www.reliablecontrols.com

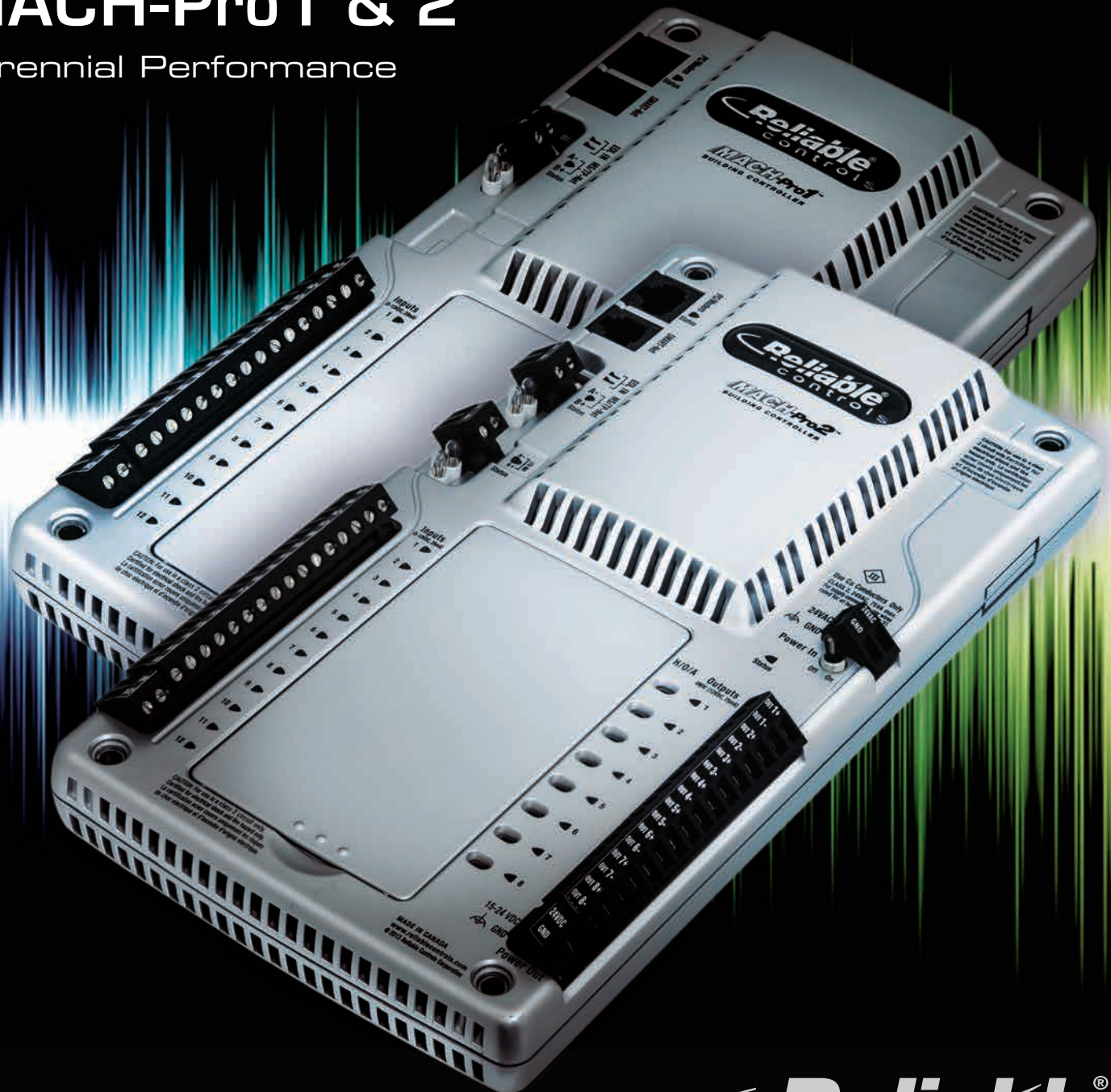# RUNtime

The Official Quarterly Newsletter of Reliable Controls® Corporation

Q3 - 2014

MACH-Pro1 & 2

Perennial Performance

Reliable ®
c o n t r o l s

MACH-Pʀo1 & MACH-Pʀo2

The New Workhorse Controllers of the Industry

Destined to be a workhorse of the industry, the Reliable Controls MACH-Pro1 is a rugged, flexible, and fully programmable BACnet® Building Controller (B-BC), ideal for mid-sized rooftop equipment or small mechanical room applications. Providing expanded capabilities, the MACH-Pro2 matches the MACH-Pro1 in ruggedness, flexibility, and programmability, and is ideally suited for large equipment and mid-sized mechanical room applications.
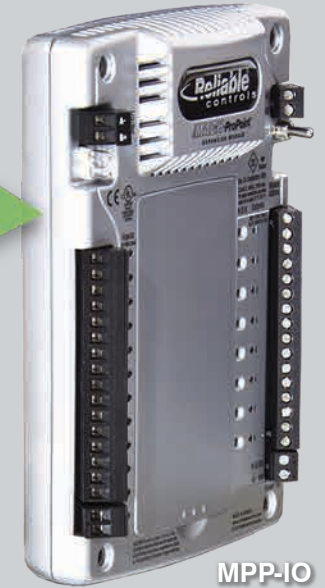
Features

- 12 Universal Inputs
- 8 Universal Outputs
- Optional HOA switches with position feedback
- Removable 45° connectors
- Proportional status LEDs on each input and output
- BACnet® MS/TP network connection
- EIA-232 PC/Modem connection
- Support for SMART-Sensors (MP1 supports 8 / MP2 supports 16)
- MACH-Pro2 provides expansion capability, accommodating up to three MACH-ProPoint expansion modules of any combination (e.g.: MPP-I, MPP-IO, and MPP-O)

MPP-IO

MACH-Pro1

MPP-I

MACH-Pro2

MPP-O

Ideal for MS/TP Rooftop Equipment or Mechanical Room Applications

SMART BUILDING TECHNOLOGY SPENDING
PROJECTED TO TRIPLE BY 2018

Smart building technology provides facility operators and occupants the ability to maintain comfort at a low cost by effectively using data collected from a wide variety of sources. A recent report released by IDC Energy Insights, Global Smart Buildings Forecast 2013–2018, projects spending in the global smart building technology market to grow from $6.3 billion in 2013 to $21.9 billion in 2018, representing a 28.4% compound annual growth rate.

Smart building technology is closely linked to sustainability, for which there is increasingly broad market awareness, and is also linked to business values aimed to deploy energy and cost saving solutions.

Over the next several years, adoption rates of smart building technology are expected to vary by region, with the most aggressive adoption in North America, Western Europe, and Asia/Pacific. Each region is spurred by different drivers, as North America primarily seeks to reduce and control energy costs, while much of Western Europe is driven by government-directed environmental and energy efficiency objectives, and Japan is primarily concerned with meeting energy supply challenges.

Prior to 2013, the global market grew slowly due to external factors such as less expensive electricity in several markets and a slow recovery from the economic downturn leading to deferred capital investments. Adoption is expected to recover as the economy continues to improve and energy costs remain variable. Additional factors in the adoption of these technologies include changes in business processes required for deployment and utilization, technical evolutions related to data-driven, performance tracking software, and an industry-wide move towards more open protocols aimed to extend the life of building automation systems.

Building automation systems are continuously evolving as the industry embraces more integrated systems based on emerging technologies over proprietary products. The trend of moving forward towards more open systems is, in part, due to the BACnet® protocol.

BACnet® provides the basis in which to grow the smart building industry through using proprietary products, as it allows interoperability between different manufacturers' products and promotes the protection of the investment in building controls. In the past, building owners were forced to replace entire systems when only a simple expansion was required, and were often unable to obtain competitive quotes for new projects because they were locked into a manufacturer's proprietary system. BACnet® resolved these issues by defining a basic set of rules for how and what building controllers could communicate.

An open standard protocol (ASHRAE Standard 135), BACnet® was built with a guarantee against obsolescence, as it can easily be extended with new features to meet the rapidly changing demands of the building automation industry, and it was designed to be extendable without altering existing capabilities. As a result, BACnet® controllers made today are interoperable with the controllers and workstations of the future. All controllers manufactured by Reliable Controls® use the BACnet® protocol as the primary method of communication and are tested and listed by the BACnet Testing Laboratory (BTL). BACnet® is here to stay: this year marks two significant anniversaries of BACnet® protocol; DIN EN

ISO 16484-5 celebrates ten years while ANSI ASHRAE 135 reaches an impressive twenty-year milestone.

Another factor promoting the growth of the smart building technology is the expanding volume of data required for more varied systems. In the past, building automation systems focused primarily on HVAC systems; however the industry is quickly expanding to include a variety of additional elements, all which work together to create the ultimate smart building technology user experience. It is evident that demand is quickly growing on a global scale and broadening the requirement for the types of data required.

With a variety of building automation systems in place around the world, there is a strong requirement for intelligent software to analyze the vast amounts of data being collected. Reliable Controls' RC-Reporter® software allows users to easily access archived building data from RC-Archive to make informed operational decisions. Software solution from Reliable Controls allow users to analyze trend and runtime data from any BACnet®, Internet-connected building and generate professional performance reports, quickly and accurately.

While data-driven software has been in demand for several years now, we have yet to reach the tipping point, as early adopters are largely impacted by the vertical industry; buildings managed in the government or healthcare verticals tend to be more mature in their appreciation of the benefits of smart buildings and

more advanced in their deployment. We are likely to see a shift in the near future as smart building technology becomes more globally commonplace, particularly in homes and private sector workplaces.

According to recent research by ON World, wireless sensor network technologies, a newer staple in smart building technologies, will enable 50 million smart homes and buildings worldwide by 2018. Smart thermostats are one of the fastest growing smart energy markets, currently used by 15% of the broadband and smartphone/tablet users surveyed by ON World, up from 9% in 2010. Annual shipments of wireless sensor network devices are expected to increase by more than 600% within the next five years, with the top three markets in energy management, smart lighting, and safety/security. This echoes the report from IDC Energy Insights, which also forecasts an uptick in areas including lighting, plug load, equipment maintenance, plumbing, and security, significantly expanding the smart building technology market.

With a focus on operational efficiency, energy savings, and occupant experience, Reliable Controls continues to design and develop new products that encompass the elements needed to evolve with the smart building industry.

> "As businesses recover following the Great Recession, building owners continue to focus on managing their operational energy costs and risks. Often, gathering building data is not the issue; rather, combining, interpreting, and prioritizing that data is becoming the key challenge. Smart building solutions are valuable technologies for deploying energy management strategies that generate operational efficiencies, cost containment, and sustainability benefits that appeal to key stakeholders across the chain of command in building management."
>
> Jill Feblowitz, Vice President, IDC Energy Insights

people & technology
you can rely on™

Comprehensive Training & Support

Everyone in the building automation industry knows the importance and true value of great technical support and Reliable Controls is no exception, offering extensive classroom and online training, as well as comprehensive technical support via phone, email, and the web.

Global Authorized Dealer Network

All sales, installation, and after-sales service is provided by an independent network of factory-trained Reliable Controls Authorized Dealers, offering exceptional local service for system design, quotations, installation, programming, commissioning, and after-sales support.

Effective Software Solutions

From mobile apps to advanced operator workstations, from wall-mounted interfaces to enterprise scheduling and reporting, Reliable Controls offers a host of effective, smart building software solutions.

Ultimate Network Flexibility

Reliable Controls products provide the ultimate network flexibility with support for Internet Protocol, Ethernet, MS/TP, Point-to-Point communications, Modbus, RTU & IP, SMTP, and SNMP.

Industry Recognized 5-Year Warranty

After designing and manufacturing four generations of building automation system products, Reliable Controls continues to proudly offer an industry-recognized 5-Year Warranty on all products.

ISO 9001 14001 QUALITY ENVIRONMENTAL ASSURANCE

5 year Warranty

Better by design

New Dealers

The following companies recently joined Reliable Controls as Authorized Dealers:

GRS Controls LLC
North Pole, AK, USA

GRS Controls is a independent technology-based facility automation contractor providing integrated facility management, environmental control, access, and security. GRS Controls provides complete turnkey services including design, installation, planned maintenance, and services for HVAC systems, commercial, industrial, and institutional markets.
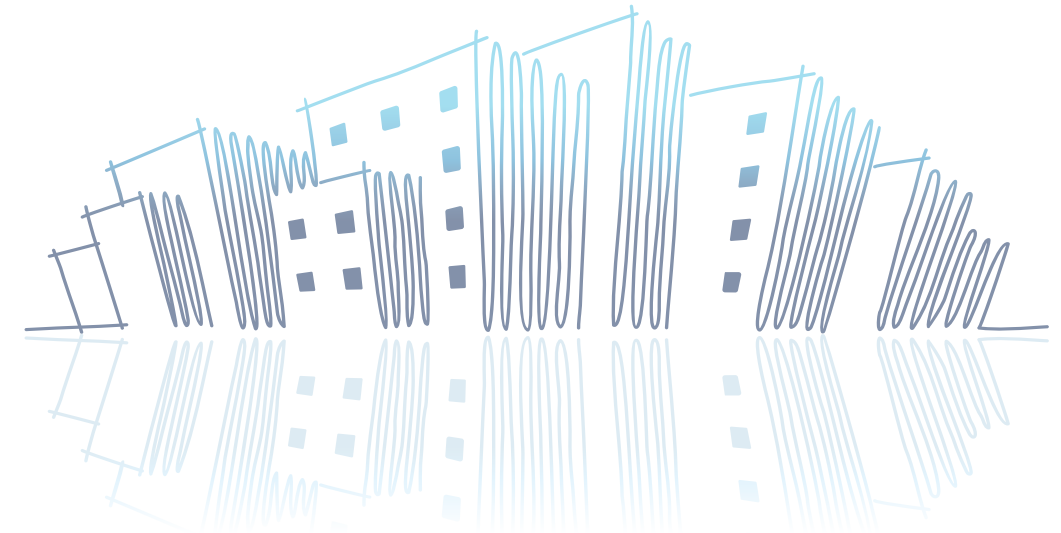
DICEC Inc.
Panama City, Panama

DIDEC is a Panamanian company with over 22 years of experience in refrigeration, electrical, and electro in the region of Panama and Central America. Services include design, consulting, and installation of HVAC systems, and other mechanical systems dealing with heat transfer and fluid.

Trade Shows

Visit Reliable Controls at the following trade shows:

BEX Asia — Build Eco Xpo
Building Today, Sustaining Tomorrow
1-3 September 2014
Marina Bay Sands | Singapore
Where Your GREEN Inspiration Begins

RMA Rocky Mountain APPA
BLAZE YOUR TRAIL SANTA FE, NM
September 22-24, 2014

AHR EXPO®-México 2014
MEXICO'S LARGEST HVAC/R EVENT
September 23 - 25 • CENTRO BANAMEX • MÉXICO D.F.

AFEC 2014
ADVANCED FACILITIES MANAGEMENT AND ENGINEERING CONFERENCE
September 24–25, 2014
Sports Authority Field/
Mile High Stadium
Denver, CO, USA

Jade Logic Ensures Occupational Comfort at CIGI Campus

The Centre for International Governance Innovation (CIGI) Campus, located in Waterloo, Ontario, is a hub for Canadian-based study and research in international affairs. Built on the site of the former Seagram Distillery, the 10,684 m² (115,000 ft²) campus is home to academic and research partnerships between the CIGI and other institutions, including the Balsillie School of International Affairs (BSIA).

The campus centres on a landscaped courtyard, offering a contemporary take on the traditional academic quad building. Highlighted by wood, glass and stone elements, the Oxbridge-style complex also features a signature bell tower and a wood-clad, 250-seat auditorium for academic and public events. This building is a campus for reflection, collaboration, and discussion of global issues.

Reliable Controls Authorized Dealer, Jade Logic Building Technologies Inc., completed a project for CIGI Campus, a facility, which has won numerous architectural awards for its design. The networked hardware in this project included a system located on the client's local area network and accessible through a dedicated VPN. The building utilizes both in-floor and ceiling radiant slab heating, in addition to ceiling slab cooling. A heat recovery chiller is utilized in the shoulder seasons and winter months.

This project presented several challenges, which were resolved through the implementation of the Reliable Controls MACH-System. The operation of the in-ceiling, chilled water systems required special dew point control to ensure that condensation on the surfaces would not be present during the cooling season. The building contains a full, theatre-style auditorium with acoustic silencing. Additionally, the exterior and center court area of the building includes floor to ceiling windows, which creates multiple heating and cooling loads on various faces throughout the year.

The successfully completed project provides close control of the building's heating and cooling system, ensuring the comfort of the occupants and energy efficient operation of the campus.

Jade Logic
Building Technologies Inc.

PROJECT TYPE:
New Construction

INSTALLATION TYPE:
Boiler
Chiller
CO² Monitoring
Fan Coil Unit
Heatpump
Lighting
Power Monitoring
VAV
Water Monitoring

TOTAL AREA:
10,684 m² (115,000 ft²)

TOTAL SYSTEM POINTS:
1200 points

EQUIPMENT INSTALLED:
60 MACH-Air™
6 MACH-ProSys™
6 MACH-ProCom™
6 MACH-ProPoint™
6 MACH-ProZone™

NETWORK:
EIA-485
Ethernet
LAN

INTEGRATION:
BACnet®
MODBUS

BERRY ARCHITECTURE + ASSOCIATES

RED DEER, AB, CANADA ADMINISTRATION

PROMOTING SUSTAINABLE OFFICE SPACE

This project transformed the former Red Deer Bowladrom into a sustainable, LEED® Silver targeted facility, housing Berry Architecture + Associates and Downey Roth Hrywkiw Fidek Chartered Accountants in an office space that features lighting, heating, and ventilation zones; open spaces with natural light; motion sensors for energy reduction; and a green roof featuring a patio, local plants, butterfly gardens, bee boxes, hummingbird nests, herb/vegetable gardens, solar panels, and water collection.

PROJECT DETAILS

Reliable Controls Authorized Dealer, Independent Control Services, Ltd. recently completed a project transforming an unoccupied bowling alley into a LEED® Silver targeted facility used for office space.

The networked hardware in this project included BACnet/IP communication and control of a third-party air handling unit, BACnet/MSTP communication of a third party humidifier, and BACnet/MSTP communication of all MACH-Air controllers to the MACH-ProWebSys. The mechanical equipment included 40 VAV boxes with MACH-Air controllers, 2 condensing boilers, and solar panels on the roof to allow for solar heating of domestic hot water.

The building's water usage is tracked and logged, and the facility reduces water usage by collecting rainwater for toilets. Natural gas usage is also reduced through the installation of solar panels on the roof. This project demonstrates that a small, professional business can have a huge impact on the environment. The space is comfortable to work in, pleasant to visit, and respectful of the environment, while acting as a model of how to marry beautiful, functional, and sustainable design in central Alberta.

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

PROJECT TYPE:
Retrofit & New Construction

INSTALLATION TYPE:
Boiler, CO_2 Monitoring, HVAC, VAV, Water Monitoring

TOTAL AREA:
8,000 m² (86,111 ft²)

EQUIPMENT INSTALLED:
1 MACH-ProWebSys™
2 MACH-ProPoint™
40 MACH-ProAir™

NETWORK:
EIA-485, Ethernet

INTEGRATION:
BACnet®

TOTAL SYSTEM POINTS:
170 points

RELIABLE CONTROLS® DEALER:
Independent Control Services, Ltd.

www.reliablecontrols.com

BACnet