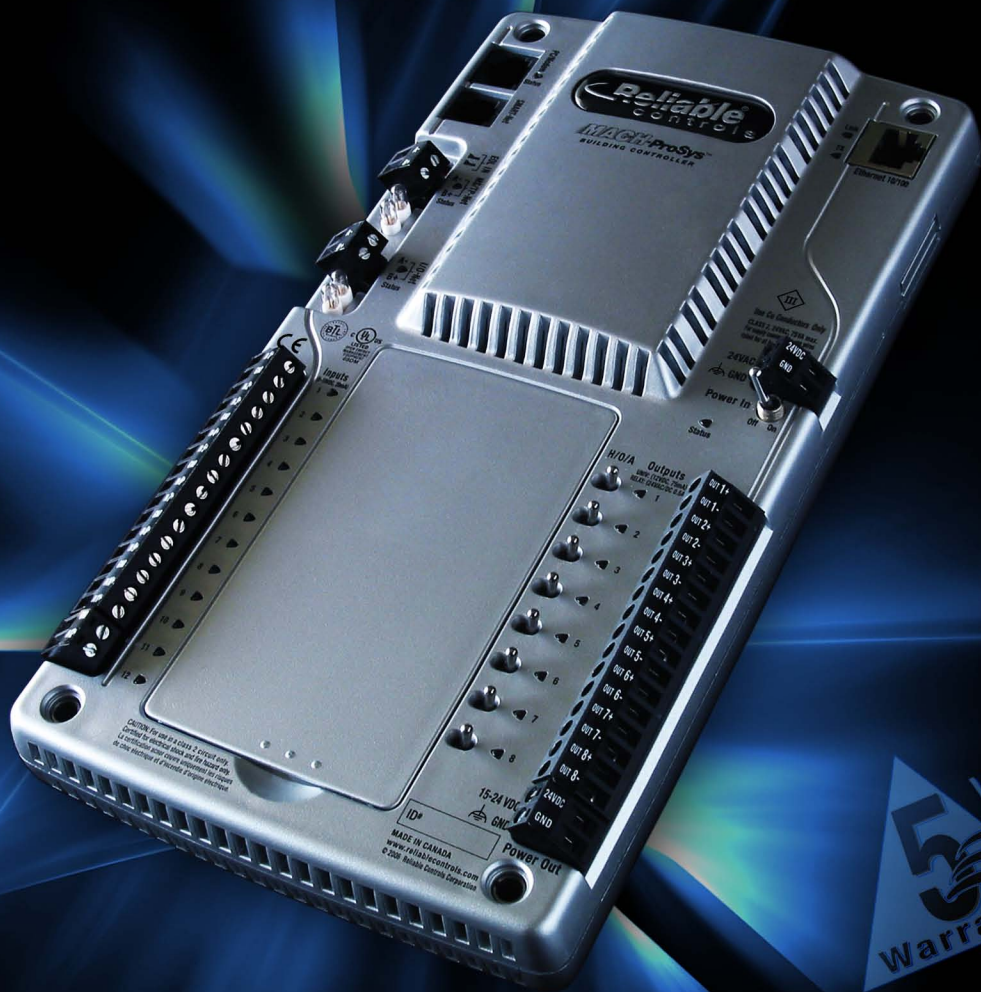




MACH-ProSys™  
BACnet® Controller

## 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](http://www.reliablecontrols.com/MPS)

## TECH SPECS

### Processor

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

### Memory

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

### Supply Voltages

- 24 VAC/VDC, 75 VA 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 ADC
- Analog: 0–5 VDC, 0–10 VDC 4–20 mA, thermistor
- Digital: dry contact
- Impedance:
  - 1M  $\Omega$  for 0–5 VDC range
  - 1M  $\Omega$  for 0–10 VDC range
  - 250  $\Omega$  for 4–20 mA range
  - 20k  $\Omega$  pull-up for thermistor/dry contact range
- 150 Hz pulse counting (supports flow meters)
- 24 VAC over-voltage protection

### 8 Outputs

- 12-bit DAC
- First four outputs are socketed to accommodate relay, TRIAC, or universal modules (output modules sold separately)
- Analog: 0–12 VDC
- Digital: 0–12 VDC
- Manual ON provides adjustable 0–12 VDC (HOA 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 by 24 VDC, the maximum voltage output is 22 VDC)

### Real-Time Clock

- $\pm 1$  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)

### 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
- Reliable Controls Protocol
  - Backward compatibility with previous generation systems
- Modbus
  - Supports both RTU and TCP in both master and slave configurations
- SMTP
  - Provides standard email communications for broadcasting email alarms
- SMS
  - GSM/GPRS modem
- SNMP
  - Simple Network Management Protocol

### 12 Inputs

- Universal ranges
- Expandable using MACH-ProPoint™ expansion modules
- Maximum possible inputs of 128

### 8 Outputs

- Outputs 1–4 are wired to unpopulated sockets
- Outputs 5–8 are universal (no sockets)
- Expandable outputs using MACH-ProPoint™ expansion modules
- Maximum possible outputs of 64

### 256 Variables

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

### 64 PID Loops

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

### 32 Weekly Schedules

- 4 On/Off times for each weekday and 2 override days
- BACnet schedules supported

### 8 Annual Schedules

- Days of the year designated as holidays
- BACnet calendar supported

### 20 Custom Tables

- For creating custom scaling functions

### 64 System Groups

- Allows related points to be grouped on to one display
- 160 points/group

### 128 Control-BASIC™ Programs

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

### 96 Trend Logs

- Each Trend Log stores 512 samples and up to 6 points
- Values recorded at user-defined intervals
- BACnet Trend Logs supported

### 128 Runtime Logs

- Totals the On time and records the On/Off times of a digital point
- Holds 200 events

### 128 User Passwords

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

### 16 Custom Units

- 8 analog engineering units
- 8 digital engineering units

### SMART-Net™ Port

- Networks up to 16 SMART-Sensors™

### Real-Time Clock

#### Warranty

- 5 years

#### Certification

- BTL Listed (B-BC)
- ISO 16484-5
- UL 916 Listed
- UUKL 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 pot adjust

### 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 pot adjust

### MPP-IO-DL

- Door lid decal kit for MP-S, MP-S-H, MPW-S, MPW-S-H, MPP-IO, and MPP-IO-H

### MPP-I

- MPP Input expansion module with 24 universal inputs

### MPP-I-DL

- Door lid decal kit for MPP-I

## ACCESSORIES

### RM

- Relay output module (package of 10)

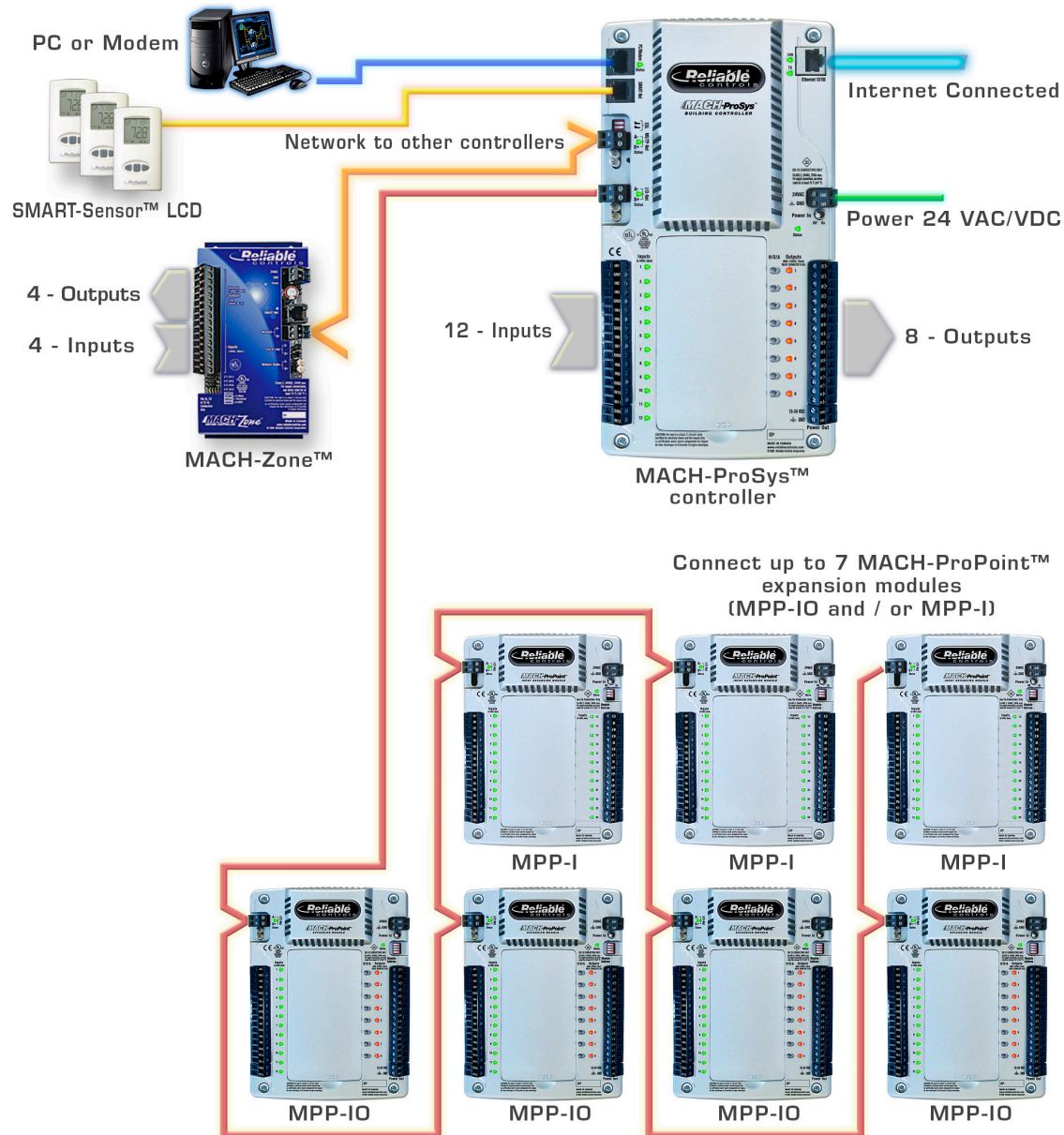
### TM

- TRIAC output module (package of 10)

### UM

- Universal output module (package of 10)

## APPLICATION DIAGRAM



Connect up to 7 MACH-ProPoint™ expansion modules (MPP-IO and MPP-I) with a maximum possible input count of 128, a maximum possible output count of 64, and a maximum total I/O of 160 per controller.