

Key technology supporting packaging applications on their journey to Industry 4.0

Mitsubishi Electric and APT Automation present latest developments in Linear Transfer Systems with Smart Carriage technology at interpack 2017.

interpack 2017, Düsseldorf, 04th-10th May 2017, Hall 6, Stand C64

Visitors to the interpack show in Düsseldorf, Germany can experience the latest advances in Mitsubishi Electric's Smart Carriage technology which have been developed in cooperation with e-F@ctory Alliance partner APT Automation. The newly modified prototype features high-speed performance, on-board intelligence, real-time synchronisation with other processes, assured safety and the ability to switch between vertical as well as horizontal tracks.

The Smart Carriage addresses industry challenges such as greater production line flexibility, improved productivity and increased overall equipment effectiveness. It offers significant benefits in a range of industry sectors, but perhaps most significantly in both secondary and end-of-line packaging applications within the [Food and Beverage](#) as well as [Life Science](#) industries. Possible applications include magic belt product grouping, side loaders, wrap-around cartoners, shrink wrappers, as well as transport packing applications in conjunction with carton assemblers, robot top loaders, carton closers and palletising robots.

Data and intelligence are on-board

By offering on-board intelligence and data memory, as well as integrated power for on-carriage devices such as sensors, the

[Smart Carriage](#) can store product information and production data. It can then communicate information from one station to the next which also allows the carriage to detect different products and then decide on optimum routes and destinations. This is supported by a high maximum speed of 4m/sec, plus, acceleration / deceleration of 3g and a positioning accuracy of ± 0.01 mm. With this solution, packaging conveyors are entering a new era of speed and accuracy. Together, these features considerably increase the efficiency and flexibility of the packaging process.

While equipment on a carriage can employ Wi-Fi, for example for data readouts, the linear transfer system provides a physical wired connection to the Smart Carriage. This delivers real-time capability, for example providing synchronisation between the carriages and a robot. Further, with an integrated safety scanner, the linear transfer system can operate in an unguarded environment, optimising both production line flexibility and plant floor utilisation without compromising safety.

A Smart Carriage can also switch between parallel packaging tracks on the linear transfer system, depending on event sequences. For even greater flexibility, the Smart Carriages on the linear transfer system now support 3D Multi-layer motion, with carriages able to switch between both horizontal and vertical tracks on production lines. This means that different product related processes can be matched to the product, and at a later date merged again intelligently on the rails. The result is significantly higher plant utilisation, greatly increased flexibility and decreased redundancy. Additional features of the system include a very small minimum distance of less than 1mm between Smart Carriages on a single track, thus driving further gains in productivity.

All of these capabilities are highlighted in a working demonstration on the Mitsubishi Electric stand showing a high-speed, real-time application with on-board intelligence. Visitors can discuss with experts

from Mitsubishi Electric how the Linear Transfer System with Smart Carriage technology could bring benefits to their individual packaging line applications.

Note:

See how Mitsubishi Electric is able to respond to today's automation demands: eu3a.mitsubishielectric.com/fa/en/solutions

Image captions:



Image 1: The Mitsubishi Electric stand, on Booth C64 in Hall 6, features the newly modified prototype of the linear transfer system with Smart Carriage technology demonstrating high-speed performance, on-board intelligence, real-time synchronisation with other processes, assured safety and the ability to switch between vertical as well as horizontal tracks.

[Source: Mitsubishi Electric Europe B.V.]



Image 2: A key technology in support of the journey to Industry 4.0, the Smart Carriage addresses industry challenges such as greater production line flexibility, improved productivity and increased overall equipment effectiveness.

[Source: Mitsubishi Electric Europe B.V.]

About Mitsubishi Electric

With over 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation is a recognised world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, as well as in products for the energy sector, water and waste water, transportation and building equipment.

With around 135,000 employees the company recorded consolidated group sales of 38.8 billion US Dollars* in the fiscal year ended March 31, 2016.

Our sales offices, research & development centres and manufacturing plants are located in over 30 countries.

Mitsubishi Electric Europe B.V., Factory Automation European Business Group (FA-EBG) has its European headquarters in Ratingen near Dusseldorf, Germany. It is a part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of FA-EBG is to manage sales, service and support across its network of local branches and distributors throughout the EMEA region.

**Exchange rate 113 Yen = 1 US Dollars, last updated 31.3.2016 (Source: Tokyo Foreign Exchange Market)*

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Press contact:

Mitsubishi Electric Europe B.V.

Factory Automation - European Business Group

Monika Torkel

Expert Marketing Communications

Mitsubishi-Electric-Platz 1

40882 Ratingen, Germany

Tel.: +49 (0)2102 486-2150

Fax: +49 (0)2102 486-7780

Monika.Torkel@meg.mee.com



PR agency:

DMA Europa Ltd.

Mr. Roland Renshaw

Europa Building, Arthur Drive, Hoo Farm Industrial Estate, Kidderminster, Worcestershire, UK

Tel.: +44 (0)1562 751436

Fax: +44 (0)1562 748315

roland@dmaeuropa.com

www.dmaeuropa.com