CONTROL by WEB™
www.ControlByWeb.com

# Product Catalog 17.1

Sales@ControlByWeb.com


Remote Control | Remote Monitoring | Industrial Automation
Data Acquisition | Temperature Monitoring | Security Monitoring
Equipment Control | Weather Station Monitoring

## Introduction

ControlByWeb™ products are high-end components for remote monitoring and control applications. Companies, organizations, and individuals use our products to monitor and control many different types of equipment and systems in real-time from any computer using a web browser. Our products can be used as stand-alone devices in simple applications, offering a complete solution requiring no additional equipment. They can also be used as building-blocks in large systems.

## How They Work

Each ControlByWeb product has a small combination of I/O (inputs & outputs) and a built-in web server. Sensors, switches, voltages, etc., can be connected to the inputs for monitoring various parameters, conditions, or events of interest such as temperatures, voltages, or alarms.

Outputs (usually relays) can be used to control just about anything, including lights, bells, motors, computers, heating systems, etc. Because our products have a built-in web server, users can view input parameters and control relay outputs using a simple web page from just about any web browser. In addition, our products support multiple protocols so they can communicate directly with computers, PLCs, and automation controllers in more advanced control systems.

## Example Applications

ControlByWeb products are used to monitor temperature, humidity, power, tank levels, pressure, the status of doors, windows, production machines, and much more. Our products are also used to control computers (remote reboot), communications equipment, lights, bells, motors, pumps, HVAC units, signs, gates, and much more.

## Why ControlByWeb™

ControlByWeb products are designed to be extremely robust and reliable. Although they are affordably priced, no shortcuts were taken in their design, and no compromises were made in the parts used. Some would say that our products are “over engineered” because there are many internal parts that could be replaced with less expensive versions or even removed to save money, but we believe it’s more important to build them right than to build them cheap.

Our products are carefully made in the USA at our own facilities and each product is inspected many times at different levels of production and tested before it is shipped. Our firmware is tested both manually and automatically for long time periods to verify its integrity before it is released. Our staff is very knowledgeable and we are interested in doing whatever we can to make sure all projects that use our products are successful. These are just a few reasons to choose ControlByWeb.

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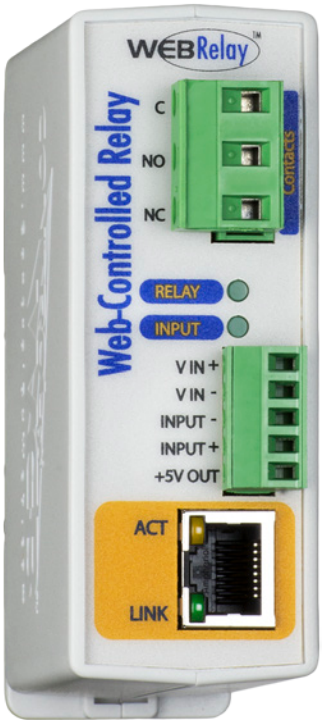
# WebRelay™

## Single Relay & Input Module

*One Optically-Isolated Input, One Relay, Manual/Automatic Reboot Modes*

## PRODUCT OVERVIEW




WebRelay™ provides reliable remote relay control and discrete signal monitoring over any IP network.

WebRelay can be used in countless applications, including pump and motor control, security lock systems, remote reboot, and lighting control.

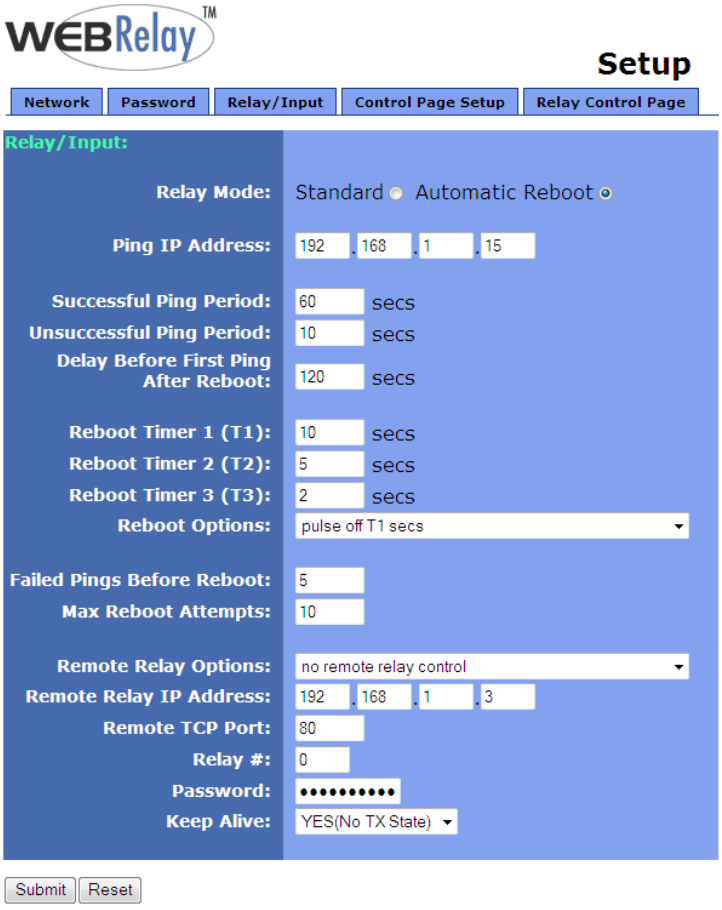
WebRelay's powerful and flexible design make imagination its only limit.

In addition to its built-in relay, WebRelay has an optically-isolated input that can be used to monitor the state of devices, control the relay, or control a remote relay somewhere else on the network.

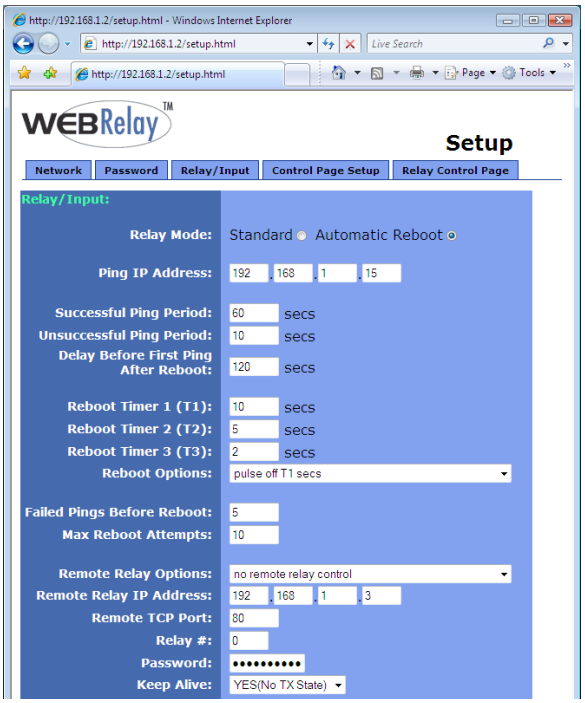
This feature is useful to extend the output of a PLC to another building, or to allow a switch or sensor to control a device at a distant location.

## Features:

- No programming required.
- Full control using a standard web browser or text-based XML messages.
- Can operate as a Modbus TCP/IP slave.
- Password protected.
- 12-Amp relay contacts.
- On/Off and Pulse modes.
- Optically-isolated input can be used for:
- Monitoring
- Relay control
- Remote relay control (Peer to Peer)
- Automatic Reboot controller mode for remote reboot of computers and network devices.
- Selectable TCP ports.
- Two removable terminal connectors included.
- Rugged DIN-Rail/wall mountable enclosure.
- Two power supply options available:
  - 9-28 VDC
  - Power-Over-Ethernet (802.3af) or 5VDC




*Automatic Reboot Options*




*Relay Options*

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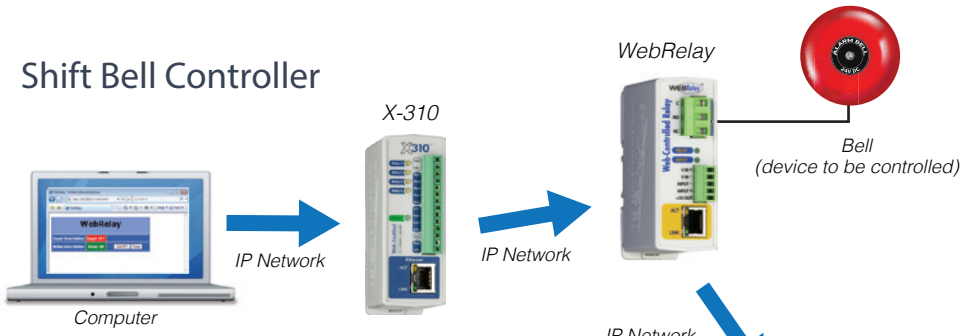
## APPLICATIONS & SPECS

### Shift Bell Controller




### Additional Applications

- ✓ Remote Reboot
- ✓ Pump Control
- ✓ Motor Control
- ✓ Remote Relay
- ✓ Remote PLC Control
- ✓ Home Automation
- ✓ Industrial Automation
- ✓ More...

### Models:

- Current: X-WR-1R12-1I-I , X-WR-1R12-1I-E
- Obsolete: X-WR-1R12-1I5-I, X-WR-1R12-1I24-I, X-WR-1R12-1I5-E (replaced with current models)

### Power Requirements

- **Voltage:**
  - X-WR-1R12-1I-I: 9-28VDC
  - X-WR-1R12-1I-E: POE and/or 9-28VDC
  - X-WR-1R12-1I5-I: 9-28VDC
  - X-WR-1R12-1I24-I: 9-28VDC
  - X-WR-1R12-1I5-E: POE Class 1 (0.44 to 3.84 Watt) or 5V±5%
- **Current:** 313 mA Max

### Relays

- **Number of Relays:** 1
- **Max Voltage:** 240VAC, 30VDC
- **Max Current:** 12A
- **Contact Type:** SPDT (Form 1C)
- **Load Type:** General Purpose
- **Contact Resistance:** < 30 milliohms initial
- **Contact Material:** AgSnO2
- **Electrical Life:** 100K cycles (Typical)
- **Mechanical Life:** 10M cycles (Typical)
- **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:** 1
- **Type:** Optically-Isolated
- **Voltage Range:**
  - X-WR-1R12-1I-I: 4-26 VDC
  - X-WR-1R12-1I-E: 4-26 VDC
  - X-WR-1R12-1I5-I: 4-12VDC
  - X-WR-1R12-1I24-I: 11-26VDC
  - X-WR-1R12-1I5-E: 4-12VDC
- **Current:**
  - X-WR-1R12-1I-I: 950uA @ 4V, 8.5mA @ 26V
  - X-WR-1R12-1I-E: 950uA @ 4V, 8.5mA @ 26V
  - X-WR-1R12-1I5-I: 4mA @ 4V, 16mA @ 12V
  - X-WR-1R12-1I24-I: 3.2mA @ 11V, 8.2mA @ 26V
  - X-WR-1R12-1I5-E: 4mA @ 4V, 16mA @ 12V
- **Minimum Hold Time:** 25mS
- **Input Isolation:** 1500Vrms
- **Input Functions:** Monitor, Local Relay Control, Remote Relay Control

### Network

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

### Connectors

- **Power/Input:** 5-Position Removable
- **Relays/Inputs:** 3-Position Removable
- **Network:** 8-pin RJ-45

### LED Indicators

- **Number of LEDs:** 4
  - Digital input voltage applied
  - Relay coil energized
  - 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, XML, Modbus TCP/IP

### Logging

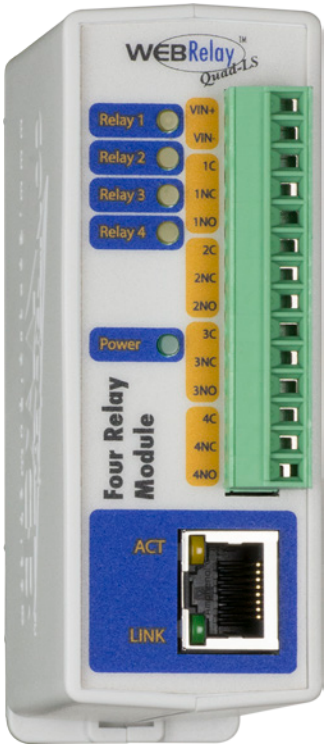
- **Log File Size:** 512K (max 28,829 logs)
- **Storage:** Nonvolatile Flash
- **Buffer Architecture:** Circular Buffer
- Log data can be periodically read and stored on a computer

### Advanced Features

- BASIC interpreter
- Remote services - Avoid most firewall issues with outbound connection to Web Services

### Password Settings

- **Password protection on setup page:** Yes
- **Password protection on control page:** Optional
- **Password Encoding:** Base 64
- **Max Password Length:** 10 Characters




For many applications, WebRelay- Quad™ is the fastest, easiest, least expensive, and most reliable way to remotely control equipment over an IP network, including the Internet.

WebRelay-Quad™ is used by many different companies for hundreds of applications such as industrial control, security, remote control, remote reset, and much more.

It has four low-signal relays that can individually switch up to 1-Amp at 28V.

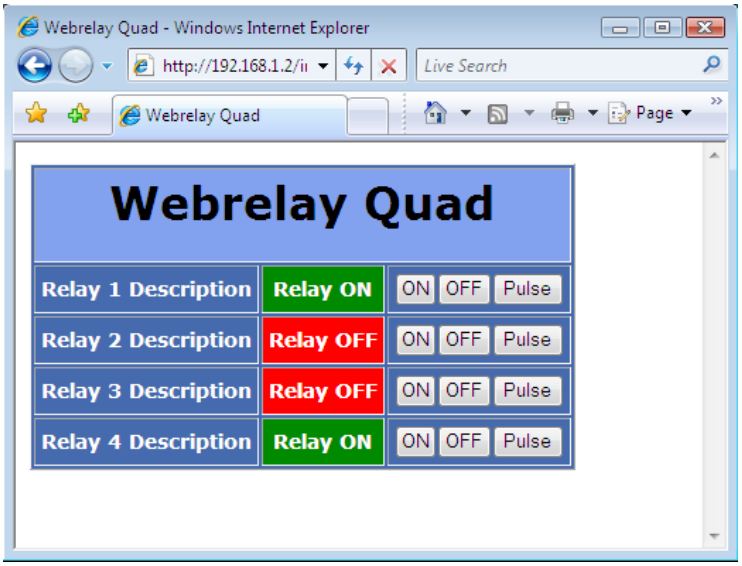
Each relay can be turned on, off, or pulsed using the built-in web pages or by running custom scripts from a computer or dedicated controller.

It is extremely versatile and can be made to fit almost any remote relay control need.

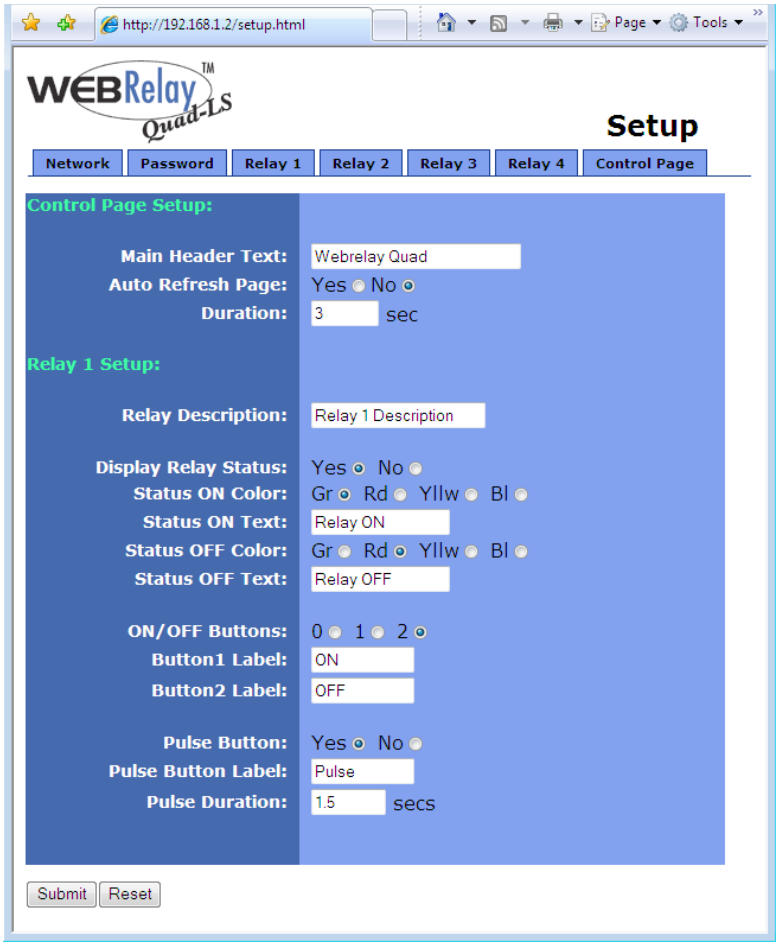
## Features:

- Built-in web server for setup and remote relay control from a web-browser.
- No special software or device drivers required.
- XML status and control pages makes communications with custom software applications simple.
- Can operate as Modbus TCP/IP slave device.
- Four independent, 28VAC, 24VDC, 1-Amp Relays (SPDT).
- On/Off and Pulse modes.
- Rugged DIN-Rail/wall mountable enclosure.
- Includes a 14-pin industrial terminal connector.
- Power Supply Options:
  - 9-28 VDC
  - Power-Over-Ethernet (802.3af) or 5VDC

The WebRelay-Quad™ is fully configured in minutes using a web browser. No additional software is needed.




*Relay Options*

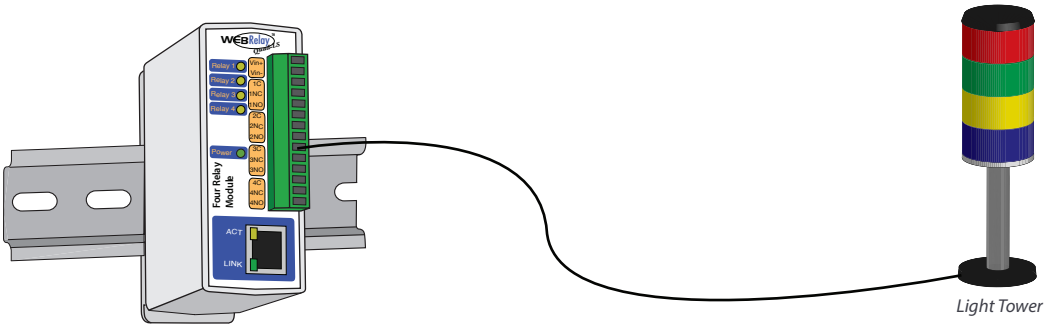



*Individual Relay Options*

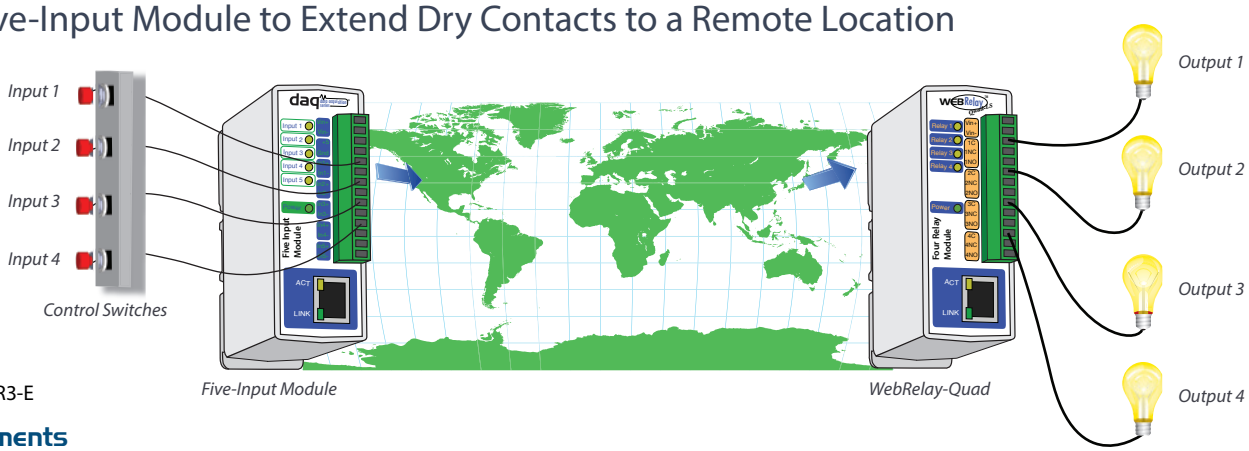
## Additional Applications

- ✓ Industrial Control
- ✓ Remote Reset
- ✓ Security
- ✓ Remote Control
- ✓ More...

## Four-Color Light Tower Control




## Use with Five-Input Module to Extend Dry Contacts to a Remote Location




### Models:

- X-WR-4R3-I, X-WR-4R3-E

### Power Requirements

- Voltage:
  - X-WR-4R3-I: 9-28VDC
  - X-WR-4R3-E: POE Class 1 (0.44 to 3.84 Watt) or 5V±5%
- Max Current:
  - X-WR-4R3-I: 320mA Max
  - X-WR-4R3-E: 477mA Max

### Relay Contacts

- Number of Relays: 4
- Max Voltage: 28VAC, 24VDC
- Max Current: 3A
- Contact Type: SPDT (Form 1C)
- Load Type: General Purpose
- Contact Resistance: < 50 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- Environmental Rating: Over voltage Category II, Pollution Degree 2
- Relay Modes: ON/OFF or Pulse
- Pulse Timer Duration: 0.1 to 86,400 Seconds (1-day)

### Network

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

### Connectors

- Power & Relays 1-4: 14-Position, 3.81mm, Removable
- Network: 8-pin RJ-45

### LED Indicators

- Number of LEDs: 7
  - Power on
  - Relay coil energized 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)
- Weight: 5 oz (142 grams)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

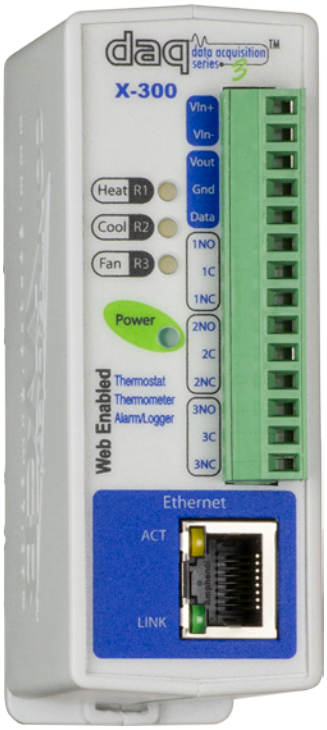
### Protocols

- HTTP, XML, Modbus

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 10 Characters

## PRODUCT OVERVIEW




The X-300™ is two products in one package!

First, the X-300™ is a powerful web-based temperature logging instrument that allows you to monitor temperatures via an IP network.

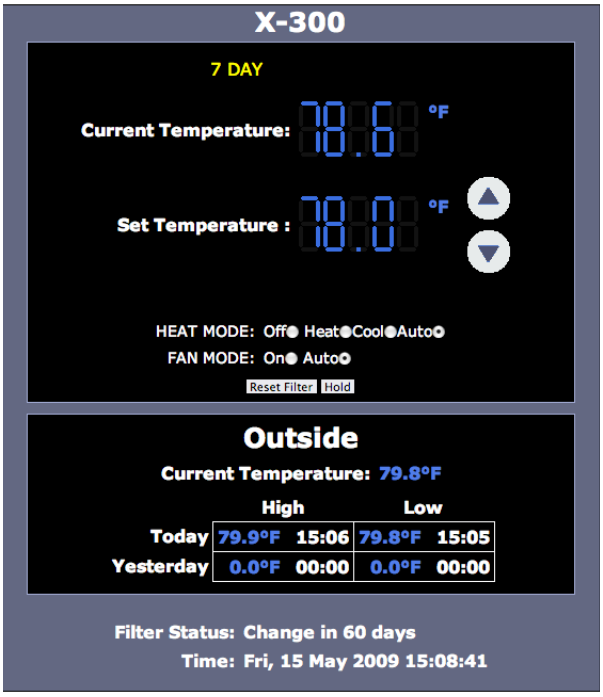
Up to eight temperature/humidity sensors can be connected at a time, and temperature/humidity can be viewed in real-time using a web browser.

It has three relays that can be used for control of fans, heaters, coolers, or just about anything. Relay control can be based upon temperature or can be independent.

In addition, the X-300™ has many advanced features including email alerts, relay control, a BASIC interpreter, and much more.

Second, the X-300™ is a 7-day programmable web-enabled thermostat. Users can adjust and set temperatures for heating and cooling systems and view current indoor and outdoor temperatures from any web browser.

As a web-enabled thermostat, it provides an attractive control web page that works great on desktop computers as well as most web-enabled smartphones.




*Control Page User Interface*

## Features:

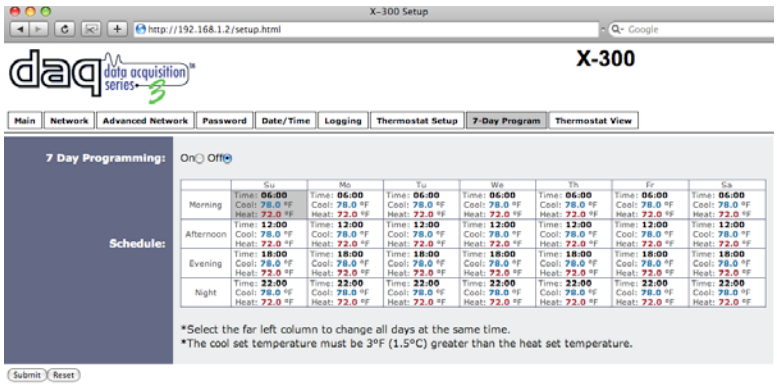
- Web-browser based - no software required.
- Self contained - no external server or services required.
- Email alerts.
- Three, 3-Amp relays.
- Built-In real-time clock w/ capacitor backup.
- Temperature Logger.
- Supports HTTP, TCP, SNMP, Modbus TCP/IP.
- Supports additional data logging and management from web services.
- Internal temperature and voltage monitoring for diagnostics.
- Wide operating temperature range.
- Removable terminal connector for convenient wiring.
- Field updatable.
- Rugged DIN-Rail/wall mountable enclosure.

## Temp/Humidity Logger:

- The temperature logger can receive data from up to eight sensors (one temperature sensor included).
- Both temperature and humidity sensors are supported.
- Supports BASIC scripts for advanced configuration.

## Thermostat:

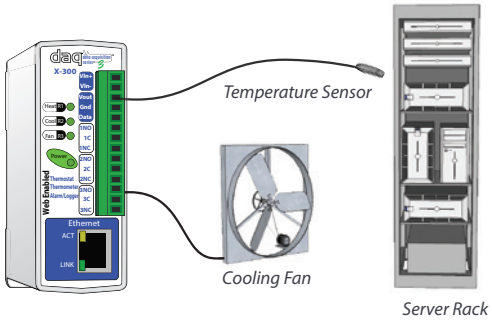
- Attractive thermostat user interface.
- Connect up to two temperature sensors (indoor and outdoor).
- 7-day programming schedule.
- Connect to single stage heating/cooling system.



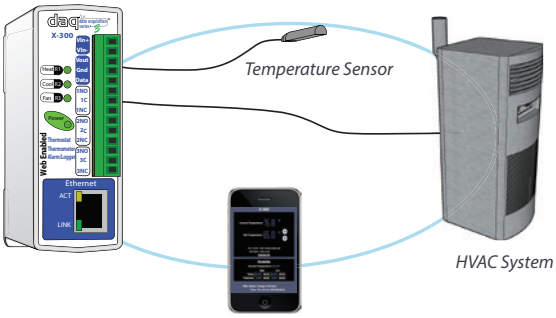

*7-Day Programmable Schedule*

## APPLICATIONS & SPECS

### Remote Temperature Monitoring/Logging




### Web-Enabled Thermostat




### Additional Applications

- ✓ Server Rooms
- ✓ Freezers
- ✓ Green Houses
- ✓ Vacation Homes
- ✓ Refrigeration Systems
- ✓ Apartment Complexes
- ✓ Car Washes
- ✓ More...

### Models:

- X-300-I+PS12-A, X-300-I, X-300-E

### Power Requirements:

- **Voltage:**
  - X-300-I: 9-28 VDC
  - X-300-E: POE Class 1 (0.44 to 3.84 Watts)
- **Current:** 44mA - 374mA*

**Current based upon voltage applied and device settings. See users manual for complete breakdown.*

### Relays

- **Number of Relays:** 3
- **Max Voltage:** 28VAC, 24VDC
- **Max Current:** 3A
- **Contact Type:** SPDT (Form 1C)
- **Load Type:** General Purpose
- **Contact Resistance:** < 50 milliohms initial
- **Contact Material:** AgSnO2
- **Electrical Life:** 100K cycles (Typical)
- **Mechanical Life:** 10M cycles (Typical)
- **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)

### Temperature Sensors

- **Maximum Number of Sensors:** 8
- **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:** Thermometer, Thermostat, Relay Control, Remote Relay Control, Email Alarms, SNMP Traps, Temperature Logging
- **Humidity Type:** Xytronix Model X-DTHS-WM wall mount sensor
- **Humidity Range:** 0-100% RH
- **Accuracy:** ±1.8%

### Real-Time Clock

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

### Capacitor Power Backup

- **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, Outputs, and Inputs:** 14-Position, 3.81mm, Removable
- **Network:** 8-pin RJ-45

### LED Indicators

- **Number of LEDs:** 6
  - Power on
  - Relay coil energized 1-3
  - 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, XML, Modbus, SNMP, SMTP, Remote Services

### Logging

- **Log File Size:** 512K min 11,049 logs
- **Storage:** Nonvolatile Flash
- **Buffer Architecture:** Circular Buffer
- Log data can be periodically read and stored on a computer

### Advanced Features

- BASIC interpreter
- Remote services - Avoid most firewall issues with outbound connection to Web Services

### Password Settings

- **Password protection on setup page:** Yes
- **Password protection on control page:** Optional
- **Password Encoding:** Base 64
- **Max Password Length:** 13 Characters

## PRODUCT OVERVIEW


The series III WebRelay-Dual™ (X-301) is an exciting component in our most advanced series of products.

It is a robust, full-featured, web-enabled, mini Ethernet I/O module with two 3-Amp relays and two optically-isolated digital inputs.

It has non-volatile memory for logging, a real-time clock with support for NTP (time server) synchronization and an advanced full-calender scheduler which can be used to turn on/off relays at preset times.

Its web-based user interface means it can be used right out of the box with no programming required.

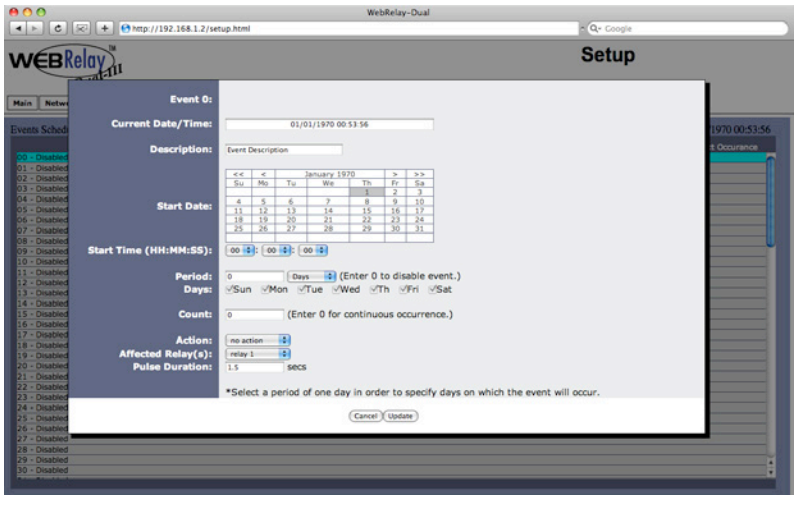
The series III WebRelay-Dual™ has many advanced features including a simple firewall, the ability to initiate a connection to remote servers, BASIC programming, SNMP, email alerts, peer-to-peer communications, internal monitoring, and more.

The series III WebRelay-Dual™ is ideal for many applications, including security, remote control, street sign controllers, shift bell controllers, and much more.

## Features:

- Up to 100 scheduled events.
- Full calender scheduling.
- Automatic daylight savings and leap year adjustment.
- Synchronize clock with NTP server for precise time keeping.
- Capacitor-backed clock.
- Two electro-mechanical relays.
- Two optically-isolated inputs.
- Automatic and manual control.
- Control and configure using a web browser.
- No software required.
- Customizable web-based control page.
- Settings stored in non-volatile memory.
- BASIC script support for advanced functionality.
- Remote services; X-301 can be configured to initiate connection to a remote server.
- HTTP, SNMP, SMTP, Modbus TCP/IP, DHCP.
- Email alerts.
- Event and periodic logging.
- System voltage and internal temperature monitoring.
- Removable 14-pin terminal connector for easy installation.
- Rugged DIN-Rail/wall mountable enclosure.


*Relay Options Page*



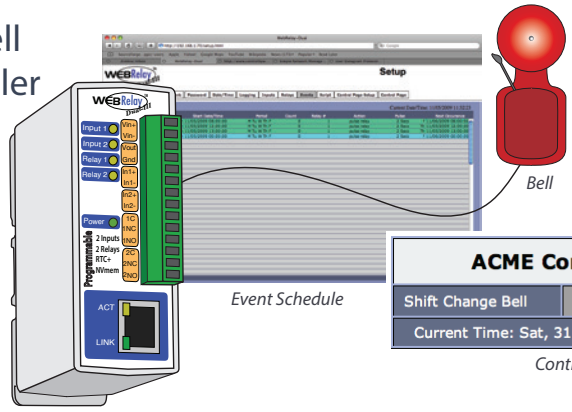

*Event Scheduling Page*



Phone: 435-750-5999
Email: Sales@ControlByWeb.com

## APPLICATIONS & SPECS

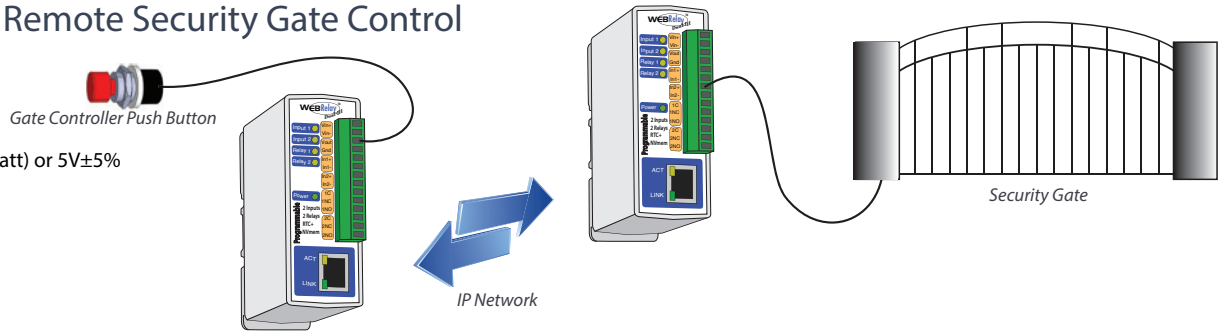
### Shift Bell Controller




## Additional Applications

- ✓ Traffic Warning Light Controller
- ✓ Electric Door Lock Control
- ✓ Timed Control of Electrical Outlets
- ✓ Vacant Home/Building Monitor
- ✓ Event Counter
- ✓ Extend I/O From a PLC to Another Building
- ✓ More...

### Remote Security Gate Control




### Models:

- X-301-I, X-301-24I, X-301-E

### Power Requirements

- **Voltage:**
  - X-301-I: 9-28VDC
  - X-301-24I: 9-28VDC
  - X-301-E: POE Class 1 (0.44 to 3.84 Watt) or 5V±5%
- **Current:** 310mA Max

### Relays

- **Number of Relays:** 2
- **Max Voltage:** 28VAC, 24VDC
- **Max Current:** 3A
- **Contact Type:** SPDT (Form 1C)
- **Load Type:** General Purpose
- **Contact Resistance:** < 50 milliohms initial
- **Contact Material:** AgSnO2
- **Electrical Life:** 100K cycles (Typical)
- **Mechanical Life:** 10M cycles (Typical)
- **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:** 2
- **Type:** Optically-Isolated
- **Voltage Range:**
  - X-301-I: 4-12VDC
  - X-301-24I: 11-26VDC
  - X-301-E: 4-12VDC
- **Current:**
  - X-301-I: 4mA @ 4V, 16mA @ 12V
  - X-301-24I: 3.2mA @ 11V, 8.2mA @ 26V
  - X-301-E: 4mA @ 4V, 16mA @ 12V
- **Minimum Hold Time:** 20ms
- **Input Isolation:** 1500V
- **Input Functions:** Monitor State, Control Relays, Control Remote Relays, Count, High Timer
- **Maximum Count:** 32-bit
- **Max Count Rate:** 25Hz
- **Edge Trigger:** Rising, Falling or Both

### Real-Time Clock

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

### Capacitor Power Backup

- **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/Relays/Inputs:** 14-Position Removable
- **Network:** 8-pin RJ-45

### LED Indicators

- **Number of LEDs:** 7
  - Power on
  - Relay coil energized 1-2
  - Digital inputs 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, XML, Modbus, SNMP, SMTP, Remote Services

### Logging

- **Log File Size:** 512K (max 28,829 logs)
- **Storage:** Nonvolatile Flash
- **Buffer Architecture:** Circular Buffer
- Log data can be periodically read and stored on a computer

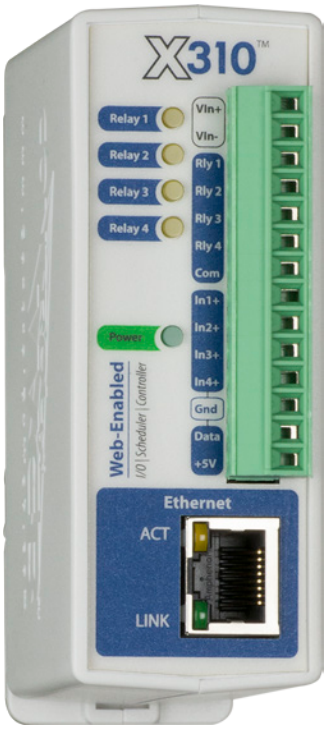
### Advanced Features

- BASIC interpreter
- Remote services - Avoid most firewall issues with outbound connection to Web Services

### Password Settings

- **Password protection on setup page:** Yes
- **Password protection on control page:** Optional
- **Password Encoding:** Base 64
- **Max Password Length:** 13 Characters

## PRODUCT OVERVIEW




The X-310™ is a full-featured, web-enabled, Ethernet I/O module with four, independent 1-Amp relays, four digital inputs, support for up to four temperature or humidity sensors, and the ability to control up to 16 remote relays. It has non-volatile memory for logging, a real-time clock with support for NTP (time server) synchronization and an advanced full-calendar scheduler which can be used to turn on/off relays at preset times. Its web-based user interface makes it easy to set-up and use.

The X-310 has many advanced features such as the ability to initiate a connection to remote servers, BASIC programming, SNMP, email alerts, peer-to-peer communications, internal monitoring, graphing, etc.

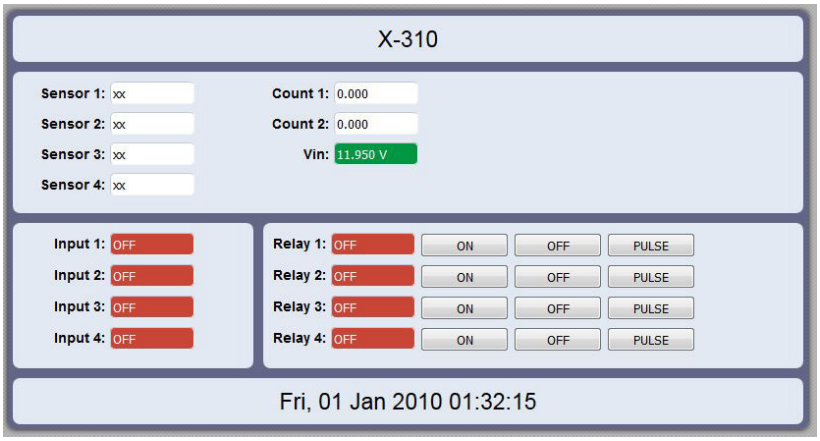
The X-310 is ideal for many applications including security, remote control, street sign controllers, shift bell controllers, and much more.

Like all of the ControlByWeb™ products, the X-310 has a built-in web server so its relays and inputs can be controlled and monitored using a web browser (or use our CBW Mobile smartphone app).

Additionally, temperature and humidity data can be graphed directly from any HTML5 compatible web browser.

The X-310 is ideal for many applications including security, remote control, street sign controllers, shift bell controllers, and much more.

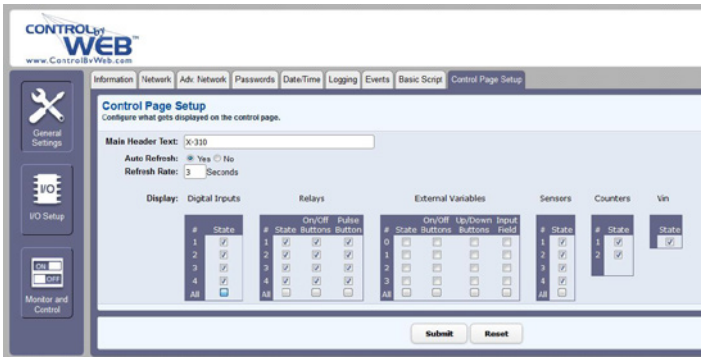
The X-310 is designed for accuracy and reliability, and is an innovative solution for a number of applications.




*Control Page Interface*

## Features:

- Four electro-mechanical relays (shared common) independently controlled
- Four digital inputs (shared ground)
- Two, scalable-counter inputs (Inputs 1 & 2)
- One-wire bus for up to 4 temperature and/or humidity sensors
- Control up to 16 remote relays
- Monitor and log power supply (voltage)
- Highly configurable - almost any combination of input/relay control possible
- Real-Time Clock with NTP server synchronization
- Automatic daylight savings and leap year adjustment
- Full calendar scheduling with 100 programmable events
- No software required
- Customizable web-based control page
- BASIC script support for advanced flexibility
- Configurable logging
- Graphing (logged data)
- Send email alerts based on user-defined conditions
- Supports encrypted email servers, such as Gmail (X-310S models only)
- Supports HTTPS (X-310S models only)
- Static or DHCP IP address configuration
- XML, Modbus TCP/IP, and SNMP interface options
- Field updatable
- Removable 14-Terminal connector for easy installation
- Rugged DIN-Rail/wall-mountable enclosure




*Control Page Setup*



Phone: 435-750-5999

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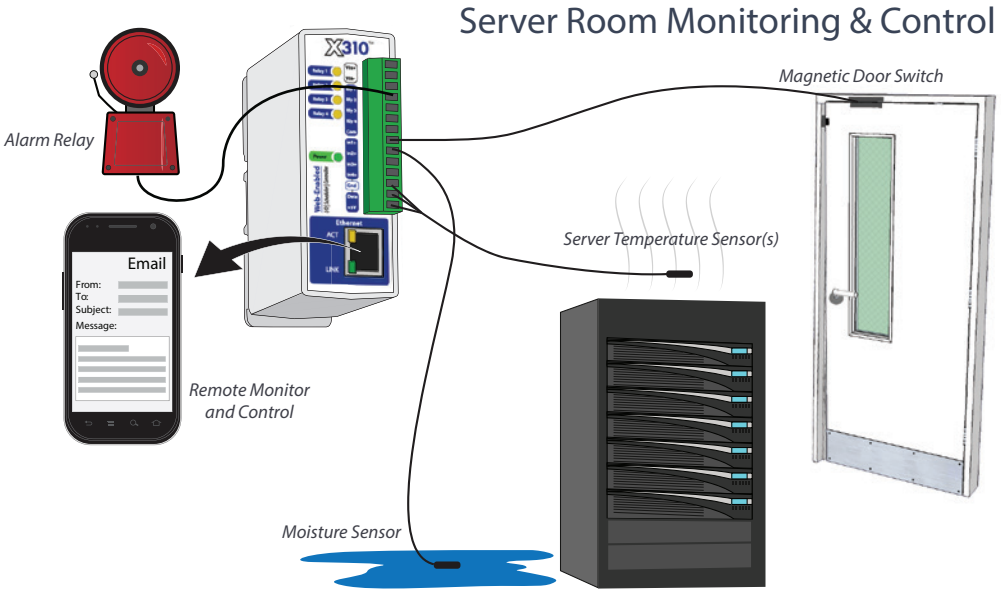
## APPLICATIONS & SPECS

### Additional Applications

- ✓ Relay Control
- ✓ Digital Input Monitoring
- ✓ Temperature and Humidity
- ✓ Email Notifications
- ✓ More...




### Models:

- X-310-1, X-310-24I, X-310-E, X-310S-I, X-310S-E

### Power Requirements

- Voltage:
  - X-310-I: 9-28VDC
  - X-310-24I: 9-28VDC
  - X-310-E: POE Class 1 (0.44 to 3.84 Watt) or 5V±5%
  - X-310S-I: 9-28 VDC
  - X-310S-E: POE Class 1 (0.44 to 3.84 Watt) and/or 9-28VDC
- Max Current: 372mA Max

### Relay Contacts

- 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: < 100 milliohms initial
- Contact Material: AgSnO2
- 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:
  - X-310-I: 4-12VDC
  - X-310-24I: 11-26VDC
  - X-310-E: 4-12VDC
  - X-310S-I: 4-26VDC
  - X-310S-E: 4-26VDC
- Current:
  - X-310-I: 4.7-25mA
  - X-310-24I: 4.7-25mA
  - X-310-E: 4.7-25mA
  - X-310S-I: 950uA @ 4V, 8.5mA @ 26V
  - X-310S-E: 950uA @ 4V, 8.5mA @ 26V

### Digital Inputs (Continued)

- Minimum Hold Time: 20ms
- Input Functions: Monitor State, Control Relays, Control Remote Relays, Scalable Counter (Inputs 1 & 2), High Timer
- Maximum Count: 32-bit
- Max Count Rate: 25Hz Max (Dependent on Configuration)
- Edge Trigger: Rising, Falling or Both

### Temperature Sensors

- Maximum Number of Sensors: 4
- 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-WM wall mount sensor
- Humidity Range: 0-100% RH
- Accuracy: ±1.8%

### Real-Time Clock:

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

### Capacitor Power Backup

- 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 or DHCP IP address configuration

### Connectors

- Power, Outputs, and Inputs: 14-Position, 3.81mm, Removable
- Network: 8-pin RJ-45

### LED Indicators

- Number of LEDs: 7
  - Power on
  - Relay coil energized 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)
- Weight: 5 oz (142 grams)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Protocols

- HTTP, XML, Modbus, SNMP, SMTP, Remote Services, Data Logging and Graphing (X-310S also supports HTTPS and SSL)

### Logging

- Log File Size: 512K (max 28,829 logs)
- Storage: Nonvolatile Flash
- Buffer Architecture: Circular Buffer
- Log data can be periodically read and stored on a computer

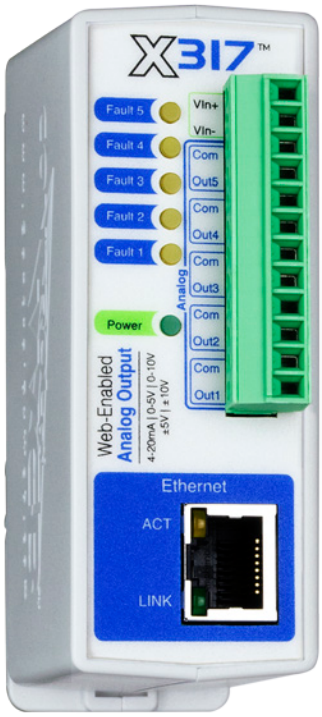
### Advanced Features

- BASIC interpreter
- Remote services
- Avoid most firewall issues with outbound connection to Web Services

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 13 Characters

## PRODUCT OVERVIEW




The X-317™ is a web-enabled analog output module with five output channels. The analog outputs are similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-317 is designed for web-based applications from the ground up. No add-on software or hardware is required.

The X-317 can be fully configured, programmed, and tested using its built-in web server. The web setup pages are intuitive and easy-to-use and do not require special programming skills.

The X-317 can be used as a stand-alone device or can operate as a peripheral for other devices such as a programmable logic controller (PLC) or the X-600M™.

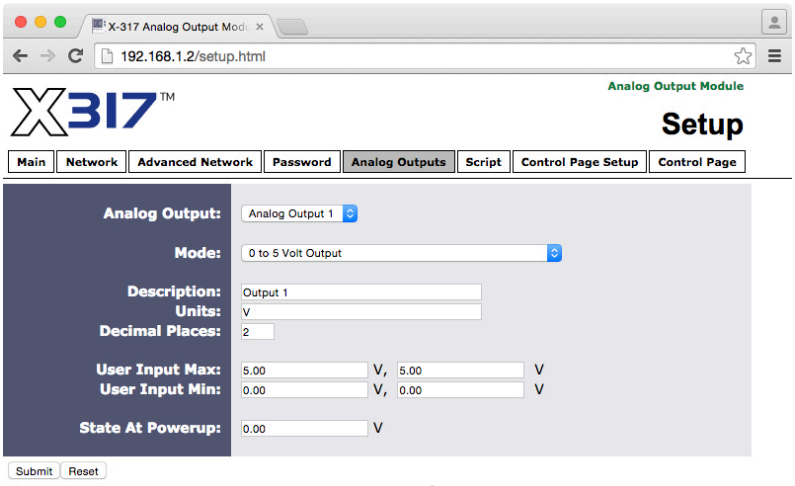
The X-317 has five precision 16-bit digital to analog converters (DACs). Each channel can be programmed for 0-5V, 0-10V, ±5V, ±10V, 4-20mA ranges. The voltage and current outputs for each channel are on a single connector terminal,.

Most industrial analog applications require isolation between the power supply and analog outputs. The X-317 has a built-in DC-DC converter for providing isolated power to the outputs. No external isolated back plane power is needed.

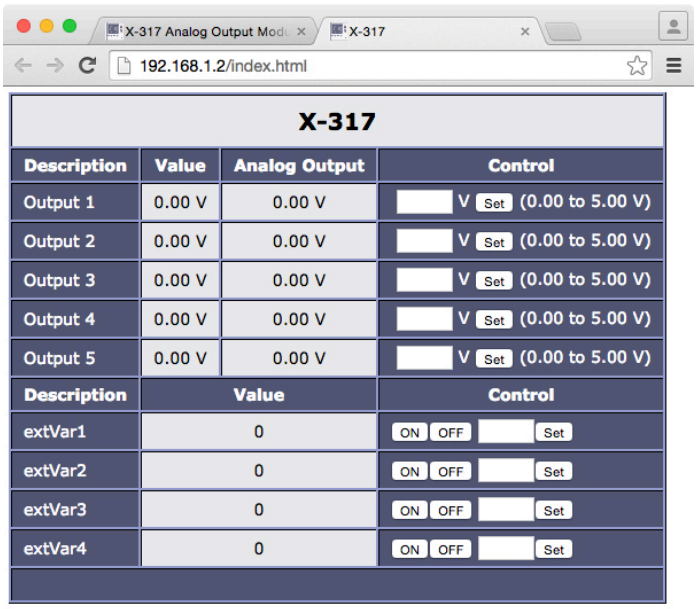
The built-in web setup pages allow the name and settings for each channel to be configured. You can configure the range of a setting to be in engineering units. For example, an input value of 0 to 100% can be scaled and processed for an output range of 4 to 20mA to control a damper motor.

## Features:

- Built with:
  - Industrial grade components
  - High-reliability SLC flash
  - Transient protection
  - Watchdog timers
  - Voltage supervisor circuitry, etc.
- Five separate analog output channels
- 0-5V, 0-10V, ±5V, ±10V, 4-20mA output ranges
- Outputs are software configured, independently programmable, and scalable
- Built-in isolated DC-DC converter
- Wide power supply range (9-28VDC)
- No special software or device drivers required
- Built-in password protected web setup and control pages
- Static or DHCP IP address configuration
- XML, Modbus TCP/IP, & SNMP interface options
- Field updatable
- Removable terminal connector
- Rugged DIN-Rail/wall-mountable enclosure

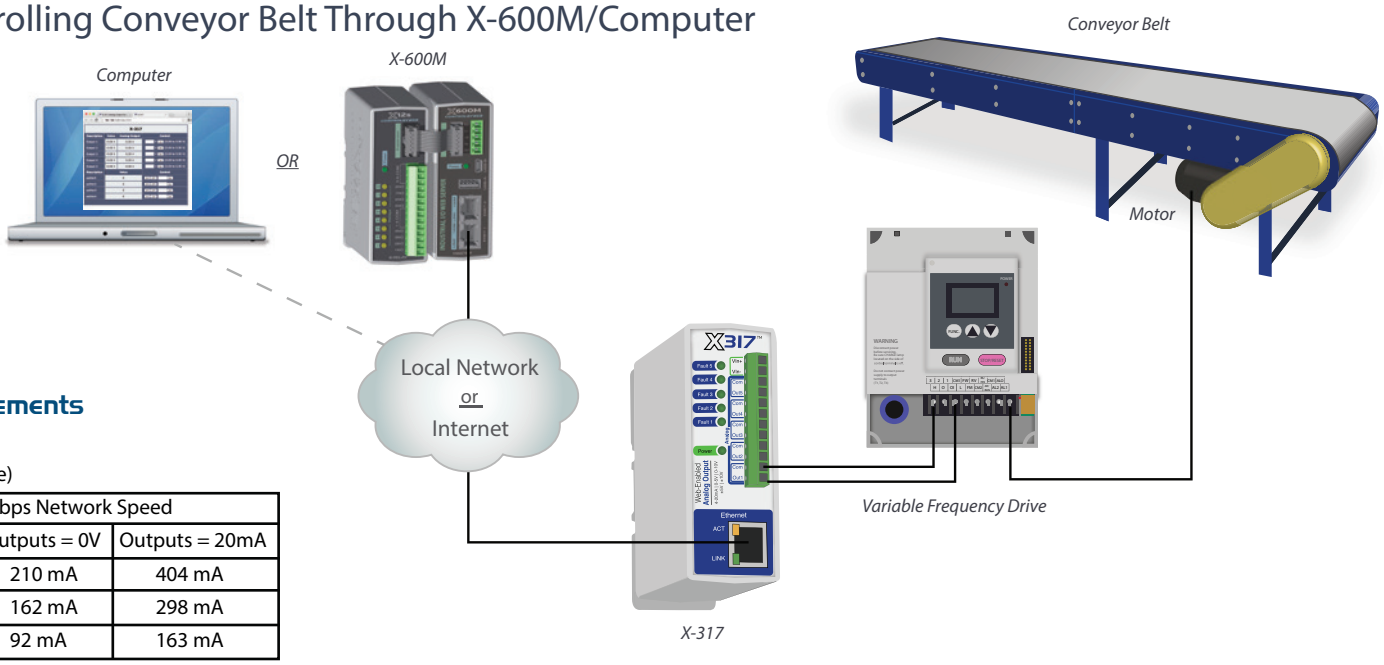



*Analog Output Configuration Tab*




*X-317 Control Page*

## X-317 Controlling Conveyor Belt Through X-600M/Computer




### Models:

- X-317-I

### Power Requirements

- Voltage: 9-28VDC
- Max Current: (table)

| 10 Mbps Network Speed | | |
|---|---|---|
| Power Supply | Outputs = 0V | Outputs = 20mA |
| 9 VDC | 210 mA | 404 mA |
| 12 VDC | 162 mA | 298 mA |
| 24 VDC | 92 mA | 163 mA |

| 100 Mbps Network Speed | | |
|---|---|---|
| Power Supply | Outputs = 0V | Outputs = 20mA |
| 9 VDC | 302 mA | 498 mA |
| 12 VDC | 229 mA | 368 mA |
| 24 VDC | 126 mA | 198 mA |

### Analog Inputs

- Number of channels: 5 (Individually configurable)
- Output Ranges: 0-5V, 0-10V, ±5V, ±10V, 4-20mA (software selectable)
- Resolution: 16-bit DAC (0-65535)
- Linearity Error: ±1-count, monotonic DAC
- Current Output (Voltage Mode): 10mA max (min load = 1K), 30mA max short circuit
- Voltage Output Inaccuracy: ±0.2% FSR includes offset error, gain error and non-linearity error, -40 to 65°C
- Max Load Capacitance: 20nF (no load), 5nF (1K load)
- Current Output Range: 4-20mA
- Current Output Inaccuracy: ±0.2% FSR includes offset error, gain error and non-linearity error, -40 to 65°C
- Output Compliance Voltage: 11.50V min (max loop voltage)
- Isolated Power Supply: Internal DC-DC converter
- Isolation: Galvanic, 1500 VAC
- ESD Protection: Integrated 15kV protection (IEC61000-4-2)
- Output Protection: Integrated over-temperature, open-line and short circuit protection
- Output Alarms: Open current loop, high internal temperature
- Load Type: Grounded, COM of all 5-channels are connected together
- Output at power up: Programmable

### Network

- Type: 10/100 Base-T Ethernet Port
- Setup: Static IP address assignment or DHCP, HTTP port selectable

### NONVOLATILE MEMORY

- All user settings are stored in nonvolatile memory. Settings will not be lost when power is disconnected.

### Connectors

- Power, & Outputs: 12-Position, 3.81mm, Removable
- Network: 8-pin RJ-45

### LED Indicators

- Number of LEDs: 8
  - Power on
  - Fault condition (channels 1-5)
  - Network linked
  - Network activity

### Physical

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Size:
  - 1.41in (35.7mm) wide
  - 3.88in (98.5mm) tall
  - 3.1in (78mm) deep (not including connector)
- Weight: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Protocols

- HTTP, XML, Modbus TCP/IP

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 13 Characters

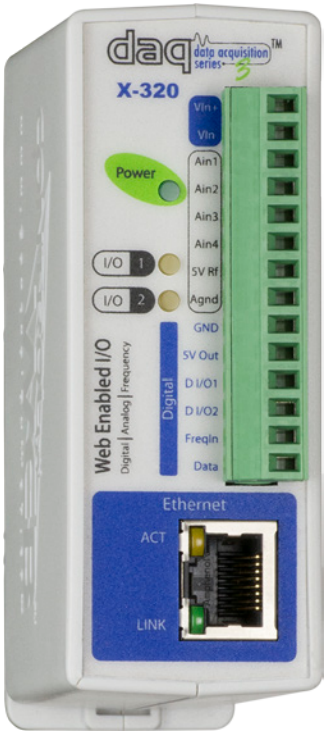
### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)



Phone: 435-750-5999
Email: Sales@ControlByWeb.com

## PRODUCT OVERVIEW




The X-320™ is a high-end web-based instrumentation module that can be used in a variety of scientific and industrial applications such as energy or power monitoring, meteorology, process control, and much more.

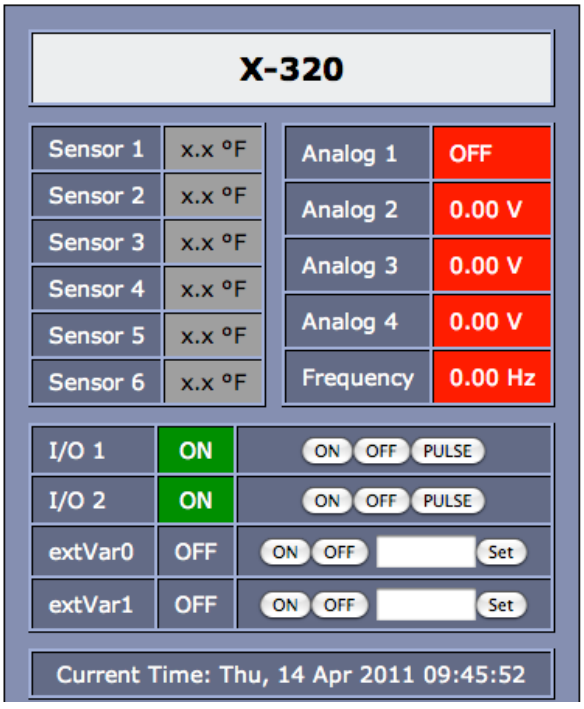
It has a combination of analog and digital inputs that can be used with the appropriate sensors for measuring voltage, current, temperature, humidity, fluid level, flow, frequency, count, etc. Two digital I/O terminals can be user-configured as inputs or outputs capable of driving solid state relays or triggering the input of another controller.

The X-320™ has a built-in web server and the data it measures can be viewed using a web browser (or custom computer application). Setup is simple; there is no app to download, no subscription to buy, no software required, and no programming necessary for setup or use. Even with its simplicity, the X-320™ has many advanced features including the ability to create BASIC scripts, SNMP, peer-to-peer communications, email alerts, and full calendar scheduling.

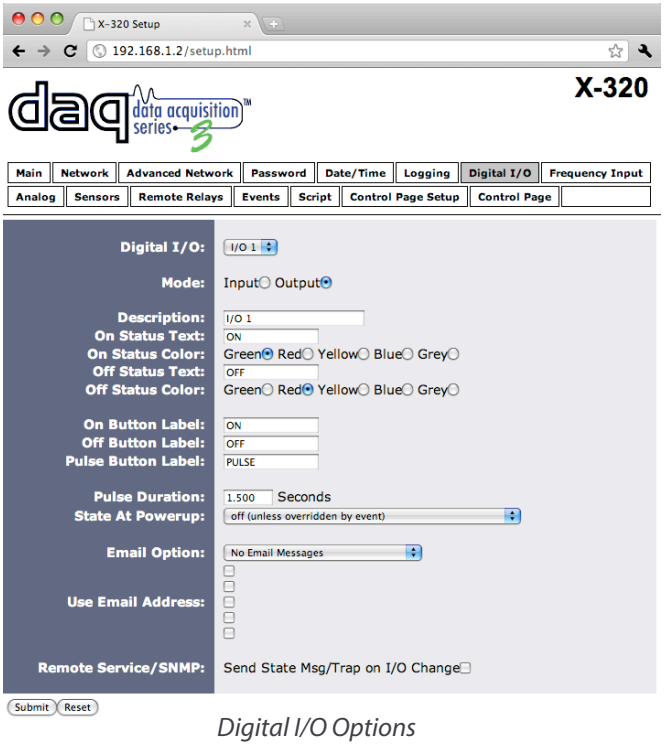
The X-320™ is designed for accuracy and reliability, and is an innovative solution for a number of applications.

## Features:

- Two programmable digital I/O.
- Four high-resolution analog inputs.
- One-wire bus for up to 6 temperature and/or humidity sensors.
- Dedicated frequency input, 130kHz max.
- Control up to three remote relays.
- Real-time clock with NTP server synchronization.
- Automatic daylight savings and leap year adjustment.
- Full calendar scheduling with 50 programmable events.
- No software required.
- Customizable web-based control page.
- BASIC script support for advanced flexibility.
- Configurable logging.
- Send email alerts based on user defined conditions.
- Static or DHCP IP address configuration.
- XML, Modbus TCP/IP, and SNMP interface options.
- Field updatable.
- Removable 14-Terminal connector for easy installation.
- Rugged DIN-Rail/wall-mountable enclosure.




*Control Page*




*Digital I/O Options*

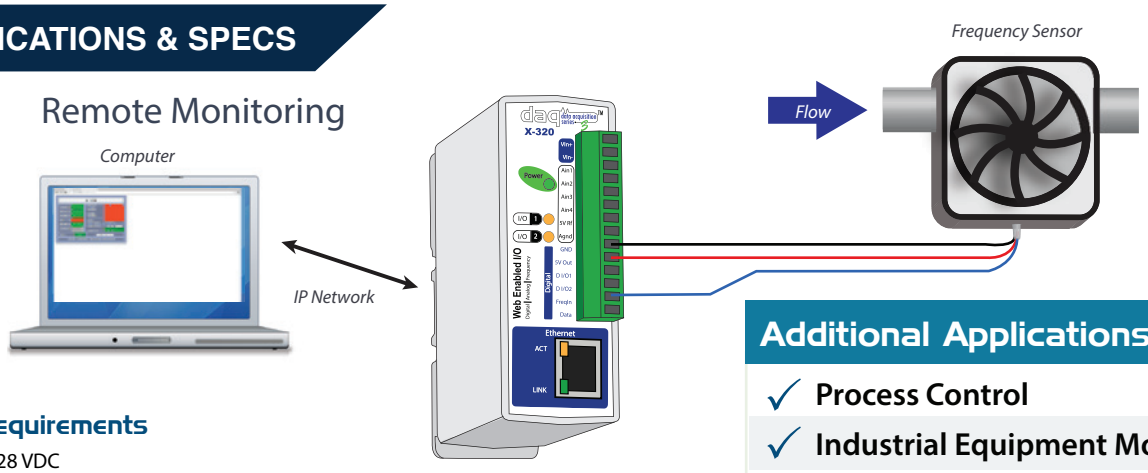
# X-320™

## Web-Enabled Instrumentation-Grade Data Acquisition

*2 Programmable Digital I/O, 4 Analog Inputs, 6 Digital Temperature/Humidity Sensor Inputs, 1 Frequency Input*

## APPLICATIONS & SPECS

### Remote Monitoring




### Additional Applications

- ✓ Process Control
- ✓ Industrial Equipment Monitoring
- ✓ Environmental Site Monitoring
- ✓ Remote Generator Control and Monitoring
- ✓ Fluid Level Monitoring
- ✓ More...

### Models:

- X-320-I

### Power Requirements

- Voltage: 9-28 VDC
- Max Current: 290mA Max

### Output Mode

- Logic output to external controllers 5V high through 49.9 Ohm resistor

### Digital Inputs

- Number of Inputs: 2 (Configurable)
- Type: Non-Isolated
- Voltage Range: 0-5VDC
- Current: Switchable 47K Pullup/Pulldown
- Minimum Hold Time: 1ms (Configurable)
- Input Isolation: Non-Isolated
- Input Functions: Control Remote Relays, Control Digital Output, Email Alerts, High Timer, Pulse Rate
- Max Count Rate: 25Hz Max
- Edge Trigger: Rising, Falling or Both

### Frequency Input

- 0 - 130 kHz input frequency
- AC or DC input, 20 V peak to peak
- Sine or Square Wave
- (Triangle wave, add 10% to Min Vin)
- 2 second average
- 0.5 Hz read rate
- Auto-zero, positive slope detection
- Accuracy and minimum input level:

| Input Frequency | Min Vin | Read Error |
|---|---|---|
| 1 - 2 Hz | 90 mV | ±0.5 Hz |
| 2 - 200 Hz | 60 mV | ±0.1 Hz |
| 200 - 1000 Hz | 60 mV | ±1 Hz |
| 1 - 10 kHz | 60 mV | ±1.5 Hz |
| 10 - 50 kHz | 60 mV | +1/-2 Hz |
| 50 - 100 kHz | 60 mV | +1/-6 Hz |
| 100 - 130 kHz | 60 mV | +2/-16 Hz |

### Analog Inputs

- Number of Inputs: 4
- Type: 4 Single-ended, 2 differential, or a combination
- Input Range: 0-5V, full scale
- **Note that inputs have high impedance so input range can easily be adjusted using external resistors. Example: 0 to 10 Volt or 4-20mA
- Resolution: 24-bit

### Temperature Sensors

- Maximum Number of Sensors: 6
- 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, Control Relays, Control Remote Relays, Log Temperature, Email Alerts
- Humidity Type: Xytronix Model X-DTHS-WM wall mount sensor
- Humidity Range: 0-100% RH
- Accuracy: ±1.8%

### Real-Time Clock

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

### Capacitor Power Backup

- Backup Functions: Retain Real-Time Clock, External Variables, Output State
- Backup Duration: 3 days minimum

### Network

- Type: 10/100 Base-T Ethernet Port
- Setup: Static or DHCP IP address configuration

### Connectors

- Power, Outputs, and Inputs: 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: 4.8 oz. (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Protocols

- HTTP, XML, Modbus, SNMP, SMTP, Remote Services

### Logging

- Log File Size: 512K min 6,477 logs
- Storage: Nonvolatile Flash
- Buffer Architecture: Circular Buffer
- Log data can be periodically read and stored on a computer

### Advanced Features

- 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: 13 Characters

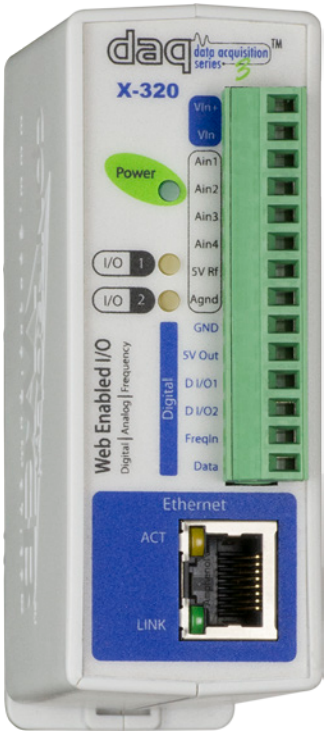
### Regulatory Compliance

- Electromagnetic Compliance:
- IEC CISPR 22, CISPR 24, FCC 47CFR15 (Class B), EU EN55024, EN55022
- Product Safety:
- IEC 60950-1 / EN 60950-1




Phone: 435-750-5999
Email: Sales@ControlByWeb.com

## PRODUCT OVERVIEW

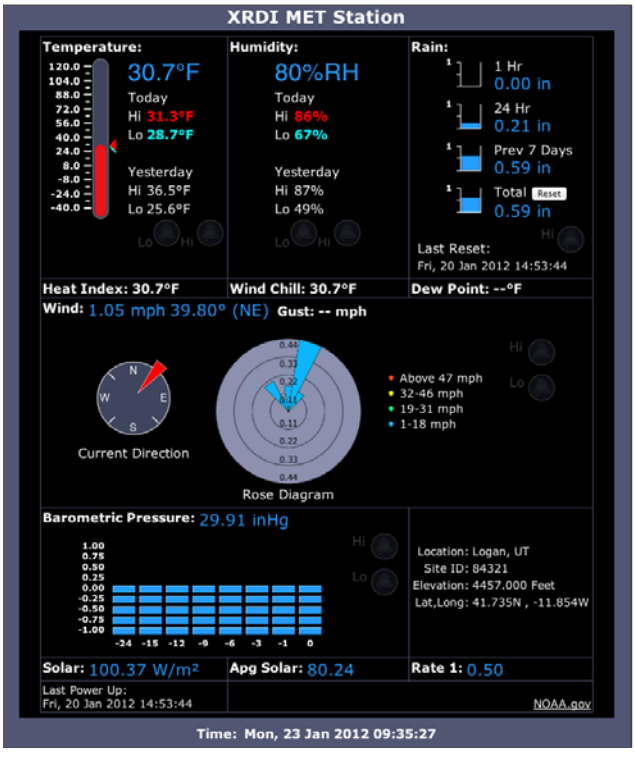



The X-320M™ is a high-end, web enabled meteorological station controller. It can be combined with a variety of sensors from various manufacturers for remotely viewing real-time wind speed and direction, precipitation, temperature, humidity, solar radiation, barometric pressure, and more. Measured and calculated parameters are displayed beautifully on an easy-to-read web page that can be viewed anytime from a computer, tablet, or smartphone using a standard web-browser.

The X-320M™ can send email/SMS notifications when monitored weather conditions exceed user-specified set points.

This meteorological station controller can also remotely activate relays on other ControlByWeb™ products, which can be used to trigger an alarm or siren if, for example, the temperature or wind speed is too high or too low.

The X-320M™ is compatible with a variety of sensors from various manufacturers. For a list of compatible meteorological sensors, please visit the X-320M product page located on our website.

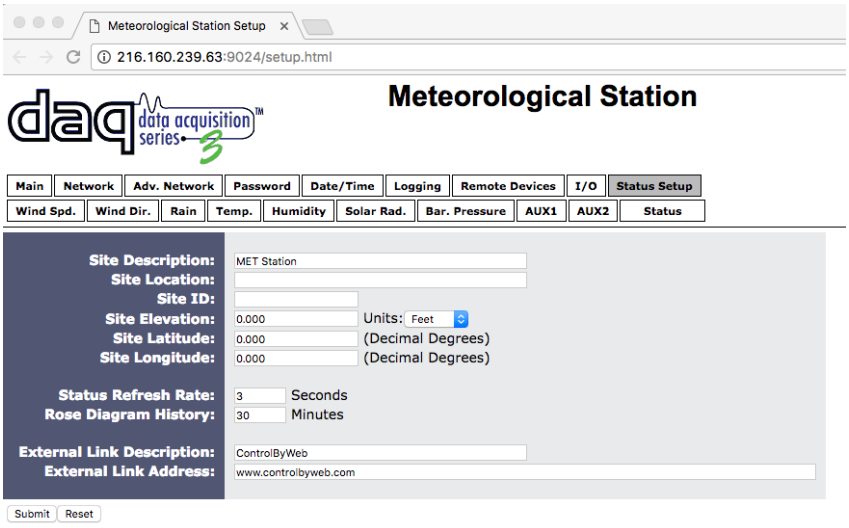



*Control Page User Interface*

** Note: Appropriate sensors are required to display these items.*

## Features:

- Intuitive Graphical User Interface.
- Compatible with a variety of meteorological sensors.
- Displays current data plus some historical data such as high and low temperatures and humidity, precipitation over time, wind gusts, and barometric pressure.*
- Calculates parameters such as heat index, wind chill, and dew point.*
- Dynamically creates rose diagram for wind direction.*
- Displays site information.
- Password protected setup and status pages.
- Built-in logging capabilities.
- Control up to three remote relays.
- Send email alerts based on user defined conditions.
- Real-Time Clock with NTP server synchronization.
- Built-in web server - no external services required.
- Remote services; X-320M can be configured to initiate a connection to a remote server.
- No software required.
- Field updatable.
- Removable 14-Terminal connector for easy installation.
- Rugged DIN-Rail/wall-mountable enclosure.




*Relay Options*

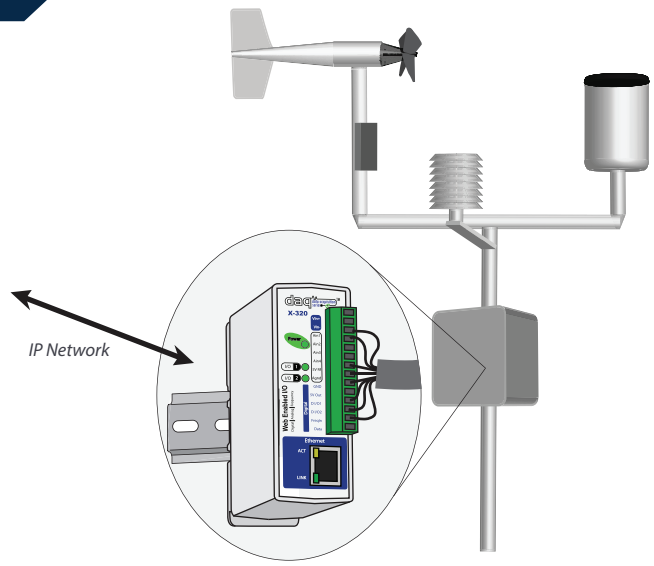
# X-320M™

## Web Enabled Meteorological Station Controller

*Intuitive Weather Station GUI, 2 Programmable Digital I/O, 4 Analog Inputs, 6 Digital Temperature Sensor Inputs, 1 Frequency Input*

## APPLICATIONS & SPECS

### Remote Monitoring




### Remotely Monitor

- ✓ Wind speed and direction
- ✓ Precipitation
- ✓ Temperature and humidity
- ✓ Solar radiation
- ✓ Barometric pressure
- ✓ More...

### Models:

- X-320M-I

### Power Requirements

- Voltage: 9-28 VDC
- Max Current: 290mA Max

### Output Mode

- Logic output to external controllers 5V high through 49.9 Ohm resistor

### Digital Inputs

- Number of Inputs: 2 (Configurable)
- Type: Non-Isolated
- Voltage Range: 0-5VDC
- Current: Switchable 47K Pullup/Pulldown
- Minimum Hold Time: 1ms (Configurable)
- Input Isolation: Non-Isolated
- Max Count Rate: 25Hz Max
- Edge Trigger: Rising, Falling or Both

### Frequency Input

- 0 - 130 kHz input frequency
- AC or DC input, 20 V peak to peak
- Sine or Square Wave
- (Triangle wave, add 10% to Min Vin)
- 2 second average
- 0.5 Hz read rate
- Auto-zero, positive slope detection
- Accuracy and minimum input level:

| Input Frequency | Min Vin | Read Error |
|---|---|---|
| 1 - 2 Hz | 90 mV | ±0.5 Hz |
| 2 - 200 Hz | 60 mV | ±0.1 Hz |
| 200 - 1000 Hz | 60 mV | ±1 Hz |
| 1 - 10 kHz | 60 mV | ±1.5 Hz |
| 10 - 50 kHz | 60 mV | +1/-2 Hz |
| 50 - 100 kHz | 60 mV | +1/-6 Hz |
| 100 - 130 kHz | 60 mV | +2/-16 Hz |

### Analog Inputs

- Number of Inputs: 4
- Type: 4 Single-ended, 2 differential, or a combination
- Input Range: 0-5V, full scale
- **Note that inputs have high impedance so input range can easily be adjusted using external resistors. Example: 0 to 10 Volt or 4-20mA
- Resolution: 24-bit

### Temperature Sensors

- Maximum Number of Sensors: 6
- 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, Control Relays, Control Remote Relays, Log Temperature, Email Alerts
- Humidity Type: Xytronix Model X-DTHS-WM wall mount sensor
- Humidity Range: 0-100% RH
- Accuracy: ±1.8%

### Real-Time Clock

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

### Capacitor Power Backup

- Backup Functions: Retain Real-Time Clock, External Variables, Output State
- Backup Duration: 3 days minimum

### Network

- Type: 10/100 Base-T Ethernet Port
- Setup: Static or DHCP IP address configuration

### Connectors

- Power, Outputs, and Inputs: 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: 4.8 oz. (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Protocols

- HTTP, XML, TCP/IP, Remote Services

### Logging

- Log File Size: 512K min 6,477 logs
- Storage: Nonvolatile Flash
- Buffer Architecture: Circular Buffer
- Log data can be periodically read and stored on a computer

### Advanced Features

- 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: 13 Characters

### Regulatory Compliance

- Electromagnetic Compliance:
- IEC CISPR 22, CISPR 24, FCC 47CFR15 (Class B), EU EN55024, EN55022
- Product Safety:
- IEC 60950-1 / EN 60950-1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# X-332™

## Web Enabled Advanced I/O Controller

*16 Relays, 16 Digital Inputs, 4 Analog Inputs, 1-Wire Bus, 2 Digital Counter Inputs, Peer-to-Peer Communication, Email Notifications, Basic Scripting, Scheduling, Logging*

**PRODUCT OVERVIEW**

The X-332™ is a robust, full-featured, web-enabled Ethernet I/O module. It has 16 relays, 16 optically-isolated digital inputs, 2 counter inputs, 4 analog inputs, support for up to four temperature and/or humidity sensors, and the ability to control relays remotely on other ControlByWeb devices. It also has many additional features such as a full calendar scheduler, a BASIC script interpreter, logging, and a real-time clock with NTP synchronization.

The X-332™ has a built-in web server so its relays and inputs can be controlled and monitored using a standard web browser (or by using our CBW Mobile smartphone app). Additionally, temperature and humidity data can be graphed directly from any HTML5 compatible web browser. Email alerts can be configured based on relay and/or input states, and temperature/humidity thresholds.

Some of its many advanced features include the ability to initiate a connection to remote servers, BASIC programming, SNMP, peer-to-peer communications, internal monitoring, etc.

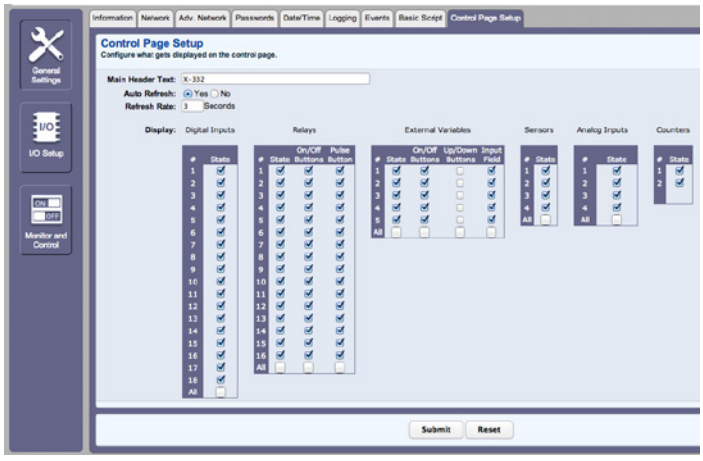
This module is ideal for many applications including security, lighting control, remote control, shift bell controllers, and much more.

Simply access and configure the X-332™ by using its web-based user interface. There is no software required, no subscription to buy, and no programming necessary for setup or use.

## Features:

- 16 electro-mechanical relays (2 Amp contacts)
- 16 optically-isolated digital inputs
- 2 counter inputs
- 4 analog inputs
- One-wire bus for up to 4 temperature and/or humidity sensors
- Control up to 16 relays on other ControlByWeb devices
- Monitor and log power supply (voltage)
- Highly configurable - almost any combination of input/relay control possible
- Real-Time Clock with NTP server synchronization
- Automatic daylight savings and leap year adjustment
- Full calendar scheduling with 100 programmable events
- Email alerts based on user-defined conditions
- Built-in web server - No software required
- Customizable web-based control page
- BASIC script support for advanced flexibility
- Configurable logging
- Graphing (logged data)
- Static or DHCP IP address configuration
- XML, Modbus TCP/IP, and SNMP interface options
- Field updatable
- Removable terminal connector for easy installation
- Rugged DIN-Rail/wall-mountable enclosure


*Control Page*




*Control Page Setup*



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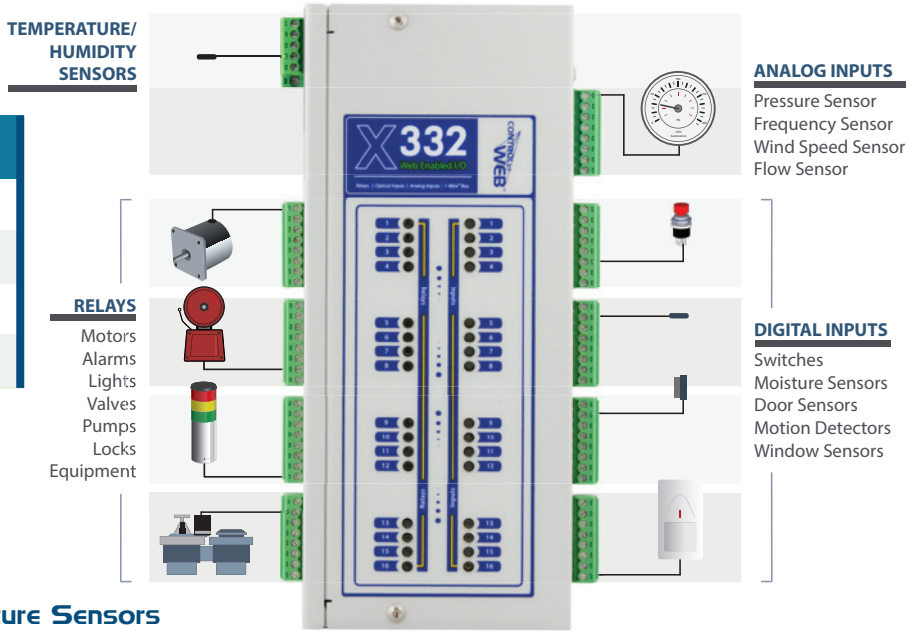
Email: Sales@ControlByWeb.com

# X-332™

## Web Enabled Advanced I/O Controller

*16 Relays, 16 Digital Inputs, 4 Analog Inputs, 1-Wire Bus, 2 Digital Counter Inputs, Peer-to-Peer Communication, Email Notifications, Basic Scripting, Scheduling, Logging*

## APPLICATIONS & SPECS




### Additional Applications

- ✓ Real-Time Clock
- ✓ Scheduling
- ✓ Logging
- ✓ Email Notifications

### Models:

- X-332-24I

### Power Requirements

- Voltage: 9-28VDC
- Max Current: 1.16A Max

### Relay Contacts

- Number of Relays: 16
- Max Voltage: 30VDC, 30VAC
- Max Current: 2A
- Contact Type: SPST (Form 1A)
- All Relays have a shared common
- Load Type: General Purpose
- Contact Resistance: < 100 milliohms initial
- Contact Material: AgSnO2
- 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: 16
- Type: Optically-Isolated
- Voltage Range: 3-26VDC
- Current: 0.6mA @ 3V, 8.2mA @ 26V
- Minimum Hold Time: 20ms
- Input Isolation: 1500V
- Input Functions: Monitor State, Control Relays, Control Remote Relays, High Timer

### Counter Inputs

- Number of Inputs: 2
- Type: Non-Isolated
- Voltage Range: 0-5VDC
- Current: 47K Pullup
- Minimum Hold Time: 20ms
- Input Isolation: Non-Isolated
- Input Functions: Monitor State, Control Relays, Control Remote Relays, Count, High Timer
- Maximum Count: 32-bit
- Max Count Rate: 25Hz Max
- Edge Trigger: Rising, Falling or Both

### Analog Inputs

- Number of Inputs: 4
- Type: Single-ended Channels
- Input Range: 0-5VDC
- Resolution: 12-bit
- Reference: 5.00V, 0.04%, 3ppm/C, 50mA Max

### Temperature Sensors

- Maximum Number of Sensors: 4
- 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: Thermometer, Thermostat, Relay Control, Remote Relay Control, Email Alerts, SNMP Traps, Temperature Logging
- Humidity Type: Xytronix Model X-DTHS-WM wall mount sensor
- Humidity Range: 0-100% RH
- Accuracy: ±1.8%

### Real-Time Clock

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

### Capacitor Power Backup

- 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 or DHCP IP address configuration

### Connectors

- Power: 3-Position, 3.81mm, Removable
- Relays & Inputs: 8-Position, 3.81mm, Removable
- Network: 8-pin RJ-45

### LED Indicators

- Number of LEDs: 35
  - Power on
  - Relay coil energized 1-16
  - Digital inputs (1-16)
  - Network linked
  - Network activity

### Physical

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Size:
  - 8.725in (221.6mm) wide
  - 1.815in (46.1mm) tall
  - 3.735in (94.9mm) deep (not including connector)
- Weight: 31.3 oz (887.3 grams) with connectors
- Material: Powder-Painted Steel

### Protocols

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

### Logging

- Log File Size: 512K (max 28,829 logs)
- Storage: Nonvolatile Flash
- Buffer Architecture: Circular Buffer
- Log data can be periodically read and stored on a computer

### Advanced Features

- Data Graphing
- 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: 13 Characters

# X-600M™

## Web-Enabled Programmable Logic Controller

*Ethernet Switch, Expansion Bus, One-Wire Bus, USB, Event Scheduler with Real-Time Clock, Logging & Graphing, Email/Text Notifications, Configurable Web Pages (Dashboard, Panels, Widgets, etc.)*

## PRODUCT OVERVIEW


The X-600 series modular I/O controller is the ultimate drop-in solution for monitoring and control. Start with the X-600M controller and add I/O modules for a solution tailored to your specific application. This series has so many new features it is OUR BEST YET!

The X-600M™ is a multi-function web-enabled module for control and monitoring over the Internet. The X-600M performs control, logic, and monitoring functions similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-600M is designed for web-based applications from the ground up.

The X-600M can be setup, controlled, and monitored using its built-in web server and a standard web browser. The web page setups are intuitive and easy to use and do not require special programming skills. No add-on software or hardware is required.

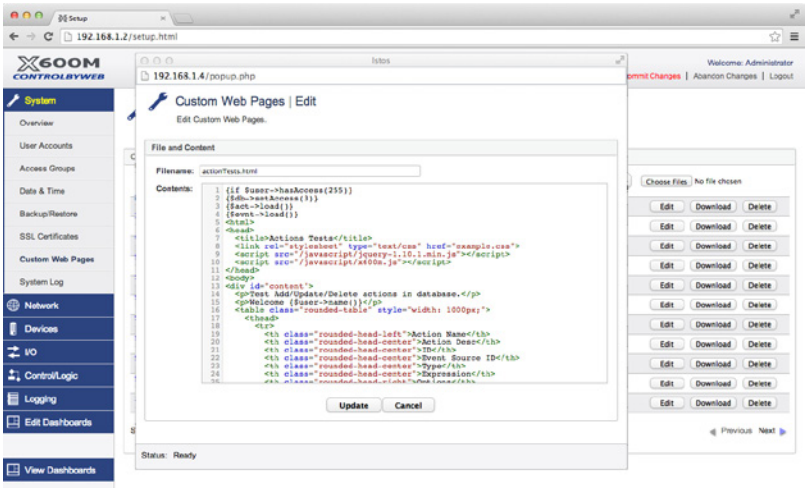
The X-600M functions as a powerful master controller for other ControlByWeb™ modules. Its ribbon-cable expansion bus connector allows for up to 64 expansion modules to be connected directly to the X-600M. It can also control up to 128 other stand-alone ControlByWeb products.

Expansion I/O modules for the X-600M are available with relays, digital inputs, thermocouples, and more.

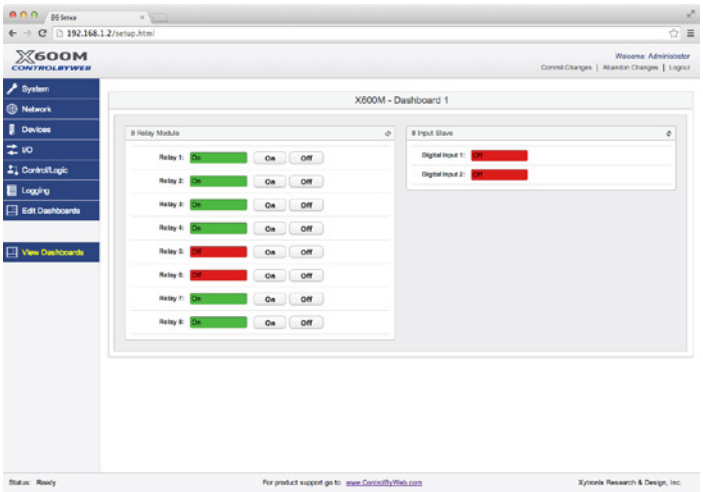
The features of other ControlByWeb products are also included, such as Email notification, scheduling, logging and graphing of logged data, custom Lua scripts, and much more.

## Features:

- Powerful built-in web server
- Easily configurable web pages
- Logging & automatic graphing of log files
- Built-In Ethernet switch with two Ethernet Connections
- Expansion bus - Direct connection up to 64 modules (128 modules total)
- Communicates with all ControlByWeb modules
- Up to 1,024 I/O points
- Supports USB Wi-Fi adapters & USB flash drives
- Built-in 1-wire bus for temp/humidity sensors
- Send custom email alerts using encrypted email servers (Gmail, Yahoo, etc.)
- Create logic scripts or full programs using Lua
- Advanced, full-calender scheduling
- Protocols supported: HTTP, HTTPS, XML, SSL, SMTP, Modbus TCP/IP, Remote Services™ server and client, & more.
- Rugged DIN-rail mount enclosure
- Email alerts based on user-defined conditions
- Static or DHCP IP address configuration
- Field updatable
- Removable 14-Terminal connector
- Rugged DIN-Rail/wall-mountable enclosure




*Edit Custom Web Pages*




*View Dashboards*



Phone: 435-750-5999
Email: Sales@ControlByWeb.com

# X-600M™

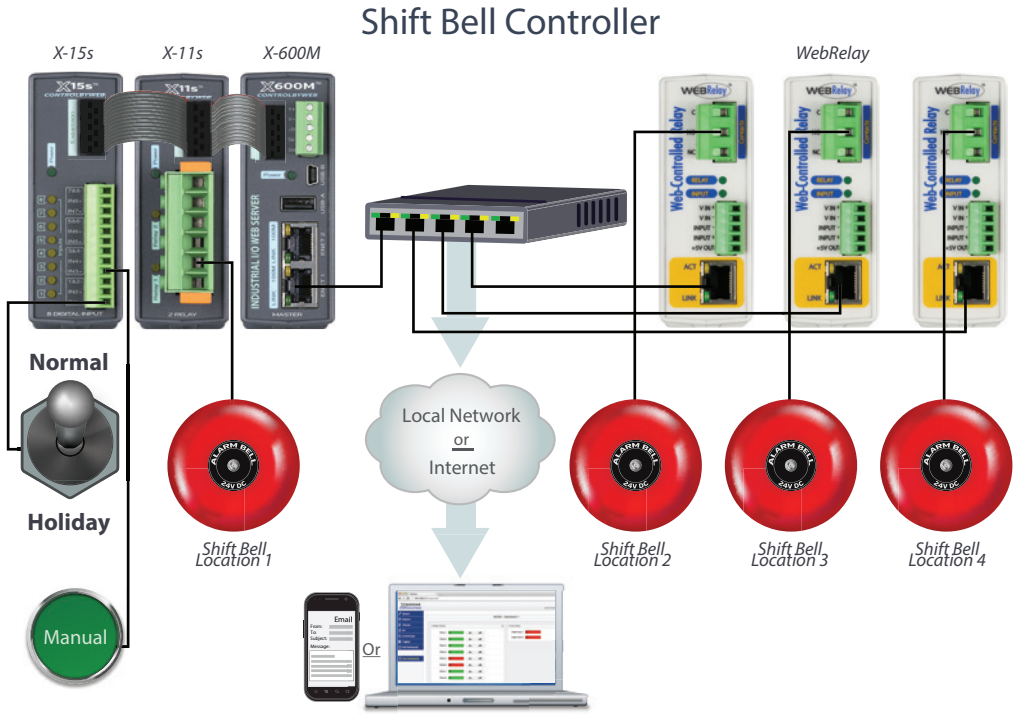
## Web-Enabled Programmable Logic Controller

*Ethernet Switch, Expansion Bus, One-Wire Bus, USB, Event Scheduler with Real-Time Clock, Logging & Graphing, Email/Text Notifications, Configurable Web Pages (Dashboard, Panels, Widgets, etc.)*

## APPLICATIONS & SPECS

### Additional Features

- ✓ Expandable, up to 1,024 I/O points
- ✓ Expansion Bus
- ✓ Easy, configurable web pages
- ✓ Custom Email Notifications
- ✓ More...




### Models:

- X-600M-I

### Power Requirements

- Voltage: 9-28VDC
- Max Current: See table below for typical values at 25°C,10/100Mbps.

| Power Supply | Input Current (no expansion modules) |
|---|---|
| 9 VDC | 173 mA |
| 12 VDC | 132 mA |
| 24 VDC | 71 mA |

### Voltage Outputs

- Expansion Bus (X-600M-I): 1.7A max

### USB

- Host: USB 2.0 Type A
- Device: USB 2.0 Mini-B

### Temperature Sensors

- Maximum Number of Sensors: 32
- Type: Dallas Semiconductor DS18B20 digital 1-Wire thermometer
- 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, Control Expansion Module's Relays, Control Remote Relays, Log Temperature, Email Alerts
- Humidity Type: Xytronix Model X-DTHS-WM wall mount sensor
- Humidity Range: 0-100% RH
- Accuracy: ±1.8%

### Real-Time Clock

- Manual or NTP(Network Time Protocol) setup
- NTP Sync Period: Once, Daily, Weekly, On Power-up
- Auto Daylight Savings Adjustment
- Battery backup (super capacitor), 30 days min
- Accuracy ±10 seconds/month

### Nonvolatile Memory

- Industrial grade eMMC NANDrive, single level cell (SLC)
- All user settings are stored in nonvolatile memory. Settings will not be lost when power is disconnected.

### Network

- 2ea 10 Base-T or 100 Base-T, 8-pin RJ-45 Ethernet connectors. Built-in 3-port L2 switch
- Setup: Static or DHCP IP address configuration

### Connectors

- Power & Inputs: 5-Position, 3.81mm, Removable
- Expansion Connector: Ribbon cable, 10-conductor, polarized, 2x5-position, 0.100" pitch Provides power and communications for expansion modules (Communications: RS-485)
- Network: 8-pin RJ-45

### LED Indicators

- Number of LEDs: 5
  - Power on
  - 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: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Protocols

- HTTP, HTTPS, SSL, SMTP, Modbus TCP/IP, Remote Services server and client

### Logging

- Up to 5 log files
- Stored in Nonvolatile Flash or external USB thumb drive
- 20Mbytes max each log file (internal)
- Unlimited data storage with external USB thumb drive
- Data wraps-around when full

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 20 Characters

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

### Product Safety Compliance

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



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## PRODUCT OVERVIEW


The X-11s™ 2-relay expansion module is used in conjunction with the X-600M™ controller.

The X-11s has two high-current relays. Both relays have Form-C contacts (SPDT). A rugged, high-current connector provides connections to the relays. One or more X-11s expansion modules can be connected to a X-600M control module with a ribbon cable. The ribbon cable provides both power and communications to the expansion modules.

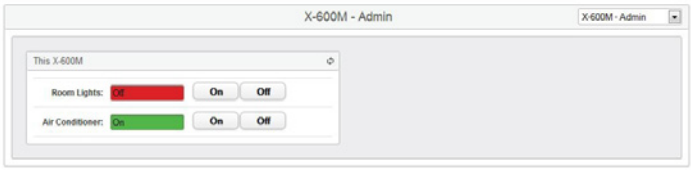
The X-600M is a multifunction web-enabled industrial I/O controller. It performs control, logic, and monitoring functions similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-600M is designed for web-based applications from the ground up. No add-on software or hardware is required.

The X-600M can be fully configured, programmed and tested using its built-in web server. The web setup pages are intuitive and easy to use and do not require special programming skills.

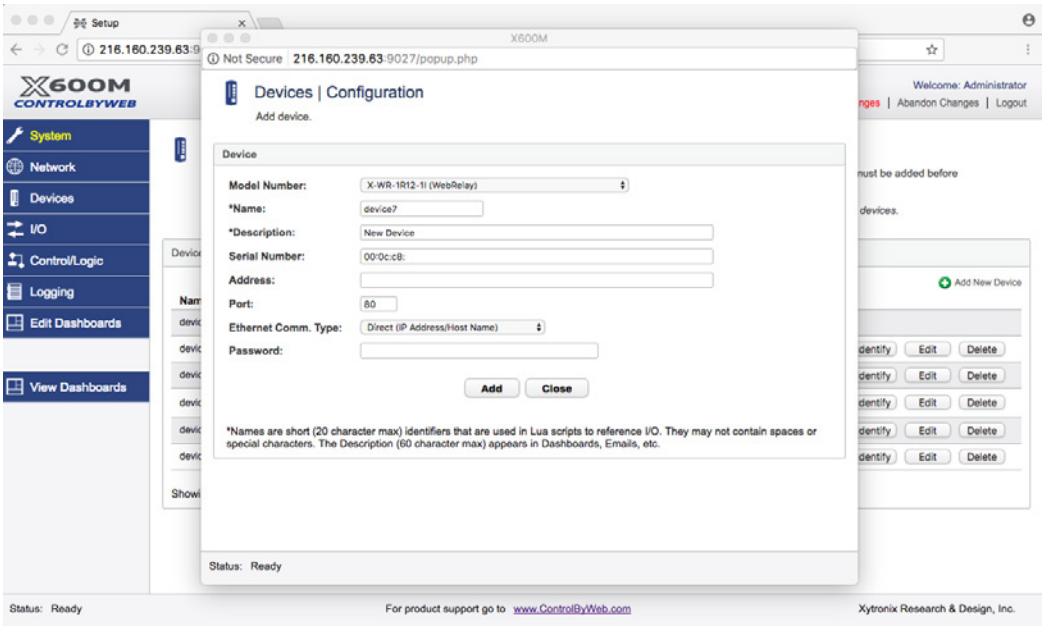
The X-600M together with expansion modules such as the X-11s provide an easy, flexible and reliable way to monitor and control systems and devices over a network. The X-11s is suitable for use with loads which require line voltages and high current such as pumps, motors, lights and heaters.

## Features:

- Two, large SPDT relays (277VAC and 20 Amps) independently controlled
- Removable locking connector supports 24AWG to 10AWG
- Two relay LEDs
- Removable terminal connector
- Powered through expansion bus
- Great for applications including:
  - Lighting control
  - Door locks
  - Remote gate control
  - Motor control
  - Pumps
  - and much more...




*View X-11s components on the X-600M's Dashboard*

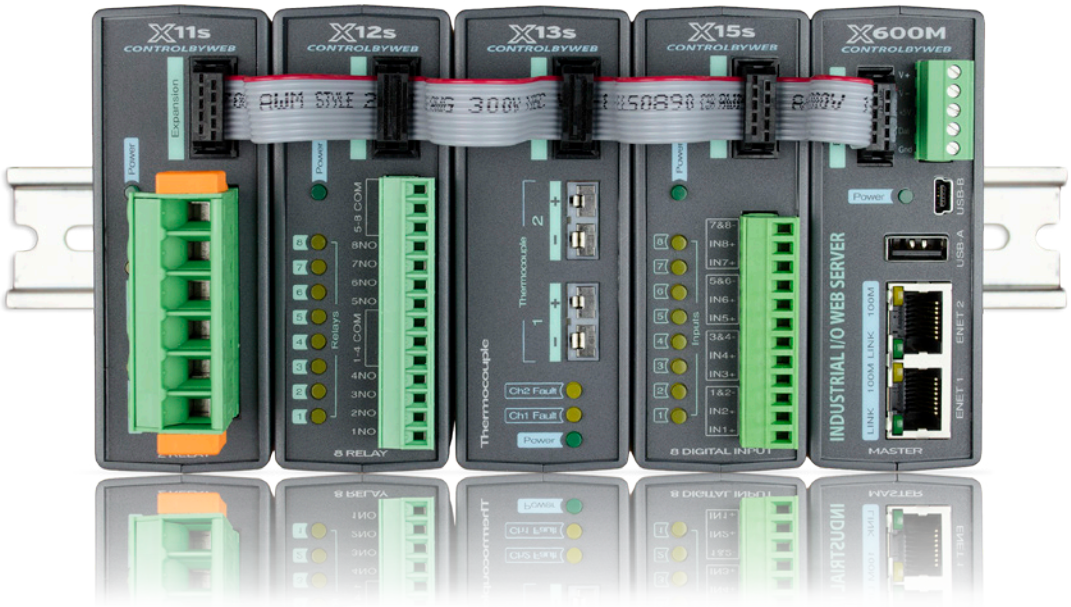



*Adding the X-11s on the X-600M*

## Applications

- ✓ Lighting Control
- ✓ Door Locks
- ✓ Remote Gate Control
- ✓ Motor Control
- ✓ Pumps
- ✓ More...

## Expansion Modules With The X-600M Controller




### Models:

- X-11s

### Power Requirements

- Voltage: 9-28 VDC (supplied via the X-600M controller, 24V recommended)
- Max Current: See table below for typical values at 25°C.

| Power Supply | All Relays OFF | All Relays ON |
|---|---|---|
| 9 VDC | 15 mA | 260 mA |
| 12 VDC | 12 mA | 196 mA |
| 24 VDC | 7 mA | 105 mA |

### Relay Contacts

- Number of Relays: 2
- Max Voltage: 277VAC, 110VDC (NO contact), 30VDC (NC contact)
- Max Current: 20A
- Contact Type: SPDT (Form 1C)
- Load Type: General Purpose
- Contact Resistance: < 30 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- 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)

### Connectors

- Relays: 6-Position, 7.62mm, Removable (with tool-free snap-lock latches)
- Expansion Connector: Ribbon cable, 10-conductor, polarized, 2x5-position, 0.100" pitch Provides power and communications for expansion modules (Communications: RS-485)

### LED Indicators

- Number of LEDs: 3
  - Power on
  - Relay coil energized 1-2

### Physical

- Size:
  - 1.41in (35.7mm) wide
  - 3.88in (98.5mm) tall
  - 3.1in (78mm) deep (not including connector)
- Weight: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

### Product Safety Compliance

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

## PRODUCT OVERVIEW


The X-12s™ 8-Relay expansion module is used with the X-600M controller. The X-12s has eight relays, each with Form-A contacts (SPST). A removable terminal connector provides connections to the relays.

One or more X-12s expansion modules can be connected to a X-600M controller with a ribbon cable.

The ribbon cable provides both power and communications to the expansion modules.

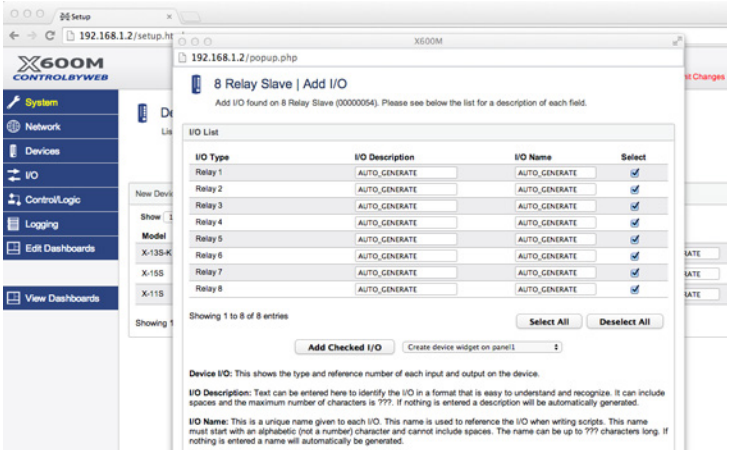
The X-600M is a multifunction web-enabled industrial I/O controller. It performs control, logic, and monitoring functions similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-600M is designed for web-based applications from the ground up. No add-on software or hardware is required.

The X-600M can be fully configured, programmed and tested using its built-in web server. The web setup pages are intuitive and easy to use and do not require special programming skills.

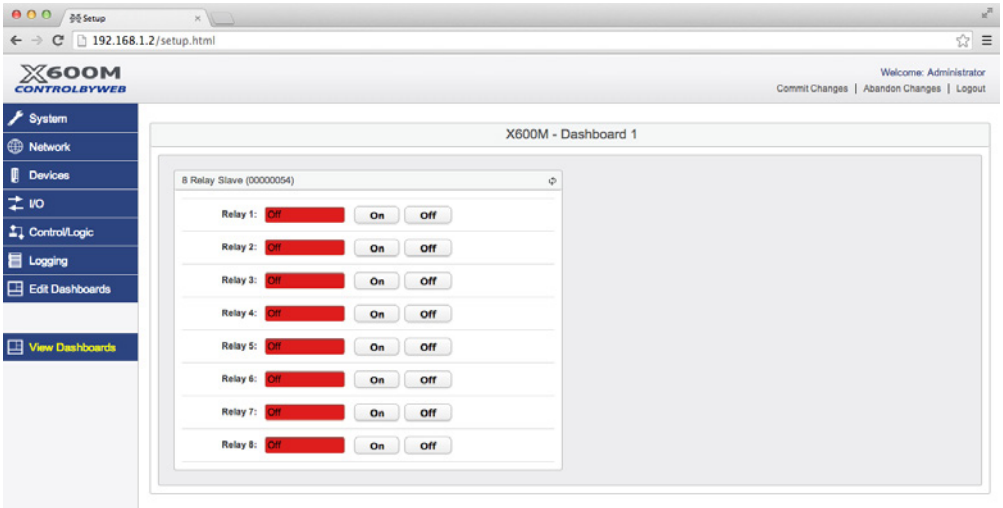
The X-600M together with expansion modules such as the X-12s provide an easy, flexible and reliable way to monitor and control systems and devices over a network. The X-12s is suitable for use with moderate loads such as solenoid valves, alarms and indicator lights.

## Features:

- Eight SPST relays (125VAC, 30VDC @ 2.5A) independently controlled
- Removable connector
- Eight relay LEDs
- Removable terminal connector
- Powered through expansion bus
- Great for moderate-load applications including:
  - Solenoid valves
  - Alarms
  - Indicator lights
  - and much more...




*Adding the X-12s on the X-600M*

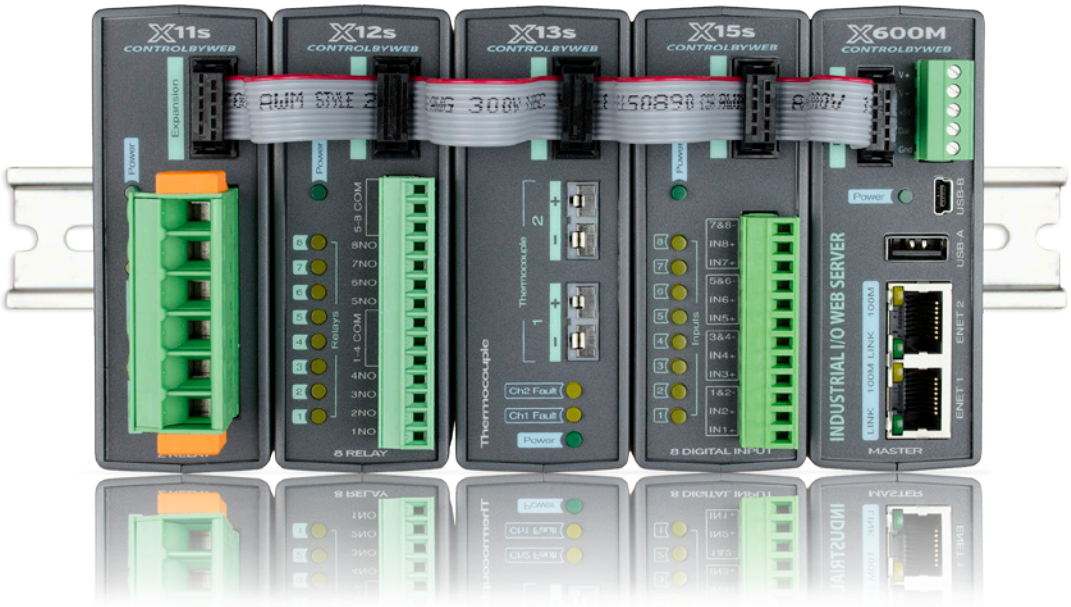



*View X-12s components on the X-600M's Dashboard*

## Applications

- ✓ Solenoid Valves
- ✓ Alarms
- ✓ Indicator Lights
- ✓ More...

## Expansion Modules With The X-600M Controller




### Models:

- X-12s

### Power Requirements

- Voltage: 9-28 VDC (supplied via the X-600M controller, 24V recommended)
- Max Current: See table below for typical values at 25°C.

| Power Supply | All Relays OFF | All Relays ON |
|---|---|---|
| 9 VDC | 16 mA | 344 mA |
| 12 VDC | 12 mA | 258 mA |
| 24 VDC | 7 mA | 133 mA |

### Relay Contacts

- Number of Relays: 8
- Max Voltage: 125VAC, 30VDC
- Max Current: 2.5A (total for each group of 4 relays with shared commons)
- Contact Type: SPST (Form 1A)
- Load Type: General Purpose
- Contact Resistance: < 100 milliohms initial
- Contact Material: AgSnO2
- 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)

### Connectors

- Relays: 14-Position, 3.81mm, Removable
- Expansion Connector: Ribbon cable, 10-conductor, polarized, 2x5-position, 0.100" pitch Provides power and communications for expansion modules (Communications: RS-485)

### LED Indicators

- Number of LEDs: 9
  - Power on
  - Relay coil energized 1-8

### Physical

- Size:
  - 1.41in (35.7mm) wide
  - 3.88in (98.5mm) tall
  - 3.1in (78mm) deep (not including connector)
- Weight: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

### Product Safety Compliance

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

## PRODUCT OVERVIEW


The X-13s™ Thermocouple expansion module is used in conjunction with the X-600M™ controller. The X-13s is a 2-channel signal conditioner for Type-K thermocouples. One or more X-13s thermocouple expansion modules can be connected to a X-600M control module with a ribbon cable. The ribbon cable provides both power and communications to the module.

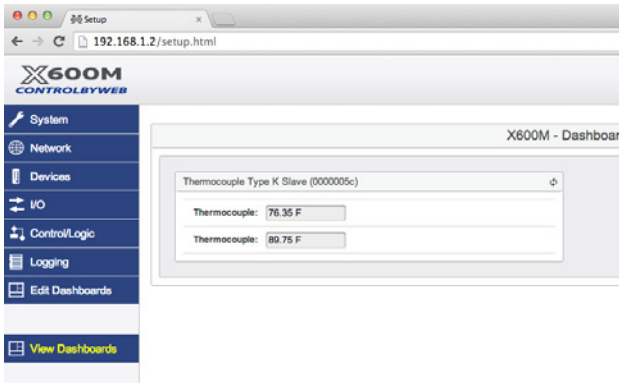
The X-600M is a multifunction web-enabled industrial I/O controller. It performs control, logic, and monitoring functions similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-600M is designed for web-based applications from the ground up. No add-on software or hardware is required.

## Features:

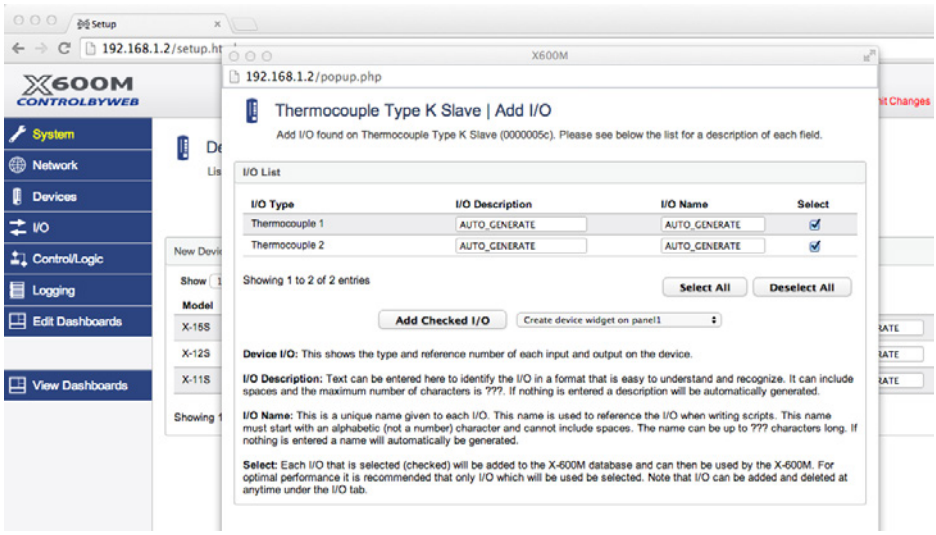
- 2-Channel thermocouple inputs
- Type K Thermocouples
- Range -200°C to +1250°C
- Two "Open Thermocouple" Channel LEDs
- Powered through expansion bus
- Great for moderate-load applications including:
  - Freezers
  - Ovens
  - Fermenters
  - Generators
  - and much more...

The X-600M can be fully configured, programmed and tested using its built-in web server. The web setup pages are intuitive and easy to use and do not require special programming skills.

The X-600M together with the X-13s provide an easy, flexible and reliable way to monitor temperature over a network. The X-13s is suitable for use with freezers, ovens, fermenters, generators – anywhere precision, rugged, temperature sensors are required.




*View X-13s components on the X-600M's Dashboard*

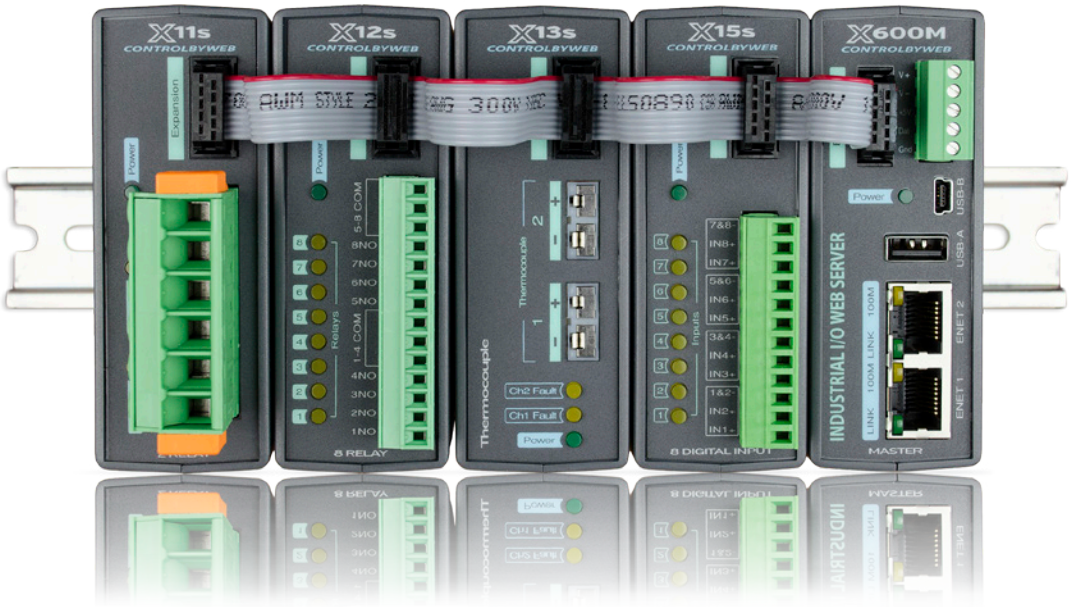



*Adding the X-13s on the X-600M*

## Applications

- ✓ Freezers
- ✓ Ovens
- ✓ Fermenters
- ✓ Generators
- ✓ More...

## Expansion Modules With The X-600M Controller




### Models:

- X-13s

### Power Requirements

- Voltage: 9-28 VDC (supplied via the X-600M controller, 24V recommended)
- Max Current: See table below for typical values at 25°C.

| Power | Thermocouple Open | Thermocouple Good |
|---|---|---|
| 9 VDC | 49 mA | 17 mA |
| 12 VDC | 37 mA | 13 mA |
| 24 VDC | 20 mA | 8 mA |

### Thermocouples

- Number of channels: 2 Channels
- Thermocouple: Type-K
- Linear Range: -200°C to 1250°C
- Operating Ambient: -40°C to 85°C (internal cold junction compensation)
- Resolution: 0.027°C
- Drift: 4ppm/°C typical, 15ppm/°C max
- Type: Inputs are not isolated, only use ungrounded thermocouples
- Input Current: Differential, ±165nA max
- Error Detection Detects sensor breakage or disconnection of lead wire

### Connectors

- Type: Miniature size, Omega PCC-SMP Series, Type-K
- Mating Connector: Miniature size, SMP
- Expansion Connector: Ribbon cable, 10-conductor, polarized, 2x5-position, 0.100" pitch Provides power and communications for expansion modules (Communications: RS-485)

### LED Indicators

- Number of LEDs: 3
  - Power on
  - "Open Thermocouple (Channels 1-2)

### Physical

- Size:
  - 1.41in (35.7mm) wide
  - 3.88in (98.5mm) tall
  - 3.1in (78mm) deep (not including connector)
- Weight: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

### Product Safety Compliance

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

## PRODUCT OVERVIEW


The X-15s™ expansion module is used in conjunction with the X-600M controller. The X-15s has eight optically-isolated digital inputs. The isolated inputs are suitable for use in industrial environments and allow the grounding system of the monitored equipment and the low voltage circuits of the X-15s to be electrically separate.

Internally the X-15s has a co-processor which provides enhanced features including: pulse counting, pulse duration, accumulated pulse time and frequency measurements. All 8-inputs have separate measurements. Programmable de-bounce timers allow glitches and short pulses to be filtered out.

One or more X-15s 8-input expansion modules can be connected to a X-600M control module with a ribbon cable. The ribbon cable provides both power and communications.

The X-600M is a multifunction web-enabled industrial I/O controller. It performs control, logic, and monitoring functions similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-600M is designed for web-based applications from the ground up. No add-on software or hardware is required.

The X-600M can be fully configured, programmed and tested using its built-in web server. The web setup pages are intuitive and easy to use and do not require special programming skills.

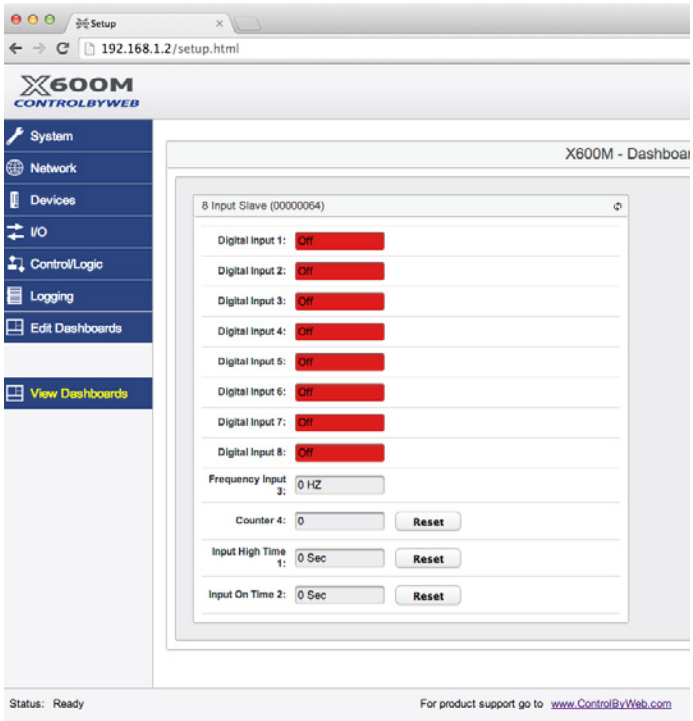
The X-600M together with the X-15s provide an easy, flexible and reliable way to monitor the state of sensors and devices over a network. The X-15s is suitable for use with security systems, freezer doors, light switches and water meters – anywhere where remote sensing is required.

The X-15s' inputs can be used to trigger email alerts based on a single change of state or after a number of state changes. The inputs can also be used as counters, or can be used to control the relay contacts of other ControlByWeb™ products (such as WebRelay™) that are located at a remote location.

*Adding the X-15s on the X-600M*

## Features:

- 8 Optically-isolated digital inputs
- Digital input functions:
- Pulse
- Frequency
- Timer
- Count
- Eight LEDs for inputs 1-8
- Removable terminal connector
- Powered through expansion bus
- Great for monitoring applications including:
- Button/Switch Inputs
    - Security Sensors
    - Flow Meters
    - Machine Status
    - and much more...

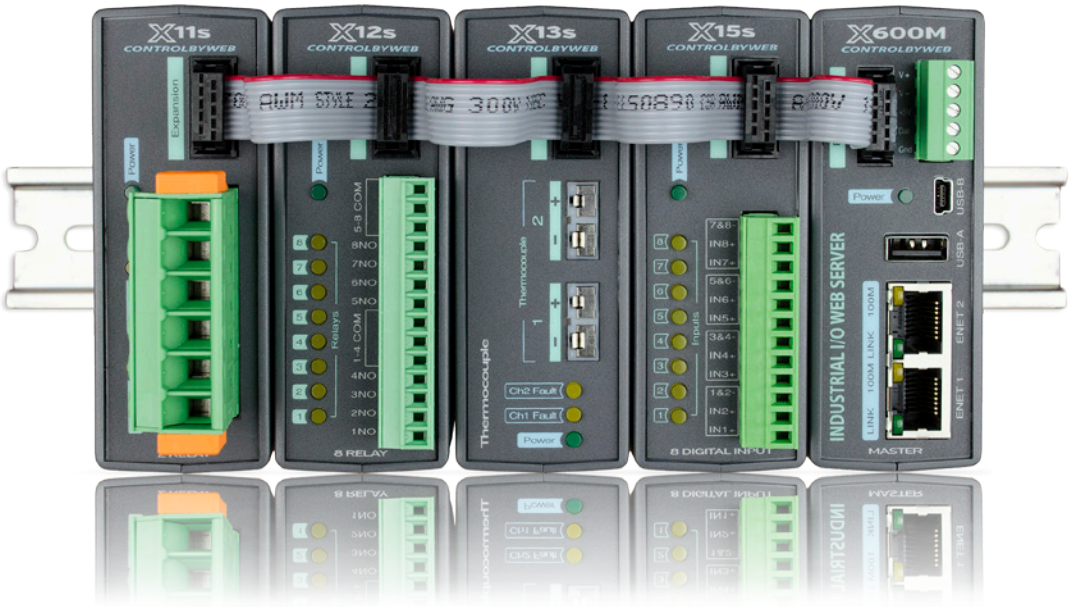



*View X-15s components on the X-600M's Dashboard*

## Applications

- ✓ Security Sensors
- ✓ Flow Meters
- ✓ Machine Status
- ✓ More...

## Expansion Modules With The X-600M Controller




### Models:

- X-15s

### Power Requirements

- Voltage: 9-28 VDC (supplied via the X-600M controller, 24V recommended)
- Max Current: See table below for typical values at 25°C.

| Power | Opto-couplers OFF | Opto-couplers ON |
|---|---|---|
| 9 VDC | 17 mA | 88 mA |
| 12 VDC | 13 mA | 66 mA |
| 24 VDC | 8 mA | 36 mA |

### Digital Inputs

- Number of Inputs: 8
- Type: Optically-Isolated
- Voltage Range: 3-26VDC
- Current: 0.6mA @ 3V, 8.2mA @ 26V
- Minimum Hold Time: 2.5mS
- Input Isolation: 1500V
- Input Functions: Monitor State, Control Relays, Control Remote Relays, Count, Frequency, High Time, ON Time
- Maximum Count: 32-bit
- Max Count Rate: 200Hz
- Edge Trigger: Rising, Falling or Both
- High Time: Pulse width (4,194,304 seconds max)
- On Time: Accumulated time an input is asserted (4,194,304 seconds max)
- Frequency: 1Hz min, 200 Hz max

### Connectors

- Inputs: 12-Position, 3.81mm, Removable
- Expansion Connector: Ribbon cable, 10-conductor, polarized, 2x5-position, 0.100" pitch Provides power and communications for expansion modules (Communications: RS-485)

### LED Indicators

- Number of LEDs: 9
  - Power on
  - Digital Inputs 1-8

### Physical

- Size:
  - 1.41in (35.7mm) wide
  - 3.88in (98.5mm) tall
  - 3.1in (78mm) deep (not including connector)
- Weight: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

### Product Safety Compliance

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

## PRODUCT OVERVIEW


The X-16s™ expansion module is used in conjunction with the X-600M™ controller. The X-16s has eight, 0-5V, analog inputs. The X-16s employs a 24-bit A/D converter and can make both single or differential voltage measurements. A 5.0V reference output can be used to power potentiometers or other resistance sensing sensors.

The X-16s is ideal for measuring precision analog voltages in industrial environments. One or more X-16s expansion modules can be connected to a X-600M control module with a ribbon cable. The ribbon cable provides both power and communications.

The X-600M is a multifunction web-enabled industrial I/O controller. It performs control, logic, and monitoring functions similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-600M is designed for web-based applications from the ground up. No add-on software or hardware is required.

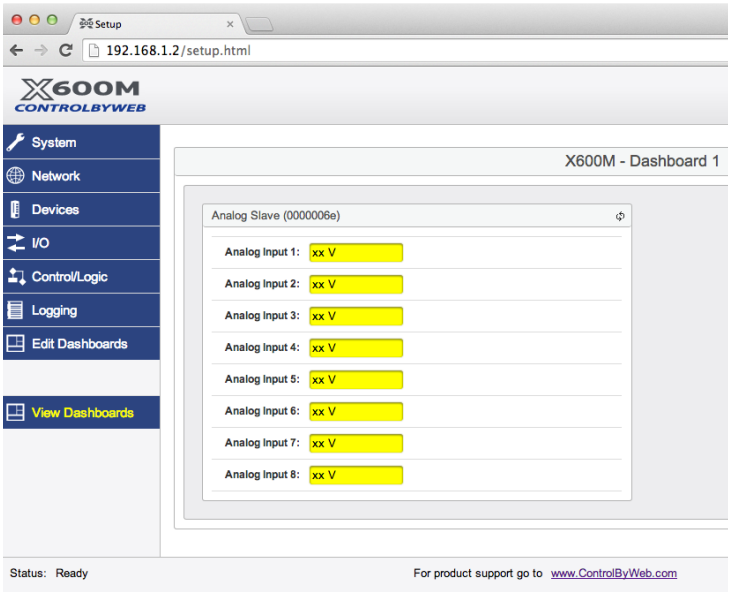
The X-600M can be fully configured, programmed and tested using its built-in web server. The web setup pages are intuitive and easy to use and do not require special programming skills.

The X-600M together with the X-16s provide an easy, flexible and reliable way to monitor sensors and devices over a network. The X-16s is suitable for use with pressure sensors, flow meters, current transducers and position sensors – anywhere where precision analog voltage sensing is required.

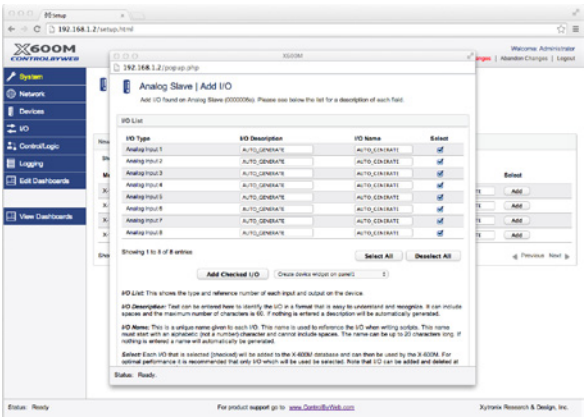
The X-16s' inputs can be used to trigger email alerts based on a voltage level and can be used to control the relay contacts of other ControlByWeb™ products (such as WebRelay™) that are located at a remote location.

## Features:

- Eight, 0-5V precision analog inputs
- Removable terminal connector
- Powered through expansion bus
- Great for monitoring applications including:
  - Temperature
  - Electrical Current
  - Pressure
  - Fluid Levels
  - and much more...




*View X-16s components on the X-600M's Dashboard*

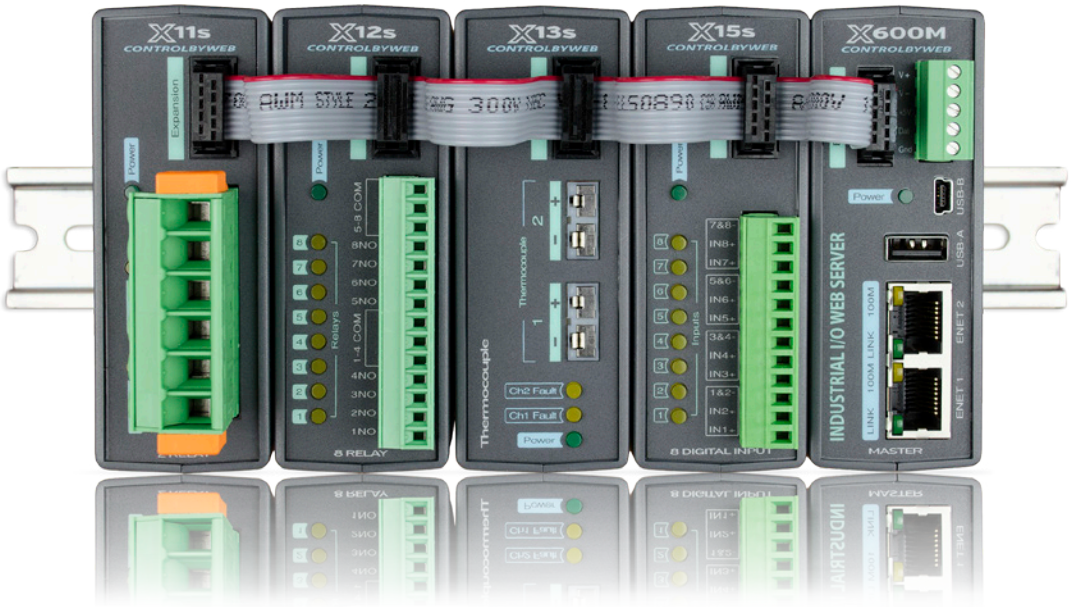


*Adding the X-16s on the X-600M*

## Applications

- ✓ Temperature
- ✓ Electrical Current
- ✓ Pressure
- ✓ Fluid Levels
- ✓ More...

## Expansion Modules With The X-600M Controller




### Models:

- X-16s

### Power Requirements

- Voltage: 9-28 VDC (supplied via the X-600M controller, 24V recommended)
- Max Current: See table below for typical values at 25°C.

| Power | Current |
|---|---|
| 9 VDC | 40 mA |
| 12 VDC | 30 mA |
| 24 VDC | 18 mA |

### Analog Inputs

- Number of Inputs: 8
- Type: 8 single-ended, 4-differential, or a combination
- Input Range: -0.1V (min), 5.1V (max), all channels
- **Note that inputs have high impedance so input range can easily be adjusted using external resistors. Example: 0 to 10 Volt or 4-20mA
- Resolution: 10µV (24 bit ΣΔ ADC)
- Reference: 5.00V, 0.04%, 3ppm/C, 50mA Max

### Connectors

- Inputs: 14-Position, 3.81mm, Removable
- Expansion Connector: Ribbon cable, 10-conductor, polarized, 2x5-position, 0.100" pitch Provides power and communications for expansion modules (Communications: RS-485)

### LED Indicators

- Number of LEDs: 1
  - Power on

### Physical

- Size:
  - 1.41in (35.7mm) wide
  - 3.88in (98.5mm) tall
  - 3.1in (78mm) deep (not including connector)
- Weight: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

### Product Safety Compliance

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

## PRODUCT OVERVIEW

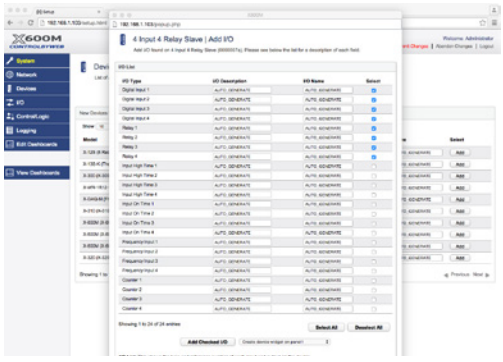

The X-17s™ expansion module is used in conjunction with the X-600M controller. The X-17s is a multi-function module with four relays and four optically-isolated digital inputs. One or more X-17s expansion modules can be connected to a X-600M control module with a ribbon cable which provides both power and communications.

The four relays have Form-A contacts (SPST) and can be used to control moderate loads such as solenoid valves, alarms, and indicator lights.

The isolated inputs are suitable for use in industrial environments and allow the grounding system of the monitored equipment and the low voltage circuits of the X-17s to be electrically separate. Internally the X-17s has a co-processor which provides enhanced features including: pulse counting, pulse duration, accumulated pulse time, and frequency measurements. All four inputs have separate measurements. Programmable de-bounce timers allow glitches and short pulses to be filtered out.

The X-600M is a multifunction web-enabled industrial I/O controller. It performs control, logic, and monitoring functions similar to that of a Programmable Logic Controller (PLC). However, unlike a PLC, the X-600M is designed for web-based applications from the ground up. No add-on software or hardware is required. The X-600M can be fully configured, programmed, and tested using its built-in web server. The web setup pages are intuitive and easy to use and do not require special programming skills.

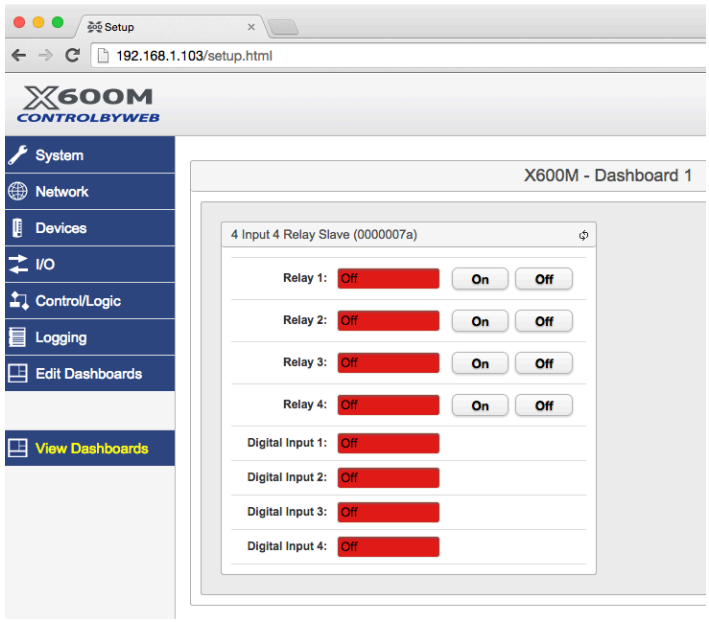
The X-600M together with the X-17s provides an easy, flexible, and reliable way to monitor sensors and control devices over a network. The X-17s is suitable for use with security systems, freezer doors, light switches, and water meters, as well as with moderate loads such as solenoid valves, alarms, and indicator lights.



*Adding the X-17s on the X-600M*

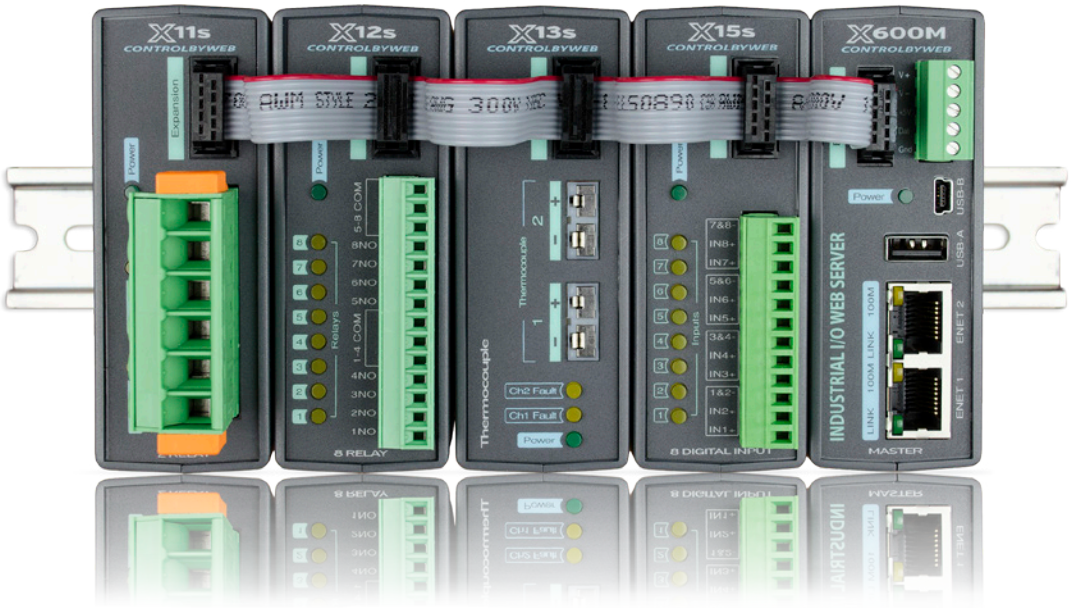
## Features:

- Four isolated relays (SPST)
- Relay Functions:
  - On
  - Off
  - Pulse
- Four optically-isolated digital inputs (common negative)
- Input Functions:
  - On/Off Status
  - Pulse Count
  - Pulse Duration
- Accumulated Pulse Time
- Frequency
- Powered through expansion bus - no separate power supply connections are required
- Eight LEDs for inputs and outputs
- Removable terminal connector




*View X-17s components on the X-600M's Dashboard*

## Expansion Modules With The X-600M Controller




## Applications

- ✓ Security Systems
- ✓ Freezer Doors
- ✓ Light Switches
- ✓ Water meters
- ✓ More

### Models:

- X-17s

### Power Requirements

- Voltage: 9-28 VDC (supplied via the X-600M controller, 24V recommended)
- Max Current: See table below for typical values at 25°C.

| Power | All Opto-couplers & Relays OFF | All Opto-couplers & Relays OFF |
|---|---|---|
| 9 VDC | 18 mA | 224 mA |
| 12 VDC | 14 mA | 165 mA |
| 24 VDC | 8 mA | 86 mA |

### Relay Contacts

- Number of Relays: 4
- Max Voltage: 125VAC, 30VDC
- Max Current: 2.5A
- Contact Type: SPST (Form 1A)
- Load Type: General purpose
- Contact Resistance: < 100 milliohms initial
- Contact Material: AgSnO2
- 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: Optically-Isolated
- Voltage Range: 3-26VDC
- Current: 0.6mA @ 3V, 8.2mA @ 26V
- Minimum Hold Time: 2.5mS
- Input Isolation: 1500V
- Input Functions: Monitor State, Control Relays, Control Remote Relays, Count, Frequency, High Time, ON Time
- Maximum Count: 32-bit
- Max Count Rate: 200Hz
- Edge Trigger: Rising, Falling or Both
- High Time: Pulse width (4,194,304 seconds max)
- On Time: Accumulated time an input is asserted (4,194,304 seconds max)
- Frequency: 1 Hz min, 200 Hz max

### Connectors

- Relays & Inputs: 14-Position, 3.81mm, Removable
- Expansion Connector: Ribbon cable, 10-conductor, polarized, 2x5-position, 0.100" pitch Provides power and communications for expansion modules (Communications: RS-485)

### LED Indicators

- Number of LEDs: 9
  - Power on
  - Relay coil energized 1-4
  - Digital Inputs 1-4

### Physical

- Size:
  - 1.41in (35.7mm) wide
  - 3.88in (98.5mm) tall
  - 3.1in (78mm) deep (not including connector)
- Weight: 4.8 oz (136 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

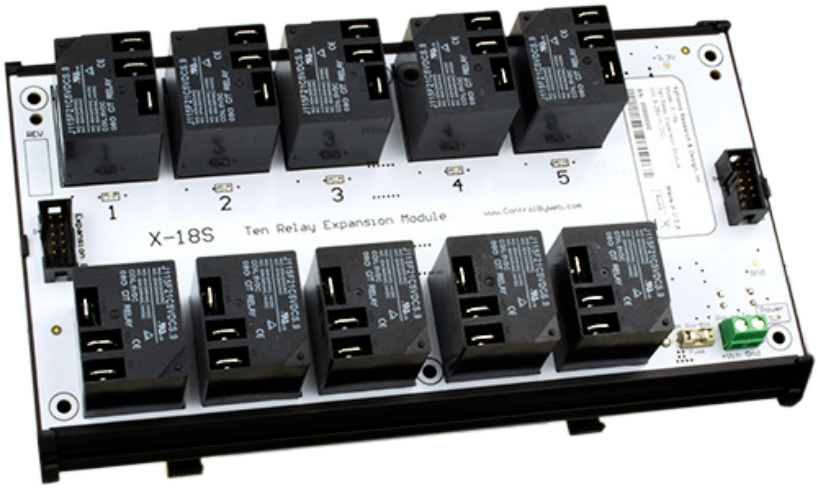
### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

## PRODUCT OVERVIEW



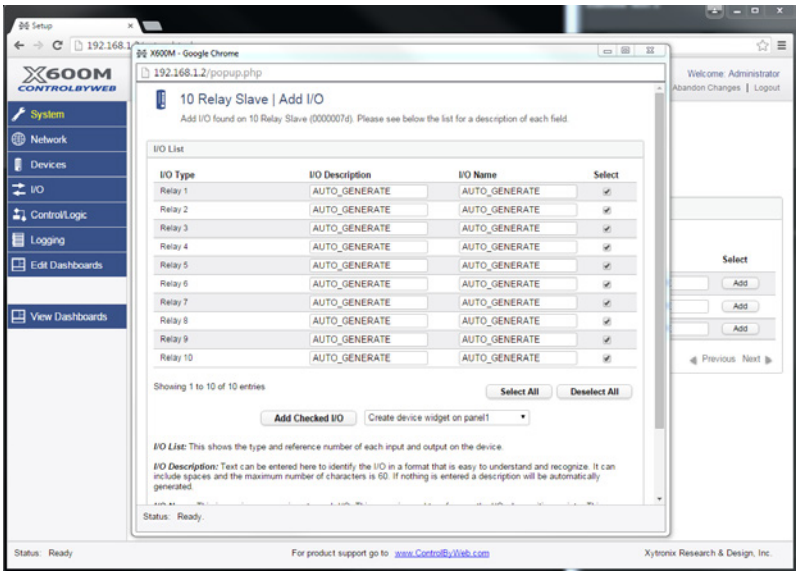

The X-18s™ expansion module is used with the X-600M controller. The X-18s has ten, high-current relays, each with Form-C contacts (SPDT).

Wiring connections are made directly to the relays using 1/4" tab terminals located on top of the relays.

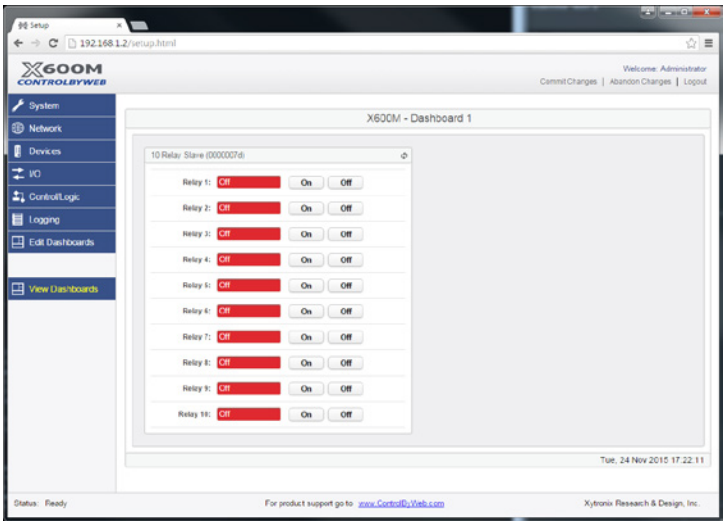
This module is suitable for use with loads which require line voltages and high currents such as pumps, motors, lights and heaters. Attach multiple X-18s modules or a combination of expansion modules to the X-600M for an I/O combination that is tailored to your specific needs.

## Features:

- 10 Isolated relays (SPDT)
- Relay Functions:
  - On
  - Off
  - Pulse
- Relay Connectors: 1/4 inch tab connectors
- Great for heavy-load applications including:
  - Motors
  - Solenoid valves
  - Lights
  - and much more...
- 11 LEDs for relays and power
- Power Supply: 9-28 VDC (24V recommended)

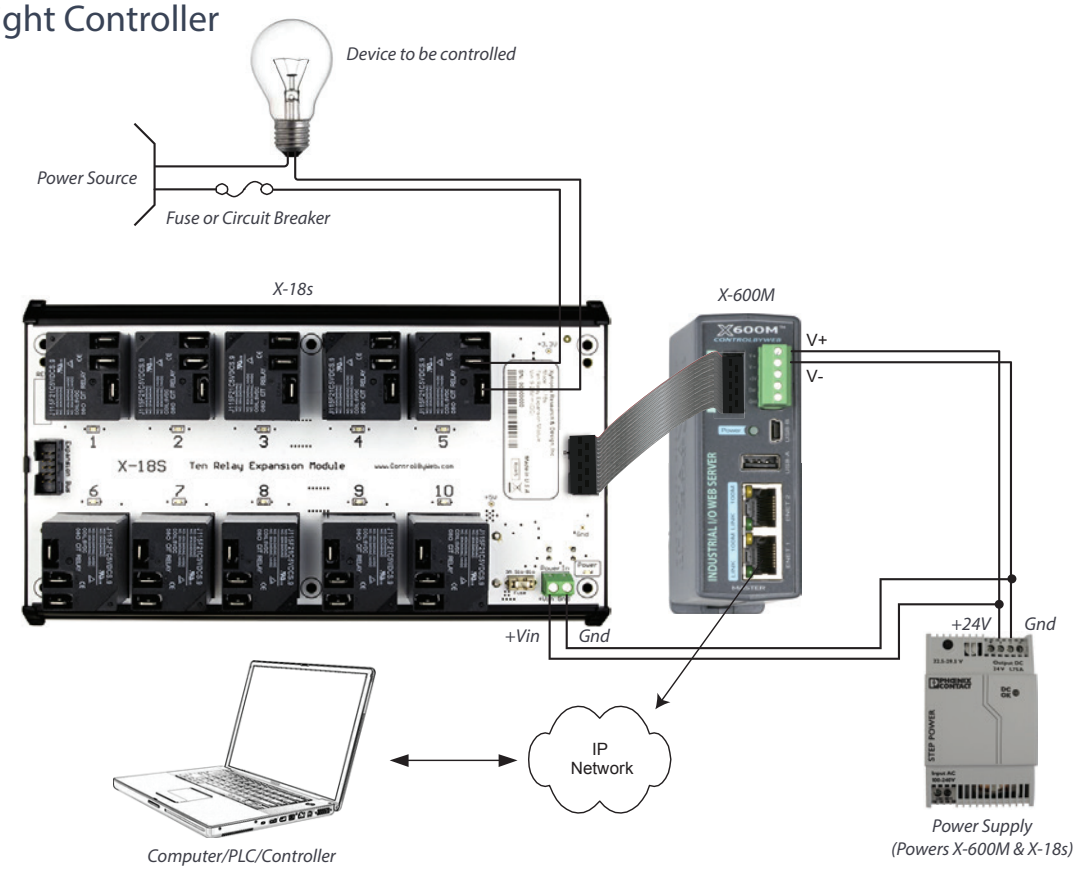



*Adding the X-18s on the X-600M*




*View X-18s components on the X-600M's Dashboard*

## High-Voltage Light Controller




### Models:

- X-18s

### Power Requirements

- Voltage: 9-28 VDC (24V recommended)
- Max Current: See table below for typical values at 25°C.

| Power Supply | All Relays OFF | All Relays ON |
|---|---|---|
| 9 VDC | 18 mA | 1200 mA |
| 12 VDC | 14 mA | 880 mA |
| 24 VDC | 11 mA | 450 mA |

### Relay Contacts

- Number of Relays: 10
- Max Voltage: 277VAC, 30VDC
- Max Current: 30A
- Contact Type: SPDT
- Load Type: General Purpose
- Contact Resistance: < 30 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- Environmental Rating: Over voltage Category II, Pollution Degree 2
- Relay Modes: ON/OFF or Pulse
- Pulse Timer Duration: 0.1 to 86,400 Seconds (1-day)

### Connectors

- Expansion Connector: Ribbon cable, 2x5-position, polarized 0.100" pitch
- Relays: 1/4" tab connectors

### LED Indicators

- Number of LEDs: 11
  - Power on
  - Relays 1-10

### Physical

- Size:
  - 8.60in (218.44mm) wide
  - 4.95in (125.73mm) tall
  - 2.46in (62.48mm) deep
- Weight: 20 oz (566 g)
- Enclosure Material: PVC
- Enclosure Flame Rating: UL94 V1

### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

# X-19s™

## 16 Relay, 16 Digital and 4 Analog Input Expansion Module

*16 Relays -30VDC, 30VAC, 2-Amp | 16 Optically-Isolated Digital Inputs 4-28VDC | 4 Analog Inputs 0-5VDC*

## PRODUCT OVERVIEW


The X-19s™ expansion module is used with the X-600M controller. The X-19s has 16 relays, 16 optically-isolated digital inputs, and 4 analog inputs. Screw terminal strips provide connections to the relays and inputs.

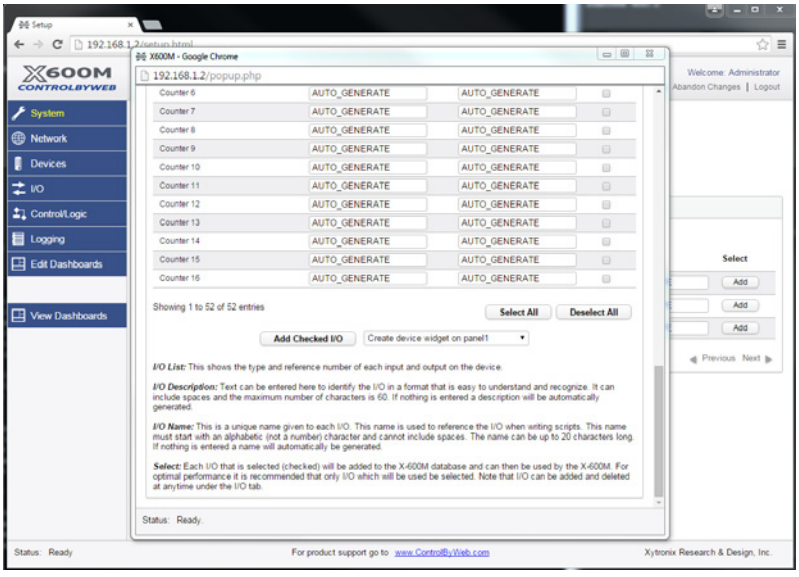
The X-19s is suitable for use in many applications from security systems to industrial controls where a high I/O count is required. It can be used to monitor freezer doors, light switches, and pulsed flow meters as well as control moderate loads such as solenoid valves, and lights.

Since the X-19s functions as a slave device to the X-600M, the advanced features of the X-600M can be utilized with this module. For example scheduling, remote relay control, logging, counting, email alerts based upon single input state change or multiple input state changes, analog slope and offset calculations, and many other features are available.

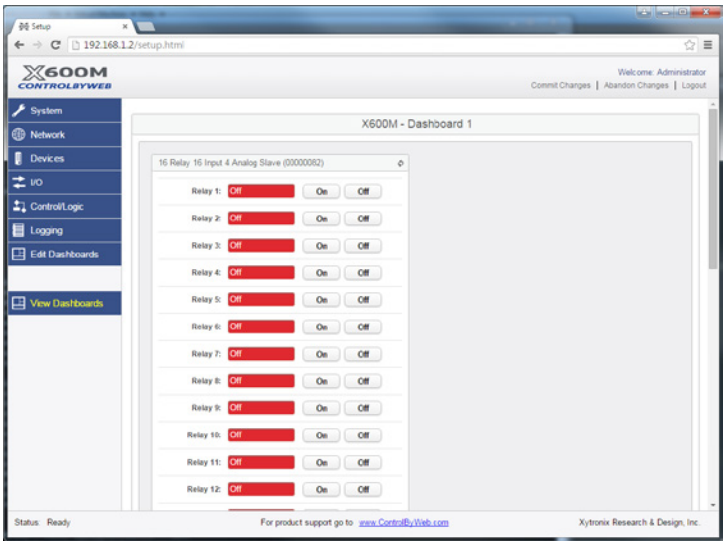
Attach multiple X-19s modules or a combination of expansion modules to the X-600M for an I/O combination that is tailored to your specific needs.

## Features:

- 16 isolated relays SPST
- Relay functions: ON/OFF or Pulsed
  - Great for moderate-load applications including:
  - Solenoid valves
  - Lights
  - and much more moderate load applications
- PCB terminal block, screw connection, 3.81mm pitch
- 16 optically-isolated digital inputs
- Digital input functions:
  - Monitor State
  - Control Relays
  - Control Remote Relays
  - Count
- Input Debounce
- 4 analog inputs
- 33 LEDs for outputs and power
- Power Supply: 9-28 VDC (24V recommended)




*Adding the X-19s on the X-600M*




*View X-19s components on the X-600M's Dashboard*

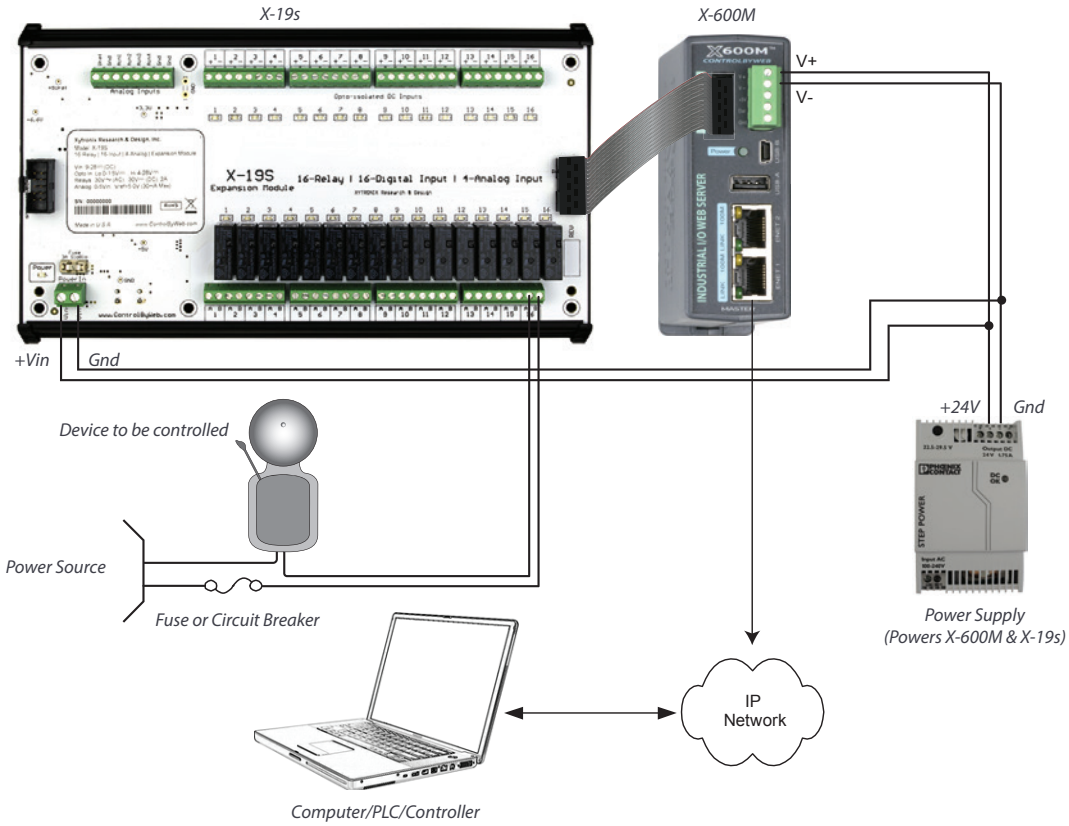
# X-19s™

## 16 Relay, 16 Digital and 4 Analog Input Expansion Module

*16 Relays -30VDC, 30VAC, 2-Amp | 16 Optically-Isolated Digital Inputs 4-28VDC | 4 Analog Inputs 0-5VDC*

## APPLICATIONS & SPECS

Shift Bell Controller




### Models:

- X-19s

### Power Requirements

- Voltage: 9-28 VDC (24V recommended)
- Max Current: See table below for typical values at 25°C.

| Power Supply | All Relays OFF | All Relays ON |
|---|---|---|
| 9 VDC | 20 mA | 650 mA |
| 12 VDC | 16 mA | 490 mA |
| 24 VDC | 12 mA | 250 mA |

### Relay Contacts

- Number of Relays: 16
- Max Voltage: 30VDC, 30VAC
- Max Current: 2A
- Contact Type: SPST
- Load Type: General Purpose
- Contact Resistance: < 100 milliohms initial
- Contact Material: AgSnO2
- 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: 16
- Type: Optically-Isolated
- Voltage Range: 4-28VDC
- Vin Hi (Min): 4V
- Vin LO (Max): 1.5V
- Current: 950uA @ 4V, 8.5mA @ 26V
- Minimum Hold Time: 5ms
- Input Isolation: 1500V
- Input Functions: Asynchronous status of the digital inputs
- Number of Counter Inputs: 16
- Maximum Count: 32-bit
- Max Count Rate: 100 Hz
- Edge Trigger: Rising, Falling or Both

### Analog Inputs

- Number of Inputs: 4
- Type: Single-ended channels
- Input Range: 0-5VDC
- Resolution: 12-bit
- Reference: 5.000V ±.04%, 3ppm, 30mA MAX

### Connectors

- Expansion Connector: Ribbon cable, 2x5-position, polarized 0.100" pitch
- Relays & Inputs: PCB terminal block, screw connection, 3.81 mm pitch

### LED Indicators

- Number of LEDs: 33
  - Power on
  - Relays 1-16
  - Digital Inputs 1-16

### Physical

- Size:
  - 8.60in (218.44mm) wide
  - 4.95in (125.73mm) tall
  - 1.96in (49.78mm) deep
- Weight: 12 oz (342 g)
- Enclosure Material: PVC
- Enclosure Flame Rating: UL94 V1

### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

## PRODUCT OVERVIEW


The X-20s™ expansion module is used with the X-600M controller. The X-20s has six, high-current relays, each with Form-C contacts (SPDT) and six, optically-isolated digital inputs. A screw terminal strip provides high-current connections to the relays.

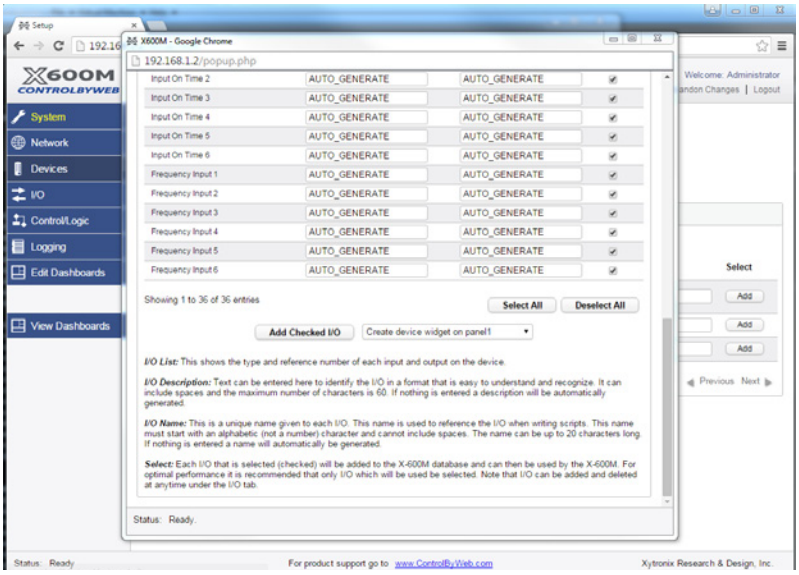
The X-20s is suitable for use with controlling relatively heavy loads such as motors, solenoid valves, and lights. Switches can be connected to the X-20s' digital inputs to locally control these loads. The digital inputs can also be used for other monitoring applications such as limit switches, security sensors, or light switches.

Since the X-20s functions as a slave device to the X-600M, the advanced features of the X-600M can be utilized with this module. For example scheduling, remote relay control, logging, counting, email alerts based upon single input state change or multiple input state changes, and many other features are available.

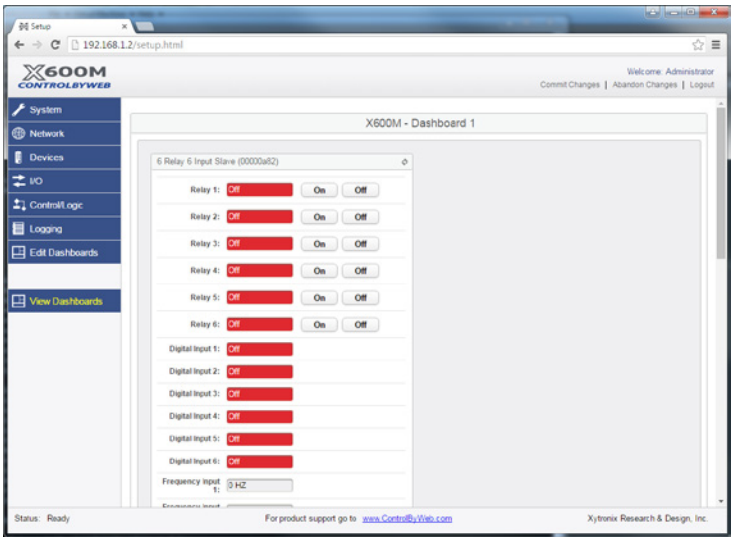
Attach multiple X-20s modules or a combination of expansion modules to the X-600M for an I/O combination that is tailored to your specific needs.

## Features:

- 6 isolated relays SPDT
- Relay functions: ON/OFF or Pulse
- Great for heavy-load applications including:
  - Motors
  - Solenoid valves
  - Lights
  - and much more ...
- Thermoplastic, UL94V-0, 3-wall, 0.375" pitch
- 6 optically-isolated digital inputs
- Digital input functions:
  - Monitor State
  - Control Relays
  - Control Remote Relays
  - Count
  - Frequency
  - High Time
  - ON Time
- 13 LEDs for outputs, inputs, and power
- Power Supply: 9-28 VDC (24V recommended)



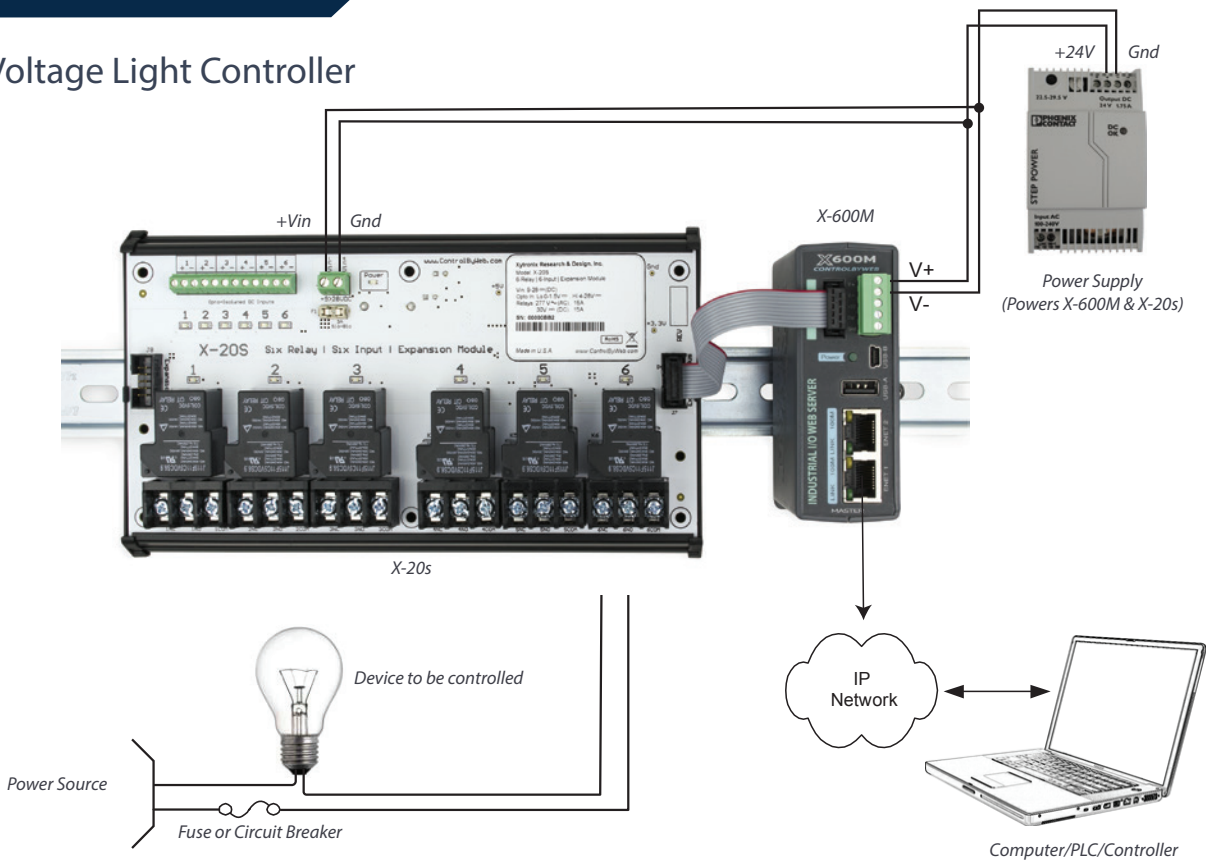

*Adding the X-20s on the X-600M*




*View X-20s components on the X-600M's Dashboard*

## APPLICATIONS & SPECS

### High-Voltage Light Controller




### Models:

- X-20s

### Power Requirements

- Voltage: 9-28 VDC (24V recommended)*
- Max Current: See table below for typical values at 25°C.

| Power Supply | All Relays OFF | All Relays ON |
|---|---|---|
| 9 VDC | 20 mA | 750 mA |
| 12 VDC | 16 mA | 555 mA |
| 24 VDC | 12 mA | 285 mA |

### Relay Contacts

- Number of Relays: 6
- Max Voltage: 277VAC, 30VDC
- Max Current: 15A
- Contact Type: SPDT
- Load Type: General Purpose
- Contact Resistance: < 30 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- Environmental Rating: Over voltage Category II, Pollution Degree 2
- Relay Modes: ON/OFF or Pulse
- Pulse Timer Duration: 0.1 to 86,400 Seconds (1-day)

### Digital Inputs

- Number of Inputs: 6
- Type: Optically-Isolated
- Voltage Range: 4-28VDC
- Vin Hi (Min): 4V
- Vin LO (Max): 1.5V
- Current: 950uA @ 4V, 8.5mA @ 26V
- Minimum Hold Time: 2.5ms
- Input Isolation: 1500V
- Input Functions: Asynchronous status of the digital inputs
- Number of Counter Inputs: 6
- Maximum Count: 32-bit
- Max Count Rate: 200 Hz
- Edge Trigger: Rising, Falling or Both
- Frequency: 1Hz min, 200 Hz max
- High Time: Pulse width (4,194,304 seconds max)
- On Time: Accumulated time an input is asserted (4,194,304 seconds max)

### Connectors

- Expansion Connector: Ribbon cable, 2x5-position, polarized 0.100" pitch
- Relays: Thermoplastic, UL94V-0, 3-wall, 0.375" pitch
- Inputs: PCB terminal block, screw connection, 3.81mm pitch

### LED Indicators

- Number of LEDs: 13
  - Power on
  - Relays 1-6
  - Digital Inputs 1-6

### Physical

- Size:
  - 8.60in (218.44mm) wide
  - 4.95in (125.73mm) tall
  - 2.16in (54.86mm) deep
- Weight: 17 oz (474 g)
- Enclosure Material: PVC
- Enclosure Flame Rating: UL94 V1

### Environmental

- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)
- Storage Temperature: -40°F to 185°F (-40°C to 85°C)
- Humidity: 5-95%, non-condensing
- Altitude: Up to 2,000m
- Indoor use or NEMA-4 protected location

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

## PRODUCT OVERVIEW


The XW-110 is an easy-to-use wireless temperature sensor with a built-in web server. It measures environmental temperature using an internal sensor (included), or you can attach an external temperature probe (optional) for precise measurement outside of the unit. Users can view current temperature using a web browser, smart phone app, or the XW-110 can send temperature information via email. The XW-110 can be easily and quickly mounted to a wall or any other workable surface.

Stand-Alone mode makes the XW-110 a self-contained device that requires no additional servers or ControlByWeb devices. In this mode the XW-110 products can provide live, real-time temperatures status directly to users through web browsers or the CBW Mobile app. In addition, stand-alone mode offers the ability to simply monitor temperature status and send out email alerts (which can be converted to text message alerts) either periodically or whenever an alarm condition occurs.

### Stand-Alone Mode Configuration Options

**-View Real-Time Temperatures** - Use the XW-110's built in web pages to view real-time temperatures: Connects directly to Wi-Fi network, no gateway devices required - AC adapter for main power and batteries for backup - No cloud server required.

**-Email alerts during alarm conditions** - Send emails for high/low temp alarms: Connects directly to Wi-Fi network, no gateway devices required - Battery/AC adapter powered DHCP or static IP address (no static IP required) - No cloud server required - No port forwarding required - Supports encrypted & un-encrypted email servers.

**-Control relays in remote locations** - Control the relays on other ControlByWeb devices to turn on lights, bells, alerts, etc.: Connects directly to Wi-Fi network - no gateway devices required - Battery or AC adapter powered - Control remote relays on other ControlByWeb products.

### Slave mode Configuration Options:

Slave mode is used for measuring and reporting the temperature to other ControlByWeb devices. In this mode the XW-110's web interface is not directly accessible to the user, instead temperature status is simply transmitted to another ControlByWeb device that supports temperature monitoring, such as the X-600M controller, which acts as a "master" device. The master device uses the XW-110's temperature information as it would use information collected by any other sensor.

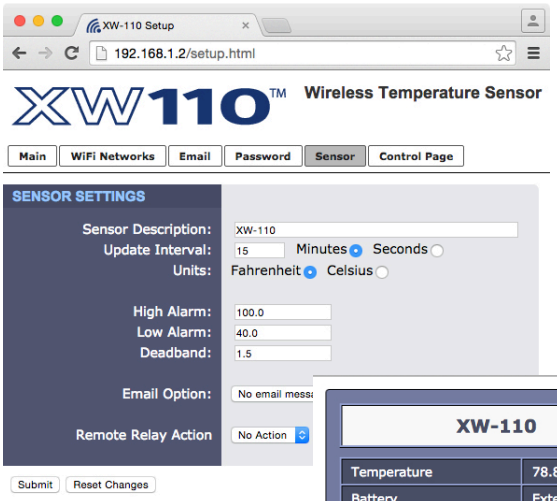
*Note on power: The XW-110 is powered by an external 5VDC wall transformer, or by two internal AA batteries. Only use batteries to provide backup power, or for modes where the web server is not being used. Some configurations consume more power than others which can make battery operation unpractical. Having more features enabled and/or increased sampling frequencies lead to lower battery life.*

There is no special software to download, no drivers to install, and no monthly subscription. Using the XW-110 is just as easy to monitor whether you are in the field, in the office, or on vacation. It is the ultimate solution to your wireless temperature monitoring needs!

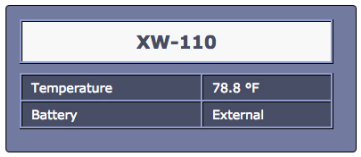
## Features:

- Monitor one temperature sensor
- Wireless Wi-Fi 802.11 b/g/n
- Transmission range up to 250ft*
- No sensor calibration needed
- Small data packets provide long battery life
- Built-in web server for configuration and remote monitoring
- Temperature sensor is accurate to +/-0.5°C from -10°C to +85°C
- Powered by external DC power adapter or two AA batteries (battery usage for backup/low power applications only)
- Longer length air/submersible temperature probes available - Sensors are interchangeable and need no calibration
- Temperature status can control relay on another ControlByWeb device
- Protocols supported: HTTP, XML, SMTP
- Simple and easy to use

*Transmission distance can vary depending upon environmental conditions, interference from other Wi-Fi devices, obstacles, etc.

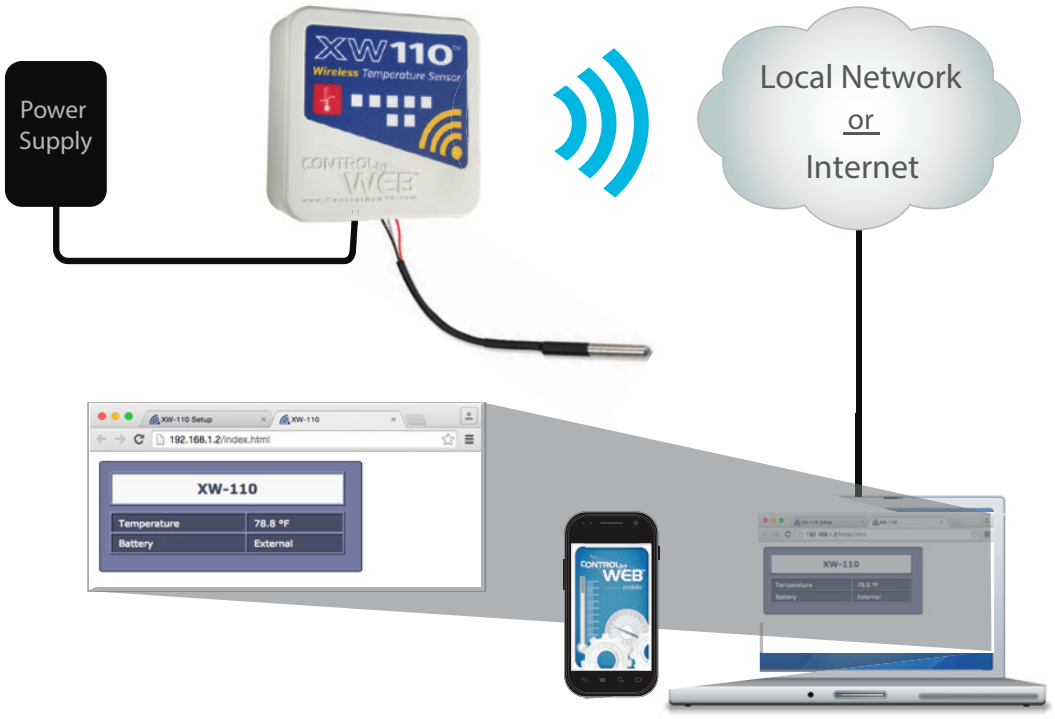



*Sensor Page*




*Control Page*

## Monitoring temperature on a computer/smartphone




### Models:

- XW-110B

### Power Requirements

- Voltage: 2AA batteries, or external 5VDC power supply
- Max Current: 500ma max (via DC power wall adapter)
- DC Jack: 5.5mm barrel x 2.5mm center pin (positive)

### Battery

- Internal: Two replaceable 1.5V "AA" cells
- Power Consumption: 27-770uA sleep, 59mA active RX, 229mA TX (at +12dBm)
- Battery Life: Up to 1-year, depending on mode, security and reporting frequency. Battery life is affected by mode, reporting interval, security, DHCP, DNS, battery temperature, and other variables.
- Battery Usage: Battery voltage is measured and periodically reported

### Wireless

- Network Standards: IEEE 802.11 b/g/n
- Frequency Band: 2.412 - 2.462 GHz
- Wi-Fi Security Standards: Open, WEP, WPA, WPA2
- Network Settings: DHCP or Static
- Wireless Range: Up to 250ft (typical for Wi-Fi devices) depends on environment
- Antenna: Integral chip antenna, 1.9 dBi.
- RF Output Power (typ): 14dBM (802.11b/g), 12dBM (802.11n)

### Operation

- Provisioning: Via internal web server (no cables or PC utilities needed)
- Access Point: Yes, push button activated (setup via web page)
- WPS: Yes, push button activated (Wi-Fi Protected Setup)
- Connectivity: Intermittently connected or always connected
- XCD Data Packet: UDP, 10-bytes (See Appendix A)
- Remote Server: ControlByWeb's X-600M™, X-300™ or cloud-based server
- Polling: state.xml (only with always-connected)

### Internal Push Buttons

- Button 1: Force access-point mode
- Button 2: Activate WPS mode

### Temperature Sensors

- Maximum Number of Sensors: 1
- Type: Digital "1-wire" thermometer probe
- 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, Email Alerts, Control Remote Relay

### Protocols

- HTTP, XML, SMTP, Remote Services

### Physical

- Location: Indoor use or NEMA-4 protected location
- Using Alkaline Batteries: -18°C to 55°C (0°F to 130°F)
- Operating Temperature: -40°C to 65°C (-40°F to 150°F)
- Storage Temperature: -40°C to 85°C (-40°F to 185°F)
- Humidity: 5-95%, non-condensing
- Size:
  - 3.16 (80mm) wide
  - 3.04in (77mm) tall
  - 0.91in (23mm) deep
- Weight: 2.4 oz (68g), no batteries
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 13 Characters

### Certifications

- FCC ID: 2AE4Z-XWD001
- IC: 21441-XWD001
- FCC 47CFR15 (Class B)
- IEC CISPR 22, CISPR 24
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

# XW-110 Plus™

## Wireless Temperature Sensor

*1-3 Wireless Temperature Sensors | Temperature Logging | Power-Failure Alerts*

## PRODUCT OVERVIEW


The XW-110 is an easy-to-use wireless temperature sensor with a built-in web server. It measures environmental temperatures using up to 3 external temperature probes (one included) for precise measurement outside of the unit. Users can view current temperature using a web browser, smart phone app, or the XW-110 can send temperature information via email. The XW-110 can be easily and quickly mounted to a wall or any other workable surface.

The XW-110 Plus model, allows you to periodically log temperature data. The temperature data is stored internally (max 28,829 logs), and can be sent daily via email. The XW-110 Plus is an ideal solution for maintaining compliance with FDA requirements to maintain food temperatures in coolers and freezers. No more manually logging temperature data by hand!

Stand-Alone mode makes the XW-110 a self-contained device that requires no additional servers or ControlByWeb devices. In this mode the XW-110 products can provide live, real-time temperatures status directly to users through web browsers or the CBW Mobile app. In addition, stand-alone mode offers the ability to simply monitor temperature status and send out email alerts (which can be converted to text message alerts) either periodically or whenever an alarm condition occurs.

### Stand-Alone Mode Configuration Options

**-View Real-Time Temperatures** - Use the XW-110's built in web pages to view real-time temperatures: Connects directly to Wi-Fi network, no gateway devices required - AC adapter for main power and batteries for backup - No cloud server required.

**-Email alerts during alarm conditions** - Send emails for high/low temp alarms or power failures: Connects directly to Wi-Fi network, no gateway devices required - Battery/AC adapter powered DHCP or static IP address (no static IP required) - No cloud server required - No port forwarding required - Supports encrypted & un-encrypted email servers.

**-Control relays in remote locations** - Control the relays on other ControlByWeb devices to turn on lights, bells, alerts, etc.: Connects directly to Wi-Fi network - no gateway devices required - Battery or AC adapter powered - Control remote relays on other ControlByWeb products.

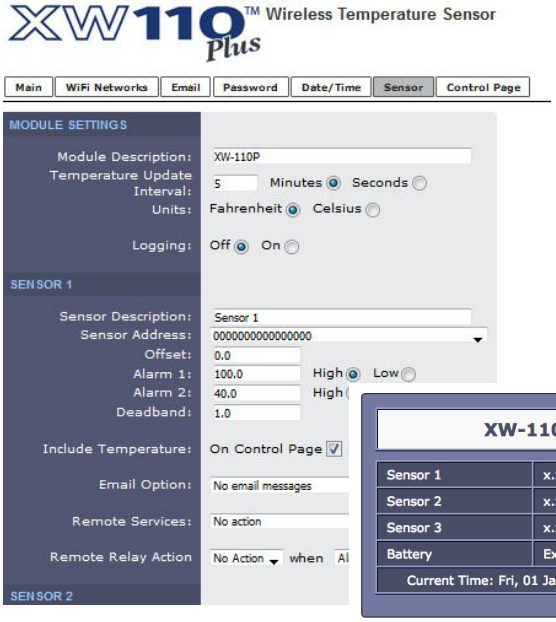
*Note on power: The XW-110 is powered by an external 5VDC wall transformer, or by two internal AA batteries. Only use batteries to provide backup power, or for modes where the web server is not being used. Some configurations consume more power than others which can make battery operation unpractical. Having more features enabled and/or increased sampling frequencies lead to lower battery life.*

There is no special software to download, no drivers to install, and no monthly subscription. Using the XW-110 is just as easy to monitor whether you are in the field, in the office, or on vacation. It is the ultimate solution to your wireless temperature monitoring needs!

## Features:

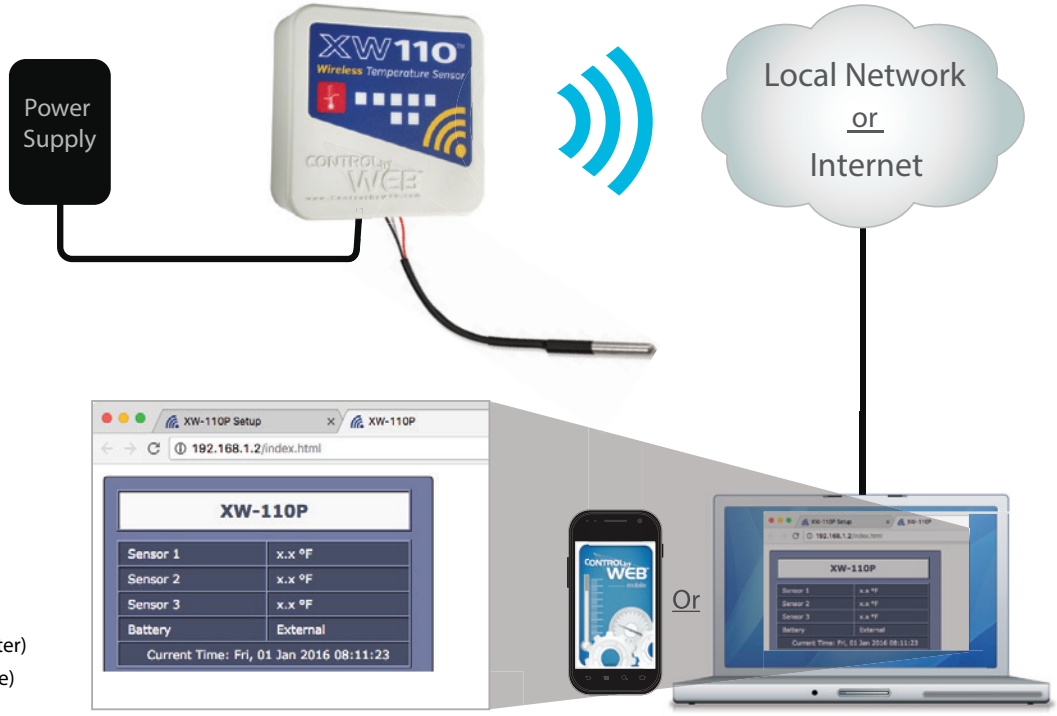
- Monitor up to 3 temperature sensors
- Wireless Wi-Fi 802.11 b/g/n
- Transmission range up to 250ft*
- Log temperature data (data sent via daily email)
- Send power failure email alerts
- No sensor calibration needed
- Small data packets provide long battery life
- Built-in web server for configuration and remote monitoring
- Temperature sensor is accurate to +/-0.5°C from -10°C to +85°C
- Powered by external DC power adapter or two AA batteries (battery usage for backup/low power applications only)
- Longer length air/submersible temperature probes available - Sensors are interchangeable and need no calibration
- Temperature status can control relay on another ControlByWeb device
- Protocols supported: HTTP, XML, SMTP, Modbus, Remote Services, Data Logging
- Simple and easy to use

*Transmission distance can vary depending upon environmental conditions, interference from other Wi-Fi devices, obstacles, etc.




*Sensor Page* *Control Page*

## Monitoring temperature on a computer/smart phone




### Models:

- XW-110P

### Power Requirements

- Voltage: 2AA batteries, or external 5VDC power supply
- Max Current: 500ma max (via DC power wall adapter)
- DC Jack: 5.5mm barrel x 2.5mm center pin (positive)

### Battery

- Internal: Two replaceable 1.5V "AA" cells
- Power Consumption: 27-770uA sleep, 59mA active RX, 229mA TX (at +12dBm)
- Battery Life: Up to 1-year, depending on mode, security and reporting frequency. Battery life is affected by mode, reporting interval, security, DHCP, DNS, battery temperature, and other variables.
- Battery Usage: Battery voltage is measured and periodically reported

### Wireless

- Network Standards: IEEE 802.11 b/g/n
- Frequency Band: 2.412 - 2.462 GHz
- Wi-Fi Security Standards: Open, WEP, WPA, WPA2
- Network Settings: DHCP or Static
- Wireless Range: Up to 250ft (typical for Wi-Fi devices) depends on environment
- Antenna: Integral chip antenna, 1.9 dBi.
- RF Output Power (typ): 14dBM (802.11b/g), 12dBM (802.11n)

### Operation

- Provisioning: Via internal web server (no cables or PC utilities needed)
- Access Point: Yes, push button activated (setup via web page)
- WPS: Yes, push button activated (Wi-Fi Protected Setup)
- Connectivity: Intermittently connected or always connected
- XCD Data Packet: UDP, 10-bytes (See Appendix A)
- Remote Server: ControlByWeb's X-600M™, X-300™ or cloud-based server
- Polling: state.xml (only with always-connected)

### Internal Push Buttons

- Button 1: Force access-point mode
- Button 2: Activate WPS mode

### Temperature Sensors:

- Number of Sensors: 1-3
- Type: Digital "1-wire" thermometer probe
- 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, Email Alerts, Control Remote Relay

### Real-Time Clock

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

### Protocols

- HTTP, XML, SMTP, Modbus (XW-110 Plus), Remote Services, Data Logging (XW-110 Plus)

### Logging

- Log File Size: 1,800 Entries
- Buffer Architecture: Circular Buffer
- (Log data can be emailed every 24 hours)

### Physical

- Location: Indoor use or NEMA-4 protected location
- Using Alkaline Batteries: -18°C to 55°C (0°F to 130°F)
- Operating Temperature: -40°C to 65°C (-40°F to 150°F)
- Storage Temperature: -40°C to 85°C (-40°F to 185°F)
- Humidity: 5-95%, non-condensing
- Size:
  - 3.16 (80mm) wide
  - 3.04in (77mm) tall
  - 0.91in (23mm) deep
- Weight: 2.4 oz (68g), no batteries
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 13 Characters

### Certifications

- FCC ID: 2AE4Z-XWD001
- IC: 21441-XWD001
- FCC 47CFR15 (Class B)
- IEC CISPR 22, CISPR 24
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

## PRODUCT OVERVIEW


The XW-111 is an easy-to-use, wireless digital input monitoring device with a built-in web server. The XW-111 monitors and reports the status of switch closure sensors and alarms. It's ideal for applications where a device's status must be monitored and Ethernet wiring is not accessible or practical to install.

The XW-111 can sense the state of up to two switch-closure sensors, such as: push buttons, magnetic door alarm switches, micro-switches, or any device which has a relay or switch closure output. The XW-111 can be configured for the alarm to be active when the switch is either open or closed.

Stand-Alone mode makes the XW-111 a self-contained device that requires no additional servers or ControlByWeb devices. While in Stand-Alone mode the XW-111 products can provide live, real-time input status directly to users through web browsers or the CBW Mobile app. In addition, Stand-Alone mode offers the ability to simply monitor input status and send out email alerts (which can be converted to text message alerts) either periodically or whenever an alarm condition occurs.

### Stand-Alone Mode:

**-View real-time input status** -Use the XW-111's built in web pages to view real-time input status: Connects directly to Wi-Fi network, no gateway devices required - AC adapter for main power and batteries for backup - No cloud server required

**-Email alerts during alarm conditions** - Send emails for on/off sensor status: Connects directly to Wi-Fi network, no gateway devices required - Battery/AC adapter powered DHCP or static IP address (no static IP required) - No cloud server required - No port forwarding required - Supports encrypted & un-encrypted email servers

**-Control relays in remote locations** - Control the relays on other ControlByWeb devices to turn on lights, bells, alerts, etc.: Connects directly to Wi-Fi network - no gateway devices required - Battery or AC adapter powered - Control remote relays on other ControlByWeb products

### Slave Mode:

Slave mode is used for measuring and reporting an input status to other ControlByWeb devices. While in Slave mode the XW-111's web interface is not directly accessible to the user, instead input status is simply transmitted to another ControlByWeb device that supports input status monitoring, such as the X-600M controller, which acts as a "master" device. The master device uses the XW-111's input status information as it would use information collected by any other input.

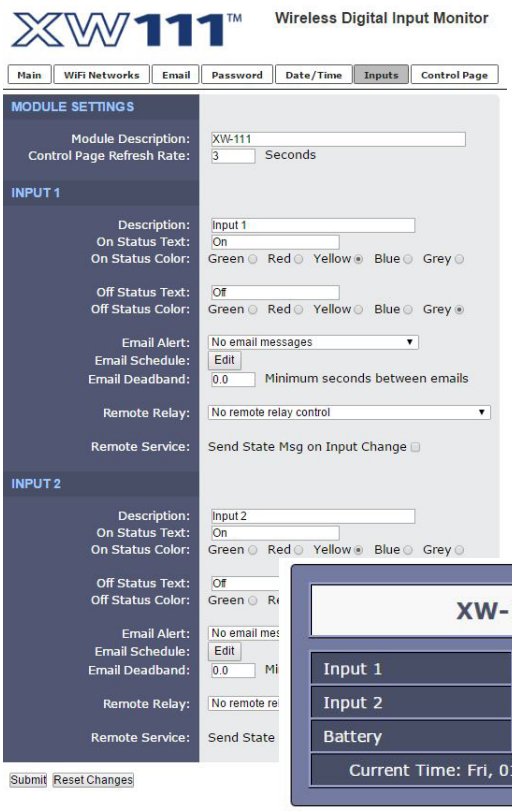
*Note on power: The XW-111 is powered by an external 5VDC wall transformer, or by two internal AA batteries. Only use batteries to provide backup power, or for modes where the web server is not being used. Some configurations consume more power than others which can make battery operation unpractical. Having more features enabled and/or increased sampling frequencies lead to lower battery life.*

There is no special software to download, no drivers to install, and no monthly subscription. Monitoring inputs with the XW-111 is easy whether you are in the field, in the office, or on vacation. It is the ultimate solution to your wireless digital input monitoring needs!

## Features:

- Wireless Wi-Fi 802.11 b/g/n
- Transmission range up to 250ft*
- Small data packets provide long battery life
- Built-in web server for configuration and remote monitoring
- Connect a variety of switch-closure sensors
- Powered by external DC power adapter or two AA batteries (battery usage for backup/low power applications only)
- Each input status can control a relay on another ControlByWeb device
- Simple and easy to use

* Transmission distance can vary depending upon environmental conditions, interference from other Wi-Fi devices, obstacles, etc.




*Inputs Page* *Control Page*

## Monitoring the XW-111 digital inputs' status on a computer/smartphone


### Models:

- XW-111B

### Power Requirements

- Voltage: 2AA batteries, or external 5VDC power supply
- Max Current: 500ma max (via DC power wall adapter)
- DC Jack: 5.5mm barrel x 2.5mm center pin (positive)

### Battery

- Internal: Two replaceable 1.5V "AA" cells
- Power Consumption: 27-770uA sleep, 59mA active RX, 229mA TX (at +12dBm)
- Battery Life: Up to 1-year, depending on mode, security and reporting frequency. Battery life is affected by mode, reporting interval, security, DHCP, DNS, battery temperature, and other variables.
- Battery Usage: Battery voltage is measured and periodically reported

### Wireless

- Network Standards: IEEE 802.11 b/g/n
- Frequency Band: 2.412 - 2.462 GHz
- Wi-Fi Security Standards: Open, WEP, WPA, WPA2
- Network Settings: DHCP or Static
- Wireless Range: Up to 250ft (typical for Wi-Fi devices) depends on environment
- Antenna: Integral chip antenna, 1.9 dBi.
- RF Output Power (typ): 14dBM (802.11b/g), 12dBM (802.11n)

### Operation

- Provisioning: Via internal web server (no cables or PC utilities needed)
- Access Point: Yes, push button activated (setup via web page)
- WPS: Yes, push button activated (Wi-Fi Protected Setup)
- Connectivity: Intermittently connected or always connected
- XCD Data Packet: UDP, 10-bytes (See Appendix A)
- Remote Server: ControlByWeb's X-600M™, X-300™ or cloud-based server
- Polling: state.xml (only with always-connected)

### Internal Push Buttons

- Button 1: Force access-point mode
- Button 2: Activate WPS mode

### Digital Inputs

- Number of Inputs: 2
- Type: Non-Isolated
- Voltage Range: 0-3.3VDC
- Current: 200K Pullup
- Minimum Hold Time: (Awake) 30mS
- Minimum Hold Time: (Asleep) 100ms
- Input Isolation: Non-Isolated
- Input Functions: Monitor State, Trigger Email Alerts, Control Remote Relays
- Edge Trigger: Rising, Falling or Both

### Physical

- Location: Indoor use or NEMA-4 protected location
- Using Alkaline Batteries: -18°C to 55°C (0°F to 130°F)
- Operating Temperature: -40°C to 65°C (-40°F to 150°F)
- Storage Temperature: -40°C to 85°C (-40°F to 185°F)
- Humidity: 5-95%, non-condensing
- Size:
  - 3.16 (80mm) wide
  - 3.04in (77mm) tall
  - 0.91in (23mm) deep
- Weight: 2.4 oz (68g), no batteries
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 13 Characters

### Certifications

- FCC ID: 2AE4Z-XWD001
- IC: 21441-XWD001
- FCC 47CFR15 (Class B)
- IEC CISPR 22, CISPR 24
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

## PRODUCT OVERVIEW


Water leaks can occur when you least expect them! Leaks that are left undetected can lead to thousands of dollars worth of repairs and equipment replacement costs. Monitor water leaks in server rooms, around water heaters, bathrooms, and areas near water tanks or pipes. Don't let a leaky pipe set you back!

The XW-112 is an easy-to-use and effective water leak detection system. This wireless device monitors the presence of conductive non-flammable liquids using a GRI-2605 liquid detection sensor (included). It's ideal for applications where liquid levels or water leaks must be monitored and Ethernet wiring is not accessible or practical to install.

### Built-in Web Server

The XW-112 is a self-contained device that does not require any additional equipment such as hubs, gateways, or servers. The XW-112 provides real-time water status to users through a standard web browser or the CBW Mobile app*. In addition, it offers the ability to monitor the water sensor's status and send out email alerts (which can be converted to text message alerts) whenever water is detected.

*Note that accessing XW-112 remotely over the Internet requires your local router to be setup to forward incoming requests to the XW-112.

### Email/Text Notifications

Receive email/text notifications in the event of a pipe burst, slow leak, or rising water levels in a tank for from ground water.

When the XW-112 Wi-Fi Water Detector detects the presence of water, it sends email notifications to up to 3 email addresses to ensure that the proper personnel is notified. Convert email messages to text messages using your wireless carrier's email to SMS gateway. (Carriers offer this as a free service.)

### Alarm Control

In addition to email/text notifications, the XW-112 can send messages to control other ControlByWeb devices when it detects the presence of water. For example, a WebRelay that is wired to an alarm notification device, such as a bell or flashing light, can be turned on by the XW-112 when water is detected. These ControlByWeb devices can be located in the same building, across campus, or they can be located in a location that's across the world!

### Power Failure Notification

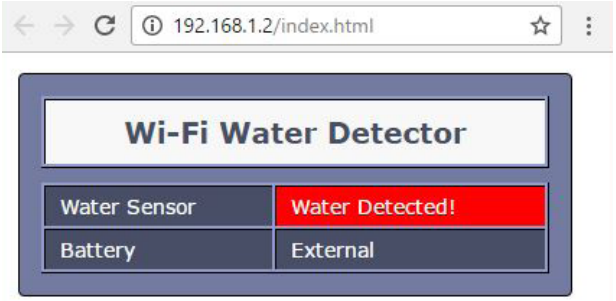
Power failures can be the cause of disasters or they may disable detection systems so that alerts are not sent out when disasters occur. For example, a power failure can disable sump pumps which can quickly cause flooding. Early notification of power failures can be extremely valuable in many applications.

The XW-112 can be configured to send out email/text notifications in the event of a power loss. This feature requires good batteries to be installed in the XW-112, and backup power must be provided to the local network that provides internet connectivity, such as a wireless access point. (Note that during times of power failure, the unit will not detect the presence of water.)

## Features:

- Wireless Wi-Fi 802.11 b/g/n
- Built-in web server provides stand-alone operation (i.e. direct access to unit without using a cloud server - No monthly or annual service fees)
- GRI-2605 liquid detection sensor is included
- Powered from a 5-Volt DC power adapter
- Two "AA" batteries provide backup power to send a power-fail alarm
- Alarm can control relays on other ControlByWeb devices
- Send encrypted email alarms and weekly status alerts (up to 3 addresses)
- Simple and easy to use
- Includes auxiliary protocols: XML and Remote Services
- Static or DHCP IP address configuration
- 5-year warranty


*Sensor Page*

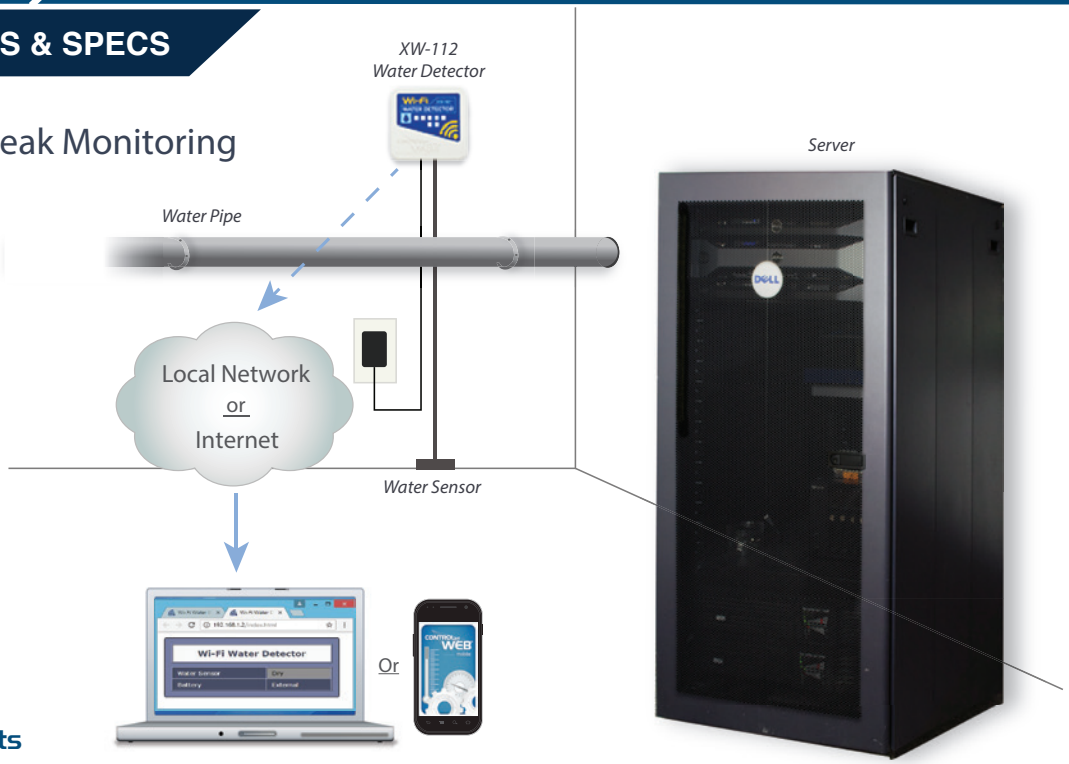



*Control Page*



Phone: 435-750-5999
Email: Sales@ControlByWeb.com

## Wireless Water Leak Monitoring




### Power Requirements

- Voltage: 5VDC power supply
- Max Current: 500ma max (via DC power wall adapter)
- DC Jack: 5.5mm barrel x 2.5mm center pin (positive)

### Battery

- Internal: Two replaceable 1.5V "AA" cells
- Power Consumption: 59mA active RX, 229mA TX (at +12dBm)
- Battery Usage: Battery voltage is measured and periodically reported
- Battery Life: On external power failure, 3 days minimum

### Wireless

- Network Standards: IEEE 802.11 b/g/n
- Frequency Band: 2.412 - 2.462 GHz
- Wi-Fi Security Standards: Open, WEP, WPA, WPA2
- Network Settings: DHCP or Static
- Wireless Range: Up to 250ft (typical for Wi-Fi devices) depends on environment
- Antenna: Integral chip antenna, 1.9 dBi.
- RF Output Power (typ): 14dBM (802.11b/g), 12dBM (802.11n)

### Operation

- Provisioning: Via internal web server (no cables or PC utilities needed)
- Access Point: Yes, push button activated (setup via web page)
- WPS: Yes, push button activated (Wi-Fi Protected Setup)
- Connectivity: Intermittently connected or always connected
- XCD Data Packet: UDP, 10-bytes (See Appendix A)
- Remote Server: ControlByWeb's X-600M™, X-300™ or cloud-based server
- Polling: state.xml (only with always-connected)

### Internal Push Buttons

- Button 1: Force access-point mode
- Button 2: Activate WPS mode

### Digital Inputs

- Number of Inputs: 1
- Type: Non-Isolated
- Current: 12.4K Pullup
- Minimum Hold Time: 20ms
- Input Functions: Monitor Liquid State, Trigger Email/ Text Alerts, Control Remote Relays
- Edge Trigger: Rising, Falling or Both

### Water Sensor

- Model: GRI 2605
- Operating Voltage: 5 VDC
- Operating Current: 10 mA
- Wire Connections:
  - Red: +5V
  - Green: In
  - Black: Ground
  - White: Ground
- Lead Wire: 6ft (1.83m)

### Physical

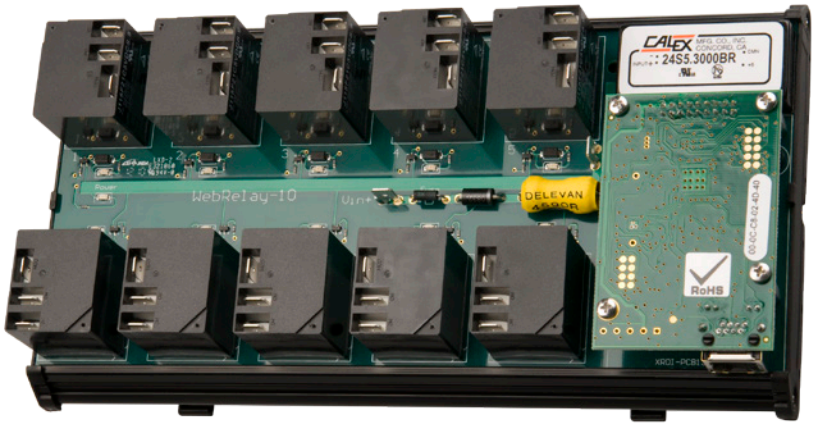
- Location: Indoor use or NEMA-4 protected location
- Using Alkaline Batteries: -18°C to 55°C (0°F to 130°F)
- Operating Temperature: -40°C to 65°C (-40°F to 150°F)
- Storage Temperature: -40°C to 85°C (-40°F to 185°F)
- Humidity: 5-95%, non-condensing
- Size:
  - 3.16 (80mm) wide
  - 3.04in (77mm) tall
  - 0.91in (23mm) deep
- Weight: 2.4 oz (68g), no batteries
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 13 Characters

### Certifications

- FCC ID: 2AE4Z-XWD001
- IC: 21441-XWD001
- FCC 47CFR15 (Class B)
- IEC CISPR 22, CISPR 24
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)




WebRelay-10™ is a robust, industrial relay board with Ethernet communications. It provides remote relay control through its ten large 30-Amp relays.

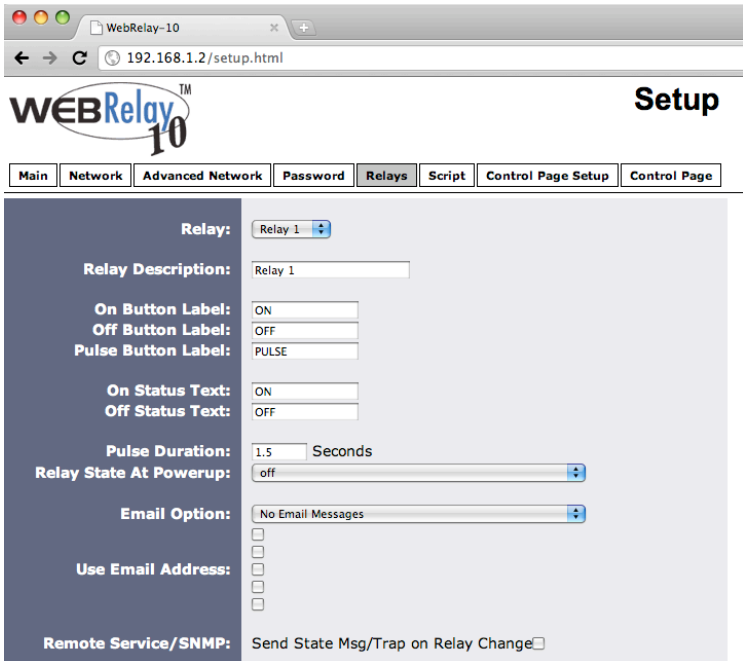
The relays can be individually controlled using a standard web browser or by sending commands from a custom control application.

It is self-contained with a built-in web server, and requires no external software, additional network modules, or computers.

WebRelay-10™ is designed for industrial applications and can be DIN-Rail mounted inside a control cabinet. Tab connectors (1/4 inch) are used for power and relay contact connection.

## Features:

- Ten independent 30-Amp Relays (Form C, SPDT).
- Built-in web server for browser-based setup and control.
- No special software or device drivers required.
- XML status and control page make communications with custom computer applications simple.
- Can operate as a Modbus TCP/IP slave.
- On/Off and Pulse modes.
- Wide power supply range (10-36 VDC).
- DIN-Rail mountable.
- LEDs indicate the current relay state.
- 1/4" tab-connectors.
- UL/CUL listed relays (E197852).

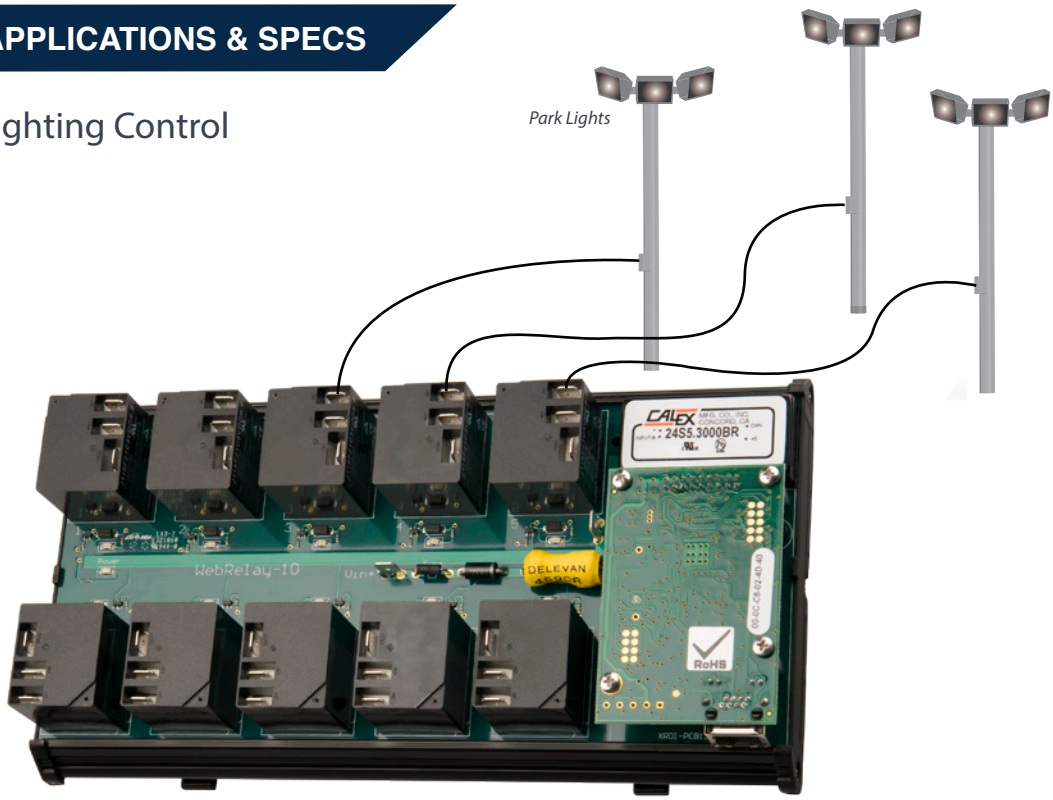



*Relay Setup Page*


*WebRelay-10 Control Page*

## APPLICATIONS & SPECS

### Lighting Control




### Additional Applications

- ✓ Automation Controller
- ✓ Industrial Automation
- ✓ Car Wash Industry
- ✓ More...

### Models:

- X-WR-10R12-I

### Power Requirements

- Voltage: 10-36VDC
- Max Current: 53mA - 1.2A
- Note: Current based upon voltage applied and device settings. See users manual for complete breakdown.

### Relay Contacts

- Number of Relays: 10
  - N.O.
    - 40A @ 240VAC resistive
    - 30A @ 277VAC General Purpose
    - 2hp @ 250VAC
- N.C.
    - 30A @ 240VAC, 30VDC resistive
    - 20A @ 277VAC General Purpose
    - 1-1/2 hp @ 250VAC
- Contact Type: SPDT (Form 1C)
- Load Type: General Purpose
- Contact Resistance: < 30 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- Environmental Rating: Over voltage Category II, Pollution Degree 2
- Relay Modes: ON/OFF or Pulse
- Pulse Timer Duration: 0.1 to 86,400 Seconds (1-day)
- Relay Connections: 1/4" Tab Terminals

### Real-Time Clock

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

### Capacitor Power Backup

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

### Network

- Type: 10/100 Base-T Ethernet Port
- Setup: Static IP address assignment, HTTP port selectable

### LED Indicators

- Number of LEDs: 13
  - Power on
  - Relay coil energized 1-10
  - Network linked
  - Network activity

### Physical

- Size:
  - 9.125in (232mm) wide
  - 4.25in (126mm) tall
  - 2.425in (62mm) deep
- Weight: 22 oz (626 grams)
- Enclosure Material: PVC
- Enclosure Flame Rating: UL94 V1
- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)

### Protocols

- HTTP, XML, Modbus, SNMP, SMTP, Remote Services, and Remote Monitoring

### Logging

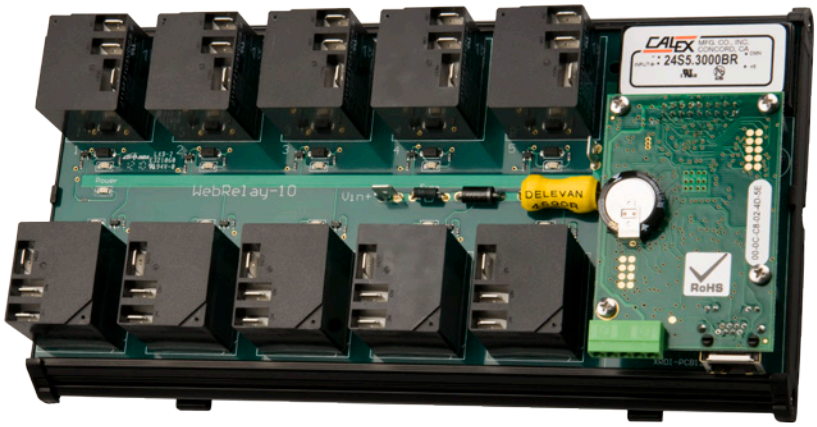
- Log File Size: 512K max 17900 logs
- Storage: Nonvolatile Flash
- Buffer Architecture: Circular Buffer
- Log data can be periodically read and stored on a computer

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 10 Characters

### Regulatory Compliance

- Electromagnetic Compliance:
- IEC CISPR 22, CISPR 24, FCC 47CFR15, EU EN55024, EN55022
- Product Safety:
- IEC 60950-1 / EN 60950-1

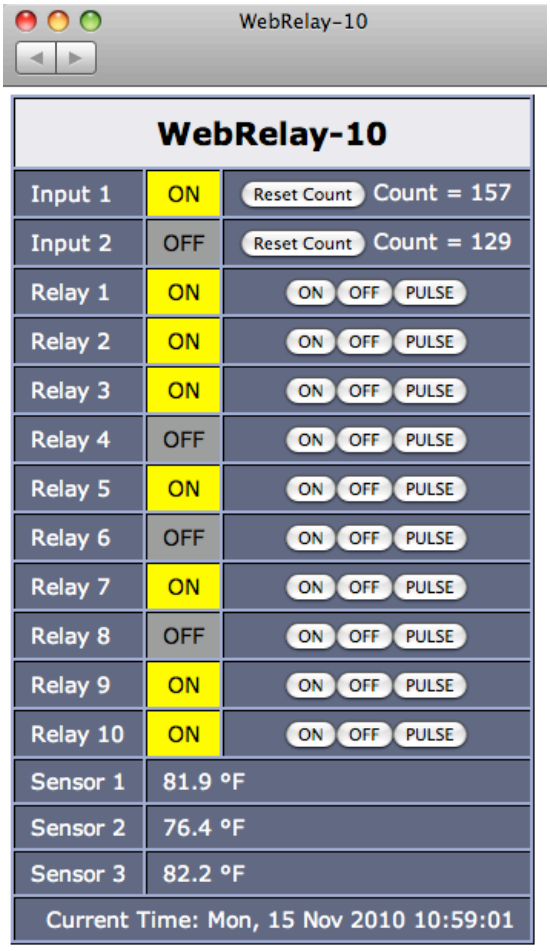


The full featured WebRelay-10 Plus™ has all the features found on WebRelay-10™, plus much more.

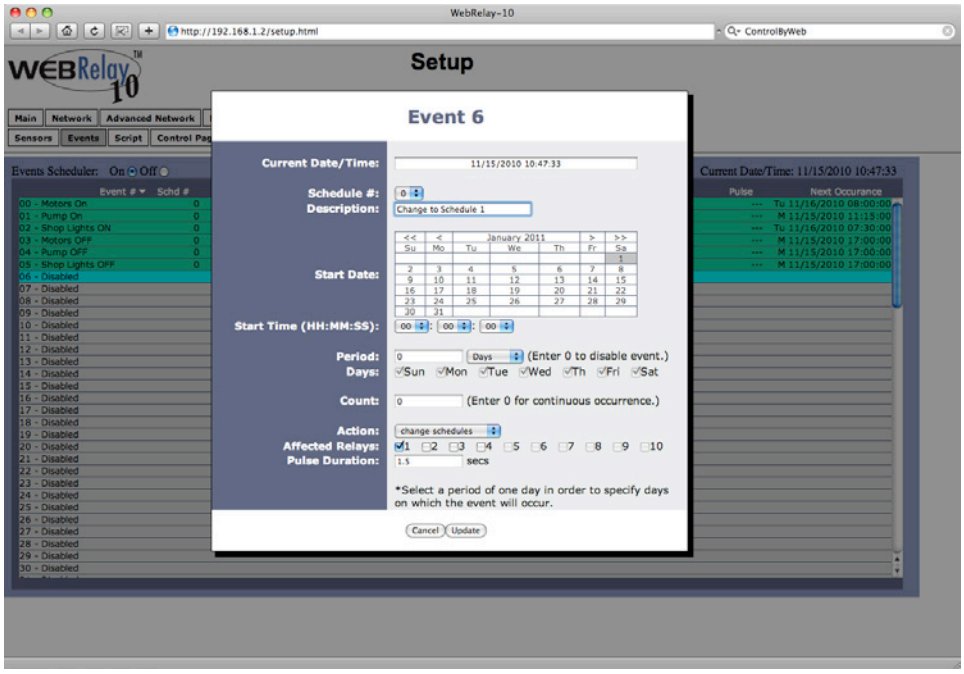
Additional features include an event scheduler, customizable email alerts, two discrete inputs, device logging, and remote temperature and/or humidity monitoring.

## Features:

- Event scheduler with yearly calendar. Schedule up to 100 events.
- Customizable email alerts.
- Up to eight temperature and/or humidity sensors can be added for environmental monitoring (one temperature sensor included).
- Dry-contact sensors or switches can be connected for local control of relays or for monitoring external devices.
- Logging; log relay changes, events, Modbus TCP/IP requests, high/low temperatures, input changes, network traffic, and more.
- Real-time clock, can automatically adjust for daylight savings time, sync with NTP server.
- System log provides detailed diagnostic information.
- Simple scripts can be written in BASIC for advanced functionality.
- Configure manually or with DHCP.




*WebRelay-10 Plus Control Page*




*Event Scheduling Page*

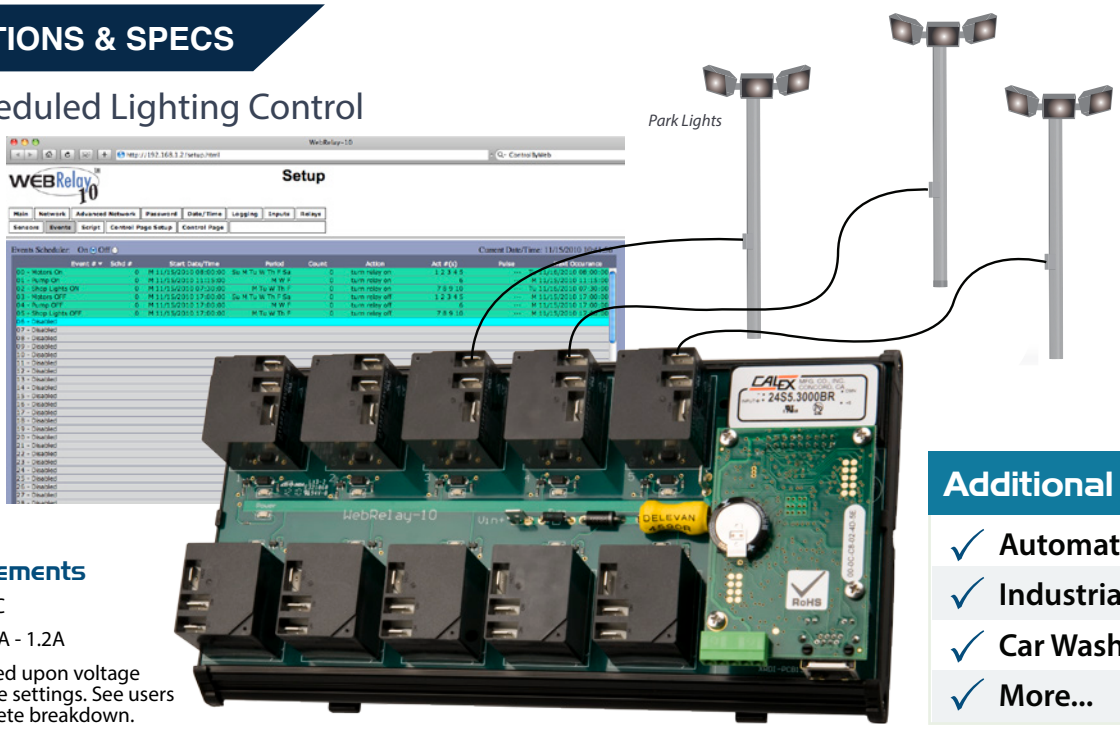
# WebRelay-10 Plus™

## 10 Web-Controlled Relays and More

*Ten Independent, 30-Amp Relays*

## APPLICATIONS & SPECS

### Scheduled Lighting Control




### Models:

- X-WR-10R12-IP

### Power Requirements

- Voltage: 10-36VDC
- Max Current: 53mA - 1.2A
- Note: Current based upon voltage applied and device settings. See users manual for complete breakdown.

### Additional Applications

- ✓ Automation Controller
- ✓ Industrial Automation
- ✓ Car Wash Industry
- ✓ More...

### Relay Contacts

- Number of Relays: 10
  - N.O.
    - 40A @ 240VAC resistive
    - 30A @ 277VAC General Purpose
    - 2hp @ 250VAC
- N.C.
    - 30A @ 240VAC, 30VDC resistive
    - 20A @ 277VAC General Purpose
    - 1-1/2 hp @ 250VAC
- Contact Type: SPDT (Form 1C)
- Load Type: General Purpose
- Contact Resistance: < 30 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- Environmental Rating: Over voltage Category II, Pollution Degree 2
- Relay Modes: ON/OFF or Pulse
- Pulse Timer Duration: 0.1 to 86,400 Seconds (1-day)
- Relay Connections: 1/4" Tab Terminals

### Digital Inputs

- Number of Inputs: 2
- Type: Non-Isolated
- Voltage Range: 0-5VDC
- Current: 47K Pullup
- Minimum Hold Time: 20ms
- Input Isolation: Non-Isolated
- Input Functions: Counters, Email Alerts, SNMP Traps
- Maximum Count: 32-bit
- Max Count Rate: 25Hz
- Edge Trigger: Rising, Falling or Both

### Temperature Sensors

- Maximum Number of Sensors: 8
- Type: 1-Wire 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-WM wall mount sensor
- Humidity Range: 0-100% RH
- Accuracy: ±1.8%

### Real-Time Clock

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

### Capacitor Power Backup

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

### Network

- Type: 10/100 Base-T Ethernet Port
- Setup: Static IP address assignment or DHCP, HTTP port selectable

### LED Indicators

- Number of LEDs: 13
  - Power on
  - Relay coil energized 1-10
  - Network linked
  - Network activity

### Physical

- Size:
  - 9.125in (232mm) wide
  - 4.25in (126mm) tall
  - 2.425in (62mm) deep
- Weight: 22 oz (626 grams)
- Enclosure Material: PVC
- Enclosure Flame Rating: UL94 V1
- Operating Temperature: -40°F to 150°F (-40°C to 65.5°C)

### Protocols

- HTTP, XML, Modbus, SNMP, SMTP, Remote Services, and Remote Monitoring

### Logging

- Log File Size: 512K max 17900 logs
- Storage: Nonvolatile Flash
- Buffer Architecture: Circular Buffer
- Log data can be periodically read and stored on a computer

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 10 Characters

### Regulatory Compliance

- Electromagnetic Compliance:
- IEC CISPR 22, CISPR 24, FCC 47CFR15, EU EN55024, EN55022
- Product Safety:
- IEC 60950-1 / EN 60950-1



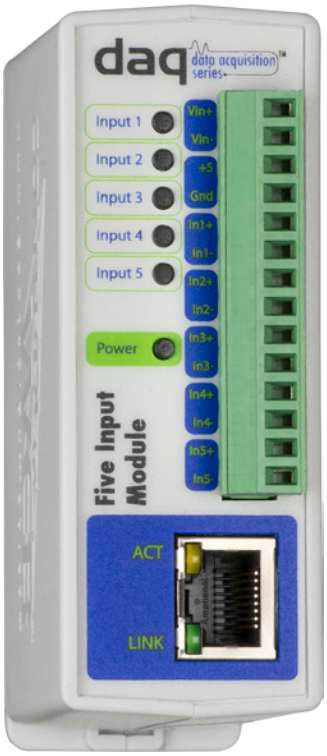

Phone: 435-750-5999

Email: Sales@ControlByWeb.com

# Five-Input Module™

*Five Optically-Isolated Digital Inputs*

## PRODUCT OVERVIEW




The Five-Input Module is a robust, full-featured, Ethernet based data acquisition device with five optically-isolated discrete inputs.

The state of the inputs can be monitored over the network using a web-browser, Modbus TCP/IP, SNMP, or XML formatted text.

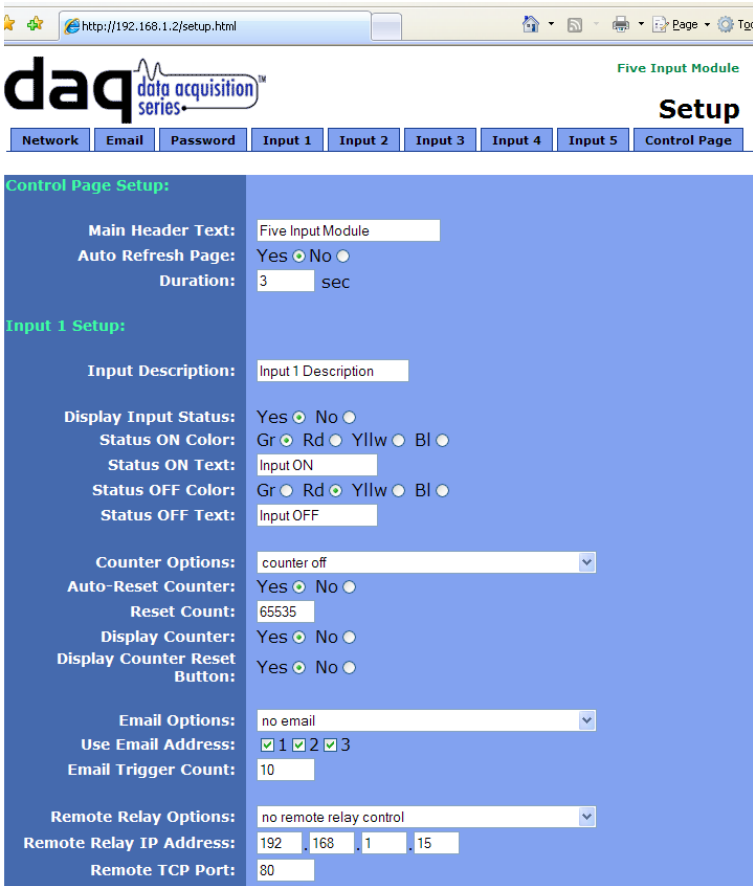
Each input can be used as an event counter and is capable of generating email messages when user-defined alarm conditions are met.

In addition, the Five-Input Module can communicate peer-to-peer and trigger ControlByWeb™ relays located throughout the network.

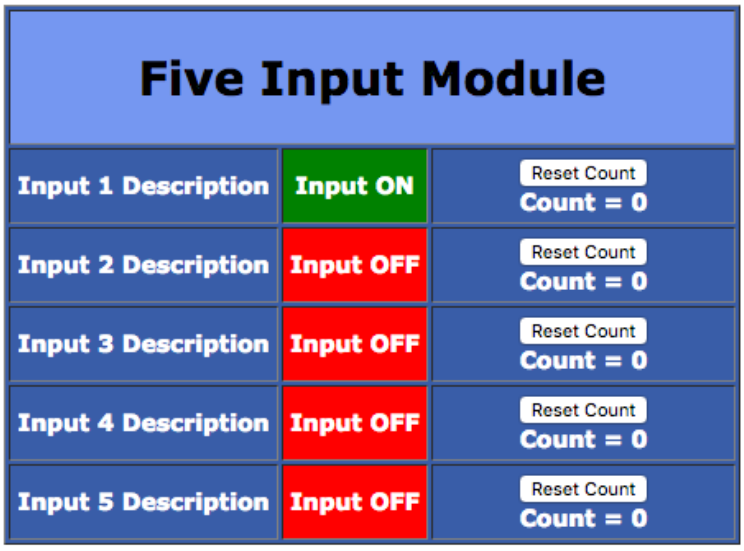
The Five-Input Module is fully configured in minutes using a web browser. No additional software is needed.

## Features:

- No programming required.
- Built-in web server.
- Configurable input status web page.
- Modbus TCP/IP & SNMP support.
- XML formatted status.
- Built-in counters.
- Password protected.
- Optically isolated inputs.
- Selectable TCP ports.
- Loss of power flag.
- 14-Pin removable terminal connector included.
- Two input voltage options:
  - 3-12 VDC
  - 11-28 VDC
- Rugged DIN-Rail/wall mountable enclosure.
- Power supply options:
  - 9-28 VDC
  - Power-Over-Ethernet (802.3af) and/or 9-28VDC




*Input Options*




*Five-Input Module Control Page*




Phone: 435-750-5999

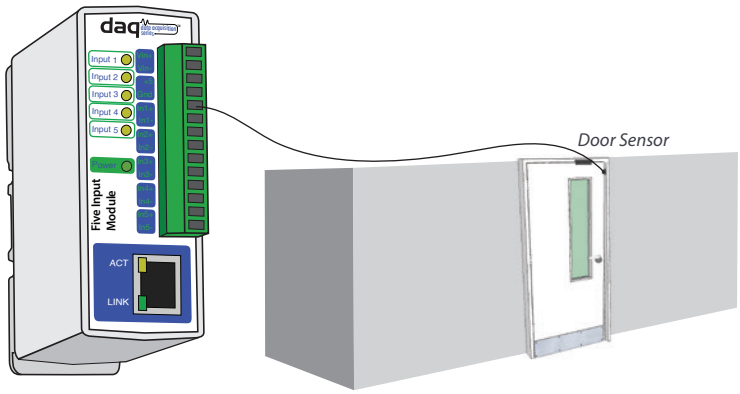
Email: Sales@ControlByWeb.com

# Five-Input Module™

*Five Optically-Isolated Digital Inputs*

## APPLICATIONS & SPECS

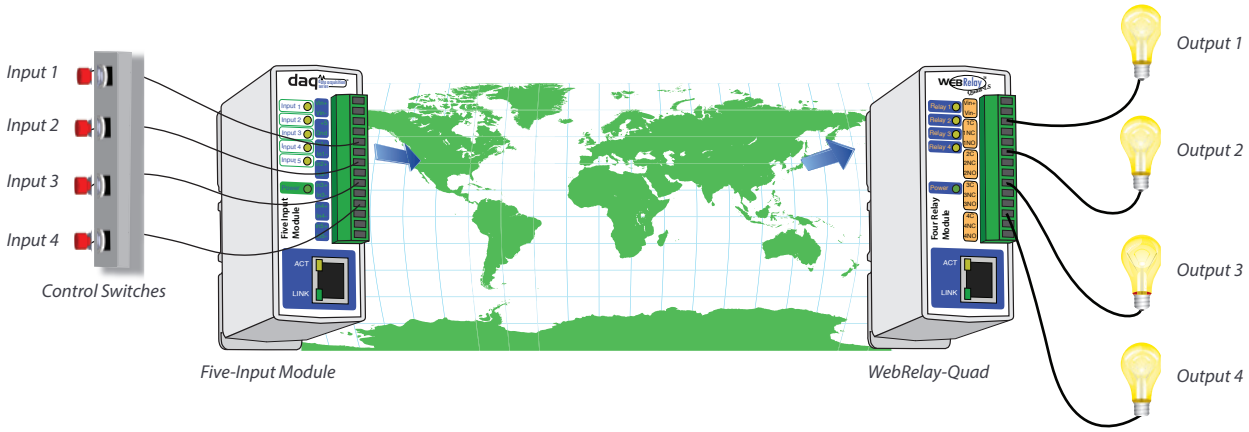
### Door Access Monitoring




### Additional Applications

- ✓ Event Counter
- ✓ Monitor Devices Over IP Network
- ✓ Extend Outputs of a PLC
- ✓ Home/Office Security
- ✓ Control Devices in Multiple Locations
- ✓ Apartment Complexes
- ✓ Car Washes
- ✓ More...

### Use with WebRelay-Quad™ to Extend Dry Contacts to a Remote Location




### Models:

- X-DAQ-5I-I, X-DAQ-5I-E

### Power Requirements

- Voltage:
  - X-DAQ-5I-I: 9-28VDC
  - X-DAQ-5I-E: POE and/or 9-28VDC
- Max Current: 350mA Max

### Digital Inputs

- Number of Inputs: 5
- Type: Optically-Isolated
- Voltage Range: 4-26VDC
- Current: 5.5mA @ 5V, 16mA @ 12V
- Minimum Hold Time: 62.5mS
- Input Isolation: 1500V
- Input Functions: Monitor State, Increment Counter, Trigger Email Alerts, Control Remote Relays
- Maximum Count: 65,535
- Max Count Rate: 8Hz
- Counter Rollover: Can be set to rollover or stop
- Edge Trigger: Rising, Falling or Both

### Network

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

### Connectors

- Power & Inputs: 14-Position 3.81mm Removable
- Network: 8-pin RJ-45

### LED Indicators

- Number of LEDs: 8
  - Power on
  - Digital Inputs 1-5
  - 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 g)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Protocols

- HTTP, XML, Modbus TCP/IP, SNMP, SMTP

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 10 Characters

# Temperature Module™

*1-4 Digital Temperature Sensors*

## PRODUCT OVERVIEW


The Temperature Module provides an inexpensive and accurate way to remotely monitor temperatures over an IP network.

It can be used for environmental temperature monitoring and simple control. Up to four digital temperature sensors can be connected, and it has two internal relays which can be used to control alarm signals, heaters, fans, etc.

Using a standard web browser, users can remotely view temperatures and control relays.

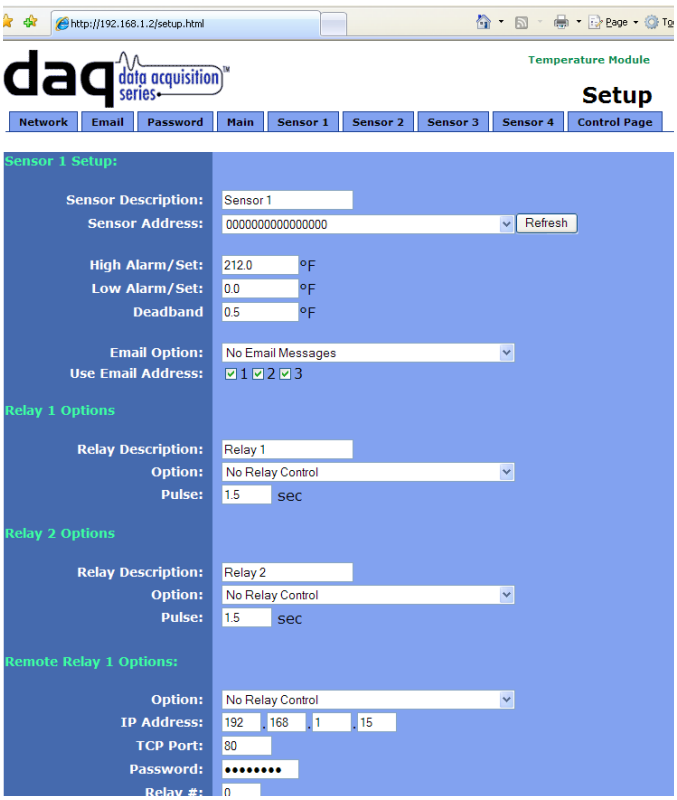
Additionally, computers, PLCs, and automation controllers can communicate with the Temperature Module using XML formatted text, or Modbus TCP/IP.

The unit can be configured to trigger relays or send email messages when a preset temperature is reached. It can even control relays in other ControlByWeb™ products located somewhere else on the network.

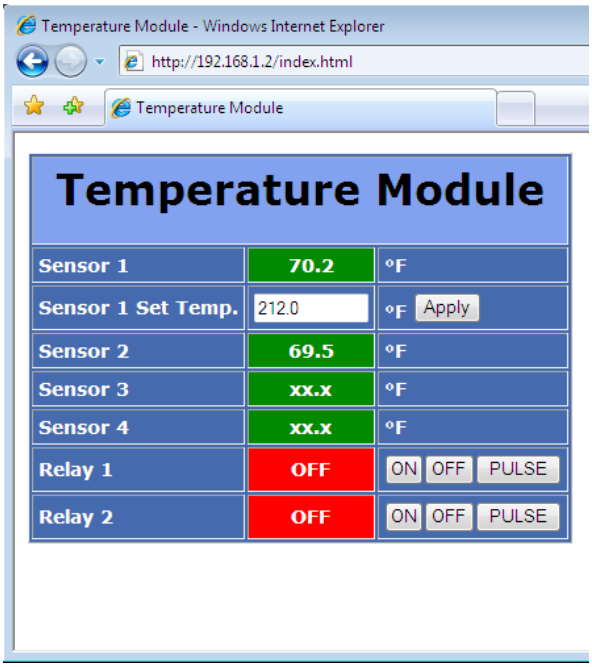
The Temperature Module is fully configured in minutes using a web browser. No additional software is needed.

## Features:

- Connect up to four digital temperature sensors (one sensor included).
- Two relays for controlling alarms or other devices.
- No programming required.
- Built-in web server.
- Configurable control and status web page.
- Email alerts when temperature crosses preset threshold.
- Modbus TCP/IP support.
- XML formatted status and control.
- Password protected.
- Selectable TCP ports.
- 14-pin removable terminal connector included.
- Rugged DIN-Rail/wall mountable enclosure.
- Power supply options:
  - 9-28 VDC
  - Power-Over-Ethernet (802.3af) or 5VDC




*Sensor Options*




*Control Page*

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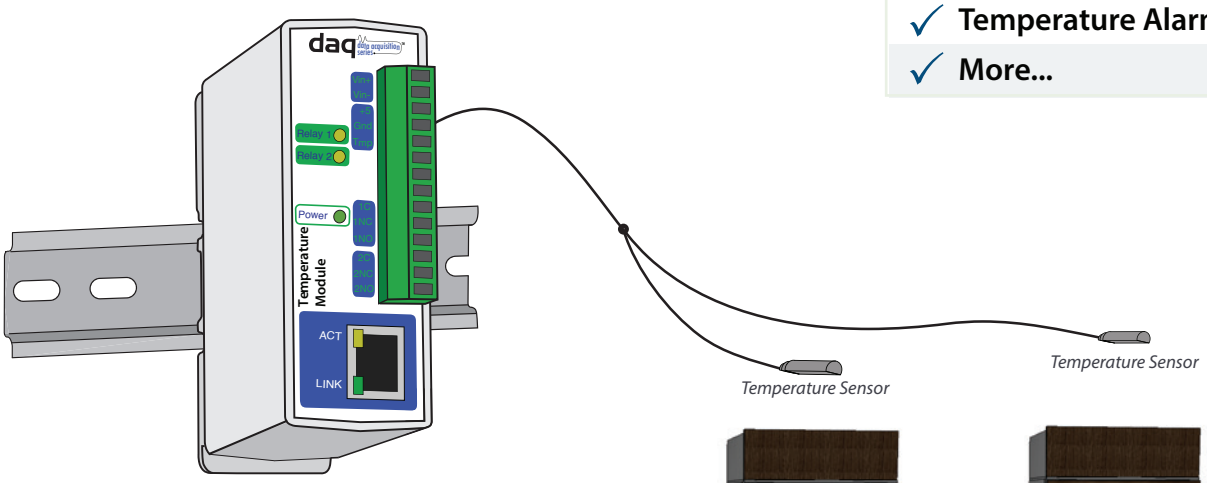
# Temperature Module™

*1-4 Digital Temperature Sensors*

## APPLICATIONS & SPECS

### Refrigeration System Monitoring




*Temperature Sensor*

*Temperature Sensor*

*Refrigeration Unit*

*Refrigeration Unit*

### Additional Applications

- ✓ Environmental Monitor
- ✓ Remote Temperature Monitoring
- ✓ Temperature Alarm
- ✓ More...

### Models:

- X-DAQ-2R1-4T-I, X-DAQ-2R1-4T-E

### Power Requirements

- Voltage:
  - X-DAQ-2R1-4T-I: 9-28VDC
  - X-DAQ-2R1-4T-E: POE Class 1 (0.44 to 3.84 Watt) or 5V±5%
- Max Current: 425mA Max

### Relay Contacts

- Number of Relays: 2
- Max Voltage: 28VAC, 24VDC
- Max Current: 3A
- Contact Type: SPDT (Form 1C)
- Load Type: General Purpose
- Contact Resistance: < 50 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- Environmental Rating: Over voltage Category II, Pollution Degree 2
- Relay Modes: ON/OFF or Pulse
- Pulse Timer Duration: 0.1 to 86,400 Seconds (1-day)

### Temperature Sensors

- Maximum Number of Sensors: 4
- 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, Control Relays, Control Remote Relays

### Network

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

### Connectors

- Power & Inputs: 14-Position 3.81mm Removable
- Network: 8-pin RJ-45

### LED Indicators

- Number of LEDs: 5
  - Power on
  - Relay coil energized 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, XML, Modbus TCP/IP, SMTP

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 10 Characters

# Analog Module™

*Eight High-Resolution Analog Inputs*

## PRODUCT OVERVIEW


The Analog Module provides a very accurate way to remotely monitor analog signals over an IP network.

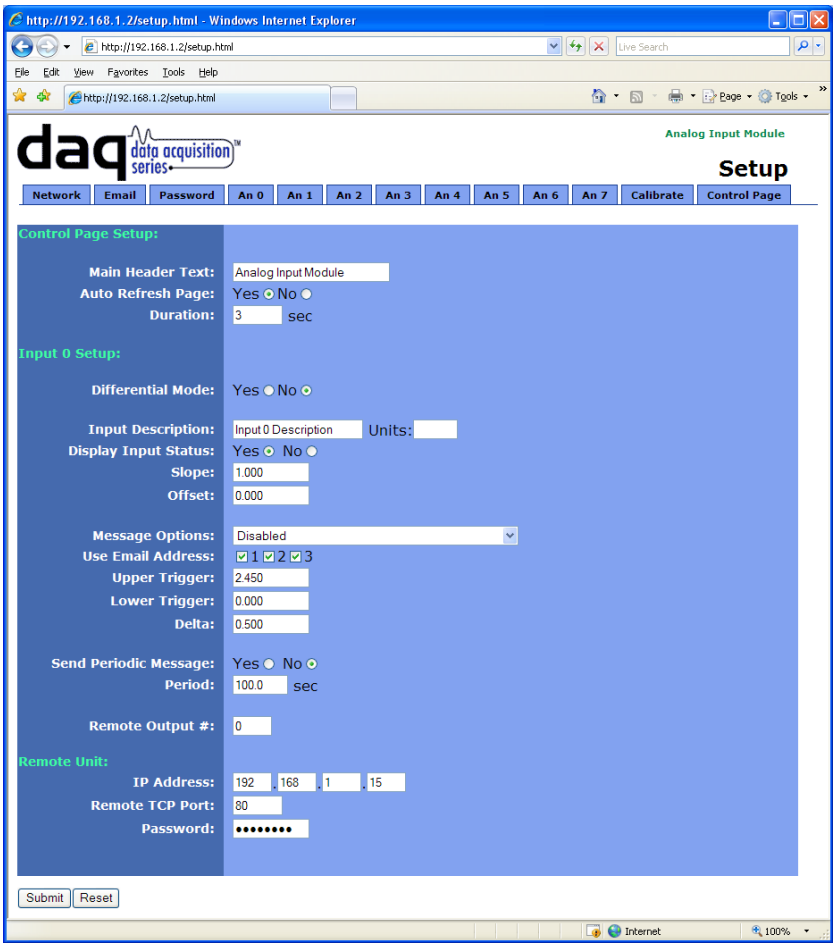
Using analog sensors (not provided), many real-world values such as position, water level, flow, voltage, current, etc., can be measured and viewed remotely. Up to eight analog signals can be connected to the module.

The Analog Module has a built-in web server which allows the inputs to be monitored in real time using a web browser. In addition, data can be accessed from a PLC or custom computer application using Modbus TCP/IP or XML.

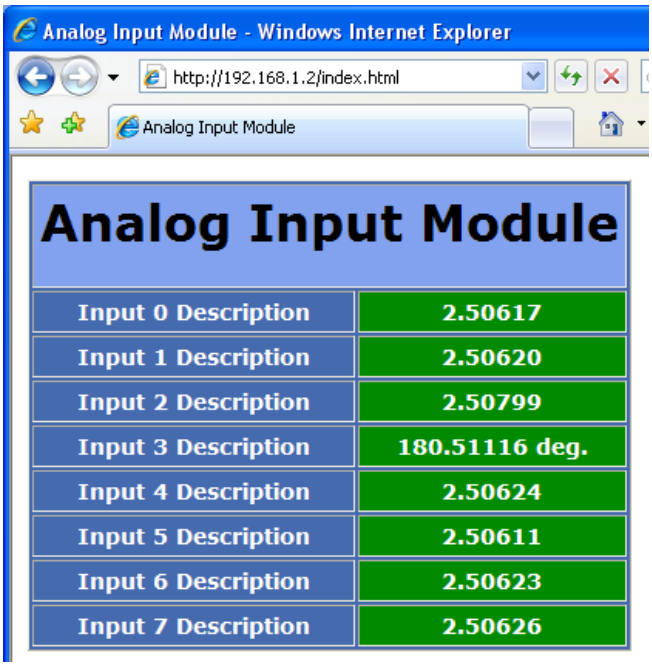
The Analog Module is fully configured in minutes using browser-based setup pages. No additional software is needed.

## Features:

- Connect up to eight analog signals.
- Accurate, instrumentation grade ADC.
- No programming required.
- Built-in web server.
- Configurable control and status web page.
- Email alerts.
- Modbus TCP/IP support.
- XML formatted status.
- Selectable TCP ports.
- 12-Pin removable terminal connector included.
- Rugged DIN-Rail/wall mountable enclosure.
- Wide power supply range (9-28 VDC).




*Input Options*




*Control Page*

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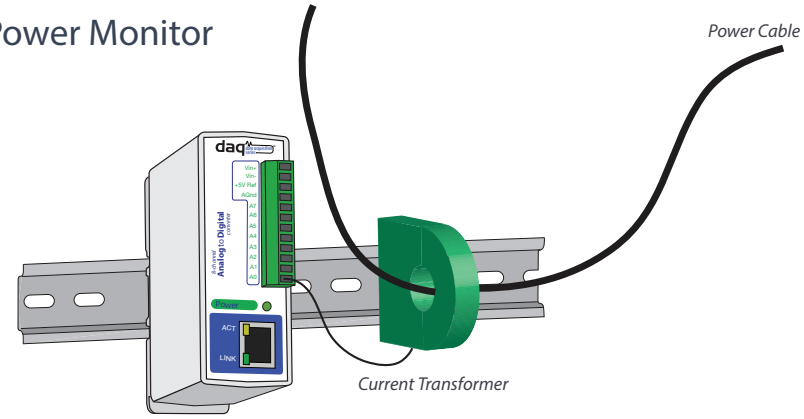
# Analog Module™

*Eight High-Resolution Analog Inputs*

## APPLICATIONS & SPECS

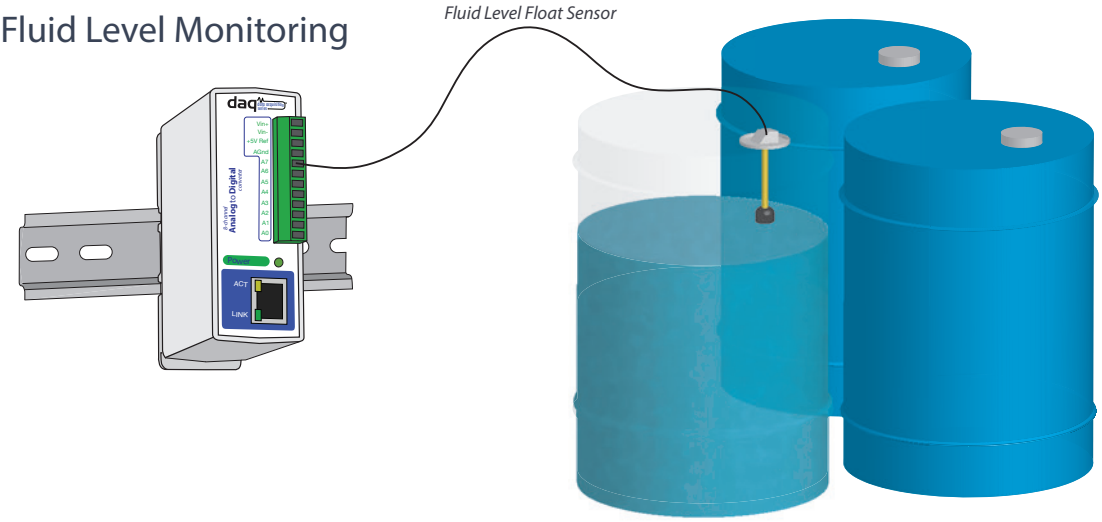
### Power Monitor




### Additional Applications

- ✓ Voltage Monitor
- ✓ Current Monitor
- ✓ Monitor Temperature
- ✓ Monitor Water Flow
- ✓ Monitor Position Height
- ✓ More...

### Fluid Level Monitoring




### Models:

- X-DAQ-8A5-I

### Power Requirements

- Voltage: 9-28VDC
- Max Current: 300mA Max

### Analog Inputs

- Number of Inputs: 8
- Type: Can be configured as 8 single-ended, 4 differential, or a combination
- Input Range: 0-5VDC
- **Note that inputs have high impedance so input range can easily be adjusted using external resistors. Example: 0 to 10 Volt or 4-20mA
- Resolution: 10µV (24 bit ΣΔ ADC)
- Reference: 5.00V, 0.04%, 3ppm/C, 50mA Max

### Network

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

### Connectors

- Power & Analog Inputs 1-8: 12-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°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, XML, Modbus TCP/IP, SMTP

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 10 Characters


WebSwitch™ Remote Power Switch is the ideal solution for remote reboot and many remote power control applications. WebSwitch™ has two power outlets which can be independently controlled using a web browser.

It is completely self-contained and includes a built-in web server, so no external servers, services, or subscriptions are required.

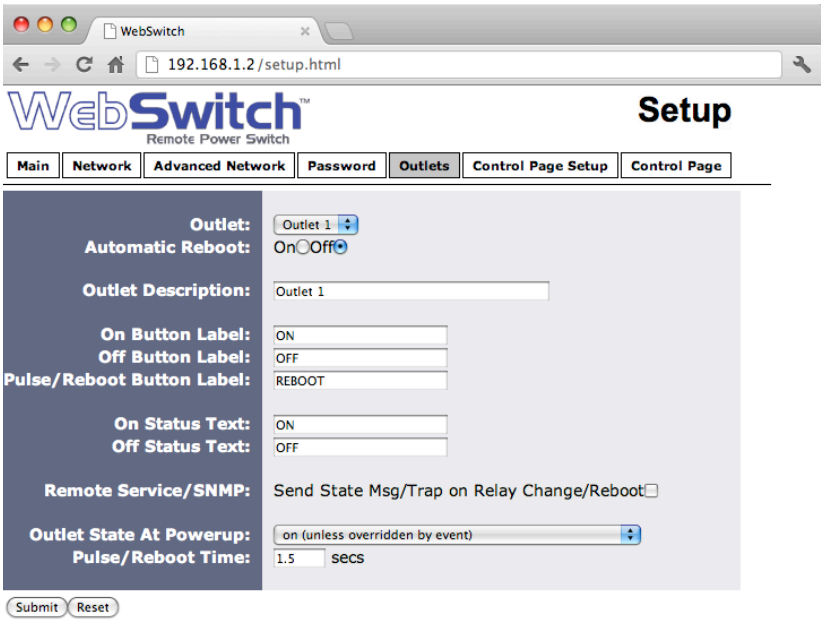
In addition to remote control, WebSwitch™ has an automatic reboot controller which can be configured to reboot computers or network devices when they become unresponsive.

WebSwitch™ is available in two models, WebSwitch™ and WebSwitch Plus™.

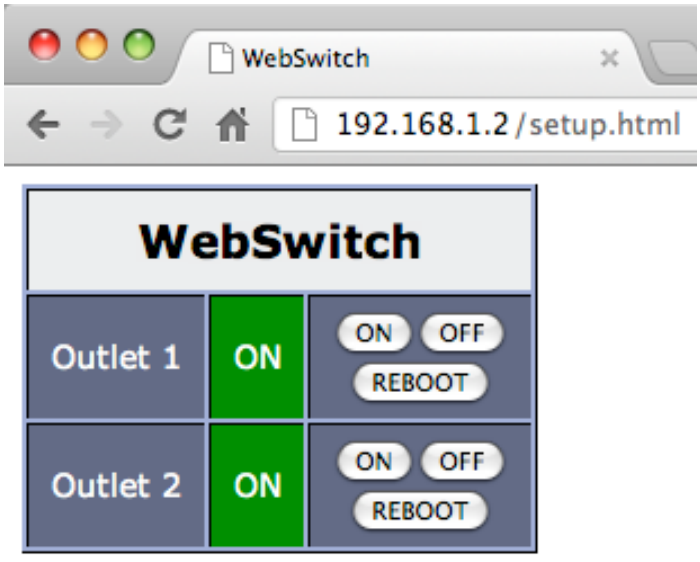
Both models are engineered to provide excellent performance for many years while running 24/7. You can have confidence using WebSwitch™ when your critical applications demand reliability and integrity.

## Features:

- Control from a standard web browser - no special software required.
- Automatic Reboot, use to reboot devices when ping responses fail.
- Built-in web server provides direct access to device; no external servers, services or subscriptions required.
- Supports HTTP, SNMP, and Modbus TCP/IP.
- "Remote Services" can be used to initiate connection with external servers.
- Password protection.
- IP filter provides simple firewall.
- Selectable TCP Ports.
- 10/100 Mbps Ethernet connectivity.
- Field re-programmable; install firmware updates when available.
- Attractive, rugged enclosure made of flame resistant plastic.
- Operates worldwide (100-240V AC; 50/60Hz).
- Wall mountable or optional rack mounting kit available.

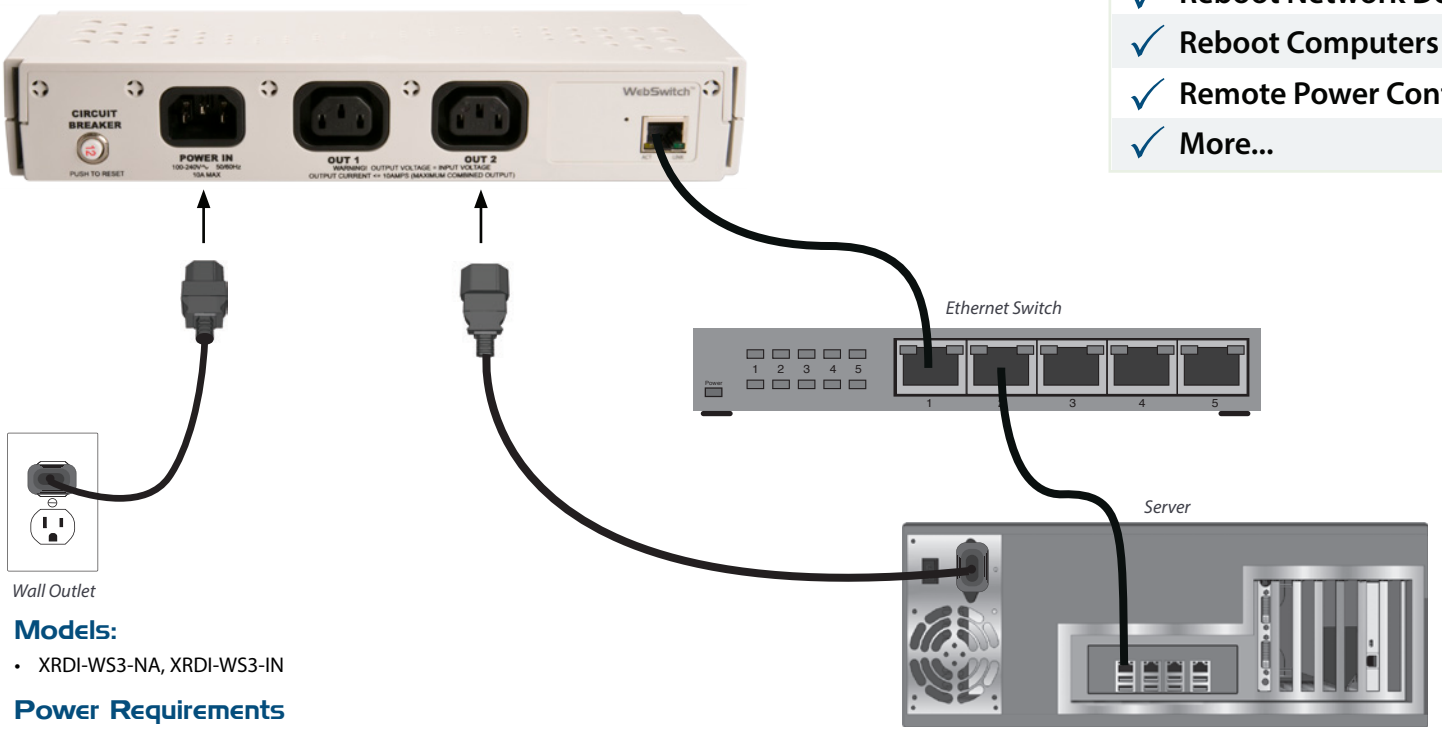



*Outlets Options*




*Control Page*

## Automatic/Remote Reboot for Servers




## Additional Applications

- ✓ Reboot Network Devices
- ✓ Reboot Computers
- ✓ Remote Power Control
- ✓ More...

### Models:

- XRDI-WS3-NA, XRDI-WS3-IN

### Power Requirements

- Voltage: 100-240V AC (47-63Hz)
- Input Frequency: 47-63Hz
- Input Connector: IEC 320 Appliance Connector (C14 Male)
- Max Current: 10A *(DO NOT USE WEBSWITCH TO CONTROL MORE THAN 10 AMPS)*

### Relay Contacts

- Number of Relays: 2
- Relay Connector: IEC C13 Female
- Contact Type: SPDT (Form 1C)
- Load Type: General Purpose
- Contact Resistance: < 30 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- Environmental Rating: Over voltage Category II, Pollution Degree 2
- Relay Modes: ON/OFF or Pulse/Reboot
- Pulse Timer Duration: 0.1 to 86,400 Seconds (1-day)

### Real-Time Clock

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

### Network

- Type: 10/100 Base-T Ethernet Port
- Setup: Static IP address assignment, HTTP port selectable

### Connectors

- Output Connectors: IEC 320 Appliance Connector (C13 Female)
- Network: 8-pin RJ-45

### LED Indicators

- Number of LEDs: 5
  - Power on
  - Out On 1-2
  - Network linked
  - Network activity

### Physical

- Operating Temperature: -4°F to 104°F (-20°C to 40°C)
- Size:
  - 10.65 inches (27.11 cm) wide
  - 1.75 inches (4.44 cm) tall
  - 3.29 inches (8.36 cm) deep
- Weight: 1 lb. 3 oz. (542 grams)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Protocols

- HTTP, XML, Modbus, SNMP, Remote Services

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 13 Characters

### Regulatory Compliance:

- Electromagnetic Compliance:
  - EN55024
  - IEC 61000-4-2
  - IEC 61000-4-3
  - IEC 61000-4-4
  - IEC 61000-4-5
  - IEC 61000-4-6
  - IEC 61000-4-11
  - EN 55022
  - IEC 61000-3-2
  - IEC 61000-3-3
  - COMPLIANT Class B

### Product Safety:

- IEC 60950-1 / EN 60950-1

# WebSwitch Plus™

## Adv. Remote Power Switch, Auto Reboot, and more

*2 Electrical Outlets, Automatic and Remote Reboot, Two Discrete Inputs, Temperature/Humidity Monitoring, Event Scheduler*

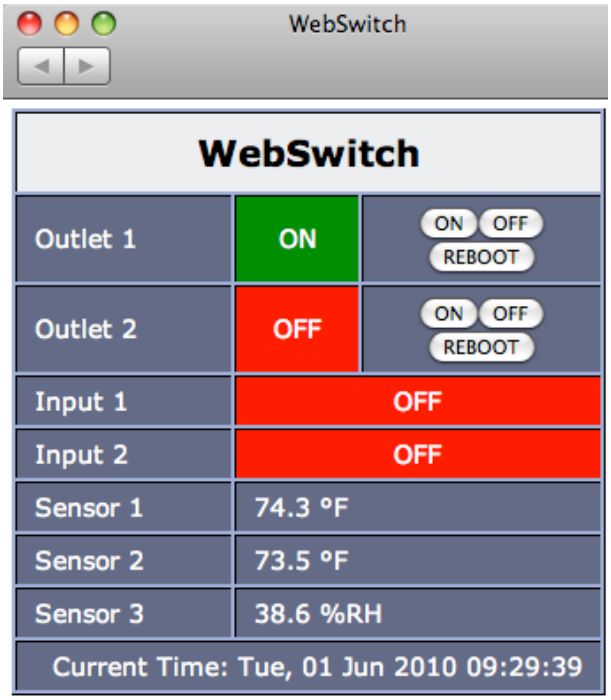
**PRODUCT OVERVIEW**


WebSwitch Plus™ includes all the features of WebSwitch™ as well as additional features such as remote temperature monitoring, discrete inputs, event scheduling, logging, and email alerts. This provides a more complete solution for remotely controlling servers and monitoring their environment.

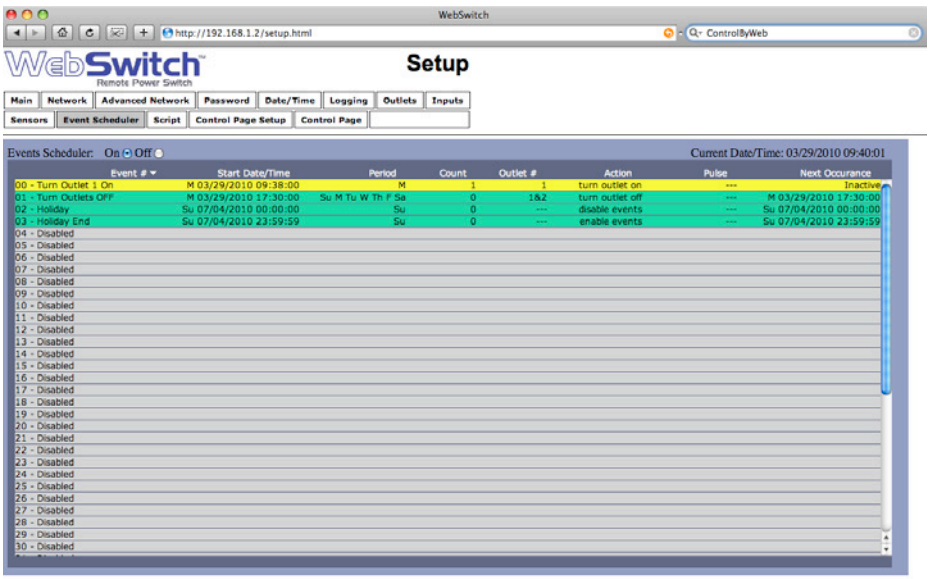

*WebSwitch with optional Rack Mount Kit*

## Features:

- Up to four temperature and/or humidity sensors can be added for environmental monitoring (one temperature sensor included).
- Dry-contact sensors or switches can be connected for local control of outlets or for monitoring external devices.
- Real-time clock, can automatically adjusts for daylight savings time, sync with NTP server.
- Added relay contact protection.
- Event scheduler with yearly calendar.
- Customizable email alerts.
- Logging: Log outlet changes, automatic reboots, high/low temperatures, network traffic, and more.
- System log provides detailed diagnostic information.
- Simple scripts can be written in BASIC for advanced functionality.
- Configure manually or with DHCP.




*Control Page*




*Events Tab*

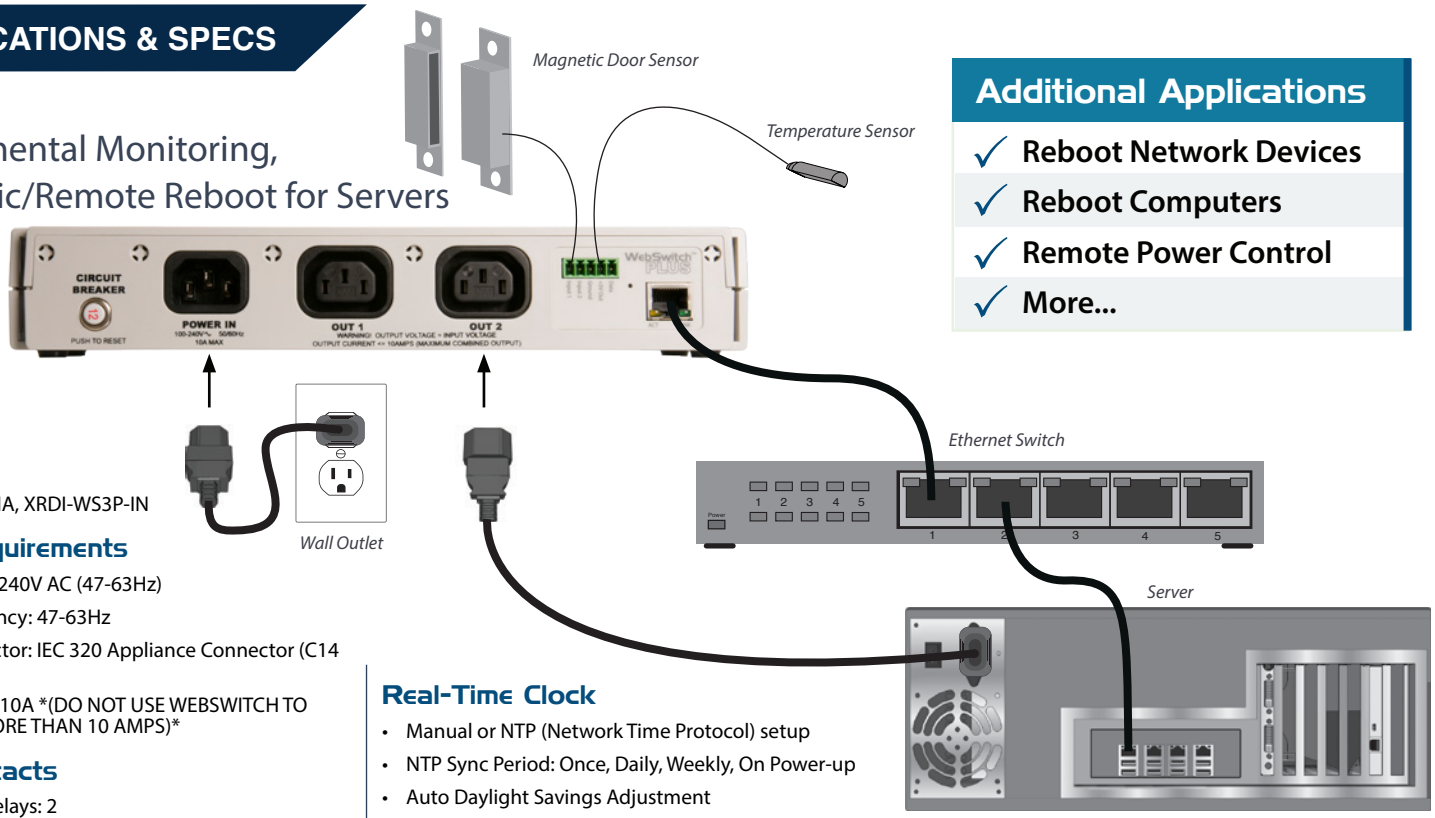
# WebSwitch Plus™

## Adv. Remote Power Switch, Auto Reboot, and more

*2 Electrical Outlets, Automatic and Remote Reboot, Two Discrete Inputs, Temperature/Humidity Monitoring, Event Scheduler*

## APPLICATIONS & SPECS

Environmental Monitoring,
Automatic/Remote Reboot for Servers




### Additional Applications

- ✓ Reboot Network Devices
- ✓ Reboot Computers
- ✓ Remote Power Control
- ✓ More...

### Models:

- XRDI-WS3P-NA, XRDI-WS3P-IN

### Power Requirements

- Voltage: 100-240V AC (47-63Hz)
- Input Frequency: 47-63Hz
- Input Connector: IEC 320 Appliance Connector (C14 Male)
- Max Current: 10A *(DO NOT USE WEBSWITCH TO CONTROL MORE THAN 10 AMPS)*

### Relay Contacts

- Number of Relays: 2
- Relay Connector: IEC C13 Female
- Contact Type: SPDT (Form 1C)
- Load Type: General Purpose
- Contact Resistance: < 30 milliohms initial
- Contact Material: AgSnO2
- Electrical Life: 100K cycles (Typical)
- Mechanical Life: 10M cycles (Typical)
- Environmental Rating: Over voltage Category II, Pollution Degree 2
- Relay Modes: ON/OFF or Pulse/Reboot
- Pulse Timer Duration: 0.1 to 86,400 Seconds (1-day)

### Digital Inputs

- Number of Inputs: 2
- Type: Non-Isolated
- Voltage Range: 0-5VDC
- Current: 47K Pullup
- Minimum Hold Time: 20ms
- Input Isolation: Non-Isolated
- Input Functions: Emails Alerts, SNMP Traps

### Temperature Sensors

- Maximum Number of Sensors: 3
- 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-WM wall mount sensor
- Humidity Range: 0-100% RH
- Accuracy: ±1.8%

### Real-Time Clock

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

### Capacitor Power Backup

- Backup Functions: Retain Real-Time Clock, External Variables, Outlet State.
- Backup Duration: 3 days minimum

### Network

- Type: 10/100 Base-T Ethernet Port
- Setup: Static IP address assignment or DHCP, HTTP port selectable

### Connectors

- Output Connectors: IEC 320 Appliance Connector (C13 Female)
- Network: 8-pin RJ-45
- Digital Inputs & Temperature: 5-Position Removable

### LED Indicators

- Number of LEDs: 5
  - Power on
  - Out On 1-2
  - Network linked
  - Network activity

### Physical

- Operating Temperature: -4°F to 104°F (-20°C to 40°C)
- Size:
  - 10.65 inches (27.11 cm) wide
  - 1.75 inches (4.44 cm) tall
  - 3.29 inches (8.36 cm) deep
- Weight: 1 lb. 3 oz. (542 grams)
- Enclosure Material: Lexan 940 Polycarbonate Plastic
- Enclosure Flame Rating: UL94 V0

### Protocols

- HTTP, XML, Modbus, SNMP, Remote Services

### Password Settings

- Password protection on setup page: Yes
- Password protection on control page: Optional
- Password Encoding: Base 64
- Max Password Length: 13 Characters

### Regulatory Compliance:

- Electromagnetic Compliance:
  - EN55024
  - IEC 61000-4-2
  - IEC 61000-4-3
  - IEC 61000-4-4
  - IEC 61000-4-5
  - IEC 61000-4-6
  - IEC 61000-4-11
  - EN 55022
  - IEC 61000-3-2
  - IEC 61000-3-3
  - COMPLIANT Class B

### Product Safety:

- IEC 60950-1 / EN 60950-1

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# SmartStorm™

## Web-Enabled Irrigation Controller

*10-Zone Irrigation controller*

**PRODUCT OVERVIEW**


SmartStorm Irrigation Controller™ is a robust, 10-zone irrigation controller with a built-in web server. It can be controlled over any IP network, including the Internet* and private networks. The SmartStorm excels in its web interface which can be accessed from any location on a standard web browser using a computer or smart phone, which provides a much larger screen than a typical sprinkler controller's small built-in display. The web interface simplifies creating watering schedules, sensor monitoring, and manually controlling sprinkling systems, making these tasks extremely user-friendly and intuitive, while eliminating the need to reference a users manual each time watering season begins.

Remotely accessing and controlling the SmartStorm through its web interface is incredibly efficient for maintenance and repairs, allowing you to isolate broken equipment (sprinkler heads, pipes, valves, etc.) while in the field/yard, without needing a second technician at the controller, or without needing to go back and forth between the controller and the broken equipment ... Simply turn valves on and off using your smartphone.

Accessing the web interface allows for instant adjustments to the watering program for weather-related issues, or to treat dry/over-watered sections.

Technicians or other personnel who do not have direct access to the SmartStorm's web interface can also manually operate the sprinkling system using a single pushbutton on the SmartStorm to cycle through each station.

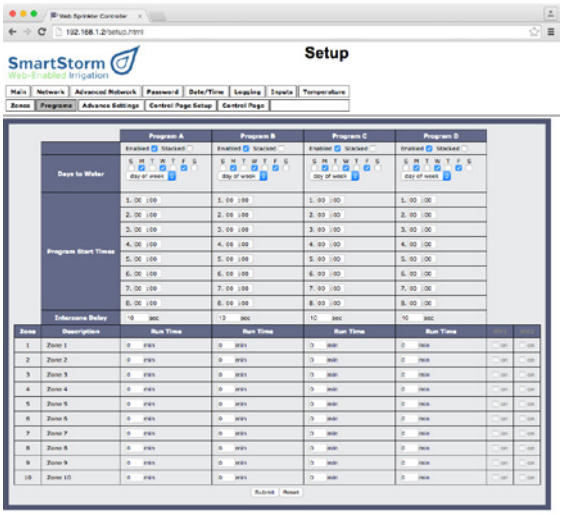
Because water conservation is so important, we've also added the ability to control your irrigation programming based on rainfall and temperature by connecting appropriate sensors.

The SmartStorm is designed to be extremely reliable! Even if you don't have a constant Internet or network connection, SmartStorm Irrigation Controller will continue to run by itself.

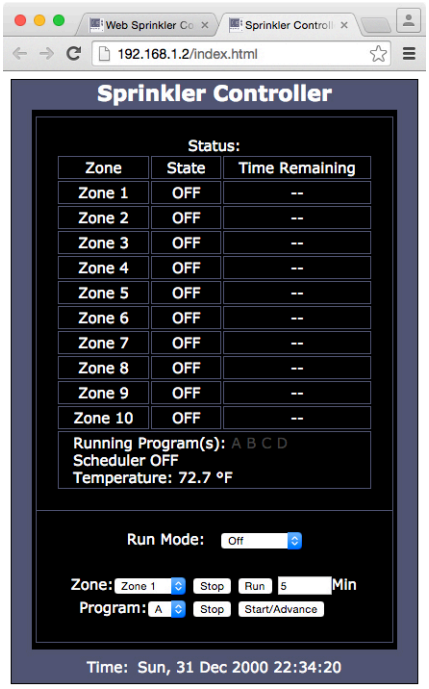
**Note that accessing SmartStorm remotely over the Internet requires the installer to setup your router to forward incoming requests to SmartStorm.*

## Features:

- Easy-to-use web page setup and status monitoring
- 10 Zones - Two of which may be programmed as a master valve/pump
- Two digital inputs for additional control features
- Four individual timing programs
- Programmable delay between stations
- Variable programming schedule: odd day, even day, day of week intervals
- Seasonal water budget
- Temperature triggered shutdown (with optional sensor)
- Logging (event based)
- Real-time clock
- Static or DHCP IP address configuration
- Field updatable
- Removable 14-pin and 5-pin terminal connectors
- Built-in web server provides stand-alone operation (i.e. direct access to unit without using a cloud server; no monthly or annual service fees)




*SmartStorm Program Setup Page*




*SmartStorm Control Page*

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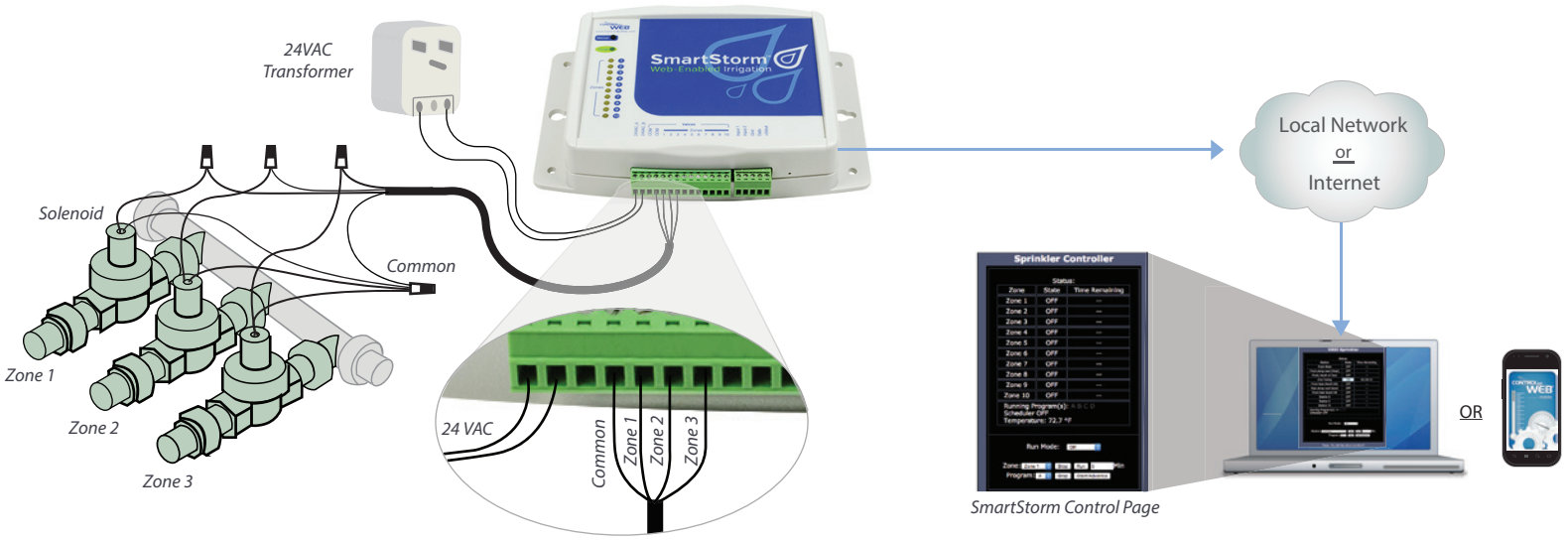
## SmartStorm Example Wiring Diagram




### Models:

- X-340-A

### Electrical

- Input Voltage: 24VAC ±10%, 60Hz
- Input Current: 125mA typ (10Mbps), 180mA typ (100Mbps), plus zone valves.
- Zone Load Capacity: Up to two 24VAC, 7VA solenoid valves
- Internal Fuse: 1.5Amp, 3AG (1/4 x 1-1/4")
- Protection: AC input and each zone output is protected with an internal MOV (metal oxide varistor) over voltage surge protection device
- Program Storage: Nonvolatile memory

### Operating

- Programming:
  - Easy-to-use web page setup and operation, load)
  - Zones can be named, programs are displayed in chart format
- Number of zones: 10 (two zones can be programmed as a master valve or pump)
- Station timing:
  - Four individual programs (A, B, C, D), 1-minute increments up to 254 minutes/station
  - Programmable delay between stations
- Start Time: Eight for each program
- Programming Schedule: Odd day, even day, day of week, variable day cycle
- Seasonal Water Budget: 0 – 200%
- Shutdown: With low temperature or rain
- Logging: Temperature and schedule events are logged to memory

### Ethernet

- 10 Base-T or 100 Base-T, 8-pin RJ-45 Ethernet

### Network

- Ethernet IPv4, Static IP address or DHCP
- Supports web browser (HTTP) and XML

### Remote Services

- REAL-TIME CLOCK
- Manual or NTP (Network Time Protocol) setup
- Automatic daylight savings adjustment
- Battery backup (super capacitor), 30 days min
- Accuracy ±1 minute/month

### Removable Connectors

- Zones: 14-position, 3.81mm
- Sensor Input: 5-position, 3.81mm

### Pushbutton & LED Indicators

- Pushbutton: Manually select and activate a specific zone (plus pump if enabled)
- Green LED: Power On
- Yellow LED: Zone 1 thru 10
- Ethernet: Green = Linked, Yellow = Activity

### Sensor Inputs

- Digital Inputs:
  - Quantity: Two
  - Function: Programmable, rain delay or manual operation
  - Vin Max: +5V, Internal pullup = 47K
  - Vin HI: 2.8V (min), Vin LO =1.0V (max)
  - Maximum cable length: 50 feet (relay isolation can be used for longer runs)
- Temperature Sensor:
  - Type: Dallas Semiconductor DS18B20 digital 1-wire thermometer
  - Accuracy: ±0.5°C from -10°C to +85°C
  - Max Cable Length: 600 ft (180m)

### Environmental

- Indoor use or NEMA-4 protected location, Category II, Pollution Degree 2
- Altitude: Up to 2,000m
- Operating Temperature: -40°C to 65.5°C
- (-40°F to 150°F)
- Storage Temperature: -40°C to 85°C
- (-40°F to 185°F)
- Humidity: 5-95%, non-condensing

### Mechanical

- Mounting: Wall Mount
- Material: Polycarbonate plastic
- Size: 7.56 x 5.06 x 1.54 in. (192.14 x 128.64 x 39.24mm) - not including connector
- Weight: 12.3 oz (348.7 g)

### Electromagnetic Compliance

- IEC CISPR 22, CISPR 24
- FCC 47CFR15 (Class B)
- EN55024 ITE Immunity (2010)
- EN55022 Emissions (2010)

# Feature Comparison — Part I

| | Outputs | Inputs | Temperature Monitoring | Humidity Monitoring | Real-Time Clock | Scheduling | Logging | Email Notifications | Automatic Reboot | Input Counters | Remote Relays | Supported Scripts | Supported Protocols | Enclosure | Power Supply |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WebRelay** | 1 Relay<br>240VAC, 30VDC,<br>12A | 1 Digital | - | - | - | - | - | - | • | - | 1 | - | HTTP, XML, Modbus TCP/IP | DIN Rail or Wall-Mount | 9-28VDC<br>POE/5VDC |
| **WebRelay-Quad** | 4 Relays<br>28VAC, 24VDC<br>3A | - | - | - | - | - | - | - | - | - | - | - | HTTP, XML, Modbus TCP/IP | DIN Rail<br>Wall-Mount | 9-28VDC<br>POE/5VDC |
| **X-300** | 3 Relays<br>28VAC, 24VDC<br>3A | | 1-8 | | • | • | • | • | - | - | 3 | BASIC | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail<br>Wall-Mount | 9-28VDC<br>POE/5VDC |
| **X-301** | 2 Relays<br>28VAC, 24VDC<br>3A | 2 Digital | - | - | • | • | • | • | - | 2 | 2 | BASIC | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail<br>Wall-Mount<br>Shelf Mount | 9-28VDC<br>POE/5VDC |
| **X-310** | 4 Relays<br>28VAC, 24VDC<br>3A | 4 Digital | 1-4 | | • | • | • | • | - | 2 | 16 | BASIC | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail<br>Wall-Mount | 9-28VDC<br>POE and/or 5VDC |
| **X-317** | 5 Analog Outputs | - | - | - | - | - | - | - | - | - | - | - | HTTP, XML, Modbus TCP/IP, SNMP | DIN Rail<br>Wall-Mount | 9-28VDC |
| **X-320** | 2 User-Selectable Digital I/Os<br>4 Analog Inputs<br>1 Frequency Input | | 1-6 | | • | • | • | • | - | 2 | 3 | BASIC | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail<br>Wall-Mount | 9-28VDC |
| **X-320M** | 2 User-Selectable Discrete I/Os<br>4 Analog Inputs<br>1 Frequency Input | | 1-6 | | • | - | • | • | - | 2 | 2 | - | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail<br>Wall-Mount | 9-28VDC |
| **X-332** | 16 Relays<br>30VDC, 30VAC<br>2A | 16 Digital<br>4 Analog | 1-4 | | • | • | • | • | - | 2 | 16 | BASIC | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail<br>Wall-Mount<br>Shelf Mount | 9-28VDC |
| **X-600M** | Expandable I/O via expansion modules | | 1-32 | | • | • | • | • | • | | Up to 1024 | LUA | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail<br>Wall-Mount | 9-28VDC |
| **X-11s** | 2 Relays<br>277VAC, 110VDC,<br>20A | - | - | - | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | | | | | DIN Rail<br>Wall-Mount | Powered via expansion bus from X-600M |
| **X-12s** | 8 Relays<br>125VAC 30VDC<br>2.5A | - | - | - | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | | | | | DIN Rail<br>Wall-Mount | Powered via expansion bus from X-600M |

# Feature Comparison Part 2

| | Outputs | Inputs | Temperature Monitoring | Humidity Monitoring | Real-Time Clock | Scheduling | Logging | Email Notifications | Automatic Reboot | Input Counters | Remote Relays | Supported Scripts | Supported Protocols | Enclosure | Power Supply |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **X-13s** | - | - | 2 Thermocouple Type K | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | | | | | | DIN Rail Wall-Mount | Powered via expansion bus from X-600M |
| **X-15s** | - | 8 Digital | - | - | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | *8* | *See X-600M features.* | | | DIN Rail Wall-Mount | Powered via expansion bus from X-600M |
| **X-16s** | - | 8 Analog | - | - | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | | | | | DIN Rail Wall-Mount | Powered via expansion bus from X-600M |
| **X-17s** | 4 Relays 125VAC, 30VDC 2.5A | 4 Digital | - | - | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | *4* | *See X-600M features.* | | | DIN Rail Wall-Mount | Powered via expansion bus from X-600M |
| **X-18s** | 10 Relays 277VAC, 30VDC 30A | - | - | - | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | | | | | DIN Rail | 9-28VDC |
| **X-19s** | 16 Relays 30VDC, 30VAC 2A | 16 Digital 4 Analog | - | - | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | | | | | DIN Rail | 9-28VDC |
| **X-20s** | 6 Relays 277VAC, 30VDC 15A | 6 Digital | - | - | *This is an expansion module compatible with the X-600M Controller. See X-600M features.* | | | | | | | | | DIN Rail | 9-28VDC |
| **XW-110** | - | - | 1 | - | - | - | - | • | - | - | 1 | - | HTTP, XML, SMTP | Wall-Mount | 5 VDC Wall Transformer |
| **XW-110 Plus** | - | - | 3 | - | - | - | • | • | - | - | 1 | - | HTTP, XML, Modbus TCP/IP, SMTP, Remote Services | Wall-Mount | 5 VDC Wall Transformer |
| **XW-111** | - | 2 Digital | - | - | - | - | - | • | - | - | 2 | - | HTTP, XML, SMTP | Wall-Mount | 5 VDC Wall Transformer |
| **XW-112** | - | 1 Digital | - | - | - | - | - | • | - | - | 1 | - | HTTP, XML, SMTP | Wall-Mount | 5 VDC Wall Transformer |
| **WebRelay-10** | 10 Relays 240VAC 30A | - | - | - | - | - | - | - | - | - | - | BASIC | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail | 10-36 VDC |
| **WebRelay-10 Plus** | 10 Relays 240VAC 30A | 2 Digital | 1-8 | | • | • | • | • | - | - | - | BASIC | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | DIN Rail | 10-36 VDC |
| **Five-Input Module** | - | 5 Digital | - | - | - | - | - | • | - | 5 | 5 | - | HTTP, XML, Modbus TCP/IP, SNMP, SMTP | DIN Rail Wall-Mount | 9-28VDC POE and/or 5VDC |
| **Temperature Module** | 2 Relays 28VAC, 24VDC 3A | - | 1-4 | - | - | - | - | • | - | - | 2 | - | HTTP, XML, Modbus TCP/IP, SMTP | DIN Rail Wall-Mount | 9-28VDC POE/5VDC |

# Feature Comparison

## Part 3

| | Outputs | Inputs | Temperature Monitoring | Humidity Monitoring | Real-Time Clock | Scheduling | Logging | Email Notifications | Automatic Reboot | Input Counters | Remote Relays | Supported Scripts | Supported Protocols | Enclosure | Power Supply |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Analog Module** | - | 8 Analog | - | - | - | - | - | • | - | - | 4 | - | HTTP, XML, Modbus TCP/IP, SMTP | DIN Rail<br>Wall-Mount | 9-28VDC |
| **WebSwitch** | 2 AC Outlets<br>10A Max | - | - | - | - | - | - | - | • | - | - | - | HTTP, XML, Modbus TCP/IP, SNMP, Remote Services | Rack Mount<br>Wall-Mount<br>Shelf Mount | 100-240VAC |
| **WebSwitch Plus** | 2 AC Outlets<br>10A Max | 2 Digital | 1-3 | | • | • | • | • | • | - | - | BASIC | HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services | Rack Mount<br>Wall-Mount<br>Shelf Mount | 100-240VAC |
| **SmartStorm** | 10 Zones | 2 Digital | 1 | - | • | • | • | - | - | - | - | - | HTTP, XML, Modbus TCP/IP, SNMP, Remote Services | Wall-Mount | 24VAC ±10%, 60Hz |

# Trademark and Copyright Information



# Warranty

XRDI warrants our Products to be free of defects in workmanship and material under normal use and service and to perform substantially in accordance with published XRDI specifications (subject to reasonable tolerances) for a period of five (5) years from the date of invoice. This five year warranty only applies to products shipped from XRDI (or an authorized XRDI distributor) on or after May 1, 2016 (products shipped before that date continue to have their original twelve (12) month warranty). This warranty includes all standard ControlByWeb products that are manufactured by XRDI (does not include sensors, power supplies, and products that are sold on the ControlByWeb web site but not manufactured by XRDI). Custom Products that are manufactured by XRDI are warranted for a period of twelve (12) months from the date of invoice. XRDI warrants functionality of Products as specified when shipped however XRDI cannot and does not guarantee or warrant ongoing compatibility with software, protocols, or devices that are developed or maintained by third parties such as web browsers, automation software, etc. During the warranty period, XRDI's obligation is limited to, at its option, either repair or replace Products that prove to be defective, which shall be the sole and exclusive remedy under this limited warranty. Section 10-b describes return procedures and shipping costs that are covered and not covered under this warranty.

## Limitation

The foregoing warranty shall not apply to defects or damage resulting from improper use or misuse, neglect, shipping damage, unauthorized or improper repair, tampering, modification, improper connection, improper installation, or operation outside the electrical/environmental specifications for the product. Further, the warranty does not cover Acts of God, including but not limited to lightning, fire, flood, hurricanes, and tornadoes. This warranty does not cover damage to property, equipment, direct, indirect, consequential, or incidental damage (including damage for loss of business profit, business interruption, loss of data, and the like) arising out of the use or misuse of this product.

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