Reliable® controls

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.

5 year Warranty

Better by design

ISO 9001 14001 QUALITY ENVIRONMENTAL ASSURANCE

Member of BACnet International

USGBC

BTL

c UL us LISTED OPEN ENERGY MANAGEMENT EQUIPMENT 69DM

CE

www.reliablecontrols.com/MPWS

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 ±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 ($3.31\ mm^2$ to $0.33\ mm^2$)
- 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 3/8" 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

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

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

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)

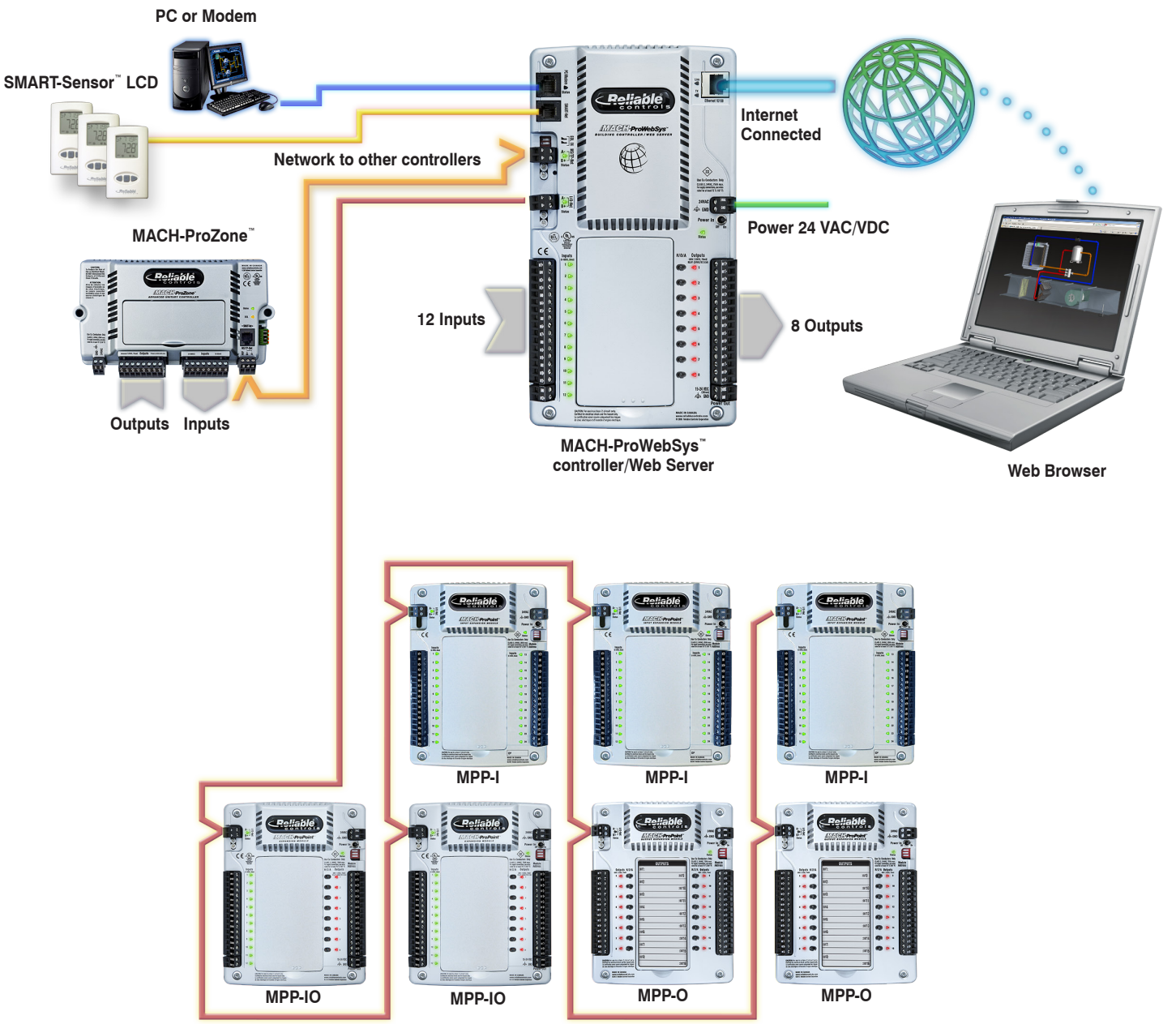
UM
- Universal output module (package of 10)

SS-RJ11TB-B, SS-RJ11TB-C
- SMART-Net breakout connector RJ-11 to terminal block

SS-X
- SMART-Sensor Network Expansion Board

© 2009–2016 Reliable Controls® Corporation. All rights reserved

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.

2011 AHR Expo® INNOVATION AWARDS Value Impact Application Honorable Mention

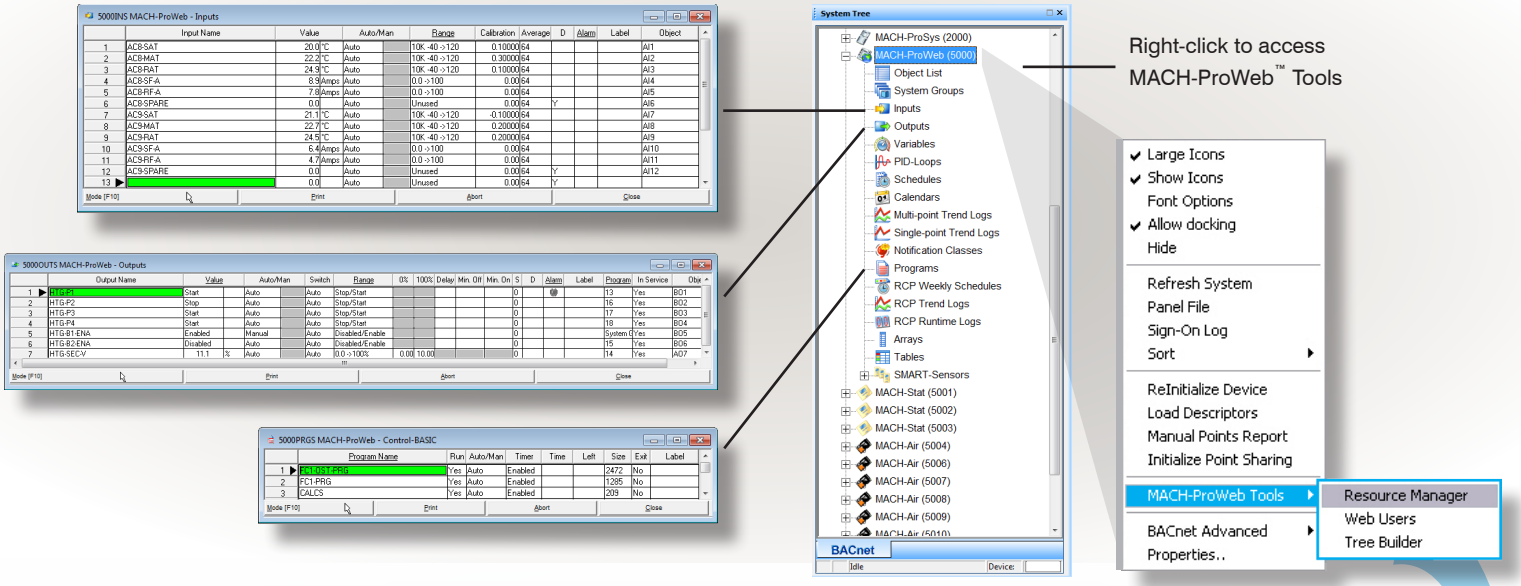
© 2009–2016 Reliable Controls® Corporation. All rights reserved

MACH-ProWebSys™

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.

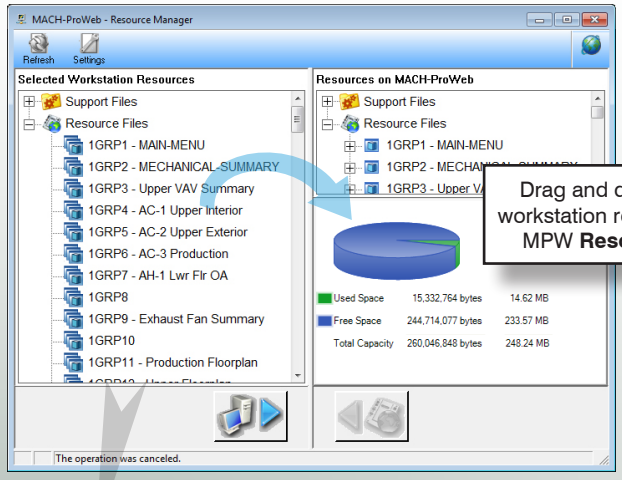
Field Controller

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).

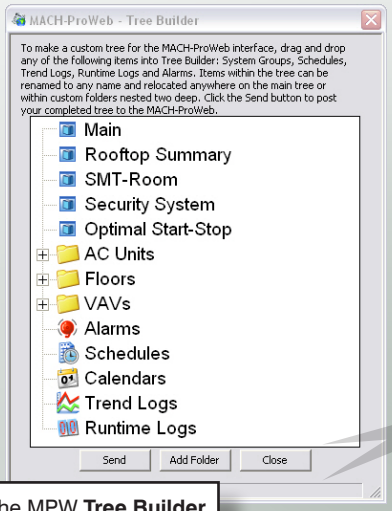


Web Server

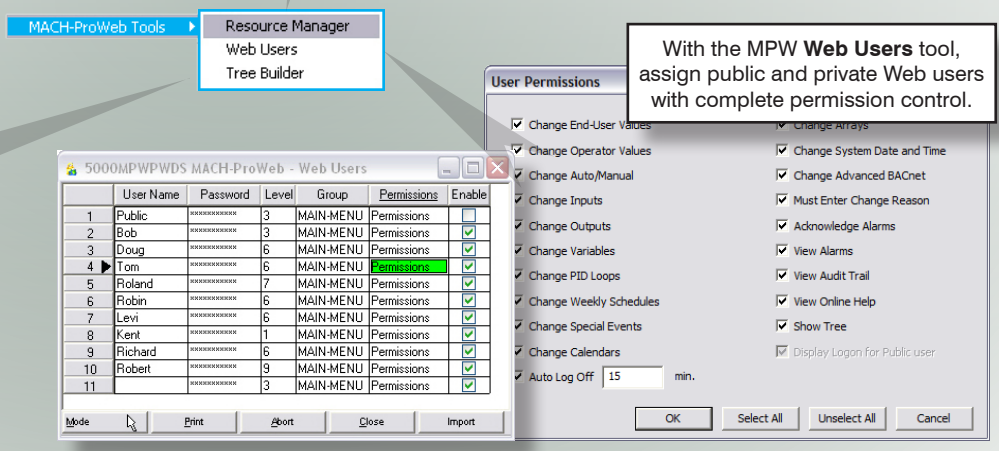
Using the MACH-ProWeb™ Tools in RC-Studio® 2.0, it is extremely simple to select and post resource files to the MACH-ProWeb™ and manage future changes.



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



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

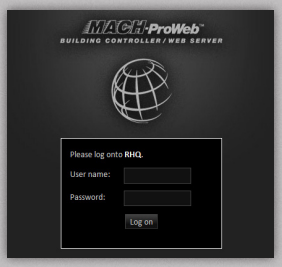


With the MPW **Web Users** tool, assign public and private Web users with complete permission control.

© 2009–2016 Reliable Controls® Corporation. All rights reserved

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.

© 2009–2016 Reliable Controls® Corporation. All rights reserved

Dealer Information:

© 2009–2016 Reliable Controls® Corporation. All rights reserved