xSenso™

Analog
I/O Server

REMOTE SENSOR MONITORING AND PROCESS CONTROL WITH THE MOST VERSATILE INDUSTRIAL ANALOG I/O SERVER

Control a process, monitor readings, chart graphs, and log data by just using an Internet web browser



xSenso™ is a compact DIN-rail or wall mount solution that enables analog sensors (voltage or current) to easily and transparently send real-time data to any node on the Internet or to a cloud based application. The options of two analog outputs (voltage or current) or two mechanical relays (AC or DC) make the xSenso a complete industrial process controller.

Compatible with some of the most popular off-the-shelf data acquisition systems such as LabVIEW™ and DASYLab™, xSenso is an ideal solution for remote monitoring and data logging of critical events in process control and automation applications. With its compact and efficient design, xSenso can be affordably installed in dispersed or remote locations. In applications where analog sensors and controllers are used, xSenso can be configured to send alarms via emails when the analog I/O readings are outside predefined ranges. These alarms allow control engineers to take immediate corrective action when certain thresholds are met.

Its embedded web server makes it possible to monitor the inputs and the outputs, chart, or log the data using browsers on computers, smartphones, and tablets from anywhere in the world.

Some examples of analog sensors that can be connected to xSenso are temperature, humidity, pressure, flow, level, force, weight, gas/air quality, etc.

xSenso™ Highlights:

- Two isolated analog voltage/current inputs
- Two isolated analog voltage/current outputs or two mechanical relays
- Redundant input power
- Power excitation per input
- Ethernet port for communication
- USB port for configuration
- Supporting ModbusTCP protocol
- Web based monitoring, charting and data logging
- HTTP/HTTPS POST to cloud based applications
- Email and text message alert notification
- Authentication, up to 256-bit encryption, SSL, SSH
- Industrial operating temperature range of –40° to +85° C
- 5-Year Limited Warranty

LANTRONIX®

CONNECT SMART. DO MORE.

Features and Specifications

> Analog Inputs **All Models**

- Channels: (2) Differential inputs (screw terminal connections)
- Resolution: 16 bits
- Sigma-Delta A/D conversion
- Input Mode: Voltage/Current
- Input Range: ±100mV, ±1V, ±10V, ±20mA
- Scaling: Configurable offset or scale and offset
- Alarm Triggers: Low, high, or range watermarks
- Accuracy:
  +/-100mV Range accuracy = +/-0.1mV @ 25°C
  +/-1V Range accuracy = +/-1mV @ 25°C
  +/-10V Range accuracy = +/-10mV @ 25°C
  +/-20mA Range accuracy = +/-0.02mA @ 25°C
- Excitation: 15VDC, 10mA per channel or 20mA total
- Sampling Rate: 10 per second, per channel
- Input Impedance: Voltage 1M ohm, Current 10 ohms min
- Galvanic Isolation: 3000 VDC

> Analog Outputs **xSenso 21A2**

- Channels: (2) outputs, independently isolated, single ended
- Resolution: 12 bits
- Output Modes: Voltage/Current
- Output Ranges: 0-10V, 0-20mA
- Accuracy:
  0-10V Range accuracy = +/-0.01V at 25°C (load current 10 mA max)
  0-20 mA Range accuracy = +/-0.02 mA at 25°C (load voltage 1.0V max)
- Galvanic Isolation: 3000 VDC

> Relay Outputs **xSenso21R2**

- Channels: (2) independently isolated Mechanical Form-C relays
- Modes: Relay SPDT, NC-NO with COM
- Rated current: 3A
- Rated voltage: 240VAC, 30VDC

> Network Interface

- Interface: (1) Ethernet 10Base-T or 100Base-TX (Auto-sensing)
- Magnetic Isolation: 1500 VAC

> Protocols

- TCP, Modbus TCP, UDP, ARP, ICMP, Telnet, DHCP, BOOTP, HTTP, HTTPS, HTTP/HTTPS POST, FTP/FTPS Push, DNS, SNTP, SMTP AUTH, SNMP (MIB II) v1/v2c/v3, custom MIBs, AutoIP, SSH, SSL, RSS, XML, FTP, Syslog, uPnP (device discovery)

> Security

- Username/Password Authentication
- 128, 192, 256-bit AES Encryption
- SSL, SSH

> Environmental

- Operating Temperature: -40° to +85° C
- Storage Temperature: -40° to +85° C
- Relative Humidity: 5 to 95% (non-condensing)

> Software

- Customizable real-time reading and chart view
- Analog input data can be logged on the PC from which the browser connection is made.
- Configurable Data Acquisition format for selectable network connectivity modes (TCP, UDP, SSL, SSH, TCP-AES)
- Configurable Alarms - connect to send streaming data, send email and text message via email
- In field firmware upgrades via FTP, HTTP/HTTPS and USB Port

> Power*

- (1) Terminal screw block
- (1) Barrel locking connector
  Both may be used simultaneously for power redundancy
- Input Voltage: 9-30VDC
- Consumption: 3W without excitation, 3.5W with excitation

* Power supplies sold separately

> Physical Characteristics

- Dimensions: **xSenso2100** [4.8 x 3.50 x 1 in] (L x W x H)
  xSenso21A2/21R2 [5.25 x 3.50 x 1 in] (L x W x H)
- Weight: **xSenso2100** [.12 kg (.26 lb)]
  xSenso21A2/21R2 [.14 kg (.30 lb)]
- Mounting: DIN rail, wall-mount, desktop

> Regulatory Certifications

- Emissions – FCC Part 15 Class B, EN61326, EN55022, EN55024 Class B, C-Tick
- Safety – UL508, CE EN61010-1, cUL 60950-1, IEC 60950-1, AS/NZS 60950:2000, CSA 22.2 950
- REACH, RoHS

> Warranty

- 5-Year Limited

Contact Us

United States
Call: 800.422.7055
Email: sales@lantronix.com
Buy Online: http://www.lantronix.com
NASDAQ: LTRX

Europe
Call: +31 (0) 76.52.3.6.74 4
Email: EMEA@lantronix.com

Asia/Pacific
Call: +852 3428.2338
Email: asiapacific_sales@lantronix.com

Japan
Call: +81.3.6277.8802
Email: japan_sales@lantronix.com

> Part Number	> Description
XSO210000-01-S	xSenso2100 Two analog input device server, DIN-Rail, 10/100, terminal block and locking barrel input power range 9-30 VDC, -40° to +85° C, RoHS
XSO21A200-01-S	xSenso21A2 Two analog input, two analog output device controller, DIN-Rail, 10/100, terminal block and locking barrel input power range 9-30VDC, -40° to +85° C, RoHS
XSO21R200-01-S	xSenso21R2 Two analog input, two mechanical relay output device controller, DIN-Rail, 10/100, terminal block and locking barrel input power range 9-30VDC, -40° to +85° C, RoHS

> Accessories	> Description
520-113-R	Barrel locking power supply, 12VDC 1A/0.5A, -40° C to 70° C, 2.1MM, US/CAN/JP, RoHS
520-114-R	Barrel locking power supply, 12VDC 1A/0.5A, -40° C to 70° C, 2.1MM, EU, RoHS
520-115-R	Barrel locking power supply, 12VDC 1A/0.5A, -40° C to 70° C, 2.1MM, UK, RoHS
520-116-R	Barrel locking power supply, 12VDC 1A/0.5A, -40° C to 70° C, 2.1MM, AUS, RoHS
X3024DR00-01	30 Watts 24VDC output, hardened DIN-Rail power supply
500-205-R	USB console management cable, USB type A to mini SB type B cable, 1.5m
Calibration Cert	3 point NIST traceable calibration certification available. See Lantronix website for details

xSenso Application Example



© 2013 Lantronix, Inc. and Lantronix are registered trademarks, and DeviceInstaller, and xSenso are trademarks of Lantronix, Inc. LabVIEW and DASYLab are registered trademarks of National Instruments Corp. All other trademarks are the property of their respective owners. Specifications subject to change without notice. All rights reserved. 940-031-R Rev C