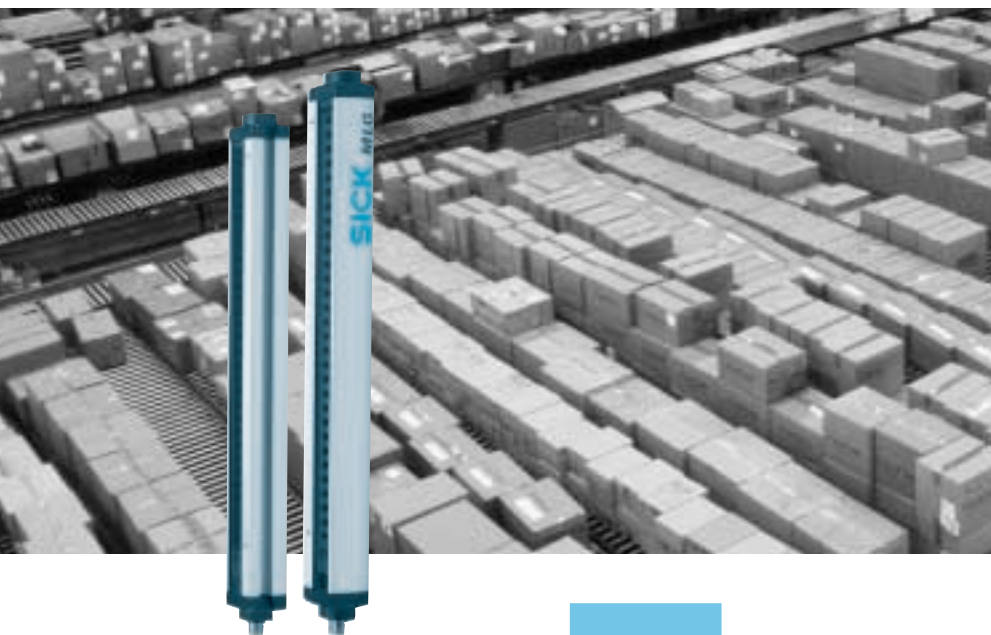


The New Dimension in Efficiency and Flexibility: Modular Light Grid MLG



function makes it possible to detect not just large objects, but also small ones down to 10 mm.

High modularity and integrated standard measuring function are distinctive features of the MLG.

The following features are available to the user:

- various beam spacings of 10, 20, 30 or 50 mm
- detection of heights between 100 mm and 3140 mm
- two ranges of 0 to 5 m and 0 to 8.5 m
- two different mounting systems.

Inputs and outputs as well as the data interface offer a wide range of possible interface combinations. If important parameters, such as the size of the objects to be detected, are unknown or variable, the user-friendly software MLG-setup offers a number of parametering suggestions.

An application assistant helps in setting up the most common applications.



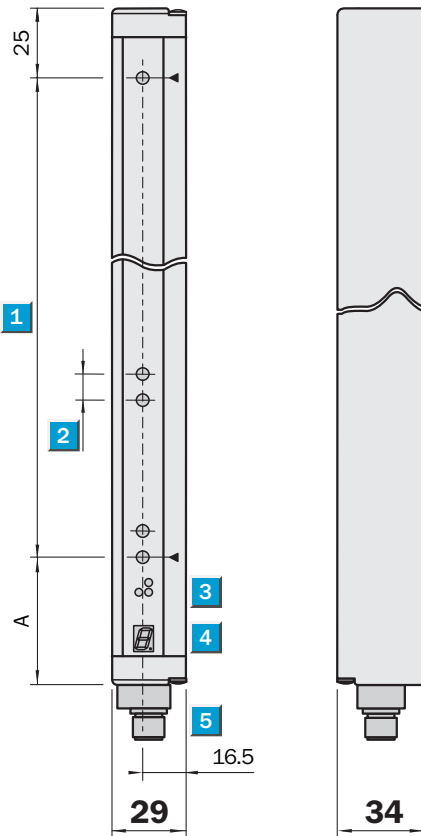
The automation light grid MLG is as variable as you require it to be. It has a host of possibilities with regard to size, resolution, configuration and interfaces. The electronics are completely integrated in the compact housing. Height measurement, zone division and monitoring, object recognition, hole and crack detection, slack control and free-passage control are all tasks suitable for the MLG. In addition, the multiple scan

SICK

	Scanning range 0 ... 5 m/0 ... 8.5 m
Modular light grid	

- High modularity: beam spacing, detection height, scanning range, interface
- Compact housing
- Short response time
- Teach-in for optimal sensitivity adjustment

Maßbild



Distance: MLG edge – first beam

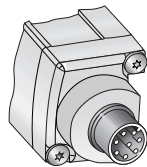
Dimensions (mm)	A
Beam spacing 10 mm	49
Beam spacing 20 mm	59
Beam spacing 30 mm	69
Beam spacing 50 mm	89

- 1** Detection height (see optical performance)
- 2** Beam spacing (10, 20, 30, 50 mm)
- 3** Status indicator: LED green/LED yellow/LED red
- 4** Indicator panel, 7 segment display
- 5** M 12 plug, 8-pin/M 12 plug, 5-pin



Connection types

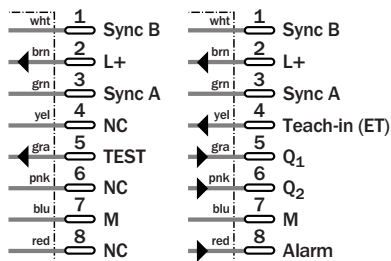
MLG x-xxxx8x1



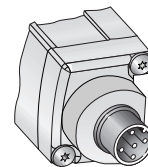
8-pin, M 12

Sender

Receiver



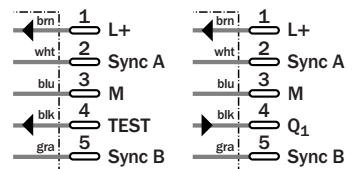
MLG x-xxxx5x1



5-pin, M 12

Sender

Receiver



Accessories

Connectors

Mounting systems

Technical data		MLG	x-xxx xx8x1	x-xxx xx5x1								
Beam spacing ¹⁾	10 mm/20 mm/30 mm/50 mm											
Maximum number of beams	240 beams											
Scanning range	0 ... 5 m (max. 7 m)/0 ... 8.5 m (max. 12 m)											
Synchronization ²⁾	By cable sync A/sync B											
Lichtquelle	LED, Infrarot											
Supply voltage V_s ³⁾	15 ... 30 V DC											
Current consumption sender	< 140 mA + 2 mA/beam											
Current consumption receiver ⁴⁾	< 100 mA + 3 mA/beam											
Connections	M 12 plug, 8-pin											
	M 12 plug, 5-pin											
Teach-in (ET)	PNP: Teach > 10 V ... < V_s											
Teach-in (ET)	External Teach-in input											
	Automatic by each Power on											
Output current I_A max.	100 mA per output											
Output load	Capacitive load: 100 nF/output											
	Inductive load: 1H/output											
Outputs/Operating mode	Q ₁ dark-switching (object detection)											
	Q ₂ light-switching (hole detection)											
Alarm output (contamination)												
Response time ⁵⁾	Max. 3x (50 μ s per beam + 2 ms) ⁶⁾											
Immunity to ambient light	50,000 lx (continuous light)											
VDE protection class	III											
Circuit protection ⁷⁾	A, B, C											
Enclosure rating	IP 65											
Ambient temperature T_A	Operation -25 ... +55 °C											
	Storage -40 ... +70 °C											
Mechanical resistance	Vibration: 5 g/10-55/s – IEC 68-2-6											
	Shock: 10 g/ 10 ms – IEC 68-2-29											
Weight	Approx. 1480 g ⁸⁾											
Material	Housing: Alu., anodized; optics: PMMA											

- 1) Further beam spacing possible
2) Sender (MLG S) and receiver (MLG E)
3) Limit values

- 4) Without load at $V_s = 24$ V
5) With resistive load
6) Depends on selected basic function

- 7) A = V_s connection, reverse polarity protected
B = Outputs Q and Q short-circuit protected
C = Interface suppression

- 8) For 1200 mm detection height, increment 160 g per 150 mm detection height

	Detection height			Minimum Detectable Object (MDO)	
	Minimum	Increment	Maximum	Beam spacing	MDO ⁹⁾
	MLG 1:	140 mm	150 mm	2390 mm	10 mm
MLG 2:	140 mm	150 mm	3140 mm	20 mm	25 ¹⁰⁾ /30 ¹¹⁾ mm
MLG 3:	120 mm	150 mm	3120 mm	30 mm	35 ¹⁰⁾ /40 ¹¹⁾ mm
MLG 5:	100 mm	150 mm	3100 mm	50 mm	55 ¹⁰⁾ /60 ¹¹⁾ mm

Order information	
Type	Part no.
MLG x-xxxx8x1	See page 4
MLG x-xxxx5x1	See page 4

⁹⁾ MDO for non-moving objects measured in a direction parallel to the MLG

¹⁰⁾ Scanning range: 5 m

¹¹⁾ Scanning range: 8.5 m

MLG Modular light grid, standard

Order informations *

Operating range = 0 ... 5 m/Beam spacing 20 mm/Type: standard

Type	Part no.	Height	Beams	Switching output
MLG 2-0280F511	1 023 372	280 mm	15	1 x PNP, dark-switching
MLG 2-0440F511	1 023 560	440 mm	23	1 x PNP, dark-switching
MLG 2-2380F511	1 023 572	2380 mm	120	1 x PNP, dark-switching

Operating range = 0 ... 5 m/Beam spacing 30 mm/Type: Standard

Type	Part no.	Height	Beams	Switching output
MLG 3-0420F511	1 022 103	420 mm	15	1 x PNP, dark-switching
MLG 3-1470F511	1 022 102	1470 mm	50	1 x PNP, dark-switching
MLG 3-2220F511	1 023 561	2220 mm	75	1 x PNP, dark-switching

Operating range = 0 ... 5 m/Beam spacing 50 mm/Type: Standard

Type	Part no.	Height	Beams	Switching output
MLG 5-0400F511	1 023 440	400 mm	9	1 x PNP, dark-switching
MLG 5-0700F511	1 022 867	700 mm	15	1 x PNP, dark-switching
MLG 5-1000F511	1 023 538	1000 mm	21	1 x PNP, dark-switching
MLG 5-1150F511	1 023 643	1150 mm	24	1 x PNP, dark-switching

Operating range = 0 ... 8.5 m/Beam spacing 30 mm/Type: Standard

Type	Part no.	Height	Beams	Switching output
MLG 3-0120F521	1 023 008	120 mm	5	1 x PNP, dark-switching
MLG 3-0870F521	1 023 003	870 mm	30	1 x PNP, dark-switching

Type	Interfaces
F5x1	1 PNP output, dark-switching, automatic Teach-in
F8x1	1 PNP output, dark-switching, 1 PNP output, light-switching, manual Teach-in


* additional types on request

INDUSTRIAL SENSOR SYSTEMS

**For tailor-made
Solutions: Modular
Light Grid MLG.**

You invest only in what you really need. Individually adaptable in length, resolution and functionality. Simple triggering system or online parametering system via software, with intelligent measuring functions. The Modular Light Grid MLG is the solution to a host of automation tasks, for example, checking profile, presence, projection or height.

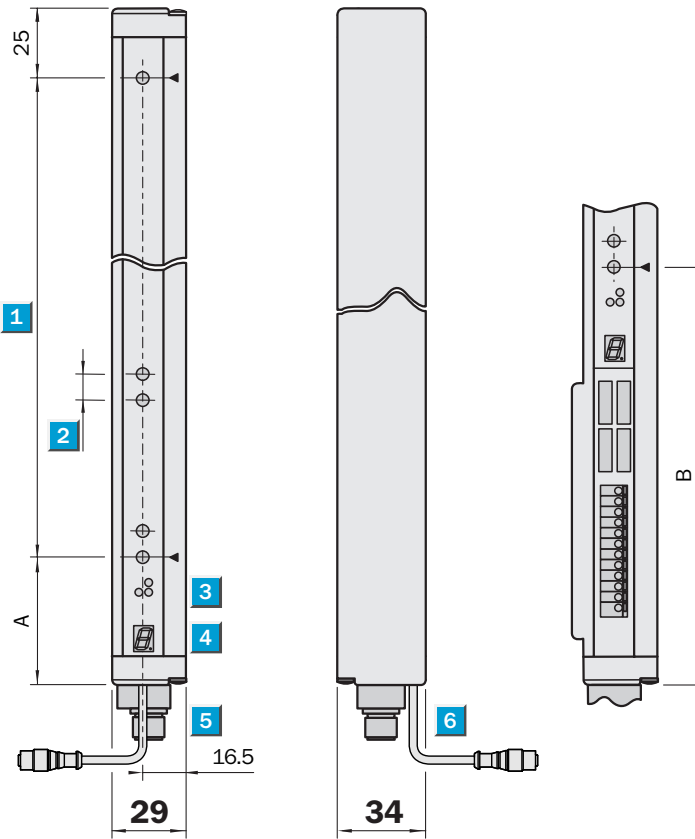
**SICK**SICK AG www.sick.de


Operating range
 0 ... 5 m/0 ... 8.5 m
Modular light grid

- High modularity: beam spacing, detection height, scanning range and interface
- Compact housing
- Short response time
- Teach-in for optimal sensitivity adjustment
- MLGsetup software for visualisation and parameterisation (included)



Dimensional drawing



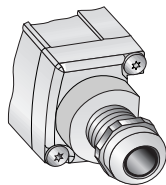
Distance: MLG edge – first beam

Dimensions (mm)	A	B
MLG 1 10 mm	49	160
MLG 2 20 mm	59	170
MLG 3 30 mm	69	180
MLG 5 50 mm	89	200

- 1** Detection height (see optical performance)
- 2** Beam spacing 10, 20, 30, 50 mm
- 3** Status indicator: LED green/LED yellow/LED red
- 4** Indicator panel, 7 segment display
- 5** PG 9/M 12 plug, 8-pin
- 6** Configuration M 8 plug, 4-pin

Connection types

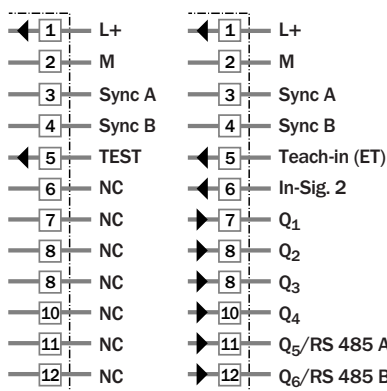
MLG x-xxxxx2x2



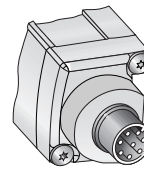
PG 9, terminals

Sender

Receiver



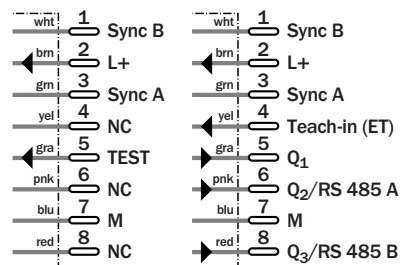
MLG x-xxxxx8x2



8-pin, M 12

Sender

Receiver



Accessories

Connectors
Mounting systems
MLGsetup Software*
Parametering cable

* included with delivery

Technical data		MLG	1)								
Maximum number of beams	240 beams										
Scanning range	0 ... 5 m/0 ... 8.5 m										
Synchronization mode ²⁾	Synchronized by cable sync A/sync B										
Supply voltage V_S ³⁾	15 ... 30 V DC										
Current consumption sender	< 140 mA + 2 mA/beam										
Current consumption receiver ⁴⁾	< 100 mA + 3 mA/beam										
Teach-in (ET)	PNP: Teach > 10 V ... < V_S										
Teach-in (ET)	External teach-in input										
Output current I_A max.	100 mA per output ⁵⁾										
Output load	Capacitive load: 100 nF/output Inductive load: 1H/output										
Operating mode outputs	Configurable with MLGsetup										
Response time ⁶⁾	Max. 3x (50 μ s per beam + 2 ms) ⁷⁾										
Alarm output (contamination)	Configurable with MLGsetup ⁸⁾										
Data interface	RS 485 ⁹⁾										
Configuration plug ¹⁰⁾	4-pin, M 8 plug, RS 232: 9.6 kBaud fix ¹¹⁾										
Immunity to ambient light	50,000 lx (continuous light)										
VDE protection class	III										
Circuit protection ¹²⁾	A, B, C										
Enclosure rating	IP 65										
Ambient temperature T_A	Operation -25 ... +55 °C Storage -40 ... +70 °C										
Mechanical resistance	Vibration: 5 g/10-55/s – IEC 68-2-6 Shock: 10 g/ 10 ms – IEC 68-2-29										
Weight (with PG 9)	Approx. 1480 g ¹³⁾										
Material	Housing: Alu., anodized; optics: PMMA										

¹⁾ See selection table (page 4)

²⁾ Sender (MLG S) and receiver (MLG E)

³⁾ Limit values

⁴⁾ Without load at $V_S = 24$ V

⁵⁾ max. $\Sigma = 550$ mA

⁶⁾ With resistive load

⁷⁾ Depends on selected basic function

⁸⁾ Default setting on Q_3

⁹⁾ Baud Rate, reporting mode configurable per MLGsetup

¹⁰⁾ Plug built on receiver (MLG E)

¹¹⁾ Configurable with MLGsetup

¹²⁾ A = V_S connection, reverse polarity protected

B = Outputs Q and Q short-circuit protected

C = Interface suppression

¹³⁾ For 1200 mm detection height, increment 160 g per 150 mm detection height

Optical performance

	Detection height			Minimum Detectable Object (MDO)		
	Minimum	Increment	Maximum	Beam spacing	MDO ¹⁴⁾	MDO ¹⁴⁾ with multiple scan ¹⁵⁾
MLG 1:	140 mm	150 mm	2390 mm	10 mm	15 ¹⁶⁾ /20 ¹⁷⁾ mm	< 10 ¹⁶⁾ / ^{<} 15 ¹⁷⁾ mm
MLG 2:	140 mm	150 mm	3140 mm	20 mm	25 ¹⁶⁾ /30 ¹⁷⁾ mm	< 15 ¹⁶⁾ / ^{<} 20 ¹⁷⁾ mm
MLG 3:	120 mm	150 mm	3120 mm	30 mm	35 ¹⁶⁾ /40 ¹⁷⁾ mm	< 20 ¹⁶⁾ / ^{<} 25 ¹⁷⁾ mm
MLG 5:	100 mm	150 mm	3100 mm	50 mm	55 ¹⁶⁾ /60 ¹⁷⁾ mm	< 30 ¹⁶⁾ / ^{<} 35 ¹⁷⁾ mm

¹⁴⁾ MDO for non-moving objects measured in a direction parallel to the MLG

¹⁵⁾ Multiple scan MDO sizes are determined at the mid point between the sender and receiver. Scanning range: Multiple scan usage will reduce scanning range and prolong response time.

¹⁶⁾ Scanning range: 5 m

¹⁷⁾ Scanning range: 8.5 m

Order informations *

Operating range = 0 ... 5 m/Beam spacing 10 mm/with plug/Type: programmable with MLGsetup

Type	Part no.	Height	Beams	Switching outputs
MLG 1-0140I812	1 022 573	140 mm	15	1 x PNP, RS 485, 1 input
MLG 1-0140F812	1 022 147	140 mm	15	3 x PNP, 1 input
MLG 1-0290F812	1 022 166	290 mm	30	3 x PNP, 1 input
MLG 1-0440F812	1 022 294	440 mm	45	3 x PNP, 1 input
MLG 1-0590F812	1 023 581	590 mm	60	3 x PNP, 1 input
MLG 1-0590I812	1 022 167	590 mm	60	1 x PNP, RS 485, 1 input
MLG 1-0740F812	1 023 031	740 mm	75	3 x PNP, 1 input
MLG 1-0740I812	1 023 558	740 mm	75	1 x PNP, RS 485, 1 input
MLG 1-0890I812	1 023 557	890 mm	90	1 x PNP, RS 485, 1 input
MLG 1-1190F812	1 022 159	1190 mm	120	3 x PNP, 1 input
MLG 1-1340I812	1 022 712	1340 mm	135	1 x PNP, RS 485, 1 input
MLG 1-1640F812	1 022 168	1640 mm	165	3 x PNP, 1 input

Operating range = 0 ... 5 m/Beam spacing 10 mm/with terminal chamber/Type: programmable with MLGsetup

Type	Part no.	Height	Beams	Switching outputs
MLG 1-0590F212	1 023 373	590 mm	60	6 x PNP, 2 inputs
MLG 1-0740I212	1 023 583	740 mm	75	RS 485, 4 x PNP outputs, 2 inputs
MLG 1-0890F212	1 022 179	890 mm	90	6 x PNP, 2 inputs
MLG 1-1040I212	1 023 584	1040 mm	105	RS 485, 4 x PNP outputs, 2 inputs
MLG 1-1340F212	1 023 582	1340 mm	135	6 x PNP, 2 inputs

Operating range = 0 ... 5 m/Beam spacing 20 mm/with plug/Type: programmable with MLGsetup

Type	Part no.	Height	Beams	Switching outputs
MLG 2-0280F812	1 023 585	280 mm	15	3 x PNP, 1 input
MLG 2-0580F812	1 023 555	580 mm	30	3 x PNP, 1 input
MLG 2-0880F812	1 023 586	880 mm	45	3 x PNP, 1 input
MLG 2-1180F812	1 023 587	1180 mm	60	3 x PNP, 1 input
MLG 2-1480F812	1 023 588	1480 mm	75	3 x PNP, 1 input
MLG 2-0280I812	1 023 589	280 mm	15	1 x PNP, RS 485, 1 input
MLG 2-0740I812	1 022 855	740 mm	38	1 x PNP, RS 485, 1 input
MLG 2-0880I812	1 022 590	880 mm	45	1 x PNP, RS 485, 1 input
MLG 2-1430I812	1 023 591	1430 mm	75	1 x PNP, RS 485, 1 input
MLG 2-1940I812	1 023 559	1940 mm	98	1 x PNP, RS 485, 1 input

Operating range = 0 ... 5 m/Beam spacing 20 mm/with terminal chamber/Type: programmable with MLGsetup

Type	Part no.	Height	Beams	Switching outputs
MLG 2-0140F212	1 023 592	140 mm	8	6 x PNP outputs, 2 inputs
MLG 2-1040F212	1 023 593	1040 mm	53	6 x PNP outputs, 2 inputs
MLG 2-1640F212	1 023 594	1640 mm	83	6 x PNP outputs, 2 inputs
MLG 2-0440I212	1 023 595	440 mm	23	RS 485, 4 x PNP outputs, 2 inputs
MLG 2-0740I212	1 023 596	740 mm	38	RS 485, 4 x PNP outputs, 2 inputs
MLG 2-2240I212	1 023 597	2240 mm	113	RS 485, 4 x PNP outputs, 2 inputs
MLG 2-2240F212	1 022 606	2240 mm	113	6 x PNP, 2 inputs

* additional types on request

Order informations *

Operating range = 0 ... 5 m/Beam spacing 30 mm/with plug/Type: programmable with MLGsetup

Type	Part no.	Height	Beams	Switching outputs
MLG 3-0420F812	1 023 598	420 mm	15	3 x PNP, 1 input
MLG 3-1020F812	1 022 169	1020 mm	35	3 x PNP, 1 input
MLG 3-1470F812	1 023 556	1470 mm	50	3 x PNP, 1 input
MLG 3-1920I812	1 023 392	1920 mm	65	1 x PNP, RS 485, 1 input
MLG 3-2070F812	1 022 292	2070 mm	70	3 x PNP, 1 input
MLG 3-2220F812	1 022 173	2220 mm	75	3 x PNP, 1 input
MLG 3-2670F812	1 023 599	2670 mm	90	3 x PNP, 1 input
MLG 3-2820F812	1 022 174	2820 mm	95	3 x PNP, 1 input

Operating range = 0 ... 5 m/Beam spacing 30 mm/with terminal chamber/Type: programmable with MLGsetup

Type	Part no.	Height	Beams	Switching outputs
MLG 3-1770F212	1 023 598	1770 mm	60	6 x PNP outputs, 2 inputs
MLG 3-2070F212	1 023 601	2070 mm	70	6 x PNP outputs, 2 inputs
MLG 3-2820F212	1 023 602	2820 mm	95	6 x PNP outputs, 2 inputs

Operating range = 0 ... 5 m/Beam spacing 50 mm/with plug/Type: programmable with MLGsetup

Type	Part no.	Height	Beams	Switching outputs
MLG 5-0250F812	1 023 603	250 mm	6	3 x PNP, 1 input
MLG 5-0250I812	1 023 607	250 mm	6	1 x PNP, RS 485, 1 input
MLG 5-0700F812	1 022 175	700 mm	15	3 x PNP, 1 input
MLG 5-1150F812	1 022 176	1150 mm	24	3 x PNP, 1 input
MLG 5-1300I812	1 023 432	1300 mm	27	1 x PNP, RS 485, 1 input
MLG 5-1450F812	1 023 604	1450 mm	30	3 x PNP, 1 input
MLG 5-1450I812	1 023 608	1450 mm	30	1 x PNP, RS 485, 1 input
MLG 5-1600F812	1 022 177	1600 mm	33	3 x PNP, 1 input
MLG 5-1900F812	1 023 604	1900 mm	40	3 x PNP, 1 input
MLG 5-2350F812	1 022 178	2350 mm	48	3 x PNP, 1 input
MLG 5-2800F812	1 023 606	2800 mm	57	3 x PNP, 1 input
MLG 5-2800I812	1 023 609	2800 mm	57	1 x PNP, RS 485, 1 input

Operating range = 0 ... 5 m/Beam spacing 50 mm/with terminal chamber/Type: programmable with MLGsetup


Type	Part no.	Height	Beams	Switching outputs
MLG 5-0850F212	1 023 610	850 mm	18	6 x PNP, 2 inputs
MLG 5-1600F212	1 023 611	1600 mm	33	6 x PNP, 2 inputs
MLG 5-2200F212	1 023 612	2200 mm	45	6 x PNP, 2 inputs
MLG 5-2500F212	1 023 613	2500 mm	51	6 x PNP, 2 inputs
MLG 5-1000I212	1 023 614	1000 mm	21	4 x PNP, RS 485, 2 inputs
MLG 5-1450I212	1 023 615	1450 mm	30	4 x PNP, RS 485, 2 inputs
MLG 5-2500I212	1 023 358	2500 mm	51	4 x PNP, RS 485, 2 inputs

Operating range = 0 ... 8.5 m/Beam spacing 10 mm/with plug/Type: programmable with MLGsetup

Type	Part no.	Height	Beams	Switching outputs
MLG 1-0290I822	1 022 572	290 mm	30	1 x PNP, RS 485, 1 input

* additional types on request

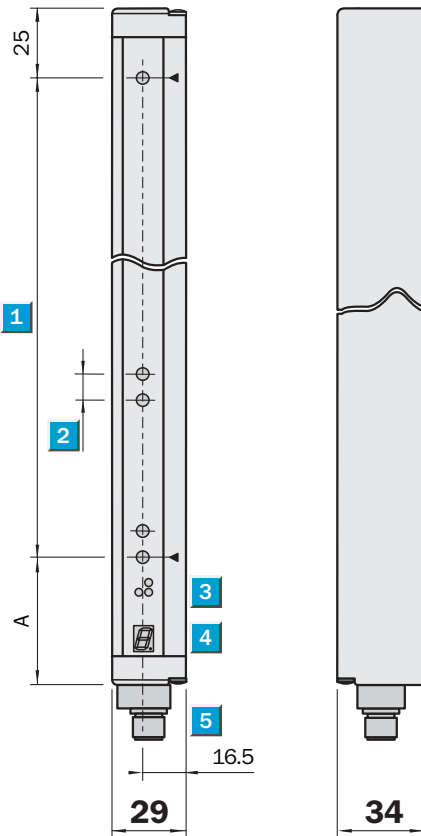
Type	Interfaces
F8x2	3 x PNP outputs, 1 input
F2x2	6 x PNP outputs, 2 inputs
I8x2	RS 485 data interface, 1 x PNP output, 1 input
I2x2	RS 485 data interface, 4 x PNP outputs, 2 inputs

	Operating range 0.5 ... 5 m
Modular light grid	

- Wide selection of detection heights
- Short response time
- Teach-in for optimal sensitivity adjustment



Dimensional drawing



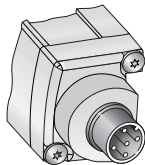
Distance: MLG edge – first beam

Dimensions (mm)	A
Beam spacing 30 mm	69
Beam spacing 50 mm	89

- 1** Detection height (see optical performance)
- 2** Beam spacing 30 mm, 50 mm
- 3** Status indicator: LED green/LED yellow/LED red
- 4** Indicator panel, 7 segment display
- 5** M 12 plug, 5-pin

Connection types

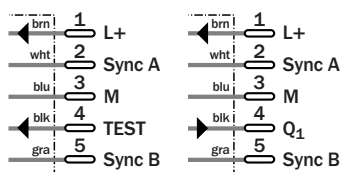
MLG x-xxxxF513



5-pin, M 12

Sender

Receiver



Accessories

- Connectors
- Mounting systems

Technical data		MLG	5-0250	5-0550	5-0700	5-1000	5-1150	5-1450	5-1750	5-1900	5-2050	3-2220
			F513	F513	F513	F513	F513	F513	F513	F513	F513	F513
Beam spacing ¹⁾	50 mm											
	30 mm											
Number of beams/												
Detection height	6 beams/250 mm											
	12 beams/550 mm											
	15 beams/700 mm											
	21 beams/1000 mm											
	24 beams/1150 mm											
	30 beams/1450 mm											
	36 beams/1750 mm											
	39 beams/1900 mm											
42 beams/2050 mm												
75 beams/2220 mm												
Scanning range	0.5 ... 5 m											
Synchronization mode ²⁾	Synchronized by cable sync A/sync B											
Light source	LED, infrared light											
Supply voltage V_s ³⁾	15 ... 30 V DC											
Ripple	< 5 V_{pp} within V_s tolerances											
Current consumption sender	< 140 mA + 2 mA/beam											
Current consumption receiver ⁴⁾	< 100 mA + 3 mA/beam											
Connection	M 12 plug, 5-pin											
Switching output	PNP, Q_1 dark-switching											
Teach-in (learn)	Automatic by each Power on											
Output current I_A max.	100 mA											
Output load	Capacitive load: 100 nF/output											
	Inductive load: 1 H/output											
Response time ⁵⁾	6 ... 35 ms											
Immunity to ambient light	50,000 lx (continuous light)											
VDE protection class	III											
Circuit protection ⁶⁾	A, B, C											
Enclosure rating	IP 65											
Ambient temperature T_A	Operation -25 ... +55 °C											
	Storage -40 ... +70 °C											
Mechanical resistance	Vibration: 5 g/10-55/s – IEC 68-2-6											
	Shock: 10 g/10 ms – IEC 68-2-29											
Weight	580 ... 2300 g											
Material	Housing: Alu., anodized; optics: PMMA											

- 1) Further beam spacing possible
2) Sender (MLG S) and receiver (MLG E)
3) Limit values
4) Without load at $V_s = 24$ V
5) With resistive load


- 6) A = V_s connection, reverse polarity protected
B = Outputs Q and Q short-circuit protected
C = Interface suppression

	Optical performance					
	Detection height (mm)			Minimum Detectable Object (MDO)		
	Min.	Inc.	Max.	Beam spacing	MDO ⁷⁾	MDO ⁷⁾ with multiple scan ⁸⁾
MLG 3:	120	150	3120	30 mm	35 mm	< 20 mm
MLG 5:	100	150	3100	50 mm	55 mm	< 30 mm

- 7) MDO for non-moving objects measured in a direction parallel to the MLG
8) Multiple scan MDO sizes are determined at the mid point between the sender and receiver

Order information	
Type	Part no.
MLG 5-0250F513	1 022 646
MLG 5-0550F513	1 022 647
MLG 5-0700F513	1 022 648
MLG 5-1000F513	1 022 649
MLG 5-1150F513	1 022 650
MLG 5-1450F513	1 022 642
MLG 5-1750F513	1 022 651
MLG 5-1900F513	1 022 652
MLG 5-2050F513	1 022 653
MLG 3-2220F513	1 022 870

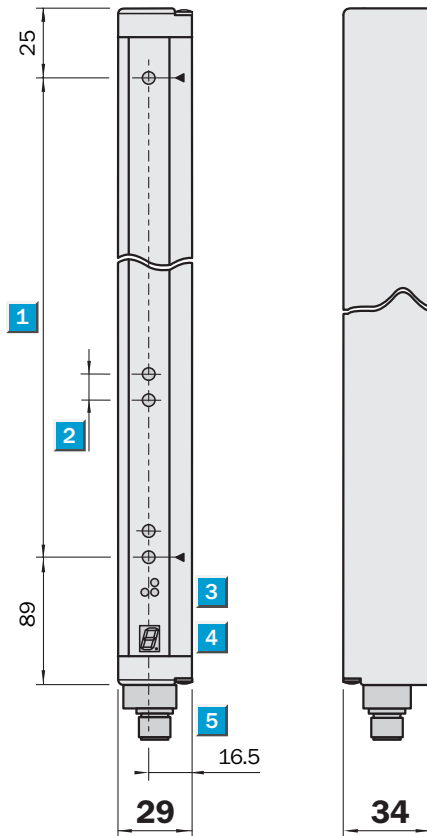
* additional types on request

	Operating range 0.5 ... 5 m
Modular light grid	

- For replacement of LGA series
- Short response time
- Teach-in for optimal sensitivity adjustment



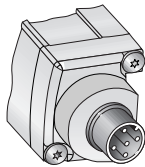
Dimensional drawing



- 1** Detection height (see optical performance)
- 2** Beam spacing 30 mm, 50 mm
- 3** Status indicator: LED green/LED yellow/LED red
- 4** Indicator panel, 7 segment display
- 5** M 12 plug, 5-pin

Connection types

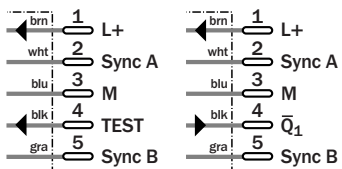
MLG x-xxxxF51L



5-pin, M 12

Sender

Receiver



Accessories

Connectors

Mounting systems

Technical data		MLG	5-0250	5-0550	5-0700	5-1000	5-1150	5-1450	5-1750	5-1900	5-2050
			F51L	F51L	F51L	F51L	F51L	F51L	F51L	F51L	F51L
Beam spacing ¹⁾	50 mm										
Number of beams/ Detection height	6 beams/250 mm										
	12 beams/550 mm										
	15 beams/700 mm										
	21 beams/1000 mm										
	24 beams/1150 mm										
	30 beams/1450 mm										
	36 beams/1750 mm										
	39 beams/1900 mm										
	42 beams/2050 mm										
Scanning range	0.5 ... 5 m										
Synchronization mode ²⁾	Synchronized by cable sync A/sync B										
Light source	LED, infrared light										
Supply voltage V_s ³⁾	15 ... 30 V DC										
Ripple	< 5 V_{pp} within V_s tolerances										
Current consumption sender	< 140 mA + 2 mA/beam										
Current consumption receiver ⁴⁾	< 100 mA + 3 mA/beam										
Connection	M 12 plug, 5-pin										
Switching output	PNP, \bar{Q}_1 dark-switching, inverted										
Teach-in (learn)	Automatic by each Power on										
Output current I_A max.	100 mA										
Output load	Capacitive load: 100 nF/output Inductive load: 1 H/output										
Response time ⁵⁾	6 ... 35 ms										
Immunity to ambient light	50,000 lx (continuous light)										
VDE protection class	III										
Circuit protection ⁶⁾	A, B, C										
Enclosure rating	IP 65										
Ambient temperature T_A	Operation -25 ... +55 °C Storage -40 ... +70 °C										
Mechanical resistance	Vibration: 5 g/10-55/s – IEC 68-2-6 Shock: 10 g/10 ms – IEC 68-2-29										
Weight	580 ... 2300 g										
Material	Housing: Alu., anodized; optics: PMMA										

¹⁾ Further beam spacing possible

²⁾ Sender (MLG S) and receiver (MLG E)

³⁾ Limit values

⁴⁾ Without load at $V_s = 24$ V

⁵⁾ With resistive load

⁶⁾ A = V_s connection, reverse polarity protected

B = Outputs Q and Q short-circuit protected

C = Interface suppression

	Optical performance					
	Detection height (mm)			Minimum Detectable Object (MDO)		
	Min.	Inc.	Max.	Beam spacing	MDO ⁷⁾	MDO ⁷⁾ with multiple scan ⁸⁾
MLG 5:	100	150	3100	50 mm	55 mm	< 30 mm

⁷⁾ MDO for non-moving objects measured in a direction parallel to the MLG

⁸⁾ Multiple scan MDO sizes are determined at the mid point between the sender and receiver

Order information	
Type	Part no.
MLG 5-0250F51L	1 023 622
MLG 5-0550F51L	1 023 623
MLG 5-0700F51L	1 023 624
MLG 5-1000F51L	1 023 625
MLG 5-1150F51L	1 023 626
MLG 5-1450F51L	1 023 627
MLG 5-1750F51L	1 023 628
MLG 5-1900F51L	1 023 629
MLG 5-2050F51L	1 023 630

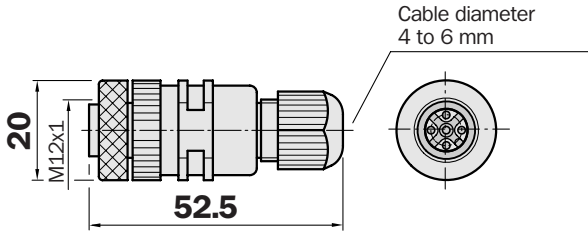
* other types on request

Dimensional drawings and order information

SENSICK screw-in system M 12, 5-pin, enclosure rating IP 67

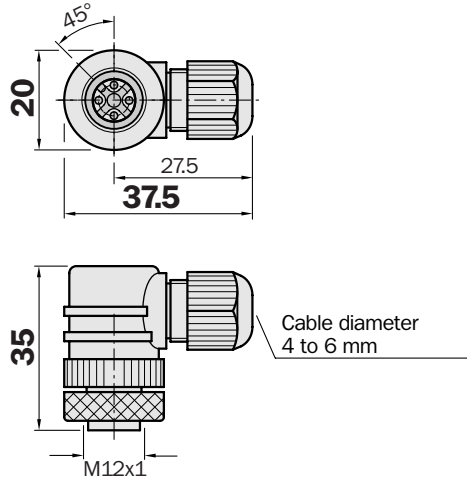
Female connector M 12, 5-pin, straight

Type	Part no.	Contacts
DOS-1205-G	6 009 719	5



Female connector M 12, 5-pin, right angle

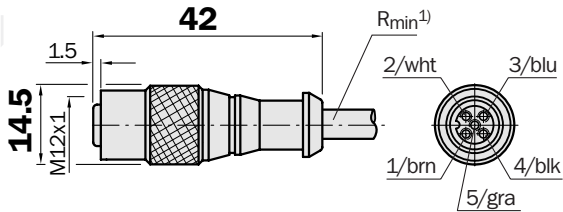
Type	Part no.	Contacts
DOS-1205-W	6 009 720	5



Female connector M 12, 5-pin, straight

Cable diameter 5/6 mm, 4/5 x 0.25 mm², sheath PVC

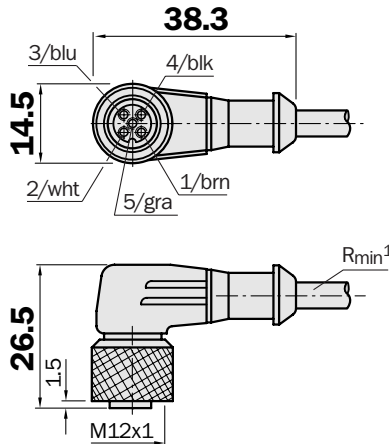
Type	Part no.	Contacts	Cable length
DOL-1205-G02M	6 008 899	5	2 m
DOL-1205-G05M	6 009 868	5	5 m
DOL-1205-G10M	6 010 544	5	10 m



Female connector M 12, 5-pin, right angle

Cable diameter 5/6 mm, 4/5 x 0.25 mm², sheath PVC

Type	Part no.	Contacts	Cable length
DOL-1205-W02M	6 008 900	5	2 m
DOL-1205-W05M	6 009 869	5	5 m
DOL-1205-W10M	6 010 542	5	10 m



¹⁾ Minimum bend radius in dynamic use
 $R_{min} = 20 \times \text{cable diameter}$

Dimensional drawings and order information

SENSICK screw-in system M 12, 8-pin, enclosure rating IP 67

Female connector M 12, 8-pin, straight, shielded

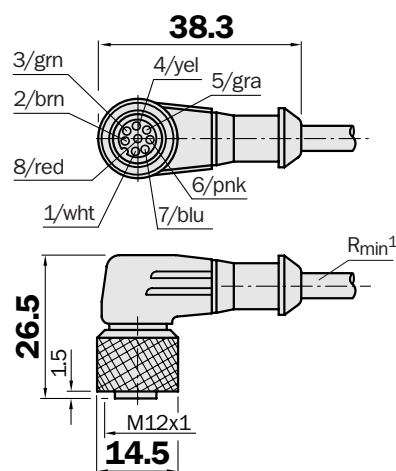
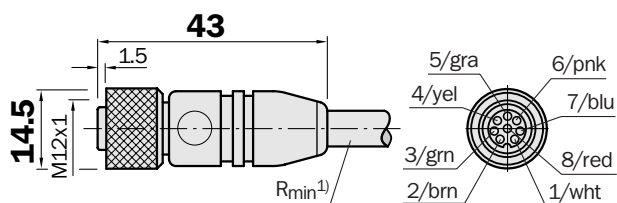
Cable diameter 6.6 mm, 8 x 0.25 mm², sheath PVC

Type	Part no.	Cable length
DOL-1208-G02MA	6 020 633	2 m
DOL-1208-G05MA	6 020 993	5 m
DOL-1208-G10MA	6 022 152	10 m
DOL-1208-G15MA	6 022 153	15 m

Female connector M 12, 8-pin, right angle, shielded

Cable diameter 6.6 mm, 8 x 0.25 mm², sheath PVC

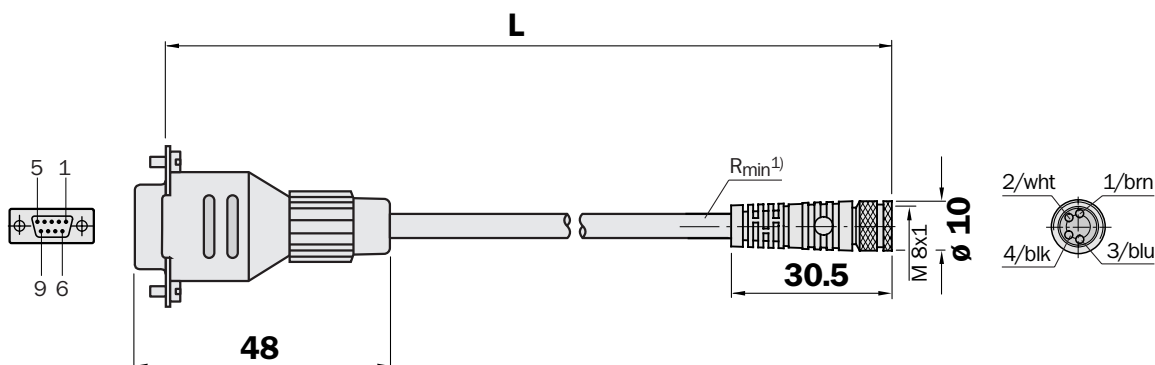
Type	Part no.	Cable length
DOL-1208-W02MA	6 020 992	2 m
DOL-1208-W05MA	6 021 033	5 m



Parametering cable PC to MLG E (L = 2 m)

Cable diameter 5 mm, 4 x 0.25 mm², sheath PVC

Type	Part no.
	2 023 695



MLGsetup parametering software (CD-ROM)

For Windows 95®, Windows 98®, Windows NT®, Windows ME®, Windows XP® configuration software

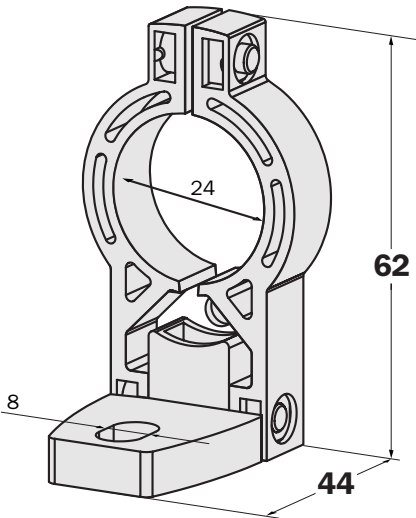
Part no.
2 023 827

Dimensional drawings and order information

Mounting kit 1 – Swivel Mount

For MLG S and MLG E, recommended for detection heights up to 1600 mm

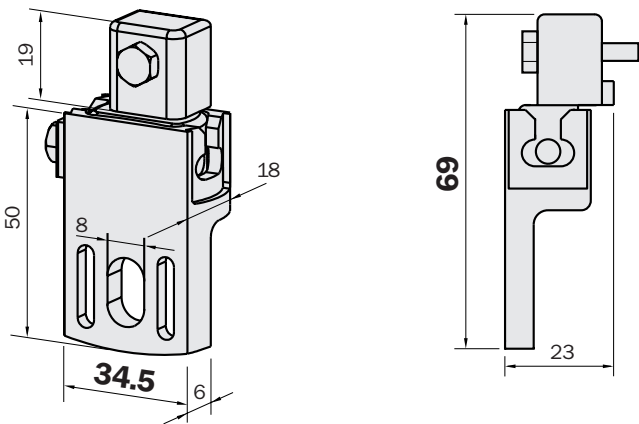
Type	Part no.	Pieces
	2 019 649	4



Mounting kit 4 – T-nuts with shifting nuts

Side mounting with shift nuts for all monitoring heights (for high vibration and shock exposure)

Type	Part no.	Pieces
BEF-NUT-MLG	2 023 696	4



Alignment aid

Laser alignment aid

Type	Part no.	Cable length
AR 60	1 015 741	2 m

Alignment aid

Adapter for MLG housing

Type	Part no.
	4 032 462

Great Britain

Erwin Sick Ltd.
 Waldkirch House
 39 Hedley Road, St. Albans
 Hertfordshire AL 1 5BN
 ☎ +44 17 27-83 11 21
 Fax +44 17 27-85 67 67
 info@sick.co.uk

USA

SICK, Inc.
 6900 West 110th Street
 Bloomington, MN 55438
 ☎ +1 (952) 9 41-67 80
 Fax +1 (952) 9 41-92 87
 WATS: 1-800-325-7425
 info@sickusa.com

Australia

Sick Pty. Ltd. Head Office, P.O. Box 214
 899 Heidelberg Road
 Ivanhoe, Vic. 3079, Australia
 ☎ +61 39 49 74 10 0
 (0 8) 33 48 02 - toll free
 Fax +61 39 49 71 18 7
 sales@sick.com.au

