**Safety in system**
**Protection for man and machine**

# AS-INTERFACE
# SAFETY AT WORK

ASi
**Safety at Work**

# SCHMERSAL
## THE DNA OF SAFETY

# INTRODUCTION





**Heinz and Philip Schmersal,**
Managing Directors of the Schmersal Group

## New solutions to improve production efficiency and machine safety

**Safety in system – Protection for man and machine**

Often, it is unavoidable that people have to intervene with the workings of a machine. When this is done, the safety of the operator is imperative. This demands the responsibility of the machine operator, which is also required by the world's standards and guidelines for machine safety.

The Schmersal Group has concentrated for many years on safety at work with our products and solutions; today we can offer the industry the world's largest range of safety switchgear and systems for the protection of man and machine.

Under the guiding principle "Safety with system – protection for man and machine" we develop and produce products that carry the system concept and can be optimally integrated into the work processes. Because we are convinced that safety does not contradict higher productivity.

In our fields of activity we have a leading position due to our expertise, our innovative power and our comprehensive range of products. With this we follow a central theme: Together with you, we want to make the world a little safer. Talk to us – we look forward to working with you.

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**Web shop**  ⬚

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**products.schmersal.com**

## DESCRIPTION

**Fast mounting, smooth installation**
The AS interface enables fast mounting and installation of the components in the safety circuit. The safety switchgear devices are connected to each other and also to the AS-i master and the safety monitor via the yellow AS-i two-wire unshielded line. The power supply also comes from the AS-i unshielded 2-wire line. For AS-i slaves with higher power requirements, the black profile cable with 24 VDC auxiliary voltage is available. It is possible to connect not only operational but also fail-safe AS-i slaves to an AS-i master in mixed configuration. The safety functions are smoothly configured in the AS-i safety monitor through the ASIMON software.

**Flexible in use**
Even after installation it is possible to change or enhance an AS-i safety system at any time. This applies to both safety switchgear add-ons and switchgear configuration (e.g. safety links, STOP category, filter times etc.).

**A tried-and-tested "multilingual" system**
With over 7 million safety switchgears in the field, AS-i Safety is the most successful safety bus in the world. In addition to the smooth wiring and configuration, the fact that AS-Interface can communicate with all conventional and commonly used bus systems, has considerably contributed to this success. For the user of the AS-i Safety System, this means that his system speaks many languages – for instance: PROFIBUS, PROFINET, EtherNet/IP and ModbusTCP. For AS-i safety there are also solutions for the field buses DeviceNet, CC-Link, CANopen and Sercos III. In this way, a universal application through different communication standards is enabled.

**An economic solution – also for smaller machines**
When does the installation of an AS-i Safety System generate return on investment?
When purely considering the costs, cost advantages are already generated – depending on the application – as of six safety switchgear with 6 m connecting cable each – compared to the parallel wiring. In addition to that, there are advantages, which cannot be directly included in the cost savings. These advantages include the smooth extension possibilities, the increased flexibility for making changes to the safety circuit afterwards and the clearly enhanced diagnostic possibilities. Also the comfortable configuration through the safety monitor is an advantage, which is already featured by the smallest AS-i Safety System.

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## SYSTEM STRUCTURE
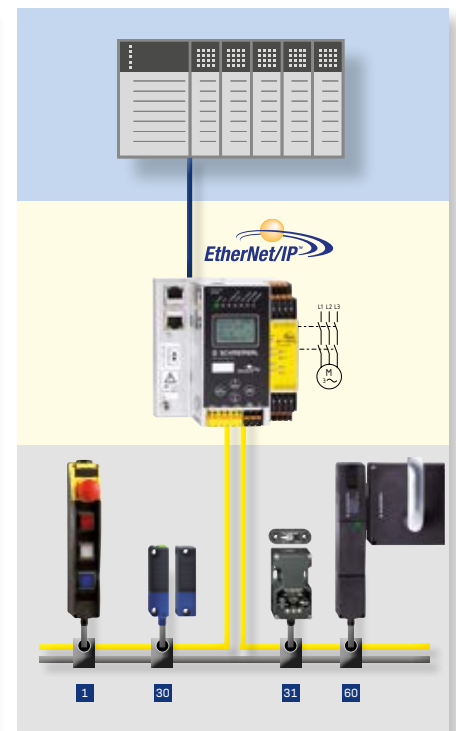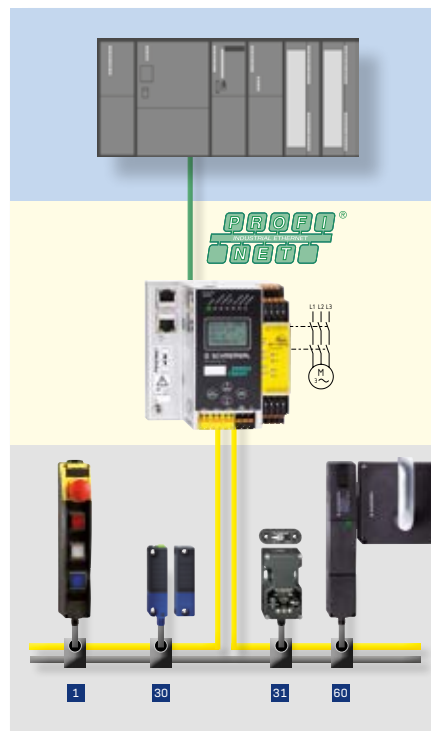
## USER ADVANTAGES

- ■ Individually scalable safety solutions for different machine sizes
- ■ Smooth, fail-safe installation and interface connection of the safety switchgear through AS-Interface
- ■ Comfortable configuration of the safety solution through the "ASIMON" Drag & Drop software
- ■ Complete diagnostics of the entire safety circuit and all connected safety switchgear by the control system
- ■ High operational safety through individually configurable safety-monitoring modules with multiple filter functions, e.g. for bouncing safety guards
- ■ The safety functions can be easily changed or extended at a later date
- ■ Cost-advantageous parallel wiring, approximately six switchgears each with a 6m connecting cable

# SAFETY SENSORS
## OVERVIEW OF THE SERIES

| | BNS 260-AS | BNS 36-AS | BNS 16-AS |
|---|---|---|---|
| **Key Features** | | | |
| | • Thermoplastic enclosure<br>• 1 direction of actuation | • Thermoplastic enclosure<br>• 1 direction of actuation | • Thermoplastic enclosure<br>• 2 different directions of actuation |

**Product version**

| | | | |
|---|---|---|---|
| **Active principle** | magnetic | magnetic | magnetic |
| **Individual coding** | – | – | – |
| **Coding level EN ISO 14119** | Low | Low | Low |
| **Device supply off** | AS-i | AS-i | AS-i |

**Technical features**

| | | | |
|---|---|---|---|
| **Assured switch-on distance $s_{ao}$** | 5 mm | 7 mm | 8 mm |
| **Assured switch-off distance $s_{ar}$** | 15 mm | 17 mm | 18 mm |
| **Electrical characteristics** | | | |
| **AS-i supply voltage** | 18.0 V … 31.6 V | 18.0 V … 31.6 V | 18.0 V … 31.6 V |
| **AS-i power consumption** | ≤ 50 mA | ≤ 50 mA | ≤ 100 mA |
| **AS-i specification** | V 2.1 | V 2.1 | V 2.1 |
| **AS-i profile** | S-0.B.F.E | S-0.B.F.E | S-0.B.F.E |
| **Mechanical data** | | | |
| **Dimensions (W × H × D)** | 36 × 13 × 26 mm | 88 × 13 × 25 mm | 52 × 39 × 90 mm |
| **Connection** | Cable or cable connector M12 | Cable or cable connector M12 | Connector plug M 12 |
| **Ambient conditions** | | | |
| **Ambient temperature** | −25 °C … +60 °C | −25 °C … +60 °C | −25 °C … +60 °C |
| **Protection class** | IP67 | IP67 | IP67 |

**Safety classification**

| | | | |
|---|---|---|---|
| **Standards** | EN ISO 13849-1, IEC 61508 | EN ISO 13849-1, IEC 61508 | EN ISO 13849-1, IEC 61508 |
| **PL/SIL** | e/3 | e/3 | e/3 |
| **Category** | 4 | 4 | 4 |
| **PFH** | $6.21 \times 10^{-9}$/h | $1.24 \times 10^{-8}$/h | $7.24 \times 10^{-9}$/h |
| **Certificates** | AS-i, TÜV, cULus | AS-i, TÜV, cULus | AS-i, TÜV, cULus |

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| RSS 260-AS | RSS 36-AS |
|---|---|
| • Thermoplastic enclosure<br>• 2 different directions of actuation<br>• Repeated universal or individual coding<br>• High switching distance and offset possible | • Thermoplastic enclosure<br>• 3 different directions of actuation<br>• Repeated universal or individual coding<br>• High switching distance and offset possible<br>• Optionally with magnetic latching 18 N |
| RFID | RFID |
| ■ | ■ |
| High ("I" variants) | High ("I" variants) |
| AS-i | AS-i |
| From front 10 mm, lateral 6 mm | 10 mm |
| From front 18 mm, lateral 15 mm | 20 mm |
| 18.0 V … 31.6 V | 18.0 V … 31.6 V |
| ≤ 100 mA | ≤ 100 mA |
| V 3.0 | V 3.0 |
| S-0.B.F.E | S-0.B.F.E |
| 39.2 × 18 × 29.5 mm | 106 × 25 × 22.6 mm |
| Connector plug M 8<br>Cable connector M12 | Connector plug M 12 |
| −25 °C … +60 °C | −25 °C … +70 °C |
| IP65 / IP67 | IP65 / IP67 / IP69 |
| EN ISO 13849-1, IEC 61508 | EN ISO 13849-1, IEC 61508 |
| e/3 | e/3 |
| 4 | 4 |
| $3.93 \times 10^{-10}$/h | $5.13 \times 10^{-10}$/h |
| AS-i, TÜV, cULus | AS-i, TÜV, cULus |

# SAFETY SENSORS
## PREFERRED TYPES

| Range | | Coding | Supply | Connection | Latching force | Actuation direction |
|---|---|---|---|---|---|---|
| RSS 260-AS |  | Standard coding | AS-i power | Connector M8, 4-pole and cable connector M12, 4-pole | – | From side |
| | | Individual coding | | | | |
| | | Individual coding, re-teaching enabled | | | | |
| RSS 36-AS |  | Standard coding | AS-i power | Connector M12, 4-pole | – | From side |
| | | | | | 18 N | |
| | | Individual coding | | | – | |
| | | | | | 18 N | |
| | | Individual coding, re-teaching enabled | | | – | |
| | | | | | 18 N | |
| BNS 260-AS |  | Standard coding | AS-i power | Cable with connector M12, 4-pole | – | From side |
| BNS 36-AS |  | Standard coding | AS-i power | Cable with connector M12, 4-pole | – | From side |
| BNS 16-AS |  | Standard coding | AS-i power | Connector M12, 4-pole | – | Front side |
| | | | | | | Cover-side |

Actuators should be ordered separately. A selection can be found on page 10.
Other types can be found on **products.schmersal.com.**
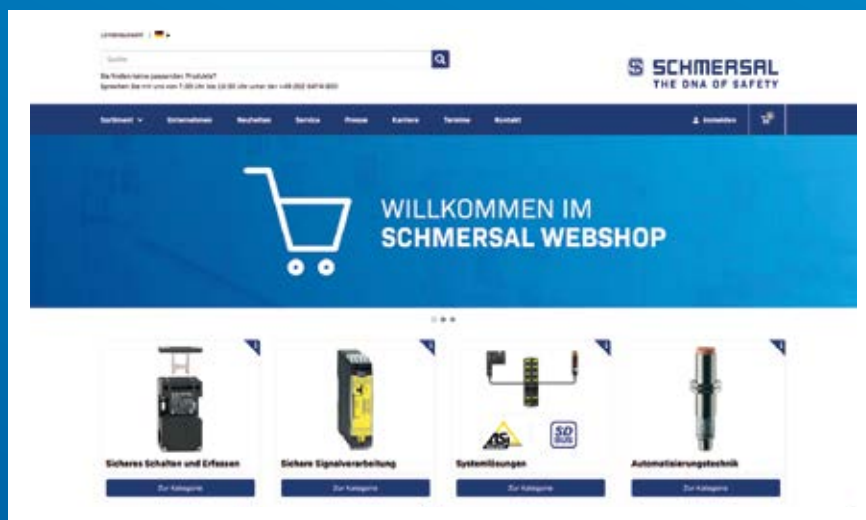
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| Sao/Sar | Housing material | Actuator | Type designation | Material number |
|---|---|---|---|---|
| 10/18 mm | Plastic | RST260-1 RST16-1 RST-U-2 | RSS260-ST-AS | 103004638 |
| | | | RSS260-LSTM12-4-0.25M-AS | 103014763 |
| | | | RSS260-I1-ST-AS | 103004640 |
| | | | RSS260-I1-LSTM12-4-0.25M-AS | 103014762 |
| | | | RSS260-I2-ST-AS | 103004641 |
| | | | RSS260-I2-LSTM12-4-0.25M-AS | 103014764 |
| 10/20 mm | Plastic | RST 36-1 RST 36-1-R RST16-1 RST-U-2 | RSS 36-ST-AS | 103001531 |
| | | | RSS 36-ST-AS-R | 103001534 |
| | | | RSS 36-I1-ST-AS | 103001536 |
| | | | RSS 36-I1-ST-AS-R | 103001537 |
| | | | RSS 36-I2-ST-AS | 103001538 |
| | | | RSS 36-I2-ST-AS-R | 103001539 |
| 5/15 mm | Plastic | BPS 260-1 BPS 260-2 | BNS 260 STG-AS-R | 101186155 |
| | | | BNS 260 STG-AS-L | 101186156 |
| 7/17 mm | Plastic | BPS 36-1 BPS 36-2 | BNS 36 STG-AS-R | 101194956 |
| | | | BNS 36 STG-AS-L | 101194955 |
| 8/18 mm | Plastic | BPS 16 | BNS 16 ST1-AS-V | 101177221 |
| | | | BNS 16 ST1-AS-D | 101177222 |

# SAFETY SENSORS
## ACTUATOR

| RST 260-1 103004318 | RST-U-2 103005994 | BPS 36-. |
|---|---|---|
|  |  |  |
| ■ Actuator for RSS 260<br>■ Thermoplastic enclosure | ■ Small actuator for RSS 16, RSS 36 and RSS 260<br>■ Thermoplastic enclosure | ■ Actuator and sensor on a mounting level:<br>**BPS 36-1** 101190052<br>■ Actuator 90° attached to the sensor:<br>**BPS 36-2** 101191859 |

| RST 36-. | RST 16-1 103004336 | BPS 260-. |
|---|---|---|
|  |  |  |
| ■ Actuator for RSS 36<br>**RST 36-1** 101213820<br>■ Actuator with latching magnet:<br>**RST 36-1-R** 101213821 | ■ Flat actuator for RSS 16, RSS 36 and RSS 260<br>■ Thermoplastic enclosure | ■ Actuator and sensor on a mounting level:<br>**BPS 260-1** 101184395<br>■ Actuator 90° attached to the sensor:<br>**BPS 260-2** 101184396 |

| | | BPS 16 101172566 |
|---|---|---|
| | |  |
| | | ■ Actuator for BNS 16<br>■ Thermoplastic enclosure |

Detailed information regarding the actuator selection and other actuators can be found at **products.schmersal.com**.

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THE ONLINE PRODUCT CATALOGUE



FOR DETAILED INFORMATION, CHECK OUT
**PRODUCTS.SCHMERSAL.COM**

# SOLENOID INTERLOCKS
## OVERVIEW OF THE SERIES

|  | ■ AZM 170-AS (AUX) | ■ AZM 161-AS (AUX) | ■ AZM 161-AS (AS-i) |
|---|---|---|---|
| **Key Features** | | | |
|  | • Thermoplastic enclosure<br>• Holding force 1000 N<br>• Manual release;<br>• Power to unlock / Power to lock | • Thermoplastic enclosure<br>• Holding force 2000 N<br>• Optionally with individual coding<br>• Manual release, emergency exit or emergency release<br>• Power to unlock / Power to lock | • Thermoplastic enclosure<br>• Holding force 2000 N<br>• Optionally with individual coding<br>• Manual release, emergency exit or emergency release<br>• Power to unlock / Power to lock |
| **Product version** | | | |
| Active principle | electromechanical | electromechanical | electromechanical |
| Individual coding | – | – / ■ | – / ■ |
| Coding level EN ISO 14119 | Low | Low<br>("I" variant = high) | Low<br>("I" variant = high) |
| Device supply off | AS-i | AS-i | AS-i |
| Magnet supply off | AUX | AUX | AS-i |
| **Technical features** | | | |
| Clamping force | 1000 N | 2000 N | 2000 N |
| Latching force | 30 N (Index R) | 30 N (Index R) | 30 N (Index R) |
| Safe unlocking function possible | up to PL e | up to PL e | – |
| **Electrical characteristics** | | | |
| AS-i supply voltage | 18.0 V ... 31.6 V | 18.0 V ... 31.6 V | 18.0 V ... 31.6 V |
| AS-i power consumption | ≤ 100 mA | ≤ 100 mA | ≤ 250 mA |
| AUX supply voltage | 24 VDC −15% / +10% | 24 VDC −15% / +10% | – |
| AUX power consumption | ≤ 500 mA | ≤ 500 mA | – |
| AS-i specification | V 2.1 | V 2.1 | V 2.1 |
| AS-i profile | S-7.B.F.E | S-7.B.F.E | S-7.B.F.E |
| **Mechanical data** | | | |
| Dimensions (W × H × D) | 90 × 60 × 30 mm | 130 × 90 × 30 mm | 130 × 90 × 30  mm |
| Connection | Connector plug M 12 | Connector plug M 12 | Connector plug M 12 |
| **Ambient conditions** | | | |
| Ambient temperature | −25 °C ... +55 °C | −25 °C ... +60 °C | −25 °C ... +60 °C |
| Protection class | IP67 | IP67 | IP67 |
| **Safety classification** | | | |
| Standards | | EN ISO 13849-1, IEC 61508 | |
| PL/SIL | c/1 up to d/2 | c/1 up to d/2 | c/1 up to d/2 |
| Control category | 1 to 3 | 1 to 3 | 1 to 3 |
| PFH | up to $1.01 \times 10^{-7}$/h | up to $1.01 \times 10^{-7}$/h | up to $1.01 \times 10^{-7}$/h |
| Certificates | AS-i, TÜV, cULus | AS-i, TÜV, cULus | AS-i, TÜV, cULus |

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| MZM 100-AS (AUX) | AZM 201-AS (AUX) | AZM 300-AS (AUX) | AZM 300-AS (AS-i) |
|---|---|---|---|
| • Thermoplastic enclosure<br>• Holding force 750 N<br>• Electromagnetic interlock function<br>• Optional with permanent magnet engagement<br>• Power to lock | • Thermoplastic enclosure<br>• Holding force 2000 N<br>• Repeated universal or individual coding<br>• Manual release, emergency exit or emergency release<br>• Power to unlock / Power to lock | • Thermoplastic enclosure<br>• Holding force 1000 N<br>• Repeated universal or individual coding<br>• Manual release, emergency exit or emergency release<br>• Power to unlock / Power to lock | • Thermoplastic enclosure<br>• Holding force 1000 N<br>• Repeated universal or individual coding<br>• Manual release, emergency exit or emergency release<br>• Power to unlock / Power to lock |
| inductive | RFID | RFID | RFID |
| – | ■ | ■ | ■ |
| Low | High ("I" variants) | High ("I" variants) | High ("I" variants) |
| AS-i | AS-i | AS-i | AS-i |
| AUX | AUX | AUX | AS-i |
| 750 N | 2000 N | 1000 N | 1000 N |
| 30 – 100 N (Index RE) Magnet 15 N (Index M) | 30 N | 25 N / 50 N | 25 N / 50 N |
| – | up to PL e | up to PL e | – |
| 26.5 V ... 31.6 V | 26.5 V ... 31.6 V | 18.0 V ... 31.6 V | 26.5 V ... 31.6 V |
| ≤ 100 mA | ≤ 100 mA | ≤ 100 mA | ≤ 200 mA |
| 24 VDC −15% / +10% | 24 VDC −15% / +10% | 24 VDC −15% / +10% | – |
| ≤ 600 mA | ≤ 500 mA | ≤ 300 mA | – |
| V 2.1 | V 3.0 | V 3.0 | V 3.0 |
| S-7.B.F.E | S-7.B.F.E | S-7.B.F.E | S-7.B.F.E |
| 40 × 167 × 40 mm | 40 × 220 × 50 mm | 88 × 121 × 35 mm | 88 × 121 × 35 mm |
| Connector plug M 12 | Connector plug M 12 | Connector plug M 12 | Connector plug M 12 |
| −25 °C ... +55 °C | −25 °C ... +60 °C | 0 °C ... +60 °C | 0 °C ... +60 °C |
| IP67 | IP67 | IP66, IP67, IP69 | IP66, IP67, IP69 |
| EN ISO 13849-1, IEC 61508 | | | |
| e/3 | e/3 | e/3 | e/3 |
| 4 | 4 | 4 | 4 |
| $5.00 \times 10^{-9}$/h | $1.81 \times 10^{-9}$/h | $1.34 \times 10^{-9}$/h | $1.34 \times 10^{-9}$/h |
| AS-i, TÜV, cULus | AS-i, TÜV, cULus | AS-i, TÜV, cULus | AS-i, TÜV, cULus |

# SOLENOID INTERLOCKS
## PREFERRED TYPES

| Range | Coding | Supply Interlocking solenoid | Connection | Latching force | Special features |
|---|---|---|---|---|---|
| AZM 161-AS | Standard coding | AS-i power | Connector M12, 4-pole | 30 N | Manual release |
| | | | | | Manual release |
| | | AUX Power | | | Manual release |
| | | | | | Manual release |
| | | | | | Emergency exit |
| AZM 170-AS | Standard coding | AUX Power | Connector M12, 4-pole | 30 N | Manual release |
| | | | | | Manual release |
| AZM 201-AS | Standard coding | AUX Power | Connector M12, 4-pole | 30 N | Manual release |
| | | | | | Manual release |
| | | | | | Manual release |
| | Individual coding | | | | Manual release |
| | | | | | Manual release |
| | | | | | Manual release |
| MZM 100-AS | Standard coding | AUX Power | Connector M12, 4-pole | 30 ... 100 N | --- |
| | | | | | Permanent magnet |
| | | | | | --- |
| | | | | | Permanent magnet |
| AZM 300-AS | Standard coding | AS-i power | Connector M12, 4-pole | 25 N / 50 N | Manual release |
| | | | | | Manual release |
| | | | | | Emergency exit |
| | Individual coding | | | | Manual release |
| | | | | | Manual release |
| | | | | | Emergency exit |
| | Individual coding, re-teaching enabled | | | | Manual release |
| | | | | | Manual release |
| | | | | | Emergency exit |
| | Standard coding | AUX Power | | | Manual release |
| | | | | | Manual release |
| | | | | | Emergency exit |
| | Individual coding | | | | Manual release |
| | | | | | Manual release |
| | | | | | Emergency exit |
| | Individual coding, re-teaching enabled | | | | Manual release |
| | | | | | Manual release |
| | | | | | Emergency exit |

Actuators should be ordered separately. A selection can be found on page 16 ff.
Other types can be found on **products.schmersal.com.**

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| Guard locking monitored | Actuator monitored | Power to lock | Power to unlock | Type designation | Material number |
|---|---|---|---|---|---|
|  | ■ | ■ |  | AZM 161 B-ST1-AS-RA | 101209097 |
| ■ |  |  | ■ | AZM 161 Z-ST1-AS-R | 101209107 |
|  | ■ | ■ |  | AZM 161 B-ST1-AS-RAP | 101209090 |
| ■ |  |  | ■ | AZM 161 Z-ST1-AS-RP | 101209109 |
| ■ |  |  | ■ | AZM 161 Z-ST1-AS-RPT | 101216398 |
|  | ■ | ■ |  | AZM 170 B ST-AS RAP | 101210414 |
| ■ | ■ |  | ■ | AZM 170 BZ ST-AS RP-2197 | 101211516 |
|  | ■ | ■ |  | AZM 201B-ST-T-AS-A-P | 103025301 |
| ■ |  |  | ■ | AZM 201Z-ST-T-AS-P | 103025866 |
| ■ | ■ |  | ■ | AZM 201BZ-ST-T-AS-P | 103025873 |
|  | ■ | ■ |  | AZM 201B-I2-ST-T-AS-A-P | 103025857 |
| ■ |  |  | ■ | AZM 201Z-I2-ST-T-AS-P | 103025868 |
| ■ | ■ |  | ■ | AZM 201BZ-I2-ST-T-AS-P | 103025874 |
|  | ■ | ■ |  | MZM 100 B ST-AS REAP | 101198705 |
|  | ■ | ■ |  | MZM 100 B ST-AS REMAP | 101209551 |
| ■ |  | ■ |  | MZM 100 ST-AS REAP | 101198704 |
| ■ |  | ■ |  | MZM 100 ST-AS REMAP | 101209553 |
|  | ■ | ■ |  | AZM300B-ST-AS-A | 103005902 |
| ■ |  |  | ■ | AZM300Z-ST-AS | 103005916 |
| ■ |  |  | ■ | AZM300Z-ST-AS-T | 103009476 |
|  | ■ | ■ |  | AZM300B-I1-ST-AS-A | 103005910 |
| ■ |  |  | ■ | AZM300Z-I1-ST-AS | 103005924 |
| ■ |  |  | ■ | AZM300Z-I1-ST-AS-T | 103009475 |
|  | ■ | ■ |  | AZM300B-I2-ST-AS-A | 103005906 |
| ■ |  |  | ■ | AZM300Z-I2-ST-AS | 103005920 |
| ■ |  |  | ■ | AZM300Z-I2-ST-AS-T | 103011892 |
|  | ■ | ■ |  | AZM300B-ST-AS-A-P | 103005899 |
| ■ |  |  | ■ | AZM300Z-ST-AS-P | 103005913 |
| ■ |  |  | ■ | AZM300Z-ST-AS-P-T | 103009481 |
|  | ■ | ■ |  | AZM300B-I1-ST-AS-A-P | 103005908 |
| ■ |  |  | ■ | AZM300Z-I1-ST-AS-P | 103005922 |
| ■ |  |  | ■ | AZM300Z-I1-ST-AS-P-T | 103009480 |
|  | ■ | ■ |  | AZM300B-I2-ST-AS-A-P | 103005904 |
| ■ |  |  | ■ | AZM300Z-I2-ST-AS-P | 103005918 |
| ■ |  |  | ■ | AZM300Z-I2-ST-AS-P-T | 103009483 |

# SOLENOID INTERLOCKS

## AZM 161 – ACTUATORS AND ACCESSORIES

| AZM 161-B1 * | 101145117 |
|---|---|



- Straight actuator
- Also with individual coding *

| AZM 161-B1S | 101171125 |
|---|---|



- Shortened straight actuator
- Standard coding

| AZM 161-B1-1747 | 101164100 |
|---|---|



- Straight actuator with magnetic latch
- Standard coding

| AZM 161-B1-2024 | 101178199 |
|---|---|



- Straight actuator with slot lip-seal
- Standard coding

| AZM 161-B1-2053 | 101173089 |
|---|---|



- Straight actuator with ball latch
- Standard coding

| AZM 161-B1-2177 | 101176642 |
|---|---|



- Straight actuator with centering guide
- Standard coding

| B6R * | |
|---|---|



- Flexible actuator for right-hand side door hinge
- Individual coding *

| B6L * | |
|---|---|



- Flexible actuator for left-hand side door hinge
- Individual coding *

| AZM 161-B1F | 101175431 |
|---|---|



- Straight actuator
- Standard coding

Detailed information regarding the actuator selection and other actuators can be found at **products.schmersal.com**.

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| AZM 161-B6 | 101144420 | AZM 161-B6-2177 | 101174113 | AZM 161-B6S | 101170375 |
|---|---|---|---|---|---|

- Flexible actuator
- Standard coding

- Flexible actuator with centering guide
- Standard coding

- Shortened flexible actuator
- Standard coding

**Tamperproof screws**

- Tamperproof screws with unidirectional slots
  M5 × 12          **101135338**
  M5 × 16          **101135339**
  M5 × 20          **101135340**
- Quantity 2 pcs

**Centering device**

**Slot sealing plug AZM 161**          101145379

**Triangular key M5**          101100887

- Centering device for pre-positioning
- Mounting outside: **TFA-020**    **101172607**
- Mounting inside: **TFI-020**    **101172609**

- To cover unused actuator slots
- For protection against the ingress of dirt
- Easy to install by just clipping in

- For manual release

Detailed information regarding the actuator selection and other actuators can be found at **products.schmersal.com**.

| AZ 17/170-B1 | 101122893 | AZ 17/170-B1-2245 | 101137406 | AZ 17/170-B5 | 101122895 |
|---|---|---|---|---|---|

- Straight actuator
- Standard coding

- Actuator with rubber mounting
- Standard coding

- Angled actuator
- Standard coding

| AZ 17/170-B11 | 101139788 | AZ 17/170-B15 | 101139789 | AZM 170-B6 | 101123391 |
|---|---|---|---|---|---|

- Long straight actuator
- Standard coding

- Long angled actuator
- Standard coding

- Flexible actuator
- Standard coding

| Centering device | | Tamperproof screws | | AZM 170-B | 101208493 |
|---|---|---|---|---|---|

- Centering device for pre-positioning
- Mounting outside: **TFA-020**     **101172607**
- Mounting inside: **TFI-020**     **101172609**

- Tamperproof screws with unidirectional slots
- M4 × 8     **101147463**
- Quantity 2 pcs

- Centering guide
- Only in combination with long actuator

Detailed information regarding the actuator selection and other actuators can be found at **products.schmersal.com**.

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# SOLENOID INTERLOCKS
## AZM 201 – ACTUATORS AND ACCESSORIES

| **AZ/AZM201-B1-...** | **AZ/AZM201-B1-...-P0** | **AZ/AZM201-B40-...** |
|---|---|---|
| ■ Actuator for sliding safety guards<br>■ Left-hand side actuating direction<br>**AZ/AZM201-B1-LT**      103013493<br>Right-hand side actuating direction<br>**AZ/AZM201-B1-RT**      103013494 | ■ With emergency exit P0<br>■ Left-hand side actuating direction<br>**AZ/AZM201-B1-LTP0**      103013496<br>Right-hand side actuating direction<br>**AZ/AZM201-B1-RTP0**      103013495 | ■ Actuators for rotatable and moveable protection equipment, especially for hinged-doors with overlapping folds |

| **AZ/AZM201-B30-... -G1** | **AZ/AZM201-B30-...-SZ** | **AZ/AZM201-B30-...-G2** |
|---|---|---|
| ■ Actuator for hinged safety guards | ■ Actuator B30 with lockout tag | ■ Actuator with rotating knob |

| **AZ/AZM201-...-P1** | **AZ/AZM201-...-P20** | **AZ/AZM201-B30-...-P30/P31** |
|---|---|---|
| ■ Emergency exit | ■ Emergency exit (metal) | ■ Three point locking linkage for requirements with increased mechanical stability (7,000 N) |

Detailed information regarding the actuator selection and other actuators can be found at **products.schmersal.com**.

| MZM 100-B1.1 | 101204290 | MS MZM 100-W | 101185510 |
|---|---|---|---|



- Actuator free from play for MZM 100
- Neutralisation of undesired noises

- Mounting set for MZM 100
- Screws are included in delivery

| AZ/AZM300-B1 | 101218025 | MP-AZ/AZM300-1 | 103003172 | MS-AZ/AZM300-B1-1 | 103002891 |
|---|---|---|---|---|---|



- Actuator
- 3 different directions of actuation

- Mounting plate

- Mounting set for actuators

| AZM300-...-T / -N | | SZ 200-1 | 101196397 |
|---|---|---|---|



- Emergency exit (-T) for fitting and actuation only from **within** the hazardous area
- Emergency release (-N) for fitting and actuation only on the **outside** of the safety guard

- Lockout tag with 6 bore holes for AZM 200, AZM 201 and AZM 300
- To prevent inadvertent closing, e.g. during maintenance

Detailed information regarding the actuator selection and other actuators can be found at **products.schmersal.com**.

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# SAFETY LIGHT GRIDS / LIGHT CURTAINS
## OVERVIEW OF THE SERIES

|  | ■ SLC 440-AS | ■ SLG 440-AS |
|---|---|---|

### Key Features

|  | SLC 440-AS | SLG 440-AS |
|---|---|---|
|  | ▪ Sturdy aluminium profile<br>▪ Resolution 14 mm and 30 mm<br>▪ Protection field heights<br>  170 mm – 1770 mm<br>▪ Programmable blanking functions<br>▪ Integrated status indication | ▪ Sturdy aluminium profile<br>▪ 2-, 3-, 4-beam<br>▪ Protection field heights<br>  500 mm / 800 mm / 900 mm<br>▪ Programmable blanking functions<br>▪ Integrated status indication |

### Product version

|  | SLC 440-AS | SLG 440-AS |
|---|---|---|
| **Type to EN 61496** | Type 4 | Type 4 |
| **Device supply off:** | AS-i | AS-i |
| **Auxiliary supply off:** | AUX | AUX |

### Technical features

|  | SLC 440-AS | SLG 440-AS |
|---|---|---|
| **Resolution** | 14 mm and 30 mm |  |
| **Number of beams** |  | 2-, 3-, 4-beam |
| **Protection field height** | 170 mm ... 1770 mm | 500 mm / 800 mm / 900 mm |
| **Range of the protection field** | 0.3 ... 7.0 m / 14 mm Resolution<br>0.3 ... 10.0 m / 30 mm Resolution | 0.3 ... 12.0 m |
| **Blanking functions** | Fixed protection field /<br>With movable edge area /<br>Movable protection field | Fixed protection field /<br>With movable edge area /<br>Movable protection field |
| **Electrical characteristics** |  |  |
| **AS-i supply voltage** | 18.0 V ... 31.6 V | 18.0 V ... 31.6 V |
| **AS-i power consumption** | ≤ 50 mA | ≤ 50 mA |
| **AUX supply voltage** | 24 VDC −15% / +10% | 24 VDC −15% / +10% |
| **AUX power consumption receiver** | ≤ 150 mA | ≤ 150 mA |
| **AUX power consumption emitter** | ≤ 75 mA | ≤ 75 mA |
| **AS-i specification** | V 3.0 | V 3.0 |
| **AS-i profile** | S-0.B.F.E | S-0.B.F.E |
| **Mechanical data** |  |  |
| **Dimensions of profile (WxD)** | 27.8 × 33 mm | 27.8 × 33 mm |
| **Length inc. securing bracket** | Protection field height + 113 mm | Protection field height + 133 mm |
| **Connection** | Connector plug M 12 | Connector plug M 12 |
| **Ambient conditions** |  |  |
| **Ambient temperature** | −10 °C ... +50 °C | −10 °C ... +50 °C |
| **Protection class** | IP67 | IP67 |

### Safety classification

|  | SLC 440-AS | SLG 440-AS |
|---|---|---|
| **Standards** | EN ISO 13849-1, IEC 61508 | EN ISO 13849-1, IEC 61508 |
| **PL/SIL** | e/3 | e/3 |
| **Category** | 4 | 4 |
| **PFH** | $5.17 \times 10^{-9}$/h | $5.17 \times 10^{-9}$/h |
| **Certificates** | AS-i, TÜV, cULus | AS-i, TÜV, cULus |

# SAFETY LIGHT GRIDS / LIGHT CURTAINS
## LIGHT CURTAINS

| Range | Type to EN 61496 | Safety version | Supply | Connection | Special features |
|---|---|---|---|---|---|
| **SLC 440-AS** | Type 4 | Light curtain SLC | AUX Power | Connector M12, 4-pole | Integrated AS-i Safety Module |

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| Resolution | Protection field height | Range | Type designation | Material number |
|---|---|---|---|---|
| 14 mm | 170 mm | 0.3...7 m | SLC440AS-ER-0170-14 | 103007432 |
| 14 mm | 250 mm | 0.3...7 m | SLC440AS-ER-0250-14 | 103007438 |
| 14 mm | 330 mm | 0.3...7 m | SLC440AS-ER-0330-14 | 103007444 |
| 14 mm | 410 mm | 0.3...7 m | SLC440AS-ER-0410-14 | 103007450 |
| 14 mm | 490 mm | 0.3...7 m | SLC440AS-ER-0490-14 | 103007456 |
| 14 mm | 570 mm | 0.3...7 m | SLC440AS-ER-0570-14 | 103007462 |
| 14 mm | 650 mm | 0.3...7 m | SLC440AS-ER-0650-14 | 103007468 |
| 14 mm | 730 mm | 0.3...7 m | SLC440AS-ER-0730-14 | 103007474 |
| 14 mm | 810 mm | 0.3...7 m | SLC440AS-ER-0810-14 | 103007480 |
| 14 mm | 890 mm | 0.3...7 m | SLC440AS-ER-0890-14 | 103007486 |
| 14 mm | 970 mm | 0.3...7 m | SLC440AS-ER-0970-14 | 103007492 |
| 14 mm | 1050 mm | 0.3...7 m | SLC440AS-ER-1050-14 | 103007498 |
| 14 mm | 1130 mm | 0.3...7 m | SLC440AS-ER-1130-14 | 103007504 |
| 14 mm | 1210 mm | 0.3...7 m | SLC440AS-ER-1210-14 | 103007514 |
| 14 mm | 1290 mm | 0.3...7 m | SLC440AS-ER-1290-14 | 103007520 |
| 14 mm | 1370 mm | 0.3...7 m | SLC440AS-ER-1370-14 | 103007526 |
| 14 mm | 1450 mm | 0.3...7 m | SLC440AS-ER-1450-14 | 103007532 |
| 30 mm | 170 mm | 0.3...10 m | SLC440AS-ER-0170-30 | 103007435 |
| 30 mm | 250 mm | 0.3...10 m | SLC440AS-ER-0250-30 | 103007441 |
| 30 mm | 330 mm | 0.3...10 m | SLC440AS-ER-0330-30 | 103007447 |
| 30 mm | 410 mm | 0.3...10 m | SLC440AS-ER-0410-30 | 103007453 |
| 30 mm | 490 mm | 0.3...10 m | SLC440AS-ER-0490-30 | 103007459 |
| 30 mm | 570 mm | 0.3...10 m | SLC440AS-ER-0570-30 | 103007465 |
| 30 mm | 650 mm | 0.3...10 m | SLC440AS-ER-0650-30 | 103007471 |
| 30 mm | 730 mm | 0.3...10 m | SLC440AS-ER-0730-30 | 103007477 |
| 30 mm | 810 mm | 0.3...10 m | SLC440AS-ER-0810-30 | 103007483 |
| 30 mm | 890 mm | 0.3...10 m | SLC440AS-ER-0890-30 | 103007489 |
| 30 mm | 970 mm | 0.3...10 m | SLC440AS-ER-0970-30 | 103007495 |
| 30 mm | 1050 mm | 0.3...10 m | SLC440AS-ER-1050-30 | 103007501 |
| 30 mm | 1130 mm | 0.3...10 m | SLC440AS-ER-1130-30 | 103007511 |
| 30 mm | 1210 mm | 0.3...10 m | SLC440AS-ER-1210-30 | 103007517 |
| 30 mm | 1290 mm | 0.3...10 m | SLC440AS-ER-1290-30 | 103007523 |
| 30 mm | 1370 mm | 0.3...10 m | SLC440AS-ER-1370-30 | 103007529 |
| 30 mm | 1450 mm | 0.3...10 m | SLC440AS-ER-1450-30 | 103007535 |
| 30 mm | 1530 mm | 0.3...10 m | SLC440AS-ER-1530-30 | 103007538 |
| 30 mm | 1610 mm | 0.3...10 m | SLC440AS-ER-1610-30 | 103007541 |
| 30 mm | 1690 mm | 0.3...10 m | SLC440AS-ER-1690-30 | 103007544 |
| 30 mm | 1770 mm | 0.3...10 m | SLC440AS-ER-1770-30 | 103007547 |

# SAFETY LIGHT GRIDS / LIGHT CURTAINS
## LIGHT GRIDS

| Range | Type to EN 61496 | Safety version | Supply | Connection | Special features |
|---|---|---|---|---|---|
| **SLG 440-AS** | Type 4 | Light grids SLG | AUX Power | Connector M12, 4-pole | Integrated AS-i Safety module |

# SAFETY LIGHT GRIDS / LIGHT CURTAINS
## ACCESSORIES

| **SG.** | **KA-0975**     1030005659 | **PLS-..** |
|---|---|---|
| ■ Protective enclosure for SLC/SLG<br>■ Protection field heights<br>  to 970 mm: **SG5**    103001594<br>  to 1930 mm: **SG6**    103001596 | ■ Parametrisation cable for SLC/SLG 440-AS | ■ Test rod<br>  30 mm diameter: **PLS-01**    101207768<br>  14 mm diameter: **PLS-02**    101207769 |

| **MST-....** | **ULS-M-....** | **MSD.** |
|---|---|---|
| ■ Mounting stands<br>■ Base L/W 135x135 mm<br>■ Height 500 ... 2000 mm | ■ Deflecting mirror series M<br>■ Mirror height 350 ... 1870 mm<br>■ Included in delivery: tilted mirror and<br>  qty. 2 mounting brackets | ■ Vibration damper<br>  SLC/SLG type 2: **MSD2**    101207735<br>  SLC/SLG type 4: **MSD4**    101207754<br>■ Included in delivery: Set with 8 pieces |

Further accessories can be found at **products.schmersal.com**.

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| Resolution | Protection field height | Range | Type designation | Material number |
|---|---|---|---|---|
| 2 beams | 500 mm | | SLG440AS-ER-0500-02 | 103007551 |
| 3 beams | 800 mm | 0.3 … 12 m | SLG440AS-ER-0800-03 | 103007554 |
| 4 beams | 900 mm | | SLG440AS-ER-0900-04 | 103007557 |

## OBJECT BLANKING
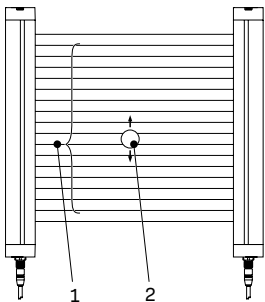


1 Object blanking area
2 Movable object

For safe production, object blanking can be used in contrast to the muting function to blank just part of the protection field . This makes it possible to add objects, e.g. workpieces, or position a conveyor belt with a fixed position in the protection field without triggering a stop signal. With integrated movable object blanking (floating blanking) of the SLC440-AS light curtains, up to 2 light beams of the light curtain can be blanked flexibly. This function is required if there is a need to be able to interrupt light beams in the protection field at a position that is not specifically defined. In this way, objects such as movable electrical cables or materials with slightly varying heights can be fed through the light curtain without triggering a stop signal.

Different blanking functions are available. The distinguishing feature of the different modes is the number of light beams that can be interrupted by an object. In addition to that, it can be defined whether the object may be in the protection field permanently or only temporarily. The interrupted light beams can be at any position in the protection field. Apart from the first infrared light beam (the beam closest to the connector), any light beam can be used for blanking.

If the floating blanking function is configured the resolution of the light curtain changes. The technical documentation of the different light curtains includes the tables with the effective resolutions to calculate the minimum safety distance according to ISO 13855.

# SAFETY SWITCHES AND EMERGENCY-STOP BUTTONS
## OVERVIEW OF THE SERIES

|  | ■ AZ 16-AS | ■ AZ 201-AS | ■ NAS 311-AS |
|---|---|---|---|
| **Key Features** | | | |
|  | • Thermoplastic enclosure<br>• 3 different directions of actuation | • Thermoplastic enclosure<br>• Repeated universal or individual coding<br>• 2 different directions of actuation | • Thermoplastic enclosure<br>• Thermoplastic operating element<br>• Pull to reset |
| **Product version** | | | |
| **Active principle** | electromechanical | RFID | electromechanical |
| **Individual coding** | – | ■ | – |
| **Coding level EN ISO 14119** | Low | High ("I" variants) | – |
| **Device supply off** | AS-i | AS-i | AS-i |
| **Technical features** | | | |
| **Latching force** | 5 N / 30 N (Index R) | 30 N | – |
| **Electrical characteristics** | | | |
| **AS-i supply voltage** | 18.0 V … 31.6 V | 26.5 V … 31.6 V | 26.5 V … 31.6 V |
| **AS-i power consumption** | ≤ 50 mA | ≤ 100 mA | ≤ 50 mA |
| **AS-i specification** | V 2.1 | V 3.0 | V 2.1 |
| **AS-i profile** | S-0.B.F.E | S-0.B.F.E | S-7.B.0.E |
| **Mechanical data** | | | |
| **Dimensions (W × H × D)** | 52 × 90 × 30 mm | 40 × 220 × 50 mm | 85 × 85 × 98 mm |
| **Connection** | Connector plug M 12 | Connector plug M 12 | Connector plug M 12 |
| **Ambient conditions** | | | |
| **Ambient temperature** | −25 °C … +60 °C | −25 °C … +65 °C | −25 °C … +60 °C |
| **Protection class** | IP67 | IP67 | IP65 |
| **Safety classification** | | | |
| **Standards** | EN ISO 13849-1, IEC 61508 | EN ISO 13849-1, IEC 61508 | EN ISO 13849-1, IEC 61508 |
| **PL/SIL** | c/1 up to d/2 | e/3 | e/3 |
| **Control category** | 1 to 3 | 4 | 4 |
| **PFH** | up to $1.01 \times 10^{-7}$/h | $1.81 \times 10^{-9}$/h | $1.4 \times 10^{-8}$/h |
| **Certificates** | AS-i, TÜV, cULus | AS-i, TÜV, cULus | AS-i |

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# SAFETY SWITCHES
## ACTUATORS AZ 16 AND AZ 201

| AZ 15/16-B1 | 101083036 | AZ 15/16-B1-1747 | 101093553 | AZ 15/16-B1-2024 | 101108278 |
|---|---|---|---|---|---|

- Straight actuator

- Straight actuator with magnetic latch
- Holding force approx. 30 N

- Straight actuator with slot lip-seal
- For protection against the ingress of dirt

| AZ 15/16-B1-2053 | 101111081 | AZ 15/16-B1-2177 | 101126794 | AZ 15/16-B6 | 101137434 |
|---|---|---|---|---|---|

- Straight actuator with ball latch
- Holding force approx. 100 N

- Straight actuator with centering guide
- For light non precisely guided doors (flexing etc.)

- Flexible actuator
- For small actuating radius over the wide or small edge of the actuator (adjustable)

| AZ/AZM201-B1-... | AZ/AZM201-B30-... -G1 | AZ/AZM201-B30-..-SZ |
|---|---|---|

- Actuator for sliding safety guards
- Left-hand side actuating direction
  - **AZ/AZM201-B1-LT**      103013493
  - Right-hand side actuating direction
  - **AZ/AZM201-B1-RT**      103013494

- Actuator for hinged safety guards

- Actuator B30 with lockout tag

Detailed information regarding the actuator selection and other actuators can be found at **products.schmersal.com**.

# SAFETY SWITCHES
## PREFERRED TYPES

| Range | | Coding | Supply | Connection | Latching force | Actuation direction |
|---|---|---|---|---|---|---|
| AZ 16-AS | | Standard coding | AS-i power | Connector M12, 4-pole | 5 N | From head From top From below |
| | | | | | 30 N | |
| AZ201-AS | | Standard coding | AS-i power | Connector M12, 4-pole | 30 N | From side |
| | | Individual coding | | | | |

Other types can be found at **products.schmersal.com**.

# EMERGENCY-STOP BUTTON
## PREFERRED TYPES

| Range | | Design | Supply | Connection | Type designation | Material number |
|---|---|---|---|---|---|---|
| NAS 311-AS | | Emergency stop button | AS-i power | Connector M12, 4-pole | **NAS 311 ST1-AS** | **101173041** |

Other types can be found at **products.schmersal.com**.

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| Sao/Sar | Housing material | Actuator | Type designation | Material number |
|---|---|---|---|---|
| --- | Plastic | AZ 15/16-B1<br>AZ 15/16-B2<br>AZ 15/16-B6 | **AZ 16 ST1-AS** | **101161809** |
| | | | **AZ 16 ST1-AS R** | **101167262** |
| 4 mm / 30 mm | Plastic | AZ/AZM201-B1 ... / B30 ... | **AZ201ST-T-AS** | **103027843** |
| | | | **AZ201-I2-ST-T-AS** | **103027849** |
| | | | **AZ201-I1-ST-T-AS** | **103027848** |

# CONTROL PANELS BDF 200-AS
## OVERVIEW OF THE SERIES

| | ■ BDF 200-AS |
|---|---|

**Key Features**

- Thermoplastic enclosure
- Control panel with emergency stop function and 3 mounting positions for command and signalling devices
- Large range of emergency-stop buttons, illuminated LED pushbuttons, LED indicators, buttons, selector switches and key-operated switches
- Emergency stop, start / stop and reset functions available
- Optional with highly visible indicator lamp G24 (red / green)

**Product version**

| Device supply off | AS-i |
|---|---|

**Technical features**

| **Electrical characteristics** | |
|---|---|
| AS-i supply voltage | 18.0 V ... 31.6 V |
| AS-i power consumption | ≤ 150 mA |
| AS-i specification / AS-i profile | V 2.1 |
| **Mechanical data** | Safety-Slave V 3.0 / S-7.B.F.F<br>A/B-Slave V 3.0 / S-7.A.7.F |
| Dimensions (W × H × D) | 40 × 234 – 253 × 69 mm |
| Connection | Connector plug M 12 |
| **Ambient conditions** | |
| Ambient temperature | −25 °C ... +65 °C |
| Protection class | IP65 |

**Safety classification**

| Standards | EN ISO 13849-1, IEC 61508 |
|---|---|
| PL/SIL | e/3 |
| Category | 4 |
| PFH | $1.4 \times 10^{-8}$/h |
| Certificates | AS-i, TÜV, cULus |
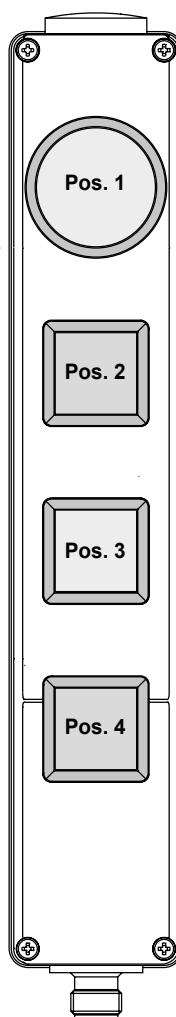
## PREFERRED TYPES

| Range | Design | Supply | Connection | Fitting Pos. 1 | Pos. 2 |
|---|---|---|---|---|---|
| BDF 200-AS | Control panel with Emergency stop button | AS-i power | Connector M12, 4-pole | Emergency stop pushbutton | LMRD |
| | | | | | LTGN |
| | | | | | SWS20 |
| | | | | NHK pushbutton with protective collar | LMRD |
| | | | | | LTWH |
| | | | | | SWS20 |

Other types can be found at **products.schmersal.com**.

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| Control elements | | Pos. 1 | Pos. 2 | Pos. 3 | Pos. 4 | Control panel |
|---|---|---|---|---|---|---|
|  | NH | ● | | | |  |
| | NHK | ● | | | | |
|  | LT.. | | ● | ● | ● | |
|  | LM.. | | ● | ● | ● | |
|  | DT.. | | ● | ● | ● | |
|  | SWS20 SWT20 | | ● | | | |
|  | WS20 WS30 WT20 WT30 WTS30 | | ● | | | |

| Ordering suffix | | Yellow | Red | Green | Blue | Black | White |
|---|---|---|---|---|---|---|---|
|  | Illuminated pushbutton LT.. | LTYE | LTRD | LTGN | LTBU | | LTWH |
|  | Indicator lights LM.. | LMYE | LMRD | LMGN | LMBU | | LMWH |
|  | Pushbutton DT.. | DTYE | DTRD | DTGN | DTBU | DTBK | DTWH |

| Pos. 3 | Pos. 4 | Indicator lamp | Type designation | Material number |
|---|---|---|---|---|
| LTWH | LTBU | --- | BDF200-ST1-AS-NH-LMRD-LTWH-LTBU | 101214617 |
| LTYE | LTWH | Red / Green | BDF200-ST1-AS-NH-LTGN-LTYE-LTWH-G24 | 103005880 |
| LTWH | LTYE | --- | BDF200-ST1-AS-NH-SWS20-LTWH-LTYE | 103006605 |
| LTWH | LTBU | --- | BDF200-ST1-AS-NHK-LMRD-LTWH-LTBU | 101215387 |
| LTBU | LTWH | --- | BDF200-ST1-AS-NHK-LTWH-LTBU-LTWH | 101215280 |
| LTWH | LTBU | Red / Green | BDF200-ST1-AS-NHK-SWS20-LTWH-LTBU-G24 | 101214618 |

# COMPACT SAFETY INPUT MODULE ASIM-C
## CAN BE USED FOR SAFETY SWITCHGEAR WITH 2 NC CONTACTS

| | ■ ASIM-C-M12-4P-... | ■ ASIM-C-M12-8P-... |
|---|---|---|
| **Key Features** | | |
| | **Compact safe input module** | **Compact safe input module** |
| | ▪ Integrated in passive distributor | ▪ Integrated in passive distributor |
| | ▪ For 2 floating NC contacts | ▪ For 2 floating NC contacts |
| | ▪ Convenient LED displays | ▪ 50 mA output integrated for LED |
| | ▪ Pre-wired M12 connector cables, length 0.5 m and 2.0 m | ▪ Convenient LED displays |
| | | ▪ Pre-wired M12 connector cables, length 0.5 m and 2.0 m |
| **Product version** | | |
| Type designation / Material number | ASIM-C-M12-4P-0,5M / 103004694 ASIM-C-M12-4P-2M / 103004695 | ASIM-C-M12-8P-0,5M / 103004696 ASIM-C-M12-8P-2M / 103004693 |
| Device supply off: | AS-i | AS-i |
| **Technical features** | | |
| Length of the equipment connection cable | 0.5 m and 2.0 m | 0.5 m and 2.0 m |
| **Electrical characteristics** | | |
| AS-i supply voltage | 26.5 V ... 31.6 V | 26.5 V ... 31.6 V |
| AS-i power consumption | ≤ 100 mA | ≤ 100 mA |
| AS-i specification | V 3.0 | V 3.0 |
| AS-i profile | S-7.B.F.0 | S-7.B.F.0 |
| **Mechanical data** | | |
| Dimensions (W × H × D) | 28 × 41 × 22 mm | 28 × 41 × 22 mm |
| Connection | Cable connector M12, 4 pole | Cable connector M12, 8 pole |
| **Ambient conditions** | | |
| Ambient temperature | −20 °C ... +60 °C | −20 °C ... +60 °C |
| Protection class | IP67 | IP67 |
| **Safety classification** | | |
| Standards | EN ISO 13849-1, IEC 61508 | EN ISO 13849-1, IEC 61508 |
| PL/SIL | e/3 | e/3 |
| Category | 4 | 4 |
| PFH | – | – |
| Certificates | AS-i, TÜV, cULus | AS-i, TÜV, cULus |

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The following SCHMERSAL safety switchgear can be connected based on ASIM-C-**4P** … as an example:

| Range PS116 | Range PS2xx | Range PS3xx |
|---|---|---|
|  |  |  |

| BNS-B20 | BNS 303 | BNS 40S |
|---|---|---|
|  |  |  |

| TESK | ZQ 700-ST | ZQ 900-ST |
|---|---|---|
|  |  |  |

The following SCHMERSAL safety switchgear can be connected based on ASIM-C-**8P** … as an example:

| BDF100-NH / BDF100-NHK | T3Z 068 with G24 | ZQ 900 with G24 |
|---|---|---|
|  |  |  |

# ACTIVE SAFETY DISTRIBUTORS
## CAN BE USED FOR ELECTRONIC SAFETY SWITCHGEAR

|  | ■ BWU3565 | ■ BWU3635 |
|---|---|---|

**Key Features**

|  | **Safe active AS-i distributor**<br>▪ Connections for profile cable AS-i/AUX<br>▪ With 2 safe inputs for OSSDs and one non-safe output<br>▪ Convenient LED displays<br>▪ Pre-fitted 8-pin M12 connecting cable, 1.0 m in length<br><br>**Can be used e.g. for equipment types:**<br>- AZM 400<br><br>**Only non-safe unlocking function!** | **Safe active AS-i distributor**<br>▪ Connections for profile cable AS-i/AUX<br>▪ With 2 safe inputs for OSSDs and one non-safe output<br>▪ Convenient LED displays<br>▪ Pre-fitted 8-pin M12 connecting cable, 1.0 m in length<br><br>**Can be used e.g. for equipment types:**<br>- Series CSS: CSS 180, CSS 30S<br>- Series RSS: RSS 16<br>- Series AZM: AZM 201 |
|---|---|---|

**Product version**

| Type designation / Material number | BWU3565 / 103016677 | BWU3635 / 103016678 |
|---|---|---|
| **Device supply off:** | AUX | AUX |

**Technical features**

| Length of the equipment connection cable | 1.0 m | 1.0 m |
|---|---|---|
| **Electrical characteristics** |  |  |
| **AS-i supply voltage** | 21.6 V … 31.6 V | 21.6 V … 31.6 V |
| **AS-i power consumption** | ≤ 60 mA | ≤ 60 mA |
| **AUX supply voltage** | 24 VDC −15 % / +20 % | 24 VDC −15 % / +20% |
| **AUX power consumption** | max. 750 mA | max. 750 mA |
| **AS-i Specification** | V 2.1 | V 2.1 |
| **AS-i profile** | S-7.B.F.1 | S-7.B.F.1 |
| **Mechanical data** |  |  |
| **Dimensions (W × H × D)** | 60 × 45 × 19 mm | 60 × 45 × 19 mm |
| **Connection** | Cable connector M12, 8 pole | Cable connector M12, 8 pole |
| **Ambient conditions** |  |  |
| **Ambient temperature** | −20 °C … +60 °C | −20 °C … +60 °C |
| **Protection class** | IP67 | IP67 |

**Safety classification**

| Standards | EN ISO 13849-1, IEC 61508 | EN ISO 13849-1, IEC 61508 |
|---|---|---|
| **PL/SIL** | e/3 | e/3 |
| **Category** | 4 | 4 |
| **Certificates** | AS-i, cULus | AS-i, cULus |

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# INSTALLATION ACCESSORIES
## PASSIVE BUS DISTRIBUTORS AND M12 CONNECTING CABLES

**Passive bus distributors**

**Type: ASSB-2P-1M12-V1 / mat. no.: 103001619**
- Flat-cable distributor AS-Interface
- M12 connector, 2-poles
- Protection class IP67
- Dimensions 28 mm × 41 mm × 35 mm

**Type: ASSB-4P-1M12-V1 / mat. no.: 103001616**
- Flat-cable distributor AS-Interface and auxiliary voltage
- M12 connector, 4-poles
- Protection class IP67
- Dimensions 28 mm × 41 mm × 35 mm

**Type: ASSB-4P-2M12-V1 / mat. no.: 103001617**
- Flat-cable distributor AS-Interface and auxiliary voltage
- 2 M12 connectors, 4-poles
- Protection class IP67
- Dimensions 28 mm × 41 mm × 35 mm

**Type: ASSB-2P-FKB-V1 / mat. no.: 103001620**
- Flat-cable connector for 2 flat cables
- 2-pole bridge
- Protection class IP67
- Dimensions 28 mm × 41 mm × 22 mm

**Type: ASSB-4P-SW-V1 / mat. no.: 103001618**
- Flat-cable distributor AS-Interface and auxiliary voltage
- 4 terminals for single wires
- Protection class IP67
- Dimensions 28 mm × 41 mm × 35 mm

**M12 connecting cables**

**Type: V-SK4P-M12-...**
- M12 connector male – M12 connector female
- PUR cable, PVC-, silicone- and halogen-free
- UL/CSA homologations
- Protection class IP67, IP69
- 5 available lengths
  0.5 m, 1.0 m, 1.5 m, 2.0 m, 3.0 m

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## PROTECTION FOR MAN AND MACHINE

In the demanding field of machine safety, the owner-managed Schmersal Group is one of the international market leaders. The company, which was founded in 1945, has a workforce of about 2,000 people and seven manufacturing sites on three continents along with its own companies and sales partners in more than 60 nations.

Customers of the Schmersal Group include "Global Players" in mechanical engineering and plant manufacturing and operators of machinery. They benefit from the company's extensive expertise as a provider of systems and solutions for machine safety. In addition, Schmersal specialises in various areas including intralogistics, foodstuff production, the packaging industry, machine tool industry, lift switchgear, heavy industry and the automotive industry.

A major contribution to the systems and solutions offered by the Schmersal Group is made by tec.nicum with its comprehensive range of services: Certified Functional Safety Engineers advise machinery manufacturers and machinery operators in all aspects relating to machinery and occupational safety – and do so with product and manufacturer neutrality. Furthermore, they design and realise complex solutions for safety around the world in close collaboration with the clients.

## SAFETY PRODUCTS

- Safety switches and sensors, solenoid interlocks
- Safety controllers and safety relay modules, safety bus systems
- Optoelectronic and tactile safety devices
- Automation technology: position switches, proximity switches

## SAFETY SYSTEMS

- Complete solutions for safeguarding hazard areas
- Individual parametrisation and programming of safety controllers
- Tailor-made safety technology – be it for individual machines or a complex production line
- Industry-specific safety solutions

## SAFETY SERVICES

- tec.nicum academy – Seminars and training
- tec.nicum consulting – Consultancy services
- tec.nicum engineering – Design and technical planning
- tec.nicum integration – Execution and installation

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