Reliable controls ®
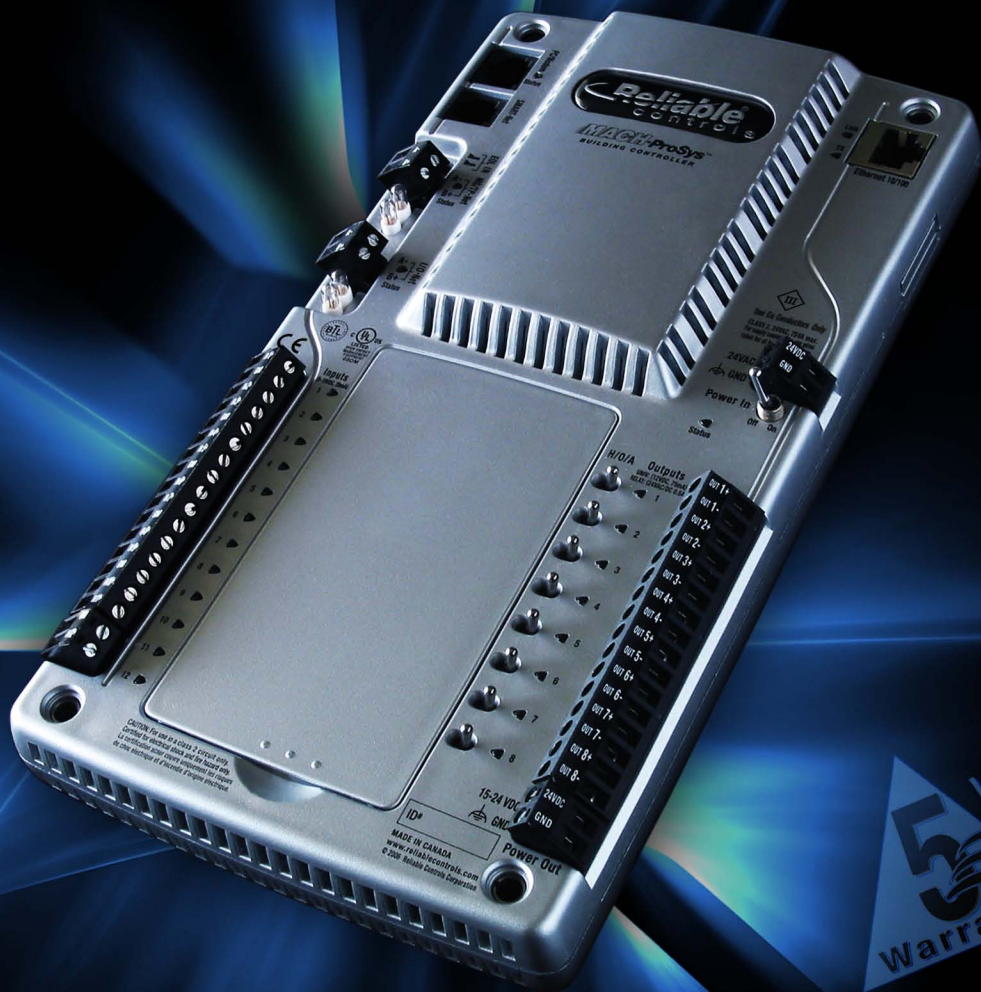
Apex of control

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.

5 year Warranty

Better by design

BACnet International

UL GREEN BUILDING COUNCIL U.S.G.B.C

BTL

c UL us LISTED OPEN ENERGY MANAGEMENT EQUIPMENT 69DM

CE

TECH SPECS

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

Memory
- 8 MB operating RAM
- 1 MB non-volitile 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 Ω for 0–5 VDC range 1M Ω for 0–10 VDC range 250 Ω for 4–20 mA range 20k Ω 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
- ±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 3.84 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")

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

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

MPS
- MACH-ProSys™ controller

MPS-H
- MACH-ProSys™ controller with HOA (Hand/Off/Auto) switches and pot adjust

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

MPP-H
- MPP with HOA (Hand/Off/Auto) switches and pot adjust

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

MP-DL
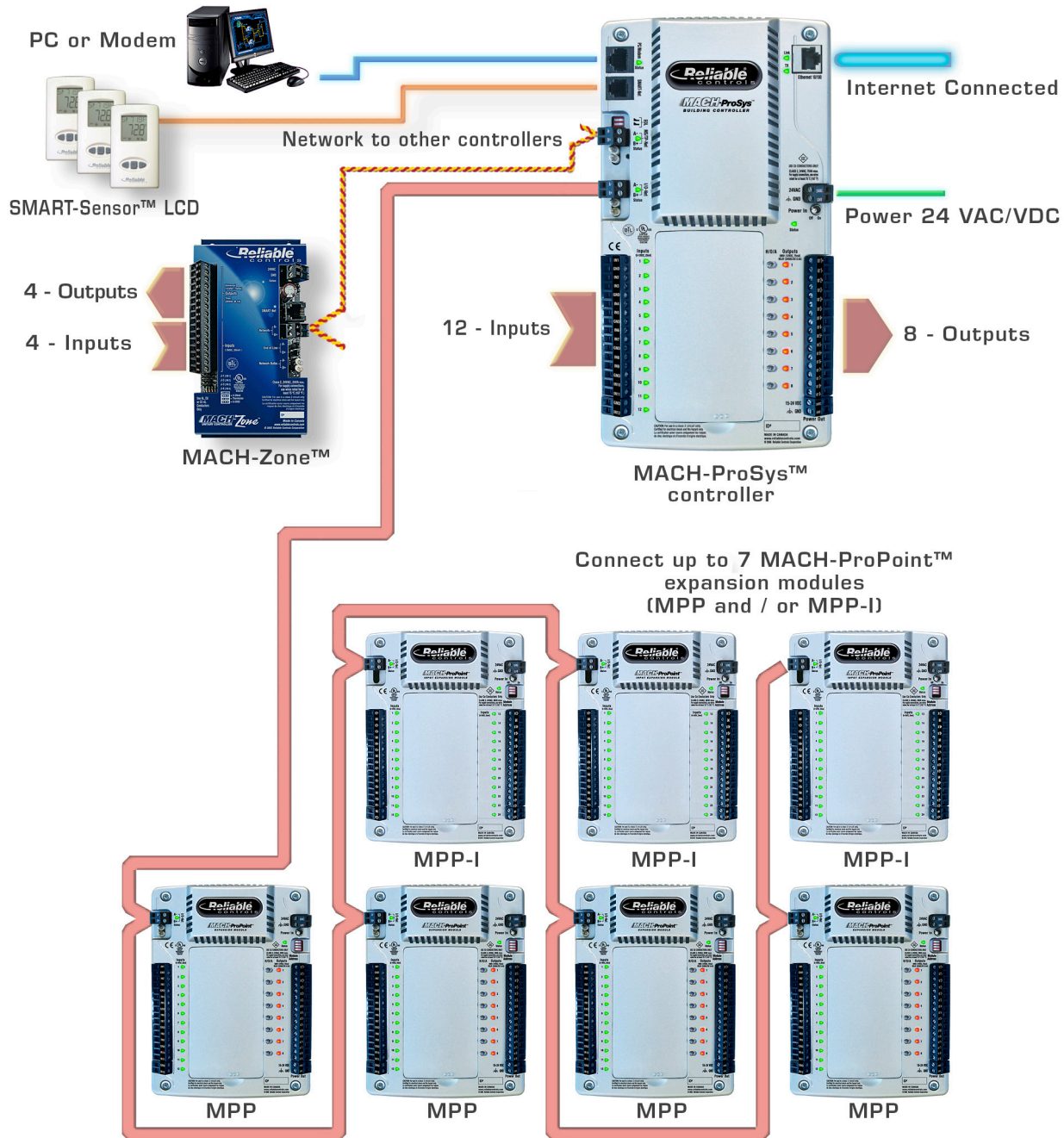- Door lid decal kit for MPS and MPP

ACCESSORIES

RM
- Relay output module (package of 10)

TM
- TRIAC output module (package of 10)

UM

Designed and Manufactured in Canada

PC or Modem

SMART-Sensor™ LCD

Network to other controllers

Internet Connected

Power 24 VAC/VDC

4 - Outputs

4 - Inputs

12 - Inputs

8 - Outputs

MACH-Zone™

MACH-ProSys™
controller

Connect up to 7 MACH-ProPoint™
expansion modules
(MPP and / or MPP-I)

MPP-I

MPP-I

MPP-I

MPP

MPP

MPP

MPP

Connect up to 7 MACH-ProPoint™ expansion modules (MPP 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.