

Yeast Culturing with XI/ON Intelligent Remote I/O



XI/ON, "one Bit bitte"

Bitburger Brauerei Th. Simon GmbH, was founded in 1817, and is now one of the most important premium breweries in Germany. The Bitburger company, with a production output of 4.19 million hectoliters in 2001 is one of the largest premium beer brands in Germany, and is characterised by a blend of tradition with modern management. The company is owned by the seventh generation of the family, and achieved a turnover in 2001 of 371 million Euros.

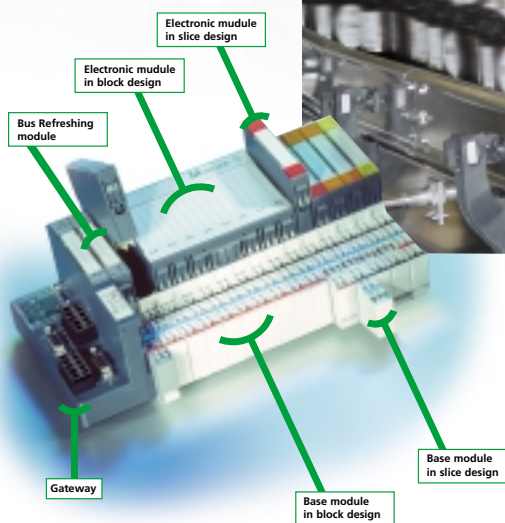


In order to ensure the quality of Bitburger beers from the brewery to the end consumer, the company uses qualified beverage wholesalers to sell its products. Bitburger is represented in 56 countries with over 1,000 specialist wholesalers worldwide. Its consistent quality policy is not only demonstrated by its DIN ISO 9001 certification but also by its analysis technology. Sensors and computers support the work of the brewer in ensuring that customers obtain a constantly high level of quality.

XI/ON in yeast culturing

Short planning, commissioning and maintenance times, minimum documentation requirements, flexibility and future security. These are the requirements that a state-of-the-art automation system is expected to meet with its different components.

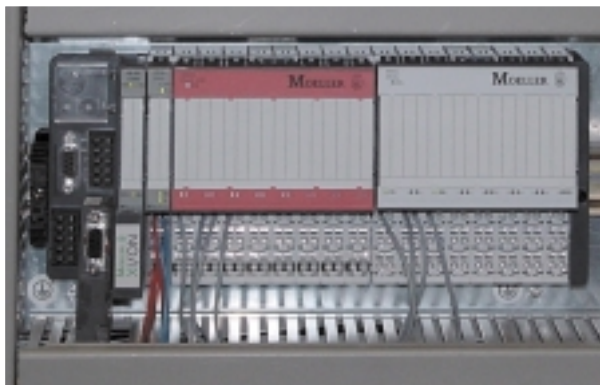
The gateway, block and slice structure of the modular XI/ON offers a completely new level of quality in the field of I/O. The gateway offers the user independence from the type fieldbus required: it controls the entire data traffic between the fieldbus and I/O modules. The base modules with a slice and block design are integrated in the connection points for the field level and can be snap-fitted onto mounting rails. Electronic modules, also available in slice and block design, allow the functions required to be simply plugged in. Supply modules provide the voltage (24 V DC or 120/230 V AC) for all connected modules.



XI/ON



Photos: Moeller, Bitburger



The XI/ON System therefore combines slice and block designs to ensure a level of "fine granularity" and thus a compact design. The XI/ON concept gives users the openness and flexibility they need: the gateway, currently available for CANopen, DeviceNet, Profibus and Interbus, links the I/O points configured for the application with the implemented bus system. If the bus system is changed, then only the gateway needs changing. If the fieldbus needs changing, the complete field section of the system can then stay unchanged. This reduces time and cost requirements as well as the documentation required.

Tailored I/O stations

The Moeller I/O system includes a range of standard components such as digital and analog input and output modules, counters and technology modules, and temperature modules. The block modules of the system provide 16 inputs or 16 outputs. These modules reduce the price per channel. Single channels can be added as slice modules. This makes it possible to produce customized I/O stations, allowing analog, digital and function

modules to be combined into clear and logical units. Commissioning or maintenance is carried out using the user-friendly I/Oassistant PC software. This software supports interactive planning and commissioning. Modules and stations can be configured quickly and simply. The tool can also be used to check the plausibility of the application, such as the available auxiliary voltage. The software thus prevents the making of costly planning errors during commissioning. At the same time, the visualization function of the process image and the diagnostics messages support the user in localising faults immediately.

The screw terminal and spring-loaded terminals of the rugged XI/ON base modules ensure that cables are connected securely. The so-called "fixed wiring" reliably separates the mechanical and electronic functions. All electronic modules are simply fitted on the base modules and can be exchanged easily without unscrewing the wiring. The coding between the base and electronic module prevents modules from being plugged in incorrectly. Base modules can already be completely wired and voltage tested before being

fitted. The I/Oassistant software mentioned allows users to check the system in detail for faults and diagnose the connected wiring.

The system also offers flexibility after commissioning: XION modules are hot swappable. This means that during operation users can simply pull out the modules for maintenance or in the event of faults in order to change them.

I/Oassistant – a universal tool

The integrated serial interface is a special highlight of Moeller's gateway concept. The I/Oassistant engineering and diagnostics tool allows users to access the gateway without affecting the current operating status. The I/Oassistant tool not only provides the possibility of local diagnostics, but is also a universal tool that offers the user interactive support during the planning and implementation process of the XI/ON system. The user can create and structure the project on screen, selecting gateways, base or electronic modules or adding accessories. Configuration and parameter assignment of the individual stations can be carried out either offline or online. Later modifications are possible at any time.

I/Oassistant can also help the user with ordering. A click of the mouse is all that's needed to create an order request for the station required and then fax it on to Moeller. In this way, for example, the user can select the type of housing (stainless steel or plastic) and order accessories.

Conclusion

The Bitburger brewery keeps a keen eye on its automation processes, so that the level of automation implemented meets its requirements exactly. Beer brewing is a logical process and can be broken down into a sequence of several individual steps. These system steps, developed from centuries of individual experience in beer brewing and direct observation, are supported by XI/ON reliably and yet with a degree of moderation. After all, even today beer brewing is not a fully automated process. The company's philosophy gives the highest priority to human experience and creativity, man and machine working together in a team. Nevertheless, the team players ought to be the best they possibly can...