



Protocol Converters

Communication and data processing



- **scalable configuration**
- **high reliability**
- **versatile and special use**

Protocol converters are designed for cases where it is necessary to communicate two or more systems that do not have a common set of communication protocols and interfaces. The use of a converter can also significantly contribute to the fact that the required communication solution will be more economically advantageous and that the time of its implementation will be shortened. Whether by eliminating the necessary development on the part of one of the interconnected systems or by using one of the long-proven converter solutions. Wide possibilities of use are given by the support of various types of platforms, communication standards, system interfaces from a number of areas.

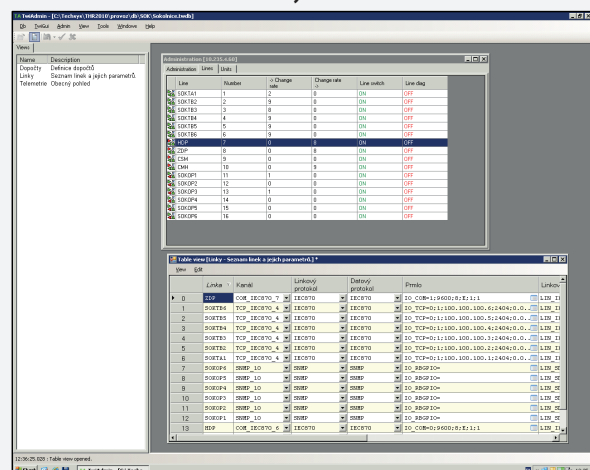
→ Basic Characteristics

- scalable solutions in terms of interface types, communication protocols and performance
- large selection of platforms from special - **HW platform Storm**, through standard industrial PC to virtual environment - **SW platform Twister**
- optional time synchronization via internal module (GPS module), communication protocol or external source (e.g. NTP server)
- local and remote supervision - SW resources for local and remote administration, maintenance and diagnostics
- a very wide range of communication protocols from the fields of energy, transport, industry and telecommunications

- wide possibilities of connection to information and database systems

→ Typical Use

- connecting existing systems with protocols no longer available on newer systems
- for the communication of systems from different application areas, for example the connection of a power system to an industrial system
- interconnection of the technology control system to the information or database system
- special embedded converters extending an existing device or standard product with a communication interface required by the end customer - e.g. when exporting a device or product to an area with other protocol standards
- interconnection of network infrastructure monitoring and supervision system and technological management systems
- integration of modern IoT solutions into existing traditional control and information systems



TechAdmin screenshot for converter monitoring, management, diagnostics and maintenance



Physical and communication interfaces and protocols

Serial communication	RS-232, RS-422, RS-485
Network communication	Ethernet Base-T

- the interface can be supplemented with a number of media converters and additional modules for optical communication
- similarly, it is also possible to use modules for wireless communication (mobile networks – GPRS / LTE, wifi, IoT, etc.)

Communication protocols and interfaces

Simple	Modbus RTU, Modbus TCP
Standard	IEC60870-5-101, IEC60870-5-104, DNP3.0, IEEE C37.118, SNMP, OPC UA
Complicated	IEC61850-8-1, IEC60870-6 TASE2, IEC62056 DLMS/COSEM
Older	RP570, TG809, SSI
Interfaces	ODBC, SOAP, XML, Rest API, message queues Redis
Database systems	SQL – MS SQL, ORACLE, PostgreSQL, MySQL, dBMaria

- Of course, there is support for current communication security solutions according to common Cyber Security standards, such as IEC 62351

→ Storm Converters

Simple converters are built on the Storm platform and ensure the conversion of simple and standard protocols for smaller numbers of communications. Storm's HW and SW platform is designed for industrial environments.

Typical shortcuts here include conversion between protocols:

- IEC60870-5-101 / IEC60870-5-104
- Modbus TCP nebo RTU / IEC60870-5-104
- DNP3.0 / IEC60870-5-104

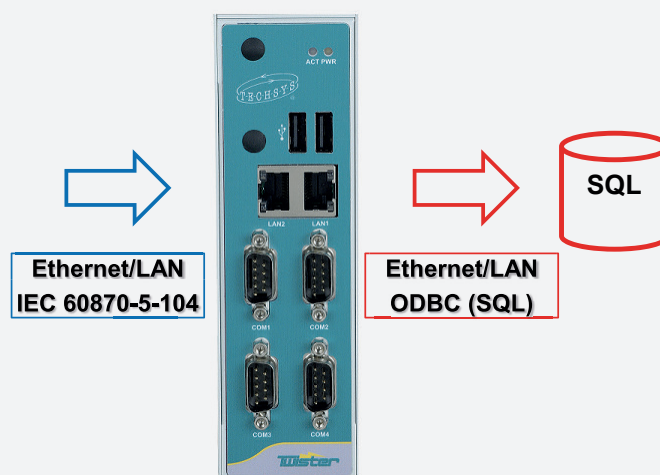


→ Twister Converters

More complex converters are implemented on the SW Twister platform. It is possible to build simple as well as the most powerful converters with a large volume of transmitted data and a large number of communications. HW platform and SW Twister are widely scalable and the solution can be run on both small industrial PCs and server solutions, including virtual.

Typical shortcuts here include conversion between protocols:

- IEC61850-8-1 / IEC60870-5-104
- IEC60870-6 TASE.2 / IEC60870-5-104
- OPC UA / Modbus
- IEC60870-5-104 / ODBC



→ Other services and supplies

- communication recording and complete communication analysis of existing systems with no or incomplete description and documentation
- implementation of historical or no longer supported protocols
- complete implementation of new types of protocols according to their standard description (IEC, DNP, IEEE standards, etc.)
- delivery of a complete converter as a product with complete documentation and installation instructions
- delivery as equipment intended for installation in cubicles or boxes or delivery including cubicles or boxes adapted to the given type of use
- complete turnkey deliveries including installation and commissioning

