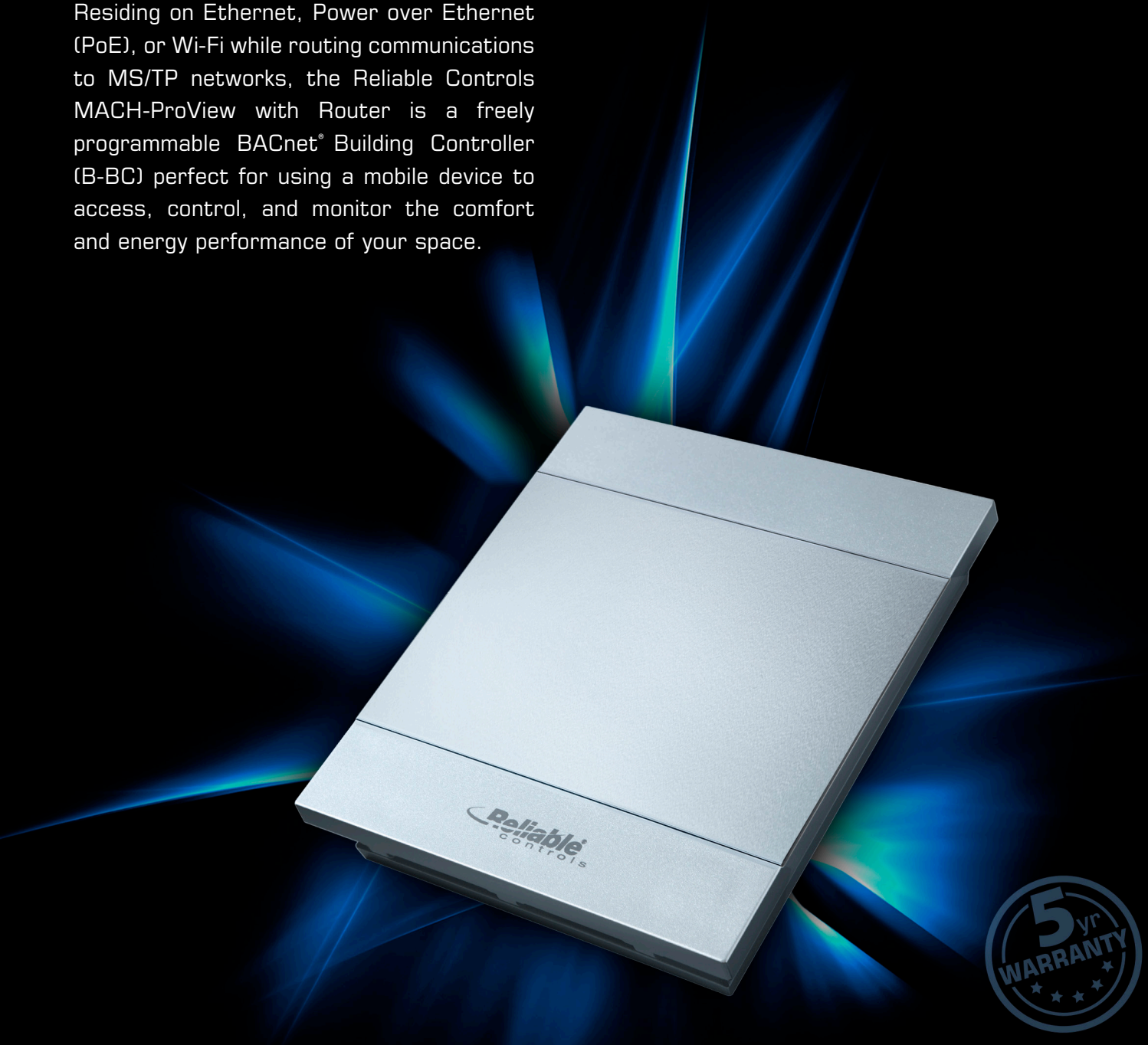
MACH-ProView™ with Router

BACnet Controller

Mobile views of efficiency

Residing on Ethernet, Power over Ethernet (PoE), or Wi-Fi while routing communications to MS/TP networks, the Reliable Controls MACH-ProView with Router 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.



Better by design

www.reliablecontrols.com/MPV-R

MACH-ProView™ with Router

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 ±10% 93 VA max 50/60 Hz
- 24 VDC ±10% 9 W max

Communications (depends on model)
- 1 IEEE 802.3 (Ethernet 10/100 BaseT)
- 1 IEEE 802.3af (PoE)
- 1 IEEE 802.1b/g/n (Wi-Fi, 2.4GHz only)
- 1 EIA-485 (RS-485)@ 76.8 kbps max
- 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 MΩ for 0–10 VDC range
  - 250 Ω for 4–20 mA range
  - 20 kΩ 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 ± 0.1 °C (0.18 °F) accuracy

Temperature Sensor
- Range -20 to 55 °C
- +/- 0.1 °C (0.18 °F) resolution
- User Calibrated to +/- 0.1 °C (0.18 °F) accuracy

CO_2 Sensor (for -CO2 models)
- Non Dispersive Infrared Optical Sensor
- 400–2000 ppm range
- Accuracy ±40 ppm
- Automatic calibration built in
- Non Linearity < 1% of full scale

Humidity Range (for -H models)
- 10–90% range
- ±3%RH max from 20 to 80%, ±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
- ± 1 second per day

Memory/RTC Backup
- 72 hour backup
- 10 years for database

Wiring Terminals
- 16 to 24 AWG (1.31 mm² to 0.21 mm²)
- 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)

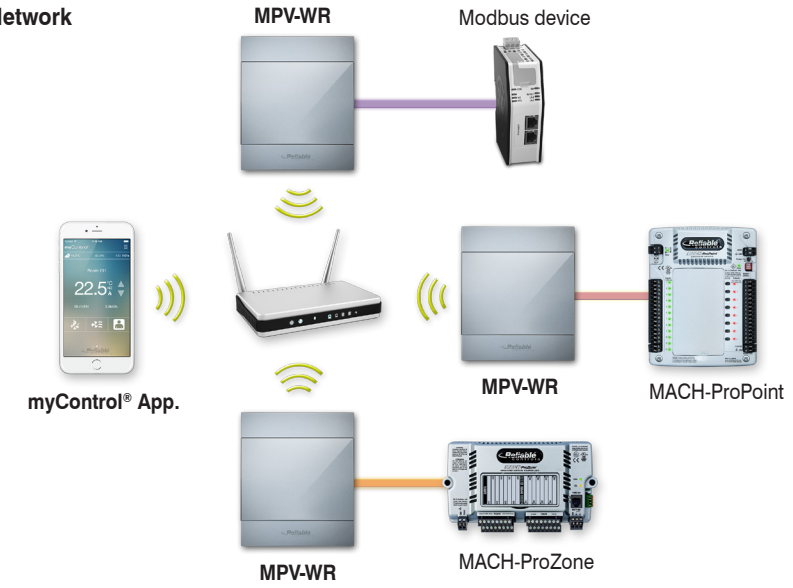
Mounting
- See backplate dimension diagram
- Two 6-32, 1" TRUSS head Phillips mounting screws included for 1-gang and 2-gang boxes
- Two 8-32, $^{5}/_{8}$" long, Phillips wafer head machine screws included for 4" x 4" and $4\ ^{11}/_{16}$" boxes
- Minimum opening in wall
  46 mm W x 72 mm H ($1\ ^{13}/_{16}$"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

Weight
- 0.28 kg (0.6 lb.)

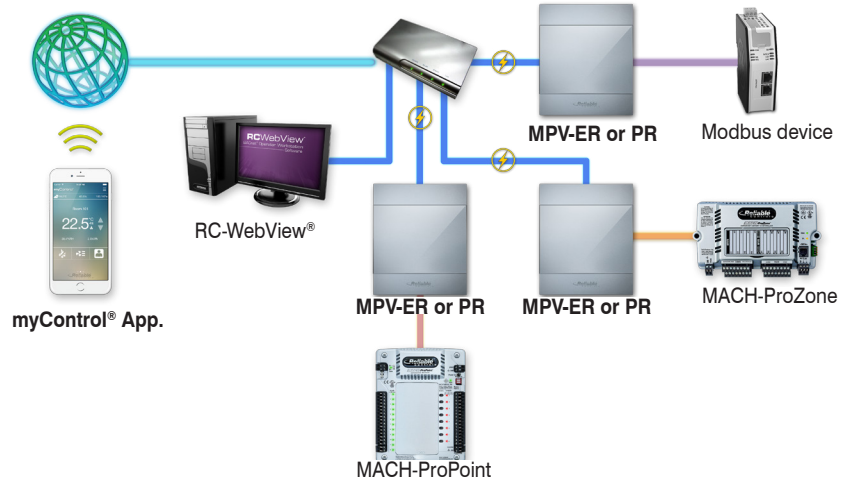
Ambient Limits
- Operating: -20 °C to 55 °C (-4 °F to 131 °F)
- Shipping: -40 °C to 60 °C (-40 °F to 140 °F)
- Humidity: 10% to 90%

Application Diagrams

Wi-Fi Network



Ethernet or Power over Ethernet (PoE) Network



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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-personal and WPA2-personal security
- 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

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

64 System Groups
- Allows related objects to be grouped onto one
- 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_2
- 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)
- UL 916 Listed
- FCC CFR 47 Part 15/B
- CE

Ordering

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

MPV-PR (base model)
- MACH-ProView controller, with 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-WR (base model)
- MACH-ProView controller, with 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_2 sensor
- -H adds humidity sensor
- -OC adds occupancy sensor
- /W for white enclosure (e.g. MPV-ER-H-OC/W)

Accessories

CC-MPV-XP2
- Cable from MPV 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)

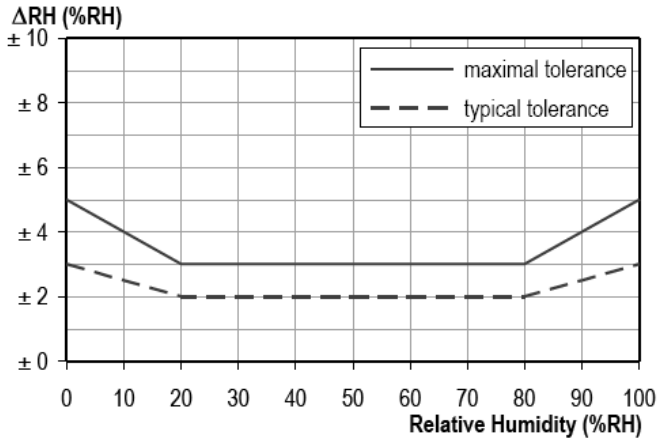
MPP-I
- MPP Input expansion module with 24 universal inputs

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)



Dealer Information: