

THE **trend**

THE OFFICIAL QUARTERLY NEWSLETTER OF RELIABLE CONTROLS<sup>®</sup> CORPORATION



**enocean<sup>®</sup> alliance**



**Joining the Alliance**





## THE SUSTAINABLE ALLIANCE

*The EnOcean Alliance is a consortium of companies dedicated to providing automated solutions for sustainable buildings by employing energy harvesting wireless technology to make buildings more energy efficient, more flexible, and ultimately, more economic to run.*

To achieve this worthy goal, the EnOcean Alliance is working to further develop and promote self-powered wireless monitoring and control systems for sustainable buildings by formalizing the interoperable wireless standard.

If you have familiarity with BACnet, you will understand the concept of interoperability – think of EnOcean as wireless interoperability.

By manufacturing products according to EnOcean Equipment Profiles (EEP), the Alliance protocol ensures interoperability among HVAC/R devices of all EnOcean Alliance member manufacturers and support the development of a variety of solutions for building automation. Jointly produced by EnOcean Alliance members, currently available EEPs include switches, remote controls, sensors, sensor combinations, and data of every kind, not only for HVAC/R applications, but for other green building automation requirements.

EnOcean Equipment Profiles define the functionality of EnOcean-enabled equipment independently of manufacturer. To ensure interoperability between all EnOcean-based products, every manufacturer must provide a binding declaration prior to product release demonstrating that their solution meets the EnOcean Alliance specification through compliance with one or more EEP.

The new binding declaration is the first official specification to compile and publish the EEPs, paving the way for global proliferation of EnOcean technology driving the development and manufacture of new types of equipment. For users, the directive means that they have an even greater selection and more implementation possibilities as a result of a growing number of products and suppliers.

The Reliable Controls EnOcean family of products will initially support all the sensor-based EEPs (referred to as '4BS' types) as defined in the EnOcean 2.0 EEP standard.

The backbone of EnOcean's interoperable wireless standard is the 315 MHz radio frequency which is ideal for indoor applications. Lower frequencies such as the 315 MHz result in greater range – for the same signal strength, the 315 MHz band is less crowded than the more popular 2.4 GHz, 868 MHz, and 915 MHz bands. As far as crowd control is concerned, the 315 MHz frequency range is licensed for short data bursts from transmitters only, thereby reducing the risk of data collisions, and because 315 MHz is intended for low power devices, interference from distant transmitters is minimized. EnOcean's 868 MHz solution is mainly intended for Europe.

Because of its low power and short transmission times, the 315 MHz range is ideal for solar powered sensors that help to empower the sustainable solutions demanded by an environmentally-conscious marketplace. As was clearly evident at the 2011 AHR Expo recently held in Las Vegas, the building automation marketplace is awash with new and exciting wireless product offerings.

A group of companies across Europe and North America including EnOcean, Texas Instruments, Omnio, Sylvania, Masco, and MK Electric formed the EnOcean Alliance in April 2008 as a non-profit, mutual benefit corporation. The alliance is built around EnOcean's self-powered wireless radio technology which since 2003 has been installed in over 100,000 buildings worldwide, including Le Monde Headquarters (Paris, France), Telecom Italia Headquarters (Milan, Italy), Juwi Headquarters (Wörrstadt, Germany), Torre Espacio (Madrid, Spain), SAP Headquarters (Walldorf, Germany), Nestlé Headquarters (Paris, France), SMT Sandvik Headquarters (Sao Paulo, Brasil), Olympic Village (Whistler, Canada), Trudeau International Airport (Montreal, Canada), and Semper Opera House (Dresden, Germany). Market research company WTRS recently announced that EnOcean module shipments will reach \$1.4 billion by 2013 – the EnOcean Alliance has a very sunny future.

## Why go Wireless?

For the better part of the last decade, the BAS marketplace was inundated with a ringing chorus of demands for wireless technology solutions, but the initial offerings often came up short of the mark with the biggest knock against them being the lack of a truly batteryless solution. For the BAS industry, wired solutions trumped battery powered devices because of the man-hours lost to replacing dead batteries.

As wireless technologies slowly replaced household items and continued to prove themselves in the general marketplace, the confidence in wireless BAS solutions began to grow. With the advent of truly batteryless and wireless technologies, Reliable Controls was ready to join the wireless/batteryless revolution.

In addition becoming a proven technology, wireless/batteryless solutions offer several advantages over wired solutions, especially in non-evasive retrofits, including:

- Lower cost,
- More robust configuration, and
- Controller I/O expansion.



# ZEN OCEAN

*No Wires. No Batteries. No Limits.*

The EnOcean Alliance has the largest installed base of field-proven wireless building automation networks in the world and Reliable Controls® is honoured to join their ranks with the release of an entirely new product line based on the EnOcean chipset.

The Reliable Controls® family of EnOcean products currently consists of two devices, that when used together, can facilitate wireless EnOcean communication into any existing MACH-System without the need of software upgrades.

The SPACE-Sensor™ EnOcean (SSE) is a wireless and batteryless transmitter that resides in the occupant space. The SSE uses a photovoltaic cell to convert solar energy into electrical energy that is stored in the device. A fully charged SSE will continue to function in complete darkness for up to 7 days. Transmission rates can be DIP switch selectable from every 10, 60, or 100 seconds. Transmission distances can be from a maximum of 30 m (100 ft) line of sight, or 10 m through two commercial drywall walls or a single slab of commercial concrete flooring.

The SMART-Sensor™ EnOcean Accesspoint (SSEA) is a transceiver that connects directly to any SMART-Net network. The SSEA can be added to any existing SMART-Net network and there is no need to upgrade firmware or software. Each SSEA can learn up to 18 different wireless points. Depending on the type of MACH controller used, 2 to 8 SSEAs can reside on the controller's SMART-Net.



SMART-Sensor™ EnOcean Accesspoint



SPACE-Sensor™ EnOcean



## New Dealers

### *Neptune Electrical & Contracting*

PO Box 16930  
Ajman  
United Arab Emirates

### *Tyko Mechanical*

11547 N Warren St  
Hayden, ID 83835  
United States

### *Riley and Associates*

1220 W Goodale Blvd  
Columbus, OH 43212-3789  
United States



## Upcoming Trade Shows

BOM's NFMT 2011

**NFMT**



**BOM's NFMT**  
Baltimore Convention Center, Baltimore, MA, USA  
March 15-17, 2011  
**Booth #649**

(<http://www.nfmt.com/default.asp>)

Globalcon 2011

**GLOBALCON**



**GLOBALCON 2011**  
Pennsylvania Convention Center, Philadelphia, PA, USA  
March 30-31, 2011  
**Booth #401**

(<http://www.aeepgrams.com/globalcon/>)

China Refrigeration 2011

**中国制冷展 2011**  
CHINA REFRIGERATION



**CHINA REFRIGERATION 2011**  
Shanghai New International Exposition Center, Shanghai, China  
April 7-9, 2011  
**Booth #E5E11**

(<http://www.cr-expo.com/en2009/Default.asp>)

## LIKE US

Did you know we have a facebook page?

Here is the link to the page...

<http://www.facebook.com/pages/Reliable-Controls/107354670114>

This is a good way to socialize with Reliable Controls® employees and authorized dealers and others in our industry.

If you like what you see, don't be shy, click the Like Us button.



## AHR EXPO

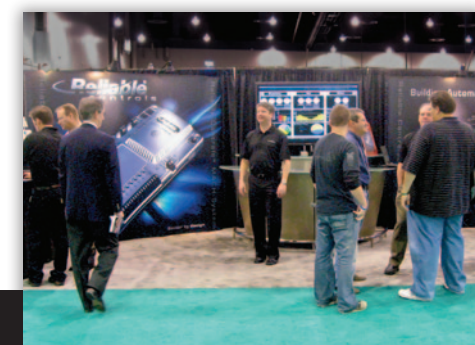
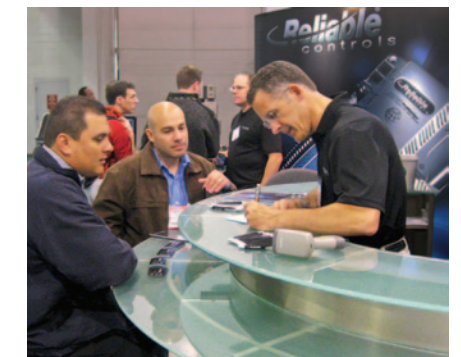
## The Really Big Show

For the first time in its 63 year history, the AHR Expo was held in Las Vegas, Nevada, and despite the 29 degree Fahrenheit evenings and high winds, the show attracted over 34,000 attendees from 31 countries and was hailed as a great success, clocking in as the third largest AHR Expo ever!

For Reliable Controls® the show was very good. With five sales and marketing staff, and five members from R&D, the ten-person team remained highly engaged for the majority of the show, promoting the newly released MACH-ProWeb™ and touch-screen panel, and the soon to be beta tested SSE and SSEA series of EnOcean wireless products. Despite the show organizers decision to locate the Building Automation and Control showcase in the most remote hall of the convention center, far from the main entrance of the main hall, attendance to the Reliable Controls® booth was still very good.

Many new potential end-users and engineers spoke with Reliable Controls® staff, and admired the excellent graphics and animations that ran continuously on the high resolution 65-inch monitor. Our Regional Sales Managers will remain busy over the next month working with the Authorized Dealer network to follow up on the new leads from the show.

A nice hospitality was hosted by the company on the 104<sup>th</sup> floor of the Stratosphere tower. Approximately 150 guests enjoyed a mostly standing room only dinner, while socializing, and learning more about the unique culture of Reliable Controls®.



## Big Protocol on Campus

The University of Adelaide, Australia, has fully embraced the interoperability of the BACnet protocol. The five campus institute began their journey toward BACnet® after a core audit/review conducted by Systems Design Engineering on the university's North Terrace campus concluded that all BMS systems communicate on a dedicated V-LAN network. The V-LAN network was later expanded to include all campus locations.

The core review also revealed the necessity to use "open protocols" to enable a building-by-building system integration. Protocols identified in the core review included BACnet®, OPC (OLE for process Control) and others. Over the years, the university had employed a number of BMS systems that included proprietary protocol manufactures, and high level protocol integration gateways. After reviewing the suppliers of many BMS systems and the local support for these products, the university selected BACnet® as their choice for a *standard* open protocol. To ensure transparent, competitive and open bidding on university projects, a review process was used to qualify which companies were allowed to bid.

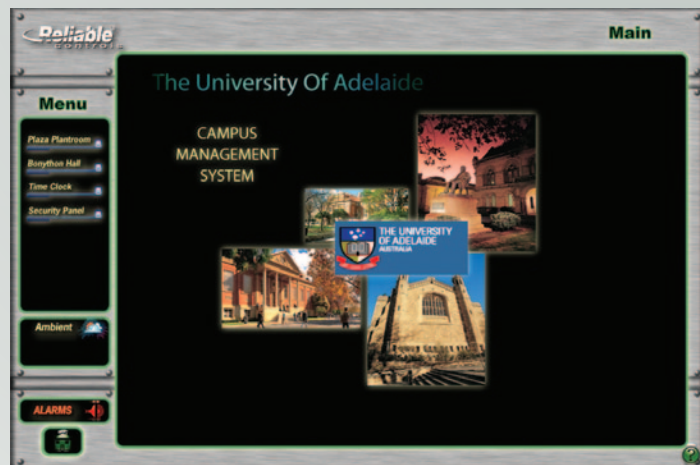
Austec Building Automation of Adelaide, SA, a local Reliable Controls® authorized dealer, was selected as one of the companies allowed to bid on BMS work at the University of Adelaide. Austec Building Automation was chosen because of their years of experience working with BACnet systems and their depth of resources available to directly support the university.



The audit/review conducted by Systems Design Engineering predicted an energy savings of approximately 1,700,000 kW.hr per annum for the North Terrace Campus. At present, Reliable Controls® products are installed at three of the university's five campuses. Typically, building operators have access to the system via a browser interface. At a higher level, operators have access across multiple campuses. Since all of these systems use the BACnet® protocol, data may be coming from multiple manufacturer's BACnet® devices.

The University of Adelaide encompasses five major campus locations in and around Adelaide, SA:

- North Terrace campus with 49 owned buildings covering 134,000 (Usable Floor Area) UFA sq. metres, 8 heritage rated,
- Roseworthy campus with 152 buildings covering UFA 61,000 sq. metres, 5 heritage rated,
- Waite campus at 69 buildings covering UFA 67,000 sq. metres, 10 heritage rated,
- Therbarton campus with 27 buildings covering UFA 20,00 sq. metres, 6 heritage rated, and
- National Wine with 4 buildings covering UFA 3,800 sq. metres, 3 heritage listed.



## Revisiting the Promise of Green Cities

In the Q3 edition of the Trend in 2008, we highlighted cutting-edge visions of a possible future – the promise of green cities. Three years on, one of our subjects has taken remarkable strides...

MASDAR CITY, UAE - In 2008, the United Arab Emirates was still the darling of the world's construction stage with over a third of the world's cranes hard at work building artificial islands, an underwater hotel, and the world's tallest building, biggest mall, and most expensive airport. Lost in the hype of dinosaur-sized fossil fuel growth, the United Arab Emirates officially broke ground back in 2008 on the world's most sustainable city - Masdar City, a \$22 billion initiative to construct from scratch a brand new, zero-emissions city that would grow to be the home of 50,000 inhabitants on the blanched outskirts of Abu Dhabi.

With a per capita ecological footprint larger than the United States, the United Arab Emirates are currently one of the most energy demanding places in the world, but to the Emirates' credit, the seeds of sustainability have been planted in the sand - buildings now exist and human bodies now occupy sci-fi spaces. What seems to be missing from Masdar City though, is the much anticipated power source to drive the project's "carbon-neutral, zero-waste" mandate. The official Masdar City website ([www.masdar.ae](http://www.masdar.ae)) is long on artist's impressions of eco-city spaces and even feature a few photos of buildings constructed to date, but all eyes eagerly await the power source.

It remains to be seen whether Masdar City is a first step toward genuine sustainable development in the Gulf region, or a greenwashing of the Emirates' black gold rush days. What is clear from the observation deck on the 124<sup>th</sup> floor of the world's tallest structure ever built, Dubai's Burj Khalifa, is that the Emirates didn't build an artificial island in the gulf, they built two of them – they have a proven track-record with big projects.



Various views of the Masdar Institute Building and the Knowledge Centre, Masdar City, UAE

# Innovative Products for the *Independent Dealer*

Reliable Controls® is proud to be in a unique position to have an independent Authorized Dealer network that provides valuable input into product development – the results speak for themselves...



## BTL Product Listings

Reliable Controls® has been a strong proponent of BACnet® since April of 1996.

As a reflection of this commitment, to date, all of our controller products are BTL listed.

BACnet | TESTING | LABORATORIES

- BTL Listings
- Product Catalog
- Archived Listings
- What is BTL?
- BTL Mark Benefits
- BTL Mark Usage
- Device Testing
- Test Capabilities
- Test Documentation
- Developer Resources
- Fee Schedule
- Pre-testing Tools
- Contact Information
- Coming Events
- FAQ & Help

### BTL Product Listings

**Reliable Controls**  
[www.reliablecontrols.com](http://www.reliablecontrols.com)

[Manufacturer's Product Catalog](#)

---

[BACnet Operator Workstation Software \(B-OWS\)](#)

Product	Model	Version	BTL Listing
RC-Studio 2.0	RC-ST2	Update 1.50	June 2009

---

[BACnet Building Controller \(B-BC\)](#)

Product	Model	Version	BTL Listing
MACH-ProCom B-BC	MPC	7.11	October 2008
MACH-ProSys B-BC	MPS	7.11	October 2008
ETHER-Link Portal	EL	6.51	August 2005
MACH-Client B-BC			

Click the BTL Testing Labs tab for a complete list of our BTL-listed products...

[www.bacnetinternational.net](http://www.bacnetinternational.net)

# CRANWEST FARMS

DELTA, BC, CANADA

AGRICULTURE

## WIRELESS ON THE FARM

A well established 300-acre cranberry growing operation, Cranwest Farms is situated in Burns Bog, the largest domed peat bog on the west coast of North America.

## PROJECT DETAILS

At Cranwest Farms, an elaborate underground irrigation and water management system is required to protect the crop from frost, provide crop irrigation and chemigation, and to control tail water recovery, surface runoff, flood control, and water management for harvesting. Pumps range in size from 20–250 HP.

Punctuated throughout the 300-acres are twelve station locations, each of which employs MS/TP topology to translate data to Dual Protocol IP and broadcast via 2.4 GHz wireless bridges to two 90-degree sector antennas installed back to back on a 48-foot tower in the center of the property. A 5.8 GHz RF *back-haul link* connects all stations to the central station where access to the Internet and the OWS is installed.

The Cranwest Farms installation of a Reliable Controls MACH-System is unique in its implementation of wireless Dual Protocol IP RF segments to link remote pump station controllers to a central station for monitoring and control. Major savings for Cranwest Farms are realized in better *stress management* for the staff, especially during the critical frost protection stage of the growing cycle. The operation can now be monitored *offsite*, as the system will email alerts and alarm messages for all phases of the operation.

To learn more about projects using Reliable Controls®, visit [www.reliablecontrols.com/projects/overview](http://www.reliablecontrols.com/projects/overview).



### PROJECT TYPE:

Retrofit & New Construction

### INSTALLATION TYPE:

Power Monitoring, Pump Control, Security, Water Monitoring

### TOTAL AREA:

1.2 Million m<sup>2</sup> Net Growing Area  
(13.1 Million ft<sup>2</sup> Net Growing Area)

### EQUIPMENT INSTALLED:

1 MACH-ProCom™  
1 MACH-Stat™  
5 ETHER-Link™  
5 MACH2™  
6 MACH-ProSys™  
10 MACH2X™

### NETWORK:

Ethernet, EIA-485, LAN

### INTEGRATION:

BACnet®

### TOTAL SYSTEM POINTS:

276 points

### RELIABLE CONTROLS® DEALER:

Lange Installations Ltd.

