The X-410™ is a multifunction web-enabled module for control and monitoring. The X-410 has four internal relays, four digital inputs, four pulse counters, 16 general purpose timers, 16 general purpose registers and a 1-Wire® bus. The 1-Wire bus supports up to 16 sensors for monitoring temperature, humidity and more. 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-410 using a web browser, the CBW Mobile app, or custom applications written for a computer, PLC, or other automation controller.

The X-410's built-in interface allows you to create custom "Tasks" for simple and advanced control logic. Create tasks based on time, input or outputs' status, or the responsiveness of remote devices. The X-410 also has a built-in BASIC interpreter for custom applications not achievable through the Task Builder system.

Other features are also included such as, email notification, event scheduling, and logging. The X-410 can control and monitor up to 32 remote devices, graph logged data, FTP logged data, email logged data, send encrypted emails, and monitor its power supply voltage.

The X-410 supports a number of 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-410 supports TLS V1.2 encryption as well as cloud integration (not required) for easier configuration and access. Specifically the X-410 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-410 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-410 installed behind a network router by eliminating manual configuration of the device and port forwarding setup on routers.

### Features:

- Four electro-mechanical relays (shared common) independently controlled
- Four digital inputs (shared ground)
- 1-Wire Bus for up to 16 sensors (temperature, humidity, ultrasonic sensors, etc.)
- Control, monitor, and log 32 remote modules, or up to 100 I/O
- User Permissions: Admin, Manager, User
- Tasks
  - 50 Scheduled
  - 50 Conditional
  - 16 Automatic Reboot
  - 20 Override Schedules
- Send email alerts based on user-defined conditions (supports encrypted email servers, such as Gmail)
- Real-Time Clock with NTP server synchronization
- Automatic daylight savings and leap year adjustment
- Highly configurable - Almost any combination of input/relay control possible
- No software required
- Customizable web-based Control Page
- BASIC script support for advanced flexibility
- Configurable logging
- Graphing (logged data)
- HTTPS/TLS encrypted
- Static or DHCP IP address configuration
- Modbus, SNMP, Remote Service, IP Filtering
- Field updatable
- Removable 14-Terminal connector for easy installation
- Rugged Din-Rail/wall-mountable enclosure
- 5-Year Warranty

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**Example Control Page**

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**Web-Enabled Programmable Controller**

4 Digital Inputs, 4 Relays, up to 16 1-Wire® sensors
### X-410™

**4 Digital Inputs, 4 Relays, up to 16 1-Wire sensors**

**APPLICATIONS & SPECS**

**Server Room**

**Control & Monitoring**

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**Power Requirements**

- **Voltage:**
  - X-410-I: 9-28 VDC
  - X-410-E: POE and/or 9-28VDC
- **Max Current:** 240mA

**Relays**

- **Number of Relays:** 4
- **Max Voltage:** 28VAC, 24VDC
- **Max Current:** 1A
- **Contact Type:** SPST (Form 1A) - All relays have a shared common
- **Load Type:** General Purpose
- **Contact Resistance:** 1 milliohm max
- **Contact Material:** AgNi
- **Electrical Life:** 100K operations (Min)
- **Mechanical Life:** 5M cycles (Min)
- **Environmental Rating:** Over voltage Category II, Pollution Degree 2
- **Relay Modes:** ON/OFF or Pulsed
- **Pulse Timer Duration:** 0.1 to 86,400 Seconds (1-day)

**Digital Inputs**

- **Number of Inputs:** 4
- **Type:** Non-Isolated
- **Voltage Range:** 4-26 VDC
- **Current:** 950uA @ 4V, 8.5mA @ 26V
- **Minimum Hold Time:** 20mS
- **Input Functions:** Monitor State, Control Relays, Control Remote Relays, Scalable Counter, On Timer, Total On Timer, Frequency
- **Maximum Count:** 24-bit
- **Max Count Rate:** 20Hz Max (Dependent on Configuration)
- **Edge Trigger:** Rising, Falling or Both

**Temperature Sensors**

- **Maximum Number of Sensors:** 16
- **Type:** Dallas Semiconductor DS18B20
- **Temperature Range:** -67°F to 257°F (-55°C to +125°C)
- **Accuracy:** ±0.5°C (from -10°C to +85°C)
- **Sensor Functions:** Monitor Temperature, Log Temperature, Email Alerts, SNMP Traps
- **Humidity Type:** Xytronix Model X-DTHS-P sensor
- **Humidity Range:** 0-100% RH
- **Accuracy:** ±2%
- **Max Cable Length:** 600 feet (180m) maximum combined cable length

**Real-Time Clock**

- **Backup Functions:** Retain Real-Time Clock, External Variables, Relay State, and Counters
- **Backup Duration:** 3 days minimum

**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:** 11
  - Power on
  - Relay coil energized 1-4
  - Digital Input 1-4
  - 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)

**Protocols**

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

**Logging**

- **Log File Size:** 512K (up to 8,448 logs)
- **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-410-I: FCC 47CFR15 (Class B)**
- **X-410-E: FCC 47CFR15 (Class A)**

**Product Safety Compliance**

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

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