

IO-Link: the future of hygienic measuring technology is digital



**Pressure transmitter
COMPACT IO-Link** for
diaphragm seal operation
Type series CA1510

Temperature transmitter IO-Link
for resistance thermometer
Type series PA2530

Digitalisation is not sparing process technology either. The proven 4..20 mA current interface continues to be widely used but its use is increasingly coming into question. IO-Link technology represents a promising approach. LABOM Mess- und Regeltechnik GmbH relies on this future-centric technology and has now also launched it for hygienic applications.

“Transmission using the 4...20 mA interface is the workhorse of industrial measuring technology,” explains Thomas Köster, R & D Director at LABOM. Many benefits of this interface have become process industry standards since it was introduced back in the 1950s – however the analogue interface is no longer up-to-date. The majority of measuring devices used in process technology today feature digital processing of digital values. If systems nevertheless operate with analogue transmission, this leads to an inefficient conversion chain. Admittedly field bus systems, which are sometimes regarded as a future-centric alternative, would work digitally but are often too complex and expensive to incorporate directly into field devices.

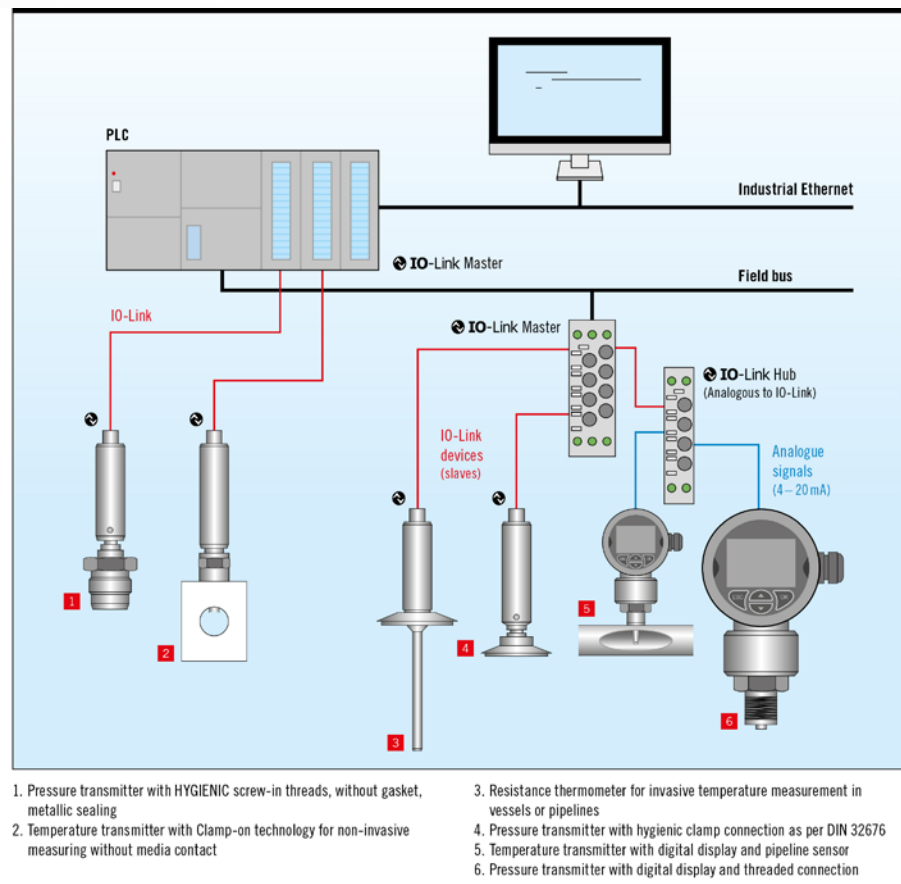
IO-Link offers functional diversity

IO-Link technology represents a promising approach: IO-Link offers the functional diversity of a digital interface without the complexity of a field bus. Originating from factory automation, IO-Link already has wide acceptance in that field. Apart from its wide use, global standardisation by DIN EN IEC 61131-9 also provides for the certainty of future use. Up to now, hygienic applications, in particular, have been problematic as factory automation providers were not set up to meet the requirements of hygienic processes. LABOM Mess- und Regeltechnik GmbH has now solved this problem: as an established supplier for hygienic applications in the pharmaceutical, biotechnology, and food, drink and tobacco sectors, LABOM has now launched pressure and temperature transmitters with an IO-Link interface.

Hygienic pressure and temperature transmitter - with IO-Link interface

The unique feature of this is that the IO-LINK transmitters can be combined with many process connections and measuring devices from the LABOM range to ensure that the right combination can be put together for each process. The typical requirements of hygienic manufacturing, including material certificates, test protocols, specific process connections or the surface qualities of wetted parts, do not present an obstacle to LABOM with its extensive product range and many years of experience in the field of hygienic designs and applications.

System architecture with LABOM IO-Link devices



The product range includes a pressure and temperature transmitter with an IO-Link interface. The pressure transmitter COMPACT IO-Link is suitable for measuring the gauge pressure of gases, vapours and liquids and has been specifically developed for use in the pharmaceutical, food and biotechnology industries. Featuring a compact, hygiene-compatible stainless steel housing and a large number of hygienic process connections, it complies with all the requirements of plant and machine construction for use in the hygiene sector. It can be combined with all common designs of flat and inline diaphragm seals, enabling it to be integrated with ease into every process. The pressure transmitter also stands out on account of its rapid COM 3 (230.4 kBaud) data transmission rate.

Hygienic pressure and temperature transmitter - with IO-Link interface

The temperature transmitter PA2530 with IO-Link interface is designed for use in the pharmaceutical, food and biotechnology sectors. The MiniTherm range is used here for quick response measurements with replaceable measuring insert and clamp-on for temperature measurement without interfering with the process. With its compact and hygienic design, it fits perfectly into the hygienic process industry.

AseptConnect, the hygienic inline housing with standardised device connection, can also be used as an alternative to inline diaphragm seals or for temperature and pressure measurement with smaller pipe diameters.

A real alternative

“With our hygienic transmitters, IO-Link has the potential to replace the established 4...20 mA interface for a significant number of sensors, in hygienic processes too,” summarises Thomas Köster. Sturdy, field bus-neutral, easy to parametrise and install, IO-Link represents a real alternative to the analogue interface or field bus systems in field devices.

The IO-Link system consists of a digital point-to-point connection between the field device (sensor or actuator) and the so-called IO-Link master. Cabling is cost-effective using an unshielded 3-wire cable with widely available M12 plugs. Up to 16 devices can be connected to an IO-Link master without the devices interfering with each other.

Cost-effective integration

The straightforwardness of the point-to-point connection, which was already a clear benefit of the 4...20 mA interface over field bus systems, is a further bonus here: it enables the simple, cost-effective integration of IO-Link devices into process control systems. The IO-Link devices are significantly cheaper than a measuring device with a field bus system.

Fast, digital communication into the field device provides significant added value for the user. There is no risk of distortion of the measured value during transmission and parametrisation can be done conveniently on a PC. IO-Link even enables the parametrisation to be saved in the IO-Link master: if a faulty device needs to be replaced, the new device can therefore be automatically parametrised.

Hygienic pressure and temperature transmitter - with IO-Link interface

Enhancement, no competition

IO-Link is not intended as a replacement for all existing bus systems – on the contrary: IO-Link can be connected to diverse field buses via the master so that existing bus systems are retained and continue communicating from the IO-Link master to the remaining digital infrastructure. This offers the enormous advantage that the entire technology does not need to be converted or replaced: only the communication between field device and master is managed by IO-Link. It is therefore evident: IO-Link does not represent competition for field buses, rather replaces them on the “final straight” into the field device. There should not be anything standing in the way of LABOM IO-Link products being used in the process industry.