

# 3SE International Limit Switches

## Position Switches

3SE2 100 to 3SE3 170 / 3SE2 303 / 3SE2 404  
Metal enclosure and open type

### Features

- UL Listed, CSA Certified, CE. Meets or exceeds most local, national and international standards.
- Standard (40 mm) or Wide (56 mm) die-cast aluminum housing. Offers increased wiring space, additional cable entry options and corrosion resistant housing
- Standard (40 mm) offerings can accommodate both U.S. 29.4 [1.16] × 59.5 [2.34] and DIN 30 [1.18] × 60 [2.36] mounting dimensions
- Nine field interchangeable operating heads (12 variations). Interchangeable on both the standard (40 mm) and wide (56 mm) styles. Reduces inventory and inventory costs
- Field replaceable, electrically isolated, double bridge contacts. Provides electrical flexibility and ease of maintenance
- Direct opening action (positive opening) of the NC contact
- NEMA A600, Q600 contact ratings

### Application

The function of position switches (limit switches) is to produce electrical signals corresponding to the positions of moving machinery.

The units are suitable for use in virtually any climate.

#### Specifications

IEC 60 947-5-1.

The 3SE2 100 and 3SE2 120 position switches correspond to Swiss regulations (SUVA). The following actuator types have been approved:

- Plunger – B
- Overtravel plunger – C
- Roller plunger – D
- Roller lever – E
- Angular roller lever – F
- Roller crank – GW

In addition, the open-type 3SE3 position switches and the 3SE3 switch inserts are also permitted.

#### Safety position switches

The 3SE. position switches with metal enclosures and snap-action contacts as well as devices with slow-action contacts can be used as safety position switches in control systems conforming to EN 60 204-1, or IEC 60 204-1.

### Construction

3SE position switches are available in die-cast standard (40 mm) or wide (50 mm) aluminum enclosures or as open-type units.

The 3SE2 120/3SE3 170 position switches with standard enclosure, overtravel plunger, roller plunger, rod and roller crank actuators, conform to EN 50 041. These specifications define the most important mounting dimensions, operating points, enclosure types and actuator types.

Position switches have one or three cable entries. The cable entry has a 1/2"-NPT (3SE3) or M20 × 1.5 (3SE2) threaded metal wire opening. (see also [Accessories, Page 13/97](#))

#### Actuators

All actuators can be retro-fitted or exchanged for another version. They can also be repositioned every 90° so that the switches can be operated from any of the four sides.

- The position switches with roller lever are approached perpendicular to the plunger axis and position switches with angular roller lever are approached in parallel with the plunger axis.
- The roller crank actuators, adjustable-length roller crank actuators and rod actuators can be operated from both sides and be positioned from 10° to 10° on the actuating spindle. The rollers of the actuators are made from wear resistant plastic.

- The wobble spring can be approached from any direction.
- The forked lever actuator has two defined switching positions. The actuating element causes changeover from one position to the other. This actuator is suitable for two-channel operation.

The open-type 3SE. position switches are available exclusively with a plunger actuator.

Important:

The 3SE. position switches with metal enclosure are not permitted to be used as stops.

#### Contacts

The position switches (limit switches) are available with snap-action contacts, slow-action contacts or slow-action make-before-break contacts.

The 3SE. position switches with a metal enclosure are available with 2, 3 or 4 contacts.

The movable normally closed and normally open switch contacts are electrically isolated from each other and are suitable for switching voltages of different potentials.

#### Contact reliability

The movable switch contacts are double moving contacts. This increases the contact reliability even when the switch has to be operated with low voltages and currents, e. g. DC 5 V/1 mA.

The switching point of the snap action contacts is independent of the switching speed.

The contact chamber is covered to prevent ingress of foreign bodies.

### Principle of operation

#### Positive opening →

The opening contacts of the switch are forced open mechanically, positively-driven and reliably by the plunger (positive-opening).

In order to ensure this positive opening, the position switch must be actuated in such a way that the nominal travel ([Pages 13/100 to 13/112](#)) and angle for the positive opening are substantially exceeded.

Position switches that display this symbol are suitable for use in safety applications.

# 3SE International Limit Switches

## Position Switches

3SE2 100 to 3SE3 170 / 3SE2 303 / 3SE2 404  
Metal enclosure and open type, 40 and 56 mm width

### Technical data

| <ul style="list-style-type: none"> <li>• rated voltage</li> <li>• continuous current</li> <li>• switching capacity</li> <li>- for 3SE. ...-8.</li> </ul> | AC 600 V<br>10 A<br>Heavy Duty, A 600/Q 600<br>Heavy Duty, A 300/Q 30   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
|--|---|----------------|-------|---------------|-------------------|--|--|-------|---------------|---------------|-------|---------------|---------------|---|---|---|---|---|---|----|----|----|----|----|----|-----|----|----|----|---|---|-----|----|---|-----|---|---|-----|----|---|-----|---|-------------------|-----|----|---|-----|-----|-------------------|
| Rated insulation voltage $U_i$   | 500 V   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Pollution degree   | Class 3   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Short circuit protection <sup>1)</sup> , DIAZED-fuse links   | Utilization category gL/gG 6 A, quick response characteristic 10 A  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Rated operational voltage $U_e$  | AC 500 V, over 300 V only for equal potential (3SE21.0-and 3SE3170-8..00)<br>AC 500 V, over AC 380 V only for equal potential   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Conventional free-air thermal current $I_{th}$   | 10 A  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Rated operational current $I_e$ <sup>4)</sup>  | <table border="1"> <thead> <tr> <th colspan="3">AC 40 to 60 Hz</th> <th colspan="3">DC</th> </tr> <tr> <th><math>U_e</math></th> <th><math>I_e</math> / AC-12</th> <th><math>I_e</math> / AC-15</th> <th><math>U_e</math></th> <th><math>I_e</math> / DC-12</th> <th><math>I_e</math> / DC-13</th> </tr> <tr> <th>V</th> <th>A</th> <th>A</th> <th>V</th> <th>A</th> <th>A</th> </tr> </thead> <tbody> <tr> <td>24</td> <td>10</td> <td>10</td> <td>24</td> <td>10</td> <td>10</td> </tr> <tr> <td>125</td> <td>10</td> <td>10</td> <td>48</td> <td>6</td> <td>4</td> </tr> <tr> <td>230</td> <td>10</td> <td>6</td> <td>110</td> <td>4</td> <td>1</td> </tr> <tr> <td>400</td> <td>10</td> <td>4</td> <td>220</td> <td>1</td> <td>0.4<sup>2)</sup></td> </tr> <tr> <td>500</td> <td>10</td> <td>3</td> <td>440</td> <td>0.5</td> <td>0.2<sup>3)</sup></td> </tr> </tbody> </table> | AC 40 to 60 Hz |       |               | DC                |  |  | $U_e$ | $I_e$ / AC-12 | $I_e$ / AC-15 | $U_e$ | $I_e$ / DC-12 | $I_e$ / DC-13 | V | A | A | V | A | A | 24 | 10 | 10 | 24 | 10 | 10 | 125 | 10 | 10 | 48 | 6 | 4 | 230 | 10 | 6 | 110 | 4 | 1 | 400 | 10 | 4 | 220 | 1 | 0.4 <sup>2)</sup> | 500 | 10 | 3 | 440 | 0.5 | 0.2 <sup>3)</sup> |
| AC 40 to 60 Hz   |   |                | DC    |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| $U_e$  | $I_e$ / AC-12   | $I_e$ / AC-15  | $U_e$ | $I_e$ / DC-12 | $I_e$ / DC-13     |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| V  | A   | A              | V     | A             | A                 |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| 24   | 10  | 10             | 24    | 10            | 10                |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| 125  | 10  | 10             | 48    | 6             | 4                 |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| 230  | 10  | 6              | 110   | 4             | 1                 |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| 400  | 10  | 4              | 220   | 1             | 0.4 <sup>2)</sup> |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| 500  | 10  | 3              | 440   | 0.5           | 0.2 <sup>3)</sup> |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Mechanical endurance   | $30 \times 10^6$ operating cycles ( $15 \times 10^6$ for 3SE3 2.0-8.)   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Electrical endurance   | $10 \times 10^6$ operating cycles with 3RH11, 3RT10 16, 3RT10 17, 3RT10 24 to 3RT10 26 (3TH4, 3TF40 to 3TF43) contactors<br>$0.5 \times 10^6$ operating cycles when interrupting $I_e$ / AC-15 at 230 V<br>With DC the contact endurance depends not only on the breaking current but also on the voltage, the circuit inductance and the speed of switching. No generally valid information can be given.  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| <ul style="list-style-type: none"> <li>• for AC-15 duty</li> <li>• for DC-13 duty</li> </ul>   |   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Operating frequency  | $6 \times 10^3$ operating cycles per hour with 3RH11, 3RT10 16, 3RT10 17, 3RT10 24 to 3RT10 26 (3TH4, 3TF40 to 3TF43) contactors  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Operating accuracy   | 0.05 mm for repeated switching, measured at the plunger of the switch block.  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Operating point  | With snap-action contacts independent of contact wear constant throughout the life of the switch  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Ambient temperature  | -30 to +85 °C (-22 to +185°F)   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Degree of protection DIN VDE 0470 and IEC 60 529   |   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| <ul style="list-style-type: none"> <li>• with metal enclosure</li> <li>• open-type</li> <li>• electrical plug and socket connection</li> </ul>           | IP 67<br>IP 20 (terminals), IP 40 (switching chamber)<br>IP 65  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Enclosure cable entry  | 1 x 1/2"-NPT (3SE3); 1 x M 20 x 1.5 (3SE212) or 3 x M20 x 1.5 (3SE2100, 2303, 2404)   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Conductor cross-sections   |   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded with end sleeve</li> </ul>   | 2 x 2.5 mm <sup>2</sup> (2 x 14 AWG)<br>2 x 1.5 mm <sup>2</sup> (2 x 16 AWG)  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Installation angle   | Any   |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Enclosure material   | Metal (GD – AISi 12)  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |
| Protective conductor terminal  | M 3.5 inside enclosure  |                |       |               |                   |  |  |       |               |               |       |               |               |   |   |   |   |   |   |    |    |    |    |    |    |     |    |    |    |   |   |     |    |   |     |   |   |     |    |   |     |   |                   |     |    |   |     |     |                   |

1) Without any welding acc. to DIN VDE 0660 Part 200.

2) 3SE21.0 - and 3SE3170 - 8..00: 0.27A

3) 3SE21.0 - and 3SE3170 - 8..00: 0.10A

4) Refer to Section 19, General Information for NEMA Control and Circuit Ratings.

# 3SE International Limit Switches Position Switches

3SE2 100 to 3SE3 170  
Metal enclosure, 40 and 56 mm width

## Selection and ordering data

2 contacts · Moving double break contacts · IP 67 degree of protection · EN 50 041

| 40 mm wide | 56 mm wide <sup>2)</sup> | Actuator design to EN 50 041   | Enclosure width | 3SE. position switches<br>with 2 slow-action contacts                                 | 3SE. position switches<br>with 2 slow-action contacts                                 | Weight approx. |               |       |
|------------|--------------------------|--|-----------------|---|---|----------------|---------------|-------|
|            |                          |  |                 | <br>Identification number <b>11</b><br>acc. to EN 50 013,<br>switch block 3SE3 000-0A | <br>Identification number <b>02</b><br>acc. to EN 50 013,<br>switch block 3SE3 000-6A |                |               |       |
|            |                          |  |                 | Order No.   | List Price \$   | Order No.      | List Price \$ |       |
|            |                          |  |                 |   | 1 unit  |                | 1 unit        | kg    |
|            |                          |  |                 | → 3SE□ 1□0-0B   | 50.00   | → 3SE□ 1□0-6B  | 50.00         | 0.190 |
|            |                          | Plunger (3SX3100)  | –               | → 3SE2 100-0B   | 50.00   | → 3SE2 100-6B  | 50.00         | 0.220 |
|            |                          | Overtravel plunger (3SX3106)   | B               | → 3SE□ 1□0-0C   | 67.00   | → 3SE□ 1□0-6C  | 67.00         | 0.230 |
|            |                          |  |                 | → 3SE2 100-0C   | 67.00   | → 3SE2 100-6C  | 67.00         | 0.258 |
|            |                          | Roller plunger (3SX3107)   | C               | → 3SE□ 1□0-0D   | 74.00   | → 3SE□ 1□0-6D  | 74.00         | 0.250 |
|            |                          |  |                 | → 3SE2 100-0D   | 74.00   | → 3SE2 100-6D  | 74.00         | 0.280 |
|            |                          | Roller lever   | –               | → 3SE□ 1□0-0E   | 63.00   | → 3SE□ 1□0-6E  | 63.00         | 0.210 |
|            |                          | Actuator made of molded plastic (3SX3102)                                    |                 | → 3SE2 100-0E   | 63.00   | → 3SE2 100-6E  | 63.00         | 0.240 |
|            |                          | Angular roller lever   | –               | → 3SE□ 1□0-0F   | 60.00   | → 3SE□ 1□0-6F  | 60.00         | 0.225 |
|            |                          | Actuator made of molded plastic (3SX3104)                                    |                 | → 3SE2 100-0F   | 60.00   | → 3SE2 100-6F  | 60.00         | 0.240 |
|            |                          | Roller crank   | A               | → 3SE□ 1□0-0GW  | 71.00   | → 3SE□ 1□0-6GW | 71.00         | 0.305 |
|            |                          | • finely adjustable from 10° to 10° (3SX3211 + 3SX3212)                      |                 | → 3SE2 100-0GW  | 71.00   | → 3SE2 100-6GW | 71.00         | 0.335 |
|            |                          | • adjustable length, finely – adjustable from 10° to 10° (3SX3211 + 3SX3213) |                 | 3SE□ 1□0-0UW  | 87.00   | 3SE□ 1□0-6UW   | 87.00         | 0.315 |
|            |                          |  |                 | 3SE2 100-0UW  | 87.00   | 3SE2 100-6UW   | 87.00         | 0.333 |
|            |                          | Rod actuator   | D               |   |   |                |               |       |
|            |                          | finely adjustable from 10° to 10°  |                 |   |   |                |               |       |
|            |                          | • Molded plastic rod (3SX3211 + 3SX3215)                                     | 40              | 3SE□ 1□0-0WW  | 82.00   | 3SE□ 1□0-6WW   | 82.00         | 0.315 |
|            |                          |  | 56              | 3SE2 100-0WW  | 82.00   | 3SE2 100-6WW   | 83.00         | 0.348 |
|            |                          | • Aluminum rod (3SX3211 + 3SX3214)   | 40              | 3SE□ 1□0-0VW  | 83.00   | 3SE□ 1□0-6VW   | 83.00         | 0.321 |
|            |                          |  | 56              | 3SE2 100-0VW  | 83.00   | 3SE2 100-6VW   | 83.00         | 0.354 |
|            |                          | Switch body with switch block  | 40              | 3SE□ 1□0-0A   | 44.00   | 3SE□ 1□0-6A    | 44.00         | 0.175 |
|            |                          | without actuator   | 56              | 3SE2 100-0A   | 44.00   | 3SE2 100-6A    | 44.00         | 0.203 |
|            |                          | Order No. suffix   |                 |   |   |                |               |       |
|            |                          | • with metric connecting thread M 20 × 1.5 I.E. 3SE□1 □0                     |                 |   |   |                |               |       |
|            |                          | • with 1/2" - NPT connecting thread I.E. 3SE□1 □0                            |                 |   |   |                |               |       |

For operation, operating speed and travel, see Pages 13/100 to 13/105.

→ Positive opening acc. to IEC 60 947-5-1, Appendix K, and DIN VDE 0660 Part 200.

1) The actuator heads can be subsequently exchanged (see Page 13/95).  
2) For conduit thread adaptors see page 13/97.

Discount Code: Limit Switches




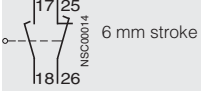




















# 3SE International Limit Switches

## Position Switches

3SE2 100 to 3SE3 170  
Metal enclosure, 40 and 56 mm width

### Selection and ordering data

2 contacts · Moving double break contacts · IP 67 degree of protection · EN 50 041

| 40 mm wide  |   | 56 mm wide <sup>2)</sup> |          | Actuator design to EN 50 041 | Enclosure width | 3SE. position switches with 2 slow-action contacts                                |                              | 3SE. position switches with 2 slow-action make before-break contacts   |                              | Weight approx. kg |
|---|---|--------------------------|----------|------------------------------|-----------------|---|------------------------------|--|------------------------------|-------------------|
|   |   |                          |          |                              |                 | Order No.   | List Price \$ 1 unit         | Order No.  | List Price \$ 1 unit         |                   |
|    |  |                          |          |                              |                 |  | 6 mm stroke                  |    | 6 mm stroke                  |                   |
|   |   |                          |          |                              |                 | Identification number <b>20</b><br>acc. to EN 50 013,<br>switch block 3SE3 000-7A |                              | Identification number <b>11</b><br>acc. to EN 50 013,<br>switch block 3SE3 000-3A  |                              |                   |
|   | Actuator <sup>1)</sup>  |                          | mm       |                              |                 |   |                              |  |                              |                   |
|    | <b>Plunger</b><br>(3SX3100)   | –                        | 40<br>56 |                              |                 | <b>3SE□ 1□0-7B</b><br><b>3SE2 100-7B</b>  | <b>50.00</b><br><b>50.00</b> |  <b>3SE□ 1□0-3B</b><br> <b>3SE2 100-3B</b>       | <b>50.00</b><br><b>50.00</b> | 0.195<br>0.220    |
|    | <b>Overtravel plunger</b><br>(3SX3106)  | B                        | 40<br>56 |                              |                 | <b>3SE□ 1□0-7C</b><br><b>3SE2 100-7C</b>  | <b>67.00</b><br><b>67.00</b> |  <b>3SE□ 1□0-3C</b><br> <b>3SE2 100-3C</b>       | <b>67.00</b><br><b>67.00</b> | 0.230<br>0.259    |
|    | <b>Roller plunger</b><br>(3SX3107)  | C                        | 40<br>56 |                              |                 | <b>3SE□ 1□0-7D</b><br><b>3SE2 100-7D</b>  | <b>74.00</b><br><b>74.00</b> |  <b>3SE□ 1□0-3D</b><br> <b>3SE2 100-3D</b>       | <b>74.00</b><br><b>74.00</b> | 0.252<br>0.277    |
|   | <b>Roller lever</b><br>Actuator made of molded plastic (3SX3102)                  | –                        | 40<br>56 |                              |                 | <b>3SE□ 1□0-7E</b><br><b>3SE2 100-7E</b>  | <b>63.00</b><br><b>63.00</b> |  <b>3SE□ 1□0-3E</b><br> <b>3SE2 100-3E</b>      | <b>63.00</b><br><b>63.00</b> | 0.209<br>0.239    |
|  | <b>Angular roller lever</b><br>Actuator made of molded plastic (3SX3104)          | –                        | 40<br>56 |                              |                 | <b>3SE□ 1□0-7F</b><br><b>3SE2 100-7F</b>  | <b>60.00</b><br><b>60.00</b> |  <b>3SE□ 1□0-3F</b><br> <b>3SE2 100-3F</b>   | <b>60.00</b><br><b>60.00</b> | 0.220<br>0.236    |
|  | <b>Roller crank</b><br>• finely adjustable from 10° to 10° (3SX3211 + 3SX3212)    | A                        | 40<br>56 |                              |                 | <b>3SE□ 1□0-7GW</b><br><b>3SE2 100-7GW</b>  | <b>75.00</b><br><b>71.00</b> |  <b>3SE□ 1□0-3GW</b><br> <b>3SE2 100-3GW</b> | <b>71.00</b><br><b>71.00</b> | 0.305<br>0.328    |
|  | • adjustable length, finely – adjustable from 10° to 10° (3SX3211 + 3SX3213)      |                          | 40<br>56 |                              |                 | <b>3SE□ 1□0-7UW</b><br><b>3SE2 100-7UW</b>  | <b>87.00</b><br><b>87.00</b> | <b>3SE□ 1□0-3UW</b><br><b>3SE2 100-3UW</b>   | <b>87.00</b><br><b>87.00</b> | 0.315<br>0.336    |
|  | <b>Rod actuator</b><br>finely adjustable from 10° to 10°                          | D                        |          |                              |                 |   |                              |  |                              |                   |
|   | • Molded plastic rod (3SX3211 + 3SX3215)  |                          | 40<br>56 |                              |                 | <b>3SE□ 1□0-7WW</b><br><b>3SE2 100-7WW</b>  | <b>82.00</b><br><b>83.00</b> | <b>3SE□ 1□0-3WW</b><br><b>3SE2 100-3WW</b>   | <b>82.00</b><br><b>83.00</b> | 0.190<br>0.200    |
|   | • Aluminum rod (3SX3211 + 3SX3214)  |                          | 40<br>56 |                              |                 | <b>3SE□ 1□0-7VW</b><br><b>3SE2 100-7VW</b>  | <b>83.00</b><br><b>83.00</b> | <b>3SE□ 1□0-3VW</b><br><b>3SE2 100-3VW</b>   | <b>83.00</b><br><b>83.00</b> | 0.190<br>0.200    |
|   | <b>Switch body</b><br>with switch block   |                          | 40       |                              |                 | <b>3SE□ 1□0-7A</b>  | <b>44.00</b>                 | <b>3SE□ 1□0-3A</b>   | <b>44.00</b>                 | 0.175             |
|   | without actuator  |                          | 56       |                              |                 | <b>3SE2 100-7A</b>  | <b>44.00</b>                 | <b>3SE2 100-3A</b>   | <b>44.00</b>                 | 0.203             |

#### Order No. suffix

- with metric connecting thread M 20 × 1.5  
I.E. 3SE□1 □0
- with 1/2" - NPT connecting thread  
I.E. 3SE□1 □0

2.2  
3.7

2.2  
3.7

For operation, operating speed and travel, see Pages 13/100 to 13/105.

→ Positive opening acc. to IEC 60 947-5-1, Appendix K, and DIN VDE 0660 Part 200.
















1) The actuator heads can be subsequently exchanged (see Page 13/95).  
2) For conduit thread adaptors see page 13/97.

# 3SE International Limit Switches Position Switches

**3SE2120 Specials**  
Metal enclosure, 40 and 56mm width

## Selection and ordering data

**2 contacts · Moving double break contacts · IP 67 degree of protection · EN 50 041**

| 40 mm wide  | 56 mm wide <sup>2)</sup>  | Actuator design to EN 50 041   | Enclosure width | 3SE position switches<br>with 2 snap-action contacts  | 3SE3 position switches<br>with 2 snap-action contacts   | Weight approx.         |                         |       |
|---|---|--|-----------------|---|---|------------------------|-------------------------|-------|
|   |   |  |                 | Order No.   | List Price \$<br>1 unit   | Order No.              | List Price \$<br>1 unit | kg    |
|    |  |  |                 | <br>6 mm stroke<br>Identification number <b>11</b><br>acc. to EN 50 013,<br>switch block 3SE3 000-1A <sup>2)</sup> | <br>6 mm stroke<br>Identification number <b>02</b><br>acc. to EN 50 013 switch<br>block 3SE3 000-8AV00 <sup>2)</sup> |                        |                         |       |
|   |   |  |                 |   |   |                        |                         |       |
|   |   | Actuator <sup>1)</sup>   | mm              |   |   |                        |                         |       |
|   |   | <b>Plunger</b><br>(3SX3100)  | –               | 40  | → 3SE□ 1□0-1B 50.00   | → 3SE□ 1□0-8BV00 50.00 | 50.00                   | 0.190 |
|    |   |  |                 | 56  | → 3SE2 100-1B 50.00   | → 3SE2 100-8BV00 50.00 | 50.00                   | 0.225 |
|   |   | <b>Overtravel plunger</b><br>(3SX3106)   | B               | 40  | → 3SE□ 1□0-1C 67.00   | → 3SE□ 1□0-8CV00 67.00 | 67.00                   | 0.230 |
|    |   |  |                 | 56  | → 3SE2 100-1C 67.00   | → 3SE2 100-8CV00 67.00 | 67.00                   | 0.260 |
|   |   | <b>Roller plunger</b><br>(3SX3107)   | C               | 40  | → 3SE□ 1□0-1D 74.00   | → 3SE□ 1□0-8DV00 74.00 | 74.00                   | 0.255 |
|    |   |  |                 | 56  | → 3SE2 100-1D 74.00   | → 3SE2 100-8DV00 74.00 | 74.00                   | 0.279 |
|   |   | <b>Roller lever</b><br>Actuator made of<br>molded plastic<br>(3SX3102)               | –               | 40  | → 3SE□ 1□0-1E 63.00   | → 3SE□ 1□0-8EV00 63.00 | 63.00                   | 0.210 |
|    |   |  |                 | 56  | → 3SE2 100-1E 63.00   | → 3SE2 100-8EV00 63.00 | 63.00                   | 0.239 |
|   |   | <b>Angular roller lever</b><br>Actuator made of<br>molded plastic<br>(3SX3104)       | –               | 40  | → 3SE□ 1□0-1F 60.00   | → 3SE□ 1□0-8FV00 60.00 | 60.00                   | 0.225 |
|  |   |  |                 | 56  | → 3SE2 100-1F 60.00   | → 3SE2 100-8FV00 60.00 | 60.00                   | 0.242 |
|   |   | <b>Roller crank</b><br>• finely adjustable<br>from 10° to 10°<br>(3SX3211 + 3SX3212) | A               | 40  | → 3SE□ 1□0-1GW 71.00  | → 3SE□ 1□0-8GW00 71.00 | 71.00                   | 0.305 |
|  |   |  |                 | 56  | → 3SE2 100-1GW 71.00  | → 3SE2 100-8GW00 71.00 | 71.00                   | 0.331 |
|   |   | • adjustable length,<br>finely adjustable from<br>10° to 10°<br>(3SX3211 + 3SX3213)  | –               | 40  | 3SE□ 1□0-1UW 87.00  | 3SE□ 1□0-8UW00 87.00   | 87.00                   | 0.315 |
|  |   |  |                 | 56  | 3SE2 100-1UW 87.00  | 3SE2 100-8UW00 87.00   | 87.00                   | 0.336 |
|   |   | <b>Rod actuator</b><br>finely adjustable<br>from 10° to 10°                          | D               |   |   |                        |                         |       |
|   |   | • Molded plastic rod<br>(3SX3211 + 3SX3215)  |                 | 40  | 3SE□ 1□0-1WW 82.00  | 3SE□ 1□0-8WW00 82.00   | 82.00                   | 0.315 |
|  |   |  |                 | 56  | 3SE2 100-1WW 82.00  | 3SE2 100-8WW00 82.00   | 82.00                   | 0.346 |
|   |   | • Aluminum rod<br>(3SX3211 + 3SX3214)  |                 | 40  | 3SE□ 1□0-1VW 83.00  | 3SE□ 1□0-8VW00 83.00   | 83.00                   | 0.320 |
|  |   |  |                 | 56  | 3SE2 100-1VW 83.00  | 3SE2 100-8VW00 83.00   | 83.00                   | 0.355 |
|   |   | <b>Wobble spring</b><br>(3SX3126)  | –               | 40  | 3SE□ 1□0-1R 81.00   | 3SE□ 1□0-8RV00 81.00   | 81.00                   | 0.230 |
|  |   |  |                 | 56  | 3SE2 100-1R 81.00   | 3SE2 100-8RV00 81.00   | 81.00                   | 0.270 |
|   |   | <b>Fork lever, latching</b><br>(3SX3127 + 3SX3115)                                   | –               | 40  | 3SE□ 1□0-1T 117.00  | –                      | –                       | 0.340 |
|  |   |  |                 | 56  | 3SE2 100-1T 117.00  | –                      | –                       | 0.360 |
|   |   | <b>Switch body</b><br>with switch block  |                 | 40  | 3SE□ 1□0-1A 44.00   | 3SE□ 1□0-8AV00 44.00   | 44.00                   | 0.175 |
|   |   | without actuator   |                 | 56  | 3SE2 100-1A 44.00   | 3SE3 100-8AV00 44.00   | 44.00                   | 0.203 |

### Order No. suffix

- with metric connecting thread M 20 x 1.5  
I.E. 3SE□1□0
- with 1/2" - NPT connecting thread  
I.E. 3SE□1□0

2.2  
3.7

2.2  
3.7

For operation, operating speed and travel, see Pages 13/100 to 13/105.

- Positive opening acc. to IEC 60 947-5-1, Appendix K, and DIN VDE 0660 Part 200.

- 1) The actuator heads can be subsequently exchanged (see Page 13/95).
- 2) For conduit thread adaptors see page 13/97.


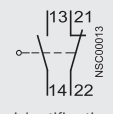







# 3SE International Limit Switches

## Position Switches

**3SE2120 Specials**  
Metal enclosure, 40mm width

### Selection and ordering data

2 contacts · Moving double break contacts · IP 67 degree of protection · EN 50 041 · with 4-pole or 5-pole male receptacle

| 40 mm wide  | Actuator design to EN 50 041   | Enclosure width | 3SE3 position switches with 2 snap-action contacts  | Weight approx.   |       |
|---|--|-----------------|---|--|-------|
|    |  |                 |  <p>Identification number 11 acc. to EN 50 013. switch block 3SE3 000-1A)</p> |  |       |
|   | Actuator <sup>1)</sup>   | mm              | Order No.   | List Price \$<br>1 unit  | kg    |
|    | <b>Plunger</b>   | –               | 40  | <ul style="list-style-type: none"> <li>→ 3SE2 120-1BV00-0AC4 67.00</li> <li>→ 3SE2 120-1BV00-0AC5 70.00</li> </ul> | 0.200 |
|   | <ul style="list-style-type: none"> <li>with 4-pole, M12 male receptacle</li> <li>with 5-pole, M12 male receptacle</li> </ul>   |                 |   |  |       |
|    | <b>Overtravel plunger</b>  | B               | 40  | <ul style="list-style-type: none"> <li>→ 3SE2 120-1CV00-0AC4 84.00</li> <li>→ 3SE2 120-1CV00-0AC5 87.00</li> </ul> | 0.200 |
|   | <ul style="list-style-type: none"> <li>with 4-pole, M12 male receptacle</li> <li>with 5-pole, M12 male receptacle</li> </ul>   |                 |   |  |       |
|    | <b>Roller plunger</b>  | C               | 40  | <ul style="list-style-type: none"> <li>→ 3SE2 120-1DV00-0AC4 91.00</li> <li>→ 3SE2 120-1DV00-0AC5 94.00</li> </ul> | 0.265 |
|   | <ul style="list-style-type: none"> <li>with 4-pole, M12 male receptacle</li> <li>with 5-pole, M12 male receptacle</li> </ul>   |                 |   |  |       |
|   | <b>Roller lever</b>  | –               | 40  | <ul style="list-style-type: none"> <li>→ 3SE2 120-1EV00-0AC4 80.00</li> <li>→ 3SE2 120-1EV00-0AC5 83.00</li> </ul> | 0.225 |
|   | <ul style="list-style-type: none"> <li>with 4-pole, M12 male receptacle</li> <li>with 5-pole, M12 male receptacle</li> </ul>   |                 |   |  |       |
|  | <b>Angular roller lever</b>  | –               | 40  | <ul style="list-style-type: none"> <li>→ 3SE2 120-1FV00-0AC4 67.00</li> <li>→ 3SE2 120-1FV00-0AC5 70.00</li> </ul> | 0.230 |
|   | <ul style="list-style-type: none"> <li>with 4-pole, M12 male receptacle</li> <li>with 5-pole, M12 male receptacle</li> </ul>   |                 |   |  |       |
|  | <b>Roller crank</b>  | A               | 40  | <ul style="list-style-type: none"> <li>→ 3SE2 120-1GW00-0AC4 88.00</li> <li>→ 3SE2 120-1GW00-0AC5 91.00</li> </ul> | 0.310 |
|   | <ul style="list-style-type: none"> <li>finely adjustable from 10° to 10°</li> <li>with 4-pole, M12 male receptacle</li> <li>with 5-pole, M12 male receptacle</li> </ul>                    |                 |   |  |       |
|  | <b>Roller crank</b>  |                 | 40  | <ul style="list-style-type: none"> <li>→ 3SE2 120-1UW00-0AC4 104.00</li> </ul>                                     | 0.325 |
|   | <ul style="list-style-type: none"> <li>adjustable length, finely adjustable from 10° to 10°</li> <li>with 4-pole, M12 male receptacle</li> <li>with 5-pole, M12 male receptacle</li> </ul> |                 |   |  |       |
|   | <b>Switch body with contact block without operating head</b>   | –               | 40  | <ul style="list-style-type: none"> <li>3SE2 120-1AV00-0AC4 61.00</li> <li>3SE2 120-1AV00-0AC5 64.00</li> </ul>     | 0.180 |
|   | <ul style="list-style-type: none"> <li>with 4-pole, M12 male receptacle</li> <li>with 5-pole, M12 male receptacle</li> </ul>   |                 |   |  |       |

### Wiring Diagram for M12 Connections

| M12 Pin | Limit Switch, Snap-Action Contacts 2 <sup>2)</sup> |                   | Typical M12 Cable <sup>3)</sup> |                   |
|---------|--|-------------------|---------------------------------|-------------------|
|         | 4-pole Connection                                  | 5-pole Connection | 4-wire Connection               | 5-wire Connection |
| 1       | 21   | 21                | Brown                           | Brown             |
| 2       | 22   | 22                | White                           | White             |
| 3       | 13   | 13                | Blue                            | Blue              |
| 4       | 14   | 14                | Black                           | Black             |
| 5       | N/A  | Ground            | N/A                             | Green             |



4-pole 5-pole  
Male Receptacle

→ Positive opening acc. to IEC 60 947-5-1, Appendix K

1) The actuator heads can be subsequently exchanged (see Page 13/95).  
2) 21 & 22 = Normally Closed; 13 & 14 = Normally Open.













3) Typical M12 female plug with 5 meter cable.  
4-pole 5-pole  
Right-angle 3RX1542 3RX1631  
Straight 3RX1513 3RX1570

# 3SE International Limit Switches Position Switches

**3SE2 120 Specials**  
Metal enclosure, 40 and 56 mm width

## Selection and ordering data

**2 contacts · Moving double break contacts · IP 67 degree of protection · EN 50 041**  
**1 or 2 LEDs · Stainless steel roller/rod · Increased corrosion protection**

| 40 mm wide <sup>2)</sup>  | Actuator design to EN 50 041  | Enclosure width | 3SE3 position switches with 2 snap-action contacts  | List Price \$ 1 unit  | Weight approx. kg                |
|---|---|-----------------|---|---|----------------------------------|
|              |   |                 | <br>6 mm stroke<br>Identification number 11<br>acc. to EN 50 013<br>switch block 3SE3 000-8AV00 <sup>2)</sup> |   |                                  |
| Actuator <sup>1)</sup>  |   | mm              | Order No.   |   |                                  |
|  NSC00096    | <b>Plunger</b><br>• with 1 LED, 24 V, yellow <sup>3)</sup> <sup>5)</sup><br>• with increased corrosion protection   | –               | 40  | → <b>3SE2120-1AV00-0AF0 + 3SX3100</b> <sup>5)</sup><br>→ <b>3SE2 120-1BV00-0AK0</b> <b>52.00</b>  | 0.220<br>0.200                   |
|  NSC00097    | <b>Overtravel plunger</b><br>• with 1 LED, 24 V, yellow <sup>3)</sup> <sup>5)</sup><br>• with increased corrosion protection  | B               | 40  | → <b>3SE2120-1AV00-0AF0 + 3SX3106</b> <sup>5)</sup><br>→ <b>3SE2 120-1CV00-0AK0</b> <b>69.00</b>  | 0.260<br>0.240                   |
|  NSC 00098   | <b>Roller plunger</b><br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with 2 LED, 24 V, yellow & green <sup>4)</sup><br>• with stainless steel roller<br>• with increased corrosion protection   | C               | 40  | → <b>3SE2120-1DV00-0AF0</b> <b>99.00</b><br>→ <b>3SE2120-1DV00-0AF1</b> <b>108.00</b><br>→ <b>3SE2120-1DV00-0AA3</b> <b>92.00</b><br>→ <b>3SE2120-1DV00-0AK0</b> <b>76.00</b> | 0.250<br>0.250<br>0.255<br>0.250 |
|  NSC 00099  | <b>Roller lever</b><br>Actuator made of moulded plastic<br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with stainless steel roller<br>• with increased corrosion protection   | –               | 40  | → <b>3SE2120-1EV00-0AF0</b> <b>88.00</b><br>→ <b>3SE2120-1EV00-0AA3</b> <b>85.00</b><br>→ <b>3SE2120-1EV00-0AK0</b> <b>65.00</b>  | 0.215<br>0.200<br>0.210          |
|  NSC00093  | <b>Angular roller lever</b><br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with stainless steel roller<br>• with increased corrosion protection   | –               | 40  | → -<br>→ <b>3SE2120-1FV00-0AA3</b> <b>82.00</b><br>→ <b>3SE2120-1FV00-0AK0</b> <b>62.00</b>   | 0.240<br>0.210                   |
|  NSC 00094 | <b>Roller crank</b><br>• finely adjustable from 10° to 10°<br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with stainless steel roller<br>• with increased corrosion protection  | A               | 40  | → <b>3SE2120-1GW00-0AF0</b> <b>96.00</b><br>→ <b>3SE2120-1GW00-0AA3</b> <b>93.00</b><br>→ <b>3SE2120-1GW00-0AK0</b> <b>73.00</b>  | 0.305<br>0.315<br>0.310          |
|  NSC 00099 | • adjustable length, finely adjustable from 10° to 10°<br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with stainless steel roller<br>• with increased corrosion protection  |                 |   | <b>3SE2120-1UW00-0AF0</b> <b>112.00</b><br><b>3SE2120-1UW00-0AA3</b> <b>109.00</b><br><b>3SE2120-1UW00-0AK0</b> <b>89.00</b>  | 0.310<br>0.315<br>0.315          |
|  NSC 00010 | <b>Rod actuator</b><br>finely adjustable from 10° to 10°<br>• <b>molded plastic rod</b><br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with increased corrosion protection<br>• aluminum rod<br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with increased corrosion protection | D               | 40  | -<br><b>3SE2120-1WW00-0AK0</b> <b>84.00</b><br>-<br><b>3SE2120-1VW00-0AK0</b> <b>85.00</b>  | 0.315<br>0.320                   |
|  NSC 00095 | <b>Wobble spring</b><br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with stainless steel roller<br>• with increased corrosion protection  | –               | 40  | -<br><b>3SE2120-1RV00-0AL0</b> <b>78.00</b><br><b>3SE2120-1RV00-0AK0</b> <b>83.00</b>   | 0.200<br>0.200                   |
|  NSC 00101 | <b>Fork lever, latching</b><br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with stainless steel roller<br>• with increased corrosion protection   | –               | 40  | -<br><b>3SE2120-1TV00-0AA3</b> <b>220.00</b><br><b>3SE2120-1TV00-0AK0</b> <b>119.00</b>   | 0.355<br>0.345                   |
|   | <b>Switch body with contact block without operating head</b><br>• with 1 LED, 24 V, yellow <sup>3)</sup><br>• with 2 LEDs, 24 V, yellow & green <sup>4)</sup>   | –               | 40  | <b>3SE2120-1AV00-0AF0</b> <b>69.00</b><br><b>3SE2120-1AV00-0AF1</b> <b>78.00</b>  | 0.185<br>0.200                   |

→ Positive opening acc. to IEC 60 947-5-1, Appendix K

1) The actuator heads can be subsequently exchanged (see Page 13/95).  
2) For conduit thread adaptors see page 13/97.

3) The switch contacts have changed from their normal state.

4) Green LED – There is power to the switch. Yellow LED – The switch contacts have changed from their normal state.

5) Two parts required. Order separately.



# 3SE International Limit Switches Position Switches

## 3SE2 100 to 3SE3 170, 3SE2 230

### Selection and ordering data

#### Switch Bodies with replaceable contact block without operating head

Metal Housing

40 mm<sup>1)</sup>



**3SE2 120**  
**3SE3 170**

56 mm<sup>1)</sup>



**3SE2 100**

Molded Plastic Housing

40 mm<sup>2)</sup>



**3SE2 230**

3SE2100, 3SE2120, 3SE2230 and 3SE3170 limit switches with field replaceable contact blocks may be provided as complete devices; or, separately as components; switch body, operating head and lever (if applicable).

**Switch Bodies** are complete except for the operating head and lever (if applicable). The contact blocks are field replaceable and have a molded plastic housing in which the fixed contacts and the terminals are located.

**Operating Heads** include the necessary hardware to mount to the selected Switch Body and may require an **Operating Lever**.

Plunger, Overtravel Plunger, Roller Plunger, Roller Lever, Angular Roller Lever and Wobble Spring operating heads are complete so only a Switch Body is required.

Side rotary operating heads such as Roller Crank, Adjustable Roller Crank, Fork Lever and Rod Actuator require a side rotary Operating Head and a suitable Lever. Therefore three parts are required for a complete switch; Switch Body, Operating Head, suitable Lever.

Operating heads for the 3SE2100, 3SE2120 and 3SE3170 series are interchangeable with each other and the various contact configurations. The same operating heads are also used in the 3SE2303 and 3SE2404 series. These switches are not available in parts.

Operating heads for the 3SE2230 series are interchangeable with the various contact configurations and may also require a lever (side rotary operating head).

#### Switch Body with Contact Block without Operating Head

| Housing Style   |  | Contact Arrangement     |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|---|--|-------------------------|----------------------|-------------------|-------------------------|----------------------|-------------------|--|----------------------|-------------------|------------------|----------------------|-------------------|------------------|----------------------|-------------------|------------------|----------------------|-------------------|
|   |  | 1 NO + 1 NC Slow-action |                      |                   | 1 NO + 1 NC Snap-action |                      |                   | 1 NO + 1 NC, Slow-action Make-Before-Break |                      |                   | 2 NC Slow-action |                      |                   | 2 NO Slow-action |                      |                   | 2 NC Snap-action |                      |                   |
|   |  | Order No.               | List Price \$ 1 Unit | Weight Approx. kg | Order No.               | List Price \$ 1 Unit | Weight Approx. kg | Order No.                                  | List Price \$ 1 Unit | Weight Approx. kg | Order No.        | List Price \$ 1 Unit | Weight Approx. kg | Order No.        | List Price \$ 1 Unit | Weight Approx. kg | Order No.        | List Price \$ 1 Unit | Weight Approx. kg |
| 56 mm Wide Metal Housing with M20 x 1.5 Threaded Opening                  |  |                         |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|   |  | 3SE2100-0A              | 44.00                | 0.202             | 3SE2100-1A              | 44.00                | 0.203             | 3SE2100-3A                                 | 44.00                | 0.205             | 3SE2100-6A       | 44.00                | 0.200             | 3SE2100-7A       | 44.00                | 0.203             | 3SE2100-8AV00    | 44.00                | 0.175             |
| 40 mm Wide Metal Housing with M20 x 1.5 Threaded Opening                  |  |                         |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|   |  | 3SE2120-0A              | 44.00                | 0.175             | 3SE2120-1A              | 44.00                | 0.175             | 3SE2120-3A                                 | 44.00                | 0.175             | 3SE2120-6A       | 44.00                | 0.175             | 3SE2120-7A       | 44.00                | 0.190             | 3SE2120-8AV00    | 44.00                | 0.175             |
| 40 mm Wide Metal Housing with M20 x 1.5 Threaded Opening and One 24V LED  |  |                         |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|   |  | —                       | —                    | —                 | 3SE2120-1AV00-0AF0      | 69.00                | 0.185             | —  | —                    | —                 | —                | —                    | —                 | —                | —                    | —                 | —                | —                    | —                 |
| 40 mm Wide Metal Housing with M20 x 1.5 Threaded Opening and Two 24V LEDs |  |                         |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|   |  | —                       | —                    | —                 | 3SE2120-1AV00-0AF1      | 78.00                | 0.200             | —  | —                    | —                 | —                | —                    | —                 | —                | —                    | —                 | —                | —                    | —                 |
| 40 mm Wide Metal Housing with M12 male Receptacle, 4-Poles                |  |                         |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|   |  | —                       | —                    | —                 | 3SE2120-1AV00-0AC4      | 61.00                | 0.180             | —  | —                    | —                 | —                | —                    | —                 | —                | —                    | —                 | —                | —                    | —                 |
| 40 mm Wide Metal Housing with M12 male Receptacle, 5-Poles                |  |                         |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|   |  | —                       | —                    | —                 | 3SE2120-1AV00-0AC5      | 64.00                | 0.180             | —  | —                    | —                 | —                | —                    | —                 | —                | —                    | —                 | —                | —                    | —                 |
| 40 mm Wide Metal Housing with 1/2" NPT Threaded Opening                   |  |                         |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|   |  | 3SE3170-0A              | 44.00                | 0.171             | 3SE3170-1A              | 44.00                | 0.169             | 3SE3170-3A                                 | 44.00                | 0.182             | 3SE3170-6A       | 44.00                | 0.174             | 3SE3170-7A       | 44.00                | 0.170             | 3SE3170-8AV00    | 44.00                | 0.170             |
| 40 mm Wide Plastic Housing with M20 x 1.5 Threaded Opening                |  |                         |                      |                   |                         |                      |                   |  |                      |                   |                  |                      |                   |                  |                      |                   |                  |                      |                   |
|   |  | 3SE2230-0A              | 31.00                | 0.095             | 3SE2230-1A              | 31.00                | 0.100             | 3SE2230-3A                                 | 31.00                | 0.095             | 3SE2230-6A       | 31.00                | 0.095             | 3SE2230-7A       | 31.00                | 0.095             | 3SE2230-8AV00    | 31.00                | 0.130             |

<sup>1)</sup> Shown with operating head. See catalog page 13/95 and 13/96 for operating heads and levers.

<sup>2)</sup> Shown with operating head. See catalog page 13/83 for operating heads and levers.


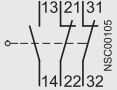
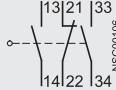
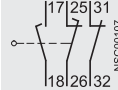
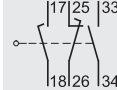










# 3SE International Limit Switches Position Switches

**3SE2 303**  
Metal enclosure, 56 mm width

## Selection and ordering data

3 contacts · Wide enclosure · Moving double break contacts · IP 67 degree of protection · M20 x 1.5 connecting thread

| 56 mm wide <sup>2)</sup>  | 3SE. position switches<br>with mit 3 slow-action<br>contacts   | 3SE. position switches<br>with mit 3 slow-action<br>contacts   | 3SE. position switches<br>with 3 slow-action make-<br>before-break contacts   | 3SE. position switches<br>with 3 slow-action<br>make-before-break<br>contacts   | List<br>Price \$<br>1 unit | Wght<br>approx.<br>kg |
|---|--|--|---|---|----------------------------|-----------------------|
|   | Order No.  | Order No.  | Order No.   | Order No.   |                            |                       |
|    | <br>6 mm stroke<br>Identification number <b>12</b><br>acc. to EN 50 013,<br>switch block<br>3SE3 003-0A | <br>6 mm stroke<br>Identification number <b>21</b><br>acc. to EN 50 013,<br>switch block<br>3SE3 003-1A | <br>6 mm stroke<br>Identification number <b>12</b><br>acc. to EN 50 013,<br>switch block<br>3SE3 003-2A | <br>6 mm stroke<br>Identification No. <b>21</b><br>acc. to EN 50 013,<br>switch block<br>3SE3 003-3A |                            |                       |
| Actuator <sup>1)</sup>  |  |  |   |   |                            |                       |
|    | <b>Plunger</b><br>(3SX3100)  | → <b>3SE2 303-0B</b>   | → <b>3SE2 303-1B</b>  | → <b>3SE2 303-2B</b>  | → <b>3SE2 303-3B</b>       | <b>99.00</b> 0.310    |
|    | <b>Overtravel plunger</b><br>(3SX3106)   | → <b>3SE2 303-0C</b>   | → <b>3SE2 303-1C</b>  | → <b>3SE2 303-2C</b>  | → <b>3SE2 303-3C</b>       | <b>94.00</b> 0.332    |
|    | <b>Roller plunger</b><br>(3SX3107)   | → <b>3SE2 303-0D</b>   | → <b>3SE2 303-1D</b>  | → <b>3SE2 303-2D</b>  | → <b>3SE2 303-3D</b>       | <b>102.00</b> 0.356   |
|  | <b>Roller lever</b><br>Actuator made of<br>molded plastic<br>(3SX3102)   | → <b>3SE2 303-0E</b>   | → <b>3SE2 303-1E</b>  | → <b>3SE2 303-2E</b>  | → <b>3SE2 303-3E</b>       | <b>91.00</b> 0.314    |
|  | <b>Angular roller lever</b><br>Actuator made of<br>molded plastic<br>(3SX3104)   | → <b>3SE2 303-0F</b>   | → <b>3SE2 303-1F</b>  | → <b>3SE2 303-2F</b>  | → <b>3SE2 303-3F</b>       | <b>87.00</b> 0.330    |
|  | <b>Roller crank</b><br>• finely adjustable from<br>10° to 10°<br>(3SX3211 + 3SX3212)   | → <b>3SE2 303-0GW</b>  | → <b>3SE2 303-1GW</b>   | → <b>3SE2 303-2GW</b>   | → <b>3SE2 303-3GW</b>      | <b>98.00</b> 0.411    |
|  | • adjustable length,<br>finely adjustable from<br>10° to 10°<br>(3SX3211 + 3SX3213)  | <b>3SE2 303-0UW</b>  | <b>3SE2 303-1UW</b>   | <b>3SE2 303-2UW</b>   | <b>3SE2 303-3UW</b>        | <b>114.00</b> 0.415   |
|  | <b>Rod actuator</b><br>finely adjustable from<br>10° to 10°<br>• Molded plastic rod<br>(3SX3211 + 3SX3215)<br>• Aluminum rod<br>(3SX3211 + 3SX3214)                                      | <b>3SE2 303-0WW</b>  | <b>3SE2 303-1WW</b>   | <b>3SE2 303-2WW</b>   | <b>3SE2 303-3WW</b>        | <b>111.00</b> 0.416   |
|   |  | <b>3SE2 303-0VW</b>  | <b>3SE2 303-1VW</b>   | <b>3SE2 303-2VW</b>   | <b>3SE2 303-3VW</b>        | <b>111.00</b> 0.425   |

For operation, operating speed and travel, see Pages 13/106 to 13/112.

→ Positive opening acc. to IEC 60 947-5-1, Appendix K, and DIN VDE 0660 Part 200.

1) The actuator heads can be subsequently exchanged (see page 13/95).  
2) For conduit thread adaptors see page 13/97.


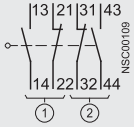
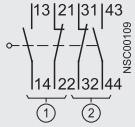
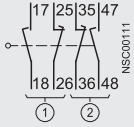









# 3SE International Limit Switches

## Position Switches

**3SE2 404**  
Metal enclosure, 56 mm width

### Selection and ordering data

4 contacts · Wide enclosure · Moving double-break contacts · Degree of protection IP 67 · M20 x 1.5 connecting thread

| 56 mm wide <sup>2)</sup>  | 3SE. position switches<br>with 4 snap-action contacts  |                         | 3SE. position switches<br>with 4 slow-action contacts  |                         | 3SE. position switches<br>with 4 slow-action make before-break contacts  |                         | Wght approx.<br>kg |
|---|--|-------------------------|--|-------------------------|--|-------------------------|--------------------|
|   | Order No.  | List Price \$<br>1 unit | Order No.  | List Price \$<br>1 unit | Order No.  | List Price \$<br>1 unit |                    |
|              |  |                         |  |                         |  |                         |                    |
|   | <br>6 mm stroke<br>Identification number <b>22</b><br>acc. to EN 50 013<br>① Switch block 3SE3 000-1A<br>② Switch block 3SE3 010-1A |                         | <br>6 mm stroke<br>Identification number <b>22</b><br>acc. to EN 50 013<br>① Switch block 3SE3 000-0A<br>② Switch block 3SE3 010-0A |                         | <br>6 mm stroke<br>Identification number <b>22</b><br>acc. to EN 50 013<br>① Switch block 3SE3 000-3A<br>② Switch block 3SE3 010-3A |                         |                    |
| Actuator <sup>1)</sup>  |  |                         |  |                         |  |                         |                    |
|  NSC00096    | → <b>3SE2 404-1B</b>   | <b>121.00</b>           | → <b>3SE2 404-0B</b>   | <b>121.00</b>           | → <b>3SE2 404-2B</b>   | <b>121.00</b>           | 0.380              |
|  NSC00097    | → <b>3SE2 404-1C</b>   | <b>138.00</b>           | → <b>3SE2 404-0C</b>   | <b>138.00</b>           | → <b>3SE2 404-2C</b>   | <b>138.00</b>           | 0.400              |
|  NSC 00098   | → <b>3SE2 404-1D</b>   | <b>189.00</b>           | → <b>3SE2 404-0D</b>   | <b>147.00</b>           | → <b>3SE2 404-2D</b>   | <b>147.00</b>           | 0.420              |
|  NSC 00099  | → <b>3SE2 404-1E</b>   | <b>136.00</b>           | → <b>3SE2 404-0E</b>   | <b>136.00</b>           | → <b>3SE2 404-2E</b>   | <b>136.00</b>           | 0.381              |
| Actuator made of molded plastic (3SX3102)   |  |                         |  |                         |  |                         |                    |
|  NSC00093  | → <b>3SE2 404-1F</b>   | <b>132.00</b>           | → <b>3SE2 404-0F</b>   | <b>132.00</b>           | → <b>3SE2 404-2F</b>   | <b>132.00</b>           | 0.400              |
| Actuator made of molded plastic (3SX3104)   |  |                         |  |                         |  |                         |                    |
|  NSC 00094 | → <b>3SE2 404-1GW</b>  | <b>181.00</b>           | → <b>3SE2 404-0GW</b>  | <b>141.00</b>           | → <b>3SE2 404-2GW</b>  | <b>141.00</b>           | 0.480              |
| • finely adjustable from 10° to 10° (3SX3211+3SX3212)   |  |                         |  |                         |  |                         |                    |
|  NSC 00099 | <b>3SE2 404-1UW</b>  | <b>161.00</b>           | <b>3SE2 404-0UW</b>  | <b>161.00</b>           | <b>3SE2 404-2UW</b>  | <b>161.00</b>           | 0.479              |
| • adjustable length, finely adjustable from 10° to 10° (3SX3211+3SX3213)                      |  |                         |  |                         |  |                         |                    |
|  NSC 00010 | <b>3SE2 404-1WW</b>  | <b>155.00</b>           | <b>3SE2 404-0WW</b>  | <b>155.00</b>           | <b>3SE2 404-2WW</b>  | <b>155.00</b>           | 0.490              |
| finely adjustable from 10° to 10°   |  |                         |  |                         |  |                         |                    |
| • Molded plastic rod (3SX3211+3SX3215)  | <b>3SE2 404-1VW</b>  | <b>155.00</b>           | <b>3SE2 404-0VW</b>  | <b>155.00</b>           | <b>3SE2 404-2VW</b>  | <b>155.00</b>           | 0.490              |
| • Aluminum rod (3SX3211+3SX3214)  |  |                         |  |                         |  |                         |                    |
|  NSC 00101 | <b>3SE2 404-1T</b>   | <b>193.00</b>           | –  | –                       | –  | –                       | 0.515              |
| Fork lever (3SX3127+3SX3115)  |  |                         |  |                         |  |                         |                    |

For operation, operating speed and travel, see Pages 13/100 to 13/105.

→ Positive opening acc. to IEC 60 947-5-1, Appendix K, and DIN VDE 0660 Part 200.

1) The actuator heads can be subsequently exchanged (see page 13/95).  
2) For conduit thread adaptors see page 13/97.







# 3SE International Limit Switches Position Switches

3SE2 100 to 3SE3 170 / 3SE2 303 / 3SE2 404  
Metal enclosure, 40 and 56 mm width

## Accessories

### Actuator heads lamps

The actuator heads of the position switches can be subsequently exchanged for other variants.

|   | Actuators with mounting screws   | For position switches  | Order No.   | List Price \$  | Weight approx.  |
|---|--|--|---|--|---|
|   |  | 3SE2 100-□□<br>3SE2 120-□□<br>3SE2 230-□□<br>3SE2 303-□□<br>3SE2 404-□□<br>3SE3 170-□□ |   | 1 unit   | kg  |
|                | <b>Plunger</b><br>includes screws and gasket   | -.B  | <b>3SX3 100</b>   | <b>24.00</b>   | 0.018   |
|                | <b>Overtravel plunger</b><br>includes screws and gasket  | -.C  | <b>3SX3 106</b>   | <b>43.00</b>   | 0.056   |
|                | <b>Roller plunger</b><br>includes screws and gasket<br>• standard roller<br>• stainless steel roller   | -.D  | <b>3SX3 107</b><br><b>3SX3 263</b>  | <b>51.00</b><br><b>69.00</b>   | 0.082<br>0.080  |
|                | <b>Roller lever</b><br>includes screws and gasket<br>• standard roller<br>• stainless steel roller   | -.E  | <b>3SX3 102</b><br><b>3SX3 275</b>  | <b>28.00</b><br><b>33.00</b>   | 0.034<br>0.050  |
|                | <b>Angular roller lever</b><br>includes screws and gasket<br>• standard roller<br>• stainless steel roller   | -.F  | <b>3SX3 104</b><br><b>3SX3 276</b>  | <b>35.00</b><br><b>30.00</b>   | 0.043<br>0.050  |
| 3SX3 126<br> | <b>Wobble spring</b> <sup>1)</sup><br>(includes screws and gasket)<br>• standard, spring 50 mm, plastic rod 50 mm<br>• length 73 mm, spring 23.5 mm, stainless steel rod 10 mm<br>• length 113 mm, spring 23.5 mm, stainless steel rod 50 mm<br>• length 139.5 mm, spring 50 mm, plastic rod 50 mm with increased corrosion protection<br>• length 139.5 mm, spring 50 mm, stainless steel rod 50 mm<br>• length 239.5 mm, spring 150 mm, plastic rod 50 mm<br>• length 239.5 mm, spring 150 mm, stainless steel rod 50 mm | -.R  | <b>3SX3 126</b><br><b>3SX3 282</b><br><b>3SX3 285</b><br><b>3SX3 284</b><br><b>3SX3 281</b><br><b>3SX3 283</b><br><b>3SX3 311</b> | <b>59.00</b><br><b>66.00</b><br><b>66.00</b><br><b>85.00</b><br><b>77.00</b><br><b>66.00</b><br><b>82.00</b> | 0.049<br>0.020<br>0.020<br>0.050<br>0.060<br>0.070<br>0.080 |






<sup>1)</sup> Not for safety circuits

# 3SE International Limit Switches

## Position Switches

3SE2 100 to 3SE3 170 / 3SE2 303 / 3SE2 404  
Metal enclosure, 40 and 56 mm width

### Accessories

| Actuators with mounting screws |   | For position switches   | Order No.   | List Price \$   | Weight approx.                            |
|--------------------------------|---|---|---|---|---|
|                                |   | 3SE2 100-□□<br>3SE2 120-□□<br>3SE2 303-□□<br>3SE2 404-□□<br>3SE3 170-□□ |   | 1 unit  | kg  |
| 3SX3 211                       |  <p><b>Roller crank operating heads</b><br/>(without lever, includes screws &amp; gasket)</p> <ul style="list-style-type: none"> <li>• standard momentary (spring return), left and right operation</li> <li>• momentary (spring return), left and/or right operation</li> <li>• fork lever, maintained</li> </ul>   | -GW, -U, -V, -W<br>-GW, -U, -V, -W<br>-1T                               | <b>3SX3 211</b><br><b>3SX3 307</b><br><b>3SX3 127</b>                                       | <b>41.00</b><br><b>48.00</b><br><b>65.00</b>                                | 0.112<br>0.085<br>0.131                   |
| 3SX3 212                       |  <p><b>Roller crank levers</b><br/>(operating head not included)</p> <ul style="list-style-type: none"> <li>• standard, plastic roller, 19 mm dia.</li> <li>• stainless steel roller, 19 mm dia.</li> <li>• plastic roller, 30 mm dia.</li> <li>• plastic roller, 50 mm dia.</li> <li>• rubber roller, 50 mm dia.</li> </ul>   | -GW   | <b>3SX3 212</b><br><b>3SX3 265</b><br><b>3SX3 278</b><br><b>3SX3 301</b><br><b>3SX3 280</b> | <b>9.00</b><br><b>21.75</b><br><b>17.00</b><br><b>16.00</b><br><b>18.00</b> | 0.020<br>0.025<br>0.020<br>0.020<br>0.020 |
| 3SX3 213                       |  <p><b>Adjustable length roller crank</b><br/>(operating head not included)</p> <ul style="list-style-type: none"> <li>• <b>levers with clamp</b> <ul style="list-style-type: none"> <li>• standard, plastic roller, 19 mm dia.</li> <li>• stainless steel roller, 19 mm dia.</li> <li>• plastic roller, 30 mm dia.</li> <li>• rubber roller, 50 mm dia.</li> </ul> </li> <li>• <b>levers without clamp</b> <ul style="list-style-type: none"> <li>• rubber roller, 50 mm dia.</li> </ul> </li> </ul> | -UW   | <b>3SX3 213</b><br><b>3SX3 268</b><br><b>3SX3 302</b><br><b>3SX3 304</b><br><b>3SY3 024</b> | <b>24.00</b><br><b>37.00</b><br><b>30.00</b><br><b>32.00</b><br><b>8.00</b> | 0.024<br>0.030<br>0.025<br>0.020<br>0.036 |
| 3SX3 115                       |  <p><b>Fork lever</b><br/>(operating head not included)</p> <ul style="list-style-type: none"> <li>• standard, plastic rollers, 19 mm dia.</li> <li>• stainless steel rollers, 19 mm dia.</li> </ul>   | -1T   | <b>3SX3 115</b><br><b>3SX3 266</b>  | <b>35.00</b><br><b>61.00</b>  | 0.032<br>0.050                            |
| 3SX3 215                       |  <p><b>Rod actuator</b><br/>(operating head not included)</p> <ul style="list-style-type: none"> <li>• <b>with support</b> <ul style="list-style-type: none"> <li>• standard, plastic rod</li> <li>• aluminum rod</li> </ul> </li> <li>• <b>without support</b> <ul style="list-style-type: none"> <li>• standard, plastic rod</li> <li>• aluminum rod</li> </ul> </li> </ul>  | -WW<br>-VV<br>-WW<br>-VV  | <b>3SX3 215</b><br><b>3SX3 214</b><br><b>3SX3 000</b><br><b>3SX3 001</b>                    | <b>20.00</b><br><b>20.00</b><br><b>3.00</b><br><b>3.00</b>                  | 0.031<br>0.032<br>0.008<br>0.016          |

# 3SE International Limit Switches Position Switches

## Accessories

### Connectors

for fast installation and replacement of position and interlock switches






| Design   |   | Order No.  | List Price \$  | Weight approx. kg |
|--|---|--|--|-------------------|
|  |   | Preferred type   | 1 unit   |                   |
| <b>Cable connectors for 3SE2 (with M20 x 1.5)</b>  |   |  |  |                   |
| 3SY3 131<br>  | 3SY3 123<br>               | <b>Receptacle (6-poles + ground)</b><br>250V max., 10A<br>for M20 x 1.5<br>with 0.75 mm <sup>2</sup> connecting leads,<br>for 3SX3 123 cable plug,<br>molded plastic, IP 65 degree of protection | <b>3SY3 131</b><br><b>53.00</b>                                  | 0.030             |
|  |   | <b>Plug <sup>1)</sup></b><br>Molded plastic enclosure, degree of<br>protection IP 65, screw terminals  | <b>3SY3 123</b><br><b>57.40</b>                                  | 0.064             |
| 3SY3 131<br> | 3SY3 123<br>               | <b>Receptacle (4-pole), M 12 for M20 x 1.5</b><br>250V max., 4A<br>for 3RX1 505 coupling plug,<br>with 0.75 mm <sup>2</sup> connecting lead,<br>IP 67 degree of protection                       | <b>3SY3 127</b><br><b>36.00</b>                                  | 0.008             |
|  | 3SY3 128<br>              | <b>Receptacle (5-pole), M 12 for M20 x 1.5</b><br>125V max., 4A<br>for 3RX1584<br>with 0.25 mm <sup>2</sup> connecting lead,<br>IP 67 degree of protection                                       | <b>3SY3 128</b><br><b>36.00</b>                                  | 0.006             |
|  |   | <b>Plug (4-pole), M 12</b><br>with terminal compartment, can be pre-<br>assembled  | <b>3RX1 505</b>  | 0.016             |
|  |   | <b>Plug (5-pole), M 12</b><br>with terminal compartment, can be pre-<br>assembled  | <b>3RX1 584</b>  | 0.016             |
| 3SX9918<br> | 3RX1 505<br>3RX1 584<br> |  |  |                   |
| 5VF1182<br> |                          | <b>Plastic wire gland</b><br>PG 13.5 (6 mm long, with seal)<br>PG 11 (6 mm long, with seal)  | <b>5VF1 182</b><br><b>5.00</b><br><b>5VF1 181</b><br><b>5.00</b> |                   |
| <b>Adaptors for 3SE. (with M 16)</b>   |   |  |  |                   |
| 3SX1997<br> |   | metal M16 x 1.5 to 1/2" NPT  | <b>3SX1997</b><br><b>8.40</b>                                    | 0.022             |
| <b>Adaptors for 3SE2 (with M 20)</b>   |   |  |  |                   |
| 3SX9918<br> |   | plastic M20 x 1.5 wire gland   | <b>3SB3901-0CK</b><br><b>5.00</b>                                | 0.011             |
| 3SX1998<br> | 3SX9918<br>              | metal M20 x 1.5 to 1/2" NPT  | <b>3SX1998</b><br><b>8.60</b>                                    | 0.022             |
|  |   | plastic M20 x 1.5 to 1/2" NPT  | <b>3SX9918</b><br><b>7.00</b>                                    | 0.012             |
| <b>Adaptors for 3SE. (with M 25)</b>   |   |  |  |                   |
| 3SX1999<br> |   | metal M 25 x 1.5 to 1/2" NPT   | <b>3SX1999</b><br><b>8.75</b>                                    | 0.022             |

1) For wiring, a crimping tool is necessary, max. conductor size 1 mm<sup>2</sup>.

# 3SE International Limit Switches Position Switches

3SE2 100 to 3SE3 170 / 3SE2 303 / 3SE2 404  
Metal enclosure, 40 and 56 mm width

## Accessories and spare parts

| Design  | Fig.   | For position switches                       | Order No.             | List Price \$<br>1 unit | Weight approx.<br>kg | Pack<br>Units |
|---|--|---|-----------------------|-------------------------|----------------------|---------------|
| <b>Spare parts for 3SE. 1.0, 3SE. 230 and 3SE. 404</b>                              |  |   |                       |                         |                      |               |
| 1   | 2  |   |                       |                         |                      |               |
|    |   |   |                       |                         |                      |               |
| <b>Switch blocks with 2 contacts with moving double-break contacts</b>              |  |   |                       |                         |                      |               |
| • with snap-action contacts   |  |   |                       |                         |                      |               |
| - 1 NO + 1 NC   | 1  | 3SE. 1.0-1.,<br>3SE2 230-1.,<br>3SE2 404-1. | <b>3SE3 000-1A</b>    | <b>27.00</b>            | 0.032                |               |
| - 2 NC  | 1  | 3SE. 1.0-8.,<br>3SE2 230-8.,<br>3SE2 404-8. | <b>3SE3 000-8AV00</b> | <b>27.00</b>            | 0.020                |               |
| • with slow-action contacts   |  |   |                       |                         |                      |               |
| - 1 NO + 1 NC   | 2  | 3SE. 1.0-0.,<br>3SE. 230-0.,<br>3SE. 404-0. | <b>3SE3 000-0A</b>    | <b>27.00</b>            | 0.031                |               |
| - 2 NC  |  | 3SE. 1.0-6.,<br>3SE. 230-6.                 | <b>3SE3 000-6A</b>    | <b>27.00</b>            | 0.029                |               |
| - 2 NO  |  | 3SE. 1.0-7.,<br>3SE. 230-7.                 | <b>3SE3 000-7A</b>    | <b>27.00</b>            | 0.029                |               |
| • with slow-action make-before-break contacts                                       |  |   |                       |                         |                      |               |
| - 1 NO + 1 NC   | 2  | 3SE. 1.0-3.,<br>3SE. 230-3.,<br>3SE. 404-2. | <b>3SE3 000-3A</b>    | <b>27.00</b>            | 0.031                |               |
| 3   | 4  |   |                       |                         |                      |               |
|   |  |   |                       |                         |                      |               |
| <b>Switch blocks with repeat plunger with 2 contacts - 1 NO + 1 NC</b>              |  |   |                       |                         |                      |               |
| for position switches with 4 contacts with moving double-break contacts             |  |   |                       |                         |                      |               |
| • with snap-action contacts   | 3  | 3SE. 404-1.                                 | <b>3SE3 010-1A</b>    | <b>37.00</b>            | 0.033                |               |
| • with slow-action contacts   | 4  | 3SE. 404-0.                                 | <b>3SE3 010-0A</b>    | <b>37.00</b>            | 0.032                |               |
| • with slow-action make-before-break contacts                                       | 4  | 3SE. 404-2.                                 | <b>3SE3 010-3A</b>    | <b>29.00</b>            | 0.034                |               |
| <b>Spare parts for 3SE. 303</b>   |  |   |                       |                         |                      |               |
| 5   |  |   |                       |                         |                      |               |
|  |  |   |                       |                         |                      |               |
| <b>Switch blocks with 3 contacts with moving double-break contacts</b>              |  |   |                       |                         |                      |               |
| • with slow-action contacts   |  |   |                       |                         |                      |               |
| - 1 NO + 2 NC   | 5  | 3SE. 303-0.                                 | <b>3SE3 003-0A</b>    | <b>53.00</b>            | 0.047                |               |
| - 2 NO + 1 NC   | 5  | 3SE. 303-1.                                 | <b>3SE3 003-1A</b>    | <b>53.00</b>            | 0.047                |               |
| • with slow-action make-before-break contacts                                       |  |   |                       |                         |                      |               |
| - 1 NO + 2 NC   | 5  | 3SE. 303-2.                                 | <b>3SE3 003-2A</b>    | <b>41.00</b>            | 0.047                |               |
| - 2 NO + 1 NC   | 5  | 3SE. 303-3.                                 | <b>3SE3 003-3A</b>    | <b>41.00</b>            | 0.063                |               |

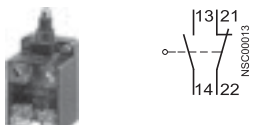
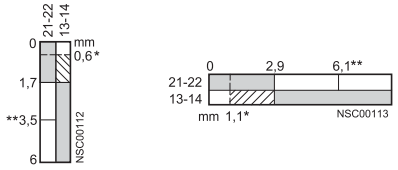
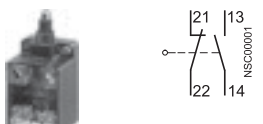
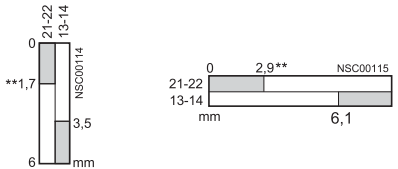
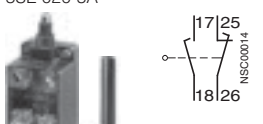
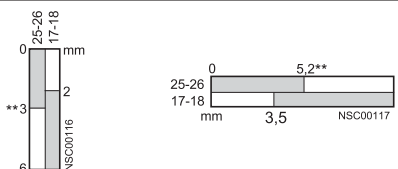
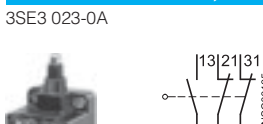
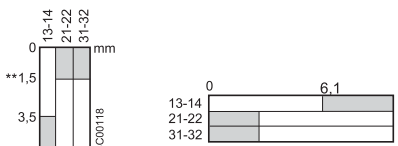
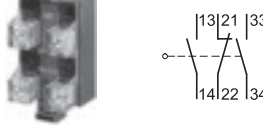
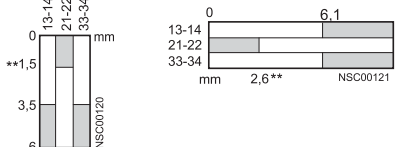

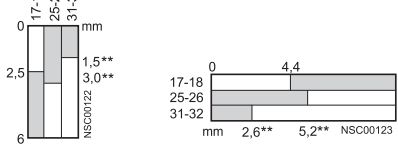
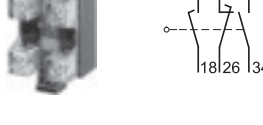
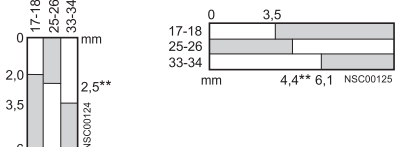
# 3SE International Limit Switches Position Switches

3SE3 020 / 3SE3 023  
Open type

## Selection and ordering data

**2 contacts · Moving double break contacts · Degree of protection: Terminals IP 20, switching chamber IP 40**

Tandem arrangement (2 × 2 contacts) is possible when 3SY3 121 adapter is used (see accessories below).

| Internal circuit diagram<br>Term. design.<br>acc. to<br>EN 50 013   | Order No.  | List Price \$ | Weight approx. | Nominal travel and related terminals   | Minimum force required along plunger axis |
|---|--|---------------|----------------|--|---|
|   | Preferred type   | 1 unit        | kg             | 0-line commencement of plunger travel<br>■ contact closed<br>□ contact open<br>* operating point on return<br>** positive opening acc. to IEC 60 947-5-1-3<br>along plunger axis    perpend. to plunger axis $\alpha = 30^\circ$ |   |
| <b>Snap-action contacts, 6 mm stroke</b>  |  |               |                |  |   |
| 3SE3 020-1A<br>                  | with 21 mm long plunger, 6mm Hub<br>→ <b>3SE3 020-1A</b>                                       | <b>25.00</b>  | 0.036          |    | 6 N                                       |
| <b>Slow-action contacts, 6 mm stroke</b>  |  |               |                |  |   |
| 3SE3 020-0A<br>                  | with 21 mm long plunger, 6mm Hub<br>→ <b>3SE3 020-0A</b>                                       | <b>25.00</b>  | 0.036          |    | 8 N                                       |
| <b>Slow-action make-before-break contacts, 6 mm stroke</b>  |  |               |                |  |   |
| 3SE 020-3A<br>                 | with 21 mm long plunger<br>→ <b>3SE3 020-3A</b>  | <b>25.00</b>  | 0.036          |   | 8 N                                       |
|   | <b>Intermediate piece</b><br>for tandem arrangement of 2-pole open-type position switches      |               |                |  |   |
|   | <b>3SY3 121</b>  | <b>2.00</b>   | 0.001          |  |   |
| 3SY3 121  |  |               |                |  |   |
| <b>3 contacts · Moving double break contacts · Degree of protection: Terminals IP 20, switching chamber IP 40</b> |  |               |                |  |   |
| <b>Slow-action contacts, 6 mm stroke</b>  |  |               |                |  |   |
| 3SE3 023-0A<br>                | with 21 mm plunger and repeat plunger, for tandem arrangement, 6mm Hub<br>→ <b>3SE3 023-0A</b> | <b>39.00</b>  | 0.051          |    | 11 N                                      |
|                                | → <b>3SE3 023-1A</b>   | <b>39.00</b>  | 0.051          |    | 13 N                                      |
| <b>Slow-action make-before-break contacts, 6 mm stroke</b>  |  |               |                |  |   |
| 3SE3 023-2A<br>                | with 21 mm plunger and repeat plunger, for tandem arrangement, 6mm Hub<br>→ <b>3SE3 023-2A</b> | <b>39.00</b>  | 0.051          |    | 11 N                                      |
|                                | → <b>3SE3 023-3A</b>   | <b>39.00</b>  | 0.058          |    | 13 N                                      |

→ Safety function according to IEC 60 947-5-1, Appendix K.

For operation, operating speed and travel, see Page 13/112.



# 3SE International Limit Switches

## Position Switches

**3SE2 100 to 3SE3 170 / 3SE2 404**  
Metal enclosure, 40 and 56 mm width

### Operation, operating speed and travel or angle of actuators

#### 2 contacts · Standard and wide enclosure

Bars, cams, stops, etc. are used as actuating devices. The shape of the actuating device must provide the given angles for the leading and trailing edges.

For operation from the side, sparingly greased steel, POM (polyoxymethylene or polyacetal) or PA (polyamide) should be used as cam and bar material.

#### Operating speed along plunger axis

The actuating speed in the case of position switches with slow-action contacts is not permitted

to go lower than 15 mm/s for DC and 1 mm/s for AC. Position switches with snap-action contacts should be used when the speeds are lower.

#### 3SE2 404 position switches · 4 contacts · Wide enclosure

The data for operation, operating speed, travel and angle of operation is the same as for the


position switches with 2 switch blocks.

Two switch blocks with 2 contacts are used for position switches with 4 contacts.

| Operation by a bar | Switch blocks | Nominal travel and related terminals | Switch blocks | Nominal travel and related terminals |
|--------------------|---------------|--------------------------------------|---------------|--------------------------------------|
|--------------------|---------------|--------------------------------------|---------------|--------------------------------------|

○ operating pt. acc. to EN 50 041  
 $v_{max}$  max. operating speed  
 0-line ref. line acc. to EN 50 041  
 H travel difference  
 → direction of operation

Terminal designation acc. to EN 50 013

0-line reference line acc. to EN 50 041  
 S travel acc. to EN 50 041  
  
 contact closed  
 contact open  
 \* operating point on return  
 \*\* positive opening acc. to IEC 60 947-5-1-3

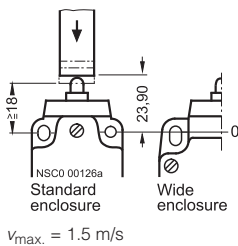
#### Plunger

along plunger axis

perpendicular to plunger axis

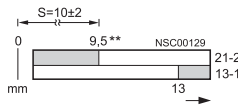
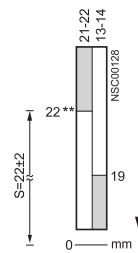
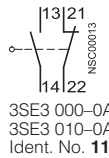
along plunger axis

**3SE2 100-B,**  
**3SE. 1□0-B,**  
**3SE2 404-B**

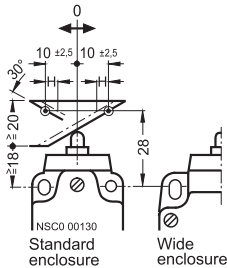
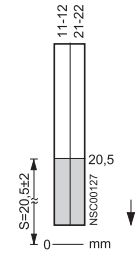
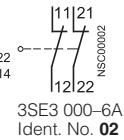


#### Slow-action contacts

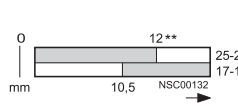
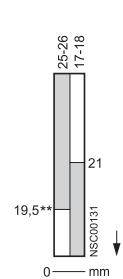
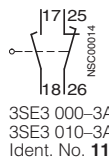
##### 1 NC + 1 NO



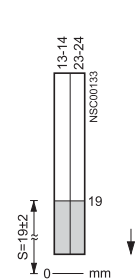
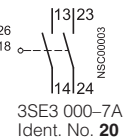
##### 2 NC



#### 1 NO + 1 NC with make-before-break



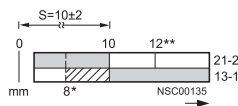
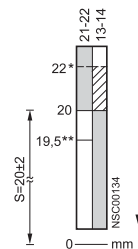
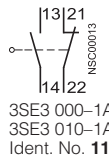
##### 2 NO



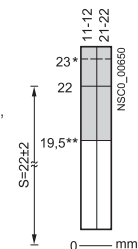
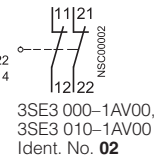
Minimum force required in direction of operation: 12 N

#### Snap-action contacts

##### 1 NC + 1 NO



##### 2 NC



# 3SE International Limit Switches Position Switches

**3SE2 100 to 3SE3 170 / 3SE2 230 / 3SE2 404**  
Metal enclosure, 40 and 56 mm width

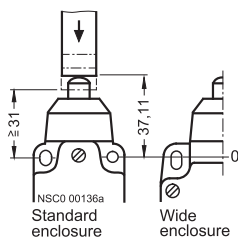
## Operation, operating speed and travel or angle of actuators

### 2 or 4 contacts · Standard and wide enclosure

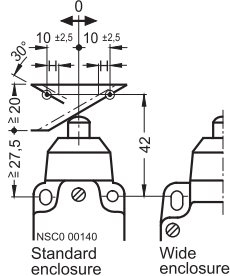
| Operation by a bar   | Switch blocks                          | Nominal travel and related terminals   | Switch blocks | Nominal travel and related terminals |
|--|--|--|---------------|--------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ operating pt acc. to EN 50 041</li> <li><math>V_{max}</math> max. operating speed</li> <li>0-line ref. line acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>0-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li>▬ contact closed</li> <li>□ contact open</li> <li>* operating point on return</li> <li>** positive opening acc. to IEC 60 947-5-1-3</li> </ul> |               |                                      |

### Overtravel plunger, Type B

**3SE2 100-C,  
3SE. 1□0-C,  
3SE2 230-C,  
3SE2 404-C**



$V_{max.} = 1.5 \text{ m/s}$

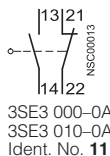


$V_{max.} = 0.5 \text{ m/s}$

Minimum force required in direction of operation: 32 N

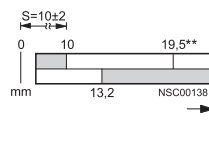
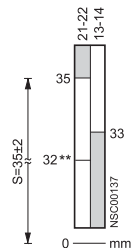
### Slow-action contacts

#### 1 NC + 1 NO

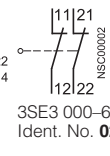


3SE3 000-0A,  
3SE3 010-0A,  
Ident. No. **11**

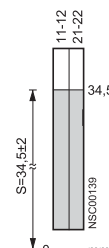
along plunger axis    perpendicular to plunger axis



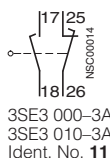
#### 2 NC



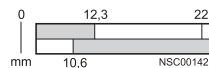
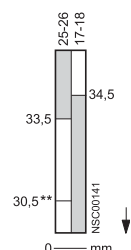
3SE3 000-6A,  
Ident. No. **02**



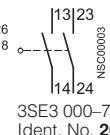
#### 1 NO + 1 NC With make-before-break



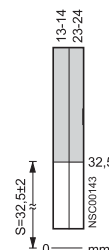
3SE3 000-3A,  
3SE3 010-3A,  
Ident. No. **11**



#### 2 NO

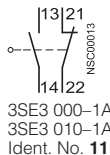


3SE3 000-7A,  
Ident. No. **20**

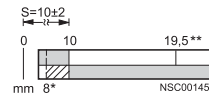
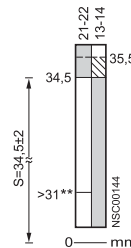


### Snap-action contacts

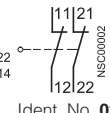
#### 1 NC + 1 NO



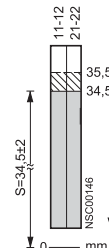
3SE3 000-1A,  
3SE3 010-1A,  
Ident. No. **11**



#### 2 NC



Ident. No. **02**



# 3SE International Limit Switches Position Switches

3SE2 100 to 3SE3 170 / 3SE2 230 / 3SE2 404  
Metal enclosure, 40 and 56 mm width

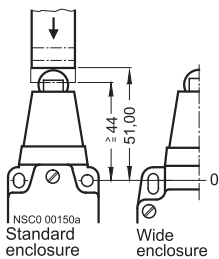
## Operation, operating speed and travel or angle of actuators

### 2 or 4 contacts · Standard and wide enclosure

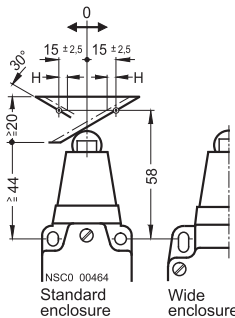
| Operation by a bar   | Switch blocks                          | Nominal travel and related terminals   | Switch blocks | Nominal travel and related terminals |
|--|--|--|---------------|--------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ operating pt acc. to EN 50 041</li> <li><math>V_{max}</math> max. operating speed</li> <li>O-line ref. line acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>O-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li>■ contact closed</li> <li>□ contact open</li> <li>* operating point on return</li> <li>** positive opening acc. to IEC 60 947-5-1-3</li> </ul> |               |                                      |

### Roller plunger, type C

3SE2 100-D,  
3SE 1□0-D,  
3SE2 230-D,  
3SE2 404-D



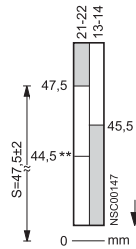
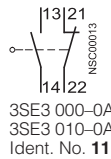
$V_{max.} = 1.5 \text{ m/s}$



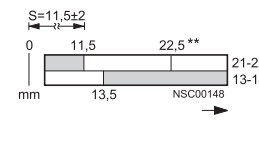
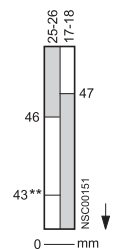
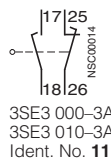
$V_{max.} = 1 \text{ m/s}$  (3SE3 230-1D),  
 $V_{max.} = 0.5 \text{ m/s}$  (3SE3 1.0-1D),  
Minimum force required  
in direction of operation: 32 N

### Slow-action contacts

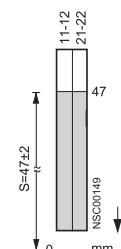
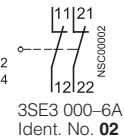
#### 1 NC + 1 NO



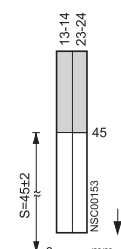
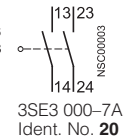
#### 1 NO + 1 NC With make-before-break



#### 2 NC

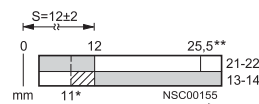
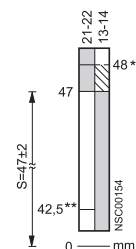
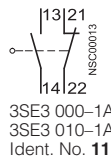


#### 2 NO

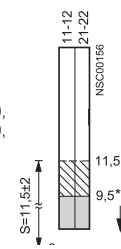
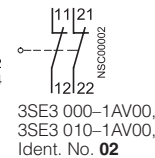


### Snap-action contacts

#### 1 NC + 1 NO



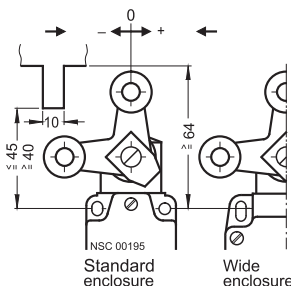
#### 2 NC



### Fork lever

3SE2 100-1T,  
3SE 1□0-1T,  
3SE2 404-1T

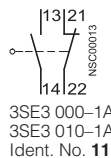
lateral actuation



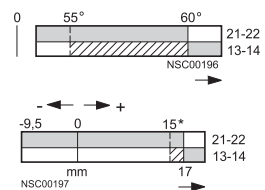
$V_{max.} = 2 \text{ m/s}$   
Minimum force required  
in direction of operation: 30 N

### Snap-action contacts

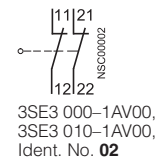
#### 1 NC + 1 NO



Deflection in direction of rotation



#### 2 NC



# 3SE International Limit Switches Position Switches

3SE2 100 to 3SE3 170 / 3SE2 230 / 3SE2 404  
Metal enclosure, 40 and 56 mm width

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

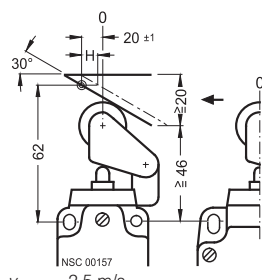
## Operation, operating speed and travel or angle of actuators

### 2 or 4 contacts · Standard and wide enclosure

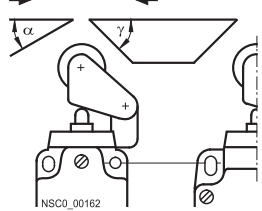
| Operation by a bar   | Switch blocks                          | Nominal travel and related terminals  | Switch blocks | Nominal travel and related terminals |
|--|--|---|---------------|--------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ operating pt acc. to EN 50 041</li> <li><math>\alpha, \gamma</math> approach angle</li> <li><math>v_{max}</math> max. operating speed</li> <li>0-line ref. line acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>0-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li>■ contact closed</li> <li>□ contact open</li> <li>* operating point on return</li> <li>** positive opening to IEC 60 947-5-1-3</li> </ul> |               |                                      |

### Roller lever

3SE2 100–E, 3SE. 1□0–E,  
3SE2 230–E, 3SE2 404–E



$v_{max} = 2.5 \text{ m/s}$

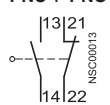


$v_{max} = 1 \text{ m/s}$ ,  $\alpha_{max} = 30^\circ$ ,  $\gamma_{max} = 45^\circ$   
Minimum force required in direction of operation: 12 N

perpendicular to plunger axis

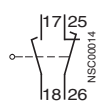
#### Slow-action contacts

1 NC + 1 NO

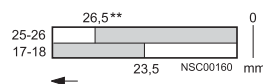
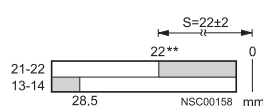


3SE3 000–0A,  
3SE3 010–0A,  
Ident. No. 11

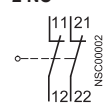
1 NO + 1 NC  
With make-bef.-break



3SE3 000–3A,  
3SE3 010–3A,  
Ident. No. 11

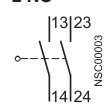


2 NC

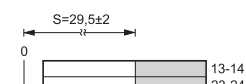
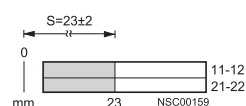


3SE3 000–6A,  
Ident. No. 02

2 NO

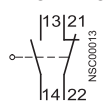


3SE3 000–7A,  
Ident. No. 20

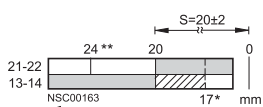


#### Snap-action contacts

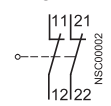
1 NC + 1 NO



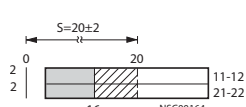
3SE3 000–1A,  
3SE3 010–1A,  
Ident. No. 11



2 NC

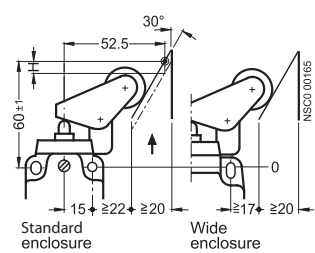


Ident. No. 02

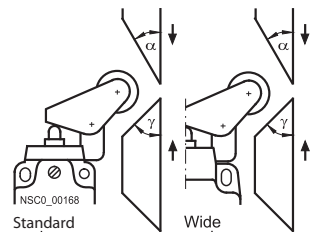


### Angular roller lever

3SE2 100–F, 3SE. 1□0–F,  
3SE2 230–F, 3SE2 404–F



$v_{max} = 2.5 \text{ m/s}$

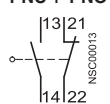


$v_{max} = 1 \text{ m/s}$ ,  $\alpha_{max} = 30^\circ$ ,  $\gamma_{max} = 45^\circ$   
Minimum force required in direction of operation: 12 N

along plunger axis

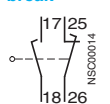
#### Slow-action contacts

1 NC + 1 NO

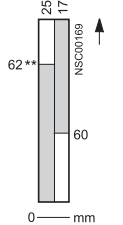
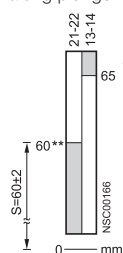


3SE3 000–0A,  
3SE3 010–0A,  
Ident. No. 11

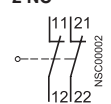
1 NO + 1 NC  
With make-before-break



3SE3 000–3A,  
3SE3 010–3A,  
Ident. No. 11

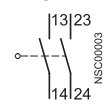


2 NC



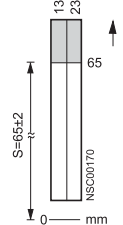
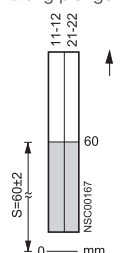
3SE3 000–6A,  
Ident. No. 02

2 NO



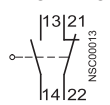
3SE3 000–7A,  
Ident. No. 20

along plunger axis

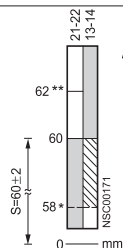


#### Snap-action contacts

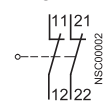
1 NC + 1 NO



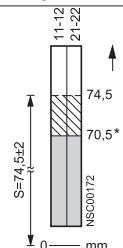
3SE3 000–1A,  
3SE3 010–1A,  
Ident. No. 11



2 NC



Ident. No. 02



# 3SE International Limit Switches

## Position Switches

3SE2 100 to 3SE3 170 / 3SE2 230 / 3SE2 404  
Metal enclosure, 40 and 56 mm width

### Operation, operating speed and travel or angle of actuators

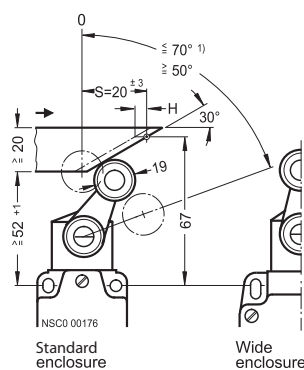
#### 2 or 4 contacts · Standard and wide enclosure

| Operation by a bar   | Switch blocks                          | Nominal travel and related terminals   | Switch blocks | Nominal travel and related terminals |
|--|--|--|---------------|--------------------------------------|
| <ul style="list-style-type: none"> <li>⊙ operating pt acc. to EN 50 041</li> <li><math>\alpha</math> approach angle</li> <li><math>\beta</math> trailing angle</li> <li><math>v_{max}</math> max. operating speed</li> <li>0-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>0-line ref. line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li>■ contact closed</li> <li>□ contact open</li> <li>* operating point on return</li> <li>** positive opening to IEC 60 947-5-1-3</li> </ul> |               |                                      |

#### Roller crank, type A

repositionable and finely adjustable from 10° to 10°

3SE2 100-GW, 3SE, 1□0-GW, 3SE2 230-GW, 3SE2 404-GW



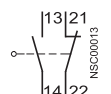
$v_{max} = 3 \text{ m/s}$

Minimum torque required in direction of operation: 25 Ncm

In special designs, contacts can only be operated from right or left. By twisting the plunger from the right and left.

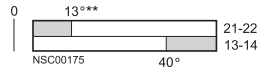
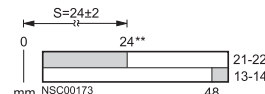
#### Slow-action contacts

##### 1 NC + 1 NO



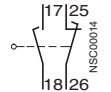
3SE3 000-0A, 3SE3 010-0A, Ident. No. 11

perpendicular to plunger axis

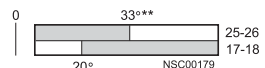
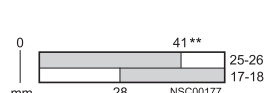


##### 1 NO + 1 NC

#### With make-bef-break

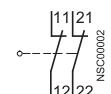


3SE3 000-3A, 3SE3 010-3A, Ident. No. 11



perpendicular to plunger axis

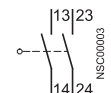
##### 2 NC



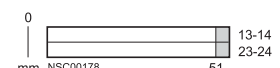
3SE3 000-6A, Ident. No. 02



##### 2 NO

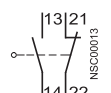


3SE3 000-7A, Ident. No. 20

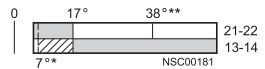
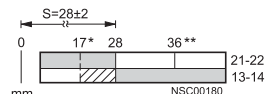


#### Snap-action contacts

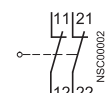
##### 1 NC + 1 NO



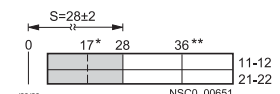
3SE3 000-1A, 3SE3 010-1A, Ident. No. 11



##### 2 NC



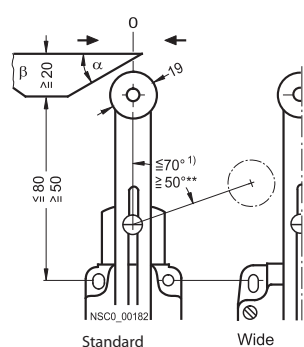
3SE3 000-1AV00, 3SE3 010-1AV00, Ident. No. 02



#### Roller crank, adjustable length

finely adjustable from 10° to 10°

3SE2 100-UW, 3SE, 1□0-UW, 3SE2 230-U, 3SE2 404-UW



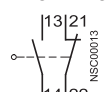
$v_{max} = 1 \text{ m/s}$ ,  $\alpha_{max} = 30^\circ$ ,  $\beta_{max} = 30^\circ$

Minimum torque required in direction of operation: 25 Ncm

Contact operation either from right or left or from right and left.

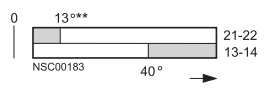
#### Slow-action contacts

##### 1 NC + 1 NO



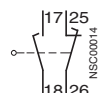
3SE3 000-0A, 3SE3 010-0A, Ident. No. 11

Deflection in direction of rotation

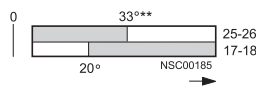


##### 1 NO + 1 NC

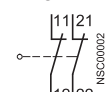
#### With make-bef-break



3SE3 000-3A, 3SE3 010-3A, Ident. No. 11

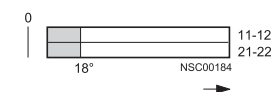


##### 2 NC

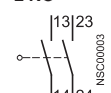


3SE3 000-6A, Ident. No. 02

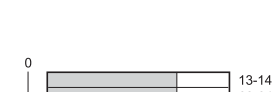
Deflection in direction of rotation



##### 2 NO

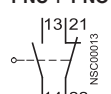


3SE3 000-7A, Ident. No. 20

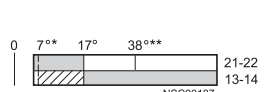


#### Snap-action contacts

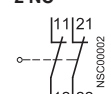
##### 1 NC + 1 NO



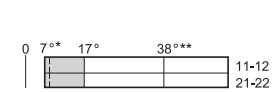
3SE3 000-1A, 3SE3 010-1A, Ident. No. 11



##### 2 NC



3SE3 000-1AV00, 3SE3 010-1AV00, Ident. No. 02



1) Max. operating angle 70°.

# 3SE International Limit Switches Position Switches

**3SE2 100 to 3SE3 170 / 3SE2 230 / 3SE2 404**  
Metal enclosure, 40 and 56 mm width

1  
2  
3  
4  
5  
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13

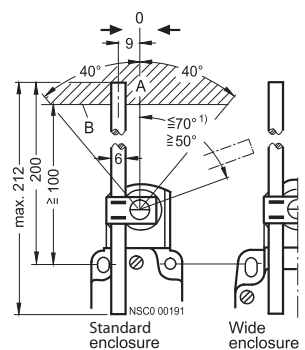
## Operation, operating speed and travel or angle of actuators

### 2 or 4 contacts · Standard and wide enclosure

| Operation by a bar  | Switch blocks                          | Nominal travel and related terminals   | Switch blocks | Nominal travel and related terminals |
|---|--|--|---------------|--------------------------------------|
| ☉ operating pt. acc. to EN 50 041<br>$V_{max}$ max. operating speed<br>0-line ref. line acc. to EN 50 041<br>→ direction of operation | Terminal designation acc. to EN 50 013 | 0-line ref. line acc. to EN 50 041<br>■ contact closed<br>□ contact open<br>* operating point on return<br>** positive opening to IEC 60 947-5-1-3 |               |                                      |

### Rod actuator

finely adjustable from 10° to 10°  
**3SE2 100-WW, 3SE. 1□0-WW, 3SE2 230-W, 3SE2 404-WW**  
**3SE2 100-VW, 3SE. 1□0-VW, 3SE2 230-V, 3SE2 404-VW**

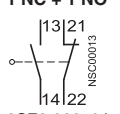


A = Operating range  
 B = Lower edge of actuator  
 $V_{max} = 3 \text{ m/s}$   
 Minimum torque required in direction of operation: 25 Nm  
 In special designs, contacts can only be operated from right or left. By twisting the plunger from the right and left.

in direction of rotation

#### Slow-action contacts

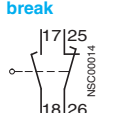
##### 1 NC + 1 NO



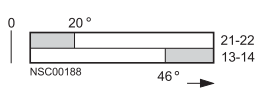
3SE3 000-0A, 3SE3 010-0A, Ident. No. **11**

##### 1 NO + 1 NC

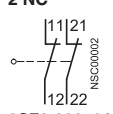
#### With make-before-break



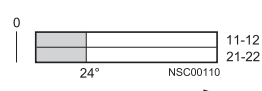
3SE3 000-3A, 3SE3 010-3A, Ident. No. **11**



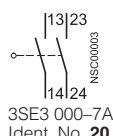
##### 2 NC



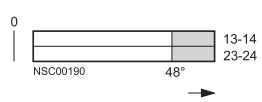
3SE3 000-6A, Ident. No. **02**



##### 2 NO

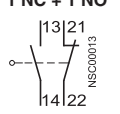


3SE3 000-7A, Ident. No. **20**

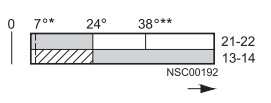


#### Snap-action contacts

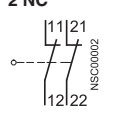
##### 1 NC + 1 NO



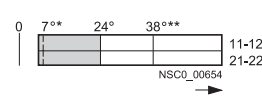
3SE3 000-1A, 3SE3 010-1A, Ident. No. **11**



##### 2 NC

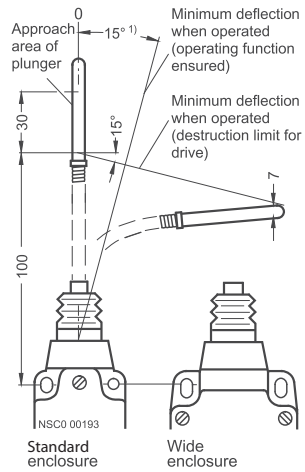


3SE3 000-1AV00, 3SE3 010-1AV00, Ident. No. **02**



### Spring rod

**3SE2 100-1R, 3SE. 1□0-1R, 3SE2 230-R**

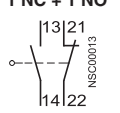


$V_{max} = 1 \text{ m/s}$ , approachable from all sides  
 Minimum force required in direction of operation: 12 N with lateral deflection at the tip: 2.5 N

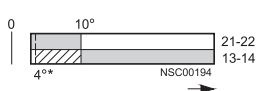
Deflection of spring rod

#### Snap-action contacts

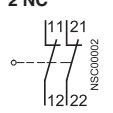
##### 1 NC + 1 NO



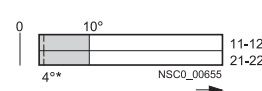
3SE3 000-1A, 3SE3 010-1A, Ident. No. **11**



##### 2 NC



3SE3 000-1AV00, 3SE3 010-1AV00, Ident. No. **02**



1) Max. operating angle 70°.

# 3SE International Limit Switches

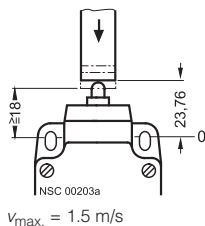
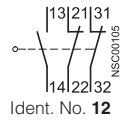
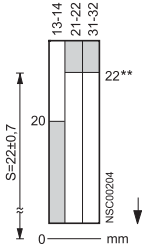
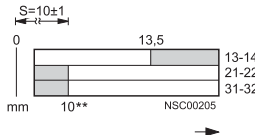
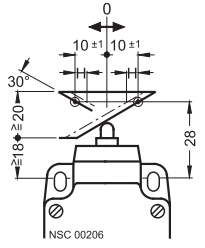
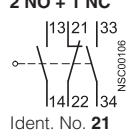
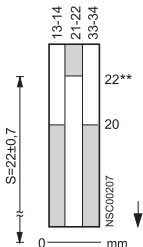
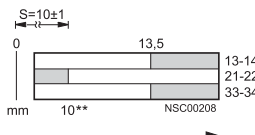
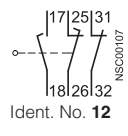
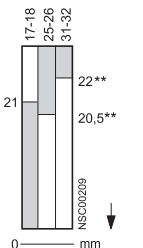
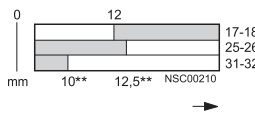
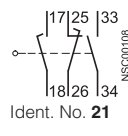
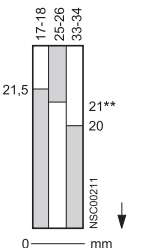
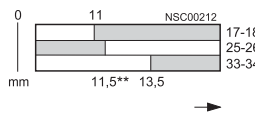
## Position Switches

### 3SE2 303 Metal enclosure, 56 mm width

#### Operation, operating speed and travel or angle of actuators

#### 3 contacts · Wide enclosure

| Operation by a bar  | Switch blocks                          | Nominal travel and related terminals  | Minimum force required in direction of operation |
|---|--|---|--|
| <ul style="list-style-type: none"> <li>⊙ operating pt acc. to EN 50 041</li> <li><math>V_{max}</math> max. operating speed</li> <li>O-line reference line acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>O-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li>■ contact closed</li> <li>□ contact open</li> <li>* operating point on return</li> <li>** positive opening to IEC 60 947-5-1-3</li> </ul> |  |

| Plunger  | Slow-action contacts  | along plunger axis  | perpendicular to plunger axis  | Minimum force required in direction of operation |
|--|---|---|--|--|
| <b>3SE2 303-B</b><br><br>$V_{max.} = 1.5 \text{ m/s}$ | <b>1 NO + 2 NC</b><br><br>Ident. No. <b>12</b>                               |    |    | 16 N   |
| <br>$V_{max.} = 0.5 \text{ m/s}$                     | <b>2 NO + 1 NC</b><br><br>Ident. No. <b>21</b>                              |   |   | 18 N   |
|  | <b>1 NO + 2 NC</b><br><b>make-before-break</b><br><br>Ident. No. <b>12</b> |  |  | 16 N   |
|  | <b>2 NO + 1 NC</b><br><b>make-before-break</b><br><br>Ident. No. <b>21</b> |  |  | 18 N   |



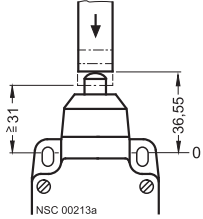
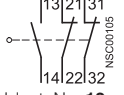
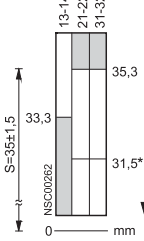
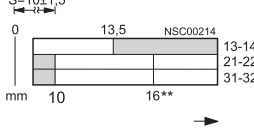
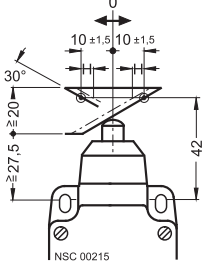
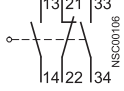
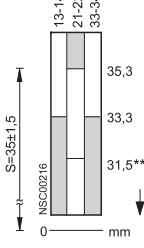
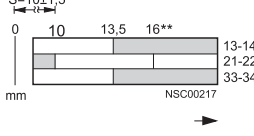
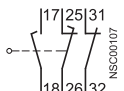
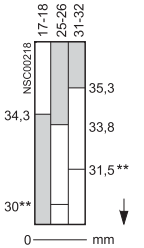
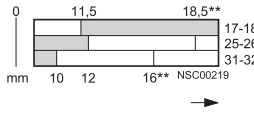
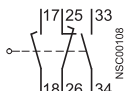
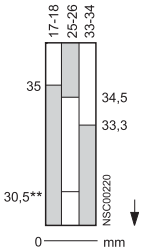
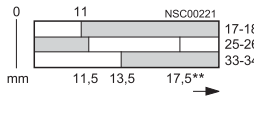
# 3SE International Limit Switches Position Switches

**3SE2 303**  
Metal enclosure, 56 mm width

## Operation, operating speed and travel or angle of actuators

### 3 contacts · Wide enclosure

| Operation by a bar   | Switch blocks                          | Nominal travel and related terminals  | Minimum force required in direction of operation |
|--|--|---|--|
| <ul style="list-style-type: none"> <li>⊙ operating pt. acc. to EN 50 041</li> <li><math>V_{max}</math> max. operating speed</li> <li>O-line reference line acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>O-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li>■ contact closed</li> <li>□ contact open</li> <li>* operating point on return</li> <li>** positive opening to IEC 60 947-5-1-3</li> </ul> | Minimum force required in direction of operation |

| Overtravel plunger   | Slow-action contacts  | along plunger axis  | perpendicular to plunger axis   | Minimum force required in direction of operation |
|--|---|---|---|--|
| <b>3SE2 303-C</b><br> <p><math>V_{max} = 1.5 \text{ m/s}</math></p> | <b>1 NO + 2 NC</b><br> <p>Ident. No. <b>12</b></p>                               |    |    | 35 N   |
|  <p><math>V_{max} = 0.5 \text{ m/s}</math></p>                     | <b>2 NO + 1 NC</b><br> <p>Ident. No. <b>21</b></p>                              |   |   | 37 N   |
|  | <b>1 NO + 2 NC</b><br><b>make-before-break</b><br> <p>Ident. No. <b>12</b></p> |  |  | 35 N   |
|  | <b>2 NO + 1 NC</b><br><b>make-before-break</b><br> <p>Ident. No. <b>21</b></p> |  |  | 37 N   |

# 3SE International Limit Switches

## Position Switches

### 3SE2 303 Metal enclosure, 56 mm width

#### Operation, operating speed and travel or angle of actuators

#### 3 contacts · Wide enclosure

| Operation by a bar  | Switch blocks                          | Nominal travel and related terminals  | Minimum force required in direction of operation |
|---|--|---|--|
| <ul style="list-style-type: none"> <li>⊙ operating pt acc. to EN 50 041</li> <li><math>V_{max}</math> max. operating speed</li> <li>0-line reference line acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>0-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li> contact closed</li> <li> contact open</li> <li>* operating point on return</li> <li>** positive opening to IEC 60 947-5-1-3</li> </ul> |  |

| Roller plunger  | Slow-action contacts   | along plunger axis | perpendicular to plunger axis | Minimum force required in direction of operation |
|---|--|--------------------|-------------------------------|--|
| <b>3SE2 303--D</b><br><br>$V_{max} = 1.5 \text{ m/s}$ | <b>1 NO + 2 NC</b><br><br>Ident. No. <b>12</b>                             |                    |                               | 35 N   |
| <br>$V_{max} = 1 \text{ m/s}$                         | <b>2 NO + 1 NC</b><br><br>Ident. No. <b>21</b>                             |                    |                               | 37 N   |
|   | <b>1 NO + 2 NC</b><br><b>make-before-break</b><br><br>Ident. No. <b>12</b> |                    |                               | 35 N   |
|   | <b>2 NO + 1 NC</b><br><b>make-before-break</b><br><br>Ident. No. <b>21</b> |                    |                               | 37 N   |

# 3SE International Limit Switches Position Switches

**3SE2 303**  
Metal enclosure, 56 mm width

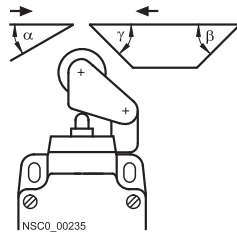
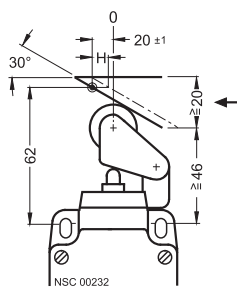
## Operation, operating speed and travel or angle of actuators

### 3 contacts · Wide enclosure

| Operation by a bar   | Switch blocks                          | Nominal travel and related terminals   | Minimum force required in direction of operation |
|--|--|--|--|
| <ul style="list-style-type: none"> <li>⊙ operating pt acc. to EN 50 041</li> <li><math>\alpha</math> approach angle</li> <li><math>\beta</math> trailing angle</li> <li><math>\gamma</math> approach angle</li> <li><math>v_{max}</math> max. operating speed</li> <li>0-line reference line acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>0-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li> contact closed</li> <li> contact open</li> <li>** positive opening to IEC 60 947-5-1-3</li> </ul> | Minimum force required in direction of operation |

### Roller lever

#### 3SE2 303--E

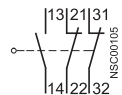


For operation perpendicular to plunger axis:  
 $v_{max} = 1 \text{ m/s}$  at  $\alpha_{max} = 30^\circ$   
 $v_{max} = 2.5 \text{ m/s}$  at  $\gamma_{max} = 45^\circ$   
 $\beta_{max} = 45^\circ$

For operation along plunger axis:  $v_{max} = 1.5 \text{ m/s}$

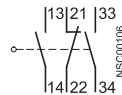
### Slow-action contacts

#### 1 NO + 2 NC



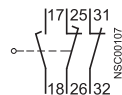
Ident. No. **12**

#### 2 NO + 1 NC



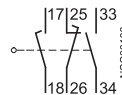
Ident. No. **21**

#### 1 NO + 2 NC make-before-break



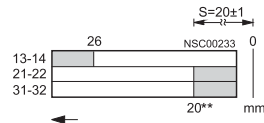
Ident. No. **12**

#### 2 NO + 1 NC make-before-break

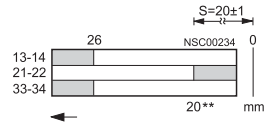


Ident. No. **21**

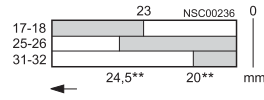
perpendicular to plunger axis



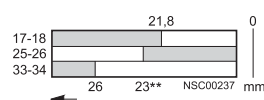
15 N



17 N



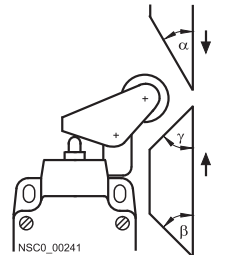
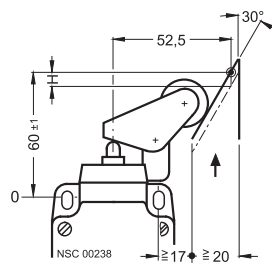
15 N



17 N

### Angular roller lever

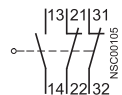
#### 3SE2 303--F



For operation along plunger axis:  
 $v_{max} = 1 \text{ m/s}$  at  $\alpha_{max} = 30^\circ$   
 $v_{max} = 2.5 \text{ m/s}$  at  $\gamma_{max} = 45^\circ$   
 $v_{max} = 2.5 \text{ m/s}$  at  $\beta_{max} = 45^\circ$

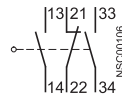
### Slow-action contacts

#### 1 NO + 2 NC



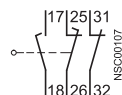
Ident. No. **12**

#### 2 NO + 1 NC



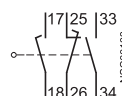
Ident. No. **21**

#### 1 NO + 2 NC make-before-break



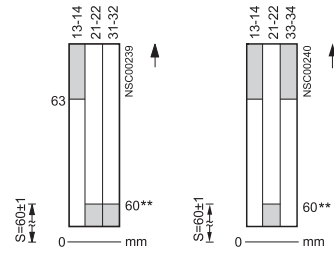
Ident. No. **12**

#### 2 NO + 1 NC make-before-break



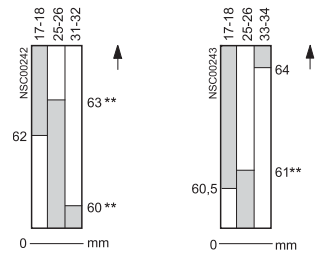
Ident. No. **21**

along plunger axis



15 N

17 N



15 N

17 N

# 3SE International Limit Switches

## Position Switches

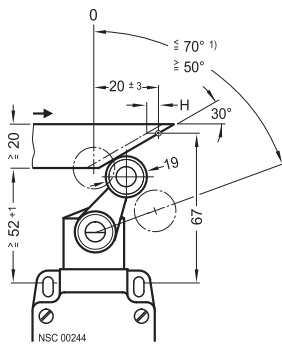
**3SE2 303**  
Metal enclosure, 56 mm width

### Operation, operating speed and travel or angle of actuators

**3 contacts · Wide enclosure**

| Operation by a bar   | Switch blocks                          | Nominal travel and related terminals   | Minimum force required in direction of rotation |
|--|--|--|---|
| <ul style="list-style-type: none"> <li>⊙ operating pt. acc. to EN 50 041</li> <li><math>v_{max}</math> max. operating speed</li> <li>O-line reference line acc. to EN 50 041</li> <li>H travel difference</li> <li>→ direction of operation</li> </ul> | Terminal designation acc. to EN 50 013 | <ul style="list-style-type: none"> <li>O-line reference line acc. to EN 50 041</li> <li>S travel acc. to EN 50 041</li> <li>■ contact closed</li> <li>□ contact open</li> <li>** positive opening to IEC 60 947-5-1-3</li> </ul> | Minimum force required in direction of rotation |

| Roller crank   | Slow-action contacts  | perpendicular to plunger axis  | 25 Ncm |
|--|---|--|--------|
| finely adjustable from 10° to 10°<br><b>3SE2 303--GW-Z</b><br><b>A31</b> | <b>1 NO + 2 NC</b><br><br>Ident. No. <b>12</b>                               |    |        |
|  | <b>2 NO + 1 NC</b><br><br>Ident. No. <b>21</b>                               |    |        |
|  | <b>1 NO + 2 NC</b><br><b>make-before-break</b><br><br>Ident. No. <b>12</b> |  |        |
|  | <b>2 NO + 1 NC</b><br><b>make-before-break</b><br><br>Ident. No. <b>21</b> |  |        |



$v_{max} = 3 \text{ m/s}$

In special designs contacts can only be operated from right or left. By twisting the plunger from the right and left.


1) Max. operating angle 70°.  
Max. deflection for adjustment purposes 90°.

# 3SE International Limit Switches Position Switches

**3SE2 303**  
Metal enclosure, 56 mm width

## Operation, operating speed and travel or angle of actuators

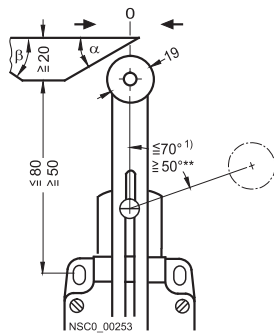
### 3 contacts · Wide enclosure

| Operation by a bar   | Switch blocks                          | Nominal travel and related terminals  | Minimum force required in direction of rotation |
|--|--|---|---|
| $\odot$ operating pt acc. to EN 50 041<br>$\alpha$ approach angle<br>$\beta$ trailing angle<br>$v_{max}$ max. operating speed<br>0-line reference line acc. to EN 50 041<br>$\rightarrow$ direction of operation | Terminal designation acc. to EN 50 013 | 0-line reference line acc. to EN 50 041<br>S travel acc. to EN 50 041<br><br>** positive opening to IEC 60 947-5-1-3 | Minimum force required in direction of rotation |

### Roller crank, adjustable length

finely adjustable from 10° to 10°

#### 3SE2 303--UW

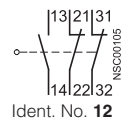


$v_{max} = 3 \text{ m/s}$ ,  
 $\alpha_{max} = 30^\circ$ ,  
 $\beta_{max} = 30^\circ$

In special designs contacts can only be operated from right or left. By twisting the plunger from the right and left.

### Slow-action contacts

#### 1 NO + 2 NC

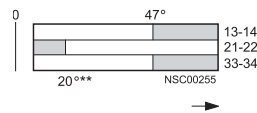
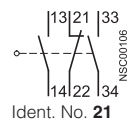


perpendicular to plunger axis

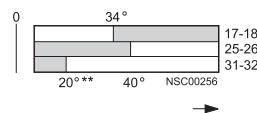
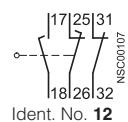
25 Ncm



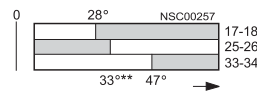
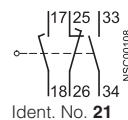
#### 2 NO + 1 NC



#### 1 NO + 2 NC make-before-break



#### 2 NO + 1 NC make-before-break



1) Max. operating angle 70°.

# 3SE International Limit Switches

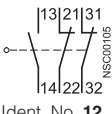
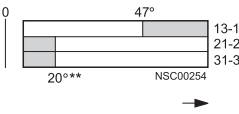
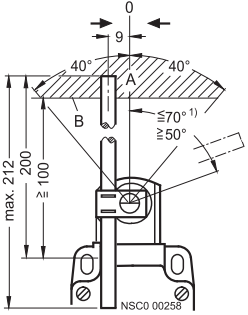
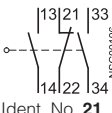
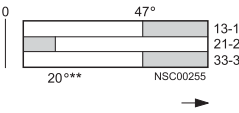
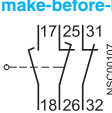
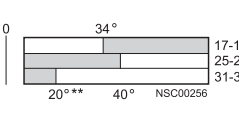

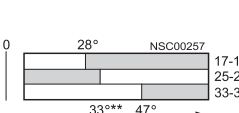
## Position Switches

**3SE2 303 / 3SE3 02.**  
Metal enclosure, 56 mm width

### Operation, operating speed and travel or angle of actuators

#### 3 contacts · Wide enclosure

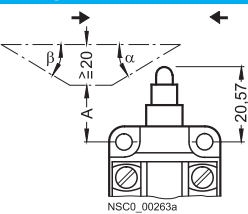
| Operation by a bar  | Switch blocks                          | Nominal travel and related terminals   | Minimum force required in direction of rotation |
|---|--|--|---|
| ⊙ operating pt acc. to EN 50 041<br>$v_{max}$ max. operating speed<br>0-line reference line acc. to EN 50 041<br>→ direction of operation | Terminal designation acc. to EN 50 013 | 0-line reference line acc. to EN 50 041<br>S travel acc. to EN 50 041<br>■ contact closed<br>□ contact open<br>** positive opening to IEC 60 947-5-1-3 |   |

| Rod actuator   | Slow-action contacts   | Deflection in direction of rotation  | Minimum force required in direction of rotation |
|--|--|--|---|
| finely adjustable from 10° to 10°<br><b>3SE2 303--WW,</b><br><b>3SE2 303--VW</b>   | <b>1 NO + 2 NC</b><br> Ident. No. <b>12</b>                     |    | 25 Ncm  |
|  <p>A = Operating range<br/>B = Lower edge of actuator</p> <p><math>v_{max} = 3 \text{ m/s}</math></p> <p>In special designs contacts can only be operated from right or left. By twisting the plunger from the right and left.</p> | <b>2 NO + 1 NC</b><br> Ident. No. <b>21</b>                     |    |   |
|  | <b>1 NO + 2 NC make-before-break</b><br> Ident. No. <b>12</b>  |   |   |
|  | <b>2 NO + 1 NC make-before-break</b><br> Ident. No. <b>21</b> |  |   |

1) Max. operating angle 70°. Max. deflection for adjustment purposes 90°.

### 3SE3 020 and 3SE3 023 open-type position switches

2 and 3 contacts · Moving double break contacts · Degree of protection: Terminals IP 20, switching chamber IP 40

| Operation by a bar  | Type  | A ≥ mm      | A** ≤ mm |      |
|---|---|-------------|----------|------|
| <b>Plunger</b>  |   |             |          |      |
|                          | Actuators can be in the form of a bar, cam, stop etc.                               | 3SE3 020-0A | 15       | –    |
|   | For operation perpendicular to plunger axis:  | 3SE3 020-1A | 15       | 17.5 |
|   | $\alpha_{max} = 30^\circ$ , $v_{max} = 0.5 \text{ m/s}$<br>$\beta_{max} = 30^\circ$ | 3SE3 020-3A | 15       | –    |
| For operation perpendicular plunger axis:<br>$v_{max} = 1.5 \text{ m/s}$                                    |   |             |          |      |
| A Actuating bar spacing = distance from center, fixing hole up to lower edge of contact bar                 | 3SE3 023-0A   | 15          | –        |      |
|   | 3SE3 023-1A   | 15          | –        |      |
|   | 3SE3 023-2A   | 15          | –        |      |
| A** Actuating bar distance, to guarantee positive opening of the snap-action contacts acc. to DIN VDE 0113. | 3SE3 023-3A   | 15          | –        |      |

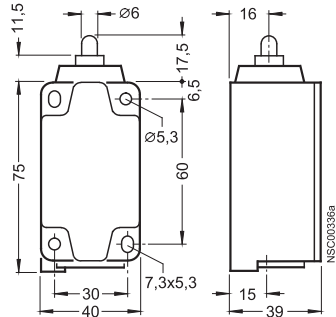
# 3SE International Limit Switches Position Switches

3SE2 100 to 3SE3 170  
Metal enclosure, 40 and 56 mm width

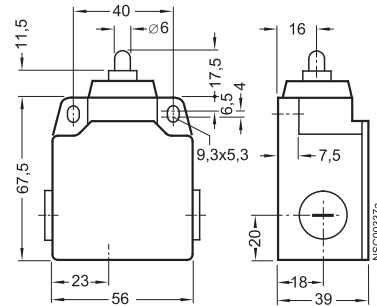
## Dimension drawings

### 3SE2 1.0, 3SE3 1.0

**3SE. 1□0**  
narrow enclosure, 2 contacts,  
with plunger

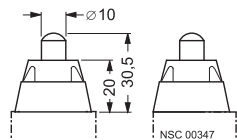


**3SE2 100**  
wide enclosure, 2 contacts,  
with plunger

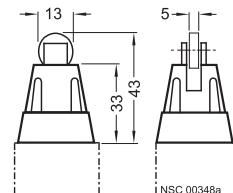


### Actuators for 3SE2 1.0, 3SE3 1.0 position switches

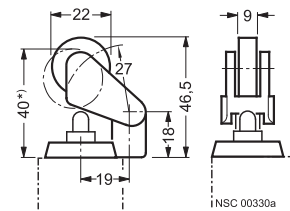
**Overtravel plunger, Form B**



**Roller plunger, Form C**

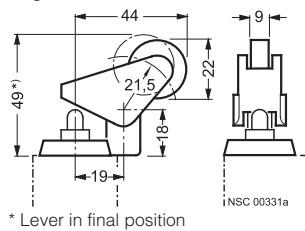


**Roller lever**



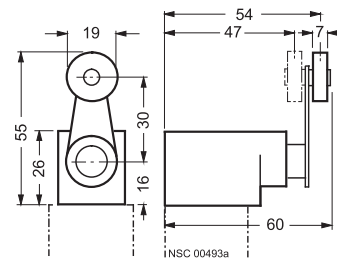
\* Lever in final position

**Angular roller lever**

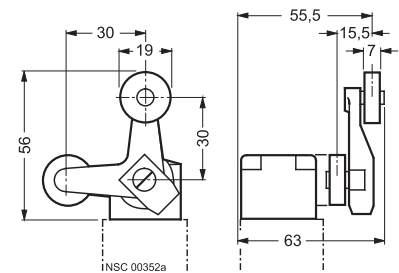


\* Lever in final position

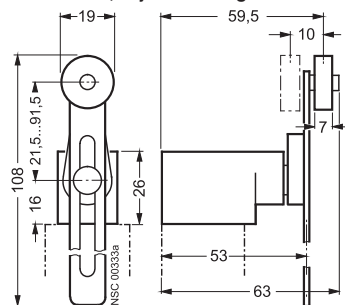
**3SX3 212 roller crank for  
3SX3 211 actuator heads**



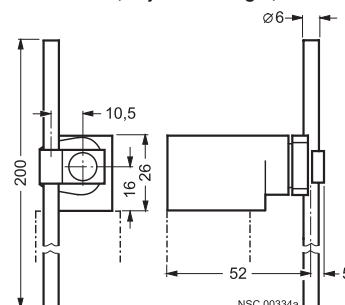
**Fork lever**



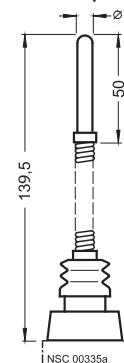
**Roller crank, adjustable length**



**Rod actuator, adjustable length, Form D**



**Wobble spring**





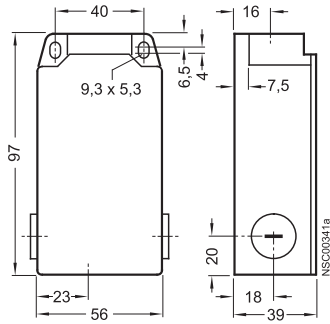
# 3SE International Limit Switches Position Switches

**3SE2 303 / 3SE2 404**  
Metal enclosure, 56 mm width

## Dimension drawings

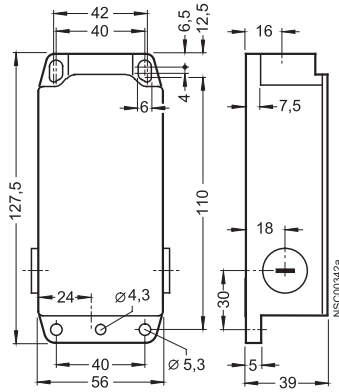
### 3SE2 303

wide enclosure, 3 contacts



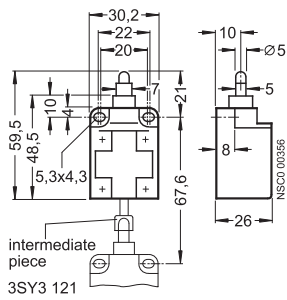
### 3SE2 404

wide enclosure, 4 contacts



## Open-type

### 3SE3 020-.A



### 3SE3 023-.A

