



MACH-ProWebSys™

Web-Enabled Controller

# 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.



Better by design

[www.reliablecontrols.com/MPWS](http://www.reliablecontrols.com/MPWS)

## TECH SPECS

### Processor

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

### Memory

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

### Supply Voltages

- 24 VAC ±10% 75 VA max. 50/60 Hz
- 24 VDC ±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 MΩ for 0–10 VDC range
  - 250 Ω for 4–20 mA range
- 20 kΩ 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 mm<sup>2</sup> to 0.33 mm<sup>2</sup>)
- 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 5/16" 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

### 64 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
- 320 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)

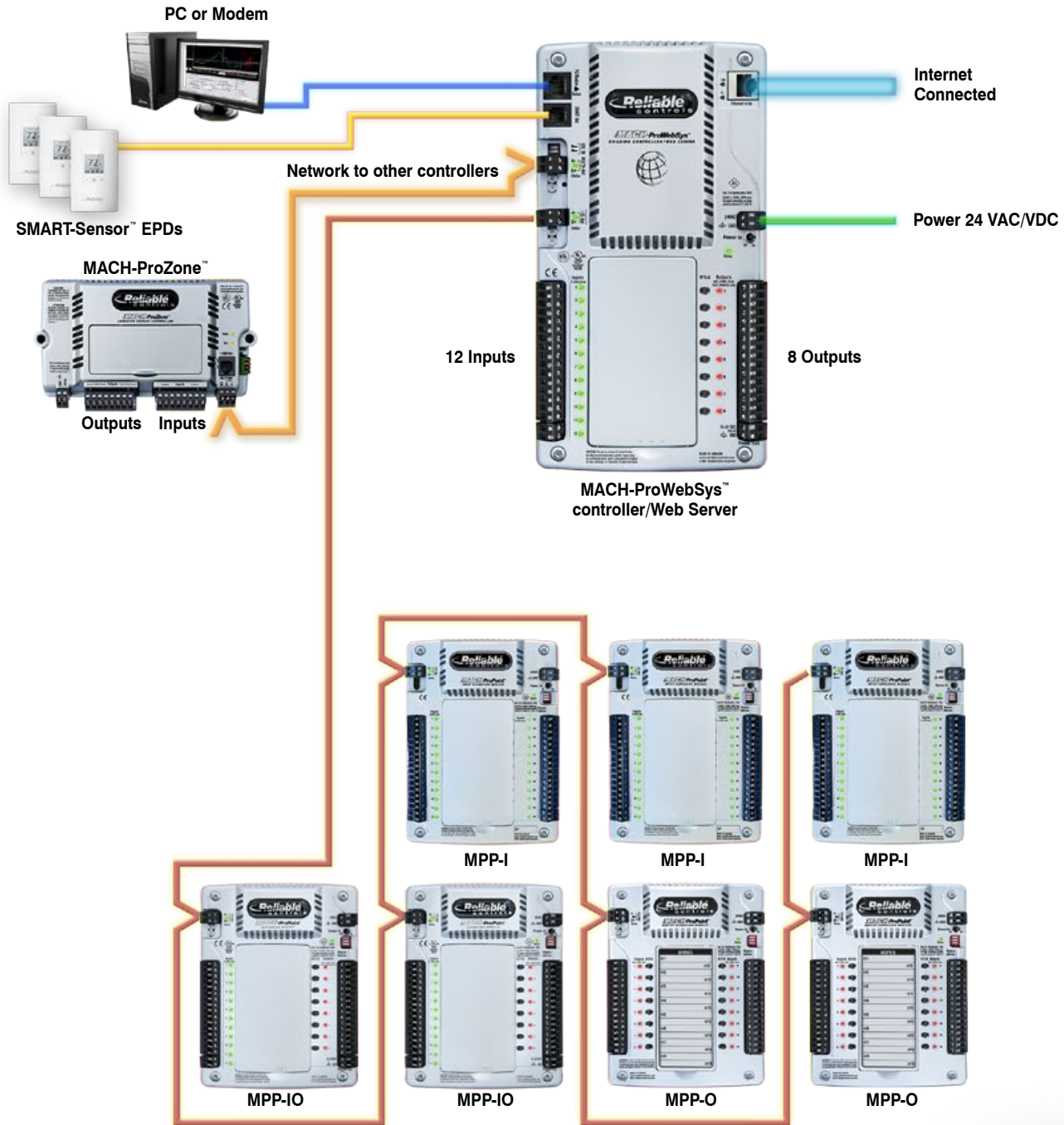
### SS-RJ11TB-B, SS-RJ11TB-C

- SMART-Net breakout connector RJ-11 to terminal block

### SS-X

- SMART-Sensor Network Expansion Board

## APPLICATION DIAGRAM



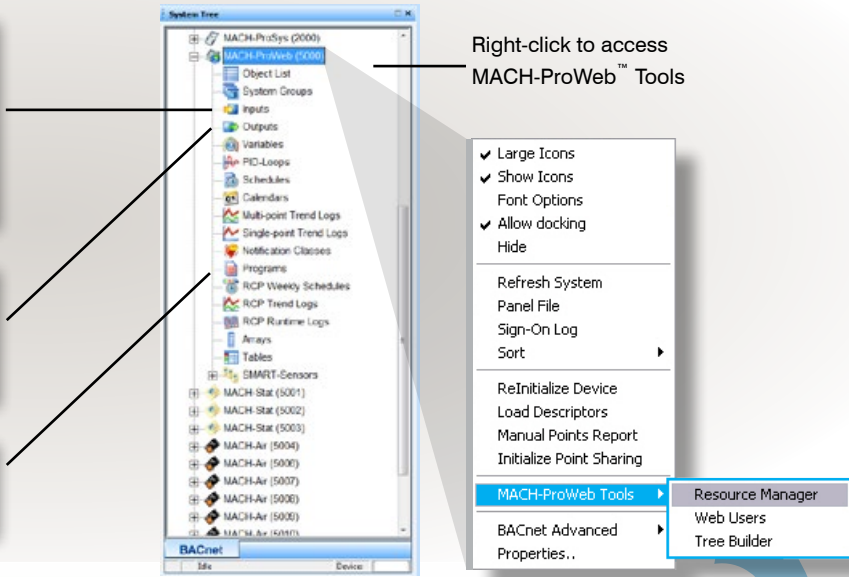
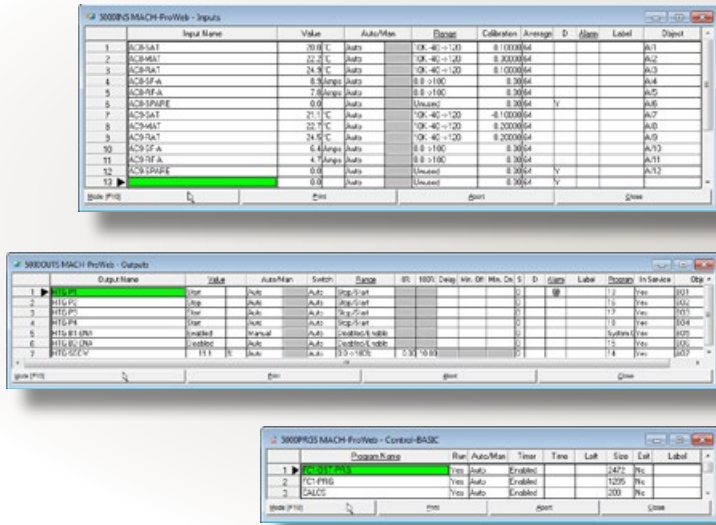
Connect up to 7 MACH-ProPoint™ expansion modules of any mix with a maximum input count of 180, and a maximum output count of 120 per controller. Expansion modules are daisychained to the I/O-Net port of the controller in any combination.



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.

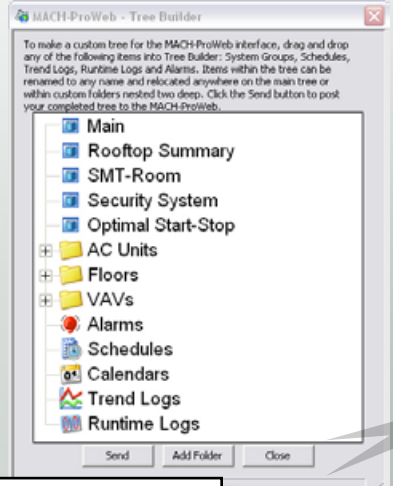
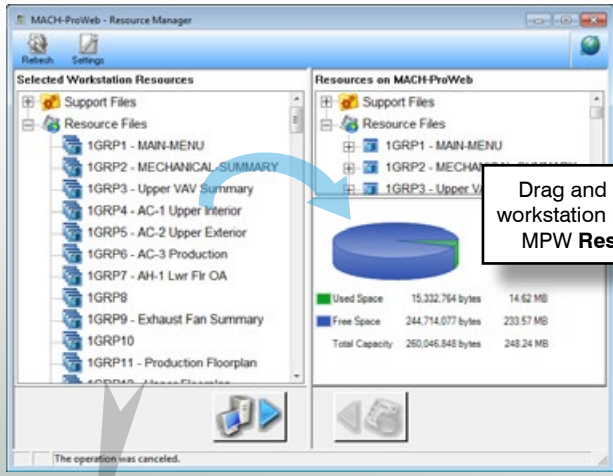
## FIELD CONTROLLER

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).

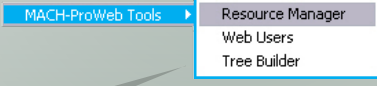


## WEB SERVER

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.

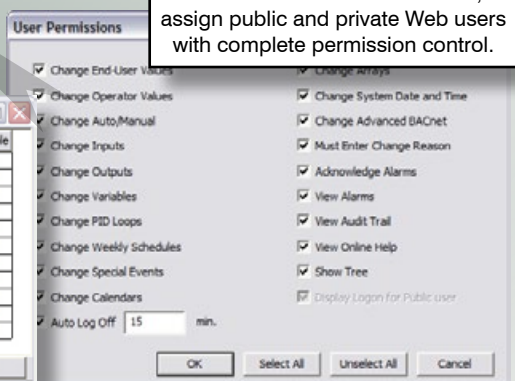


With the MPW Tree Builder, drag and drop graphics and objects to make your own customized navigation tree.



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

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	Fert	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"/>



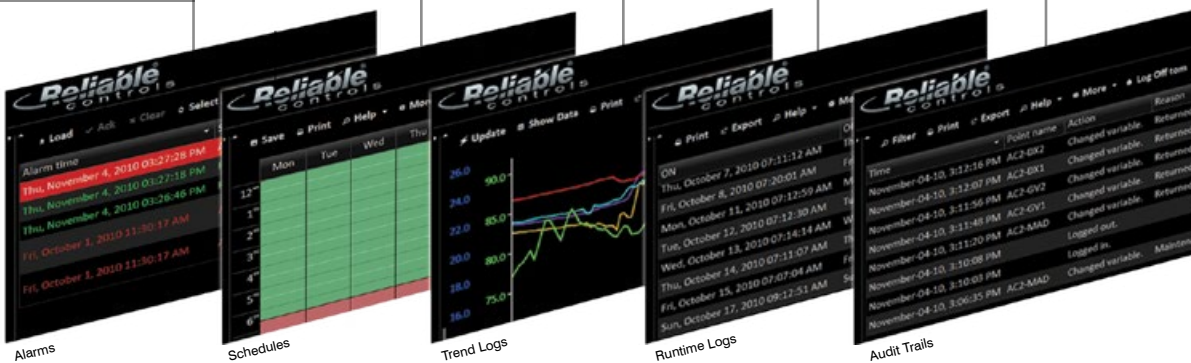
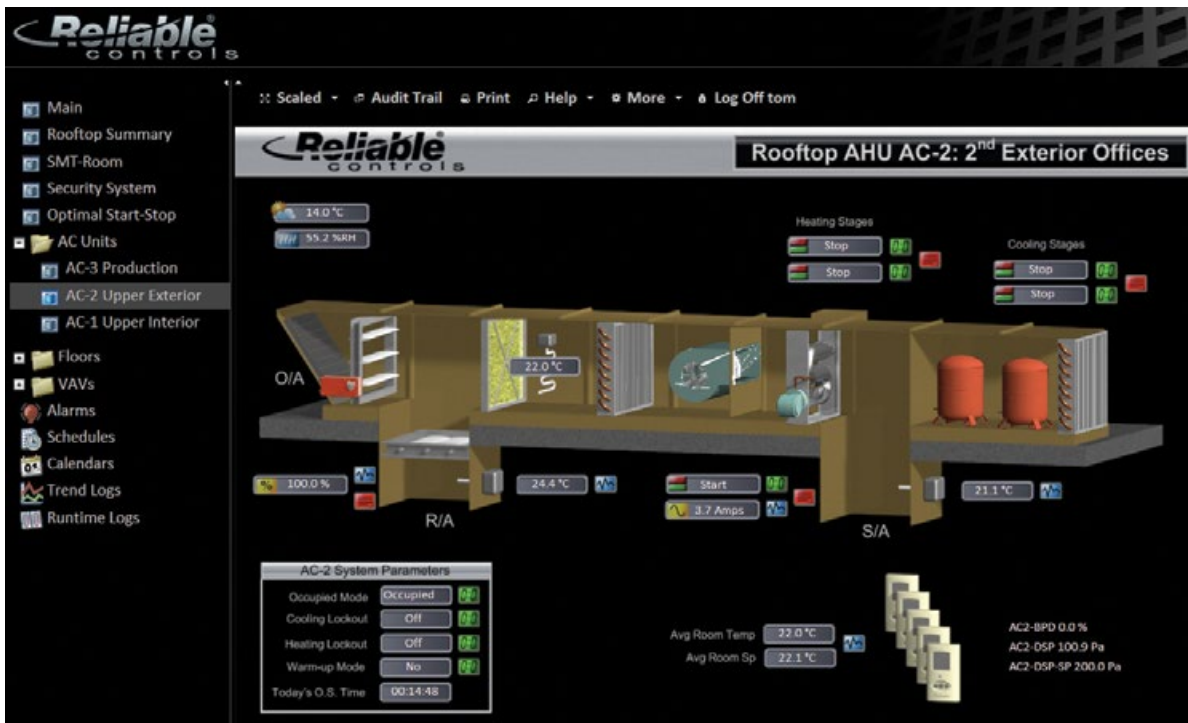
**WORKSTATION**

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: