

Tuesday, May 25th, 2021

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Close the Gap!

Process automation goes Ethernet

The usage of Ethernet communication is hardly established in process automation. This industry and their associated applications demand a high degree of robustness, availability, long cable lengths for spacious systems, options for use in Ex areas and special topologies from communication technology. The introduction of Ethernet APL (Advanced Physical Layer according to IEEE 802.3cg) now opens up new possibilities for the process industry.

Based on the newly developed physical layer, process devices can use the Ethernet protocol to communicate robustly with high data rates on existing 2-wire lines (SPE, single pair Ethernet), even in Ex areas (ATEX, IECEx). If required, field devices can even be supplied with power via the communication line using Power over Dataline (PoDL). By using standardized protocols, they can be seamlessly integrated into the Ethernet topology of the overall system. This enables a consistent communication solution from the sensor to the controller.

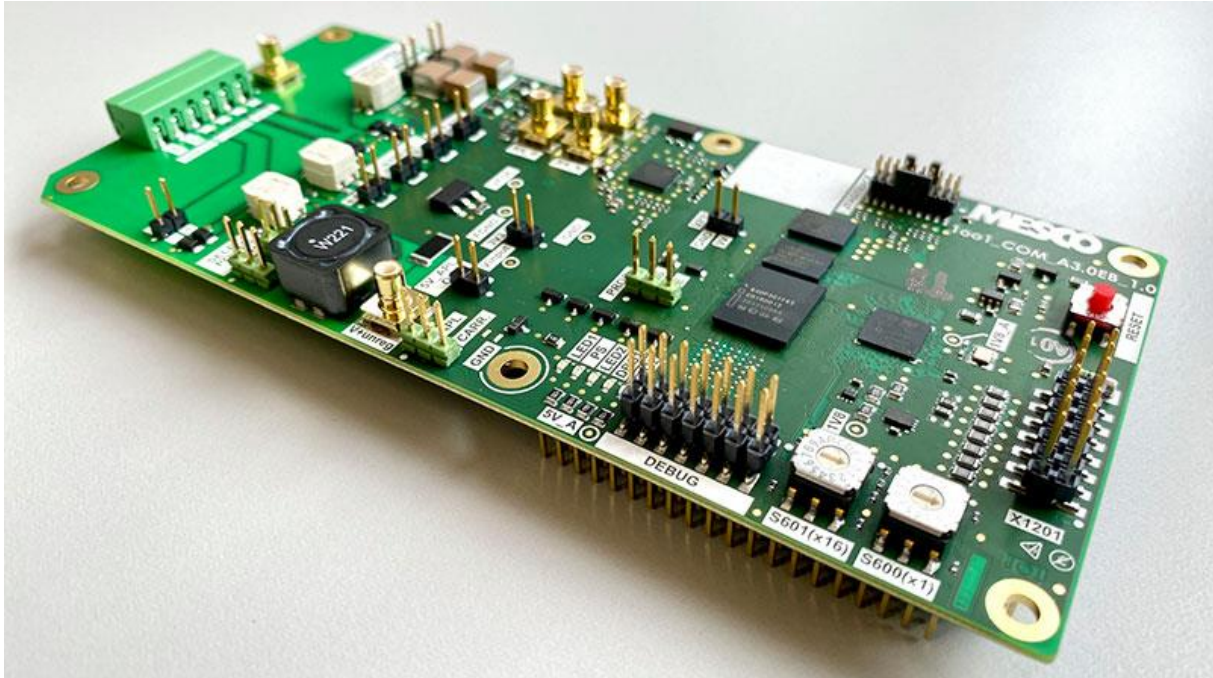
With 10Mbit / s full-duplex Ethernet, the Ethernet APL technology allows the speed to be increased by two to four powers of ten in comparison to conventional process automation protocols - and that on cable lengths of 200m or 1200m. This creates significant added value in both process automation and system optimization.

What MESCO offers for Ethernet APL

With the new Ethernet APL technology, the topics are growing together at MESCO. The company has developed hardware and software for field devices for the process industry for over 30 years, from concept to certification. MESCO can fall back on many years of experience in this field as well as on the know-how on the development of Ethernet nodes in factory automation.

The core competence of MESCO lies in the area of development services. MESCO adapts the solutions individually to the customer's problem. This is an advantage for products that want to have a promising future.

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MESCO Ethernet APL Evaluation Board with a wide range of uses and analysis options.



MESCO offers hardware development, embedded software development, industrial communication, functional safety and explosion protection.

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Meta-Title:

Use of Ethernet communication in process automation

Meta-Description:

The process industry demands robustness, availability, long cable lengths, use in Ex areas and special topologies from communication technology. With Ethernet APL (according to IEEE 802.3cg), new possibilities open up for this. On the physical layer, process devices can use the Ethernet protocol to communicate robustly at high data rates on existing 2-wire lines, even in hazardous areas. If required, field devices can be supplied by power via the communication line using Power over Dataline (PoDL).

Keywords:

Process automation, Ethernet, communication technology, robustness, availability, cable lengths, Ex area, ATEX, IECEx, explosion protection, Ethernet APL, advanced physical layer, IEEE 802.3cg, SPE, single pair ethernet, process devices, Ethernet protocol, high data rates, 2-Wire lines, field device, Power over Dataline, PoDL, sensor, control, 10Mbit/s, full-duplex

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MESCO Engineering is your partner for innovative electronics development for products in the field of process automation and factory automation. Our core competence is the development of hardware and software. The combination of the technical fields of industrial communication, functional safety and explosion protection is our strength. Since 1990 we are offering to our customers – worldwide – up-to-date interbranch know-how, integrated solutions and a comprehensive service. Here an honest, transparent and partnership-like cooperation comes first.

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