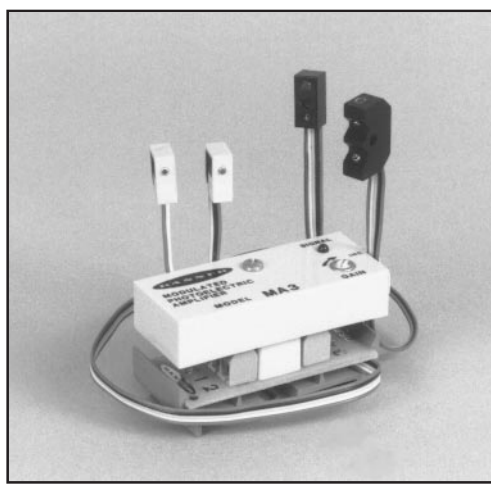
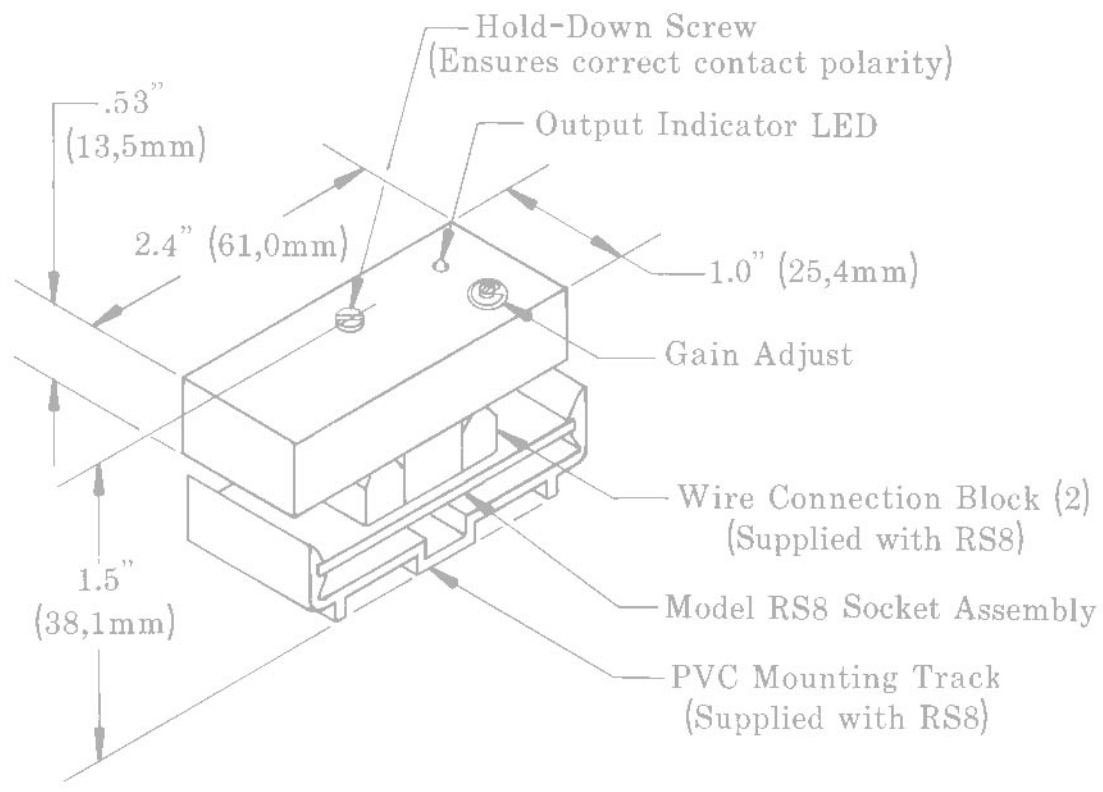




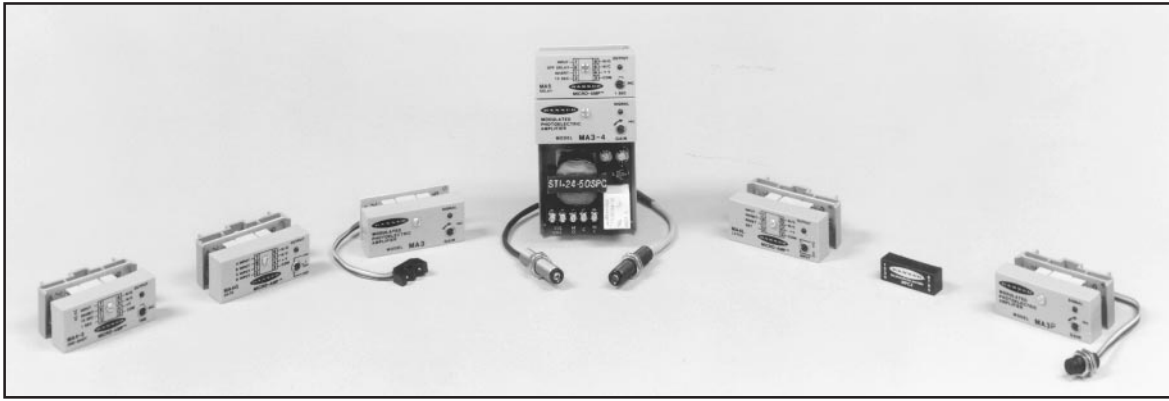
# MICRO-AMP<sup>®</sup> System

Remote sensors, modulated amplifiers, and logic modules



- A versatile system of compact, high-performance remote sensors modulated amplifiers, and logic modules
- Remote sensors for opposed, retro, diffuse, convergent, and fixed-field sensing modes, in a variety of sizes, shapes, and housing styles to suit nearly any remote sensing application
- Rugged, epoxy-encapsulated amplifier modules; also logic modules for one-shot, 4-input gate (AND, NOR, XNOR), latch, and delay functions
- Plug-in amplifier and logic modules are track mountable for ease of installation and replacement (helpful in large systems)
- All modules have an output indicator for system monitoring; amplifier modules include Banner's exclusive AID™ indicator system

# MICRO-AMP<sup>®</sup> System



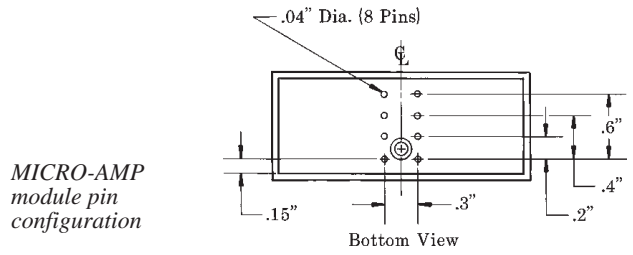
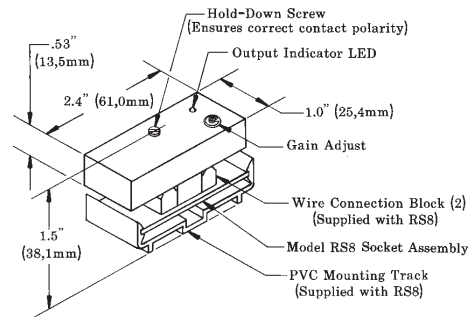
The Banner MICRO-AMP<sup>®</sup> System is a family of miniature dc modulated photoelectric amplifiers and logic modules which offer the same sensing performance as larger, conventional modules. They are the smallest photoelectric control modules ever built, and can fit easily into tight areas of machines or control panels. Built around the concept of an I/O module, they are the perfect photoelectric control device for use with computers or programmable logic controllers (PLCs). Multiple modules stack neatly on 1-inch (25mm) centers in PVC mounting track, taking only a fraction of the control panel space required by standard photoelectric modules.

Model MA3 is a complete dc-powered modulated amplifier designed for use with Banner's SP100 Series of miniature remote sensors. Model MA3-4 is a higher-gain amplifier which is used with Banner's complement of high-performance modulated remote sensors. Building-block style control logic may be added to a system with a selection of MICRO-AMP logic modules.

Model MPC3 is similar to amplifier model MA3, except that it is specifically designed for PC board mounting in OEM sensing applications.

MICRO-AMP modules may be mounted and wired using the optional model RS8 socket (shown in the drawing at right) or they may be mounted directly to a printed circuit board (see Accessories, p. 20).

**Dimension Drawing, MICRO-AMP Modules (except MPC3) with RS8 Wiring Socket**



*MICRO-AMP module pin configuration*

Module Model	Modulated Amplifier	Logic Functions	Used with (Input)	Full Description
MA3	YES	NONE (ON/OFF)	Banner SP100 Series miniature modulated remote sensors	See pages 3-4
MA3A	YES	NONE (ON/OFF)	Banner SP100FF modulated fixed-field sensor	See page 18
MA3-4	YES	NONE (ON/OFF)	Banner high-performance remote sensors	See pages 5-10
MA4-2	MICRO-AMP logic modules are designed to accept the output signal from a MICRO-AMP amplifier and process that signal for a required logic function. MICRO-AMP logic modules themselves contain no amplifier.	ONE-SHOT	Switches, contacts, or NPN (current sinking) output of dc sensors or amplifiers, including: Banner MULTI-BEAM, MAXI-BEAM, VALU-BEAM, MINI-BEAM, and ECONO-BEAM sensors; plus MAXI-AMP and MICRO-AMP modules.	See page 11
MA4G		4-input logic gate: AND, NOR, X-NOR		See page 12
MA4L		Latch or alternate-action flip-flop		See page 13
MA5		ON-delay or OFF-delay		See page 14
MPC3 (for printed circuit board mounting)	YES	NONE (ON/OFF)	Banner SP100 Series miniature modulated remote sensors	See pages 15-16, 18