

Datalogic Safety Light Curtains

Advanced Series, Finger-safe



Programmable safety light curtain with 14mm resolution

- Includes both sender and receiver
- Type 4, PLe, SIL3
- 14mm resolution integrated light curtain for finger protection
- Operating distance up to 7m (selectable)
- 300-900 mm protected height
- Zero dead zone
- Basic Configuration Mode (BCM) through pushbuttons
- Advanced Configuration Mode (ACM) through GUI (SG EXTENDED GUI software included)
- CASCADE (No differentiation between master and slave models)
- Integrated MUTING and BLANKING functions
- Compact housing
- Proprietary 18-pin to standard M12 connectors
- 8 signalling LEDs
- Alignment level bar graph on both TX and RX units
- IP65 rated
- UL, CE, TUV and RoHS compliant
- • Accessory Dongle for:
 - Configuration cloning
 - Ethernet (TCP/IP connection)
 - Remote monitoring
 - Remote programming

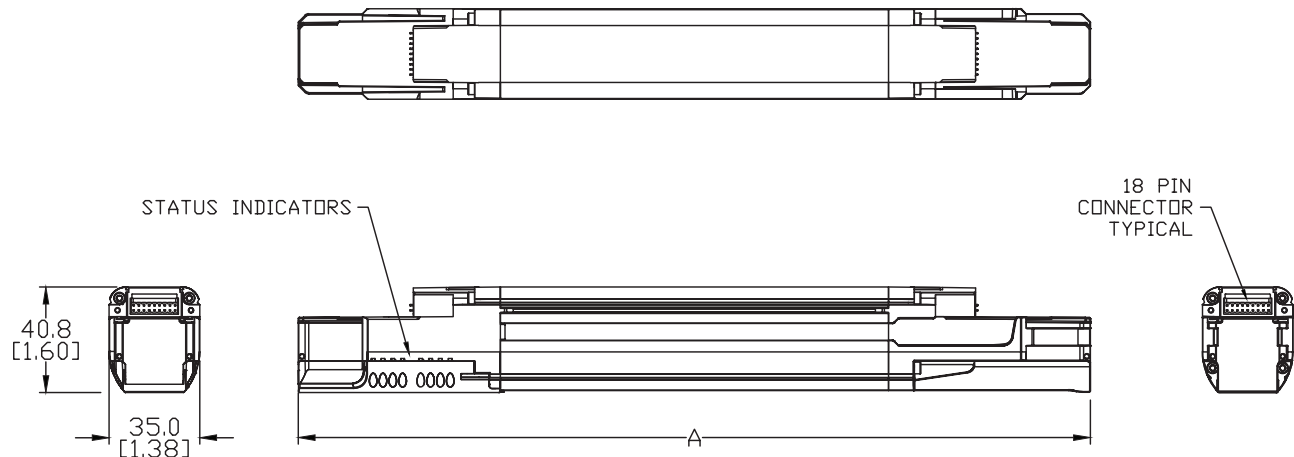


SG4-14 Programmable Series Selection Table

Part Number	Price	Protected Height mm[in]	Total Height A mm[in]	Number of Beams	Response Time [ms]	Response Time with Code [ms]	Approximate Product Weight per Unit kg [lb]
<u>SG4-14-030-00-P</u>	\$961.00	300 [11.81]	306.3 [12.06]	32	15	20	2.10 [4.63]
<u>SG4-14-045-00-P</u>	\$1,182.00	450 [17.72]	456.3 [17.96]	48	17	25	2.10 [4.63]
<u>SG4-14-060-00-P</u>	\$1,405.00	600 [23.62]	606.3 [23.87]	64	19	29	3.00 [6.61]
<u>SG4-14-075-00-P</u>	\$1,603.00	750 [29.53]	756.3 [29.78]	80	20	34	4.30 [9.48]
<u>SG4-14-090-00-P</u>	\$1,871.00	900 [35.43]	906.3 [35.68]	96	22	38	4.30 [9.48]

Dimensions

mm [in]



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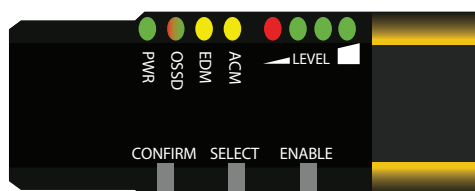
SG4-14 and SG4-30 Programmable Series Specifications

Electrical Data	
Supply Voltage	24VDC $\pm$ 20%
Current Consumption (Transmitter)	3W maximum
Current Consumption (Receiver)	5W maximum (without load)
Outputs	2 PNP OSSD outputs with short circuit protection (1.4 A @ 55°C)
Output Current	0.5 A maximum on each output
Output Voltage – ON status:	Vdd-1V
Output Voltage – OFF status:	0.2 V
Leakage Current	< 1mA
Output Capacitive Load	2.2 μ F @ 24VDC
Recovery Time	100ms typical
Protected Height	300 - 1800 mm
Safety Category	Type 4 (ref. EN 61496-1)
Auxiliary Functions	Reset, Restart selection, Alignment, EDM, Test, Muting, Partial Muting, Override, Coding, Range reduction, Fixed Blanking, Floating Blanking, Cascade, PNP / NPN output, GUI programming
Electrical Protection	Class I / Class III
Electrical Connections	M12 5-pole for sender
	M12 12-pole + M12 5-pole for receiver muting applications
	M12 12-pole for receiver blanking applications
Cable Length (for supply power)	50m (164ft) maximum
Pollution Degree	2
Optical Data	
Light Emission	Infrared LED (950nm)
Resolution	14mm
	30mm
Operating Distance	0.2 - 7 m / 0.2 - 4 m (0.7 - 23 ft / 0.7 - 13 ft) for 14mm resolution 0.2 - 20 m / 0.2 - 12 m (0.7 - 66 ft / 0.7 - 39 ft) for 30mm resolution
Ambient Light Rejection	IEC 61496-2
Mechanical and Environmental Data	
Operating Temperature	0 to 55°C (32 to 131°F)
Storage Temperature	-25 to 70°C (-13 to 158°F)
Temperature Class	T6
Humidity	15 - 95% (non-condensing)
Mechanical Protection	IP65 (EN 60529)
Vibrations	Width 0.35 mm
	Frequency 10 - 55 Hz 20 sweep per axis
	1 octave / min (EN 60068-2-6)
Shock Resistance	16ms (10g) 1000 shock for each axis (EN60068-2-29)
Housing Material	Painted aluminum (yellow RAL 1003) front screen
Cap Material	PBT Valox 508 (pantone 072-CVC)
Front Glass Material	PMMA (Polymethylmethacrylate [acrylic])
Connectors	Proprietary 18-pin to standard M12
Agency Approvals	UL E226479, CE, TUV, RoHS

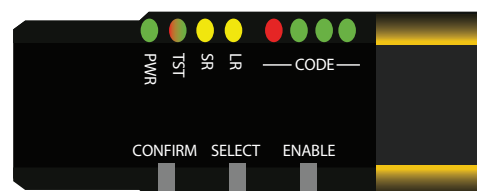
To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

Status Indicators

Receiver



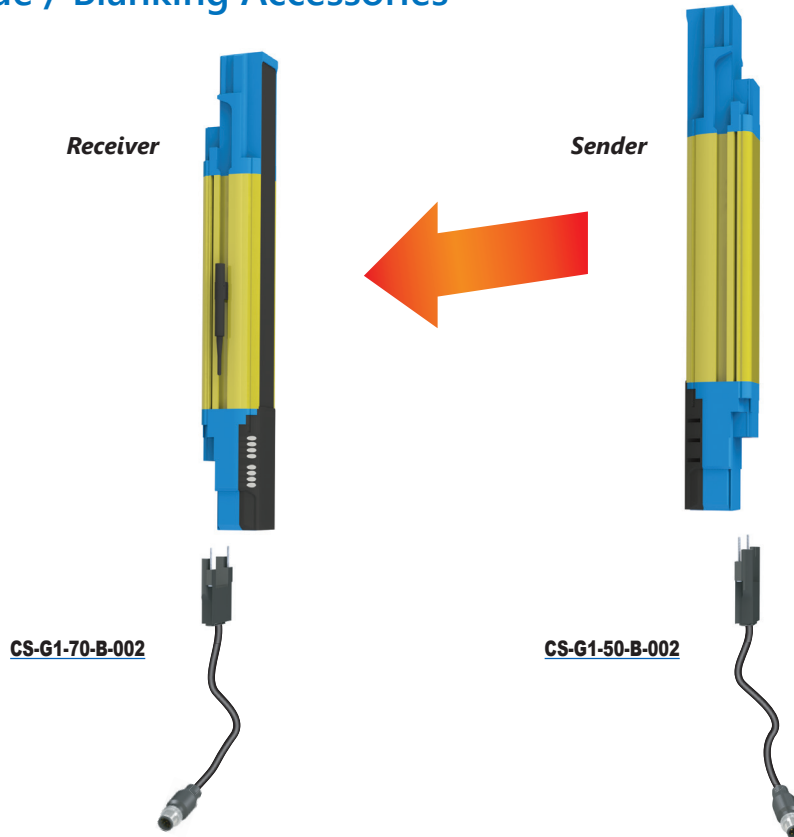
Sender



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Basic Mode / Blanking Accessories

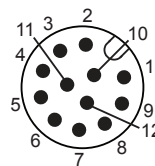


Pigtail Cable Blanking Configuration for Receiver (CS-G1-70-B-002)



M12 12-pin:

1.	24V (brown)
2.	0V (blue)
3.	Reset / Restart / Align (white)
4.	Teach In (green)
5.	OSSD2 (pink)
6.	EDM (yellow)
7.	N.C. (black)
8.	OSSD1 (gray)
9.	Tolerance (red)
10.	Lamp (violet)
11.	N.C. (gray / pink)
12.	Earth (red / blue)

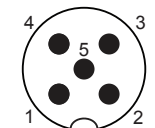


Pigtail Cable for Sender (CS-G1-50-B-002)



M12 5-pin:

1.	24V (brown)
2.	Test (white)
3.	0V (blue)
4.	Earth (black)
5.	Not Used (gray)

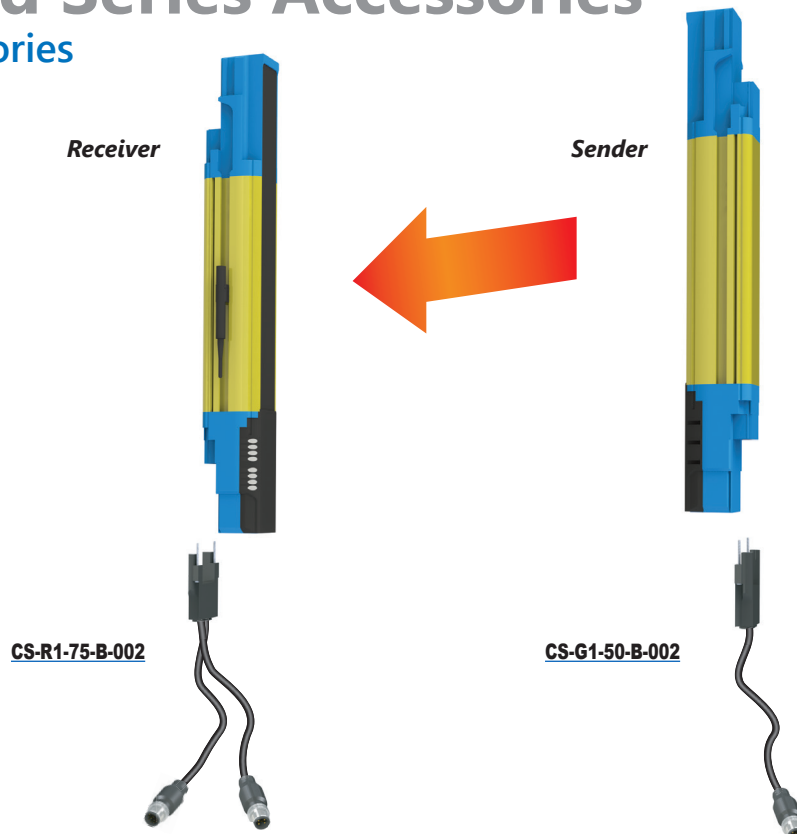


Note: Confirm the specific color to each pinout based on the cable used during installation.

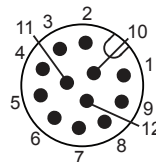
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Muting Accessories

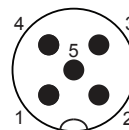


Pigtail Cable Muting Configuration for Receiver (CS-R1-75-B-002)



M12 12-pin:

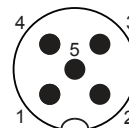
1.	24V (brown)
2.	0V (blue)
3.	Reset / Restart / Align (white)
4.	Teach In (green)
5.	OSSD2 (pink)
6.	EDM (yellow)
7.	N.C. (black)
8.	OSSD1 (gray)
9.	Tolerance (red)
10.	Lamp (violet)
11.	N.C. (gray / pink)
12.	Earth (red / blue)



M12 5-pin:

1.	24V (brown)
2.	Muting2 (white)
3.	0V (blue)
4.	Muting1 (black)
5.	N.C. (gray)

Pigtail Cable for Sender (CS-G1-50-B-002)



M12 5-pin:

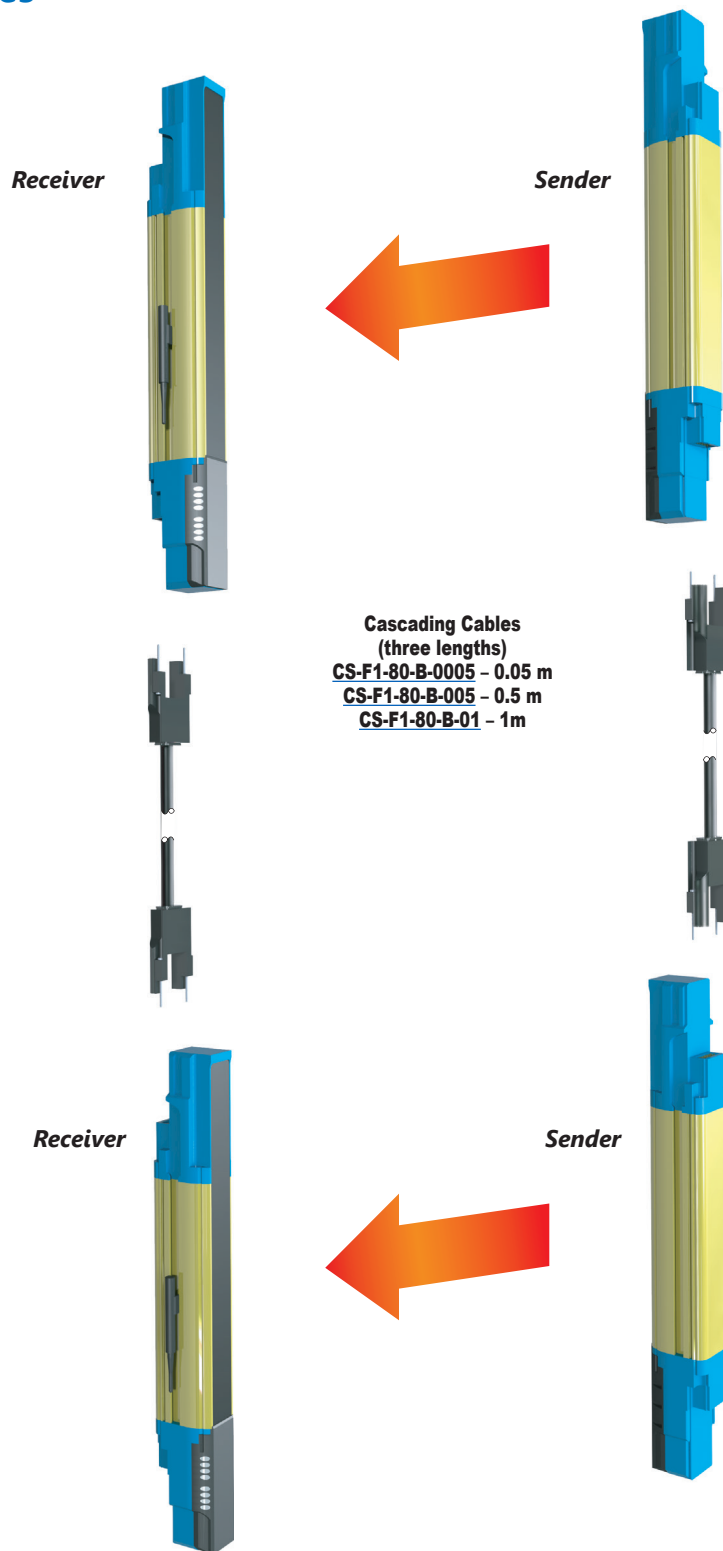
1.	24V (brown)
2.	Test (white)
3.	0V (blue)
4.	Earth (black)
5.	Not Used (gray)

Note: Confirm the specific color to each pinout based on the cable used during installation.

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Cascading Cables



Note: A maximum number of three units, one master and two slaves, may be cascaded. The maximum length of the master unit is 1800mm and the maximum length of each slave is 1200mm.

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Safety Light Curtains Cables		
Part Number	Price	Description
<u>CS-R1-75-B-002</u>	\$52.00	Datalogic cable, muting, PVC jacket, 0.2 m cable length, 18-pin proprietary to 5-pin M12 male quick-disconnect to 12-pin M12 male quick-disconnect
<u>CS-G1-70-B-002</u>	\$41.00	Datalogic cable, blanking, PVC jacket, 0.2 m cable length, 18-pin proprietary to 12-pin M12 male quick-disconnect
<u>CS-G1-50-B-002</u>	\$41.00	Datalogic cable, emitter, PVC jacket, 0.2 m cable length, 18-pin proprietary to 5-pin M12 male quick-disconnect
<u>CS-F1-80-B-0005</u>	\$34.50	Datalogic cable, cascading, PVC jacket, 0.05 m cable length, 18-pin proprietary to 18-pin proprietary
<u>CS-F1-80-B-005</u>	\$34.50	Datalogic cable, cascading, PVC jacket, 0.5 m cable length, 18-pin proprietary to 18-pin proprietary
<u>CS-F1-80-B-01</u>	\$51.00	Datalogic cable, cascading, PVC jacket, 1m cable length, 18-pin proprietary to 18-pin proprietary

**CS-R1-75-B-002****CS-G1-70-B-002****CS-G1-50-B-002****CS-F1-80-B-0005****CS-F1-80-B-005****CS-F1-80-B-01**

Datalogic Safety Light Curtains

Advanced Series Accessories

L-Muting Arms

SG-L-ARMS L muting arms provide an optional method of achieving unidirectional muting.

SG-L-ARMS

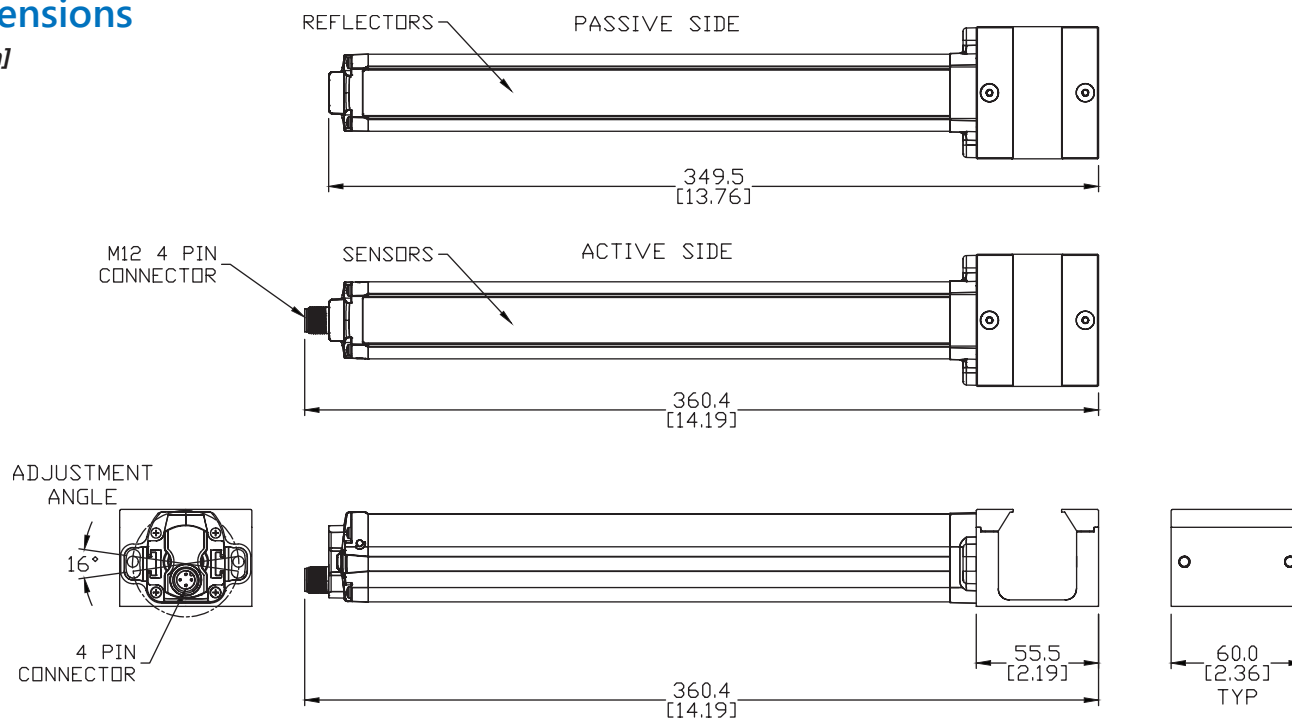
\$390.00

- Operating distance up to 3m
- Detectable objects down to 16.5 cm (6.5 in) in length. (See manual for exact formulas.)



Dimensions

mm [in]



Datalogic Safety Light Curtains

Advanced Series Accessories

T-Muting Arms

SG-T-ARMS T muting arms provide an optional method of achieving bidirectional muting.

SG-T-ARMS

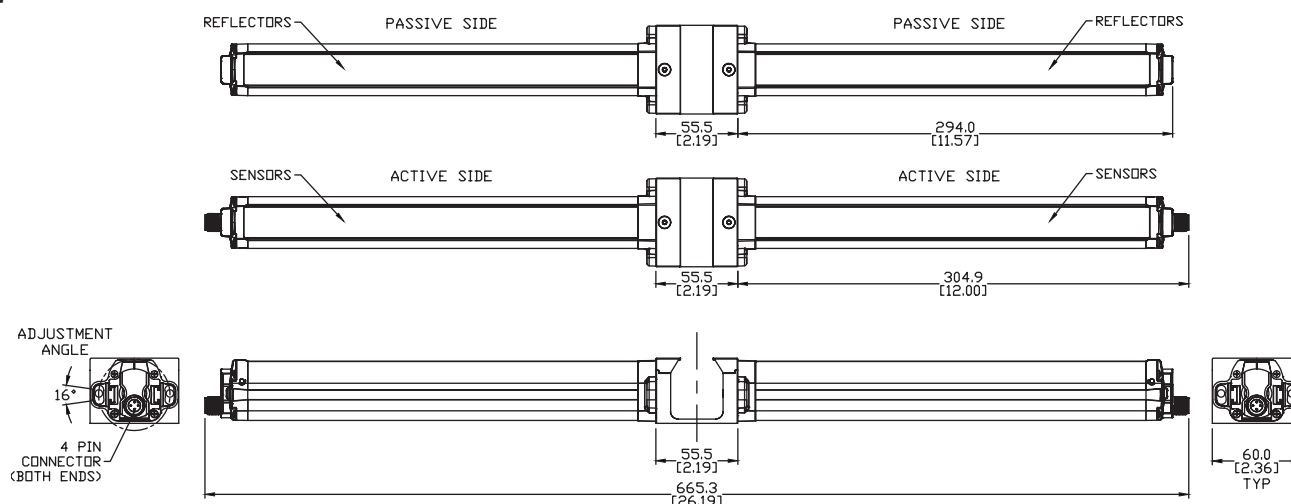
\$679.00

- Operating distance up to 3m
- Detectable objects down to 34.5 cm (13.6 in). (See manual for exact formulas.)



Dimensions

mm [in]

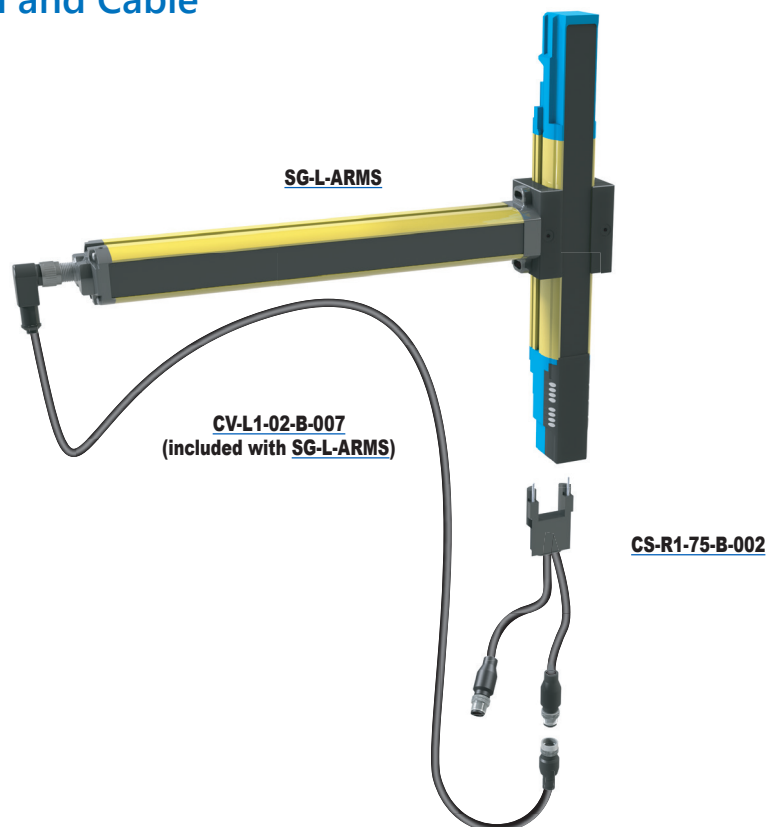


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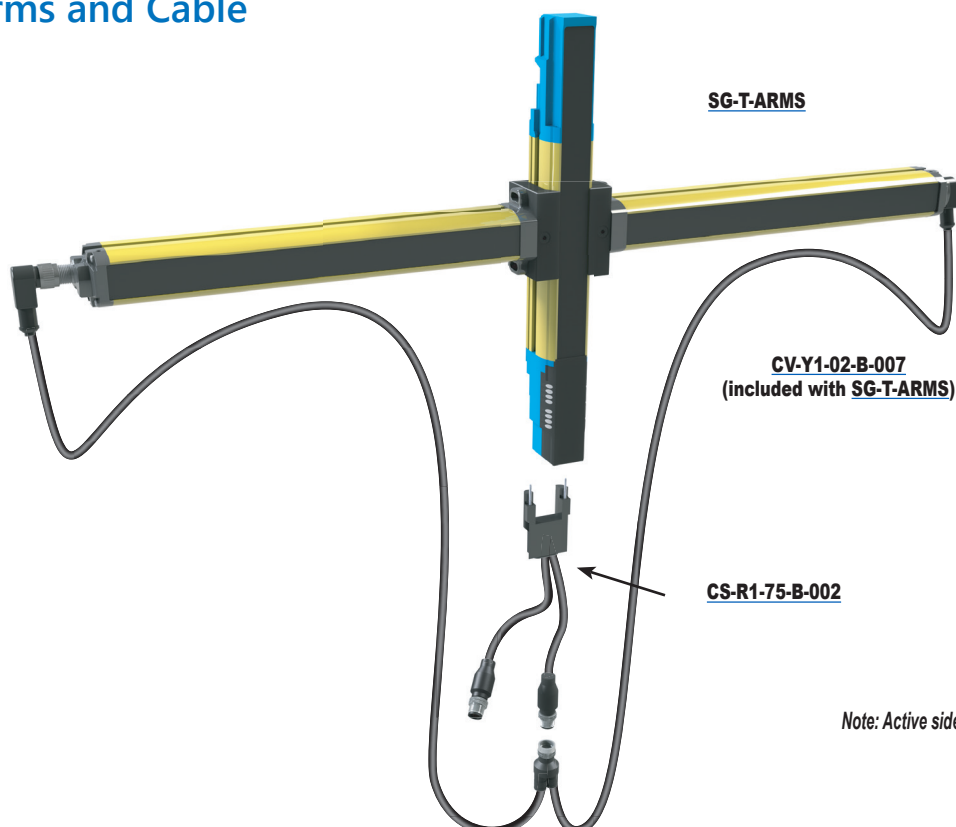


L-Muting Arm and Cable



Note: Active side shown

T-Muting Arms and Cable



Note: Active side shown

Datalogic Safety Light Curtains

Advanced Series Accessories



Safety Light Curtains Muting Arms and Cables		
Part Number	Price	Description
<u>SG-L-ARMS</u>	\$390.00	Muting arm pair, L-type, 4-pin M12 female quick-disconnect. For use with SG4 series (-P) light curtains.
<u>SG-T-ARMS</u>	\$679.00	Muting arm pair, T-type, 4-pin M12 female quick-disconnect. For use with SG4 series (-P) light curtains.
<u>CV-L1-02-B-007</u>	\$30.00	Datalogic cable, L-muting, PVC jacket, 0.5 m cable length, 5-pin M12 female quick-disconnect to 5-pin M12 female quick-disconnect
<u>CV-Y1-02-B-007</u>	\$35.50	Datalogic cable, T-muting, PVC jacket, 0.5 m cable length, 5-pin M12 female quick-disconnect to 5-pin M12 female quick-disconnect to 5-pin M12 female quick-disconnect



[SG-L-ARMS](#)



[SG-T-ARMS](#)



[CV-L1-02-B-007](#)



[CV-Y1-02-B-007](#)

Datalogic Safety Light Curtains

Advanced Series Accessories

Communication Interface



SG4-DONGLE



SG4-DONGLE communication interface attaches to programmable Datalogic Safety Light Curtains and a PC through an Ethernet TCP/IP connection allowing remote monitoring and remote programming. Configuring, cloning, error logging and remote monitoring and programming are simplified through the free downloadable software.*

**Note: To connect SG4-DONGLE directly to a PC, order Ethernet cable CAB-ETH-M01.*

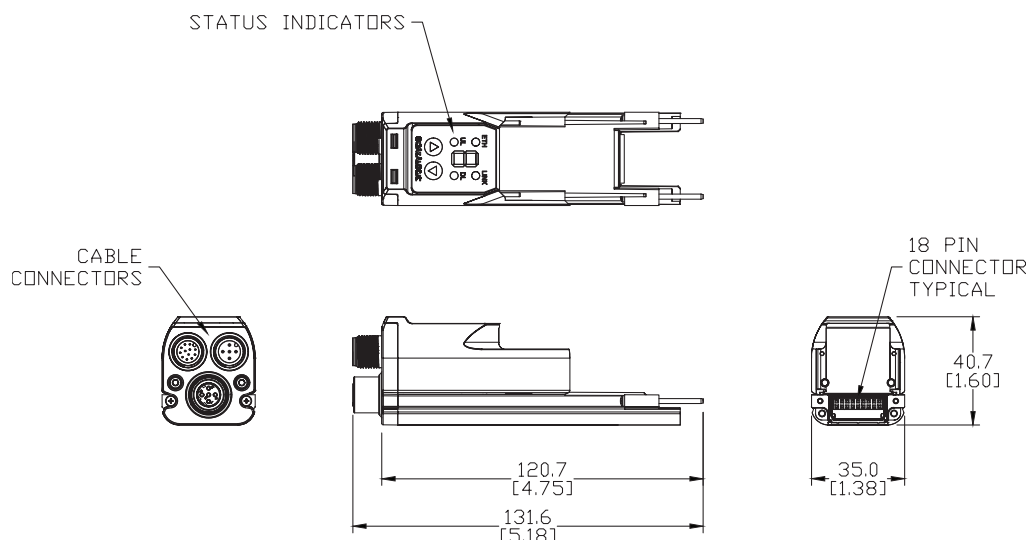
- Configuration cloning
- Ethernet TCP/IP connection
- Remote monitoring
- Remote programming using SG-EXTENDED-GUI software
- CE compliant

Safety Light Curtains Communication Interface and Software

Part Number	Price	Description
<u>SG4-DONGLE</u>	\$241.00	Programming dongle. Requires programming software included with SG4 (-P) light curtains.
<u>SG-EXTENDED-GUI</u>	\$23.50	Programming software for SG4 series (-P) on CD; software also available for free download from Automationdirect.com

Dimensions

mm [in]



Datalogic Safety Light Curtains

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Communication Software

SG-EXTENDED-GUI communication software is available for download free of charge at www.automationdirect.com.
Remote monitoring and programming are simplified through the software.*

*Note: To connect directly to a PC, order Ethernet cable [CAB-ETH-M01](#).

- Remote monitoring
- Remote configuration

Part No. SG-EXTENDED-GUI

\$23.50

Software CD

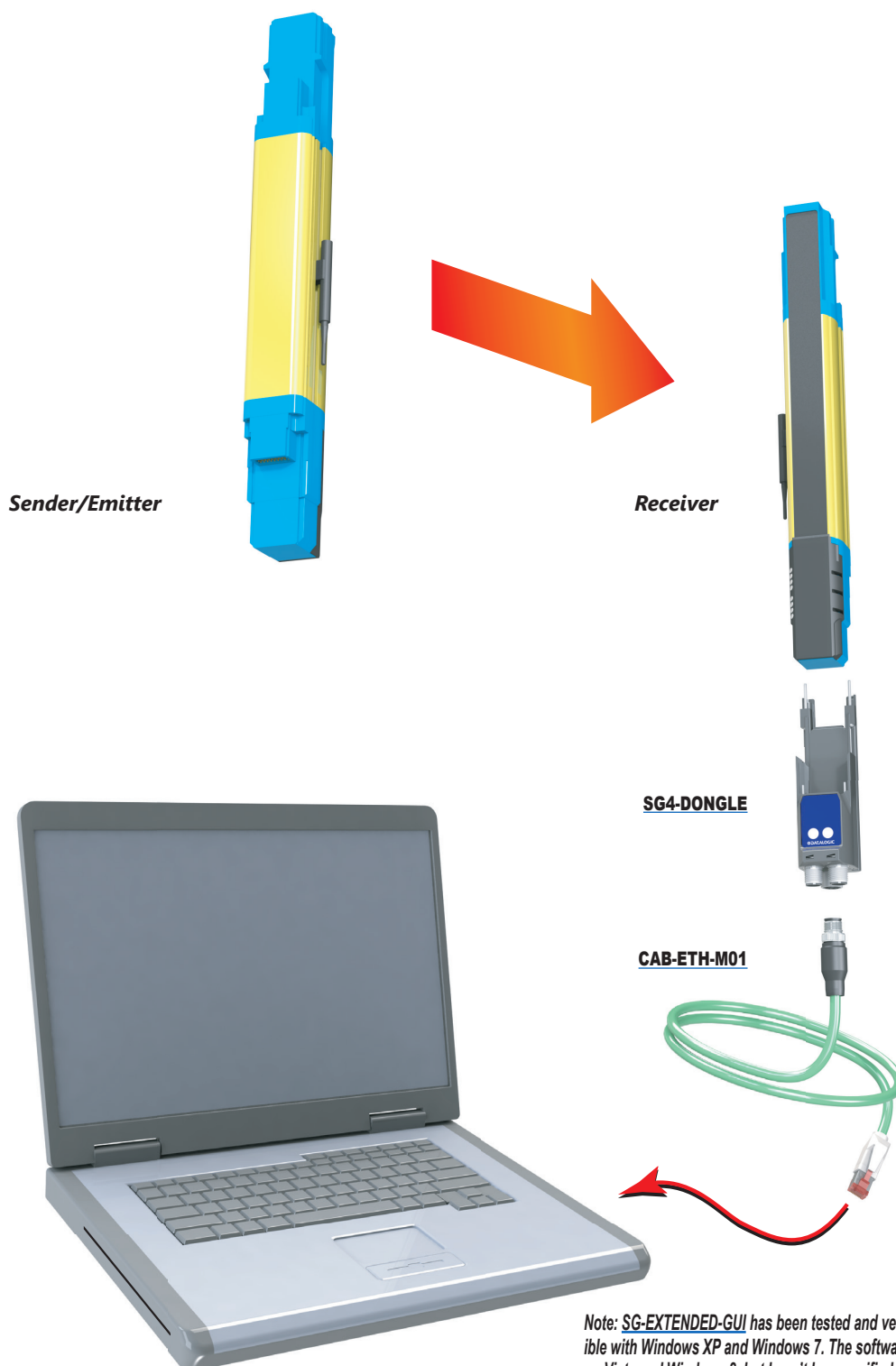
Datalogic Parameters		
Function	Parameters with BCM (Basic Configuration Mode): Without GUI	Parameters with ACM (Advanced Configuration Mode): With GUI
Coding	None / Code 1 / Code 2	None / Code 1 / Code 2
Restart Mode	Auto / Manual Restart	Auto / Manual Restart
Override Restart	Manual	Manual / Auto
EDM	Enable / Disable	Enable / Disable
Range Reduction	Long / Short	Long / Short
Muting Type	T-muting / L-muting	T-muting / L-muting For L-muting: T12 time interval selection, T12 multiplier selection
Muting Timeout	10 minute / infinite	Selectable length in steps of 1 minute from 10min to 1080 minutes
Muting Filter	None	ON (100ms) or OFF
Muting Delay	None	Selectable in steps of 100ms up to 1000ms
Partial Muting	None	Possible to define up to 5 zones each defined in position and dimension
Override Mode	Level / Edge	Level / Edge
Override Timeout	120 seconds	Selectable in steps of 1 minute from 1 to 256 minutes
Fixed Blanking	Two zones can be configured	5 zones can be configured, also with increased tolerance (top or bottom)
Floating Blanking	1 or 2 beams floating blanking with partial surveillance selectable	**5 zones can be configured, total or partial surveillance without limit of number of beams
Reduced Resolution	4 beams	1 / 2 / 3 / 4 beams selectable

**Note - Blocking the two beams on both ends at the same time is not permitted.

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Communication Interface



Note: SG-EXTENDED-GU has been tested and verified compatible with Windows XP and Windows 7. The software will also run on Vista and Windows 8, but hasn't been verified.

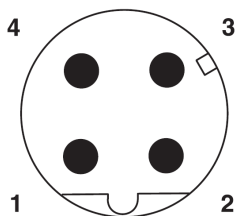
Datalogic – Ethernet Cables



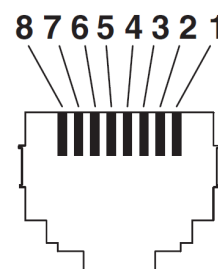
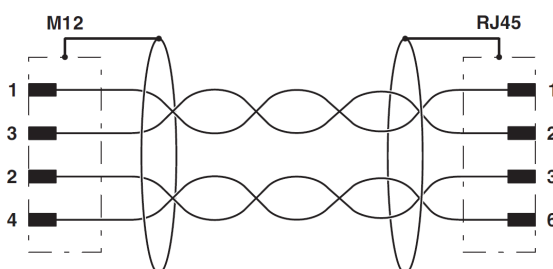
Datalogic Communication Cables		
Part Number	Price	Description
<u>CAB-ETH-M01</u>	\$52.00	Datalogic cable, Ethernet, PVC jacket, shielded, 1m [3.28 ft] cable length, M12 4-pin male D-coded to RJ45
<u>CAB-ETH-M03</u>	\$63.00	Datalogic cable, Ethernet, PVC jacket, shielded, 3m [9.84 ft] cable length, M12 4-pin male D-coded to RJ45
<u>CAB-ETH-M05</u>	\$75.00	Datalogic cable, Ethernet, PVC jacket, shielded, 5m [16.40 ft] cable length, M12 4-pin male D-coded to RJ45

**CAB-ETH-M01****CAB-ETH-M03****CAB-ETH-M05**

Diagrams



Pin assignment M12 male connector,
4-pos., D-coded, male side



Connector pin assignment plug RJ45



Cable cross section

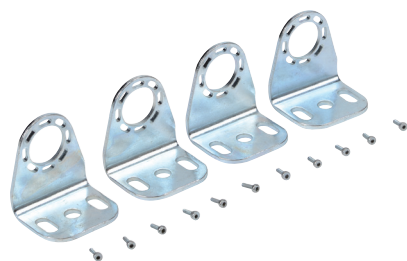
Datalogic Safety Light Curtains

Accessories

Mounting Brackets

Datalogic Safety Light Curtains Mounting Brackets Selection Guide

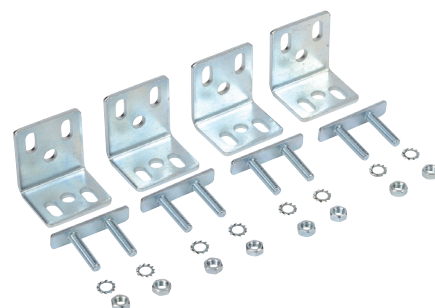
Part Number	Price	Mounting Bracket Type	For Use With	Qty Per Package	Drawing
<u>ST-K4ROT</u>	\$20.00	Rotational	SG4 Base Series (-E) light curtains	4	<u>PDF</u>
<u>ST-K4ROT-SH</u>	\$66.00	Rotational	All SH4 Series light curtains	4	<u>PDF</u>
<u>ST-KSTD</u>	\$10.00	Standard	All SG4 and SH4 Series light curtains	4	<u>PDF</u>
<u>ST-K4OR</u>	\$47.00	Lateral orientable	All SG4 and SH4 Series light curtains	4	<u>PDF</u>
<u>ST-K4AV</u>	\$20.00	Anti-vibration	All SG4 and SH4 Series light curtains	4	<u>PDF</u>



[ST-K4ROT](#)



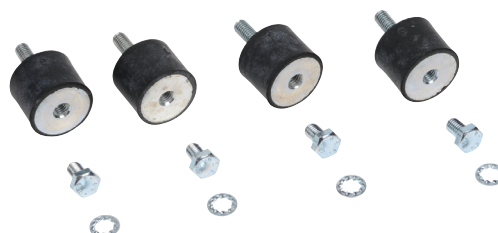
[ST-K4ROT-SH](#)



[ST-KSTD](#)



[ST-K4OR](#)



[ST-K4AV](#)

Datalogic Safety Light Curtains



Accessories

Test Pieces

TP-14 and TP-30 test pieces are used to verify if the resolution of safety light curtains is maintained inside the entire detection field. TP-14 has a diameter of 14mm [0.55 in] and TP-30 has a diameter of 30mm [1.18 in]. Both models have an overall length of 300mm [11.81 in].

Safety Light Curtains Test Pieces		
Part Number	Price	Description
<u>TP-14</u>	\$23.50	Test rod for 14mm resolution finger detection light curtains, plastic, 14mm diameter
<u>TP-30</u>	\$25.50	Test rod for 30mm resolution hand detection light curtains, plastic, 30mm diameter



TP-14



TP-30

Safety Products



Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.

AutomationDirect does not provide design or consulting services, and cannot advise whether any specific application or use of our products would ensure compliance with the safety requirements for any application.