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OpenAir damper actuators – move a lot with little energy

Durable, robust actuators for HVAC applications, air volume control
as well as fire and smoke protection dampers

www.siemens.com/openair



Damper actuators for efficiency at every stage

OpenAir™ damper actuators are used in millions of applications worldwide. Thanks to their rugged, compact design, they're not only easy to install but also extremely durable in operation, during transport and on the construction site. The low-consumption motors deliver high positioning forces using little energy. High precision provides a pleasant, controlled room climate and ensures optimal energy efficiency, which helps to reduce operating costs.

You receive expert assistance in every project phase, including tools such as the HIT for simple, time-saving selection and planning of all field devices, or data matrix codes for immediate access to all product information.

Maximum satisfaction at minimum cost

A product range to cover every need

With their standardized dimensions and cabling and installation concept, OpenAir damper actuators are designed for direct coupling and fast commissioning. With all series, the actuators are fixed to the damper shaft with a single screw. In addition, self-centering shaft adapters reduce installation work, which saves you time and costs.

The choice of four sizes of housing covers all HVAC applications, from recirculated air dampers, outside air dampers and shutoff dampers, to variable air volume control and fire protection dampers to central air handling units. And demanding applications with special requirements, such as fume hoods in laboratories, are no problem either. The product range also includes VAV¹⁾ compact controllers with all important communication standards.

Convenience in every area

But the OpenAir product range is not only convenient for installation and commissioning. Thanks to their fast and precise implementation of instructions from the building automation system, the damper actuators help to provide a constant room climate.

In addition, their brushless motors, gear trains that have already been run in and precisely mounted technology ensure especially quiet operation. This is ideal for areas where intensive work is carried out, as well as for night-time operation such as in hotels and hospitals.

Best quality based on many years of experience

OpenAir damper actuators are based on solid application expertise and Siemens' decades of experience in manufacturing actuators. They are tested intensively in the in-house HVAC lab, thus ensuring stable control loops and offering a level of reliability that you can count on.

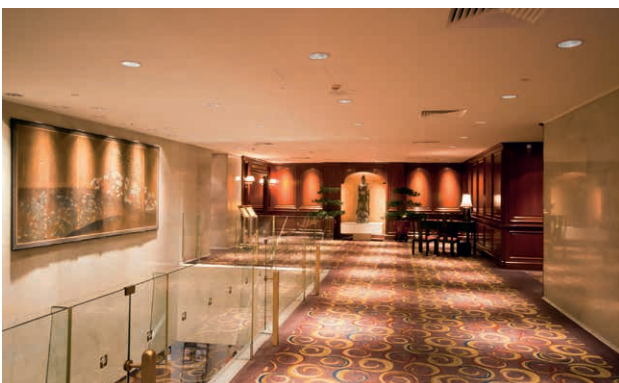
Full support for practical application

Siemens supports you with its full expertise and provides practice-oriented support, for example with tools to facilitate your daily work as well as with its global service network.

Highlights

- Energy and cost savings thanks to low-consumption motors and high accuracy
- High level of investment protection through long service life and maximum reliability
- Fast, simple installation and commissioning
- Optimum comfort for living and working environments thanks to proven technology
- Professional support and practice-oriented tools

¹⁾ VAV = variable air volume





Actuators for HVAC applications: reliable and powerful – especially suited for environments in which a quiet atmosphere is required.

Actuators for HVAC applications

Powerful safety

OpenAir actuators for HVAC applications are available for low and high torques ranging from 2 Nm to 35 Nm and 125 N to 550 N respectively, so you can choose the right product for any type of application.

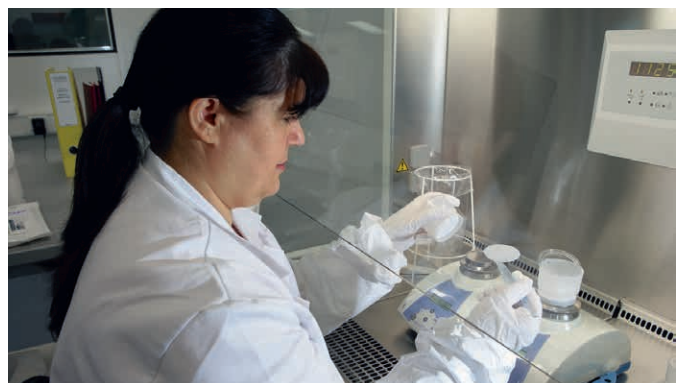
The powerful actuators with 35 Nm offer maximum safety under demanding operating conditions. And with their compact design, the small actuators with 2 Nm are ideally suited for difficult installation conditions. They can also be easily mounted in tight places, e.g. in false floors. Fast-running damper actuators with a torque of 6 Nm, 2 s running time and a long service life are perfectly suited for special applications like fume hoods.
















Simple and safe installation

Self-centering shaft adapters simplify installation and reduce installation expenses – and make mounting fool-proof. They can be installed from both sides, enabling them to be fixed on short shafts without difficulty. They also reduce the stress on the actuator, which increases its service life and reliability.

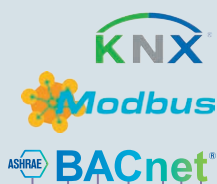
Highlights

- High reliability thanks to high torque
- Compact actuators for difficult installation conditions
- The suitable actuator for every application – e.g. fast-running damper actuators for laboratories
- Simple installation thanks to self-centering shaft adapters



Actuators for HVAC applications		Control signal	Operating voltage	Standard model	Feedback potentiometer (1 kOhm)	Adjustable start/span	Adjustable start/span with 2 auxiliary switches	Feedback (1 kOhm) with 2 auxiliary switches	2 auxiliary switches	Dimensions, round damper shaft (mm)	Dimensions, square damper shaft (mm)
Damper actuators spring return (SR)											
	GQD series 2 Nm for approx. 0.3 m² damper area 30 s running time 15 s SR time	2-position	AC/DC 24 V AC 230 V	GQD121.1A GQD321.1A	–	–	–	–	GQD126.1A GQD326.1A	8...15	6...11
	3-position Modulating DC 0...10 V	AC/DC 24 V	GQD131.1A	–	–	–	–	GQD136.1A			
		AC/DC 24 V	GQD161.1A	–	–	–	–	GQD166.1A			
	GNP series 6 Nm for approx. 1 m² damper area 2 s running time el. fail-safe function	2-position	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E	6.4...20.5	6.4...13
	3-position Modulating DC 0/2...10 V 0/4...20 mA	AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E			
		AC/DC 24 V	GNP191.1E	–	–	–	–	GNP196.1E			
	GMA series 7 Nm for approx. 1.5 m² damper area 90 s running time 15 s SR time	2-position	AC/DC 24 V AC 230 V	GMA121.1E GMA321.1E	–	–	–	–	GMA126.1E GMA326.1E	6.4...20.5	6.4...13
	3-position Modulating DC 0...10 V	AC/DC 24 V	GMA131.1E	GMA132.1E	–	–	–	GMA136.1E			
		AC/DC 24 V	GMA161.1E	–	GMA163.1E	GMA164.1E	–	GMA166.1E			
	GCA series 18 Nm for approx. 3 m² damper area 90 s running time 15 s SR time	2-position	AC/DC 24 V AC 230 V	GCA121.1E GCA321.1E	–	–	–	–	GCA126.1E GCA326.1E	8...25.6	6...18
	3-position Modulating DC 0...10 V	AC/DC 24 V	GCA131.1E	–	–	–	GCA135.1E	–			
		AC/DC 24 V	GCA161.1E	–	GCA163.1E	GCA164.1E	–	GCA166.1E			
Damper actuators non-spring return											
	GSD series 2 Nm for approx. 0.3 m² damper area 30 s running time	2-position On/Off (1-wire SPST)	AC/DC 24 V AC 230 V	GSD121.1A GSD321.1A	–	–	–	–	GSD126.1A GSD326.1A	8...15	6...11
	GDB series 5 Nm for approx. 0.8 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GDB131.1E GDB331.1E	GDB132.1E GDB332.1E	–	–	–	GDB136.1E GDB336.1E	8...16	6...12.8
		Modulating DC 0...10 V	AC 24 V	GDB161.1E	–	GDB163.1E	GDB164.1E	–	GDB166.1E		
	GLB series 10 Nm for approx. 1.5 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GLB131.1E GLB331.1E	GLB132.1E GLB332.1E	–	–	–	GLB136.1E GLB336.1E	8...16	6...12.8
		Modulating DC 0...10 V	AC 24 V	GLB161.1E	–	GLB163.1E	GLB164.1E	–	GLB166.1E		
	GAP series 6 Nm for approx. 1 m² damper area 2 s running time	2-position	AC/DC 24 V	GAP191.1E	–	–	–	–	GAP196.1E	6.4...20.5	6.4...13
		3-position	AC/DC 24 V	GAP191.1E	–	–	–	–	GAP196.1E		
		Modulating DC 0/2...10 V 0/4...20 mA	AC/DC 24 V	GAP191.1E	–	–	–	–	GAP196.1E		
	GEB series 15 Nm for approx. 3 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GEB131.1E GEB331.1E	GEB132.1E GEB332.1E	–	–	–	GEB136.1E GEB336.1E	6.4...20.5	6.4...13
		Modulating DC 0...10 V	AC 24 V	GEB161.1E	–	GEB163.1E	GEB164.1E	–	GEB166.1E		
	GBB series 25 Nm for approx. 4 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GBB131.1E GBB331.1E	–	–	–	GBB135.1E GBB335.1E	GBB136.1E GBB336.1E	8...25.6	6...18
		Modulating DC 0...10 V	AC 24 V	GBB161.1E	–	GBB163.1E	GBB164.1E	–	GBB166.1E		
	GIB series 35 Nm for approx. 6 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GIB131.1E GIB331.1E	–	–	–	GIB135.1E GIB335.1E	GIB136.1E GIB336.1E	8...25.6	6...18
		Modulating DC 0...10 V	AC 24 V	GIB161.1E	–	GIB163.1E	GIB164.1E	–	GIB166.1E		
	GDB series 125 N for approx. 0.8 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GDB131.2E GDB331.2E	–	–	–	–	GDB136.2E GDB336.2E	–	–
		Modulating DC 0...10 V	AC 24 V	GDB161.2E	–	GDB163.2E	–	–	–	–	
	GLB series 250 N for approx. 1.5 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GLB131.2E GLB331.2E	–	–	–	–	GLB136.2E GLB336.2E	–	–
		Modulating DC 0...10 V	AC 24 V	GLB161.2E	–	GLB163.2E	–	–	–	–	
	GEB series 400 N for approx. 3 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GEB131.2E GEB331.2E	–	–	–	–	GEB136.2E GEB336.2E	–	–
		Modulating DC 0...10 V	AC 24 V	GEB161.2E	–	GEB163.2E	–	–	–	–	
	GBB series 550 N for approx. 4 m² damper area 150 s running time	3-position	AC 24 V AC 230 V	GBB131.2E GBB331.2E	–	–	–	–	GBB136.2E GBB336.2E	–	–
		Modulating DC 0...10 V	AC 24 V	GBB161.2E	–	GBB163.2E	–	–	–		

Networked OpenAir VAV controllers guarantee interoperability through the use of standardized and open communication protocols. This enables the VAV controllers to be used in any system, including those of other manufacturers.



Actuators for air volume control 300 Pa application range		Control signal	Operating voltage	Standard model	Dimensions, round damper shaft (mm)	Dimensions, square damper shaft (mm)
	GDB 300 Pa VAV compact controller¹⁾ 5 Nm for approx. 0.8 m ² damper area 150 s running time	3-position	AC 24 V	GDB181.1E/3	8...16	6...12.8
		Modulating DC 0/2...10 V	AC 24 V			
		KNX S-/LTE-Mode, KNX PL-Link	AC 24 V	GDB181.1E/KN		
		Modbus RTU	AC 24 V	GDB181.1E/MO		
		BACnet MS/TP	AC 24 V	GDB181.1E/BA		
	GLB 300 Pa VAV compact controller¹⁾ 10 Nm for approx. 1.5 m ² damper area 150 s running time	3-position	AC 24 V	GLB181.1E/3	8...16	6...12.8
		Modulating DC 0/2...10 V	AC 24 V			
		KNX S-/LTE-Mode, KNX PL-Link	AC 24 V	GLB181.1E/KN		
		Modbus RTU	AC 24 V	GLB181.1E/MO		
		BACnet MS/TP	AC 24 V	GLB181.1E/BA		
	ASV 300 Pa VAV modular controller¹⁾	3-position	AC 24 V	ASV181.1E/3	–	–
		Modulating DC 0/2...10 V	AC 24 V			

¹⁾ Available to OEMs only

Actuators for air volume control

Convenient to use

OpenAir VAV controllers work with the highest degree of accuracy and stability. This is ensured not only by the highly precise differential pressure measurement, but also by the ingenious software algorithms of the products. The VAV controllers provide the best conditions for highly comfortable usability.

Practical to install

The VAV controllers allow fast, simple parameterization, so they can be matched to VAV boxes and programmed quickly and easily, as usually only three OEM-specific device characteristics have to be entered.

The right communication standard



The VAV compact controllers are available in all common communication standards: KNX S-/LTE-Mode, KNX PL-Link, Modbus RTU and BACnet MS/TP. This makes them easy to integrate in any system, whether this is made by Siemens or any other supplier. The expensive point-to-point wiring in large plants is replaced by the bus connection. Bus communication enables the plant to be monitored accurately which can have a positive impact on the energy balance.

Highlights

- High level of accuracy thanks to fast and location-independent measured value acquisition
- Long-term stability without aging and temperature drift
- Fast commissioning through simple adjustment to VAV boxes
- All common communication standards from a single source



The AST20 handheld operating unit for all VAV controllers has a convenient ergonomic design. It facilitates commissioning and service thanks to its intuitive menu guidance and user-friendly display.

Actuators for fire and smoke protection dampers	Control signal	Operating voltage	2 auxiliary switches	2 auxiliary switches and thermal cut-out	Dimensions, square damper shaft (mm)
 GNA actuator¹⁾ 7 Nm for approx. 1 m ² damper area 90 s running time 15 s spring return time	2-position	AC/DC 24 V AC 230 V	GNA126.1E/.. ²⁾ GNA326.1E/.. ²⁾	GNA126.1E/T.. ²⁾ GNA326.1E/T.. ²⁾	10, 12
 GGA actuator¹⁾ 18 Nm for approx. 2.5 m ² damper area 90 s running time 15 s spring return time	2-position	AC/DC 24 V AC 230 V	GGA126.1E/.. ²⁾ GGA326.1E/.. ²⁾	GGA126.1E/T.. ²⁾ GGA326.1E/T.. ²⁾	10, 12

¹⁾ Available to OEMs only ²⁾ .. = insert dimension of damper shaft square (mm)



Actuators for fire and smoke protection dampers

Absolute safety in emergency situations

OpenAir actuators for fire and smoke protection dampers are used at the interface between security systems and people. They work extremely reliably in emergency situations.

Their spring return function returns them safely to the zero position. If the thermal fuse melts or if a power failure occurs or the operating power is switched off, the

fire and smoke protection dampers close, thereby preventing smoke and flames from spreading through the connected air ducts.

Powerful for opening and closing

The OpenAir actuators come in two powerful torques: 7 Nm and 18 Nm. In addition, the actuators open and close the dampers with the same torque. For instance, the GNA actuator opens the damper blade by motor from 0 to 90 degrees within 90 seconds at 7 Nm – and closes the damper mechanically in 15 seconds also at 7 Nm.

This level of performance ensures that fire and smoke protection dampers are closed especially quickly and reliably, thereby helping to keep escape routes and emergency exits free of smoke for as long as possible.

Highlights

- Two powerful torques for additional safety – 7 Nm or 18 Nm
- High reliability through identical torques in opening and closing
- Fast, easy and safe installation





OpenAir matched to individual needs

Individually adapted for you

OpenAir damper actuators not only combine optimal ventilation with exceptionally high energy efficiency but can also be adapted flexibly to your requirements. You can use your own company logo and have cables preassembled, and you can choose between three different cable lengths – and if desired, you can also have halogen-free cables.

Your options

- Your logo on the actuators
- Choice of cable length: 0.9, 2.5 or 5 m
- Choice of cable type: PVC or halogen-free
- Preassembled with plug of your own choice

Your Siemens contact partner will be pleased to advise you on conditions and ordering process.

Highlights

- Products adaptable to your requirements
- Enhanced brand awareness with your own logo on the actuators
- Easier installation with the correct cable length
- Own connector system for fast, reliable wiring





Thanks to robust housings and high reliability, OpenAir damper actuators are optimally designed for mounting and operation.

Simple and robust handling

Simple and time-saving mounting

Standardized dimensions and a consistent wiring and mounting concept for all OpenAir damper actuators facilitate direct mechanical coupling and quick commissioning. That not only reduces time and effort for mounting but installation costs as well.

The actuators are secured to the damper shaft with a single screw. The color and number coding of the cables prevents incorrect connection. The high-torque actuators are equipped with a self-centering shaft adapter, which can be mounted from both sides. This is not only ideal for fixing on short shafts, but also prevents friction and cracking noises since the actuator does not move.

Build in high quality

Siemens conforms with the stringent ISO 9001 and 14001 standards in the production of OpenAir damper actuators, thus satisfying the requirements of a closed quality and ecological cycle. Safety of employees at work is given high priority through compliance with standard OHSAS 18001:2007.

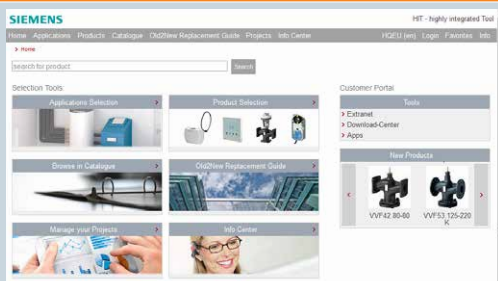
High quality is also of prime concern from development all the way to delivery. Extensive final tests ensure operational readiness and together with systematic fatigue tests ensure the high reliability of the actuators.

Highlights

- Simple, time-saving mounting through high degree of standardization
- Reliable, fault-free operation thanks to high product quality

Practical support

HIT



HIT simplifies the time-consuming task of finding suitable products when designing HVAC systems. The tool offers more than 300 preconfigured HVAC standard applications, classified according to potential energy savings as per EN 15232. This allows you to select the application that comes closest to the energy class you want. Comprehensive specifications including system diagrams, material lists and technical documentation on every device are also available. Try it out on www.siemens.com/hit

Scan to HIT



With this app you can scan in the data matrix code on the actuators and immediately obtain access to all important product information such as data sheets and mounting instructions. The app is available free of charge for iOS and Android in the corresponding stores.

CAD data



You can access the CAD data for all products free of charge to facilitate planning of plants. The data is available for each DN stage true to scale in stp or dwg format.

OpenAir product selection ruler



In addition to providing a simple means of selecting OpenAir actuators, this transparent selection aid for damper actuators in handy format also offers a comparison with competitors' products. If you'd like to know more, simply get in touch with your Siemens contact partner.

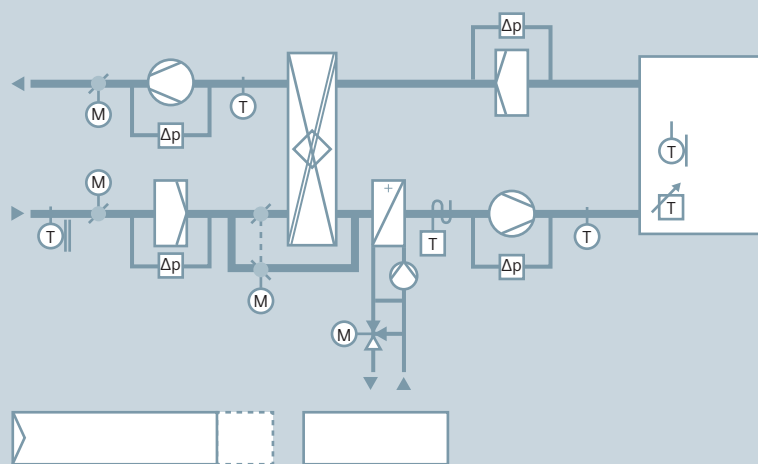
Training courses



Profit from the knowledge of the Siemens experts! Siemens is there for you with training courses on specialist subjects such as hydraulics as well as product training. Your Siemens contact partner will help you register.

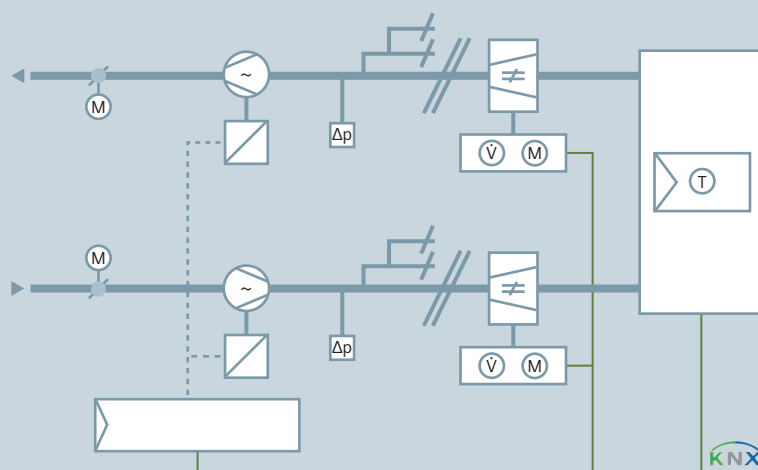
Sample applications

Room supply air temperature cascade control with plate heat recovery system and air heating



Demand-controlled operation of ventilation plants ensures energy-efficient ventilation. Depending on the requirements and type of plant, important plant elements that must be activated in an energy-optimized manner are outside air, exhaust air, recirculated air or bypass dampers. OpenAir damper actuators satisfy these requirements precisely and reliably.

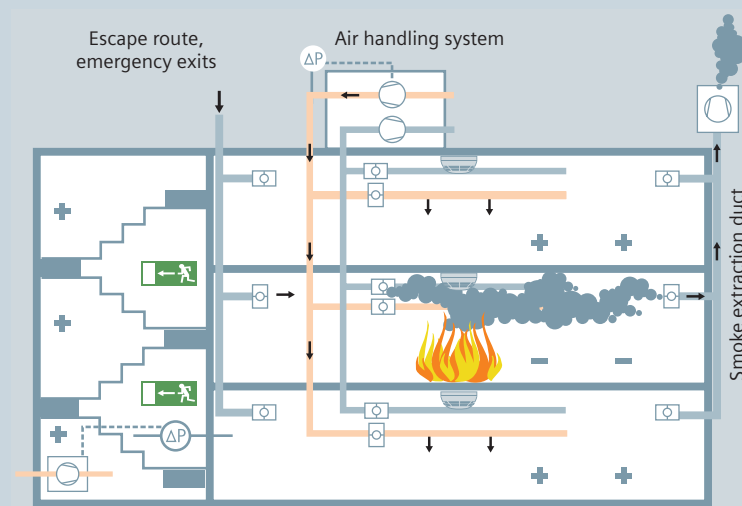
Demand-based comfort ventilation – interaction between networked VAV controllers and central AHU device



Ventilation systems, usually with temperature or air quality control, supply rooms and zones in buildings with preconditioned air. Modern comfort ventilation systems can achieve high energy savings without any loss of comfort by adapting the air volumes supplied to the actual requirement which varies according to the utilization profile and time of day. This is effected by means of communication between the OpenAir VAV controllers and sensors at room level and the controllers of the central AHU devices.

Bus communication further increases plant transparency through simultaneous monitoring of several communication objects and parameters in a management system.

Optimum interaction of ventilation system and fire control panel



Ventilation systems must switch off independently when fire alarm or extinguishing systems are activated and when thermal cut-out devices of the fire and smoke protection dampers are activated, or switch from normal to emergency operation. This operating mode ensures, for example, that the rooms are systematically regulated for overpressure so that escape routes remain free of smoke.

Motorized fire and smoke protection dampers prevent smoke and fire from spreading via the air ducts. OpenAir actuators close the dampers very quickly and reliably in the event of a fire, thereby providing a high degree of protection for people and assets.

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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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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.”