**TAILGATE DETECTION**
CEILING MOUNTED UNIT
**MODEL: TG-TOF**

## PART NUMBERS

**TG-ToF-CO** Tailgate: Time of Flight System with Card In/Card Out Access
**TG-ToF-FE** Tailgate: Time of Flight System with Card In/Free Exit Access

## OVERVIEW

The Local Door Alarm Tailgate with time of flight sensor utilizing projected infrared 3D detection (TG-ToF) monitors persons walking through a controlled door or hallway and an access control card reader system to ensure that only authorized persons pass through that secured area.

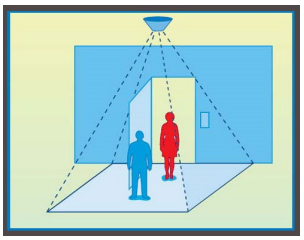
**Time of Flight Technology**—The device emits invisible infrared light, which illuminates the scene below. Reflected light is detected and the time taken for it to return is used to identify people from objects and track their movements.

The TG-ToF will generate an alarm if a person walks through the secured door or hallway without an access granted signal from the card reader system.

The system provides a lock output relay. This feature requires only one output for each card reader from the access control system to grant access to the tailgate system and unlock the door. This simplifies installation and lowers costs.

## FEATURES

- **Indoor Use Only**
- **Unaffected by Temperature Differentials—suitable for use at exterior doors**
- **Ceiling Mounted Time of Flight Sensor With Projected Infrared 3D Detection**
- **High Accuracy Counting of Multiple Persons In Sensing Area**
- **Low False Alarm Rate**
- **Projected Infrared Array Operates in Any Lighting Conditions (Extreme Sunlight or Darkness)**
- **Large Coverage Area, 7'6" Wide when Mounted on 8 Foot Ceiling**
- **Lock Output Relay**
- **Card In / Free Exit or Card In / Card Out Operation**
- **Tailgate Alarm or Count Violation Alarm Relay Output**
- **Display includes Access Granted and Secure LED's and Sounder**
- **Operating Temperature Range 0°C—40°C (32°F—104°F)**
- **Configuration Interface—HTML5 web configuration or RIFT desktop software**
- **Ignores most non-human objects (carts, luggage, etc.)**

## OPTIONAL FEATURES

- **Optional Local Warning Alarm**
- **Optional Door Held Alarm**
- **Optional Forced Door Alarm**
- **Optional System Bypass**

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## OPERATION

**ENTRY GRANTED** - A person presents a valid card to the entry reader at the door, and the access control system provides a normally open 1 second momentary Entry Granted relay to the TG-ADC control board to signal that access is granted.

**EXIT GRANTED** - If the system is card in / card out operation, then a valid card must be presented at the exit reader at the door and a separate 1 second momentary relay for Exit Granted from the access control system is required.

**FREE EXIT** – If the system is card in / free exit operation, then no exit granted signal is necessary from the access control system and persons may exit through the sensing area without causing an alarm.

**CARD STACKING** - The TG-ADC board counts the number of Access Granted signals that are received from the access control system and will allow that number of persons to pass through the sensing area without causing an alarm.

**LOCK OUTPUT RELAY** - When an Access Granted signal is received from the access control system, the TG-ADC control board activates the lock output relay to unlock the door. The lock power supply should be separate from the Tailgate System power supply.

**PEDESTRIAN COUNTING** - When the door is opened, then the TG-ADC control board counts the number of persons entering or exiting through the time of flight sensor area, and matches that count with the number of Access Granted signals received from the access control system.

**TAILGATE ALARM** - If a person walks through the doorway without an Access Granted signal, then the TG-ADC generates a Tailgate Alarm. The local sounder activates so that the alarm is annunciated at the door. The Normally Closed alarm relay opens. The alarm is reset after about 4 seconds.

**OPTIONAL SYSTEM BYPASS** - The Normally Open Entry or Exit Access Granted inputs can be shunted to temporarily bypass the tailgate system. To enter bypass provide a maintained closed contact to the Access Granted of the direction you wish to bypass. After two seconds of a closed contact that direction of travel will become bypassed allowing free travel of any number of persons in that direction.

**ALARM OUTPUT RELAY** – The Normally Closed alarm output relay opens when a Tailgate Alarm happens.

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## TECHNICAL SPECIFICATIONS

**Power**
Control Panel: 120 VAC @ 250 max.
Sensor: PoE IEEE802.3af Class 3 (15W)

**Inputs**
1 Normally Open momentary (1 sec pulse) entry Access Granted Relay from access control system.
1 Normally Open momentary (1 sec pulse) exit Access Granted Relay from access control system. Required only for Card In / Card Out systems. Not required for Card In / Free Exit system.
Ceiling Mounted Time of Flight Pedestrian Counting Sensor

**Outputs**
1 SPST Lock Output Relay rated @ 8 AMP
1 Normally Closed Entry Alarm Relay
1 Normally Closed Exit Alarm Relay
Alarm sounder @ 85dB
Green LED indicates access granted—passage is permitted without alarm
Red LED indicates secured mode—passage will generate an alarm

**Time Delays**
Access time is 7 seconds by default. Optionally the system can be configured to allow an adjustable delay between 1 and 30 seconds. The system resets after the access granted delay expires if no passage through the sensing area is detected.
Alarm Automatic Reset fixed at 4 seconds. System resets 4 seconds after a count or tailgate alarm is detected.

**Mounting**
Ceiling Mounted Sensor is placed above doorway looking down at passage area. Ceiling mounting height should be between 7’ to 14’ directly to ceiling or single gang electrical box. Higher ceilings can be accommodated with a custom bracket.
Control Panel is mounted next to the access control interface module, either in a makeup box or in the equipment room where the card reader system is located.
Sounder and LED Trim Plate may be mounted at the door mullion, 1 Gang box near the door, or in the ceiling above the door.

**Dimensions**
Control Panel – 10.5” x 13” sub-plate fits in 12” x 14” enclosure.
Ceiling Mounted Sensor - 7.68”L x 4.33”W x 1.25”D
Sensor Weight— 1.2 lbs
Sensing area – 7’6” x 7’6” @ 8’ ceiling height
Display plate – single gang electrical box