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

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

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

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

Features:

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

* 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 Input

APPLICATIONS & SPECS

Remote Monitoring

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

Models:
- X-320M-I

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

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

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

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


<table>
<thead>
<tr>
<th>Input Frequency</th>
<th>Min Vin</th>
<th>Read Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 2 Hz</td>
<td>90 mV</td>
<td>±0.5 Hz</td>
</tr>
<tr>
<td>2 - 200 Hz</td>
<td>60 mV</td>
<td>±1 Hz</td>
</tr>
<tr>
<td>200 - 1000 Hz</td>
<td>60 mV</td>
<td>±1 Hz</td>
</tr>
<tr>
<td>1 - 10 kHz</td>
<td>60 mV</td>
<td>±1.5 Hz</td>
</tr>
<tr>
<td>10 - 50 kHz</td>
<td>60 mV</td>
<td>±1/2 Hz</td>
</tr>
<tr>
<td>50 - 100 kHz</td>
<td>60 mV</td>
<td>±1/6 Hz</td>
</tr>
<tr>
<td>100 - 130 kHz</td>
<td>60 mV</td>
<td>±2/16 Hz</td>
</tr>
</tbody>
</table>

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
- Auto Daylight Savings Adjustment
- Battery (capacitor) Power Backup

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

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

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

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

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

Protocols
- HTTP, XML, TCP/IP, Remote Services

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

Advanced Features
- BASIC interpreter
- Remote services

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

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