

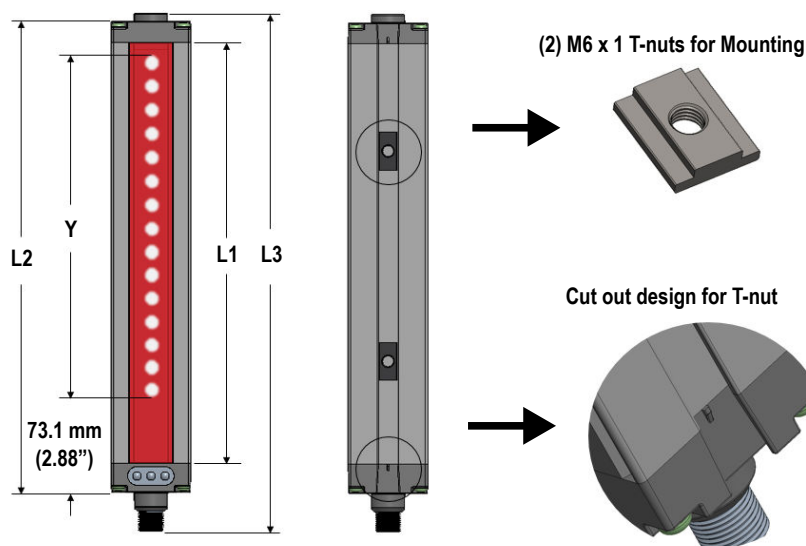
# MINI ARRAY BASIC Two-Piece Measuring Light Curtain



## 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](http://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 <sup>1</sup> |
| 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.

<sup>1</sup> Worst-case response time is twice the scan time.



## Emitter and Receiver Wiring

Connect the emitter and receiver cables as shown.

Figure 1. NPN Wiring Diagram

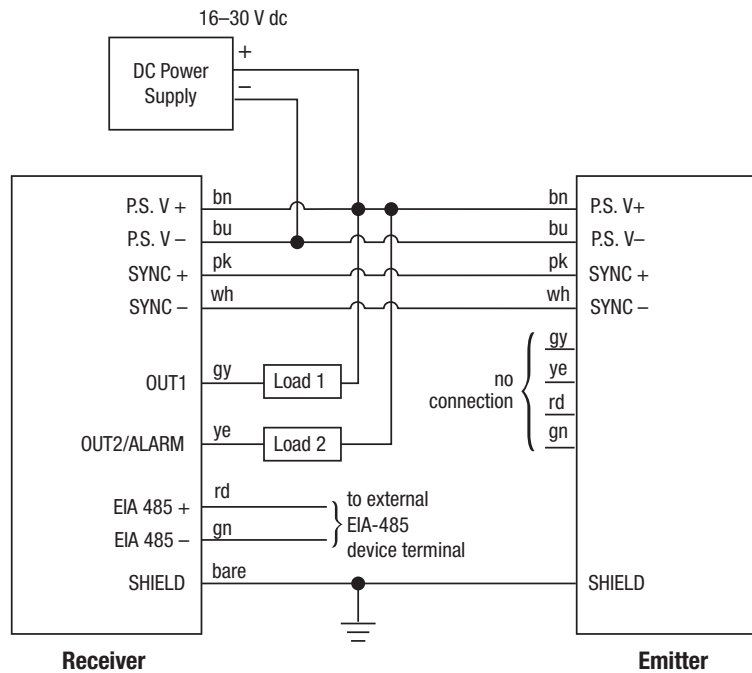
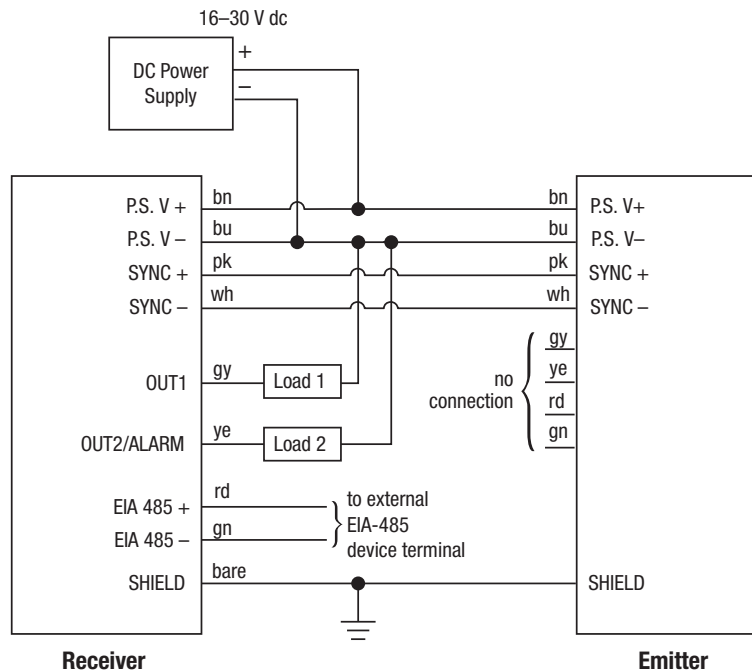


Figure 2. PNP Wiring Diagram



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  $\mu$ A 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

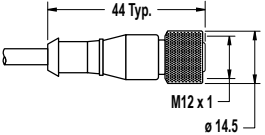
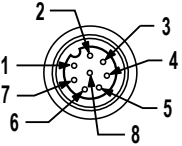
### Certifications



## 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) |          |   |   |
|  |                 |          |   | <div>1 = White</div> <div>2 = Brown</div> <div>3 = Green</div> <div>4 = Yellow</div> <div>5 = Gray</div> <div>6 = Pink</div> <div>7 = Blue</div> <div>8 = Red</div> |

## Mounting Bracket Kit (Optional)

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

Figure 3. Bracket Mounting

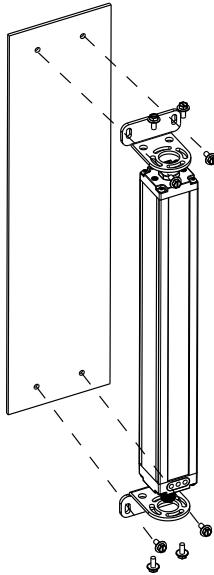
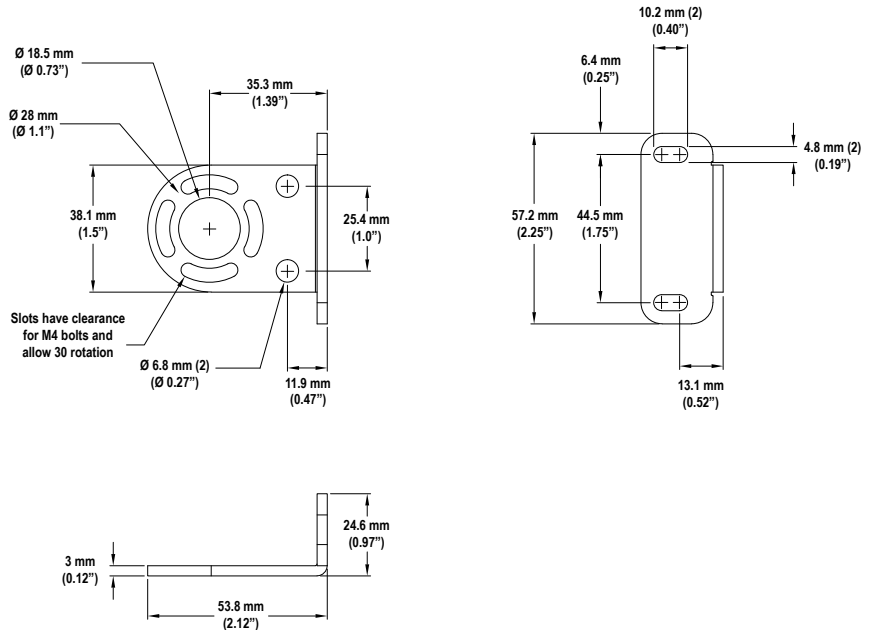


Figure 4. Bracket Dimensions



### 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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