



MACH-ProWebCom™

Web Enabled Controller

Web server. Simplified.

Publish your building automation system to the Web quickly and easily with the Reliable Controls® MACH-ProWebCom™. The first 3-in-1 device of its kind, the MACH-ProWebCom™ combines a BTL-listed BACnet Building Controller (B-BC), a BTL-listed BACnet Operator Workstation (B-OWS), and a powerful web server, all in a single package with an installed footprint of a typical building controller.



5 year
Warranty



Better by design

www.reliablecontrols.com/MPWC

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)
- 128 MB Flash EEPROM operating system, database, JavaScript, graphics, and controller configuration

Supply Voltages

- 24 VAC $\pm 10\%$ 20 VA max.
- 24 VDC $\pm 10\%$ 4 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.

Browser Support

- IE 8, Firefox 3, Chrome 5, Safari 5, or higher
- JavaScript must be enabled on client
- Flash required for animations and flood fill

Expansion Modules

- Up to 8 MACH-ProPoint™ expansion modules

Real-Time Clock

- ± 1 second per day

Memory/RTC Backup

- 72 hour backup
- 10 years for database

Dimensions

- 15.2 cm L x 13.7 cm W x 3.9 cm H (5 ⁵/₁₆" L x 5 ³/₁₆" W x 1 ¹/₂" H)

Mounting

- #8 clearance holes on 12.7 cm L x 11.0 cm W (5" L x 4 ⁵/₁₆" W)
- Screw depth 25 mm (1")

Weight

- 0.25 kg (0.6 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
- HTTP/1.1
 - Hyper Text Transfer Protocol
- 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

Inputs & Outputs

- Up to 8 MACH-ProPoint™ expansion modules
- Maximum possible inputs of 128
- Maximum possible outputs of 64
- Maximum total I/O of 160 per controller

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-OWS)
- BTL Listed (B-BC)
- UL 916 Listed
- FCC CFR 47 Part 15/B
- CE

ORDERING

MPW-C

- MACH-ProWebCom™ controller/Web server

ACCESSORIES

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

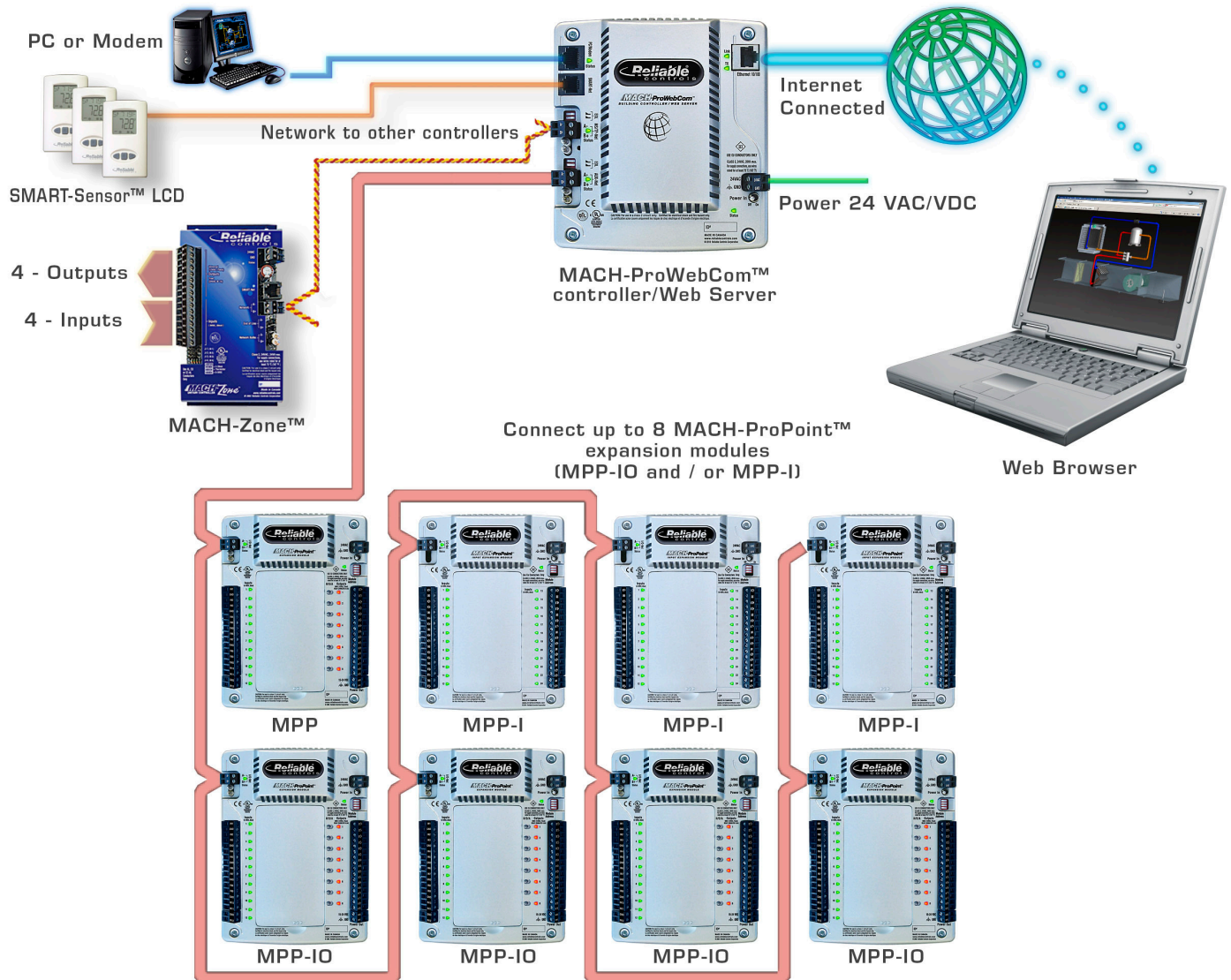
MPP-I

- MPP Input expansion module with 24 universal inputs

MPP-I-DL

- Door lid decal kit for MPP-I

APPLICATION DIAGRAM



Connect up to 8 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.



The Reliable Controls® MACH-ProWeb™ combines the field controller, configurable Web server and browser driven workstation into a single device which is simple to use, flexible to engineer and highly economical.

FIELD CONTROLLER

Program the MACH-ProWeb™ point database, Control-BASIC sequence, and graphics just as you would for any other Reliable Controls® product. The MACH-ProWeb™ is a fully functional BACnet Building Controller (B-BC).

5000INS MACH-ProWeb - Inputs

Input Name	Value	Auto/Man	Range	Calibration	Average	D	Alarm	Label	Object
1 ACSAT	20.0°C	Auto	10K -40 >120	0.1000064					AI1
2 ACSMAT	22.2°C	Auto	10K -40 >120	0.3000064					AI2
3 ACSBRAT	24.8°C	Auto	10K -40 >120	0.1000064					AI3
4 ACS SFA	8.8Amps	Auto	0.0 >100	0.0064					AI4
5 ACSRFA	7.8Amps	Auto	0.0 >100	0.0064					AI5
6 ACS SPARE	0.0	Auto	Unused	0.0064			Y		AI6
7 ACS SAT	21.1°C	Auto	10K -40 >120	-0.1000064					AI7
8 ACSMAT	22.7°C	Auto	10K -40 >120	0.2000064					AI8
9 ACSBRAT	24.5°C	Auto	10K -40 >120	0.2000064					AI9
10 ACS SFA	6.4Amps	Auto	0.0 >100	0.0064					AI10
11 ACSRFA	4.7Amps	Auto	0.0 >100	0.0064					AI11
12 ACS SPARE	0.0	Auto	Unused	0.0064			Y		AI12
13	0.0	Auto	Unused	0.0064			Y		AI12

5000OUTS MACH-ProWeb - Outputs

Output Name	Value	Auto/Man	Switch	Range	0%	100%	Delay	Min	Off	Min	On	S	D	Alarm	Label	Program	In Service	Obj
1 HTG-P1	Start	Auto	Auto	Stop/Start												13	Yes	BO1
2 HTG-P2	Stop	Auto	Auto	Stop/Start												16	Yes	BO2
3 HTG-P3	Start	Auto	Auto	Stop/Start												17	Yes	BO3
4 HTG-P4	Start	Auto	Auto	Stop/Start												18	Yes	BO4
5 HTG-B1 ENA	Enabled	Manual	Auto	Disabled/Enable												System	Yes	BO5
6 HTG-B2 ENA	Disabled	Auto	Auto	Disabled/Enable												15	Yes	BO6
7 HTG-SEC-V	11.1 %	Auto	Auto	0.0 >100%			0.00	10.00								14	Yes	AO7

5000PRGS MACH-ProWeb - Control-BASIC

Program Name	Run	Auto/Man	Timer	Time	Left	Size	Exit	Label
1 FC1-TEST-PRG	Yes	Auto	Enabled			2472	No	
2 FC1-PRG	Yes	Auto	Enabled			1285	No	
3 CALCS	Yes	Auto	Enabled			209	No	

System Tree

- MACH-ProSys (2000)
 - MACH-ProWeb (5000)
 - Object List
 - System Groups
 - Inputs
 - Outputs
 - Variables
 - PID-Loops
 - Schedules
 - Calendars
 - Multi-point Trend Logs
 - Single-point Trend Logs
 - Notification Classes
 - Programs
 - RCP Weekly Schedules
 - RCP Trend Logs
 - RCP Runtime Logs
 - Arrays
 - Tables
 - SMART-Sensors
 - MACH-Stat (5001)
 - MACH-Stat (5002)
 - MACH-Stat (5003)
 - MACH-Air (5004)
 - MACH-Air (5006)
 - MACH-Air (5007)
 - MACH-Air (5008)
 - MACH-Air (5009)
 - MACH-Air (5010)
 - BACnet

Right-click to access MACH-ProWeb Tools

- ✓ Large Icons
- ✓ Show Icons
- Font Options
- ✓ Allow docking
- Hide
- Refresh System
- Panel File
- Sign-On Log
- Sort
- ReInitialize Device
- Load Descriptors
- Manual Points Report
- Initialize Point Sharing
- MACH-ProWeb Tools
 - Resource Manager
 - Web Users
 - Tree Builder
- BACnet Advanced Properties...

WEB SERVER

Using the MACH-ProWeb™ Tools in RC-Studio® 2.0, it is extremely simple to select and post resource files to the MACH-ProWeb™ and manage future changes.

MACH-ProWeb - Tree Builder

To make a custom tree for the MACH-ProWeb interface, drag and drop any of the following items in Tree Builder: System Groups, Schedules, Trend Logs, Runtime Logs and Alarms. Items within the tree can be renamed to any name and relocated anywhere on the main tree or within custom folders nested two deep. Click the Send button to post your completed tree to the MACH-ProWeb.

- Main
- Rooftop Summary
- SMT-Room
- Security System
- Optimal Start-Stop
- AC Units
- Floors
- VAVs
- Alarms
- Schedules
- Calendars
- Trend Logs
- Runtime Logs

Send Add Folder Close

With the MPW Tree Builder, drag and drop graphics and objects to make your own customized navigation tree.

MACH-ProWeb - Resource Manager

Refresh Settings

Selected Workstation Resources

- Resource Files
 - 1GRP1 - MAIN-MENU
 - 1GRP2 - MECHANICAL SUMMARY
 - 1GRP3 - Upper VAV Summary
 - 1GRP4 - AC-1 Upper Interior
 - 1GRP5 - AC-2 Upper Exterior
 - 1GRP6 - AC-3 Production
 - 1GRP7 - AH-1 Lwr Fir OA
 - 1GRP8
 - 1GRP9 - Exhaust Fan Summary
 - 1GRP10
 - 1GRP11 - Production Floorplan

Resources on MACH-ProWeb

- Support Files
- Resource Files
 - 1GRP1 - MAIN-MENU
 - 1GRP2 - MECHANICAL SUMMARY
 - 1GRP3 - Upper VAV Summary

Used Space 14,766,689 bytes 14.08 MB
Free Space 102,673,823 bytes 97.99 MB
Total Capacity 117,440,512 bytes 112.08 MB

The operation was canceled.

Drag and drop selected PC workstation resources using the MPW Resource Manager.

MACH-ProWeb Tools

- Resource Manager
- Web Users
- Tree Builder

With the MPW Web Users tool, assign public and private Web users with complete permission control.

5000MPWPDWS MACH-ProWeb - Web Users

User Name	Password	Level	Group	Permissions	Enable
1 Public	*****	3	MAIN-MENU	Permissions	<input type="checkbox"/>
2 Bob	*****	3	MAIN-MENU	Permissions	<input type="checkbox"/>
3 Doug	*****	6	MAIN-MENU	Permissions	<input type="checkbox"/>
4 Tom	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
5 Roland	*****	7	MAIN-MENU	Permissions	<input type="checkbox"/>
6 Robin	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
7 Levi	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
8 Kent	*****	1	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
9 Richard	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
10 Robert	*****	9	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
11		3	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>

Mode Print Abort Close Import

User Permissions

<input checked="" type="checkbox"/> Change End-User Values	<input checked="" type="checkbox"/> Change Arrays
<input checked="" type="checkbox"/> Change Operator Values	<input checked="" type="checkbox"/> Change System Date and Time
<input checked="" type="checkbox"/> Change Auto/Manual	<input checked="" type="checkbox"/> Change Advanced BACnet
<input checked="" type="checkbox"/> Change Inputs	<input checked="" type="checkbox"/> Must Enter Change Reason
<input checked="" type="checkbox"/> Change Outputs	<input checked="" type="checkbox"/> Acknowledge Alarms
<input checked="" type="checkbox"/> Change Variables	<input checked="" type="checkbox"/> View Alarms
<input checked="" type="checkbox"/> Change PID Loops	<input checked="" type="checkbox"/> View Audit Trail
<input checked="" type="checkbox"/> Change Weekly Schedules	<input checked="" type="checkbox"/> View Online Help
<input checked="" type="checkbox"/> Change Special Events	<input checked="" type="checkbox"/> Show Tree
<input checked="" type="checkbox"/> Change Calendars	<input checked="" type="checkbox"/> Display Logon for Public user
<input checked="" type="checkbox"/> Auto Log Off 15 min.	

OK Select All Unselect All Cancel

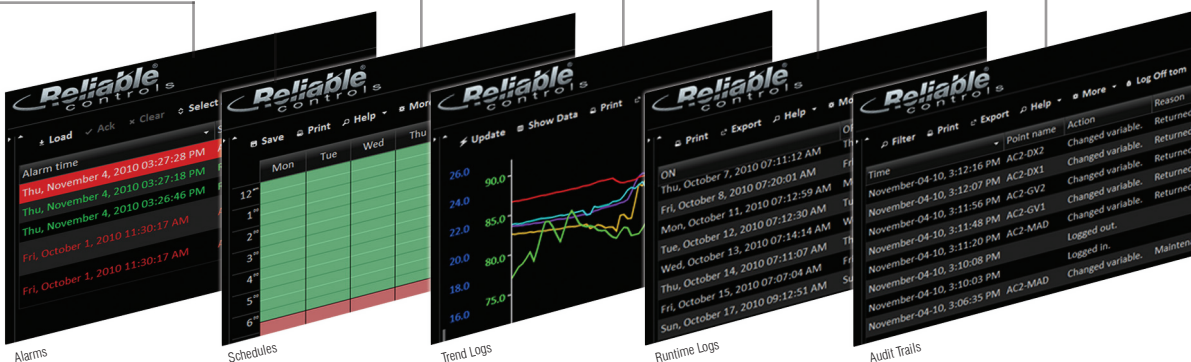
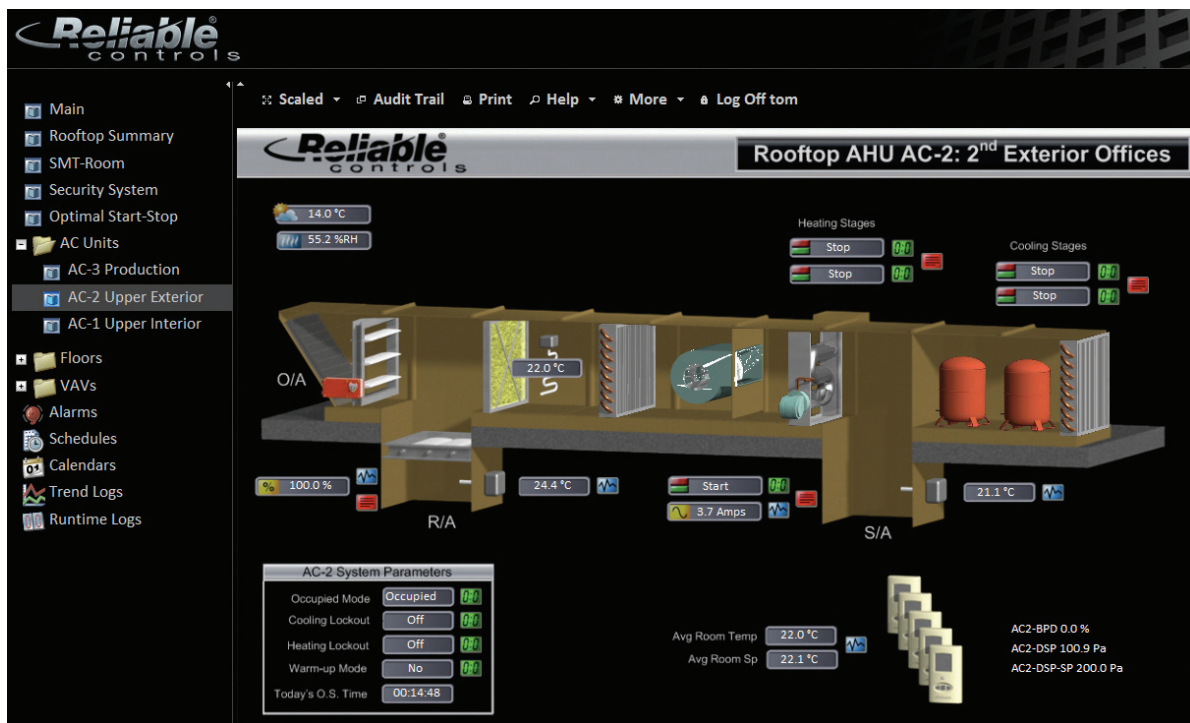
WORKSTATION

The MPW interface provides total functionality required for day-to-day building operations, and is a BTL-listed BACnet Operator Workstation (B-OWS). Using a standard browser (IE 8, Firefox 3, Chrome 5, Safari 5, or greater) on a PC or Mac, enter the URL of the MACH-ProWeb™ and navigate through the system to access and print point values, alarms, schedules, trend logs, runtime logs, and audit trails.



Public users can hit the MACH-ProWeb™ URL and access the system graphics assigned for public views.

Private users log in with credentials.



The MACH-ProWeb™ is the first three-in-one device of its kind, combining B-BC, B-OWS, and Web server capabilities into a single package with an installed footprint of a typical building controller.