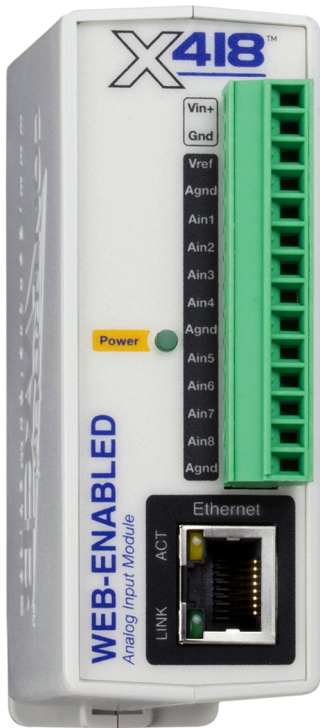


### PRODUCT OVERVIEW



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;  $\pm 1.28V$ ,  $\pm 2.56V$ ,  $\pm 5.12V$  and  $\pm 10.24V$ .

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:

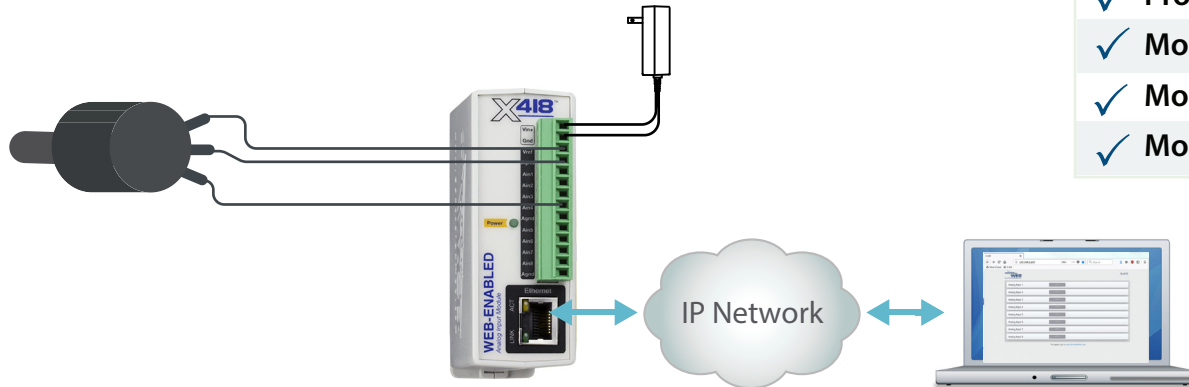
- Built-in web server for configuration and remote monitoring (HTTPS supported).
- Eight-channel, programmable, 16-bit, analog data acquisition system.
  - Programmable voltage ranges include;  $\pm 1.28V$ ,  $\pm 2.56V$ ,  $\pm 5.12V$ ,  $10.24V$ , and  $4-20mA$
- Sensor/Input status can control I/O 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

### APPLICATIONS & SPECS

#### Potentiometer Position Sensor Monitoring



#### Additional Applications

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

#### 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:** 8
- **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):**  $\pm 1.28V$ ,  $\pm 2.56V$ ,  $\pm 5.12V$ ,  $\pm 10.24V$ ,  $\pm 20.48V$  (differential)
- **Max Input Voltage (Vin):**  $-12.5V < V_{in} < +12.5V$
- **Input Impedance (Zin):**  $> 500\text{Meg Ohm}$
- **Channel Off Leakage:**  $\pm 0.6nA$  (typ)
- **Input Common Mode Rejection:**  $> 100dB$
- **Total Unadjusted Error:** -9LSB (min), +9LSB (max)
- **Voltage Reference Drift:**  $\pm 5\text{ ppm}/^{\circ}C$
- **Internal 4-20mA input shunt:** 200-ohm,  $\pm 0.1\%$ , 25ppm (uses  $\pm 5.12V$  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:** 3
  - Power on
  - Network linked
  - Network activity

#### Physical

- **Operating Temperature:**  $-40^{\circ}F$  to  $150^{\circ}F$  ( $-40^{\circ}C$  to  $65.5^{\circ}C$ )
- **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)

