

# Vehicle Weighing



## Vehicle Weighing Solutions

Weighing terminals

Unattended weighing

Dynamic weighing

Hazardous areas



## Vehicle Weighing Solutions

That Help Drive Your Business

**METTLER TOLEDO**

# Performance and Automation for Reliable Data Integration

- **Complete vehicle weighing solutions**
- **Flexible connectivity options**
- **Networked integration for ease of data access and analysis**

Maximizing your operational performance requires a weighing system that provides you with accurate, reliable, and easy to understand information from your vehicle scale. While the vehicle scale itself is the foundation of your weighing system, without a high performance weighing terminal you will not maximize efficiency in your operations that depend on vehicle weight data.

Use of automation technology and data integration in vehicle weighing continues to expand into many applications and industries that previously used a "stand-alone" weighing terminal.



## Data Integration

- PLC interface via EtherNet/IP, DeviceNet™, Profibus®, ControlNet™ or Modbus TCP
- Ethernet TCP/IP, serial, 4-20 mA analog output
- Optional Wi-Fi connectivity
- OPC for exchange of data between multi-vendor devices and control applications

Facility inbound/outbound vehicle weighing using a single truck scale



Networking multiple truck scales into a single database



Integration of truck scale operations with filling or load-out systems





Scales



Scale House



Back Office

## Vehicle Software Solutions

Depending on the requirements of the application, one of a number of scale terminals with dedicated vehicle weighing software can be used.

For advanced weighing applications, METTLER TOLEDO OverDrive® PC-based software works together with a weighing terminal to provide capabilities such as an integrated MS SQL server database, multi-scale operation, contract pricing, credit card processing, video image integration, unattended weighing, and multi-lingual operation.



## Interface with PowerCell® PDX® vehicle weighing technology

The power and flexibility of METTLER TOLEDO scale terminals enable you to apply them in the most demanding vehicle weighing applications. The latest generation of PowerCell®, the PowerCell® PDX® load cell, provides protection beyond traditional analog load cells, securing both the integrity of your process and your profits. Accurate vehicle scale weights are assured, day in and day out under the most severe of operating conditions, with predictive diagnostics constantly monitoring your scale and minimizing downtime costs.

PowerCell® PDX® networks guard against failure by providing monitoring and logging of a variety of factors that can affect system integrity:

- Weighing errors
- Overloads
- Network health
- Load cell enclosure integrity





## Vehicle Weighing Scale Terminals



|                                              | IND560                                                  | IND560 PDX             | IND780                                                                                                |
|----------------------------------------------|---------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------|
| <b>External QWERTY keyboard</b>              | Via optional USB interface                              |                        | Via standard USB interface                                                                            |
| <b>Display</b>                               | Graphic vacuum fluorescent, multi-line with prompting   |                        | 1/4 VGA graphic color or monochrome                                                                   |
| <b>Serial ports, standard</b>                | 1: RS232/422/485                                        | 2: RS232 and RS232/485 | 2: RS232 and RS232/485                                                                                |
| <b>Serial ports, optional</b>                | 2 additional                                            |                        | 2 additional                                                                                          |
| <b>Ethernet TCP/IP</b>                       | Optional                                                |                        | Standard                                                                                              |
| <b>Load cell interface</b>                   | Analog                                                  | PowerCell® PDX®        | PowerCell® PDX® and MTX®, Analog                                                                      |
| <b>Max. number of load cells</b>             | 8                                                       | 14                     | 24 PowerCell® PDX®                                                                                    |
| <b>Max. number of scale channels</b>         | 1                                                       |                        | 4, used with multi-platform scales for axle and total weights, plus metrologically approved sum scale |
| <b>Optional software</b>                     | Drive-560 Vehicle Software, TaskExpert™                 |                        | Drive-780 Vehicle software, Axle-780 software, TaskExpert™                                            |
| <b>Languages supported</b>                   | English, Spanish, French, German, Italian               |                        | English, Spanish, French, German, Swedish, Italian, Chinese                                           |
| <b>Traffic control using lights or gates</b> | Via custom TaskExpert™ program                          |                        | Included with Drive-780 software                                                                      |
| <b>PLC Interface</b>                         | EtherNet/IP, Profibus®, DeviceNet™, Modbus TCP, A-B RIO |                        | EtherNet/IP, Profibus®, DeviceNet™, ControlNet™, Modbus TCP, A-B RIO                                  |

### Unattended weighing

Complete transactions quickly using the IND9U unattended scale controllers, which enable drivers to process their own vehicle weighing transactions in seconds. There is no need for a scale house with an operator on duty. An unattended system is ideal for remote locations, scales that operate around the clock, and facilities with multiple scales.

Wireless options simplify installation and operations in your facility by using wireless Ethernet to connect scale controllers to your communications infrastructure. Even intercom voice data can be sent wirelessly, using available Voice-Over-IP (VOIP) technology.



## Dynamic Weighing Solutions

### Increase Throughput and Productivity

METTLER TOLEDO provides weighing solutions for both rail and vehicle dynamic weighing that allow for enhanced operational productivity, particularly in high volume weighing applications.



#### Railcar Dynamic Weighing

The IND9R86 dynamic weighing controller, integrated with a METTLER TOLEDO dynamic rail scale, allows for automated weighing of entire trains as they cross the scale at speeds up to 6 mph. Individual rail car weights are obtained without uncoupling cars, and train total weights are automatically calculated. Rail car identification information from an RFID tag is integrated into the

weighing record. The controller stores and prints weight information for any length train, even those comprising several hundred cars, and provides data storage for hundreds of trains. IND9R86 is designed for both attended and fully unattended, remote applications. Legal for trade approvals are available for both NTEP and OIML requirements.

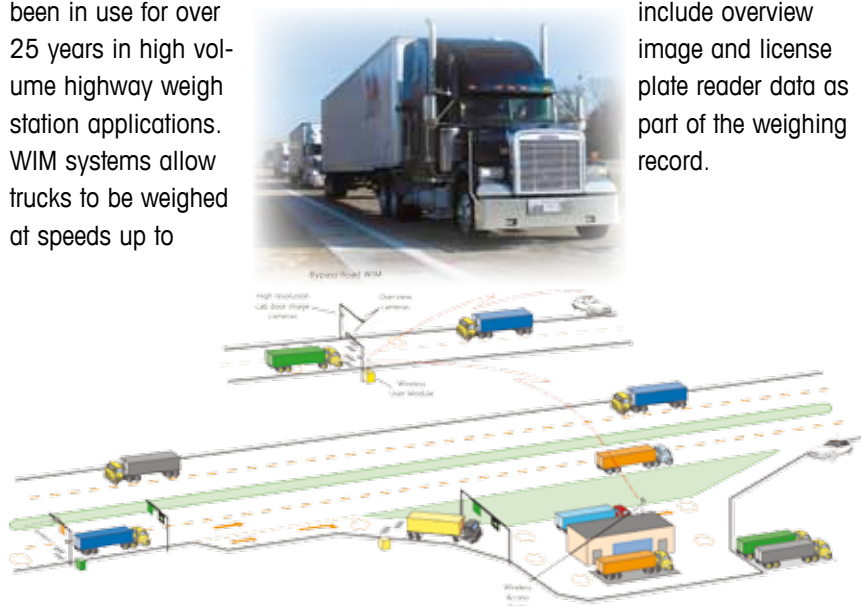
#### Vehicle Dynamic Weighing

METTLER TOLEDO vehicle Weigh in Motion (WIM) systems have been in use for over 25 years in high volume highway weigh station applications. WIM systems allow trucks to be weighed at speeds up to

100 km/hr (65 mph), automatically making vehicle weight information available to higher level software applications for overweight vehicle enforcement operations.

WIM systems are also used at seaports where throughput of high volumes of trucks is critical, and truck weight information is automatically integrated into seaport container ship management software applications. As with truck weight enforcement systems, the WIM system can

include overview image and license plate reader data as part of the weighing record.



## Hazardous Area Solutions

### Compliance with Global Standards

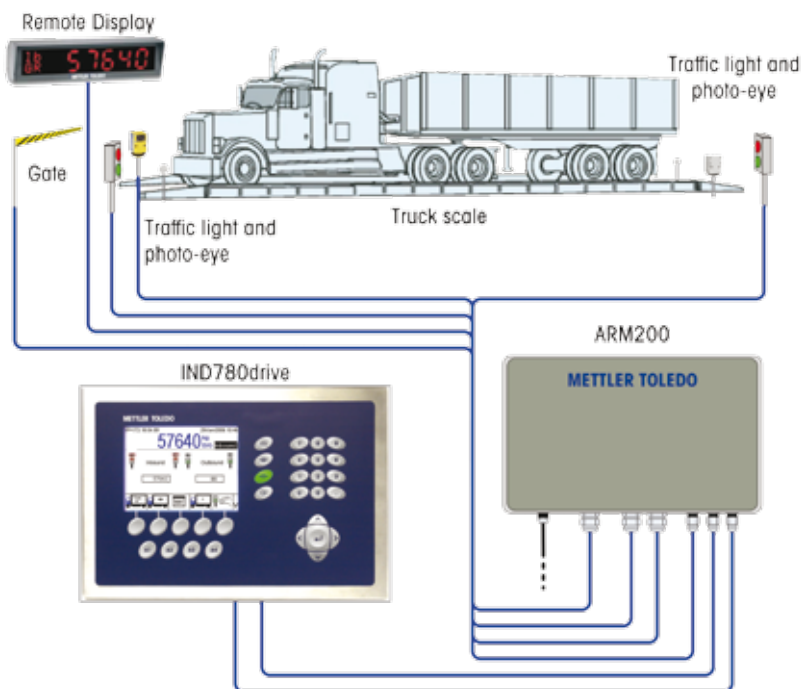
Vehicle weighing applications in areas rated as Hazardous require special precautions. METTLER TOLEDO offers a variety of load cell and weighing terminal solutions for vehicle applications to meet International hazardous area approval requirements. Contact METTLER TOLEDO for further details.



## Vehicle Weighing System Accessories

To complete the vehicle weighing system, an array of peripheral products is available for seamless integration with the vehicle scale and weighing terminal:

- Automatic Equipment Identification (AEI) readers
- Traffic lights and gates
- Vehicle proximity loop and photo-eye sensors
- Ticket printers
- Remote weight displays
- Custom solutions



Your local vehicle sales specialist can provide further information about accessories to meet the requirements of your application.

[www.mt.com/Vehicle](http://www.mt.com/Vehicle)

Visit for more information

**Mettler-Toledo AG**  
Sales International  
CH-8606 Greifensee  
Switzerland  
Tel. +41 44 944 22 11  
Fax +41 44 944 30 60

**Mettler-Toledo Ltd.**  
64 Boston Road  
Beaumont Leys Leicester  
LE4 1AW  
Tel. 0116 235 7070

Subject to technical changes  
© 09/2010 Mettler-Toledo AG  
Printed in Switzerland  
MTSI 44099444



**Quality certification.** Development, production, and auditing in accordance with ISO9001. Environmental management system in accordance with ISO14001.

**ServiceXXL®**  
Tailored Services

**Tailored Services.** Our extensive service network is among the best in the world and ensures maximum availability and service life of your product.



**Conformité Européenne**  
This label is your guarantee that our products conform to the latest guidelines.