

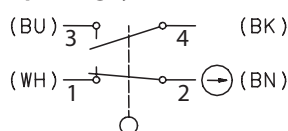
## Safety switch

### Series Safety Hinge Switch SHS3Z

Description **SHS3Z-U1Z-SA-R**

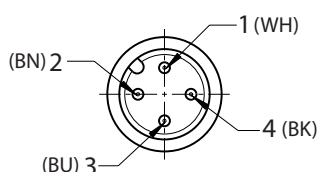
Article number **6019490057**

#### Operating symbol

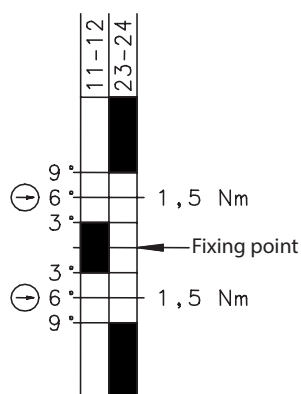


The colour allocation refers to the plug-in-cables which we have in our range.

#### PLUG



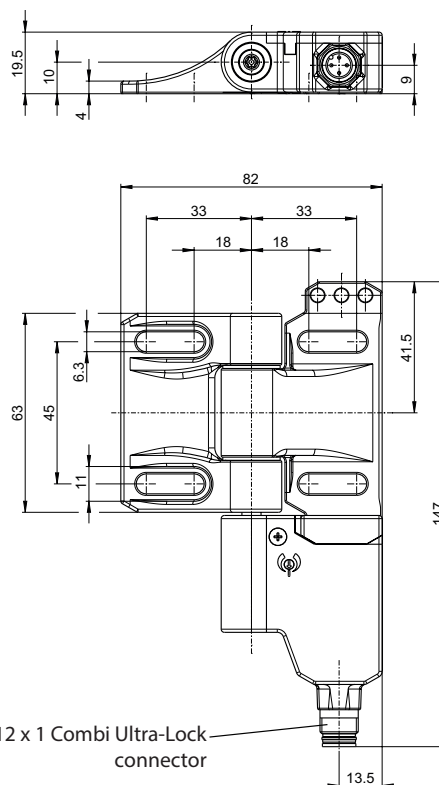
#### Operating diagram



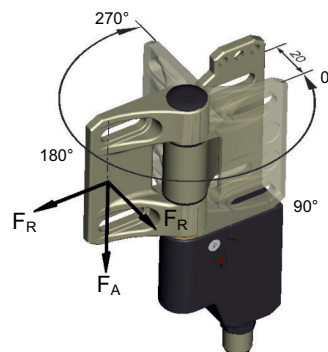
Fixing point in the range 0° ... 270° freely selectable



Tolerances:  
switching angle (opening)  $\pm 1,5^\circ$ ,  
direct opening torque 10 %,  
direct opening angle  $+ 2^\circ$



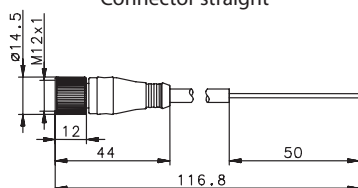
Swivel angle 0° to 270°



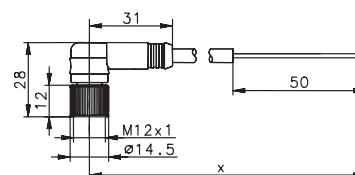
## 4-pin connector (A-coded) M12x1 with jiggle protection and molded cable

| Article number | Description               | cable length x | Version  |
|----------------|---------------------------|----------------|----------|
| 3251004310     | AN-KAB.SH53 4P 2M GERADE  | 2 m            | straight |
| 3251004311     | AN-KAB.SH53 4P 5M GERADE  | 5 m            | straight |
| 3251004312     | AN-KAB.SH53 4P 10M GERADE | 10 m           | straight |
| 3251004313     | AN-KAB.SH53 4P 2M WINKEL  | 2 m            | angled   |
| 3251004314     | AN-KAB.SH53 4P 5M WINKEL  | 5 m            | angled   |
| 3251004315     | AN-KAB.SH53 4P 10M WINKEL | 10 m           | angled   |

Connector straight



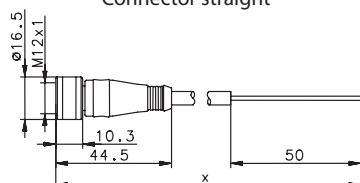
Connector angled



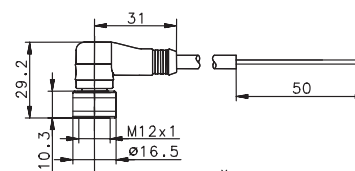
## 4-pin connector (A-coded) M12x1 with Ultra Lock quick-connect terminal and moulded cable

| Article number | Description                    | cable length x | Version  |
|----------------|--------------------------------|----------------|----------|
| 3251004316     | AN-KAB.SH53 4P U.L. 2M GERADE  | 2 m            | straight |
| 3251004317     | AN-KAB.SH53 4P U.L. 5M GERADE  | 5 m            | straight |
| 3251004318     | AN-KAB.SH53 4P U.L. 10M GERADE | 10 m           | straight |
| 3251004319     | AN-KAB.SH53 4P U.L. 2M WINKEL  | 2 m            | angled   |
| 3251004320     | AN-KAB.SH53 4P U.L. 5M WINKEL  | 5 m            | angled   |
| 3251004321     | AN-KAB.SH53 4P U.L. 10M WINKEL | 10 m           | angled   |

Connector straight



Connector angled



## Electrical Data

|                                 |           |                                                                  |
|---------------------------------|-----------|------------------------------------------------------------------|
| Rated insulation voltage        | $U_i$     | 250 V                                                            |
| Conv. thermal current           | $I_{the}$ | 4 A                                                              |
| Rated operational voltage       | $U_e$     | 230 V AC; 24 V DC                                                |
| Utilization category            |           | AC-15, $U_e / I_e$ 230 V / 3 A;<br>DC-13, $U_e / I_e$ 24 V / 1 A |
| Direct opening action           |           | acc. to IEC/EN 60947-5-1, annex K                                |
| Short-circuit protective device |           | Fuse 4 A gG                                                      |
| Protection class                |           | II (protective insulation)                                       |

## Technical Data



| Mechanical data                                                                           |                                                                                                                           |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Enclosure                                                                                 | PBT                                                                                                                       |
| Hinge                                                                                     | zinc die cast / nickel matt                                                                                               |
| Ambient air temperature                                                                   | -25 °C to +70 °C<br>(connecting cable permanently mounted; no freezing over / no condensation)                            |
| Contact type                                                                              | Slow make and break contacts (1 N.C., 1 N.O.)                                                                             |
| Mechanical life                                                                           | 1 x 10 <sup>6</sup> operating cycles                                                                                      |
| Switching frequency                                                                       | max. 300 switching operations / hour                                                                                      |
| Attachment                                                                                | 4 x M6 screws DIN EN ISO 7984 (on flat and stiff ground)                                                                  |
| Connection type                                                                           | 4-pin connector M12x1 or Ultra-Lock connection<br>Equivalent connecting cable available as accessory                      |
| Weight                                                                                    | ≈ 0,4 kg                                                                                                                  |
| Installation position                                                                     | operator definable                                                                                                        |
| Protection type                                                                           | IP 67 in acc. with IEC/EN 60529                                                                                           |
| Switching angle                                                                           | +/- 3 ° from fixing point for the N.C. contacts and 9° for the N.O. contact                                               |
| Forced disconnect angle                                                                   | 6°+2° from fixation point in both directions<br>(for 0°-3° only in Plus-direction, for 267°-270° only in Minus-direction) |
| Forced disconnect torque                                                                  | 1,5 Nm                                                                                                                    |
| Mechanical load<br>(see dimensioned drawing for the introduction direction of the forces) | F <sub>R1</sub> = max. 1200 N<br>F <sub>R2</sub> = max. 500 N<br>F <sub>A</sub> = max. 1200 N                             |

| ID for safety engineering |                            |
|---------------------------|----------------------------|
| B10d                      | 2 x 10 <sup>6</sup> cycles |

| Standards |                                         |
|-----------|-----------------------------------------|
|           | DIN EN 60947-5-1,<br>DIN EN ISO 13849-1 |

| EU Conformity |                                                    |
|---------------|----------------------------------------------------|
|               | acc. to directive 2006/42/EC (Machinery Directive) |

| Approvals |                         |
|-----------|-------------------------|
|           | DGUV                    |
|           | CCC                     |
|           | cCSA <sub>US</sub> B300 |

| Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>The safety guard shall always be mounted using two SHS3Z at least! See max. load. If the risk assessment of the machine permits a single-channel monitoring a blank hinge can used as bearing element.<br/> High forces, unfavourable force application as well as dynamic loads can shorten the service life.<br/> In case that the SHS3Z is used at an ambient temperature of 70° an accelerated ageing of the connecting cable can occur.<br/> The connecting cable shall be protected against mechanical damages.<br/> The installation of the connecting cable can be done via pipes or cable ducts.<br/> The manufacturer / supplier of the machine / equipment is obliged to take the applicable standards for the calculation of the safety distances of separating safety guards to hazardous areas into account.<br/> Especially these standards apply: DIN EN 349, DIN EN 953, DIN EN ISO 14119, DIN EN ISO 13857, ...<br/> The switch shall not be used as a mechanical stop.</p> |  |

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Technical modifications and errors excepted.

The technical datasheet corresponds to the technical state as of 2023-03-15 and will not be removed in case of changes.  
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Sous réserve d'erreurs ou modifications techniques