

## Machinery safety in the packing machinery construction

### Highest safety – shortest cycle times

**Geysssel GmbH is operating in a special segment of the packing machinery industry: the company develops and manufactures machines applying drinking straws onto the most diverse packaging at highest speed and with utmost precision. For its safety technology, Geysssel uses the Schmersal programme.**

The increasing popularity of take-away beverages is advantageous to Geysssel GmbH, a true-blue expert in the (packing) machine construction. The company with registered office at Cologne develops and produces so-called applicators (image 1) applying drinking straws, spoons or promotional and on-pack items onto packaging. As the upstream filling and packing machines runs with an extremely high output,



**Image 1**  
 The applicators designed by Geysssel can apply more than 30,000 drinking straws per hour onto beverage packaging

the machines apply up to 36,000 drinking straws per hour, i.e. 10 per second. Geysssel has become the international market leader in this challenging business.

#### Safety and productivity

The machines are equipped with up to nine safety guards, which must be accordingly and adequately protected. Until now, primarily safety sensors with magnetic switch design from the BNS 303 series (image 2) were used to that effect, these devices being very robust and insensitive to mechanical wear. In addition to that, they are insensitive to soiling and axial misalignment. For the evaluation of the safety-related signals, a safety-monitoring module with time delay of the type SRB 324 ST is used. The delay, which can be set within the range from 0 to 30 seconds, is required, considering that any abrupt stopping of the extremely fast drives would lead to mechanical defects.

#### Solenoid interlock avoids machine standstill

For the brand-new machine generation, Geysssel has decided to change the safety-related shutdown and to start using a solenoid interlock instead of sensors. In this way, interventions during the operation of the machine can be avoided. After all, when the machine stops for just one minute, more than thousand bottles are piling up.

The builders have chosen a very modern variant: a solenoid interlock of the AZM 200 type with integrated door-handle and sensor-controlled inquiry of the safety guard position and interlocking mechanism (image 3). These devices provide the machine user with comprehensive diagnostic information and emit a warning, e.g. in case of an imminent guard door misalignment.



**Image 2**  
 Until now, Geysssel used the BNS 303 safety sensor to monitor the position of the safety guards.

The wiring of the solenoid interlocks also offers advantages: up to 31 devices can be wired in series and evaluated through a single safety-monitoring module. This saves costs as well as space in the control cabinet. Simultaneously, the very high demands placed on the machinery safety are met as well: the system is suitable for applications up to Performance Level "e" to EN 13849-1 or control category 4 to EN 954-1 and SIL 3 to EN 61508.

All safety switchgear designed on the basis of the CSS sensor technology feature these functions. Other distinctive features of the AZM 200 are the integrated door-handle and the smooth fitting onto the profile systems, which are commonly used in machinery construction.

#### The lesson is clear... the productivity and safety standards are set

With the new rotary filler, Geysssel once more benchmarks the performance of applicators. With the solenoid interlock from Schmersal, the packing machinery manufacturer proves that safety and productivity are not opposites. On the contrary, the solenoid interlock essentially

contributes to a continuous operation of the machine at its ultimate capacity without inadvertent stopping.



**Image 3**  
For the applicators of the latest generation, the AZM 200 solenoid interlock is used.

**Industry focus: focus on the packing machinery construction**

As a part of the industry focus, the Schmersal Group boosts its activities in individual fields of the machinery construction. One of the industries on which Schmersal focuses, is the packing machinery construction, an industry in which it has a long-time tradition. The free brochure "A package full of solutions" highlights all the products, concepts and solutions from the Schmersal Group, which are especially designed for this industry.

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image 1 Geysssel GmbH,  
images 2-3 K.A.Schmersal GmbH