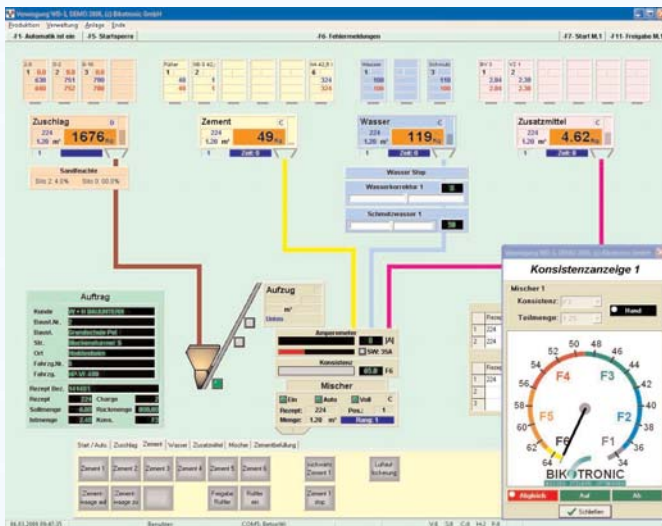




TB-WIN

Process Control System for Ready-Mixed Concrete



The TB-WIN SQL Process Control System allows the manual and automatic control of the processes in the concrete mixing plant. Thanks to its modular structure a tailor-made plant control can be created. For this, only the hardware and software modules necessary for the specific production process will be compiled.

The TB-WIN SQL Process Control System consists of:

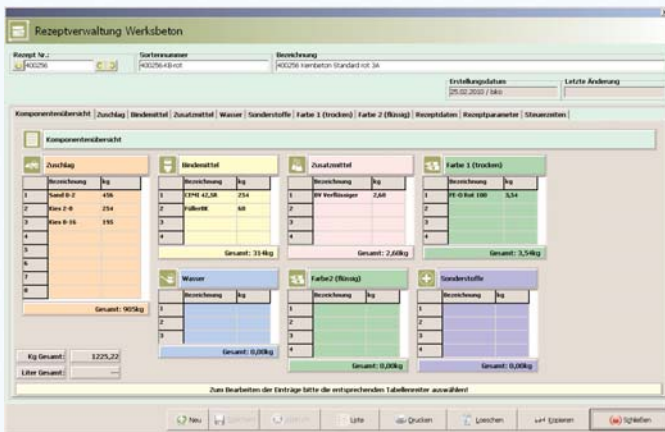
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|-------------------------|--|
| 1 Siemens Industrial PC | 1 TB-WIN administration and process control software |
| 2 LCD displays 22" | 1 Operating system Windows 7 |
| 1 Keyboard | 1 SQL database |
| 1 Mouse | 1 Soft PLC |
| | 1 Software for remote maintenance |
| | 1 MWS calibratable measured value memory |

Process Control System TB-WIN



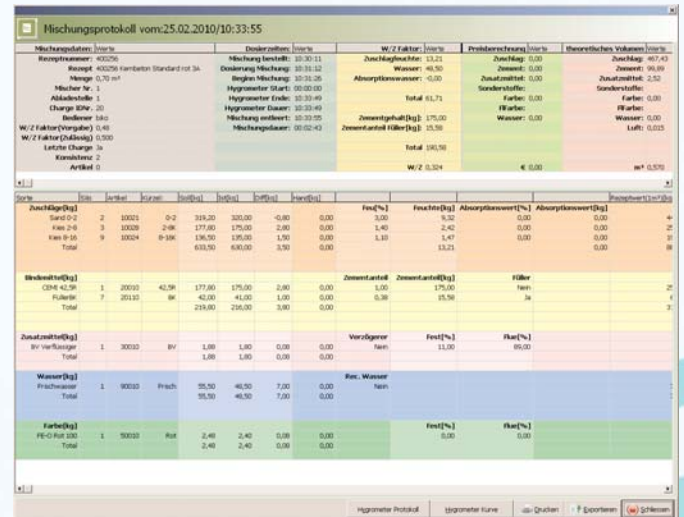
The TB-WIN manages all master data like recipes, clients, construction sites, materials used, statistics etc.

Clearly laid out menus and self-explaining buttons give the operator a maximum operating comfort and a very good overview. Basic knowledge of the operating system Microsoft Windows is enough to operate the TB-WIN system rapidly and without problems.



All lists and statistics can be accessed with different sorting orders and output with any time frame. All statistics are displayed tabularly or graphically.

The TB-WIN can record unlimited data quantities. Data size does not matter, the speed does not diminish with bigger data sizes. This data can be transferred to a central ERP with a USB stick, modem or through a network.



The integrated postprocessing of delivery notes enables an easy review of the delivery notes.

All master data of one or more plants can be administered centrally and transferred to the plant. The operator in control of the mixing does not need to enter data, if that is what you wish. Furthermore, the consistency of the data between the mixing control and the ERP is guaranteed.

Recipe Administration

- Entering of suitabilities, concrete families, exposition classes, product groups, components, discharge times for the scales, mixer closing times for small batches, other times

Materials

- Aggregate, cement, additive, water
50 preset for each material, recording of silo stocks, data export for the stocks as text or Excel file (*.csv)

Master Data Administration

- Administration of client addresses with name, location, search word, street, telephone, remarks and lock indicators, available by customer number or search word
- Administration of building site data with correlation to the customer
- Administration of the vehicle data including loading quantity, licence plate number, drivers' names etc.

Processing of Orders

- Processing of main orders and scheduled orders
- Selection of printout: with actual values according to ZTV-ING or with advertising texts
- Preprinting of delivery notes
- Deletion of orders after termination separately selected or after an adjustable time period (max. 9,999 days)
- Cash sale module: printout of the invoice on the delivery note

Material Disposition

- Disposition for all components
- Disposition via selection of single orders
- Automatic quantity calculation

Password protection for working areas

- Every menu item can be protected with a password: no access, only read access, read and write access

Production

The process control software is responsible for controlling the mixing process in manual and automatic operation. All relevant production processes and states are displayed graphically, error messages are shown in clear text with date and time.

- Graphical production overview, displaying all scales on the screen
 - Display of all scales on the screen
 - Operating system Windows 7
 - Adjustment of the water correction and the mixing rate fresh / recycling water with the mouse
 - Display of the processes
 - Continuous automatic overrun calculation for every recipe
 - Water stop function by mouse click during filling and discharging
 - Change of the loading quantity during production
 - Change of silo during batching
 - Double filling lock for mixer
 - Individually adjustable control times
 - Display of error messages
 - Counter for operating hours of all drives
 - Maintenance module
- The software can monitor every motor, valve and limit switch. If a previously set condition is fulfilled, a message in cleartext will appear and also be saved in a file for later processing.
- Calculation of the solids content in recycling water
 - Graphical presentation of the dosing accuracy for every component
 - Filling level display either calculated or with sensor

Measured Data Storage MWS

The calibratable measured data storage MWS is a software module which has been tested and authorised by the Physikalisch-Technische Bundesanstalt (PTB), the German metrology institute. The software has been approved with regard to the German and European calibration regulations. All dosing procedures are recorded in the data base with date, time and delivery note number. Thanks to this data storage, it is not necessary to have a protocol printer running simultaneously. Delivery notes can be reprinted according to ZTV-ING as often as desired.



Temperature Monitoring

A temperature measuring device for the outside temperature or a sensor in the mixer monitors the temperatures in freely configurable intervals throughout the day and displays them in a diagram. The software automatically determines the highest and lowest temperature of the day and saves this data into the temperature protocol and the plant journal. The current temperature is also displayed in every batching protocol.

Statistics

- All statistics can be output with any time frame
- Testing cube statistics for concrete families and single recipes
- Temperature statistics min./max., solids content in recycling water
- Consumption statistics with administration of the used material, comparison of theoretical and actual values with difference equation
- Statistics for customers, building sites, vehicles and concrete families
- Production statistics: selection of single orders displaying all components dosed with actual and required quantity, manually dosed quantity, moisture in the aggregates as well as starting and discharging times
- Consumption statistics: related to order, recipe, delivery note, building site, vehicle
- Batch protocols: selection of every single dosed batch with order details, dosing times, manual interference
- LOG File – All processes of the system are recorded and stored in a LOG file

Additional Features

- Postprocessing of delivery notes
- Protocol printout with any time frame
- All protocols can be stored on external data media: CD-ROM, USB stick
- Recording of all operating functions and system errors for later analysis of the equipment
- Change languages by pushing one button (if delivered in a foreign language)
- Data transmission
- Interfaces to the invoicing, disposition, ERP, laboratory
- Drilldown function

Data Export

- Data export in ASCII or Excel Format for later data preparation with Excel (*.csv)

Database

- SQL Server
- Server-Client Application
- Independent backup system

Recovery Set

To restore all Bikotronic software packages and databases easily. The recovery can be managed by the client without any problems. The Recovery Set consists of:

- Bikotronic Boot CD and Recovery DVD with instruction manual to restore all Bikotronic software packages
- Acronis TrueImage software package with manual
- USB stick as storage medium

Remote Maintenance TB-WIN

Through this connection all functions of the plant can be tested, accepted or changed.

- Via ISDN, network or internet (VPN)
- Remote maintenance software TeamViewer
- Remote maintenance for E/A interface (PLC)
- Remote maintenance for BTK-WIN
- Remote maintenance for BTS-WIN
- Remote maintenance for BTW-500 scale units

Spare Parts Provision

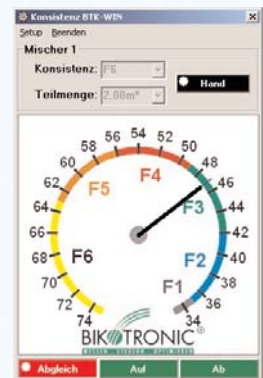
The hardware of the TB-WIN system is based on standard industry computer hardware. Thus a fast and easy spare parts provision is ensured by standardized PC components.

Options

Consistency Measurement BTK-WIN

The BTK-WIN can be integrated as software module into the equipment visualization for visual control of the concrete consistency. The consistency of the mixing material is measured through the effective power of the mixer. The spreading is displayed on the monitor.

- Consistency area F1, F2, F3, F4, F5, F6
- Quantity in m³ or %
- Display for the slump
- Display for the consistency
- Double filling lock mixer



Sand Moisture Measurement BTS-WIN

The BTS-WIN measures the moisture continuously while the batching is running. Afterwards the sand / water correction will be executed during the batching. The moisture value is displayed in the corresponding silo.

