

## The MSI Roadtrax® Brass Linguini® axle sensor ... and why it's the best sensor for you!!

### ■ Great Signal

- ★ Positive signal as tires pass over the sensor
- ★ High output - detects small vehicles - motorcycles, even bicycles
- ★ Good dynamic range - can work with large to small vehicles
- ★ Reduced Bow Wave
- ★ Reduced Road Flexing noise
- ★ High Signal to Noise Ratio for ease of signal processing
- ★ High capacitance - can drive long cables
- ★ Works even for slow speeds

### ■ Easy to handle

- ★ Conforms to any road profile
- ★ Stiff enough not to droop
- ★ Coils in a 2'x2' (600x600mm) box
- ★ Rugged so that it does not break in handling

### ■ Easy installation

- ★ Installs in a 3/4" x 1" (19 x 25mm) cut in the road to minimize damage to the road
- ★ Installs with fast curing epoxy, acrylic, or appropriate poly-urethane
- ★ No need for heaters
- ★ Smaller cut means less encapsulation material - a 6' BL sensor uses less than 2 gallons (2m sensor uses less than 1.5 liters)

### ■ Quality

- ★ 100% of sensors tested for capacitance and insulation resistance, and then impacted every 1/4" (6mm) along the length of the sensor to determine the activity and uniformity of the sensor.
- ★ Computerized process controls the extrusion and polarization of the cable
- ★ All data electronically archived
- ★ All sensors Serial Numbered for traceability

### ■ Durability

- ★ Triple sealed coax splice between the sensor and the passive cable
- ★ The sensor will not be damaged by bending to a radius of > 1' (300mm)
- ★ Will withstand normal handling without tender loving care
- ★ Tested to 40 Million Equivalent Single Axle Loadings

### ■ Versatility

- ★ Same sensor for over and in the road applications
- ★ Surface sensors can be mounted permanently or temporarily
- ★ Can be used in Portland Cement or Asphalt
- ★ Several encapsulation techniques can be used - Epoxy, acrylic, or filled poly-urethane

### ■ Great Passive cable

- ★ Super tough High Density Poly Ethylene (HDPE)
- ★ Rated as Waterproof for direct burial
- ★ Low capacitance - 27 pF/foot (89 pF/m)
- ★ Lengths from 100' to 300'(35-100m) standard - longer lengths on a custom basis

### ■ Customer Support

- ★ Fast delivery - Units in stock
- ★ Any length - 6', 8', 9',10',11',12',and 13' - with a standard of 100' of passive cable but with the option of any length in multiples of 50'
- ★ Available in metric lengths - 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 and 5.5 meters, with standard cable lengths of 35, 50, 75 and 100 meters
- ★ Installation clips included with all sensors
- ★ Installation instructions included with all sensors
- ★ Available Internationally
- ★ On site installation training available

# Roadtrax BL Traffic Sensors

## Product Description

The Roadtrax BL Traffic Sensor is designed for permanent or temporary installation into or onto the road surface for the collection of traffic data. The unique construction of the sensor allows direct installation into the road in a flexible format so that it can conform to the profile of the road. The flat construction of the sensor gives an inherent rejection of road noise due to road bending, adjacent lanes, and bow waves of approaching vehicles. The small cut in the road minimizes the damage done to the road, speeds up the installation and reduces the amount of grout used for the installation. The Roadtrax BL sensor is available both as a Class I sensor for the highest level of uniformity needed for Weigh in Motion applications and as a Class II sensor which is more cost effective for Counting, Classifying, High Speed Toll Booths, Speed Detection, and Red Light Cameras.

- Uniform, **high amplitude** piezoelectric output **compatible with existing** counters and classifiers on the market.

- **Excellent Signal to Noise Ratio** which has an inherent 10:1 rejection of road noise due to road bending, adjacent lanes and bow waves of approaching vehicles.

- **Easy installation** in a 3/4" x 1" (19 x 25mm) slot, which minimizes the disturbance of the road, decreases the depth of the road cut, and minimizes the amount of grout needed.

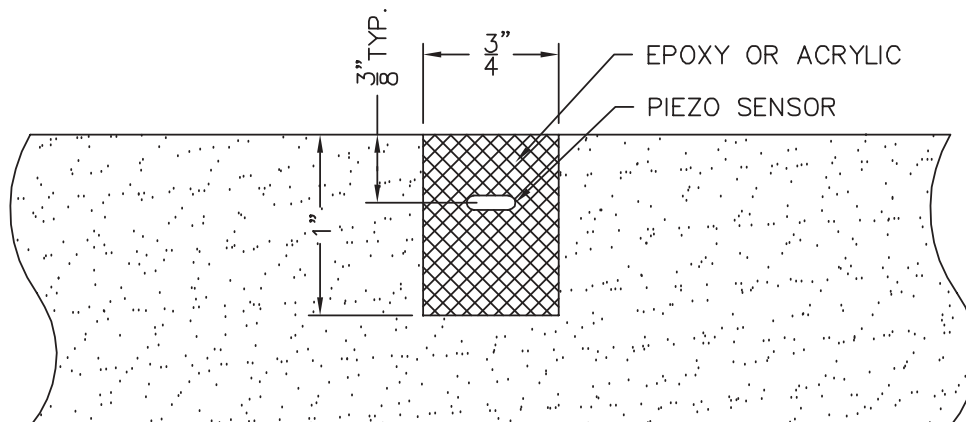
- **Flexible sensor** - conforms to any road profile while maintaining a uniform distance to the road surface.

- The **final installation is flush** with the road surface - snowplows will not damage the sensor.

- **Durable** enough to withstand normal installation handling and **hundreds of millions ESAL's**.

- All sensors are **100% tested and certified** for performance as a complete sensor prior to shipment.

- Custom Passive Signal Cable with **High Density Poly Ethylene Jacket** which is rated for direct burial and resists nicks and cuts.



## Permanent in the Road Installation

### Performance Characteristics

Output Uniformity	±20% for Class II (Classification) ±7% for Class I (Weigh in Motion)
Operating Temperature Range	- 40 to 160°F (-40 to 70°C)
Temperature Sensitivity	0.2%/°F typ, dependent on the grout used
Typical Output Level	A wheel load of 400 pounds will produce a minimum output signal of 250 mV, at 70°F and 55 mph for a proper installation
Passive Signal Cable	RG 58C/U with a High Density Polyethylene Outer jacket that is rated for direct burial; 3/16" (4.75mm) OD
Product Life	40 Million ESAL's; dependent on the installation
Capacitance	See Chart
Weight	See Chart
Insulation Resistance	>500 MΩ
Packaging	All sensors are packaged two per each 24"x20"x3" (600x550x75mm) corrugated cardboard box
Installation Brackets	Included. One bracket is used every 6" (150mm)

### Specifications<sup>1</sup>

The MSI BL Traffic sensor has the following specifications:

1. Center Core: 16 gauge, flat, braided, silver plated copper wire.
2. Piezoelectric Material: Spiral-wrapped PVDF Piezoelectric film
3. Outer Sheath: 0.016" thick brass, CDA-260, ASTM B587-88
4. Final Dimensions: 0.260" wide x 0.063" thick; 0.005"
5. Insulation resistance between core and shield: > 500 MΩ.
6. Piezoelectric Coefficient: 34 pC/N - nominal.
7. Passive Signal Cable: RG 58 type with a underground/direct burial rated outer jacket. The OD of the cable is 0.187" (4.75mm). The nominal capacitance of the cable is 27 pF/ft (89pF/m).
8. Sensors are packaged 2 per box. The box size is 24"x20"x3" (600x550x75mm).
9. Two sizes of installation brackets are included with the sensors, 3/4" (small) brackets and 1" (large) brackets. There is one small and one large bracket per 6" (150mm) of sensor length.

### Notes:

1. Although Measurement Specialties Inc. makes every effort to ensure the accuracy of the specifications at the time of publication, specifications for this product are subject to change without notice. Contact MSI for the most current information at +1 610 650 1508.

# Roadtrax BL Traffic Sensors

Sensor Length	Sensor Classification <sup>1</sup>	Capacitance with 100' cable <sup>2</sup>	Weight <sup>3</sup> pounds (kg)	Visible Brass Length	Installed Length <sup>4</sup>	Part Number <sup>5</sup>
6' (1.82m)	Class II	4.00 nF ≤ C ≤ 10.00 nF	2.75 (1.25)	70" (1.78m)	76" (1.93m)	0-1005333-Y
8' (2.42m)	Class II	5.50 nF ≤ C ≤ 11.50 nF	2.80 (1.27)	94" (2.38m)	100" (2.54m)	1-1005333-Y
9' (2.73m)	Class II	6.25 nF ≤ C ≤ 12.25 nF	2.85 (1.30)	106" (2.69m)	112" (2.85m)	2-1005333-Y
10' (3.03m)	Class II	7.00 nF ≤ C ≤ 13.00 nF	2.90 (1.32)	118" (3.00m)	124" (3.15m)	3-1005333-Y
11' (3.33m)	Class II	7.75 nF ≤ C ≤ 13.75 nF	2.95 (1.34)	130" (3.30m)	136" (3.45m)	4-1005333-Y
12' (3.64m)	Class II	8.50 nF ≤ C ≤ 14.50 nF	3.00 (1.36)	139" (3.53m)	145" (3.68m)	5-1005333-Y
13' (3.94m)	Class II	9.25 nF ≤ C ≤ 15.25 nF	3.05 (1.39)	154" (3.91m)	160" (4.06m)	6-1005333-Y
6' (1.82m)	Class I (WIM)	4.00 nF ≤ C ≤ 10.00 nF	2.75 (1.25)	70" (1.78m)	76" (1.93m)	1-1005438-Y
8' (2.42m)	Class I (WIM)	5.50 nF ≤ C ≤ 11.50 nF	2.80 (1.27)	94" (2.38m)	100" (2.54m)	2-1005438-Y
9' (2.73m)	Class I (WIM)	6.25 nF ≤ C ≤ 12.25 nF	2.85 (1.30)	106" (2.69m)	112" (2.85m)	3-1005438-Y
10' (3.03m)	Class I (WIM)	7.00 nF ≤ C ≤ 13.00 nF	2.90 (1.32)	118" (3.00m)	124" (3.15m)	4-1005438-Y
11' (3.33m)	Class I (WIM)	7.75 nF ≤ C ≤ 13.75 nF	2.95 (1.34)	130" (3.30m)	136" (3.45m)	5-1005438-Y
12' (3.64m)	Class I (WIM)	8.50 nF ≤ C ≤ 14.50 nF	3.00 (1.36)	139" (3.53m)	145" (3.68m)	6-1005438-Y
13' (3.94m)	Class I (WIM)	9.25 nF ≤ C ≤ 15.25 nF	3.05 (1.39)	154" (3.91m)	160" (4.06m)	7-1005438-Y
2.0m (6'7")	Class II	4.94 nF ≤ C ≤ 10.94 nF	2.75 (1.25)	1.98 m (78")	2.14 m (84")	1-1005528-Z
2.5m (8'3")	Class II	6.17 nF ≤ C ≤ 12.17 nF	2.85 (1.30)	2.48 m (98")	2.64 m (104")	2-1005528-Z
3.0m (9'11")	Class II	7.40 nF ≤ C ≤ 13.40 nF	2.95 (1.35)	2.98 m (117")	3.14 m (123")	3-1005528-Z
3.5m (11'6")	Class II	8.63 nF ≤ C ≤ 14.63 nF	3.05 (1.40)	3.48 m (137")	3.64 m (143")	4-1005528-Z
4.0m (13'2")	Class II	9.87 nF ≤ C ≤ 15.87 nF	3.15 (1.45)	3.98 m (157")	4.14 m (163")	5-1005528-Z
4.5m (14'10")	Class II	11.09 nF ≤ C ≤ 17.09 nF	3.25 (1.50)	4.48 m (177")	4.64 m (183")	6-1005528-Z
5.0m (16'6")	Class II	12.32 nF ≤ C ≤ 18.32 nF	3.35 (1.55)	4.98 m (196")	5.14 m (202")	7-1005528-Z
5.5m (18'2")	Class II	13.55 nF ≤ C ≤ 19.55 nF	3.45 (1.60)	5.48 m (216")	5.64 m (222")	8-1005528-Z
2.0m (6'7")	Class I (WIM)	4.94 nF ≤ C ≤ 10.94 nF	2.75 (1.25)	1.98 m (78")	2.14 m (84")	1-1005527-Z
2.5m (8'3")	Class I (WIM)	6.17 nF ≤ C ≤ 12.17 nF	2.85 (1.30)	2.48 m (98")	2.64 m (104")	2-1005527-Z
3.0m (9'11")	Class I (WIM)	7.40 nF ≤ C ≤ 13.40 nF	2.95 (1.35)	2.98 m (117")	3.14 m (123")	3-1005527-Z
3.5m (11'6")	Class I (WIM)	8.63 nF ≤ C ≤ 14.63 nF	3.05 (1.40)	3.48 m (137")	3.64 m (143")	4-1005527-Z
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5.0m (16'6")	Class I (WIM)	12.32 nF ≤ C ≤ 18.32 nF	3.35 (1.55)	4.98 m (196")	5.14 m (202")	7-1005527-Z
5.5m (18'2")	Class I (WIM)	13.55 nF ≤ C ≤ 19.55 nF	3.45 (1.60)	5.48 m (216")	5.64 m (222")	8-1005527-Z

- Class II sensors have a uniformity of ±20% and are typically used for Classification purposes. Class I sensors have a uniformity of ±7% and are typically used for Weigh in Motion applications.
- Additional cable has a capacitance of 27 pF/ft (89 pF/m) or 2.7 nF/100' (2.2 nF/25m). Provided with each sensor is a test certificate with the actual tested value for the sensor. Field tests should be within ±10% of these values, at room temperature (70F or 23C).
- All sensors are packaged 2 per box. The box weighs 1.5 lbs (0.7 kg).
- This length refers to the installed length of the sensor. This is the minimum lane width for the installed sensor.
- The suffix refers to the cable length. Cable lengths for -Y are as follows: -1 @ 100', -2 @ 150', -3 @ 200', -4 @ 250', -5 @ 300'. Cable lengths for the -Z are as follows: -1 @ 35m, -2 @ 50m, -3 @ 75M, and -4 @ 100m.