

## High-Resolution MINI-ARRAY® High-Resolution Measuring Light Screens


The MINI-ARRAY® excels at high-speed, precise monitoring and inspection applications, including on-the-fly sizing, profiling, precision edge guiding, center guiding and hole detection.

- Offers programmable controller with a selection of measurement modes scan modes and output configurations
- 120 sensing beams per foot provides reliable detection of objects as small as 2.5 mm
- Features a 1.8 m range and easy alignment
- Advanced software GUI
- Highly visible indicators for status monitoring
- Cordsets and brackets see page 382

### High-Resolution MINI-ARRAY®–2.5 mm Beam Spacing

Housing Length (L)	Array Length	Total Beams	Connection	Range	Minimum Object Size	Models*	
						Emitters	Receivers
236 mm	163 mm	64	5-pin Mini QD	0.4 - 1.8 m	2.5 mm	MAHE6A	MAHR6A
399 mm	325 mm	128				MAHE13A	MAHR13A
561 mm	488 mm	192				MAHE19A	MAHR19A
724 mm	650 mm	256				MAHE26A	MAHR26A
887 mm	813 mm	320				MAHE32A	MAHR32A
1049 mm	975 mm	384				MAHE38A	MAHR38A
1215 mm	1138 mm	448				MAHE45A	MAHR45A
1377 mm	1300 mm	512				MAHE51A	MAHR51A
1540 mm	1463 mm	576				MAHE58A	MAHR58A
1703 mm	1626 mm	640				MAHE64A	MAHR64A
1865 mm	1788 mm	704				MAHE70A	MAHR70A
2028 mm	1951 mm	768				MAHE77A	MAHR77A

For more specifications see page 383.

 **QD models:** A model with a QD requires a mating cordset (see page 382).

\* "E" and "R" in model numbers denotes "Emitter" and "Receiver" respectively. Sold separately.

## High-Resolution MINI-ARRAY® Controllers†, 16-30 V DC

Inputs	Solid-State Discrete Outputs	Analog Outputs	Serial Output	Controller Models
1 Sensor pair & Trigger (Gate)	2 PNP	(2) 0-10 V Sourcing	RS-232 & RS-485	MAHCVP-1
	2 NPN	(2) 0-10 V Sourcing		MAHCVN-1
	2 PNP	(2) 4-20 mA Sinking		MAHCIP-1
	2 NPN	(2) 4-20 mA Sinking		MAHCIN-1

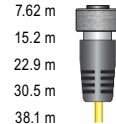
† One controller and an emitter/receiver pair (of matching length) required per system.

Cordsets

Mini QD (Shielded with Twisted Pair)

See page 922

Threaded 5-Pin	
Length	Straight
4.57 m	QDC-515C
7.62 m	QDC-525C
15.2 m	QDC-550C
22.9 m	MAQDC-575C
30.5 m	MAQDC-5100C
38.1 m	MAQDC-5125C
45.7 m	MAQDC-5150C

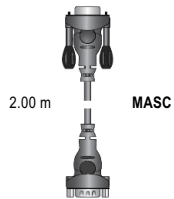


Additional cordset information available.  
See page 902.

DB9 Communication

See page 924

9-Pin	
Length	Straight



Brackets

MINI-ARRAY®

See page 854

See page 878

DIN-35-..	MSMB-3

Additional bracket information available.  
See page 852 .

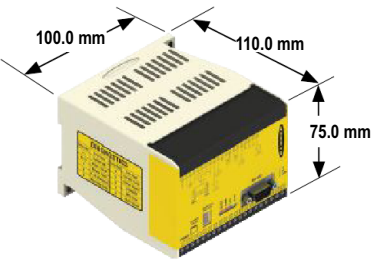
Other Accessories

Stands	Enclosures	Lens Shields
See page 952	See page 952	See page 954




High Resolution  
MINI-ARRAY Sensors

W = 38.1 mm      D = 38.1 mm  
L = Length (see model chart page 380)



High Resolution  
MINI-ARRAY Controller

## High-Resolution MINI-ARRAY® Emitter/Receiver Specifications

Emitter/Receiver Range	380 mm to 1.8 m
Minimum Object Sensitivity	2.5 mm
Sensor Scan Time	1.8 to 58.4 milliseconds, depending on scanning method and sensor length plus 1 millisecond post processing time for controller
Power Requirements	12 V dc $\pm 2\%$ , supplied by controller
Connections	Sensors connect to controller using two 5-conductor quick-disconnect cordset (one each for emitter and receiver), ordered separately. Use only Banner cordset, which incorporate a "twisted pair" for noise immunity. Cordsets measure 8.1 mm in diameter and are shielded and PVC-jacketed. Conductors are 20 gauge (0.9 mm). Emitter and receiver cordset may not exceed 75 m long, each. See page 382.
Status Indicators	<b>Emitter:</b> Red LED lights to indicate proper emitter operation <b>Receiver:</b> Green indicates sensors aligned Yellow indicates marginal alignment of one or more beams Red indicates sensors misaligned or one or more beam(s) blocked
Construction	Aluminum, with black anodized finish; acrylic lens cover
Environmental Rating	NEMA 4, 13; IP65
Operating Conditions	<b>Temperature:</b> 0° to +50° C <b>Relative humidity:</b> 95% at 50° C (non-condensing)
Certifications	

## High-Resolution MINI-ARRAY® Controller Specifications

Power Requirements	16 to 30 V dc @ 1.0 A (typical: 0.5 A @ 16 V dc)
Inputs	<b>Sensor input:</b> Emitter and receiver wire in parallel to five terminals <b>Trigger (Gate) input:</b> Optically isolated, requires 10 to 30 V dc (7.5 k $\Omega$ impedance) for gate signal <b>Remote alignment input:</b> Optically isolated, requires 10 to 30 V dc (7.5 k $\Omega$ impedance) for alignment sequence signal
Discrete (Switched) Outputs	<b>NPN outputs:</b> Open collector NPN transistor rated at 30 V dc max., 150 mA max. <b>PNP outputs:</b> Open collector PNP transistor rated at 30 V dc max., 150 mA max. <b>All discrete outputs: OFF-state leakage current:</b> less than 10 $\mu$ A @ 30 V dc <b>ON-state saturation voltage:</b> less than 1 V @ 10 mA; less than 1.5 V @ 150 mA
Serial Data Outputs	RS-232 or RS-485 interface. (Up to 15 control modules may be given unique addresses on one RS-485 party line.) ASCII or binary data format 9600, 19.2K or 38.4K baud rate 8 data bits 1 stop bit, and even, odd or no parity
Analog Outputs	<b>Voltage-sourcing outputs:</b> 0 to 10 V dc (25 mA current limit) <b>Current-sinking outputs:</b> 4 to 20 mA (16 to 30 V dc input) <b>Resolution:</b> Span / Number of sensing channels <b>Linearity:</b> 0.1% of full scale <b>Temperature variation:</b> 0.01% of full scale per ° C
Output Configuration	<b>MAHCVP-1:</b> Two PNP discrete (switched), two 0-10 V voltage sourcing <b>MAHCVN-1:</b> Two NPN discrete (switched), two 0-10 V voltage sourcing <b>MAHCIP-1:</b> Two PNP discrete (switched), two 4-20 mA current sinking <b>MAHCIN-1:</b> Two NPN discrete (switched), two 4-20 mA current sinking
System Programming	Via RS-232 interface to PC-compatible computer running Windows® XP, Vista, Windows 7, Windows 8 and using software supplied with each control module
Status Indicators	<b>Output 1 (Red):</b> Lights to indicate Discrete Output #1 is active <b>Alarm (Red):</b> Lights to indicate Discrete Output #2 is active <b>Gate (Red):</b> Lights to indicate Trigger (Gate) is active <b>Align (Green):</b> Lights to indicate emitter and receiver are aligned <b>Diagnostics indicator:</b> (Key on controller side label) Identifies System errors and status
Construction	Polycarbonate housing; mounts to flat surface or directly onto 35-mm DIN rail
Environmental Rating	NEMA 1; IP20
Operating Conditions	<b>Temperature:</b> 0° to +50° C <b>Relative humidity:</b> 95% @ 50° C (non-condensing)
Certifications	