

TC-CK1-SBE

INTERSECTOR™

Motion and Presence Sensor



DESCRIPTION

The TC-CK1-SBE INTERSECTOR™ is a microwave-based radar motion and presence sensor used for intersection control. The unit interfaces with a traffic-control cabinet, and outputs signals when vehicles are present in user-defined zones. Zones are created using an X-Y coordinate system, and operation is verified and optimized using a laptop with Internet Explorer 6.0 or greater as part of the installation process.

The TC-CK1-SBE allows users to create up to 8 detection zones and assign vehicle presence in these zones to up to 8 outputs to the control cabinet (e.g. left turn, straight through, right turn). Detection zones can be created to a maximum distance of 600 feet from the sensor itself. Unlike previous microwave radar sensors, the INTERSECTOR™ will track the presence of a vehicle in a detection zone for a predetermined time.

Interface boards are available for the INTERSECTOR™ which are compatible with both NEMA, 170, 179, and 2070 cabinets. For each sensor, one interface board is required in order to communicate with the control cabinet. Three interface boards are available. The TCIB-2.1 provides 2 outputs and uses a single slot in the cabinet. The TCIB-4.1 provides 4 outputs and uses a single slot, and TCIB-4.2 provides 4 outputs and utilizes two slots in the cabinet.

BENEFITS

The INTERSECTOR™ brings the advantages of microwave radar detection together with presence-tracking capabilities in an easy-to-understand visual image. The INTERSECTOR™ offers these advantages when compared to cameras or loops:

- ☑ Detection not affected by weather
- ☑ Immune to sunrise/sunset or post-rain glare
- ☑ Not susceptible to in-road breakage
- ☑ Multiple lanes covered by a single unit
- ☑ Advanced and stop bar detection in a single unit
- ☑ Easily installs to corner pole
- ☑ Surge protection provided in detector
- ☑ Successfully detects bicycles/motorcycles
- ☑ Significant cost savings when compared to camera mounting requirements or multiple loops
- ☑ No privacy concerns
- ☑ Classifies bicycles as they approach a red light, allowing users to establish bicycle-only detection zones.

The INTERSECTOR™ allows users to:

- ☑ Graphically track vehicles as they approach the intersection
- ☑ Easily set up detection zones to provide programmable inputs to a control cabinet
- ☑ Verify that the system is functioning correctly and troubleshoot

TC-CK1-SBEV022015

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SENSOR SPECIFICATIONS

PHYSICAL:

- ☑ Size: 11x8.5x7 (LxWxH)
- ☑ Weight: 5 pounds
- ☑ Color: Blue body with gray endcaps
- ☑ Universal Mounting Bracket included

OPERATING:

- ☑ Temperature range: -40°C to +85°C
- ☑ Power requirements: Powered from TCIB over Ethernet cable

RADAR:

- ☑ Seven selectable frequency channels at 24 GHz
- ☑ Beam angle: Azimuth 30 degrees to 100' and then reduces to 20 degrees out to 600'
- ☑ Elevation: 12 degrees
- ☑ Operates with FSK-4 mode

PERFORMANCE:

- ☑ Track multiple moving and stationary vehicles
- ☑ Tracking of X and Y location of each vehicle
- ☑ Updates 20 times per second
- ☑ Speed of each vehicle is shown for reference
- ☑ Motion detection—60 feet minimum to 600 feet maximum
- ☑ Stop bar presence detection—60 feet to 160 feet (20M~50M)
- ☑ Mounting height 14 to 20 feet—Mounting outside this range may reduce performance (See Installation Table)
- ☑ Mounting location—typically corner signal pole—Maximum 20 degrees offset from traffic direction—Mounting outside this range may reduce performance
- ☑ Ethernet interface with power supplied over the Ethernet (POE)—Maximum distance 300'—For longer distances, consult factory
- ☑ Eight programmable independent zones
- ☑ Eight Opto-isolated outputs
- ☑ Grid tracking with live interactive zones
- ☑ Simulated mode for diagnostics and demonstration

- ☑ Adjustable Delay Before Max time on stationary objects from 0 to 960 seconds
- ☑ Adjustable OZP/Max time on stationary objects from 0 to 960 seconds
- ☑ Provides histograms to verify setup of zones
- ☑ Selectable standard (English) or metric units
- ☑ User-defined delay and extension time for each zone
- ☑ Operational from cold start in 20 seconds—Full performance in 2 minutes
- ☑ Automatically recovers from power failure
- ☑ FCC approved
- ☑ IP addressable for remote set-up and monitoring
- ☑ Optional bicycle-only setting for detection zones
- ☑ Surge protection provided in detector

WARRANTY

A 3 year warranty is available from the manufacturer covering defects in materials and workmanship. Contact MS SEDCO for details.

INSTALLATION TABLE

RECOMMENDED SETTINGS

Distance to Stop Bar	Max.# Lanes	Angle (°)	Mounting Height (Ft.)
80'-90'	3	-4°	16'
90'-100'	3	-3°	16'
100'-120'	4	-2°	18'
120'-140'	4	0°	18'