AI at the edge: Next-level room control automation

SpaceLogic™ Touchscreen Room Controller with AI Eco Mode

Edge-based AI: Balancing occupant comfort, energy savings, and operational efficiency

For retrofit or new builds, facility managers and building owners face increasing pressure to decarbonize and meet regulations while supporting occupant well-being. With HVAC systems using nearly 40% of building energy and rising energy costs, now is the time to optimize operations.

Yet traditional HVAC systems rely on manual, time-based controls that can't keep up with today's dynamic operating conditions. The result? Uncomfortable occupants, under- or over-conditioned spaces, increased demand on building staff, and wasted energy.

The future of HVAC management control is here

Schneider Electric™ **SpaceLogic Touchscreen Room Controller** now features **AI Eco Mode**. This new autonomous AI mode intelligently and dynamically adjusts room temperatures to ASHRAE 55-compliant comfort standards. It maintains comfort and reduces energy consumption by adjusting the HVAC system based on the building's real-time thermal and energy patterns.

The first commercial room controller equipped with edge-based AI, the Touchscreen Room Controller redefines how HVAC systems operate by optimizing performance autonomously without dependency on the internet or cloud services. This unique and flexible capability allows the controller to function efficiently within diverse architectural topologies to meet any building need.

AI for everyone, everywhere

AI at the edge is embedded at the device level rather than in the cloud for:

- **System reliability**, not dependent on external networks or remote storage
- **Enhanced security** and privacy—data stays on site
- **Cost-effectiveness**, no recurring subscriptions or data storage fees

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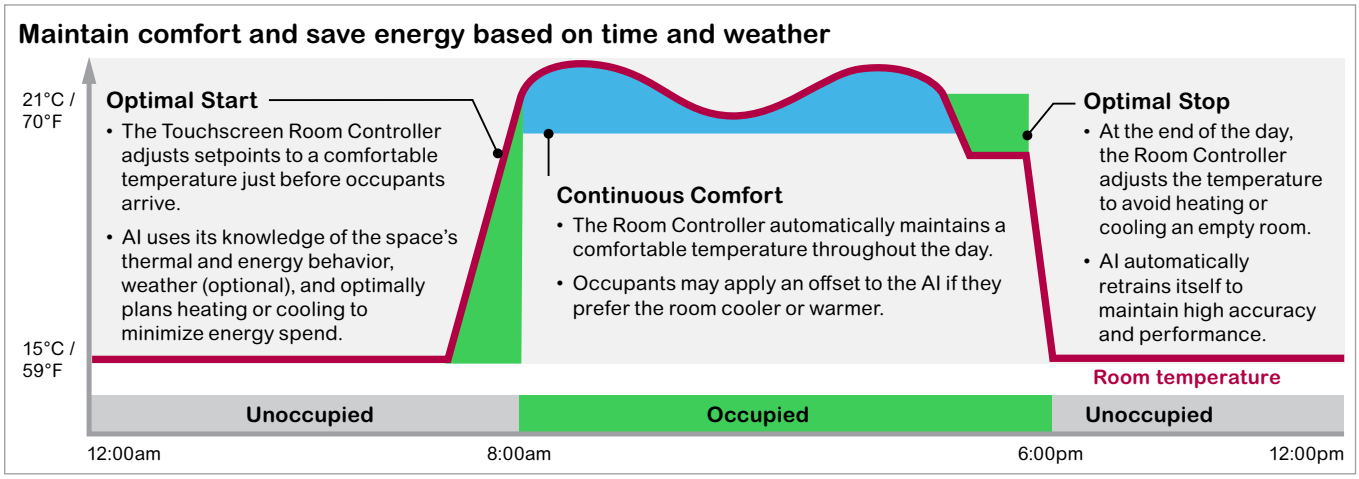
What to expect

Schneider Electric's 'AI at the edge' approach unlocks the full potential of HVAC control without needing additional hardware, remote cloud services, or external data storage.

A large-scale quantitative analysis at active building sites reveals that AI Eco Mode on the Touchscreen Room Controller successfully **maintained temperature regulation and comfort compliance over 85% of the time**, ensuring the health and productivity of occupants. Additionally, the system achieved an average **HVAC energy savings of 5%**, with up to 15% savings observed in some scenarios.[1] These findings highlight the benefits and effectiveness of powerful and responsible AI in real-world deployments.

AI Eco Mode manages comfort and energy use with Schneider Electric's proprietary 5-phase algorithm

1. **Measure** Collect temperature and humidity data from room sensors.
2. **Assess** Evaluate conditions via internal weather, thermal, and comfort models.
3. **Predict** Forecast the ideal temperature path based on environmental zone conditions.
4. **Control** Adjust setpoints and timing using a comfort agent that validates ASHRAE 55 compliance with the previous steps.
5. **Learn** Continuously refine predictions and real-time thermal data, improving occupant comfort and system efficiency.



Cutting-edge performance that is simple, smart, and efficient

The fully programmable **SpaceLogic Touchscreen Room Controller** combines thermostat simplicity with advanced functionality. With our patented Edge AI system, Schneider Electric has transformed HVAC control in rooms and common spaces, designing a smart, self-regulating system–setting a new standard for building energy management.

1 Schneider Electric, "Leveraging AI-Optimization at the Edge for Optimal Comfort and Energy Efficiency"

To learn more about the benefits of the SpaceLogic Touchscreen Room Controller visit:

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Schneider Electric Industries SAS
35, rue Joseph Monier - CS 30323
F92506 Rueil-Malmaison Cedex

• 998-24086551_GMA