

# TDC4 Series

## Cutting-Edge Non-Intrusive Traffic Detectors for Single Lane Traffic Data Acquisition with Video Verification Capability



The TDC4 Series are advanced traffic detectors using Video, Doppler Radar, Ultrasound and Passive Infrared technology. Comprehensive traffic data including individual vehicle class, speed, length, occupancy time, time gap and snapshot images are provided via RS 485.

### Typical Applications

ADEC TDC4 Series detectors are specifically designed for a variety of Traffic Data Collection and traffic control applications where inductive loops have been used in the past:

- Vehicle classification
- Individual vehicle speed
- Vehicle counting (volume)
- True presence, queue and wrong-way driver detection
- Occupancy and headway / time gap measurement
- Visual verification of irregular traffic situations; triggered by traffic situations or remotely through traffic management system

### Working principle

TDC4 traffic detectors combine video verification capabilities with the superior detection and measurement performance of the TDC3 series. They measure the speed of each vehicle using the Doppler shift of the reflected microwave frequency. The ultrasonic sensor system scans the height profile of the passing vehicle and the PIR zones obtain the vehicle position (except TDC4-2) within the observed lane.

The detector can be configured to automatically capture images upon certain traffic conditions (wrong-way driver, queue) or upon external command via RS 485. The captured image can be retrieved by RS 485 bus, eliminating the need for costly infrastructure upgrades.

### Mounting

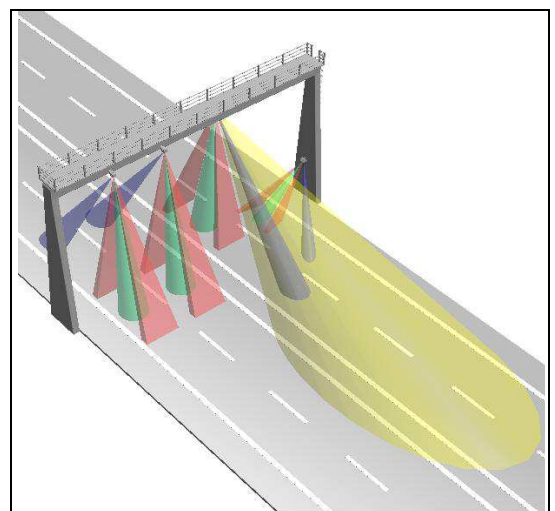
Recommended mounting points are gantries or other overhead structures above the lane centre. Clearly superior performance and reliability are a result of:

- Three independent detection technologies
- Full temperature compensation across entire temperature range
- Redundant system functionality

### Features

- **Build-in colour camera**  
Autonomously capture images at up to 640 x 480 (VGA) of irregular traffic conditions or upon request
- **Multi technology detection**  
Three independent physical detection principles
- **Standardized vehicle classification**  
German TLS for 2, 5+1 and 8+1 classes
- **Auto calibration**  
Auto calibration within the recommended height above the lane with dedicated software
- **Detection of lane-changing vehicles and vehicles travelling between adjacent lanes (except TDC4-2)**
- **Detection of standing vehicles**
- **Detection of wrong-way drivers**
- **Wide operating temperature range (-40 to +70°C (-40 to +158°F))**  
Optimal performance in all weather and climate conditions
- **Remote configuration and setup**  
With dedicated installation program

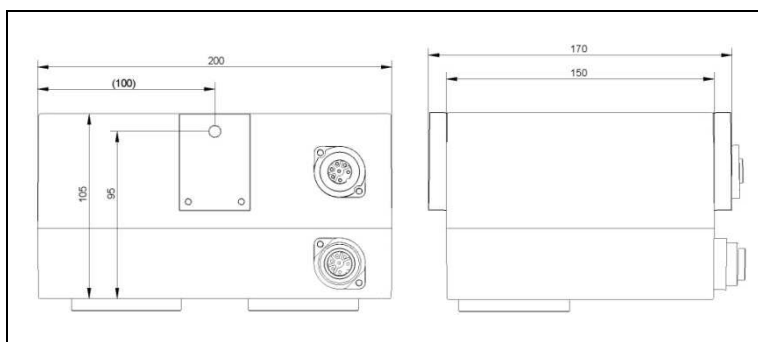
### Field of view



## Technical Specifications

Electrical	
Supply Voltage	10.5 ... 30 V DC
Power Consumption	max 190 mA typ. 160 mA @ 12 V DC
Output (Data Transfer)	RS 485 (other options on request)
Turn-on Time	typ. 20 s from power on
Mechanical	
Dimensions	see drawing
Case Material	Polycarbonate, dark grey
Mounting Points	M8, stainless steel V4A
Weight	app. 1'700 g (3.75 lbs) without bracket
Detection	
Video	Colour (VGA); max. 640 x 480
Doppler Radar	K-Band 24.05 ... 24.25 GHz
Ultrasonic Frequency	40 kHz
Ultrasonic Pulse Rate	10 ... 30 pulses per second
PIR Sensors	2 channel PIR (TDC4-2) 7 channel PIR curtain (TDC4-3 /-5 /-8)
PIR Spectral Response	6.5 ... 14 $\mu$ m
Accuracy	
Counting	typ. $\pm$ 3%
Speed	typ. $\pm$ 3% (> 100 km/h) typ. $\pm$ 3km/h ( $\leq$ 100 km/h)
Classification	Vehicle classes according TLS The specifications refer to free traffic flow, detector operated in recommended setup.
Environmental	
Operating Temperature	-40°C to +70°C (-40 to +158°F)
Humidity	95 % RH max.
Sealing	IP 64 splash proof

## Mechanical Dimensions



### Important:

Data is based on samples and believed to be representative.  
Design and specification changes reserved without prior notice.  
For more specific information on the products, their installation and application please refer to the installation manual or contact the manufacturer.

## Accessories

Interface RS 485 & Software
For the communication between detectors and a PC during commissioning and maintenance an interface module in combination with the dedicated software is necessary. The interface module and software have to be ordered separately. USB IF 485 (Order Number: 12501)
Mounting Accessories (Sold Separately)
Mounting hardware and cable connectors are not part of the detector delivery unless ordered separately. Information about the available accessories to accommodate various mounting and operation scenarios are made available separately.

## Model Overview

- **TDC4-2** (2 Classes)
- **TDC4-3** (2+1 Classes)
- **TDC4-5** (5+1 Classes)
- **TDC4-8** (8+1 Classes)

For available models depending on setup and mounting please consult the installation manual.

## Snapshot Example

