Control Units
Limit Switches

Emergency-stop Pushbuttons

AS-International Association

AS-International Association e.V. erteilt der Firma
AS-International Assoc.,a registered German association,assigns to the company

Georg Schlegel GmbH & Co. KG

in/at D 88525 Dürmentingen

ein / a

Zertifikat
Certificate

für das AS-Interface Produkt / for the AS-Interface product

AS-Interface Befehlsgerät
AS-Interface Pushbutton switch

Das Produkt hat die Bezeichnung
The product has the product number

ASI_BZ(L)II5

Das Produkt wurde entsprechend der Complete Specification (V. 2.11) und dem Profil S-B.A.E der AS-International Association entwickelt.

The product has been developed according to the association's Complete Specification (V. 2.11) and to the Slave Profile S-B.A.E.

Nummer der Zertifizierungsurkunde (ZU-Nr.):
Number of the Certification Document (ZU-Nr.):

50401

Dieses Zertifikat wird aufgrund einer Herstellererklärung und der Baumusterprüfung eines Referenzproduktes nach der Prüfungsordnung für AS-Interface Slaves durch das Prüflabor am Steinbeis Transferzentrum Leipzig erteilt.

Die Verantwortung für das Produkt, seine Funktion und seine Sicherheit verbleibt beim Hersteller.

This certificate is issued on the basis of a manufacturer's declaration and the type test of a reference product. The test was conducted by the Test Laboratory at the Steinbeis Transferzentrum Leipzig in accordance with the association's test specification for AS-Interface Slaves.

The responsibility for the product, its function and its safety lies with the manufacturer.

Odenthal, 22. Juli 2003

AS-International Association
Zertifizierungsstelle - Certification office

AS-Interface Certificate

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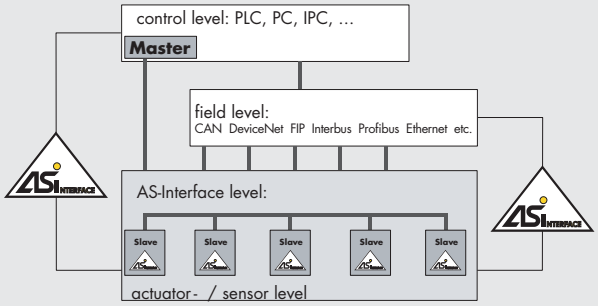
General Information

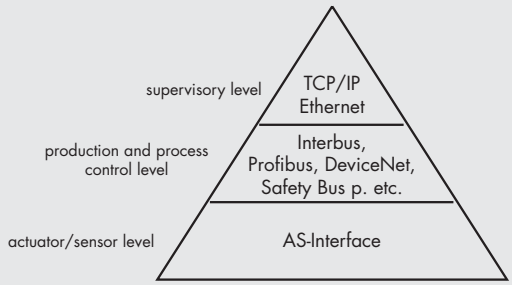
The AS-Interface System

The AS-Interface is an enduring part of the modern industrial landscape. It was developed in order to network binary sensors and actuators to the higher control level. The data log was optimized for the transmission of small data volumes.
Many sensors and actuators, as well as control and signalling units can be networked through the 2-conductor cable, which also supplies the power. Thus, the traditional looms of cables are eliminated and replaced by the yellow AS-Interface cable.
This applies also to the production of individually designed switchboards and operator control panels or to the installation of decentralized control and signalling units.
The freely selectable network topology and ease of configuration make installation that much easier.
Ease of assembly, requiring little prior knowledge, reduces downtime when faults occur. The fault liability of other systems often results in assembly delays, therefore, the AS-Interface was consciously designed to reduce error sources.
Installation - a large cost factor - is drastically reduced by using this system.
There are gateways on the market for all prevailing fieldbus systems, such as CAN, DeviceNet, Ethernet, Interbus, Profibus and others.

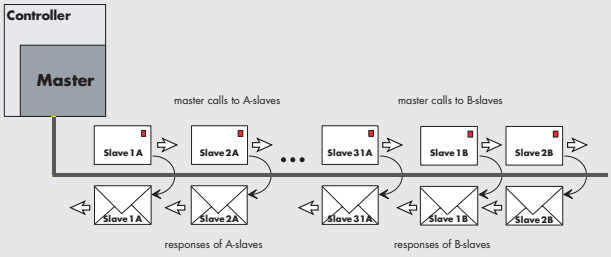
The AS-Interface Fieldbus-Hierarchy

The position of AS-Interface in the fieldbus pyramid shows its optimized application for simple digital and analogue sensors and actuators.





Function Principle of A/B-Slaves



AS-Interface Standard

On slaves according to standard V2.1 one bit of the output data can be used for distinguishing purposes in so-called A-slaves and B-slaves (max. 2 x 31= 62 slaves). Therefore, a slave acc. to version 2.1 supports four bit input and 3 bit output data.
Now an address can be assigned twice, e.g. address 15A and 15B.
In practice, this means that in the first cycle the data of slave 15A are written and read, in the following cycle those of slave 15B. Thus, the cycle time of the slaves A and B increases to max. 10 ms. The cycle time of conventional slaves remains same as being checked in every cycle.
The standard V2.1 offers to the user double the number of slaves at one cable line whereas the full downward comptability is guaranteed.

Essential differences between version 2.0 and 2.1.

	Version 2.0	Version 2.1 (new)
nbr. of slaves	31	62
nbr. of digital I/O	124 E + 124 A	248 E + 186 A
cycle time	5 ms	10 ms

Characteristics of AS-Interface

- Master - Slave principle
- Optional network topology (tree, star or linear structure)
- Optimized for easy connection of sensors and actuators
- Operation even under most difficult environmental conditions
- Reliable and failure-safe
- Cable length: 100 m, extension by repeater
- Real-time capability
- Open and manufacturer-independent bus system for the lowest field level of the automation technology
- Standardized acc. to EN 50295, IEC62026
- Adressing: Firm and clear address in the slave (EEPROM)

Advantages of AS-Interface

- One 2-conductor line (data and power) instead of a loom of cables
- Cost-saving installation
- Short start-up times
- Connection of intelligent sensors, actuators, control and signalling units
- Diagnostic of all AS-Interface slaves
- Simple addressing
- Easy to install, easy to extend
- Quick and flexible project work
- Reduced expenditure of engineering data

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Schlegel Contact Units for AS-Interface

Instead of up to 10 cable lines which were previously used for one single slave, it now requires only two wires connected by insulation piercing and looping through to all the assigned slaves. Up to 62 slaves can be connected to one 2-conductor cable. This system saves work, cuts installation times, reduces the number of potential errors and can easily be changed and extended.

Due to the flexible AS-Interface network structure the Schlegel slaves can be connected whereever you want. Each control and signalling unit means a separate node with individual address.

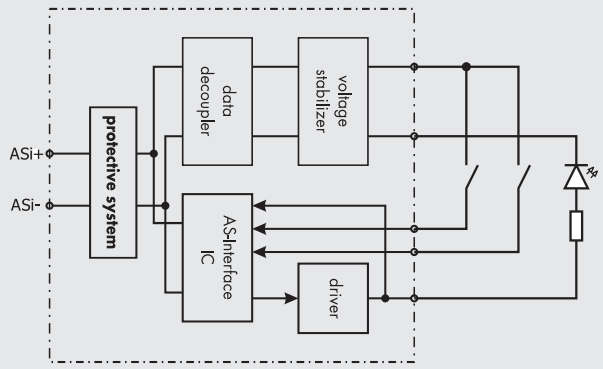
Slave Characteristics

- Certified AS-Interface slave with two input functions and one output to accept a T5.5K-LED, output with dimming function
- Same size as on the standard contact blocks of the "A..." series
- failure-safe operation even under extreme environmental conditions (e.g. welding plants, frequency converters)
- AS-Interface Profile S-B.A.E (expanded address mode)
- up to 62 slaves at one single AS-Interface line
- Input data ports D2 and D3
- Output data port D0
- Signalling units can be dimmed in 4 steps via the AS-Interface command
- Output with short-circuit and overload protection
- Easy connection via 2-pole ID-connector for 2-conductor cable
- 2 and 3-position selector and key switches are possible
- Limit switches

Technical Data of Slaves

Communication	
- AS-Interface Standard:	V2.11, Rev. 1
- Slave profile:	S-B.A.E
- Connection:	via 2-pole ID-connector (3.96mm) by insulation piercing, with lock mechanism and strain relief Type: "ASI_SL2AWG18"
- Network length:	100m max. (without repeater)
- Cycle time:	<10ms max. (62 A/B slaves)
Ambient Conditions	
- Operating temperature:	-25°C ... +70°C
- Storage temperature:	-40°C ... +80°C
- Humidity:	up to 95%, non-condensing
Mechanical Data	
- Operating travel:	≤ 3mm
- Number of switching actuations:	≥ 1 million
Electrical Data	
- Power supply:	26.5...31.6 V, through the AS-Interface line
Total power consumption:	≤ 30 mA
- Output current of LED:	20 mA max.
- Reverse polarity protection:	available
- Short-circuit/overload:	LED output permanently short-circuit proof overload protection in case of inadvertent operation of the lamp
- Signalling unit output:	supply through the AS-Interface line
Brightness:	can be dimmed in four steps via AS-Interface
Rated voltage:	24 V DC (+10%)
Socket:	T5,5K
LED:	e.g. T5,5K LED 24V/14mA, max. length 22mm, Schlegel references: L5,5K24U...

Block diagram



I/O Data Bits

General

Output		
data bit	info (Interface 3)	state
D0	0	LED off
	1	LED on

Inputs		
data bit	info (Interface 3)	state
D2	0	switch 1 not operated
	1	switch 1 operated
D3	0	switch 2 not operated
	1	switch 2 operated

Pushbuttons

pushbutton		
switching positions	not operated	operated
data bit		
DI3	0	1
DI2	0	1

Selector/Key Switches with 2 positions (1 plunger)

2 positions, 1 plunger	0 1	
switching positions	0	1
data bit		
DI3	0	1
DI2	0	1

Selector/Key Switches with 3 positions (2 plungers)

3 positions, 2 plungers	1 0 2		
switching positions	1	0	2
data bit			
DI3	1	0	0
DI2	0	0	1

Notice
for the use of selector and key switches with 2 separate plungers:
As the actuator and the AS-Interface slave can be snapped together turned by 90°, the clear assignment of the input bits (D12, D13) is based on the following reference positions:
- ASI-Slave connections upward
- locating lug upward

Brightness Control of LED

For a 4-step brightness control of the LED output (dimming function) the pulse-duty factor of a pulse-width modulated voltage (PWM) can be adjusted by a parameter request of the master.

AS-Interface parameter for pulse-width modulation of the LED

P2	P1	P0	
1	1	1	output continuous dash (Default)
1	0	1	output 50% (PWM-frequency 125 Hz)
1	1	0	output 25% (PWM-frequency 125 Hz)
1	0	0	output 12.5% (PWM-frequency 125 Hz)

Write-Parameter Request

0	0	A4	A3	A2	A1	A0	1	$\overline{Sel}$	P2	P1	P0	PB	1

Norms and Standards

AS-Interface, the standard of the lower field level, is in accordance with the Euro norm 50295 and with the world standard IEC 62026-2.

Certification and AS-Interface Logo
The reliable function and failure immunity of the Schlegel slaves were tested by an authorized laboratory. All certified products bear the AS-Interface Certification Logo (shadow logo).

50401

- AS-Interface Standard, Version 2.11, Revision 1
- CE
- UL, CSA

Connection of Slaves

The slaves are connected (by insulation piercing) to the flexible equipment wire via a 2-pole, reverse polarity protected ID-connector (3.96 mm) with lock mechanism and strain relief (refer to the accessories).

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Cable Requirements
The connection cable must meet the following requirements:

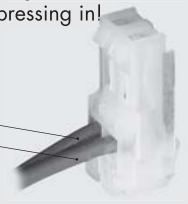
- Colour coding:	brown: ASI+ / blue: ASI-
- Insulation:	medium hard PVC insulation, suitable for ID-connection
- Single conductor size:	AWG 18 (0.8...1.0 mm²)
- Outside Ø:	min 1.0, max. 2.28mm
- Operating temperature:	-30°C ≤ T ≤ 90°C
- Approvals:	VDE 0881 / MIL-W-1687 8D / UL 1007 or 1061 or 1095

Recommended connection cable:
Flexible equipment wire "ASI_SL2AWG18"

Connection With a Hand Tool
The tool „ASI_MRT" serves to press the single conductors into the ID-connector.

Recommendation:
Using the cover "ASI_K2" an optimum strain relief is achieved in the ID-connector!

Attention:
Take care of using the correct conductor colour/ polarity before pressing in!



brown: ASI+
blue: ASI-

Connection to AS-Interface Profile Line
Depending on the case of application, there are different possibilities to connect a 2-conductor flexible equipment wire to the AS-Interface profile line (refer to the accessories).

Addressing of the Slaves
Each AS-Interface slave gets an individual address allowing the master to identify it. Possible addresses are from 1A to 31A and 1B to 31B (A/B-slaves, version 2.1). The address 0 has a special function.
Depending on the technology that is used, the slaves are addressed before or after the assembly.

Addressing Possibilities
1. Programming Cable+Addressing Device
The easiest way to assign the addresses is to use a hand addressing device which is directly connected to the slave via the Schlegel programming cable "ASI_PK500M12". The arrangement of the devices at the AS-Interface cable is independent from the assignment of the addresses.

2. Addressing with AS-Interface Controller / PLC
Various producers of controllers/PLC support the following addressing possibilities:
- automatic addressing of the whole system
- individual addressing via the connected master
- individual addressing via PC, software-implemented

Tips:
- Avoid double addressing !
- A/B-slaves (V2.1) cannot utilize the 4th output data bit because it is used to change over to the B-slaves.
- A/B-slaves can be used at AS-Interface 2.0 masters, provided the following is observed:
  -> only "A"-addresses are used
  -> the 4th data bit must permanently be "0"
  -> the 4th parameter bit must be "1"

AS-Interface Contact Blocks

Slaves

Illustration	Dimensions	Description	Type
		**AS-Interface Slave with T5.5K socket** with 2 integrated inputs and 1 LED output profile: S-B.A.E. applicable standard: V2.11	**ASI_BZLII5**
		**AS-Interface Slave** with 2 integrated inputs profile: S-B.A.E. applicable standard: V2.11	**ASI_BZII5**

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Description

Actuators
The actuators are housed in round, square or rectangular-shaped insulating bodies of attractive design, allowing side-by-side assembly and thus full keyboard arrangements.

A great variety of actuators is available:
non-illuminated or illuminated pushbuttons, selector heads with 2 or 3 positions, momentary selector heads, key actuators.

Lenses and nameplates must be ordered separately!

Marking possibilities
With the importance of an efficient component marking in mind, all SCHLEGEL control units have been designed to accept a clear marking, easy to produce and comprising a great variety of symbols and inscriptions. Hence, many standard nameplates are available. The nameplates are inserted under the transparent lenses.

Protection type (acc. to IEC/EN60529)
The Schlegel actuators are in accordance with protection type IP65, which refers to the components in front of the panel.

IP6X - protection against dust penetration (dustproof),
IPX5 - protection against water jets from all directions.
The IP code stipulates the corresponding protection type.
(1st figure: protection against solid foreign substances,
2nd figure: protection against water penetration).

For extremely severe environmental conditions, e.g. coarse dirt, chippings, flour, etc. there are pushbuttons available with transparent silicone or PVC caps.

Materials
Only top-quality materials such as polyamide 6.6 / polyamide 12 (partially reinforced) and other proved synthetics are utilized.

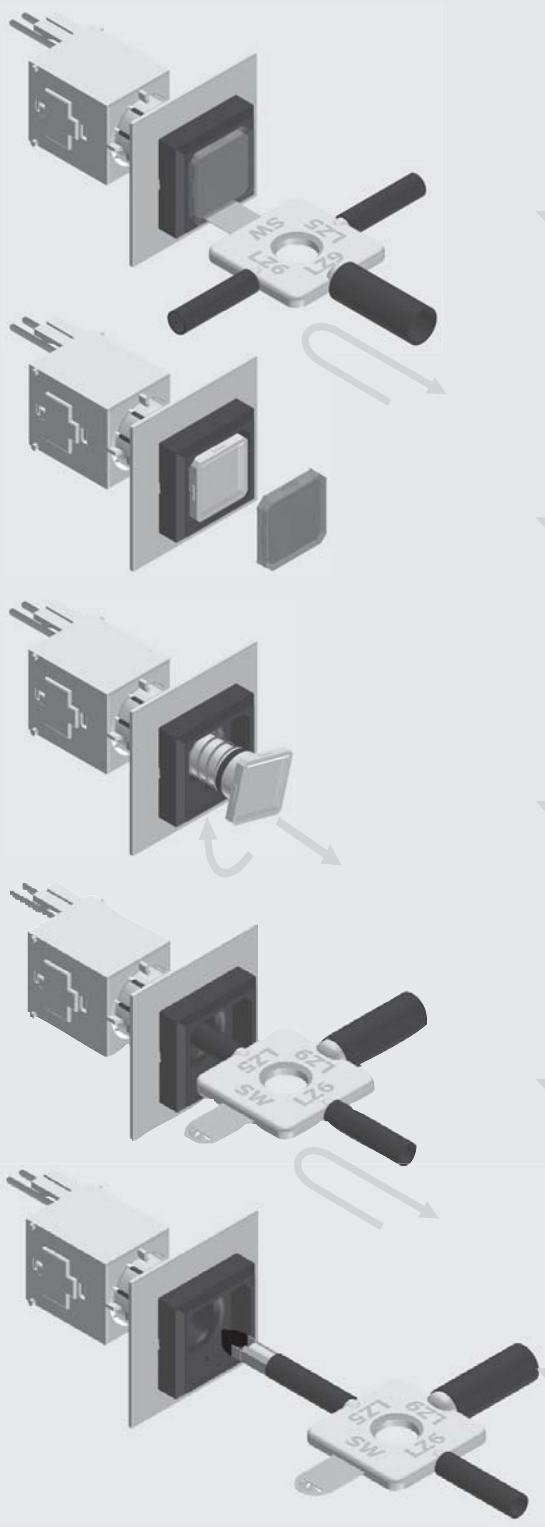
Storage Temperature
Storage temperature - 50° up to + 85° C

Max. ambient temperature during operation
for non-illuminated units . . - 30° up to + 70° C
for illuminated units - 30° up to + 55° C

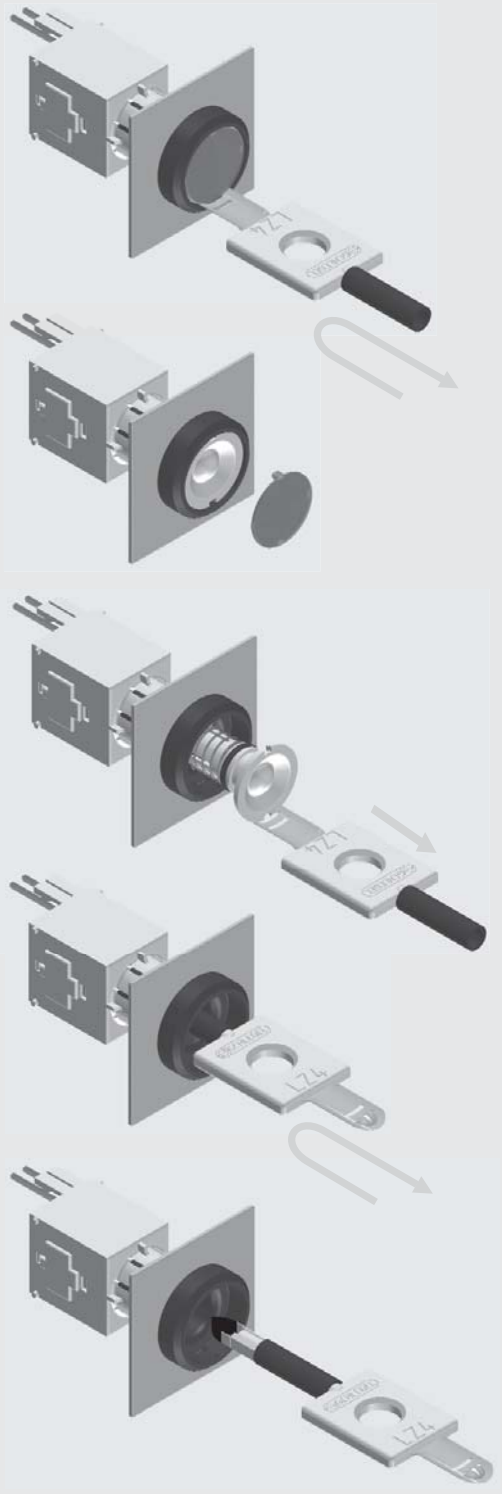
Operational and ambient conditions
acc. to IEC/EN60947-5-1 and IEC/EN60947-5-5.

Mounting and Service Instructions

OKTRON / OKTRON-JUWEL



OKTRON-R



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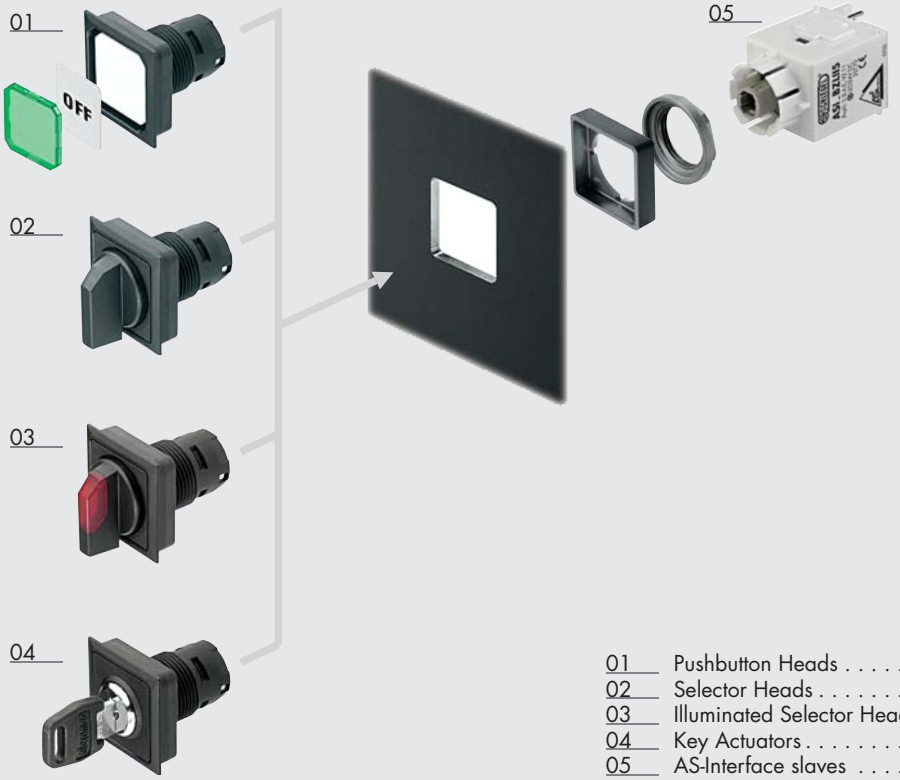
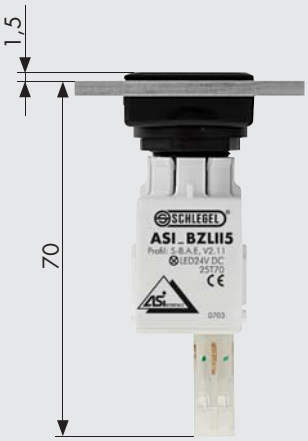
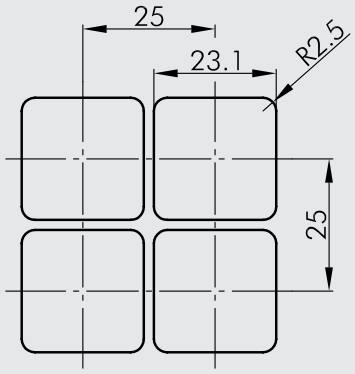
OKTRON-JUWEL
23 x 23 mm



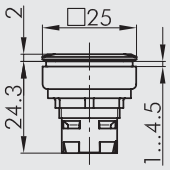
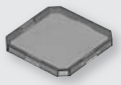




OKTRON-JUWEL
23 x 23 mm

Pushbutton Head - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description	Type
		**Pushbutton Head** Body: black	**OKJT**
		**Flat lens, transparent** available in blue-BL, yellow-GB, green-GN, clear-KL, red-RT, opalwhite-WS add code letter to type number, e.g. TOKJFBL Suitable for OKJT	**TOKJF...**
		**Blank Nameplate** suitable for OKJT	**BSOKJU**
		Nameplate with standard imprint, please specify index number (see pages 28-30) suitable for OKJT	**BSOKJ...**
		Nameplate with special imprint as per customer's need suitable for OKJT	**BSOKJB**

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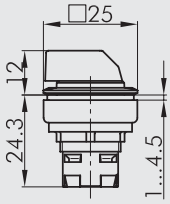
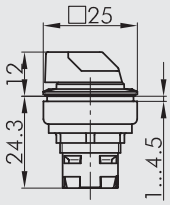
(Illuminated) Selector Heads - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description			Type
		**Selector Head**	Body:	black	**OKJWA**
				black	**OKJWB**
				black	**OKJWC**
		Selector Head, momentary		black	**OKJSTA**
				black	**OKJSTB**

I = Switching position
↷ = Spring return

Illustration	Dimensions	Description			Type
		**Illuminated Selector Head** Knob available in blue-BL, yellow-GB, clear-KL, green-GN, red-RT	Body:	black	**OKJWAL...**
				black	**OKJWBL...**
				black	**OKJWCL...**
		Illuminated Selector Head, momentary Knob available in blue-BL, yellow-GB, clear-KL, green-GN, red-RT		black	**OKJSTAL...**
				black	**OKJSTBL...**

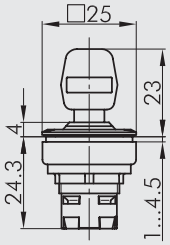
I = Switching position
↷ = Spring return

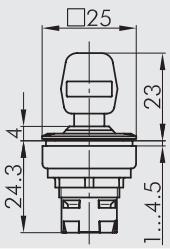
OKTRON-JUWEL
23 x 23 mm

Key Actuators - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description			Type
		Key Actuator other lock types are supplied against extra charge	Body:	black	**OKJSSA12**
				black	**OKJSSA13**
				black	**OKJSSA14**
				black	**OKJSSA15**
				black	**OKJSSA16**
				black	**OKJSSA17**
				black	**OKJSSA18**
				black	**OKJSSA23**
I = Switching position ↷ = Spring return O = Key removable position				black	**OKJSSA28**





Key Actuator
requires 3 keys:
1st key: two-way operation
tt2nd key: operation to the left only
3rd key: operation to the right only

Body: black **OKJSSA31**

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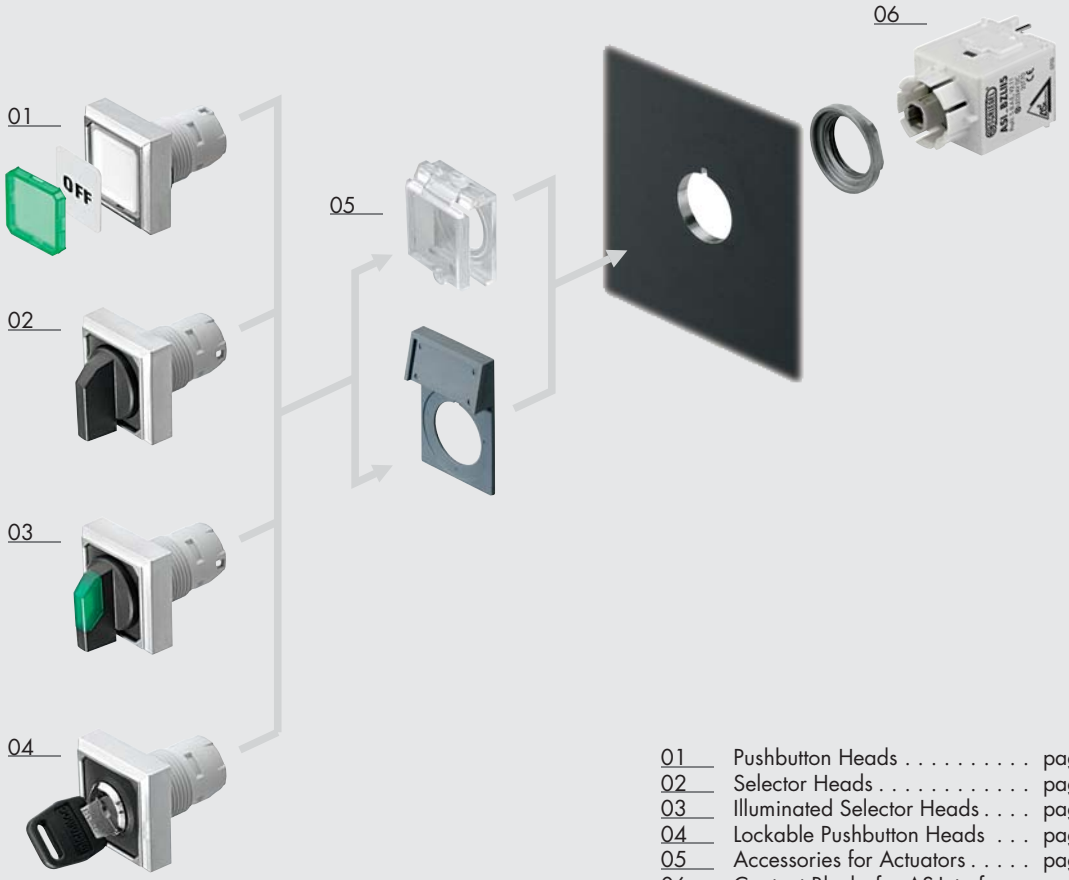
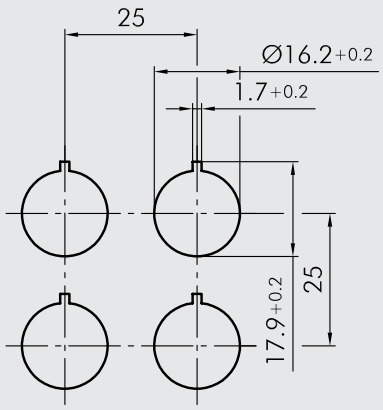


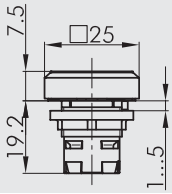
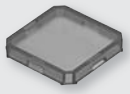
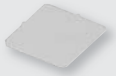


min. mounting grid 25 x 38 mm when using the external nameplate.

OKTRON
∅ 16 mm

Pushbutton Head - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description	Type
		**Pushbutton Head** Body: charcoal metallic	**OKT** **OKTM**
		**Flat lens, transparent** available in blue-BL, yellow-GB, green-GN, clear-KL, red-RT, opalwhite-WS, add code letter to type number, e.g. TOKFBL Suitable for OKT	**TOKF...**
		**Blank Nameplate** suitable for OKT	**BSOKU**
		**Nameplate** with standard imprint, please specify index number (see pages 28-31) suitable for OKT	**BSOK...**
		Nameplate with special imprint as per customer's need suitable for OKT	**BSOKB**

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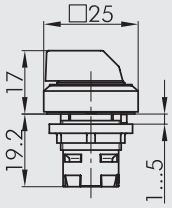
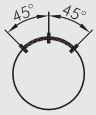
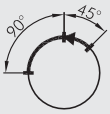
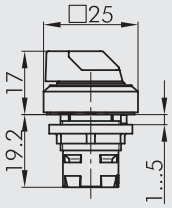
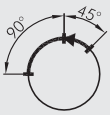
(Illuminated) Selector Heads - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description			Type
		**Selector Head**	Body: charcoal metallic		**OKWA** **OKWAM**
			charcoal metallic		**OKWB** **OKWBM**
			charcoal metallic		**OKWC** **OKWCM**
		Selector Head, momentary	charcoal metallic		**OKSTA** **OKSTAM**
			charcoal metallic		**OKSTB** **OKSTBM**

I = Switching position
↷ = Spring return

Illuminated Selector Head
Knob available in blue-BL, yellow-GB, clear-KL, green-GN, red-RT

Illustration	Dimensions				Type
		Body:	charcoal metallic		**OKWAL...** **OKWALM...**
			charcoal metallic		**OKWBL...** **OKWBLM...**
			charcoal metallic		**OKWCL...** **OKWCLM...**

Illuminated Selector Head, momentary
Knob available in blue-BL, yellow-GB, clear-KL, green-GN, red-RT

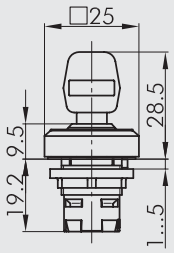
				Type
		charcoal metallic		**OKSTAL...** **OKSTALM...**
		charcoal metallic		**OKSTBL...** **OKSTBLM...**

I = Switching position
↷ = Spring return

OKTRON
Ø 16 mm

Key Actuators - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description			Type
		Key Actuator other lock types are supplied against extra charge			
			Body:	charcoal metallic	**OKSSA12** **OKSSMA12**
				charcoal metallic	**OKSSA13** **OKSSMA13**
				charcoal metallic	**OKSSA14** **OKSSMA14**
				charcoal metallic	**OKSSA15** **OKSSMA15**
				charcoal metallic	**OKSSA16** **OKSSMA16**
				charcoal metallic	**OKSSA17** **OKSSMA17**
				charcoal metallic	**OKSSA18** **OKSSMA18**
				charcoal metallic	**OKSSA23** **OKSSMA23**
				charcoal metallic	**OKSSA25** **OKSSMA25**
				charcoal metallic	**OKSSA28** **OKSSMA28**

I = Switching position
↷ = Spring return
O = Key removable position

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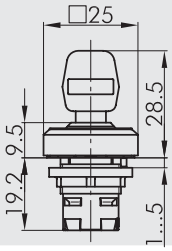
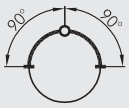
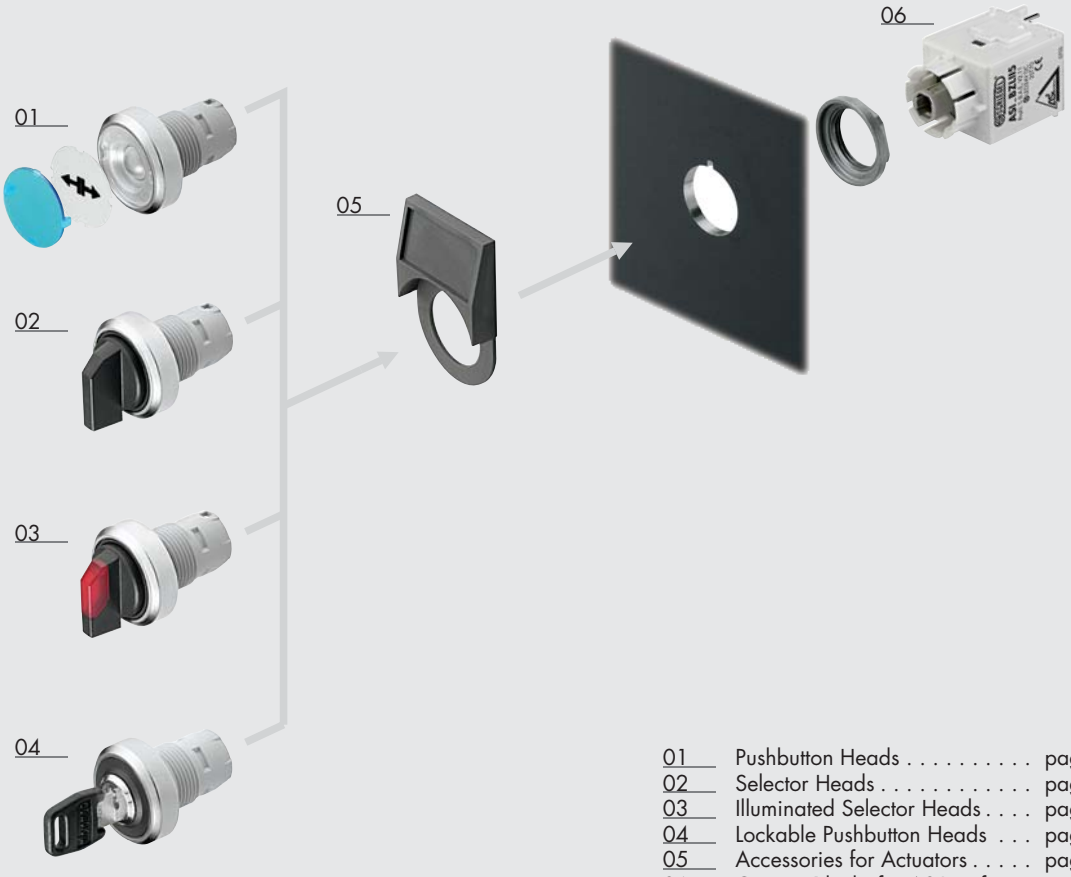
Key Actuator - IP65

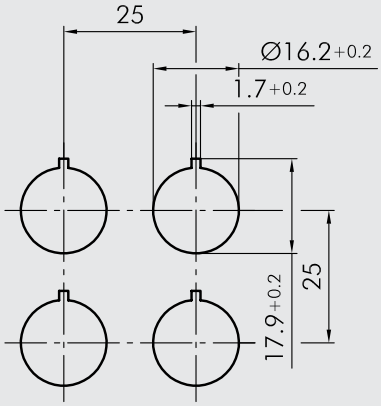
Protection Class II ⧈ .

Illustration	Dimensions	Description			Type
		**Key Actuator** requires 3 keys: 1st key: two-way operation 2nd key: operation to the left only 3rd key: operation to the right only	Body:	charcoal metallic	 **OKSSA31** **OKSSMA31**

OKTRON-R

Ø 16 mm





min. mounting grid 25 x 38 mm when using the external nameplate.

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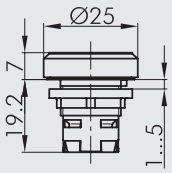
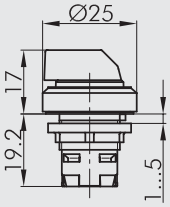
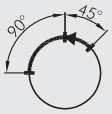
Pushbutton Head - IP65

Protection Class II ⧈ .

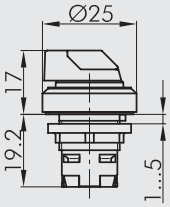
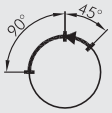
Illustration	Dimensions	Description	Type
		**Pushbutton Head** Body: charcoal metallic	**RKT** **RKTM**
		**Flat Lenses, transparent** available in blue-BL, yellow-GB, green-GN, clear-KL, red-RT, opalwhite-WS, add code letter to type number, e.g. T20FBL Suitable for RXT	**T20F...**
		**Silicone Sealing Cap** down to -50° C suitable for RKT	**TK26S**
		**Blank Nameplate** suitable for RKT	**BSRXU**
		**Nameplate** with standard imprint, please specify index no. (see pages 28-31) suitable for RKT	**BSRX...**
		Nameplate with special imprint as per customer's need suitable for RKT	**BSRXB**

(Illuminated) Selector Heads - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description				Type
		**Selector Head**	Body:	charcoal metallic		**RKWA** **RKWAM**
				charcoal metallic		**RKWB** **RKWBM**
				charcoal metallic		**RKWC** **RKWCM**
		Selector Head, momentary		charcoal metallic		**RKSTA** **RKSTAM**
				charcoal metallic		**RKSTB** **RKSTBM**

I = Switching position
↷ = Spring return

		**Illuminated Selector Head** Knob available in blue-BL, yellow-GB, clear-KL, green-GN, red-RT	Body:	charcoal metallic		**RKWAL...** **RKWALM...**
				charcoal metallic		**RKWBL...** **RKWBLM...**
				charcoal metallic		**RKWCL...** **RKWCLM...**
		Illuminated Selector Head, momentary Knob available in blue-BL, yellow-GB, clear-KL, green-GN, red-RT		charcoal metallic		**RKSTAL...** **RKSTALM...**
				charcoal metallic		**RKSTBL...** **RKSTBLM...**

I = Switching position
↷ = Spring return

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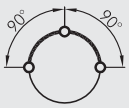
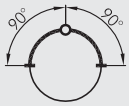
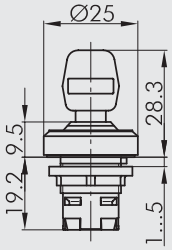
Key Actuators - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description		Type
		Key Actuator other lock types are supplied against extra charge		
		Body: charcoal metallic		**RKSSA12** **RKSSMA12**
		charcoal metallic		**RKSSA13** **RKSSMA13**
		charcoal metallic		**RKSSA14** **RKSSMA14**
		charcoal metallic		**RKSSA15** **RKSSMA15**
		charcoal metallic		**RKSSA16** **RKSSMA16**
		charcoal metallic		**RKSSA17** **RKSSMA17**
		charcoal metallic		**RKSSA18** **RKSSMA18**
		charcoal metallic		**RKSSA23** **RKSSMA23**
		charcoal metallic		**RKSSA25** **RKSSMA25**
		charcoal metallic		**RKSSA28** **RKSSMA28**

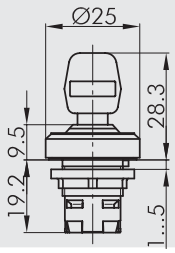


I = Switching position
↷ = Spring return
O = Key removable position

OKTRON-R
Ø 16 mm

Key Actuator - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description	Type
		**Key Actuator** requires 3 keys: 1st key: two-way operation 2nd key: operation to the left only 3rd key: operation to the right only Body: charcoal metallic 	**RKSSA31** **RKSSMA31**

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Accessories

Illustration	Dimensions	Description	Type
		**Ultra-bright LED, T5.5K socket** with integrated single-wave rectifier, for 24V AC/DC /7/14 mA) storage temperature: -25°C ... +80°C ambient temperature: -20°C ... +65°C voltage tolerance: +10 % blue . . . . . **L5,5K24UB** green . . . . . **L5,5K24UG** red . . . . . **L5,5K24UR** white . . . . . **L5,5K24UW** yellow **L5,5K24UY**	
		**Square Dummy** for the OKTRON-JUWEL series Body: black	**BVOKJ**
		**Square Dummy** for the OKTRON series Body: charcoal	**Q16DG**
		**Round Dummy** for the OKTRON-R series Body: charcoal	**RX16**
		**Ring Fastener**	**M16X1**
		**Hexagonal Mounting Tool** with torque limitation	**S16_8547**
		**Adapter** for mounting tools S16 and S22	**SRA**

Accessories

Illustration	Dimensions	Description		Type
		**External Nameplate Holder** for outside-marking of the actuators of the QUARTRON and OKTRON series, accepts self-adhesive nameplates Colour: charcoal metallic		**QXABT** **QXABT_M**
		**Nameplate Holder** for outside marking of the actuators of the OKTRON-R series, accepts adhesive nameplates Body: charcoal		**RKABT**
		**Adhesive Nameplate** 2 layers, engraved inscription appears in black Dimensions: 22 x 11 mm Symbols see page 30	blank engraved printed	**BZ16U** **BZ16G** **BZ16B**
		**Lead-sealable Protection Cap**		**KDOK**
		**Spare Key** please specify key number **Spare Key (standard)**		**ESMIC...** **ESMIC482**

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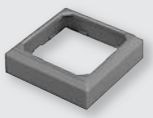
Accessories

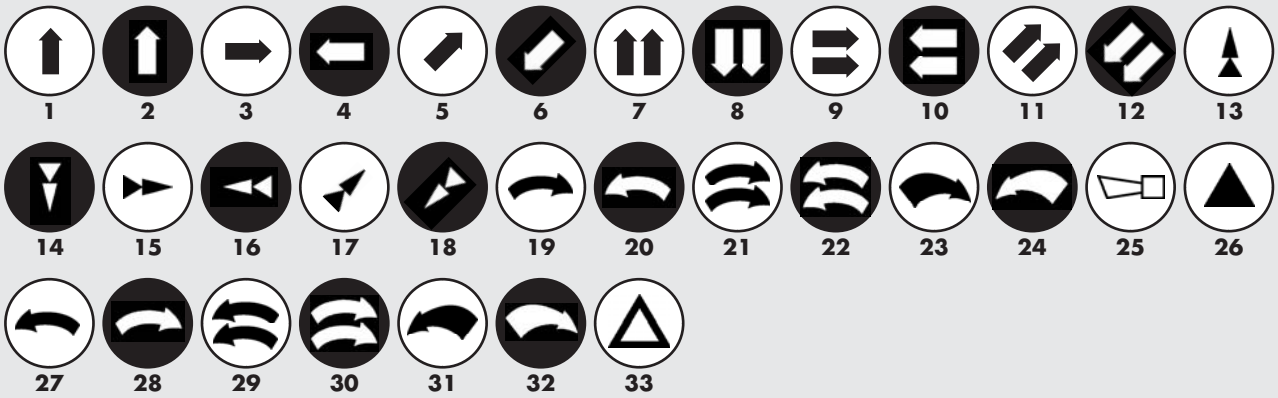
Protection Class II ⧈ .

Illustration	Dimensions	Description	Type
		**Plate Punching Tool Ø 16 mm** for aluminium of 3 mm max. thickness	**BL16**
		Plate Punching tool Ø 16 mm for steel sheets ST37 of 1.5 mm max. thickness and VA up to 1.3 mm	**BL16VA**
		**Plate Punching Tool 23 x 23 mm** for aluminium of 3 mm max. thickness	**BL23**
		Plate Punching Tool 23 x 23 mm for steel sheets ST37 of 1.5 mm max. thickness and VA up to 1.3 mm	**BL23VA**
		**Hydraulic Power Set** for HL... punching tools, consists of manual pump and hydraulic cylinder (supplied in a plastic case)	**HHP**
		Punching Tool for hydraulic power set for steel sheets (ST37) of 3.2 mm max. thickness, VA sheets up to 1.2 mm and aluminium plates up to 4 mm	**HL16**
		**Front Bezel for OKTRON** colours on request	**FROK...**
		**Front Bezel for OKTRON-R** colours on request	**FROR...**

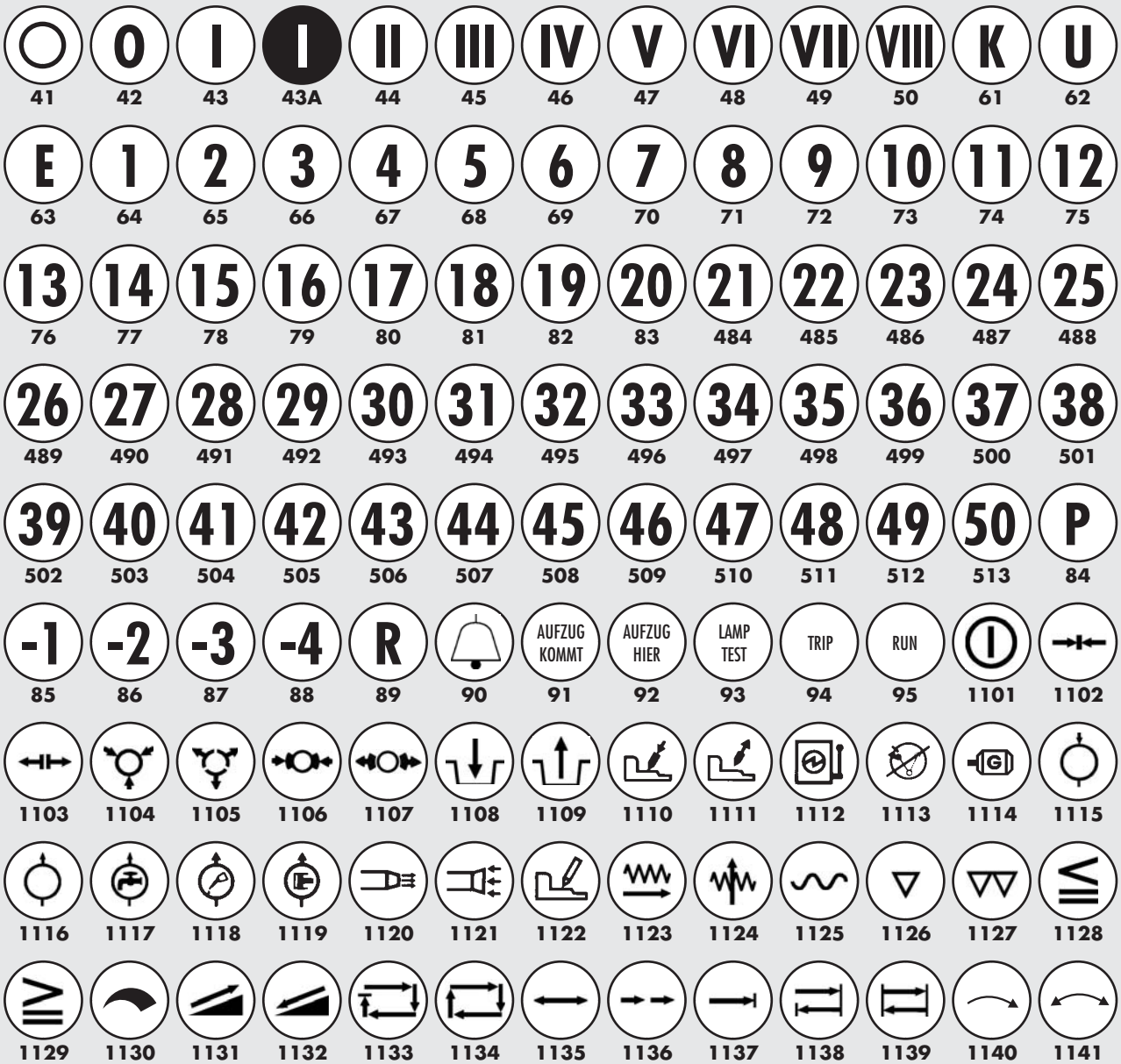
Nameplates

Subject to alterations with regard to the graphical layout of the nameplates!

Symbols for Lifting Gears



Figures and Symbols



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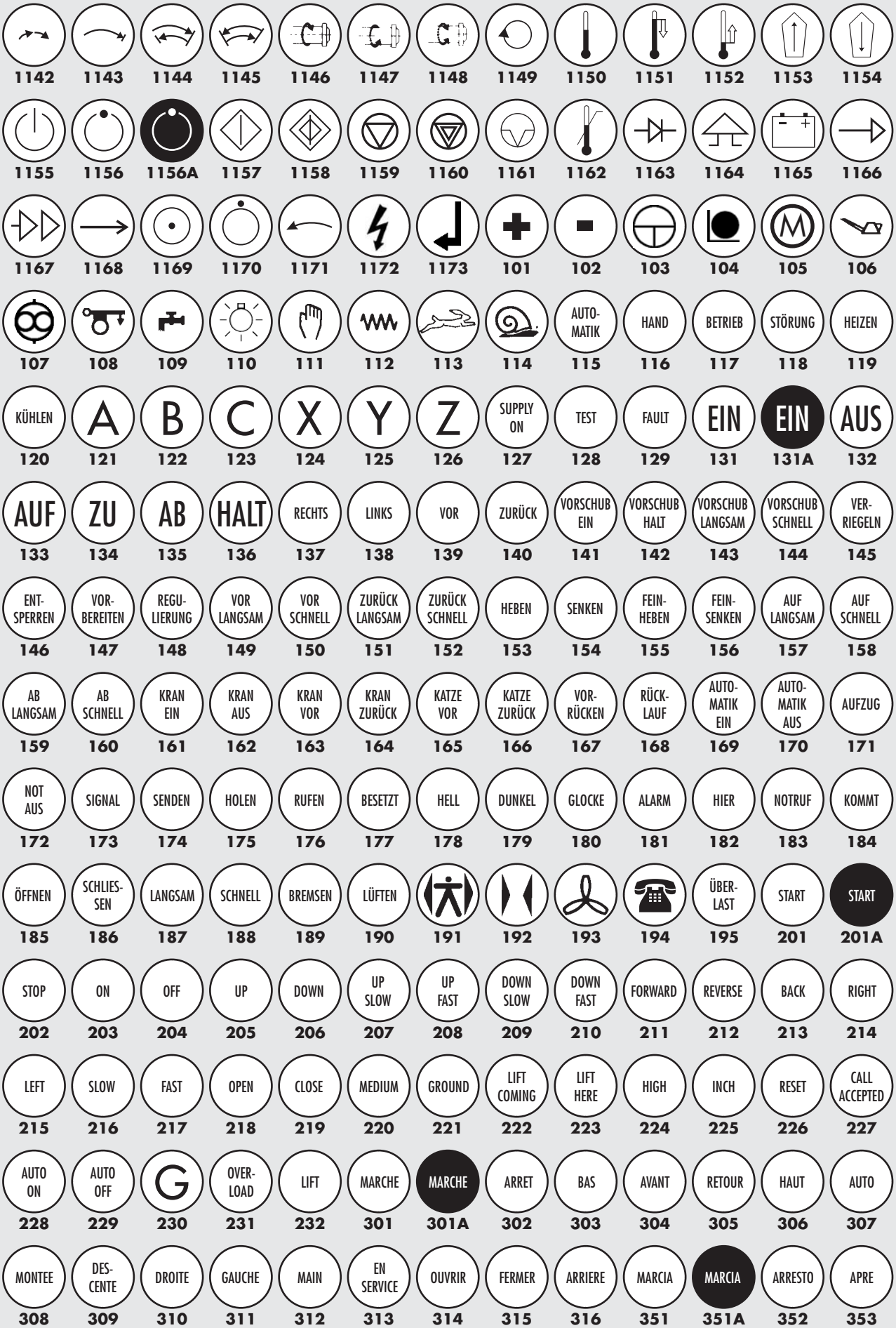
1142
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1156A
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AUTO-MATIK
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HAND
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BETRIEB
117
STÖRUNG
118
HEIZEN
119
KÜHLEN
120
A
121
B
122
C
123
X
124
Y
125
Z
126
SUPPLY ON
127
TEST
128
FAULT
129
EIN
131
EIN
131A
AUS
132
AUF
133
ZU
134
AB
135
HALT
136
RECHTS
137
LINKS
138
VOR
139
ZURÜCK
140
VORSCHUB EIN
141
VORSCHUB HALT
142
VORSCHUB LANGSAM
143
VORSCHUB SCHNELL
144
VER-RIEGELN
145
ENT-SPERREN
146
VOR-BEREITEN
147
REGU-LIERUNG
148
VOR LANGSAM
149
VOR SCHNELL
150
ZURÜCK LANGSAM
151
ZURÜCK SCHNELL
152
HEBEN
153
SENKEN
154
FEIN-HEBEN
155
FEIN-SENKEN
156
AUF LANGSAM
157
AUF SCHNELL
158
AB LANGSAM
159
AB SCHNELL
160
KRAN EIN
161
KRAN AUS
162
KRAN VOR
163
KRAN ZURÜCK
164
KATZE VOR
165
KATZE ZURÜCK
166
VOR-RÜCKEN
167
RÜCK-LAUF
168
AUTO-MATIK EIN
169
AUTO-MATIK AUS
170
AUFZUG
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NOT AUS
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SIGNAL
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SENDEN
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HOLEN
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RUFEN
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BESETZT
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HELL
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DUNKEL
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GLOCKE
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ALARM
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HIER
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NOTRUF
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KOMMT
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ÖFFNEN
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SCHLIES-SEN
186
LANGSAM
187
SCHNELL
188
BREMSEN
189
LÜFTEN
190
191
192
193
194
ÜBER-LAST
195
START
201
START
201A
STOP
202
ON
203
OFF
204
UP
205
DOWN
206
UP SLOW
207
UP FAST
208
DOWN SLOW
209
DOWN FAST
210
FORWARD
211
REVERSE
212
BACK
213
RIGHT
214
LEFT
215
SLOW
216
FAST
217
OPEN
218
CLOSE
219
MEDIUM
220
GROUND
221
LIFT COMING
222
LIFT HERE
223
HIGH
224
INCH
225
RESET
226
CALL ACCEPTED
227
AUTO ON
228
AUTO OFF
229
G
230
OVER-LOAD
231
LIFT
232
MARCHE
301
MARCHE
301A
ARRET
302
BAS
303
AVANT
304
RETOUR
305
HAUT
306
AUTO
307
MONTEE
308
DES-CENTE
309
DROITE
310
GAUCHE
311
MAIN
312
EN SERVICE
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OUVRIR
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FERMER
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ARRIERE
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MARCIA
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MARCIA
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ARRESTO
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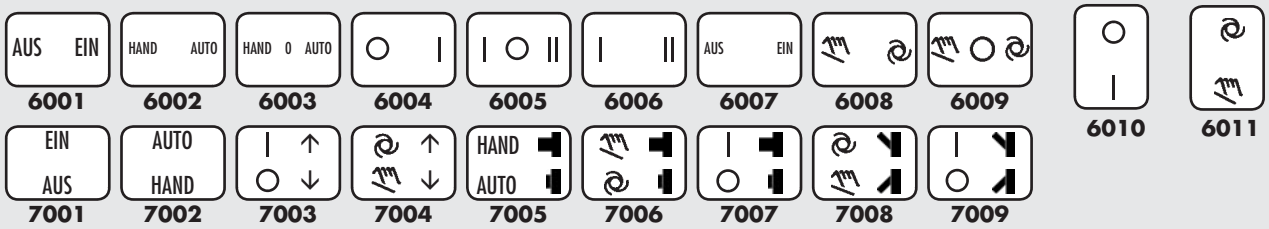
APRE
353

354 **355** **356** **361** **362** **365** **366** **367** **368** **369** **370** **371**

Stickable Nameplates BZ...
for external nameplates holders



6001 **6002** **6003** **6004** **6005** **6006** **6007** **6008** **6009** **6010** **6011**

7001 **7002** **7003** **7004** **7005** **7006** **7007** **7008** **7009**

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General Information - Safety at Work

The Working Principle

AS-Interface Safety at Work is based on the standard AS-i log. The system and a connected AS-Interface safety monitor are designed for the transmission of safety-related informations. As base serves the transmission of dynamic code sequences which are stored in every safe AS-Interface slave (8* 4 bit code table). Through a "teach in" function the safety monitor reads in these code sequences when starting up the machine. During operation the safety monitor permanently compares the nominal and actual sequences of the safe slaves. If the safe slave (e.g. an emergency-stop button) supplies a wrong code sequence, the safety monitor reacts immediately by switching off the machine.
When developing this concept it was attached great importance to the easy handling of the system. Same as on AS-Interface, each safety-related slave has to be assigned with an address. The safety monitor identifies and registers these slaves automatically. This configuration must be acknowledged, printed and countersigned in order to ensure clear allocation of the safety-related signals to a cutoff-circuit.

Advantages of AS-Interface Safety at Work

- Saving of conventional cabling
- Reduction of cabling and mounting costs
- Failure-safe PLC not necessary
- high flexibility in project planning by easy and quick extension of existing systems, easy retrofitting of Safety at Work
- easy system installation by standardized AS-Interface technology
- Combination of Safety at Work and standard AS-Interface System in one network
- Grouping of safe signals possible
- Can be used up to Safety Category 4 acc. to EN 954–1
- Approved by TÜV and BIA

Schlegel E-Stop as Safe AS-Interface Slave

Function

When connecting an emergency-stop pushbutton to an AS-Interface network, the integrated code generator permanently produces 8 different 4-bit codes which are set up acc. to the S-7.B.E profile. Each E-stop has its own code sequence which is unique. When the E-stop button is pressed a case of emergency is signalized to the safety monitor by the code sequence "0000".
Should one of the two contacts of the E-stop fail, or should the E-stop button, for any reason whatever, be separated from the contact unit, this fault is signalized to the safety monitor by a special sequence enabling precise diagnostics (defective hardware)*
The actual running /diagnostic state can be indicated via the external ID-connector (standard output DO), e.g. by an external 24V LED.

*Notice: In case of a hardware defect the safety contacts of the safety monitor can only be released by restarting the monitor.

Slave Characteristics

- Type references: ASI_SAW16 (16mm), ASI_SAW22 (22mm)
- AS-Interface profile: S-7.B.E, standard address mode
- Permanent monitoring and safety shutdown on separation of contact unit from actuator
- External ID-connector as standard output D0 e.g. for the individual control of a LED 24V/15mA max.
- Safety integrity level: SIL 3
- Applicable Norms and Standards: IEC 61508, IEC 62026-2, IEC 60204-1, EN 418, EN 60947-5-5
- Easy connection via 2-pole ID-connector and standard strand
- Output with short-circuit and overload protection

Technical Data of Safe Slaves

Communication	
- AS-Interface Standard:	V2.11
- Slave profile:	S-7.B.E
- Standby delay time:	< 1s
- Input delay:	< 5ms
- Connection:	via 2-pole ID-connector (3.96mm) by insulation piercing,with lock mechanism and strain relief Reference: "ASI_SL2AWG18"
Ambient Conditions	
- Operating temperature:	-25°C ... +70°C
- Humidity:	up to 95%, non-condensing
- Protection type/Contact unit:	IP20
- Contamination level:	2 (acc. to IEC60947-1)
Electrical Data	
- Power supply:	26.5...31.6 V, fully through the AS-Interface line
Total power consumption:	≤ 50 mA
- Reverse polarity protection:	available
- Contacts:	two positive opening contacts acc. to IEC60947-5-5
- Safety integrity level:	SIL3
- Output (not safe):	for the control of a LED
Rated voltage:	24 V DC (+10%)
Power consumption	15mA max.
Short circuit/overload	LED output
Connector Plug:	JST B2B-XH-A, 2 poles, for 2-pole connector JST XHP-2 Crimp RM 2.5mm

I/O Data Bits

Output		
data bit	info (Interface 3)	state
D0	0	off
	1	on

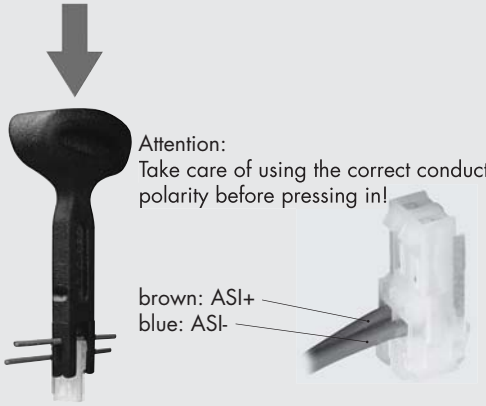
Inputs		
data bit	info (Interface 3)	state
D0...D3	acc. to S-7.B.E profile	

Norms and Standards
- IEC 62026-2
- Complete Specification AS-Interface, Version 2.11 Rev.1
- IEC 60204-1
- IEC 61508
- EN 418
- IEC 60947-5-5
- TÜV Type Approval (in preparation)
- AS-Interface-Certification (will be applied)
- UL/CSA Certification (in preparation)

Connection of Slaves
The slaves are connected (by insulation piercing) to the flexible equipment wire via a 2-pole, reverse polarity protected ID-connector (3.96 mm) with lock mechanism and strain relief (refer to the accessories).

Connection With a Hand Tool
The tool „ASI_MRT" serves to press the single conductors into the ID-connector.

Recommendation:
Using the cover "ASI_K2" an optimum strain relief is achieved in the ID-connector!



Connection to AS-Interface Profile Line
Depending on the case of application, there are different possibilities to connect a 2-conductor flexible equipment wire to the AS-Interface profile line (refer to the accessories).

Addressing of Slaves
Each of the safe AS-Interface slaves is assigned with a complete address.
The easiest way to assign the addresses is to use a hand addressing device which is directly connected to the slave via the Schlegel programming cable "ASI_PK500M12".
The individual addressing via the connected AS-Interface Master is also possible and supported by different manufacturers.

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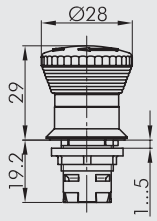
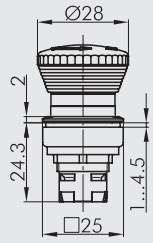
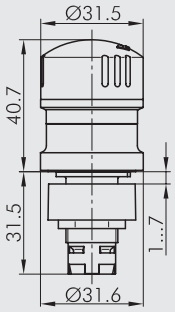
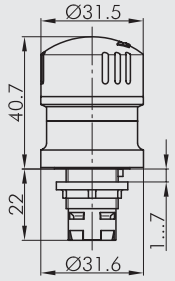
AS-Interface Slaves (Safety at Work)

Illustration	Dimensions	Description	Type
		**AS-Interface Slave (Safety at Work) 16 mm** for safety-related control units of 16 mm mounting diameter, e.g. emergency-stop actuators - with short-circuit proof, individually controllable, digital output - permanent monitoring and safe shutdown if contact block and actuator are separated - profile: S-7.B.E - applicable standard: V 2.1 - safety integrity level: SIL 3 suitable for: OKJUV, QXJBUV, QXJUV, RKUV28, RXBUV, RXJBUV, RXJUV, RXUV, RXUVP	**ASI_SAW16**
		**AS-Interface Slave (Safety at Work) 22 mm** for safety-related control units of 22 mm mounting diameter, e.g. emergency-stop actuators. - with short circuit-proof, individually controllable, digital output - permanent monitoring and safe shutdown if contact block and actuator are separated - profile: S-7.B.E - applicable standard: V 2.1 - safety integrity level: SIL 3 suitable for: QRBLUV, QRBLUVSE, QRBUV, QRBUVSE, QRJUV, QRUV, QRUVP	**ASI_SAW22**

Emergency-stop Heads - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description	Type
		**Emergency-stop Head** with position indicator, fool-proof with snap function, twist to reset in accordance with EN 418, IEC/EN 60947-5-1, IEC/EN 60947-5-5 Mounting aperture: Ø 16 mm	**RKUV28**
		**Emergency-stop Head** with position indicator, with special spring mechanism, fool-proof, twist to reset, in accordance with EN 418, IEC/EN 60947-5-1, IEC/EN 60947-5-5 Mounting aperture: 23 x 23 mm	**OKJUV**
		**Emergency-stop Head** with switching position indicator, twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 22 mm	**RXJUV**
		**Emergency-stop Head** with switching position indicator, twist to reset in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 16 mm	**RXUV**

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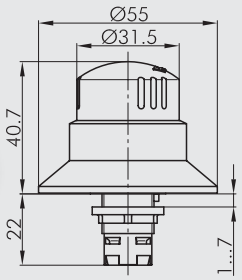
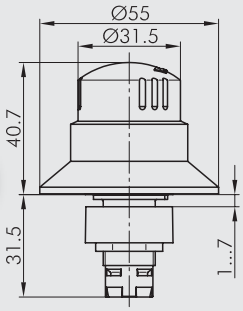
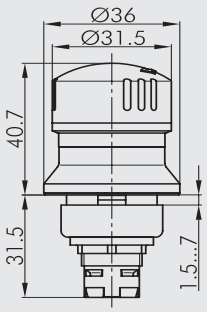
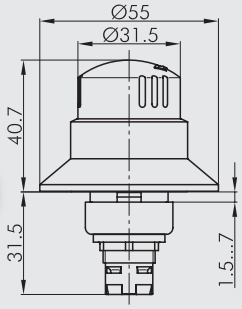
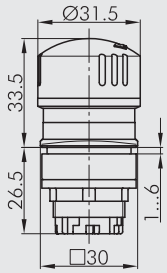
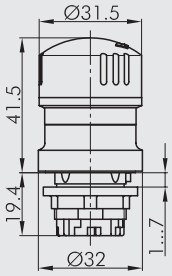
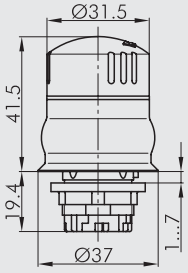
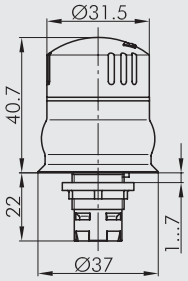
Emergency-stop Heads - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description	Type
		**Emergency-stop Head** with switching position indicator and yellow anti-lock collar, twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 16 mm	**RXBUV**
		**Emergency-stop Head** with switching position indicator and yellow anti-lock collar, twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 22 mm	**RXJBUV**
		**Emergency-stop Head** with switching position indicator, twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: 24 x 24 mm	**QXJUV**
		**Emergency-stop Head** with switching position indicator and yellow anti-lock collar, twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: 24 x 24 mm	**QXJBUV**

Emergency-stop Heads - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description	Type
		**Emergency-stop Head** with position indicator, twist to reset in accordance with EN418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: 26 x 26 mm	**QRJUV**
		**Emergency-stop Head** with position indicator, twist to reset in accordance with EN418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 22 mm	**QRUV**
		**Emergency-stop Head for hygienic applications** twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 version for protection type IP69K in preparation Mounting aperture: Ø 22 mm	**QRUVP**
		**Emergency-stop Head for hygienic applications** twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5, version for protection type IP69K in preparation Cannot be used with threaded adapter R16x1! Mounting aperture: Ø 16 mm	**RXUVP**

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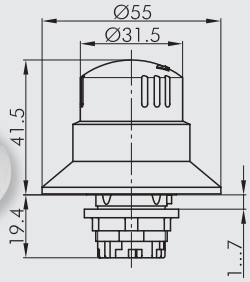
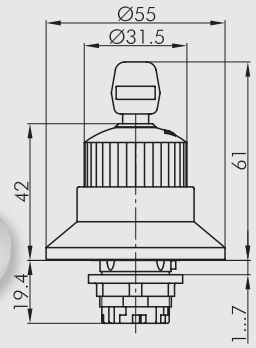
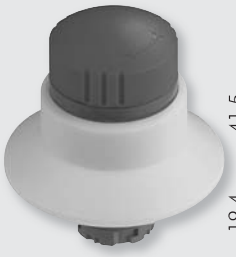
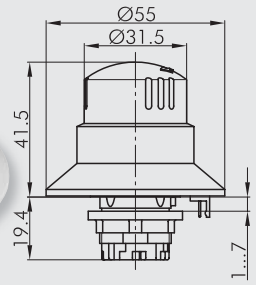
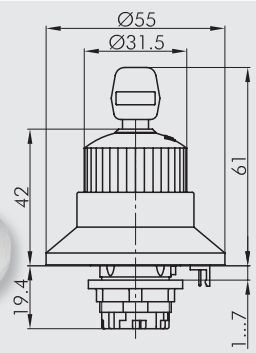
Emergency-stop Heads - IP65

Protection Class II ⧈ .

Illustration	Dimensions	Description	Type
		**Emergency-stop Head** with position indicator and yellow anti-block collar, twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 22 mm	**QRBUV**
		**Emergency-stop Head** with switching position indicator and yellow anti-lock collar, with key release, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 22 mm	**QRBUVSE**
		**Illuminated Emergency-stop Head** with switching position indicator and illuminated anti-lock collar, 24V DC / 34mA; AC 17mA, twist to reset, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 22 mm	**QRBLUV**
		**Illuminated Emergency-stop Head** with switching position indicator and illuminated anti-lock collar, 24V DC / 34mA; AC 17mA, with key release, in accordance with EN 418, IEC/EN 60947-5-1 and IEC/EN 60947-5-5 Mounting aperture: Ø 22 mm	**QRBLUVSE**

Accessories for AS-Interface Slave (Safety at Work)

Illustration	Dimensions	Description	Type
		**Connection Cable** serves to connect an illuminated emergency-stop pushbutton, 2-conductor strand, red/black, 0.25 mm², with connector crimped on both sides, length: approx. 17 cm	**VK_JST025BKL**
		**Connection Cable** with open end, to connect e.g. an external LED signal lamp, 2-conductor strand, red/black, 0.34 mm², with connector crimped on one side, length: approx. 30 cm	**VK_JST034**

Description

Definition
Limit switches are dealt under different names such as position switches, limiting switches or limit stop switches. However, behind all these terms hides a switchgear which is primarily used to protect man and machine.

Characteristics of DUX Limit Switches
A great variety of drives are available for these limit switches. They are used in auxiliary and pilot circuits and are excellently suitable for the control and movement limitation e.g. of processing and manufacturing machines, of lifts, transportation equipments, vehicles, cranes, in the building technology as well as trigger switch in safety and alarm systems, etc. The limit switches are offered in different designs and materials and can such be used in many fields of application and ambience conditions. The various combination possibilities of the units help to solve control problems at an optimum.

Arrangement and Operation of Limit Switches
Limit switch and plunger drive should only be used when the tolerance range of the switching point is very narrow. The actuation movement should be in the same direction as the plunger movement. The limit switches are constructed in a way that they may in no case be used as a mechanical limit stop The reset power is only designed for the plunger reset of the limit switch, hence, it must not be taken from the driving device for any other movable actuating appliances (such as flaps, doors, etc.). In order to guarantee an optimum switching action the max. operating angles of the individual drives must be observed.The trip cam of the respective machine may actuate the plunger only in the permissible plane. The over-travel of the driving device may only be used as shown in the relative diagram. It is not permitted to shorten the working travel by actuating the driving device in advance. The reset movement of the driving device must be guided by the return movement of the machine's trip cam, i.e. the driving device must not spring back freely to its original position.
The length of the actuating cam must be chosen so that an actuating time is achieved with double safety.

Mounting of Limit Switches
Limit switches have to be mounted in accordance with the above instructions. To guarantee the corresponding degree of protection the lid screws must be tightened evenly in order to ensure proper adjustment/sealing of the cable entry according to the cable diameter.
The limit switches must be used under strict observance of the relative parameters and rules of application. Depending on the number of switching actuations and operating conditions the operational reliability of the switches has to be checked regularly.

Due to the flexible AS-Interface network structure the DUX limit switches designed for AS-Interface can be connected whereever you want. Each limit switch means a separate node with individual address.

Technical Data of Limit Switches for AS-Interface

Communication	
- AS-Interface Standard:	V2.11, Rev. 1
- Slave profile:	S-B.A.E
- Connection:	4-pole sensor connector M12x1, whereas contact 1 is assigned to ASI+ and contact 3 to ASI-.
- Network length:	100m max. (without repeater)
- Cycle time:	<10ms
Ambient Conditions	
- Transport-, storage- and operating temperature	-25°C ... +55°C
Mechanical Data	
- operating travel:	6mm
Electrical Data	
- Power supply:	26,5...31,6 V, through the AS-Interface line
Total power consumption:	≤ 30 mA
- Reverse polarity protection:	available
Admissible on-load switching cycles:	1200/h
Mechnical life:	10 mill. switching cycles
Operating force at the plunger:	10 N
Drives:	exchangeable and rotatable by 90°
Protection type acc. to DIN 40050:	IP65
Construction:	acc. to VDE 0660/200
Ambient conditions acc. to DIN IEC 721-3-3	stationary use at weatherproof locations 3D6/3Z2/3Z10/3B2/3C2/3S3/3M6

ASI_EKU series

						
1 Ö + 1 S 	**ASI_EKU1-KST**	**ASI_EKU1-KD**		**ASI_EKU1-KG**	**ASI_EKU1-KH**	**ASI_EKU1-KRH**
1 Ö + 1 S Sprungkontakt 	**ASI_EKU1-SPR-KST**	**ASI_EKU1-SPR-KD**	**ASI_EKU1-SPR-KFS**	**ASI_EKU1-SPR-KG**	**ASI_EKU1-SPR-KH**	**ASI_EKU1-SPR-KR**

△ recommended operating travel

▲ positive opening

I/O Data Bits

Limit Switches		
switching position	not operated	operated
data bit		
DI3	0	1
DI2	1	0

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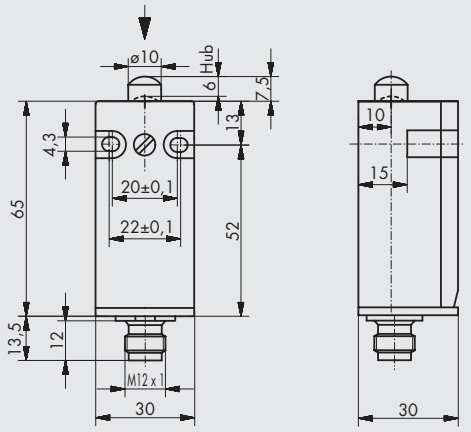
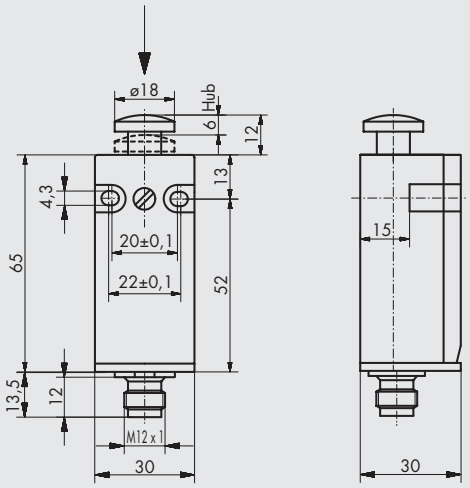
U1-	**ASI_EKU1-KRHV**	**ASI_EKU1-KK**	**ASI_EKU1-KDH**	**ASI_EKU1-KDF**	**ASI_EKU1-KR**	**ASI_EKU1-KV**	**ASI_EKU1-KW**	**ASI_EKU1-KZ**
U1-RH	**ASI_EKU1-SPR-KRHV**	**ASI_EKU1-SPR-KK**	**ASI_EKU1-SPR-KDH**	**ASI_EKU1-SPR-KDF**	**ASI_EKU1-SPR-KR**	**ASI_EKU1-SPR-KV**	**ASI_EKU1-SPR-KW**	

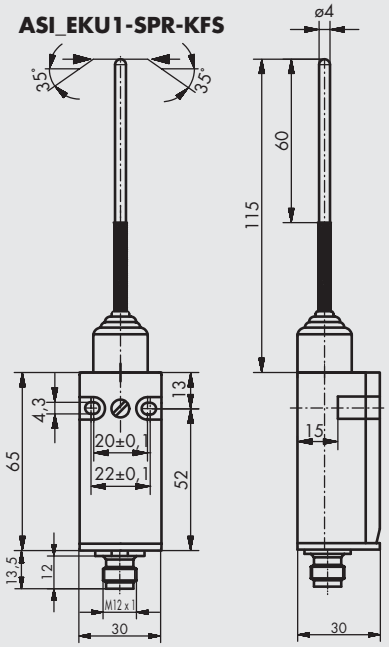
ASI_EKU1-KST
ASI_EKU1-SPR-KST



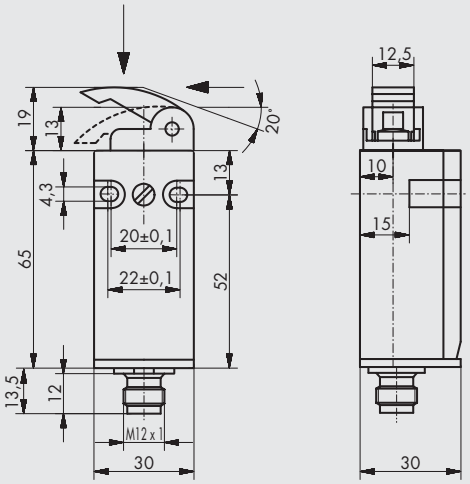
ASI_EKU1-KD
ASI_EKU1-SPR-KD



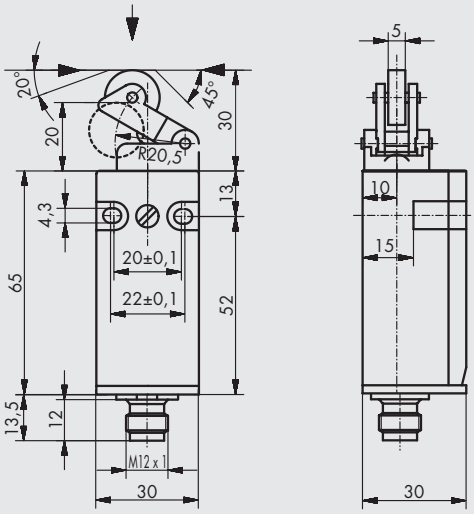
ASI_EKU1-SPR-KFS



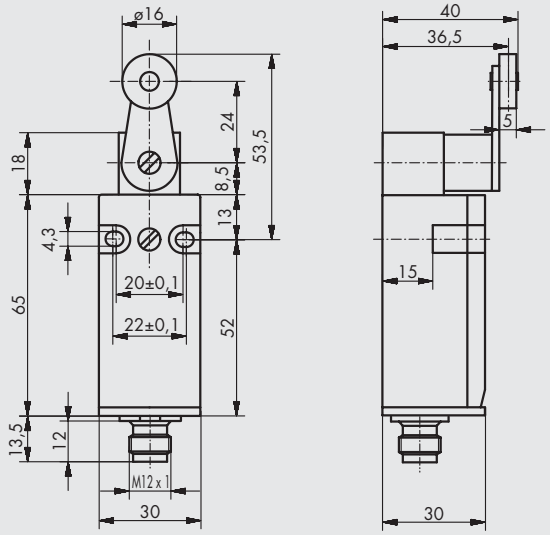
ASI_EKU1-KG
ASI_EKU1-SPR-KG



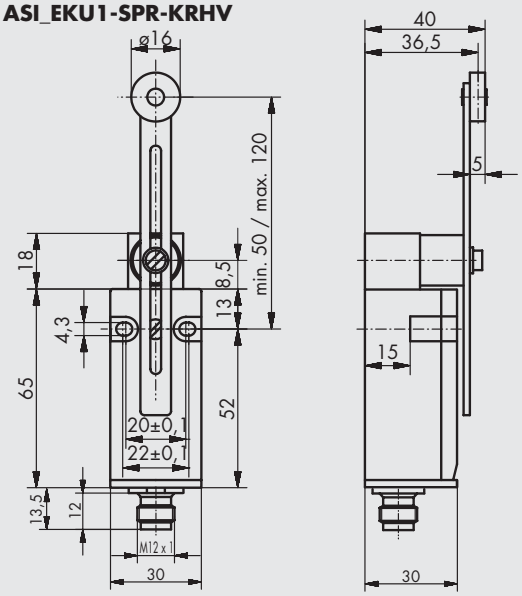
ASI_EKU1-KH
ASI_EKU1-SPR-KH



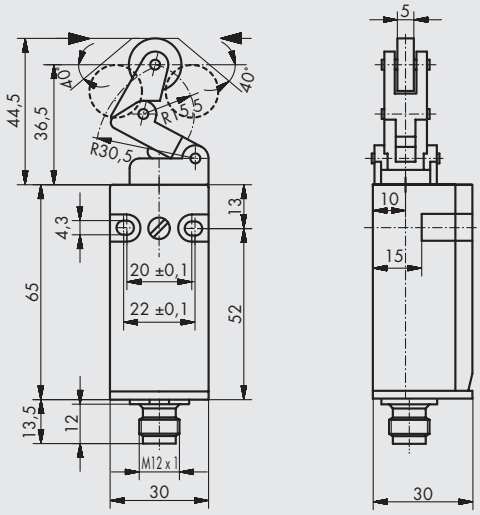
ASI_EKU1-KRH
ASI_EKU1-SPR-KRH



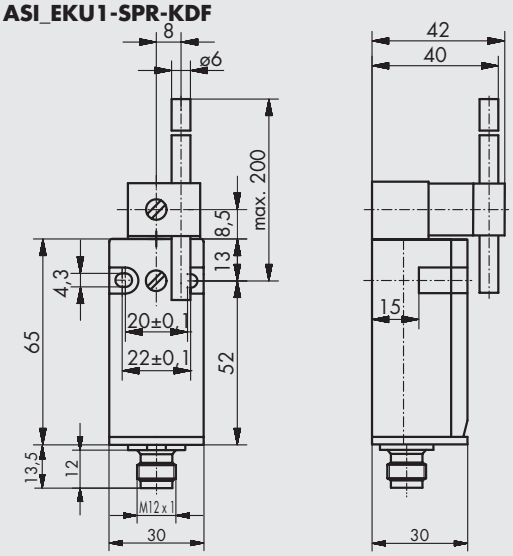
ASI_EKU1-KRHV
ASI_EKU1-SPR-KRHV



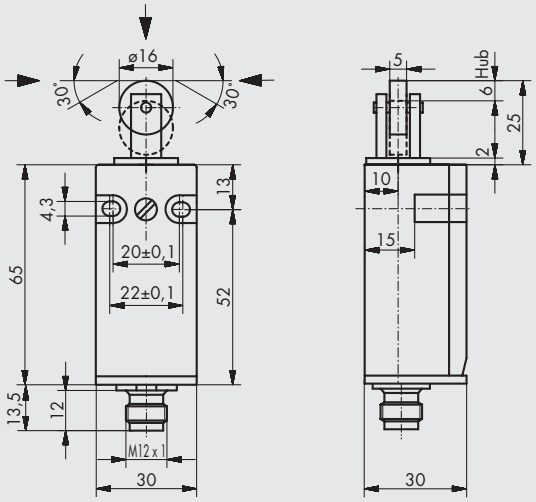
ASI_EKU1-KK
ASI_EKU1-SPR-KK



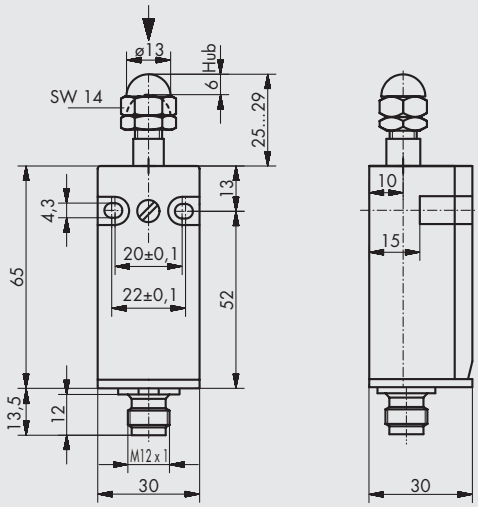
ASI_EKU1-KDH
ASI_EKU1-KDF
ASI_EKU1-SPR-KDH
ASI_EKU1-SPR-KDF



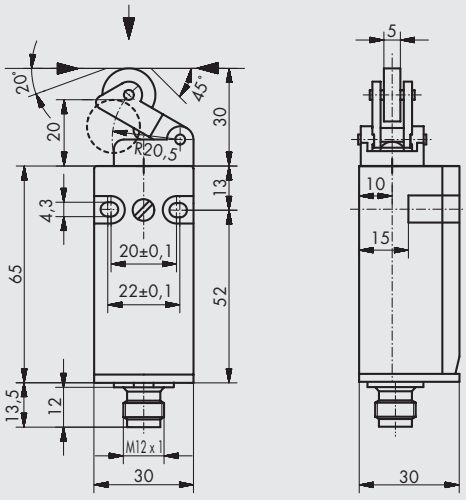
ASI_EKU1-KR
ASI_EKU1-SPR-KR



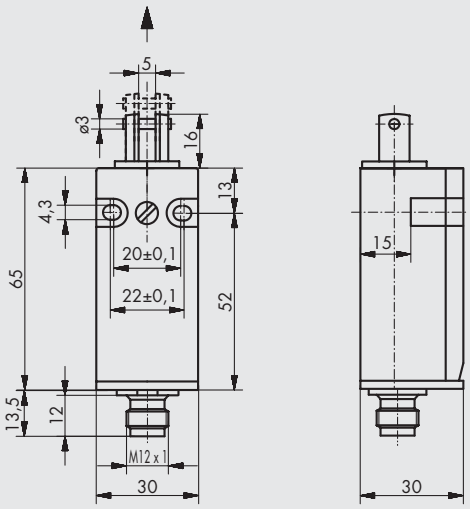
ASI_EKU1-KV
ASI_EKU1-SPR-KV



ASI_EKU1-KW
ASI_EKU1-SPR-KW



ASI_EKU1-KZ



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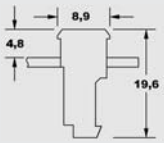
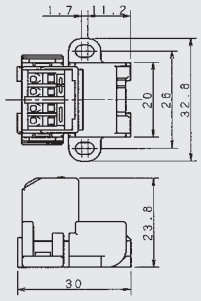
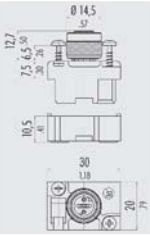
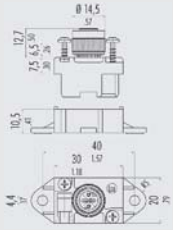
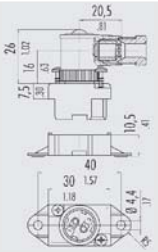
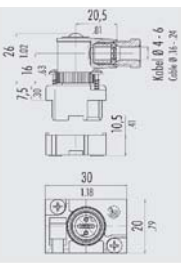
Accessories for Contact Blocks

Illustration	Dimensions	Description	Type
		**ID-Connector** 2 poles, for AWG18, serves to connect the AS-Interface slaves by insulation piercing; with lock mechanism and strain relief Technical data: . connector spacing 3.96 mm . wire size: AWG18 (0.8...1-0 mm²) . outside dia.: 1.0...2.28 mm Recommendation: optimum strain relief when used with "ASI_K2"	**ASI_SB2AWG18**
		**Cover with integrated strain relief** for 2-pole ID-connector	**ASI_K2**
		**Hand Tool** serves to individually press the conductors into the ID-connector, connector spacing 3.96 mm	**ASI_MRT**
		**AS-Interface Programming Cable** serves to address the slaves ASI_BZLII5, ASI_BZII5 with a commercial AS-Interface hand addressing device. Technical data: . PVC cable 500 mm, 2 x 0.75 mm² . M12 straight-line plug	**ASI_PK500M12**
		**Flexible Equipment Wire** suitable for IDC technique, serves to connect the AS-Interface slaves, twisted 2-conductor cable, brown/blue; VPE=50 m Technical data: . AWG18 . 19 wires . conductor resistance 21 Ohm/km . style no. 1007 / TR4 . operating temperature max. 80/90 °C (UL/CSA) . storage temperature down to -55 °C . acid/alkali-proof and oil-resisting . flame resistant . keeps its elasticity under heat and cold	**ASI_SL2AWG18**
		**Flat Cable Branch with cage clamp** serves to connect the AS-Interface slaves to the yellow profile line; Technical data: . AWG20-AWG18 . 31.6V/<> 3A . ambient temperature: -25 up to 55° C . outside dia. of wire: 1.0...2.28 mm	**LA9Z-SNTB**

Accessories for Contact Blocks

Illustration	Dimensions	Description	Type
		**Flat Cable Branch with M12 socket** without mounting plates, allows connection of a cable with M12 plug to the yellow profile line; Technical data: · 2 A max. · IP20	**ASI_AZM12**
		**Flat Cable Branch with M12 socket** and mounting plates, allows the connection of a cable with M12 plug to the yellow profile line; Technical data: · 2 A max. · IP20	**ASI_AZM12L**
		**M12 Straight-line Plug** with plastic nut, self-assembly via screw connections, serves to connect the AS-Interface flexible equipment wire to a M12 connector Technical data: . 4 A max. . 4 poles . PG7	**ASI_M12**
		**M12 Right-angle Plug** with plastic nut, self-assembly via screw connections, serves to connect the AS-Interface flexible equipment wire to a M12 connector. Technical data: . 4 A max. . 4 poles . PG7	**ASI_M12W**
		**Flat Cable Branch** self-assembly via screw connections, with mounting plates, serves to connect the AS-Interface flexible equipment wire to the yellow profile line. Technical data: . 2 poles . 4 A max.	**ASI_AZL**
		**Flat Cable Branch** self-assembly via screw connections, without mounting plates, serves to connect the AS-Interface flexible equipment wire to the yellow profile line. Technical data: . 2 poles . 4 A max.	**ASI_AZ**

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Alphabetical Type Index

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