

شرکت کنترل توزین پند

**PANDtec**

**پند تک**

عضو گروه صنعتی پند

**PANDTRAFFIC**

Traffic and Road Control Technologies

[www.pandtraffic.com](http://www.pandtraffic.com)

## Axle Weigher

Axle weighing helps ensure that vehicles are properly loaded to their rated capacity and to avoid the many problems associated with overloading. Precise measurement and easy setup for static or dynamic weighing.



## Improving truck safety: Potential of weigh-in-motion technology

Overloaded trucks present a threat to road safety, but also to infrastructure, as they increase pavement wear, cracking and rutting, and thus can contribute to premature pavement failure. Heavy trucks also contribute to bridge fatigue damage.



## Weighbridge Specification

### Feature:

Deck construction  
 Weighbridge width (standard)  
 Weighbridge length  
 Weighing components  
 Load cell protection class  
 Capacity  
 Maximum rated axle load  
 Operating temperature  
 Temperature EC/94/EEC  
 Easy access to load cells

### Specification:

Steel construction  
 4 m  
 0.7 m  
 Stainless Steel  
 IP68, IP69k; NEMA 6p  
 30/50/60/80/100 t  
 23.5 t tri axle over 1.2 m axle spacing  
 -10° c to + 50° c (-76° F to 122° F)  
 -10° c to + 40° c (4° F to 104° F)  
 Yes

## High Performance Digital Weight Indicator

### MAIN FEATURES:

- 25-key alphanumeric waterproof keyboard.
- Highly efficient red LED display with 6 digits 15mm high.
- Backlight LCD graphic 25x100mm display
- Synoptic bar graph with 16 bright LEDs showing the active functions.
- Dimensions: 278x125x186 mm.
- Suitable for use on the table, column or wall.
- Real time clock and permanent data storage.
- Fitted alibi memory, integrated on the motherboard.
- 24-bit A/D converter, 4 channels, up to 3200 conv./sec. and up to 8 signal linearisation points.
- 4 independent analogue channels (up to 2 in the E-AF03 version, 1 in the E-AF09 version) for reading of the weight.
- Connection with up to 16 analogue load cells of 350 Ohm (45 load cells of 1000 Ohm)
- Up to 1.000.000 displayable divisions for internal factory use, with internal resolution up to 3.000.000 points.
- Power supply: 110-240 Vac and built-in rechargeable battery.
- Connectable to printers and labellers with the command drivers.
- Available with attached printer as standard.
- EU Type Examination Certificate (45501:2015)
- OIML R76
- OIML R51 - MID
- OIML R134 (AF09)



## Software:

- Web based administration, hence all information may be viewed from any connected browser
- User friendly and full proof truck weighing
- Reporting (weighing tickets and user defined reports)
- Connection via an online connection
- Supervision of the whole weighing procedure
- Snapshots of the truck, front and rear, through a high resolution surveillance camera



Pax

- A flexible, simple to use, powerful, weighbridge operation software, which will instantly provide you with valuable information on any load that passes over your scale, whether you are receiving raw materials, dispatching finished products or operating commercial weighing stations.
- Windows based software package
- Basic functions: collection, display and registration of weighing data
- Management of vehicle data, product data, customers and other vehicle related information
- Printout of tickets with information on the weight transactions
- Generation of user defined reports
- Integrate all data in central server



Weighbridge Structure

- Simple to install and relocate
- Designed for fast and accurate weighing
- Axle Weighbridge weighs any vehicle up to 30,000kg per axle
- 'In motion' at speeds of up to 20 km/h.
- this vehicle axle weigher is ideal for sites where space or access is limited.



Weighbridge

A weighbridge is a major investment for any site. It is where you collect the information needed to charge your clients and meet legislative requirements. Before making such an important purchase, it pays to consider carefully where and how you plan to use the weighbridge. Involving your chosen supplier at an early stage in the specification process can help to ensure that you make the right decisions.

### Pandtec Wim

PandtecWIM is a cutting edge high-speed weigh-in-motion system. It meets the most demanding criteria for traffic detection and dynamic weighing. PandtecWIM is used for traffic statistics, pre-selection, and direct enforcement. The system was developed with an emphasis on accuracy, reliability and simplicity. It is suitable for basic single lane installations as well as for complex multi-lane free-flow environments with heavy traffic.



### The Modular System

PandtecWIM is designed as a modular system. According to the required precision, a corresponding layout and configuration can be selected. According to the levels of the equipment, different stations are suitable for particular applications - see the stations mentioned below.

### Specifications

- Vehicle data (gross vehicle weight, axle load, wheel load, type/ class of vehicle speed, gap, vehicle dimensions)
- High accuracy for slow & high speeds
- Over loaded vehicle detection
- Pre-selection and direct enforcement
- Twin-tyre detection
- Monitoring of free-flow traffic on multi-lane roads.
- High accuracy of vehicle classification
- User-configurable weight limits according to local legislation
- Watch dog system monitoring
- Web API for third party data integration
- SQL database

### Classification

- Standard EN 8+1
- EUR 13 and COST 323
- Full adaptation to specific national standards possible
- Custom categories reflecting specific customer end user needs and requirements.

### Why Pandtec-WIM?

- PandtecWIM is compatible with third-party components (HW, SW)
- WIM is open to third party SW and HW component . It is customizable for specific applications and local conditions.
- Protects against road damage by over loaded vehicles
- The system can be adapted according to given conditions and traffic situation
- Helps to significantly extend the Lifetime of roads and to cut repair costs.

### Software Solution

An integral part of the system is a SW solution based on Microsoft Windows Server, MS SQL data base, and a web interface that offers all key function for system monitoring, control, and setup.

System information, real-time measured data, and also statistics are evaluated on-line and readily accessible through any internet-enabled (mobile) device.

### Web Interface

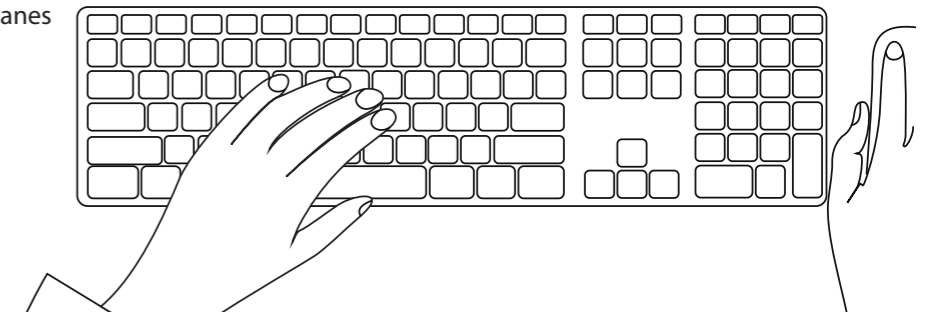
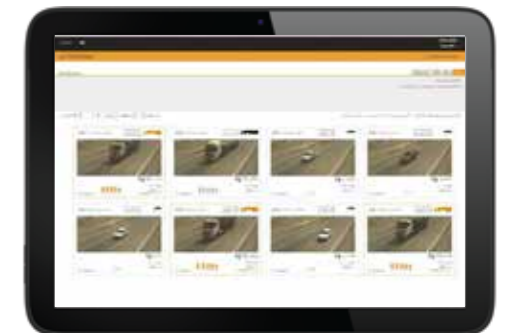
The main module of the web application is the so called Watchdesk. This is a console, where weighed (measured) vehicles are displayed in real time, including an indication of their traffic offence. After that, it is possible to display all detailed information such as the number of axles, axle weight, wheel weight, wheel speed (to see if there was any turning or breaking) and a calculated measurement validity.

### Pandtec Wim Control Unit

- Minimal recommended speed from 10 km/h
- Sensitivity weighing 10 kg
- Traffic intensity accuracy 98 %
- Classification accuracy 95 % (on average, depends on vehicle category)
- Ethernet interface
- Communication options GSM/GPRS, TCP/IP, Wi-Fi
- 120 GB SSD for data storage (higher capacity is an option)
- Max. cable length to loop: 300 m / WIM sensor: 100 m
- Designed for operations in extreme climatic conditions (standardised version ARCTIC, TROPIC and DESERT)
- One 3U rack up to 6 lanes, 6U racks up to 12 lanes

### Term of Uses

- DIRECT ENFORCEMENT
- OPTIWIM
- TOLL-PER-TONNE
- PRE-SELECTION





### Web Interface

The web Interface is designed for operation by end users typically road administration, for system administrators enforcement staff (eg. police.)

- Real- time visualization of passing vehicles including LPR and overview camerasnapshots
- Vehicle database access in cluding search and filtering functions
- Detailed information of every recorded vehicle e.g. total vehicle weight and even wheel and axle weight, overload indication, speed, validity of measurement)
- Traffic statistics (e.g. overloaded vehicles classification, country of origin)
- Display of measurement protocol in case of an offence
- Data export to Microsoft Excel and PDF
- Device calibration and configuration of operational parameters .
- User accounts management, database management and regional settings
- Web API for data integration
- Calibration and maintenance tools



### Statistics

- Vehicle categories
- Overloaded vehicles
- Weight statistics



### Typical Installation

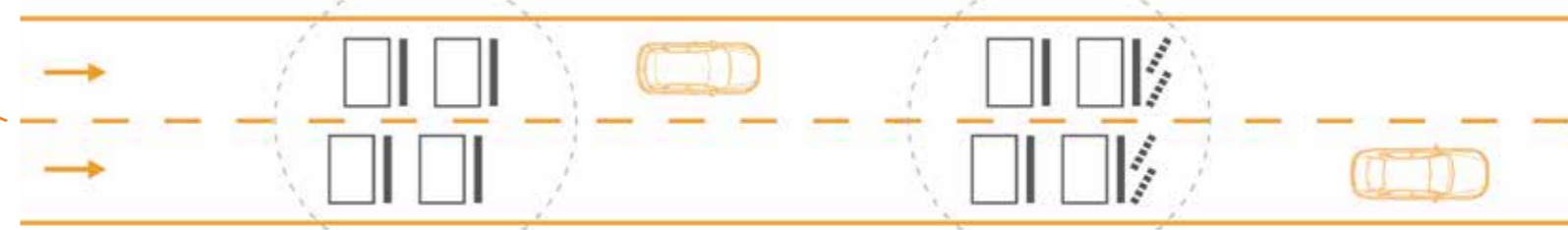
Examples of other possible applications of Pandtec-WIM, in case of a need for higher precision of the measurement of the overall weight:

- It is possible to use QUARTZ or OptiWIM sensors.
- It is possible to increase the number of QUARTZ sensors rows (to get the precision level of  $\pm 5\%$  it is needed to use two rows of QUARTZ sensors) or to use OptiWIM sensors.
- It is possible to increase the number of WIM sensors and include skewed PIEZO thresholds for a detection of other parameters.

### Double Detection

Weighing of each wheel Allows for a high precision measurement – certified.

- Gross weight certificate accuracy  $\pm 5\%$  (AVG real accuracy  $\pm 3\%$ )
- Speed accuracy  $\pm 1\%$
- Axle base accuracy  $\pm 2.5\text{ m}$
- Vehicle length accuracy  $\pm 0.3\text{ m}$
- Basic vehicle classification



### Standard Wim System

- 2 Inductive loops per lane
- 4 QUARTZ sensors per lane

### Full-Featured Wim System

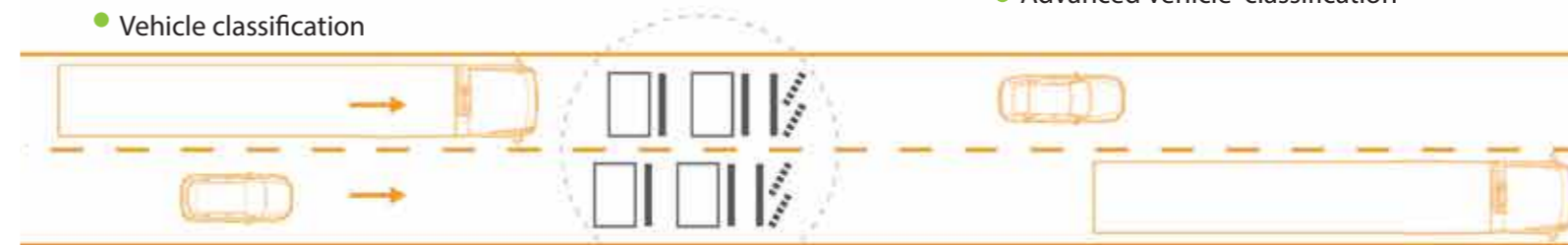
- 2 Inductive loops per lane
- 4 QUARTZ sensors per lane
- 2 PIEZO sensors per lane

### Extra Wim System

- 2 Inductive loops per lane
- 2 PIEZO sensors per lane
- Gross waight accuacy  $\pm 20\%$  (AVG real accuracy  $\pm 15\%$ )
- Indicated Speed measurement, number of axle and wheel base Vehicle length, weight per Axle
- Vehicle classification
- Economical layout using QUARTZ sensors Single detection (weighing) of each wheal
- Gross weight accuracy  $\pm 7.5\%$  (AVG real accuracy  $\pm 5\%$ )
- Speed measurement, number of axles and wheelbase, vehicle length, weight per axle
- Vehicle classification

### Extra Wim System

- 2 Inductive loops per lane
- 6 QUARTZ sensors per lane
- 2 PIEZO sensors per lane
- Gross weight certified accuracy  $\pm 5\%$  (AVG real accuracy  $3\%$ )
- Multi-tyre detection
- Axle (vehicle) width accuracy  $\pm 10\text{ cm}$
- Axle base accuracy  $\pm 2.5\text{ cm}$
- Speed accuracy  $\pm 1\%$
- Vehicle length accuracy  $\pm 0.3\text{ m}$
- Advanced vehicle classification



### Control Unit

- Speed measurement range 5-250 Km/h
- Weight resolution of 10 kg.
- Traffic in tensivity accuracy 98% +
- Classification accuracy 95%+  
(an average, depends on vehicle category)
- Ethernet interface
- Commanication option GSM/GPRS/3G, TCP/ IP,Wi-Fi
- 120 GB SSD for data storage (higher capacity is an option)

- Max.cable length for loop 300m / WIM sensor.100m
- Operating temperatures
- 0 to+30° C (WIM OEM)
- -20 to +35° C (Cabinet STANDARD)
- -40 to +30° C (Cabinet ARCTIC)
- -5 to +40° C (Cabinet TROPIC)
- -5 to +52° C (Cabinet DESERT)
- One 3U rack up to 6 lares, 6U rads up to 12 lense

### License Plate Recognition-LPR

PandtecWIM can be equipped with a custom-ized license plate recognition system. Measured data is available in real time and can be used for vehicle pre-selection or direct enforcement.

### Variable Message Signs-VMS

Variable Message Signs are mostly used in the pre-selection made. They can display license plates, measured weight and can divert overloaded vehicles from the road.

### Overview Cameras

Overview cameras capture colour photos or live-stream video and have night vision capability.

### Laser Speed Gun

HANDHELD PHOTO/ VIDEO ENFORCEMENT LASER

The only all-in-one handheld laser-based video and photo camera. It collects and stores a complete chain of video evidence for both speeding and tailgating, along with a high-resolution image that identifies vehicle make, model and license plate number.

### Features

- Tamper-proof data encryption
- Defeats laser jammers
- Save and record violations only within your desired speed limit
- Multiple operation modes

### Video Capability

Standard TruCAM Modes: Speed Mode .Video-Only Mode Auto Mode Rear Plate Mode Weather Mode  
 Optional Upgrades: Dual-Speed Mode Tailgating Mode

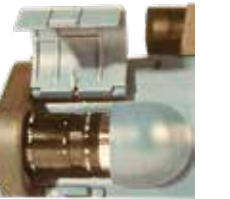
### Specifications

Weight: 3.3 lb (1.50 kg)  
 Size: 8.27× 3.86× 12.47 in(21.0× 9.8× 31.7 cm)  
 Construction: Composite polycarbonate outer shell; aluminum internal chassis  
 Maximum Range: 4,000 ft (1,200m)  
 Minimum Range:  
 Speed Mode: 50 ft (15 m)  
 Weather Mode: 200 ft (60 m)  
 Continuous Mode: 50 ft (15 m)  
 Range Accuracy: ±6 in (±15cm) absolute accuracy  
 Display Resolution:  
 Speed: +1 mph (+2 km/h)  
 Range: ±0.1 unit of measur  
 Speed Range: ±200 mph(± 320 km/h)  
 Speed Accuracy: ± 1 mph (± 2km/h)  
 Measurement Type:Auto mode and single shot

Communication:RS232. serial communications port RS485, nighttime flash signal, USB 2.0 image data transfer, touch-panel input  
 Measurement Time: 0.33 sec  
 Environment:NEMA 4/IP 55 water- and dust-resistant  
 Temperature Range: 14° to 140° F (-10° to +60° C)  
 Eye Safety: FDA Class 1 (CFR 21) IEC 60825-1  
 Laser Wavelength: 905 nanometers nominal  
 Beam Divergence: 2.5 milliradians nominal hardware  
 CaptureData Storage:Removable SD card (supports up to 2 GB and larger; SD and SDHC formats)  
 Display: 2.7 in (6.9 cm). 240 x 320 pixel, color 18 bits per pixel (bpp)  
 Camera Lens: 3.1 megapixel (2048 x 1536) 75 mm  
 GPS Receiver: 20 channels firmware  
 Operating System: Linux based  
 Anti-Jam: Automatic laser jammer avoidance  
 Video Size:Standard format: 240 x 180 pixels. Extended format: 480 x360 pixels



TruViewer software for archiving and post-processing



Easily accessible camera lens for quick focusing and iris levels

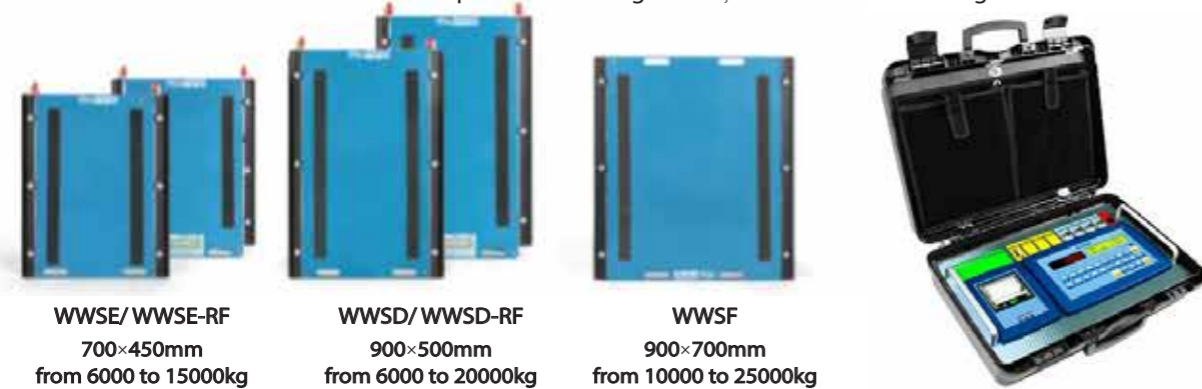
### TYPICAL ACCESSORIES





### Mobile Axle Weighing Kit

Specific Kit for the manual static weighing of axles and wheels. It is composed by two portable wheel weighing pads WWS series and by the touch screen weight high performance indicator series, with integrated printer. The user interface is clear, simple and intuitive and displays in real time the weight of the axle, the total weight, the tare and the identification code of the vehicle. The ticket reports all the weight data, in order to facilitate registration and traceability.

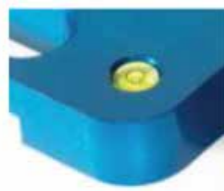


### Platforms Characteristics

- Sturdy structure, made in special aluminium, which guarantees lightness and makes them suitable also for harsh working conditions.
- Cable with quick connector, platform side.
- 10 m cable for connecting the platform to the indicator, complete with connectors.
- IP68 stainless steel load cells.
- Hermetic junction box with IP68 protection degree.
- Special vulcanised nonslip rubber applied under the platform for good grip on all surfaces.
- Very simple and reliable connection between platforms and weight indicator.
- IP68 protection, with IP68 connectors and PUR cables as standard.
- Wheels for the transport and the positioning



**NONSLIP RUBBER**  
for good grip on all types of surfaces.



**INTEGRATED LEVEL**  
for the correct positioning of the platform.



**INTEGRATED WEIGHT INDICATOR**  
with IP68 protection (Wireless version).



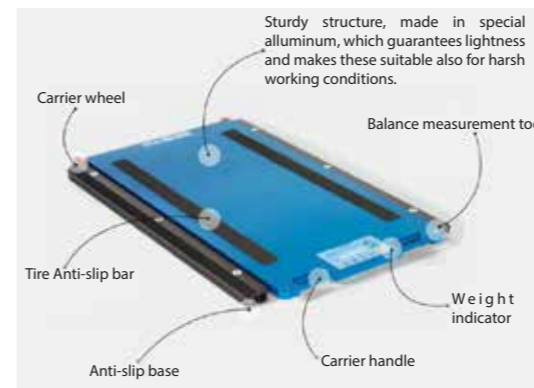
**ERGONOMIC TRANSPORT HANDLE**

- Manual static wheel/axle totalisation.
- Printing of axle total weight.
- Weighing with predetermined tare.
- Database of 500 customers.
- Simple printout.
- Multiple Printing.
- Last printout copy.



### Technical Features

- ABS transport case, with housing for the indicator and space for extra accessories.
- Touch screen weight indicator complete with printer, connectors for platforms.
- Backlit touch screen display (l<sub>x</sub>h=120x90mm). Specific layout for axle weighing.
- AF08GT Multilingual software.
- Available touch screen keyboards: QWERTY, AZERTY or QWERTZ.
- Dimensions: 325x460x170mm. Weight: circa 5kg.
- Attached thermal printer as standard.
- Real time clock and permanent data storage.
- Built-in rechargeable battery (10-hour minimum operating time).



References: Axle Weigher



Kerman: Mahan - Bam



Markazi: Saveh - Tehran



Fars: Lamerd - Shiraz

References: PandtecWIM



Kerman



Khorasan



Hormozgan





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