



Web server. Simplified.

Publish your building automation system to the Web quickly and easily with the Reliable Controls® MACH-ProWebSys™. The first 3-in-1 device of its kind, the MACH-ProWebSys 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.



TECH SPECS

Processor

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

Memory

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

Supply Voltages

- 24 VAC $\pm 10\%$ 75 VA max. 50/60 Hz
- 24 VDC $\pm 10\%$ 25 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

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

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 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 5/8" W x 1 1/2" H)

FEATURES

Protocol

- BACnet®
 - B/IP x 2, Ethernet, MS/TP and PTP
- DHCP
 - Dynamic Host Configuration Protocol
- HTTP/1.1
 - Hyper Text Transfer 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 outputs 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

32 Calendars

- Days of the year designated as holidays

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)

20 Custom Tables

- For creating custom scaling functions

64 System Groups

- Allows related points to be grouped onto one display
- 160 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

Graphic Files

- Supports GIF, TIFF, JPG, PNG, and SWF

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

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

MPW-S

- MACH-ProWebSys™ controller/ Web server

MPW-S-H

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

MPW-S-SMK

- MACH-ProWebSys certified for smoke control (see MPW-S-SMK Submittal Sheet for details)

MPW-S-H-SMK

- MPW-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)

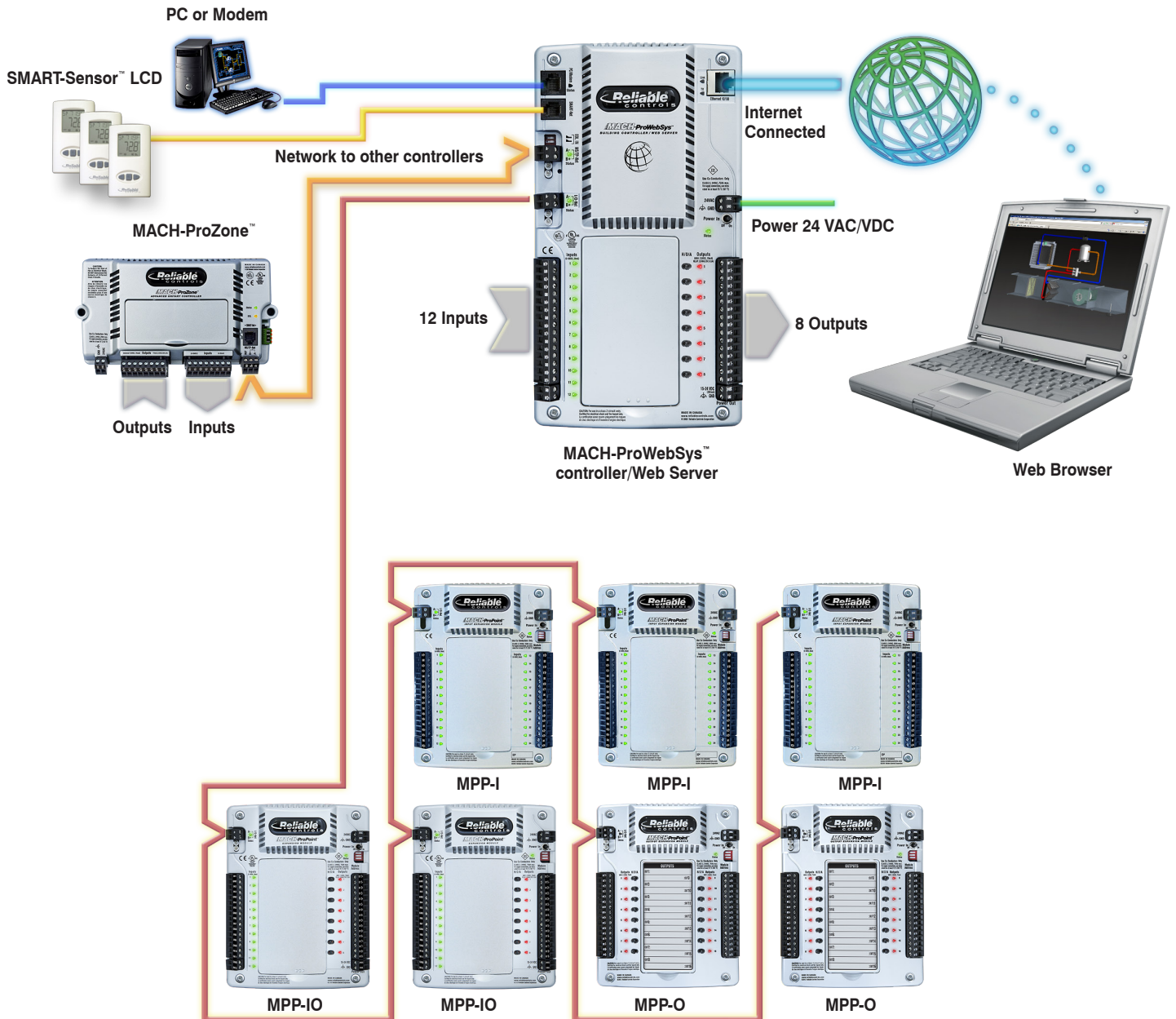
SS-RJ11TB-B, SS-RJ11TB-C

- 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 daisychained to the I/O-Net port of the controller in any combination.



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

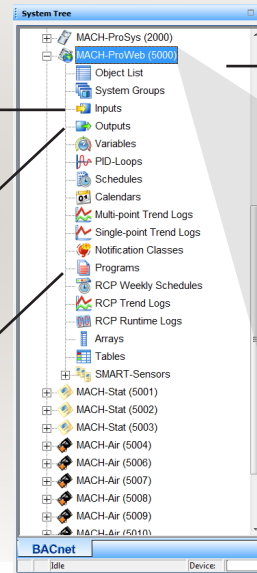
Input Name	Value	Auto/Man	Range	Calibration	Average	D	Alarm	Label	Object
1 ACSAT	20.0°C	Auto	10K -40 >120	0.1000064					AI1
2 ACSMAT	22.2°C	Auto	10K -40 >120	0.3000064					AI2
3 ACSBRAT	24.8°C	Auto	10K -40 >120	0.1000064					AI3
4 ACS SFA	8.8Amps	Auto	0.0 >100	0.0064					AI4
5 ACSRFA	7.8Amps	Auto	0.0 >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 ACS MAT	22.7°C	Auto	10K -40 >120	0.2000064					AI8
9 ACS RAT	24.5°C	Auto	10K -40 >120	0.2000064					AI9
10 ACS SFA	6.4Amps	Auto	0.0 >100	0.0064					AI10
11 ACS RFA	4.7Amps	Auto	0.0 >100	0.0064					AI11
12 ACS SPARE	0.0	Auto	Unused	0.0064			Y		AI12
13 ACS SPARE	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	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-B1 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	AD7

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	



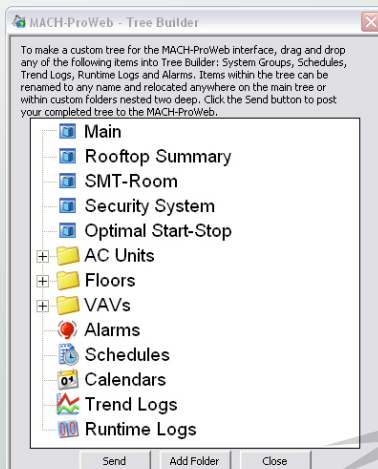
Right-click to access MACH-ProWeb™ Tools

- ✓ 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

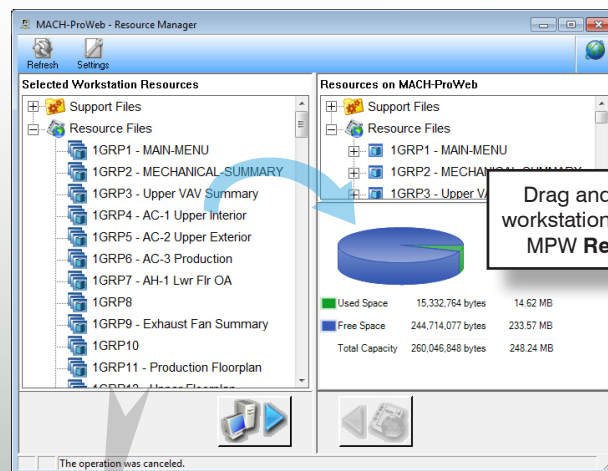
- MACH-ProWeb Tools
 - Resource Manager
 - Web Users
 - Tree Builder
- BACnet Advanced Properties...

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.



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

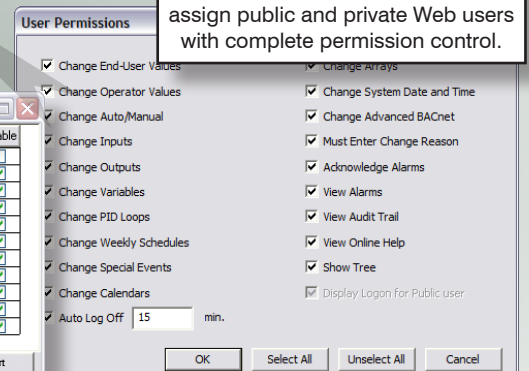


Drag and drop selected PC workstation resources using the MPW Resource Manager.

- MACH-ProWeb Tools
 - Resource Manager
 - Web Users
 - Tree Builder

5000MPWDS MACH-ProWeb - Web Users

User Name	Password	Level	Group	Permissions	Enable
1 Public	*****	3	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
2 Bob	*****	3	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
3 Doug	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
4 Tom	*****	6	MAIN-MENU	Permissions	<input checked="" type="checkbox"/>
5 Roland	*****	7	MAIN-MENU	Permissions	<input checked="" 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"/>



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

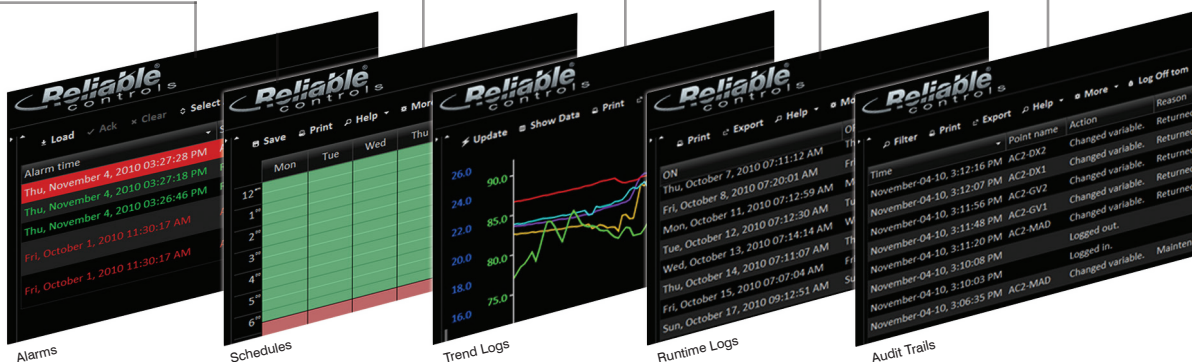
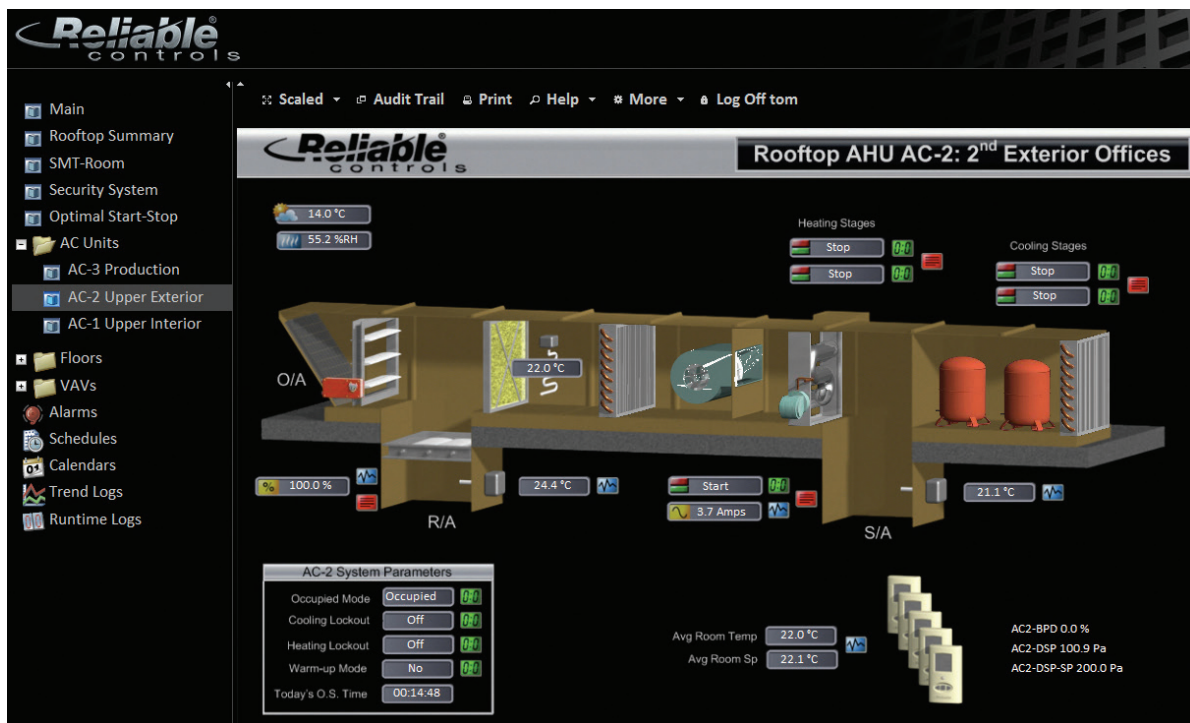
WORKSTATION

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 access the MACH-ProWeb™ URL and associated 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.

Dealer Information: