

TDC3 Series

Cutting-Edge Non-Intrusive Traffic Detectors for Single Lane Traffic Data Acquisition



The TDC3 Series are advanced traffic detectors using Doppler Radar, Ultrasound and Passive Infrared technology. Comprehensive traffic data including individual vehicle class, speed, length, occupancy time and time gap are provided via RS 485.

Typical Applications

ADEC TDC3 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

Working principle

TDC3 traffic detectors 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 TDC3-2) within the observed lane.

Mounting

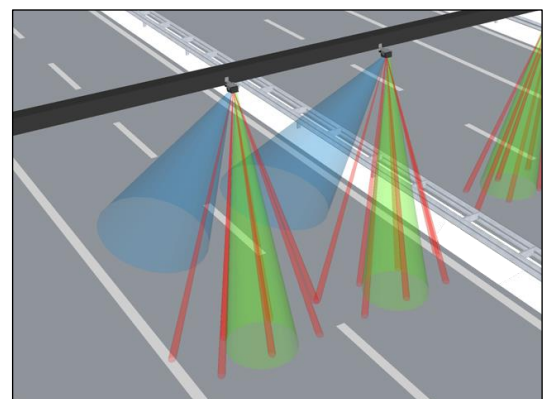
Recommended mounting points are gantries or other overhead structures above the lane centre. Clearly superior performance and reliability are a result of:

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

Features

- **Superior Data Accuracy**
Speed-Error:
< 2.1% / 2.5 km/h (F-B and F-F models)
<2.6% / 2.9 km/h (B-B-45 model)
Count-Accuracy: >99.5%
Classification-Accuracy: 80% - 99.5%
- **Standardized vehicle classification**
German TLS for 2, 5+1 and 8+1 classes
- **Multi technology detection**
Three independent physical detection principles
- **Auto calibration**
Auto calibration within the recommended height above the lane with dedicated software
- **Queue Detection**
Detection of standing vehicles
- Detection of **wrong-way drivers (WWD)**
- Detection of **lane-changing vehicles** and vehicles travelling between adjacent lanes (except TDC3-2)
- **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



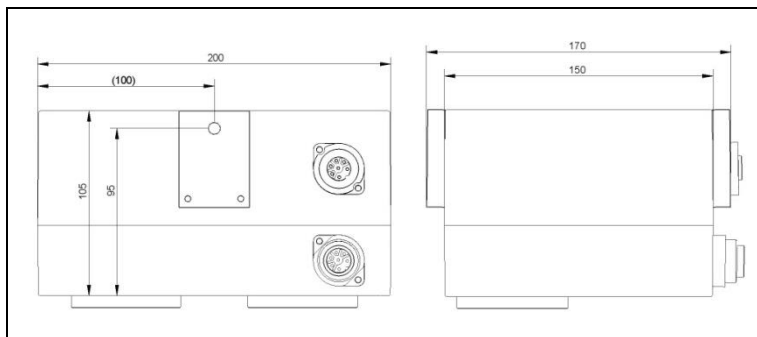
Technical Specifications

Electrical	
Supply Voltage	10.5 ... 30 V DC
Power Consumption	max 110 mA typ. 80 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. 1'400 g (3 lbs) without bracket
Detection	
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 (TDC3-2) 7 channel PIR curtain (TDC3-3 /-5 /-8)
PIR Spectral Response	6.5 ... 14 µm
Accuracy	
Counting*	>99.5%
Speed*	F-B Modelle, ≤ 100 km/h: < 2.5 km/h > 100 km/h: < 2.1 % B-B Modell, ≤ 100 km/h: < 2.9 km/h > 100 km/h: < 2.6 %
Classification*	80-99.5% Vehicle classes according to TLS <i>The specifications refer to free traffic flow, detector operated in recommended setup.</i>
Environmental	
Operating Temperature	-40°C to +70°C (-40 to +158°F)
Humidity	95 % RH max.
Sealing**	IP 64 splash proof (IP 65 version available)

* according to TLS and independently verified

** in mounted condition

Mechanical Dimensions



Important:

Warranty is void if ADEC detectors are used with third-party equipment such as brackets, connectors etc. that are not approved by ADEC.

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 (sold separately)

Interface RS 485 & Software

For the communication between detectors and a PC during commissioning and maintenance an interface module in combination with the dedicated service software is necessary.
USB-IF485: **12501**



Mounting & Cabling Accessories

Mounting hardware and cable connectors are not part of the detector delivery and must be ordered separately.

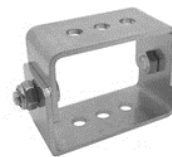
Mounting Bracket
TDC-MB: **14010**



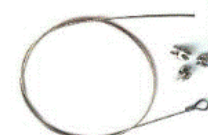
Mounting Adapter
TDC-MB: **14011**



Hinge TDC-KG: **14012**



Safety Span Wire
TDC-SL: **14051**



Cable Connector
TDC-C-M90: **64012** (m)
TDC-C-F90: **64013** (f)



120 Ω Term. Resistor
TDC-C-TR: **64014**



Three models (#) are available in IP-65 version with **protective covers** for installations inside tunnels



Model Overview

Mounted behind gantry

TDC3-2-F-B-45	2+0 vehicle classes	11110#
TDC3-2-B-B-31	2+0 vehicle classes	11112
TDC3-2-B-B-45	2+0 vehicle classes	11122#
TDC3-3-F-B-45	2+1 vehicle classes	11113
TDC3-5-F-B-45	5+1 vehicle classes	11115
TDC3-8-F-B-45	8+1 vehicle classes	11117#

Mounted in front of gantry

TDC3-2-F-F-31	2+0 vehicle classes	11111
TDC3-3-F-F-31	2+1 vehicle classes	11114
TDC3-5-F-F-31	5+1 vehicle classes	11116
TDC3-8-F-F-31	8+1 vehicle classes	11118