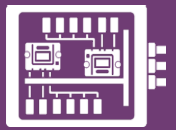




RELIABLE CONTROLS
One of Canada's Greenest Employers

CUSTOM LIGHTING CONTROL PANELS
Learn about our lighting control panel shop



reliablecontrols.com

RUNtime

The official quarterly magazine of Reliable Controls

Q3 - 2020

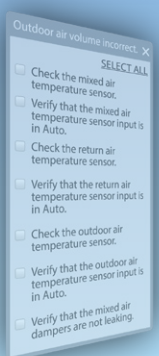
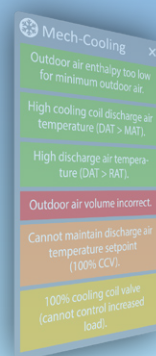


RC-WebView®

3.13



Reliable analytics



PRESIDENT'S MESSAGE

Operational resilience



Tom Zaban, P.Eng, LEED Green Associate

Resilience is a word many of us have heard bandied about in our industry. But if ever there was a time it had more impact to more people around the world, it's now.

As a building owner and a facilities operator with multiple sites in multiple countries, Reliable Controls has faced unique challenges in our effort to keep our staff safe and productive in the COVID-19 global pandemic. In British Columbia, Canada, for example, all employers are required by law to prepare and implement a COVID-19 safety plan. The plan ensures employers develop and implement guidelines and policies that address issues such as working from home, facilities access and occupancy control, physical distancing, engineered controls, cleaning and hygiene practices, and the availability of personal protective equipment.

Until an effective vaccine is widely available, many employers will likely maintain a core group of employees who work from home. But for those who need to occupy schools, hospitals, offices, and factories, managing the occupancy of the built environment during a pandemic has its challenges. Collaborative software platforms such as Microsoft Teams are helpful for maintaining remote staff productivity, and features such as Chat can be effective for documenting employee attendance. Establishing

a scheduled time each working day for staff to check in with managers and post a simple "here I am" chat message is an almost-effortless method to record attendance and stay in touch.

Mobile services such as Microsoft Power Apps allow you to easily configure, control, and document the approval process for remote employees who occasionally need to gain access to specific areas of your building. Approvals can consider not only basic justification for entry but also occupancy densities, conflicts with adjacent employees, and scheduling of contractors. Engineered controls such as plexiglass dividers have become popular temporary solutions where physical distancing cannot be maintained. Where tightly spaced cubicle partitions exist, clear wall height extensions can provide a permanent barrier that minimizes the spread of the current contagion and any future viruses. The American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) offers helpful resources on its website that describe engineered interventions, such as MERV 13 filters and maintaining relative humidity between 40 and 60 percent. And of course, having secure remote access to your integrated HVAC, lighting, and security systems allows you to monitor the pulse of your facilities at all times and can help you to continually optimize operational performance while maintaining occupant safety and comfort.

COVID-19 has imposed many immediate and unplanned changes in how we regulate occupancy in our facilities. We should not be surprised if our current activities result in modifications in future building codes, municipal bylaws and regulations, or clauses in occupancy permits or insurance policies. Designing for operational resilience is an important concept in the green buildings industry. COVID-19, despite its horrific and tragic impact, is underlining one more reason why building owners and operators need to be empowered to stand at the helm of sustainability. Reliable Controls and the Reliable Controls Authorized Dealer network are here to help. Please reach out and let us help you improve your operational resilience.

*People and technology
you can rely on™*

RELIABLE CONTROLS NAMED ONE OF CANADA'S GREENEST EMPLOYERS

Reliable Controls is pleased to be one of Canada's Greenest Employers. Reliable Controls provides simple, flexible control systems that balance the comfort, efficiency, and sustainability of buildings around the world. Our commitment to a triple bottom line of people, planet, and profit informs all aspects of day-to-day operations, including the provision of a healthy, socially responsible working environment.

We believe in the importance of social responsibility and giving back to the community. In pursuit of this goal, Reliable Controls offers team members up to 16 hours of paid time off per year to volunteer for any approved registered charity.

Reliable Controls is proud to be an ISO 9001- and 14001-certified organization. We use a quality and environmental management system to assist with the environmental objectives of the business, and as part of our commitment to LEED certification, we have implemented a sustainable purchasing policy.

The products we manufacture in Victoria follow the WEEE, RoHS 2, and R2 directives, which set collection, recycling, and recovery targets for electrical goods and restrict the use of certain hazardous materials in electrical and electronics products. Our robust composting and recycling program diverts waste from landfills and helps reduce our environmental impact.

Canada's Greenest Employers, an initiative of Canada's Top Employers, recognizes employers that lead the nation in creating a culture of environmental awareness. Winning employers are evaluated on four main criteria:

- Their unique environmental initiatives and programs
- The extent to which they have been successful in reducing their environmental footprint
- The degree to which their employees are involved in these programs and whether they contribute any unique skills
- The extent to which these initiatives have become linked to the employer's public identity, attracting new employees and clients

Reliable Controls employees conclude their work at the end of each day knowing their work matters both to them as individuals and to the health of the planet.



RC-WebVIEW 3.13

Browser-based building-management software

NEW IN RC-WebVIEW 3.13

New in RC-WebView 3.13 are options that provide for compliance with Title 21 CFR Part 11, which establishes US FDA regulations for the consideration of electronic records and signatures as trustworthy, reliable, and equivalent to paper records. Reliable Controls Authorized Dealers work in industries and regions already impacted by this regulation and many others for which similar legislation is expected, both in the United States and beyond. Title 21 CFR Part 11 has significant implications for pharmaceutical, medical device, biologic, biotech, contract research, and other regulated industries. RC-WebView 3.13 equips Reliable Controls Authorized Dealers to provide simple, flexible, sustainable and accountable solutions for these environments.



New capabilities

The following new RC-WebView features align with the requirements of Title 21 CFR Part 11:

- Digitally signed audit logs to ensure authenticity.
- Second approval for security changes.
- Printout watermark security option.
- Automatic password expiry trigger after a specified number of days.
- Option to lock out a user account after a specified number of failed logon attempts.
- Improved security support to include TLS 1.2.



Audit trail filtering

Event data in the Audit Trail worksheet is now automatically filtered in relation to what you are currently viewing. For example, if you are viewing a System Group, the Audit Trail worksheet now shows changes to all points included in the System Group. Filtering by context is applied when you open the Audit Trail worksheet while viewing Enterprise Schedules, System Groups, Workstation Groups, Navigation Groups, RCP weekly and annual schedules, runtime reports and logs, trend logs, Multipoint and Single-point Trend Log worksheets, Point Report worksheets, and BACnet schedules and calendars.

Enforce Change Approval

When you select Enforce Change Approval on the Enterprise Website Settings page (Figure 2), all entries in the audit trail are now digitally signed to ensure authenticity. In the Audit Trail worksheet, the Validated column includes check marks for entries with a valid signature, and when you export the worksheet to Excel, the exported file contains a data sheet and signature sheet.

Change Approval

☒ Enforce Change Approval

Approval password required for system changes every minutes.

Figure 2: Enforce Change Approval area on the Enterprise Website Settings page.

Enterprise Schedule Queue

Enterprise Schedule updates occur in the background while you work. RC-WebView now includes the Enterprise Schedule Queue (Figure 1), which allows you to view and export a list of pending and failed Enterprise Schedule sends. Failed sends are indicated with red text. Hover over or click a failed send to display a dialog box with details about why the Enterprise Schedule failed to send.

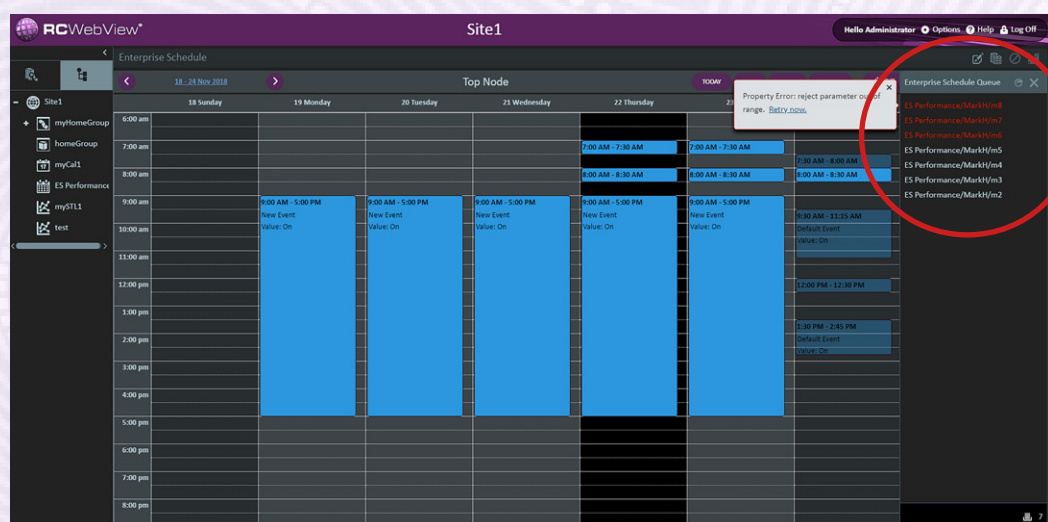


Figure 1: Enterprise Schedule Queue.

Building management solution

RC-WebView is an easy-to-use browser-based building management solution that allows you to efficiently manage any BACnet internet-connected building automation system. RC-WebView 3.13, our latest release, includes a number of new features that make the software more efficient and easier to use.

RC-WebView 3.13 now provides support for solid-color backgrounds with configurable dimensions, element layering, static images, and Landing Pads in enhanced System Groups. You can also create, modify, and delete individual Point Reports.

Harness the power of a simple interface to connect multiple independent control systems into a single Enterprise Website. Managing your building operations has never been easier.

Learn more about RC-WebView:
reliablecontrols.com/products/software/RCWV

Custom lighting control panels

Reliable Controls is a UL 508A—certified custom lighting control panel manufacturer.

Reliable Controls launched the MACH-ProLight in early 2019. With the release of this advanced lighting controller, we began building custom lighting control panels to simplify installations for technicians, and we quickly became a UL 508A—certified panel manufacturing shop.

Authorized Dealers can order a MACH-ProLight controller as part of a customized, factory-wired lighting control panel—a complete assembly of controls and switching relays wired and ready for installation. Panels are built to order and allow a mix of dimming and switching circuits specific to a lighting control strategy. Dealers can select their preferred MACH-ProLight controller model, relay quantity, and wiring details during the order process. The custom-built panel will arrive ready for Class 1 and Class 2 field terminations.

Panels come with printed wiring details affixed to the door. Electrical conduit knock-outs are positioned for high- and low-voltage wire entry, and installers can use a low-voltage breakout panel for terminating field devices. Dealers choose a flat-surface or hinged panel door, or simplify an installation by removing the backplate and wiring assembly from the enclosure.

Each panel we build is installed in a NEMA 1 enclosure with full separation of Class 1 circuitry, providing protection to both the installer and the equipment. We assemble lighting control panels in a dedicated UL 508A—certified shop at our manufacturing facility in Victoria, Canada.

Available in three sizes

Reliable Controls lighting control panels have room for up to eight relays, up to 32 relays, or up to 64 relays. Panels include a 24 VAC transformer that can accept 120/240/277 VAC or 120/347 VAC inputs.

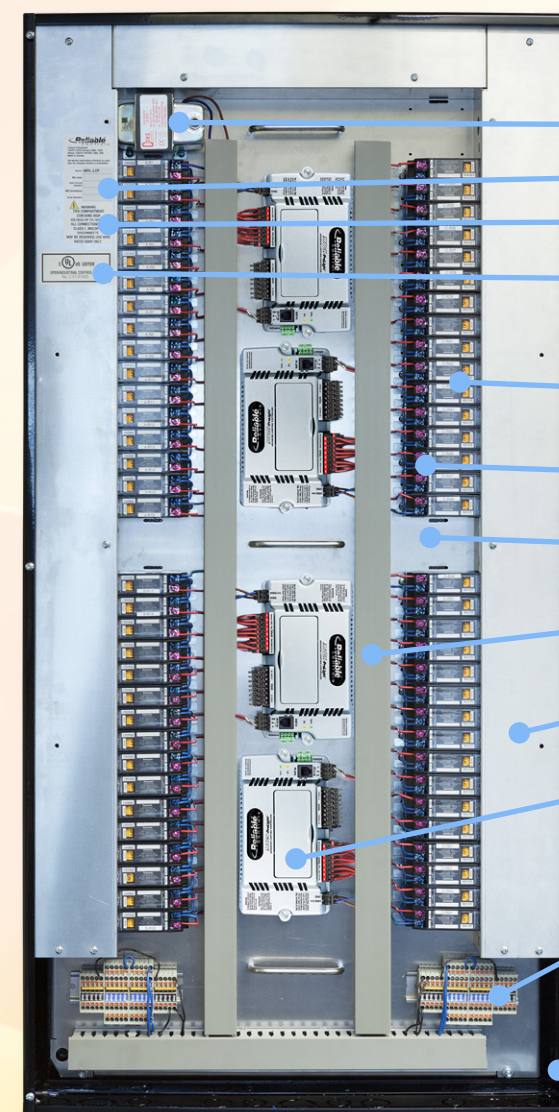


24 VAC transformer

MACH-ProLight lighting control panel for up to eight relays



MACH-ProLight lighting control panel for up to 32 relays



MACH-ProLight lighting control panel for up to 64 relays

24 VAC transformer

Name and serial number decal

Caution decal

UL decal

Relays

Jumpers

Backplate

Wire duct, covered once wiring is complete

Class 1 high-voltage wiring compartments (left, right, and top)

MACH-ProLight controller

Terminal connector blocks attached to DIN rail

Painted steel enclosure

Authorized Dealers can choose any MACH-ProLight controller for any panel size. The MACH-ProLight is a freely programmable and scalable BACnet Building Controller (B-BC) that provides 0–10 V continuous dimming and BACnet Binary Lighting Output object support and is compatible with standard lighting-control relays, low-voltage peripherals, EnOcean wireless products, and Reliable Controls SPACE-Sensor and SMART-Net products.



Panasonic relays

During assembly, our team connects the power supply wiring and MACH-ProLight inputs to terminal blocks and cuts the output wiring to specific lengths for relay connection. The black metal enclosure we use for our lighting control panels is robust and durable for the long term.

Our highly skilled technicians carefully select, wire, and label all components before functional testing begins to ensure the high quality Reliable Controls is known for.





Every relay is switched on and off multiple times to verify the status indicator, and each panel is verified to be fully compatible with a range of Reliable Controls products. The power supply, ground connection, and relays are meticulously inspected.

Once we have completed the testing process, we prepare the panel for shipping. Because even the smallest panel weighs more than 20 pounds (9 kgs), each one is carefully packaged to ensure it arrives in excellent condition, ready for installation.

Included in the shipment is everything needed for installation: the wiring schedule, WEEE directive, MACH-ProLight wiring instructions, assembly guide, an unboxing manual, and all hardware necessary for mounting. A serial number and date of manufacturing is included that allows us to trace each panel's manufacturing history in the event of an issue.

PANEL FEATURES

- Ability to select the appropriate MACH-ProLight model.
- Jumper-selectable universal outputs.
- Flexible mix of dimming and switching loads.
- Analog outputs to sink or source current.
- Single-wire connection to actuate the relay and read status.
- Compatible with Douglas Lighting 8700 series switches.
- Accommodates multi-input relay switching.
- Arrives fully assembled with all low-voltage terminations completed.
- Accommodates all common line-voltage connections up to 347 VAC.
- Included 24 VAC transformer powers relays, controllers, and associated switching peripherals, including light switches, occupancy sensors, and light-level sensors.
- Accommodates 120/240/277/347 VAC inputs.
- Supports industry-standard Panasonic WR6161K-84 and WR6172K-84 series relays, suitable for all types of loads.
- Easy addition and removal of relays with quick-release spring-clip mounting.
- Ability to switch up to four relays with each relay driver output.
- Zero-cross switching.
- NEMA1 enclosure with standard electrical knockouts.



MACH-ProLight
lighting control panel
for up to eight relays

MACH-ProLight
lighting control panel
for up to 32 relays

MACH-ProLight
lighting control panel
for up to 64 relays

Learn more about the MACH-ProLight:
reliablecontrols.com/MPL

Learn more about custom lighting control panels:
reliablecontrols.com/products/accessories/#Lighting_Control_Panels

FOCUS ON TECHNOLOGY

Dual-tech occupancy sensors

For years the building automation industry has worked to strike a balance between occupant comfort and energy savings in both lighting and HVAC applications. In pursuit of this goal, building owners and operators have embraced occupancy-sensing devices with open arms—and open wallets. It's not hard to see why; the technology enables an intelligent control system to prevent the illumination or conditioning of a space that is not occupied, which leads to a reduction in energy consumption. While use of this technology has spread into almost every vertical market we operate in, so, too, have the horror stories. We hear of frustrated employees sitting at their desks waving their arms in the dark because the lights keep turning off; that moment of panic when you're sitting on the toilet and the bathroom lights suddenly go out; the storage room that illuminates every time someone walks past; and the lunch room that is freezing cold because there is a coat rack in front of the occupancy sensor. These scenarios are all great examples of inadequate planning and likely choosing the wrong sensor for the job. To better understand how these situations could be avoided, let's step back and look at the most common occupancy sensor in use today in building automation: the passive infrared sensor, or PIR (Figure 1).

The PIR sensing element has two slots in it, each made of a special material that is sensitive to infrared radiation. When the sensor is idle, both slots detect the same amount of infrared radiation, the ambient amount radiated from the room, walls, or outdoors. When a warm body crosses the sensing path, it intercepts one half of the PIR sensor, which causes a positive differential change between the two slots. When the warm body leaves the sensing path, the reverse happens, and the sensor generates a negative differential change. These change pulses are detected and reported back to the building automation system as a binary input. Pairing the sensor with a lens adds multiple sensing paths and produces a wider sensing range and varying patterns, but the principle remains the same. Because PIR sensors are “visual” and measure heat, it's important that they have a clear horizon to detect motion in a space and are not located near heat-generating equipment or devices. Additionally, a PIR sensor is much more sensitive to motion crossing its detection path rather than moving toward or away from it, so best practice is to avoid mounting it in line with an occupant path. The best use case for a PIR-only sensor is in small spaces with few obstructions. When a larger detection area is required, or when a lot of obstacles prevent minor motion detection, it is prudent to select a dual-tech occupancy sensor.

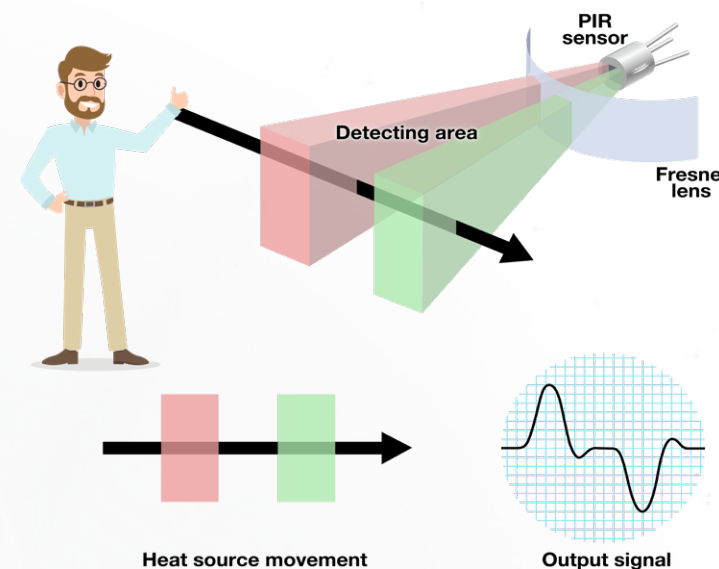


Figure 1: Operating principle of PIR sensor.

Dual-tech sensors are usually a combination of a PIR sensor and a Doppler sensor, but other variations exist that rely on acoustic or camera-assisted sensing. Doppler sensors derive their name from the Doppler effect, the change in frequency within which sound or light waves from a given source reach an observer when the source and observer are in motion with respect to each other, so that the frequency increases or decreases according to the speed at which the distance decreases or increases (Figure 2).

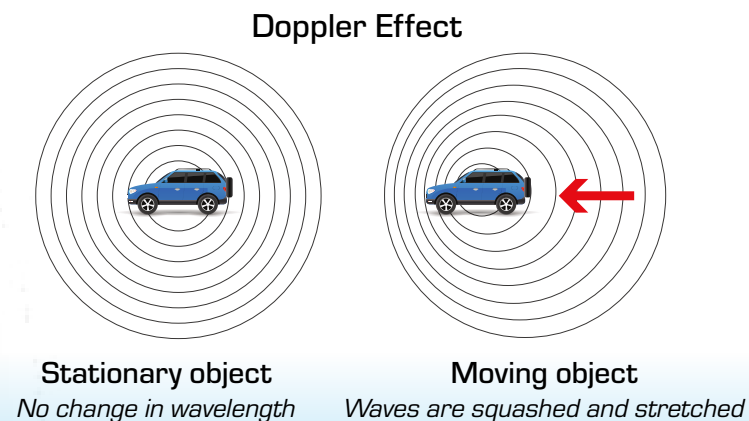


Figure 2: Doppler effect.

There are two types of Doppler sensors: ultrasonic Doppler (USD) and high-frequency Doppler (HFD). Both technologies transmit duty-cycle pulses at a specific frequency and measure the changes of the returned signal as reflected off a moving object, but the key difference is the frequency of the duty cycle employed. USD sensors rely on frequencies in the 25–45 kHz range, whereas HFD sensors rely on frequencies in the 4–12 GHz range (Figure 3), making HFD sensors much more sensitive to minor motion and better able to penetrate nonmetallic partition materials such as glass, plaster, and plywood.

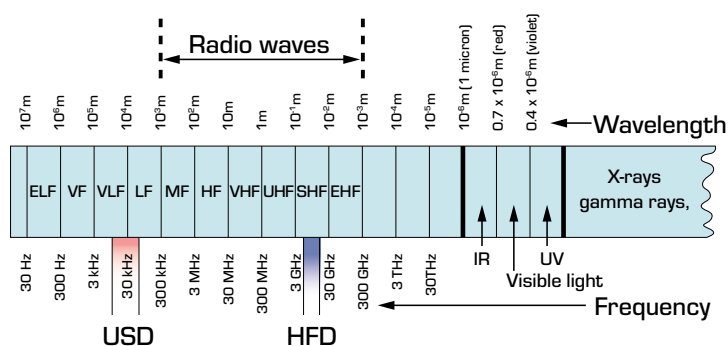


Figure 3: Frequency spectrum of Doppler sensors.

As mentioned, the most common type of dual sensor uses PIR and Doppler sensing. To gain some perspective on using the technology in a lighting application, Figure 4 illustrates a practical example of a storage room with some tall shelves.

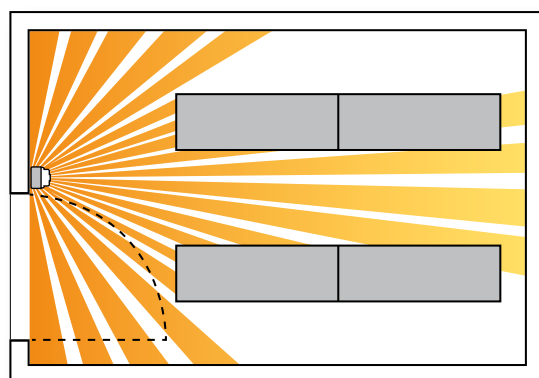


Figure 4: A PIR-only motion detector in a storage room with tall shelves.

The storage room in Figure 4 has a wall-mounted PIR-only motion detector. If this was an archival room where someone was spending a lot of time at a shelf reading or observing, the sensor would almost certainly leave the person in the dark at some point. To improve the control, you could increase the delay timer, but then the lights might remain illuminated longer than required. In Figure 5, a dual PIR and HFD sensor has replaced the PIR-only sensor.

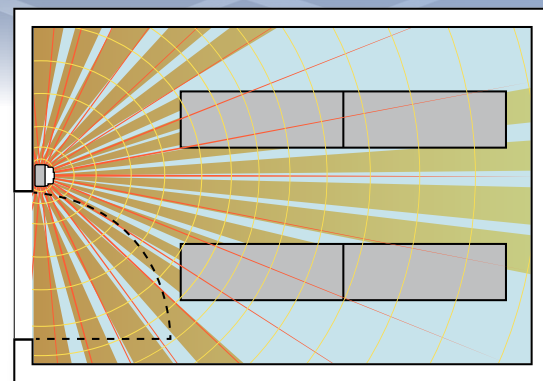


Figure 5: Dual PIR and HFD sensor in a storage room with tall shelves.

Notice the coverage now extends to the perimeter in all directions—and likely beyond. The blue area and the radial pattern are the high-frequency waves permeating the space not covered by the PIR sensor that detect small movements, such as pages turning or feet shuffling, and maintain the lighting state until there is no longer a person in the room. After initial installation, the sensitivity of the HFD sensor may need to be adjusted to prevent detection and false trips from motion on the other side of partitions. You can find information about dual PIR and HFD sensor behavior in the datasheet for the particular sensor you choose. For example, Figure 6 illustrates what the coverage pattern might look like for the dual PIR and HFD sensor from Figure 5.

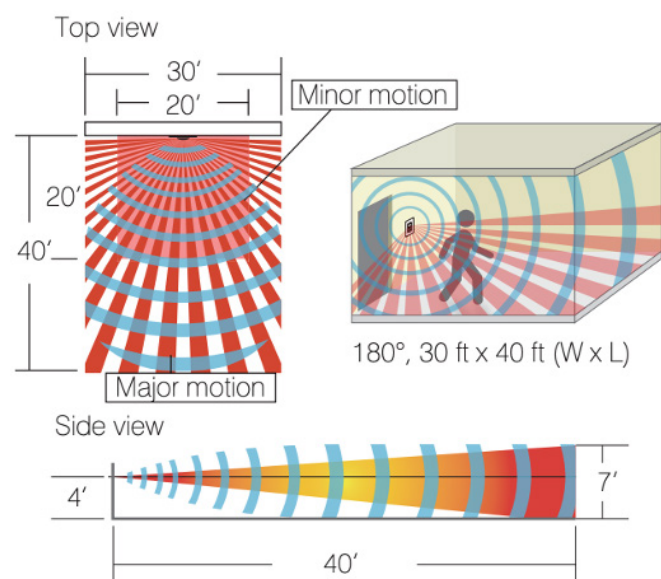


Figure 6: Coverage pattern for dual PIR and HFD sensor.

In the archival room example, a wall-mounted occupancy sensor was selected for the design solution, but as with most engineering problems, there may be more than one alternative. The same lighting control issue could be solved with a ceiling-mounted solution (Figure 7) or with multiple sensors mounted high on the walls in opposing corners of the room. The key is to understand how the space will be used and choose a path that best matches the desired outcome and budget.

You can easily spot the difference between a dual-tech sensor that employs USD and one that uses HFD by looking at the enclosure. USD sensors have holes in the enclosure to let the ultrasonic waves escape; HFD sensors do not (Figures 8 and 9). Not only is this more pleasing to the eye, but it also means HFD sensors are less susceptible to vandalism or tampering.

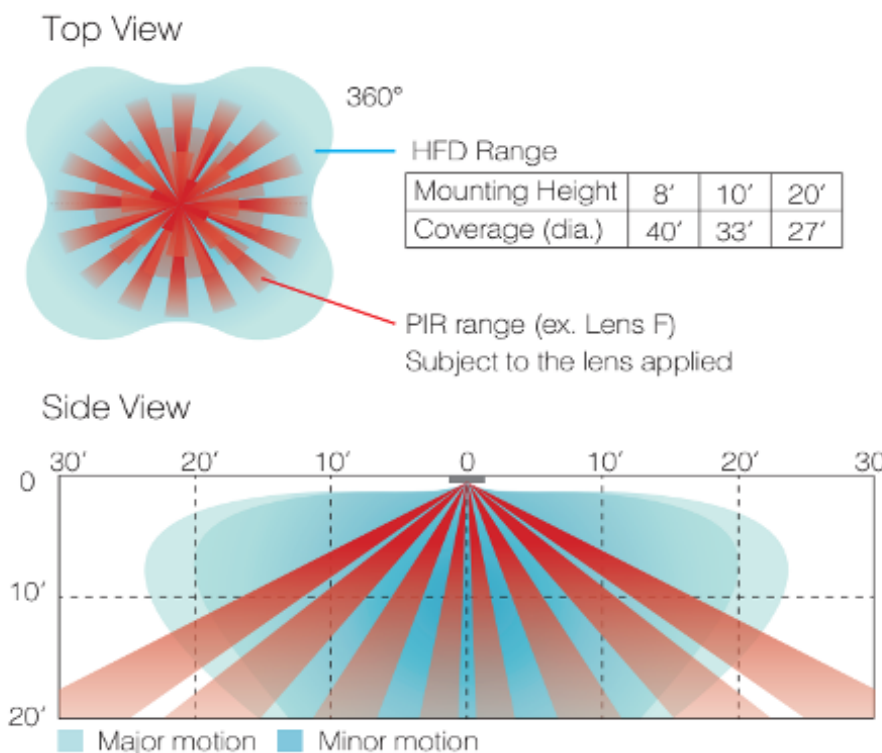


Figure 7: Coverage pattern for a ceiling-mounted dual PIR and HFD sensor.



Figure 8: Wall-mounted dual-tech USD sensor (left); dual-tech HFD sensor (right).



Figure 9: Ceiling-mounted dual-tech USD sensor (left); dual-tech HFD sensor (right).

In the United States, the building sector accounts for about 76 percent of electricity use and 40 percent of primary energy use and associated greenhouse gas emissions, almost half of which is consumed by HVAC and lighting systems.¹ Installing appropriate and effective lighting and HVAC occupancy sensing goes a long way toward improving energy efficiency and sustainability outcomes for building owners and managers. To ensure you're balancing this energy savings with occupant comfort, carefully select the correct sensor for each job, and whenever possible choose a dual-tech sensor that utilizes HFD and PIR. Reliable Controls products with optional occupancy sensing available today include the MACH-ProView controller, SMART-Sensor, and SPACE-Sensor Temperature. These devices are designed to help you save energy and money.

¹ energy.gov/sites/prod/files/2017/03/f34/qtr-2015-chapter5.pdf

People and technology you can rely on™

Reliable analytics

MAKE YOUR BUILDING ANALYTICS WORK FOR YOU

Many consultants and building owners want data analytics on their facility's operations, especially as the amount of data building managers are able to generate continues to increase. Bolt-on software packages promote analytics, but they're often wide in scope and fail to address specific problems. For building managers, the integration of HVAC, lighting, and access control systems can be beneficial, but interoperability is insufficient to ensure building sustainability. Synthesizing these elements with actionable data analytics is crucial to efficient operations.

Choosing to subscribe to third-party analytics providers can be a complicated decision with multiple options. One-size-fits-all analytics programs exist, but no two facilities are identical, and the customized solutions that are available are often prohibitively expensive.



When building operators seek analytics, they often don't know what's wrong with their built environment or how to improve it. They rely on manufacturers and service providers to learn what needs to be done. When you see a doctor or physical trainer, you benefit from their knowledge and experience. Similarly, a building automation system should provide building managers with the tools they need to maintain their facilities in optimal health.

So what can you do with your building data?

Analytics should, at a minimum, help you manage and optimize your facilities. Building analytics provide insights about equipment and system performance, energy use

intensity, occupant satisfaction, potable water consumption, indoor air quality, and more. Much can be done with this information.

Analytics are a business tool that helps you forge sustainability in the built environment. Building professionals should demand ownership of their data, expect assurance of information integrity, and have unfettered access to their data to independently investigate the results of data collection. Intelligence that is easy to access and understand can be a compelling factor when choosing an analytics solution.

For example, using real-time data for fault detection and diagnostics is an integral analytical process to ensuring facility optimization. Analyzing system performance is vital to identifying suboptimal performance long before a system has failed; before an occupant, student, or patient is impacted as a result of that failure; or before the mission of an organization is hindered. Integrating fault detection and diagnostic capability at the controller level, rather than using a supervisory system, ensures a much higher degree of system resilience and flexibility. By coupling fault detection and diagnostics with an easy-to-use graphical interface that immediately notifies operators in an obvious, intuitive way, performance issues can easily be identified and corrected. Analytics should empower you to understand the health of your built portfolio, detect and prioritize responses when faults occur, and identify the causes of everyday equipment and system problems.

A little over a year ago, the integrated fault detection and diagnostics (IFDD) system at Reliable Controls headquarters in Victoria, BC, indicated an issue with an air-conditioning unit. Our facilities manager was able to act and remedy the situation before building occupants were negatively impacted. Competitive fault

detection and diagnostics products often rely on database analysis, with reports delivered to the owner periodically. That method greatly delays fixing the cause of any issue. With IFDD from Reliable Controls, we were able to detect, diagnose, and repair the problem within a few days, saving energy, minimizing compressor wear, and eliminating downtime.

With RC-Studio, RC-GrafxSet, and at least one Reliable Controls system controller with version 8 firmware or higher, you can create an IFDD interface for any BACnet control system, be it Reliable Controls or a third-party BACnet control system. Enabling real-time fault detection

means you can immediately respond to suboptimal faults or a failure. IFDD provides optimized system performance, minimized operating issues, improved occupant comfort, and a reduction in energy consumption and costs. Even when equipment is working, opportunities exist to enhance energy performance. Beneficial analysis of system operations allows you to identify where and how to reduce consumption and costs and to fine-tune occupancy and setpoint adjustments. Simply put: IFDD is good for your financial and environmental bottom lines.



IFDD FlexTiles are purpose-built to provide an intuitive, comprehensive operator interface to an IFDD strategy that is simple, flexible, and sustainable (Figure 1). You can annotate IFDD FlexTiles in System Groups using RC-Studio 3.4.2 or later.

Program your entire IFDD interface using RC-Studio and RC-GrafxSet software. Graphics can reside in Workstation Groups in RC-Studio or in System Groups on Reliable Controls system controllers with appropriate firmware. Operators can access the interface directly in RC-Studio, and web users can use RC-WebView or the browser user interface in our MACH-ProWeb family of BACnet building controllers.

Tailor your IFDD FlexTiles to display a wide range of faults (Figure 2). Our FlexTile animations continue to evolve as we regularly publish new updates.

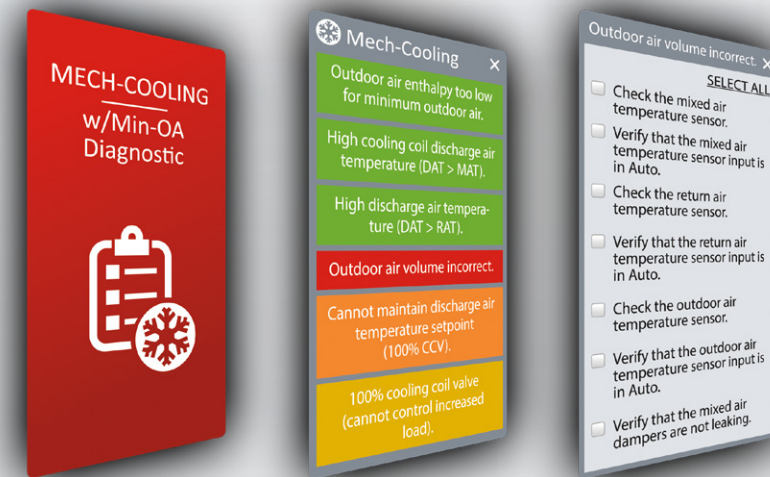


Figure 1: IFDD FlexTiles from RC-GrafxSet.

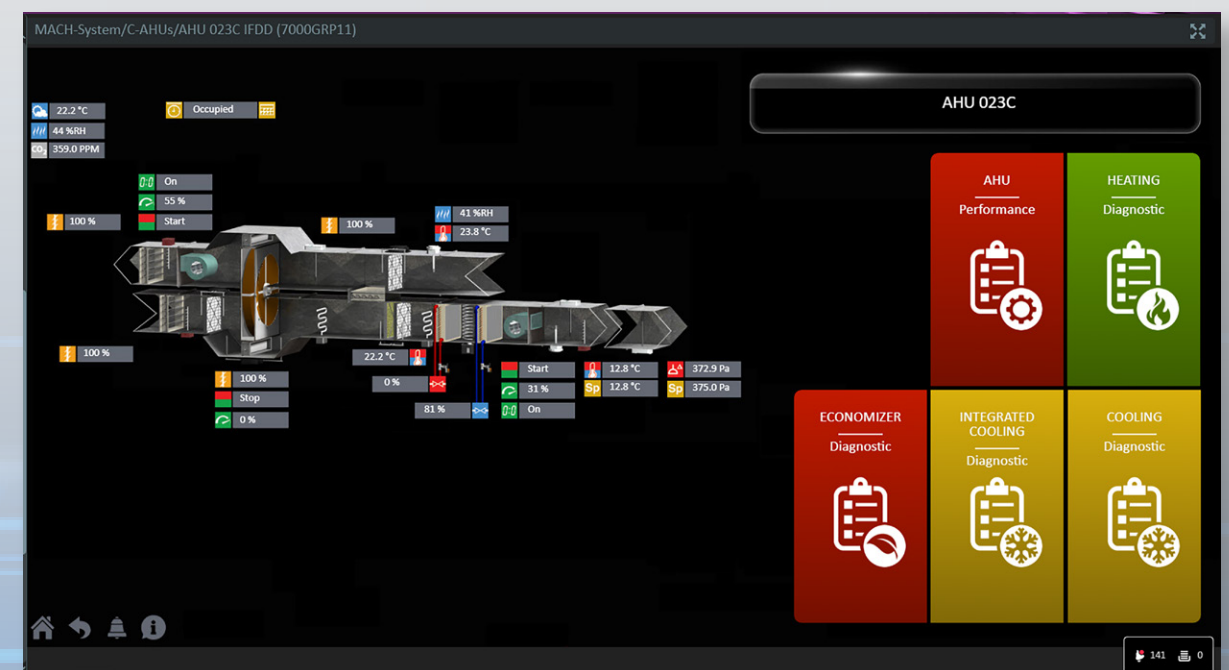


Figure 2: Use IFDD FlexTiles to display a wide range of faults.

What differentiates Reliable Controls from other data-analytics providers? Our products allow stakeholders full control over data gathering, formatting, and delivery without the burden of restricted licensing or copyright requirements, so you can quickly turn information into action while retaining full ownership and control of data. Data isn't stored on a server in another country or owned by a third party. It's yours.

RC-Archive and RC-Reporter ensure your collected data is available to you anywhere, anytime. This combination allows you to extract intelligence from your building data and discover actionable insights into your building management system. Further advantages include the following:

- RC-Archive automatically downloads building data to an industry-standard SQL Server database, delivering a robust record of performance from any internet-connected BACnet facility.
- RC-Reporter brings clarity to building performance analytics with readable, reliable, rational reports (Figure 3), delivered automatically by email or integrated directly into your building control system.



Figure 3: RC-Reporter allows you to extract intelligence from your building data.

[Learn more about RC-Reporter: reliablecontrols.com/RCR](https://reliablecontrols.com/RCR)

[Learn more about RC-Archive: reliablecontrols.com/RCAR](https://reliablecontrols.com/RCAR)

[Learn more about RC-GrafXSet and IFDD FlexTiles: reliablecontrols.com/RCGFX](https://reliablecontrols.com/RCGFX)

Data analytics are essential for green building managers who want to minimize their carbon footprint while prolonging the life of their building equipment. Analytics allow you to follow your building performance trends over time to expand the capabilities of your Reliable Controls system.



WELCOME TO OUR NEW

Reliable Controls Authorized Dealer

Peak National
Kuwait City, Kuwait
peak-national.com

PEAK

Engineering redefined...

Reliable Controls sales, installation, service, and support are performed by a growing network of independent, factory-trained Authorized Dealers. Each dealer is committed to the green building controls industry and to providing total customer satisfaction.



VIETTEL COMPLEX

HO CHI MINH CITY, VIETNAM

OVERVIEW

The Viettel Complex is the largest office complex in District 10 and the surrounding area in Ho Chi Minh City, Vietnam. Comfortable, thoughtfully designed offices provide tenants with a dynamic and creative work environment. Designed to the standard of a Class B office building, the complex has two towers, 28 floors with city views, and three basement parking zones with space for 2,550 bikes and 205 cars.

PROJECT DETAILS

Using Reliable Controls hardware and software, Authorized Dealer B.A.S.S. implemented a building automation system in the Viettel Complex to control seven chiller systems integrated via BACnet MS/TP as well as a third-party lighting system and variable frequency drives via Modbus integration.

The Viettel Complex uses a mixed mechanical system, with each tower cooled by a dedicated variable flow chilled water plant that supplies six primary air-handling units and more than 1,100 fan coil units. Four generators and hundreds of power meters are integrated with the system. B.A.S.S. recognized that a fully optimized building control system with Reliable Controls SMART-Sensor devices was critical to achieving occupant comfort and good indoor-air quality.

Building managers use RC-Studio, RC-WebView, and RC-Toolkit to program and access MACH-Pro1, MACH-ProZone, MACH-ProSys, MACH-ProView, MACH-ProCom, and MACH-ProWebCom controllers with MACH-ProPoint expansion modules. RC-Archive provides a robust record of building performance.

B.A.S.S. is pleased with the outcome of this extensive building management system, made possible with the use of flexible, easy-to-use software and hardware from Reliable Controls.

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



CORPORATE/RETAIL



PROJECT TYPE

New construction

TOTAL AREA

112,000 m² (1,205,558 ft²)

INSTALLATION TYPE

Chiller, CO₂ monitoring, fan-coil unit, HVAC, lighting, power

EQUIPMENT INSTALLED

159 MACH-Pro1™ controllers
17 MACH-ProCom™ controllers
52 MACH-ProPoint™ Input expansion modules
67 MACH-ProPoint Input/Output expansion modules
14 MACH-ProPoint Output expansion modules
79 MACH-ProSys™ controllers
5 MACH-ProView™ LCD controllers
15 MACH-ProZone™ 44-C controllers
395 MACH-ProZone 88-C controllers
2 MACH-ProWebCom™ controllers
344 SMART-Sensor™ EPD devices
2 SMART-Sensor EPD devices with CO₂ and humidity sensors
761 SMART-Sensor LCD devices
RC-Archive®, RC-Studio®, RC-Toolkit®, and RC-WebView software

NETWORK

EIA-485, Ethernet

PROTOCOL

BACnet, Modbus

BACNET

ABB variable frequency drives

POINTS

11,000 points

RELIABLE CONTROLS AUTHORIZED DEALER