X-418™

Web-Enabled Industrial Analog Input Module

8 Multi-Function Analog Inputs

PRODUCT OVERVIEW

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.

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.
- Simple and easy to use.
- 5-year warranty.

Example X-418 Control Page

CONTROLby WEB™
www.ControlByWeb.com

Phone: 435-750-5999

Email: Sales@ControlByWeb.com

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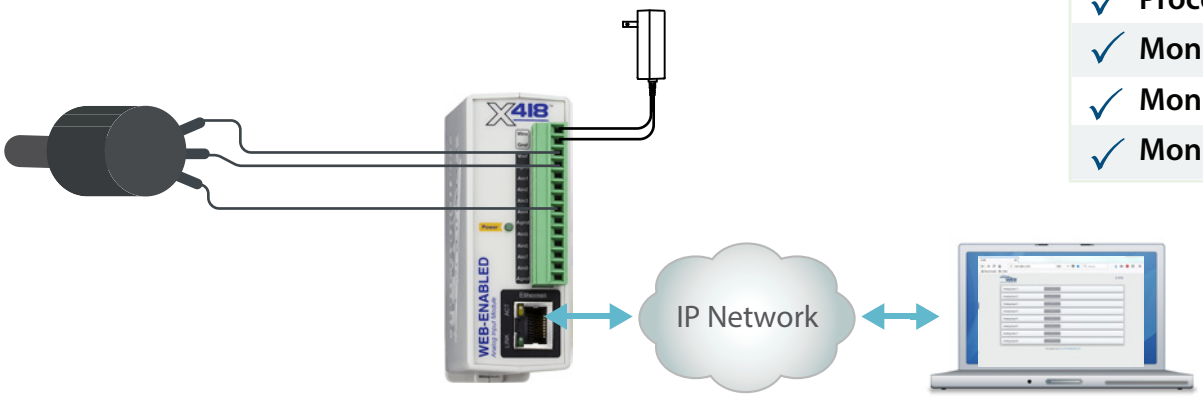
APPLICATIONS & SPECS

Additional Applications

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

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
  - Power on
  - 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
  - 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

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)

CE

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