MAXI-BEAM Power Blocks and Wiring Base

Power Block

RWB4 Wiring Base
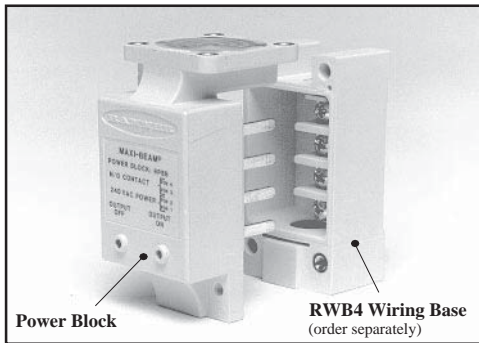(order separately)

MAXI-BEAM power blocks provide regulated low voltage dc power to the sensor head and logic module (if one is used), and all power blocks (except emitter-only types) contain an output switch for interfacing to loads or to control circuitry.

Power blocks plug into the model **RWB4 wiring base** which has heavy-duty screw terminals that accept up to #12 gauge wire (no lugs are necessary). *The RWB4 wiring base is necessary for all MAXI-BEAM sensor assemblies (except sensors using the RPBTLM power block), and must be purchased separately.*

All power blocks, except the emitter-only types, include status LEDs which continuously indicate the state of the output circuit and input power. MAXI-BEAM power blocks are epoxy-encapsulated and rated for -40 to +70 degrees C (except models RPBR and RPBR2). All MAXI-BEAMs have circuitry to prevent false closure of the output on power-up.

DC Models	*Connections*	*Functional Schematic*

RPBT
(UL) LISTED   (SA)® CERTIFIED

RPBT-1 (for emitters)

INPUT: 10 to 30V dc, 20mA, exclusive of load current; 10% maximum ripple.

OUTPUT: one open-collector NPN (current sinking) and one open-collector PNP (current sourcing) transistor. 250mA continuous, short-circuit and reverse polarity protected (both outputs).

ON-STATE VOLTAGE DROP:
PNP output: less than 1 volt at 10mA and less than 2 volts at 250mA.
NPN output: less than 200 millivolts at 10mA and less than 1 volt at 250mA.

**OFF-STATE LEAKAGE CURRENT:** less than 10 microamps.
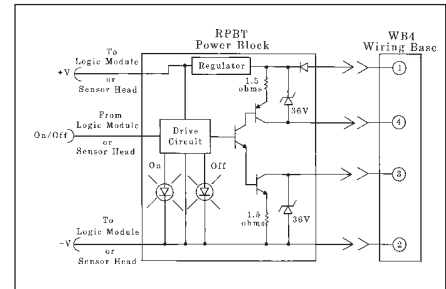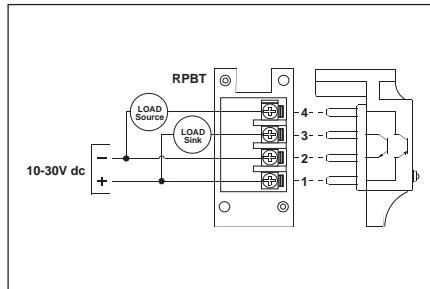
Power block RPBT is the one most often used in low voltage dc applications. There are two solid state output switches (transistors), each rated at 1/4 amp. The NPN output at terminal #3 of the wiring base sinks current to the negative side of the power supply. The PNP output at terminal #4 sources current to the load from the positive side of the power supply. Both outputs may be used simultaneously. Response time of a MAXI-BEAM which uses model RPBT is the response time which is programmed at the sensor head (plus logic delays, if any). Model RPBT-1 is the dc power block to use with model RSBE, RSBESR, and RSBEF emitter sensor heads. The RPBT-1 has no switching elements.

## Hookup Diagrams for RPBT and RPBT-1 Power Blocks

Hookup to dc Relay or Solenoid (using sinking output)

When using the power block with current sinking (NPN) output, simple loads connect between terminal #3 and the positive supply (terminal #1).
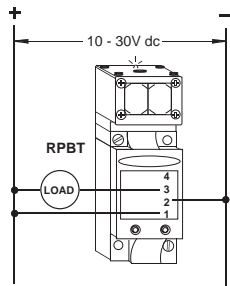

Hookup to dc Relay or Solenoid (using sourcing output)

When using the power block with current sourcing (PNP) output, simple loads connect between terminal #4 and dc common (terminal #2).
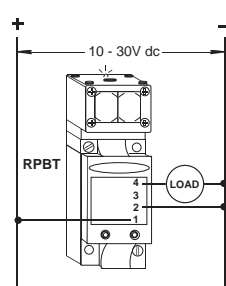

Hookup to Logic Gate (using sinking output)

A logic zero (0 volts dc) is applied to the GATE input when the MAXI-BEAM sinking output is energized. When de-energized, a logic one is applied. The logic supply must be common to the MAXI-BEAM supply negative.
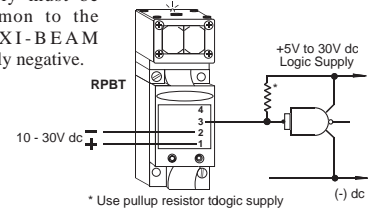
* Use pullup resistor to logic supply

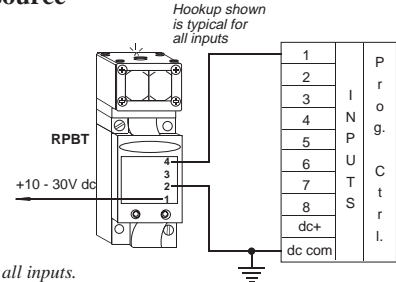### Hookup to a Programmable Controller requiring a current sink

Use MAXI-BEAM NPN output (terminal #3) to interface to PLCs and other logic devices requiring a current sink at the inputs. Connect terminal #3 of the power block to any input of the PLC. Also connect the negative of the MAXI-BEAM power supply (terminal #2) to the negative of the PLC power supply.

The hookup shown is typical for all inputs.
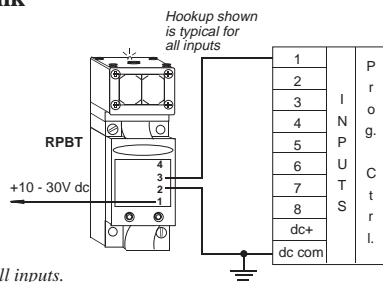
Hookup shown is typical for all inputs

Hookup to a Programmable Controller requiring a current source

Use MAXI-BEAM PNP output (terminal #4) to interface to PLCs and other logic devices requiring a current source at the inputs. Connect terminal #4 of the power block to any input of the PLC. Connect the negative of the MAXI-BEAM power supply (terminal #2) to the negative of the PLC power supply.

The hookup shown is typical for all inputs.

Hookup shown is typical for all inputs