INTERBUS

Another internationally used fieldbus system is **INTERBUS**. Since the first presentation of the system in 1987 INTERBUS has been modified, updated and improved and has become integral in numerous applications in the area of Automation Technology.

INTERBUS is an open nonproprietary standard fieldbus system. To ensure its open character, the INTERBUS Club was founded and includes numerous independent manufacturers who devise and implement Interbus specifications. The certification of the bus participants guarantees cooperation without dependancy on any individual manufacturer. The INTERBUS Club is also responsible for the publication of the INTERBUS standards and specifications, as well as marketing material. After the codification as a German national standard (DIN 19258) and a European one (EN 50254) the INTERBUS was also included into the international standard IEC 61158. This international standardization grants manufacturers and users the necessary protection for investments in future developments and applications of Interbus.

INTERBUS
is an open fieldbus system.

Technical Data

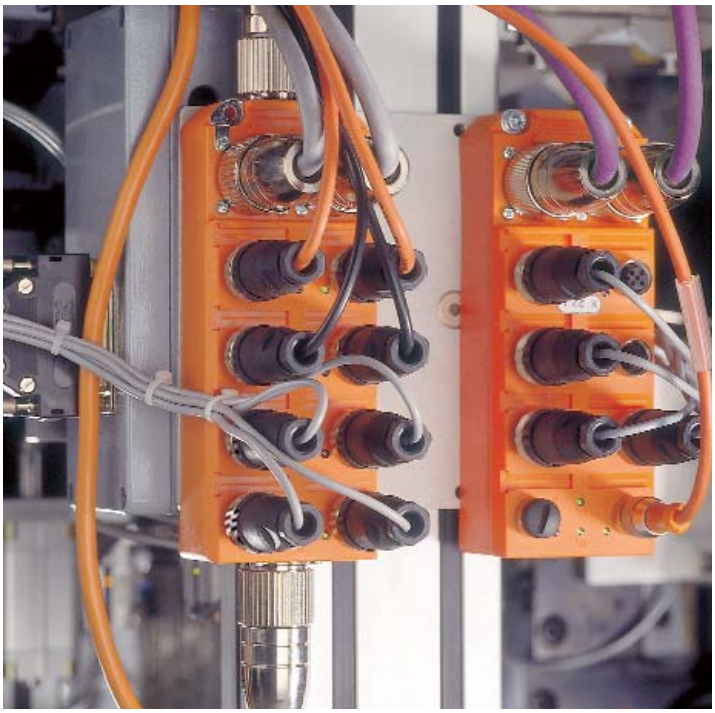
- **Transmission media**
  - Shielded twisted pair copper cable with difference signal transmission acc. to RS422 (RS485)
  - Fiber optic cable
  - Hybrid cable for the joint transmission of power supply and data with the installation remote bus
- **Network topology**
  - Physically, Interbus is built as a ring. Due to special cabling systems (e.g. transmit and receive lines in one cable, special TAP's) it resembles a tree structure.
  - No terminating resistors are required due to the ring structure.
  - Interbus is solely a mono-master system. A main line leaves the bus master; that line is the basis for the building of sub systems for the structuring of the bus.
- **Partial systems in the Interbus**
  - The **Remote Bus** (RBUS) has been designed for long distances. It connects the master with the first bus terminal and general remote bus participants with each other. A drop line from the remote bus is permitted and called a remote bus drop.
  - The **Installation Remote Bus** is a variant of the remote bus. Apart from actual data lines the power supply for the module electronics and sensors is conducted in the Installation Remote Bus Cable.
  - A **Local Bus** (LBUS) is a bus connection branching from the remote bus via a bus terminal and connecting the local bus participants with each other. Different variants of the local bus exist.

Lumberg Products

To ensure the best application of INTERBUS in the decentralized sector, components must meet maximum electromechanical demands. Lumberg's INTERBUS components offer maximum protection for the electronic system due to the material used for the housing and the potting technology. The connection for INTERBUS and the power supply of the module electronics, sensors as well as actuator system is implemented via M23 connectors. Bus terminals or TAPs are available for the connection to the bus.

- **Bus access**
  - The bus is accessed via the master-slave process.
- **Number of participants**
  - Maximum 254 remote bus participants
  - Total of 512 participants with max. 4096 I/O points.
- **Standard transmission rates and cable lengths**
  - Transmission rate: 500 kBit/s
  - Overall remote bus length: 12.8 km
  - Maximum distance between remote bus participants: 400 m
  - Length of the installation remote bus: 50 m
  - Distance between installation remote bus participants: 50 m
  - Admissible current load of the installation remote bus: 4.5 A
- **Bus cycle time**
  Dependent on number of participants
- **Configuration of the nodes**
  Configuration does not require module-specific data, because the basic data are saved in the module. The relevant libraries can be used for a detailed or offline projectioning. The libraries for the Lumberg modules can be obtained from http://www.lumbergusa.com, or by calling 804-379-2010.
- **Addressing**
  Modules are addressed automatically during the start-up of the bus depending on the physical position of the participants in the bus.
- **Diagnostic system**
  A fault of an INTERBUS participant is indicated by the message periphery error. The bus segment and the position of the partici pant concerned is shown on the display of the master and a periphery error bit is set in the control system. A periphery error can be triggered by missing periphery voltage, a short circuit at an input or output or an overload at an output module.

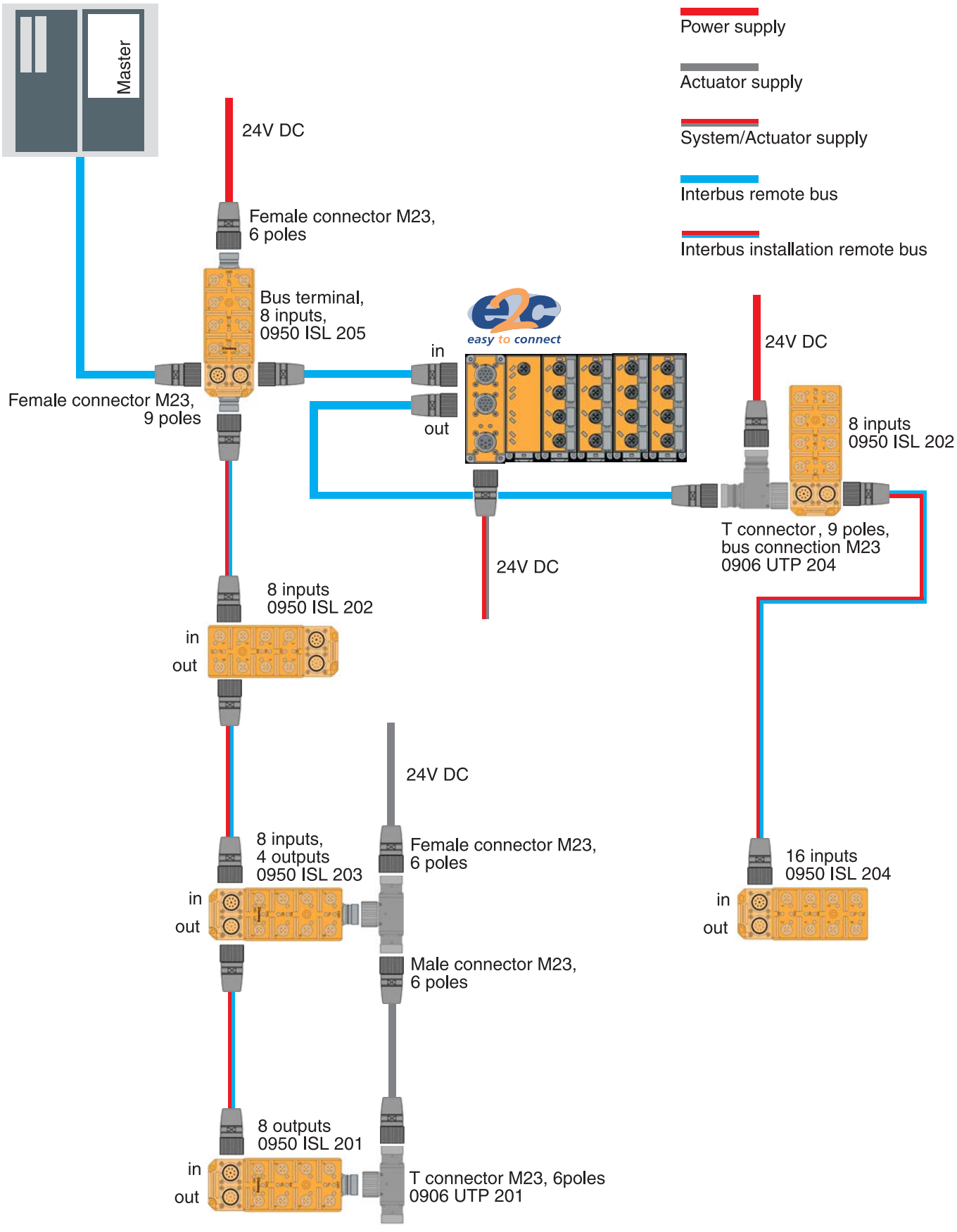
  Lumberg products also include the visual indication of a periphery error. A short circuit at an input is indicated in a module-related way via an error LED. A short circuit or an over load at one of the outputs is indicated channel-related via an error LED allocated to the output.



Components
for maximum electromechnical demands.

Product Characteristics

- Especially suitable for robotic applications (resistance to torsion).
- Very good resistance to oils, coolants and lubricants as well as emulsions.
- Suitable for use in C-Tracks.
- Very good resistance to flying weld slag (e.g.) unfinished constructions).
- Very good resistance to acids, lye and chemical cleaning agents.
- Very good electromagnetic resistance (EMC) and shielded systems.
- Very good vibration and shock resistance.
- UL approved.
- CSA approved.


Master
Power supply
Actuator supply
System/Actuator supply
Interbus remote bus
Interbus installation remote bus
24V DC
Female connector M23,
6 poles
Bus terminal,
8 inputs,
0950 ISL 205
Female connector M23,
9 poles
in
out
easy to connect
24V DC
8 inputs
0950 ISL 202
T connector, 9 poles,
bus connection M23
0906 UTP 204
24V DC
8 inputs
0950 ISL 202
in
out
24V DC
8 inputs,
4 outputs
0950 ISL 203
Female connector M23,
6 poles
Male connector M23,
6 poles
16 inputs
0950 ISL 204
8 outputs
0950 ISL 201
T connector M23, 6poles
0906 UTP 201