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Mitsubishi Electric Türkiye Provides Automation Systems that Enhance Efficiency in the Textile Industry

Ali Kıbrıslı, Servo Motion & PLC Product Consultant Manager at Mitsubishi Electric Türkiye Factory Automation Systems, shares insights on the importance of digitalization in the textile industry and the advantages offered by e-F@ctory solutions.

1. Could you briefly introduce yourself?

I have been working in the Factory Automation Division of Mitsubishi Electric Türkiye for nearly 11 years. During this time, I had the opportunity to take part in major infrastructure projects in Türkiye, such as Marmaray and Başakşehir Çam ve Sakura City Hospital. For the past two years, I have been serving as the Product Manager responsible for Servo and Motion Control systems.

2. **What kind of activities does Mitsubishi Electric Türkiye carry out for the textile industry?**

As Mitsubishi Electric Factory Automation Systems, we provide comprehensive machine automation solutions for the textile industry. We are able to meet all automation requirements of production machines used in textile manufacturing, such as automatic dyeing, drying, and stenter machines. In addition, we offer SCADA software solutions that can be used for production monitoring and planning in process industries and large-scale facilities, as well as our artificial intelligence–based software solutions called MaiLab, which support production quality control and optimization.

In the field of Servo & Motion equipment, for which I am responsible, we have gained significant application experience over the past few years, particularly in pocket sewing automation machines, thanks to our dynamic servo motors and control systems. We create differentiation in these machines through our ability to meet extremely fast cycle time requirements and through our advanced automatic servo gain tuning algorithms. In applications such as stenter machines—where intermediate products are unwound from large rolls, processed, and rewound—precise tension control, which prevents damage to the fabric, can also be achieved through servo motion systems.

On the other hand, Mitsubishi Electric has long been present in the Turkish market with sewing machines developed specifically for the textile industry and, more particularly, for automotive textile products. However, as of 2021, this solution continues under a new structure as a joint venture with Juki, another leading Japanese sewing machine manufacturer.

3. **What advantages do industrial robots offer in textile production?**

Industrial robots can emulate the human arm and perform repetitive tasks continuously, 24/7. In the textile industry, this technology can be utilized in a wide range of applications, from drawing and printing to laser cutting. As a result, increasing the use of robots on the production floor both optimizes product quality and significantly increases production volumes. Robots are also flexibly programmable, enabling manufacturers to quickly adapt their production lines to rapidly changing consumer demands.

4. **The textile industry is highly diversified. Do you offer specific solutions or receive specific demands for different segments of the textile industry?**

As we observe across all manufacturing industries, the textile sector is also facing challenges such as increasing global competition, complex and costly supply and logistics processes, the need for flexible production lines that can quickly adapt to market conditions, and artificial intelligence integration. Through our e-F@ctory concept, Mitsubishi Electric Factory Automation Systems offers a comprehensive solution platform consisting of both hardware and software, enabling manufacturing facilities to manage all processes—from procurement and production to sales and after-sales—within a single integrated framework.

Within this concept, we also provide edge computing, data analytics, and cloud integration solutions that allow manufacturers to differentiate themselves from competitors.

5. **What are your thoughts on the use of data-driven technologies in production? How do they impact global competitiveness?**

We increasingly see that the more data is utilized, the more informed and accurate decisions can be made. Over the past 5–10 years, the concept of “data-driven decision-making,” also known as Industry 4.0, and the digitalization of production data required to enable this concept have become more visible in real-world applications.

In the early stages, when fewer systems were digitalized and data volumes were relatively limited, it was possible for senior management and production managers to derive insights directly from this data. However, today, with the growing number of digitalized systems and smart sensors, and the resulting exponential increase in data volume, it is no longer feasible to extract meaningful insights using traditional technologies or manual analysis alone.

To address this challenge of data overload, companies must either selectively filter data or process it before transmitting it to higher management levels. This second approach—processing data locally on the shop floor—is referred to as Edge Computing. For this purpose, Mitsubishi Electric has developed the MELIPC product. With MELIPC, we offer not only a system that collects production data, but also a platform that provides artificial intelligence–based data analytics within the same package.

In this way, we have integrated Edge Computing into Mitsubishi Electric's e-F@ctory concept—which serves as a comprehensive solution platform covering all processes from raw material supply to after-sales—through our MELIPC product.