Types

Safety gate & Emergency Stop Safety Modules

Power supply	Safety Category	Safety Outputs	REFERENCES
24 VAC / VDC	4	3 NO	**NA1/3-D**
		2 NO	**NA1/2-D**
		2 NO	**MA1-D**
		2 NO	**MS1-D**
	2	2 NO	**MA1-B**
		1 NO	**M22A2/1-A**
230 VAC	4	3 NO	**NA1/3-D/230**

Safety gate & Emergency Stop delayed Safety Modules

Safety Category	Zero Del. Safety Outputs	Delayed Safety Outputs	REFERENCES
3	–	3 NO	**NA1/3-C-T**
2	1 NO	1 NO	**MA2-B-T**

General Characteristics	
Power drain	100 mA; 2VA (M22A2/1-A)
Response time	≤30 ms
Time delay	
Protection degree	IP 30 - IP 40
Operating temperature	0 to +55°C
Case (mm)	Modular, 16 terminals, width 22.5, 26 or 45

General Characteristics	
Power drain	400 mA (MA2-B-T); < 3 VA (NA1/3-C-T)
Response time	
Time delay	Adjustable ; Fixed (NA1/3-C-T)
Protection degree	IP 30 - IP 40
Operating temperature	0 to +55°C; –25 to +55 °C (NA1/3-C-T)
Case (mm)	Modular, 16 terminals; with 22.5; 45

Types

Two Hand Safety Modules

Power Supply	Safety Outputs	REFERENCES
24 VAC / VDC	2 NO	**ND1/2-D**
	2 NO	**MD1-D**
230 VAC	2 NO	**ND1/2-D/230**

General Characteristics		
Output functions	Safety	2 NO force guided
	Auxiliary	1 Optocoupled (MD1-D) 1 NC + 1 PNP (ND1/2-D) (ND1/2-D/230)
Controlled devices (Max.)		1
Power supply		24 VAC/VDC; 230 VAC
Power drain		150 mA
Response time		≤ 30 ms
Max. mat protected area		
Protection degree		IP 30 - IP 40
Safety category		IIIC and 4
Operating temperature		0 to +55°C
Case type and width (mm)		Modular, 16 terminals; 22.5 or 45 (MD1-D)

Light Curtain Safety Modules

Safety Outputs	REFERENCES
3 NO	**NL1/3-D**

3 NO force guided	
1	
24 VAC/DC	
2.5 VA / 2.5 W	
≤ 30 ms	
Housing: IP 40 Terminals: IP 20	
4	
0 to +55°C	
Modular, 16 terminals; 22,5	

Safety Mat Modules

Safety Outputs	REFERENCES
2 NO	**NT1/2-D**
2 NO	**MT1-D**

2 NO force guided	
1 Optoc. 55 V / 50 mA (MT1-D) 1 NO 250 VAC / 1.25 A (MT1-D)	
1	
24 VAC/DC ±10% (50-60 Hz)	
70 - 150 mA	
20 m²	
IP 30	
4	
0 to +55°C	
Modular, 12 terminals; 22.5 (NT1/2-D) Modular, 34 terminals; 90 (MT1-D)	

Types	Standstill Monitor Safety Modules	Lift level Modules	Extension Modules	Portable control Devices DCP
				
Supply voltage	Safety Outputs REFERENCES	Safety Outputs REFERENCES	Zero D. Safety Outp. REFER.	Zero D. Safety Outp. Closing Delay REFER.
24 VAC / VDC	2 NO **MF1-C**	2 NO **NA1/2-D-LIFT**	4 NO **NE1/4-D**	1 NO 3s±10% **DCP**
		2 NO **MA1-D-LIFT**		
230 VAC			4 NO **NE1/4-D/230**	
General Characteristics				
Output function Safety	2 NO 230 VAC 8 A force guided	2 NO force guided	See References	1 NO 230 VAC 2 A forced guide
Auxiliary		MA1-D LIFT: 1 NPN opt. 55 V / 50 mA		
Controlled devices (Max.)	1-phase or 3-phase signal	2 single channel		
Power supply	24 VAC/DC ±15%(50-60 Hz)	24 VAC/DC ±15% (50-60 Hz)	24 VAC/DC ±15% (50-60 Hz) 230 VAC (NE1/4-D/230)	24 VAC/DC ±10% (50 - 60 Hz)
Power drain	300 mA @ 24 Vdc	100 mA	200 mA	400 mA
Response time	≤500 ms	≤25 ms	≤30 ms	≤25 ms
Response value (Vs)	200 - 1000 mVpp			
Response value hysteresis	2 x Vs			
Input voltage	≤500 Vrms			
Input signal frequency	≤1.5 KHz			
Cycle period				≤30s
Protection degree	IP 30	IP 30	IP 30	IP 65
Safety category	3	not applicable	4	2
Operating temperature	0 to +55°C	0 to +55°C	0 to +55°C	0 to +55°C
Portable control unit Case -External dimensions				Plastic 115 x 85 x 91 mm
Safety module Case -External dimensions	Modular, 16 terminals 45 mm	Modular, 16 terminals 22,5 or 45 mm	Modular, 16 terminals 22,5 NE1/4-D	Plastic 120 x 160 x 90 mm

Types

Safety Mat System SM..

Electrical Characteristics

Internal resistance	1-5 Ω (@ mat operated) 15 KΩ (@ mat not operated)
Mat integrity monitoring	Partial with load resistence
Response time	≤75 ms

Mechanical Characteristics

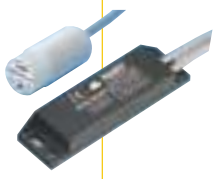
Material	PVC + Thermoplastic rubber
Thickness	~ 15 mm
Resolution	15 mm
Min. operating pressure	300 g/cm^2
Maximum load	100 Kg/cm^2
Mechanical life	>10^6 cycles

General Characteristics

Single Unit Max Dimensions	1.5 x 2.5 m All dimensions upon request
Covering	Antislip
Covering stiffness	~ 70 SH
Chemical resistance	
Excellent:	Oils - Greases - Water
Good:	Acids - Detergents - Alcohol Abrasive powder
Poor:	Solvents - Gasoline
Border	Aluminium
Floor fixing	With screws
Weight	9.3 Kg/m^2
Protection degree	IP 65 or IP 67
Operating temperature	+5° to +40°C

Types

Safety Magnetic Sensors SMS...



Safety Magnetic Units CLS...

Operating distance

		Safety Outputs	Max. switch. Power Cont.	Aux. Outp.	REFERENCES
Rectangular	10 mm	1NO	0.25 VA	-	**SMS-10**
	20 mm	1NO	0.25 VA	1NC	**SMS-10/NC**
Rectangular	20 mm	1NO+1NC	0.25 VA	-	**SMS-01**
		1NO+1NC	0.25 VA	-	**SMS-02**
		1NO+1NC	0.25 VA	-	**SMS-02/LD**
Rectangular	2NO: 20 mm	1NO+1NC	NO:0.5 A	-	**SMS-02/S1**
	NC: 17 mm	1NO+1NC	NC:0.25 A	-	**SMS-02/S1**
Cylindrical	15 ÷ 4 mm	2NO	0.25 VA	-	**SMS-03**
Cylindrical	22 ÷ 4 mm	2NO	0.25 VA	-	**SMS-03+CM**
		2NO	0.25 VA	1NC	**SMS-03/NC**
		2NO	0.25 VA	1NC	**SMS-03/NC/S1**
		1NO+1NC	0.25 VA	-	**SMS-A2P-02**
		1NO	0.25 VA	-	**SMS-A2P-10**
		2NO	0.25 VA	-	**SMS-A2P-30**

Electrical Characteristics

Max. switc. voltage contact	100 VAC
Max. switc. power contact	5 VA

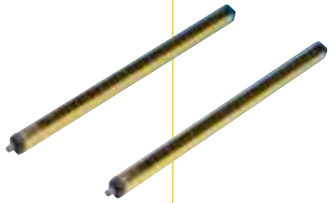
General Characteristics

External dimensions (mm)	88 x 25 x 13	
	M18 x 1 SMS-A2P-*	
Suitable magnetic unit	CLS; CLS-A2 (SMS-A2P-*)	
Output connection	Cable (PVC, AWG 26, L=2 m.)	
Protection degree	IP 67	IP 67
Operating temperature	-25° to +70°C	-25° to +70°C
Case	Plastic; PBT + 30 % glass (SMS-A2P-*)	Plastic

	SHAPE	REFERENCES
88 x 25 x 13	Rectangular	**CLS**
Ø25.1 x 9.3mm	Cylindrical	**CLS-A2**

Types

Safety Light Curtains, Safety Category 2
SBA2-30

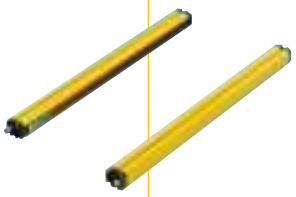


Resolution	Scann. dist.	Height of the controlled area mm	No. of beams	Resp. time ms	REFERENCES **Auto Reset**	REFERENCES **Manual Reset**
Hand mm 30	0.2-15 m					
		187	8	14	**SBA2-30/187-D15**	**SBM2-30/187-D15**
		334	16	15	**SBA2-30/334-D15**	**SBM2-30/334-D15**
		481	24	16	**SBA2-30/481-D15**	**SBM2-30/481-D15**
		628	32	17	**SBA2-30/628-D15**	**SBM2-30/628-D15**
		775	40	18	**SBA2-30/775-D15**	**SBM2-30/775-D15**
		922	48	19	**SBA2-30/922-D15**	**SBM2-30/922-D15**
		1069	56	20	**SBA2-30/1216-D15**	**SBM2-30/1216-D15**
		1216	64	22	**SBA2-30/1363-D15**	**SBM2-30/1363-D15**
		1363	72	23	**SBA2-30/1363-D15**	**SBM2-30/1363-D15**
		1510	80	24	**SBA2-30/1510-D15**	**SBM2-30/1510-D15**

General Character.	
Power supply	24 VDC ±20%
Output functions	2 PNP Output
Output connections	M12 4-pole connector for TX
	M12 5-pole connector for RX
Material	Painted aluminium
Environment light reiection	IEC-61496-2
Mechanical protection	IP 65
Operating temperature	0° to +55°C

Types

Safety Light Curtains, Safety Category 2 SB2...



Resolution	Scann. dist.	Height of the controlled area mm	No. of beams	Resp. time ms	REFERENCES
Finger mm 14	0.2-6 m				
Hand mm 35	0.2-15 m	187	8	15	**SB2-35/187-D15**
		334	16	17	**SB2-35/334-D15**
		481	24	18	**SB2-35/481-D15**
		628	32	20	**SB2-35/628-D15**
		775	40	22	**SB2-35/775-D15**
		922	48	23	**SB2-35/922-D15**
		1069	56	25	**SB2-35/1069-D15**
		1216	64	27	**SB2-35/1216-D15**
		1363	72	28	**SB2-35/1363-D15**
		1510	80	30	**SB2-35/1510-D15**
		1657	88	32	**SB2-35/1657-D15**
Body mm 315 - 515	4-50 m				
Body mm 315 - 515	0.5-50 m	515	2	14	**SB2-515/515-D50**
		815	3	14	**SB2-415/815-D50**
		915	4	14	**SB2-315/915-D50**
		1215	4	14	**SB2-415/1215-D50**
Body mm 315 - 515	0.5-25 mm				

Safety Light Curtains, Safety Category 4 SB4...

Height of the controlled area mm	No. of beams	Resp. time ms	REFERENCES
161	21	18	**SB4-14/161-D6**
308	42	22	**SB4-14/308-D6**
455	63	26	**SB4-14/455-D6**
602	84	31	**SB4-14/602-D6**
749	105	35	**SB4-14/749-D6**
187	8	15	**SB4-35/187-D15**
334	16	17	**SB4-35/334-D15**
481	24	18	**SB4-35/481-D15**
628	32	20	**SB4-35/628-D15**
775	40	22	**SB4-35/775-D15**
922	48	23	**SB4-35/922-D15**
1069	56	25	**SB4-35/1069-D15**
1216	64	27	**SB4-35/1216-D15**
1363	72	28	**SB4-35/1363-D15**
1510	80	30	**SB4-35/1510-D15**
1657	88	32	**SB4-35/1657-D15**
515	2	14	**SB4-515/515-D50**
815	3	14	**SB4-415/815-D50**
915	4	14	**SB4-315/915-D50**
1215	4	14	**SB4-415/1215-D50**
515	2	14	**SB4-515/515-D25**
815	3	14	**SB4-415/815-D25**
915	4	14	**SB4-315/915-D25**
1215	4	14	**SB4-415/1215-D25**

General Character.

Power supply	24 VDC ±20%	24 VDC ±20%
Output functions	2 PNP Output	2 PNP Output
Output connections	M12 4-pole connector for TX M12 8-pole connector for RX	M12 4-pole connector for TX M12 8-pole connector for RX
Auxiliary functions	Total/Partial muting-Override-Auto/manual Reset	Total/Partial muting-Override-Auto/manual Reset
Material	Painted aluminium	Painted aluminium
Environment light reiection	IEC-61496-2	IEC-61496-2
Mechanical protection	IP 65	IP 65
Operating temperature	-10° to +55°C	-10° to +55°C

Types

Electrical protections for Power lines

Nominal working Voltage	Max. working Power	Connect.	Radio freq. filter	Din slide	REFERENCES
230 / 380 VAC	-	Terminals	NO	Omega type 2.5 mod.	**DRP**
	-	Terminals	NO	Omega type 1.0 mod.	**SE-01**
	-	Terminals	NO	G type 1.0 mod.	**SE-01/S1**
230 VAC	400 VA	Terminals	YES	Omega type 2.5 mod.	**DRP-A2**
	4000 VA	Terminals	YES	Omega type 2.5 mod.	**DRP-A20**
	4000 VA	Terminals	YES	Omega type 2.5 mod.	**SE-02**
230 / 380 VAC	-	Termin.boards	NO	NO	**POEM-01**
	-	Wir.3x2.4mm^2	NO	NO	**POEM-02**
230 VAC	2000 VA	German socket	NO	NO	**UN-01/1T/A**
	2000 VA	Italian socket	NO	NO	**UN-01/2I/A**

General Characteristics	COMMON MODE PROTECTION	DIFFERENTIAL MODE PROTECTION
Static breakdown voltage	620 V with slew rate 100 V/s	560 V with slew rate 100 V/s
Dynamic breakdown voltage	<1200 V with slew rate 1 kV/m s	<850 V with slew rate 1 kV/ms
Nominal discharge current	6.5 kA with pulse 8/20 us	6.5 kA with pulse 8/20 m s
Response time	<500 ns	<25 ns

Types

Electrical protections for data and Telematic lines

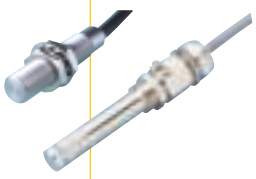
Nominal working Voltage	Protocol	Max. working current	Case	REFERENCES
12 V	Half duplex	0.45 A	Modular	**TZ-006/B**
	Half duplex	0.19 A	Modular	**TZ-037**
	Half/full duplex	0.45 A	Modular	**TZ-038**
	RS-232/C		Modular	**TZ-039**
	RS-232/C		DB9 connector	**TZ-050**
	RS-232/C		DB25 connector	**TZ-056**
5 V	RS-422 RS-485		Modular	**TZ-066**
	RS-449 RS-423		DB15 connector	**TZ-057**
24 V	Current loop	0.14 A	Modular	**TZ-042**
	Current loop	0.14 A	G type DIN slide	**SE-CL/A**
12 V	Twin-ax	0.45 A		**TZ-061**
2 V	TV-CC			**CX-06**
24 V	Data lines with 2 wires	0.45 A	Modular 2 wires	**TZ-016/B**
	Data lines with 2 wires	0.45 A	G type DIN slide	**SE-24**
	Data lines with 4 wires	0.45 A	Modular 4 wires	**TZ-040**

General Characteristics	
Common Mode Protection	Yes
Differential Mode Protection	Yes

Safety

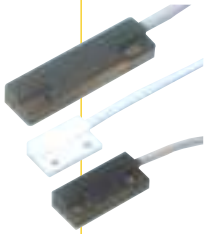
Types

Explosion proof sensors Cylindrical series FSQ, FSJ, FSW



Exter. Dimensions (mm)	REFERENCES Category 2G	REFERENCES Category 1G
Ø16 x 110	**FSQA2B01EX**	**FSQA0B01EX**
Ø16 x 100	**FSJA2B03EX**	**FSJA0B03EX**
M12 x 56	**FSWA9EX**	**FSWA0EX**
23.5x14x6.1		
37x16x8.3		
79x21.2x11.5		
EX Identification	Ex II2GEExmIIT6	Ex II1GEExiaIICT6

Explosion proof sensors Rectangular series MJ, MQ, MW



Output Function	REFERENCES Category 2G	REFERENCES Category 1G
NO	**MWA6EX**	**MWA0EX**
NO	**MQA1EX**	**MQA0EX**
NC	**MQC1EX**	**MQC0EX**
Ch.over	**MQS1EX**	**MQS0EX**
NO	**MJA7EX**	**MJA0EX**
EX Identification	Ex II2GEExmIIT5	Ex II1GEExiaIICT6

General Characteristics

Max switching voltage	230 Vac	10.9 V	230 Vac (MQS1EX 150 Vac)	10.9 V
Max switching current	3A	15 mA	0,5 ÷ 3 A	15 mA
Max switching power	100 VA (FSW 60 VA)	41mW	5 ÷ 100 VA	41mW
Effective int. inductance Li	< 2µH (FSW < 4µH)		<3÷<25µH	<3÷<25µH
Effective int. capacitance Ci	< 40 pF (FSW < 350 pF)		<20÷<300pF	<20÷<300pF
Output function	NO		See selection table	
Temperature Class	T6		T5	T6
Body material	Stainless steel AISI 303		Self-exting. PP + 30% glass fiber	PBT (MW series)

Types

Explosion Proof Sensors Level Series ILM

Float Dimensions (mm)	Output function	REFERENCES Category 2G	REFERENCES Category 1G
Sperichal ø 50	NO	**ILMA2SEX**	**ILMA0SEX**
	Change Over	**ILMS2SEX**	**ILMS0SEX**
Cylindrical ø 45x55	NO	**ILMA2CEX**	**ILMA0CEX**
	Change Over	**ILMS2CEX**	**ILMS0CEX**
EX Identification		Ex II2GEExmIIT5	Ex II1GEExiaIICT6

General Characteristics

Max switching voltage	230 Vac	10.9 V
Max switching current	3 A (ILMS2*EX 1A)	15 mA
Max switching power	100 VA (ILMS2*EX 60 VA)	41 mW
Effective int. inductance Li	<2 µH (ILMS*EX <4µH)	<2 µH (ILMS*EX <4µH)
Effective int. capacitance Ci	<40 pF (ILMS*EX <350 pF)	<40 pF (ILMS*EX <350 pF)
Output function	See selection table	See selection table
Temperature Class	T5	T6
Body material	Stainless steel AISI 316	Stainless steel AISI 316