

New Dataforth isoLynx® SLX200 Data Acquisition System

June 1, 2005

Dataforth Corporation of Tucson, Arizona, has just introduced the isoLynx® SLX200 data acquisition system, which implements industry standard Modbus RTU and TCP protocols, thereby enabling communication with a wide variety of existing third-party software drivers and HMI/SCADA packages. Fully certified by the Modbus IDA organization, the SLX200 is a fast, intelligent, modular, fully isolated data acquisition system that provides superior reliability, accuracy, and isolation for a wide range of rugged high performance industrial applications. With its ability to interface with more than 650 SCM5B analog I/O modules, the isoLynx SLX200 offers maximum flexibility for factory automation, process control, test and measurement, machine control, and data acquisition applications.

The communication protocol is Modbus RTU for RS-232/485 or Modbus TCP for Ethernet. The SLX200's full certification ensures the device can be easily integrated onto existing Modbus networks, and most common Modbus function codes (1, 2, 3, 4, 5, 6, 15, 16, 23) are supported.

The isoLynx® SLX200 communicates on RS-232/485 non-isolated serial links up to 115.2kbps and 10Mb/s Ethernet. Standard communication is RS-232/485; up to 32 systems can be multidropped on the RS-485 serial link. Optional Ethernet communication boards are available and can be either factory installed or upgraded in the field.

As device configuration is performed using standard Modbus function codes, any third-party software application that supports the Modbus RTU and/or Modbus TCP protocol can be used for configuration. Parameters are stored in non-volatile memory, so configuration only has to happen once. A free software configuration utility provided with the device makes the process easy and intuitive.

The isoLynx® SLX200 supports two analog scan modes: one for general purpose signal monitoring with running average, maximum, and minimum values available for each analog input; the other, used to obtain data with highly accurate time correlation between samples, provides user-configurable scan parameters such as scan list, scan rate, and scan count. Other powerful firmware features of the SLX200 include automatic analog output refresh, which ensures signals remain solid at the levels where they were initially set, and configurable default output values that ensure output signals are set at safe levels when unexpected power outages or brown-outs occur. Power-on self-test results can be obtained visually by glancing at a status LED or programmatically by reading the appropriate register on the device. A section of memory is set aside for general purpose user data, some of which is stored in non-volatile memory.

The flexible, modular design of the SLX200 combines a 12-channel I/O controller base system and optional 8- or 16-channel expansion backplanes, which can be either panel or DIN rail mounted. The system accepts single-channel digital or analog I/O modules and provides 1500Vrms analog I/O isolation. All I/O is channel-to-channel and channel-to-bus isolated.

One I/O controller module can operate up to 60 channels of differential analog I/O and 128 channels of digital I/O, using Dataforth's versatile SCM5B analog and SCMD

digital modules. The I/O controller contains a powerful high-speed microcontroller, A/D and D/A subsystem, communication interface, associated memory, and status LEDs. The A/D system is built around a 16-bit, successive approximation converter and can convert a maximum 60-channel configuration in 15msec. The D/A converter is also a 16-bit device and can write a maximum 60-channel configuration in 30msec.

Key features of the isoLynx® SLX200 data acquisition system include:

- Modbus RTU Support on RS-232/RS-485 (2- and 4-wire) at Data Rates up to 115.2kbps
- Modbus TCP Support on 10Mb/s Ethernet Port
- Analog Input Protection of 240VAC Continuous, 5kV Peak
- Channel-to-Channel and Channel-to-Bus Isolation of 1500Vrms Analog I/O, 4000VDC Digital I/O
- 16-Bit A/D, D/A
- Analog Input Filtering Up to 6 Poles
- $\pm 0.012\%$ Base System Accuracy, No Modules
- $\pm 0.005\%$ Base System Linearity, No Modules
- $\pm 0.03\%$ Module Accuracy
- $\pm 0.005\%$ Module Linearity
- I/O Selection of 650+ Different I/O Modules
- Industrial Operating Temperature of -40°C to $+85^{\circ}\text{C}$ (-40°F to $+185^{\circ}\text{F}$)
- All Modules Certified to CSA, FM, CE, and ATEX Requirements
- System CE Compliant, CSA, FM, and ATEX Approvals Pending
- Free Software Configuration Utility

The ability to select from Dataforth's 650+ standard and custom single-channel SCM5B analog I/O modules means the isoLynx® SLX200 can interface to a broad spectrum of analog signals, including millivolt, volt, milliamp, amp, linearized and non-linearized thermocouple, RTD, potentiometer, slidewire, strain gage, AC-to-true-RMS output, frequency, 2-wire transmitter, and transducers requiring DC excitation. All Dataforth SCM5B standard and custom modules provide superior specifications, including $\pm 0.03\%$ accuracy, $\pm 0.005\%$ linearity, 1500Vrms isolation, and 240VAC input protection. Analog output modules are available that provide a wide selection of current or voltage output ranges; industry standard miniature digital I/O modules are used for digital AC/DC input and output requirements. As users can mix and match most I/O module types on a per-channel basis, wasted I/O channels are reduced and cost-effectiveness ensured.

The highly modular design of the SLX200 and the ability to keep all wiring connected to the system when accessing I/O modules also ensure excellent field serviceability and easy upgrades.

Operation and storage temperature for the isoLynx® SLX200 is -40°C to $+85^{\circ}\text{C}$, and relative humidity range is zero to 95% non-condensing. Power requirement is +5VDC, 2.5W base system with no modules installed. The system is designed to meet the requirements of EN61000-6-4 (radiated/conducted emissions) and EN61000-6-2 (ESD/RF/EFT immunity).

Prices for the isoLynx® SLX200 system start at \$489 for the 12 channel analog base system. Analog and digital I/O modules are priced separately and start at \$85 and \$11.50, respectively.

Dataforth Corporation was established in 1984 and is a worldwide leader in the design and manufacture of signal conditioning, data acquisition, and data communication products for industrial and institutional markets. The company offers a broad range of analog and digital I/O modules, 2-wire transmitters, data acquisition systems, industrial data modems, and modem systems. The Dataforth Quality Management System is ISO9001:2000 registered.

For additional information, call 800-444-7644 toll-free, e-mail sales@dataforth.com, or visit our website at www.dataforth.com.