





isoLynx®

8B SLX300

Data Acquisition System



DATAFORTH®

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Compact, Rugged, Reliable…

8B isoLynx® SLX300 Data Acquisition System



The **8B isoLynx® SLX300** builds on the proven reliability and outstanding performance of the **SCM5B isoLynx® SLX200** and miniature-sized **SensorLex® 8B** isolated signal conditioning modules to provide a compact, low cost solution for wide ranging rugged industrial applications.

Using industry standard Modbus RTU or TCP protocols, the SLX300 enables communication with a broad range of existing third-party software tools and HMI/SCADA packages. Pluggable modules provide the system with maximum flexibility of analog and digital channel configuration, making it ideal for factory automation, process control, test and measurement, machine control, and data acquisition applications.

Multiple powerful, high-speed microcontrollers and high performance data converters at the heart of the SLX300 system enable simultaneous analog and digital I/O at sustained rates of up to 3.0kS/s. The SLX300 also offers advanced features including high-speed acquisition, alarms, counters, and timers.

Modular design allows configuration with up to twelve channels of isolated analog input, four channels of isolated analog output, and eight channels of isolated digital I/O.

Providing the system with powerful functionality, the eight digital I/O channels can be configured to perform seven different advanced special functions: pulse/frequency counter, pulse/frequency counter with de-bounce, waveform measurement, time between events, frequency generator, PWM generator, and one-shot pulse generator. The SLX300 also enables four alarm states – high, high-high, low, and low-low – to be set on the analog input and digital I/O special function channels with alarm output mapped to a user selectable analog or digital output channel.

Additional SLX300 features and special purpose functions specifically for data acquisition and control include:

- Sampled data from analog input channels is processed and stored as current, minimum, maximum, and average readings with selectable averaging weight
- A burst mode of operation allows up to 100kS/s sampling rate on analog input channels with data stored to a 192k sample buffer and also provides a waveform generator function using the analog output channels
- Burst sampling mode can be set up with a single shot or repetitive 48 entry scan list to specify scan sequence, scan rate, and scan count

The 8B isoLynx® SLX300 interfaces to a host system through a choice of communication links and can be either panel or DIN rail mounted. The SLX300 system also is available in a rack-mounted or bench top 1U enclosure.

Key Features and Specifications

- **Modbus RTU and TCP Support**
- **1500Vrms Input-to-Output & Channel-to-Channel Isolation**
- **240Vrms Field-Side Protection**
- **Wide I/O Selection**
  - **Analog – 19 Product Families, 123 Models**
  - **Digital – 6 Product Families, 14 Models**
- **Mix & Match Analog & Digital I/O**
- **Advanced Features Including Alarms, Counters, Timers, PWMs, and more**
- **–40°C to +85°C Operating Temperature**
- **Free Configuration Software**
- **CE Compliant**
- **Hazardous Locations Certifications, UL/CUL Pending**
- **Manufactured per RoHS Directive 2002/95/EC**

Specifications Typical at T_A=+25°C and +5V power

Analog Input	
Channel Count	12
Module Type	Mix and match input types on a per-channel basis 8B30/31/32/33/34/35/36/37/38/40/41/42/43/45/47/50/51/PT All models with 0-5V output
Accuracy(1)	±0.07%
Resolution	±0.024%
Cold Junction Compensation Accuracy, 25ºC Accuracy, -40ºC to +85ºC	 ±0.5ºC ±1.5ºC
Input Protection	240VAC continuous, ESD per EN 61000-6-2
Isolation (Input-to-Output & Ch-to-Ch)	1500Vrms max
Throughput(2)	3.0kS/s max continuous 100kS/s max burst(4), programmable
Sampling Buffer	192k sample, 384k Bytes
Scan List	Up to 48 entries in any order
Averaging	Selectable weight
Alarm	Program High/High-High/Low/Low-Low per channel
Alarm Response	Programmable analog out, digital out
Analog Output	
Channel Count	4
Module Type	Mix and match output types on a per-channel basis 8B39/49 All models with 0-5V input
Accuracy(1)	±0.07%
Resolution	±0.024%
Output Protection	40VAC max, ESD per EN 61000-6-2
Isolation (Output-to-Input & Ch-to-Ch)	1500Vrms max
Throughput(2)	1kS/s max continuous 4kS/s max burst, programmable
Programmable Waveform	16k samples per channel
Digital I/O	
Channel Count	8
Module Type	Mix and match I/O types on a per-channel basis SCMD-MIAC5x, SCMD-MIDC5x SCMD-MOAC5x, SCMD-MODC5x SCMD-MORx5, SCMD-PT
Isolation (Input-to-Output & Ch-to-Ch)	1500Vrms max
Throughput(2)	2.0kS/s max continuous

Digital I/O Special Functions	
Pulse/Frequency Counter	Frequency to 80kHz, count to 10M, RPM to 65k
Pulse/Frequency Counter with De-bounce	Frequency to 50Hz, count to 10M
Waveform Measurement	Frequency to 15kHz, # periods, pulse width, period, duty cycle
Time Between Events	Min, max, avg, selectable time base
Frequency Generator	Up to 100kHz
PWM Generator	Selectable time base
One-Shot Generator	20µs min pulse Programmable pre- and post-delay
Alarm	Program High/High-High/Low/Low-Low per function
Alarm Response	Programmable digital out
Communications	
RS-232	2.4kbps to 921.6kbps, DB-9 connector
RS-485	2.4kbps to 921.6kbps, pluggable screw terminal connector
USB	Full speed, 2.0 compliant, type B connector
Ethernet	10/100 Base-T, static IP, RJ-45 connector
Protocol	
RS-232, RS-485, USB	Modbus RTU
Ethernet	Modbus TCP
Software Tools	
Software Tools	Free configuration software tool
Power	
+5VDC	270mA(3)
7-34VDC (8BPWR-2 required)	320mA(3)
Physical	
Dimensions (l)(w)(h) Panel Mount DIN Rail Mount Bench Top 1U Enclosure	 16.24" x 3.47" x 1.92" (413mm x 88mm x 49mm) 16.24" x 3.47" x 2.00" (413mm x 88mm x 51mm) 16.73" x 6.0" x 1.72" (424.9mm x 152.4mm x 43.7mm)
Mounting	Panel or DIN rail Rack-mounted or bench top 1U enclosure
Environmental	
Operating Temp. Range	–40ºC to +85ºC
Storage Temp. Range	–40ºC to +85ºC
Relative Humidity	0 to 95% Noncondensing
Emissions, EN 61000-6-4	
Radiated, Conducted	Class A
Immunity, EN 61000-6-2	**ISM Group 1**
RF	Performance A, ±0.5% span error
ESD, EFT	Performance B

NOTES:
(1) System accuracy does not include module accuracy or SLX300 CJC accuracy. SLX300 CJC Accuracy replaces CJC Accuracy in 8B37/47 module datasheets. Reference module datasheets for further details.
(2) Throughput varies with system configuration.
(3) Does not include module power consumption. Reference module datasheets for further details.
(4) Burst Mode Scan rate is reduced when CJC, linearization, averaging, and/or alarm functions are enabled.

ReDAQ® Shape SLX300 Software

ReDAQ® Shape, Dataforth's out-of-the-box DAQ software for the SLX300, provides the easiest and most efficient development tool to create, save, and open graphical user interface projects as well as to test, process, and analyze acquired data. Built-in functions in the Acquire and Analyze panels can be used without setup and configuration. Just three easy steps are required to create customized Presentation panels using 18 high quality controls and powerful isoLynx® SLX300 functions.

ReDAQ® Shape also provides the most effective way to set up and configure the 8B isoLynx® SLX300 functions. The software controls are easily used to create, move, re-size, cut, copy, paste, and delete; they also support any graphical file format so presentations made with other software can be loaded into ReDAQ® Shape.

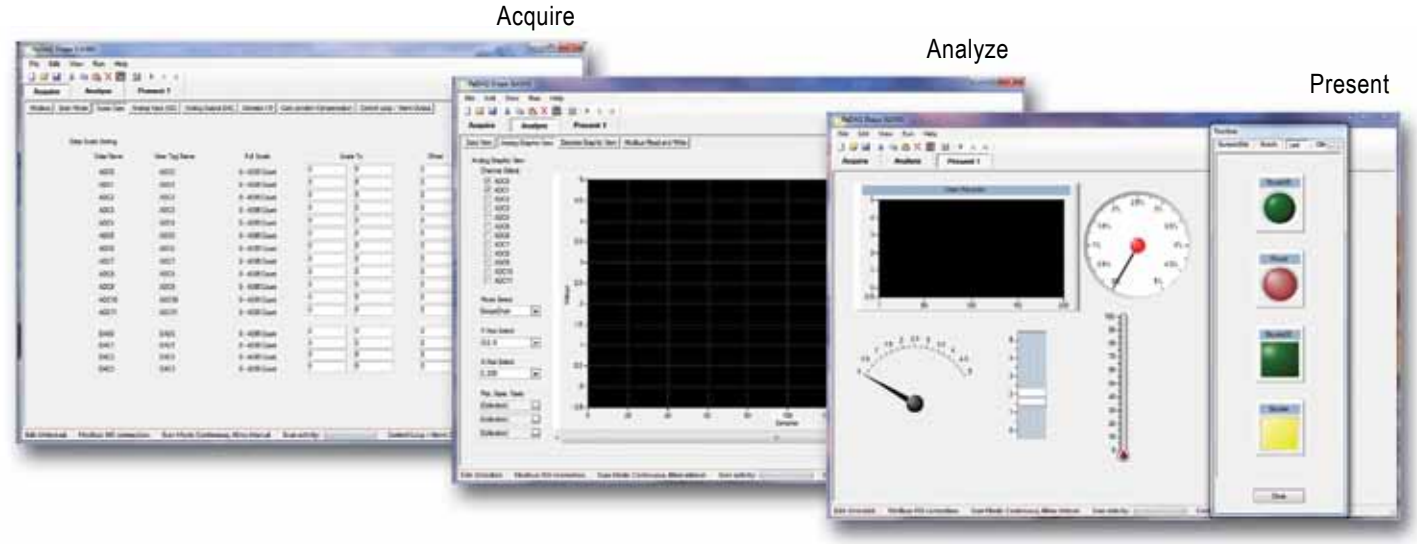
In contrast to other graphical software environments, ReDAQ® Shape SLX300 software has a very short user-learning curve. It was created using programming tools incorporated from Microsoft Visual Studio® and National Instruments Measurement Studio™, ensuring its integrated, across-the-board applicability.

ReDAQ®- Shape Controls

- Button
- Picture Box
- Text Box
- Group Box
- Label
- LED
- Switch
- Numeric Edit
- Thermometer
- Slide
- Tank
- Gage
- Meter
- Knob
- Chart Recorder
- Oscilloscope
- XY Plot
- Discrete Waveform Graph

8B isoLynx® SLX300 Functions

- Continuous and burst scan modes for 12 analog input chs and 4 analog output chs
- Automatically scales data from counts to engineering units
- Eight discrete I/O with seven special functions: pulse/frequency counter, pulse/frequency counter with de-bounce, waveform measurement, time between events, frequency generator, PWM generator, and one-shot pulse generator
- Customer user tag name for any input and output
- Cold Junction Compensation and linearization for thermocouple input modules
- Control loop and alarm output
- Three function timer (count-down, 24hr/day or day/time) with 10 programmable events



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