

TC26-B Vehicle Sensor

Microwave Vehicle Motion Sensor

INSTALLATION INSTRUCTIONS

Section 1

General Description

The Model TC26-B is a microprocessor controlled vehicle sensor with a variable range. It is designed to trigger the operation of a traffic controller. The TC26-B will only respond to motion in one direction (approach or depart only-selectable), which makes it ideal for long-range detection at intersections. A microprocessor analyzes the reflected microwave energy and responds to motion in the proper direction. The TC26-B generates an extremely low power microwave beam aimed to cover the same area normally covered by a loop detector system. It is less expensive to install and less susceptible to damage and malfunction from ice, salt and heavy vehicular traffic.

The TC26-B operates on much the same principle that police radar uses. The unit transmits a low power microwave signal, some of which is reflected by a moving target, such as an automobile or truck. Larger vehicles, such as semi-trucks, reflect more energy than automobiles and can be detected at further distances. Since the TC26-B uses microwave signals as its means of detecting a moving target, it is not affected by air motion, temperature and humidity changes, or high frequency sounds.

Section 2

Installation

The TC26-B vehicle sensor will perform best when it is aimed directly at traffic. This can be accomplished by mounting the unit at the typical mounting height of 14' to 24' and aiming the sensing head so it can "view" the traffic coming toward or moving away from the unit. Side-fire mounting is also acceptable.

The TC26-B is mounted with 2 lag bolts through 2 - 1/2" prepunched mounting holes, or by banding to the poles.

To remove the fastening bracket from the sensor, take out the 5/16-18 horizontal bolt holding the bracket to the hinge. Using the bracket as a template for locating screw holes, mark and drill the pole or band the bracket and refasten the sensor to the bracket with the 5/16-18 bolt removed earlier.

Wiring-(see wiring diagrams below)

Operating voltage is 12V to 24V AC or DC and is usually supplied through a transformer. Current consumption of the unit is 0.075 Amps.



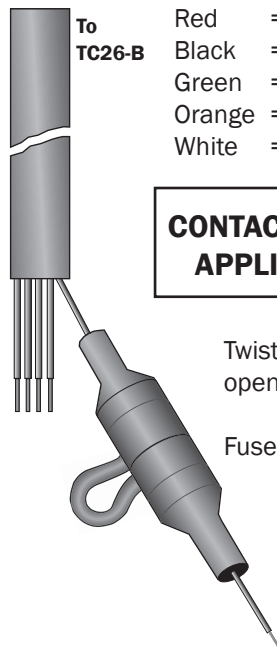
NO AMPLIFIER REQUIRED!
NOTE: 24V, 24VA transformer included



WARNING: To limit exposure to electrical damage from power surges, ALWAYS wire the sensor through the transformer that is provided or a TCPS series isolation module (sold separately).

Wiring of the 5-conductor cable is as follows:

To TC26-B	Red	= Power (fused)	12V to 24V AC/DC (No Polarity)
	Black	= Power	
	Green	= Relay COM	
	Orange	= Relay N.O.	
	White	= Relay N.C.	



CONTACTS SHOWN WITH POWER APPLIED TO UNIT (FAILSAFE)

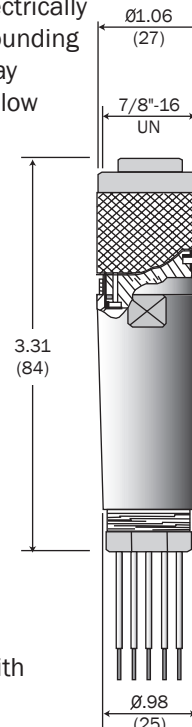
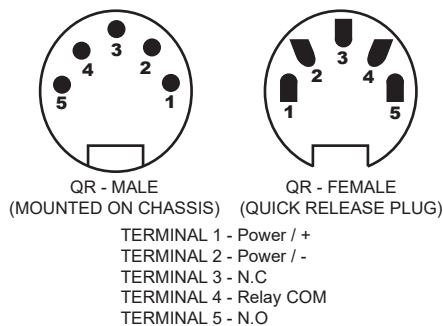
Twist counter-clockwise and pull to open waterproof housing.

Fuse = 0.5a; 250V; Fast Blo; 3AG



WARNING: Do Not ground one side of the secondary of the supply transformer. Circuit ground of the unit is electrically connected to the housing. Grounding one side of the transformer may create a direct short that will blow the fuse located in the wire harness (pictured above).

Wiring of the quick release option is as follows:



NOTE: Relay contact designation is with power applied.



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CAUTION: Do Not apply 120V AC primary power to the transformer until all secondary wiring is complete.

NOTE: When power is applied, allow 30 seconds of warm-up before testing sensor

For more information, call us toll-free at (317) 842-2545.

Alignment

To adjust the sensor's head angle, loosen the 5/16-18 hinge bolt. This allows vertical movement of the TC26-B. When alignment is complete, make sure that all bolts and screws are tightened.

Adjustment

All adjustments are made via the external controls located on the back panel of the unit (See Figure 1).

Range Control- Allows the detection pattern to be varied to sense cars at a maximum of 200' and 350' for semi-trucks and larger vehicles.

Delay Control- Allows adjustment of the relay hold time from 0.250-5.0 seconds.

Approach/Depart Switch- Allows selectable sensor detection of traffic traveling either towards or away from the sensor.

An LED is located at both the front and back of the unit to provide visual confirmation that the unit is detecting traffic.

Operation



REMINDER: When power is applied, allow 30 Seconds warm-up before testing sensor.



NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

Section 3

Technical Data

Model.....	TC26-B
Operating Frequency.....	10.525 GHz +/- 25 MHz
Detection Method.....	Microprocessor-Analyzed Doppler Microwave
Detection Pattern.....	Adjustable (see Fig. 2)
Detection Angle.....	Adjustable, Tilt & Swivel
Detection Mode.....	Continuous with Motion
Response Time.....	0.250 seconds
Time Delay.....	Adjustable 0.250-5.0 seconds
Power Requirements.....	12V to 24V AC or DC
Cable Wiring Requirements.....	Five-Conductor Cable (see Wiring Section, Pg.1)
Fuse Specifications.....	0.5a;250V;Fast-Blow;3AG Waterproof housing
Current Consumption.....	75 mA (0.075 Amps)
Power Consumption.....	1.8 watts max. @ 24V
Relay Contacts.....	Form C, rated at 3 amps
Mounting.....	Heavy-duty bracket, pre-drilled & slotted for pole mount
Temperature.....	-35 °F to 165 °F (-37 °C to 75 °C)
Weight.....	3 lbs. (1.4 kg)
Size.....	7" x 4" x 4" (17.8cm x 10.2cm x 10.2cm)
Color.....	Gray, Powder Coated
Enclosure.....	Aluminum with stainless steel hardware
Quick Release:	
Electrical Rating.....	9A 600V CU
Torque Force.....	0.79 Nm CSA; 0.40 Nm UL
Wire Range.....	Max. AWG 16



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Section 4

Warranty

MS SEDCO guarantees this product to be free from manufacturing defects for 18 months from date of installation. Unless MS SEDCO is notified of the date of installation, the warranty will be in effect for 18 months from the date of shipment from our factory. If, during the first 18 months, this unit fails to operate and has not been tampered with or abused, the unit can be returned prepaid to the factory and it will be repaired free of charge. After 18 months, the unit will be repaired for a nominal service charge. **This limited warranty is in lieu of all other warranties, expressed or implied, including any implied warrantability of merchantability, and no representative or person is authorized to assume for MS SEDCO any other liability in connection with the sale of our products. All warranties are limited to the duration of this written limited warranty. In no event shall MS SEDCO be liable for any special, incidental, consequential or other damages arising from any claimed breach of warranty as to its products or service.**

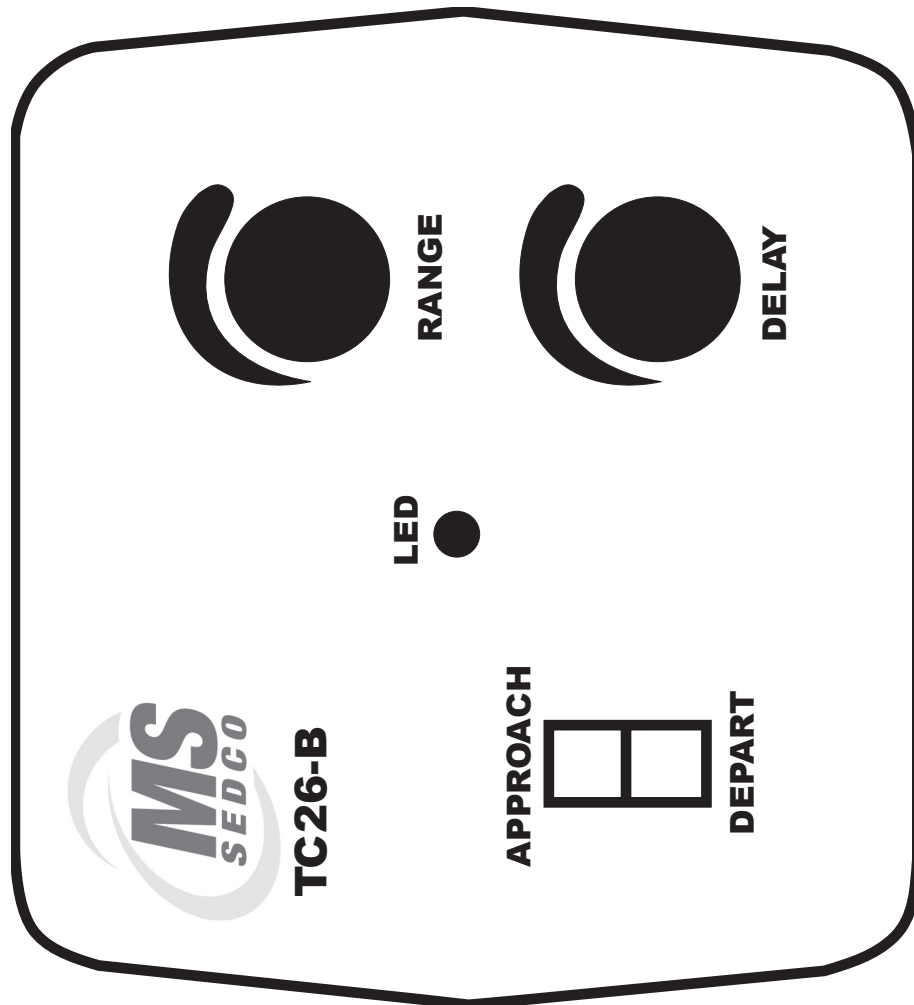


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FIGURE 1
BACKPLATE DIAGRAM

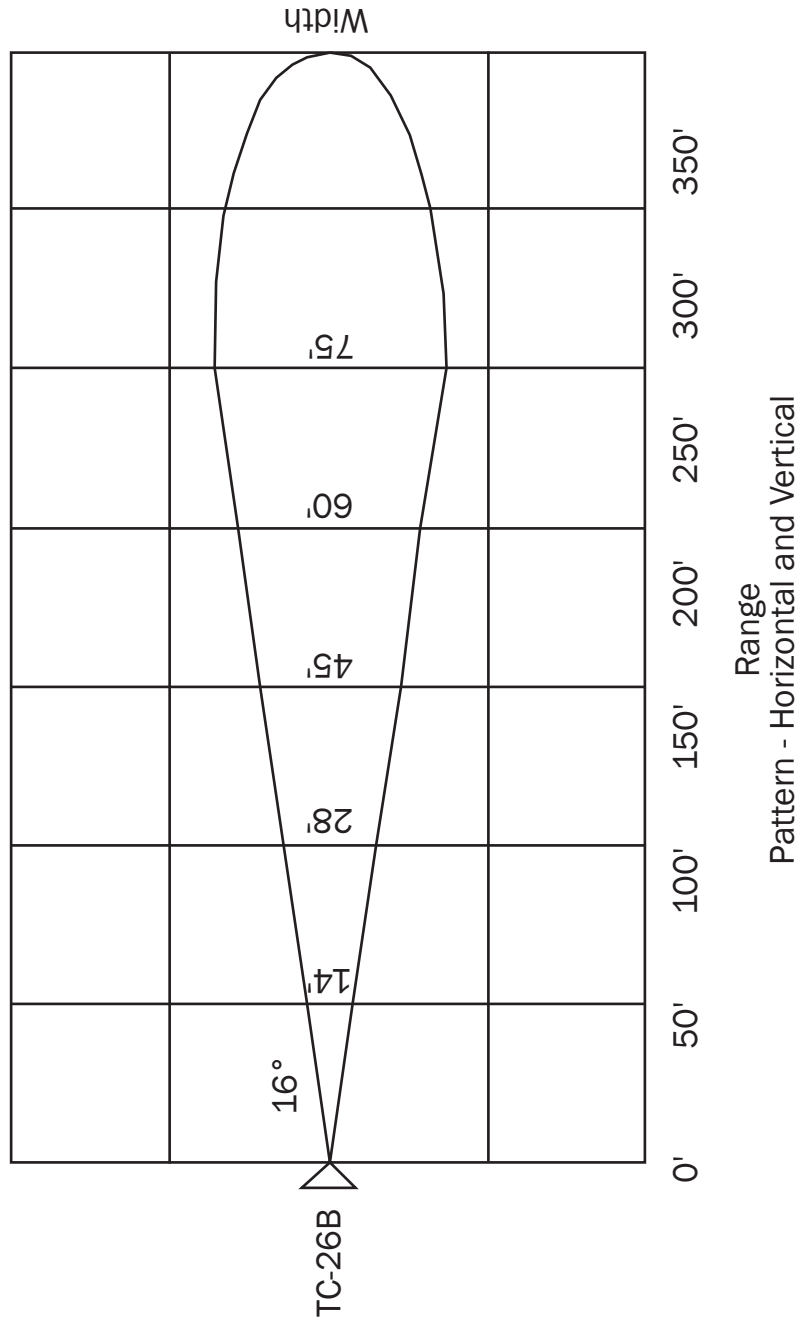


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FIGURE 2



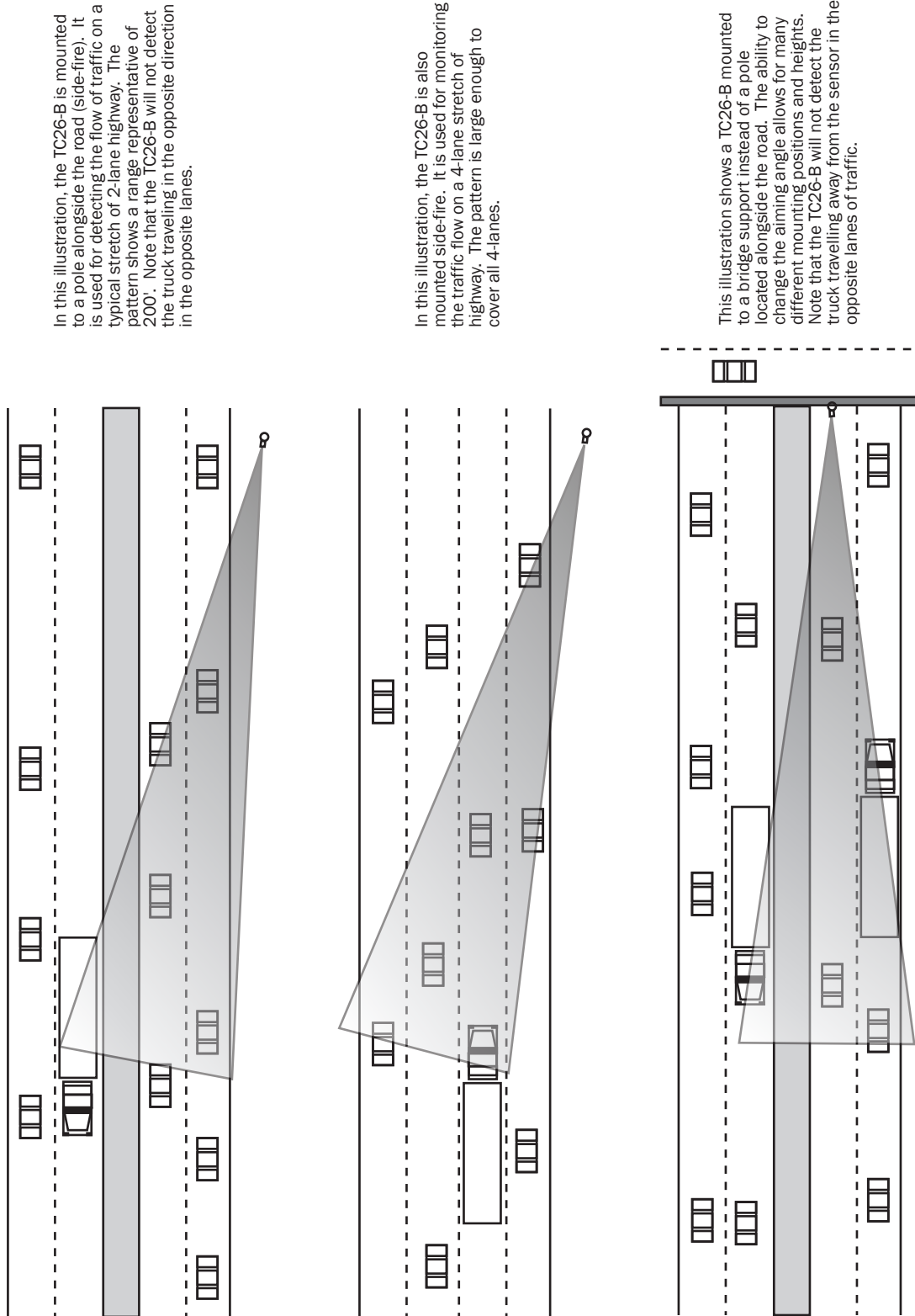
- NOTES:
- 1) Pattern Size Depends on Unit Mounting Height, Tip Angle, and Size of Vehicles
 - 2) Pattern shown with Tip Angle of 5 degrees, Mounting Height of 17'6".

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FIGURE 3



In this illustration, the TC26-B is mounted to a pole alongside the road (side-fire). It is used for detecting the flow of traffic on a typical stretch of 2-lane highway. The pattern shows a range representative of 200'. Note that the TC26-B will not detect the truck traveling in the opposite direction in the opposite lanes.

In this illustration, the TC26-B is also mounted side-fire. It is used for monitoring the traffic flow on a 4-lane stretch of highway. The pattern is large enough to cover all 4-lanes.

This illustration shows a TC26-B mounted to a bridge support instead of a pole located alongside the road. The ability to change the aiming angle allows for many different mounting positions and heights. Note that the TC26-B will not detect the truck travelling away from the sensor in the opposite lanes of traffic.