



SH4

TYPE 4 SAFETY LIGHT CURTAINS



- Complete type 4 safety light curtains line
- Finger (14 mm), hand (30 mm), or body protection
- Improved performance and features
- Compact profile (35 x 40 mm)
- Wide range scalable in Base, Standard and Advanced models
- Simultaneous muting and blanking
- Innovative wireless monitoring and configuration system
- Optical two beams synchronization and anti-interference coding
- Base functions: alignment, automatic restart
- Standard functions: manual restart, EDM
- Standard Muting functions: 2-signals mono and bidirectional muting, override
- Advanced functions: partial muting, dynamic partial muting, 4-signals muting, reduced resolution, multiple fixed or floating blanking zones
- Active/Passive version for body protection



CODE DESCRIPTION

	SH	4	-	14	-	0300	-	SM	-	AP	-	8	-	5
series	SH	Safety light curtain												
type	4	Type 4												
detection capability	14	Finger: 14 mm												
	30	Hand: 30 mm												
	2	Body: 2 Beams												
	3	Body: 3 Beams												
	4	Body: 4 Beams												
monitored height	0300	300 mm												
	...													
	2250	2250 mm												
functionality	B	Base												
	S	Standard												
	SM	Standard muting												
	A	Advanced												
	C	Cascade												
optical structure		Emitter and receiver												
	AP	Active side and retroreflective passive side												
receiver main connector	5	5-pins male M12												
	8	8-pins male M12												
	12	12-pins male M12												
receiver secondary connector		No connector												
	5	5-pin female M12												

TECHNICAL FEATURES

	SH4-14-****-*-***	SH4-30-****-*-***
		
Protection	finger	hand
Type (EN61496-1)	4	
PL (EN ISO 13849-1)	e	
SIL (IEC 61508)	3	
Optical structure	Emitter and Receiver	
Protected height	300...2250 mm (with 150 mm steps)	
Detection capability	14 mm	30 mm
Operating range	0.2 ... 10 m	0.2 ... 20 m
Operating distance using muting arms (SG-F1/G1-ARMS and SG-F2/G2-ARMS)	0.5 ... 7 m	
Operating distance using reflective muting arms (SH4-T-ARMS or SH4-L-ARMS)	0.5 ... 3 m	
Dead Zone	No dead zone	
Cascade connection	Up to 3 units	
Power supply (Vdc)	24 Vdc $\pm$ 20%	
Transmitter consumption	3.5 W max	
Receiver consumption	5.5 W max (without load)	
Safe Outputs	2 OSSD, with short circuit protection	
Auxiliary Outputs	2 PNP, with short circuit protection	
Output current	250 mA max / each output, 500 mA max total outputs	
Capacitive load	1 μ F @ 24Vdc max	
Leakage current	< 1 mA	
Response time	from 12 to 30 ms (14 mm res)	from 10 to 19 ms (30 mm res)
Cables length	30 m	
Electrical protection	Class III	
Light source	Infrared LED (850 nm wavelength)	
Effective aperture angle (EAA)	< $\pm$ 2.5° at 3 m	
Operating temperature	-30 ... +55 °C	
Storage temperature	-30 ... +70 °C	
Temperature class	T6	
Humidity	15 ... 95 % (no condensation)	
Mechanical protection	IP65, IP 67 (EN 60529)	
Vibrations resistance	10 mm / 3 g, 5 ... 150 Hz frequency (EN 60068-2-6 / Class 3M7 IEC TR 60721-4-3)	
Shock resistance	25 g x 6 ms x 600 (EN 60068-2-27 / Class 3M7 IEC TR 60721-4-3)	
Weight	1.4 Kg/m (single bar, without package)	
Housing Material	Painted aluminium (yellow RAL 1003)	
Caps and covers material	PBT	
Window material	MAKROLON AR 7099 Clear PC	
Functions BASE models (SH4-*-B-*)	Automatic Restart	
Functions STANDARD models (SH4-*-S-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode	
Functions STANDARD MUTING models (SH4-*-SM-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding	
Functions ADVANCED models (SH4-*-A-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding, 4-signals Muting, Dynamic partial muting, Partial Muting (at beams level), Fixed Blanking, External signal fixed blanking teach-in, Floating Blanking, Reduced resolution, Integrated laser aimer	
Functions CASCADE models (SH4-*-C-*)	Cascade models acquire the same functions of the main unit to which they are connected (STANDARD MUTING or ADVANCED)	
Configuration BASE models (SH4-*-B-*) and STANDARD models (SH4-*-S-*)	By Wiring	
Configuration STANDARD MUTING models (SH4-*-SM-*)	By DIP-Switches	
Configuration ADVANCED models (SH4-*-A-*)	By DATASENSING SH4 DESIGNER and wi-fi connection	

	SH4-2-0500-*-*-*	SH4-3-0800-*-*-*	SH4-4-****-*-*-*
			
Protection	body		
Type (EN61496-1)	4		
PL (EN ISO 13849-1)	e		
SIL (IEC 61508)	3		
Optical structure	Emitter and Receiver		
Protected height	500 mm	800 mm	900 or 1200 mm
Detection capability	500 mm	400 mm	300 or 400 mm
Operating range	Short range: 0.5 ... 15 m (default value); Long range: 5 ... 70 m (selectable)		
Operating distance using muting arms (SG-F1/G1-ARMS and SG-F2/G2-ARMS)	0.5 ... 7 m		
Operating distance using reflective muting arms (SH4-T-ARMS or SH4-L-ARMS)	0.5 ... 3 m		
Dead Zone	130 mm Distance from bottom to first beam		
Cascade connection	Not possible		
Power supply (Vdc)	24 Vdc $\pm$ 20%		
Transmitter consumption	3.5 W max		
Receiver consumption	5.5 W max (without load)		
Safe Outputs	2 OSSD, with short circuit protection		
Auxiliary Outputs	2 PNP, with short circuit protection		
Output current	250 mA max / each output, 500 mA max total outputs		
Capacitive load	1 μ F @ 24Vdc max		
Leakage current	< 1 mA		
Response time	from 12 to 15 ms		
Cables length	30 m receiver; 50 m transmitter		
Electrical protection	Class III		
Light source	Infrared LED (850 nm wavelength)		
Effective aperture angle (EAA)	< $\pm$ 2.5° at 3 m		
Operating temperature	-30 ...+55 °C		
Storage temperature	-30 ...+70 °C		
Temperature class	T6		
Humidity	15 ... 95 % (no condensation)		
Mechanical protection	IP65, IP 67 (EN 60529)		
Vibrations resistance	10 mm / 3 g, 5 ... 150 Hz frequency (EN 60068-2-6 / Class 3M7 IEC TR 60721-4-3)		
Shock resistance	25 g x 6 ms x 600 (EN 60068-2-27 / Class 3M7 IEC TR 60721-4-3)		
Weight	1.4 Kg/m (single bar, without package)		
Housing Material	Painted aluminium (yellow RAL 1003)		
Caps and covers material	PBT		
Window material	MAKROLON AR 7099 Clear PC		
Functions BASE models (SH4-*B-*)	Automatic Restart		
Functions STANDARD models (SH4-*S-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode		
Functions STANDARD MUTING models (SH4-*SM-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding		
Functions ADVANCED models (SH4-*A-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding, 4-signals Muting, Dynamic partial muting, Partial Muting (at beams level), Fixed Blanking, External signal fixed blanking teach-in, Floating Blanking, Reduced resolution, Integrated red LED aimers for each beam		
Configuration BASE models (SH4-*B-*) and STANDARD models (SH4-*S-*)	By Wiring		
Configuration STANDARD MUTING models (SH4-*SM-*)	By DIP-Switches		
Configuration ADVANCED models (SH4-*A-*)	By DATASENSING SH4 DESIGNER and wi-fi connection		

	SH4-2-0500-*AP-***	SH4-3-0800-*AP-***	SH4-4-****-*AP-***
Protection	 body		
Type (EN61496-1)	4		
PL (EN ISO 13849-1)	e		
SIL (IEC 61508)	3		
Optical structure	Active Side and Retroreflective Passive Side		
Protected height	500 mm	800 mm	900 or 1200 mm
Detection capability	500 mm	400 mm	300 mm
Operating range	0.5 ... 8 m	0.5 ... 8 m	0.5 ... 6.5 m (SH4-4-0900-AP-*) 0.5 ... 8 m (SH4-4-1200-AP-*)
Operating distance using reflective muting arms (SH4-T-ARMS or SH4-L-ARMS)	0.5 ... 3 m		
Dead Zone	130 mm Distance from bottom to first beam		
Cascade connection	Not possible		
Power supply (Vdc)	24 Vdc ± 20%		
Active unit consumption	2 W max (without load)		
Safe Outputs	2 OSSD, with short circuit protection		
Auxiliary Outputs	2 PNP, with short circuit protection		
Output current	250 mA max / each output, 500 mA max total outputs		
Capacitive load	1 uF @ 24Vdc max		
Leakage current	< 1 mA		
Response time	15 ms		
Cables length	30 m		
Electrical protection	Class III		
Light source	Infrared LED (850 nm wavelength)		
Effective aperture angle (EAA)	< ± 2.5° at 3 m		
Operating temperature	-30 ...+55 °C		
Storage temperature	-30 ...+70 °C		
Temperature class	T6		
Humidity	15 ... 95 % (no condensation)		
Mechanical protection	IP65, IP 67 (EN 60529)		
Vibrations resistance	10 mm / 3 g, 5 ... 150 Hz frequency (EN 60068-2-6 / Class 3M7 IEC TR 60721-4-3)		
Shock resistance	25 g x 6 ms x 600 (EN 60068-2-27 / Class 3M7 IEC TR 60721-4-3)		
Weight	1.4 Kg/m (single bar, without package)		
Housing Material	Painted aluminium (yellow RAL 1003)		
Caps and covers material	PBT		
Window material	MAKROLON AR 7099 Clear PC		
Functions BASE models (SH4-*B-*)	Automatic Restart		
Functions STANDARD models (SH4-*S-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode		
Functions STANDARD MUTING models (SH4-*SM-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding		
Functions ADVANCED models (SH4-*A-*)	Manual / Automatic Restart, Reset, External Device Monitoring (EDM), Alignment mode, 2-signals T Muting / L Muting, Muting dependent Override, Partial muting (half protection height), Muting input filtering and timeout setting, Anti-interference coding, 4-signals Muting, Dynamic partial muting, Partial Muting (at beams level), Fixed Blanking		
Configuration BASIC models (SH4-*B-*) and STANDARD models (SH4-*S-*)	By Wiring		
Configuration STANDARD MUTING models (SH4-*SM-*)	By DIP-Switches		
Configuration ADVANCED models (SH4-*A-*)	By DATASENSING SH4 DESIGNER and wi-fi connection		

AVAILABLE MODELS

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Model
14 mm	0.2 ... 10 m	basic	5 poles	300	30	9	SH4-14-0300-B-5 (957920001)
				450	45	10	SH4-14-0450-B-5 (957920002)
				600	60	12	SH4-14-0600-B-5 (957920003)
				750	75	13	SH4-14-0750-B-5 (957920004)
				900	90	15	SH4-14-0900-B-5 (957920005)
				1050	105	16	SH4-14-1050-B-5 (957920006)
				1200	120	18	SH4-14-1200-B-5 (957920007)
				1350	135	20	SH4-14-1350-B-5 (957920008)
				1500	150	21	SH4-14-1500-B-5 (957920009)
				1650	165	23	SH4-14-1650-B-5 (957920010)
				1800	180	24	SH4-14-1800-B-5 (957920011)
				1950	195	26	SH4-14-1950-B-5 (957920012)
				2100	210	27	SH4-14-2100-B-5 (957920013)
14 mm	0.2 ... 10 m	standard	8 poles	2250	225	29	SH4-14-2250-B-5 (957920014)
				300	30	9	SH4-14-0300-S-8 (957920015)
				450	45	10	SH4-14-0450-S-8 (957920016)
				600	60	12	SH4-14-0600-S-8 (957920017)
				750	75	13	SH4-14-0750-S-8 (957920018)
				900	90	15	SH4-14-0900-S-8 (957920019)
				1050	105	16	SH4-14-1050-S-8 (957920020)
				1200	120	18	SH4-14-1200-S-8 (957920021)
				1350	135	20	SH4-14-1350-S-8 (957920022)
				1500	150	21	SH4-14-1500-S-8 (957920023)
				1650	165	23	SH4-14-1650-S-8 (957920024)
				1800	180	24	SH4-14-1800-S-8 (957920025)
				1950	195	26	SH4-14-1950-S-8 (957920026)
				2100	210	27	SH4-14-2100-S-8 (957920027)
				2250	225	29	SH4-14-2250-S-8 (957920028)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Response time (ms) with Anti-Interference code enabled	Model
14 mm	0.2 ... 10 m	standard muting	8 poles	300	30	9	14	SH4-14-0300-SM-8 (957920043)
				450	45	10	18	SH4-14-0450-SM-8 (957920044)
				600	60	12	22	SH4-14-0600-SM-8 (957920045)
				750	75	13	26	SH4-14-0750-SM-8 (957920046)
				900	90	15	30	SH4-14-0900-SM-8 (957920047)
				1050	105	16	33	SH4-14-1050-SM-8 (957920048)
				1200	120	18	37	SH4-14-1200-SM-8 (957920049)
				1350	135	20	41	SH4-14-1350-SM-8 (957920050)
				1500	150	21	45	SH4-14-1500-SM-8 (957920051)
				1650	165	23	49	SH4-14-1650-SM-8 (957920052)
				1800	180	24	52	SH4-14-1800-SM-8 (957920053)
				1950	195	26	56	SH4-14-1950-SM-8 (957920054)
				2100	210	27	60	SH4-14-2100-SM-8 (957920055)
				2250	225	29	64	SH4-14-2250-SM-8 (957920056)
14 mm	0.2 ... 10 m	standard muting	8 and 5 poles	300	30	9	14	SH4-14-0300-SM-8-5 (957920565)
				450	45	10	18	SH4-14-0450-SM-8-5 (957920566)
				600	60	12	22	SH4-14-0600-SM-8-5 (957920567)
				750	75	13	26	SH4-14-0750-SM-8-5 (957920568)
				900	90	15	30	SH4-14-0900-SM-8-5 (957920569)
				1050	105	16	33	SH4-14-1050-SM-8-5 (957920570)
				1200	120	18	37	SH4-14-1200-SM-8-5 (957920571)
				1350	135	20	41	SH4-14-1350-SM-8-5 (957920572)
				1500	150	21	45	SH4-14-1500-SM-8-5 (957920573)
				1650	165	23	49	SH4-14-1650-SM-8-5 (957920574)
				1800	180	24	52	SH4-14-1800-SM-8-5 (957920575)
				1950	195	26	56	SH4-14-1950-SM-8-5 (957920576)
				2100	210	27	60	SH4-14-2100-SM-8-5 (957920577)
				2250	225	29	64	SH4-14-2250-SM-8-5 (957920578)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Response time (ms) with Anti-Interference code enabled	Model
14 mm	0.2 ... 10 m	advanced	12 poles	300	30	9	14	SH4-14-0300-A-12 (957920147)
				450	45	10	18	SH4-14-0450-A-12 (957920148)
				600	60	12	22	SH4-14-0600-A-12 (957920149)
				750	75	13	26	SH4-14-0750-A-12 (957920150)
				900	90	15	30	SH4-14-0900-A-12 (957920151)
				1050	105	16	33	SH4-14-1050-A-12 (957920152)
				1200	120	18	37	SH4-14-1200-A-12 (957920153)
				1350	135	20	41	SH4-14-1350-A-12 (957920154)
				1500	150	21	45	SH4-14-1500-A-12 (957920155)
				1650	165	23	49	SH4-14-1650-A-12 (957920156)
				1800	180	24	52	SH4-14-1800-A-12 (957920157)
				1950	195	26	56	SH4-14-1950-A-12 (957920158)
				2100	210	27	60	SH4-14-2100-A-12 (957920159)
				2250	225	29	64	SH4-14-2250-A-12 (957920160)
14 mm	0.2 ... 10 m	advanced	12 and 5 poles	300	30	9	14	SH4-14-0300-A-12-5 (957920161)
				450	45	10	18	SH4-14-0450-A-12-5 (957920162)
				600	60	12	22	SH4-14-0600-A-12-5 (957920163)
				750	75	13	26	SH4-14-0750-A-12-5 (957920164)
				900	90	15	30	SH4-14-0900-A-12-5 (957920165)
				1050	105	16	33	SH4-14-1050-A-12-5 (957920166)
				1200	120	18	37	SH4-14-1200-A-12-5 (957920167)
				1350	135	20	41	SH4-14-1350-A-12-5 (957920168)
				1500	150	21	45	SH4-14-1500-A-12-5 (957920169)
				1650	165	23	49	SH4-14-1650-A-12-5 (957920170)
				1800	180	24	52	SH4-14-1800-A-12-5 (957920171)
				1950	195	26	56	SH4-14-1950-A-12-5 (957920172)
				2100	210	27	60	SH4-14-2100-A-12-5 (957920173)
				2250	225	29	64	SH4-14-2250-A-12-5 (957920174)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Response time (ms) with Anti-Interference code enabled	Model
14 mm	0.2 ... 10 m	cascade	5 and 5 poles	300	30	9	14	SH4-14-0300-C-5-5 (957920029)
				450	45	10	18	SH4-14-0450-C-5-5 (957920030)
				600	60	12	22	SH4-14-0600-C-5-5 (957920031)
				750	75	13	26	SH4-14-0750-C-5-5 (957920032)
				900	90	15	30	SH4-14-0900-C-5-5 (957920033)
				1050	105	16	33	SH4-14-1050-C-5-5 (957920034)
				1200	120	18	37	SH4-14-1200-C-5-5 (957920035)
				1350	135	20	41	SH4-14-1350-C-5-5 (957920036)
				1500	150	21	45	SH4-14-1500-C-5-5 (957920037)
				1650	165	23	49	SH4-14-1650-C-5-5 (957920038)
				1800	180	24	52	SH4-14-1800-C-5-5 (957920039)
				1950	195	26	56	SH4-14-1950-C-5-5 (957920040)
				2100	210	27	60	SH4-14-2100-C-5-5 (957920041)
				2250	225	29	64	SH4-14-2250-C-5-5 (957920042)
30 mm	0.2 ... 20 m	base	5 poles	300	12	7	-	SH4-30-0300-B-5 (957920057)
				450	18	8	-	SH4-30-0450-B-5 (957920058)
				600	24	9	-	SH4-30-0600-B-5 (957920059)
				750	30	9	-	SH4-30-0750-B-5 (957920060)
				900	36	10	-	SH4-30-0900-B-5 (957920061)
				1050	42	11	-	SH4-30-1050-B-5 (957920062)
				1200	48	12	-	SH4-30-1200-B-5 (957920063)
				1350	54	12	-	SH4-30-1350-B-5 (957920064)
				1500	60	13	-	SH4-30-1500-B-5 (957920065)
				1650	66	14	-	SH4-30-1650-B-5 (957920066)
				1800	72	14	-	SH4-30-1800-B-5 (957920067)
				1950	78	15	-	SH4-30-1950-B-5 (957920068)
				2100	84	16	-	SH4-30-2100-B-5 (957920069)
				2250	90	17	-	SH4-30-2250-B-5 (957920070)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Response time (ms) with Anti-Interference code enabled	Model
30 mm	0.2 ... 20 m	standard	8 poles	300	12	7	-	SH4-30-0300-S-8 (957920071)
				450	18	8	-	SH4-30-0450-S-8 (957920072)
				600	24	9	-	SH4-30-0600-S-8 (957920073)
				750	30	9	-	SH4-30-0750-S-8 (957920074)
				900	36	10	-	SH4-30-0900-S-8 (957920075)
				1050	42	11	-	SH4-30-1050-S-8 (957920076)
				1200	48	12	-	SH4-30-1200-S-8 (957920077)
				1350	54	12	-	SH4-30-1350-S-8 (957920078)
				1500	60	13	-	SH4-30-1500-S-8 (957920079)
				1650	66	14	-	SH4-30-1650-S-8 (957920080)
				1800	72	14	-	SH4-30-1800-S-8 (957920081)
				1950	78	15	-	SH4-30-1950-S-8 (957920082)
				2100	84	16	-	SH4-30-2100-S-8 (957920083)
				2250	90	17	-	SH4-30-2250-S-8 (957920084)
30 mm	0.2 ... 20 m	standard muting	8 poles	300	12	7	10	SH4-30-0300-SM-8 (957920099)
				450	18	8	12	SH4-30-0450-SM-8 (957920100)
				600	24	9	13	SH4-30-0600-SM-8 (957920101)
				750	30	9	15	SH4-30-0750-SM-8 (957920102)
				900	36	10	17	SH4-30-0900-SM-8 (957920103)
				1050	42	11	18	SH4-30-1050-SM-8 (957920104)
				1200	48	12	20	SH4-30-1200-SM-8 (957920105)
				1350	54	12	22	SH4-30-1350-SM-8 (957920106)
				1500	60	13	23	SH4-30-1500-SM-8 (957920107)
				1650	66	14	25	SH4-30-1650-SM-8 (957920108)
				1800	72	14	27	SH4-30-1800-SM-8 (957920109)
				1950	78	15	28	SH4-30-1950-SM-8 (957920110)
				2100	84	16	30	SH4-30-2100-SM-8 (957920111)
				2250	90	17	32	SH4-30-2250-SM-8 (957920112)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Response time (ms) with Anti-Interference code enabled	Model
30 mm	0.2 ... 20 m	standard muting	8 and 5 poles	300	12	7	10	SH4-30-0300-SM-8-5 (957920085)
				450	18	8	12	SH4-30-0450-SM-8-5 (957920086)
				600	24	9	13	SH4-30-0600-SM-8-5 (957920087)
				750	30	9	15	SH4-30-0750-SM-8-5 (957920088)
				900	36	10	17	SH4-30-0900-SM-8-5 (957920089)
				1050	42	11	18	SH4-30-1050-SM-8-5 (957920090)
				1200	48	12	20	SH4-30-1200-SM-8-5 (957920091)
				1350	54	12	22	SH4-30-1350-SM-8-5 (957920092)
				1500	60	13	23	SH4-30-1500-SM-8-5 (957920093)
				1650	66	14	25	SH4-30-1650-SM-8-5 (957920094)
				1800	72	14	27	SH4-30-1800-SM-8-5 (957920095)
				1950	78	15	28	SH4-30-1950-SM-8-5 (957920096)
				2100	84	16	30	SH4-30-2100-SM-8-5 (957920097)
				2250	90	17	32	SH4-30-2250-SM-8-5 (957920098)
30 mm	0.2 ... 20 m	advanced	12 poles	300	12	7	10	SH4-30-0300-A-12 (957920189)
				450	18	8	12	SH4-30-0450-A-12 (957920190)
				600	24	9	13	SH4-30-0600-A-12 (957920191)
				750	30	9	15	SH4-30-0750-A-12 (957920192)
				900	36	10	17	SH4-30-0900-A-12 (957920193)
				1050	42	11	18	SH4-30-1050-A-12 (957920194)
				1200	48	12	20	SH4-30-1200-A-12 (957920195)
				1350	54	12	22	SH4-30-1350-A-12 (957920196)
				1500	60	13	23	SH4-30-1500-A-12 (957920197)
				1650	66	14	25	SH4-30-1650-A-12 (957920198)
				1800	72	14	27	SH4-30-1800-A-12 (957920199)
				1950	78	15	28	SH4-30-1950-A-12 (957920200)
				2100	84	16	30	SH4-30-2100-A-12 (957920201)
				2250	90	17	32	SH4-30-2250-A-12 (957920202)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Response time (ms) with Anti-Interference code enabled	Model
30 mm	0.2 ... 20 m	advanced	5 and 12 poles	300	12	7	10	SH4-30-0300-A-12-5 (957920203)
				450	18	8	12	SH4-30-0450-A-12-5 (957920204)
				600	24	9	13	SH4-30-0600-A-12-5 (957920205)
				750	30	9	15	SH4-30-0750-A-12-5 (957920206)
				900	36	10	17	SH4-30-0900-A-12-5 (957920207)
				1050	42	11	18	SH4-30-1050-A-12-5 (957920208)
				1200	48	12	20	SH4-30-1200-A-12-5 (957920209)
				1350	54	12	22	SH4-30-1350-A-12-5 (957920210)
				1500	60	13	23	SH4-30-1500-A-12-5 (957920211)
				1650	66	14	25	SH4-30-1650-A-12-5 (957920212)
				1800	72	14	27	SH4-30-1800-A-12-5 (957920213)
				1950	78	15	28	SH4-30-1950-A-12-5 (957920214)
				2100	84	16	30	SH4-30-2100-A-12-5 (957920215)
				2250	90	17	32	SH4-30-2250-A-12-5 (957920216)
30 mm	0.2 ... 20 m	cascade	5 and 5 poles	300	12	7	10	SH4-30-0300-C-5-5 (957920113)
				450	18	8	12	SH4-30-0450-C-5-5 (957920114)
				600	24	9	13	SH4-30-0600-C-5-5 (957920115)
				750	30	9	15	SH4-30-0750-C-5-5 (957920116)
				900	36	10	17	SH4-30-0900-C-5-5 (957920117)
				1050	42	11	18	SH4-30-1050-C-5-5 (957920118)
				1200	48	12	20	SH4-30-1200-C-5-5 (957920119)
				1350	54	12	22	SH4-30-1350-C-5-5 (957920120)
				1500	60	13	23	SH4-30-1500-C-5-5 (957920121)
				1650	66	14	25	SH4-30-1650-C-5-5 (957920122)
				1800	72	14	27	SH4-30-1800-C-5-5 (957920123)
				1950	78	15	28	SH4-30-1950-C-5-5 (957920124)
				2100	84	16	30	SH4-30-2100-C-5-5 (957920125)
				2250	90	17	32	SH4-30-2250-C-5-5 (957920126)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Response time (ms) with Anti-Interference code enabled	Model
body detection	0.5 ... 70 m	base	5 poles	500	2	12	-	SH4-2-0500-B-5 (957920127)
				800	3	15	-	SH4-3-0800-B-5 (957920128)
				900	4	15	-	SH4-4-0900-B-5 (957920129)
				1200	4	15	-	SH4-4-1200-B-5 (957920130)
		standard	8 poles	500	2	12	-	SH4-2-0500-S-8 (957920131)
				800	3	15	-	SH4-3-0800-S-8 (957920132)
				900	4	15	-	SH4-4-0900-S-8 (957920133)
				1200	4	15	-	SH4-4-1200-S-8 (957920134)
		standard muting	8 poles	500	2	12	23	SH4-2-0500-SM-8 (957920139)
				800	3	15	27	SH4-3-0800-SM-8 (957920140)
				900	4	15	29	SH4-4-0900-SM-8 (957920141)
				1200	4	15	29	SH4-4-1200-SM-8 (957920142)
		standard muting	8 and 5 poles	500	2	12	23	SH4-2-0500-SM-8-5 (957920135)
				800	3	15	27	SH4-3-0800-SM-8-5 (957920136)
				900	4	15	29	SH4-4-0900-SM-8-5 (957920137)
				1200	4	15	29	SH4-4-1200-SM-8-5 (957920138)
		advanced	12 and 5 poles	500	2	12	23	SH4-2-0500-A-12-5 (957920231)
				800	3	15	27	SH4-3-0800-A-12-5 (957920232)
				900	4	15	29	SH4-4-0900-A-12-5 (957920233)
				1200	4	15	29	SH4-4-1200-A-12-5 (957920234)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

Capability	Range	Functionality	Receiver connector	Protected height (mm)	Beams	Response time (ms) with Anti-Interference code disabled	Response time (ms) with Anti-Interference code enabled	Model
body detection	0.5 ... 8 m	basic	5 poles	500	2	15	-	SH4-2-0500-B-AP-5 (957920143)
	0.5 ... 6.5			800	4	15	-	SH4-3-0800-B-AP-5 (957920144)
	0.5 ... 8 m			900	4	15	-	SH4-4-0900-B-AP-5 (957920145)
	0.5 ... 8 m			1200	4	15	-	SH4-4-1200-B-AP-5 (957920146)
	0.5 ... 8 m	standard muting	8 poles	500	2	15	-	SH4-2-0500-SM-AP-8 (957920561)
	0.5 ... 6.5			800	4	15	-	SH4-3-0800-SM-AP-8 (957920562)
	0.5 ... 8 m			900	4	15	-	SH4-4-0900-SM-AP-8 (957920563)
	0.5 ... 8 m			1200	4	15	-	SH4-4-1200-SM-AP-8 (957920564)
	0.5 ... 8 m	advanced	12 and 5 poles	500	2	15	-	SH4-2-0500-A-AP-12-5 (957920239)
	0.5 ... 6.5			800	4	15	-	SH4-3-0800-A-AP-12-5 (957920240)
	0.5 ... 8 m			900	4	15	-	SH4-4-0900-A-AP-12-5 (957920241)
	0.5 ... 8 m			1200	4	15	-	SH4-4-1200-A-AP-12-5 (957920242)

For units in cascade, the overall response time is given by this formula. 2 units: (sum of units response time + 1 ms); 3 units: (sum of units response time - 1 ms)

CONNECTION DIAGRAMS (RECEIVER MAIN CONNECTOR)

SH4 BASE (SH4-**-****-B(-AP)-5): M12 male 5-poles		SH4 STANDARD (SH4-**-****-S-8): M12 male 8-poles																																																																																																	
	<table><tr><td>1</td><td>BROWN</td><td>24 Vdc</td><td>POWER</td></tr><tr><td>2</td><td>WHITE</td><td>OSSD1</td><td>SAFE OUTPUT</td></tr><tr><td>3</td><td>BLUE</td><td>0 Vdc</td><td>POWER</td></tr><tr><td>4</td><td>BLACK</td><td>OSSD2</td><td>SAFE OUTPUT</td></tr><tr><td>5</td><td>GREY</td><td>COM</td><td>COM</td></tr></table>	1	BROWN	24 Vdc	POWER	2	WHITE	OSSD1	SAFE OUTPUT	3	BLUE	0 Vdc	POWER	4	BLACK	OSSD2	SAFE OUTPUT	5	GREY	COM	COM		<table><tr><td>1</td><td>WHITE</td><td>RESTART/ RESET</td><td>INPUT</td></tr><tr><td>2</td><td>BROWN</td><td>24Vdc</td><td>POWER</td></tr><tr><td>3</td><td>GREEN</td><td>EDM / SE-LECTION</td><td>INPUT</td></tr><tr><td>4</td><td>YELLOW</td><td>EDM</td><td>INPUT</td></tr><tr><td>5</td><td>GREY</td><td>OSSD1</td><td>SAFE OUTPUT</td></tr><tr><td>6</td><td>PINK</td><td>OSSD2</td><td>SAFE OUTPUT</td></tr><tr><td>7</td><td>BLUE</td><td>0 Vdc</td><td>POWER</td></tr><tr><td>8</td><td>RED</td><td>MAN/AUTO SELECTION</td><td>INPUT</td></tr></table>	1	WHITE	RESTART/ RESET	INPUT	2	BROWN	24Vdc	POWER	3	GREEN	EDM / SE-LECTION	INPUT	4	YELLOW	EDM	INPUT	5	GREY	OSSD1	SAFE OUTPUT	6	PINK	OSSD2	SAFE OUTPUT	7	BLUE	0 Vdc	POWER	8	RED	MAN/AUTO SELECTION	INPUT																																												
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SH4 ST. MUTING (SH4-**-****-SM(-AP)-8): M12 male 8-poles		SH4 STAND. MUTING (SH4-**-****-A(-AP)-12-5): M12 male 8-poles																																																																																																	
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8	RED	OVER-RIDE 2	INPUT																																																																																																
SH4 ADVANCED (SH4-**-****-A-12): M12 male 12-poles		SH4 ADVANCED (SH4-**-****-A(-AP)-12-5): M12 male 12-poles																																																																																																	
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12	RED/BLUE	N/A																																																																																																	

NOTES:

Inputs and Outputs of SH4 ADVANCED can be reconfigured with DATASENSING SH4 DESIGNER APP between the following:

INPUTS				OUTPUTS	
• Reset	• EDM	• Muting3	• Override1	• Lamp	
• Restart	• Muting1	• Muting4	• Teach in	• Override status	
• Align	• Muting2	• Muting Enable	• Beam Tolerance		

CONNECTION DIAGRAMS (RECEIVER SECONDARY CONNECTOR)

SH4 STANDARD MUTING (SH4-**-****-S-8-5): M12 female 5-poles				
SH4 ADV.MUTING (SH4-**-****-A(-AP)-12-5): M12 female 5-poles				
	1	BROWN	24 Vdc	POWER OUTPUT
	2	WHITE	MUTING2	SAFE OUTPUT
	3	BLUE	0 Vdc	POWER OUTPUT
	4	BLACK	MUTING1	SAFE OUTPUT
	5	GREY	COM	COM

CONNECTION DIAGRAMS (TRANSMITTER MAIN CONNECTOR)

SH4 BASE (SH4-**-****-B-5): M12 male 5-poles				
	1	BROWN	24 Vdc	POWER
	2	WHITE	N/A	
	3	BLUE	0 Vdc	POWER
	4	BLACK	N/A	
	5	GREY	N/A	

SH4 STANDARD (SH4-**-****-S-8): M12 male 5-poles				
SH4 STANDARD MUTING (SH4-**-****-SM-*): M12 male 5-poles				
	1	BROWN	24 Vdc	POWER
	2	WHITE	TEST	INPUT
	3	BLUE	0 Vdc	POWER
	4	BLACK	CODE	INPUT
	5	GREY	N/A	

SH4 ADVANCED (SH4-**-****-A-*): M12 male 5-poles				
	1	BROWN	24 Vdc	POWER
	2	WHITE	TEST/ POINTER	INPUT
	3	BLUE	24 Vdc	POWER
	4	BLACK	CODE	INPUT
	5	GREY	COM	COM

CONNECTION DIAGRAMS (TRANSMITTER SECONDARY CONNECTOR)

SH4 STANDARD MUTING (SH4-**-****-SM-8-5): M12 female 5-poles				
	1	BROWN	24 Vdc	POWER
	2	WHITE	TEST	INPUT
	3	BLUE	0 Vdc	POWER
	4	BLACK	CODE	INPUT
	5	GREY	COM	COM

SH4 ADVANCED (SH4-**-****-A-12-5): M12 female 5-poles				
	1	BROWN	24 Vdc	POWER
	2	WHITE	TEST/ POINTER	INPUT
	3	BLUE	0 Vdc	POWER
	4	BLACK	CODE	INPUT
	5	GREY	COM	COM

NOTE: PIN2 on transmitter main connector of body resolution models (SH4-2/3/4-*-**) can be used for selection of short or long range.

DIMENSIONS (FINGER)

SH4-14-***_**_*_*
SH4-14-***_**_*_*

LASER AIMER

(mm)

Model	L (mm)
SH4-14-0300-**-**-*	309
SH4-14-0450-**-**-*	459
SH4-14-0600-**-**-*	609
SH4-14-0750-**-**-*	759
SH4-14-0900-**-**-*	909
SH4-14-1050-**-**-*	1059
SH4-14-1200-**-**-*	1209
SH4-14-1300-**-**-*	1359
SH4-14-1500-**-**-*	1509
SH4-14-1650-**-**-*	1659
SH4-14-1800-**-**-*	1809
SH4-14-1950-**-**-*	1959
SH4-14-2100-**-**-*	2109
SH4-14-2250-**-**-*	2259

DIMENSIONS (HAND)

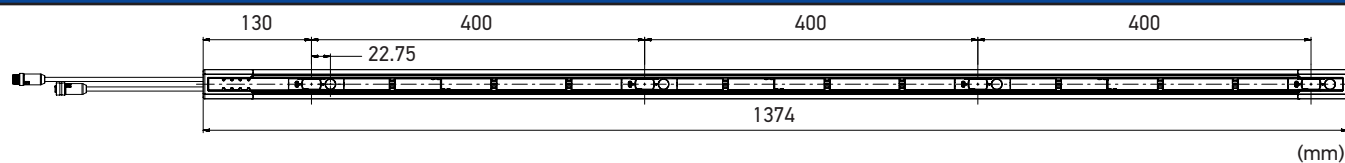
SH30-30-***-**-**-*

(mm)

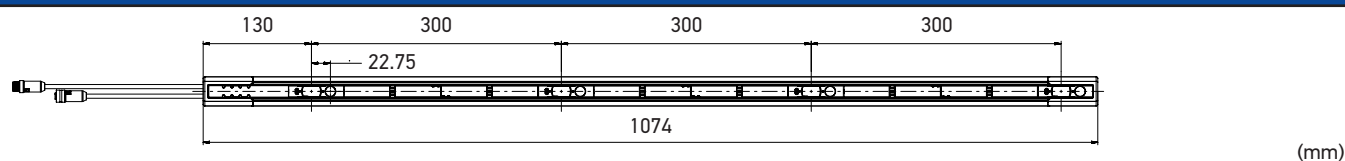
Model	L (mm)
SH4-30-0300-**-**-*	309
SH4-30-0450-**-**-*	459
SH4-30-0600-**-**-*	609
SH4-30-0750-**-**-*	759
SH4-30-0900-**-**-*	909
SH4-30-1050-**-**-*	1059
SH4-30-1200-**-**-*	1209
SH4-30-1300-**-**-*	1359
SH4-30-1500-**-**-*	1509
SH4-30-1650-**-**-*	1659
SH4-30-1800-**-**-*	1809
SH4-30-1950-**-**-*	1959
SH4-30-2100-**-**-*	2109
SH4-30-2250-**-**-*	2259

DIMENSIONS (BODY)

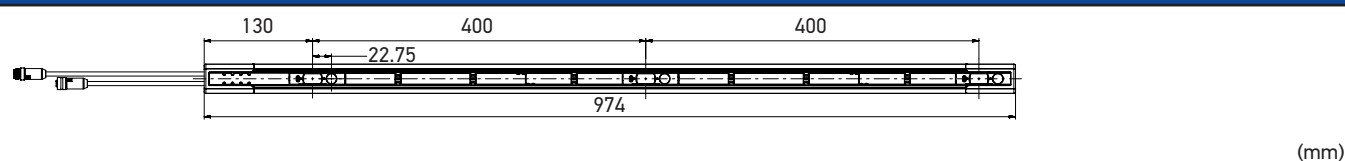
SH4-4-1200-**-**-*



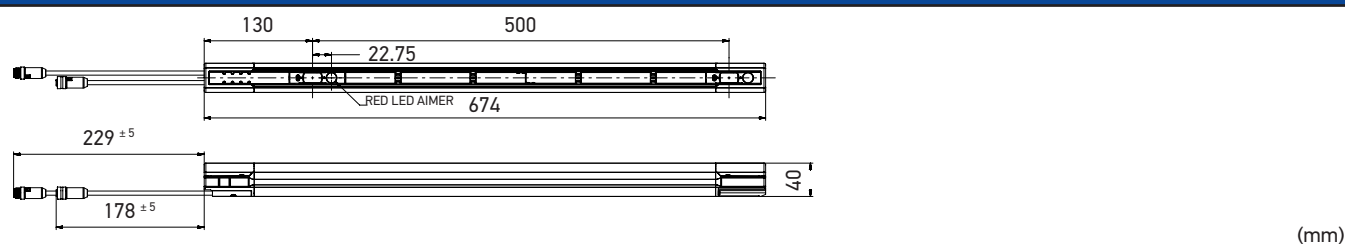
SH4-4-0900-**-**-*



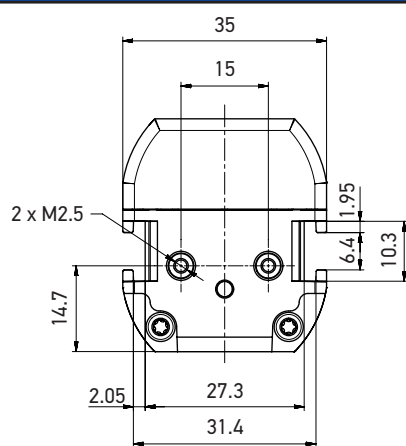
SH4-3-0800-**-**-*



SH4-2-0500-**-**-*

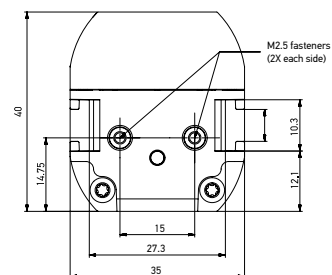
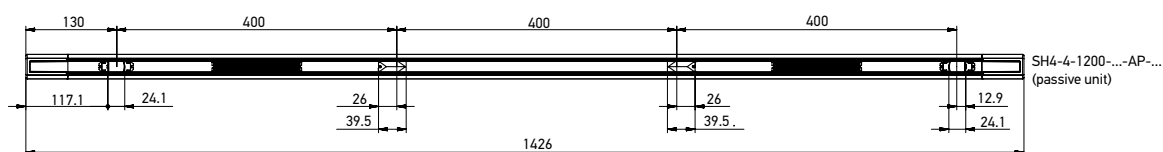
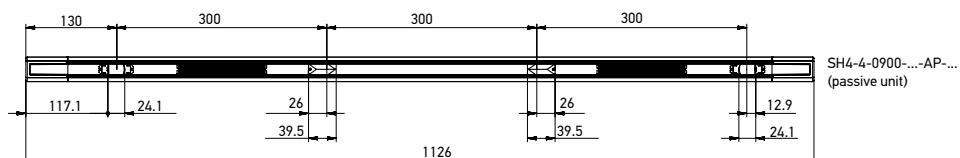
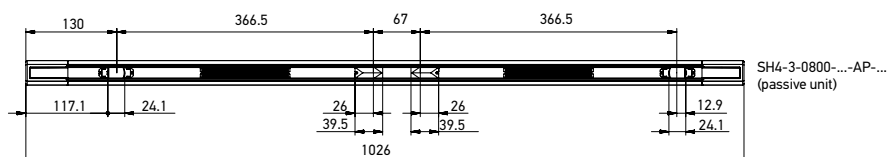
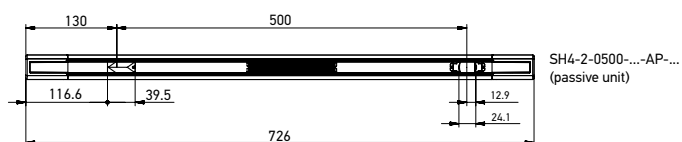
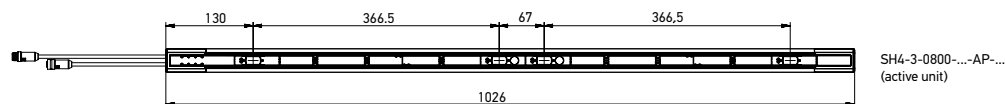
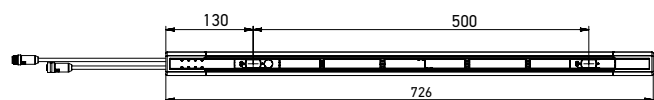


SH4-*-*-*-**-**-*

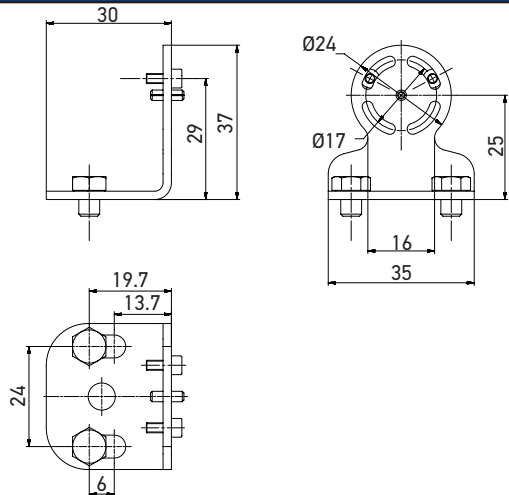


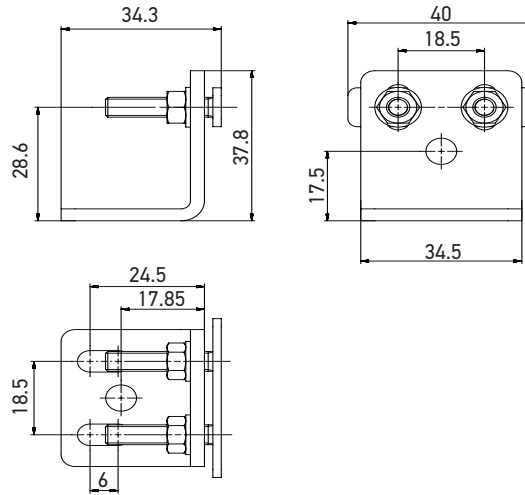
DIMENSIONS (AP)

SH4-*-*-*-(-AP)-**



ACCESSORIES: BRACKETS

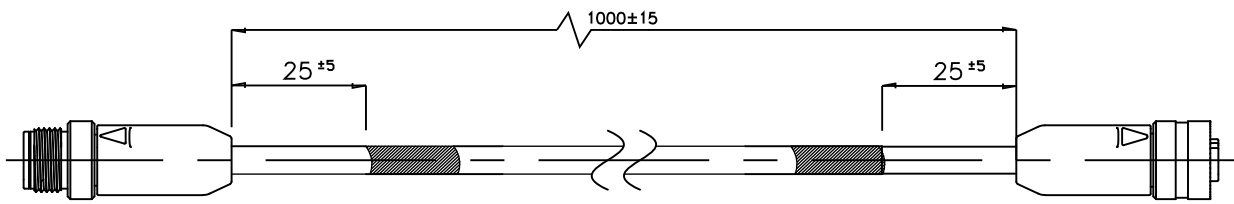
ST-K4ROT-SH				
		Model	Order nr.	Compatibility
 (mm)		Metal top-bottom rotating fixing brackes kit (4 brackets) for SH4	95ASE0042	SH4

ST-KSTD					
 (mm)		Model	Order nr.	Compatibility	Notes
		Metal angled fixing brackes kit (4 brackets) for SH4	95ACC1670	SH4, SG2/SG4, SG BODY COMPACT, SG BODY BIG	The angled fixing bracket is included in the package of SH4 but it can be ordered separatedly for substitutions

ACCESSORIES: TRANSMITTER AND RECEIVER CABLES

SH4 BASE (SH4-**-****-B(-AP)-5)		
Receiver main connector	Length (m)	Order code
CS-A1-03-U-03	3	95ASE1170
CS-A1-03-U-05	5	95ASE1180
CS-A1-03-U-10	10	95ASE1190
CS-A1-03-U-15	15	95ASE1200
CS-A1-03-U-25	25	95ASE1210
CS-A1-03-U-50	50	95A252700
SH4 STANDARD AND SH4 STANDARD MUTING (SH4-**-****-S/SM(-AP)-8(-5))		
Receiver main connector	Length (m)	Order code
CS-A1-06-U-03	3	95ASE1220
CS-A1-06-U-05	5	95ASE1230
CS-A1-06-U-10	10	95ASE1240
CS-A1-06-U-15	15	95ASE1250
CS-A1-06-U-25	25	95ASE1260
CS-A1-06-U-50	50	95A252710
SH4 ADVANCED (SH4-**-****-A(-AP)-12(-5))		
Receiver main connector	Length (m)	Order code
CS-A1-10-U-03	3	95A252720
CS-A1-10-U-05	5	95A252730
CS-A1-10-U-10	10	95A252740
CS-A1-10-U-15	15	95A252750
CS-A1-10-U-25	25	95A252760
CS-A1-10-U-50	50	95A252770
SH4 all models		
Transmitter main connector	Length (m)	Order code
CS-A1-03-U-03	3	95ASE1170
CS-A1-03-U-05	5	95ASE1180
CS-A1-03-U-10	10	95ASE1190
CS-A1-03-U-15	15	95ASE1200
CS-A1-03-U-25	25	95ASE1210
CS-A1-03-U-50	50	95A252700
SH4 all Muting models (SH4-**-****-SM/A-**-5)		
Receiver/Transmitter secondary connector	Length (m)	Order code
CD12M/0B-050B1	5	CD12M/0B-050B1
CD12M/0B-100B1	10	CD12M/0B-100B1

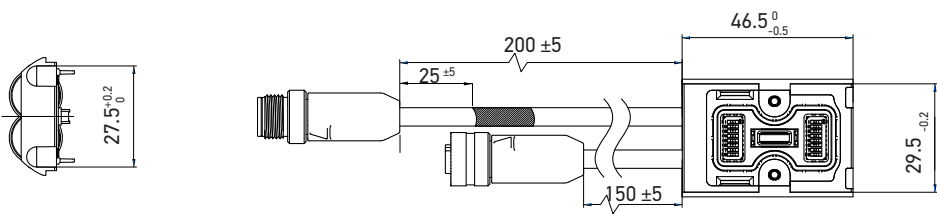
ACCESSORIES: CASCADE CABLES

CS-H2-03-B-**		
		
Model	Length (m)	Order code
CS-H2-03-B-01	1 m	95ASE0031
CS-H2-03-B-03	3 m	95ASE0032
CS-H2-03-B-10	10 m	95ASE0033

Cascade cables have 5 poles, M12 male connector on one side, and M12 female connector on the opposite side. They can be used to cascade SH4 safety light curtains (refer to manual for technical details)

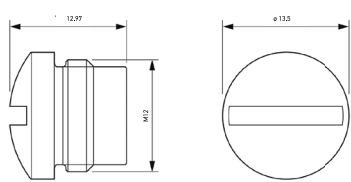
ACCESSORIES: PLUGS

The following are spare parts that can be ordered in substitution of the parts included in SH4 family safety light curtains.

SH-PLUG-**-*			
			
(mm)			
Model	Main connector	Secondary connector	Order code
SH-PLUG-5	5-pin M12 male	none	95ASE0047
SH-PLUG-8	8-pin M12 male	none	95ASE0048
SH-PLUG-12	12-pin M12 male	none	95ASE0049
SH-PLUG-5-5	5-pin M12 male	5-pin M12 female	95ASE0050
SH-PLUG-8-5	8-pin M12 male	5-pin M12 female	95ASE0051
SH-PLUG-12-5	12-pin M12 male	5-pin M12 female	95ASE0052

ACCESSORIES: SCREW

The following are spare parts that can be ordered in substitution of the parts included in SH4 family safety light curtains.

SH-SP		
		
Model	Description	Order code
SH-SP	Kit of screw plugs for SH4 female connectors (2 pieces)	95ASE0043

When female secondary connector of SH4 are not used, use a SH-SP plug to isolate them

ACCESSORIES: SH-TARGET

SH-TARGET			
Model	Description	Order code	
SH-TARGET	Retroreflector target for SH4 BODY alignment	95ASE0046	

(mm)

ACCESSORIES: M12 MALE-MALE ADAPTER

SH-MMA				
Model	Description	Order code	Notes	
SH-MMA	M12 Male-Male Adapter	95ASE0044	SH-MMA can be used to convert the SH4 secondary connector (M12 female) in a M12 male, in order to reuse SG muting accessories and cables. It is not needed when using muting accessories designed for SH4.	

(mm)

ACCESSORIES: LASER POINTER

SH-LP				
Model	Description	Order code	Notes	
SH-LP	Laser pointer class 2	95ASE0030	SH-LP is a laser pointer with a plastic bracket that can be quickly connected to the profile of SH4 safety light curtains in order to ease the alignment of transmitter and receiver.	

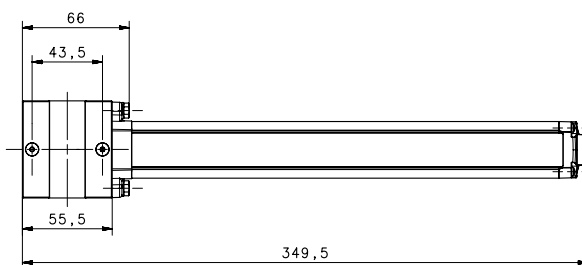
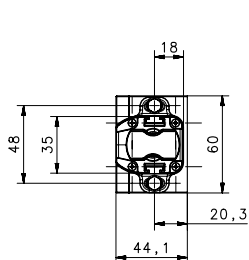
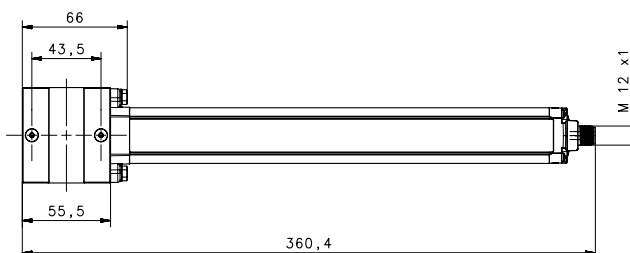
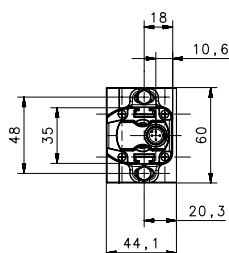
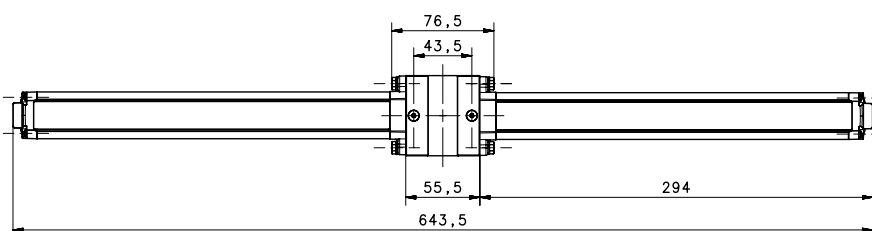
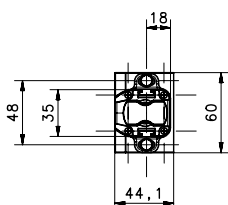
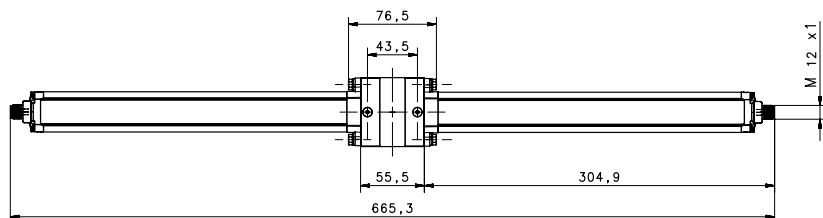
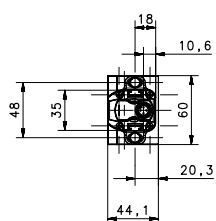
(mm)

ACCESSORIES: MUTING ARMS FOR 2-SIGNALS T AND L MUTING

SH-T-ARMS and SH-L-ARMS are ready to install kits composed of:

1. active arm, with retroreflective polarized photocells: 1 for SH-L-ARMS, 2 for SH-T-ARMS
2. passive arm, with corresponding reflectors: 1 for SH-L-ARMS, 2 for SH-T-ARMS
3. 2 brackets to connect arms to SH4
4. 1 muting cable CV-Y4-02-B-007 (for SH-T -ARMS) or CV-L2-02-B-007 (for SH-L-ARMS) to connect the active arms to the secondary 5-poles connector of SH4 STANDARD MUTING, or SH4 ADVANCED.

SH-T/L-ARMS



Model	Description	Order number
SH-T-ARMS	Active/Passive arms Couple for T muting	95ASE0035
SH-L-ARMS	Active/Passive arms Couple for L muting	95ASE0036

IMPORTANT NOTICE: For safety reasons, L muting arms should be used only for openings through which goods must exit from the dangerous area: for openings in which goods must enter the dangerous area, as well as for bi-directional movements, use T muting arms.

ACCESSORIES: CABLES FOR MUTING ACTUATORS

CV-**-02-B-007			
Model	Description	Order code	
CV-Y4-02-B-007	M12 4-poles T muting cable for SH4	95ASE0037	
CV-L2-02-B-007	M12 4-poles L muting cable for SH4	95ASE0038	

ACCESSORIES: SH MUTING CONNECTION BOX

SH-M-CB			
Model	Description	Order code	
SH-M-CB	SH Muting connection box	95ASE0039	
SG-M-CB-KIT	Muting connection box kit	95ASE2830	

The SH-M-CB connection box has 4 M12 connectors on board, one for each muting sensor to be connected to an SH4 light curtain. Unused connectors need to be covered by a cap, in order to maintain IP67 protection. A green LED indicator signals when the muting sensor is generating the corresponding muting signal towards the safety light curtain. Inside the connection box, signals are put in parallel: A1 with A2 and B1 with B2, and forwarded to the pigtail connector, that has to be inserted into the muting connector of the light curtain. This means that muting function of SH4 for which SH-M-CB is compatible are 2-signals T muting and 2-signals L muting. In order to attach SH-M-CB to the housing grooves of SH-M-CB, order SG-M-CB-KIT.