



Climatix – the HVAC controller range for OEMs

Control Products & Systems OEM



Climatix – tailored to HVAC applications and OEM needs

Climatix™ offers a complete range of flexible and scalable control solutions – from standard to freely programmable. 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, fan coil 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 and user interfaces complement the versatile product portfolio.

Modular controller range based on extensive experience

Comprehensive portfolio meeting all your requirements

Climatix offers a unique product range concept with proven applications in the form of 3 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.

Rely on extensive experience

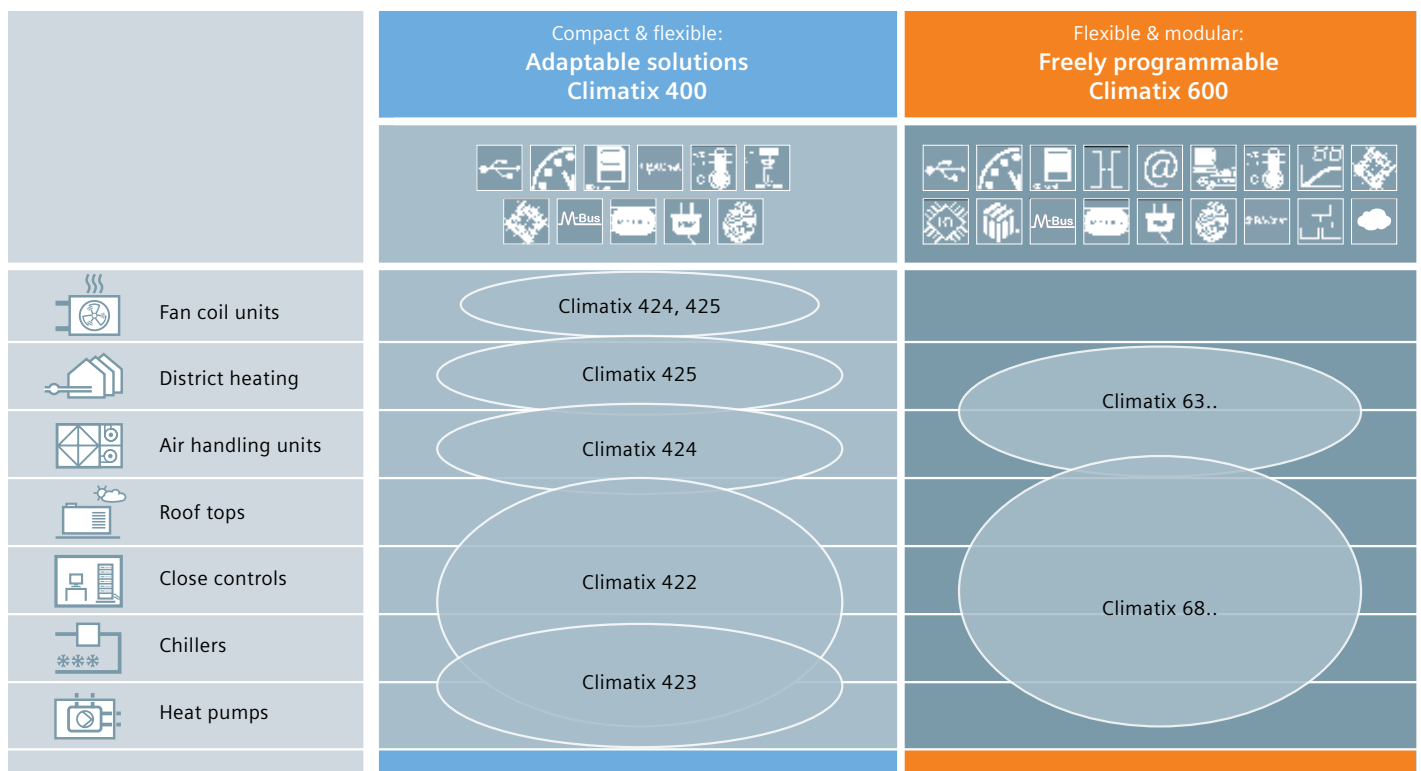
Climatix controllers are based on in-depth application expertise and Siemens' decades of experience in manufacturing HVAC controls. In Siemens' OEM team, the combined efforts of qualified and motivated staff and the exchange of experience have been decisive for success, continually relying on teamwork, 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.

* Building automation and control system

** Application-specific integrated circuit

Highlights

- From simple and compact to flexible and modular
- Plug-and-play capability for standard systems
- Seamless integration into BACS*
- Ease of programming for customized OEM solutions



Legend:

- Data logger
- Modbus embedded
- Plug and play
- Remote service
- Real time clock and timer function
- I/O extensions
- LonMark
- Proprietary ASIC** for I/O flexibility
- Web service
- BACnet
- Know-how application protection
- SD card
- USB connection
- Embedded TCP/IP
- Remote Servicing System
- M-Bus
- Wide operating temperature range
- Electronic expansion valve



Chillers and heat pumps

Wide choice of solutions for hydronic systems

■ 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

Chiller plant sequences or complete hydronic plants with fan coil units can be easily programmed. This enables OEMs to combine plant elements aimed at optimizing comfort while minimizing energy usage. A wide range of valves, actuators and sensors enhance the offering.

■ Open communication protocols

Climatix supports all standard protocols for straightforward integration into BACS and is suited for connection via the internet even on residential applications.

■ Energy efficiency

Climatix focuses on the optimization of performance and energy savings based on intelligent product harmonization and leading edge HVAC control technology.

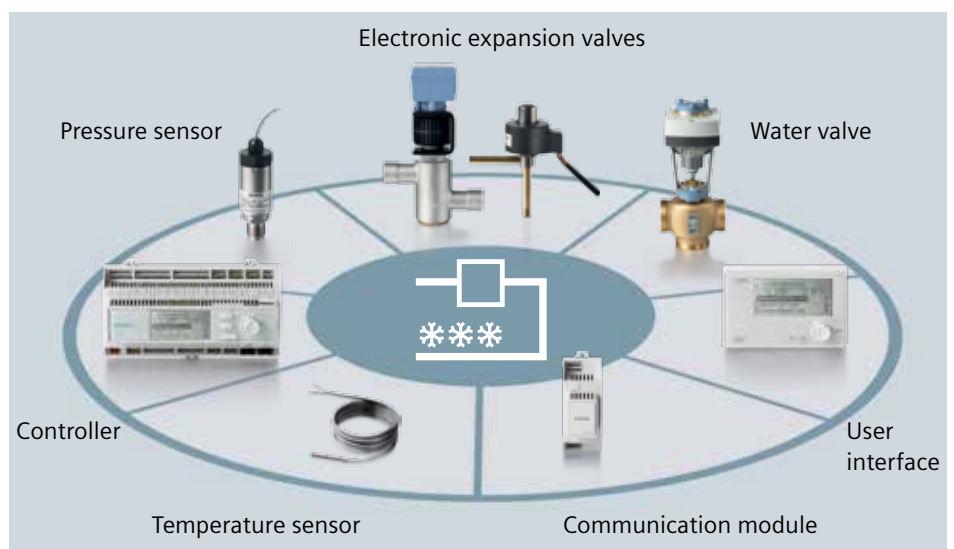
Evaporation and superheat can be controlled in the calculated and designed operating range using optimum algorithms and an electronic expansion valve driver. The products make optimum use of all plant components; this results in extremely energy-efficient operation of the compressor and of the entire chiller or heat pump.

■ Service and maintenance

Climatix provides a choice of scalable features for commissioning, service, maintenance, and troubleshooting, even from remote locations.

Highlights

- Chiller and heat pump solutions
- Total chiller control
- Open communication protocols
- Energy efficiency
- Service and maintenance from remote locations





Air handling units

Complete solutions from small and compact to large and modular air handling units

Ready-to-use applications

Climatix controllers can be loaded with a ready-to-use air handling unit application. The OEM can select via HMI or the web any required functionality. The communication interfaces for BACnet, LON, Modbus or OPC are prepared and fully documented to ensure easy integration into standard BACS.

Proven HVAC libraries

Today, the market often asks for free programmability to develop OEM-specific applications and programs. Climatix provides a large number of proven HVAC libraries as a basis for the straightforward creation of OEM-specific applications.

Remote servicing and maintenance

Remote service via TCP/IP ports and direct service via HMI and SD card offer cost savings for servicing and maintenance.

Comprehensive product range

In addition to the Climatix controllers, Siemens markets a full range of products to manage the entire air handling unit. This includes damper actuators, sensors (for temperature, pressure, humidity, and indoor air quality), variable speed drives

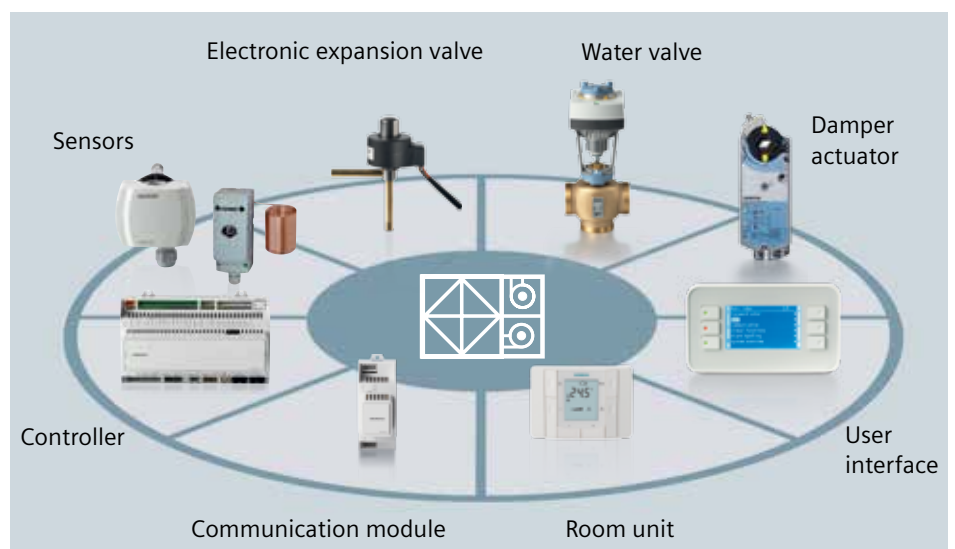
for fans and pumps, plus an extensive range of valves and actuators. The OEM benefits from a single source, thus simplifying purchasing and logistics, but also the responsibility for the full functionality of the air handling unit.

Integrated refrigeration

The modular controller concept of Climatix facilitates the straightforward use of integrated refrigeration in ventilation plants aimed at optimizing costs and efficiency.

Highlights

- Ready-to-use AHU applications
- Proven HVAC function blocks for quick programming by the OEM
- Scalable hardware and software in all sizes
- Comprehensive product range





Close control – precision cooling – shelters

State-of-the-art HVAC control solutions

■ Extensive range of controls

For close control, high precision cooling and telecom shelter applications, Siemens offers a whole range of controllers and field devices: Climatix freely programmable controllers, refrigeration valves, water valves and actuators, various types of sensors for temperature and humidity, pressure switches for fans and filters.

■ Precision control

Specific Siemens features, such as the accuracy of the unique ASIC combined with the high precision of the innovative magnetic valve enable OEMs to achieve equipment performance as never before: Extreme reliability, longer life, wider range of applications and energy optimization.

■ Wide range of HMIs

Depending on the OEM's needs, customers can choose from various types of user interfaces. The touch panels feature excellent visualization. Smaller user interfaces are available also, ensuring ease of operation and commissioning on site.

■ Fit for high precision air conditioning

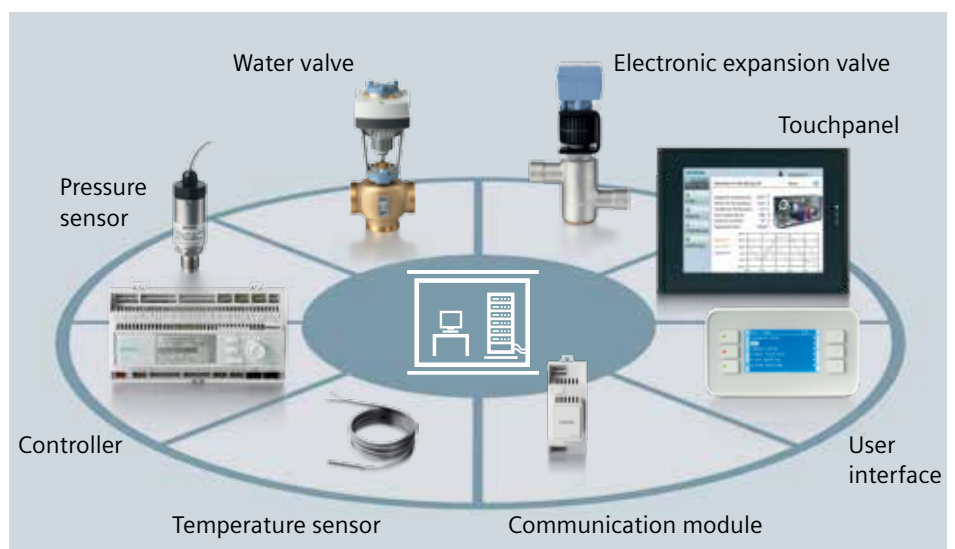
Specifically designed for the most demanding applications, Climatix is perfectly suited for high precision air conditioning, offering reliable lead-and-lag features, energy optimization, and integration into BACS.

■ Telecom mobile shelter

Climatix offers dedicated controllers for shelter applications to match the specific power supply requirements plus lead-and-lag operation.

Highlights

- Extensive range of controls
- Broad range of user interfaces
- Accurate and energy-saving operation
- Fit for high precision air conditioning and telecom mobile shelter applications





District heating and cooling

From production to distribution

■ 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 touchpanels can be connected to the controllers.

■ Advantage for the OEM

Programmed and tested applications on the controller can be expanded as required. The district heating 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, modems and web, integration into BACS or centralized management systems of utilities is easy. Communication modules can be added whenever there is a need.

■ Energy efficiency

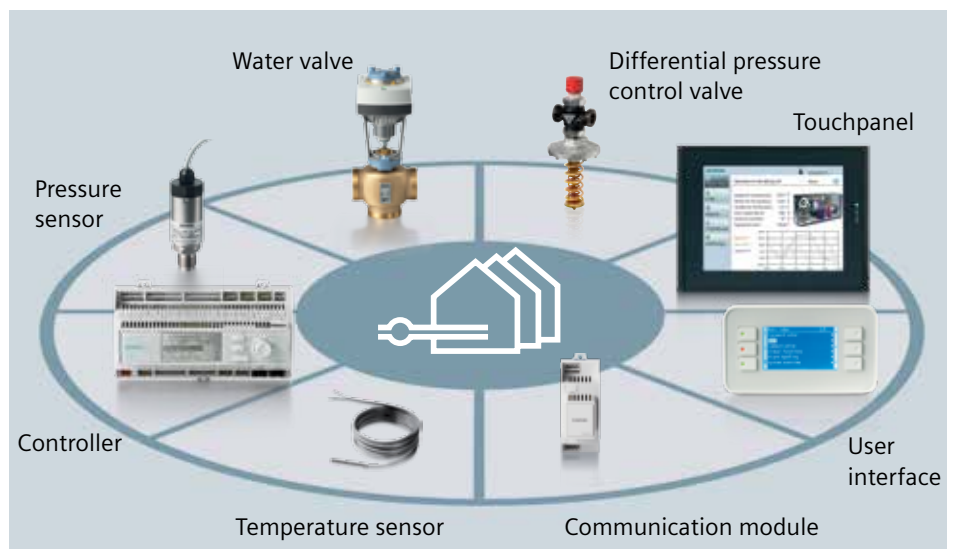
With the help of energy monitoring and/or load control, the energy efficiency of district heating plants can be optimized from production to consumption.

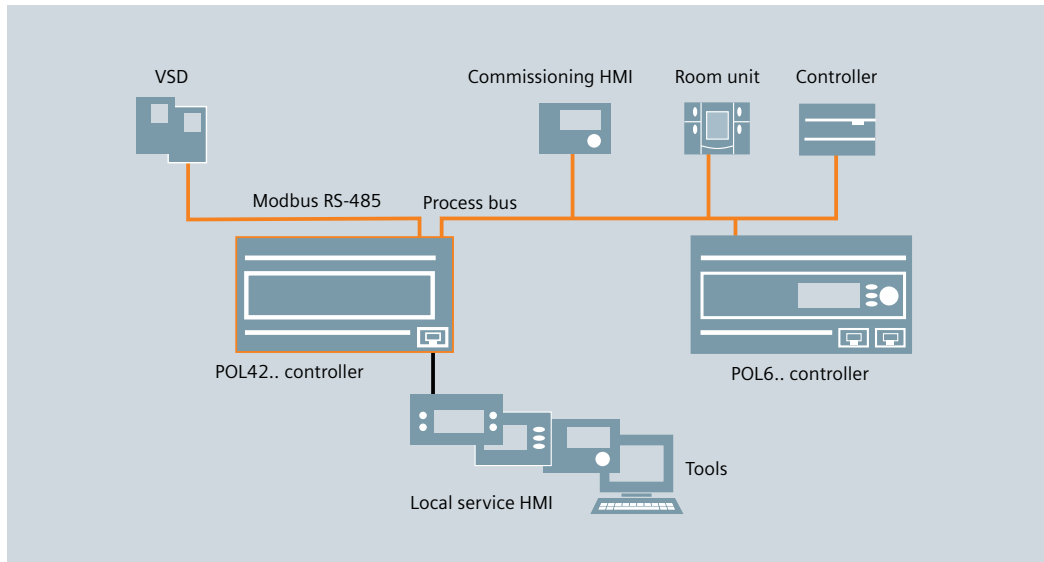
■ Data archive

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 plant.

Highlights

- Clear-text display
- Programmed or freely programmable
- Easy integration into centralized management systems
- Optimized for energy efficiency
- Data archive





Climatix 400 – compact and flexible

Dedicated applications – ideal for plug-and-play systems

■ 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 driver

For chiller and heat pump applications, Climatix 400 provides an embedded stepper driver for unipolar EEV to minimize cost and dimensions.

■ Energy-efficient application

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

■ Plug-and-play systems

For straightforward set up of hydronic systems, with chillers / heat pump and fan coil units, the Climatix range offers an on-board process bus, without any PC tool.

■ Standardized solutions

Standardized Climatix 400 products are available with proven ready-to-use applications to shorten time to market.

■ 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.

Highlights

- Embedded programmed and proven applications
- Modbus or BACnet MSTP, M-Bus and Prozessbus bus available
- Integrated stepper motor driver for unipolar valve
- Wide operating temperature range
- Optional free programmability



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 MSTP 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 600 – flexible and modular

Freely programmable, extendable controllers for seamless integration into BACS

■ Unlimited capabilities

The Climatix 600 range excels in flexibility based on a modular concept combining controllers with extension I/O modules, multiple communication interfaces, a choice of HMIs, and time-saving programming tools.

■ Free programmability

Any HVAC application can be easily developed or customized by using Climatix programming tools. These include proven libraries with control logics and communicative functions.

■ Flexible and extendable I/Os

A proprietary ASIC (application-specific integrated circuit) supports all types of I/O signals required for any typical HVAC application. Up to 8 channels can be configured via software as inputs or outputs, analog or digital, thus ensuring full hardware flexibility at highest accuracy. Addi-

tional I/O modules can be added as required by the application.

■ Broad operating temperature range

Climatix is designed for installation in any geographical location from – 40 to 70 °C (– 40 to 158 °F).

■ Communication and accessibility

Climatix controllers offer multiple communication capabilities. These include a process bus for plug-and-play HVAC systems, an on-board modbus to integrate peripheral devices, and an IP port for access via the Internet, thus allowing remote operation and monitoring, or simplifying service and troubleshooting.

■ Seamless integration

Climatix 600 offers a broad choice of field-installable communication modules. Climatix ensures seamless integration into Siemens BACS.

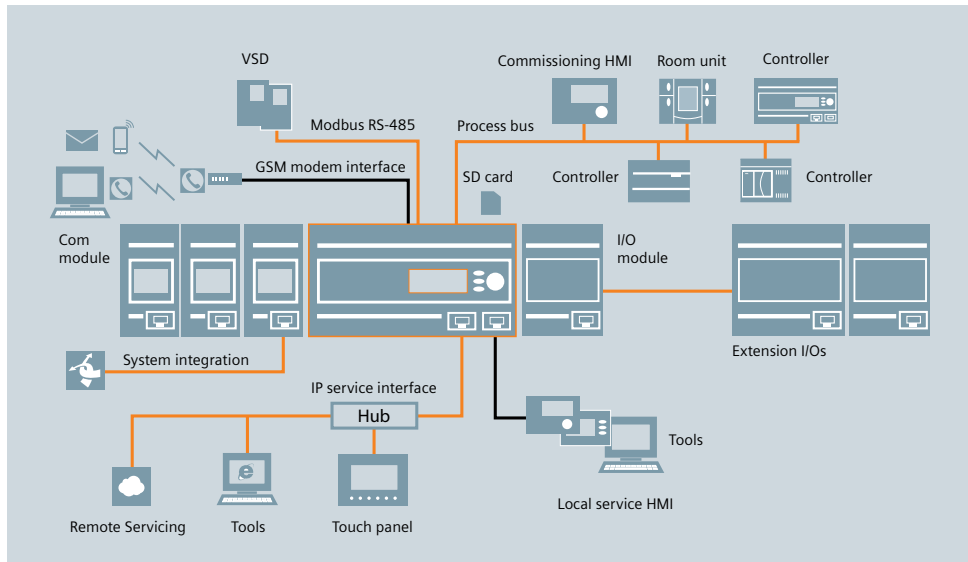
Highlights

- Freely programmable controllers with large HVAC software functions library
- Highest flexibility due to modularity and unique I/O ASIC
- Broad operating temperature range
- Extensive communication capabilities
- Remote access via web for servicing and commissioning
- Seamless integration into BACS



POL63.. and POL68..

- 27 I/Os, optimized for chiller, roof top and heat pump applications (POL68..)
- 21 I/Os, optimized for air handling units and district heating applications (POL63..)
- Optional display on board
- SD card for easy configuration, commissioning and service
- Modbus and process bus on board
- On-board TCP/IP and modem interface for remote servicing
- Optional LON, BACnet, Modbus, M-bus and web communication modules
- 3 versions available for POL63..: Basic, with LON or TCP/IP communication



Climatix 600 – communication modules

Easy integration into BACS

Standard open protocols

Climatix can be integrated into BACS via standard open protocols, such as BACnet or LON. This ensures maximum interoperability with any type of third-party equipment.

Seamless integration into Siemens BACS

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

Easy handling

Various 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 3 different communication modules can be simultaneously connected to the same controller to match different communication topologies and technologies.

Highlights

- Simultaneous connection of up to 3 modules to the same controller
- Straightforward installation in the field
- Full integration into BACS by standard open protocols
- Seamless integration into Siemens BACS Designo or Apogee

| | |
|--|---|
| | 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 - 78 kbaud TP/FT-10 transceiver - 62 standard network variables - Controller application upgrade via LON |
| | 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 - Supports BACnet MS/TP with different baud rates - BTL-certified |
| | POL908 – BACnet IP - Integration into BACS via BACnet IP - Preloaded generic BACnet server - Supports BACnet/IP over B-BC profile and BBMD - Client communication to other BACnet devices - BTL-certified |
| | POL019 OPC server - OPC integration of Climatix controllers over Ethernet or modem - Light license for small plants - Full license for large plants |



| | Fixed, dedicated I/Os | Universal I/Os |
|--|-----------------------|----------------|
| | 66 | 24 |
| | 61 | 24 |
| | 55 | 24 |
| | 44 | 24 |
| | 45 | 16 |
| | 43 | 16 |
| | 37 | 16 |
| | 26 | 16 |
| | 27 | 8 |
| | 25 | 8 |
| | 19 | 8 |

Appropriate amount of I/Os through extension modules

Climatix 600 – I/O extension modules

For highest flexibility and modularity

Modularity for costs savings

A choice of options offer the best solution and minimize 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.

Highlights

- Best combination of I/O extension modules
- High flexibility through combined I/O modules
- Distributed panel design is possible by locating modules in different control panels
- ECV module, useful, flexible and secure

POL92.. up to 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



User interfaces

Comprehensive choice of solutions customized for HVAC installations

■ Climatix user interfaces

Extensive range of human machine interfaces (HMI), 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 in-

stallers to save time. User-friendly settings of temperatures, fan speed, humidity and air quality. The products ensure straightforward commissioning of HVAC equipment.

■ Panel-mounted HMIs

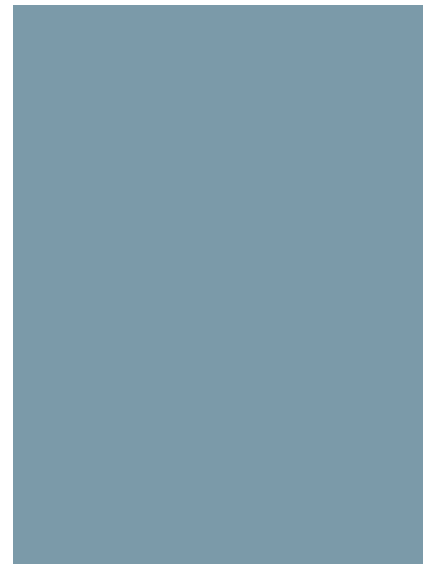
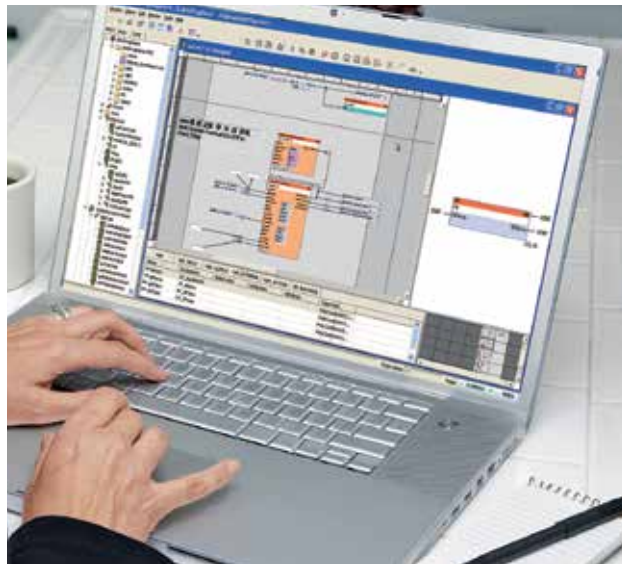
Suitable for installation in control panels or for attachment to HVAC units by means of permanent magnet. The HMIs' industrial design ensures protection even under extreme operating conditions. Several types of visualization in the form of segmented LCDs, fully programmable displays and touch screens. 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
- Extended operating conditions
- Multilanguage support (Unicode)

| | |
|--|--|
| | <p>POL871 (HMI-TM)</p> <ul style="list-style-type: none"> - 8-line backlit display - Suited for outdoor installation (IP65) - Firmware upgrades on site via SD card - Programmable iconic mode user interface |
| | <p>POL895 (HMI-DM)</p> <ul style="list-style-type: none"> - 8-line backlit display - Built-in temperature sensor - Suitable for local or remote installation - Firmware upgrades on site via SD card |
| | <p>POL831 (HMI-LED)</p> <ul style="list-style-type: none"> - Compact panel-mounted HMI (IP54) - Communication over Modbus protocol - Fully programmable via Climatix tools |

| | |
|--|--|
| | <p>POL8T1</p> <ul style="list-style-type: none"> - Touch panels 4.3", 7" and 12" (IP65) - Communication over Modbus protocol - Ethernet and RS485 serial ports - Fully programmable graphic user interface - Software upgrades on site via USB/SD card |
| | <p>POL822 (HMI-SG)</p> <ul style="list-style-type: none"> - Segmented LCD with built-in temperature sensor - Suitable for use with universal conduit boxes - Fully programmable via Climatix tools - 7-day time scheduler |
| | <p>QMX3..</p> <ul style="list-style-type: none"> - Climatix is compatible with BACS products - Plug & play connection over PL-Link bus - Communicative sensors, switches and room units - Setting of temperature, humidity, air quality, CO2 |



The fast way to customized solutions

Programming tool SAPRO with HVAC libraries and commissioning tool SCOPE

■ Free programmability

The Climatix controllers can be freely programmed by SAPRO. This is a graphic-oriented programming tool conforming to IEC 61131-3 standard and offers 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 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, modem, or LON.

Highlights

- Graphical, object-oriented programming tool
- HVAC libraries for refrigeration, air conditioning and district heating functions
- Online test to simulate and verify applications in the office
- Archive and version management



FACTORY tool

- Support for OEM's production process
- Loading and configuration of Climatix controller
- End-of-line report



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

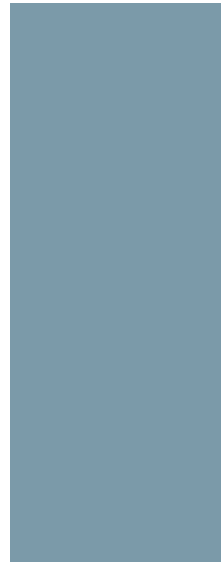
Complete HVAC libraries

- Proven HVAC libraries for refrigeration, air conditioning and district heating



SCOPE Light commissioning tool

- Read-and-write access to all Climatix data points
- Connectable over USB, LON, modem, or TCP/IP
- Configuration and visualization of on-/offline data trends, logs, and time schedule
- Up-/downloading parameter sets, automatic generation of commissioning documentation



Climatix 600 – advanced web solutions

Powerful web visualization for remote operation

■ Remote configuration via HMI@Web

To allow HMI operation over the internet, Climatix 600 controllers provide a web-based HMI. After login, the browser replicates the local HMI functionality and allows identical operation. Each user can individually select language and measurement system (metric/imperial).

■ Web SCADA package

The web module allows the OEM to offer web visualization for operating and monitoring HVAC plants. It displays plant diagrams with related parameters according to user access levels. The trend viewer displays online values or archived offline data and is capable of storing data on client PCs. All alarms are reported, indicated and notified by email or SMS to service personnel. Convenient calendar

views simplify scheduler configuration. User access management protects data from being manipulated.

■ Easy customization

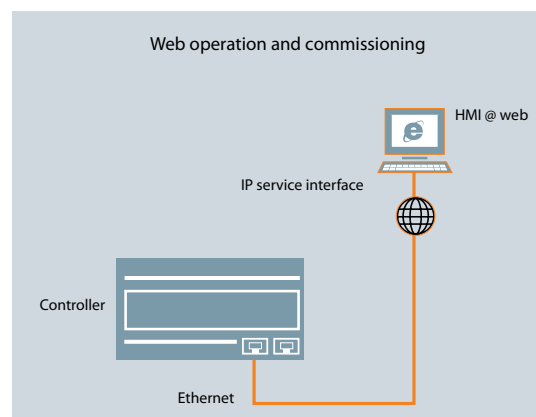
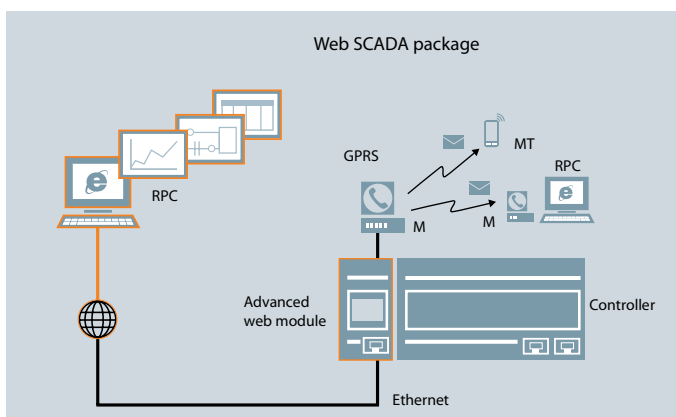
The package includes a web tool to set up or customize the functionality and visualization or look and feel without web programming knowledge. It is easy to select different plant pictures and drag and drop parameters into the graphical view.

■ Diagnostics and maintenance

To optimize service activities, Climatix controllers send alarm event descriptions to HMIs, tools or web clients. This allows easy identification of needed spare parts, or preventive service actions required on the plant.

Highlights

- Easy configuration and tailoring
- Ready-to-use web package
- Alarm notification over email
- Professional user access management





Climatix IC – Remote Servicing System

Seeing what really matters – enhance the efficiency and reliability of your plants

■ 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

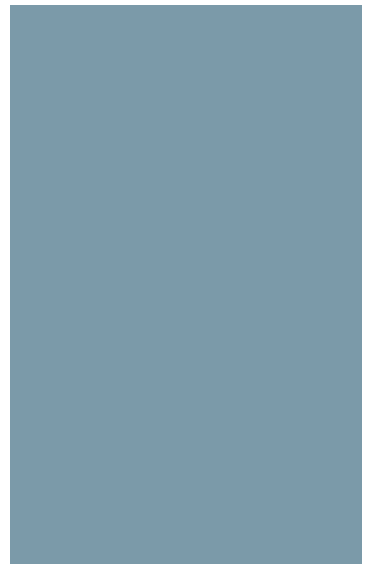
Climatix IC operates with a standard web browser and is suited for use with all types of web-compatible devices. The service engineer logs in on the Climatix portal via a laptop, tablet or Smartphone, allowing him to access the plant directly. There is no need to use special cables or to install extra 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: All data are logged to be used as a basis for future services



Fully networked OEM systems

Easy integration and communication

■ Plug-and-play OEM system

The Climatix range enables OEMs to offer complete hydronic or ventilation systems for easy installation with no need for using engineering tools. Communication takes place via the Climatix process bus, which needs only 2 wires. It allows free topologies and is capable of providing power from controller to connected devices.

■ Integration into BACS

Climatix can be connected based on any standard used in BACS, such as BACnet or LON. This enables OEM equipment to be inte-

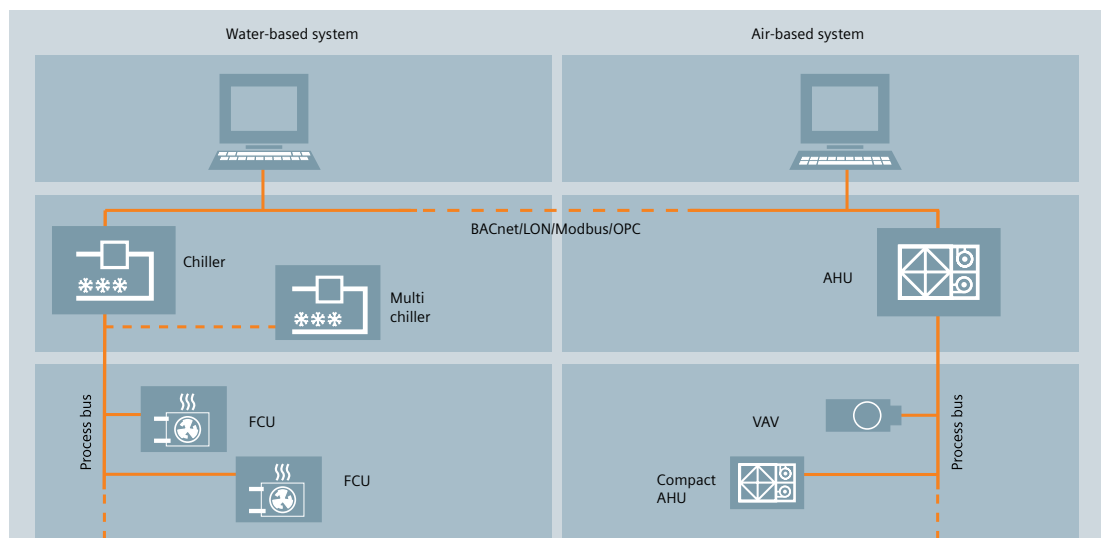
grated into BACS – with minimum engineering effort and maximum interoperability. Climatix is easy to integrate into Siemens BACS Designo and Apogee.

■ Comfort and energy efficiency

















This approach allows different types of HVAC systems and plant sizes to be optimized. Customized energy saving algorithms can be adopted, ensuring excellent performance and enhanced comfort while saving energy.

Highlights

- OEM-designed, engineered and pre-tested systems, ready for the market
- Flexible for integration into any open standard communication system
- Complete hydronic or ventilation systems, easy to install
- Seamless integration into Siemens Designo and Apogee























Climatix – communication options

| | | | | Ethernet IP with "HMI@Web" | Process bus | RS-485/ Modbus | LON | BACnet MSTP | BACnet IP | M-bus | Advanced web server | |
|--|--|--------|---|----------------------------|-------------|----------------|-----|-------------|-----------|-------|---------------------|---|
| Climatix 400 | On-board communication | POL4.. |  | POL422.50 | | 1 | 1 | | 1 | | | |
| | | |  | POL422.70 | | 1 | 1 | | 1 | | | |
| | | |  | POL423 | | 1 | 1 | | 1 | | | |
| | | |  | POL424.50 | | 1 | 1 | | 1 | | | |
| | | |  | POL424.70 | | 1 | 1 | | 1 | | | |
| | | |  | POL425 | | 1 | 1 | | 1 | | | |
| | | |  | POL426 | | 1 | 1 | | 1 | | 1 | |
| Climatix 600 | | POL6.. |  | POL63.. | ✓ | 1 | 1 | | | | | |
| | | |  | POL687 | ✓ | 1 | 1 | | | | | |
| Communication modules for Climatix 600 | Additional communication module for POL6.. | |  | POL902 | | | 2 | | | | | |
| | | |  | POL904 | | | | | 1 | | | |
| | | |  | POL906 | | | | 1 | | | | |
| | | |  | POL907 | | | | | | | 1 | |
| | | |  | POL908 | | | | | | 1 | | |
| | | |  | POL909.50 | | | | | | | | 1 |
| | | |  | POL909.80 | | | | | | 1 | | 1 |

Legend: ✓ optional: HMI@Web, Modbus, JSON, process bus



Climatix – controllers and I/O mix

| | | | | Ni 1000 | Pt 1000 | NTC | 0...2,5 kOhm | DC 0...5 V | DC 0...10V | DC 0...20 mA | Digital In voltage-free | DC 0...10V analog out | PWM | DC 4...20 mA analog out | DC digital out | Maximum program-able I/Os | | | |
|---------------------------------|------------|---|-----------|---------|---------|-----|--------------|------------|------------|--------------|-------------------------|-----------------------|-----|-------------------------|----------------|---------------------------|----|----|----|
| | | | | Inputs | | | | | | | | Outputs | | | | | | | |
| Climatix 400 | POL4.. |  | POL422.50 | | | 5 | | 2 | 2 | | 5 | 3 | | | | | | | |
| | |  | POL422.70 | | | 5 | | 2 | 2 | | 5 | 3 | | | | | | | |
| | |  | POL423 | 4 | 4 | 7 | | 4 | 4 | | 5 | 3 | 3 | | | | | | |
| | |  | POL424.50 | 5 | 5 | | | 2 | 2 | | 5 | 3 | | | | | | | |
| | |  | POL424.70 | 5 | 5 | | | 2 | 2 | | 5 | 3 | | | | | | | |
| | |  | POL425 | 3 | 3 | 6 | | 3 | 3 | | 5 | 3 | 3 | | | | | | |
| | |  | POL426 | 4 | 4 | 7 | | 4 | 4 | | 5 | 3 | 3 | | | | | | |
| Climatix 600 | POL6.. |  | POL63.. | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 13 | 8 | | | 4 | | 15 | | |
| | |  | POL687 | 8 | 8 | 11 | 8 | 8 | 8 | 8 | 10 | 8 | | | 4 | 4 | | 13 | |
| I/O extensions modules (max 31) | for POL6.. |  | POL925 | | | | | | | | 4 | | | | | | | | |
| | |  | POL94E | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | 1 | 2 | | 3 | |
| | |  | POL94U | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | | 1 | 2 | | 3 | |
| | |  | POL945 | | | 2 | | 2 | | | | 4 | | | | | | | 4 |
| | |  | POL955 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 10 | | 8 | | | | 10 |
| | |  | POL965 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | | 4 | 4 | | 8 |
| | |  | POL96E | 10 | 10 | 10 | 8 | 8 | 10 | 10 | 8 | 8 | 8 | | | 4 | 4 | | 12 |
| | |  | POL96U | 10 | 10 | 10 | 8 | 8 | 10 | 10 | 8 | 8 | 8 | | | 4 | 4 | | 12 |
| | |  | POL985 | 8 | 8 | 11 | 8 | 8 | 8 | 8 | 11 | 8 | | | 4 | 4 | | | 14 |
| | |  | POL98E | 10 | 10 | 13 | 8 | 8 | 10 | 10 | 11 | 8 | | | 4 | 4 | | | 18 |
| | |  | POL98U | 10 | 10 | 13 | 8 | 8 | 10 | 10 | 11 | 8 | | | 4 | 4 | | | 18 |

Legend: ✓ optional

* plus additional stepper motor port

| Digital In 24 V insulated | Digital In 115/230 V insulated | Bipolar stepper motor/PWM | Unipolar stepper motor/PWM | Relay NO/NC | Relay NO | Triac 0.5 A | Total I/O amount | DC 24 V out | DC 5 V out | UPS at power off | USB port | HMI port (on RJ45) | SD card support | Real-time clock | Built-in HMI (164 x 44) | Ethernet IP with "HMI@Web", Climatrix IC | Ext. I/Os (maximum) | BMS communication bus | |
|---------------------------|--------------------------------|---------------------------|----------------------------|-------------|----------|-------------|------------------|-------------|----------------|------------------|----------|-------------------------|-----------------|-----------------|-------------------------|--|---------------------|-----------------------|--|
| Inputs | | Outputs | | | | | | | Supply sensors | | | Tools and commissioning | | | | | | Expandability | |
| | 1 | | 1 | 1 | 6 | | 21* | 1 | 1 | | 1 | 1 | | 1 | | | | 1 | |
| | 1 | | 1 | 1 | 6 | | 21* | 1 | 1 | | 1 | 1 | | 1 | ✓ | | | 1 | |
| | 1 | 1 | | 1 | 4 | 2 | 21 | 1 | 1 | | 1 | 1 | ✓ | 1 | | | | 1 | |
| | 1 | | | 1 | 6 | | 21 | 1 | 1 | | 1 | 1 | ✓ | 1 | | | | 1 | |
| | 1 | | | 1 | 6 | | 21 | 1 | 1 | | 1 | 1 | ✓ | 1 | ✓ | | | 1 | |
| | | | | 1 | 4 | 2 | 19 | 1 | | | 1 | 1 | ✓ | 1 | | | | 1 | |
| | 1 | | | 1 | 4 | 2 | 21 | 1 | | | 1 | 1 | ✓ | 1 | | | | 1 | |
| | | | | | 6 | | 21 | 2 | | | 1 | 1 | 1 | 1 | ✓ | ✓ | 31 | 3 | |
| 2 | 2 | | | 2 | 6 | 2 | 27 | 2 | 2 | | 1 | 1 | 1 | 1 | ✓ | 1 | 31 | 3 | |
| | | | | | | | 6 | | | | | | | | | | | 1 | |
| | 1 | 1 | | 1 | | | 6 | 1 | 1 | | | | | | | | | 1 | |
| | 1 | 1 | | 1 | | | 6 | 1 | 1 | 1 | | | | | | | | 1 | |
| | | | | 4 | | | 8 | | 1 | | | | | | | | | 1 | |
| | | | | | 4 | | 14 | | | | | | | | | | | 1 | |
| | 1 | | | | 4 | 2 | 15 | 2 | 2 | | | | | | | | | 1 | |
| | 1 | 2 | | | 4 | 2 | 21 | 3 | 3 | | | | | | | | | 1 | |
| | 1 | 2 | | | 4 | 2 | 21 | 3 | 3 | 1 | | | | | | | | 1 | |
| | 2 | | | | 8 | 2 | 26 | 2 | 2 | | | | | | | | | 1 | |
| | 2 | 2 | | | 8 | 2 | 32 | 3 | 3 | | | | | | | | | 1 | |
| | 2 | 2 | | | 8 | 2 | 32 | 3 | 3 | 1 | | | | | | | | 1 | |

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