

# Software and hardware solutions for the concrete industry



# TMS, Smart automation solutions for your concrete process

## Who is TMS?

For over 27 years, TMS has been developing and implementing innovative software and hardware solutions for the concrete industry and its related sectors: from fleet planning through to quality control, from motor control cabinets through to process control in your production plant. More than 170 companies worldwide make daily use of TMS solutions and TMS experience. TMS provides professional project implementations and service support, whether this is in the area of plant reconstruction or a complete turnkey automation project including the delivery of the electro components.

## TMS conactive

### Which products and services does TMS supply?

- TMS conactive software suite
- PC and server hardware
- Wireless operations and control solutions
- Electrotechnics, load cells and scale calibration
- Moisture measurement and water dosing
- Convi Visco Probe for real-time measurement of the consistency of SCC
- IP-Scale weighing indicators and flow controllers
- Additive scales

The products and services are briefly described in this brochure. You can also find additional information at: [www.commandalkon-tms.com](http://www.commandalkon-tms.com)

### In which market sectors does TMS operate?

- Pre cast concrete industry
- Ready mix industry
- Cement industry
- Aggregates industry
- Dry mortar industry

### How can you benefit from TMS?

- You can benefit from more than 27 years' TMS knowledge and experience in your industry
- TMS has experience in the combined areas of IT, the concrete industry and electro-technology. TMS offers a complete service
- TMS provides a single point of contact for both ICT and the overall project
- Proven product solutions for the concrete industry with strong client references
- Cost savings due to transport production and mix optimization
- TMS offers a pragmatic approach, technical knowledge and is solution focused
- Service and support with Service Level Agreements (24/7, 365 days of the year)



# TMS conactive, the software solution for the concrete industry

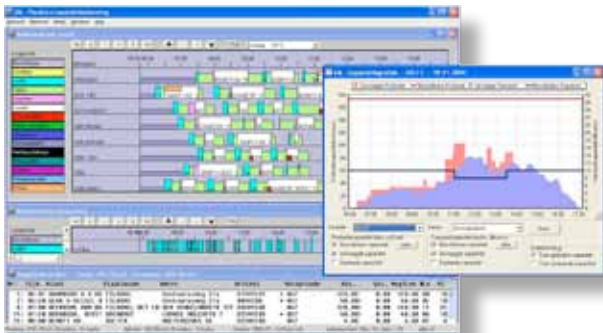
## What is TMS conactive?

TMS conactive is a modular, MS Windows-based system, designed for multiple users, plants and locations and also for stand-alone use. The system is available as a complete package or on a modular basis. For the ready mix industry, TMS offers a standardized, low cost, 'do-it-yourself' package, known as 'BoX'. This software, a variant of TMS conactive, is specifically designed for companies that only require a packaged solution.



## Comprehensive, flexible and future proof

TMS conactive consists of 3 main modules: Management, Quality Control and Process Control. The system can be easily configured with the user being able to configure many aspects themselves. However, industry insights and regulations continually change and technology is constantly advancing. As a result, TMS conactive will be routinely enhanced and new functionality added to ensure that the software remains your solution of choice.



## Planning optimizers and cost saving

A unique feature of TMS conactive Management are the planning optimizers for both the capacity planning (pre-planning) as well as the real-time day planning (dispatching). These optimizers calculate the optimal production and transport planning, taking into account timely delivery to your clients whilst ensuring that costs are kept to a minimum. The planner is also able to assess the trade-off between service level and costs. During dispatching,

## TMS conactive Management module

This module has been developed specifically for the ready mix industry and includes the following software functionality:

- Sales & pricing
- Order entry and capacity planning for trucks and production
- Real-time planning and dispatching
- Integrated transport and production optimizers
- Management information and reports

The module includes an automatic price calculator for registering agreed ready mix prices. The calculator enables you to quickly provide your clients with quotations and / or contracts. Invoicing is made easy as all executed orders and associated costs are exported to your company's finance / billing system. Transport and production planning are essential activities for your company as you seek to ensure timely delivery of products whilst reducing the costs of transportation. Planning becomes more complex as the number of trucks and production locations increases. TMS conactive Management enables the planner(s) to oversee the planning activities by means of a quick and simple order entry system, useful planning boards and capacity graphics. The planner will benefit from real-time overviews of delivery schedules that indicate where possible bottlenecks occur. Naturally, the software is equipped to print delivery notes and is integrated with the Process Control and Quality Control TMS modules, as well as GPS Track and Trace systems.

plans will be continuously updated, in real-time, based on truck activity statuses and the latest situations. The planner is then provided with loading proposals. This will result in cost savings of 5-10% and an increase in service levels.

**“Using our products, many customers have achieved considerable cost savings”**

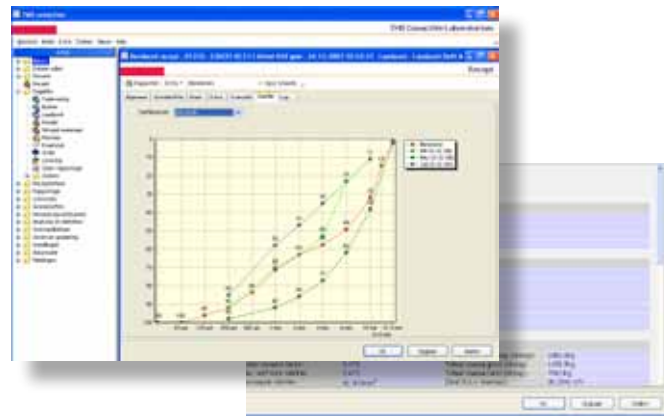
### TMS conactive Quality Control module

The indispensable tool for modern concrete technologists who wish to continually monitor the quality of raw materials, the concrete mix and the end product.

### What are the features of TMS conactive Quality Control?

- Raw material analysis and control
- Mix calculation and optimization
- Sample and product analysis
- Inventory management
- Norm statistics and reports

When designing concrete mixes, the client specifications and quality requirements, as well as the cost implications, are considered. Due to variations in raw material characteristics, varying delivery location conditions and product advances, the mix design process is a continuous activity. Analyses and samples provide a large volume of historical and current data to assist in calculating optimal mixes. The end result is the consistent production of high quality concrete and concrete products for the lowest cost, whilst adhering to current regulations. TMS conactive Quality Control supports you through your processes and reduces your workload.



Your quality control processes require you to analyze raw materials, samples and products and to record the results of these tests. The information gathered provides an insight into your processes. In the TMS conactive Quality Control module, it is very easy to enter and define your analyses and to input the recorded results.

In addition to the ability to easily export data, for example to MS Excel, TMS conactive Quality Control features numerous, standard reports enabling you to evaluate your process performance.

The concrete technologist is responsible for the quality control of raw materials and conducting the required analyses. TMS conactive Quality Control has been developed to enable you to input the supply of raw materials and related analysis data, as well as the changes in stock levels and the automatic consumption of sampling materials.

### Central use of TMS conactive Management and Quality Control

Do you have numerous production locations, concrete technologists and planners? If this is the case, TMS conactive can support you! For each module, the system features a central database in which multiple employees at multiple locations can work simultaneously. For example, it is possible to have a central plan and total overview for multiple production locations. The planning optimizers of TMS conactive

generate plans for all production locations and summarize them in a central plan. If you wish to use this feature, you can base your planning on the entire fleet and total loading points, which will result in an efficient and effective plan that incorporates all trucks and loading points.

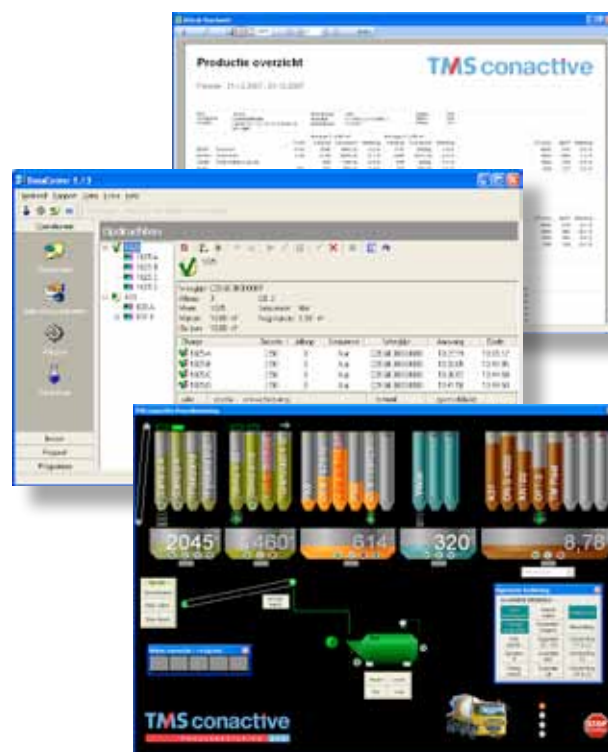
### TMS conactive Process Control module

By deploying the TMS conactive Process Control module you can manage your concrete production from start to finish. The module provides proven and advanced functionality for reliable and automated production.

All operations differ. Several factors contribute to the fact that processes at one factory will vary to those of another. As TMS conactive Process Control software is 'component' based and therefore flexible, it can deal with these process variations so that all plant specific situations are supported. Despite these differences, there are a number of main, common processes for which the module has been developed:

- Batching, dosing, weighing and mixing
- Moisture measurement and water dosing
- Control and notification
- Concrete transportation (buckets, bucket cranes, wagons, conveyor belts)
- Concrete call and control from the production hall
- Bin fill system
- Silo and bin fill systems (safety, release, control)
- Specific rinse programs for mixers
- Recycling installations

TMS conactive Process Control is a combination of both standard TMS developed control software and related hardware, which is required for the control of concrete production processes. The software has



been developed based on how processes are conducted in practice, with the result that it is easy and intuitive to use and rich in industry specific functionality.

For the communication between operating controls (PC, PLC and weighing/flow controllers), TMS relies on standard hardware and the globally used TCP/IP Ethernet protocol. In this way, the weighing controllers can be accessed remotely via the Internet or via your own office network. Also the use of now widely accessible Wifi and bluetooth communications technology is available. With TMS conactive Process Control Your plant automation is integrated with your office network with all the advantages that brings.

### What do customers say about the TMS products?

- It is clear from using the software that TMS has incorporated user requirements into the functionality and has in-depth knowledge of the concrete process.
- We always thought that our planning process was really efficient but since using TMS conactive Management we realize improvements were possible. The difference amounts to at least one truck per year.
- Thanks to the wireless support of TMS on our forklift truck, we have constant visibility of our production process.
- It is really convenient that my entire concrete process is managed in one software solution, centrally accessible for all my employees.
- We bought our operating controls from TMS because they visited our factory with a team of specialists to conduct a thorough analysis.

# Additional features and benefits of TMS

- **PC and server hardware.** Top of the range PC's, TFT monitors, servers, touch panel PCs, network components and peripherals. Includes complete installation and implementation.
- **Wireless concrete call, production and control.** With the wireless solutions of TMS, you can, for example, use a touch panel PC(s) to call off concrete from your factory, enter moisture corrections or monitor and manage the complete production process. Similarly, the bin fill system can be operated from the crane or loader in that way.
- **Electrotechnical.** If required, we can manage the complete electrical installation for concrete plants, ranging from motor control and switch cabinets to external manual controls and from engineering to cabling.
- **Moisture measurement and water dosage.** TMS' CP-Hydro module manages moisture measurements and mix corrections based on the water dosage and moisture probe measurements of the aggregates and inside the mixer.
- **Convi Visco Probe.** This unique invention from Denmark enables you to measure and control the consistency of mainly SCC concrete, in real-time and by means of a special mixer probe.
- **IP-scale weighing / flow controllers.** For the weighing, flow and time dosage process, TMS uses a TCP/IP Ethernet based weighing/flow controller. This controller can be easily set and adjusted via a webpage (also remotely via an internet connection).
- **Additives scales.** TMS supplies and installs RVS scales for additives with single or multi compartments and complete with wiring, pumps, valves and load cells.
- **Load cells and scale calibration.** OIML R60 load cells and junction boxes. Supplied as loose components or installed. The calibration of scales can also be a part of the TMS package.



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