

Product Data

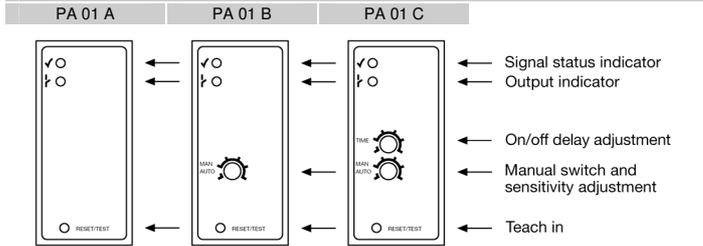
| Electrical Data | |
|--------------------|---|
| Supply voltage | 12-30 V ac / 12-36 V dc, 115 V ac or 230 V ac |
| Voltage tolerance | +/- 15% |
| Power consumption | Max. 2.5 VA |
| Output: relay | 1 open / 1 closed, 250 V ac / 3 A, 120 V ac / 5 A |
| Output: transistor | 100 mA / 36 V dc |

| Environmental Data | |
|------------------------|---------------|
| Temperature, operation | -10 to +55 °C |
| Sealing class | IP 40 |
| Approvals | |

| Applicable Remote Sensors & Sensing Ranges | | | | |
|--|---------------|------|------|------|
| Remote Sensor Series | 101 | 100 | 110 | 120 |
| | Sensing Range | | | |
| Long range mode | 8 m | N/A | N/A | N/A |
| Short range mode | 2.5 m | 10 m | 23 m | 45 m |

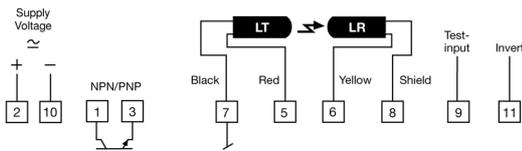
Note: Long range mode must only be selected with the 101 series.

Illustration

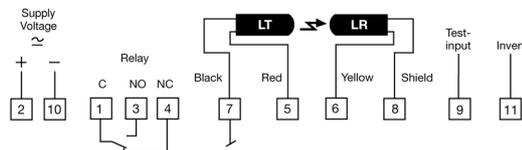


Connection

Wiring Diagrams



Transistor output – PA 01 X 61X



Relay output – PA 01 X 51X

Connection Steps

- 1 Check the power supply and output of the amplifier type.
- 2 Make sure power is off. Connect wires to the 11-pin socket according to wiring diagram.
- 3 Plug-in the amplifier into the 11-pin socket. Turn power on.
- 4 When the amplifier is operating, the green (signal status) LED is on.

Adjustments

DIP Switch Settings

DIP Switches are located on the back of the amplifier.

| Model | PA 01 A | PA 01 B | PA 01 C |
|-------|----------------|----------------|-------------|
| | | Long range | Long range |
| | Short range | Short range | Short range |
| | Light operated | Light operated | On delay |
| | Dark operated | Dark operated | Off delay |

Light operated: enables the output to be inactive when there is an object present.
Dark operated: enables the output to be active when there is an object present.

Note: All types will be light operated when pin 11 is shorted to pin 7. This overrides the light/dark selection.

Output Logic

| Detection (thru beam) | Output mode | Relay Output | Transistor Output | Output indicator |
|-----------------------|----------------|--------------|-------------------|------------------|
| Object present | Dark operated | Closed | Closed | On |
| Object absent | Light operated | Open | Open | Off |
| Object present | Dark operated | Open | Open | Off |
| Object absent | Light operated | Closed | Closed | On |

Manual Sensitivity Adjustment PA 01 B/C

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.

Sensitivity adjustment may be required in applications where objects to be detected are small or translucent. Proceed with the following steps:

- 1 Begin with turning the potentiometer to MAN position. Manual sensitivity adjustment mode has now been selected.
 - 2 Increase the sensitivity to maximum by turning the potentiometer to full clockwise position.
 - 3 Check there is no object present interrupting the beam and the sensor pair is correctly aligned and within their specified sensing range.
 - 4 Select target object with smallest dimensions and most translucent surface.
 - 5 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 6.
 - 6 Decrease the sensitivity by turning the potentiometer counter clockwise until the output is activated.
 - 7 Remove target object. Observe the output status has changed.
- If the signal level is low, the green LED (signal status) will flash slowly. 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

Automatic Sensitivity Adjustment - Teach-In PA 01 A/B/C

Automatic sensitivity can be used in applications where changes in the environment occur e.g. change of ambient light or moderate contamination. This adjustment must not be used in applications where the environment is very contaminated.

- 1 Observe that no object is between remote transmitter and receiver sensors.
 - 2 For PA 01 A proceed to step 3
For PA 01 B/C turn the potentiometer to full counter clockwise position to AUTO and proceed to step 3.
 - 3 Push the RESET / TEST button to initiate teach-in. The green LED will flash when automatic adjustment is in progress.
 - 4 When the automatic adjustment has completed, the green LED will be stable. The system is now adjusted for optimal detection.
 - 5 Move an object in and out of the detection area. Observe on the yellow LED that the output changes correctly (refer to Output Logic table).
 - 6 For a new adjustment, push the RESET / TEST button to initiate teach-in.
- If a severe disturbance occurs, the green LED (signal status) will flash quickly.

Time Delay Adjustment PA 01 C

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.

- 1 Select on delay or off delay using the DIP switch. Refer to DIP Switch Settings.
- 2 Increase or decrease time delay by turning potentiometer clockwise or counter clockwise respectively.

Test Input

The transmitter can be disabled and enabled for test purposes. Make sure no object is present in the detection area, between remote transmitter and receiver sensor, when test is activated. When the transmitter is disabled, a change in output should occur.

| | |
|---------------------|--|
| Disable transmitter | Push RESET / TEST button (only in manual mode) or short pin 9 to pin 7 or pull-down below 2.0 V dc |
| Enable transmitter | Do not short pin 9 to pin 7 or pull-up to maximum 5.0 V dc |



Warning
This product is not a safety system and must not be used as such. It is not designed for personnel safety applications, and must not be used as a stand alone personnel safety system.