

Connecting to the bigger picture

SpaceLogic SP90
Series Smart Actuators
Innovation at the Edge



Life Is On

Schneider
Electric

The Schneider Electric SP90 PIBCV Smart Actuator brings building energy optimization to a whole new level!

Buildings account for more than 40% of global energy usage, with HVAC accounting for around 40% of that total. Here, smart energy valves, compared to traditional valves, can save up to 30% of the energy / CO₂ levels and play a significant role in helping reach climate CO₂ targets for both new and existing builds.



Smart actuators are intelligent devices used in the control of hydronic systems (heating or cooling) in HVAC applications.

The SP90 Smart Actuator is designed to:

- Operate hydronic systems at peak energy efficiency throughout the building.
- Enable fast problem diagnosis and resolution, with the aid of collected trends and analytics data.
- Ensure full and secure communication connectivity to a Building Management System.

What is the formula to achieve energy optimization and reduce costs?

① Modernize and future-proof

The **SP90** provides information that helps maintain optimum performance of the HVAC system by calculating energy consumption from a flow rate and ΔT and providing information in the distribution of heating and cooling power. It provides for a hyperefficient and balanced building that is seasonally self-adjustable, with precise hydronic energy distributed exactly where it is needed.

The **SP90** is designed for a quick and efficient setup under the **EcoStruxure™ Building Operation (EBO)**, along with other connected devices. But the main function of the SP90 actuator as a sophisticated, information-rich device, is to give insight into the energy usage and working efficiency of the HVAC system, as well as reporting analytics related to the operational health of the products and equipment that it is controlling.

The **SP90** is a dual Modbus / BACnet / MSTP communication device that also captures analytics. It can connect to thermostats, fan speed controllers, as well as temperature and humidity sensors, delivering a simple room-control architecture.



With SP90 connected actuators, the building is fully adaptable to varying HVAC demands, which fluctuate as the season and occupancy levels change over time.



② Maintain the health of the equipment

Now, maintenance can be planned via alerts. The SP90 communicates alarms relating to operational status and service duty so that maintenance can be planned with minimal downtime, avoiding occupant complaints and expensive emergency work. The alarms identify problems and undesirable conditions quickly, enabling faster diagnosis and problem resolution that results in lower service costs and increased energy efficiency.

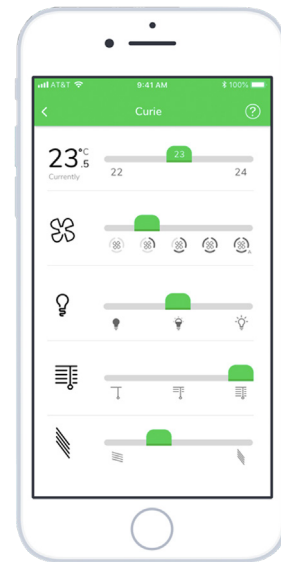
With the SP90 and EBO, you can take a snapshot of building performance from inception, and then measure reduction in equipment performance over time, which allows for optimization of costs and maintenance labor.

3 Increase safety — stop lifting ceiling panels

The SP90 PIBCV actuator enables remote flow balancing through the Building Management System (BMS) to provide optimal hydronic control, ensuring peak energy efficiency and occupant comfort, no matter what the season or occupancy level. This ability to remotely balance all the hydronic flows significantly reduces the commissioning and balancing time, and it does so without the use of ladders.

The SP90 actuator provides information to the EcoStruxure Building Operation, including the flow rate through each device. This allows for optimal flow control throughout the building, ensuring peak energy efficiency and occupant comfort from all hydronics.

With optional temperature sensors fitted to the inlet and return pipes of the exchanger, hyperefficient control becomes possible, with Delta T control and energy usage data mapped across the building.





4 Reduce engineering and commissioning time of project

Faster setup

An exceedingly efficient setup between the EcoStruxure Building Operation (EBO) and the SP90 smart actuators.

The Advanced Engineering Tool (AET) greatly reduces commissioning setup time by uploading key BACnet objects (i.e., design flow rates, valve type, location ID, application mode, etc.) en masse to all devices on the network.

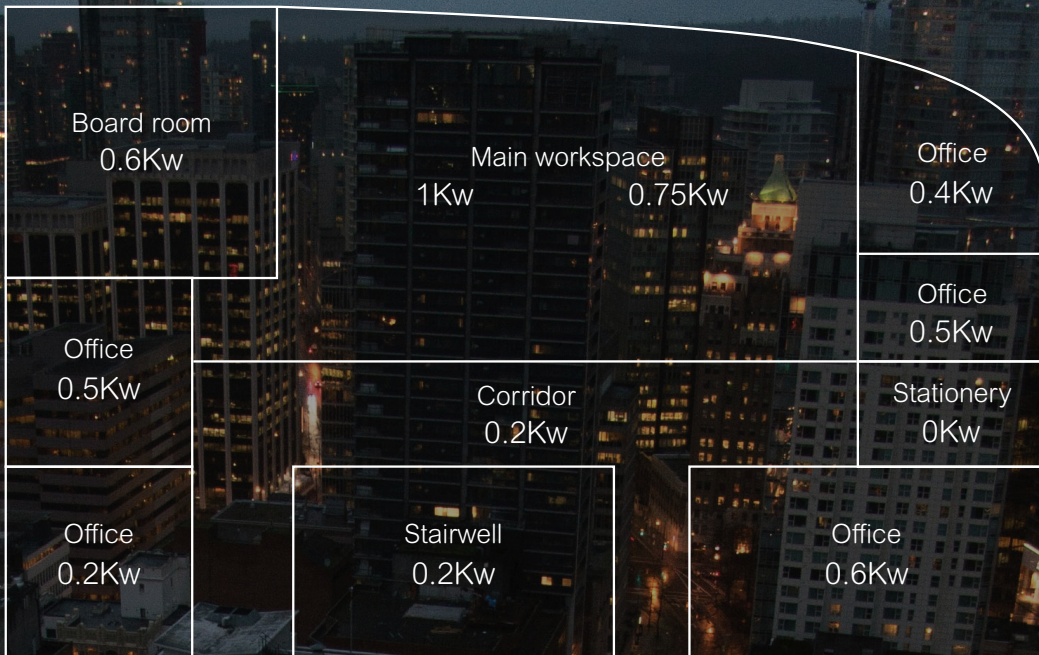
The use of widgets greatly speeds up the configuration of the actuator in a simple visual manner with all the key BACnet objects.

Use of pre-configured cables allows a reduction in the wiring time and avoids costly mistakes that can often be replicated many times.

Improved operation

LEDs that make it easy to locate actuators and provide visual indication of how the actuator is operating, reducing setup and commissioning time.

Daisy-chain connectivity allows up to 64 actuators to be controlled under one automation server controller, thereby providing a simple but effective product architecture.



5 Be hyperefficient — cap facility energy costs

The SP90 has a ΔT Manager that maximizes the efficiency of the HVAC system. This keeps it working at its full potential by ensuring the flow rate is always optimized for the heat exchanger output.

The “Energy Limitation Manager” is a function that allows control of the maximum heating and cooling of hydronic energy to a set level, with the purpose of allowing energy bills to be capped.

Providing information on energy usage without a costly and separate heat meter results in significantly lower CapEx costs, allowing feasible adoption to all terminal units within a building.

It is not possible to optimize a building’s energy usage if you do not know the equipment efficiency or the energy consumption in each room. With the SP90 Smart Actuator, you have that information in hand!



Connecting to the bigger picture

The **SpaceLogic SP90 Smart Actuator** is an integral part of the foundation of the Schneider Electric™ EcoStruxure Building Operation Platform. The EcoStruxure Building securely connects hardware, software, and services over an Ethernet IP backbone to help you maximize building efficiency, optimize comfort and productivity, and increase building value.

“Smart” begins at the foundation of the EcoStruxure Building, with Pressure Independent Balancing and Control technology. This provides precise building control and delivers critical information to the BMS, including changes in the physical environment and the state of valve / actuator operation.

Designed to help optimize valve performance in a variety of HVAC applications, Schneider Electric’s Smart PIBC solution enables customers to contain HVAC costs and optimize building performance. If the device level control is not performing as it should, then neither is the BMS. With the SP90 Smart Actuator, your Building System Management will be performing!

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