

Dynamic truck scales with SysTec weight indicators

Scale manufacturer BATSCH uses SysTec weighing electronics for Weigh-in-Motion systems



Unique in the world: The Austrian company **BATSCH** is considered an innovation driver of dynamic truck scales for heavy vehicles. SysTec weight indicators IT8000E and IT6000E are used in the **W&M approved** dynamic truck scales patented by BATSCH. These Weigh-in-Motion systems are a milestone in vehicle weighing and have been nominated for the Austrian State Award „Designing Mobility Safely“ - the most important award of the Austrian Federal Ministry of Transport, Innovation and Technology (BMVIT).

The key facts

- Automatic overload detection while driving over the scale
- Up to 35 km/h travel speed
- W&M approved and automatic scale
- Accuracy: +/- 1 percent
- Total weight determination up to 100 t and axle loads up to 20 t

Products

- Weigh-in-Motion systems HHB01 and HHB02 manufactured by BATSCH
- W&M approved SysTec weighing systems IT8000E and IT6000E. The robust and fast weight indicators provide high update rates for dynamic weighing and a variety of interfaces for the connection to EDP systems

Benefits

- Increased road safety through in-motion weight check: Fewer accidents due to overloaded trucks
- Reduction of economic costs through reduced road damage caused by overloaded vehicles
- Uninterrupted and automatic checking of weight and axle loads while on the road
- W&M approved and legally enforceable weighing result is submitted to EDP in realtime
- In case of overloading, fines can be levied directly
- The fast weighing procedure enables a higher monitoring frequency
- The requirements of EC Directive 2015/719 are fully met. More: <https://eur-lex.europa.eu/eli/dir/2015/719>

Successful in operation

- These systems, which are unique in Europe, were installed by the Austrian executive at the traffic control station on the Austrian A5 northern freeway to monitor traffic safety. The operation of the measuring system has been in successful continuous operation since 2018.

Weighing systems increase traffic safety

Overloaded trucks are a danger for all road users. The driving stability of the vehicles is impaired, thus increasing the risk of accidents. In addition, damage to roads and bridges is inevitable. For this reason, truck scales are extremely important as control instruments when it comes to safety and reducing economic costs.

With classic static truck scales, the police wave suspicious trucks out of traffic and then check them on a scale. Although the static method provides precise measurement data, it is time-consuming, cost-intensive and only allows random checks of a few vehicles. Therefore, the new dynamic BATSCH drive-over scales are of great advantage, as they allow fast and complete W&M approved monitoring.



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Monitoring of axle loads: EC Directive

According to EC Directive 2015/719, in 2021 EU member states must introduce measures for the detection of vehicles that exceed the permissible axle loads or total masses. This includes weighing systems integrated into the infrastructure (roads) as well as on-board systems in the truck.

Patented world novelty

The scale manufacturer Hans Batsch has a long-standing partnership with the weighing terminal manufacturer SysTec. Both companies have always been engaged in innovations in the field of weighing technology. What started as a research project of the BATSCH company, after years of intensive development work, now resulted in two patented W&M approved dynamic truck scales with integrated SysTec weight indicators. BATSCH sells the weigh-in-motion systems under the brand name „Dynaweigh“. Weighing takes place dynamically in fully automatic operation without the intervention of operating personnel. In doing so, the vehicle drives over all weighing modules of the weighbridge and the weight is

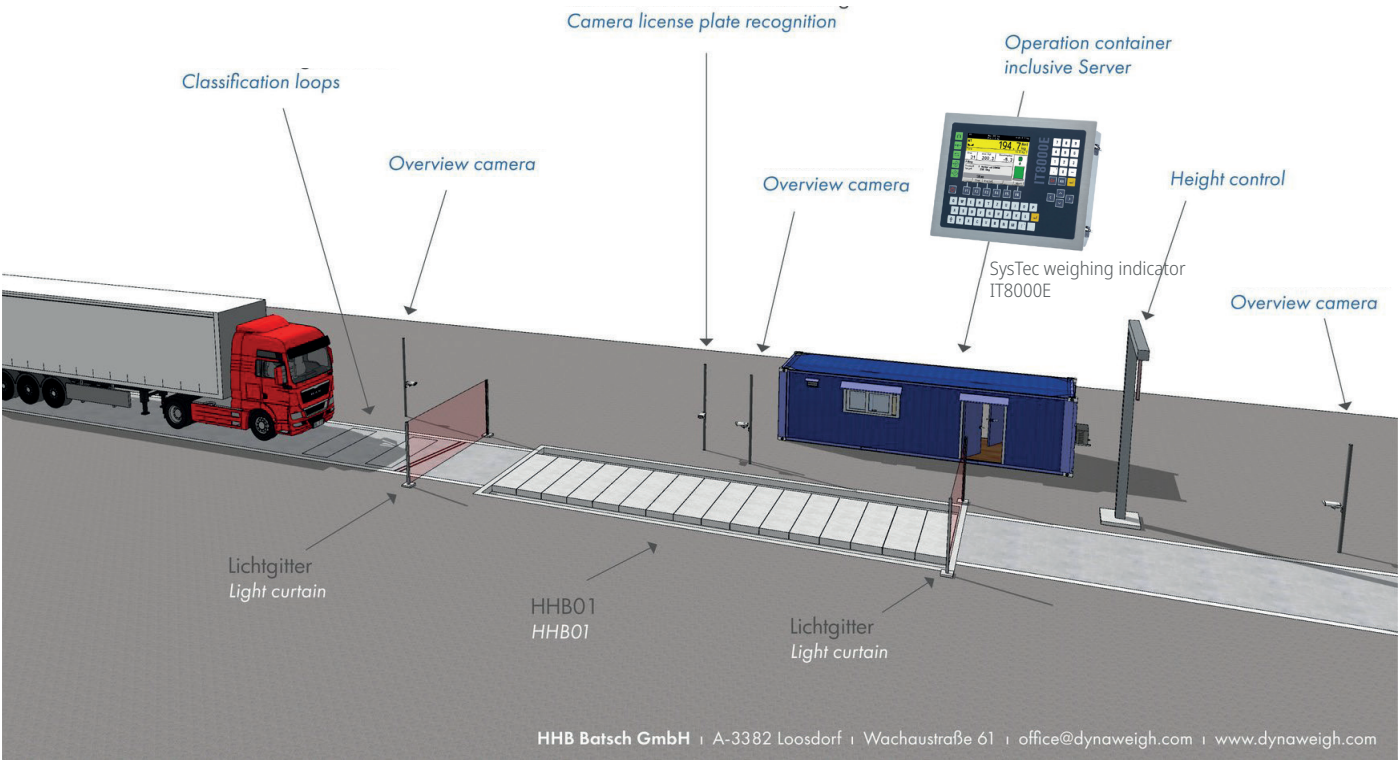


automatically captured, recorded and stored in the approved weight memory. The innovative scales can eliminate vibrations through intelligent software and absorb large longitudinal and transverse forces, such as those that occur when a vehicle drives over a weighbridge at higher speed.

The forces are recorded at several measuring sensors and analyzed by means of special software. The software filters out the dynamic oscillating forces and calculates the actual vehicle weight. The weighing systems are characterized by an accuracy of ± 1 percent and record vehicle weights at a travel speed of up to 35 km/h. It is possible to generate a weighing report in about six seconds and link the weighed truck with a photo and automatic license plate recognition. This enables seamless and legally enforceable monitoring of heavy trucks, even at peak times on the highway.



© Photo BATSCH Waagen



BATSCH truck scales have been successfully tested for calibration class 2 by the Federal Office of Metrology and Surveying and are approved in Austria and Germany. Approvals for further countries are pending.

Weighing electronics

The evaluation unit consists of a network of several SysTec weighing indicators, which in a coordinated manner and independently of each other determine partial results of the displayed weights.

To display the total weights, a front-end device is used, which calculates and allocates the partial results. For operation from a second operator station, another SysTec weighing system can be connected to the front end, which mirrors the display and operation of the front end 1:1 and can be used as a remote control unit.

Black boxes

The SysTec black boxes include the weighing electronics, but without display and operating unit. They are equipped with two analog/digital converters of type ADM for the connection to scale platforms with strain gauge load cells.

Technical data of the ADM

- Max. 8 strain gauge load cells 350 Ω each
- Range of load cell impedance 43 Ω to 4500 Ω
- W&M approved resolution of 6000 d at max. 80 % preload, internal resolution 524,000 d
- Smallest permissible input signal for W&M approved applications 0.33 μV / d
- Update rate 1,200 updates per sec
- Supply voltage for load cells: 5 V \pm 5 % (gated power supply)

The black boxes communicate with the front end device via network (TCP/IP).

At a glance: weighing system IT8000E

- Powerful and fast: High update rates. W&M approved resolution 6000 d (at max. 80 % preload). Internal resolution 524,000 d. Selectable update rate 50–800 / sec.
- Bright TFT color display 5.7" with wide viewing angle and large-character weight display, alphanumeric keyboard
- W&M approved application possible as automatic and non-automatic scale (approved in the EC, USA, Canada and others)
- Universal use: Numerous application programs
- Adaptation to custom-specific applications: Free programmability
- Robust: Stainless steel housing (protected to IP69K)
- ATEX: For installation in hazardous area SysTec offers the variants IT8000E Ex2/22 and for zone 1/21 model IT8000Ex
- Various designs: Wall-mount/desk version as well as panel-mount version for installation in control cabinet
- Numerous interface options: 2 internal and up to 6 external scale connections, can be integrated into PC networks via Ethernet or WLAN, connection to label printers and network printer, PLC connection via fieldbus
- High operational security: Data storage power fail safe, password protection, battery-backed realtime clock, remote diagnostics via internet possible





„The variety of applications in the scale and software sector requires continuous innovation and ongoing development in order to maintain and further expand the market position already achieved! Therefore we use smart and W&M approved weighing terminals from SysTec, as they can be flexibly adapted to our own requirements.“

Hans Batsch, Managing Director BATSCH Waagen & EDV GmbH & Co KG

Further information



SysTec Systemtechnik und Industrieautomation GmbH

Since 1994 SysTec has been developing and producing W&M approved industrial weighing indicators and filling controllers for static and dynamic scales.

More than 150,000 installations are successfully in use worldwide. The innovative SysTec weighing systems work reliably in numerous applications: These include filling systems for liquids and bulk materials, shipping / receiving scales, beltweighers, vehicle scales, checkweighers, piece counting scales, mobile weighing systems and all kinds of customer-specific applications. In addition to standard products, SysTec also offers customer-specific system solutions and custom-made hardware and software. Comprehensive technical advice completes the range of services.

The production and development site for SysTec weighing terminals and software solutions is Germany. The company is located in Bergheim-Glessen, near Cologne. The production of the weighing terminals and software is subject to international OIML standards.

Discover more: www.systemecnet.com



BATSCH Waagen & EDV GmbH & Co KG

The owner-managed company BATSCH Waagen & EDV GmbH & Co KG was founded in 1970 by the owner Hans Batsch. The headquarter of the family business is located in Loosdorf, Austria.

The range of products and services includes scale construction, verification & re-verification, calibration, automation, digitalization / networking, project management and sales. BATSCH offers tailor-made solutions for every sector - from the 0.01 mg to the 180 t scale.

The company started with the sale of small scales and scale repair in the commercial area. Soon the industrial sector was added with the sale of platforms in the heavy capacity range - including installation of load cells.

Subsequently, the precision sector with analytical and laboratory scales as well as the medical sector with medical scales were added. BATSCH has special know-how in the field of weighbridges and is considered the market leader in this segment in Austria.

Discover more: www.batsch.at
www.dynaweigh.com