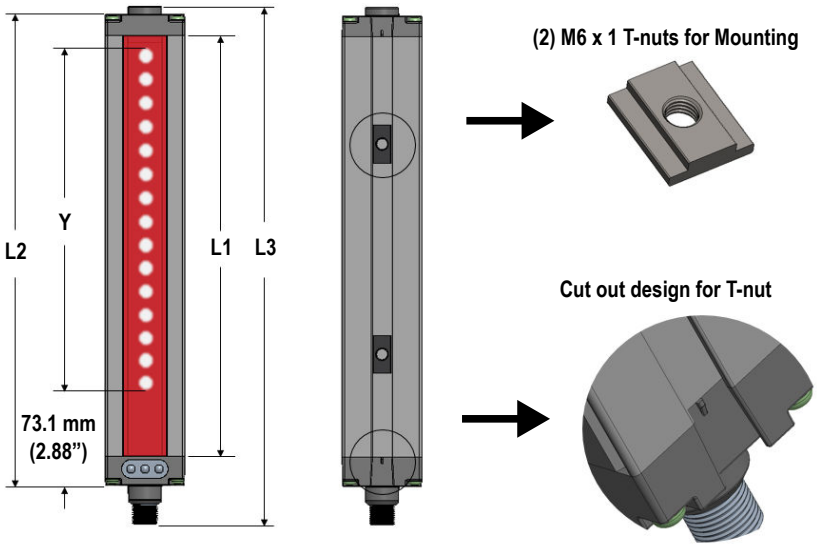
MINI ARRAY BASIC Two-Piece Measuring Light Curtain

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.

Emitter and Receiver Wiring

Connect the emitter and receiver cables as shown.

Figure 1. NPN Wiring Diagram

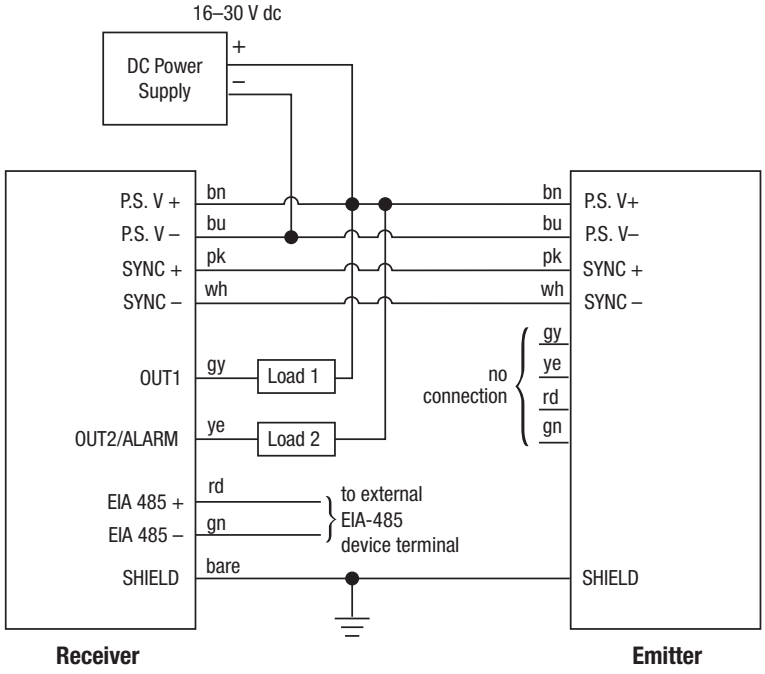
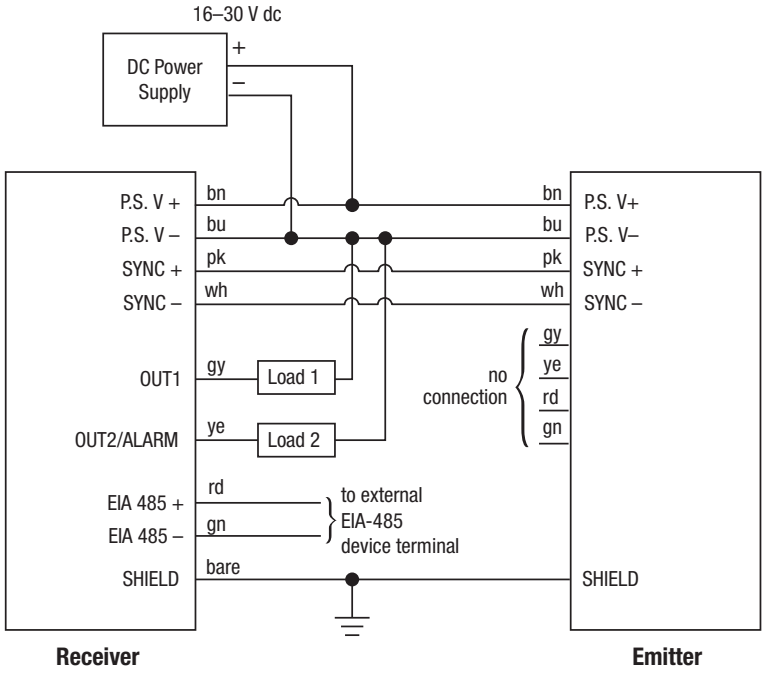


Figure 2. PNP Wiring Diagram



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

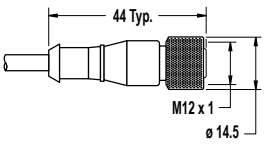
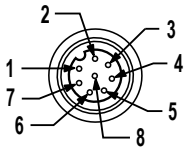
Certifications

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

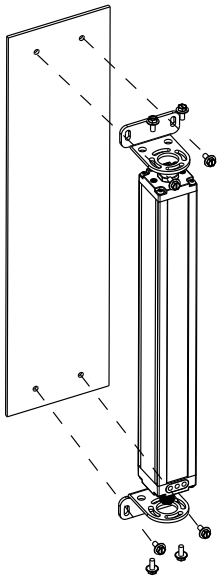
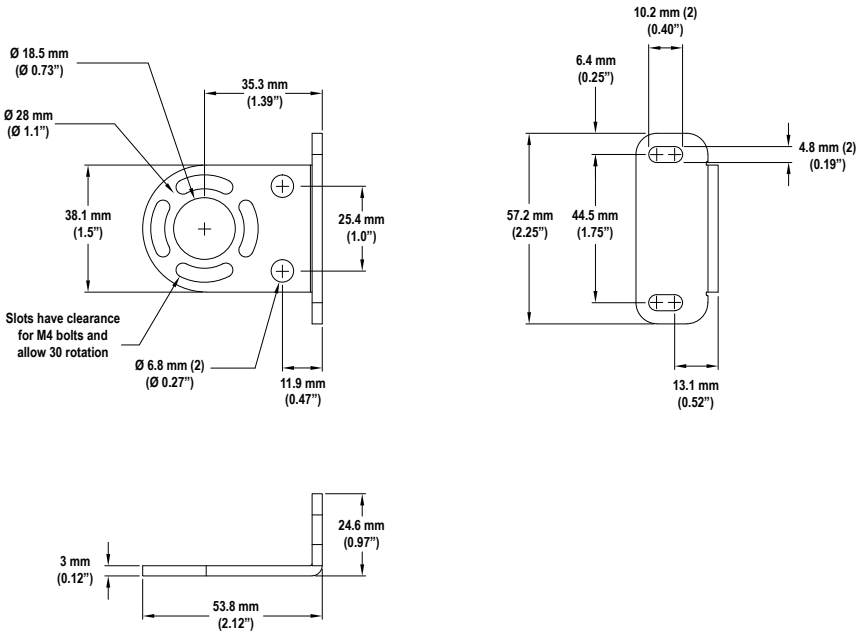


Figure 4. Bracket Dimensions



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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