



MACH-ProSys™
BACnet® Controller

Apex of control

With its onboard I/O, the Reliable Controls® MACH-ProSys™ takes the MACH-ProCom™ higher, reaching the apex of control as a fully programmable, Internet-connected, BACnet Building Controller (B-BC) ideal for large rooftop equipment, large mechanical rooms and multi-building applications.



Better by design



www.reliablecontrols.com/MPS

TECH SPECS

Processor

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

Memory

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

Supply Voltages

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

Communications

- IEEE 802.3 Ethernet 10/100 BaseT
- 2 EIA-485 @ 76.8 kbps max.
- 1 EIA-232 @ 115.2 kbps max. PC or modem
- SMART-Net port @ 16 sensors max.

Universal 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 over-voltage protection

8 Outputs

- 12-bit D/A converter
- First four outputs are socketed to accommodate relay, TRIAC, or universal modules (output modules sold separately)
- Analog: 0–12 VDC
- Binary: 0/12 VDC
- Manual ON provides adjustable 0–12 VDC (HOA model only)
- LED indicator (glows proportionally)
- Output power: 75 mA @ 12 VDC
- 24 VAC over-voltage and short protection

Expansion Modules

- Up to 7 MACH-ProPoint expansion modules

Peripheral Power

- Onboard variable 15–24 VDC power supply providing 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

Wiring Terminals

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

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)

Mounting

- #8 clearance holes on 23.0 cm L x 11.0 cm W (9 1/16" L x 4 5/16" W)
- Screw depth 25 mm (1")

FEATURES

Protocol

- BACnet
 - B/IP x 2, Ethernet, MS/TP and PTP
- 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
 - Provides standard email communications for broadcasting email alarms
 - Supports TLS/SSL security
- SNMP
 - Simple Network Management Protocol
- SNTP
 - Simple Network Time Protocol

12 Inputs

- Universal ranges
- Expandable using MACH-ProPoint expansion modules
- Maximum possible inputs of 180

8 Outputs

- Outputs 1–4 are wired to unpopulated sockets
- Outputs 5–8 are universal (no sockets)
- Expandable using MACH-ProPoint expansion modules
- Maximum possible outputs of 120

1024 Variables

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

128 PID Loops

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

128 Schedules

- 14 On/Off times for each weekday or exception

64 Calendars

- Days of the year designated as holidays

Weight

- 1.3 kg (2.7 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% RH non-condensing

20 Custom Tables

- For creating custom scaling functions

64 System Groups

- Allows related points to be grouped onto one display
- 320 points/group

128 Control-BASIC™

Programs

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

Trend Logs

- Each Trend Log stores up to 8 points
- Values recorded at user-defined intervals
- Dynamically assigned

Runtime Logs

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

128 Variable Arrays

- Up to 128 elements in a one-dimensional array

128 User Passwords

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

Custom Units

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

SMART-Net™ Port

- Networks up to 16 SMART-Sensors

1536 Network In Points

512 Network Out Points

- 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

MP-S

- MACH-ProSys controller

MP-S-H

- MACH-ProSys controller with HOA (Hand/Off/Auto) switches and potentiometer overrides for each output

MP-S-SMK

- MACH-ProSys controller certified for smoke control. See MP-S-SMK submittal for details

MP-S-H-SMK

- MP-S-SMK with HOA (Hand/Off/Auto) switches and potentiometer overrides for each output

ACCESSORIES

MP-DINRAIL

- Two-piece adapter kit to mount controller onto 35 mm x 7.5 mm top hat DIN rail. DIN rail not included

MPP-IO

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

MPP-IO-H

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

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

- 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

MPP-I

- MPP Input expansion module with 24 universal inputs

MPP-I-DL

- Door label sheet for MPP-I

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

- Door label sheet for MPP-O

RM

- Relay output module (package of 10)

TM

- TRIAC output module (package of 10)

UM

- Universal output module (package of 10)

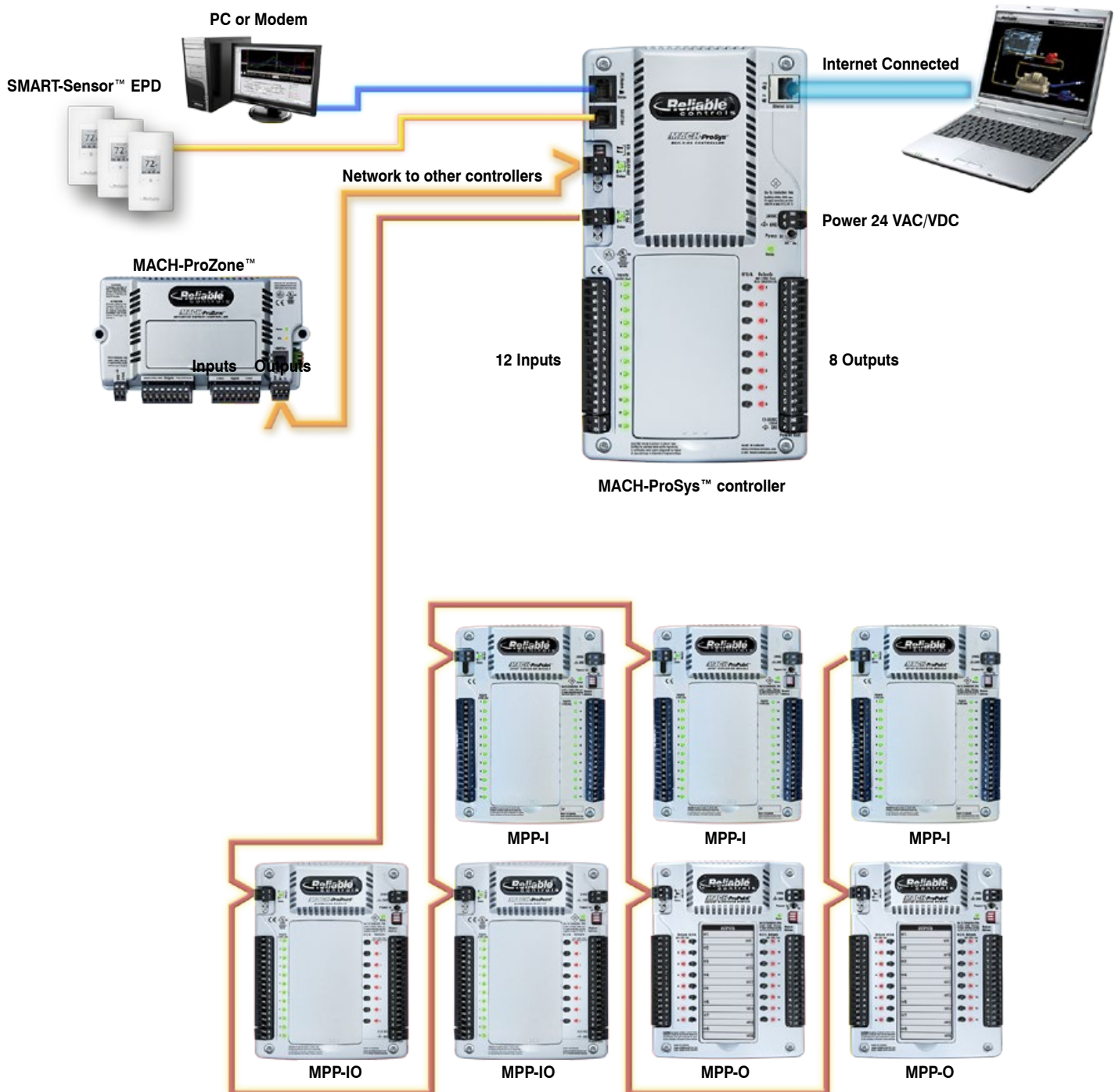
SS-RJ11TB-B, SS-RJ11TB-C

- SMART-Net breakout connector RJ-11 to terminal block

SS-X

- SMART-Sensor Network Expansion Board

APPLICATION DIAGRAM



Connect up to 7 MACH-ProPoint expansion modules of any mix with a maximum input count of 180, and a maximum output count of 120 per controller. Expansion modules are daisy-chained to the I/O-Net port of the controller in any combination.

Dealer Information:

SERV-ALL
Specializing in Building Performance

SERV-ALL Mechanical Services Ltd.
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