REER Micron Light Grids

Sender/Receiver Pair Analog Output

Overview

REER Micron Light Grid is a multi-beam optoelectronic system consisting of a sender and a receiver, used to measure objects.

Configuration software and analog outputs allow dynamic detection and measurement of objects.

The status of the light grid outputs (which reside in the receiver) changes as soon as a measurement is performed (or an object is detected).

Features

- Status indicating display
- Protection rating IP65, IP67
- Configurable with Micron configuration software (free download)
- Mounting hardware included
- Purchase cables separately
- 2-year warranty

MI301-AC

Sender/Receiver Pair Analog Output Micron Light Grids Selection Chart

Part Number	Price	Beam Resolution	Detection Height	Operating Distance	Analog Output	Switching Output	Operating Voltage	Connection	Weight kg [lbs]	Drawing Link
MI301-AC	$;060#t:	10mm [0.39 in]	290mm [11.41 in]	0-10m [0-32.80 ft]	(2) 4-20 mA + 2% (refers to 0VDC) (configurable functions) Operating with 10 to 470 Ohm load resistor	(2) push-pull 100mA @ 0-24VDC (configurable functions) PNP or NPN	24VDC ± 20%	(1) 5-pin M12 quick-disconnect (1) 8-pin M12 quick-disconnect (1) 4-pin M5 connector (USB) for software configuration	1.51 [3.32]	PDF
MI601-AC	$060#u:		590mm [23.22 in]						2.25 [4.96]	PDF
MI901-AC	$;0060#v:		890mm [35.03]						3.18 [7.01]	PDF
MI1201-AC	$;0060#x:		1190mm [46.85 in]						3.96 [8.73]	PDF
MI1501-AC	$;0060#y:		1490mm [58.66 in]						4.67 [10.29]	PDF
MI303-AC	$060#z:	30mm [1.18 in]	270mm [10.62 in]						1.51 [3.32]	PDF
MI603-AC	$;060#]:		570mm [22.44 in]						2.25 [4.96]	PDF
MI903-AC	$;060#[:		870mm [34.25 in]						3.18 [7.01]	PDF
MI1203-AC	$;0060#_:		1170mm [46.06 in]						3.96 [8.73]	PDF
MI1503-AC	$;0060##:		1470mm [57.87 in]						4.67 [10.29]	PDF

Note: Configuration software requires cable part number CSU-M5, purchase separately.
Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

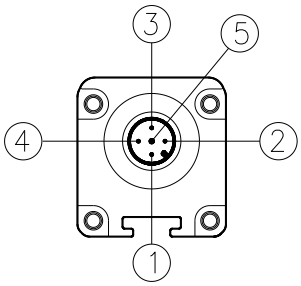
Sender/Receiver Pair Analog Output Micron Light Grids Specifications

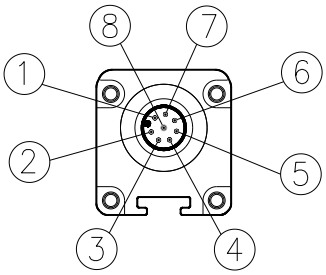
Measurement Time	(500 µs + 70 µs x n beams) x N Where N = scan cycles (1, 2, 3 selectable)
Synchronization	Optical or via cable, selectable
Maximum Power	Sender: 1W Receiver: 2W
Inputs	Input with configurable functions (0/24 VDC)
Duration of Input Signal (minimum)	5ms
Connection Length (maximum)	50m
Operating Temperature	-10 to 55°C [14 to 131°F]
Storage Temperature	-10 to 70°C [14 to 158°F]
Status Display	LEDs for operating status and light grid self-diagnosis
Protection Class	IP65/IP67
Housing Material	Housing: Aluminum Caps: Glass reinforced polypropylene
Agency Approvals	CE, cULus E469760

REER Micron Light Grids

Sender/Receiver Pair Analog Output

Wiring Diagrams





Sender: 5-Pin M12 Pinout			
Pin	***Color***	***Name***	***Description***
1	Brown	24VDC	24VDC power supply
2	White	RANGE	24VDC Input - High Range 0VDC - Low Range
3	Blue	0VDC	0VDC power supply
4	Black	SYNC	RX-TX Sync input (optional)
5	Gray	PE	Ground connection

Receiver: 8-Pin M12 Pinout			
Pin	***Color***	***Name***	***Description***
1	White	OUT2/SYNC	Static output 2 / RX-TX sync
2	Brown	24VDC	24VDC power supply
3	Green	OUT1	Static output 1
4	Yellow	INPUT	Input with programmable functions
5	Gray	ANALOG_OUT2	Analog output 2 4-20mA current output
6	Pink	ANALOG_OUT1	Analog output 1 4-20mA current output
7	Blue	0VDC	0VDC power supply
8	Red	PE	Ground connection

REER Micron Light Grids

Sender/Receiver Pair PNP, IO-Link

Overview

The PNP IO-Link Micron light grid is a multi-beam optoelectronic system consisting of a sender and a receiver, used to measure objects.

Configuration software and IO-Link connectivity allow dynamic detection and measurement of objects.

The status of the light grid outputs (which reside in the receiver) changes as soon as a measurement is performed (or an object is detected).

Features

- Status indicating display
- Protection rating IP65, IP67
- Configurable
- IO-Link v1.1.2
- Mounting hardware included
- Purchase cables separately
- 2-year warranty

MI301-IOL

Sender/Receiver Pair PNP, IO-Link Micron Light Grids Selection Chart									
Part Number	***Price***	***Beam Resolution***	***Detection Height***	***Operating Distance***	***Switching Output***	***Operating Voltage***	***Connection***	***Weight kg [lbs]***	***Drawing Link***
MI301-IOL	$;060#!:	10mm [0.39 in]	290mm [11.41 in]	0-10m [0-32.80 ft]	PNP	24VDC ± 20%	(2) 5-pin M12 quick-disconnects	1.42 [3.13]	PDF
MI601-IOL	$;0060#?:		590mm [23.22 in]					2.17 [4.78]	PDF
MI901-IOL	$;;0060#,:		890mm [35.03]					3.23 [7.12]	PDF
MI1201-IOL	$;;0060!0:		1190mm [46.85 in]					4.01 [8.84]	PDF
MI1501-IOL	$;;0060!1:		1490mm [58.66 in]					4.72 [10.40]	PDF
MI303-IOL	$;060!2:	30mm [1.18 in]	270mm [10.62 in]					1.42 [3.13]	PDF
MI603-IOL	$;060!3:		570mm [22.44 in]					2.17 [4.78]	PDF
MI903-IOL	$;;0060!4:		870mm [34.25 in]					3.23 [7.12]	PDF
MI1203-IOL	$;;0060!5:		1170mm [46.06 in]					4.01 [8.84]	PDF
MI1503-IOL	$;;0060!6:		1470mm [57.87 in]					4.72 [10.40]	PDF

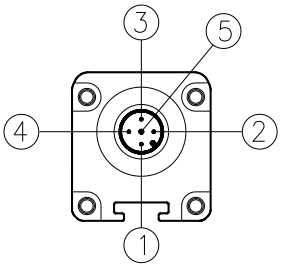
Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

Sender/Receiver Pair PNP, IO-Link Micron Light Grids Specifications	
Synchronization	Optical or via cable, selectable
Maximum Power	Sender: 1W Receiver: 3W
Connection Length (maximum)	20m [65.62 ft]
Operating Temperature	-10 to 55°C [14 to 131°F]
Storage Temperature	-10 to 70°C [14 to 158°F]
Status Display	LEDs for operating status and light grid self-diagnosis
Protection Class	IP65/IP67
IO-Link	IO-Link Interface and System specification - Version 1.1.2 Port Class A (Type A) COM2 = 38.4 kbaud SIO mode supported: Yes Block parameterization: Yes Data storage: Yes
Material	Housing: Aluminum Caps: Glass reinforced polypropylene
Agency Approvals	CE, cULus E469760

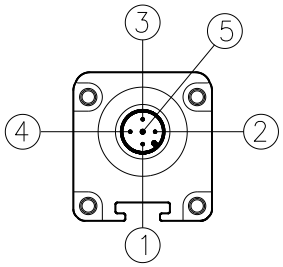
REER Micron Light Grids

Sender/Receiver Pair PNP, IO-Link

Wiring Diagrams



Sender: 5-Pin M12 Pinout			
Pin	***Name***	***Type***	***Description***
1	24VDC	–	24VDC power supply
2	RANGE	DI	24VDC Input - High Range 0VDC - Low Range
3	0VDC	–	0VDC power supply
4	SYNC	DI	RX-TX Sync input (optional)
5	PE	–	Ground connection



Receiver: 5-Pin M12 Pinout			
Pin	***Name***	***Type***	***Description***
1	L+	–	24VDC power supply
2	SYNC	DO	RX-TX Sync output (optional)
3	L-	–	0VDC power supply
4	C/Q	COM/DO	SIO standard input/output or IO-Link communication
5	NC	–	Not connected

REER Micron Light Grids

Sender/Receiver Pair Push-pull, Complementary

Overview

The push-pull complementary Micron light grid is a multi-beam optoelectronic system consisting of a sender and a receiver, used to detect objects.

Digital outputs allow basic detection of objects.

The status of the light grid outputs (which reside in the receiver) changes as soon as a measurement is performed (or an object is detected).

Features

- Status indicating display
- Protection rating IP65, IP67
- Mounting hardware included
- Purchase cables separately
- 2-year warranty

MI151-C

Sender/Receiver Pair Push-pull, Complementary Micron Light Grids Selection Chart									
Part Number	***Price***	***Beam Resolution***	***Detection Height***	***Operating Distance***	***Switching Output***	***Operating Voltage***	***Connection***	***Weight kg [lbs]***	***Drawing Link***
MI151-C	$;060!7:	10mm [0.39 in]	140mm [5.51 in]	0-10m [0-32.80 ft]	(2) push-pull complementary 100mA @ 24VDC PNP or NPN	24VDC ± 20%	(2) 5-pin M12 quick-disconnects	1.09 [2.40]	PDF
MI301-C	$;060!8:		290mm [11.41 in]					1.42 [3.13]	PDF
MI451-C	$;060!9:		440mm [17.32in]					1.81 [3.99]	PDF
MI601-C	$;060!a:		590mm [23.22 in]					2.17 [4.78]	PDF
MI751-C	$;;0060!b:		740mm [29.13 in]					2.81 [6.19]	PDF
MI153-C	$;060!c:	30mm [1.18 in]	120mm [4.72 in]					1.09 [2.40]	PDF
MI303-C	$;060!d:		270mm [10.62 in]					1.42 [3.13]	PDF
MI453-C	$;060!e:		420mm [16.53 in]					1.81 [3.99]	PDF
MI603-C	$;;060!f:		570mm [22.44 in]					2.17 [4.78]	PDF
MI753-C	$;060!g:		720mm [28.34 in]					2.50 [5.51]	PDF

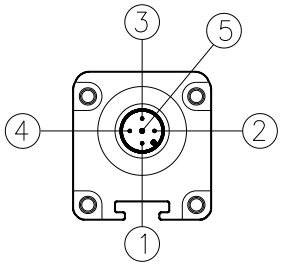
Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

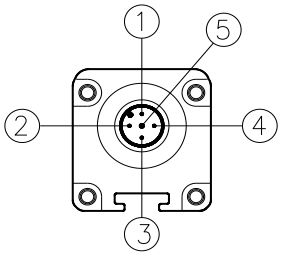
Sender/Receiver Pair Push-pull Complementary Micron Light Grids Specifications	
Measurement Time	(500 µs + 70 µs x n beams) x 2
Synchronization	Optical
Max Power	Sender: 1W Receiver: 2W
Duration of Input Signal (minimum)	5ms
Connection Length (maximum)	100m [328 ft]
Operating Temperature	-10 to 55°C [14 to 131°F]
Storage Temperature	-10 to 70°C [14 to 158°F]
Status Display	LEDs for operating status and light grid self-diagnosis
Protection Class	IP65/IP67
Material	Housing: Aluminum Caps: Glass reinforced polypropylene
Agency Approvals	CE, cULus E469760

REER Micron Light Grids

Sender/Receiver Pair Push-pull, Complementary

Wiring Diagrams





Sender: 5-Pin M12 Pinout			
Pin	***Color***	***Name***	***Description***
1	Brown	24VDC	24VDC power supply
2	White	RANGE	24VDC Input - High Range 0VDC - Low Range
3	Blue	0VDC	0VDC power supply
4	Black	SYNC	Not Used
5	Gray	PE	Ground connection

Receiver: 5-Pin M12 Pinout			
Pin	***Color***	***Name***	***Description***
1	Brown	24VDC	24VDC power supply
2	White	OUT2	Static output 2 | DARK-ON 24VDC, 100mA
3	Blue	0VDC	0VDC power supply
4	Black	OUT1	Static output 1 | LIGHT-ON 24VDC, 100mA
5	Gray	PE	Ground connection

ReeR Micron Light Grids

Light Grid Cables

Overview

Programming cable used for X-AC models to connect to software. CSY patch cables are used for IO-Link models to simplify cable management. H patch cable shorts pin 2 to L+, setting units in long range mode. L patch cable is not connected.

CSU-M5

CSY-IOL-H

Features

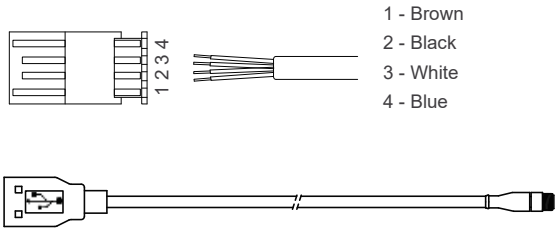
- PVC
- IP67

Micron Light Grid Cables

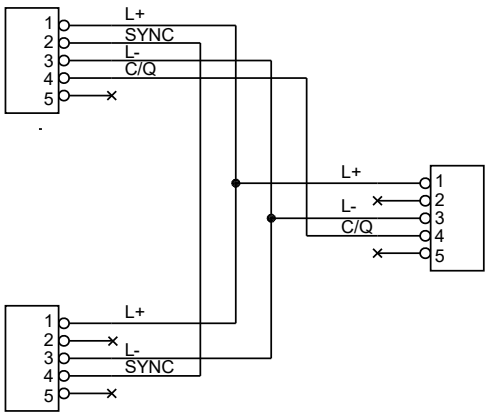
Part Number	Price	Description	Cables Section	Insulation	Torque	Temperature Range	Weight kg [oz]	Drawing Link
CSU-M5	$;-60!i:	ReeR programming cable, USB Type A male to M5, black, 6.5ft/2m cable length. For use with Micron X-AC analog models.	—	—	—	—	0.04 [1.41]	N/A
CSY-IOL-H	$;-60!l:	ReeR IO-Link high signal cable, 3-pin M12 quick-disconnect to (2) 5-pin M12 quick-disconnects, black, 1.3ft/400mm cable length. For use with Micron X-IOL IO-Link models.	0.25 mm^2	≥100MΩ (IEC60512)	Min 0.5 N•m Max 0.8 N•m	-25 to 80°C [-13 to 176°F]	0.06 [2.11]	N/A
CSY-IOL-L	$;60!h:	ReeR IO-Link low signal cable, 3-pin M12 quick-disconnect to (2) 5-pin M12 quick-disconnects, black, 1.3ft/400mm cable length. For use with Micron X-IOL IO-Link models.					0.06 [2.11]	N/A

Wiring Diagrams

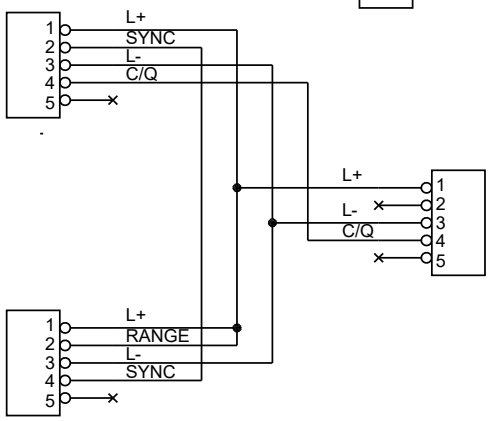
CSU-M5



CSY-IOL-L



CSY-IOL-H



ReeR Micron Light Grids Accessories

Mounting Brackets

- Available in 90- or 180-degree
- Hardware included

SAV8ECSU-M5

SFBE180

Micron Light Grid Mounting Brackets				
Part Number	***Price***	***Description***	***Weight kg [oz]***	***Drawing Link***
SAV8E	$;-60!j:	ReeR anti-vibration mounting bracket, 90-degree, steel. Package of 8. For use with ReeR Micron light grids. Hardware included.	0.10 [3.52]	PDF
SFBE180	$;60!k:	ReeR mounting bracket, 180-degree, vertical and horizontal adjustment, steel. Package of 4. For use with ReeR Micron light grids. Hardware included.	0.22 [7.76]	PDF

Each light grid ships with 90-degree mounting brackets only, 180-degree versions are available if needed.

Laser Alignment Tool

Overview

The LAD4 alignment device allows a fast and reliable optical alignment for ReeR safety light grids.

The device emits a visible (red) laser beam, making it possible to correctly align the sender and the receiver, as well as the possible deflection mirrors.

Features

- Class 2 laser light emission
- Laser diode 635nm wave length
- Beam divergence < 0.5 mrd
- 2 AAA batteries included

CE

LAD4

Micron Light Grid Laser Alignment Tool				
Part Number	***Price***	***Description***	***Weight kg [oz]***	***Drawing Link***
LAD4	$;060!n:	ReeR laser alignment tool, Class 2 laser light emission, 50m operating range. For use with ReeR Micron light grids. 2 AAA batteries included.	0.38 [13.40]	PDF