



BIG IDEA CONTROLS
The MACH-System Hits
the Books at Eco-Library



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RUNtime

The Official Quarterly Newsletter of Reliable Controls Corporation

Q3 - 2012

Clearing the Air

How the **MACH-ProAir**
will breathe new life into the
green building movement



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QUALITY
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Reliable
controls

Clearing the Air

How the MACH-ProAir will breathe new life into the green building movement

60% of electricity in the United States and 40% worldwide is consumed by commercial buildings. Facility energy costs are on the rise while capital and operating budgets are under increasing scrutiny.

With energy efficiency and green construction near the top of national and global agendas, stringent energy standards were updated and published early this year by both the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) and the International Code Council® (ICC). Each publication committed to rigorous energy efficiency requirements for both residential and commercial buildings.¹

ANSI/ASHRAE/IES Standard 90.1-2012 and the 2012 International Energy Conservation Code (IECC) have promised a 30% reduction in energy costs over 2004 standards. Many of these cost savings are provided by overhauling traditional design strategies and sequences of control. When a 1°F reduction in mechanical conditioning delivers 2–3% annual energy cost savings, it's easy to see how modifications to the way we used to control our mechanical equipment can have substantial economic impacts.

Some of the changes to fundamental thinking include aggressive changes to temperature and airflow setpoints together with zero-energy deadbands in local zone and terminal unit applications. There are also new requirements for automatic scheduling, optimal start, unoccupied setback, zone isolation, demand control ventilation, and terminal unit discharge air temperature control.

Simple, logical Energy Conservation Measures (ECMs) like these are sure to reduce operating costs for facility executives facing increasing energy costs and poli-public green awareness. As industry leaders, these ASHRAE and IECC standards are sure to garner support among design engineers around the world.

One of the obstacles to this revolution and advancement is the prevalence of configurable DDC devices with “burned-in” specific application profiles. Many configurable devices have rigid, traditional sequences of operation and cannot be freely programmed to embrace new strategies.

Fortunately, the MACH-ProAir™ (MPA) advanced VAV controller continues the tradition of Reliable Controls® MACH-System intrinsic simplicity, flexibility, and cost-effectiveness. The inherent nature of the flexible models, dynamic database and easy, custom programmability make the MACH-ProAir™ an obvious choice for today's energy conscious VAV applications.

To further support the worldwide network of Reliable Controls® Authorized Dealers as they embrace these conscientious changes to traditional methods, the MACH-ProAir™ will be released complete with a library of standard applications that implement the energy conservation requirements and sequences of operation of ANSI/ASHRAE/IES Standard 90.1-2012 and 2012 IECC.

Product Highlights

- The flow and motor control algorithms are embedded in the MACH-ProAir™ firmware (The parameters used by these algorithms are hard coded into the controller's points.)
- Improved flow sensor can handle +/- 2 inches H₂O, better resolution and accuracy (Negative pressure is possible which makes new control applications possible.)
- The End-Of-Line (EOL) network terminator is a slide switch, a first for Reliable Controls®, making termination easy – an amber status LED shows the controller is terminated
- The SMART-Net port has the traditional RJ-11 connection and a new 4 pole large screw terminal block
- TRIACs are internally connected to a common terminal labeled “R~” (On MPA-12 models the TRIACs are internally connected to the 24 VAC terminal.)
- No configuration jumpers, all configuration items are handled in software
- Improved Motor Torque increased to 45Nm from 35Nm
- Automatic actuator calibration on power-up can now be disabled



Note: All MACH-ProAir™ certifications are pending.

NEW VICE PRESIDENT

SALES & MARKETING – AMERICAS

It is with great pleasure that Reliable Controls® announces Chris Gleason as the new Vice President, Sales & Marketing – Americas.

For the past decade Chris has had the responsibility of Regional Sales Manager for Eastern USA providing sales support and distribution development for some thirty Reliable Controls® Authorized Dealers in the region, and doubling the market share for the company every four years. Prior to joining Reliable Controls®, and after graduating from Seton Hall University with a major in business administration and marketing, Chris held a number of significant senior sales management positions with other automation firms including GE-FANUC Automation Distributors, Mitsubishi Electric Automation, and Basler Vision Technologies for North and South America.

In his new role as Vice President, Sales & Marketing – Americas, Chris will provide valuable advocacy and oversight for the company's existing and growing team of Regional Sales Managers as well as long-term sales and marketing planning for the entire Reliable Controls® Authorized Dealer network in North America, Central America, and South America.

Professionalism, articulation, and a passion for doing the right thing, are some of the key qualities that Chris imbues into his daily work, and come January 1, 2013, the company looks forward to seeing Chris step up into this new leadership role.

On behalf of the entire company, "Congratulations!"

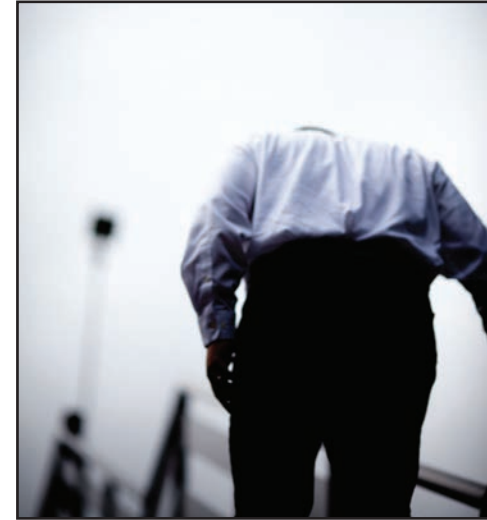


THE CHARITY NEWS

2012

Power To Be

Reliable Controls® raised over \$2,500.00 for the charity Power To Be which provides adventure-based programs designed for youth and families in need of support. Through a collaborative approach and caring staff, Power To Be inspires connections with nature and the discovery of limitless ability. Jutta Goebel, Chris Marshall, Debbie Knobel, and Richard Prevost participated in Power To Be's corporate challenge called Power to Play, an annual charitable outdoor adventure-based race of 35 teams (4 players per team). As an extra fund raising incentive for Power To Be, Tom Zaban bungy jumped at Wildplay Element Parks in Nanaimo, British Columbia. Overall, the 2012 charity event raised over \$130,000.00.



Times Colonist 10K GoodLife Race

In all, 39 employees, friends, and family members participated in the Times Colonist 10K GoodLife Race. For each Reliable Controls® employee who ran the race, Reliable Controls® donated \$50 to the charity of their choice.



Year-to-date, Reliable Controls® has made \$5,600.00 in charitable donations.

2011

A strong contingent participated in the Times Colonist 10K GoodLife Race in 2011. As well, Reliable Controls® raised \$7,250.00 toward Prostrate Cancer Research through our participation in the Movember donation drive.



2010

A strong contingent also participated in the Times Colonist 10K GoodLife Race in 2010. As well, a multi-month Reliable Controls Jeopardy Tournament culminated at the company's Christmas party between undefeated champions Ian McKenzie, Darren McQuitty, and David Brunsdon – the big winners being the SPCA.



New DEALERS

IFACTS

www.ifacts-llc.com
Alexandria, Ohio, United States

Chinacomm System

www.chinacomm.com.cn
Beijing, China

Xcell Mechanical Services

www.xcellmechanicalservices.com
Mackinaw, Illinois, United States

J & J Air Conditioning

www.jjair.com
San Jose, California, United States

RenewAge Energy Solutions

www.renewage.com
Culver City, California, United States

Delta T HVAC Solutions

www.deltathvac.ca
Saint John, New Brunswick, Canada

Ergon Caribbean

www.ergonpr.com
San Juan, Puerto Rico

Shaanxi Yate Installation Engineering

Xi'an, Shaanxi, China

TRADE SHOWS

Reliable Controls® will have a strong presence at the following trade shows.



CHES NATIONAL CONFERENCE

Palais de Congres de Montreal, Intercontinental Hotel
Montreal, QC, Canada
September 23-25, 2012

Booth #700

(www.ches.org/en/conferences-events/2012-conference.html)



NFMT VEGAS

BUILDING OPERATING MANAGEMENT'S
BUILDING OPERATING MANAGEMENT NFMT
Mirage Event Center, Las Vegas, NV, USA

October 02-03, 2012

Booth #424

(www.nfmt.com/vegas)



Healthcare Facilities Management Conference

Hotel Grande Chancellor
Hobart, TAS, Australia
October 03-06, 2012

Booth #TBA

(www.icebergevents.com/IHEA2012/)



BUILD Eco Xpo ASIA 2012

Marina Bay Sands Convention Centre
Marina Bay Sands, Singapore

October 10-12, 2012

Booth #J25

(www.efmabc.com)



TBIX Expo 2012

Place Bonaventure
Montreal, QC, Canada
October 24-25, 2012

Booth #108

(www.tbix.ca)



GREENBUILD 2012

Moscone Center
San Francisco, CA, USA

July 11-12, 2012

Booth #TBA

(www.oasbo.org/default/index/)



RC-STUDIO INSTRUCTIONAL VIDEOS



We are excited to post the first three videos in a new series dedicated to explaining day-to-day operation and configuration of specific MACH-System features. Ideal for customers, operators, and new technicians, these videos provide a succinct description of the feature and simple step-by-step instructions for configuration.

The first three videos focus on Direct Access, BACnet® Schedules, and BACnet® Trend Logs, and are available online in the Customer Training Center by following the Training Videos > RC-Studio link. Enjoy.

OPERATOR TRAINING CLASS

The Operator Training class is a two-day course, ideal for facility managers and operators who wish to derive maximum benefit from their MACH-System installations. Attendees should have computer experience and have regular operation of an RC-Studio® 2.0 workstation as part of their job description. The course includes database entry, alarm management, Control-BASIC programming, scheduling, Trend Logs, Runtime Logs, System Group graphics, and much more.

Contact your local Authorized Dealer to inquire about scheduling Operator Training in your area, or to participate in existing course dates.



October 12–13
Victoria, British Columbia, Canada

November 15–16
Vancouver, British Columbia, Canada



BUILDING CUSTOMER SATISFACTION

Reliable Controls® objective is to have the most satisfied dealers in our industry, and by extension, to have the most satisfied customers in our industry. To gauge our success with our customers, we use customer loyalty as our measuring stick, and by all accounts, we're building loyal relationships.

Our outstanding customer loyalty stems from our ability to be good listeners and to deliver practical, easy-to-use building solutions that are flexible, economical, and an excellent return on investment, year over year. Ultimately, it is our commitment to customer support that maintains customer satisfaction - projects completed by the Reliable Controls® Authorized Dealer network are backed by the best support in the industry. To create outstanding support, we begin with establishing a strong Authorized Dealer in your local area and provide uncluttered, customer-related communication channels.

DEALER TRAINING PROGRAM One of the requirements of the Authorized Dealer program is to keep technical staff trained on the use of Reliable Controls® products. To meet this requirement, technical staff need to be enrolled in the Reliable Controls® Certification Program, and maintain a minimum Level 3 certification.

REGIONAL SALES SUPPORT Reliable Controls® helps all dealers to succeed via Regional Sales Manager visits, consultant and end-user presentations, trade shows, and advertisements in national magazines.

PRODUCT USER GUIDES Each product released by Reliable Controls® is accompanied by a professionally crafted User Guide that walks the user through the product's capabilities.

ENGINEERING AND TECHNICAL SUPPORT All customers are only a phone call away from accessing the very engineers who designed and built the product installed at their facility.

All this to say... your environment is in good hands.



Controlling the BIG Ideas

In greater Melbourne, Australia, the 18 million dollar Hume Global Learning Centre – Craigieburn recently opened for business to provide and improve access to learning and employment opportunities in the local community. The two story centre is home to the Craigieburn Library, a café, gallery, occasional childcare facilities, Craigieburn Council's Customer Service Centre on the ground level, and a conference and training centre on the upper level. The centre will surely be a lively hub of activity for learning, socializing, sharing knowledge, and inspiring creativity.

Reliable Controls® Authorized Dealer, ElectCon, was awarded the contract to install the Building Automation System into the Hume Global Learning Centre – Craigieburn. The MACH-System installed by ElectCon features 630 points networked across three main controllers. The main floor is controlled by a MACH-ProWebCom™ controller that acts as the HTTP system server and quarterbacks two streams of functionality, each responsible for conditioning the main floor space by using a combination of MACH1™ and MACH-Air™ Variable Air Volume (VAV) controllers. Also present in the installation are two MACH-ProSys™ (MPS) controllers, one dedicated to the main floor plant and the other dedicated to the second floor. The main floor plant MPS employs Modbus to connect to both Mechanical Service Switch Board (MSSB) power meters that connect the ground and level 1 power meters – each meter measures power usage in its MSSB High Level Interface (HLI) and also connects to three MACH-ProPoint™ I/O modules for Chillers with two Variable Speed Drive (VSD) pumps and two boilers with two VSDs. The second floor MPS connects to nine MACH1™ controllers that are in turn connected to Air Handler Units (AHUs), as well as four MACH-ProPoint™ I/O modules for three Air Handler Units, 1 Plant Air Conditioner, 1 Air Conditioner, 1 Evaporative Cooler, two Kitchen Exhaust Fans (KEFs), and 1 Toilet Exhaust Fan (TEF). The entire facility is monitored through one Operator Work Station (OWS) using RC-Studio®.

The mechanical equipment installed at the Hume Global Learning Centre – Craigieburn consists of two York Air Cooled Chillers, two pumps to run water through the chillers, two pumps dedicated for the Heating Hot Water (HHW) of the AHUs, two pumps for the slab heating, two Laars Mighty Therm Non Condensing Boilers with two pumps, and 15 G.W. Walker Air Handling Units (AHUs). Variable Frequency Drives (VFDs) reside on the supply side fans for the AHUs which have fixed minimum air dampers, operate in economy cycles when appropriate, and maintain a static pressure, a dirty filter, a spill air fan, and PID looped HHW and Chiller Water (CHW), which gives run and fault status back from the Variable Speed Drive (VSD) and measures Supply Air Temperature (SAT), Return Air Temperature (RAT), and Room Temperature (RMT). All zoning is under floor. The floor diffusers allow the air to circulate into the space. MACH-Air™ (MA) controllers are mounted in this space and the air is then sent to a contained "open plenum".

In the main library, where there is no under floor, there are linear ceiling diffusers. Each zone is monitored for both temperature and CO₂ by Reliable Controls® SMART-Space Temperature devices (SST-CO2-O). Perimeter heating for the facility uses hot water coils connected to MA controllers. The computer room air conditioned and temperature monitored by a Variable Refrigerant Volume (VRV) split unit.

The facility features several innovative refinements that add to the building's efficiency. To start, the structure's external North side wall (summer sun) and an inside East wall of the library are made from rammed earth. Although the rammed earth walls delayed the project's completion by 4 months, their passive solar heating properties (a seemingly limitless capacity to absorb heat during the day and slowly release it during the night) have proven to be significant contributors to the building's overall energy-efficiency. The facility also features radiant floor heating in the main entrance lobby. Issues initially occurred with air movement when both the North and South doors were opened at the same time, but the radiant floor tempered this anomaly via the SSTs installed in the main lobby.

Reliable Controls® equipment installed at Craigieburn Library, Learning Centre and Gallery includes:

1	MPWC	4	SST
1	SST-O-L	7	MPP
2	MPS	15	M1
2	SST-O	24	MAH
		36	SST-CO2



ElectCon

www.electcon.com.au



WEBSTER DETENTION CENTER

AUGUSTA, GA, USA

PRISONS

THE BIG HOUSE

The Charles B. Webster Detention Center was completed in 1997 to increase the temporary housing capacity of the Augusta Sheriff's Office. A 12,815 m² (137,940 ft²) expansion project was completed in late 2011 which increased the inmate capacity with the goal of moving all detention, booking, and jail administration operations to the site.

PROJECT DETAILS

The 2011 expansion project required the construction of two new housing units, complete with medical/mental health facilities and video visitation center. An additional retrofit of the existing chiller plant replaced one fully-loaded Siemens Building Technologies MBC and one DPU controller with the Reliable Controls® MACH-System. As a central component of the 2011 expansion project, all Building Automation Systems at the facility are quarterbacked by Reliable Controls® MACH-ProSys™ controllers, utilizing MS/TP and Fiber communications. The upgrade, installed by SouthEast Automated Systems saw the installation of a comprehensive smoke control system for each housing pod and main corridors connected to a central fireman's override panel. The smoke control systems and fireman's override panel were pre-built by SouthEast Automated to include floor plans and LED functional overrides with command/control using a MACH-Global™ controller. The overall installation benefited system users by achieving a low controller count, access to the Internet for command control, and a simple and easily commissioned solution for a complex smoke-control sequence.

To learn more about projects using Reliable Controls® visit

www.reliablecontrols.com/projects/overview



PROJECT TYPE:

Retrofit and New Construction

INSTALLATION TYPE:

Boiler, Chiller, Fan Coil Unit, HVAC, Smoke

TOTAL AREA:

24,000 m² (258,340 ft²)

EQUIPMENT INSTALLED:

**1 MACH-ProWebSys™
2 MACH-Global™
7 MACH-ProSys™
8 MACH-Global™ Expansion Card
10 MACH-ProCom™
10 MACH2™ Smoke + Expansion
26 MACH2™ + Expansion**

NETWORK:

EIA-485, Ethernet, Fibreoptic

INTEGRATION:

BACnet®

TOTAL SYSTEM POINTS:

463 points

ENGINEERING CONSULTANTS:

Johnson, Laschober and Associates

RELIABLE CONTROLS® DEALER:

SouthEast Automated Systems

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