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**Bernd: Direct communication of measured values from the process level**

TELE's modular remote I/O system measures various parameters, depending on the requirements, and is not sensitive to interference

**The modular Bernd system from TELE Haase reliably measures and monitors voltage, current, active power, phase sequence, temperature and digital signals in tough industrial environments. Bernd is very talkative and effectively communicates the measured values from the process level directly to the automation level. Voltage-proof for direct measurement in low-voltage networks, interference-resistant, overload-capable, galvanically safe and completely free from additional converters, measuring transducers or isolation amplifiers. If necessary, Bernd even works reliably with inverter-fed machines.**

**Bernd is thus a key component in industrial digitization. As a largely open remote I/O system, the device can be integrated directly into the sensor level and can work with any CPU and various buses (e.g. Profibus, Modbus-RTU, DeviceNet, CANopen, Modbus-TCP, Ethernet / IP), for easy remote maintenance and integration into any control system.**

**Resistant to interference**

Where does Bernd fit in particularly well? Wherever a connection between measuring circuit and control circuit is required in machines and systems at a low voltage level. The design of the terminals, the clearance and creepage distances, the robust design and the voltage resistance allow it to be used directly in the machine's control cabinet. The galvanic isolation of the modules makes it possible for a single system to monitor several system components. Resistant to interference, the system is particularly suitable for use in the process industry as well as in the areas of water & waste, renewable energy and transport.

**Process transparency and modular design**

Bernd measures directly at the process and communicates safely and reliably. This allows intelligent maintenance management through online access to all relevant key indicators and data, up to the individual measured values.

Bernd enables a scalable solution and therefore saves space. The system is individually constructed for the respective application. Due to the direct measurement of electrical values, such as voltage, phase sequence, current or active power in the field plane, Bernd does not need expensive converters or transducers for standard signals. The safe separation of the measuring modules also prevents costs for isolation amplifiers.

**From stand-alone solution to automation system**

Bernd supports the most common field buses for connecting to PAC or PLC systems for communication to the master level. In this way, it can be connected to the master level and thus integrated into a more comprehensive automation system. The device can work with any CPU.

Bernd directly records the measured values and temperature sensor values. In addition, a large number of physical values can be mapped to unit signals (0-10 V; 4-20 mA) via sensors and processed via the monitoring system.

**Flexible in operation**

Bernd has already been successfully used, for example, in the fibre production industry. With current measuring modules, the system measures the current consumption of motors in the fibre production line and sends the data via a Profibus gateway to a Siemens S7 controller in the control room. The advantage of this application is the robust design of the current measuring modules, since they are used directly upon the frequency inverters.

In the area of transport, Bernd monitors the cooling chain in the galleys of high-speed trains. The unit controls the cooling devices via PT100 sensors and ensures that the foodstuffs contained inside remain fresh. The status of this solution is displayed in the form of a traffic light. Green means that everything is OK, yellow signals that the food is usable until the end of the day and red indicates that the food can no longer be sold. At the same time, Bernd also controls the cooling compressors, the defrosting system and the data logging of temperatures on a memory card.

Bernd's abilities are also appreciated in the water & waste industry: the system is used, among other things, as an automatic torque monitoring and control system for an energy-saving fermenter agitator. Bernd continuously evaluates the analogue signals of the frequency converter and detects impermissible torque peaks - for example, if the liquid to be stirred becomes too viscous. In this case, Bernd immediately takes control of the situation and prevents damage to the agitator.

**Text and images are available for download at**
[**http://www.tele-online.com/organisation/kontakt/presse**](http://www.tele-online.com/organisation/kontakt/presse) **.**

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# About TELE

# Founded in 1963, the company makes products for a better world and specializes in high-value industrial electronics such as monitoring technology, time relays, power electronics, and grid and system protection. Known as a Smart Factory, TELE is an innovation laboratory for integrated technologies. At its Vienna location it produces technological solutions for mechanical and plant engineering, renewable energies, water & waste, and other industrial sectors. TELE's organizational culture is free of traditional hierarchies, which creates the space needed for independent thinking and extraordinary ideas. In 2016 the company generated approximately 13 million euros, 9.6 million euros of which were from exports. In addition to the site in Vienna with around 90 employees, TELE Group also consists of an international network of more than 60 trade partners.