

## FREQUENTLY ASKED QUESTIONS REGARDING PANTRON PHOTO-ELECTRIC SENSORS

### CABLE LENGTH

- *Can the transmitter and receiver cables be spliced?* Yes. Pantron photoeye cables may be extended. A good rule of thumb is to limit the extension to 35 meters or 115 feet but do not exceed 10 Ohms. If you have the option of extending only one cable, extend the transmitter. Make a good electrical splice and solder the wires. Apply heat shrink tubing to the spliced cable area. Do not use wire connectors (a.k.a. wire nuts).
- *Does the length of the cable (50mm, 5m, 15m, 35m) effect the sensing range?* Not as long as the cable length is less than 115 feet. The sensing range of the transmitter and receiver are determined by the amplifier and whether the transmitter is a standard one or high powered.
- *Can I run the transmitter and receiver cables through the same conduit?* Yes. The receiver cable is shielded. Do not run cables for motor controls through the same conduit, though.
- *If I decide to extend the length of the existing cable, what type of cable should I use?* Although Pantron offers extra cable, it is not necessary to purchase Pantron cable. Use a good .22 gauge shielded cable and make a solid electrical splice, soldering the wires.

### CROSS TALK

- *If I need to mount several sensors in the same general area, how close can they be mounted without experiencing cross talk?* Cross talk can occur when eyes are mounted too closely together. If only two sets of eyes are needed, allow two to three feet between the sensors and alternate the transmitters and receivers. Then select one of the amplifiers and turn the transmit frequency dipswitch to the "on" position.
- NOTE: You also have the option of using a multiplexer for the application. Two, four and eight channel multiplexers eliminate cross talk and provide the option of one relay output for each set of eyes or light curtain mode. The eight channel multiplexer is extremely useful for truck washes.

### FIELD OF VIEW

- *What is the field of view or opening angle of the photoeyes?* 12° for a standard transmitter eye and 18° for a high powered transmitter. 8° for the receiver eye.
- *There is vibration on the machine. Will I have a problem with the eyes being knocked out of alignment?* No. The Pantron eyes have a wide opening angle that allows the sensors to withstand vibration. Even with a wide opening angle, the eyes provide a tight, powerful beam.

### IMMUNITY TO EXTRANOUS LIGHT

- *I am mounting the sensors at the entrance of a car wash. Will bright sunlight cause problems for the eyes?* It should not. Pantron eyes are rated to 60,000 LUX. If direct sunlight does cause a problem, try swapping the side that the transmitter and receiver are mounted on. Put the receiver on the side that gets less direct sunlight. Pantron does offer a polarized filter for the M12 style receiver eye that will also help correct this problem.

## **LENS**

- *There is a lot of fog in my car wash when the weather is cold. Will the eyes still operate?* Yes. Pantron eyes are manufactured with a filter on the front of the eye, not a lens. Therefore, the eyes are able to penetrate dust, dirt, steam, snow, fog, soap film, grease, etc.

## **Alarm LED**

- *The Alarm LED comes on or stays on during normal operation of my photoeyes. Is there a problem?* The function of the alarm LED is to alert the user that the automatic amplifier is running at the highest gain setting. This is also the setting of least sensitivity. The amplifier is trying to overcome an obstruction or adjust for improper alignment. Clean the photoeyes and make sure they are aligned properly. The system should continue to function normally in all other aspects.

## **MOUNTING**

- *How far away from the sensors can the amplifier be mounted?* Pantron eyes can be mounted 45 meters or 148 feet away, but do not exceed 10 OHMS. The amplifier should be mounted in a watertight enclosure or in a control panel.
- *Should the amplifier be mounted in an enclosure?* Yes. The amplifiers are rated IP40 and should be installed in an enclosure or control panel. When mounting the amplifier in a control panel with other components, allow one-inch space between components.
- *Can the eyes be mounted in wet areas in a location where machinery is being washed down?* Yes. The eyes are rated IP67 and can be submersed under water. The amplifier is the only part of the system that requires protection from moisture.
- *How should I mount the eyes?* The M12 (nickel plated brass) is threaded and comes with two nuts so it is easy to drill a hole and mount the eyes just like you would insert a bolt into a piece of metal. The P10 (Polycarbonate or plastic) type is easy to mount using the ISH1 mounting block, ISH2 mounting clip or ISH10 strain relief.
- *In a car wash, how can I mount the sensors so that I will be able to pick up all types of cars and trucks?* The eyes should be mounted on a stand at different heights. Install the transmitter approximately one foot off the floor on one side of the wash and the receiver at approximately two to five feet off the floor on the opposite side of the wash. Be sure the photoeyes are mounted at an angle facing each other.
- *Can I use a reflector in my car wash application and mount the transmitter and receiver on the same side to eliminate wiring both sides?* No. This arrangement causes many problems for car washes. The reflector will cause false signals when it is covered with fog.

## **SEALING**

- *Are the eyes sealed for use in harsh applications such as a car wash?* Yes. The eyes are rated to IP67. The patented color-coded strain relief on the transmitter (red) and receiver (black) eliminates the problem of water seepage into the back of the photoeye.

## **SYSTEM QUESTIONS**

- *What makes up a Pantron photoelectric system kit?* The amplified system consists of a transmitter, receiver, amplifier, socket and enclosure. Mounting equipment is optional.
- *Is it necessary to use the amplifier?* For the standard photoeyes, yes. This is a closed loop system. If you can not wire to both sides and if the application is not too severe, you can mount the transmitter and receiver side by side in a prox mode. Proximity mounting should not be used for a harsh environment application. If you require a system with a built in amplifier, please see our SlimLine system. These photoeyes have a built-in amplifier and do not need an external one.
- *Is the Pantron system interchangeable with other competitive systems?* The Pantron system operates on the GaAIAs (880nm) wavelength. However, we do not recommend combining parts of a Pantron system with other systems as it may result in poor performance of the overall system.

## **TEMPERATURE**

- *What is the maximum temperature the eyes can withstand?* 150 degrees Fahrenheit or 60 degrees Centigrade without fiber optic cables.

## **TECHNICAL ASSISTANCE TOLL FREE LINE**

**Our office hours are from 8:00a.m. to 5:00 p.m.  
Call Toll Free: 1-800-211-9468  
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