



BELIMO SENSORS RETROFIT

Central British Columbia Healthcare Facilities Improve Patient Comfort with HVAC Upgrades

Belimo Sensors Help Streamline Healthcare Facility Upgrades

Established in 2001, this publicly funded healthcare service provider is responsible for delivering health-related services to over 740,000 people across the southern interior region of British Columbia, Canada. The organization owns and operates 46 hospitals and health care centers across a 215,000 square kilometers [83,000 square miles] area, including laboratories, outpatient clinics, and wellness centers.

The healthcare network is committed to setting new standards in the delivery of healthcare by promoting healthy lifestyles and providing high-quality services in a timely, caring, and efficient manner. In 2018, the healthcare network contracted Houle Electric for HVAC and control system upgrades for two of its facilities to improve energy efficiency and environmental comfort. The project included over 500 sensors, damper actuators, and globe valve retrofits to meet the needs of the upgrades.

TYPE OF BUILDING

Hospital and Healthcare Facility

PROJECT

Retrofit

SECTOR

Healthcare

PRODUCTS

Belimo sensors (CO₂, air differential pressure, temperature, humidity), damper actuators, UGVL globe valve retrofit kits



Sensor Technology Saved Thousands in Upfront Costs

Facilities and Project Overview

The project involved switching from pneumatic to direct digital controls (DDC) to improve efficiency and modernize the building automation system (BAS). The project scope included 1,500 mechanical and control system inputs and outputs at a care center in Kelowna and a hospital in Williams Lake. The care center is a one-story, 213-bed care facility 14,500 square meters [156,000 square feet] built in 1976. The hospital is a level 2 community hospital, 42-bed care facility 18,075 square meters [7000 square feet] constructed in 1963.

The existing building management system (BMS) at the Kelowna care center underwent a recommissioning project in 2008. After only ten years in operation, the system had not yet reached the end of its design life; however, facility personnel were experiencing problems, including failing actuators, valves, and temperature inconsistencies that impacted patient comfort. The majority of systems at the hospital in Williams Lake experienced a similar recommissioning project in 1999.

Building Upgrades Include Belimo Sensors

As the main contractor on the project, Houle streamlined the procurement process by using as few vendors as possible. Houle had worked with Belimo in the past and respected the company's reputation for service, quality, and delivery. "Nearly every control accessory we could buy from Belimo, we did," said Cameron Lutz, Project Manager at Houle. "This greatly simplified our procurement and management workload on the job."

In total, Belimo supplied Houle with over 500 products for the building upgrades, including 339 sensors (temperature, pressure, humidity, CO₂), 94 damper actuators, 77 universal global valve linkage retrofit kits, and 22 larger globe valves. "One part of the project scope called for replacing Magnehelic® filter gauges with Photohelic® gauges," said Lutz. "We lobbied with the owner to use air differential pressure sensors instead. The sensors met the spec for roughly a quarter of the price and provided enhanced capabilities, such as tracking filter pressure and setting alarm reminders." The use of Belimo's air differential pressure sensors helped save the owner \$16,800 in upfront costs.



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Houle Electric

Easy Installation and Seamless Integration

The use of Belimo products streamlined the installation and commissioning process. In many areas of the two facilities, construction requirements dictated that if contractors were working in a designated area for more than an hour, patient relocation would occur. To avoid moving the patients, Houle staged all of the sensors before installation to minimize the time technicians worked in the space.

"One enormous benefit of Belimo sensor packaging is that all the ancillary components for installation, such as mounting brackets, screws, connectors, and foam tape to minimize vibration on the ductwork, are included," said Lutz "In a lot of cases when using other sensors, our technicians would have to go looking for these parts, which would increase installation time and effort. By using Belimo sensors, our technicians were able to complete the work quickly, minimizing any disruption to patients and limiting the impact on the overall operation of the healthcare facility."

Lutz also explained how Belimo sensors facilitated Houle's efforts towards system standardization. "All Belimo enclosures are NEMA 4X / IP65 rated; we didn't have to worry about the environment where they were being installed. Additionally, shop drawings and submittals were simplified because all sensors utilize standard connections. The price difference between Belimo sensors and the alternative products was insignificant. When you consider all of the added capabilities, features, and installation advantages, you are getting significantly more value in the box."



SENSOR FEATURES

- **Air Differential Pressure** - Accurately monitors differential pressure to indicate filter status cleanliness and communicates an active signal output to the BAS. The optional liquid-crystal display (LCD) provides easy field verification.
- **CO₂** - Dual channel self-calibration technology is ideal for hospital environments that operate 24/7. BAS strategies with CO₂ sensors indicate low building occupancy and reduce the amount of fresh air brought into the building that needs to be heated or cooled.
- **Temperature and Humidity** - Precise and reliable readings ensure optimal building comfort and energy efficiency. All sensors are UL compliant, easy to install, maintain, and backed with a 5-year warranty.

Prepackaged Sensor Components Streamline Installation

Customer Satisfaction

Overall, the use of Belimo products helped Houle meet the hospital network requirements for improved occupant comfort with increased energy efficiency. The switch from pneumatic to DDC provided facility personnel with greater control and offered enhanced visibility for troubleshooting.

"After working with Belimo at these two projects, we decided to specify Belimo sensors, actuators, and valves on every project going forward," said Lutz. "In addition to helping save \$16,800 in upfront costs for the owner, the use of the sensors allowed us to simplify installation and streamline the entire project. They also helped us minimize our impact on day-to-day activities, which is critically important in a healthcare facility, where patient health and well-being come before everything else. We look forward to working with Belimo on future projects."

CUSTOMER BENEFITS

- **Reduced costs** - Belimo air differential pressure sensors saved the owner \$16,800 up-front when compared to Photohelic filter gauges.
- **Ease of installation** - Belimo sensors are prepackaged with all necessary components for installation, which allowed Houle to streamline installation and minimize disruption to patients and facility operations.
- **Standardization** - Shop drawings and submittal documents are simplified because all Belimo sensors utilize standard UL compliant connections and NEMA 4X / IP65 enclosure.

Belimo Americas

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