Get in the zone

Small, durable and packed with flexibility, the Reliable Controls® MACH-ProZone™ is a fully programmable BACnet® Building Controller (B-BC) with highly scalable I/O in a very small footprint. The MACH-ProZone is ideal for a wide range of applications that include small to mid-sized roof top and heat pump applications, and small mechanical room applications.

Better by design

www.reliablecontrols.com/MPZ

Tech Specs

Processor
- 66 MHz, high-performance, 32-bit embedded microcontroller with onboard Flash memory.
- Controller database stored in robust non-volatile memory. Values and log data are stored in 3 day battery backed memory.
- Operating System firmware easily updated at any time over the network.

Supply Voltages
- 24 VAC ±10% 25 VA max. 50/60 Hz.
- 24 VDC ±10% 12 W max.

Communications
- 1 EIA-485 (RS-485)@ 76.8 kbps max. with auto-baud detection.
- 2 SMART-Net ports (one RJ-11 and one 4-wire terminal block) supporting a maximum of 8 devices.

Universal Inputs
- 12-bit A/D converter.
- Soft selectable: 0–10 VDC, 4–20 mA, thermistor/dry contact.
- Impedance:
  3M Ω on 0–10 VDC range.
  250 Ω on 4–20 mA range.
  20k Ω on thermistor range.
- Pulse counting up to 40 Hz (supports flow meters).
- 24 VAC over-voltage protection.

Universal Outputs
- 12-bit D/A converter.
- Analog: 0–12 VDC.
- Binary: 0/12 VDC.
- Output power:
  75 mA @ 12 VDC.
- 24 VAC over-voltage and short protection.
- Jumper selectable solid state relay.

Solid State Relay Outputs
- Switches 24 VAC/VDC.
- 500 mA max.

Real-time Clock (-C models)
- Clock operation is maintained in power loss.
- 1 year backup.
- Replaceable Lithium coin cell BR 2032.

Memory/RTC Backup (-C models)
- Values, Trend log and Run time log data stored for 72 hours (-C models stored for 1 year).
- Controller database, including panel file is stored in Flash memory, 10 year retention.

Terminal Blocks
- 12 to 30 AWG (3.31 mm² to 0.05 mm²).
- Stranded or solid core.
- Copper conductors only.

Features

Dynamic Database
- Allows a maximum of 160 objects to be created of any supported type in any model of controller.

Protocol
- BACnet®
  - MS/TP (EIA-485).

Programs
- 16,000 bytes of programmable control strategy in a readable, BASIC-like language.
- 3,200 bytes per program.

Inputs
- Universal ranges.
- Soft selectable 0–10 VDC, 4–20 mA, thermistor/dry contact.

Outputs
- Universal ranges.
- Jumper selectable 0–12 VDC, sink or source, or solid state relay driver.

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

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

Single-Point Trend Logs
- Stores 128 samples at programmable time intervals.

Multipoint Trend Logs
- Each Trend Log stores 128 samples of 8 points at programmable time intervals.

Runtime Report
- Records the total On time and the total number of transitions, as well as daily transitions for every binary point.
- A 50 sample runtime log is automatically enabled for each binary point.

System Groups
- Allows related points to be grouped onto one display.
- 80 points/group.

Schedules
- 7 On/Off times for each weekday or exception.

Calendars
- Days of the year designated as holidays.

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

Tables
- For creating custom input ranges and programs lookup tables.

Custom Units
- 8 analog engineering units.
- 8 binary engineering units.
- 8 multistate units with 8 states, 32-characters each .

SMART-Net Port
- Networks up to 8 SMART devices.

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

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

Warranty
- 5 years.

Certification
- BTL Listed (B-BC).
- CE.
- CFR47 Part 15/B.
- UL 916 Listed.
- WEEE.

SETUP-Tool™
- SETUP-Tool for optional local configuration.

Dimensions
- 10.9 cm L x 19.1 cm W x 4.6 cm H (4 5/16" L x 7 1/2" W x 1 13/16" H).

Mounting
- DIN rail, or
- #8 clearance holes on 17.8 cm W (7" W) centerline.

Weight
- 0.3 kg (0.7 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.

Ordering

MPZ-44
- MACH-ProZone controller with 4 inputs, 4 outputs.

MPZ-48
- MPZ controller with 4 inputs, 8 outputs.

MPZ-84
- MPZ controller with 8 inputs, 4 outputs.

MPZ-88
- MPZ controller with 8 inputs, 8 outputs.

Accessories

MPZ-DL-INKJET
- Door lid decal kit for MPZ prints on Inkjet.

MPZ-DL-LASER
- Door lid decal kit for MPZ prints on laser.

KN-JB4
- 4 position insulated jumper bar for MPZ (package of 10).

Options
- -C Adds battery backup for real-time clock.

Designed and Manufactured in Canada
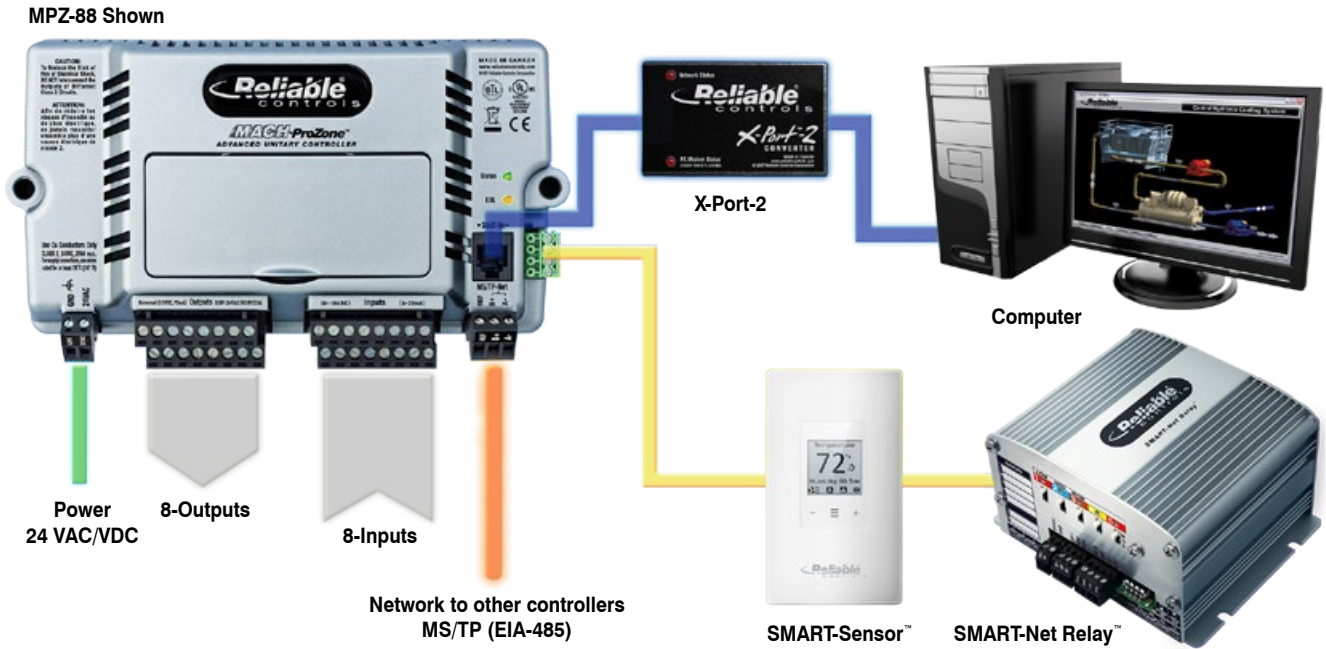
Typical Object Configuration

There are physical limitations to the number of inputs, outputs, and SMART-Sensors that can be connected to a MACH-ProZone controller. For other object types, a maximum number of 128 objects of a single type can be created. The total number of objects (including inputs, outputs, and SMART-Sensors) is limited to 160, and is also limited by the onboard memory. The table below details typical databases that fit in all models.

Memory	Variables	Loops	Schedules	Calendars	Tables*	Groups	Multipoint Trend**	Runtime*	Arrays	Program	SMART-Sensor
MPZ-88	64	8	4	2	4	4	10	128	4	16	4

* Runtime Reports and Tables are not counted in the 160 object limit. Inputs and outputs are counted in the 160 object limit.
** Trends are configured to store 128 samples.

APPLICATION DIAGRAM

MPZ-88 Shown

Power
24 VAC/VDC

8-Outputs

8-Inputs

Network to other controllers
MS/TP (EIA-485)

X-Port-2

Computer

SMART-Sensor™

SMART-Net Relay™

Dealer Information:

 Designed and Manufactured in Canada