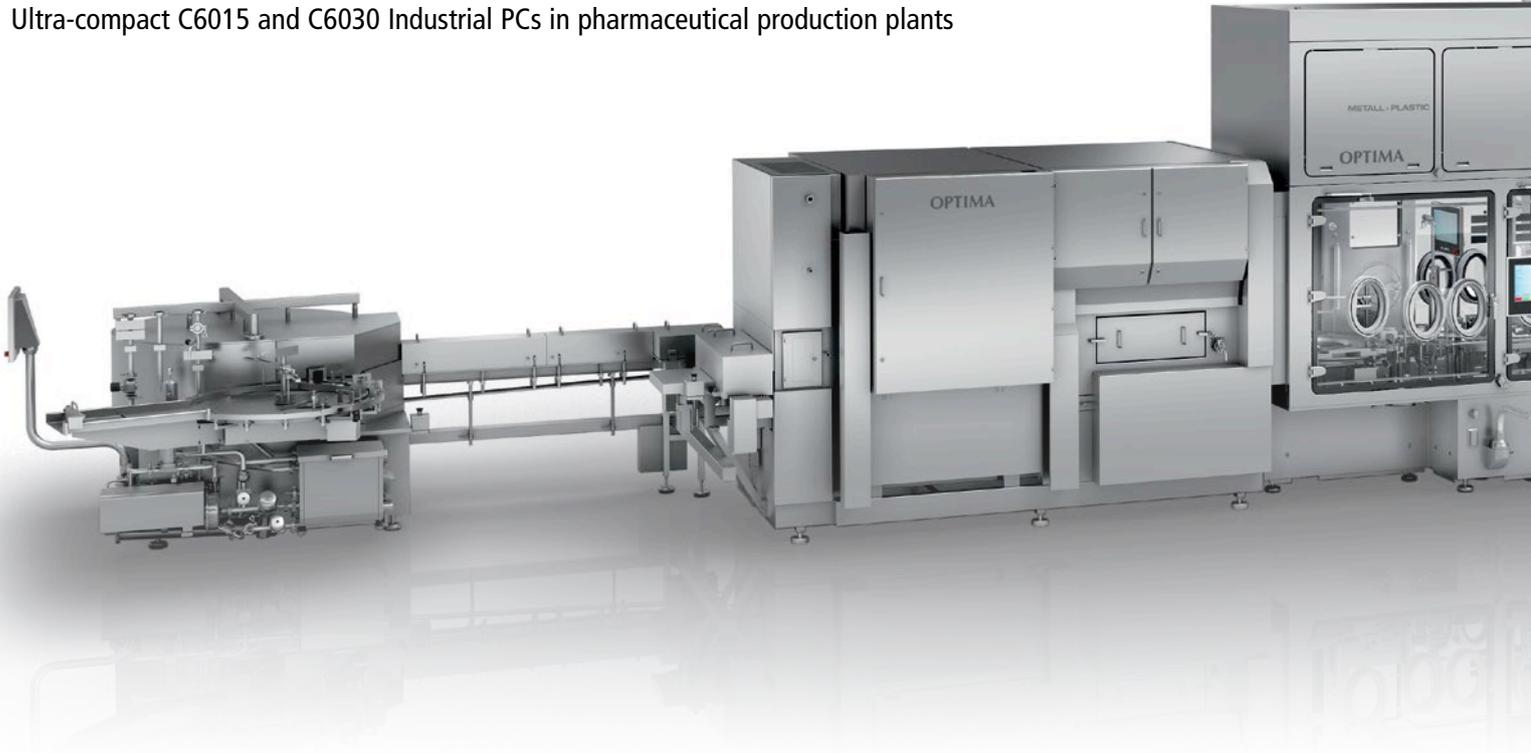


Ultra-compact C6015 and C6030 Industrial PCs in pharmaceutical production plants



Flexible edge devices expand digitalization options for drug filling systems

Optima Packaging Group GmbH, headquartered in Schwäbisch Hall, Germany, employs around 2,450 people worldwide. Its Optima Pharma business unit specializes in systems for bottling liquid or freeze-dried pharmaceuticals in commonly used container formats, such as syringes. What sets its filling systems apart are the optional smart features that can be added to the machines flexibly and easily using ultra-compact C6015 and C6030 Industrial PCs from Beckhoff.

Optima Pharma's filling systems span an entire range of process stages, from cleaning and sterilizing glass containers to filling, sealing and finishing. Heiko Ellwanger, Director Automation Technology, explains: "What we offer the pharmaceuticals sector is a turnkey solution that covers the full scope of manufacturing – from empty glass containers to filled, sealed and validated syringes, carpules, vials and so on. We also set up and pretest our production lines in-house before we ship them out to customers."

Greater flexibility and transparency in pharmaceuticals manufacture

In the past, the pharmaceutical industry mainly wanted filling systems with the highest possible product output. Now though, says Ellwanger, the emphasis is shifting more toward efficient and flexible production in smaller batches: "Increasingly, the sector is using multi-functional produc-

tion systems with minimal setup times instead of the more conventional, highly optimized single-purpose machines. We offer precisely these kinds of multi-functional systems that support a wide variety of container sizes and pharmaceuticals."

Crucial to these systems' broad capabilities are a high level of automation as well as machine designs that rely on as few different format parts as possible. For Heiko Ellwanger, the optional smart features offered by Optima Pharma, which can be added easily if required using C6015 and C6030 ultra-compact Industrial PCs from Beckhoff, are particularly important in this context. "When manufacturing in smaller batches, the individual products are generally expensive, so it's important to avoid producing rejects as far as possible, if not entirely. Our smart product traceability feature plays an important part here. It maximizes manufacturing transparency by ensuring



Optima offers optional smart features that can be added easily to its extensive range of pharmaceutical production systems using ultra-compact Industrial PCs from Beckhoff.

that all relevant machine and production data is available and, in the event of a complaint, can be linked with the individual product in question. This offers pharmaceutical makers an immense advantage as they no longer have to discard a complete production run – perhaps needlessly – out of safety concerns.”

Compact, flexible to install edge devices

Heiko Ellwanger notes that the decision to use the ultra-compact Industrial PCs as edge devices was driven in particular by their exceptionally compact format and their flexibility to install. “Other advantages,” he adds, “are their comprehensive array of ports as well as the scalable performance offered by the breadth of CPUs available. The PCs’ build quality, too, is exceptional, and we can have them custom-branded with the Optima label. Their long-term component availability is hugely important for the pharmaceuticals sector as well. For all these reasons, we’re now using these ultra-compact Industrial PCs as remote gateways group-wide, throughout Optima.”

Many of the smart features rely on comprehensive data capture. This can be used, for example, to optimize filling processes or monitor the condition of drive axes based on power and temperature readings, as well as for classic plant visualization. Says Ellwanger: “The ultra-compact C6030 Industrial PC is ideally suited to data management tasks like this. It has the variety of ports required as well as the computing power, with multiple cores, each clocking at up to 3.6 GHz. Another application is to monitor specific machine stations by video so that we can optimize their individual processes. With the C6015, it’s the exceptionally compact format that’s important for us. We use it as an easy-to-integrate interface gateway – for hand-held scanners, for example.



The ultra-compact C6030 Industrial PC here is a custom-branded version with an Optima label.

The production systems are often extremely large, so it’s important to be able to scale up the number of scanners as needed to enable the machines to be operated efficiently. We simply install a C6015 in each case to handle communication with the plant control system.”

Benefits of using separate edge devices

For Heiko Ellwanger, using separate edge devices offers multiple advantages: “Customers generally specify which overall plant control systems are to be used. The ultra-compact Industrial PCs from Beckhoff give us the flexibility to implement communication with every conceivable type of component, regardless of the vendor. The PCs also have all the requisite interfaces – like the USB ports we need to connect the hand-held scanners, which aren’t necessarily available on the plant control systems.”

Another consideration is that any changes made to a validated production plant make re-validation necessary. Heiko Ellwanger explains: “This involves a considerable amount of effort, so it’s something we try to avoid. Using additional ultra-compact Industrial PCs to expand systems means we can make changes easily, because we’re adding parallel functionality that doesn’t directly affect the pharmaceutical process itself.”

More information:

www.optima-packaging.com/pharma

www.beckhoff.com/c6015

www.beckhoff.com/c6030