

15. Interface to a control system

15.1 Fieldbuses

Fieldbus (or field bus) is the name of a family of industrial computer network protocols used for real-time distributed control, now standardized as IEC 61158. A Bus is a fieldbus cable between a host and field devices connected to multiple segments, sometimes with repeaters. Fieldbuses are industrial communication systems that use a range of media such as copper cable, fiber optics, or wireless, with bit-serial transmission for coupling distributed field devices (sensors, actuators, drives, transducers, analyzers etc.) to a central control or management system. Fieldbus technology replaces the expensive, conventional analogue signal transmission 4-20 mA- or ± 10 V wiring and prevailing with digital technology in the field and enables bidirectional data transmission.

The entire communication between the devices and the automation system as well as the process control station takes place over the bus system, and all operating device data are exclusive transmitted over the fieldbus. The communication between control station, operating terminals, and field devices simplifies the start-up and parameterization of all components. The communications functions allow diagnostic data, which provided by up-to-date field devices, to be evaluated.