

## Categorized Listing of Packaged Rooftop HVAC Unit (RTU) Controls

The landscape of building HVAC controls can be difficult to navigate due to the number of solutions readily available on the market. In particular, it is often unclear which solutions are best suited for small to medium-sized buildings. To help clarify the landscape, the table below categorizes manufacturers and their respective controls products suited for small to medium commercial buildings equipped with packaged rooftop HVAC units (RTUs).

Each product is categorized into one or more of the following control categories:

- 1) Networked Thermostatic Control;
- 2) Advanced RTU Control;
- 3) Light Commercial BAS – Integrates with Multiple-Zone HVAC Systems; and
- 4) Light Commercial BAS – Integrates with Other Energy End Uses.

The criteria that products must satisfy to be included in a category are defined below. Products with multiple checkmarks satisfy the criteria for each of the checked categories. Representatives of the product manufacturer have approved the categorization of all products in the table.

**Please note, inclusion in this table does not indicate endorsement, nor does absence from the table indicate a product is not suited to this application or market. This table is not exhaustive will be updated on an ongoing basis in collaboration with representatives from product manufacturers. The performance of these products has not been validated by Berkeley Lab.**

Contact us at [SSBC-Controls@lbl.gov](mailto:SSBC-Controls@lbl.gov) for more information.

Product Categories	Criteria
<b>Networked Thermostatic Control</b>	Solution uses networked thermostats communicating to a software platform to enable remote access, monitoring, and control (e.g., setpoint and schedule changes) of multiple single-zone RTUs from one or more buildings through a single interface of a web or mobile app.
<b>Advanced RTU Control</b>	Solution adds control capability that enhances RTU energy efficiency, reduces electrical demand, and/or improves occupant well-being. Examples are demand controlled ventilation, economizer control, variable speed fan control, and dynamic multi-unit coordination. These capabilities can be implemented through the addition of hardware components (e.g., controllers, actuators, sensors) and associated software, or through software alone. Solution also enables remote monitoring of multiple RTUs from one or more buildings through a single interface of a web or mobile app.
<b>Light Commercial BAS - Integrates with Multiple-Zone HVAC Systems</b>	Solution provides Advanced RTU Control and can integrate and control more complex HVAC equipment and systems such as RTUs with VAV distribution systems.
<b>Light Commercial BAS - Integrates with Other Energy End Uses</b>	Solution provides Advanced RTU Control and can integrate and monitor other energy end uses and provide on/off control of lighting, pumps, fans, and other equipment.

Manufacturer	Solution	Networked Thermostatic Control	Advanced RTU Control	Light Commercial BAS		Components
				Integrates with Multiple- Zone HVAC Systems	Integrates with Other Energy End Uses	
Bes-Tech	<a href="#">Digi-RTU®</a>		✓			Digi-RTU® controller, Digi-SBM® supervisory controller and gateway, one or more VFDs, temperature and CO <sub>2</sub> sensors, and Digi-SFT® desktop app
BrainBox AI	<a href="#">BrainBox AI</a>	✓	✓			WiFi-enabled thermostats and BrainBox AI cloud
Carrier	<a href="#">ComfortVu and ComfortVu+ BACnet Thermostats</a>	✓				Requires wired BACnet MSTP network for integration into Carrier i-Vu or third-party BAS (local or cloud based) for remote access.
	<a href="#">Connect43 and Connect43FX BACnet and WiFi Thermostats + Connect Cloud</a>	✓				Connect Cloud requires connectivity to customer WiFi network. Optional wired BACnet MSTP for connectivity to Carrier i-Vu or third-party BAS for alternative remote access.
	<a href="#">Connect43 and Connect43FX BACnet and WiFi Thermostats + Encyle Swarm Logic</a>		✓			Connection to Encyle requires connectivity to customer WiFi network and Encyle subscription
	<a href="#">RTU Open Advanced BACnet RTU controller + Communicating Sensors</a>		✓	✓	✓	Requires BACnet network for Carrier i-Vu or third-party BAS integration. Requires additional communicating controllers for control of ancillary equipment and/or zoning systems.

Manufacturer	Solution	Networked Thermostatic Control	Advanced RTU Control	Light Commercial BAS		Components
				Integrates with Multiple- Zone HVAC Systems	Integrates with Other Energy End Uses	
Cognition Controls	<a href="#">Smart HVAC Control Solution</a>	✓	✓			Cellular connected smart thermostat, wireless sensors, Cognition Controls web platform, and dedicated Cognition Controls support
Contemporary Controls	<a href="#">BASstat Thermostats + BASview3</a>	✓				BASstat BACnet thermostat and BASview3 supervisory graphical interface
	<a href="#">BAScontrol Unitary Controller + BASview3</a>	✓	✓		✓	BAScontrol unitary controller, BASview3 supervisory graphical interface, and third party wall setters (provides zone conditions and setpoint adjustment)
ecobee	<a href="#">SmartBuildings</a>	✓				Smart Thermostat Premium, Smart Thermostat Enhanced, or ecobee3 lite and SmartBuildings desktop and mobile apps
Emerson	<a href="#">Sensi Multiple Thermostat Manager</a>	✓				Emerson Sensi™ smart thermostat or Sensi™ Touch smart thermostat and Multiple Thermostat Manager
ENTOUCH	<a href="#">ENTOUCH.one Primary Controller + ENTOUCH.cloud</a>	✓	✓			ENTOUCH.one primary controller and ENTOUCH.cloud analytics engine
	<a href="#">ENTOUCH.one Product Line + ENTOUCH.cloud</a>	✓	✓	✓	✓	ENTOUCH.one family of products and ENTOUCH.cloud analytics engine

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Manufacturer	Solution	Networked Thermostatic Control	Advanced RTU Control	Light Commercial BAS		Components
				Integrates with Multiple- Zone HVAC Systems	Integrates with Other Energy End Uses	
GridPoint	<a href="#"><u>Energy Optimization Platform</u></a>	✓	✓		✓	Controller, networked thermostats, sensors, energy meters, and Energy Manager cloud platform
Honeywell	<a href="#"><u>Remote Building Manager Express</u></a>	✓	✓		✓	Honeywell TC500A commercial thermostat, GW-1000 gateway, IO-10MIXR I/O module, and Supervisor cloud platform
JCI	<a href="#"><u>Verasys</u></a>	✓	✓	✓	✓	JCI Verasys family of products
Lynxspring	<a href="#"><u>JENEsys Edge®</u></a>	✓	✓	✓	✓	JENEsys Edge® 534 Niagara 4 Programmable Logic Controller, third-party communicating thermostats, touch screen display, and Connexion cloud platform
Monaire	<a href="#"><u>Monaire - AI Powered HVAC/R Management</u></a>	✓	✓			Thermostats, wireless sensors, gateways, cloud-based AI algorithms, web and mobile apps, and contractor services
Network Thermostat	<a href="#"><u>X-Series Thermostats &amp; NetX-Cloud</u></a>	✓	✓	✓	✓	X-Series thermostats and NetX-Cloud
Pelican Wireless	<a href="#"><u>Pelican Climate Management</u></a>	✓	✓	✓	✓	Pelican Climate Management family of products
Prolon	<a href="#"><u>Prolon</u></a>	✓	✓	✓	✓	M2000 or C1050 rooftop unit controller, T-series communicating wall sensors, NC2000 network controller, and Focus software and mobile application

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Manufacturer	Solution	Networked Thermostatic Control	Advanced RTU Control	Light Commercial BAS		Components
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ProStar Energy Solutions	<a href="#"><u>Smart Stat + eIQ Platform</u></a>	✓				Thermostats and eIQ Platform
	<a href="#"><u>Controller-based BMS + eIQ Platform</u></a>	✓	✓	✓	✓	Controller, CATALYST (if appropriate), room sensors, and eIQ Platform
Strato Automation	<a href="#"><u>BACwall RTU Thermostat + SLC/OCN+</u></a>	✓	✓			Thermostat and software platform
	<a href="#"><u>Strato SLC/OCN+</u></a>	✓	✓	✓	✓	Strato Automation family of products and software platform
TCS Basys	<a href="#"><u>Ubiquity Cloud</u></a>	✓	✓	✓	✓	Ubiquity Cloud family of products
Trane	<a href="#"><u>Pivot® Smart Thermostat</u></a>	✓				Trane Pivot® smart thermostat and Pivot® mobile app
	<a href="#"><u>Tracer® Concierge®</u></a>	✓	✓	✓	✓	Tracer® Concierge® family of products

