

# Touch-Display-PLC: Transparency at all levels



## THE COMPANY

Fawema Maschinenfabrik GmbH & Co KG is a company operating worldwide in the packaging industry. The products of the machine builder from Engelskirchen-Ründeroth range from the manufacture and supply of machines for packaging, metering, filling and sealing to product collating. Filling and packaging solutions are manufactured for dry products with different consistencies such as flour and sugar, and non-food materials such as washing powder or charcoal. Packaging sizes range from 100 gram bags to 25 kilo sacks. Packaging solutions are developed for stand-up bags or tube bags.

Up to now, machine builders have concentrated on the mechanical and electrical processes involved in their field. Whilst a standard automation system with HMI operation, fault detection and diagnostics are today standard features, the logging of product related data, process interventions or compliance with the new regulations in the food industry are not. A new machine type is opening up many possibilities of dealing with a new trend in electrical design and software development. Fawema's VC250 is a new continuous bag form, fill and seal machine featuring a Moeller touch display-PLC – a solution that meets all these requirements.



**New control concept**

With the development of the new bag form, fill and seal machine, Fawema is pursuing new approaches in the selection of control components for the drive system, the visualization and seamless communication. The system is also able to provide if necessary features such as access control, operating data acquisition and even traceability in compliance with EC178/2002 or the FDA regulations – without major changes to the engineering. The core of the control concept for the bag form, fill and seal machine is a multi-axis system with three servo axes and Moeller's XVC601 touch display PLC with the 10.4" infra-red touch display. The concept also includes Moeller's WinBloc remote I/O system.

The simple linking and communication with the servo system is one benefit of the XVC601. Axis controllers and XVC601 exchange their data via Ethernet. Just one parameter definition is required since both systems were programmed with 3S CoDeSys and use the integrated SymArti protocol for communication. Visualization and operation are designed on all machines series according to the "one face to the customer" principle. In other words, standard features for visualization, functions and operating elements ensure that operators can get to know the system easily.

An additional benefit is that machine parameters and operating data can also be made available if required by the customer.

**Flexible visualization, operating data acquisition and product traceability**

For the new EU Directive EC178/2002, Moeller developed a concept that uses software extensions to link standard hardware components to the so-called FDA server, and enable fea-

tures ranging from operating data acquisition to traceability. The FDA client software just has to be installed on the XVC601 device. This provides a permanent and secure connection via Ethernet to the FDA server. The server itself consists of a Moeller XCC601 Box PC fitted with a powerful SQL database. This database is preconfigured with ready-made screens and does not require any additional configuration. An HTML interface is available for headless versions without a display. This system is then simply set up via a web browser on a PC connected to Ethernet.

Users can design the visualization application with XSoft-EPAM (Easy Page Machine) in Microsoft Excel. XSoft-EPAM is an add-in supplied by Moeller and is simply integrated into Microsoft Excel. The visualization application can then be designed entirely in Excel – with all the features provided by this standard software.

The visualization application created with XSoft-EPAM is therefore automatically prepared to customise the machine in full compliance with the relevant standards. Data to be recorded is marked during the project design phase. The great advantage of the Moeller solution is that Fawema does not have to make any changes to the project design and visualization when customers place special requirements. As customers can modify and control virtually all the parameters via the integrated visualization system, Fawema decided that it was necessary for all interventions to be immediately loggable if required. Moeller's traceability concept meant that this requirement could be met without any problem – thanks to the powerful and safe user management system and the log function of the connected database.

It is now possible to trace exactly who changed which machine parameter and when. Whether for a bag or a batch, end customers can at any time clearly assign a product to the machine parameters at the time of production. The data written can also be used easily for statistics functions, so that a temperature or speed curve, for example, can be prepared graphically for a particular batch and can be printed immediately.



**EG178/2002**

The regulation EC 178/2002 came into force on January 1, 2005 for the food and animal feed industry within the European Union. The new regulation applies to all companies involved in production, processing and distribution. This regulation stipulates the duties, responsibilities and procedures required for suitable crisis management. A key requirement for the packaging industry is stipulated in Article 18 "Traceability": The mandatory and unambiguous traceability of ingredients at all stages of production, processing and distribution. Manufacturers must thus be able to trace the history of a product at any time, its use and the locations involved.

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