



AND
EVERYTHING
FLOWS

Direct Link to the
Process Control System:

THE FIRST ETHERNET-APL- POSITIONER

BY SAMSON



SPECIAL PRINT

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Ethernet-APL has the potential to finally herald the overdue start of the digital era at the field level of process applications. Requiring only a manageable effort and based on the trusted fieldbus cables (type A according to IEC 61158-2), Ethernet-APL enables the field level to communicate seamlessly with the process control system and asset management systems. With the TROVIS 3797 Positioner, SAMSON has launched the world's first Ethernet-APL-certified positioner onto the market, setting a new milestone in process automation.

Networks span half the world, only the field level in process applications seems to have successfully resisted the digitalization megatrend. The majority of field devices is still using 4 to 20 mA connection. Even the aging fieldbus technology has gotten a foothold in very few plants. Ethernet-APL clears the cobwebs from process automation systems.

User-driven technology change

Ethernet-APL was developed specifically for the process industry. It forms the physical layer for Ethernet communication to transmit power and data over a two-wire system. Field devices can be connected in hazardous areas over distances of up to 1,000 meters.

It is basically possible to use any type of industrial Ethernet-based protocol. At a bandwidth of 10 MBit/s, communication is 300 times faster than over the currently available fieldbus networks.

The TROVIS 3797 Positioner with PROFINET provides a standardized system integration according to PA Profile 4, which makes it the perfect choice for state-of-the-art process control systems.

The open architecture of Ethernet-APL makes it possible to implement parallel communication channels, for example OPC UA. No wonder that the most important associations and organizations in the process industry count on Ethernet-APL to be a feasible technology for the future. Equipment users in particular are pushing the wide-spread implementation of this standard.

Their reasoning is obvious: access to device data happens basically in real time. The direct connection at the field level allows for the decentralized configuration and calibration of all assets as well as the automatic detection of devices. In addition, configuration, diagnostic and process data can be read at any time to perform in-depth analyses.

Documentation and device replacements are also much easier. Thanks to the flexible architecture, expansions and a significantly higher level of automation for the entire plant are possible, including IIoT and Industry 4.0 applications. All in all, much greater efficiency is achieved at various points, which can bring down the cost considerably. Users benefit from the manufacturer-independent exchangeability of field units. At the same time, skilled personnel is relieved of routine tasks, which is a benefit as such workers are in increasingly short supply.

One SAMSON positioner for all valves

SAMSON has been an official industry partner of the APL Consortium since its foundation in 2018 and played an active role in the technical development of the standard. Now, the leading valve manufacturer is introducing the first APL-capable positioner onto the market, connecting the process control system with the field level. Development activities for the TROVIS 3797 Positioner with PROFINET communication began in 2019 when field tests were run at a large chemical company. The new model is based on the high-end platform of the proven TROVIS 379x positioner family.

Reliability proven under real-life conditions

Ethernet-APL field units must pass tests relating to their physical and protocol-specific features and demonstrate PA Profile compliance.

Extensive load tests involving around 240 field devices and several process control systems were conducted to verify the reliability of the Ethernet-APL technology under realistic conditions.

TROVIS 379X Positioners serve as the basis for creating a digital twin, fulfilling IIoT and Industry 4.0 requirements. Electronic nameplates provide a unique identification of the valve, actuator and all mounted accessories.

The technology behind the positioners meets the highest standards applied by SAMSON as a leading valve manufacturer. Their modular design makes it easy to retrofit or replace pneumatic and option modules. Such modules can be added, for example to achieve a higher air capacity for both single- and double-acting actuators.

With its TROVIS 3797 Ethernet-APL positioners, SAMSON lifts the field level into the digital era.





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