

**SIEMENS**



## Desigo Total Room Automation – for energy-efficient and flexible rooms

The innovative Green Leaf symbol makes saving energy easier than ever.

Answers for infrastructure and cities.



## Interactive room automation for energy-efficient buildings

Invest in your building's future and quickly benefit from significantly lower operating costs – using the intelligent Desigo™ Total Room Automation (TRA).

As an essential part of building automation, Desigo TRA lowers the energy consumption of every room in your building. The innovative Green Leaf symbol encourages room users to actively save energy, reducing operating costs and increasing your property's attractiveness. At the same time, Desigo TRA lowers your building's CO<sub>2</sub> emissions and promotes your company's green image.

In addition, Desigo TRA adjusts the heating, ventilation, air conditioning, lighting and shading for optimal room temperature, air quality and lighting conditions in any situation – the best way to ensure user satisfaction.

# Save up to 25% energy by involving room users

## High energy efficiency for your building

The Desigo TRA room automation system links all disciplines within a room and ensures the perfect interplay between heating, ventilation, air conditioning, lighting and shading. The system responds to the actual demand in the room, delivering only the amount of energy actually needed. Energy saving functions get room users actively involved in the process.

The Green Leaf symbol alerts users when unnecessary energy consumption occurs so they can take correct action.\*

## Intelligent comfort for any room

Desigo TRA ensures a comfortable room climate, good air quality and optimal lighting conditions with as little energy as possible. In addition, all room disciplines can be operated easily and intuitively from a single room operator unit. This creates a pleasant workplace environment and increases the motivation and productivity of room users.

## More flexibility for your plans

Business goals and room usage change, and customer requirements grow. Desigo TRA can be expanded step by step, giving you the ability to add new features when you need them. Since it supports international communication standards, it can be integrated seamlessly into existing installations.

## Convenient handling

With convenient handling, the plug-and-play room operator units reduce the time, effort and costs required for installation, operation and maintenance. In addition, tested applications make it easy to configure the system.

## Maximum reliability

Benefit from a reliable partner with many years of experience and a broad installed base: Hundreds of thousands of Desigo room automation systems are in use worldwide. Our extensive application knowledge contributes to the ongoing development of products and systems.

## Highlights

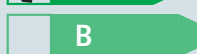
- High energy efficiency resulting from energy saving functions and the involvement of room users
- Optimal working environment and user satisfaction due to intelligent comfort
- Long-term investment protection through high flexibility
- Convenient handling for simplified installation and maintenance
- Maximum safety from an experienced, reliable partner

### BACS efficiency classes – EN 15232

**High energy performance**  
BACS and TBM



**Advanced**  
BACS and TBM



**Standard**  
BACS



**Non-energy-efficient**  
BACS



BACS Building Automation and Control System  
TBM Technical Building Management System

\* Studies conducted by Technische Universität München (TUM) suggest that energy consumption can be reduced by up to 25 percent if room users optimize their energy behavior.

Desigo TRA's Green Leaf symbol allows room users to become actively involved in the energy saving process, thus helping lower energy consumption.





#### Active energy management by room users

RoomOptiControl, an innovative energy efficiency feature, detects unnecessary energy consumption and alerts users by changing the color of the Green Leaf symbol on the room operator unit from green to red.

To reset the room controller to energy-efficient operation without loss of comfort, the user simply touches the symbol. The Green Leaf symbol returns to green.



Energy-optimized operation



Unnecessary energy consumption; energy saving potential exists

## Green Leaf symbol for optimized room climate

### Straightforward operation for a comfortable room climate

All disciplines within a room can be operated conveniently from a single room operator unit. Designo TRA room operator units are so user-friendly that operating errors – and associated energy losses – are virtually eliminated. In addition, the unique Green Leaf symbol alerts users when unnecessary energy consumption occurs. A simple fingertip of the Green Leaf symbol is all it takes to reset the room automation system to energy-efficient operation.

### Pleasant air quality in the workplace

A pleasant workplace climate improves concentration and has a positive effect on motivation and productivity. Designo TRA's innovative AirOptiControl application creates the ideal framework. It ensures that temperature, air quality and humidity limits are not exceeded and lowers energy consumption by up to 50 percent compared to a constant air volume system.

In addition, communicating sensors measure and adjust the CO<sub>2</sub> level in the air as well as the humidity and room temperature.

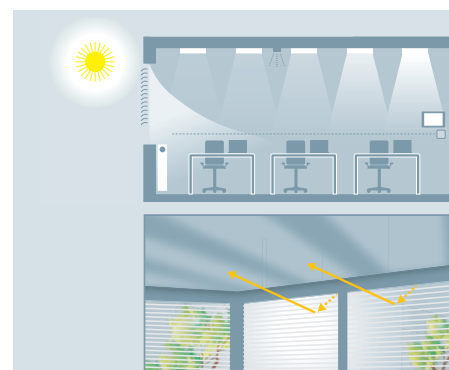
### Ideal lighting conditions for productive work

Optimized lighting conditions at the workplace prevent eye strain. Designo TRA automatically adjusts the lighting level to match the time of day. When needed, shading is provided to ensure optimal use of natural light without glare.

#### Highlights

- Room comfort through easy-to-use Green Leaf symbol
- Workplace comfort with optimized room conditions and air quality
- Better concentration because of fatigue-free lighting conditions

Through intelligent, energy-saving control of lighting and shading, Designo TRA ensures optimized lighting conditions in the workplace. Artificial light e.g. is switched on/off depending on natural light and information from presence detectors and controlled by integrated brightness sensors. Blinds are optimally adjusted to minimize glare, to make use of natural light and to protect from the heat and the cold.





Desigo TRA offers maximum flexibility. With its advanced segment concept, the building floor plan and the room layout can be adjusted easily and quickly – without modifying electrical or HVAC installations.

This means less initial expenditure and lower costs for the basic configuration. When tenants move in, they have complete freedom to add functional expansions as needed.

## Maximum flexibility, minimal investment

### Lower initial costs because of scalable concept

The scalable system concept allows you to offer tenants or buyers a great deal of freedom to design the space any way they wish. The basic configuration can be limited to a minimal installation, which can be easily expanded by tenants based on their requirements – from the room layout to individual workplace lighting. This shortens the construction phase and makes it easier to lease or sell the building.

### Easy adaptation to changing requirements

When a reorganization becomes necessary or when the room usage or the tenant changes, the unique segment concept of Desigo TRA will lower your costs. Floors in the building are subdivided into room segments and these, in turn, are flexibly combined into rooms. When the room layout changes, you can quickly adjust the segment grouping.

### Flexible settings for different work situations

The room operator units also offer flexible functionality. Scenes that trigger multiple actions in the room can be programmed for different work situations – e.g. normal operation, break, meeting or presentation – and modified if needed.

### Highlights

- Low initial costs due to scalability
- Flexible segment concept easily adapts to changes in room usage
- Room ambience can be changed by switching scenes

Using individually preprogrammed “scenes” stored in the room operator unit, you can change the room conditions simply by fingertip. The scenes select the room temperature, ventilation, shading and lighting appropriate for each situation. For a presentation, the light is dimmed and the shades are lowered while during a break, lighting and ventilation are turned on and the heating is turned down.





Desigo offers you a broad range of room operator units: Be it for HVAC or lighting/shading, with or without Green Leaf symbol and for wall mounting. The high-quality, IP-compatible touch room operator unit QMX7 features capacitive color display and can be installed even horizontally or vertically.

The communicating sensors for flush mounting measure the room temperature, humidity and air quality. They can be combined with the Delta frame program and matched with any room design.

## Innovative technology to minimize maintenance costs

### A comprehensive range for any requirement

The Desigo TRA product range meets all functionality and installation requirements. In addition to room automation stations, it also includes operator units, pushbuttons, communicating sensors for wall and flush mounting as well as presence detectors with integrated brightness sensors. The Desigo TRA range also combines harmoniously with different switch designs from Siemens and frames from other manufacturers.

### Standardized communication for easy installation and use

Standardized communication lowers installation and investment costs. You can easily reuse existing HVAC and lighting installations and optimize their functionality.

### Less effort for more convenience

Desigo TRA offers you convenient handling, which makes installation, reconfiguration and maintenance significantly easier and faster. Plug-and-play peripherals can be added and commissioned without engineering. Similarly, devices can be replaced without tools and engineering. An extensive library of tested applications facilitates planning and commissioning.

### Highlights

- The right product for any installation requirement
- Easy integration because of open communication standards
- Fast commissioning using plug-and-play products and predefined applications



The room operator unit QMX3 featuring Desigo Total Room Automation's RoomOptiControl function received the "GebäudeEffizienz Award 2012" (building efficiency award) as the best automation product.



Siemens uses not only its own laboratories for testing but also eu.bac-accredited testing facilities. The eu.bac certification according to European standards confirms the high quality, control accuracy and energy efficiency of the Desigo TRA devices.

# Long-term partnership with maximum reliability

**Reliability from experience**  
Siemens offers optimized room automation from a single source. You will benefit from a reliable partner with more than 60 years of experience in HVAC control technology, more than 30 years of experience in building automation systems and active involvement in international standardization bodies. In addition, Desigo TRA is based on the proven quality of a broad installed base.

**Proven reliability**  
Our extensive application knowledge is reflected in our products, systems and applications. They are thoroughly tested in the in-house laboratories from Siemens under real-life conditions to ensure smooth, error-free and efficient operation.

**In touch with the latest trends**  
With its high level of compatibility and continuous development, Desigo TRA protects your investment across the entire life cycle of your building. Changes, expansions or upgrades can be made gradually. Since Desigo TRA complies with global and European standards such as BACnet and eu.bac, you can rest assured that your building and room automation solution meets the latest requirements.

- Highlights**
- Reliability of an experienced, competent partner
  - Investment protection across the entire life cycle
  - Reliability through tested, proven components and applications
  - Meeting global and European standards



BACnet is an open communication standard for building automation used worldwide. Independent testing and certification authorities guarantee the reliability of BACnet devices.

Desigo room automation stations use BACnet to communicate with each other and with the management station. This ensures universal communication from the room to the management station.

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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract. The document contains a general product overview. Availability can vary by country. For detailed product information, please contact the company office or authorized partners.

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#### **Answers for infrastructure and cities.**

Our world is undergoing changes that force us to think in new ways: demographic change, urbanization, global warming and resource shortages. Maximum efficiency has top priority – and not only where energy is concerned. In addition, we need to increase comfort for the well-being of users. Also, our need for safety and security is constantly growing. For our customers, success is defined by how well they manage these challenges. Siemens has the answers.

**“We are the trusted technology partner for energy-efficient, safe and secure buildings and infrastructure.”**