

Tailgate Detector **TDflex™** M25



TDflex™ is an award-winning tailgate detection solution that prevents unauthorized access at:

- Doors
- Mantraps
- Airlocks
- E-gates
- Turnstiles
- Access points without doors

Tailgate Detector - TDflex™ The Essential Security Layer for Your Access Control Systems

Today's access control systems are designed to help control and manage authorized access to secure areas. Ensuring that every individual has properly presented a valid ID or successfully cleared biometric identification is a major challenge faced by security professionals. Preventing tailgating and piggybacking, in other words misleading or outsmarting the system, is a problem existing solutions do not sufficiently address.

IEE's Tailgate Detector TDflex™¹ offers a solution that ensures only authorized people can enter a restricted area by adding an additional and essential security layer.

Efficient Security Staff Support

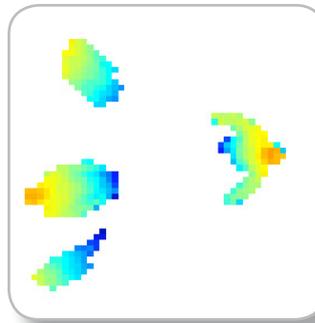
With IEE's TDflex™, businesses can optimize the scheduling of their security staff. As the sensor is fully automated, security staff do not need to physically monitor access points – they will be alerted if there is a security breach – and TDflex™ reduces the potential for human error.



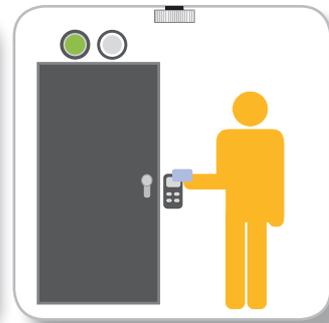
3D MLI Sensor™

How TDflex™ Works

IEE has developed a 3D sensor that uses MLI (Modulated Light Intensity) technology. This technology is based on the optical time of flight (TOF) principle, where an active, non-scanning light source emits modulated near-infrared light. The phase shift between the light emitted by the source and the light reflected by the people and objects in the field of view is measured to create a real-time topographic image of the monitored area. The 3D MLI Sensor™ calculates the exact number of people transiting the detection area and triggers an alarm when it detects situations such as tailgating or piggybacking.



Topographic image



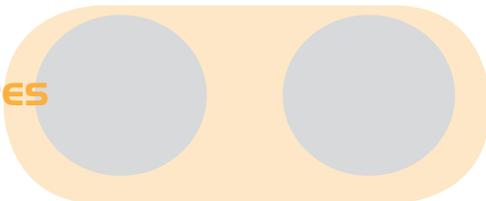
Access allowed



Alarm

¹All references to TDflex™ in this brochure refer to TDflex™ M2S, which is a different generation from previous TDflex™ products and offers different features.

Features



High Accuracy

Sophisticated algorithms and extensive test scenarios ensure reliable detection of people and objects in the detection area. These test scenarios, which consist of people carrying or wheeling luggage, wearing hats, or walking closely together, show that TDflex™ can both handle people carrying objects and detect multiple individuals in close proximity.

Reliability in Changing Light Conditions

As the sensor emits its own illumination, the performance is not influenced by artificial light and the sensor also works in the dark.

Embedded Software

Due to its integrated firmware, the sensor does not require any additional computer or server to process the data it captures.

Sensor Management Tool

The computer-based, multi-lingual sensor management tool enables management of multiple sensors and offers the following features:

- Multi-sensor configuration and backup
- Fast software updates via the Ethernet network
- The ability to copy any given configuration to multiple sensors
- Multi-sensor status monitoring and advanced diagnostics
- Password-protected configuration
- Language selection

Semi-Automatic Calibration

After configuring basic parameters such as mounting height, detection width and length, the sensor calibrates itself within a few seconds. During

this calibration, the sensor checks the empty detection area and captures the presence of fixed objects and walls.

Digital I/O Module

TDflex™ comes with a separate I/O module that features seven digital inputs and eight digital outputs. This module, which is powered via TDflex™, should be installed on the secure side, in order to maximize security.

Audible Feedback for Confirmation and Alerts

TDflex™ has an integrated buzzer which can be used to give individual acoustic feedback for such things as:

- Pre-alert
- Tailgate alert
- Access allowed/impeded
- More than one have entered (real mantrap mode)

Self-Diagnostics

A self-diagnostic routine runs at start-up and is regularly repeated to detect any sensor malfunction.

Data Logging

Historical data and system events:

- Tailgate alerts
- Abort credits
- Bypass on/off
- Superuser requests
- System errors

Superuser Mode

This is a temporary directional bypass, triggered by a person using a specific superuser badge with an access control device, that allows the superuser to:

- escort visitors without credentials
- enter with carts containing very large objects of any shape

Features

People Counting

In addition to its access control features, TDflex™ can also be used as a People Counter:

- Forward/Backwards counts
- Current number of people in the detection area
- Zone occupancy. Triggering of an alert (SMS, e-mail, relay), if occupancy exceeds or falls below the set thresholds
- If there are multiple access points, the occupancy of the entire area can be monitored in the IEE Occupancy Tool (XML-RPC option required)
- Historic counting data logging, analysis and reporting

Advanced Anti-Tamper Protection

With its optical, mechanical and electronic functionalities, TDflex™ now offers improved anti-tamper protection. This greatly reduces the chance that anyone can manipulate the sensor.

Seamless Integration into Existing Access Control Systems (ACS)

TDflex™ interfaces with any ACS via digital inputs and outputs (I/Os). These signals allow you to control the doors and trigger alerts if there has been a security breach.

If a person who has authenticated decides not to enter the secure area, TDflex™ sends an "abort credit" signal to the ACS.

In addition to the digital I/Os, the ACS can also communicate directly with TDflex™ via XML-RPC (optional).

Easy Installation

The TDflex™ Design Housing - available in white, black and gray - provides easy and aesthetic integration into existing building architecture. The Design Housing can be integrated into dropped ceilings ("Flush mount"), on the ceiling ("On-ceiling") or, by using an extension, below the ceiling ("Under-ceiling") offering increased flexibility for all kinds of ceiling structures. TDflex™ is compatible with single or double doors swinging into the field of view and can be installed either on the unsecure side (preferred) or the secure side.



Flush mount



On-ceiling



Under-ceiling

Operating Modes

TDflex™ is a Tailgate Detector with two main operating modes:

- Virtual mantrap
- Real mantrap

Virtual Mantrap Mode

In this mode, TDflex™ monitors single access points to and from a secure area and is usually installed in front of doors. It is also possible to monitor mechanical or optical turnstiles, or virtual access points without any physical barrier.

If an unauthorized person attempts to gain access, TDflex™ generates an alert. This means that, depending on the security strategy, the door can be locked as a preventative measure ("high security strategy"), or if the secure area is breached, an alert can be triggered.

TDflex™ can also monitor people leaving the secure area to ensure there is no tailgating – effectively forcing people to badge out.

In the virtual mantrap mode the following outputs are provided:

- Access recommendation
- Pre-alert
- Tailgate alert
- Status indicators
- Abort credit



Unauthorized access at turnstiles

Real Mantrap Mode

In the real mantrap mode, TDflex™ monitors any space within two or more interlocking doors. In this mode, TDflex™ does not consider authentication credits (inputs) from the access control system; it continuously provides the occupancy status of the mantrap. This is then used to safely control the doors.



Mantrap

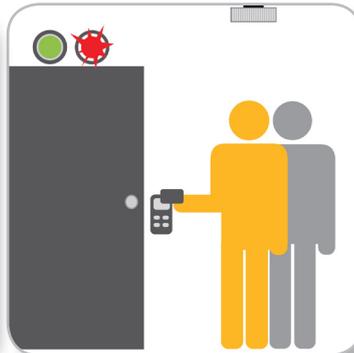
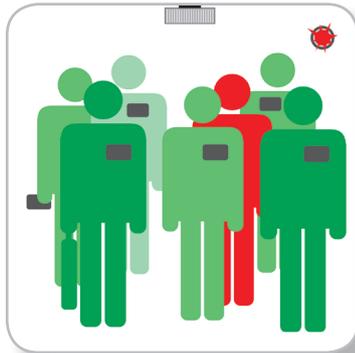
With the classic strategy of "single person transfer", which enforces the transit of one person at the time, TDflex™ provides the following outputs:

- Empty
- Only one person
- Suspicious e.g. more than one person or a person behaving abnormally

As an alternative to "single person transfer", TDflex™ can also ensure secure transit of multiple people at a time, by counting the people inside the mantrap. This allows for higher throughput without compromising security.

Unparalleled Flexibility in Different Infrastructures

Virtual Mantrap Mode



No Door

Entry/Exit readers:

- Generates an alert if a person without ID transits.

Passive RFID:

- Counts the number of people in the detection area.
- Generates an alert if a person without ID enters the detection area.
- No credit allocation.

One Door

High security strategy:

- One person at a time.
- The door is locked if more than one person is detected in the field of view.

High throughput:

- Generates an alert if a person without ID enters or exits.
- Crowding is allowed.

Real Mantrap Mode



Two Doors

Single person transfer:

- Outputs "empty", "one person" or "suspicious".

Multiple person transfer:

- Counts the number of people present in the mantrap. This number is checked by an external logic against the number of credits.



Technical Data

| Device Properties | TDflex9696M2S | TDflex6464M2S |
|--|--|---------------------------------|
| Mounting height | 2.5 to 3 m | 3.0 to 5.0 m |
| Maximum detection area at virtual gate | 2.8 m x 1.1 m to 3.8 m x 1.6 m | 2.6 m x 1.0 m to 4.6 m x 1.9 m |
| Maximum detection area in mantrap | 3.6 m x 1.9 m to 4.6 m x 2.5 m | 3.6 m x 1.8 m to 4.6 m x 2.75 m |
| Field of view/illumination | 90° x 60° | 60° x 40° |
| Type of illumination | Modulated near infrared light (NIR) | |
| Weight | 1.6 kg (Core housing) + 1.6 kg (Design housing) | |
| Dimensions of the Core Housing | W 167 mm x H 133 mm x D 94 mm | |
| Dimensions of the Design Housing | 206 mm (integration cutout diameter), 247 mm (outside rim diameter), 115 mm (height) | |
| Operational temperature range | -20°C to +50°C | |
| Enclosure rating (device with fan) | IP 40 | |
| Supply voltage range | 24 V DC ± 15% | |
| Power consumption | max. 2A at 24 V DC | |
| Core housing material | Anodized aluminum | |
| Technology | 3D MLI Sensor™ | |



Core Housing

Design Housing



Tailgate Detector TDflex™ M2S

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