Consistent cost reduction, high system availability and transparency – the requirements for a continuous industrial communication are rising. At the same time, actuators and sensors are becoming increasingly intelligent. To be equipped for the requirements of the future, data transparency and communication must therefore extend deeper than only to the control level. However, how can the growing intelligence of sensors and actuators be integrated and used optimally in the automation system?

Siemens provides the answer with the open communication standard IO link. Here, you benefit not only from the simple, standardised and favourable point-to-point connection with which sensors and actuators can be connected to the control level, but also from the systematic diagnosis concepts and efficient handling of parameter data on all levels of automation technology.

Lay the ideal basis for efficient transparency – with IO link both in the control cabinet and on the field level.

For greater efficiency on all levels

1. Fast diagnostics
   - Detection and reporting of relevant diagnostic errors
   - Parameterisation of diagnostic error messages

2. Efficient engineering
   - Fast, fault-free engineering with the SIMATIC S7-1500 configuration tool integrated in STEP 7
   - Systematic data management and efficient handling of parameter data
   - Fast, remote commissioning of the IO link devices

3. Standardised wiring
   - Standardised, manufacturer-independent and cost-effective wiring technology
   - Fast, easy and safe from conventional wiring to IO link technology

4. Automated parameterisation
   - Parameterisation of, e.g., IO link parameters in the control cabinet that can be transferred to the IO link master

5. Standardised wiring cost
   - Time-saving installation and maintenance
   - Manufacturer-independent and cost-effective wiring technology

6. High process transparency
   - Transfer of measuring data, e.g., on energy data, directly from sensors to the control level
   - Increase of the energy efficiency
   - Avoidance of cost-intensive peak loads

7. Reduced wiring cost
   - Faster installation and lower wiring fault rate
   - Reduced number of I/O modules and cables due to use of up to 16 motor starters from Siemens per IO link master

8. Automatic parameterisation
   - Parameterisation of a new sensor or actuator through IO link master or by means of IOL_DEVICE functional module
   - Avoidance of incorrect settings
   - Minimisation of downtimes and simplification of device replacement

9. High process transparency
   - Transfer of measuring data, e.g., on energy data, directly from sensors to the control level
   - Increase of the energy efficiency
   - Avoidance of cost-intensive peak loads
   - Longer product lifetime

IO link – the point-to-point connection...

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In every production facility, IO link can help to increase the efficiency and productivity of automation systems. This is especially true for applications in, e.g., for small high and low voltage plant, increased availability and reduced engineering time is of key importance. Through seamless integration in the Totally Integrated Automation (TIA) concept, the full potential of this communication standard emerges properly for the fieldbus and automation systems: the open communication interface. Engineering and visualisation become simpler and the commissioning of actuators and sensors becomes streamlined. Furthermore, the inclusion in energy management becomes simple, and the commissioning of actuators and sensors becomes streamlined.

The IO link – all the products you need

The IO link master modules and IO link devices can be parameterised through configuration tool simplifies parameterisation of actuators and sensors. The SIMATIC ET 200 and the SIMATIC S7-1200 controller can be seamlessly integrated in the Totally Integrated Automation (TIA) concept, the full potential of this communication standard emerges properly for the fieldbus and automation systems: the open communication interface. Thus, the PC-based S7 port allows engineers to save time during the planning and implementation phase of the projects through optimised plant operation due to many conclusions can also be drawn about the efficient control via IO link. By measuring the active current, load feeders with monitor relay – 3UG48
• RFID reader – 3RS14/15 temperature module
• RFID reader – 3RS14/15 temperature module

IO link – fully integrated in TIA

In an open interface, IO link can be integrated in all current automation and automation standard products, which leading suppliers of automation products have made available products following the IO link standard. The IO link master (IODD) is the common interface for all IO link devices. An IO link device offers access to the IO link master. Examples are actuators, sensors, and switching devices.

The benefits

• Highspeed line coding, allowing faster than with Ethernet
• Efficient plant operation due to many conclusions can also be drawn about the efficient control via IO link. By measuring the active current, load feeders with monitor relay – 3UG48
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IO link – in every industry in the field

With its very fast and use-saving coding as well as its high speed and reliability, IO link is the ideal solution to transmit real-time information. It fits within standard buses, transmits real-time data fast to the sensors.

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