

MAKE LIFE EASY

# Climatix Rooftop Unit Optimization Solution

Ensure rooftop units always perform as expected. Climatix simplifies maintenance and management of rooftop units – making life easy.

[usa.siemens.com/rtu](http://usa.siemens.com/rtu)

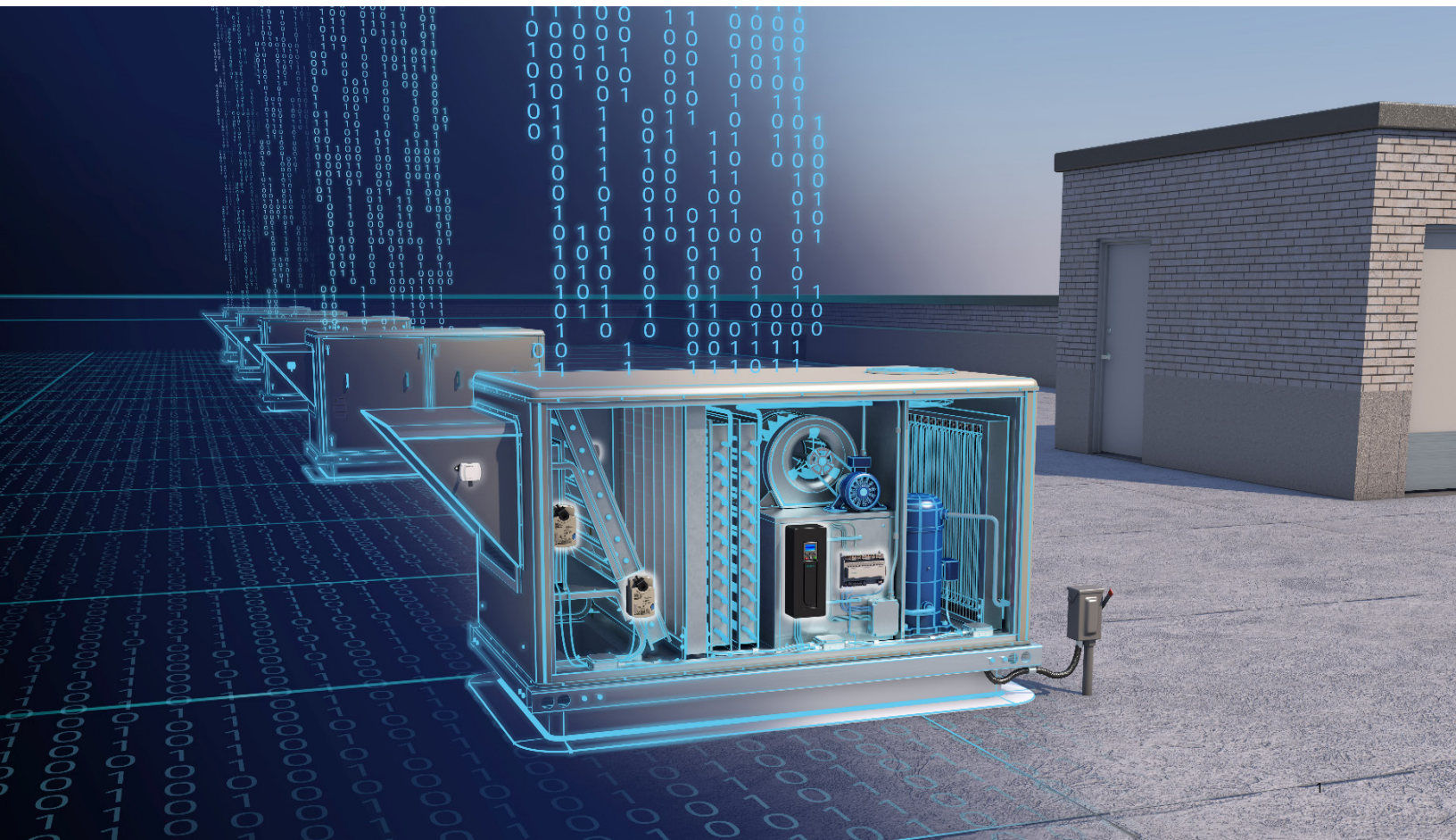


# Ensure rooftop units always perform as expected

No matter the age of the equipment, optimizing rooftop unit performance is essential to prevent smaller issues from becoming larger problems.

Rooftop units may be out of sight but shouldn't be out of mind. Equipment performance declines over time without proper attention, leading to poor indoor air quality, poor temperature management, nuisance noise, escalating energy bills and unexpected system downtime with more costly repairs.

The Climatix RTU solution simplifies maintenance and management of rooftop units to make life easy. It's a pre-engineered package specially designed to optimize RTU performance out of the box. No special controller programming is required – it's done for you. The sensors you need are included in one kit that works with any manufacturer's rooftop unit with up to three cooling compressors and two stages of heating.





After the physical install, I could commission this from my phone and have it running in under 30 minutes. That alone is worth thousands of dollars of programming and troubleshooting that I don't have to do or pay anyone else to do."



## What we mean by **RTU performance made easy**

Siemens set out to deliver a better rooftop unit management solution unlike any other that's designed with efficiency in mind – for contractors and building owners. This controller-driven solution has pre-programmed configurations in the Climatix RT which are easily set up using a simple mobile app that guides the tech through the process and prevents mistakes. The programming is so simply designed that an apprentice could perform the work. Need to add a VFD to the unit? No problem. When paired with the Climatix VFD, your tech still only has a few points to assign in minutes...not hours. This solution provides simplified remote monitoring and the ability to navigate through any issues identified to proactively troubleshoot before rolling a truck.

Save time and labor.

Reduce truck rolls.

Grow your service business.

Deliver customer peace of mind.

# Climatix RTU solution

Traditionally, rooftop units are installed and ignored until something goes wrong. And building owners are challenged to curb energy costs.

Climatix RT along with Climatix VFD are designed to monitor RTU performance and operate the unit more efficiently. Our independent testing results have demonstrated the ability to increase the integrated energy efficiency ratio (IEER) by 20% with the Climatix RTU solution package and Climatix VFD installed.



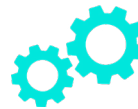
## Better Efficiency

- Improve energy usage
- Increase IEER by 20%
- Improve uptime
- Enhance system lifespan



## Better Comfort

- Eliminate temperature extremes
- Improve air quality
- Reduce noise levels
- Improve occupant satisfaction

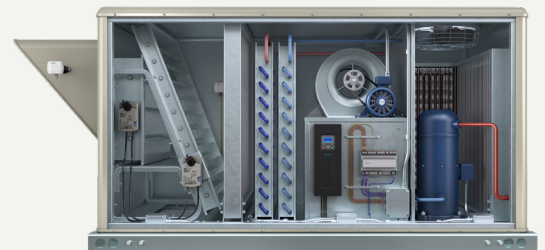


## Better Control

- Gain visibility to performance trends
- Eliminate system downtime
- Reduce service calls
- Maintain predictable costs

## Designed to make Contractors more efficient and faster – from installation to troubleshooting and basic service.

The Climatix RTU solution is designed to be used with minimal interface. The kit you order includes the Climatix RT controller paired with room unit sensors for demand-controlled ventilation plus sensors for temperature, humidity and differential pressure. This kit addresses core RTU performance optimization. You have the option to include the Climatix VFD for enhanced efficiency and OpenAir damper actuators for reliable, long-lasting fresh air management.



**Increase IEER 20%**

### Core Performance Kit



Climatix RT Controller



Room Unit Sensors



Airflow Monitoring Sensor



Intake Air RH & Temp Measurement Sensor



Return and Mixed Air Temp Measurement Sensors

### Enhanced Efficiency Options

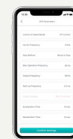


Climatix VFD



OpenAir™ Damper Actuators

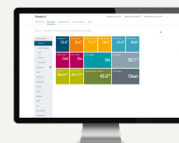
### Easy Installation and Remote Management



Climatix Mobile App



WiFi Commissioning Stick



Climatix IC

# A true controller-driven solution for optimized RTU performance with Climatix RT.



Climatix RT Controller



WiFi Commissioning Stick

## Pre-defined applications

Designed exclusively for rooftop units, Climatix RT includes fault detection diagnostics and pre-configured alarms that monitor points such as filter status, damper alarm cycles, excessive or insufficient outside air, freeze alarms, compressor alarms, heater alarms, sensor alarms and more.

## Operates with Siemens Room Unit Sensors

Climatix RT is specially designed to deliver peak RTU performance used in conjunction with Siemens room unit sensors for demand-controlled ventilation and CO<sub>2</sub> monitoring.

## Title 24 energy compliance

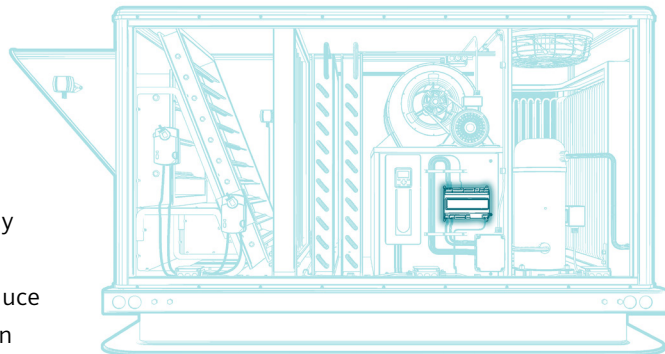
No additional controllers are required to supply outdoor air to reduce or eliminate mechanical cooling during ideal conditions. This helps reduce energy consumption and increases the lifespan of the RTU compressors and condensers.

## Onboard communication for scalability

Operates with Modbus RTU, BACnet IP and BACnet MS/TP.

## Commands Climatix VFD

Climatix RT takes VFD configuration to a new level of simplicity, reducing the parameters that need to be programmed...all easily managed through the Climatix mobile app.



# Ensure healthy and productive indoor environments

Indoor air quality is key to occupant health and safety. It is important that a building's mechanical systems are properly maintained with consideration to ventilation, airflow, and humidity, to ensure healthy and productive indoor environments.

Viruses transmitted by an infectious person can be dispersed throughout a room for hours. Long-range airborne viruses can even infect people who haven't had close contact with an infectious person if they inhale enough of the virus. Bringing fresh outdoor air into a room can dilute and/or displace any present airborne virus, which reduces probability that someone breathes enough infectious aerosol to become infected.

Monitoring air quality in real time and using reliable technology to ventilate buildings efficiently creates a safe environment to live and work during a pandemic and beyond.



## Eliminate or minimize indoor air re-circulation and maximize fresh outdoor air to the extent possible. Climatix RT manages fresh air levels based on a variety of needs.

### **Automatic indoor air quality maintenance**

Enhance indoor air quality via demand-controlled ventilation by monitoring carbon dioxide and increasing fresh air supply inside when CO<sub>2</sub> levels become too high.

### **Fresh air purge to boost outside air – inside**

Enable maximum fresh air intake into buildings without using mixed or return air. This application was designed in response to COVID-19 to improve ventilation and reduce air contamination and adhere to ASHRAE 62.1 guidelines to preserve occupant health and productivity. All buildings are not the same, which is why you get the flexibility to initiate a purge on your terms. This application can be a scheduled event as needed or initiated on demand to trigger a purge cycle via Climatix IC or the mobile app.

### **Title 24-compliant economization**

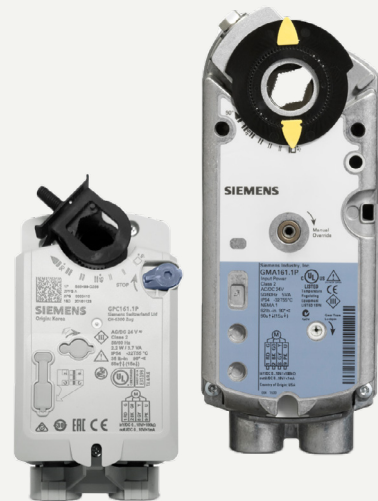
Climatix RT has a built-in economizer application that eliminates the extra costs of a separate controller to manage fresh air intake for supplying outdoor air to reduce or eliminate mechanical cooling during ideal temperature conditions. This helps save energy and increase the lifespan of RTU compressors and condensers.



## Increase efficiency with precise control

Properly sized damper actuators use outside air better to improve RTU performance.

Reliable damper performance and monitoring damper position are key to optimizing free cooling and energy efficiency. OpenAir™ damper actuators are 100% factory tested for optimum performance and certified for use with the Climatix RT solution. The compact size is over 30% smaller than comparable products for easier retrofit installation in limited space.



# Core enablers for air quality and system efficiency

The right sensors matter for air quality to allow for optimized demand-controlled ventilation. As part of the Climatix RTU solution, air quality sensors can generate energy and cost savings results exceeding 20%. These recommended Siemens sensors have been tested together with Climatix RT as a proven solution for optimized performance.

QMX3 room sensors measure temperature, humidity and CO<sub>2</sub>. They are available in two display options depending on what information is needed to see in the room and level of interaction permitted by room occupants to properly balance efficiency and comfort. Room sensors monitor:

- Relative humidity
- Temperature
- CO<sub>2</sub> concentration

CO<sub>2</sub> is monitored via infrared absorption measurement (NDIR). The sensor provides exact measurement at all times and does not require maintenance or recalibration with the integrated, stable reference light source. This ensures long-term stability and maximum measurement accuracy with freedom from maintenance.

The display option can also indicate air quality levels of good/moderate/poor if desired.



QMX3 Room Sensors

[ppm]	Typical CO <sub>2</sub> Concentration
<400	Outside
700	City air
1000	Comfort limit
1500	Ventilation strongly recommended
2000	Unacceptable indoor air quality
4000	Bedroom at poor ventilation
5000	Max. concentration for workspaces (MAC value)
40000	Exhaled air

## A solid foundation for optimum comfort and better measurement

Sensors for air temperatures at every stage and airflow monitoring help ensure complete optimization of rooftop units. Installation is very easy and can be optimally adapted to the situation.

Accurate measurement of airflow provides the information needed to monitor dirty filters to ensure proper air circulation and mitigate equipment failures.



Return and Mixed Air Temp Measurement



Airflow Monitoring



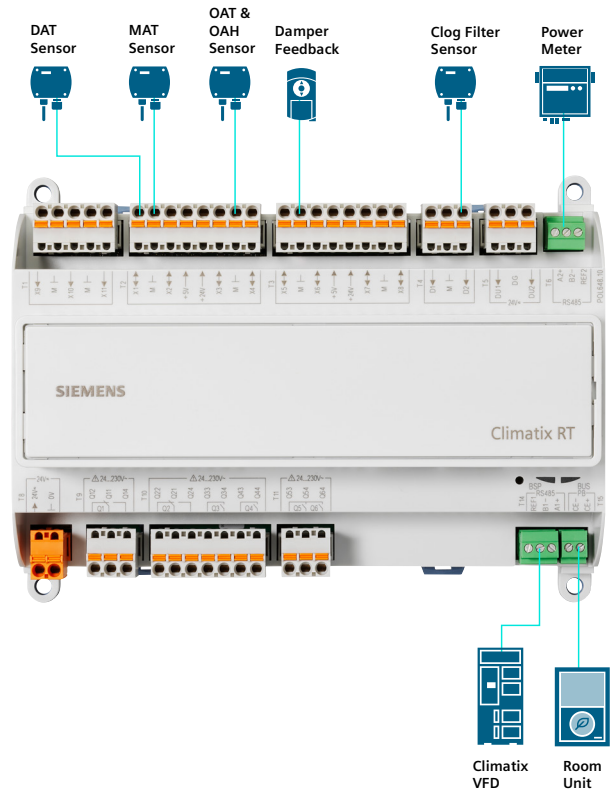
Intake Air RH & Temp Measurement



# Pre-engineered solution for turnkey installation

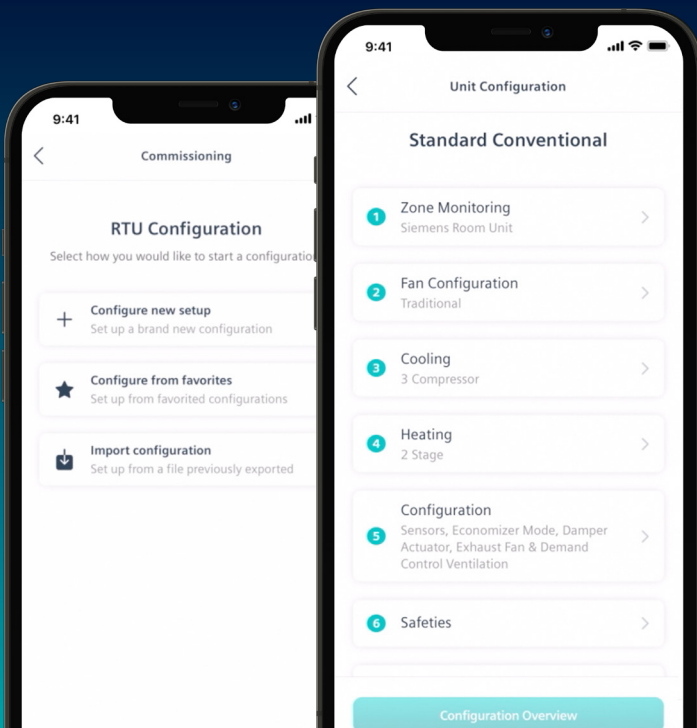
The Climatix RTU solution is designed for plug-and-play installation with pre-terminated inputs and outputs. The controller is pre-engineered with predefined applications designed specifically for rooftop units and paired with Siemens sensors, Climatix VFD and OpenAir actuators to optimize installation, commissioning and performance.

The Climatix mobile app eases the installation process and improves accuracy at checkout.



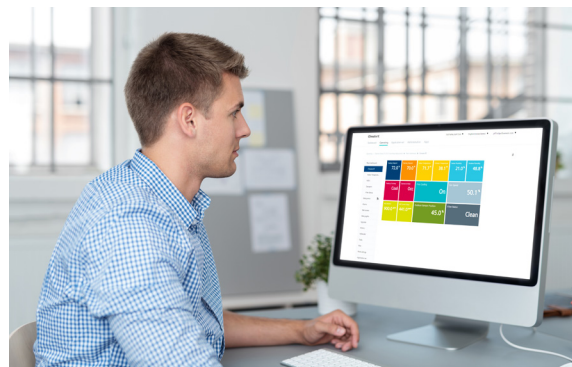
## Configuration and monitoring made easy

Commissioning new units is fast and simple with the Climatix mobile app. It securely connects point to point with the Climatix RTU controller and allows even junior techs to easily commission an entire system using the mobile app's guided wizard. The pre-configured sequence simplifies the setup procedure and allows favorite configurations to be saved for even faster implementation on additional units.



# Always keep rooftop unit performance in sight

Remotely monitor rooftop unit operating parameters to mitigate downtime. Climatix IC provides real-time access from anywhere.



## Secure and simple to use

Climatix IC remote management service works with the Climatix RT controller and state-of-the-art Climatix mobile app for RTU configuration, commissioning and operations. As a cloud-based solution, it allows you to securely monitor multiple locations and equipment anytime from anywhere.

This simple, easy-to-use application helps you remotely view a real-time dashboard of heating and cooling setpoints; indoor/outdoor temperature; humidity levels; fan speed; filter status and more.

Troubleshooting has never been easier. Efficiently sort through equipment alarms and notifications to pinpoint locations that require attention. Dig into performance details with analytics to better understand performance trends.

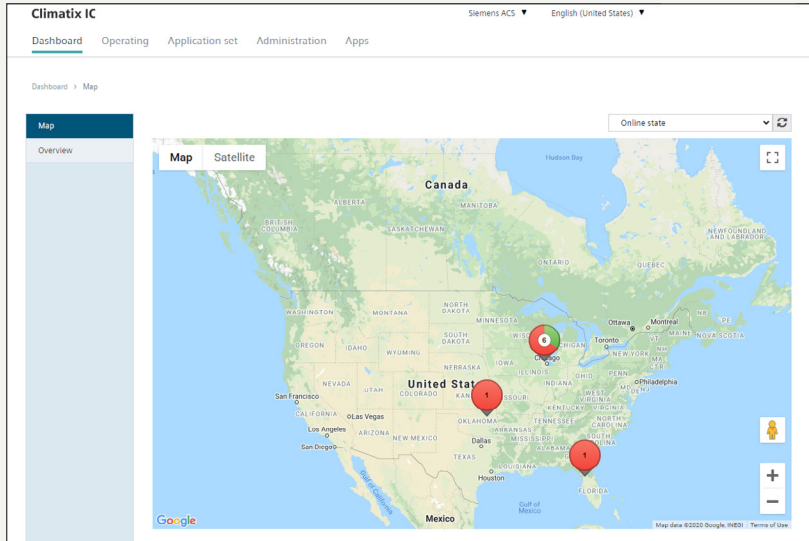
## Reduce unnecessary truck rolls

Be more proactive to avoid the expense of unnecessary service visits wherever possible. Using the Climatix IC cloud solution, you can schedule remote firmware upgrades that will be least disruptive to operations without involving a technician onsite to complete the task. Improve visibility with the right information you need for better service delivery.



# Climatix IC

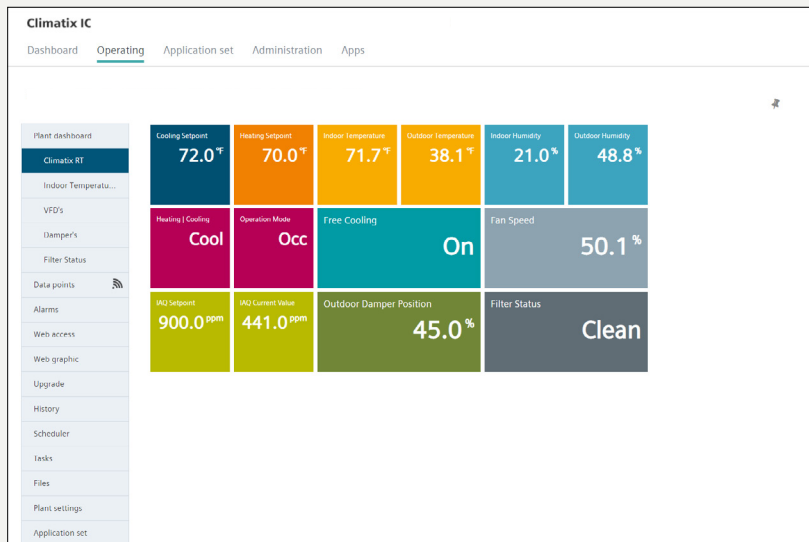
## Multi-site monitoring made easy



### Map View

Drill down from any location to see each RTU performance data in detail.

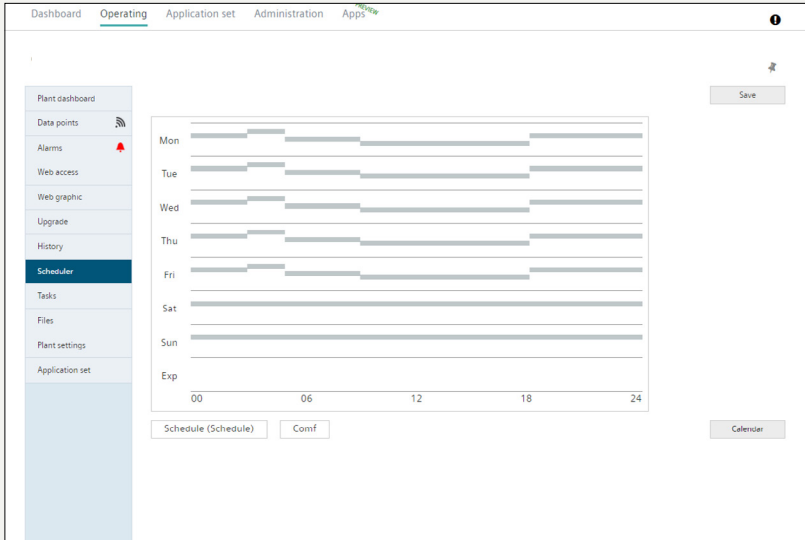
## Simple, real-time performance assessment



### RTU Dashboard

View cooling/heating set points, indoor/outdoor temperature, current operation mode, fan speed, filter status, damper position and IAQ values.

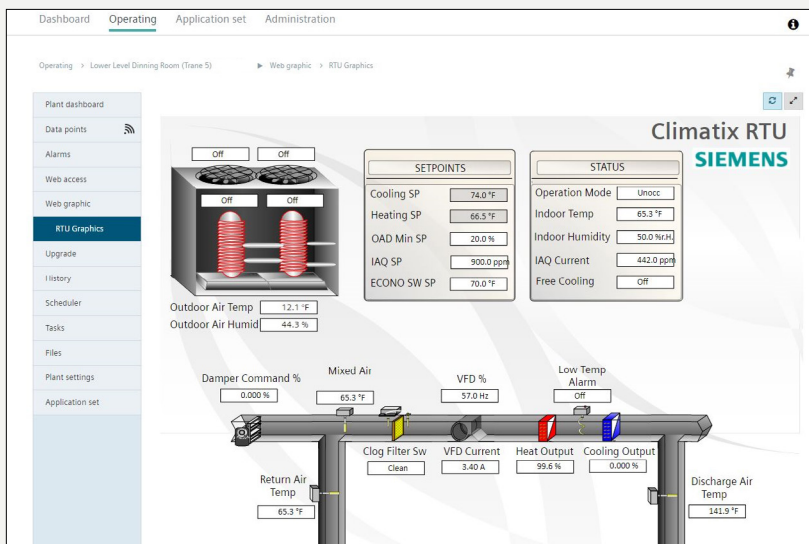
# Review/assign operation modes for the day/week/month



## RTU Schedule

Weekly schedules can be programmed with exceptions by day as needed. Set modes for unoccupied, pre-occupied and occupied. Set one day and easily copy to others.

# Easy visualization of detailed RTU operations



## RTU Graphic Interface

See all data points for quick review and for troubleshooting any additional setpoints to analyze such as return air, mixed air and supply air temperature, VFD current and low temp alarm.

# Track alarms and troubleshoot

The screenshot shows the 'Climatrix IC' web interface. The top navigation bar includes 'Dashboard', 'Operating' (selected), 'Application set', 'Administration', and 'Apps'. A left sidebar contains various menu items: 'Plant dashboard', 'Data points', 'Alarms' (highlighted with a red notification icon), 'Web access', 'Web graphic', 'Upgrade', 'History', 'Scheduler', 'Tasks', 'Files', 'Plant settings', and 'Application set'. The main content area is titled 'Active alarms' and displays a table of recent alarm events. Below the table is an 'Alarm history' section with pagination controls.

Alarm time	Text	Alarm value
> 01/21/2021 2:13:45 PM	+ 21.01.2021 14:13:45 Discharge Air Temperature (ins.DAT-Fault): noOutput	
> 01/21/2021 2:13:45 PM	+ 21.01.2021 14:13:45 Mixed Air Temperature (ins.MAI-Fault): noOutput	
> 01/21/2021 2:10:03 PM	+ 21.01.2021 14:10:03 Outdoor Temperature (ins.OAT-Fault): noOutput	
> 01/21/2021 2:10:03 PM	+ 21.01.2021 14:10:03 Outdoor Humidity (ins.OAH-Fault): noOutput	

**Alarm Description**  
Gain insight and suggestions for potential RTU functional issues.



# Climatix controller-driven VFD simplifies setup **for energy efficiency made easy**

The Climatix VFD series leverages the Climatix RT controller to simplify commissioning, monitoring and troubleshooting.

Designed specifically for use in new or existing rooftop unit fan applications, Climatix VFDs provide the energy efficiency needed. They are easily integrated, compact and cost-effective.

With other VFDs, setup may include programming 80+ parameters. With Climatix, the controller is preset with the key parameters for RTU operation and only requires VFD configuration with 10 or fewer parameters for Induction Motors; 25 or fewer for Permanent Magnet motors.

The Climatix mobile app completes programming with a press of the button. Combine with Climatix IC remote monitoring and you always know the exact VFD setting and RTU fan performance.



## Key Features

### Compact form

Designed to fit nicely in tight spaces with a size 40% smaller than other VFDs – ideal for RTU retrofits.

### Conformal-coated PCBs

Durable in harsh environments, the Climatix VFD printed circuit boards are built to withstand dust and moisture buildup.

### Built-in Safe Torque Off (STO)

STO turns off IGBT switching to prevent generation of motor torque to achieve a safe stop.

### Additional features

- Multi-motor control of up to 4 motors
- Built-in PID
- Phase loss protection
- Plenum rated
- DC braking
- Operating temperature -4° to 122° F (-20° to 50° C) without derating
- Certifications: UL, CE, RCM, TUV (SIL 2), RoHS, REACH

## Climatix VFDs are perfect for both new and retrofit RTU applications.

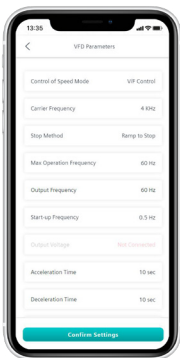
- ✓ Simple integration
- ✓ Fast commissioning
- ✓ Energy savings
- ✓ Improved indoor air quality

# The right combination for peak performance

With the VFD sequence of operations specially programmed into the Climatix RT controller, contractors save hundreds of hours in training and commissioning. Learn it in a day and be on your way to simplified service and maintenance for more rooftop units.

## Save Programming Time

All settings pre-configured in the controller.



### Simple Mobile App

Commission a VFD in minutes... not days. Troubleshoot remotely to save unnecessary trips.



### Designed for RTUs

Hassle-free communication with controller and quick startup.



### Remote Monitoring

Know exact performance status and avoid unnecessary truck rolls.

# | Make life easier

Over 75% of buildings in the USA use rooftop units, and building owners are pressured to mitigate operational costs. Climatix rooftop unit optimization is an affordable service providing peace of mind that RTU performance and building comfort are maintained satisfactorily...no matter the equipment age.

## **BETTER EFFICIENCY**

*"We're not doing a great job of managing energy ourselves, because we're not focused on it. RTU service monitoring takes something off our plate that we're not good at."*

*– Restaurant Manager*

It's not uncommon for a new restaurant to have top kitchen equipment combined with average RTU equipment to meet initial construction budgets. With a lot of restaurant equipment creating heat, combined with temperature swings throughout the year, managing energy becomes a huge priority in addition to food safety and guest comfort. Proactive monitoring of RTU performance to avert an equipment outage crisis is a key benefit to avoid lost business.

## **BETTER COMFORT**

*"While the economy has made us more cost-conscious, we need to make the right investments to assure guest satisfaction and safety for the long-term."*

*– Country Club Owner*

While a country club is about the perfect golf experience, it is also a priority to provide the perfect clubhouse and event experience for members and guests. Now, having peace of mind that air quality is safe is of greater importance. Scheduling daily fresh air purge cycles to proactively maintain safe air quality becomes a key advantage for event bookings and elevates the club's reputation for quality.

## **BETTER CONTROL**

*"We need reliable service while operating with limited facilities maintenance funds."*

*– Middle School Maintenance Manager*

Many schools are faced with budget gaps for facilities operation and yet are tasked to keep up maintenance to avoid more costly outages. Climatix RTU solution with remote management by Climatix IC provides an affordable service to improve RTU equipment performance and extend equipment life to achieve more predictable costs.



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