



Traffic data acquisition – with no compromises

Ohio Department of Transportation relies on Weigh In Motion
technology from Kistler



Headquarters of Ohio Department of Transportation (ODOT) in Columbus

The US state of Ohio is stepping up its efforts to collect traffic data so that it can claim important Federal budget funding to conserve infrastructure. Kistler Lineas sensors achieved exceptionally convincing results in the state's tests on Weigh In Motion systems.

Although Ohio is one of the smaller US states in terms of area, it is a key center of industry and business. From Cleveland on the shore of Lake Erie in the north to Columbus and Cincinnati in the southwest, Ohio has the seventh largest gross domestic product (GDP) of all US states, and is second only to neighboring Michigan in automobile production. Ohio is known as the Buckeye State, after the native tree similar to a horse chestnut that has a characteristic tan-colored eye in the middle of its seed. In US Presidential elections, Ohio is traditionally regarded as a swing state and a bellwether that usually votes with the winning party.

In some ways, Ohio resembles the German Federal State of Baden-Württemberg: the two territories have similar populations (about 11 million), their GDPs are comparable (about EUR 500,000 million), and the enterprise structure of both Ohio and Baden-Württemberg is defined by the automotive industry and its supply sector. However, Ohio has three times the area of Baden-Württemberg: it is located centrally in the United States, within one day's drive for 60% of the North American population. Responsibility for developing and conserving the highway infrastructure is assigned to the Ohio Department of Transportation (ODOT): with a workforce of over 4,500, this state agency controls all aspects of construction, planning, traffic monitoring and transportation safety.

For installation, operation and durability – quality is the focus
Dave Gardner, Manager of ODOT's Traffic Monitoring Section, shares responsibility for traffic oversight throughout the state of Ohio with his colleague Sandie Mapel, Field Manager. "Acquiring precise traffic data is very important for us because allocation of Federal budget funds depends on those statistics," Gardner explains. "Axle loads and overall truck weights are recorded and submitted for the Federal Data Plan."

ODOT currently operates 22 Weigh In Motion (WIM) stations to monitor stress on Ohio's roads caused by trucks and heavy commercial vehicles. "We'll gradually be adding more installations in the coming years," Mapel adds. "We believe it's very important to deploy the correct systems in terms of installation, operation and data quality."

A practical, high-performance system: Kistler Lineas scores convincingly in field tests

To investigate its options, ODOT installed a WIM test section on US Route 23, which links the country's far north to Florida and crosses Ohio from north to south. The traffic monitoring experts at ODOT were impressed by the performance of quartz-based Lineas sensors from Kistler. "Their compact design makes them easy to install, especially in existing roads. The Lineas sensors combine long service lifetimes with data quality that leaves nothing to be desired," Mapel comments. "For all these reasons, we'll be deploying more Kistler sensor technology to acquire traffic data in the future. We're also examining how much use we could make of the complete KiTraffic Statistics system," she concludes. Another test section to assess this option is due to be set up in Ohio before long.

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Dave Gardner, Manager of ODOT's Traffic Monitoring Section

Progressive expansion with technology from Kistler on board

ODOT's first Kistler Lineas sensor installation was back in 2007, and the agency has been increasing its use of Lineas sensors since 2016. The oldest Kistler installation still operating in the state today dates from 2011.

When asked if more WIM applications could be implemented with Kistler – such as direct camera-based collection of fees for overloaded vehicles ("direct enforcement") or protection of bridges against overloaded trucks – Gardner slows the pace: "We aren't there yet! Law enforcement carry out random checks on trucks, and we also send them traffic monitoring data for analysis purposes. But the data isn't forwarded to Law Enforcement in real time."



Installation of Kistler Linesas quartz sensors (9195G) in the road pavement



ODOT currently operates 22 Weigh In Motion stations – and is planning to add more in the coming years

On the other hand, the situation for bridges could be different. Ohio has the second largest number of bridges of all 50 US states and many of them were built after the second world war, so they require appropriate monitoring, protection and maintenance. Technology from Kistler can help prevent damage inflicted on bridges by overloaded vehicles. Such vehicles can be prevented from driving onto a bridge with the help of accurate WIM data that is available in real time – so bridge lifetimes become substantially longer. “However, a different department at ODOT is responsible for that,” Gardner notes.

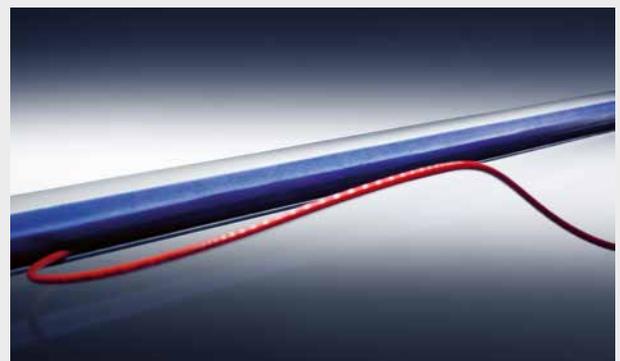
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Sandie Mapel, Field Manager of ODOT’s Traffic Monitoring Section

Including Ohio, 47 out of the 50 US states are now operating WIM technology from Kistler. With over 50,000 Linesas sensors already installed in more than 50 countries, WIM by Kistler is internationally recognized as the solution of choice to protect road infrastructure, improve traffic safety, and collect weight-based toll fees.

Linesas quartz sensors for Weigh In Motion (WIM)

Linesas quartz sensors (9195G) are used to measure wheel and axle loads, and they can also determine gross vehicle weights with no disruption to traffic flow. Installed in the road pavement, these sensors deliver highly accurate measurement signals.



Key product features and user benefits at a glance:

- Quartz technology for high-precision measurements and long-term stability
- Compliant with OIML R134 (accuracy class 2)
- Long life expectancy thanks to rugged sensor design
- Wide measuring range
- Nonstop weighing at low to high speeds
- Insensitive to temperature fluctuations
- Installation in the road pavement is fast and easy



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