

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: 85% - 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 %	
Classification*	85-99.5% Vehicle classes according to 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 (IP 65 version available***)	

* according to TLS and independently verified ** in mounted condition

*** keep protective covers off during normal operation!

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 softwar USB-IF485: 12501	e is necessary.		
Mounting & Cabling Acc	cessories		
Mounting hardware and c part of the detector delive separately.	able connectors are not ry and must be ordered		
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 avai in IP-65 version with protective covers for pressure washing of installations inside tunnels	lable		

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