



SG4 Fieldbus

SAFETY LIGHT CURTAIN WITH POWERLINK FIELDBUS



Safety light curtain with integrated openSAFETY over POWERLINK protocol. Complete diagnostic and monitoring available over the communication bus. Doesn't require programming: safety functions are managed in safety PLC using information sent by the light curtain.

- Fast and easy installation, configuration and maintenance
- Complete diagnostic and monitoring available over the communication bus
- Basic models: classic functions available
- Advanced models: each beam status safe information available
- Two M12 connectors on receiver side for POWERLINK connection

- M8 connectors on emitter and receiver for power supply
- Up to 19 m operating range and 1800 m protected height
- Finger, hand and body protection
- Compact dimensions (35 x 42 mm section)
- POWERLINK node address configurable with selector switches
- Functions available in combination with B&R safety controller SL and SLX: auto/manual restart, EDM, Muting, Override
- Functions available for advanced models in combination with B&R safety controller SL: fixed blanking, floating blanking, partial and dynamic muting, warning areas, measurement



CODE DESCRIPTION

SG 4 - 14 - 015 - DP - B

serie	SG	SG4 Extended							
type	4	Type 4							
resolution/ beams	14	Finger: 14 mm							
	30	Hand: 30 mm							
	2	2 beams							
	3	3 beams							
	4	4 beams							
monitored height	015	150 mm							
	030	300 mm							
	...								
	180	1800 mm							
	060	600 mm (2 beams)							
	080	800 mm (3 beams)							
	090	900 mm (4 beams)							
communication protocol	120	1200 mm (4 beams)							
	OP	openSAFETY over POWERLINK							
safe communi- cation	A	Advanced (all beams transmitted)							
	B	Basic (on/off status transmitted)							

TECHNICAL SPECIFICATIONS

	SG4-14-***-OP-*	SG4-30-***-OP-*
	SAFETY TYPE 4 	SAFETY TYPE 4 
GENERAL DATA		
Operating principle	Emitter + Receiver	
Detection capability	14 mm	30 mm
MONITORED AREA		
Nominal sensing distance	0.2 ... 6 m	0.2 ... 19 m
Controlled height	150 ... 1800 mm	
EMISSION DATA		
Emission	Infrared LED (940nm)	
Effective beam angle	≤ ±2.5 °	
FUNCTIONS		
Available functions	OpenSAFETY/POWERLINK Advanced Functions (SG4-**-***-OP-A), OpenSAFETY/POWERLINK Basic Functions (SG4-**-***-OP-B)	
Included accessories	Standard “L” Mounting Brackets: 4 pcs kit, Standard “L” Mounting Brackets: 6 pcs kit	
SAFETY PARAMETERS		
Type	4	
PL	e	
SIL	SIL 3 (IEC 61508)	
INPUT/OUTPUT		
Output type	POWERLINK	
COMMUNICATION		
Network Interface	openSAFETY/POWERLINK	
ELECTRICAL DATA		
Supply voltage	24 Vdc ±20%	
Power consumption - Emitter	≤ 3 W	
Power consumption - Receiver	≤ 5 W without load	
Maximum DC load current	500 mA each output	
MECHANICAL DATA		
Dimensions	35 x 41.9 x (233.6 ... 1880.3) mm	
Material	Painted aluminum / PMMA / PBT Valox 508	
Connections	M8-4 poles (emitter) M8-4 poles + 2x M12-4 poles D-Coded (receiver)	
Length of cables (Power)	≤ 50 m	
CERTIFICATIONS		
Shocks	16 ms (10 G) 1,000 shocks per axis (EN 60068-2-29)	
Vibrations	Width 0.35 mm, frequency 10 ... 55Hz; 20 sweep per axis, 1octave/min (EN 60068-2-6)	
Electromagnetic compatibility	IEC EN 60947-5-2	
ENVIRONMENTAL DATA		
Operating Temperature	0 ... 50 °C	
Storage temperature max.	-25 ... 70 °C	
Mechanical Protection	IP65	
Humidity	15 ... 95 % no condensation	
Ambient light immunity	According to IEC 61496-2	

TECHNICAL SPECIFICATIONS

	SG4-S2-060-OP-B	SG4-S3-080-OP-B	SG4-S4-***-OP-B
	SAFETY TYPE 4		
GENERAL DATA			
Operating principle	Emitter + Receiver		
Detection capability	600 mm	400 mm	300 mm
MONITORED AREA			
Nominal sensing distance	0.2 ... 19 m		
Controlled height	500 mm	800 mm	900 ... 1200 mm
EMISSION DATA			
Emission	Infrared LED (940nm)		
Effective beam angle	≤ ±2.5 °		
FUNCTIONS			
Available functions	OpenSAFETY/POWERLINK Basic Functions (SG4-**-***-OP-B)		
Included accessories	Standard “L” Mounting Brackets: 4 pcs kit		Standard “L” Mounting Brackets: 4 pcs kit, Standard “L” Mounting Brackets: 6 pcs kit
SAFETY PARAMETERS			
Type	4		
PL	e		
SIL	SIL 3 (IEC 61508)		
INPUT/OUTPUT			
Output type	POWERLINK		
COMMUNICATION			
Network Interface	openSAFETY/POWERLINK		
ELECTRICAL DATA			
Supply voltage	24 Vdc ±20%		
Power consumption - Emitter	≤ 3 W		
Power consumption - Receiver	≤ 5 W without load		
Maximum DC load current	500 mA each output		
MECHANICAL DATA			
Dimensions	35 x 41.9 x (682.7) mm	35 x 41.9 x (982.1) mm	35 x 41.9 x (982.1 ... 1281.5) mm
Material	Painted aluminum / PMMA / PBT Valox 508		
Connections	M8-4 poles (emitter) M8-4 poles + 2x M12-4 poles D-Coded (receiver)		
Length of cables (Power)	≤ 50 m		
CERTIFICATIONS			
Shocks	16 ms (10 G) 1,000 shocks per axis (EN 60068-2-29)		
Vibrations	Width 0.35 mm, frequency 10 ... 55Hz; 20 sweep per axis, 1octave/min (EN 60068-2-6)		
Electromagnetic compatibility	IEC EN 60947-5-2		
ENVIRONMENTAL DATA			
Operating Temperature	0 ... 50 °C		
Storage temperature max.	-25 ... 70 °C		
Mechanical Protection	IP65		
Humidity	15 ... 95 % no condensation		
Ambient light immunity	According to IEC 61496-2		

AVAILABLE MODELS

Type	Detection capa- bility	Nominal sensing distance	Controlled height	Beams number	Response time	Model
4	Finger prot. res. 14 openSAFETY 14 mm	0.2 ... 6 m	150 mm	16	19 ms	SG4-14-015-OP-B (957901770)
					14 ms	SG4-14-015-OP-A (957902050)
			300 mm	32	22 ms	SG4-14-030-OP-B (957901780)
					16 ms	SG4-14-030-OP-A (957902060)
			450 mm	48	18 ms	SG4-14-045-OP-A (957902070)
					25 ms	SG4-14-045-OP-B (957901790)
			600 mm	64	29 ms	SG4-14-060-OP-B (957901800)
					21 ms	SG4-14-060-OP-A (957902080)
			750 mm	80	31 ms	SG4-14-075-OP-B (957901810)
					23 ms	SG4-14-075-OP-A (957902090)
			900 mm	96	35 ms	SG4-14-090-OP-B (957901820)
					25 ms	SG4-14-090-OP-A (957902100)
			1050 mm	112	38 ms	SG4-14-105-OP-B (957901830)
					27 ms	SG4-14-105-OP-A (957902110)
			1200 mm	128	41 ms	SG4-14-120-OP-B (957901840)
					29 ms	SG4-14-120-OP-A (957902120)
			1350 mm	144	44 ms	SG4-14-135-OP-B (957901850)
					31 ms	SG4-14-135-OP-A (957902130)
			1500 mm	160	47 ms	SG4-14-150-OP-B (957901860)
					33 ms	SG4-14-150-OP-A (957902140)
			1650 mm	176	51 ms	SG4-14-165-OP-B (957901870)
					35 ms	SG4-14-165-OP-A (957902150)
			1800 mm	192	54 ms	SG4-14-180-OP-B (957901880)
					38 ms	SG4-14-180-OP-A (957902160)

AVAILABLE MODELS

Type	Detection capa- bility	Nominal sensing distance	Controlled height	Beams number	Response time	Model
4	Hand prot. res. 30 openSAFETY 30 mm	0.2 ... 19 m	150 mm	8	19 ms	SG4-30-015-OP-B (957901890)
					14 ms	SG4-30-015-OP-A (957902170)
			300 mm	16	21 ms	SG4-30-030-OP-B (957901900)
					15 ms	SG4-30-030-OP-A (957902180)
			450 mm	24	16 ms	SG4-30-045-OP-A (957902190)
					22 ms	SG4-30-045-OP-B (957901910)
			600 mm	32	24 ms	SG4-30-060-OP-B (957901920)
					17 ms	SG4-30-060-OP-A (957902200)
			750 mm	40	25 ms	SG4-30-075-OP-B (957901930)
					18 ms	SG4-30-075-OP-A (957902210)
			900 mm	48	27 ms	SG4-30-090-OP-B (957901940)
					19 ms	SG4-30-090-OP-A (957902220)
			1050 mm	56	29 ms	SG4-30-105-OP-B (957901950)
					20 ms	SG4-30-105-OP-A (957902230)
			1200 mm	64	31 ms	SG4-30-120-OP-B (957901960)
					21 ms	SG4-30-120-OP-A (957902240)
			1350 mm	72	32 ms	SG4-30-135-OP-B (957901970)
					23 ms	SG4-30-135-OP-A (957902250)
			1500 mm	80	34 ms	SG4-30-150-OP-B (957901980)
					24 ms	SG4-30-150-OP-A (957902260)
			1650 mm	88	36 ms	SG4-30-165-OP-B (957901990)
					25 ms	SG4-30-165-OP-A (957902270)
			1800 mm	96	38 ms	SG4-30-180-OP-B (957902000)
					27 ms	SG4-30-180-OP-A (957902280)
	Body prot. 2 beams openSAFETY 600 mm		500 mm	2	24 ms	SG4-S2-060-OP-B (957902010)
	Body prot. 3 beams openSAFETY 400 mm		800 mm	3	27 ms	SG4-S3-080-OP-B (957902020)
	Body prot. 4 beams openSAFETY 300 mm		900 mm	4		SG4-S4-090-OP-B (957902030)
			1200 mm		31 ms	SG4-S4-120-OP-B (957902040)

SG4-**-***-OP-*

(Power connector)

MALE
M8
4 pins Emitter

1	Brown	+10...30 Vdc
2	White	N/A
3	Blue	0 Vdc
4	Black	N/A

SG4-**-***-OP-*

(Powerlink Connector)

MALE
M12
4 pins powerlink

1	White/Orange	TxD+
2	White/Green	RxD+
3	Orange	TxD-
4	Green	RxD-

MECHANICAL DRAWINGS

SG4-**-0**-OP-*

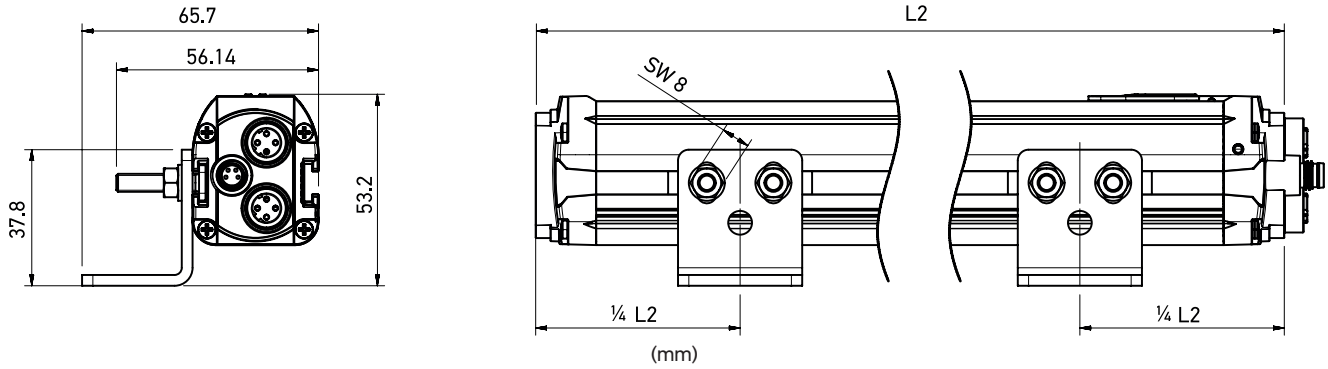
SG4-**-0**-OP-*

(mm)

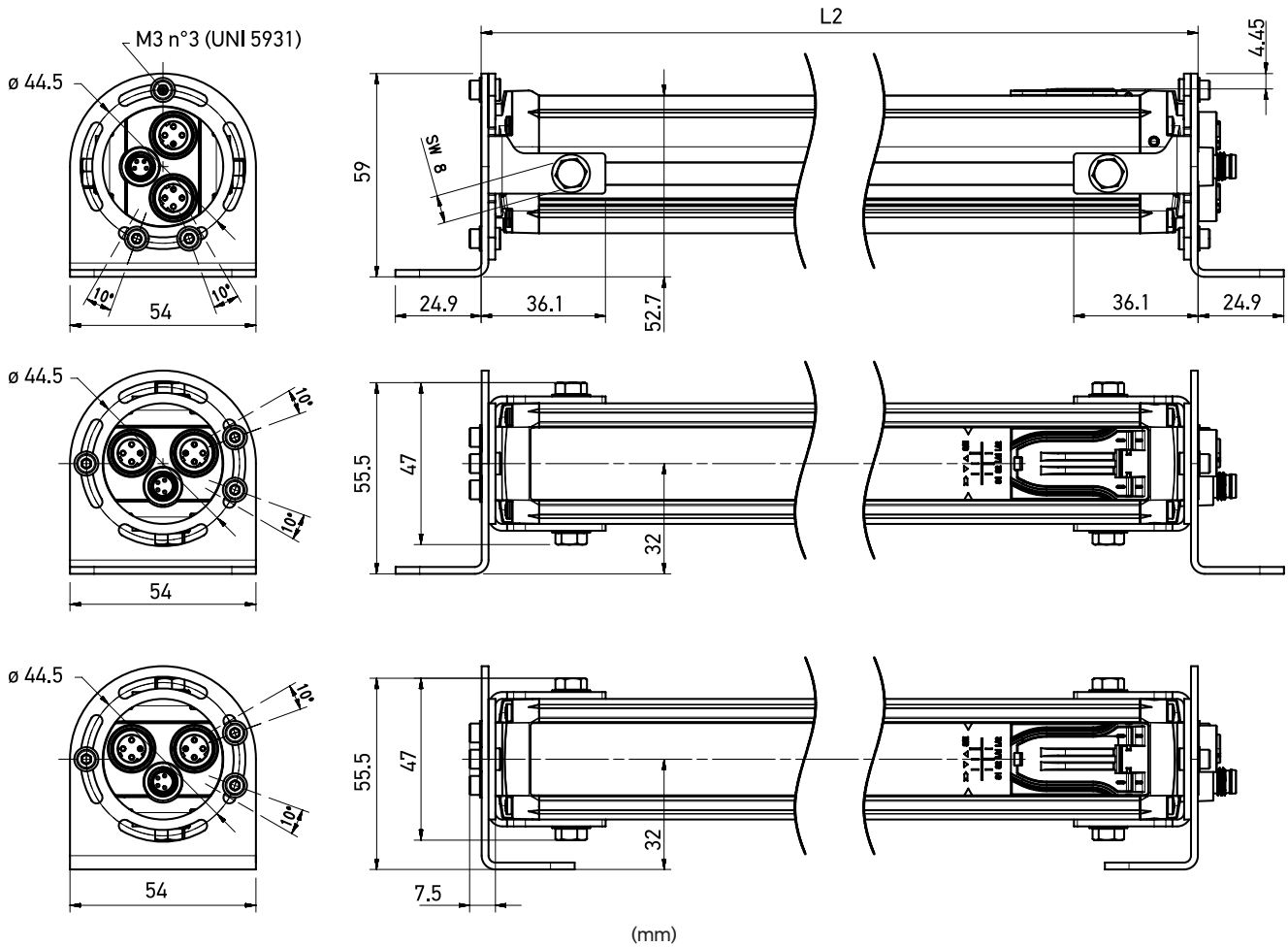
Models	L1 (mm)	L2 (mm)	A	B
SG4-**-015-OP-*	150	236.6	M12 internal (n°2)	M8 external (n°2)
SG4-**-030-OP-*	300	383.3		
SG4-**-045-OP-*	450	533		
SG4-**-060-OP-*	600	682.7		
SG4-**-075-OP-*	750	832.4		
SG4-**-090-OP-*	900	982.1		
SG4-**-105-OP-*	1050	1131.8		
SG4-**-120-OP-*	1200	1281.5		
SG4-**-135-OP-*	1350	1431.2		
SG4-**-150-OP-*	1500	1580.9		
SG4-**-165-OP-*	1650	1739.6		
SG4-**-180-OP-*	1800	1880.3		
SG4-S2-060-OP-*	600	682.7		
SG4-S2-080-OP-*	825	982.1		
SG4-S2-090-OP-*	900			
SG4-S2-120-OP-*	1200	1281.5		

MECHANICAL DRAWINGS

SG4--0**-OP-* SG4 Fieldbus with ST-KTSTD fixing bracket**



SG4--0**-OP-* SG4 fieldbus with ST-K4-R0T-OP fixing brackets**



SG4 Fieldbus ACCESSORIES TO BE ORDERED SEPARATELY

SAFETY LIGHT CURTAINS

	Model	Description	Article code
Cables	CS-B1-02-G-03	CS-B1-02-G-03 4 pins M8 3m grey	95A251420
	CS-B1-02-G-05	CS-B1-02-G-05 = M8 4-p axial 5m	95A251430
	CS-B1-02-G-10	CS-B1-02-G-10 4 pins M8 10m grey	95A251480
	CAB-ETH-M01	M12-RJ45 IP67 ethernet cable 1m	93A051346
	CAB-ETH-M03	M12-RJ45 IP67 ethernet cable 3m	93A051347
	CAB-ETH-M05	M12-RJ45 IP67 ethernet cable 5m	93A051348
	CAB-ETH-M10	M12-RJ45 IP67 ethernet cable 10m	93A051391
Laser pointers	SG-LP	Laser pointer for SG light curtains	95ASE5590
Mirrors	SG-DM-150	Deviating mirror for light curtains h=150mm	95ASE1670
	SG-DM-600	Deviating mirror for light curtains h=600mm	95ASE1680
	SG-DM-900	Deviating mirror for light curtains h=900mm	95ASE1690
	SG-DM-1200	Deviating mirror for light curtains h=1200mm	95ASE1700
	SG-DM-1650	Deviating mirror for light curtains h=1650mm	95ASE1710
	SG-DM-1900	Deviating mirror for light curtains h=1900mm	95ASE1720
Mirrors brackets	ST-PS-DM	SG-PSB protective stand mounting kit for mirror SG-DM 2 nuts	95ASE1770
	ST-DM	Deviating mirrors SG-DM mounting kit on SE-S columns	95ASE1940
Mounting brackets	ST-KSTD	Metal angled brackets 4 pcs kit for SG/SH4	95ACC1670
	ST-K4AV	Anti vibration supports 4 pcs kit to be used with ST-KSTD	95ACC1700
	ST-K6AV	Anti vibration supports 6 pcs kit to be used with ST-KSTD	95ACC1710
	ST-K4R0T-OP	Metal top-bottom rotative brackets 4 pcs kit for SG4 FIELDBUS	95ASE2840
Protective stands	SG-PSB-600	Protective stand for light curtains h=600mm	95ASE2240
	SG-PSB-1000	Protective stand for light curtains h=1000mm	95ASE2250
	SG-PSB-1200	Protective stand for light curtains h=1200mm	95ASE2260
	SG-PSB-1650	Protective stand for light curtains h=1650mm	95ASE2270
	SG-PSB-1900	Protective stand for light curtains h=1900mm	95ASE2280
	SG-P	Plate with springs for protective stands SG-PSB and SG-PSM	95ASE2290
Protective stands brackets kit	ST-PS4-SG-SE	SG-PSB protective stand mounting kit for SG/SH4 4 brackets	95ASE1750
	ST-PS6-SG-SE	SG-PSB protective stand mounting kit for SG/SH4 6 brackets	95ASE1760

COMPATIBILITY WITH B&R HARDWARE AND SOFTWARE

Due to the characteristics of the functional blocks that have been developed by B&R in order to communicate with DATALOGIC SG4 FIELDBUS safety light curtains, always check to have the following versions or newer:

1) SG4 Fieldbus Base:

HW: SafeLOGIC SL81xx, SLXxxx

SW: SafetyRelease 1.10, SafeDESIGNER 4.2.x, Automation Studio 4.2.8.x, SL Upgrades 1.10.x.x

2) SG4 Fieldbus Advanced:

HW: SL81xx only

SW: SafetyRelease 1.10, SafeDESIGNER 4.3.3, Automation Studio 4.3.3, SL Upgrades 1.10.2.x

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