

BS2-TS

4G-Equipped, Solar-Powered Data Collector & Transmitter for Traffic Management Applications



ADEC's **Base Station 2** is a data aggregator that provides the key link between the ADEC passive infra-red (PIR) traffic detectors TDC1-PIR and the ADEC traffic cloud: The BS2 gathers the traffic data from up to three TDC1-PIR detectors and forwards them to the traffic data cloud.

The **BS2** is battery operated and provides power to up to three TDC1-PIR detectors as well as its own circuitry using the attached solar panel. It can be mounted and properly aligned on any stable structure, such as a street light pole, using the attached bracket.

Typical Applications

The data aggregator system has been developed specifically for operation of up to three TDC1-PIR traffic detectors monitoring the traffic of up to three lanes. It is designed for both permanent as well as temporary installations where flexibility is key:

- Permanent or temporary traffic measurement
- Both for urban and inter-urban applications
- Feeding traffic models using up-to-date, real-world data
- Single-vehicle granularity accessible via web-browser
- Near unlimited traffic data storage via ADEC traffic cloud

Principle of Operation

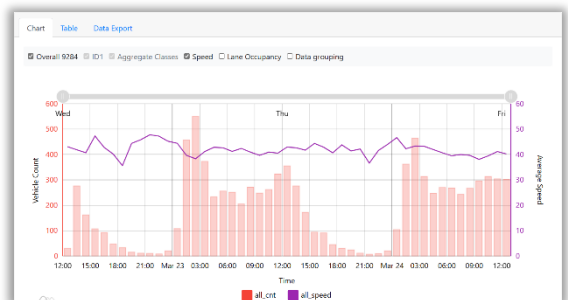
The BS2 gathers individual-vehicle traffic data from up to three directly connected TDC1-PIR traffic detectors and forwards that data to the ADEC traffic cloud. The data are stored in the cloud and can be accessed, downloaded and visualized both through any web-browser.

The traffic data cloud provides easy access from any third-party traffic management or modelling software through standard web APIs.

Features

- **Autonomous Operation**
The power necessary to operate up to three TDC1-PIR traffic detectors is provided from the built-in battery which is recharged from the attached solar panel
- **Secure Internet Storage & Access**
Specifically designed for integration into the *Internet-of-things* (IoT) via ADEC traffic cloud. Single vehicle traffic data is accessible through simple Internet browser, mobile phones etc. as well as any third-party software via easy-to-use web-interface
- **Built-in 4G Modem**
Propagates single vehicle data (speed, length and vehicle class and counts) or averaged (interval) data to the Internet-of-Things (IoT) and allows setup/management via simple Internet connection, including mobile phones
- **Built-in Antenna**
Integrated antenna to communicate with the mobile phone data network
- **Inexpensive Operation (Western Europe)**
Low-cost operation and data plan account management online available
- **Minimal Wind Load (10W Version)**
Thanks to small size of only 355 x 265 x 90 mm, 14" x 10.5" x 3.5" (H x W x D)

Typical application

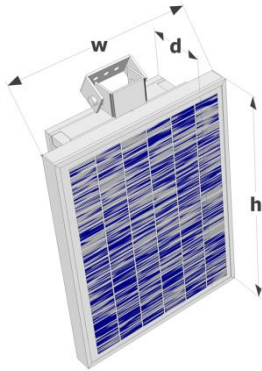


Browser-view of hourly averaged volume and speed values

Technical Specification

Electrical	
Capacity	10 Ah for 5 days autonomous operation
Solar Panel	Polycrystalline, 10W / 30W
Communication	RS 485, half-duplex, 9600 Baud
Network	2G, 3G, 4G
Mechanical	
Dimensions	see drawing and table
Housing	Weather-proof plastic enclosure
Weight	see drawing and table
Environment	
Operating Temperature	-20° to +55°C (-4° to +160°F)
Humidity	max 95 % (non condensing)
IP protection	IP 64

Mechanical Dimensions and Weight

	[mm]	10W	30W
	w	255	345
	h	355	555
	d	90	90
	[kg]	10W	30W
	BS2-T	1.1	
	BS2-TB	1.9	
	BS2-TS	3.9	5.2

Mounting

The BS2 is attached to a pole or other stable structure using one or two (30 W panel version) pole-mount adapter TDC-PMA. The TDC-PMA is optional accessory. Both the location of the BS2 as well as the angle of the panel should be set to maximize solar irradiation onto the solar panel *at winter solstice*. Season and time of day must be taken into consideration when choosing the optimal mounting location. Up to three (3) TDC1-PIR can be powered and managed from a single base station BS2. The station is equipped with three (3) Amphenol connectors for easy connection of the TDC1-PIR-C detectors. The TDC1-PIR-C traffic detectors must be properly mounted and aligned according to separate documentation.

Note:

When using the 30W version, more TDC1-PIR may be powered by the station if interval data are transmitted. If individual vehicle records are transmitted, under no circumstances shall more than 3 TDC1-PIR-C be operated on a single BS2-TS.

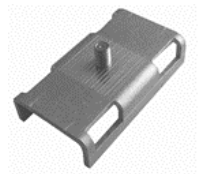
Important:

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.

Optional Accessories

Pole Mount Adapter (PMA)

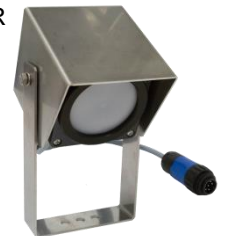
A bracket for mounting the BS2 on a round pole is available as separate accessory (not included in standard delivery).



TDC-PMA: **14101**

TDC1-PIR non-intrusive traffic detector

Low-power, multi-channel PIR traffic detector for precise acquisition of individual vehicle parameters, pre-assembled with 2m cable and fitting cable plug



TDC1-PIR-C: **10002**

Junction / Extension Box (for BS2-TS30)

The 3-way junction box extends the RS 485 bus and allows additional detectors be connected



JBL3: **14200**

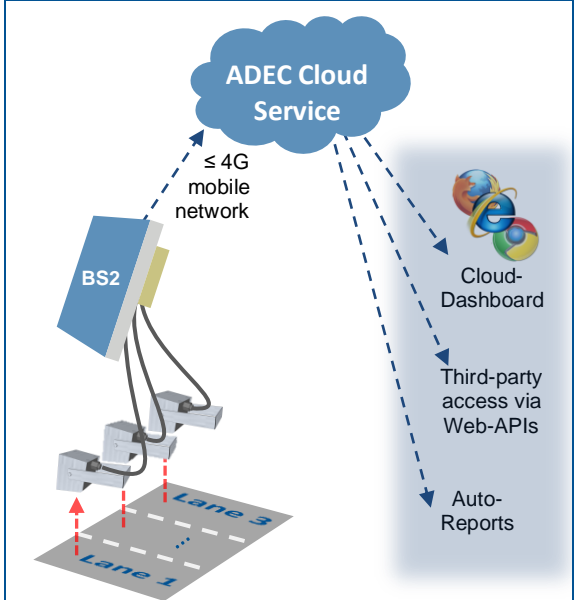
ADEC Traffic Cloud / IoT Services

Traffic cloud, data storage: **11310**

Traffic cloud web-access: **11311**

Periodic auto-reporting: **11312**

System Overview



Model Overview

Model	Description	Part#
BS2-TS	BS2 with battery & 10W panel	11308
BS2-TS30	BS2 with battery & 30W panel	11328
BS2-TB*	BS2 with battery	11309
BS2-T	BS2 only	11307

*requires external power for at least two hours per day