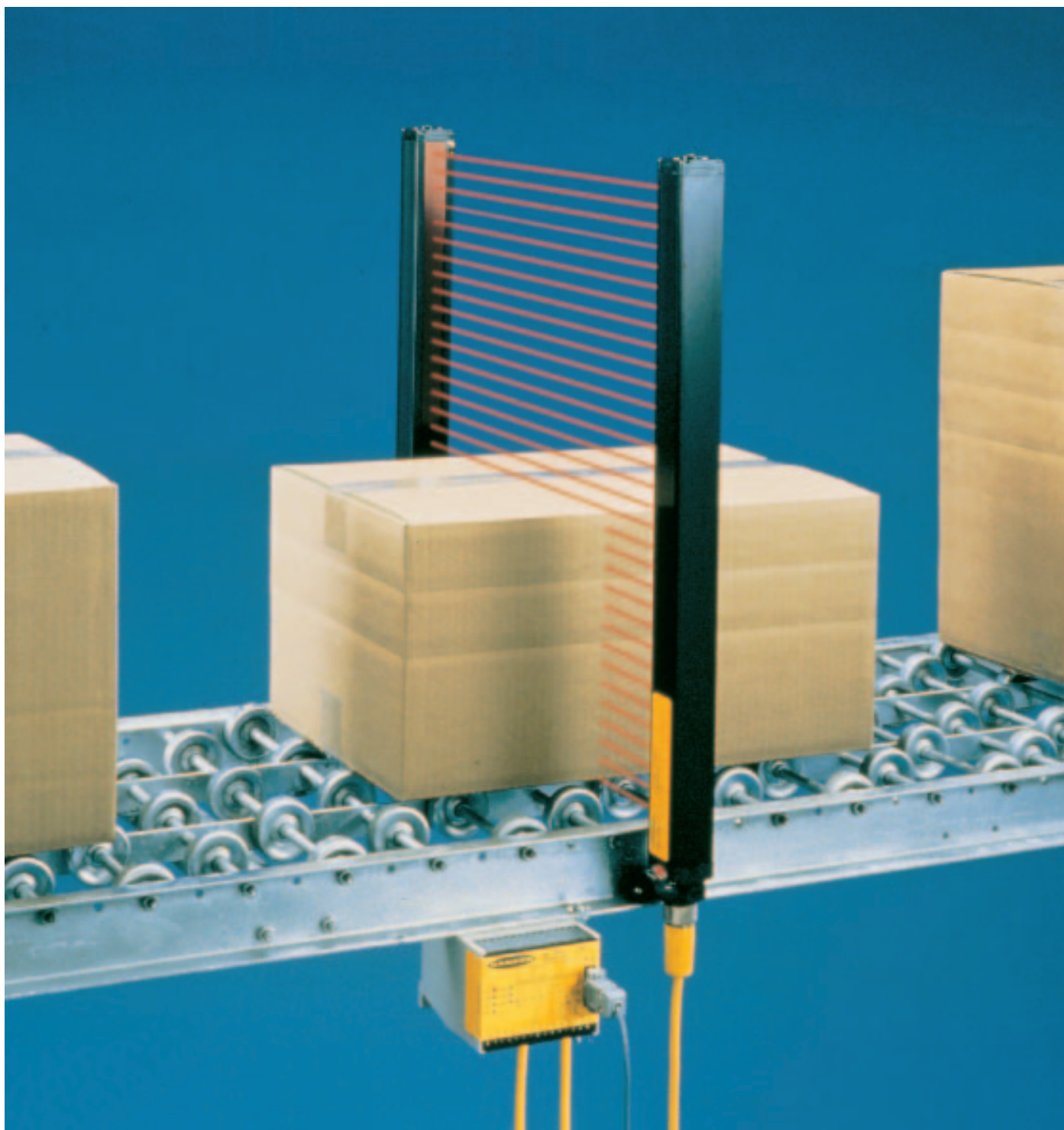




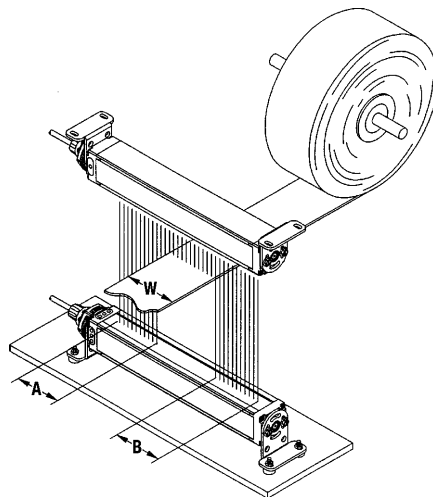
MINI-ARRAY Measuring Light Curtain



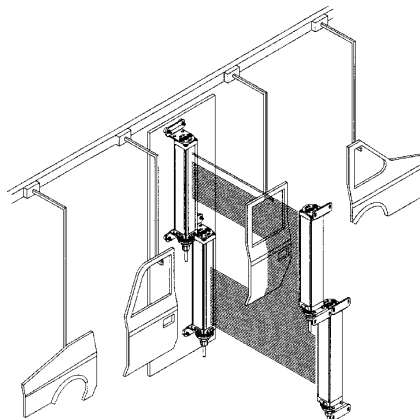
MINI-ARRAY

Measuring Light Curtain

- Light curtain available in 10 different sizes (from 143...1819 mm)
- Range up to 17 m
- Minimum Detectable Object Size 19.1 mm or 38.1 mm, in interlaced scan mode 12.7 or 25.4 mm
- Two independent programmable discrete outputs or two analog outputs available
- Four selectable Scan modes and ten measuring modes
- Blanking possibility to enable non-detection of objects in defined area
- Micro-processor controller unit with RS232, DIN size box
- Easily programmable using Windows® -based software (included)
- Possibility to retrieve data from controller via RS232
- Emitter and receiver black anodised aluminium housings protected to IP 65



Edge guiding



Paint booth profiling

range between emitter and receiver is 16.8 m for the 19.1 mm beam spacing, or 6.1 m for 9.5 mm beam spacing.

The standard controller module has two independent discrete outputs, each programmable in ten different measuring modes. An output choice is available in two PNP outputs, two NPN or one NPN and one relay, depending upon controller model.

In case of the controller module with analog outputs, there is a choice of two voltage outputs (0 to 10V) or two current outputs (4 to 20mA), each combined with one programmable NPN discrete output. In addition, it is possible to define two independent detection zones in one curtain, as well as two areas of 'non-detection' (blanking).

MINI-ARRAY

Measuring Light Curtain

The measuring Light Curtain MINI-ARRAY is mainly used for the inspection and profiling of objects. Typical applications include dynamic sizing or profiling of objects, width control and edge guiding, closed loop control of web tension, hole detection and detection of ejected parts.

Every Measuring Light Curtain consists of an emitter, a receiver and a separate controller module.

Emitter and receivers are available with array lengths, ranging from 133 to 1819 mm, and with a choice of two beam spacings (9.5 or 19.1 mm). The maximum

Programming possibilities

Measurement modes

Each of the outputs (switching or analog) can be assigned an independent measuring mode. Some of the most important modes are :

FBB : the system will detect the First Beam Broken

TBB : the system will return the Total Beams Broken

CBB : the system will return the total number of consecutive beams broken (Contiguous Beams Broken)

LBM : the system will detect the Last Beam Made

CBM : the system will return the total number of consecutive beams made (Contiguous Beams Made)

VHS or Vehicle Separation Mode : special detection mode for toll booth applications

Scan Modes

It is possible to select between four different scan modes :

Straight : all beams are scanned in sequence starting from the bottom end (cable end).

Interlaced : alternates a straight scan with a slanted beam scan. This increases the resolution in the middle 1/3 of the sensing range

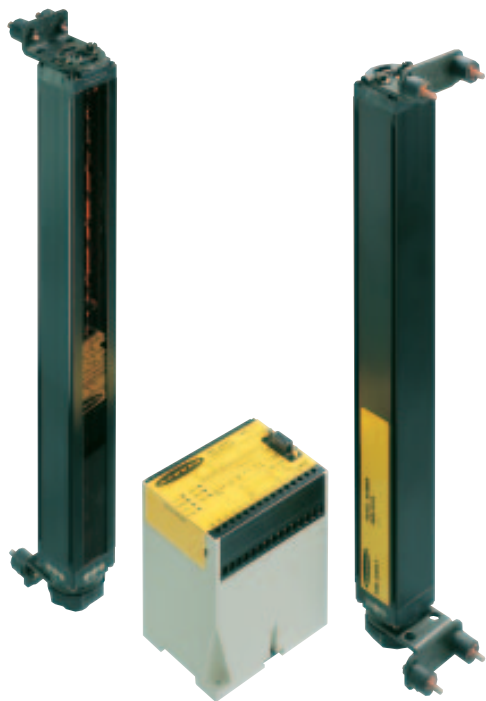
Edge Scan : each scan will begin six beams prior to the last beam blocked during the previous scan. This reduces the scanning time of the system.

Skip Scan : allows for one to seven beams to be skipped during each scan. This also reduces the scanning time of the system, but also reduces the resolution of the MINI-ARRAY.

Controller module

The controller module uses a microprocessor design. To configure the controller, Windows® - based software communicates with the unit via the built-in RS232 interface (requires Windows®95, Windows® 3.1 or OS/2®).

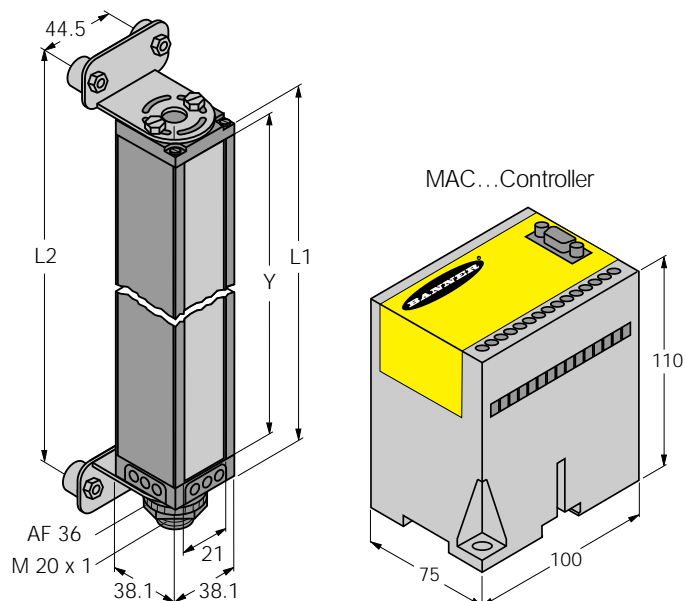
This supplied software also offers systems diagnostics, and emitter and receiver alignment.



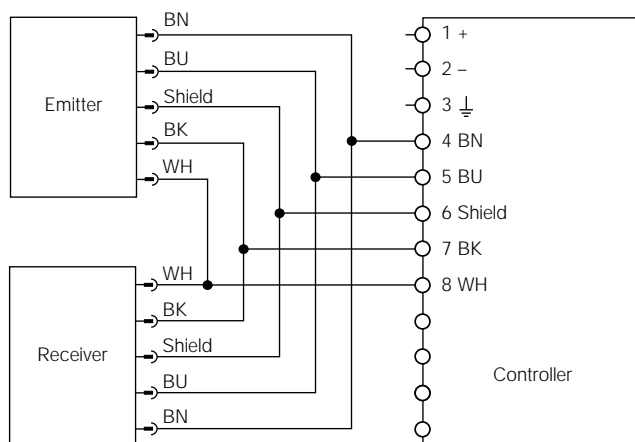
MINI-ARRAY Measuring Light Curtain and Controller

Wave length	IR (infrared)	880 nm
Resolution	Minimum object detection size ¹⁾	19.1 mm (BM...32A) 38.1 mm (BM...16A)
	Scan time	55 µs per light beam plus 1 ms processing time per scan
Supply	Supply voltage	16...30 VDC
	No load current	≤ 1.2 A
	Delay upon power up	5 s
Protection		short-circuit
Output	Continuous load current	≤ 150 mA (switched output)
	Load impedance	≥ 1,5 kΩ (analog output)
Material	Housing	aluminium (light curtain) polycarbonate (controller) acrylic
	Lens	
	Protection class (IEC 529/DIN 40050-9)	IP 65 (light curtain) IP 52 (controller)
	Temperature range	-20...+70 °C
Indicator LEDs	Red (emitter)	power-on
	Red (receiver)	object detected or light curtain not aligned
	Green (receiver)	proper alignment
	Green + yellow (receiver)	marginal alignment

Dimensions [mm]



Wiring diagram



¹⁾ In „Interlaced Mode“ 12.7 mm or 25.4 mm

Accessories

Cable (2 per system)	
QDC-515C (4.6 m)	3037442
QDC-525C (7.6 m)	3037443
QDC-550C (15.2 m)	3037498

Mounting stand	
MSA...	on request

MINI-ARRAY

Measuring Light Curtain

	<i>Max. range [m]</i>	<i>Housing length L1 [mm]</i>	<i>Defined area Y [mm]</i>	<i>Distance between drill holes - L2 [mm]</i>	<i>Connection mode</i>	<i>Type</i>	<i>Ident.-No.</i>
Measuring light curtains for minimum object detection sizes of 38.1 (24.5) mm¹⁾	0.9...17	201	143	234	connector	BMEL616A emitter	3039919
	0.9...17	356	295	390	connector	BMRL616A receiver	3039920
	0.9...17	505	448	539	connector	BMEL1216A emitter	3038541
	0.9...17	659	600	693	connector	BMRL1216A receiver	3038542
	0.9...17	810	752	844	connector	BMEL1816A emitter	3039574
	0.9...17	963	905	997	connector	BMRL1816A receiver	3039582
	0.9...17	1115	1057	1148	connector	BMEL2416A emitter	3038543
	0.9...17	1267	1210	1301	connector	BMRL2416A receiver	3038544
	0.9...14	1572	1514	1606	connector	BMEL3016A emitter	3039576
	0.9...14	1877	1819	1910	connector	BMRL3016A receiver	3039584
	0.9...14	1877	1819	1910	connector	BMEL3616A emitter	3038545
Measuring light curtains for minimum object detection sizes of 19.1 (12.7) mm¹⁾	0.6...6,1	201	133	234	connector	BMEL632A emitter	3039921
	0.6...6,1	356	286	390	connector	BMRL632A receiver	3039922
	0.6...6,1	505	438	539	connector	BMEL1232A emitter	3038529
	0.6...6,1	659	591	693	connector	BMRL1232A receiver	3038530
	0.6...6,1	810	743	844	connector	BMEL1832A emitter	3039575
	0.6...6,1	963	895	997	connector	BMRL1832A receiver	3039583
	0.6...6,1	1115	1048	1148	connector	BMEL2432A emitter	3038531
	0.6...6,1	1267	1200	1301	connector	BMRL2432A receiver	3038532
	0.6...4,6	1572	1505	1606	connector	BMEL3032A emitter	3039577
	0.6...4,6	1877	1810	1910	connector	BMRL3032A receiver	3039585
	0.6...4,6	1877	1810	1910	connector	BMEL3632A emitter	3038533
1) Values between brackets are valid for the "Interlaced mode"	0.6...4,6	1877	1810	1910	connector	BMRL3632A receiver	3038534
	0.6...4,6	1877	1810	1910	connector	BMEL4232A emitter	3039579
	0.6...4,6	1877	1810	1910	connector	BMRL4232A receiver	3039587
	0.6...4,6	1877	1810	1910	connector	BMEL4832A emitter	3038535
	0.6...4,6	1877	1810	1910	connector	BMRL4832A receiver	3038536
	0.6...4,6	1877	1810	1910	connector	BMEL6032A emitter	3038537
	0.6...4,6	1877	1810	1910	connector	BMRL6032A receiver	3038538
	0.6...4,6	1877	1810	1910	connector	BMEL7232A emitter	3038539
	0.6...4,6	1877	1810	1910	connector	BMRL7232A receiver	3038540
	Available controllers	Outputs pnp (2 x) npn (2 x) npn (1 x), reed relay 130 V/10 VA (1 x) 4...20 mA (2 x), npn (1 x) 0...10 V (2 x), npn (1 x)				Type MACP-1 MACN-1 MAC-1 MACI-1 MACV-1	Ident.-No. 3047820 3047999 3043296 3046326 3046327

Subject to changes without notice • Edition 03.03 P/N ED010



IMPORTANT SAFETY WARNING! These sensors do NOT include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can result in either an energised or de-energised output condition. These products should not be used as sensing devices for personnel safety.