

# BUS and Network Cables



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BUS-Systems have become a very vital part of factory automation and it is hard to imagine automation without them. Besides hardware and software components, passive components such as bus cables and connectors play an important role for reliable function of the system. Bus cables must comply with all electrical parameters of the particular system. There is no universally applicable bus cable as the individual requirements are too diverse.

Lutze offers robust, industrial grade Bus and Network cables for the most common used systems worldwide. These cables are being offered for stationary and flexible applications as well as continuous moving applications in drag chains.

## Systems:

### ASI – Actuator-Sensor-Interface

The AS-Interface per EN 50295 is a serial Actuator Sensor Network being used for digital signals in lower field levels. It works in accordance to the Master Slave Principle and presents a cost effective alternative to other serial bus systems.

### Profibus

Profibus is the most common Bus System used in Europe in the area of automated manufacturing.

### Profibus PA

The engineering of these cables per IEC 61158-2 fulfills the requirements in process automation and also offers intrinsically safe connection to the field devices. Profibus PA is a synchronous protocol with DC-current flow free transmission, which is also often designated as H1. The IEC 61158-2 technique is applied at the Profibus PA.

### Profibus DP

This Profibus variant, optimized through increased transmission speed and low installation cost, was especially designed for the communication between automation systems and decentralized peripheral devices in the field range. Profibus DP substitutes the conventional parallel data communication with 24V or 0-20 mA. Lutze Profibus cables meet the specification for Profibus DP type A according to EN 50254. Profibus DP und Profibus FMS use the same transmission technology as well as a unified BUS protocol. Both variants can be operated simultaneously on one cable.

### Profibus Fast Connect®

These cables have an optimized radial, symmetrical construction and can facilitate the application of special tools. Thereby, bus connector plugs are able to be assembled in a fast and installation-friendly way.

### CAN-Bus

CAN-Bus is specified according to ISO 11898. Primarily designed for automotive applications CAN-Buses are used today for the exchange of digital information, Controller Area Network (CAN) for faster data transfer/data exchange.

### Interbus

The Interbus-S was published in 1987 as an open sensor/actuator bus protocol. As a typical sensor/actuator fieldbus, it is configured for the cyclic processing of process data and hence differentiates significantly from data orientated field buses. The main application area of Interbus-S lays in production engineering, process engineering, as well as transport and logistics. Here the main focus is both the automotive industry and the drive technology.

### DeviceNet

DeviceNet is a service related Network, based on the proven CAN-Technology for fast data exchange. The configuration consists of thick cable (aka Trunk cable) and thin cable (aka drop cable). The use of high flexing cables in drag chains is likewise possible. DeviceNet has been standardized by Open DeviceNet Vendor Association (ODVA) and is the leading bus system for industrial automation in North America.

### Industrial ETHERNET

ETHERNET is the most commonly used communication technology. The ETHERNET Standard allows for a remarkable increase in the bandwidth, from 12 Mbits/s for a bus system, to up to 10Gbit/s. In the office world the ETHERNET Standard has already established itself as the standard technology, however the requirements for wiring systems and active components in the industrial environment differ greatly from those in an office environment. On one hand the infrastructure must be more robust; and on the other hand criteria such as real time application require special IT solutions. Consequently, this has resulted in the development of various proprietary systems such as ProfiNet, EtherCAT, Modbus TCP and Powerlink with system specific components which may not be compatible with others. A structured Ethernet cabling according to EN 50173-3 should support each proprietary system. While Lutze offers a large number of industrial ETHERNET cable solutions we are pleased to offer a special innovation with our drag chain suitable Cat6 ETHERNET cable.