

# Product Catalog I7.I

Sales@ControlByWeb.com

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

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# Introduction

ControlByWeb<sup>™</sup> 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 ControlByW∈b<sup>™</sup>

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.

# **Table of Contents**

3
5
7
9
23
25
41
43
45
51
53
55
57
59
61
63
66
66

# WebRelay™

**PRODUCT OVERVIEW** 



WebRelay<sup>™</sup> 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.

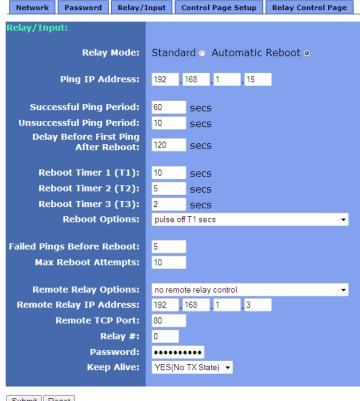
WebRelay's powerful and flexible design make imagination its only limit.

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.

# **W∈BRelay**<sup>™</sup>

Setup

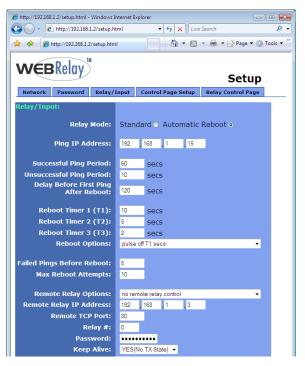


Submit Reset

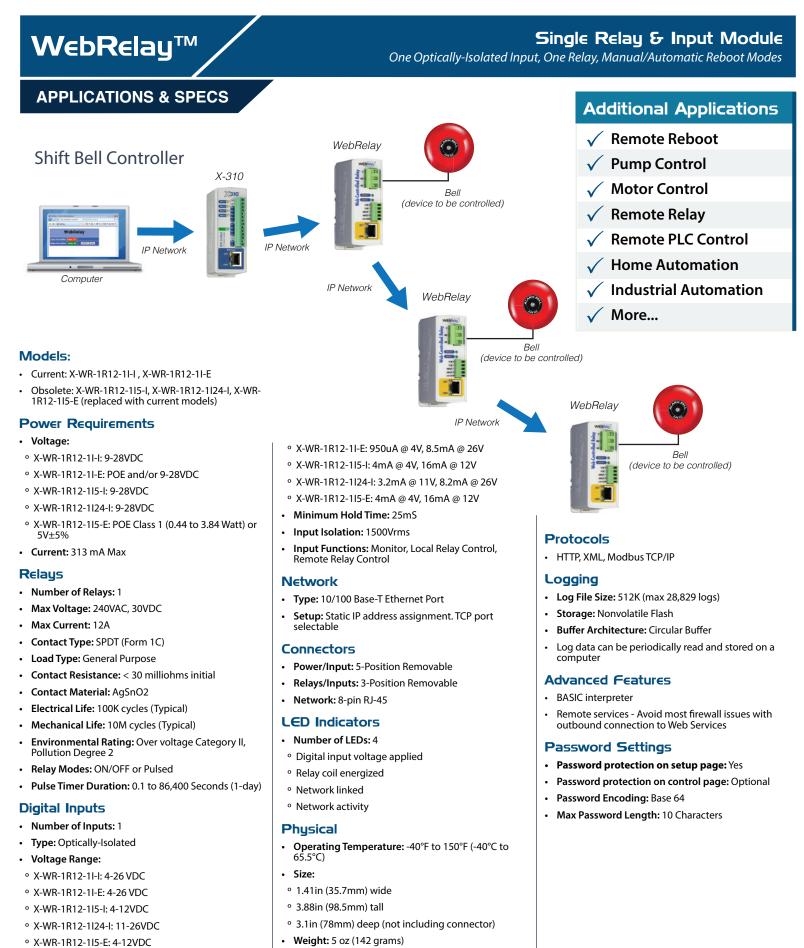
Automatic Reboot Options

# Features:

- No programming required.
- Full control using a standard web browser or textbased 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



Relay Options



- Current:
- ° X-WR-1R12-1I-I: 950uA @ 4V, 8.5mA @ 26V

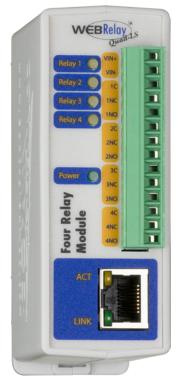


Enclosure Material: Lexan 940 Polycarbonate Plastic

Enclosure Flame Rating: UL94 V0

# WebRelay-Quad™

**PRODUCT OVERVIEW** 



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

WebRelay-Quad<sup>™</sup> 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.

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

🖉 Webrelay Quad - Windows In	ternet Explorer			- 0	x
G - http://192.16	8.1.2/ii 👻 🍫 🔅	K Live Searc	:h		Q
🚖 🕸 🏈 Webrelay Quad		👌 🔹 🛙	2 - 🖶	🔻 🔂 Page	• >>
Mahua		<b></b>			^
Webre	elay Q	zuad			
Relay 1 Description	Relay ON	ON OFF	Pulse		
Relay 2 Description	Relay OFF	ON OFF	Pulse		
Relay 3 Description	Relay OFF	ON OFF	Pulse		
Relay 4 Description	Relay ON	ON OFF	Pulse		
					-
	Relay Op	tions			

# 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

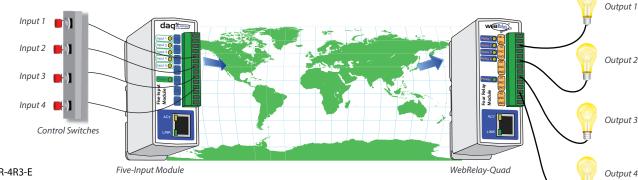
😭 🍄 🌈 http://192.168.1.2/setup.htm	il 👌 🔻 🗟 👻 🖶 🕈 🔂 Page 🕶 🍈 Tools 🖛 🎽
WEBRelay M Quad-LS	Setup
Network Password Relay 1	Relay 2 Relay 3 Relay 4 Control Page
Control Page Setup:	
Main Header Text:	Webrelay Quad
Auto Refresh Page:	Yes ⊙ No ●
Duration:	3 sec
Relay 1 Setup:	
Relay Description:	Relay 1 Description
Display Relay Status: Status ON Color:	Yes ● No ● Gr ● Rd ● Yllw ● Bl ●
Status ON Text:	Relay ON
Status OFF Color:	Gr ⊙ Rd ⊙ Yllw ⊙ Bl ⊙
Status OFF Text:	Relay OFF
ON/OFF Buttons:	0 • 1 • 2 •
Button1 Label:	ON
Button2 Label:	OFF
Pulse Button:	Yes   No
Pulse Button Label:	Pulse
Pulse Duration:	1.5 secs
Submit Reset	

Individual Relay Options



WebRelay-Quad™	<b>4 Web-Controlled Relays</b> Four Independent, 1-Amp Relays
APPLICATIONS & SPECS	Additional Applications
	🗸 Industrial Control
Four-Color Light Tower Control	🗸 Remote Reset
Vegilian).	Security
	✓ Remote Control
	✓ More
	Ι

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**

Light Tower

- 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





Advanced Web-Enabled Temperature Monitoring & Thermostat 3 Relays, 1-8 Temperature/Humidity Sensors, 7-Day Programmable Web-Enabled Thermostat



The X-300<sup>™</sup> is two products in one package!

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

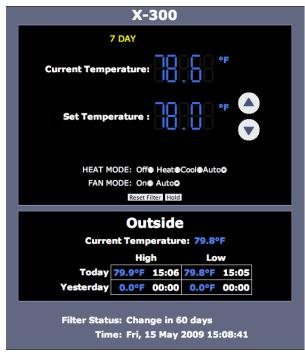
Up to eight temperature/humidity sensors can be connected at a time, and temperature/humidity can be viewed in real-time using a web browser.

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<sup>™</sup> has many advanced features including email alerts, relay control, a BASIC interpreter, and much more.

Second, the X-300<sup>™</sup> 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.

**PRODUCT OVERVIEW** 

- 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.

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						X-3	800	
ain Network Advanced Netwo	ork Passw	ord Date/Tim	Logging	Thermostat Setup	7-Day Program	n Thermostat	View	
7 Day Programming:	On) Offe	)						
	_	Su	Mo	Tu	We	Th	Er.	Sa
	Morning	Time: 06:00 Cool: 78.0 °F Heat: 72.0 °F						
Schedule:	Afternoon	Time: 12:00 Cool: 78.0 °F Heat: 72.0 °F						
	Evening	Time: 18:00 Cool: 78.0 °F Heat: 72.0 °F						
	Night	Time: 22:00 Cool: 78.0 % Heat: 72.0 %	Time: 22:00 Cool: 78.0 °F Heat: 72.0 °F					
Submit () Reset ()	*Select th	ne far left colu	Heat: 72.0 °F		Heat: 72.0 °F	Heat: 72.0 °F	Heat: 72.0 °F	

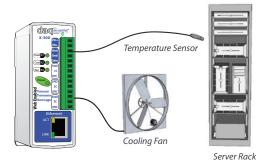


<sup>7-</sup>Day Programmable Schedule

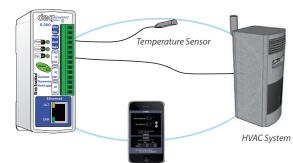
Advanced Web-Enabled Temperature Monitoring & Thermostat 3 Relays, 1-8 Temperature/Humidity Sensors, 7-Day Programmable Web-Enabled Thermostat

# **APPLICATIONS & SPECS**

# Remote Temperature Monitoring/Logging



Web-Enabled Thermostat



### 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

### Additional Applications

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

### 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

# **X-30I**™

**PRODUCT OVERVIEW** 



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

● ● ●	Image: WebRelay-Dual         Image: WebRelay-Dual           Image: WebRelay-Dual         Image: WebRelay-Dual							
Main Network Advanced Netw	ork Password Date/Time Logging Inputs Relays							
Relay: Relay Description:	Relay 1							
On Button Label: Off Button Label:	Relay 1 ON OFF							
Pulse Button Label:	PULSE							
On Status Text: Off Status Text:	ON OFF							
Pulse Duration:	1.5 Seconds							
Relay State At Powerup:	off (unless overridden by event)							
Relay Option:	no local relay control							
Email Option:	No Email Messages							
Use Email Address:								
Remote Service/SNMP:	Send State Msg/Trap on Relay Change							
Submit Reset	Relay Options Page							

# 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.



Event Scheduling Page



**X-30I**™

### **WebRelay-Dual | 2 Relay, 2 Input Module** Two Optically-Isolated Inputs, Two Relays, 100 Individual Event Scheduler

**APPLICATIONS & SPECS** 

# \_\_\_\_

More...

Shift Bell Additional Applications Controller WEB **Traffic Warning Light Controller Electric Door Lock Control** Bell **Timed Control of Electrical Outlets** ACME Company Vacant Home/Building Monitor Event Schedule Shift Change Bell OFF Ring Bell Current Time: Sat, 31 Oct 2009 00:01:06 **Event Counter** Control Paae Extend I/O From a PLC to Another Building

### Models:

• X-301-I, X-301-24I, X-301-E

### Power Requirements

#### Voltage:

- X-301-I: 9-28VDC
  X-301-24I: 9-28VDC
- Gate Controller Push Button
- 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-l: 4-12VDC
- ° X-301-24I: 11-26VDC
- ° X-301-E: 4-12VDC
- Current:
- ° X-301-l: 4mA @ 4V, 16mA @ 12V
- ° X-301-24l: 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

**Remote Security Gate Control** 

- 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)

Security Gate

- 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



### Web-Enabled Programmable Controller



4 Relays, 4 Digital Inputs, 1-Wire Bus, 2 Digital Counters, Control up to 16 Remote Relays, Monitor Supply Voltage, Email Notifications, Basic Scripting, Scheduling, Logging



The X-310<sup>™</sup> is a full-featured, webenabled, 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 nonvolatile memory for logging, a real-time clock with support for NTP (time server) synchronization and an advanced fullcalendar 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<sup>™</sup> 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.

Sensor 1: xx	Count 1: 0.000				
Sensor 2: 🗙	Count 2: 0.000				
Sensor 3: 🗙	Vin: 11.950 V				
Sensor 4: 🗙					
		_	_		_
Input 1: OFF	Relay 1: OFF	ON	OFF	PULSE	
Input 2: OFF	Relay 2: OFF	ON	OFF	PULSE	
Input 3: OFF	Relay 3: OFF	ON	OFF	PULSE	
Input 4: OFF	Relay 4: OFF	ON	OFF	PULSE	

Control Page Interface

**PRODUCT OVERVIEW** 

## 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



# **X-3IO**<sup>™</sup>

## Web-Enabled Programmable Controller

4 Relays, 4 Digital Inputs, 1-Wire Bus, 2 Digital Counters, Control up to 16 Remote Relays, Monitor Supply Voltage, Email Notifications, Basic Scripting, Scheduling, Logging

### **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**

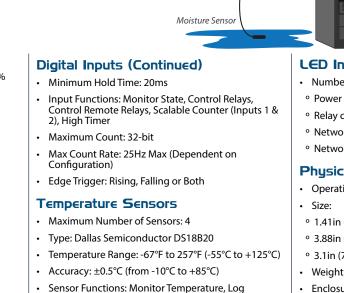
- Number of Inputs: 4
- Type: Non-Isolated
- Voltage Range:
- ° X-310-I: 4-12VDC
- ° X-310-24I: 11-26VDC
- ° X-310-E: 4-12VDC
- ° X-310S-I: 4-26VDC
- ° X-310S-E: 4-26VDC
- Current:

CONTROL

- ° X-310-I: 4.7-25mA
- ° X-310-24I: 4.7-25mA

**ME**E

- ° X-310-E: 4.7-25mA
- ° X-310S-I: 950uA @ 4V, 8.5mA @ 26V
- ° X-310S-E: 950uA @ 4V, 8.5mA @ 26V



- Temperature, Email Alerts, SNMP Traps
- Humidity Type: Xytronix Model X-DTHS-WM wall mount sensor
- Humidity Range: 0-100% RH
- Accuracy: ±1.8%

Alarm Relay

Email

### **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

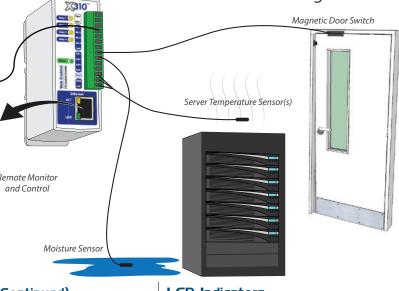
### Connectors

Power, Outputs, and Inputs: 14-Position, 3.81mm, Removable

10

Network: 8-pin RJ-45

## Server Room Monitoring & Control



### **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)
- ° 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

Phone: 435-750-5999

Email: Sales@ControlByWeb.com

### Password Settings

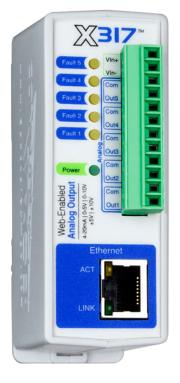
Password protection on setup page: Yes

Max Password Length: 13 Characters

- Password protection on control page: Optional
- Password Encoding: Base 64

**PRODUCT OVERVIEW** 

# **X-3I7**™



The X-317<sup>™</sup> 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 builtin 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<sup>™</sup>.

The X-317 has five precision 16-bit digital to analog converters (DACs). Each channel can be programmed for 0-5V, 0-10V,  $\pm$ 5V,

 $\pm$ 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.

• • • Time: X-317 Analog Outp	ut Modu ×					
← → C <sup>I</sup> 🗋 192.168.1.2/se	tup.html					5
					Analog	Output Module
<b>∐3I7</b> ™						Setup
Main Network Advanced N	etwork Pa	assword A	nalog Outputs	Script	Control Page Setup	Control Page
Analog Outpu Mod		Output 1 📀				
Description	1: Output				<b>`</b>	
Unit Decimal Place						
User Input Max			V, 5.00		V	
User Input Mi	0.00		V, 0.00		V	
State At Poweru	0.00		V			
Submit Reset						

Analog Output Configuration Tab

# 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

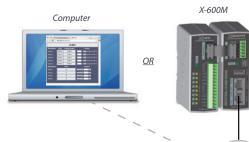
X-317								
Description	Value	Analog Output	Control					
Output 1	0.00 V	0.00 V	V Set (0.00 to 5.00 V)					
Output 2	0.00 V	0.00 V	V Set (0.00 to 5.00 V)					
Output 3	0.00 V	0.00 V	V Set (0.00 to 5.00 V)					
Output 4	0.00 V	0.00 V	V Set (0.00 to 5.00 V)					
Output 5	0.00 V	0.00 V	V Set (0.00 to 5.00 V)					
Description		Value	Control					
extVar1		0	ON OFF Set					
extVar2		0	ON OFF Set					
extVar3		0	ON OFF Set					
extVar4		0	ON OFF Set					

X-317 Control Page



### **APPLICATIONS & SPECS**

## 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	Power Supply Outputs = 0V						
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:  $\pm 0.2\%$  FSR includes offset error, gain error and non-linearity error, -40 to  $65^\circ\text{C}$
- Max Load Capacitance: 20nF (no load), 5nF (1K load)
- Current Output Range: 4-20mA
- Current Output Inaccuracy:  $\pm 0.2\%$  FSR includes offset error, gain error and non-linearity error, -40 to  $65^\circ\text{C}$
- 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



• Type: 10/100 Base-T Ethernet Port

Local Network or

Internet

 Setup: Static IP address assignment or DHCP, HTTP port selectable

X317

X-317

### 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



• 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)





# **X-320**™

### **PRODUCT OVERVIEW**



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

X-320							
Sensor 1	x.x °	F	Analog 1	OFF			
Sensor 2	x.x °	F	Analog 2	0.00 V			
Sensor 3	x.x °F x.x °F		Analog 3	0.00 V			
Sensor 4							
Sensor 5	x.x °	F	Analog 4	0.00 V			
Sensor 6	x.x °F		Frequency	0.00 Hz			
I/O 1	ON	ON OFF PULSE					
I/O 2	ON		ON OFF P	ULSE			
extVar0	OFF	0	ON OFF	Set			
extVar1	OFF	•	ON OFF	Set			
Current T	ime: T	hu,	14 Apr 2011 (	9:45:52			

Control Page

# 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.

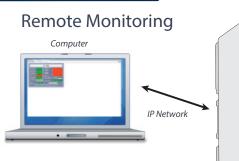




## Web-Enabled Instrumentation-Grade Data Acquisition

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

### **APPLICATIONS & SPECS**





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





Maximum Number of Sensors: 6

daq<u>im</u> x-320

/0 2

- 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

14

Network: 8-pin RJ-45

#### **LED Indicators**

- Number of LEDs: 5
- Power on
- I/O (1-2)
- Network linked
- Network activity

# Additional Applications

- Process Control
- Industrial Equipment Monitoring

Frequency Sensor

- / Environmental Site Monitoring
- ✓ Remote Generator Control and Monitoring
- ✓ Fluid Level Monitoring
  - More...

### **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

IEC CISPR 22, CISPR 24, FCC 47CFR15 (Class B), EU

Phone: 435-750-5999

Email: Sales@ControlByWeb.com

- Password Encoding: Base 64
- Max Password Length: 13 Characters

# Regulatory ComplianceElectromagnetic Compliance:

EN55024, EN55022

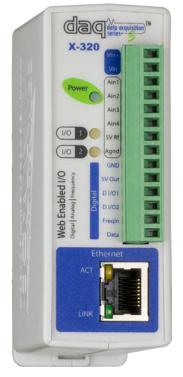
IEC 60950-1 / EN 60950-1

Product Safety:

# 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

**PRODUCT OVERVIEW** 



The X-320M<sup>™</sup> 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<sup>™</sup> 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<sup>™</sup> 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<sup>™</sup> 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.

XRDI MET Station

## 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.

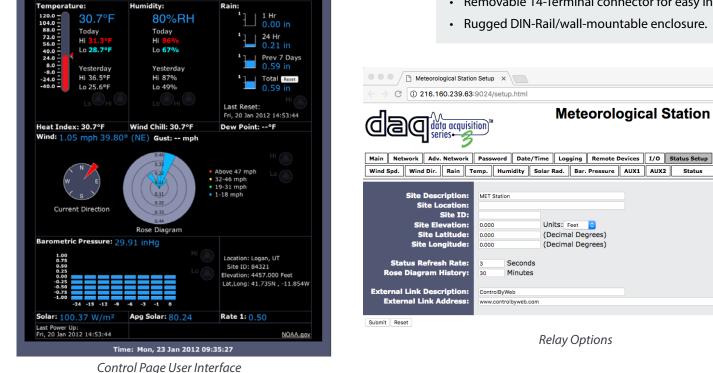
Meteorological Station

• Rugged DIN-Rail/wall-mountable enclosure.

Units: Feet 😒

(Decimal Degrees)

(Decimal Degrees)



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



# **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 Inputs

## **APPLICATIONS & SPECS**

## **Remote Monitoring**



### 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

16

Network: 8-pin RJ-45

### **LED Indicators**

- Number of LEDs: 5
- Power on
- ° I/O (1-2)
- ° Network linked
- Network activity

### **Remotely Monitor**

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

### 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

IEC CISPR 22, CISPR 24, FCC 47CFR15 (Class B), EU

Phone: 435-750-5999

Email: Sales@ControlByWeb.com

Password Encoding: Base 64

**Regulatory Compliance** 

Electromagnetic Compliance:

EN55024, EN55022

IEC 60950-1 / EN 60950-1

Product Safety:

Max Password Length: 13 Characters

### Web Enabled Advanced I/O Controller

# X-332™

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<sup>™</sup> 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<sup>™</sup> 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.

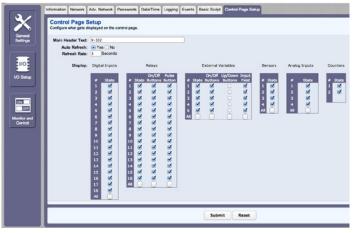
Simply access and configure the X-332<sup>™</sup> by using its web-based user interface. There is no software required, no subscription to buy, and no programming necessary for setup or use.

	X-33	2			
Analog 1: 8345	Sensor 1: **		Count	1: 0	
Analog 2: CON	Sensor 2:		Count	2: C	
Analog 3: 500 Analog 4: 510	Sensor 3:				
Analog 4: Line	Densor 4.				
put I: CN	Relay 1: 04	05	011	PULS	A second
put 2: CHI	Relay 2: Cit	ÓN	Off	PALS	t
nput 3: Off	Relay 3: Cit	ÓN	Off	PAS	e
put 4: OFF	Relay 4: Cit	0N	no (	N	4
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Control Page

# 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 Setup** 



### 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** 

**Email Notifications** 

Scheduling

Logging

### 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</li>
- 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

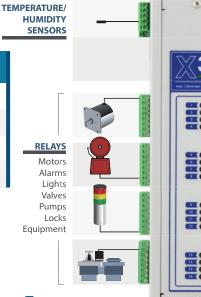
### Analog Inputs

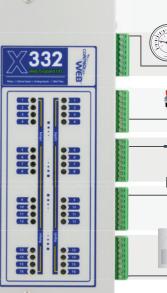
- Number of Inputs: 4
- Type: Single-ended Channels

- Input Range: 0-5VDC
- Resolution: 12-bit

CONTROLD

Reference: 5.00V, 0.04%, 3ppm/C, 50mA Max





Pressure Sensor Frequency Sensor Wind Speed Sensor Flow Sensor

ANALOG INPUTS

#### DIGITAL INPUTS

Switches Moisture Sensors Door Sensors Motion Detectors Window Sensors

### 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
- 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

18

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**

Password Settings

Password Encoding: Base 64

Password protection on setup page: Yes

Max Password Length: 13 Characters

Password protection on control page: Optional

Phone: 435-750-5999

Email: Sales@ControlByWeb.com

Data Graphing

•

•

**BASIC** interpreter

Remote services

### Web-Enabled Programmable Logic Controller

# **X-600M**™

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.)



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<sup>™</sup> 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<sup>™</sup> 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.

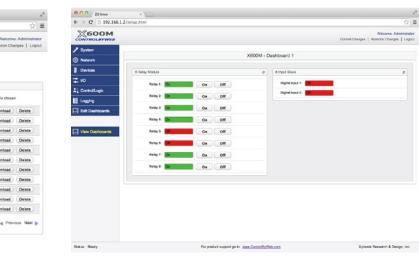
Expansion I/O modules for the X-600M are available with relays, digital inputs, thermocouples, and more.

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.

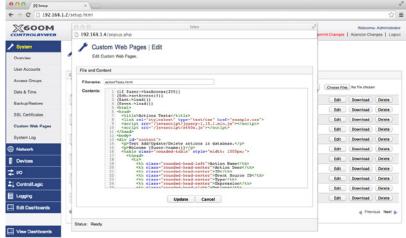
**PRODUCT OVERVIEW** 

## 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<sup>™</sup> 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



View Dashboards



Edit Custom Web Pages



# **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

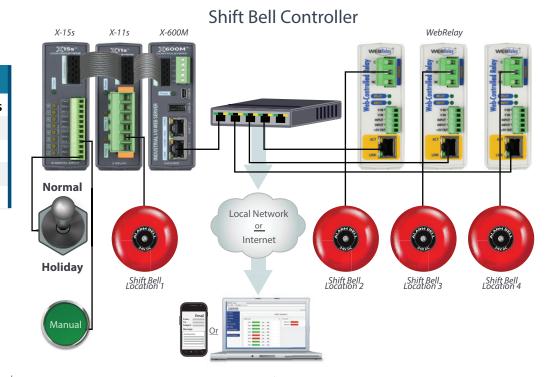
- Host: USB 2.0 Type A
- Device: USB 2.0 Mini-B

### 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)

**PRODUCT OVERVIEW** 



X-lls™

The X-11s<sup>™</sup> 2-relay expansion module is used in conjunction with the X-600M<sup>™</sup> 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 webenabled 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...

	X-600M - Admin	X-600M - Admin
This X-600M	φ	
Room Lights: Of	On Off	
Air Conditioner: On	On Off	

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

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Status: Ready			For product support go to www.ControlByWeb.com	Xytronix Research & Design, Inc.

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



### **APPLICATIONS & SPECS**

## Expansion Modules With The X-600M Controller



### **Applications**

$\checkmark$	Lighting Control
$\checkmark$	Door Locks
$\checkmark$	Remote Gate Control
$\checkmark$	Motor Control
$\checkmark$	Pumps
$\checkmark$	More

### 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 toolfree 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<sup>™</sup> 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 webenabled 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...

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

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Uiew Dashboards	Relay 5: Off	On Off		
	Relay 6: Off	On Off		
	Relay 7: Off	On Off		
	Relay 8: Off	On Off		

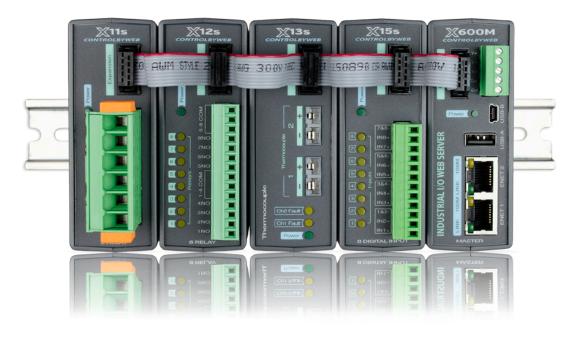
View X-12s components on the X-600M's Dashboard





# **APPLICATIONS & SPECS**

## Expansion Modules With The X-600M Controller



### **Applications**

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

### 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



**X-I3**s™

The X-13s<sup>™</sup> Thermocouple expansion module is used in conjunction with the X-600M<sup>™</sup> 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 webenabled 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-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.

## 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...

🖡 System		
Network		X600M - Das
Devices	Thermocouple Type K Slave (0000005c)	¢
≥ vo	Thermocouple: 76.35 F	
Control/Logic	Thermocouple: 89.75 F	
Logging		
Edit Dashboards	·	

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

← → C 🗋 192.168.			X600M		H21
<b>Жеоом</b>		192.168.1.2/popup.php			
CONTROLBYWEB	_	Thermocouple Type	K Slave   Add I/O		
System	De	Add I/O found on Thermocouple Type K Slave (0000005c). Please see below the			f each field.
Network	Lis	I/O List			
Devices		I/O Type	I/O Description	I/O Name	Select
≥ vo		Thermocouple 1	AUTO_GENERATE	AUTO_GENERATE	2
] Control/Logic	New Devic	Thermocouple 2	AUTO_GENERATE	AUTO_GENERATE	2
Logging	Show 1	Showing 1 to 2 of 2 entries		Select All	Deselect All
Edit Dashboards	Model X-15S	Add C	hecked I/O Create device widge	et on panel1 🔹	
	X-125	Device I/O: This shows the type and m	ference number of each input and out	put on the device.	
View Dashboards	X-118	I/O Description: Text can be entered to spaces and the maximum number of cl			
	Showing 1	I/O Name: This is a unique name given to each I/O. This name is used to reference the I/O when writing scripts. This name must start with an alphabetic (not a number) character and cannot include spaces. The name can be up to ??? characters long. If nothing is entered a name will automatically be generated.			
		Select: Each I/O that is selected (chec optimal performance it is recommended anytime under the I/O tab.	ked) will be added to the X-600M data		

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





### **APPLICATIONS & SPECS**

## Expansion Modules With The X-600M Controller



Арр	lications
$\checkmark$	Freezers
$\checkmark$	Ovens
$\checkmark$	Fermenters
$\checkmark$	Generators
$\checkmark$	More

#### 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<sup>™</sup> 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<sup>™</sup> products (such as WebRelay<sup>™</sup>) that are located at a remote location.

	Frequency Input 2 Frequency Input 3 Prequency Input 4	AUTO_CONDATE	AITO, DIVERSITE AITO, DIVERSITE	
Network     Devices				
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Devices	Lis Frequency Input 5	AUTO, CONDATE	AUTO, GENERATE	
	Frequency Input 6	AUTO CONTRACT	AUTO, GENERATE	
± 10	Fequency Input 7	A/10_CONDATE	AUTO_GENERATE	
	Frequency Input 8	APRODUCTION	AUTO_GENERATE	
Control Logic	Device 1	AUTO, CONDUCTE	AUTO, SENERATE	<b>a</b>
E Lagging	OW COURSES	AUTO, CONSIATE	AUTO, GENERATE	
	Ceutier3	AUTO_CONDATE	AUTO, GENERATE	
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x	Counter 5	AUTO_CONDATE	AUTO_GENERATE	
	Counter6	AJ70_CONSATE	AUTO_CENERATE	
View Dashboards	COURSET	AUTO, CONDATE	AUTO, GENERATE	
5 N	dourser 8	AUTO, CONSIATE	AUTO, GENERATE	
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		Add Checked 1/0 Cruze device with	(pet on parel 1 B)	

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...

CONTROLBYWEB					
System				X600M - D	achh
Network				7.000m - Di	
Devices	8 Input Slave (00000	064)		Ø	
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, Control/Logic	Digital Input 2:	ж			
Logging	Digital Input 3:	MC			
Edit Dashboards	Digital Input 4:	ht			
	Digital Input 5:	H.			
View Dashboards	Digital Input 6:	hc			
	Digital Input 7:	nc			
	Digital Input 8:	)ff			
	Frequency Input 3:	HZ			
	Counter 4: 0	)	Reset		
	Input High Time	Sec	Reset		
	Input On Time 2: 0		Reset		

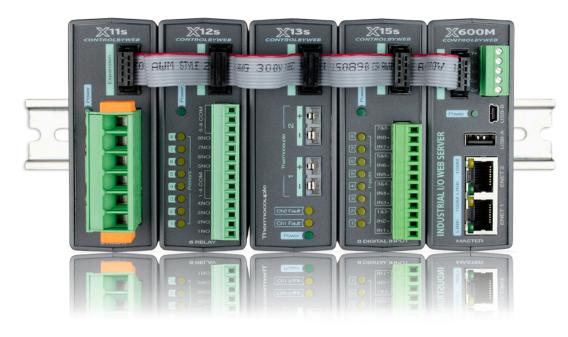
View X-15s components on the X-600M's Dashboard





### **APPLICATIONS & SPECS**

## Expansion Modules With The X-600M Controller



### **Applications**

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

### 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



- 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<sup>™</sup> expansion module is used in conjunction with the X-600M<sup>™</sup> 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 webenabled 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<sup>™</sup> products (such as WebRelay<sup>™</sup>) that are located at a remote location.

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Logging	15	Analog Input 2	AUTO, GENERATE	AUTO CININATI	ef.		
		Analog Input 3	AUTO, CENERATE	AUTO_CININATI			Entert
Edit Dashboards	×	Averag Input 4	AUTO, GENERATE	AUTO, CINIBATI	w		
	100	Analog Input 5	AUTO, GENERATE	AUTO CENTRATE	8		(MI)
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Adding the X-16s on the X-600M

# 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
  - o and much more...

System		
Network		X600M - Dashboard
Devices	Analog Slave (0000006e)	φ
	Analog Input 1: xx V	
Control/Logic	Analog Input 2: xx V	
	Analog Input 3: xx V	
Edit Dashboards	Analog Input 4: xx V	
	Analog Input 5: xx V	
View Dashboards	Analog Input 6: xx V	
	Analog Input 7: xx V	
	Analog Input 8: xx V	

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





# APPLICATIONS & SPECS

## Expansion Modules With The X-600M Controller



### **Applications**

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

### 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  $\Sigma\Delta$  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<sup>™</sup> expansion module is used in conjunction with the X-600M controller. The X-17s is a multi-function module with four relays and four opticallyisolated 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.

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		Showing 1 to 24 of 24 entries		Select.A2	Deselect All		
			Add Decided 10 Cruck donte we	an manual 1			

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

Setup	×	
← → C 🗋 192.168.1.103	/setup.html	
🗲 System		X600M - Dashboard 1
Network		X600W - Dashboard 1
Devices	4 Input 4 Relay Slave (0000007a)	φ
<b>↓</b> 1/0	Relay 1: Off O	n Off
Control/Logic		
Logging		
Edit Dashboards	Relay 3: Off O	in Off
	Relay 4: Off O	in Off
View Dashboards	Digital Input 1: Off	
	Digital Input 2: Off	
	Digital Input 3: Off	
	Digital Input 4: Off	

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





### **APPLICATIONS & SPECS**

### Expansion Modules With The X-600M Controller



### **Applications**



#### 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)





10 Relays -277VAC, 30VDC, 30-Amp

**PRODUCT OVERVIEW** 



The X-18s<sup>™</sup> 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)

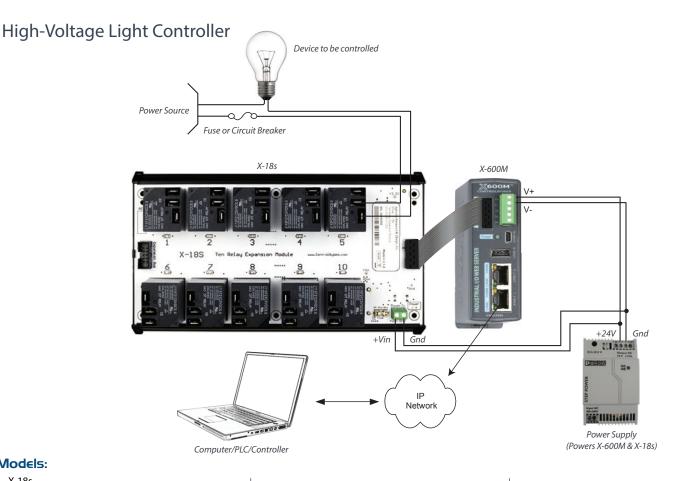
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rol/Logic	Relay 2	AUTO_GENERATE	AUTO_GENERATE	8	
	Relay 3	AUTO_GENERATE	AUTO_GENERATE		
ing	Relay 4	AUTO_GENERATE	AUTO_GENERATE	8	
Dashboards	Relay 5	AUTO_GENERATE	AUTO_GENERATE	8	Select
	Relay 6	AUTO_GENERATE	AUTO_GENERATE	8	Add
	Relay 7	AUTO_GENERATE	AUTO_GENERATE	8	Add
Dashboards	Relay 8	AUTO_GENERATE	AUTO_GENERATE	8	Add
	Relay 9	AUTO_GENERATE	AUTO_GENERATE		
	Relay 10	AUTO_GENERATE	AUTO_GENERATE	8	Previous Next )
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	Add Checked I/O Create device widget on panel1				
	I/O List: This shows the type and reference number of each input and output on the device.				
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	I/O Description: Text can I	pe and reference number of each input and be entered here to identify the UO in a form:	widget on panel1  • output on the device. at that is easy to understand and reco	ognize. It can	

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

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



### **APPLICATIONS & SPECS**



### 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
- o 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)





**PRODUCT OVERVIEW** 



The X-19s<sup>™</sup> 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.

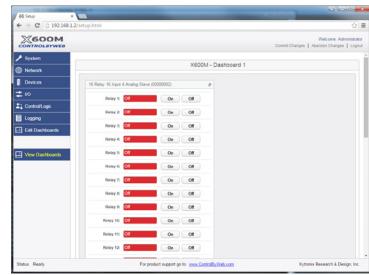
Attach multiple X-19s modules or a combination of expansion modules to the X-600M for an I/O combination that is tailored to your specific needs.

→ C 🗋 192.16	8.1,2/setup.html			0 8	88	
<u>%600М</u>	192.168.1.2/popup.php					Welcome: Administrat
ONTROLBYWEB	Counter 6	AUTO_GENERATE	AUTO_GENERATE		-	Abandon Changes   Logo
System	Counter 7	AUTO_GENERATE	AUTO_GENERATE			
Network	Counter 8	AUTO_GENERATE	AUTO_GENERATE			
	Counter 9	AUTO_GENERATE	AUTO_GENERATE			
Devices	Counter 10	AUTO_GENERATE	AUTO_GENERATE			
vo	Counter 11	AUTO_GENERATE	AUTO_GENERATE			
Control/Logic	Counter 12	AUTO_GENERATE	AUTO_GENERATE			
	Counter 13	AUTO_GENERATE	AUTO_GENERATE			
Logging	Counter 14	AUTO_GENERATE	AUTO_GENERATE			
Edit Dashboards	Counter 15	AUTO_GENERATE	AUTO_GENERATE			Select
	Counter 16	AUTO_GENERATE	AUTO_GENERATE			Add
View Dashboards	Showing 1 to 52 of 52 entries		Select All	Deselect All		Add
		d Checked I/O Create device	widget on panel1 •			Add
	I/O Description: Text can be ente include spaces and the maximum generated.	number of characters is 60. If nothin	at that is easy to understand and record g is entered a description will be autor I to reference the I/O when writing scri	natically pts. This name	I	e Previous Next 🏚

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

### Features:

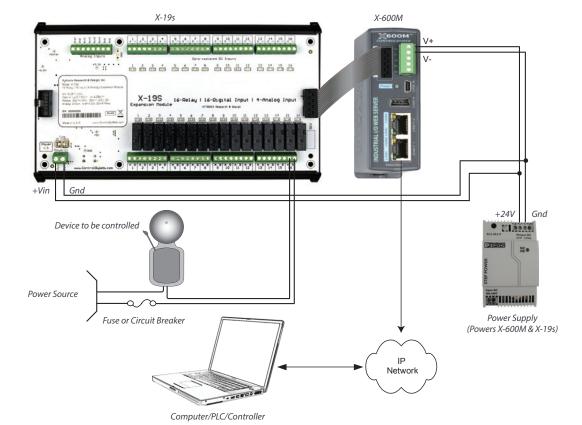
- 16 isolated relays SPST
- Relay functions: ON/OFF or Pulsed
  - ° Great for moderate-load applications including:
  - Solenoid valves
  - ° Lights
  - ° and much more moderate load applications
- PCB terminal block, screw connection, 3.81mm pitch
- 16 optically-isolated digital inputs
- Digital input 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)



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

### **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  $\pm$ .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)



# **X-20**s™

### **Six Relay, Six Input Expansion Module** 6 Relays - 277VAC, 30VDC, 15-Amp | 16 Optically-Isolated Digital Inputs 4-28VDC

**PRODUCT OVERVIEW** 



The X-20s<sup>™</sup> 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.

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<u>%600М</u>	Inout On Time 2	AUTO GENERATE	AUTO GENERATE		Welcome: Administrato
ONTROLBYWEB	Input On Time 3	AUTO GENERATE	AUTO GENERATE		andon Changes   Lopou
System	Input On Time 4	AUTO GENERATE	AUTO GENERATE	8	
	Input On Time 5	AUTO GENERATE	AUTO GENERATE		
Network	Input On Time 6	AUTO_GENERATE	AUTO_GENERATE	8	
Devices	Frequency Input 1	AUTO_GENERATE	AUTO_GENERATE		
ю	Frequency Input 2	AUTO_GENERATE	AUTO_GENERATE		
Control/Logic	Frequency Input 3	AUTO_GENERATE	AUTO_GENERATE		
	Frequency Input 4	AUTO_GENERATE	AUTO_GENERATE		
Logging	Frequency Input 5	AUTO_GENERATE	AUTO_GENERATE		
Edit Dashboards	Frequency Input 6	AUTO_GENERATE	AUTO_GENERATE		Select
	Showing 1 to 36 of 36 entries		Select All	Deselect All	Ald
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	NO List: This shows the type ar	d reference number of each input and	output on the device.		Add
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		d (checked) will be added to the X-600 mended that only I/O which will be used			
					*

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

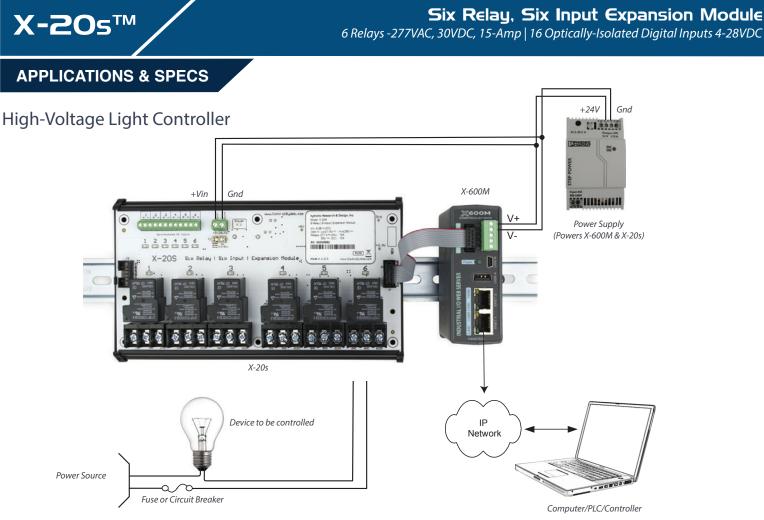
### Features:

- 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)

← → C ☐ 192.168.1.2	and particular and a second	\$
		Welcome: Administrato Commit Changes   Abandon Changes   Logou
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Network	X600M - Dashboa	era 1
Devices	6 Relay 6 Input Slave (00000a82) Ø	
<b>2</b> 1/0	Relay 1: Ctt On Ott	
Control/Logic	Relay 2: Off On Off	
Logging	Relay 3: Off On Off	
Edit Dashboards	Relay 4: Off On Off	
	Relay 5: Off On Off	
View Dashboards		
	Relay 6: Off On Off	
	Digital Input 1: Off Digital Input 2: Off	
	Digital input 2: Off	
	Digital input 4: Off	
	Digital Input 5: Off	
	Digital Input 6: Off	
	Frequency input 0 HZ	
	Descusary level	

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





### 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)





### Wireless Temperature Sensor

1 Wireless Temperature Sensor

# XW-IIO™



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

### **PRODUCT OVERVIEW**

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.

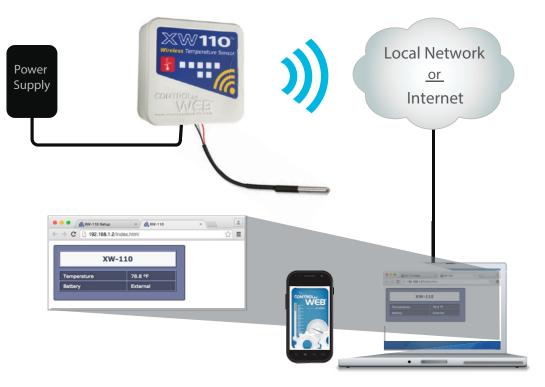




# XW-IIO<sup>™</sup>

### **APPLICATIONS & SPECS**

### 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<sup>™</sup>, X-300<sup>™</sup> 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-IIO Plus™



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 & unencrypted 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

### **PRODUCT OVERVIEW**

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.



Main WiFi Networks Email Password Date/Time Sensor Control Page

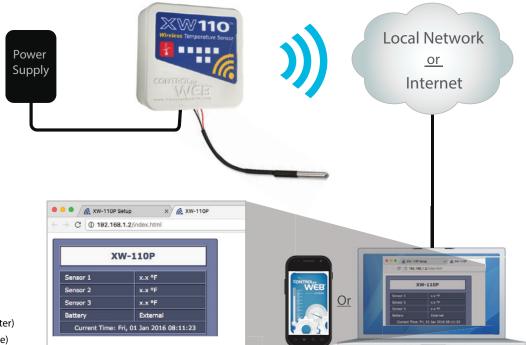
MODULE SETTINGS			
Module Description:	XW-110P		
Temperature Update Interval:	5 Minutes () Se	econds 🔘	
Units:	Fahrenheit 🧿 Celsius	0	
Logging:	Off 🕘 On 🔘		
SENSOR 1			
Sensor Description:	Sensor 1		
Sensor Address:	000000000000000	<b>•</b>	
Offset:	0.0		
Alarm 1:	100.0 High ()	Low	
Alarm 2:	40.0 High (	5	
Deadband:	1.0	X	W-110P
Include Temperature:	On Control Page 🔽		
Email Option:	No email messages	Sensor 1	x.x °F
		Sensor 2	x.x °F
Remote Services:	No action	Sensor 3	x.x °F
Remote Relay Action	No Action 🚽 when Al	Battery	External
		Current Time:	Fri, 01 Jan 2016 08:11:23
SENSOR 2			
Senso	r Paae	C	ontrol Paae



# XW-IIO Plus™

### **APPLICATIONS & SPECS**

### 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<sup>™</sup>, X-300<sup>™</sup> or cloud-based server
- Polling: state.xml (only with always-connected)

# CONTROL DY WEB

### 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)

# XW-III™

### **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 realtime 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

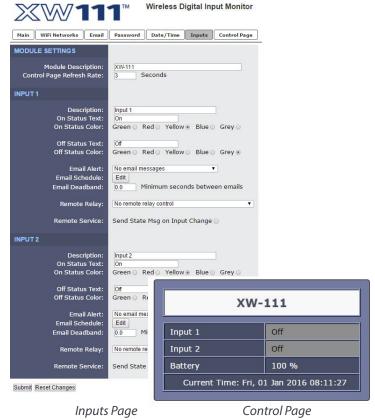
Connect a variety of switch-closure sensors

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

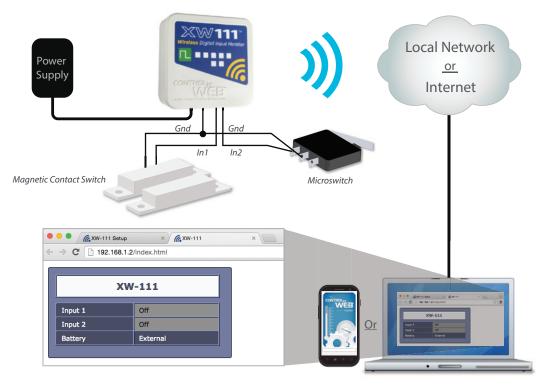
\* Transmission distance can vary depending upon environmental conditions, interference from other Wi-Fi devices, obstacles, etc.





### **APPLICATIONS & SPECS**

### 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<sup>™</sup>, X-300<sup>™</sup> 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**

WI-FI KW-IE WATER DETECTOR

XW-II2™



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!

Water leaks can occur when you

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





# **XM-II5**™

### Wi-Fi Water Detector 1 Water Sensor | Alarm Notifications | Power-Failure Alerts



### 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<sup>™</sup>, X-300<sup>™</sup> 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-IO™

**PRODUCT OVERVIEW** 



WebRelay-10<sup>™</sup> 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<sup>™</sup> 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.

O O WebRelay-10	× •
← → C ③ 192.168.1.2/setu	p.html
WEBRelay 10	Setup
Main Network Advanced Netw	ork Password Relays Script Control Page Setup Control Page
Relay:	Relay 1
Relay Description:	Relay 1
On Button Label: Off Button Label: Pulse Button Label:	ON OFF PULSE
On Status Text: Off Status Text:	ON OFF
Pulse Duration: Relay State At Powerup:	1.5 Seconds
Email Option:	No Email Messages
Use Email Address:	
Remote Service/SNMP:	Send State Msg/Trap on Relay Change
	Relay Setup Page

### 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).

WebRelay-10					
Relay 1	ON	ON OFF PULSE			
Relay 2	ON	ON OFF PULSE			
Relay 3	OFF	ON OFF PULSE			
Relay 4	ON	ON OFF PULSE			
Relay 5	OFF	ON OFF PULSE			
Relay 6	ON	ON OFF PULSE			
Relay 7	OFF	ON OFF PULSE			
Relay 8	ON	ON OFF PULSE			
Relay 9	ON	ON OFF PULSE			
Relay 10	OFF	ON OFF PULSE			

WebRelay-10 Control Page



# WebRelay-IO<sup>™</sup>

### IO Web-Controlled Relays Ten Independent, 30-Amp Relays

APPLICATIONS & SPECS

### 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</li>
- 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

**Industrial Automation** 

**Car Wash Industry** 

### 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





More...

# WebRelay-IO Plus™

**PRODUCT OVERVIEW** 



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

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

● ● ● ● WebRelay-10					
WebRelay-10					
Input 1	ON	Reset Count Count = 157			
Input 2	OFF	Reset Count Count = 129			
Relay 1	ON	ON OFF PULSE			
Relay 2	ON	ON OFF PULSE			
Relay 3	ON	ON OFF PULSE			
Relay 4	OFF	ON OFF PULSE			
Relay 5	ON OFF PULSE				
Relay 6	OFF	ON OFF PULSE			
Relay 7	ON	ON OFF PULSE			
Relay 8	OFF	ON OFF PULSE			
Relay 9	ON	ON OFF PULSE			
Relay 10	ON	ON OFF PULSE			
Sensor 1	81.9	٩F			
Sensor 2	76.4	°F			
Sensor 3	82.2	°F			
Current 1	Time: M	lon, 15 Nov 2010 10:59:01			

WebRelay-10 Plus Control Page



- 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.

	Setup		
	ootup		
	Event 6		
Current Data (Times			
Current Date/ Time:	11/15/2010 10:47:33	Current Date/Time: 11/15/2010 10:47:33	
Schedule #:	0	Pulse Next Occurance	
		Tu 11/16/2010 08:00:00	
Description.	change to schedule 1	M 11/15/2010 11:15:00	
		Tu 11/16/2010 07:30:00	
		M 11/15/2010 17:00:00	
	30 10 10 10 11 10 10	M 11/15/2010 17:00:00	
Chart Date:	2 3 4 5 6 7 8	··· M 11/15/2010 17:00:00	
start Date:			
	16 17 18 19 20 21 22		
Start Time (HH-MM-SS).			
start time (nn.nn.35).			
Days:	Sun SMon Tue Wed Th Fri Sat		
Count:	0 (Enter 0 for continuous occurrence.)		
	Commentation (1)		
Pulse Duration:	1.5 SECS		
	*Select a period of one day in order to specify days		
	on which the event will occur.		
	Cancel Update		
		1	
	Current Date/Time: Schedule #: Description: Start Date: Start Time (HH:MM:SS): Period: Days: Count: Action: Action: Action: Pulae Duration:	Current Date/Time:       1/15/2010 10.47.33         Schedule #:       0.0         Description:       0.0         Start Date:       0.0         Start Date:       0.0         Start Time (HH:ML:SS):       0.0         Period:       0.0         Days:       0.0         Count:       0.0         Action:       Affected Relays:         Pulse Duration:       1.2         *Select a period of one day in order to specify days	Current Date/Time:         11/15/2010 10.47.33           Schedule #:         Image: Date Schedule 1         Image: Date Schedule 1           Schedule #:         Image: Date Schedule 1         Image: Date Schedule 1           Start Date:         Image: Date Schedule 1         Image: Date Schedule 1           Start Date:         Image: Date Schedule 1         Image: Date Schedule 1           Start Date:         Image: Date Schedule 1         Image: Date Schedule 1           Start Date:         Image: Date Schedule 1         Image: Date Schedule 1           Start Date:         Image: Date Schedule 1         Image: Date Schedule 1           Start Date:         Image: Date Schedule 1         Image: Date Schedule 1           Start Date:         Image: Date Schedule 1         Image: Date Schedule 1           Days:         Image: Date Schedule 1         Image: Date Schedule 1           Days:         Image: Date Schedule 1         Image: Date Schedule 1           Days: <thimage: 1<="" date="" schedule="" th="">         Image: Date Schedule 1         Image: Date Schedule 1           Days:         Image: Date Schedule 1         Image: Date Schedule 1         Image: Date Schedule 1           Days:         Image: Date Schedule 1         Image: Date Schedule 1         Image: Date Schedule 1           Days:         Image: Date Schedule 1</thimage:>

Event Scheduling Page



# WebRelay-IO Plus™

### **IO Web-Controlled Relays and More**

Ten Independent, 30-Amp Relays



Scheduled Lighting Control Park Lights WEBRelay Setur Logging Inputs Relays Hain Network Advanced Network Password Date/ Sensors Events Script Centrel Page Setup Control Event # \* Schol # Start Data/Time Period 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.

### Relau Contacts

- Number of Relays: 10
- ° N.O.

Models:

- 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

- **Car Wash Industry**
- More...

### Physical

- Size:
- ° 9.125in (232mm) wide
- º 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





# Five-Input Module™

### **PRODUCT OVERVIEW**



The Five-Input Module is a robust, fullfeatured, 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<sup>™</sup> relays located throughout the network.

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

~

~

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🍃 💠 🏉 http://192.168.1.2/setup.html				۵.	<b>b</b> - <b>b</b>	▪ 🔂 Page ▪ 🎯 Too
					Fi	ve Input Module
daq data acquisition series	9					Setup
Network Email Password	Input 1	Input 2	Input 3	Input 4	Input 5	Control Page
Control Page Setup:						
	-					
Main Header Text:	Five Input	tModule				
Auto Refresh Page:	Yes 💿 N	lo 🔿				
Duration:	3	sec				

# 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 1 Description	Input ON	Reset Count Count = 0
Input 2 Description	Input OFF	Reset Count Count = 0
Input 3 Description	Input OFF	Reset Count Count = 0
Input 4 Description	Input OFF	Reset Count Count = 0
Input 5 Description	Input OFF	Reset Count Count = 0

**Five Input Module** 

Five-Input Module Control Page

# Remote Relay Options: no remote relay control Remote Relay IP Address: 192,168,1,15 Remote TCP Port: 80 Input Options

Input Description: Input 1 Description

Yes 💿 No 🔿

Input ON

Input OFF

counter off

65535

Yes 💿 No 🔿

Yes 💿 No 🔿

Yes 

No

✓ 1 ✓ 2 ✓ 3

no email

10

 $\mathsf{Gr} \odot \mathsf{Rd} \odot \mathsf{Yllw} \odot \mathsf{Bl} \odot$ 

 $\mathsf{Gr} \bigcirc \mathsf{Rd} \odot \mathsf{Yllw} \bigcirc \mathsf{Bl} \bigcirc$ 

Display Input Status:

Status ON Color:

Status ON Text:

Status OFF Color: Status OFF Text:

**Counter Options:** 

Display Counter:

Email Options:

Use Email Address:

Email Trigger Count:

Reset Count:

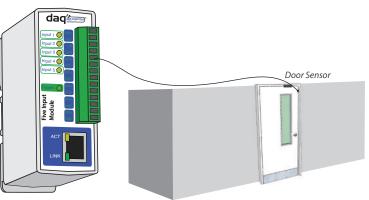
Auto-Reset Counter:

Display Counter Reset Button:



### **APPLICATIONS & SPECS**

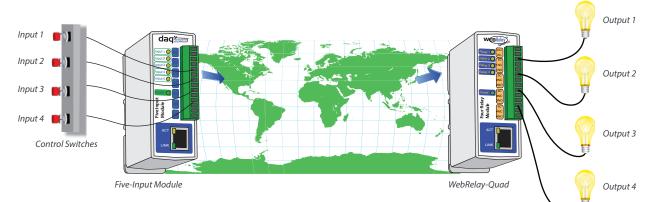
### Door Access Monitoring



### 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<sup>™</sup> 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™

### **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.

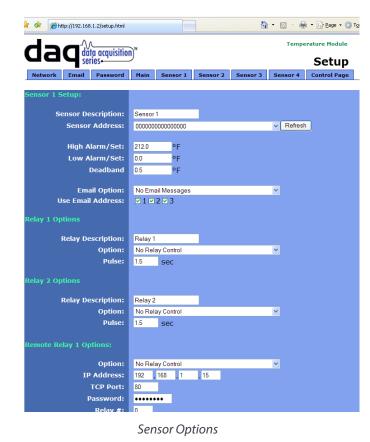
Using a standard web browser, users can remotely view temperatures and control relays.

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

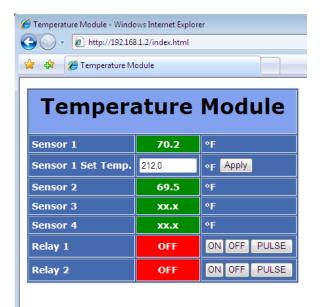
a preset temperature is reached. It can even control relays in other ControlByWeb™ products located somewhere else on the network.

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



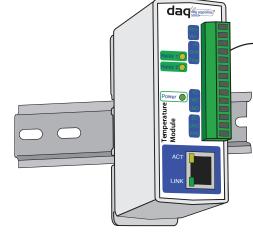
Control Page

### **APPLICATIONS & SPECS**

# **Refrigeration System Monitoring**

### **Additional Applications**

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





Refrigeration Unit

Temperature Sensor



Temperature Sensor



Refrigeration Unit

### 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

• 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

### 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





### **Protocols**



# Analog Module™

### 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).

🖉 http://192.168.1.2/setup.html - Wi	ndows Internet Expl	orer										
🔆 🔆 👻 🖉 http://192.168.1.2/setup.hl	ml				*	47 🗙	Live Search		<b>P</b> •			
Eile Edit View Favorites Tools Help												
😤 🏟 🏀 http://192.168.1.2/setup.html								• 🔂 Page • 🍈 Too	ls ▼ ″			
							Anal	og Input Module				
	ŋ							Setup				
Network Email Password	An 0 An 1	An 2 An 3	An 4	An 5	An 6	An 7	Calibrate	Control Page				
Control Page Setup:												
Main Header Text:	Analog Input Module											
Auto Refresh Page:	Yes • No •											
Duration:	3 sec											
Input 0 Setup:												
Differential Mode:	Yes ○ No ⊙											
Differential Mode.	resonoo											
Input Description:	Input 0 Description	Units:										
Display Input Status:	Yes 💿 No 🔿											
Slope: Offset:	1.000											
Offset:	0.000											
Message Options:	Disabled			~								
Use Email Address:	☑ 1 ☑ 2 ☑ 3											
Upper Trigger:	2.450											
Lower Trigger: Delta:	0.000											
Della;	0.500											
Send Periodic Message:	Yes 🔿 No 💿											
Period:	100.0 sec											
Remote Output #:	0											
Remote Unit: IP Address:	192 168 1	. 15										
Remote TCP Port:	80	. 15										
Password:												
Submit Reset												
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		Input O	ntion									
		inputO	puon	5								

 Analog Input Module - Windows Internet Explorer

 Image: Second state

 Image: Second state

# **Analog Input Module**

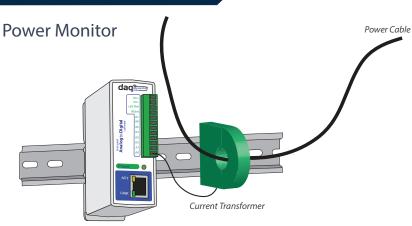
Input 0 Description	2.50617
Input 1 Description	2.50620
Input 2 Description	2.50799
Input 3 Description	180.51116 deg.
Input 4 Description	2.50624
Input 5 Description	2.50611
Input 6 Description	2.50623
Input 7 Description	2.50626

Control Page



# Analog Module™

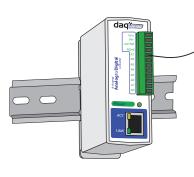
### APPLICATIONS & SPECS

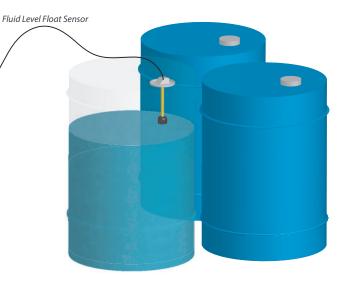


### **Additional Applications**

$\checkmark$	Voltage Monitor
$\checkmark$	Current Monitor
$\checkmark$	Monitor Temperature
$\checkmark$	<b>Monitor Water Flow</b>
$\checkmark$	<b>Monitor Position Height</b>
$\checkmark$	More







### 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:  $10\mu V$  (24 bit  $\Sigma\Delta$  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™

**PRODUCT OVERVIEW** 



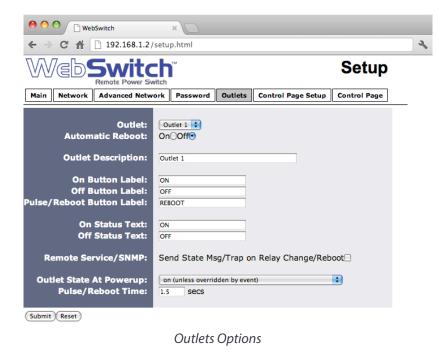
WebSwitch<sup>™</sup> Remote Power Switch is the ideal solution for remote reboot and many remote power control applications. WebSwitch<sup>™</sup> has two power outlets which can be independently controlled using a web browser.

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<sup>™</sup> has an automatic reboot controller which can be configured to reboot computers or network devices when they become unresponsive.

WebSwitch<sup>™</sup> is available in two models, WebSwitch<sup>™</sup> and WebSwitch Plus<sup>™</sup>.

Both models are engineered to provide excellent performance for many years while running 24/7. You can have confidence using WebSwitch<sup>™</sup> 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.



Control Page



2 Electrical Outlets, Remote Control, Automatic Reboot

**APPLICATIONS & SPECS** 

### Automatic/Remote Reboot for Servers

### **Additional Applications**

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

Ethernet Switch

Wall Outlet

### 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
- o 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

Server

- 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

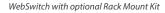
2 Electrical Outlets, Automatic and Remote Reboot, Two Discrete Inputs, Temperature/Humidity Monitoring, Event Scheduler

**PRODUCT OVERVIEW** 



WebSwitch Plus<sup>™</sup> includes all the features of WebSwitch<sup>™</sup> 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.





00	WebSwitch	

WebSwitch											
Outlet 1	ON	ON OFF REBOOT									
Outlet 2	OFF	ON OFF REBOOT									
Input 1	OFF										
Input 2		OFF									
Sensor 1	74.3 °F										
Sensor 2	73.5 °F										
Sensor 3	38.6 %R	н									
Current Time:	Tue, 01 Ju	ın 2010 09:29:39									
	<i>c</i> , 10										

Control Page

### 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.

	ch" Switch	S	etup				
N 11 11	work Password Date/Tim ipt Control Page Setup C	e Logging Outlets ontrol Page	Inputs				
ents Scheduler: On • Off •						Current Dat	e/Time: 03/29/2010 09:40:01
Event # 🔻	Start Date/Time	Period	Count	Outlet #	Action	Pulse	Next Occurance
- Turn Outlet 1 On	M 03/29/2010 09:38:00	M	1	1	turn outlet on		Inactive
- Turn Outlets OFF	M 03/29/2010 17:30:00	Su M Tu W Th F Sa	0	182	turn outlet off		M 03/29/2010 17:30:00
- Holiday	Su 07/04/2010 00:00:00	Su	0		disable events		Su 07/04/2010 00:00:00
- Holiday End	Su 07/04/2010 23:59:59	Su	0		enable events		Su 07/04/2010 23:59:59
- Disabled							
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4 - Disabled							195
- Disabled							
5 - Disabled							101
7 - Disabled							28
B - Disabled							
9 - Disabled							
							4

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

Temperature Sensor

### **APPLICATIONS & SPECS**

# Environmental Monitoring, **Remote Reboot for Servers**

### **Additional Applications**

- 🗸 Reboot Network Devices
  - Reboot Computers
  - ✓ Remote Power Control

Server

More...

Ethernet Switch

### 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

ΈĽ

Wall Outlet

Manual or NTP (Network Time Protocol) setup

Magnetic Door Sensor

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- 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

# SmartStorm™

10-Zone Irrigation controller

**PRODUCT OVERVIEW** 

# SmartStorm

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

SmartStorm

Main Network Advanced Network Paser Zones Programs Advance Settings Cont

off using your smartphone.

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

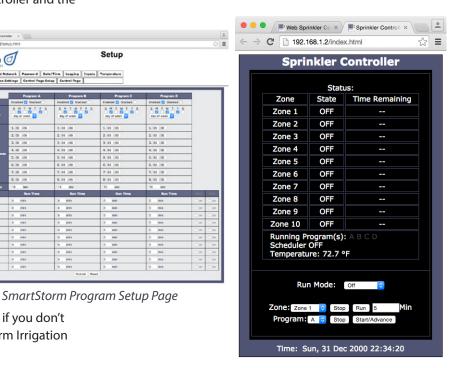
Because water conservation is so important, we've also added the ability to control your irrigation programming based on rainfall and temperature by connecting appropriate sensors.

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)



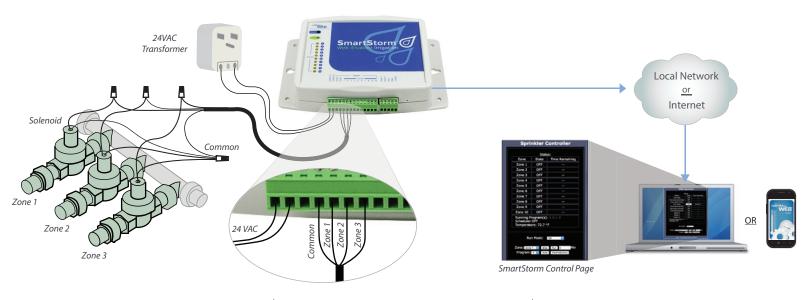
SmartStorm Control Page



# **SmartStorm**<sup>™</sup>

### **APPLICATIONS & SPECS**

### 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
- $^{\rm o}\,$  Accuracy:  $\pm 0.5^{\circ}\text{C}$  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

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	1 Relay	[]		ŕ		$\square$		$\square$		Ĺ		(			
WebRelay	240VAC, 30VDC,	1 Digital	-	-	-	-	-	-	•	-	1	-	HTTP, XML, Modbus TCP/IP	DIN Rail or Wall-Mount	9-28VDC POE/5VDC
	12A	<sup> </sup>	<u> </u>	—′		⊢′		′	'	<u> </u>	'	ļ'			
WebRelay-Quad	4 Relays 28VAC, 24VDC	-	-	-	-	-	-	-	-	-	-	-	HTTP, XML, Modbus TCP/IP	DIN Rail Wall-Mount	9-28VDC POE/5VDC
	3A	L!						<u> </u>				<u> </u>		[]	
X-300	3 Relays 28VAC, 24VDC		1	-8	•	•	•	•	-	-	3	BASIC	HTTP, XML, Modbus TCP/IP, SNMP, SMTP,	DIN Rail Wall-Mount	9-28VDC POE/5VDC
	3A	1						'					Remote Services	VVdli-iviourit	FUE/SVDC
	2 Relays					$\overline{}$							HTTP, XML,	DIN Rail	
X-301	28VAC, 24VDC 3A	2 Digital	-	-	•	•	•	•	-	2	2	BASIC	Modbus TCP/IP, SNMP, SMTP, Remote Services	Wall-Mount Shelf Mount	9-28VDC POE/5VDC
	3A 4 Relays							$\vdash$		$\vdash$					
X-310	28VAC, 24VDC	4 Digital	1.	-4	•	•	•	•	-	2	16	BASIC	HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services	DIN Rail Wall-Mount	9-28VDC POE and/or 5VDC
	3A	!		/	$\square$	$\vdash$		$\vdash$	<u> </u>	<u> </u>	'	<u> </u> '			
X-317	5 Analog Outputs	-	-	-	-	-	-	-	-	-	-	-	HTTP, XML, Modbus TCP/IP, SNMP	DIN Rail Wall-Mount	9-28VDC
	2 User-Selec												HTTP, XML,	DIN Rail	
X-320	4 Analog 1 Frequer	g Inputs	1-	-6	•	•	•	•	-	2	3	BASIC	Modbus TCP/IP, SNMP, SMTP, Remote Services	Wall-Mount	9-28VDC
	2 User-Se	electable				$\square$							HTTP, XML,		
Х-320М	Discrete 4 Analog 1 Frequer	g Inputs	1.	-6	•	-	•	•	-	2	2	_	Modbus TCP/IP, SNMP, SMTP, Remote Services	DIN Rail Wall-Mount	9-28VDC
	16 Relays							├'							
X-332	30VDC, 30VAC	16 Digital 4 Analog	1.	-4	•	•	•	•	-	2	16	BASIC	HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services	DIN Rail Wall-Mount Shelf Mount	9-28VDC
	2A					<u> </u>		$\vdash$					HTTP, XML,		
X-600M	Expandab expansion		1-:	-32	•	•	•	•	•		Up to 1024	LUA	Modbus TCP/IP, SNMP, SMTP, Remote Services	DIN Rail Wall-Mount	9-28VDC
	2 Relays														Powered via
X-11s	277VAC, 110VDC, 20A	-	-	-	This	s is an	expar	nsion n			oatible w M featur		-600M Controller.	DIN Rail Wall-Mount	expansion bus from X-600M
	8 Relays														Powered via
X-12s	125VAC 30VDC	-	-	-	Thi	s is an	expar	nsion n			oatible w M featur		-600M Controller.	DIN Rail Wall-Mount	expansion bus from X-600M
	2.5A														X-000101

# Feature Comparison

# Part 2

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	/			/	re MO	Nonito	Clock	./		fication	Report	ters da	\$ Scipts	Protocol	/ /
	Output	5 Input	5/2	emperati	ure Mo	eal Time	oring Clock	ng ogging Er	mail No	stification at the second	put pet	nters Relation	Sported Supporte	d Protocols	re Power
X-13s	-	-	2 Thermo	2 ocouple be K					nodule	e compa		vith the X-	600M Controller.	DIN Rail Wall-Mount	Powered via expansion bus from X-600M
X-15s	-	8 Digital	-	-	com	This is an expansion module compatible with the X-600M Controller. See X-600M features.8See X-600M features.						DIN Rail Wall-Mount	Powered via expansion bus from X-600M		
X-16s	-	8 Analog	-	-	Thi	s is an	expar	ision n			atible w A featur		600M Controller.	DIN Rail Wall-Mount	Powered via expansion bus from X-600M
X-17s	4 Relays 125VAC, 30VDC 2.5A	4 Digital	-	-	com	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-18s	10 Relays 277VAC, 30VDC 30A	-	-	-	Thi	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	-	-	Thi	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	-	-	Thi	s is an	expar	nsion n			atible w A featur		600M Controller.	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

	Output	5 Input	3 / 24	merat	ure MO	Nonitorine Monitorie	e clock	19 090119	mail No.	itonati	Peboc Reboc	ters Relation	\$ Supported Supporte	A Protocols	Je Poweipus
Analog Module	-	8 Analog	-	-	-	-	-	•	-	-	4	-	HTTP, XML, Modbus TCP/IP, SMTP	DIN Rail Wall-Mount	9-28VDC
WebSwitch	2 AC Outlets 10A Max	-	-	-	-	-	-	-	•	-	-	-	HTTP, XML, Modbus TCP/IP, SNMP, Remote Services	Rack Mount Wall-Mount Shelf Mount	100-240VAC
WebSwitch Plus	2 AC Outlets 10A Max	2 Digital	1	-3	•	•	•	•	•	-	-	BASIC	HTTP, XML, Modbus TCP/IP, SNMP, SMTP, Remote Services	Rack Mount Wall-Mount Shelf Mount	100-240VAC
SmartStorm	10 Zones	2 Digital	1	-	•	•	•	-	-	-	-	-	HTTP, XML, Modbus TCP/IP, SNMP, Remote Services	Wall-Mount	24VAC ±10%, 60Hz

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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, XR-DI'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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