

## VectorSense® Tire Contact Sensor

VectorSense sensors measure tire-to-road contact patch pressure distribution for applications including weigh-in-motion, tire safety, and vehicle classification.

### VectorSense® Tire Sensor Suite

VectorSense adds another dimension to Weigh-In-Motion (WIM) measurement technology by integrating contact pressure and positional information into one sensor system. VectorSense measures tire to road contact patch pressure distribution to determine various tire parameters.

By capturing these foundational vehicle measurements, the VectorSense sensor system enables the ability to expand on this platform to deliver specific application layers to suit any customer's needs.

### Applications

#### VSWIM – VectorSense Weigh-in-Motion

- Tire Loading
- Axle and Tire Width
- Tire Type (Single/Dual/Wide Based Tires)
- Vehicle Speed and Length, Axle Configuration
- Lane Position (Absolute, Out of lane detection)

#### TACS – Tire Anomaly and Classification System

- Detection of tire anomalies on commercial vehicles
- Anomalies can be classified as (Dangerous, Suspect, and Inefficient)
- Enforcement or Information System

#### TSS – Tire Safety Screening

- Detection of tire anomalies for fleet notification of potential safety issues

#### AACT – Advanced Axle Classification for Toll

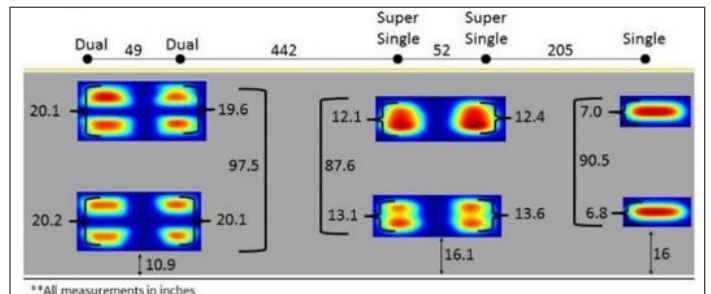
- Axle and tire type detection for toll audit systems

### Features

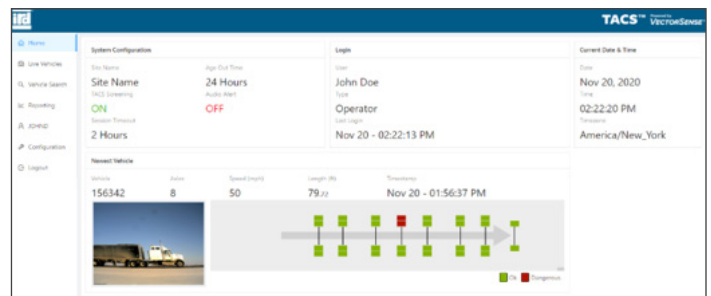
- **Operators User Interface** – Web-based interface for viewing live vehicle information and system configuration
- **Standard Data Interface** – Provides a secure real-time interface for integration to external systems



VectorSense Sensor Array



Tire Contact Pressure Measurement

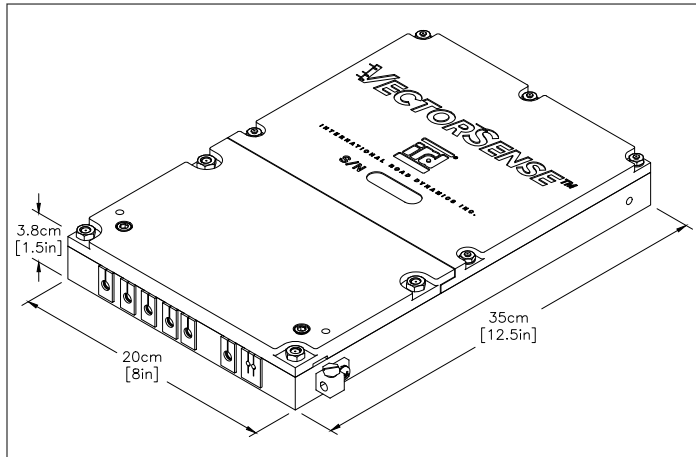


Operators User Interface

# VectorSense System Components and Specifications

## VectorSense interface electronics

The In-Road Sensors connect via the VectorSense Interface Electronics, then to the Roadside Electronics. The roadside electronics connect to and communicate with Weigh Station systems or third-party systems which receive tire and vehicle record data in near real time via a network connection.



VectorSense Interface Electronics

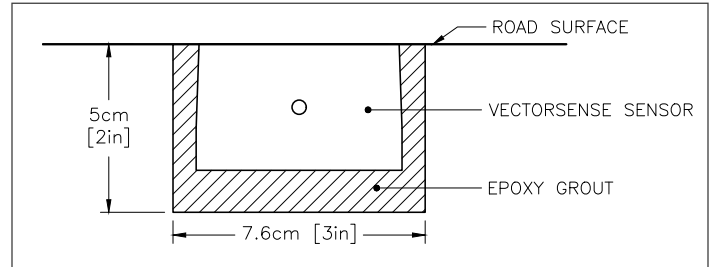
VectorSense Specifications	
<b>System Specifications</b>	
Operating Temperature Range	-40 to +80 °C (-40 to 175 °F)
System Power Consumption	PoE (15W)
<b>VectorSense Sensor Specifications</b>	
Operating Temperature Range	-40 to +80 °C (-40 to 175 °F)
Sensor Length	2.4 m to 4.5 m (8 ft to 15 ft)
Cable Length	6 m or 12.2 m (20 ft to 40 ft)
Positional Sample Resolution	10 mm (0.4 in)
Nominal Resistance	50 ohms
Speed Range	5 to 160 km/h (3 to 100 mph)

## System Layout and Installation

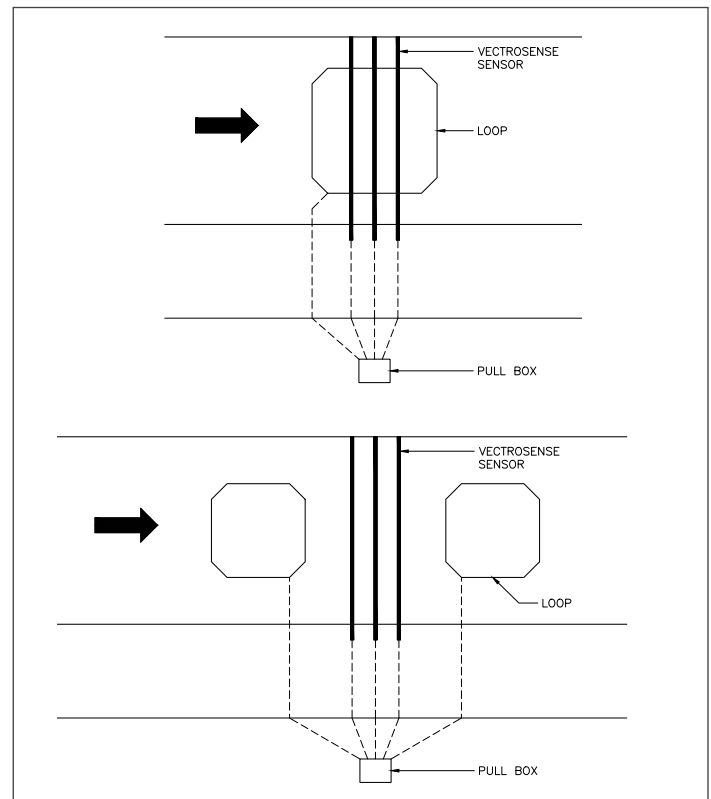
VectorSense is easy to install in both asphalt and concrete roadways.

Each in-road sensor can be installed in a saw cut approximately 7.6 cm (3 in) wide by 5.1 cm (2 in) deep.

A standard installation consists of 3 in-road sensors spaced approximately 46 cm (18 in) apart providing support for vehicle speed measurement and system redundancy, combined with one or two inductive loops.



Installation Slot Cross Section



System Layout Options

