

For Sensors and Actuators

BiSS INTERFACE

www.biss-interface.com

- Isochronous real-time data acquisition
- Fast, serial, safe
- Permanent bidirectional
- Point-to-point and multi-slave networking
- Support of safety-related applications
- Compact, cost effective
- Open standard

Applications

- Sensors and actuators
- Motion control
- Machine networking

Benefits

- Remarkable costs savings for
 - embedding
 - cabling, connectors, line drive (RS422, LVDS)
 - initial operation, maintenance
- Ready-to-use IP modules
- Licensing free of charge

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Open Standard Sensor/ Actuator Communication

The BiSS Interface features bidirectional isochronous communication between sensors, actuators and industrial controls. The purely digital link and its protocol has been designed for maximum performance, transmission reliability and security. Remarkable cost savings are obtained by reducing efforts for hardware, for installation and maintenance tasks.

Without affecting the payload data of measurements or interfering with control cycles the communication protocol incorporates a permanent, bidirectional access to slave registers. That way device parameters and additional measurement data, or an electronic ID plate and OEM data, can be accessed at any time – device monitoring and diagnosis is made easy.

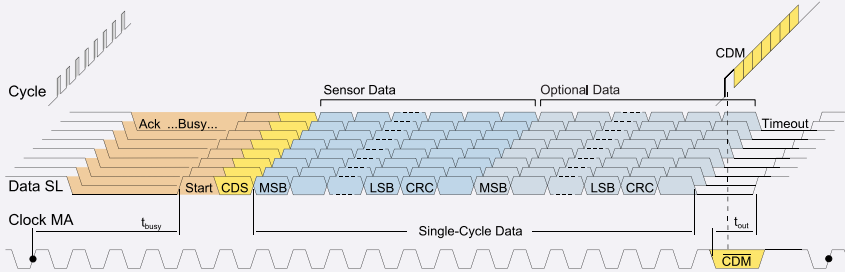
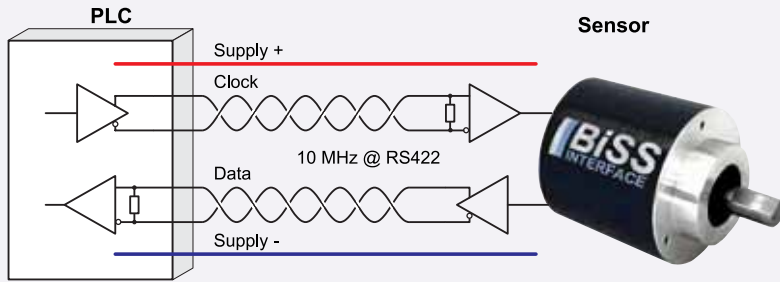
For an unlimited subscriber count the interface master provides the clock signal for simultaneously triggered actions. For an example, a typical RS422 link can support frame repetition rates of 10 μ s even with data words of up to 64 bits.

Data transmission is fully CRC secured for the bidirectional command and register communication and for each single-cycle data channel separately, with an assignment of a start value ensuring channel identification by safety controls.

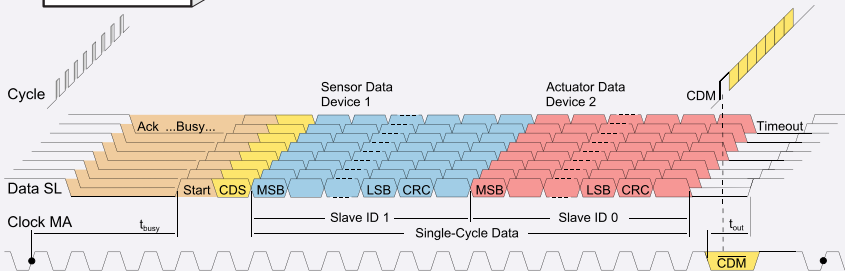
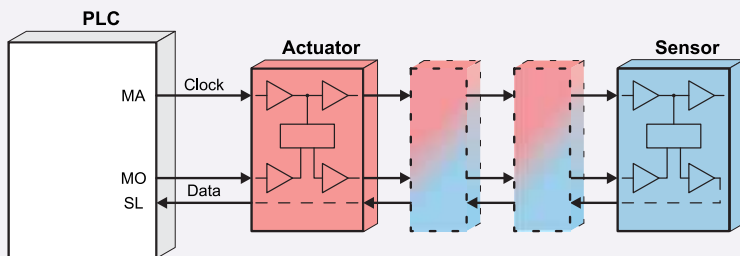
With the BiSS Interface the ASSP / ASiC manufacturer iC-Haus has established an open standard interface for individual automation solutions. On the basis of an OEM license available free of charge interface embedding is supported by IP modules such as VHDL code and an API library for software developers.



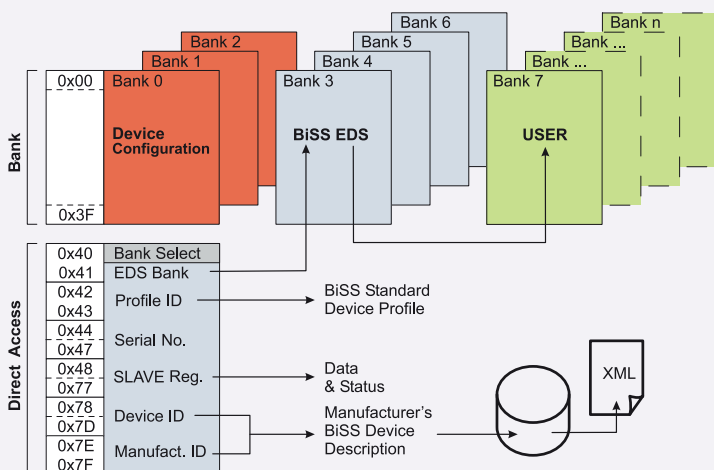
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Point-to-point: Sensor-to-PLC communication with two data words and bidirectional control data: master to slave by CDM, slave to master by CDS. The BiSS master adjusts automatically to line and measurement delays each cycle.



Multi-slave networking: Sensor/actuator network controlled by master output data (MO). The slave devices build up a serial shift register and simply pass on clock and data.



Slave layout example: BiSS C introduces a bank-switch to address extended memory in blocks of 64 bytes each, and direct addresses supplying measurement data and device information. Fixed addresses are agreed for pointers to the following information: electronic data sheet (BiSS EDS), standard device profile, serial number, device description file (XML) and device manufacturer ID.