Realize your innovation with Climatix – the HVAC controller range for OEMs
Climatix – tailored to HVAC applications and OEM needs

Climatix™ offers a complete range of flexible and scalable control solutions. The product range has been designed for any type of OEM heating, ventilation and air conditioning application. The controllers are suited for use with chillers, heat pumps, air handling units, roof tops, high-precision air conditioning units and district heating or cooling substations. They operate reliably under extreme temperature conditions from -40 to 70 °C (-40 to 158 °F).

A broad range of I/O extension modules, communication, cloud-based remote services and user interfaces complement the versatile product portfolio.
Modular controller range based on extensive experience

Comprehensive portfolio meeting all requirements
Climatix offers a unique product range concept with proven applications in the form of 2 different controller families.

The flexible and scalable design allows the selection of optimum solutions for customers’ specific needs. The product range includes standard controllers for basic, cost-optimized HVAC applications. Controllers of modular design with unique technology are available for more demanding applications, where maximum flexibility with regard to extensions and communication is a requirement. System adaptations can be easily made with no need to modify the control panel – neither mechanically nor electrically. Climatix enables customers to save time and costs when it comes to installation, engineering, commissioning and servicing.

Reley on extensive experience
Climatix controllers are based on in-depth application expertise and Siemens’ decades of experience in manufacturing HVAC controls.

In Siemens’ OEM team, the combined efforts of qualified and motivated personnel and the exchange of experience have been decisive for success, continually relying on teamwork, both within the company and in close cooperation with customers and suppliers. Siemens is a preferred controls supplier to leading OEMs throughout the world, thanks to solid working methods, quality and reliability of products, customer approach, and business processes which have been matched to the specific needs of the OEM market.

Highlights
- From simple and compact to flexible and modular
- Plug & play capability for standard systems
- Seamless integration into superposed systems
- Ease of programming for customized OEM solutions
- Remote Servicing System for OEMs, Facility Managers and service personnel

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Chillers and heat pumps

Chiller and heat pump solutions
Climatix controllers are designed for a wide range of chiller and heat pump applications. Proven standard applications and complete HVAC function libraries minimize the OEM’s effort in providing tailored chiller and heat pump solutions.

Total chiller control
Climatix provides many functions and features to control and operate the chiller efficiently. Siemens offers a wide range of components for refrigeration applications including valves, actuators and sensors.

Open communication protocols
Climatix supports all standard protocols for straightforward integration into BACS and networking within the unit.

Energy efficiency
Climatix focuses on the optimization of performance and energy savings based on intelligent product harmonization and leading edge HVAC control technology. Evaporation and superheat can be controlled in the calculated and designed operating range using optimum algorithms and an electronic expansion valve driver. The products make optimum use of all plant components; this results in extremely energy-efficient operation of the compressor and of the entire chiller or heat pump.

Service and maintenance
Climatix provides a choice of scalable parameters for commissioning, service, maintenance and troubleshooting – including remote service.

Wide choice of solutions for refrigeration applications

Highlights
- Chiller and heat pump solutions
- Total chiller control
- Open communication protocols
- Energy efficiency
- Service and maintenance from remote locations
Easy-to-use clear-text display and remote control over the web
Access to the application is easy and matched to the user’s needs. Menu texts can be selected in the local language. New languages can be added to the standard menu languages. Special characters, such as Cyrillic or Chinese, are also supported. A full range of touch panels can be connected to the controllers.

Benefits for OEMs
Programmed and tested applications on the controller can be extended as required. The district heating and cooling applications are based on general applications, such as primary controller, space heating, domestic hot water and solar plant, which can be combined as required. The OEM can benefit from free programmability of the Climatix controllers to create own applications, or to make use of specific in-house know-how.

Easy integration into centralized management systems
Thanks to Climatix’s communication capability like BACnet, Modbus, M-bus or web, integration into BACS or centralized management systems of utilities is easy. Communication modules can be added whenever there is a need.

Energy efficiency
With the help of energy monitoring and/or load control, the energy efficiency of district heating or cooling plants can be optimized from production to consumption.

Data archive
A data archive is available for energy, temperature values, and errors. Using the archived data, a central analysis program can evaluate the situation in a plant and supply adequate information, enabling optimization of district heating or cooling plant.
Efficient air handling units with networked products

Material and labor cost savings up to 30% thanks to simpler wiring concepts with bus-compatible sensors and actuators. Tool-free installation of Modbus actuators owing to bayonet-mount and fast commissioning Climatix.

Controllers and software

- The Climatix AHU solution provides a comprehensive and proven control solution for air handling units including controller, software application and components (communication modules, extension modules and user interfaces)
- Reliable operation of large and complex plants comprising up to 8,000 objects thanks to new high performance processor with extended storage capacity
- The controllers facilitate compact configuration of control panels due to a host of built-in functions (e.g. with built-in stepper motor drivers for refrigerant valves)
- Extensive connectivity options including Modbus RTU and TCP, BACnet MS/TP and IP, OPC, M-bus, LON and JSON
- The straightforward way to customized solutions with graphical, object-oriented programming tool SAPRO as per IEC 61131-3
- Comprehensive software tools and libraries for efficient development of applications
- Ready for Desigo CC thanks to Desigo CC library concept

Damper actuators

- Wide range with matching torque, optimum functionality, and high reliability
- Only one screw required for mounting, thus ensuring fast, error-free installation
- Extended service life: self-centering shaft adapter prevents actuator from wobbling around the damper shaft
- Robust metal housing on all models for long service life
- High torque plus spring return
- Plug & play thanks to customer-specific cables and plugs
- Quiet, energy-efficient motor technology extends product service life
- Online product configurator for fast and straightforward selection of the desired actuators
Customization

Flexible customization to meet all requirements:
- Project-specific labeling (e.g., AHU No.1)
- Supplied as multipacks
- Cable length and type
- Cable complete with plug of your choice
- Your logo
- Certificates

Configurator matches the product online to your requirements.

Climatix IC – Remote Servicing System

Climatix IC adds value throughout the system’s life cycle:
- Remote firmware update
- Supervised commissioning
- Alarm management dashboards
- Alarm management and energy monitoring
- Remote diagnostics
- Application upgrade

Climatix offers competitive advantages and new business opportunities.

Variable speed drives

- Host of options based on modular product concept: same control unit regardless of output
- Straightforward connection to Climatix thanks to Modbus communication
- Energy-efficient fan operation through variable speed drive for precise adjustment of speed to current requirements

Sensors

- Broad product range covering all standard measuring ranges and output signals
- Sensors are tested in Siemens’ own HVAC laboratory to ensure highest levels of reliability
- Energy efficiency and enhanced room comfort owing to demand-controlled ventilation
- Maintenance-free pressure sensors featuring high long-term stability
- Great measuring accuracy helps save energy costs

Valves and actuators

- Quick, tool- and fault-free assembly of actuators and valves
- Dirt-resistant thanks to small number of parts and valve characteristic integrated in the ball for long, maintenance-free product service life
- Plug & play thanks to customer-specific cables and connectors
- Insulating shell for optimal thermal insulation and energy savings
- 100% water-tight, resulting in extreme energy efficiency (no heat losses due to false circulation)
- Online product configurator for fast and straightforward selection of the desired actuators
Climatix C600, the next generation – realize your innovation

Climatix offers a complete range of flexible and scalable control solutions. The controllers have been designed to meet the requirements of OEMs. The latest generation C600 excels in extensive connectivity. The products are capable of communicating with all commonly used BACS.

Connectivity

- Two integrated RS-485 ports for the simultaneous use of operating units, Siemens Modbus damper actuators and additional users of Modbus RTU or BACnet MSTP applications
- Dedicated Ethernet port for BACnet IP, cloud connection (IC), OPC or Modbus TCP
- Process bus connection facility for room operating units
- Extra connection facility for additional communication modules for Modbus RTU, BACnet IP, BACnet MSTP, M-bus and LON
- Micro-B USB port for easy connection of Climatix SAPRO and SCOPE tools
- SD memory card for updates of firmware and applications

Built-in functionality

- Reliable operation, even of large and complex plants with up to 8,000 objects, thanks to new high performance processor with extended storage capacity
- Intuitive operation with push & roll knob for fast access to information during commissioning, operation or service
- Two built-in stepper motor drivers to control electronic expansion valves, optional with supercaps for fail-safe operation
- Broad operating temperature range (-40 to 70 °C) with no need to take special protective measures
- Password-protected configurations for high levels of security
Straightforward development

- Climatix library with proven HVAC function blocks for fast development of applications
- Cost-efficient development of applications thanks to proven standard applications
- Comprehensive application templates for chillers and heat pumps can be easily customized to meet plant-specific requirements

Cloud technology

- High level of customer satisfaction thanks to plant transparency
- Lower service costs owing to bundled service activities
- Information matched to user requirements (e.g., for OEMs, Facility Managers or service personnel)
- Quick overview with map and plant status using traffic light colors

Straightforward mounting and installation

- Compact setup of control panel thanks to built-in functionality
- Fast and fault-free wiring with coded screw-plug terminals
- Tool-free mounting of controllers on DIN rails
- Flexible setup of control panel thanks to peripheral bus (e.g., for detached mounting of I/O module islands)
- High flexibility thanks to uniform I/O layout concept of the different types of controllers

POL688.10, POL688.80 21 I/O extension modules
POL648.10, POL648.80 27 I/O extension modules
POL69x.10, POL69x.80 27 I/O extension modules (2 EEV drivers)
Compact HVAC controllers
The Climatix 400 controllers with dedicated hardware are cost-optimized for compact chiller/heat pump and ventilation systems, for both residential and light commercial plants. They are an adaptable range of compact controllers.

Embedded stepper motor driver
For chiller and heat pump applications, Climatix 400 provides an embedded stepper motor driver for unipolar electronic expansion valves to minimize cost and dimensions.

Energy-efficient applications
Climatix 400 is optimized for applications employing the latest technologies, such as variable speed drives, capacity-controlled compressors and electronically controlled valves. This enables OEMs to develop energy-efficient solutions.

Plug & play systems
For straightforward setup of hydronic systems with chillers/heat pumps and fan coil units, the Climatix range offers an on-board process bus – without PC tool.

Integrated operation
Integrated operation affords customized programming of text and graphic displays for different types of applications.

Customized applications
Freely programmable controllers are also available for customized software applications to ensure quick reactions to market demand changes. For easy software updates even in the field, Climatix 400 supports SD cards.

Compact HVAC controllers POL42..
- Optimized versions for compact chillers and heat pumps (POL422, POL423)
- Optimized versions for compact air handling units (POL426)
- Optimized version for small, compact district heating substations
- Programmable versions available with SD card support
- Modbus or BACnet MS/TP and process bus available
- Embedded stepper motor driver for electronic expansion valves
- Pulse width-modulated outputs for variable pump control
- Wide operating temperature range from -40 to 70 °C
- M-bus master interface (POL426)
Climatix user interfaces
Extensive range of user interfaces (HMs), room units and touch screens. Key features are extended operating conditions, quick factory or site installation, rugged industrial design, user-friendly engineering process, plus monitoring and remote servicing. The products are in compliance with worldwide certification, directives and regulations. Climatix user interfaces are designed for use with compact and advanced HVAC equipment.

Wall-mounted room units
Quick and cost-efficient installation thanks to 2-wire bus (KNX-based), enabling installers to save time: User-friendly settings of temperatures, fan speed, humidity and indoor air quality. The products ensure straightforward commissioning of HVAC equipment.

Panel-mounted user interfaces
Suitable for installation in control panels or for attachment to HVAC units by means of permanent magnet. The user interfaces’ industrial design ensures protection even under extreme operating conditions. Several types of visualization in the form of segmented LCDs, fully programmable displays and touch screens. Basic texts, icons and touch interfaces are available for every type of HVAC equipment.

### Highlights
- Fully programmable user interfaces
- Plug & play connection powered directly by controller
- Multilanguage support (Unicode)

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| POL871 (HMI-TM) | - 8-line backlit display  
- Suited for outdoor installation (IP65)  
- Firmware upgrades on site via SD card  
- Programmable iconic mode user interface |
| POL895 (HMI-DM) | - 8-line backlit display  
- Built-in temperature sensor  
- Suitable for local or remote installation  
- Firmware upgrades on site via SD card |
| POL831 (HMI-LED) | - Compact panel-mounted HMI (IP54)  
- Communication over Modbus protocol  
- Fully programmable via Climatix tools |
| POL8T1 | - Touch panels 4.3", 7" and 12" (IP65)  
- Communication over Modbus protocol  
- Ethernet and RS-485 serial ports  
- Fully programmable graphic user interface  
- Software upgrades on site via USB/SD card |
| POL822 (HMI-SG) | - Segmented LCD with built-in temperature sensor  
- Suitable for use with universal conduit boxes  
- Fully programmable via Climatix tools  
- 7-day scheduler |
| QMX3.. | - Climatix is compatible with BACS products  
- Plug & play connection over PL-Link bus  
- Communicative sensors, switches and room units  
- Setting of temperature, humidity, indoor air quality, CO₂ |
Standard open protocols
Climatix can be integrated into BACS via standard open protocols, such as BACnet or Modbus. This ensures maximum interoperability with any type of third-party equipment.

Seamless integration into Siemens BACS
Using BACnet or Modbus, Climatix can be easily and natively integrated into Siemens BACS Desigo or Apogee. This reliable approach enables the OEM to actively promote its own equipment for use in building automation.

Easy handling
Various communication modules are available to support any type of integration into BACS. Modules can be easily added in the factory or even in the field, powered directly by the controller.

Flexible communication
Up to 2 different communication modules can be simultaneously connected to the same controller to match different communication topologies and technologies.

Highlights
- Simultaneous connection of up to 2 modules to the same controller
- Straightforward installation in the field
- Full integration into BACS by standard open protocols
- Seamless integration into Siemens BACS Desigo or Apogee
- Web server solution for remote monitoring and control

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| POL902 – Modbus RTU | - Integration into BACS via RS-485 Modbus  
- 2 RS-485 Modbus RTU slaves  
- Galvanically isolated |
| POL906 – LON | - Integration into BACS via LON network  
- Galvanically isolated LON network |
| POL907 – M-bus | - Galvanically isolated  
- Connection of up to 6 M-bus devices  
- Up to 64 M-bus devices with M-bus repeater  
- Short-circuit-proof bus power supply |
| POL904 – BACnet MS/TP | - Integration into BACS via BACnet MS/TP or IP  
- BTL-certified |
| POL908 – BACnet IP | - Integration into BACS via BACnet MS/TP or IP  
- BTL-certified |
| POL909 – advanced web solutions | - Remote configuration via HMI@Web  
- Web SCADA package  
- Diagnostics and maintenance |
| POL0L9 OPC server | - OPC integration of Climatix controllers  
- Light license for small plants  
- Full license for large plants |
Modularity for costs savings
A choice of options offers the best solution and minimizes expenditure. If extra functions are required, Climatix includes a broad range of I/O extension modules. They provide freedom in flexibility to satisfy all kinds of application requirements. The extension modules can be powered by the controller.

Flexibility
To enhance flexibility, the unique ASIC used on the controller for programming universal I/Os is also available on the extension modules. The type and number of I/Os are selected depending on the functions required by the specific application. Extension I/O modules can also be installed on site if additional functions are required at a later stage.

Distributed I/O modules
Depending on the installation or the control panel, the extension I/O modules can be attached to the controller or distributed in control panels.

ECV modules
The ECV modules have incorporated drivers for electronically controlled valves, equipped with unipolar or bipolar motors. The valves’ algorithm can be freely programmed on the controller. Each ECV module can drive independent valves and be combined with other modules for unlimited flexibility. In the event of power failure, the modules drive the valves to a safe position, with no need for an external battery.

Climatix C600 – I/O extension modules

### Highlights
- Best combination of I/O extension modules
- High flexibility through combined I/O modules
- Distributed control panels possible since modules can be installed in different panels
- ECV modules – useful, flexible and secure

### POL94.. through POL98..
- Choice of I/O modules with different types and number of I/Os
- Each module offers specific combinations of inputs for each individual HVAC application
- Power supply AC 24 V or DC 5 V for active sensors on board the modules
- Straightforward addressing via easily accessible DIP switches
- POL955, POL96.. and POL98.. offer 8 universal I/Os for high level of flexibility
- Reliable operation in case of power failure or communication breakdown
- LEDs for operation and diagnostics
- ECV versions with incorporated drivers for electronically controlled valves
Remote maintenance – at any time from any location
HVAC systems often operate in places far from the OEM’s production center. This can lead to high service costs and travel expenses which can be avoided, especially during warranty periods. The Climatix IC Remote Servicing System facilitates diagnostics, optimum settings or system upgrades from any location – with no need for having a service engineer on site. But should it prove necessary to visit the plant, the available data will enable the service engineer to do his work efficiently.

Connection – straightforward and effective
Today, the majority of Climatix controllers are equipped with a built-in IP interface. Using this interface, the plant connects itself automatically to the Climatix IC Remote Servicing System – with no need for programming or making settings.

Web-based – always up to date
Climatix IC operates with a standard web browser and is suited for use with all types of web-compatible devices. The service engineer logs in on the Climatix portal via laptop, tablet or smartphone, allowing him to access the plant directly. There is no need to use special cables or to install extra software.

Collection and handling – life cycle-oriented
A significant benefit offered by the Climatix IC Remote Servicing System from Siemens is the central collection and storage of all plant and process data during the plant’s life cycle. These data are available at any time to make all kinds of evaluations and to provide valuable information about the plant’s operating state, reliability and efficiency. Climatix IC is the perfect tool for cutting maintenance costs in the long term and for developing new business fields.

Highlights
- Extensive checks: remote access for diagnostics, optimization and maintenance
- Significant cost reduction: optimization of service visits thanks to remote access
- Enhanced customer satisfaction: shorter response times in terms of service
- Very straightforward connection: Climatix controllers can be connected directly via the internet
- Storage of plant data: logged to be used as a basis for future services

Tailored solutions are available to meet the needs of different HVAC applications. IC20.100 “get connected” gives OEMs access to a simple remote monitoring package at no cost.
The Climatix controllers can be freely programmed by SAPRO. This is a graphic-oriented programming tool conforming to IEC 61131-3 and offering the highest flexibility in the HVAC market. The tool enables customers to develop specific functions for efficient application design.

Proven HVAC libraries
To minimize engineering efforts, SAPRO provides proven libraries for air conditioning, refrigeration and district heating. The integrated online help explains the use of each function. The SAPRO HVAC libraries enable OEMs to minimize development time and to concentrate efforts on creating customized functionalities.

Online test
To reliably test the programmed application, SAPRO provides a powerful online test capability directly on the target device. This includes checking and forcing values, variables, inputs and outputs before incorporating the controller into a real unit. After commissioning the unit, the online test can even be efficiently used for troubleshooting from a remote location.

Easy local or remote commissioning
Climatix controllers can be commissioned via Climatix HMIs by browsing the HMI@Web or by the SCOPE commissioning tool. With SCOPE, all available settings can be accessed over USB, IP or LON.

SAPRO programming software
- Graphical, object-oriented programming tool as per IEC 61131-3 (FBD, SFC, ST)
- Archive and version management, workgroup, workflow support and library management

SCOPE Light commissioning tool
- Read-and-write access to all Climatix data points
- Connectable over USB, LON, or TCP/IP
- Configuration and visualization of on/offline data trends, logs, and time schedule

Highlights
- Graphical, object-oriented programming tool
- HVAC libraries for refrigeration, air conditioning and district heating functions
- Higher levels of customer satisfaction: shorter response times in the case of service work
- Online test to simulate and verify applications in the office
- Archive and version management
When building technology creates perfect places – that’s Ingenuity for life.


With our knowledge and technology, our products, our solutions and our services, we turn places into perfect places.

We create perfect places for their users’ needs – for every stage of life.

#CreatingPerfectPlaces
siemens.com/perfect-places