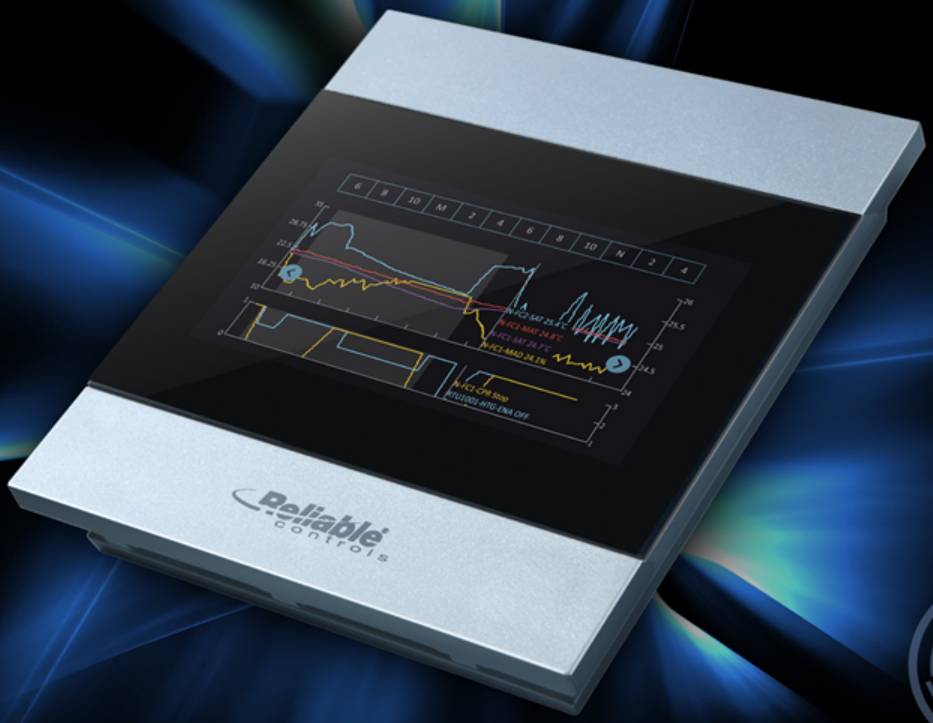
Reliable controls

MACH-ProView LCD

BACnet Controller

Elegant views of efficiency

The Reliable Controls MACH-ProView™ LCD is a powerful and elegant BACnet Building Controller (B-BC) and BACnet Operator Display (B-OD) that provides a plenitude of attractive, high- resolution graphical interfaces to access, control, and monitor the comfort and energy of any space.



5 yr WARRANTY

ISO 9001 14001 QUALITY ENVIRONMENTAL ASSURANCE

Member of BACnet International

Better by design

RELIABLECONTROLS.COM/MPV-L

Product features

Protocols

- BACnet
  - Supports one B/IP subnetwork and B/VPN.
  - Ethernet or MS/TP.
- 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 on controllers with the -W option:
  - Supports WPA-Personal and WPA2-Personal security.
- SMART-Net.

32 Views

- Display and access related objects from the LCD.
- Customizable screens include EQUIPMENTview, SPACEview, LISTview, and STATview.
- System Views include TRENDview, ALARMview, SCHEDULEview, RUNTIMEview, CONFIGURATIONview, and NAVIGATIONview.

Support for myControl App

- Display SPACEview, LISTview, and STATview using the myControl app.
- The MACH-ProView allows 10 concurrent myControl app users.

Optional Inputs

- CO_2 sensor.
- Humidity sensor.
- Occupancy sensor.
- VOC sensor with humidity sensor.

512 Values

- Select standard and custom ranges as well as fixed program-driven values.

32 Schedules

- 14 on/off times for each weekday or exception.

Multipoint Trend Logs

- Store up to eight objects in each trend log.
- Record values at user-defined intervals.
- Dynamic; user assigned.

Runtime Report

- Total the on time and record the on/off times of every binary object.
- Automatically generated.

Large Touchscreen Display

- Display full-color graphics, runtime logs, trend logs, alarms, and schedules.
- Configure display to be always on or to blank after 10-100 seconds of idle time.

Languages

- English.
- French.
- German.
- Italian.
- Traditional Chinese.
- Portuguese.
- Spanish.

64 System Groups

- Group related objects on one display.
- 320 unique objects per group.

Six Inputs

- Universal ranges.
- Use software to select thermistor/dry contact, 4–20 mA, or 0–10 VDC.

Six Outputs

- First four have jumper-selectable universal ranges.
- Last two are binary solid-state relay only.

64 Loops

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

64 Calendars

- Designate days of the year as holidays.

Single-point Trend Logs

- Record values at user-defined intervals or based on change of value.
- Dynamic; user assigned.

129 Notification Classes

- Specify alarm configuration, broadcast destination, and email recipients.

64 Programs

- Freely programmable control strategy in a readable, BASIC-like language.
- 3,200 bytes per program.

Onboard Temperature Sensor

- Dedicated 10 kΩ thermistor.

SMART-Net Port

- Network up to four SMART-Net devices.

MACH-ProView LCD

Product features

128 Arrays
- Up to 128 elements in a one-dimensional array.

20 Tables
- For creating custom scaling functions.

128 User Passwords
- Protect access to the system.
- Assign each user with a username and access level.
- Multiple levels of security.

Warranty
- 5 years.

24 Custom Units
- Eight analog engineering units.
- Eight binary units.
- Eight multistate units with eight states, 30 characters each.

256 Net Ins
- The maximum number of shares from other devices.

128 Net Outs
- The maximum number of writes to other devices.

Real-Time Clock

Technical specifications

Processor
- 147 MHz high-performance 32-bit embedded microcontroller.

Supply Voltages
- 24 VAC ±10% 93 VA maximum, 50/60 Hz.
- 24 VDC ±10% 9 W maximum.

Display
- Full-color 480 x 272 pixel screen.
- 4.3" wide-quarter VGA.
- Thin film transistor.
- Projective capacitive touch.
- Display area 57 x 96 mm (2 1/4" x 3 3/4").

Universal Outputs
- 12-bit D/A converter.
- Analog: 0–12 VDC.
- Binary: Software-configurable between 0–12 VDC.
- Maximum 75 mA each.
- 24 VAC overvoltage and short protection.

Solid-State Relay Outputs
- Switch 24 VAC/VDC.
- 500 mA maximum.

Temperature Sensor
- Range -20°C to 55°C.
- 0.1°C (0.18°F) resolution.
- User calibrated to ±0.1°C (0.18°F) accuracy.

Memory
- 8 MB operating RAM.
- 1 MB nonvolatile RAM for trends and dynamic values.
- 32 MB Flash EEPROM operating system, database, and controller configuration.

Communication Options
- One IEEE 802.3 (Ethernet 10/100BASE-T).
- One IEEE 802.3af (PoE).
- One IEEE 802.11 a/b/g/n (Wi-Fi, 2.4/5.0 GHz).
- One EIA-485 (RS-485) port that supports a baud rate up to 76.8 kbps.
- One SMART-Net port that supports up to four devices on a SMART-Net network.

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 overvoltage protection.

CO_2 Sensor (-CO2 Option)
- Nondispersive infrared optical sensor.
- 400-2,000 ppm range.
- Accuracy ±40 ppm.
- Automatic calibration built in.
- Nonlinearity <1% of full scale.

Technical specifications

VOC Sensor (-V option)

- Automatic background calibration.
- Heated metal oxide sensor.
- 0-8,190 ppb range.
- Accuracy 40% of measured value.
- Resolution:
  - 2 ppb (0 to 2,008 ppb).
  - 6 ppb (2009+ ppb).
- Automatically includes humidity sensor (-H option).

Humidity Sensor (-H Option)

- 0.1% display resolution.
- 0%-100% range.
- Accuracy ±2.4% maximum from 0%–90%. See plot.

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).
- Compatible with single-gang, dual-gang, 4" x 4", and 4 11/16" square boxes.
- Minimum opening in wall 46 x 72 mm (1 13/16" x 2 13/16").

Real-Time Clock

- ±1 second per day.

Memory/RTC Backup

- 72-hour backup.
- 10 years for database.

Certifications

- **BTL Listed (B-BC).**
- **BTL Listed (B-OD).**
- **UL 916 Listed.**
- FCC CFR 47 Part 15 Class B.
- CE.
- WEEE.

Occupancy Sensor (-OC Option)

- Passive infrared radiation sensor.
- 64 detection zones.
- 94° horizontal range/82° vertical range.
- 5 m (16.4 ft) maximum detection distance.

Wiring Terminals

- 16–24 AWG (1.31–0.21 mm^2).
- Stranded or solid core.
- Copper conductors only.

Hardware Mounting Included

- Two 6-32 1" Truss head Phillips mounting screws for single-gang and dual-gang boxes.

Weight

- 0.28 kg (0.6 lb).

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).
- Compatible with single-gang, dual-gang, 4" x 4", and 4 11/16" square boxes.
- Minimum opening in wall 46 x 72 mm (1 13/16" x 2 13/16").

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%–90%.

Ordering

Models

MPV-L-M

- MACH-ProView LCD with MS/TP connection.

MPV-L-E

- MACH-ProView LCD with Ethernet port.

MPV-L-P

- MACH-ProView LCD with Power over Ethernet port.

MPV-L-W

- MACH-ProView LCD with Wi-Fi connection.

Options

- -CO2 adds CO_2 sensor.
- -H adds humidity sensor.
- -V adds VOC sensor.
- -OC adds occupancy sensor.
- /W for white enclosure.

Build Your Order

To create the order number, add options to the base model. For example, MPV-L-E-CO2-H-OC/W is the order number for a MACH-ProView LCD with Ethernet port and CO_2, humidity, and occupancy sensors in a white enclosure. Order limitations are as follows:

- -V option must be ordered with the -H option.

Accessories

ACC-MPV-L-PM

- MACH-ProView Panel Mount Kit. Please note: If you mount the controller with this accessory kit, onboard sensors are not functional. We recommend against adding optional sensors or using the onboard thermistor with this accessory.

CC-MPV-XP2

- Cable from MACH-ProView LCD controller to X-Port-2 Converter for local MS/TP communications.

Product images

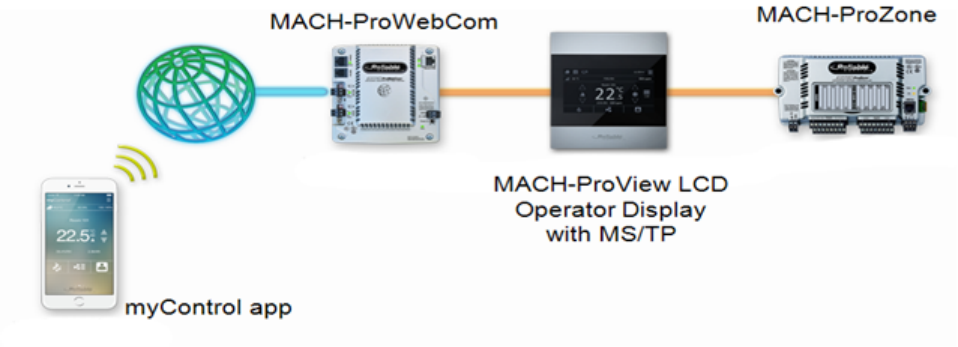
MACH-ProView LCD

MACH-ProView LCD bottom

MACH-ProView LCD side

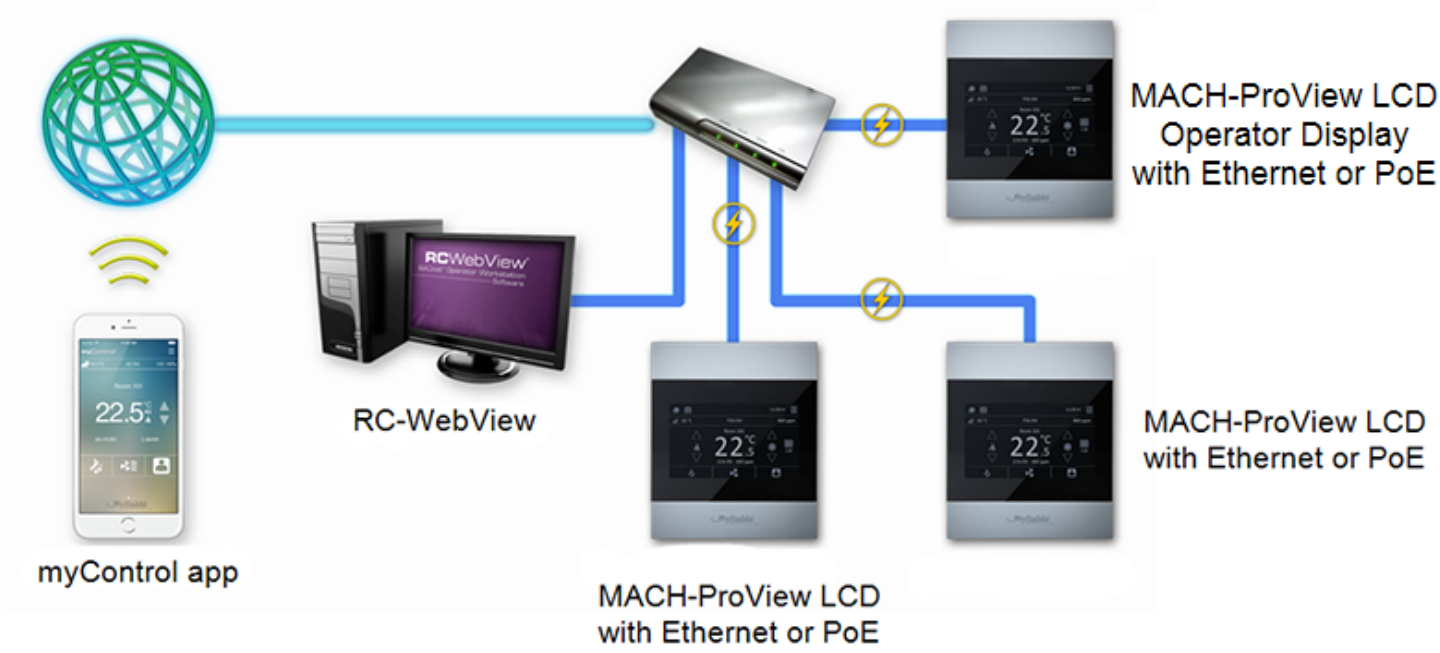
Application diagrams

Wi-Fi network



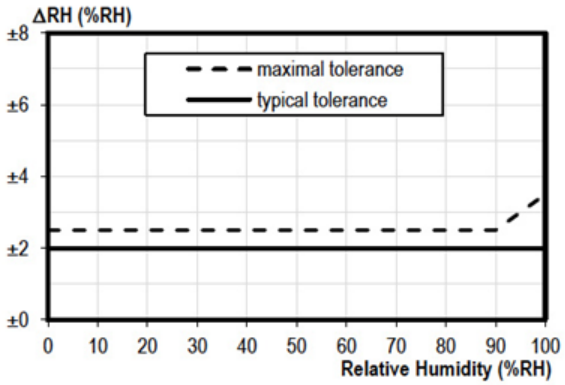
MS/TP network

Application diagrams

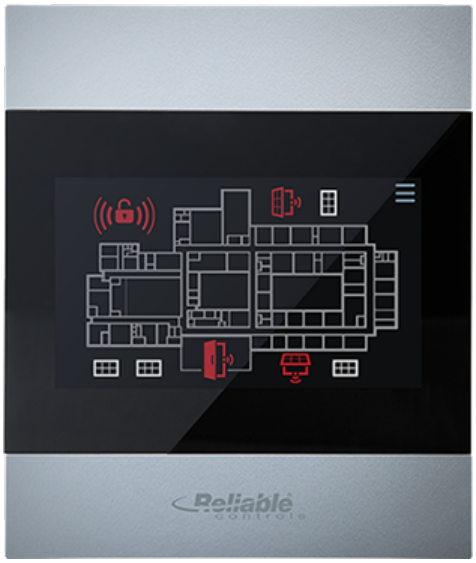


Ethernet or Power over Ethernet (PoE) network

Humidity sensor chart



Integrated EQUIPMENTviews



EQUIPMENTview example 1

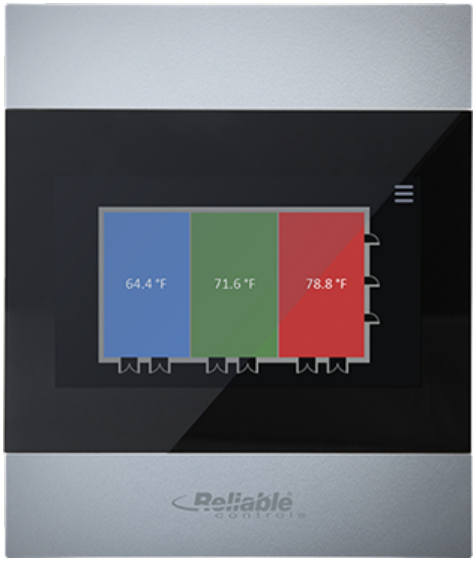
EQUIPMENTview example 2

Integrated EQUIPMENTviews

EQUIPMENTview example 3

EQUIPMENTview example 4

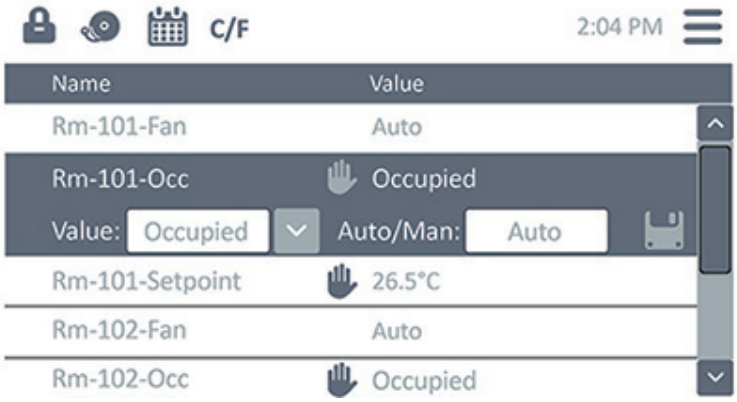
Integrated EQUIPMENTviews



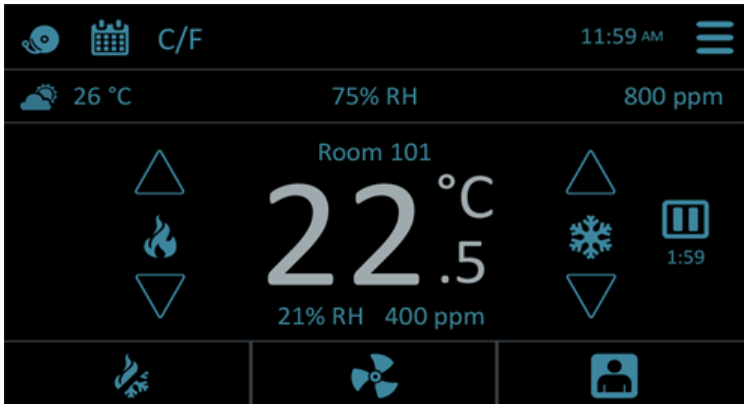
EQUIPMENTview example 5

SPACEview showing cooling setpoint

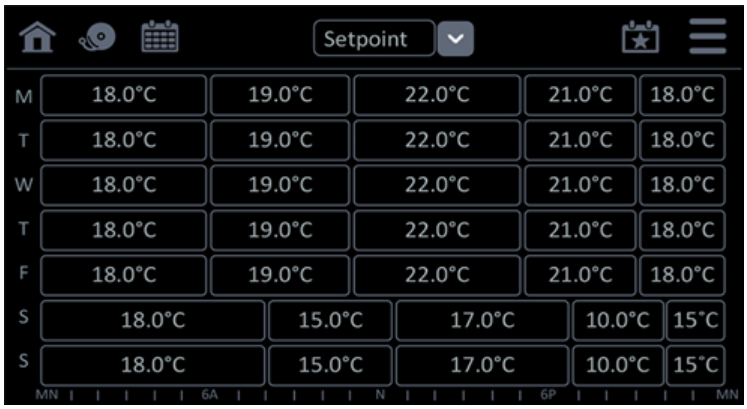
Integrated EQUIPMENTviews



LISTview



STATview



SCHEDULEview

Dealer Information: