

Castles~n~Coasters Amusement Park Uses Electro-Sensors Speed Switches on Two of its Attractions

Phoenix, Arizona

Amusement parks have many different rides designed to entertain the masses. A number of these rides operate by making the same loop hundreds of times per day, and some at high speeds. When the public is involved, especially when there is sophisticated technology, large mechanical equipment, and a risk for injury, safety is a main concern of owners and operators.



One way to ensure a ride is working properly is to continuously monitor the moving parts. For [Castles~n~Coasters](#) in Phoenix, the Electro-Sensors [DR1000](#) speed switch system (with [906](#) speed sensor and [255](#) pulser disc) has been critical in the operation of two of their attractions; the log flume and family roller coaster.



Torrance Ring, IT/Electrical Manager at [Castles~n~Coasters](#), says that the park has been using Electro-Sensors speed switches since the ride manufacturer installed them in 1991. According to Ring, the log flume ride, Splash Down, utilizes three pairs of sensors on the drive belt, which are used to propel the boats up the lifts. The drive belts operate by using 50 HP motors connected to the drive drum with the belt looped back onto a tension drum. The speed switch monitors the RPM of the drive drum and tensioner drum and if they do not match, it means there is a problem with the belt. Sensing this difference in speed, the switch will trip out, shutting down the ride.

On the family coaster, Patriot, the DR1000 system works by first mounting a [split collar pulser wrap](#) and 906 speed sensor to the idler wheel to reference the forward speed of the coaster train when it leaves the braking station. If the train speed exceeds the setpoint, pre-programmed into the DR1000, the ride will shut down.

In both of these applications speed plays a critical role in the proper operation of the ride. It is imperative that if something is starting to go wrong, the ride is immediately shut down before the passenger safety is compromised.

[Castles~n~Coasters](#) has put their trust in Electro-Sensors speed switches for 23 years and counting. Ring says, "We have kept the original Electro-Sensors in use because they are reliable, easy to use, and perform the necessary monitoring. Additionally these sensors are installed outdoors, exposed to shock and vibrations, and capable of withstanding the harsh temperature extremes in Arizona."



DR1000 Speed Switch, 906 Speed Sensor, 255 Pulser Disc

These statements from Ring sum up the philosophy behind Electro-Sensors products. It is our goal to continue this tradition of producing the most reliable and easiest to use monitoring sensors and systems in the market.