



MACH-ProView™

BACnet Controller

## Mobile views of efficiency

Residing on Ethernet, Power over Ethernet (PoE), or Wi-Fi, the Reliable Controls MACH-ProView is a freely programmable BACnet® Building Controller (B-BC) perfect for using a mobile device to access, control, and monitor the comfort and energy performance of your space.



Member of  
**BACnet**  
International



Better by design

[www.reliablecontrols.com/MPV](http://www.reliablecontrols.com/MPV)

## Tech Specs

### Processor

- 147 MHz, high-performance, 32-bit embedded microcontroller

### Memory

- 8 MB operating RAM
- 1 MB non-volatile RAM (trends and dynamic values)
- 32 MB Flash EEPROM operating system, database, and controller configuration

### Supply Voltages

- 24 VAC  $\pm 10\%$  93 VA max 50/60 Hz
- 24 VDC  $\pm 10\%$  9 W max

### Communications (depends on model)

- 1 IEEE 802.3 (Ethernet 10/100 BaseT)
- 1 IEEE 802.3af (PoE)
- 1 IEEE 802.11b/g/n (Wi-Fi, 2.4GHz only)
- 1 SMART-Net port @ 4 sensors max

### Universal Inputs

- 12-bit A/D converter
- Analog: 0–10 VDC 4–20 mA, thermistor
- Binary: dry contact
- Impedance:
  - 1 M $\Omega$  for 0–10 VDC range
  - 250  $\Omega$  for 4–20 mA range
  - 20 k $\Omega$  pull-up for thermistor/dry contact range
- Pulse counting up to 150 Hz (supports flow meters)
- 24 VAC over-voltage protection

### Universal Outputs

- 12-bit D/A converter
- Analog: 0–12 VDC
- Binary: 0/12 VDC
- Output power: 75 mA @ 12 VDC
- 24 VAC over-voltage and short protection

### Relay Outputs

- Solid state
- Switches 24VAC/VDC
- 500 mA max

### Temperature Specifications

- 12-bit A/D converter
- Range: 0 °C to 40 °C (32 °F to 104 °F)
- 0.1 °C (0.18 °F) resolution
- User calibrated to  $\pm 0.1$  °C (0.18 °F) accuracy

### Temperature Sensor

- Range -20 to 55 °C
- $\pm 0.1$  °C (0.18 °F) resolution
- User Calibrated to  $\pm 0.1$  °C (0.18 °F) accuracy

### CO<sub>2</sub> Sensor (for -CO2 models)

- Non Dispersive Infrared Optical Sensor
- 400–2000 ppm range
- Accuracy  $\pm 40$  ppm
- Automatic calibration built in
- Non Linearity < 1% of full scale

### Humidity Range (for -H models)

- 10–90% range
- $\pm 3\%$  RH max from 20 to 80%,  $\pm 2\%$  typical, see table

### Occupancy Sensor (for -OC models)

- Passive Infrared Radiation (PIR) sensor
- 64 detection zones
- 94° horizontal range / 82° vertical range
- 5 m (16.4 ft.) max detection distance

### Real-Time Clock

- $\pm 1$  second per day

### Memory/RTC Backup

- 72 hour backup
- 10 years for database

### Wiring Terminals

- 16 to 24 AWG (1.31 mm<sup>2</sup> to 0.21 mm<sup>2</sup>)
- Stranded or solid core
- Copper conductors only

### Dimensions

- 14.5 cm L x 12.2 cm W x 2.7 cm H  
(5 <sup>11</sup>/<sub>16</sub>" L x 4 <sup>13</sup>/<sub>16</sub>" W x 1 <sup>1</sup>/<sub>16</sub>" H)

### Mounting

- See backplate dimension diagram
- Two 6-32, 1" TRUSS head Phillips mounting screws included for 1-gang and 2-gang boxes
- Two 8-32, <sup>5</sup>/<sub>8</sub>" long, Phillips wafer head machine screws included for 4" x 4" and 4 <sup>11</sup>/<sub>16</sub>" boxes
- Minimum opening in wall  
46 mm W x 72 mm H (1 <sup>13</sup>/<sub>16</sub>" x 2 <sup>13</sup>/<sub>16</sub>" )

### Weight

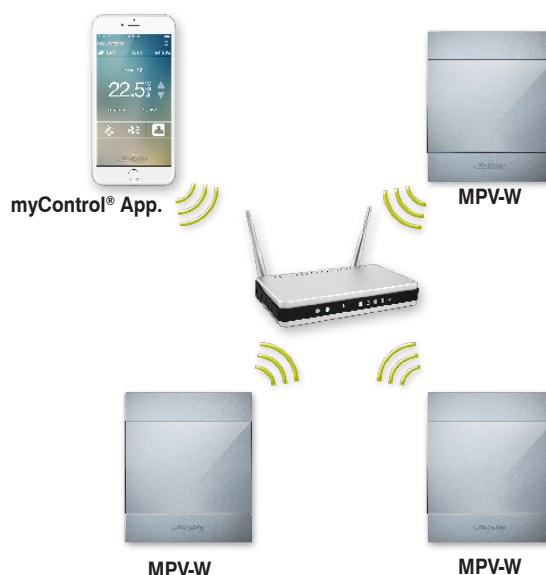
- 0.28 kg (0.6 lb.)

### Ambient Limits

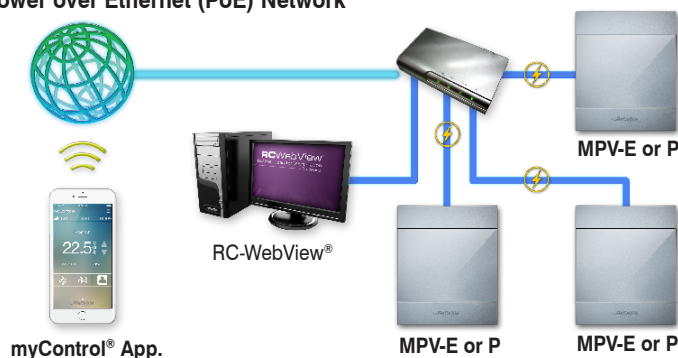
- Operating: -20 °C to 55 °C (-4 °F to 131 °F)
- Shipping: -40 °C to 60 °C (-40 °F to 140 °F)
- Humidity: 10% to 90%

## APPLICATION DIAGRAMS

### Wi-Fi Network



### Ethernet or Power over Ethernet (PoE) Network



## Features

### Protocols

- BACnet: B/IP x 1, Ethernet, or RC-RemoteAccess®
- DHCP: Dynamic Host Configuration Protocol
- SMTP: Simple Mail Transfer Protocol
  - Provides standard email communications for broadcasting email alarms
  - Supports TLS/SSL security
- SNTP: Simple Network Time Protocol
- Wi-Fi (for -W models):
  - Supports WPA-personal and WPA2-personal security
- SMART-Net

### 32 Views

- Configurable screens include SPACEview, LISTview, and STATview displayed using the myControl® app

### 64 System Groups

- Allows related objects to be grouped onto one display
- 160 unique objects/group

### 6 Inputs

- Universal ranges
- Software selectable 0–10 VDC, 4–20 mA, thermistor/dry contact

### Optional Inputs

- CO<sub>2</sub>
- Humidity
- Occupancy

### 6 Outputs

- First 4 have jumper selectable universal ranges
- Last 2 are binary solid state relay only

### 512 Values

- Selectable standard and custom ranges, as well as fixed program-driven values

### 64 Loops

- Standard P, PI, or PID controllers for closed loop control

### 32 Schedules

- 14 On/Off times for each weekday or exception

### 16 Calendars

- Days of the year designated as holidays

### Multipoint Trend Logs

- Each Trend Log stores up to eight objects
- Values recorded at user-defined intervals
- Dynamically assigned

### Single-Point Trend Logs

- Values recorded at user-defined intervals or based on change of value (COV)
- Dynamically assigned

### Runtime Report

- Totals the On time and records the On/Off times of every binary object
- Dynamically assigned

### 129 Notification Classes

- Specifies alarm configuration, broadcast destination, and email recipients

### 64 Programs

- Freely programmable control strategy in a readable, BASIC-like language
- 3200 bytes per program

### 128 Arrays

- Up to 128 elements in a one-dimensional array

### 20 Tables

- For creating custom scaling functions

### SMART-Net Port

- Networks up to 4 SMART-Sensors

### 128 User Passwords

- Protects access to system
- Each user is assigned a user name and an access level

### 24 Custom Units

- 8 analog engineering units
- 8 binary units
- 8 multistate units with 8 states, 30 characters each

### 256 Net Ins

### 128 Net Outs

- The total maximum number of writes and shares to other devices

### Real-Time Clock

### Warranty

- 5 years

### Certification

- BTL Listed (B-BC)
- UL 916 Listed
- FCC CFR 47 Part 15/B
- CE

## Ordering

### MPV-E (base model)

- MACH-ProView controller, with 6 universal inputs, onboard thermistor, 6 outputs (4 universal/relay and 2 relay) and Ethernet network, silver color

### MPV-P (base model)

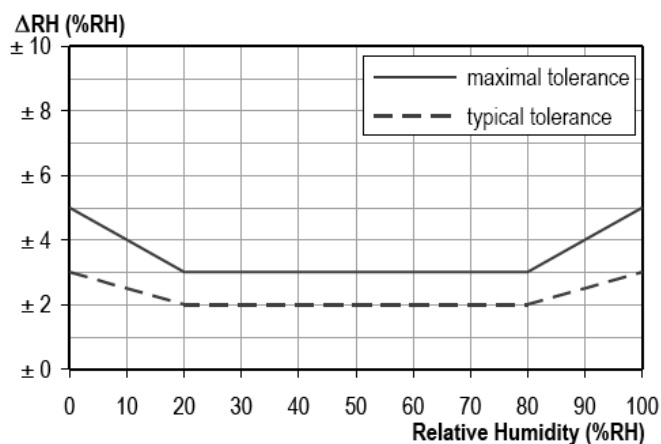
- MACH-ProView controller, with 6 universal inputs, onboard thermistor, 6 outputs (4 universal/relay and 2 relay) and Power over Ethernet network, silver color

### MPV-W (base model)

- MACH-ProView controller, with 6 universal inputs, onboard thermistor, 6 outputs (4 universal/relay and 2 relay) and Wi-Fi network, silver color

### Options

- CO2 adds CO<sub>2</sub> sensor
- H adds humidity sensor
- OC adds occupancy sensor
- /W for white enclosure (e.g. MPV-P-CO2-H/W)



Dealer Information: