

Dairy & Beverages

Industrial Weighing & Product Inspection



8 News

Latest Statistical Quality Control System In Use at Nestlé Turkey

Nestlé – one of the oldest foreign investments in Turkey – entered the Turkish market in 1875, only 8 years after its foundation. The Turkish METTLER TOLEDO distributor BAYKON has served Nestlé for many years with top-class weighing technology and Statistical Quality Control (SQC) systems.

A century in Turkey

100 years ago, in 1909 Nestlé opened its first sales office in Istanbul introducing Nestlé's baby food, concentrated milk and chocolate products to Turkish consumers. With strong confidence in the Turkish market, Nestlé opened the first chocolate factory in Turkey in 1927.

Nestlé continued to be the first company to introduce new products into Turkey. In 1968 Turkish consumers were introduced to chocolate spread with CHOKELLA®, in 1984 instant coffee with NESCAFE®, in 1986 chocolate powder drink with NESQUIK®, in 1996 growing-up milk with NESTLE® Çocuk, in 1989 coffee cream with COFFEE MATE® and in 2002 coffee mixes with NESCAFE® 3in1.

Today, Nestlé operates from its multi production site at Karacabey in Bursa. Offering approximately 40 world wide known brands and 400 high standard products in 8 different food categories which appeal to Turkish consumers, Nestlé continues to maintain its leadership in most of the categories which it had introduced to the Turkish market.

After relying for years on the METTLER TOLEDO Statistical Quality Control System SQC52, Nestlé Karacabey decided to upgrade its installation with the new Statistical Quality Control system FreeWeigh.Net®. Mr. Edgar Krappen, Factory Manager comments: "We have been using the METTLER TOLEDO SQC52 system successfully for years. This and the



METTLER TOLEDO



Garvens dynamic checkweighers integrated into FreeWeigh.Net®



Net content control of Nescafe sticks, Maggi hardtablet bouillon and chokella spread at the FreeWeigh.Net® test places with ID30 PC-terminal

fact that the PC-based FreeWeigh.Net®, installed by the METTLER TOLEDO distributor BAYKON, completely satisfied our needs, convinced us to proceed with this very successful partnership.”

Meeting customer needs

Prerequisite for a successful installation was that existing scales and dynamic checkweighers – including third party – could be integrated into the system. Secondly, it was of great importance to have a perfect solution for hygienically sensitive environment and thirdly the system had to be user friendly especially for the operators at the test places.

FreeWeigh.Net® is designed to meet all these requirements. The PC-based Statistical Quality Control system enables

sample based monitoring and documentation of parameters such as net content, expiration date, visual aspects of product and packaging, taste, etc. FreeWeigh.Net® offers – among others – the following core data: production (time period) mean value, number of violations of the legally defined tolerance limits and mean standard deviation of the production (time period). These parameters are required to fulfill legal requirements e.g. in regard to the national and international net weight legislation as well as to monitor, adjust and document all quality aspects of a product.

Seamless device connectivity

BAYKON introduced a FreeWeigh.Net® system including fifteen ID30 PC-terminals, three remote PR balances and four dynamic checkweighers. Through the Device Integration Utility module of FreeWeigh.Net® BAYKON was able to integrate third party checkweighers besides the METTLER TOLEDO Garvens checkweighers. The optional Device Integration Utility provides a configurable string parser for devices with communication interface and enhances FreeWeigh.Net® to an all-embracing quality insurance beyond weighing.

Practical, informative, user friendly

Mr. Edgar Krappen comments: “Changing from SQC52 to the FreeWeigh.Net® system was successfully accomplished within one day after some pre-work and testing. Due to the very practical and user friendly menus provided by the FreeWeigh.Net® software, our operators were able to adapt to the new system immediately.”

At the test places operators weigh random samples of the various Nestlé products in a predefined interval and monitor statistical data. FreeWeigh.Net® stores and analyzes the measured values and immediately provides quality data information at all stations. Supervisors and operators can directly intervene if needed thus saving costs by avoiding unnecessary overfilling and wastage.



Net weight control of semi-finished chocolate bars

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FreeWeigh.Net® – software scalability

FreeWeigh.Net® Modules at Nestlé Karacabey:

Testplace Module:

The convenient – PC based – user interface for execution of random samples and testplans

- Easy product selection on PC
- Convenient design for touch-screen operation
- Usable for Personal Computers or PC based terminals
- Online graphics for active products

Device Integration Utility Module:

Allows connection of measurement instrument to FreeWeigh.Net®, which are not supported with a dedicated device driver such as third party checkweighers, cap torque measurement devices, rest oxygen detectors etc.

- Provides a configurable string parser for devices with communication interface
- Enhances FreeWeigh.Net® to all-embracing quality assurance beyond weighing

Attributes & Testplans Module:

Input of product quality attributes from visual inspection and execution of Testplans – linking individual measurements and checks together to a sequence

- Ensures completeness of quality data
- Simple operation
- Graphical representation with Pareto charts showing the frequency of errors

Batch Handling Module:

Ideal for customers working with batch oriented processes

- Authorization of batch release in the batch catalog
- Batch oriented statistics
- Possibility for two concurrent batches

SPC Module:

Statistical Process Control with

- Control limits for mean value of random sample
- Control limits for standard deviation and range of random sample
- CuSum
- Cp/Cpk

Free Reporting Module:

Allows highly customized reports:

- Simultaneous display of selected related product information in one report:
 - Activities / alarms
 - Combined variable / attribute-samples / statistics
 - Variables: mean value, standard deviation, range control charts, histograms
 - Attributes: pareto, trend graphic for individual attributes, c-charts, u-charts
- Freely selectable time period
- Data pin-pointing allows filtering tolerance violators from the report.

Mr. Edgar Krappen emphasizes: “Manual documentation and reports belong to the past. Due to the Data Export module and Excel Macros supplied by BAYKON, we are now able to automatically generate the Nestlé Standard QMS forms.

Perfect for hygienic sensitive areas

The fifteen test places with ID30 PC-terminals fulfill Nestlé’s strict hygienic requirements. The stainless steel, IP69k protected terminals are ideal for hygienic sensitive areas where heavy cleaning procedures are the standard. The terminal can even be hosed down with high pressure equipment. The ergonomic touch-screen terminal with its intuitive user guidance provides an easy-to-use data entry station at the production lines and the existing scales could be seamlessly connected to a terminal.



ID30 PC-terminal:
Dustproof and suitable
for cleaning with high-
pressure equipment



Complete supplier

Following the thriving FreeWeigh.Net® project BAYKON served Nestlé with further METTLER TOLEDO weighing solutions. Four new PUA579 floor scales with lifting device made for heavy wash down procedures were successfully introduced at various places in production.

The stainless steel low profile scale

(35mm) is protected against prolonged submersion (IP68) and the automatic lifting device with gas springs provides easy accessibility for profound cleaning under the platform.



PUA579 floor scale with automated lifting device



Additionally, several Garvens checkweighers and over forty tank scales were installed in the production area. The tank scales are equipped with METTLER TOLEDO load cells and IND130 smart weight transmitters. The hermetically sealed stainless steel load cells are protected against submersion (IP68) and the digital connectivity between weighing sensors and Nestlé’s Siemens S7 PLC is seamlessly provided by the IND130 Profibus® option.



Stainless steel load cell

Mr. Edgar Krappen concludes: “BAYKON’s technical power and the experienced local team in combination with the strong METTLER TOLEDO solutions convinced us to carry on the successful partnership. The hygienically designed floor scales, the outstanding performance of the Garvens checkweighers and the unrivalled precision of the METTLER TOLEDO tank scale solutions stand for it.”



IND130 smart weight transmitters

For more information:

- ▶ www.mt.com/freeweighnet
- ▶ www.mt.com/batching
- ▶ www.mt.com/garvens

Highly Affordable Turbidity/Color Solution for Phase Separation

The risk of process interruption due to using the wrong or a contaminated product must be minimized if you want to optimize production. The new InPro 8300 RAMS series from METTLER TOLEDO not only solves the problem, it is very cost-effective too.

Cost savings

In the highly competitive environment of Dairy manufacture, cost optimized production is vital. To maximize production you need to know exactly when the water to milk phase separation is complete. To minimize loss at the filling line you must determine the precise moment product and not water is flowing through the line. And you want to do all this with minimum expenditure.

RAMS does it all

The InPro 8300 RAMS optical product monitor is unique, versatile, compact and inexpensive. RAMS (Reflection Absorption Multi-Switch) technology uses LEDs to measure the reflection and absorption of liquids. The absorption of near-infrared light is utilized to accurately and instantly determine when the transition of water to milk is complete. Using eight parameters determined by four LEDs, the InPro 8300 RAMS can identify up to eight differently colored liquids. This makes the monitor ideal for multiple-product filling lines.

Easy to install and maintain

All members of the InPro 8300 RAMS product family are easily installed on Tuchenhagen VARINLINE housings. They are further characterized by a reduced maintenance requirement thanks to the use of long-life LEDs and CIP resistant materials. The only calibration procedure necessary for all InPro 8300 RAMS versions is a simple in-line zero point correction.

Benefits

- Low installation cost
 - Fast and easy installation on Tuchenhagen VARINLINE housings
- Reliable operation
 - Use of silica gel in optical housings eliminates error-prone usage of air purge installation
- Fast, easy calibration
 - Simple in-line calibration correction with clear water
- Very low maintenance cost
 - Uses long-life LEDs, not bulbs
- Excellent value
 - Extremely attractive price/performance ratio

Learn more at:

► www.mt.com/InPro8300RAMS



InPro 8330 RAMS product monitor

Best Practice

Optimize product/water phase separation control for higher efficiency.

To minimize product losses and to optimize process water recycling, in-line turbidity monitors provide more reliable and reproducible results compared to a sight glass or conductivity control.



► www.mt.com/Turb

GARVENS

Checkweighing

Dynamic weighing technology Provides quality assurance for Jägermeister

The cult drink Jägermeister is the traditional brand of the Mast-Jägermeister AG, renowned world wide for its instant association with two sympathetic stags and a wild "pub party" atmosphere with young adults.

Jägermeister has, behind its modern and trendy image, a very long and traditional history. The company Mast-Jägermeister AG has been producing Jägermeister which is enjoyed in more than 80 countries around the world since 1935. The cordial Jägermeister is made from a total of 56 herbs, blossoms and roots and has always been produced and bottled in Wolfenbüttel. More recently the Mast-Jägermeister AG opened production sites in Kamenz in Saxony and Wittmar near Wolfenbüttel. The continuously rising sales figures prove that Jägermeister is an absolute market success with more than 81 million bottles being filled with the mild yet spicy cordial in 2007. This impressive number

strengthens the company's position as the largest German producer of internationally distributed spirit specialities.

The main focus is on quality control

Quality is one of the key success factors for Mast-Jägermeister AG, a company with a very strong single brand. "Quality assurance is an extremely important subject in the Jägermeister production", explains Jens Rießen, head of the Kamenz plant. "Due to our strong brand reputation we are committed to making sure that our customers will always get the very best quality", continues Rießen. At the Kamenz site in Saxony over 20 million litres of Jägermeister is bottled per year and since

this modern facility commenced production the company Mast-Jägermeister AG has been relying on checkweighers from METTLER TOLEDO Garvens.



Jägermeister started production in Kamenz in 1996

METTLER TOLEDO Garvens supplied the dynamic weighing technology for completeness checking in the end-of-line packaging process where the weight of cartons filled with either "1 litre" or "0.04 litre" bottles is verified. This ensures that

Key Benefits of the Garvens XE3 Checkweigher

- Consumer protection and quality control by automatic rejection of underweight or overweight products.
- Touchscreen with clear operator guidance, for ease of operation.
- Garvens offers several "XE" checkweigher models for different weighing ranges and applications. Up to 100 product setups can be stored, allowing for quick and easy product changeover.



Checkweigher XE3 checking completeness of cartons with bottles

incomplete cartons or those containing bottles with too little content are detected and rejected, preventing them from leaving the factory. Moreover, the weight check ensures that damaged bottles with leaks are immediately detected.

Mast-Jägermeister AG trusts in Garvens innovativeness

Garvens checkweighers can be integrated near to every production line as their design can be easily adapted to the given technical requirements of any production line. An example of this is where two weighing terminals of two separate "E Series" checkweighers, integrated into different production lines, were installed side by side, remote from their weigh-frames, allowing for easy operation of both checkweighers from one position. A solution that was highly appreciated by the staff operating the Jägermeister production lines.

The XE3 is a very cost effective state-of-the-art dynamic weighing technology solution

An XE3 checkweigher weighing 60 cartons per minute is also in use at Mast-Jägermeister AG. In this application the



Two remote 'E Series' weighing terminals (separate from weigh frames) – for easier access

XE3 can weigh products up to 6000g with an accuracy of up to 1g. The XE3 automatically rejects underweight cartons by means of a pusher, enabling the line staff to check the carton and replace bottles where necessary. This method ensures that only full bottles reach the end consumers.

METTLER TOLEDO Garvens checkweighers are instrumental in supporting the quality management of Mast-Jägermeister AG and protecting the Jägermeister brand.

► www.mt.com/garvens



Best Practice

The Principles of Checkweighing Guide shows manufacturers in all industry sectors with an automated production line, how to develop an effective product inspection programme and achieve compliance with standards, legislations and regulations. Further more, this guide explains in depth how an effective checkweighing programme can improve efficiency, save costs, protect end consumers and ensure a consistent high quality.



Request your complimentary copy from

► www.mt.com/pi-guides

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2. IND780 Process terminal
3. DL22 Food & Beverage Analyzer
4. Safeline metal detectors and x-ray inspection systems

colorWeight®

1026 kg

Yellow – weight above tolerance

1000 kg

Green – weight within tolerance

0974 kg

Red – weight below tolerance



2



3



4

EHEDG



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