BETTER BY DESIGN
Physical Benefits of
Reliable Controls Devices

THE ULTIMATE
Three-in-One Product:
the MACH-ProWebSys™

www.reliablecontrols.com

RUNtime

The Official Quarterly Newsletter of Reliable Controls® Corporation

Q2 - 2014

*The new & improved SS-L
...now with Backlight!*

Reliable®
c o n t r o l s

RUNtime

SMART-SENSOR WITH BACKLIGHT

Leave your flashlight in the truck!

Connect with your space.

A complement to any room, the Reliable Controls SMART-Sensor series delivers a communicating sensor solution that allows you to connect with up to ten configurable parameters related to your space – and the device now features a backlight to go along with the LCD screen!

The following options are now available with the SMART-Sensor:

- BL adds backlight
- CO2 adds CO2 sensor
- D adds °C/°F switch
- H adds humidity sensor
- IO adds 2 inputs and 2 TRIAC outputs
- L adds LCD display
- W specifies white color
- OC adds occupying sensor

Points configured in the SMART-Sensor are accessed using a three-button interface. The device features a three-line display to clearly indicate point name, point value, and equipment status. Six characters are used to display point name, four large digits show point value, and six icons are available to show equipment status. BACnet® objects connected to the Reliable Controls MACH-System can be accessed directly from the SMART-Sensor. Users can conveniently access the network using an RJ-11 connection located at the bottom of the SMART-Sensor. All SMART-Sensor models include an onboard thermistor.

Standard SSL features include the ability to:

- Display and adjust of up to ten points from any Reliable Controls MACH-System controller
- Network up to 16 sensors on a single SMART-Net network depending on the host controller type
- Access, view, and adjust data easily with the three-button interface and large, three-row LCD display
- Connect with all generations of MACH-System controllers (fully compatible)
- Sense temperature with a range from 0°C (32°F) to 40°C (104°F)

LCD screen with backlight

Three-button keypad

X-Port-2™ converter access port, two Allen screws

5 year warranty

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Better by design

The hallmarks of superior building controls

With nearly three decades of design experience, Reliable Controls has developed a passion for manufacturing superior building controls. In 1986, the inaugural release of the Burke1000 controller immediately raised the bar in the industry with the introduction of removal connectors, proportional LEDs for inputs and outputs, and easily accessible Hand/Off/Auto switches for outputs. These hardware hallmarks remained in place from generation to generation and were expanded upon to further improve controller resilience and field service life. Today the entire MACH-Pro and MACH-ProWeb series of controllers includes a number of quality hallmarks that make product installation and service simple, flexible and economical. Take a closer look at the Reliable Controls MACH-Pro and MACH-ProWeb building controllers and you will see, they are in fact, better by design.

Network protection
prevents damage caused by lightning strikes or accidental over voltage

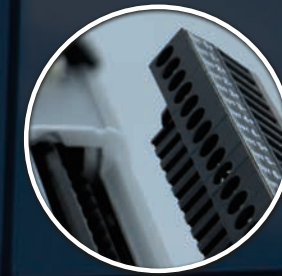**Proportional LED**
provides visual feedback on every I/O point

Steel sleeves
provide screw torque protection

Sturdy enclosure
protects circuitry

H/O/A switches
with software feedback

45˚ removable connectors
make wiring easy

Rising cage
provides superior wire termination

Circuit protection
provides over voltage and short circuit protection on inputs and outputs

Potentiometers
provide variable voltage to outputs in Hand

DIN mounting
makes installation easy for MACH-ProZone Controllers

NEXT GENERATION
OF DIFFERENTIAL PRESSURE MONITORING

RUNtime

SERIES MS2
MAGNESENSE® II DIFFERENTIAL PRESSURE TRANSMITTER

- Simultaneous current and voltage outputs with optional Modbus® and BACnet Communications gives flexibility in connecting directly to the BMS controller.

- Larger 5-digit LCD optional remote display tool and integral display incorporates the user selectable engineering units.

- Field-selectable pressure ranges can be converted to read air velocity or volumetric air flow directly.

Modbus® is a registered trademark of Schneider Automation, Inc.

MODEL UFM
CLAMP-ON ULTRASONIC FLOWMETER

- Completely obstruction free cross-section resulting in no pressure head loss.

- Minimal space requirement with two piece design that snaps directly on pipe.

- Easy 2 parameter programing, just enter pipe inner diameter, select pipe material and go!

- No measuring required with simple two digit separation code decreasing chance of error.

- Save installation time by easily moving clips to appropriate distance.

NEXT GENERATION
OF ULTRASONIC FLOWMETERS

Dwyer®

DWYER INSTRUMENTS, INC. WWW.DWYER-INST.COM | 800-872-9141
RIGHT CHOICE. RIGHT PRICE. RIGHT NOW.

NEW DEALERS

Sichuan Li Chi Environmental Science & Techn. Co, Ltd.
Chengdu City, Sichuan Province, China

Building Automation Solution Company, Ltd.
Ho Chi Minh City, Vietnam

Mesa Energy Systems, Inc.
Irvine, CA, USA

Neelands Refrigeration Ltd.
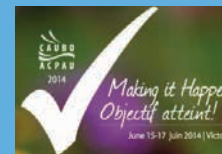Burlington, ON, Canada

Attendo, Inc.
San Juan, Puerto Rico

Sierra Controls, Ltd.
Kitchener, ON, Canada

LRL HVAC/R Solutions, Ltd.
Lacombe, AB, Canada

TRADE SHOWS

May 20–22, 2014
ARBS 2014
Melbourne Convention & Exhibition Centre, Melbourne, Australia

http://arbs.com.au
Booth #654/653

June 15–17, 2014
CAUBO Annual Conference
Victoria Conference Centre, Victoria, BC

http://web2.caubo.ca/annual_conf/2014/english/index_e.html
Booth #L28

June 25–26, 2014
West Coast Energy Management Congress
Washington State Convention Center, Seattle, WA, USA

http://energyevent.com
Booth: #511

EFFECTIVE ENERGY & WATER USAGE TRACKING

Kerr Controls Inc. updates the renowned Fairmont Empress!

The historic Fairmont Empress hotel is currently experiencing energy savings as a result of Reliable Controls Authorized Dealer Kerr Controls' recent efforts to update the aging controls system through reprogramming, with a strong focus on improved comfort and energy efficiency.

Located in the inner harbour of Victoria, BC, the Fairmont Empress opened in 1908 and is now one of the city's oldest and most famous hotels. The 51,096m^2 (550,000 ft^2) hotel has 477 guest rooms, two ballrooms, 22 meeting rooms, 4 restaurants, a spa, and an indoor swimming pool.

Kerr Controls Inc. recently completed this energy savings focused retrofit project, with the primary focus of reprogramming the sequence of operations for the mechanical equipment to achieve a higher level of savings. The uniqueness of the project is attributed to the sheer volume of data, including electricity, gas, and wastewater data, which the system collects for monitoring purposes.

The networked hardware in the Empress includes MACH-ProSys controllers with MACH-ProPoint expansions, as well as a MACH-ProZone component. Mechanical equipment includes boilers, air handling units, chillers, VAVs, heat pumps, spa pumps, and lighting.

The upgraded system greatly improved the client's ability to monitor and track energy and water usage, allowing stricter attention to be paid to efficiency.

The project work started in June 2012 and wrapped up by the end of October the same year. By the end of November 2013, the annual savings for electricity, gas, and water/wastewater totaled nearly $55,000, which more than paid for the client's investment in reprogramming.

The updated graphics, powered by RC-Studio, have created a more user-friendly system, while improvements to the programming have improved occupancy comfort and provide measurable energy efficiency.
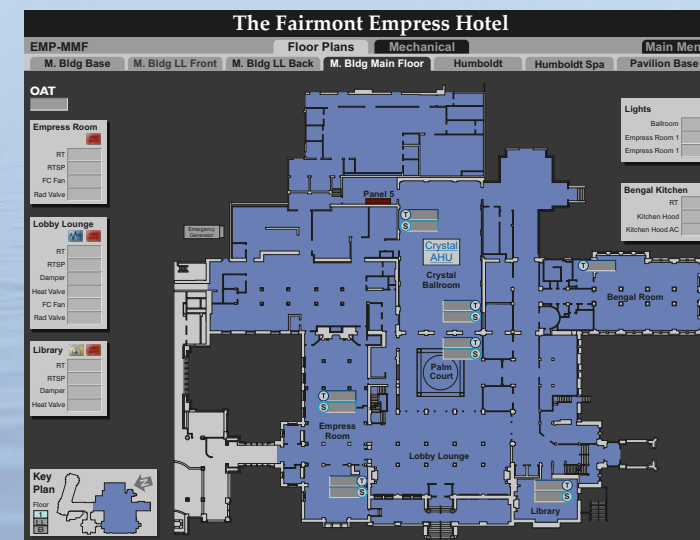
Kerr Controls Inc., a Reliable Controls Authorized Dealer based in Victoria, BC, specializes in the design and installation of building automation systems for energy management, building comfort, and efficient equipment operation. The Kerr Controls team offers a professional, one-stop-shop for building owners/operators by providing maintenance and repair services for building management systems and all the related mechanical and HVAC equipment.

The company was founded in 2001 by owner Mike Kerr, a controls industry professional for more than twenty years. Kerr Controls Inc. focuses on integrating software-driven digital controls with HVAC equipment to create building automation systems that operate to their full potential and maximum efficiency.

KERR CONTROLS INC.
Building Automation Specialists

THE ULTIMATE 3-IN-1 PRODUCT

Reducing inter-departmental inefficiencies while increasing functionality, the BACnet® B-OWS listed MACH-ProWeb controller provides the capability to quickly and easily publish building automation system information to the web with minimal demands on IT.

As Internet technology and building management systems rapidly advance, facility managers are often caught in the middle between satisfying facility management needs and adhering to IT security requirements; bridging the gap between two inter-departmental worlds with very different priorities. A practical and professional solution is now at hand to resolve this cross-functional concern.

The Reliable Controls® MACH-ProWeb™ controller is the first three-in-one device of its kind, providing the capability to quickly and easily publish building system information to the web, with minimal demands on IT. This product combines the field controller, configurable web server, and browser-driven workstation, all into a single device that's simple to use, flexible to engineer, and economical to acquire. The device features a unique combination of elements, amalgamating a BTL-listed BACnet® Building Controller, a BTL-listed BACnet Operator Workstation and a powerful web server, into a single package with the installed footprint of a typical building controller.

The MACH-ProWeb allows the facility management team to program and implement building controls processes just as it normally would, but instead of having to purchase server equipment and potentially infringe on sensitive IT procedures, the controller features its own built-in server that resides right inside the controller, and does not require a separate rack-mounted server in the IT department's domain.

This efficient set-up allows each department to independently manage their own equipment and procedures. The only requirement from IT is a local IP address on a subnet unique to the building management department. The controller ships with default port settings typical for the industry and often doesn't need additional configuration; the configuration of the controller makes set-up a very intuitive process.

By allowing IT and facilities management to keep equipment and procedures separate, the MACH-ProWeb provides the ideal, flexible and synergistic solution, perfect for streamlining web access to the building automation system.

As building automation systems evolve and continue to be integrated into inter-departmental procedures, an open and flexible solution is needed to overcome barriers and improve facility access, management, and efficiency. The Reliable Controls MACH-ProWeb controller illuminates the solution to cross-functional obstacles, providing a flexible, viable, and proven path for building control that every department will appreciate.

AT A GLANCE

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 gen. systems
- Modbus: supports both RTU & TCP in master & slave configurations
- SMTP: provides standard email communications for alarms
- SMS: GSM/GPRS modem
- SNMP: Simple Network Management Protocol

Browser Support
- IE 8, Firefox 3, Chrome 5, Safari 5, or greater
- JavaScript must be enabled 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
- Digital: dry contact
- Pulse counting up to 150 Hz (supports flow meters)

8 Outputs
- 12-bit D/A converter
- First four outputs are socketed to accommodate relay, TRIAC, or universal modules
- Analog: 1-12 VDC
- Binary: 0/12 VDC
- Manual ON provides adjustable 0-12 VDC (HOA only)

Field Controller

Every technician will be impressed with the flexibility and ease of use of this programmable field controller. A large dynamic database allows storage of an extensive array of points, including universal inputs & outputs, variables, PID loops, trend & runtime logs, schedules, sequence of operation, alarms, and a customized graphical interface. As a fully functional BACnet Building Controller, the device allows the facilities technician to easily access the tools to customize the controller.

Workstation

In addition to satisfying all the field controller requirements, this device has a built-in, BACnet Operator Workstation for day-to-day building operations. Using any standard browser on a PC or Mac, the facility manager simply enters the URL of the MACH-ProWeb controller and easily navigates through the system to access point values, alarms, schedules, trend logs, runtime logs, and audit trails from any controller on the network, including third party BACnet and Modbus devices.

Web Server

The workstation runs on a powerful, but compact web server built into the controller. To configure the web server, the facilities technician simply drags and drops selected workstation resources to the web server using the MACH-ProWeb Resource Manager. There is plenty of memory on the web server to store all the graphics and functionality of up to approximately 200 screens; more than enough for small- to mid-sized systems.

Better by design™

BUTCHART GARDENS

VICTORIA, BC, CANADA

TOURISM

CONTROLLING THE RENOWNED BUTCHART GARDENS

Butchart Gardens is a popular tourist attraction located in Victoria, BC, Canada on Vancouver Island. Butchart Gardens offers 22 ha (55 acres) of wonderful, floral displays visited by more than a million visitors each year, and is designated as a National Historic Site of Canada. The facility includes a show garden with restaurants, a cafe, a gift shop, and several outbuildings, greenhouses, and maintenance facilities.

PROJECT DETAILS

Butchart Gardens, a renowned tourist attraction in the capital of British Columbia, has performed their own controls work in-house since 1992. When introducing Reliable Controls devices, it was essential that many generations of DDC panels from a variety of vendors all work together seamlessly using current Reliable Controls software.

The networked hardware includes four MACH-ProSys, one MACH-Global, five MACH-Net, four MACH2, in addition to a variety third-party devices. All controllers are connected via either RS-485 or Ethernet via Cat 5 or fibre optic backbone. The mechanical equipment includes heat pumps, natural gas and electric E+ boilers, chillers with heat recovery to potable water, and remaining heat rejection to the irrigation loop. Challenges that were confronted and resolved included RS485 networking between several different buildings and hydro services. Optical isolators and fuses on the network provide protection to controller electronics.

The completed system allows Butchart Gardens to control and monitor a wide variety of systems from different locations, including workstations and smartphones, offering a high level of control while also providing energy savings.

To learn more about projects using Reliable Controls® visit
www.reliablecontrols.com/projects/overview

PROJECT TYPE:
New Construction & Retrofit

INSTALLATION TYPE:
Boiler, Chiller, Fan Coil Unit, Fume Hood, Geothermal, Heatpump, Lighting, Power Monitoring, Smoke, VAV, Water Monitoring

TOTAL AREA:
200,000+ m² (2,152,800 ft²)

EQUIPMENT INSTALLED:
4 MACH-ProSys™
1 MACH-Global™
5 MACH-Net™
4 MACH2™

NETWORK:
EIA-485, Ethernet, Fibre Optic, LAN, WAN, Wireless

INTEGRATION:
Reliable Controls Protocol

TOTAL SYSTEM POINTS:
1600

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BACnet