

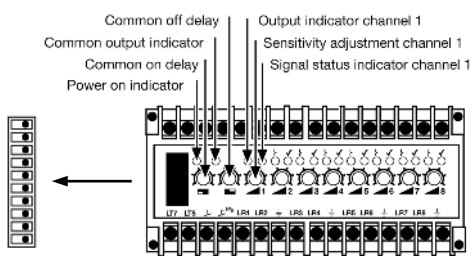
**Product Data**

Electrical Data	
Supply voltage	24 V dc, 24 V ac, 115 V ac or 230 V ac
Voltage tolerance	+/- 15%
Power consumption	Max. 6,5 VA
Output: relay	1 open / 1 closed, 250 V ac / 3 A, 120 V ac / 5 A
Output: transistor	40 mA / 30 V dc

Environmental Data	
Temperature, operation	-10 to +50 °C
Sealing class	IP 30
Approvals	

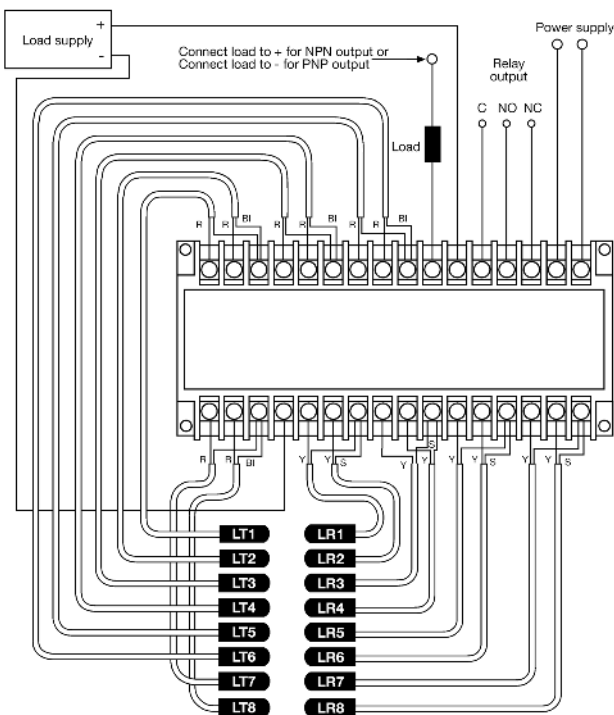
Applicable Remote Sensors & Sensing Ranges in Thru Beam						
Remote Sensor Series	MPA 81 B			MPA 81 D		
		100	110	120	100	110
	Sensing Range					
Long range	8 m	18 m	35 m	4 m	9 m	18 m
Short range	4 m	9 m	18 m	2 m	5 m	9 m

**Illustration**



**Connection**

**Wiring Diagram**



Wire Code	
R	Red
Bl	Black
Y	Yellow
S	Shield

MPA 81 B/D  
 1 common transistor/relay output

**Connection Steps**

- 1 Check the power supply and output of the amplifier type.
- 2 Make sure power is off. Connect all wires according to wiring diagram.
- 3 Turn power on after checking wiring is correct.
- 4 When the amplifier is operating, the green (power-on) LED is on.

**Adjustments**

**Common Output Selection**

The common output mode can be selected via dip switch.

Common output standard	Enables the common output to be active (close) when one or more channels are active	
Common output inverted	Enables the common output to be active (close) only if all channels are inactive	

**Long/Short Range Selection**

Long range mode enables the system to operate at 100% (maximum range). Short range mode Enables the system to operate at 50% of maximum range, in order to ease sensitivity adjustment at shorter ranges. Long/short range is selected for all channels.

Long range	
Short range	

**Output Mode Selection**

The output mode can be individually selected, for each channel, via the dip switches.

Light Operated	Enables the channel output to be inactive (red output LED is off) when there is an object present in the detection area. (Thru beam)	
Dark Operated	Enables the channel output to be active (red output LED is on) when there is an object present in the detection area. (Thru beam)	

**Sensitivity Adjustment**

- Maximum sensitivity can be used for most applications and is advised for applications with contaminated environments e.g. dirt, water and dust. Increase the sensitivity to maximum by turning the potentiometer to full clockwise position. Repeat the procedure for each channel.
- Sensitivity adjustment may be required in applications where objects to be detected are small or translucent. Proceed with the following steps:
- 1 Adjust the sensitivity to maximum by turning the potentiometer to full clockwise position.
  - 2 Check there is no object present interrupting the beam and the sensor pair is correctly aligned and within their specified sensing range.
  - 3 Select target object with smallest dimensions and most translucent surface.
  - 4 Place target object between remote transmitter and receiver sensors. If the output status changes, adjustment is not required. If the output status has not changed proceed to step 5.
  - 5 Decrease the sensitivity by turning the potentiometer counter clockwise until the output changes.
  - 6 Remove target object. Observe the output status has changed.
  - 7 Repeat the procedure for each channel.
- If the signal level is low, the green LED (signal status) will go off. In general, it is recommended to increase the sensitivity till the LED goes on and to check the following:
- Alignment of sensors
  - Transmitter and receiver sensors are within sensing range
  - Sensor heads are not excessively contaminated

**Time Delay Adjustment**

The on delay enables output signal to only activate if an object in the detection area is present for the adjusted time period. (In Dark operated mode)

The off delay enables output signal to remain activated for the adjusted time period. The time delay is adjustable between 0 - 10 sec.

On delay	Increase or decrease on delay by turning potentiometer clockwise or counter clockwise respectively.
Off delay	Increase or decrease off delay by turning potentiometer clockwise or counter clockwise respectively.



**Warning**  
 This device is not to be used for Personnel Protection in Machine Guarding Safety applications. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel machine guarding stand-alone safety applications.