

THE ART OF CONNECTING

Smart products. Smart process. Smart factory.

Industrial 4.0 also known as 'Smart factory' or 'Smart manufacturing', aims to innovatively transition business models and revenue sources with use of advanced information and services. The transformation is driven by mass adoption of technology and digitization across sectors, including automation, manufacturing process improvement and productivity/production optimization. The use of Industrial Internet of Things (IIOT) and Big data analytics has maximized the efficiency of manufacturing ecosystem. The need for factories to be future ready has influenced thoughts and actions of manufacturers to implement technologies to make smart factory a reality. Smart cables and connectors play a vital role to empower smart factories and increase production efficiency.

Being the world's leading suppliers of cable and connection technology, Lapp is already shaping smart factory initiative. The future began long ago at Lapp when we partnered with SmartFactoryKL, a non-profit association founded in 2005. It is a network of industrial and research partners, which initiates and implements together research and development projects, ranging from base technologies to the development of marketable products in Europe. In association with SmartFactoryKL, Lapp has developed a hybrid plug within the frame work that combines data, power supply and pneumatics in one connector and significantly reduces the retrofit times of a modular production plant.

Lapp is dynamically working towards making smart factory a reality by developing solutions to meet the challenges of the future. The product range that will be displayed at the Automation Expo'17 from 9th August to 12th August 2017, will showcase some of Lapp's offering for smart factories. To further strengthen Lapp's offering for the smart factories, the company will launch ETHERLINE®ACCESS, the managed and unmanaged switches, at the [Automation Expo 2017](#). The switches along with data cables and connectors from one source will ensure reliable connectivity for industrial network. The other product range that will be displayed at the Automation Expo 2017, include:

ETHERLINE®, is data communication systems for ETHERNET technology. [ETHERLINE®](#) systems are made up of durable and robust cables and connection components for passive network technology and deliver an effective solution for almost any application, particularly in an industrial environment. They have an increasingly important role to play with the need of future ready factories on the rise.

Under this range of products, we have developed highly flexible [ETHERLINE® FD Cat. 6A](#). These cables can transmit highest data rates with consistent reliability in drag chains that are under constant movement with a data rate of 10 Gbit/s. In order to fulfil the Cat. 6A requirements, we recommend the use of M12 connectors where water-tightness and dirt resistance in accordance with IP67 are required.

We also offer space-saving yet robust solutions such as the 30% thinner ETHERLINE® EC, suitable for use at sensor level which allows the tightest bending radii. Thanks to the

robust PUR outer sheath, the cable can also be used with high mechanical stresses or in oily environments. Another extension to the ETHERLINE® products is the robust 4-wire Cat. 5e Ethernet® cables. These are also available as finished products with a pointed, space-saving M8 connector that is substantially smaller than the M12 connector, commonly used with Industrial Ethernet.

The technology is linked using the PROFINET Industrial Ethernet system. ETHERLINE® range of products are designed with data cables that ensure minimal loss of data/signal, and uses networking which assures high speed data communication. The slim and light design of the components manufactured by Lapp enables robustness with high flexibility best suitable to manage torsion, reeling and unreeling.

Under ETHERLINE®, Lapp is launching ETHERLINE® ACCESS, the managed and unmanaged switches. ETHERLINE® ACCESS is an active network component for industrial Ethernet systems. Lapp believes that the ETHERLINE® range of cables, connectors and switches are the integral part of the company's vision for future factories.

UNITRONIC®, the high-quality [UNITRONIC®](#) data network cables and field bus components provide a forward-looking solution for all applications in industrial machinery and plant engineering. From transmission of simple control signals to field bus signals in complex network structures, this offers a dependable cabling and connection solution for almost every situation. UNITRONIC® 100 CY is highly effective in avoiding leakage of signals during data transmission. This is achieved because of the tinned copper braiding act as a screening material against EMI interference. This especially helps when there is a need for fast, safe and forward-thinking solutions for transferring data.

HITRONIC®, the fibre optic cables are designed to transfer large volumes of data. Communications via fibre optics are fast, efficient, and secure. Even electromagnetic interference has no effect on [HITRONIC®](#) fibre optic cable. The HITRONIC® range is an ideal solution for robots which need high frequency data to be transmitted.

HITRONIC® cables come in three types namely, Glass Optic Fiber, Polymer Optic Fiber, Plastic Cladded Fiber. With the trend moving towards larger data transmission with longer distance and higher bandwidth, HITRONIC® cables is the need of the hour; due to which the factories at a long distance can be well connected with the operational offices.

ÖLFLEX® CONNECT, is a customized [plug 'n' play solution](#), an offering specifically for Machine Tool segment. Everything is possible with this innovative product, from cable assemblies to industry standard servo connections right up to sophisticated high-speed drag-chain systems.

With the years of experience and backed by a team of industrial experts, Lapp is able to offer a huge array of cables that are unique, including [ÖLFLEX®ROBOT 900 P](#), [ÖLFLEX® ROBOT F1](#), [ÖLFLEX ® CONNECT SERVO](#) and [ÖLFLEX ® CONNECT CHAIN 808](#). These are highly flexible control cables which provide end-to-end solution and are ideal for usage with torsional load in harsh environmental conditions during manufacturing.

[Lapp's](#) product portfolio is adapting to the changing requirements of the manufacturing industry by constantly innovating. As a competent partner in the realisation of future-oriented networks, we have greatly extended our cabling and connection technology range for Industrial Ethernet and fibre optic cables so that we can supply the market of the future with ground-breaking solutions. The trend is towards smaller and smaller yet also more and more efficient connectors and cables.

Our aim as a leading cable and connection technology manufacturer is to meet these industry challenges with our smart range of products.