

## @Road Sensor Services



### Remotely Monitor Vehicle Sensors

Using @Road Sensor Services, fleet managers and dispatchers gain valuable insight into the status of their assets in the field. For example:

- Dispatchers of street sweeping equipment can ensure service quality with information about each time and location that the sweeper broom moves up or down
- Waste-collection companies can better resolve customer disputes with reports showing each time a truck's trash lift arm is used
- Tow truck managers can validate when and where a towing job started and stopped
- Managers of fleets with temperature-controlled compartments can receive prompt notification of out-of-range temperature levels within the trucks
- Companies can receive immediate notification if a cargo door is opened at an unexpected remote location as opposed to a warehouse or customer site

@Road Sensor Services automatically record and report on such occurrences, providing added visibility that helps companies protect their assets and provide quality service. The @Road Sensor Services set of solutions includes StatSensor™ and TempSensor™—each available as optional features of the @Road GeoManager<sub>SM</sub> iLM® Mobile Resource Management (MRM) solution.

### @Road StatSensor

@Road StatSensor enables monitoring of up to four independent transition events within a vehicle, such as Door Opened/Closed, Door Up/Down, Light On/Off, Tow Lift

Up/Down or Street Sweeper Broom Up/Down. This service enables the @Road iLM (Internet Location Manager™) in-vehicle hardware to monitor electrical signals from various switches or sensors in the vehicle, then send information on transition events to the @Road server for use in detailed GeoManager reports.

Using the web-based GeoManager application from the office or any other location with Internet access, managers may review easy-to-read reports on the time, date and location where sensor transitions take place. Exception Reports deliver immediate text notification to a manager's PC or SMS-enabled mobile device if a sensor is triggered outside of defined parameters. Reports on sensor events can let a manager know, for example, when a cargo load was delivered, the location at which a tow was raised, or how many waste truck loads were picked up on a residential block. Such information helps companies improve management of their mobile assets.

### @Road Sensor Services

- Remotely monitor the use of specialized equipment like waste truck lift arms, street sweeper brooms and tow truck lifts
- Track deliveries and protect cargo by monitoring trailer door opening and closing times and locations
- Protect temperature-sensitive loads with automatic monitoring of compartment temperatures
- Receive immediate notifications for temperatures or sensor events that fall outside defined parameters

## @Road TempSensor

@Road TempSensor works in a similar way as StatSensor, using digital temperature data from a customized sensor that is installed in a temperature-controlled compartment of the vehicle. TempSensor is especially helpful for temperature-sensitive industries, such as food and chemical distribution, because it automatically provides periodic reports on compartment temperatures for vehicles in the field. Managers may receive immediate Exception Report notifications when the temperature of a vehicle compartment exceeds or drops below set thresholds. Such information can maintain the safety of temperature-sensitive chemicals, prevent cargo loss and help resolve customer disputes over spoiled goods.

## Part of a Complete MRM Solution

@Road GeoManager iLM, which supports @Road Sensor Services, is a comprehensive solution for effective Field Force Management. @Road offers a complete array of MRM services through its Field Force Management, Field Service Management and Field Asset Management solutions.

## @Road StatSensor Specifications

### Technology

- Can monitor up to four independent contact-based electrical signals per vehicle
- Hold-off feature and signal debounce algorithm prevent retransmission of identical switch transitions

- @Road GeoManager iLM Reports and Exception notifications uniquely identify each vehicle's electrical signal, switch state or transition status (e.g., on to off, open to closed)
- RoHS (Restriction of Hazardous Substances) compliant

### Environment

- Operating Temperature: -4° to +140° F (-20° to +60° C)
- Storage Temperature: -40° to +221° F (-40° to +105° C)
- Humidity: 0% to 95% RH, non-condensing

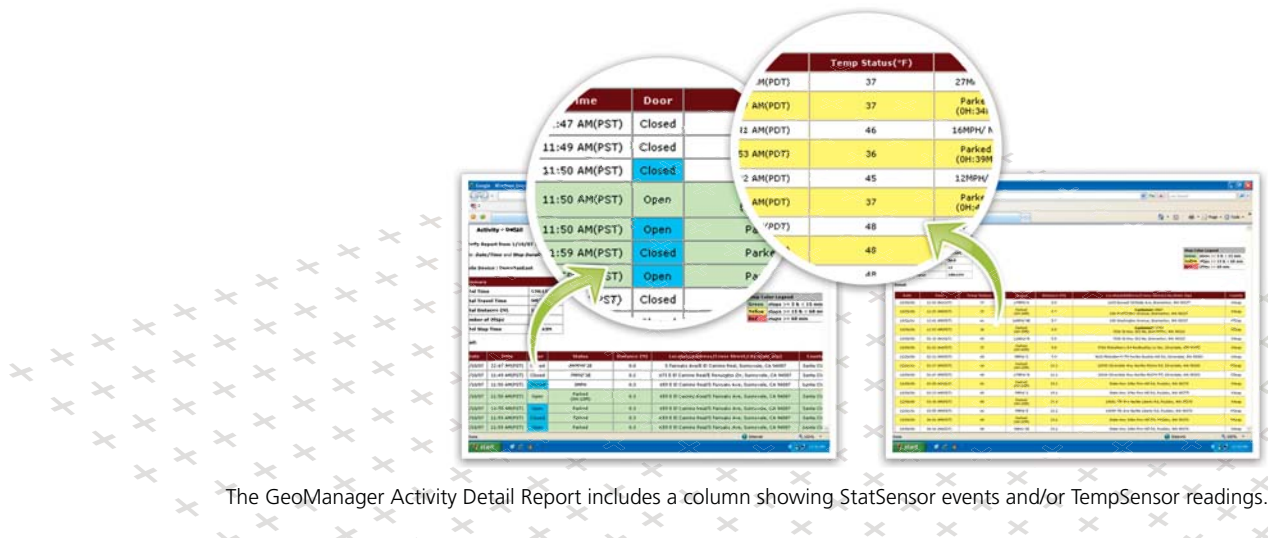
## @Road TempSensor Specifications

### Technology

- Able to monitor one temperature status signal per vehicle
- Digital temperature sensor is installed in the vehicle and connected to the @Road iLM
- Reports temperature according to customer-specified reporting intervals or immediately by Exception
- RoHS compliant

### Environment

- Operating Temperature: -40° to +158° F (-40° to +70° C)
- Temperature Reporting: Increments of 0.9° F (0.5° C)
- Accuracy: +/- 2° F (1° C)
- Humidity: 0% to 95% RH, non-condensing
- Water resistant



The GeoManager Activity Detail Report includes a column showing StatSensor events and/or TempSensor readings.

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## About @Road

@Road, a Trimble company, is a leading global provider of solutions designed to automate the management of mobile resources and to optimize the service delivery process for customers across a variety of industries. @Road delivers Mobile Resource Management (MRM) solutions in three key areas: Field Force Management, Field Service Management and Field Asset Management.

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