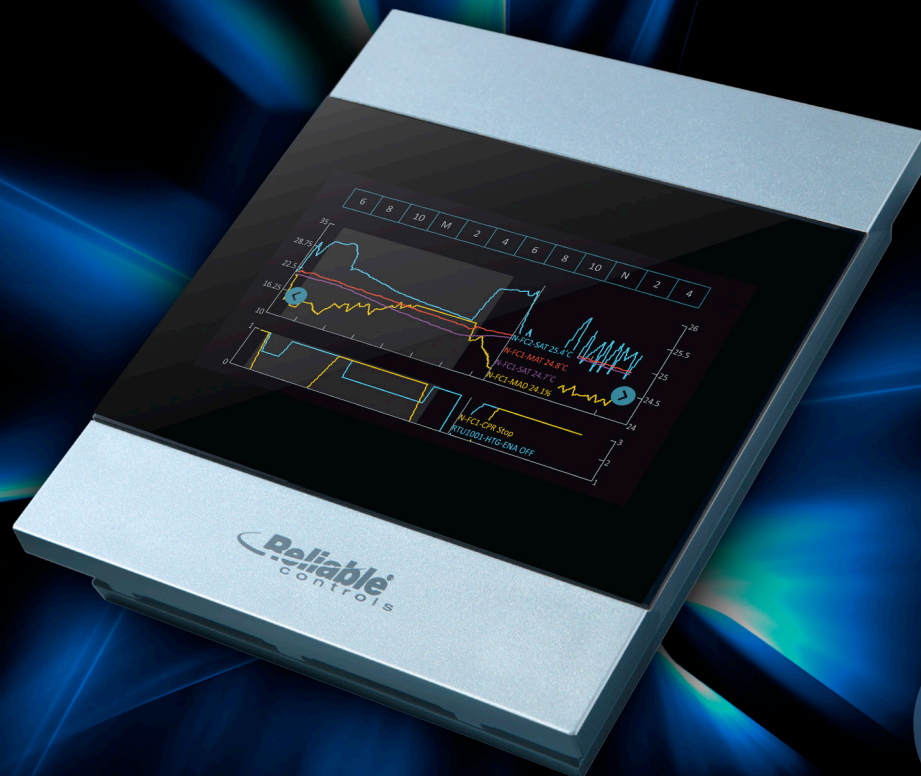




## Elegant views with routing

The Reliable Controls MACH-ProView LCD with router is a powerful and elegant BACnet building controller (B-BC) and BACnet Operator Display (B-OD) which provides a plenitude of attractive, high resolution, graphical interfaces to access, control, and monitor the comfort and energy of any space, while routing communications to multiple networks.



## 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)
- 1 EIA-485 (RS-485) @ 76.8 kbps max
- 1 SMART-Net port @ 4 sensors max

### Display

- Full color, 480 x 272 pixel
- 4.3" Wide Quarter VGA (WQVGA)
- Thin Film Transistor (TFT)
- Projective Capacitive Touch (PCAP)
- Display Area 57 mm x 96 mm (2 1/4" x 3 3/4")

### 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 24 VAC/VDC
- 500 mA max

### Expansion Module

- Up to 1 MACH-ProPoint™ expansion module of any type

### 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)

- 0.1% display resolution
- 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 11/16" L x 4 13/16" W x 1 1/16" 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, 5/8" long, Phillips wafer head machine screws included for 4" x 4" and 4 11/16" boxes
- Minimum opening in wall  
46 mm W x 72 mm H (1 13/16" x 2 13/16")

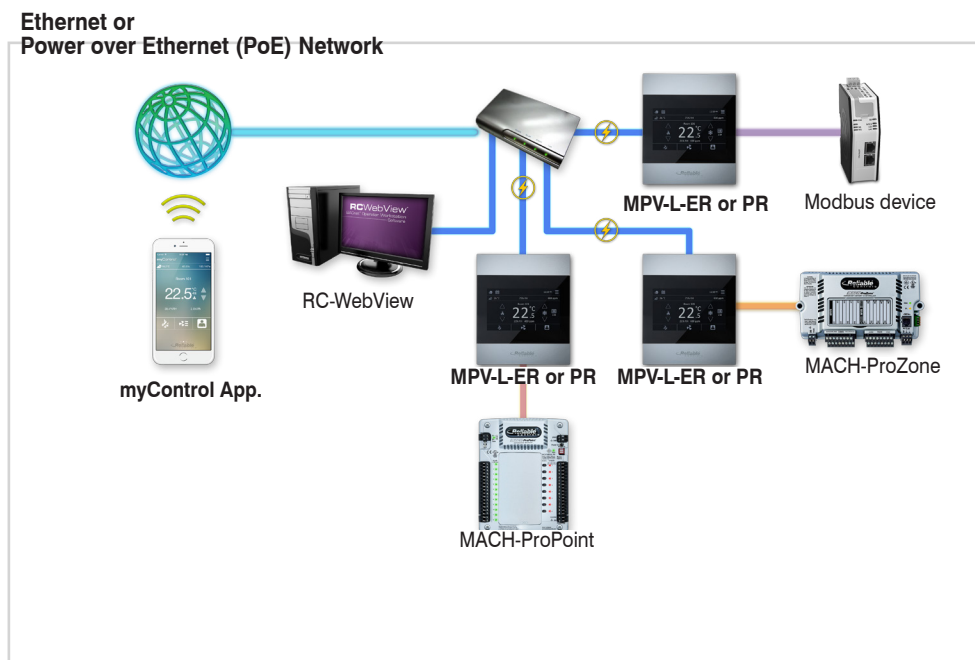
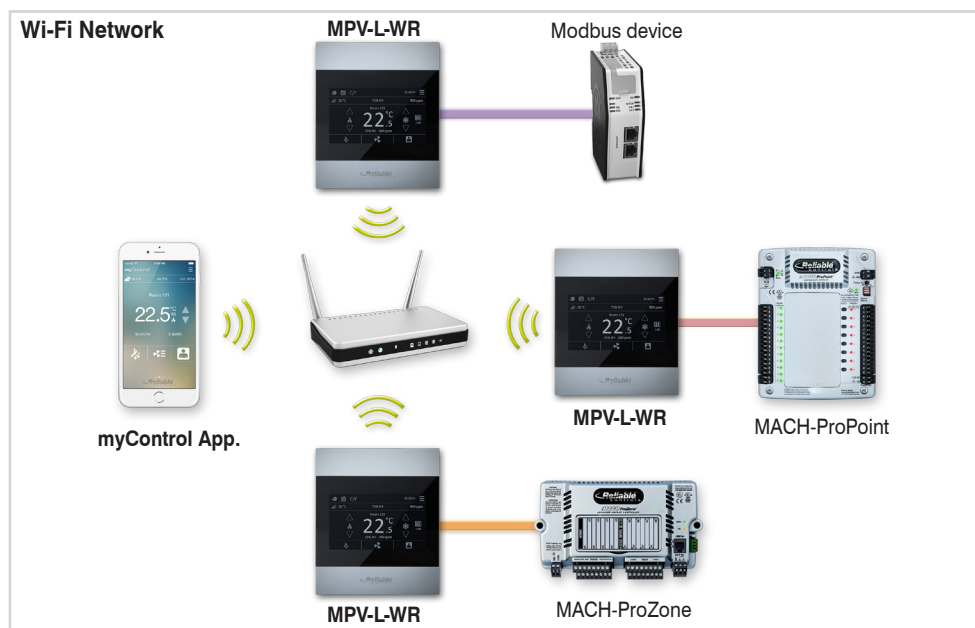
### Weight

- 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



## Features

### Protocols

- BACnet: B/IP x 2, Ethernet, MS/TP, or RC-RemoteAccess®
- DHCP: Dynamic Host Configuration Protocol
- Modbus: Supports both RTU and TCP communications in slave mode and master mode with up to 128 slave devices
- 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 -WR models): Supports WPA and WPA2 protected access
- SMART-Net
- EIA-485 port: Software configurable to be one of the following:
  - BACnet MS/TP
  - Modbus RTU slave or master
  - I/O-Net supporting one MACH-ProPoint

### Large Touch Screen Display

- Displays full color graphics, runtime logs, alarms, and schedules
- Display can be configured to be always on or to blank after 10-100 seconds of idle time

### Languages

- English
- French
- German
- Italian
- Mandarin
- Portuguese
- Spanish

### 64 Views

- Allows related objects to be displayed on and accessed from the LCD
- Configurable screens include SPACEview, LISTview, STATview, TRENDview, ALARMview, SCHEDULEview, RUNTIMEview, and CONFIGURATIONview

### 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
- Expandable using MACH-ProPoint expansion modules
- Maximum possible inputs of 30 (using 1 MPP-I module)

### 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
- Expandable using MACH-ProPoint expansion modules
- Maximum possible outputs of 22 (using 1 MPP-O module)

### 1024 Values

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

### 128 Loops

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

### 128 Schedules

- 14 On/Off times for each weekday or exception

### 32 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

### 128 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

### 1536 Net Ins

### 512 Net Outs

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

### Real-Time Clock

### Warranty

- 5 years

### Certification

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

## SPACEVIEW (SHOWING COOLING SETPOINT)



## Ordering

### MPV-L-ER (base model)

- MACH-ProView controller with LCD, 6 universal inputs, onboard thermistor, 6 outputs (4 universal/relay and 2 relay) and Ethernet network, routing to EIA-485, silver color

### MPV-L-PR (base model)

- MACH-ProView controller with LCD, 6 universal inputs, onboard thermistor, 6 outputs (4 universal/relay and 2 relay) and Power over Ethernet network, routing to EIA-485, silver color

### MPV-L-WR (base model)

- MACH-ProView controller with LCD, 6 universal inputs, onboard thermistor, 6 outputs (4 universal/relay and 2 relay) and Wi-Fi network, routing to EIA-485, 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-L-ER-H-OC/W)

## ACCESSORIES

### CC-MPV-XP2

- Cable from MPV-L controller to XP2 converter for local EIA-485 communications

### MPP-IO-U

- MACH-ProPoint I/O expansion module with 12 universal inputs and 8 universal outputs

### MPP-IO-U-H

- MPP-IO-U with HOA (Hand/Off/Auto) switches and potentiometer overrides for each output

### MPP-IO-DL-LASER or MPP-IO-DL-INKJET

- Door label sheet for MP-S, MP-S-H, MPW-S, MPW-S-H, MPP-IO, MPP-IO-H, MPP-IO-U, and MPP-IO-U-H (LASER or INKJET)

### MPP-I

- MPP Input expansion module with 24 universal inputs

### MPP-I-DL-LASER or MPP-I-DL-INKJET

- Door label sheet for MPP-I (LASER or INKJET)

### MPP-O

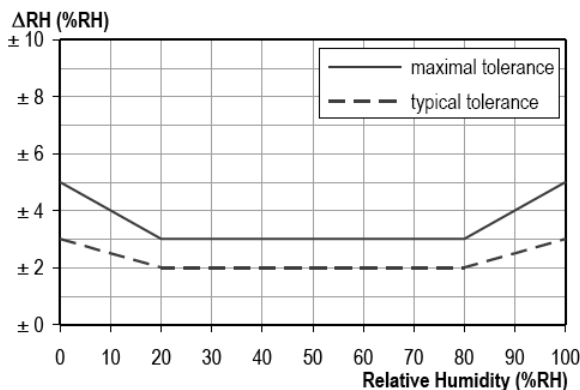
- MACH-ProPoint Output expansion module with 16 universal outputs

### MPP-O-H

- MPP-O with HOA (Hand/ Off/Auto) switches and potentiometer overrides for each output

### MPP-O-DL-LASER or MPP-O-DL-INKJET

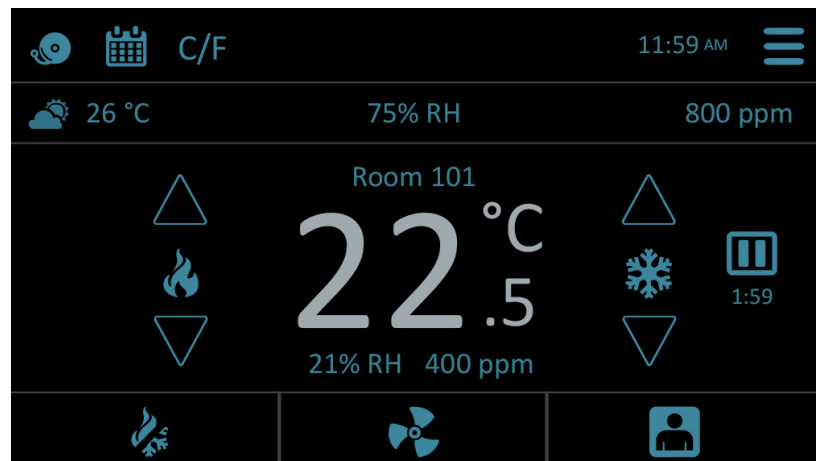
- Door label sheet for MPP-O (LASER or INKJET)



## LISTVIEW

Name	Value
Rm-101-Fan	Auto
Rm-101-Occ	Occupied
Value: Occupied	Auto/Man: Auto
Rm-101-Setpoint	26.5°C
Rm-102-Fan	Auto
Rm-102-Occ	Occupied

## STATVIEW



## SCHEDULEVIEW

	Setpoint				
M	18.0°C	19.0°C	22.0°C	21.0°C	18.0°C
T	18.0°C	19.0°C	22.0°C	21.0°C	18.0°C
W	18.0°C	19.0°C	22.0°C	21.0°C	18.0°C
T	18.0°C	19.0°C	22.0°C	21.0°C	18.0°C
F	18.0°C	19.0°C	22.0°C	21.0°C	18.0°C
S	18.0°C	15.0°C	17.0°C	10.0°C	15°C
S	18.0°C	15.0°C	17.0°C	10.0°C	15°C
	MN	6A	N	6P	MN

Dealer Information: