

Apex of control

In addition to onboard inputs and outputs, the Reliable Controls MACH-ProSys™ features extensive network routing capabilities, reaching the apex of control as a fully programmable internet-connected BACnet Building Controller (B-BC). Not only can you expand the MACH-ProSys with many flexible hardware options, you can also seamlessly integrate it with numerous open protocols, making it the ideal choice for large rooftop equipment, large mechanical rooms, and complex integrated systems.



PRODUCT FEATURES

Protocols

- BACnet
 - Supports two B/IP subnetworks and B/VPN.
 - Ethernet, MS/TP, and PTP.
- DHCP: Dynamic Host Configuration Protocol.
- Modbus:
 - Supports Modbus RTU and TCP/IP communications.
 - Modbus master up to 128 slave devices, or use the controller as a Modbus slave device.
- SMTP: Simple Mail Transfer Protocol.
 - Provides standard email communications for broadcasting email alarms.
 - Supports TLS/SSL security.
- SNMP: Simple Network Management Protocol.
- SNTP: Simple Network Time Protocol.
- SMART-Net.

64 System Groups

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

Multipoint Trend Logs

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

Runtime Report

- Totals the on time and records the on/off times of every binary object.
- Dynamically assigned.

24 Custom Units

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

1,536 Net Ins

- The maximum number of shares from other devices.

Real-Time Clock

SMART-Net Port

- Network up to 16 SMART-Net devices.

Warranty

- 5 years.

Inputs and Outputs

- 12 onboard inputs with universal ranges.
- Eight onboard outputs. Outputs 1–4 are wired to unpopulated sockets; outputs 5–8 are universal.
- Add up to seven MACH-ProPoint expansion modules to accommodate an additional 180 inputs or 120 outputs. MACH-ProSys smoke control models are expandable only with MACH-ProPoint Input/Output smoke control modules.

1,024 Values

- Select 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.

64 Calendars

- Designate days of the year as holidays.

20 Tables

- For creating custom scaling functions.

128 Programs

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

Single-point Trend Logs

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

128 Arrays

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

128 User Passwords

- Protect access to the system.
- Assign each user with a username and access level.

512 Net Outs

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

TECHNICAL SPECIFICATIONS

Processor

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

Supply Voltages

- 24 VAC $\pm 10\%$ 75 VA maximum, 50/60 Hz.
- 24 VDC $\pm 10\%$ 26 W maximum.

Onboard Inputs

- 12 universal inputs.
- 12-bit A/D converter.
- Analog: 0–10 VDC, 4–20 mA, thermistor.
- Binary: Dry contact.
- Impedance:
 - 1 M Ω for 0–10 VDC range.
 - 250 Ω for 4–20 mA range.
 - 20 k Ω pull-up for thermistor/dry contact range.
- Pulse counting up to 150 Hz. Supports flow meters.
- 24 VAC overvoltage protection.

Expansion Modules

- Add up to seven MACH-ProPoint expansion modules. MACH-ProSys smoke control models are expandable only with MACH-ProPoint Input/Output smoke control modules.

Peripheral Power

- Onboard variable 15–24 VDC power supply provides up to 200 mA of DC power to peripheral devices. If powered with 24 VDC, the maximum voltage output is 22 VDC.

Real-Time Clock

- ± 1 second per day.

Memory/RTC Backup

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

Dimensions

- 25.4 cm L x 13.7 cm W x 3.9 cm H
(10" L x 5 3/8" W x 1 1/2" H).

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% RH noncondensing.

Weight

- 1.3 kg (2.7 lb).

Memory

- 8 MB operating RAM.
- 2 MB nonvolatile RAM for trends and dynamic values.
- 4 MB Flash EEPROM operating system, database, and controller configuration.

Communication Options

- One IEEE 802.3 (Ethernet 10/100BASE-T).
- Two EIA-485 ports that support a baud rate up to 76.8 kbps each.
- One EIA-232 port that supports a baud rate up to 115.2 kbps. PC or modem.
- One SMART-Net port that supports up to 16 devices on a SMART-Net network.

Onboard Outputs

- 12 bit D/A converter.
- First four outputs have sockets to accommodate relay, TRIAC, or universal modules. Output modules sold separately.
- Four universal outputs.
- Analog: 0–12 VDC.
- Binary: Software configurable between 0–12 VDC.
- Manual on provides adjustable 0–12 VDC for Hand/Off/Auto switches.
- LED indicator glows proportionally.
- Output power: 75 mA at 12 VDC.
- 24 VAC overvoltage and short protection.

Wiring Terminals

- 12–22 AWG (3.31–0.33 mm²).
- Stranded or solid core.
- Copper conductors only.

Mounting

- #8 clearance holes on 23 cm L x 11 cm W
(9 1/16" L x 4 5/16" W).
- Screw depth 25 mm (1").

Certifications

- [BTL Listed \(B-BC\).](#)
- UL 916 Listed.*
* MACH-ProSys smoke control models are also UL 864 Listed.
- FCC CFR 47 Part 15 Class B.
- CE.
- WEEE.

ORDERING

Models

MP-S

- MACH-ProSys.

MP-S-SMK

- MACH-ProSys UL 864 Listed for use in smoke control systems.

Options

- -H adds HOA switches.

Build Your Order

The order number for a controller with HOA switches is MP-S-H or MP-S-H-SMK, depending which model you choose.

Accessories

MP-DINRAIL

- Two-piece adapter kit to mount controller on a 35 x 7.5 mm (1 6/16" x 5/16") top hat DIN rail. DIN rail not included.

MPP-IO

- MACH-ProPoint Input/Output expansion module.

MPP-IO-SMK

- MACH-ProPoint Input/Output expansion module UL 864 Listed for use in smoke control systems.

MPP-IO-H

- MACH-ProPoint Input/Output expansion module with HOA switches.

MPP-IO-H-SMK

- MACH-ProPoint Input/Output expansion module with HOA switches UL 864 Listed for use in smoke control systems.

MPP-IO-U

- MACH-ProPoint Input/Output Universal expansion module.

MPP-IO-U-H

- MACH-ProPoint Input/Output Universal expansion module with HOA switches.

MPP-IO-DL-LASER

- MACH-ProPoint Input/Output expansion module door label sheet for laser printer.

MPP-IO-DL-INKJET

- MACH-ProPoint Input/Output expansion module door label sheet for inkjet printer.

MPP-I

- MACH-ProPoint Input expansion module.

MPP-I-DL-LASER

- MACH-ProPoint Input expansion module door label sheet for laser printer.

MPP-I-DL-INKJET

- MACH-ProPoint Input expansion module door label sheet for inkjet printer.

MPP-O

- MACH-ProPoint Output expansion module.

MPP-O-H

- MACH-ProPoint Output expansion module with HOA switches.

MPP-O-DL-LASER

- MACH-ProPoint Output expansion module door label sheet for laser printer.

MPP-O-DL-INKJET

- MACH-ProPoint Output expansion module door label sheet for inkjet printer.

RM

- Package of 10 relay output modules.

TM

- Package of 10 TRIAC output modules.

UM

- Package of 10 universal output modules.

SS-RJ11TB-B

- RJ11 to six-pole terminal block base.

SS-RJ11TB-C

- RJ11 to six-pole terminal block cable; 30 cm (1 ft).

SNX

- SMART-Net Expansion Board.

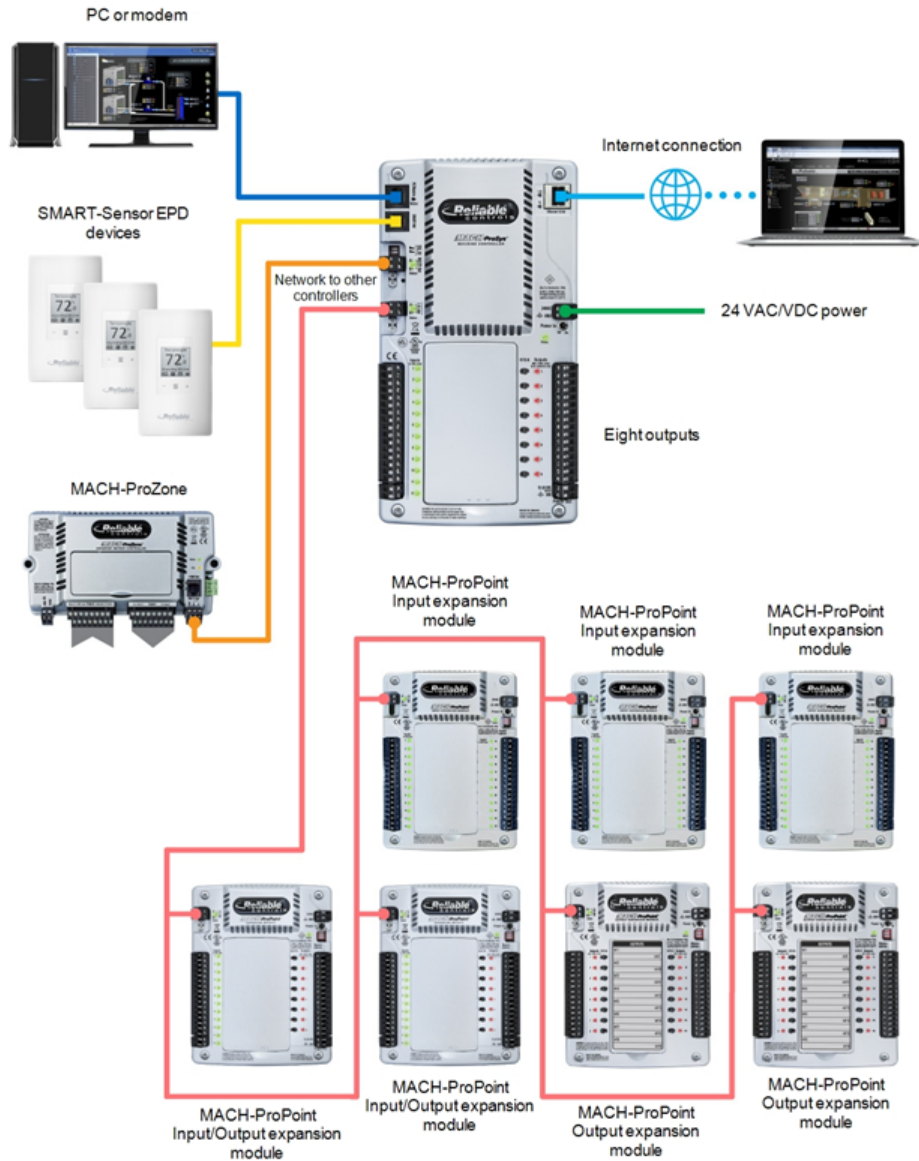
SSX

- SMART-Sensor Expansion Board.

DIAGRAMS

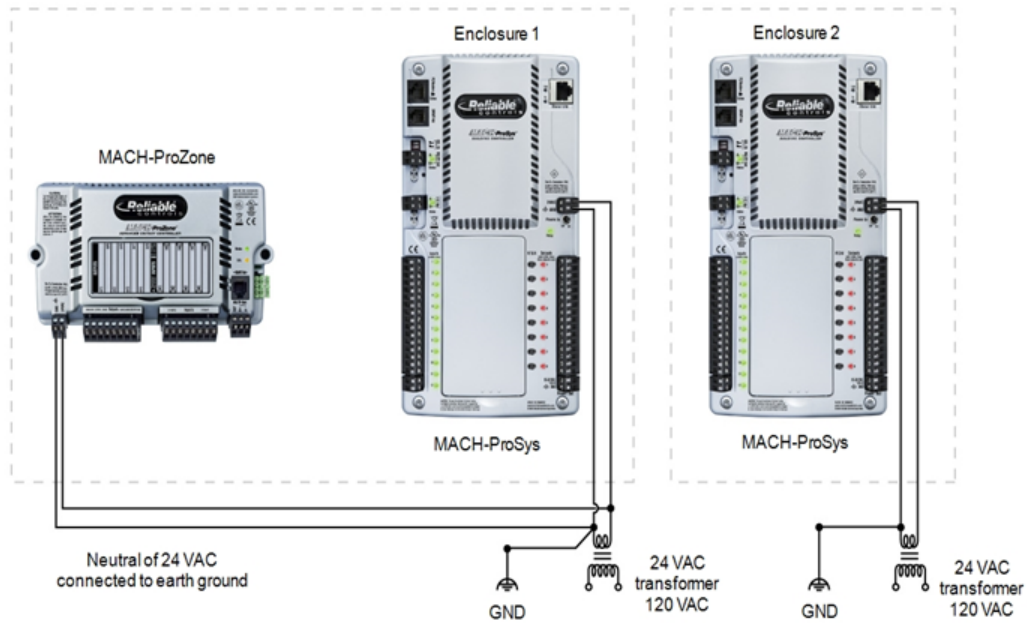
Network diagram

Connect up to seven MACH-ProPoint expansion modules of any mix with a maximum of 192 inputs or 128 outputs per controller. Daisy chain expansion modules to the controller's AUX-Net port in any order.

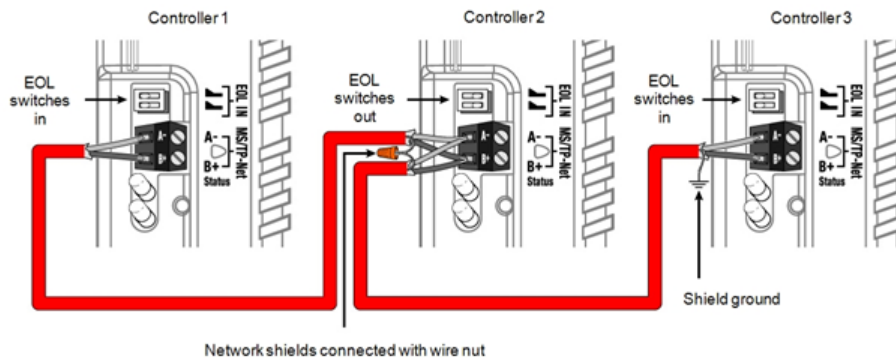


DIAGRAMS

Power wiring diagram



Network wiring diagram



Dealer Information: