

MAXI-BEAM[®] Logic Modules



Banner MAXI-BEAM[®] sensors are highly versatile, self-contained, modularized photoelectric sensing controls that are ideally suited to industrial environments. The basic MAXI-BEAM is an ON/OFF switch consisting of three modules (*sensor head, power block, and wiring base*) and a unique, patented, rotatable "programming ring" that enables you to program your choice of "light" or "dark" operate mode, sensing range, and response time.

MAXI-BEAM sensor heads have an easily-accessible multi-turn SENSITIVITY control for precise adjustment of system gain. Interchangeable sensor heads are rotatable in 90-degree increments and are available in retroreflective, diffuse, opposed, convergent, and fiberoptic sensing modes. Each sensor head also includes Banner's exclusive AID[™] circuit (Alignment Indicating Device, US patent no. 4356393), which features an LED alignment indicator that lights whenever the sensor "sees" its own modulated light source, and pulses at a rate proportional to the strength of the received light signal.

A wide selection of MAXI-BEAM power block modules is available to interface the sensor head to the circuit to be controlled. The plug-in design of the wiring base enables easy exchange of the entire sensing electronics without disturbing the field wiring.

Optional customer-installable logic modules, described here, easily convert the basic ON/OFF MAXI-BEAM into either a one-shot or delay logic function control, with several programmable timing ranges for each function.

MAXI-BEAM sensors are ruggedly constructed of molded VALOX[®] to NEMA standards 1, 3, 4, 12, and 13, and have interchangeable molded acrylic lenses. Modules simply snap and bolt together, with no interwiring necessary. Module interfaces are o-ring and quad-ring sealed for the ultimate in dust, dirt, and moisture resistance.

To order a MAXI-BEAM, follow these steps:

- 1) Select a sensor head module,
- 2) Select a power block module,
- 3) Select a wiring base (must be purchased separately from power block),
- 4) Select a logic module (if needed),
- 5) Select accessories as needed (see Banner product catalog).

Sensor Head Modules (described in data sheet P/N 03416)

RSBE & RSBR	opposed mode	range to 300'
RSBESR & RSBRSR	opposed mode (short range; narrow beam)	range to 15'
RSBLV	retroreflective mode	range to 30'
RSBLVAG	retroreflective mode (anti-glare filter)	range to 15'
RSBD	long range diffuse proximity mode	range to 5'
RSBDSR	short-range diffuse proximity mode	range to 30"
RSBCV	visible red convergent mode, focus at:	1.5"
RSBC	infrared convergent mode, focus at:	1.5"
RSBF	infrared fiber optic; for glass fibers	
RSBFV	visible red fiber optic; for glass fibers	
RSBEF & RSBRF	infrared fiber optic opposed mode; for glass fibers	
RSBFP	visible red fiber optic; for plastic fibers	

Power Block Modules (described in data sheet P/N 03418)

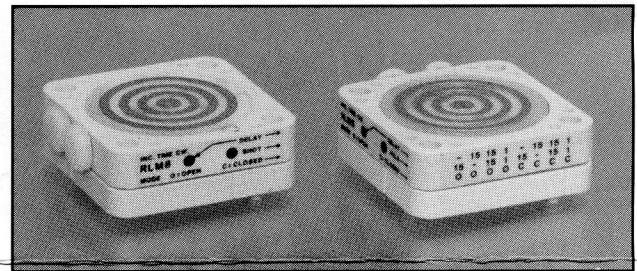
RPBT	10-30V dc; one sinking and one sourcing solid-state output
RPBT-1	10-30V dc; for use with RSBE, ESR, EF emitters (no output circuit)
RPBTLM	10-30V dc low-profile power block (requires no RWB4 wiring base)
RPBA	105-130V ac (50/60Hz); SPST solid-state output
RPBA-1	105-130V ac (50/60Hz); for use with emitter (no output circuit)
R2PBA	2-wire operation; 105-130V ac (50/60Hz); SPST solid-state output
RPBB	210-250V ac (50/60Hz); SPST solid-state output
RPBB-1	210-250V ac (50/60Hz); use with emitter (no output circuit)
R2PBB	2-wire operation; 210-250V ac (50/60Hz); SPST solid-state output
RPBU	12-250V ac or 12-30V dc; SPST solid-state output (ac or dc)
RPBR	12-250V ac (50/60Hz) or 12-30V dc; SPST E/M relay output
RPBR2	12-250V ac (50/60Hz) or 12-30V dc; SPDT E/M relay output

Wiring Base (described in data sheet P/N 03418)

RWB4	4-terminal wiring base for all models (except RPBTLM)
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Logic Modules (described in this data sheet, P/N 03417)

RLM5	ON/OFF delay (both functions adjustable up to 15 seconds)
RLM8	DELAYED ONE-SHOT (delay and pulse adjustable up to 15 seconds)



General Specifications

Construction: Reinforced molded VALOX[®] housing, quad-ring gasketed components. Electronic components fully epoxy encapsulated. NEMA 1, 3, 4, 12, and 13.

Operating Temperature: -40 to +70°C (-40 to +158°F).

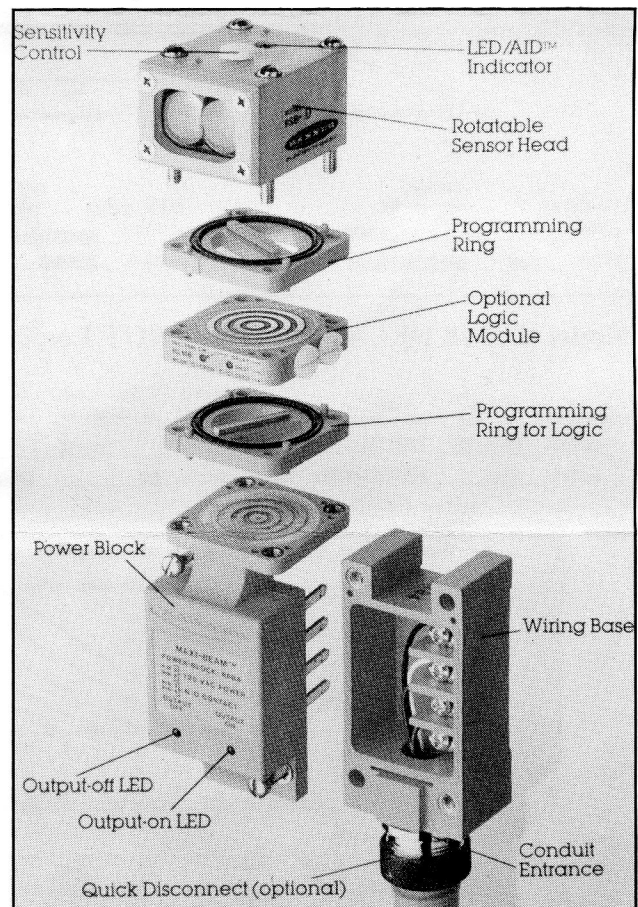
Timing Adjustment: Two 15-turn clutched potentiometers with brass elements, accessible from outside.

Timing Repeatability: Plus or minus 2% of maximum time range (assumes conditions of constant temperature and power supply voltage).

Useful Time Range: Useful range is from maximum time down to 10% of maximum (e.g.- from 1 to 0.1 seconds, or from 15 to 1.5 seconds). When timing potentiometer is set fully counterclockwise, time will be approximately 1% of maximum.

Response Time: RLM5 adds sensor response delay of approximately 2% of maximum time range. RLM8 sensor response will be that programmed for the sensor head (no added response time).

VALOX[®] is a registered trademark of General Electric Co.



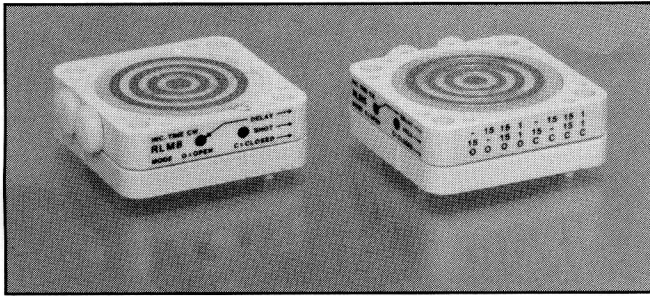


Photo shows model RLM8 (left) and model RLM5 (right) MAXI-BEAM logic modules with programming rings attached. View of RLM8 shows programming pot access (left side of module as shown); RLM5 view shows program range choices (front of module as shown). These module/ring combinations may be oriented at any of four 90-degree positions for easiest access to time adjustment pots. See also "exploded" view, page 1.

WARRANTY: Banner Engineering Corporation warrants its products to be free from defects for one year. Banner Engineering Corporation will repair or replace, without charge, any product of its manufacture found to be defective at the time it is returned to the factory during the warranty period. This warranty does not cover damage or liability for the improper use of Banner products. This warranty is in lieu of any other warranty either expressed or implied.

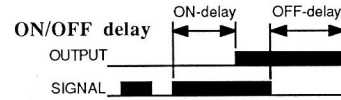
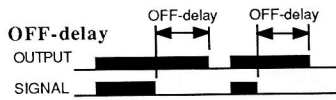
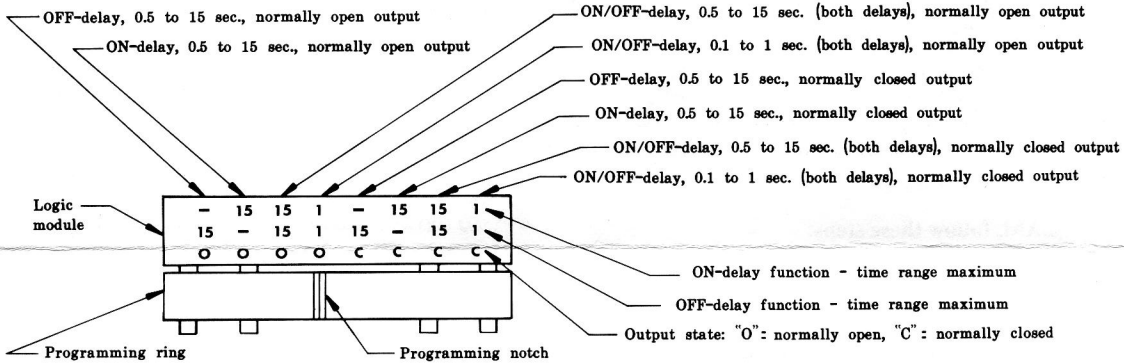
Programming instructions:

- 1) Find the programming notch which lines up with the program choice. NOTE: the programming ring may have to be turned upside-down in order to find a notch that lines up with the desired program.
- 2) Press the programming ring and logic module together. They will be held together temporarily by their interlocking pegs.
- 3) Orient the logic module for easiest access to the timing adjustments, and assemble between the programming ring of the sensor head and the power block (see exploded view on page 1). Bolt all parts together with the long bolts that are supplied with the logic module.
- 4) Apply power to the MAXI-BEAM and adjust timing, using a small flat-blade screwdriver. Timing potentiometers are located behind the nylon o-ring gasketed cover screws.

Model RLM5 ON/OFF DELAY Logic Module

Program choices:

- 1) Timing Logic Function:
 - a) ON-delay c) ON/OFF-delay
 - b) OFF-delay
- 2) Timing Adjustment Range (see options below)
- 3) Output State:
 - a) normally open b) normally closed



Model RLM8 DELAYED ONE-SHOT Logic Module

Program choices:

- 1) Timing Logic Function:
 - a) ONE-SHOT b) DELAYED ONE-SHOT
- 2) Timing Adjustment Range (see options below)
- 3) Output State:
 - a) normally open b) normally closed

