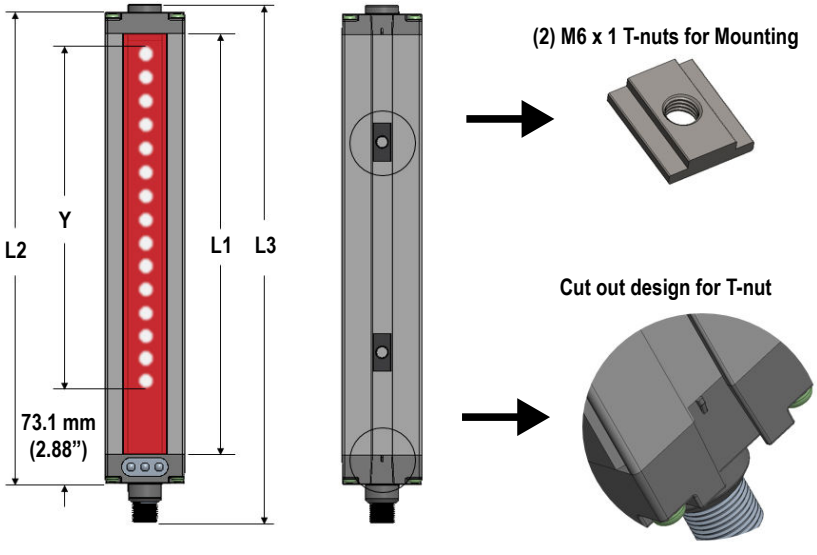
MINI ARRAY BASIC Two-Piece Measuring Light Curtain

Quick Start Guide

MINI-ARRAY BASIC Two-Piece Measuring Light Curtain configured for material handling and logistics applications with auto-stream serial output, two discrete outputs, and EIA-485 communication

This guide is designed to help you set up and install the MINI-ARRAY Basic Two-Piece Measuring Light Curtain. For complete information on programming, performance, troubleshooting, dimensions, and accessories, please refer to the Instruction Manual at www.bannerengineering.com. Search for p/n 220750 to view the Instruction Manual. Use of this document assumes familiarity with pertinent industry standards and practices.



WARNING:

- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

Models

Emitter Model	Receiver Model	Array Length (Y)	Overall Length	Total Beams	Sensor Scan Time (ms)	
					Interlaced Scan	Straight Scan [1]
MBE616Q Emitter	**MBR616PX485SQ**	143 mm (5.62 in)	251 mm (9.9 in)	8	1.4	0.9
MBE1216Q Emitter	**MBR1216PX485SQ**	295 mm (11.62 in)	403 mm (15.9 in)	16	2.5	1.5
MBE1816Q Emitter	**MBR1816PX485SQ**	448 mm (17.62 in)	555 mm (21.9 in)	24	3.6	2.0
MBE2416Q Emitter	**MBR2416PX485SQ**	600 mm (23.62 in)	708 mm (27.9 in)	32	4.8	2.6
MBE3016Q Emitter	**MBR3016PX485SQ**	752 mm (29.62 in)	860 mm (33.9 in)	40	5.9	3.2
MBE3616Q Emitter	**MBR3616PX485SQ**	905 mm (35.62 in)	1013 mm (39.9 in)	48	7.0	3.7
MBE4216Q Emitter	**MBR4216PX485SQ**	1057 mm (41.62 in)	1165 mm (45.9 in)	56	8.1	4.3
MBE4816Q Emitter	**MBR4816PX485SQ**	1210 mm (47.62 in)	1318 mm (51.9 in)	64	9.2	4.8

The receiver's two discrete outputs are set to PNP by default, but can also be configured to NPN.

[1] Worst-case response time is twice the scan time.

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Emitter and Receiver Wiring

Connect the emitter and receiver cables as shown.

Figure 1. NPN Wiring Diagram

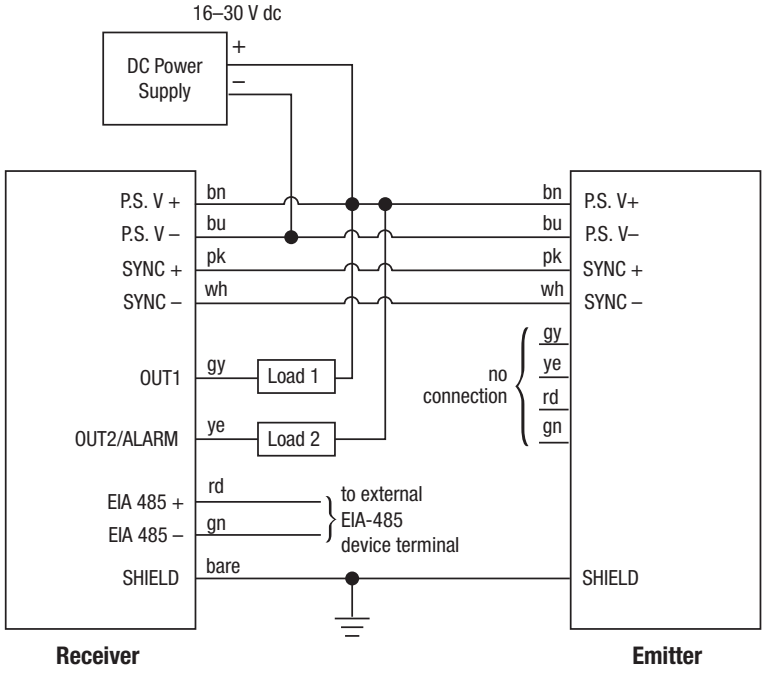
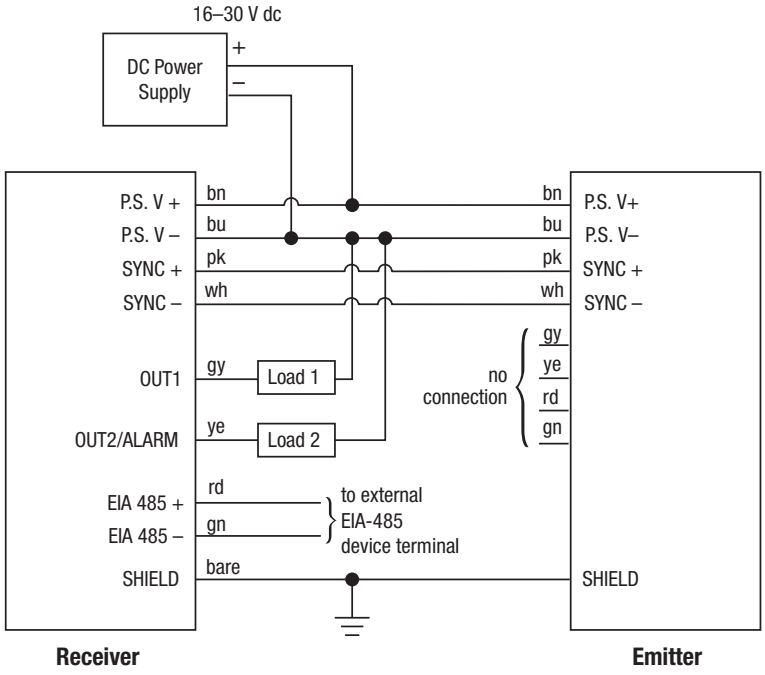


Figure 2. PNP Wiring Diagram



Receiver Output 1: (OUT1) is an open-collector transistor switch rated at 30 V DC maximum, 150 mA maximum. It is protected against overload and short circuits.

Receiver Output 2/Alarm: (OUT2/ALARM) is an open-collector transistor switch rated at 30 V DC maximum, 150 mA maximum. It is protected against overload and short circuits.

Both outputs can be configured as NPN (current sinking) or PNP (current sourcing).

Specifications

Supply Voltage and Power
16 V DC to 30 V DC; maximum power 12 watts

Supply Protection Circuitry
Protected against reverse polarity and transient voltages

Discrete Output Configuration
Two discrete outputs: Output 1 and Output 2
Outputs can be configured as either NPN or PNP (default setting)

Discrete Output (either NPN or PNP) Ratings
Rated at 30 V DC max, 150 mA max load, short circuit protected
OFF-State Leakage Current: < 10 µA at 30 V DC
ON-State Saturation Voltage: < 1 V DC at 10 mA, < 1.5 V DC at 150 mA

Serial Data Outputs
EIA-485 interface
Auto stream default: FBB, TBB
Baud rate 38400 (Adjustable)
8 data bits, 1 start bit, 1 stop bit, no parity

Controller Programming
Via EIA-485 to Banner Sensors GUI software

Emitter/Receiver Range
2 m (6.5 ft)

Minimum Object Sensitivity
Straight Scan Mode: 38.1 mm (1.5 in)
Interlaced Mode: 25.4 mm (1 in)

Sensor Scan Time
Worst-case response time is twice the scan time; see Models on p. 1

Cable Connections
Emitter and receiver with Integral 8-pin M12 male quick disconnect

Status Indicators
See

Environmental Rating
IP54

Construction
Aluminum housing with black anodized finish; acrylic lens cover

Operating Conditions
–40 °C to +70 °C (–40 °F to +158 °F)
95% maximum relative humidity (non-condensing)

Application Notes
The emitter and receiver sync lines (pink and white wires) will be damaged if connected to the power supply
The receiver EIA-485 interface (red and green wires) will be damaged if connected to the power supply

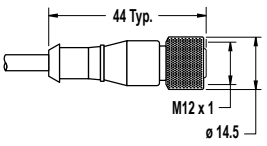
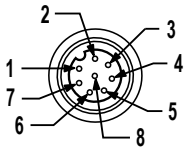
Certifications

Accessories

Cordsets

Additional lengths are available.

8-Pin Threaded M12 Cordsets with Shield—Single Ended

Model	Length	Style	Dimensions	Pinout (Female)	
MAQDC-806	2 m (6.56 ft)	Straight			
MAQDC-815	5 m (16.4 ft)				
MAQDC-830	10 m (32.81 ft)				
MAQDC-850	15 m (49.21 ft)			1 = White 2 = Brown 3 = Green 4 = Yellow	5 = Gray 6 = Pink 7 = Blue 8 = Red

Mounting Bracket Kit (Optional)

Standard packaging does not include brackets. Contact Banner Engineering to order brackets.

Figure 3. Bracket Mounting

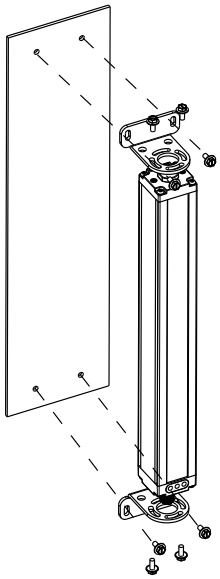
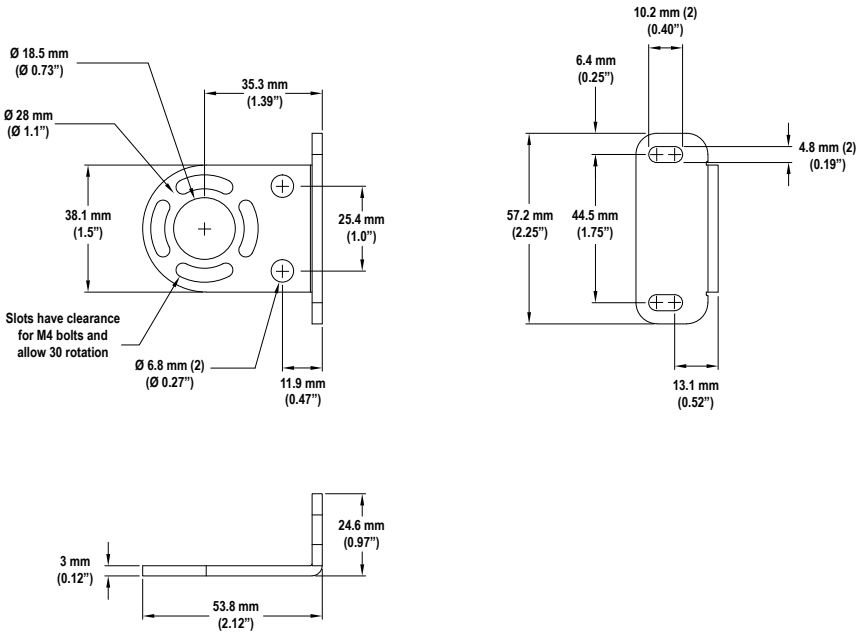


Figure 4. Bracket Dimensions



MAB-MBK-EB

- Includes 2 end cap brackets
- Includes 4 screws (M4 x 0.7 x 10 mm) for Mini Array Basic End-cap mounting
- 4 bolts mounting hardware (M4 x 0.7 x 14 mm) for customer
- 4 M4 nuts
- 8 Flat washers
- 8 Split washers

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