8 Multi-Function Analog Inputs



The X-418[™] is a web-enabled, industrial analog input module. It features an eight-channel, 16-bit, analog data acquisition system. Each channel is configurable for single-ended or differential inputs. Programmable voltage ranges include; ±1.28V. ±2.56V, ±5.12V and ±10.24V.

It can be controlled and/or monitored over any TCP/IP network including private networks, IP-based industrial control networks, and the Internet.

Users can operate the X-418 using a web browser, the CBW Mobile app, or custom applications written for a computer, PLC, or other automation controller. The built-in web server means users can access the X-418 directly as a self-contained, stand-alone unit. No gateways, cloud servers, or external services are required. The X-418 can be used, however, with our ControlByWeb.cloud cloud service if

desired which simplifies network setup.

The X-418's built-in interface allows you to create custom "Tasks" for simple and advanced control logic, without the need for scripting. Easily create tasks based on time or input status. The X-418 also has a built-in BASIC interpreter for more advanced or custom applications not achievable through the Task Builder system.

Other features are also included such as: Email notification (encrypted), event scheduling, logging & graphing (graph logged data, FTP logged data, email logged data), Control and monitor up to 32 remote devices, internal power supply voltage monitor, etc.

The X-418 supports several Ethernet protocols including: HTTP/HTTPS, Modbus/TCP, SNMP V1,V2 & V3, NTP, SMTP(Encrypted), and FTP/FTPS. (The status of the device can be retrieved in human readable formats XML and JSON.)

The X-418 supports TLS V1.2 encryption as well as cloud integration(not required) for easier configuration and access. Specifically the X-418 supports HTTPS connections, can send encrypted emails, can communicate with remote devices using TLS, and send logged data to FTP servers over an encrypted connection.

In addition, the X-418 can be configured to automatically connect to ControlByWeb.cloud, ControlByWeb's cloud service. This feature is not required, but does simplify the configuration process and internet access to an X-418 installed behind a network router by eliminating manual configuration of the device and port forwarding setup on routers. The options to use the X-418 as a stand alone device or through a cloud server makes it very powerful and very flexible.

PRODUCT OVERVIEW

Features:

- Built-in web server for configuration and remote monitoring (HTTPS supported).
- Eight-channel, programmable, 16-bit, analog data acquisition system.
 - Programmable voltage ranges include; ±1.28V, ±2.56V, ±5.12V and ±10.24V
- Sensor/Input status can control I/O on other ControlByWeb devices.
- Control/Logic Task Builder for custom control with no scripting necessary.
- ° Configurable logging of all I/O, both local and remote.
- ° Real-time clock with manual or NTP time sync.
- Send email alerts (up to 8 addresses) based on any sensor or input conditions.
- ° Send encrypted emails.
- Auxiliary protocols including Modbus/TCP, SNMP V1,V2 & V3, and Remote Services.
- Custom scripts using the built-in BASIC interpreter provide additional flexibility.
- Ethernet auto-negotiation automatically selects speed, duplex mode and works with straight or crossover cables.
- ° Power Supply: 9 to 28V DC power adapter and/or POE.
- o Simple and easy to use.
- o 5-year warranty.



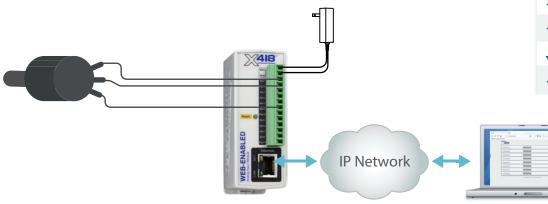
Example X-418 Control Page



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APPLICATIONS & SPECS

Potentiometer Position Sensor Monitoring



Power Requirements

- Voltage:
 - X-418-I: 9-28 VDC
 - X-418-E: POE and/or 9-28VDC
- Max Current: 152mA

Analog Inputs

- Number of Inputs: 4
- Resolution: 16-bit, SAR
- Type:
 - Channels 1-4: Single ended, differential or 4-20mA (0-20mA)
 - Channels 5-8: Single ended or differential
 - Channels 1-8: Pseudo digital input
- Input Range (Programmable): ±1.28V, ±2.56V, ±5.12V, ±10.24V, ±20.48V (differential)
- Max Input Voltage (Vin): -12.5V < Vin < +12.5V
- Input Impedance (Zin): > 500Meg Ohm
- Channel Off Leakage: ±0.6nA (typ)
- Input Common Mode Rejection: >100dB
- Total Unadjusted Error: -9LSB (min), +9LSB (max)
- Voltage Reference Drift: ±5 ppm/°C
- Internal 4-20mA input shunt: 200-ohm, ±0.1%, 25ppm (uses ±5.12V range)
- Logging Rate: 25 Hz
- Sample Rate: 50 Hz

Pseudo Digital Inputs

- Number: Programmable option, channels 1 to 8
- Vih (high-level input voltage): 3.5V
- Vil (low-level input voltage): 1.5V
- Sample Rate: 50 Hz

Real-Time Clock

- Manual or NTP(Network Time Protocol) setup
- NTP Sync Period: Once, Daily, Weekly, On Power-up
- Auto Daylight Savings Adjustment

Capacitor Power Backup

- Backup Functions: Retain Real-Time Clock, External Variables, Relay State, and Counters
- Backup Duration: 2-weeks min

Network

- Type: 10/100 Base-T Ethernet Port
- **Setup:** Static IP address assignment. TCP port selectable

Connectors

- Power/Input/Relays: 14-Position, 3.81mm, Removable
- Network: 8-pin RJ-45

LED Indicators

- Number of LEDs: 5
- o Power on
- o I/O (1-2)
- Network linked
- Network activity

Physical

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- · Size:
- ° 1.41in (35.7mm) wide
- o 3.88in (98.5mm) tall
- ° 3.1in (78mm) deep (not including connector)
- Weight: 5 oz (142 grams)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

Protocols

 HTTP, HTTPS, SSL, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services

Additional Applications

- ✓ I/O Extender
- POE weather station
- Process Controller
- Monitor fluid level
- Monitor temperature
- Monitor water level

Logging

- Log File Size: 3072K (up to 50,688 log entries depending on configuration)
- Storage: Nonvolatile Flash
- Buffer Architecture: Circular Buffer
- Log data can be periodically read and stored on a computer.

Advanced Features

- Task Builder
- · BASIC interpreter
- Remote services

Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 18 Characters

Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- EU EN55024, EN55022
- X-418-I: FCC 47CFR15 (Class B)
- X-418-E: FCC 47CFR15 (Class A)

Product Safety Compliance

 UL 61010-1 (Electrical Equipment for Measurement, Control, and Laboratory Use)



