

Safety switches GP and SGP



- ▶ For metal SGP actuating head



Approach direction



Horizontal and vertical
Adjustable in 90° steps.

AS-Interface inputs

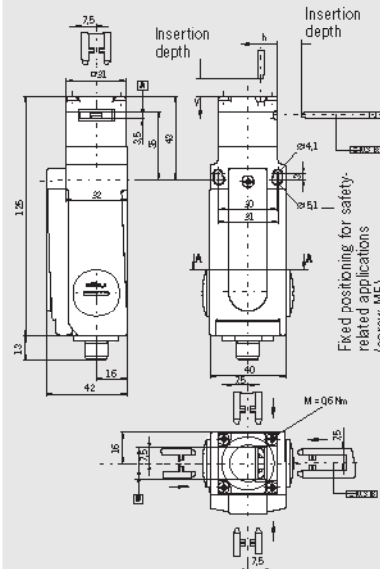
- ▶ **D0, D1** Positively driven contact 1
 - ▶ **D2, D3** Positively driven contact 2
- Evaluation is performed via a safety monitor.

Internal LED function display

- ▶ The *Power* LED indicates the operating voltage at the bus.
- ▶ The *Fault* LED shows if a fault has been detected on the AS-Interface bus.

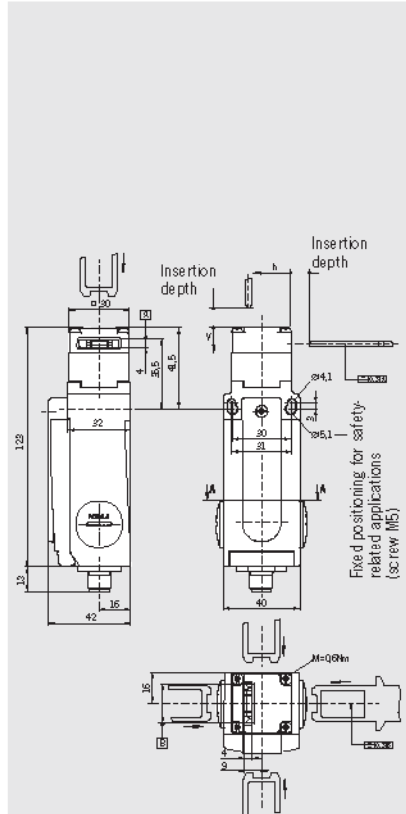
GP, plug connector M12 4-pin

Dimension drawing



Please order actuator separately
(see catalog of Safety Switches with
Plastic Housings)

SGP, plug connector M12 4-pin



Please order actuator separately
(see catalog Safety Switches with
Plastic Housings)

Ordering table

Series	Connection	Switching element	Order No./item
GP	SEM 4 Plug connector M12	2 NC ⊖	091 193 GP3-538ASEM4AS1
SGP	SEM 4 Plug connector M12	2 NC ⊖	099 126 SGP3E-538ASEM4AS1



Safety switch TP with guard locking



- ▶ Mechanical release on the front
- ▶ Increased horizontal overtravel
- ▶ Optional without guard lock monitoring



Mechanical release

Is used for releasing the guard locking with the aid of a tool. To protect against tampering, the mechanical release is sealed with sealing lacquer.

Guard locking types

TP3 Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output 0.

TP4 Open-circuit current principle, guard locking by control of AS-i output 0. Release by spring force.

Control of the interlocking solenoid

The interlocking solenoid is controlled by the control system via AS-Interface bus bit D0. Simple connection to the bus is sufficient for process protection. For personal protection, further measures must be taken to ensure safe power switching. The 24V connection can be switched safely for personal protection.

AS-Interface inputs version AS1

- ▶ **D0, D1** Door monitoring contact SK
- ▶ **D2, D3** Solenoid monitoring contact UK

AS-Interface inputs version AS2

- ▶ **D0, D1** Door monitoring contact SK 1
- ▶ **D2, D3** Door monitoring contact SK 2

Evaluation is performed via a safety monitor.

AS-Interface outputs

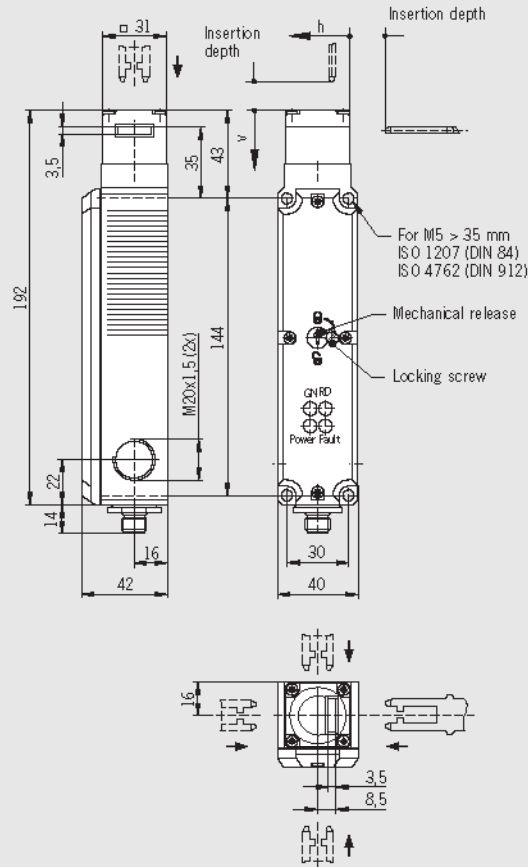
- ▶ **D0** Interlocking solenoid
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

- ▶ The *Power* LED indicates the operating voltage at the bus.
- ▶ The *Fault* LED shows if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be optionally controlled with bits D1 and D2 by the control via the bus.

Plug connector M12
4-pin

Dimension drawing



Please order actuator separately (see catalog of Safety Switches with Plastic Housings)

Ordering table

Series	Connection	Guard locking	Switching element	Version	Order No./item
TP	SEM4 Plug connector M12	3 Mechanical	SK: 1 NC ⊖ UK: 1 NC ⊖	AS1 With guard lock monitoring	088 256 TP3-4141A024SEM4AS1
		4 Electrical	SK: 1 NC ⊖ UK: 1 NC ⊖	AS1 With guard lock monitoring	088 257 TP4-4141A024SEM4AS1
			SK: 2 NC ⊖	AS2 Without guard lock monitoring	091 676 TP4-4141A024SEM4AS2

Safety switch STP with guard locking and guard lock monitoring



- ▶ Actuating head made of metal
- ▶ Mechanical release on the front



Mechanical release

Is used for releasing the guard locking with the aid of a tool. To protect against tampering, the mechanical release is sealed with sealing lacquer.

Guard locking types

STP3 Closed-circuit current principle, guard locking by spring force. Release by control of AS-i output 0.

STP4 Open-circuit current principle, guard locking by control of AS-i output 0. Release by spring force.

Control of the interlocking solenoid

The interlocking solenoid is controlled by the control system via AS-Interface bus bit D0. Simple connection to the bus is sufficient for process protection. The 24V connection can be switched safely for personal protection.

AS-Interface inputs

- ▶ **D0, D1** Door monitoring contact SK
 - ▶ **D2, D3** Solenoid monitoring contact ÜK
- Evaluation is performed via a safety monitor.

AS-Interface outputs

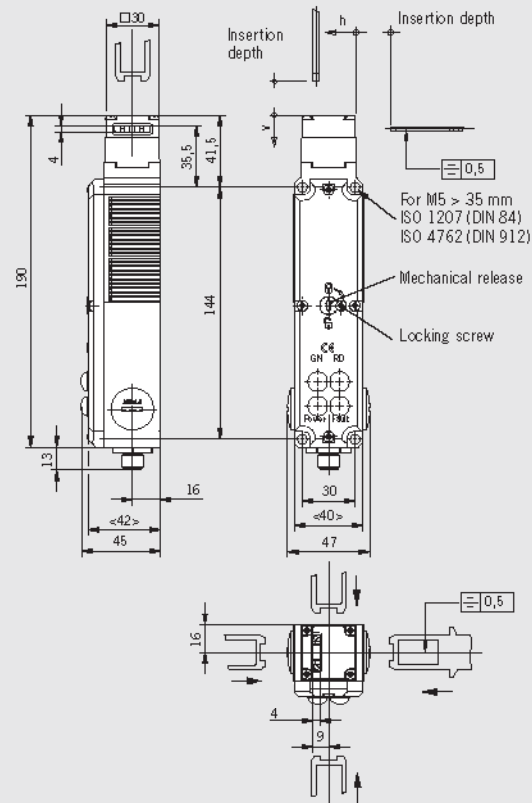
- ▶ **D0** Interlocking solenoid
- ▶ **D1** Red LED
- ▶ **D2** Green LED

LED function display

- ▶ The *Power* LED indicates the operating voltage at the bus.
- ▶ The *Fault* LED shows if a fault has been detected on the AS-Interface bus.
- ▶ The green and the red LEDs can be optionally controlled with bits D1 and D2 by the control via the bus.

Plug connector M12
4-pin

Dimension drawing




Please order actuator separately
(see catalog of Safety Switches with
Plastic Housings)



Ordering table

Series	Connection	Guard locking	Switching element	Order No./Item
STP	SEM4 Plug connector M12	3 Mechanical	SK: 1 NC ⊖ ÜK: 1 NC ⊖	097 790 STP3-41 41A024SEM4AS1
		4 Electrical	SK: 1 NC ⊖ ÜK: 1 NC ⊖	097 789 STP4-41 41A024SEM4AS1

Safety switch GP





Switch			
Parameter	Value		Unit
Housing material	Reinforced thermoplastic		
Mechanical life	2 x 10 ⁶ operating cycles		
Ambient temperature	- 20 ... + 55		°C
Weight	approx. 0.16		kg
Approach speed, max.	20		m/min
Actuating force	10		N
Extraction force	20		N
Retention force	2		N
Insertion depth (necessary minimum travel + permissible overtravel)	Standard actuator S	Actuator L overtravel	
Approach direction side (h)	28 + 2	28 + 7	mm
Approach direction from top (v)	29.5 + 1.5	29.5 + 7	mm

AS-Interface connection			
Parameter	Value		Unit
Connection	Plug connector		
Version	M12 (4-pin)		
Degree of protection according to IEC 60529	IP 67 ²⁾		
Rated insulation voltage U _i	50		V AC/DC
Switching principle	Slow-action switching element 2 NC 		
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026		
AS-Interface data			
Acc. to AS-Interface Specification 2.1	EA code: 7	ID code: B	
Total current consumption, max.	45		mA
Valid AS-Interface addresses	1 - 31		
AS-Interface inputs			
In accordance with AS-Interface Safety at Work			
Positively driven NC contact 1	D0, D1		
Positively driven NC contact 2	D2, D3		

Safety switch SGP



Switch			
Parameter		Value	Unit
Material	Housing	Reinforced thermoplastic	
	Actuating head	Die-cast aluminum	
	Cam in actuating head	Stainless steel	
Mechanical life		2 x 10 ⁶ operating cycles	
Ambient temperature		- 20 ... + 55	°C
Weight		approx. 0.16	kg
Approach speed, max.		20	m/min
Actuating force		25	N
Extraction force		25	N
Retention force		10	N
Insertion depth (necessary minimum travel + permissible overtravel)	Standard actuator S	Actuator L overtravel	
Approach direction side (h)	24.5 + 5	28.5 + 5	mm
Approach direction from top (v)	24.5 + 5	28.5 + 5	mm

AS-Interface connection			
Parameter		Value	Unit
Connection		Plug connector	
Version		M12 (4-pin)	
Degree of protection according to IEC 60529		IP 67 ²⁾	
Rated insulation voltage U _i		50	V AC/DC
Switching principle		Slow-action switching element 2 NC \ominus	
EMC protection requirements		Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data			
Acc. to AS-Interface Specification 2.1	EA code: 7	ID code: B	
Total current consumption, max.		45	mA
Valid AS-Interface addresses		1 - 31	
AS-Interface inputs			
Positively driven NC contact 1		D0, D1	
Positively driven NC contact 2		D2, D3	

Safety switch TP... with guard locking and guard lock monitoring



Switch			
Parameter	Value		Unit
Housing material	Reinforced thermoplastic		
Mechanical life	1 x 10 ⁶ operating cycles		
Ambient temperature	- 20 ... + 55		°C
Weight	approx. 0.5		kg
Approach speed, max.	20		m/min
Actuating force	10		N
Extraction force (not locked)	20		N
Retention force	10		N
Locking force, max.	1300		N
Locking force F ₂₀ in accordance with test principles GS-ET-1.9	1000		N
Insertion depth (necessary minimum travel + permissible overtravel)	Standard actuator	Overtravel actuator	
Approach direction side (h)	28 + 2	28 + 7	mm
Approach direction from top (v)	29.5 + 1.5	-	mm
Interlocking solenoid			
Solenoid operating voltage (auxiliary power on black AS-interface cable)	24 +10%/-15% Power supply unit with electrical isolation (IEC 60742, PELV)		V DC
Solenoid operating current	300		mA
Duty cycle	100		%

AS-Interface connection			
Parameter	Value		Unit
Connection	Plug connector		
Version	M12 (4-pin)		
Degree of protection according to IEC 60529	IP 67 ²⁾		
Rated insulation voltage U	50		V AC/DC
Switching principle SK, UK	Slow-action switching element 1 NC ⊖ contact each		
EMC protection requirements	Acc. to EN 50295 (AS-Interface standard) and IEC 62026		
AS-Interface data			
Acc. to AS-Interface Specification 2.1	EA code: 7	ID code: B	
Total current consumption, max.	45		mA
Valid AS-Interface addresses	1 - 31		
AS-Interface inputs			
Version AS1	In accordance with AS-Interface Safety at Work D0, D1 ▶ Door monitoring contact SK D2, D3 ▶ Solenoid monitoring contact		
Version AS2	D0, D1 ▶ Positively driven contact SK 1 D2, D3 ▶ Positively driven contact SK 2		
AS-Interface outputs			
D0	Interlocking solenoid, 1 = solenoid energized		
D1	Red LED, 1 = LED on		
D2	Green LED, 1 = LED on		
AS-Interface LED Power	Green, AS-Interface Power on		
AS-Interface LED Fault	Red, offline phase or address 0		

2) Screwed tight with the related plug connector

Safety switch STP... with guard locking and guard lock monitoring



Switch			
Parameter		Value	Unit
Material	Housing	Reinforced thermoplastic	
	Actuating head	Die-cast aluminum	
	Cam in actuating head	Stainless steel	
Mechanical life		1 x 10 ⁶ operating cycles	
Ambient temperature		- 20 ... + 55	°C
Weight		approx. 0.5	kg
Approach speed, max.		20	m/min
Actuating force		35	N
Extraction force (not locked)		30	N
Retention force		20	N
Locking force, max.		2500	N
Locking force F ₂ in accordance with test principles GS-ET-1.9		2000	N
Insertion depth (necessary minimum travel + permissible overtravel)	Standard actuator S	Actuator L for insertion funnel	
Approach direction side (h)	24.5 + 5	28.5 + 5	mm
Approach direction from top (v)	24.5 + 5	28.5 + 5	mm
Interlocking solenoid			
Solenoid operating voltage (auxiliary power on black AS-Interface cable)		24 +10%/-15% Power supply unit with electrical isolation (IEC 60742, PELV)	V DC
Solenoid operating current		300	mA
Duty cycle		100	%

AS-Interface connection			
Parameter		Value	Unit
Connection		Plug connector	
Version		M12 (4-pin)	
Degree of protection according to IEC 60529		IP 67 ²⁾	
Rated insulation voltage U _i		50	V AC/DC
Switching principle SK, UK		Slow-action switching element 1 NC ⊖ contact each	
EMC protection requirements		Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data			
Acc. to AS-Interface Specification 2.1		EA code: 7	ID code: B
Total current consumption, max.		45	mA
Valid AS-Interface addresses		1 - 31	
AS-Interface inputs			
In accordance with AS-Interface Safety at Work			
Door monitoring contact SK		D0, D1	
Solenoid monitoring contact UK		D2, D3	
AS-Interface outputs			
D0		Interlocking solenoid, 1 = solenoid energized	
D1		Red LED, 1 = LED on	
D2		Green LED, 1 = LED on	
AS-Interface LED Power		Green, AS-Interface Power on	
AS-Interface LED Fault		Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Safety switch STP-TW... with guard locking and guard lock monitoring



Switch			Value	Unit
Material	Housing		Reinforced thermoplastic	
	Actuating head		Die-cast aluminum	
	Cam in actuating head		Stainless steel	
Mechanical life			1 x 10 ⁶ operating cycles	
Ambient temperature			- 20 ... + 55	°C
Weight			approx. 0.6	kg
Approach speed, max.			20	m/min
Actuating force			35	N
Extraction force (not locked)			30	N
Retention force			20	N
Locking force, max.			2500	N
Locking force F ₂₀ in accordance with test principles GS-ET-1.9			2000	N
Insertion depth (necessary minimum travel + permissible overtravel)			Actuator S Standard	
Approach direction side (h)			24.5 + 5	mm
Approach direction from top (v)			24.5 + 5	mm
Interlocking solenoid				
Solenoid operating voltage (auxiliary power on black AS-Interface cable)			24 +10%/-15%	V DC
Solenoid operating current			300	mA
Duty cycle			100	%

AS-Interface connection			Value	Unit
Connection			Plug connector	
Version			M12 (4-pin)	
Degree of protection according to IEC 60529			IP 67 ²⁾	
Rated insulation voltage U _i			50	V AC/DC
Switching principle SK, UK			Slow-action switching element 1 NC ⊖ contact each	
EMC protection requirements			Acc. to EN 50295 (AS-Interface standard) and IEC 62026	
AS-Interface data				
Acc. to AS-Interface Specification 2.1			EA code: 7	ID code: B
Total current consumption, max.			45	mA
Valid AS-Interface addresses			1 - 31	
AS-Interface inputs				
Door monitoring contact SK			D0, D1	
Solenoid monitoring contact UK			D2, D3	
AS-Interface outputs				
D0			Interlocking solenoid, 1 = solenoid energized	
D1			Red LED, 1 = LED on	
D2			Green LED, 1 = LED on	
AS-Interface LED Power			Green, AS-Interface Power on	
AS-Interface LED Fault			Red, offline phase or address 0	

2) Screwed tight with the related plug connector

Accessories

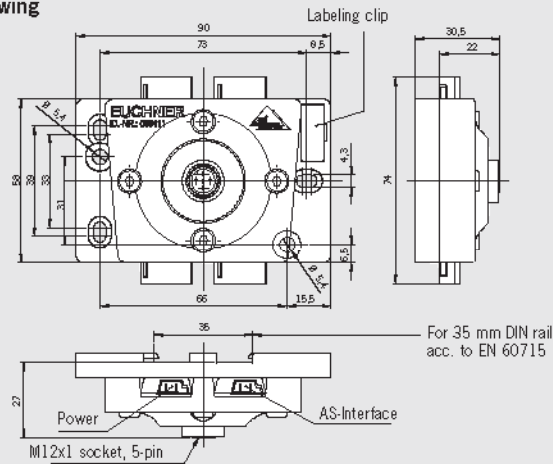
▶ Passive bus coupling module BCM-A-P1...



For connection of components with integrated AS-interface and M12 plug connector to the AS-interface ribbon cables. Both the bus and auxiliary power are converted from the ribbon cable to an M12 socket. The coupling module is suitable for safety components and for standard components. It is particularly suitable for EUCHNER safety switches with guard locking.

Passive bus coupling module BCM-A-P1...

Dimension drawing



Ordering table

Version	Connections	Order No./item
BCM-A-P1	AS ribbon cable, auxiliary power ribbon cable M12-socket	089 411 BCM-A-P1-SEM4-1
	Connection cable M12 with straight plug connectors, length 1 m PUR	089 420 Connection cable M12

Accessories for CES...AS1 evaluation units

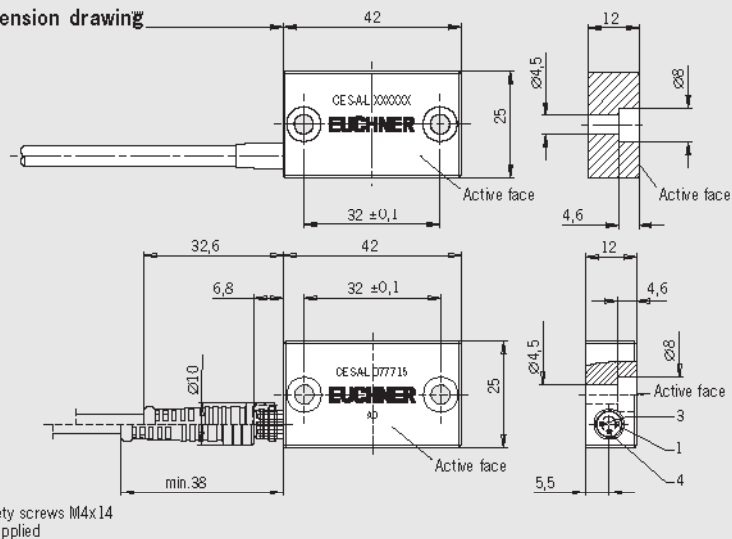
▶ Read head CES-A-LNA...



The read heads CES are suitable for connection directly to the evaluation units CES-A-F1B... or CES-A-V1B....

Read head CES-A-LNA...

Dimension drawing



Ordering table

Version	Connection	Length	Order No./item
Read head CES-A-LNA	Connection cable PVC	1 m	094 031 CES-A-LNA-01V-AS1
		2 m	094 032 CES-A-LNA-02V-AS1
	Plug connector M8	-	077 715 CES-A-LNA-SC

Accessories for CES...AS1 evaluation units

Connecting cables with M8 and M12 plug connectors are available for connection of the CES-LNA... read head and the CEM and CET read heads.

Ordering table

Version	Cable	Length	Order No./item
Cable for read heads CES, CEM, CET with M8 plug connector	PUR	2 m	095 005 LIYC11Y2X0.25X2000M12M-M8F
		5 m	095 357 LIYC11Y2X0.25X5000M12M-M8F
		10 m	099 167 LIYC11Y2X0.25X10000M12M-M8F
		30 m	099 168 LIYC11Y2X0.25X30000M12M-M8F
Cable for controlling CEM or CET guard locking	PUR	2 m	100 817 C-M08F04-04X025PV02.0-M12M05
		5 m	100 818 C-M08F04-04X025PV05.0-M12M05

Accessories and software for monitors SFM, SMO, GMO and GMOx

The software is required for programming the EUCHNER safety monitors. All safety monitors can be programmed with the same software. A Windows ®-equipped PC is required. All Safety at Work manuals in various languages are included on the CD.

A cable set SFM or the cable SMO-GMO is required to connect the PC. The cable set SFM includes a transfer cable for direct read-out from monitor to monitor.

Additional memory cards can be ordered for the monitors SMO and the gateway monitors GMO.

Plug-in connections with screw terminals and cage pull spring are available.

Ordering table

Version	Suitability	Order No./item
AsiMon Configuration software	Foll all AS interfaces Safety at Work safety monitors	088 053 AsiMon SW
Cable set SFM	For all monitors SFM...	087 299 Cable set SFM
Connection set Cage-pull clamps SMO, GMO and GMOx	For monitors SMO and Gateway monitors GMO	100 256 ZMO-ZB-KK8-M
Cable SMO and GMO	For monitors SMO and Gateway monitors GMO	100 437 ZMO-ZB-PGK
1 memory card	For monitors SMO and Gateway monitors GMO	100 875 ZMO-ZB-M1
10 memory cards	For monitors SMO and Gateway monitors GMO	100 438 ZMO-ZB-M10
1 memory card	For monitors SMOx and Gateway monitors GMOx	103 580 ZMO-ZB-MB1

Bus coupling module BCM



BCM-A-P1-SEM4-1

Parameter	Value	Unit
Housing material	Reinforced thermoplastic	
Degree of protection according to IEC 529 (mating connector inserted)	IP 67 on single insertion of the cable	
Ambient temperature	-20...+ 70	°C
Installation position	Any	
Weight	approx. 60	g
Voltage max.	36	V DC
Current max.	4	A
AS-Interface to power insulation voltage	200	V
Installation	Screw mounting (2 x M6)	
Connection		
AS-Interface and auxiliary power	Ribbon cable AS-i	
Line 1	AS-Interface bus ribbon cable (AS-Interface +, AS-Interface -)	
Line 2	Power ribbon cable (+24 V, 0 V)	
safety switch	M12 socket	
Degree of protection according to IEC 529 (mating connector inserted)	IP 67 on single insertion of the cable	