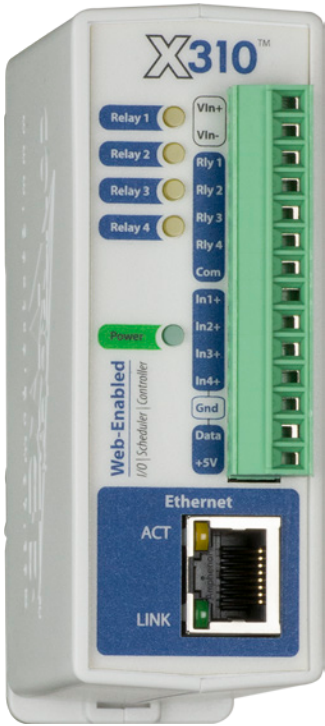


PRODUCT OVERVIEW



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).

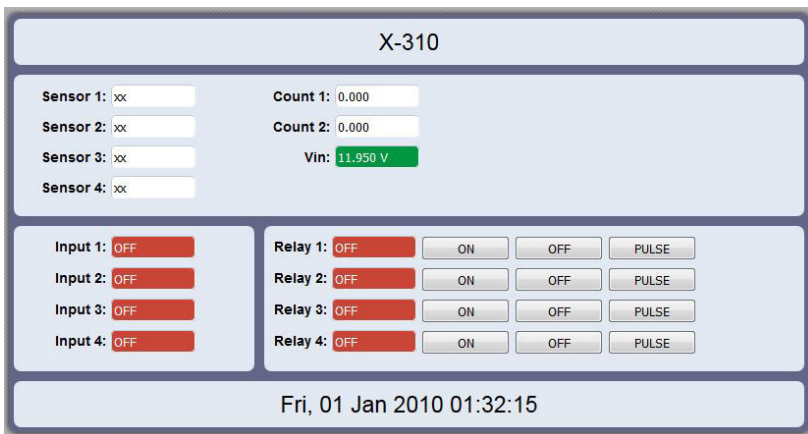
Additionally, temperature and humidity data can be graphed directly from any HTML5 compatible web browser.

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

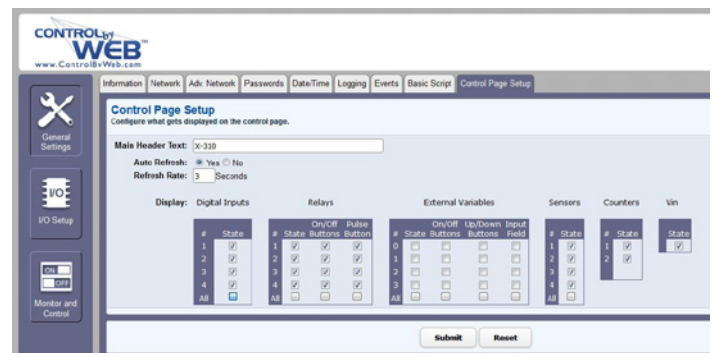
The X-310 is designed for accuracy and reliability, and is an innovative solution for a number of applications.

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 Interface



Control Page Setup

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: 9-28VDC
 - X-310S-E: POE Class 1 (0.44 to 3.84 Watt) and/or 9-28VDC
- Max Current: 372mA Max

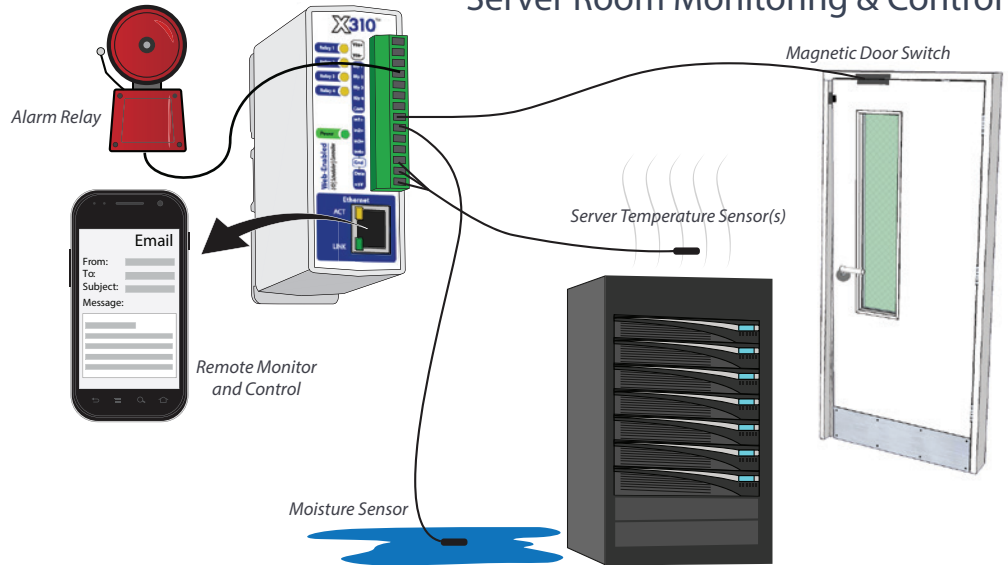
Relay Contacts

- 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

Server Room Monitoring & Control



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