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Find the *NR&D IBSM-PLUS* at our website: *Click HERE*

IBSM-PLUS

Interbus-S Interface



The IBSM-PLUS is Niobrara's second generation Interbus-S master module for the Square D SY/MAX PLC line. The IBSM-PLUS is a drop-in replacement for the IBSM.

INTERBUS

Interbus-S is an open sensor/actuator bus system which is popular throughout Europe, particularly in the automotive industry. It is an especially fast and deterministic communication protocol for automation of production and processing sensor/actuators. Interbus-S is configured as a serial data ring, called the remote bus, controlled by a master module. Branch data rings, called local bus, can be connected to the remote bus by bus terminal modules. I/O can be connected to both the remote and local bus.

Description

The Niobrara IBSM-Plus is an Interbus-S master module for remote bus interface and control. It is intended for use in a SY/MAX® register rack, where it communicates with a SY/MAX PLC through the rack interface. Communication with the Interbus devices is through an Interbus-S remote bus connector located on the front panel of the module. Also mounted on the front panel are a SY/MAX compatible RS-422 serial communication port and a four character alphanumeric display which conveys operation status and diagnostic information.

When using the IBSM-Plus, the PLC sees the points on the Interbus-S ring just like I/O mounted in the rack. The rack interface will provide up to 4,096 input points (256 registers) and 4,096 output points (256 registers) which are rack addressable.

Features

The IBSM-PLUS's standout feature is its internal register mapping which allows user defined addressing of I/O points from the Interbus. For any Interbus I/O bits mapped to the register rack, PLC scan time is kept to a minimum because unused IBSM registers are not mapped to the rack; they are simply skipped. Any Interbus input or PLC output can be mapped to multiple locations; Interbus input bits can easily be mapped to different Interbus device outputs without processor intervention, minimizing processor scan time and significantly increasing data throughput. This is a powerful feature which is not found in Interbus-S master modules for other PLC systems.

The versatile mapping feature has another important advantage. With other Interbus-S masters, each time an I/O block is added to or removed from the layout, the ladder code for the PLC must be completely rewritten since the addresses of all the I/O downstream from the new or removed block are changed in the PLC I/O table. Because of the I/O mapping in the IBSM, tedious rewriting of existing ladder code is eliminated; only those portions affecting the new or removed block must be inserted or deleted. IBSMSW, Niobrara's setup and configuration software, automatically updates the map when Interbus-S modules are added or removed from the system layout. The software is provided with each IBSM module.

Configuration

The IBSM will reset all outputs when the disable outputs signal is received from the PLC, when the module detects that the processor has halted, or when there is a bus error. If a mismatch occurs

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between the ID cycle of the Interbus and the module's configuration, due to an Interbus cable fault for example, the IBSM will generate a bus error. An internal watchdog timer restarts the IBSM in the case of a soft failure.

The IBSM also contains non-volatile processor equivalent registers in which are stored the Interbus-S I/O mapping table, the raw Interbus-S I/O registers, network diagnostic registers, and module diagnostic registers. These registers are available at the SY/MAX compatible communication port or can be rendered accessible to the PLC by use of the mapper.

The operating system program for the IBSM is stored in flash ROM. This feature allows the user to obtain the latest firmware revisions and upgrades and to download them to the IBSM from a PC using a programming cable such as a Niobrara SC902. Although conveniently reloadable, the firmware is rigorously protected. A hardware switch inside the module must be changed to enable reloading.

Ordering Information

The IBSM is available as:

- **IBSM-PLUS** with one Interbus-S remote bus master port & one RS-422 SY/MAX port

Related Equipment

The IBSM-PLUS has the following equipment available:

- **SC902** RS-232 to RS-422 converter cable for configuring the ISBM-PLUS
- **IBSS** Interbus-S slave module for SY/MAX PLC

Specifications

Warranty / Manual	The IBSM-Plus is furnished with a user manual on cd and carries a one year warranty from the date of shipment. During the warranty period, free firmware upgrades are available. See Niobrara's Standard Terms and Conditions of Sale for additional warranty information.
Dimensions	Standard SY/MAX register module. 1.5" wide by 13" tall by 6.5" deep. Approximately four pounds net. Rugged welded steel enclosure with baked on finish. All connectors and indicators are front mounted except the SY/MAX bus card edge connector on the back.
Power Requirements	From SY/MAX bus. 5 volts, 1.1A.
RS-422 Port	SY/MAX compatible DB9 connector. Same pinout as SY/MAX processor. Slide-lock posts. 50 to 19,200 baud. Even or no parity. CRC or BCC error checksum.
InterBus-S Port	9-pin female D-subminiature connector. For use with three twisted pair, InterBus-S Remote Bus standard cabling. Optically isolated.
Indicators	Four character alphanumeric LED array for module and network status reports. LED power indicator. LED transmit and receive indicators for SY/MAX port.
Setup Registers	Processor equivalent registers store the configuration of the unit and the InterBus I/O map. These registers maintained by AC power when present, by power supply when mounted in rack, and by internal capacitor for up to one week when removed from rack.
PLC Interface	Up to 512 registers

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