Sensing a better tomorrow

What you need to know about photoelectric sensors to keep your automatic carwash running smoothly.

By **Jim Dunn**

A typical automatic bay will generate $4,000 - $8,000 in gross revenue per month, but the wash must be up and running in order to generate this revenue. Time lost to equipment failures leads to lost revenue and added expenses.

How can photoelectric sensors help reduce costs and increase revenues and efficiency? The answer is simple — by providing more information, and being optimized for the unique needs of automatic carwashes. And that is exactly what today's photoelectric sensors can do.

Real-time solutions

The photoelectric system (which can include a remote amplifier and sensors) may give feedback in "real-time." This means the problem is identified and indicated by the amplifier as it happens, which is the preferred method. The amplifier may also have the option of being placed into a diagnostic mode by the operator, where the system will then analyze itself and identify problem issues.

Most of today's amplifiers will have an alarm output option, which can also be used to alert the carwash operator that a problem may exist. Whether it is done in real time or through operator intervention, on-board self-diagnostics will help the carwash operator quickly determine if a sensor is causing or contributing to machine downtime.

Properly aligning photoelectric sensors in the past often meant a time-consuming process of "eye-balling" the sender and receiver together, and then checking for an output signal. This process could take a significant amount of time, especially if long distances were being covered between the sender and receiver, or if the installer was working alone.

The proper alignment of photoelectric sensors ensures a smooth carwash experience for all customers.

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Many of today's photoelectric sensors offer alignment aids, in the form of visible or audible signals, or with linear outputs that can be connected to multimeters. In a typical sensor, there may be a LED or bargraph, which will flash or light up in relation to how well the sensors are aligned. This feature saves time when installing sensors, or during maintenance checks. What once may have taken 30 minutes to complete can now be done in just a few minutes.

In a typical automatic carwash, there can be up to six sets of photoelectric sensors, each performing a critical function. If multiple sets of sensors are mounted close to each other, the possibility exists that "cross-talk" — where one receiver is

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detecting light from a sender that it is not paired to — can occur and give false or inaccurate outputs. This can lead to vehicle damage, and create a bad reputation for your wash.

In many cases, this situation can be prevented through practical installation steps, such as alternating senders and receivers that are close to each other. But in situations where this is not practical or sufficient, it is critical that the photoelectric sensors offer multiple frequency (or channel) options. By putting each set of eyes on a separate channel, the possibility of cross-talk occurring is eliminated. This will help prevent vehicle damage and insurance claims.

Another trait of photoelectric sensors that can cause both grief and relief is their ability to have their range adjusted. This feature gives the carwash operator the flexibility to adjust the sensors to the unique environment of their particular wash. However, it can also be frustrating as one struggles to find the optimal setup.

To simplify this process, some of the latest photoelectric systems will offer the user a choice — to manually set the sensing range or to have the system automatically configure itself to the optimal range. The option of automatic range setting is especially beneficial to the carwash operator who does not have the time, or perhaps is not comfortable, with finding the perfect sensitivity setting.

Increasing revenues, reducing costs, improving operating efficiencies — photoelectric sensors are a vital component in your carwash. □

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