

# TMS conactive Process control (TMS CP)

## Manage your concrete process easily, efficiently and intelligently

Concrete production forms an integral part of your manufacturing process. You need to be able to totally rely on this process because without concrete there is no end product. You may also wish to manage loading systems and shipment in addition to concrete manufacturing. All activities should be automatic and preferably unmanned. And not forgetting optimal water dosing, which forms the basis of your product quality. The management and control of all these processes can be achieved easily and conveniently with the help of TMS conactive Process Control.

### Automatic, fast and accurate

Based on 27 years experience of automating concrete production plants and with more than 150 project references, TMS has developed a new, intelligent and generic method of process control. In developing the TMS solution, we have taken on board our client's requirements and closely observed the process in practice, whereby concrete production needs to take places automatically, quickly and accurately. In working with TMS you can be assured of an experienced partner with in-depth knowledge. The TMS CP solution will enable you to streamline your production processes even further with its advanced and intelligent control. To quote many of our customers: "With TMS CP we have taken a clear step towards the improvement and acceleration of our production process."



### What is TMS CP?

TMS CP is a combination of TMS in-house developed control software and corresponding remote I/O and weighing controller hardware for concrete industry (production) process control. The software is based entirely on MS Windows and has been developed based on practical application. This ensures that CP is user-friendly and intuitive and also features



a host of concrete industry-specific functionality. The solution's control intelligence is completely embedded in the software and it supports the entire process handling, process visualization and data entry. The component-based design of TMS CP enables TMS Project Engineers to configure every kind of plant configuration and to ensure that the process visualization is in line with customer requirements. The solution requires no programming, which therefore saves both time and money. Once you have chosen your hardware components, TMS can automate your concrete production plant processes both quickly and cost effectively.

### Who would benefit from TMS CP?

TMS CP has been specifically developed for companies whose main operation is concrete production: from small installations with a simple process through to large plants with, for example, double scales, double mixers and the complete transportation of concrete to the plant using buckets. Whether you manufacture concrete paving stones using dry concrete or prefab components using high fluid concrete

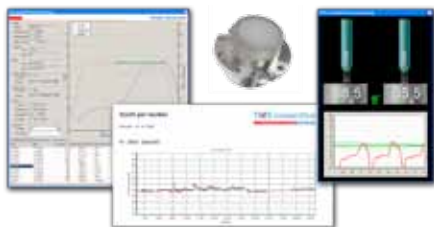
### Which processes can TMS CP control?

No two production plants are the same and processes within these plants will differ to some extent due to a number of varying factors. As TMS conactive Process Control software is component-based and therefore flexible, it can accommodate these process variations and ensure that all plant-specific situations are supported. Despite the variations, several common processes can be distinguished, for which TMS CP has been developed:

- Automatic dosing, weighing and mixing
- Process visualization
- Control and notification
- Concrete call up from the plant (mobile or fixed)
- Moisture measurement and water dosing
- Concrete transportation within the plant
- Raw material bin fill systems
- Silo fill systems
- Recycling installations
- Mixer and bucket rinse programs

### Moisture measurement and water dosage

In the concrete production industry, accurate water dosing is extremely important. To deal with this requirement TMS has specifically developed the TMS CP-Hydro module. With the aid of moisture probes in the aggregates and mixer(s), CP-Hydro calculates the correct quantity of water in the mix. Process visualization functionality enables you to easily track the dosing process and you can access the data center to establish what data, both real-time and historical, was used to determine the water quantity dosage.



### Process Visualization and Data Center

An important feature of TMS CP is the clear and ergonomic visualization of the process within a familiar MS Windows user interface. All user

commands can be executed with the mouse and the visualization functionality can be customized to suit user preferences. Plant data such as sequences, recipes, products and materials can be viewed in the Data Center. This is also where the contract screen is accessed enabling you to view which contract is being worked on what the dosage results are. The Data Center also contains a wide selection of reports, which can be displayed and printed and the data grids can be easily exported to Excel. What's more, TMS CP is completely multi-user.



### TMS CP standard hardware

TMS CP relies on standard hardware, such as a regular MS Windows XP PC. In addition, standard use is made of Beckhoff remote I/O and IP-scale flow / weighing controllers. All hardware components communicate via TCP/IP Ethernet, the global communication protocol, which is also used between servers, PCs and peripheral devices. This ensures that your control mechanisms are integrated into the office network enabling you to control the production process from any desired location in the LAN or WAN network, to monitor the process and to input data and print reports. The use of standard hardware, TCP/IP communication and MS Windows means that TMS can also offer wireless connections via WiFi and Blue Tooth, such as wireless concrete call up with touch panel PCs and bucket and transverse crane communication.

### The benefits of TMS (CP) for your organization

- TMS, a wealth of knowledge and experience
- One contact person for the entire duration of the project
- Automatic and unmanned
- Your entire production process in 1 system
- Multi-user
- Ability to control remotely
- Integrated water dosing