

ID20

Industrial Door Microwave Motion Sensor

INSTALLATION INSTRUCTIONS

Section 1

General Description

The Model ID20 is a microwave motion detector designed to trigger the operation of an automatic industrial door. The main difference between the ID20 and other motion detectors is that the ID20 will respond to motion moving in only one direction. The ID20 generates a very low power microwave beam aimed to cover the same area normally covered by loop detector systems. It is less expensive to install and less susceptible to damage and malfunction from ice, salt and heavy vehicular traffic.

The ID20 has an approximate pattern size of 18.5 feet wide at 60 feet long from the unit. The pattern is adjustable by turning the range potentiometer mounted on the PC board (see pattern drawing—Figure 2).

The ID20 operates on much the same principle that police radar uses. These units transmit a low power microwave signal, some of which is reflected by a moving target, such as a forklift or truck. This received signal goes through a Doppler shift, a slightly different frequency than was transmitted. Larger vehicles, such as semi-trucks, reflect more energy than automobiles and can be detected at further distances. Since the ID20 uses microwave signals as its means of detecting a moving target, it is not affected by air motion, temperature or humidity changes, or high frequency sounds.

Section 2

Installation

The ID20 vehicle detector can be mounted for side-fire or overhead detection. The typical mounting height is 12 to 18 feet. The sensor is mounted with 2 lag bolts through 2 - 1/2" prepunched mounting holes. To remove the fastening bracket from the sensor, take out the 1/4-20 bolt holding the bracket to the hinge. Using the bracket as a template for locating screw holes, drill and mount the bracket at desired location and refasten the sensor to the bracket with the 1/4-20 bolt removed earlier.

Wiring-(see wiring diagram-Figure 1)

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 @ 24V DC.

NOTE: 18V, 20VA transformer included

Remove four (4) hex head, self tapping machine screws, two on each end of the sensor, allowing the enclosure

cover to be lifted off, exposing the terminal strip. When wiring the ID20, apply power to terminals 1 and 2. The relay contacts on terminals 4 and 5 are normally closed (N.C.) and terminals 5 and 6 are normally open (N.O.).

NOTE: When power is applied, allow 90 seconds of warm-up before testing the sensor.



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 permanently damage the unit.

MS Sedco suggests the use of 4 conductor cable, 18 to 22 gauge conductor size, 3/16" to 5/16" cable O.D.

If 22 gauge wire is used to connect the ID20, add the following:

1. Install a 24V, 40VA transformer, instead of the transformer that is furnished, for long wire runs (300 feet or more).
2. Seal the wire fitting with sealant. This connector is designed for wire with a jacket between 3/16" and 5/16" O.D. to make a good fit in the power grip connector.
3. No wire larger than 18 gauge can be used. The terminal block is not large enough to accept wire larger than this.

Alignment

Align the ID20 by adjusting the range potentiometer and the aiming angle. The range potentiometer allows the detection pattern to be expanded or contracted to cover the desired zone. The hinge adjustment allows the sensor detection pattern to be aimed toward the desired detection zone.

To adjust the sensor's head angle, loosen the 8-32 lock screw and the 1/4-20 hinge screw. This allows vertical movement of the ID20 motion sensor. When the pattern adjustment is completed, replace the cover and ensure that all bolts and screws are tightened.

Operation

An LED is located on the main circuit board and provides a visual indication as to how the unit is operating. The wiring and adjustment specifications (Figure 1) show the location of this LED indicator. The LED will illuminate when the relay has changed state in response to motion.



