272602EcLASS 8.127272602EcLASS 8.1.027272602EcLASS 8.1.027272602EcLASS 8.1.027272602EtLASS 1.027272602EtLASS 1.0272726  |                                       |                                      |
| Mechanical data     Weight 0.54 kg     Cance decase     Cance decase |                                       |                                      |
| Weight0.54 kgHousing materialCodecastBurdisp materialVanishedSurface treatmentVanishedMechanical life1x 10° switching cyclesAmbient data-20 °C +80 °CEnclosure ratingP67 (IEC 60529)Ambient operating temperature-20 °C +80 °CStorage temperature-20 °C +80 °CClassifications-20 °C +80 °CEtcLASS 5.02727602EtcLASS 6.02727602EtcLASS 6.02727202EtcLASS 6.02727202EtcLASS 7.02727202EtcLASS 8.12727602EtcLASS 8.12727602EtcLASS 8.12727602EtcLASS 9.02727602EtcLASS 9.02727602EtcLASS 9.02727602EtcLASS 9.02727602EtcLASS 1.02727602EtcLASS 1.027  | Switching current (switching voltage) | 5 mA (5 V DC)                        |
| Hosing materialIn cliceaseSurface treatmentVanisheMechanical life1 a 10 <sup>6</sup> switching cyclesAmbient dataPR7 (EC 60529)Enclosure ratingPR7 (EC 60529)Ambient operating temperature-20 ° 0 ° + 80 ° CSortage temperature-20 ° 0 ° + 80 ° CClassifications-20 ° 20 ° + 80 ° CEnclosure 5.272502Enclosure 5.272502Enclosure 5.272602Enclosure 5.272602Enclosure 6.272602Enclosure 6.272602Enclosure 7.272602Enclosure 7.272602Enclosu   | Mechanical data                       |                                      |
| surface treatmentvanishedMechanical life1x10 <sup>6</sup> switching cyclesAmbient dataEnclosure ratingP67 (IE C6029)Ambient operating temperature20 °C +80 °Cstorage temperature-20 °C +80 °Cstorage temperature-20 °C +80 °Cclassifications20 °C +80 °CEcLASS 5.02727020EcLASS 5.142727020EcLASS 6.22727020EcLASS 6.22727020EcLASS 7.02727020EcLASS 8.12727020EcLASS 9.02727020EcLASS 1.02727020EcLASS 1.02727020EcLASS 1.02727020EcLASS 1.02727020EcLASS 1.02727020EcLASS 1.02727020EcLASS 1.02727020EcLASS 1.0272020EcLASS 1.020292EtTM 5.0EcO292EtTM 5.0EcO292EtTM 6.0EcO292EtTM 6   | Weight                                | 0.54 kg                              |
| Mechanical life1 x 10 <sup>6</sup> switching cyclesAmbient dataEnclosure ratingP67 (IEC 60529)Ambient operating temperature-20 °C +80 °CStorage temperature-20 °C +80 °CClassifications20 °C +80 °CEcLASS 5.02727602EcLASS 5.1.42727602EcLASS 6.027272602EcLASS 6.227272602EcLASS 7.027272602EcLASS 8.127272602EcLASS 9.027272602EcLASS 9.027272602EcLASS 1.027272602EcLASS 1.027272602EcLASS 1.027272602EcLASS 1.027272602EntASS 1.0 <td< th=""><th>Housing material</th><th>Zinc diecast</th></td<>  | Housing material                      | Zinc diecast                         |
| Ambient dataEnclosure ratingP67 (EC 60529)Ambient operating temperature-20 °C +80 °CStorage temperature-20 °C +80 °CClassifications-20 °C +80 °CEcLASS 5.02727602EcLASS 5.1.427272002EcLASS 6.027272002EcLASS 6.027272002EcLASS 6.127272002EcLASS 6.227272002EcLASS 7.027272002EcLASS 7.027272002EcLASS 8.127272002EcLASS 8.127272002EcLASS 8.127272002EcLASS 9.027272002EcLASS 9.027272002 <tr< th=""><th>Surface treatment</th><th>Varnished</th></tr<>  | Surface treatment                     | Varnished                            |
| Enclosure ratingIP67 (IEC 60529)Ambient operating temperature-20 °C +80 °CStorage temperature-20 °C +80 °CStorage temperature-20 °C +80 °CClassifications-20 °C +80 °CEcLASS 5.027270202EcLASS 5.1.427270202EcLASS 6.027270202EcLASS 6.227270202EcLASS 7.027270202EcLASS 8.127270202EcLASS 8.127270202EcLASS 9.027270202EcLASS 9.027270202EcLAS  | Mechanical life                       | 1 x 10 <sup>6</sup> switching cycles |
| Ambient operating temperature-0° °C +80°CStorage temperature-0° °C +80°CClassificationsEcLASS 5.0727202EcLASS 5.142727202EcLASS 6.02727202EcLASS 6.22727202EcLASS 7.02727202EcLASS 8.02727202EcLASS 8.12727202EcLASS 9.02727202EcLASS 1.02727202EcLASS 1.0 <t< th=""><th>Ambient data</th><th></th></t<>  | Ambient data                          |                                      |
| Storage temperature-20 °C +80 °CClassificationsEcLass 5.027272602EcLass 5.1.427272602EcLass 6.027272602EcLass 6.227272602EcLass 7.027272602EcLass 8.027272602EcLass 9.027272602EcLass 1.027272602EcLass 1.027272602<   | Enclosure rating                      | IP67 (IEC 60529)                     |
| ClassificationsEcLass 5.027272602EcLass 5.1.427272602EcLass 6.027272602EcLass 6.227272602EcLass 7.027272602EcLass 8.027272602EcLass 8.127272602EcLass 9.027272602EcLass 1.0.027272602EcLass 1.0.027272602 <th>Ambient operating temperature</th> <th>-20 °C +80 °C</th>  | Ambient operating temperature         | -20 °C +80 °C                        |
| ECLASS 5.027272602ECLASS 5.1.427272602ECLASS 6.027272602ECLASS 6.227272602ECLASS 7.027272602ECLASS 8.027272602ECLASS 9.027272602ECLASS 9.027272602ECLASS 10.027272602ECLASS 11.027272602ECLASS 12.02002592ETIM 5.0E002592ETIM 6.0E002592ETIM 7.0E002592  | Storage temperature                   | -20 °C +80 °C                        |
| ECLASS 5.1.42727202ECLASS 6.02727202ECLASS 6.22727202ECLASS 7.02727202ECLASS 8.02727202ECLASS 8.12727202ECLASS 9.02727202ECLASS 10.02727202ECLASS 11.02727202ECLASS 12.02727202ETIM 5.0E002592ETIM 6.0E002592ETIM 6.0E002592ETIM 6.0E002592  | Classifications                       |                                      |
| ECLASS 6.07272602ECLASS 6.27272602ECLASS 7.07272602ECLASS 8.07272602ECLASS 9.07272602ECLASS 9.07272602ECLASS 10.07272602ECLASS 11.07272602ECLASS 12.07272602ETIM 5.06002592ETIM 6.06002592ETIM 7.06002592ETIM 7.06002592   | ECLASS 5.0                            | 27272602                             |
| EcLASS 6.227272602EcLASS 7.027272602EcLASS 8.027272602EcLASS 9.027272602EcLASS 10.027272602EcLASS 11.027272602EcLASS 12.027272602EtLASS 12.02002592EtIM 5.0E002592EtIM 6.0E002592EtIM 7.0E002592   | ECLASS 5.1.4                          | 27272602                             |
| ECLASS 7.027272602ECLASS 8.027272602ECLASS 8.127272602ECLASS 9.027272602ECLASS 10.027272602ECLASS 11.027272602ECLASS 12.027272602ETIM 5.0E002592ETIM 6.0E002592ETIM 7.0E002592ETIM 7.0E002592  | ECLASS 6.0                            | 27272602                             |
| Eclass 8.02727602Eclass 8.12727602Eclass 9.02727602Eclass 10.02727602Eclass 11.02727602Eclass 12.02727602Etim 5.0Eco2592Etim 6.0Eco2592Etim 6.0Eco2592Etim 6.0Eco2592Etim 7.0Eco2592Etim 8.0Eco2592  | ECLASS 6.2                            | 27272602                             |
| ECLASS 8.1         27272602           ECLASS 9.0         27272602           ECLASS 10.0         27272602           ECLASS 11.0         27272602           ECLASS 12.0         27272602           ETIM 5.0         27272602           ETIM 6.0         E002592           ETIM 7.0         E002592           ETIM 8.0         E002592  | ECLASS 7.0                            | 27272602                             |
| ECLASS 9.0         27272602           ECLASS 10.0         27272602           ECLASS 11.0         27272602           ECLASS 12.0         27272602           ETIM 5.0         EC002592           ETIM 6.0         EC002592           ETIM 7.0         EC002592           ETIM 8.0         EC002592   | ECLASS 8.0                            | 27272602                             |
| EcLass 10.0       27272602         EcLass 11.0       27272602         EcLass 12.0       27272602         ETIM 5.0       EC02592         ETIM 6.0       EC02592         ETIM 7.0       EC02592         ETIM 8.0       EC02592   | ECLASS 8.1                            | 27272602                             |
| ECLASS 11.0       27272602         ECLASS 12.0       27272602         ETIM 5.0       EC002592         ETIM 7.0       EC002592         ETIM 8.0       EC002592  | ECLASS 9.0                            | 27272602                             |
| ECLASS 12.0       27272602         ETIM 5.0       EC002592         ETIM 7.0       EC002592         ETIM 8.0       EC002592   | ECLASS 10.0                           | 27272602                             |
| ETIM 5.0       EC002592         ETIM 6.0       EC002592         ETIM 7.0       EC002592         ETIM 8.0       EC002592  | ECLASS 11.0                           | 27272602                             |
| ETIM 6.0       EC002592         ETIM 7.0       EC002592         ETIM 8.0       EC002592  | ECLASS 12.0                           | 27272602                             |
| ETIM 7.0         EC002592           ETIM 8.0         EC002592  | ETIM 5.0                              | EC002592                             |
| ETIM 8.0 EC002592  | ETIM 6.0                              | EC002592                             |
|  | ETIM 7.0                              | EC002592                             |
| UNSPSC 16.0901 39122205  | ETIM 8.0                              | EC002592                             |
|  | UNSPSC 16.0901                        | 39122205                             |

# Dimensional drawing (Dimensions in mm (inch))

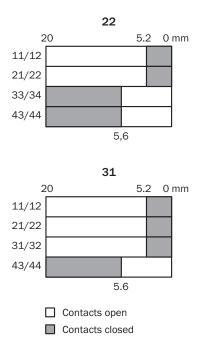






# Actuator travel diagram

Contact action over the entire actuator withdrawl distance (full insertion = 0 mm)



# **i110-SA223 | i110S** ELECTRO-MECHANICAL SAFETY SWITCHES

## Switching elements

|                         | Actuator inserted  | Actuator removed  |
|-------------------------|--|---|
|                         |  |   |
| Switching element<br>22 | 43       -√         43       -√         33       -√         34       -√         32       -√         34       -√         34       -√         35       -√         36       -√         37       -√         38       -√         39       -√         31       -√         32       -√         34       -√         35       -√         36       -√         37       -√         38       -√         39       -√         34       -√         35       -√         36       -√         37       -√         38       -√         39       -√         30       -√         31       -√         32       -√         34       -√         35       -√         36       -√         37       -√         38       -√         39       -√         30       -√         31       -√ <th>γ<br/>43 σ<sup>1</sup>σ 44<br/>33 σ<sup>1</sup>σ 34<br/>21 <u>919</u> 22<br/>11 <u>919</u> 12</th> | γ<br>43 σ <sup>1</sup> σ 44<br>33 σ <sup>1</sup> σ 34<br>21 <u>919</u> 22<br>11 <u>919</u> 12                                   |
| Switching element<br>31 | <ul> <li>♀</li> <li>43 0 0 44</li> <li>④ 31 0 0 32</li> <li>④ 21 0 22</li> <li>④ 11 0 12</li> </ul>  | 43       0       44         31       0       0       32         21       0       0       22         11       0       0       12 |

#### Switching element 22:

2 positive action N/C contacts + 2 N/O contact

## Switching element 31:

3 positive action N/C contacts + 1 N/O contact

# SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

# WORLDWIDE PRESENCE:

Contacts and other locations -www.sick.com



Online data sheet

