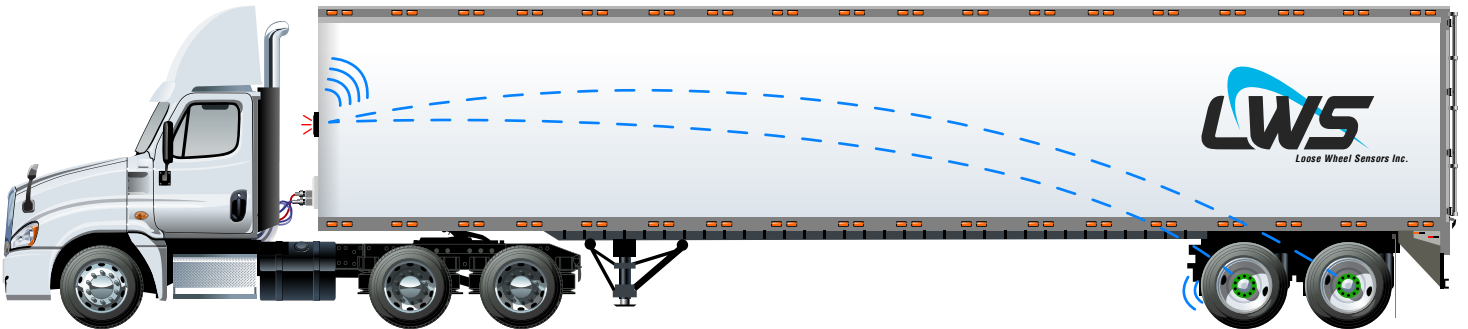


## MONITOR Wheel Stud CLAMP FORCE AND HUB TEMPERATURE WITH REAL-TIME RF SENSOR



Loose Wheel Sensors provide **real-time early-stage warnings** of loose wheels and high wheel hub temperatures. The possibility of an escaping truck/trailer wheel is a **critical safety concern** and occurs more frequently than reported. These dangerous incidents often result in injury/fatalities, property damage, higher repair costs, lost time, fines, etc.

Torque on lug nuts is an unreliable indicator of the clamping force holding the wheel of a truck or trailer in place. Studies have shown that clamping force can be reduced by more than 70% if wheel fasteners are corroded. Much of the torque is lost to overcoming friction and not converted into the needed clamping force.

The LWS sensor **relies on the axial load** in individual studs to monitor that an appropriate clamping force threshold is maintained. If the clamping force reduces below the threshold limit, a **radio signal** is sent to a beacon to **visually notify** the operator. The beacon **indicates which wheel and stud** is in jeopardy while a clamping force is still maintained. The operator can then take the appropriate action to address these warnings.

**Thermal sensors** also monitor wheel hub temperatures and a beacon signal is sent when the temperature reaches 175° F (79° C) indicating bearings/brakes need to be addressed. This feature saves maintenance costs.

The LWS system can also be interfaced with compatible **telematic/tracking systems** to send real-time **digital text notifications** to fleet maintenance, dispatch, etc. when events occur.

LWS is a **real-time early-stage warning system** allowing drivers and fleet maintenance to **take a proactive role**...be it the need to re-torque, replace fasteners, wheel reconditioning/replacement, bearing/brake service, etc....all before the unthinkable happens. This leads to **safer roadways** for everyone and helps **manage risk and costs**.

## MONITOR Wheel Stud CLAMP FORCE AND HUB TEMPERATURE WITH REAL-TIME RF SENSOR

### Features & Benefits

- Monitored wheel studs are scanned every 4 seconds.
- Alarm beacon signals driver's attention and indicates which wheel and specific stud needs attention.
- Substantial clamping force remains in a loosening stud when a fault is indicated.
- Thermal sensors monitor and send a beacon signal when hub temperature reaches 175°F (79°C).
- Over-torqued and stretched studs are discovered as they will not reach threshold clamping force.
- Eliminates requirement to re-torque after first 75 miles if not needed.
- All studs receive full axial load after threshold axial load completes monitoring circuit.
- Available for dual, triple and quad axle trailers.
- Complies with SAE J267 standard for aluminum and steel rims.
- Operational ambient temperature range of -40°F to +125°F (-40°C to +52°C).
- Battery life of 48 months at 70 °F ambient temperature.
- DIY installation does not require removal of wheels from truck/trailer.
- Can be interfaced to compatible telematic/tracking systems.
- Potted electronics for environmental protection.
- Corrosion resistant materials.



LWS Alarm Beacon mounted on front of trailer



Wireless radio signals to beacon.



LWS Sensor Rings installed on dual axial trailer