Feige Filling GmbH, Germany

Precise pail filling

When we buy a bucket of paint at the home improvement store, we just assume as a matter of course that the indicated net weight is correct. We don’t really give any thought to the effort needed to comply with the relevant legal requirements. EU law allows only very small deviations even in the case of larger containers, and employees of the weights and measurements authority regularly check for compliance with allowed tolerances.

Feige Filling, a Haver & Boecker Group company headquartered in Bad Oldesloe near Hamburg, is the global leader in filling systems for liquids and pastes. The company has hired its own certified calibration managers and thus has the expertise to carry out conformity evaluation processes according to the European Measuring Instruments Directive.

Maximum control accuracy with reduced cycle times

“The challenge in our industry is to balance our customers’ high demands regarding cost-effectiveness, robustness, and precise control performance,” says Axel Frank, who is responsible for electrical installation at Feige. For the automation of filling stations, the company has been using the Simatic S7-300 controller. At the Interpack international packaging trade fair in Düsseldorf, Feige presented a modular system with the new S7-1500 for the first time. The reasons for this choice: maximum control accuracy with reduced cycle times and enough capacity for the coordination of up- and downstream units. Feige has already come to appreciate the advantages of TIA Portal as an easy-to-use engineering environment during the S7-300 project. The considerably higher bandwidth for data transmission via Profinet will enable efficient remote maintenance.

The new Pailfill-RWF is perfect for filling a wide variety of different liquids such as paints, lacquers, lubricants, or even ketchup. The calibratable weighing range extends from 2.5 to 40 kg. The distinctive feature: the filling unit can be purchased separately or in combination with a pail denester and/or a lid placer. In any case, the S7-1500 suffices as a central control for filling, handling, and transport.

Continuous operation guarantees high productivity

The Simatic S7-1500 controls the axes of the handling device to fill the denester stack, the vacuum exhauster, and the conveyor belt to the filling station. The most demanding challenge is controlling the flow of liquid during the filling process. The machine presented at the trade fair features three filling valves. Each of the three filling stations is equipped with a weighing cell. As the filling weight of a pail nears the target value, the corresponding valve is throttled while the valve of another filling station opens by an equivalent amount; this guarantees continuous operation of the feed pump, resulting in a very high level of productivity. Another conveyor belt moves the pails to the lid placer. The finished containers – up to 40 pails per minute – can then be delivered to a palletizer.

The plant’s flexibility and productivity attracted a great deal of attention among visitors at Interpack.

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