



Voice alarm system E100 – the new standard for safe evacuation

Clear announcements and future-proof protection
in case of fire



Answers for infrastructure.

SIEMENS



E100 from Siemens – so everyone knows what to do when there’s a fire

When a fire breaks out, buildings have to be evacuated within minutes in order to protect people. Buildings with large numbers of occupants, such as hotels, office blocks, shopping malls or universities, have special requirements regarding evacuation.

The voice alarm system E100 sets a new standard for meeting this challenge. Its innovative safety functions allow an orderly and safe evacuation, even from multi-story buildings or buildings covering extensive areas and with large numbers of occupants. What’s more, E100 already fulfills all requirements of the new standard EN 54-16*.



A system you can rely on

■ Protecting people due to direct communication – thanks to clear voice messages

Rapid, orderly evacuation saves lives. Yet often, alarms with conventional alarm sounders are misinterpreted or even disregarded.

E100 offers an optimum solution: The system provides information about the dangerous situation with unambiguous announcements and gives clear instructions that can be immediately understood. Calm, reassuring voice messages help prevent panic.

■ The optimum addition to fire detection

For comprehensive fire protection, the voice alarm system E100 can be connected to a fire detection and fire alarm system, such as Sinteso™. Should the detectors recognize a fire, the voice alarm system will be automatically triggered thanks to the connection to E100.

■ A top quality system – with long-term investment protection

When you invest in E100, you're choosing a future-proof system that provides optimum protection for your employees: E100 combines certified safety equipment with state-of-the-art technology. Thanks to its highly modular system design and ease of networking, E100 can be easily adapted to new requirements and expanded. All components are tailored to meet the highest requirements. The power supply fulfills the demanding quality criteria of product standard EN 54-4 and E100 already complies fully with the new standard EN 54-16*.

■ Optimizations that pay off – from system performance to energy efficiency

The innovative technology used in E100 allows you to reduce costs up to 30%. The Class D amplifiers with an efficiency of more than 85% use considerably less power than analog amplifiers, so that energy costs are reduced and no fans are required for heat dissipation. In addition, they have long standby times with lower battery capacity. Because fewer components and control units are required, E100's high-performance power supply units and amplifiers also reduce hardware costs. Also, thanks to an integrated emergency power supply, there's no need for an external uninterruptible power supply.

■ Siemens – safety thanks to an experienced, reliable partner

Siemens is a leading manufacturer in the fire safety sector with more than 160 years of experience in research and development. All of our products are thoroughly and intensively tested. We also analyze, for instance, your existing protection devices and escape routes, devise the most efficient evacuation procedures, and create the right voice messages for specific situations.

On this basis, we offer you comprehensive, highly reliable solutions that include everything from fire detection to evacuation tailored to your requirements.

Highlights

- Rapid, orderly evacuation – thanks to clear voice messages
- Maximum investment security – thanks to state-of-the-art technology, high modularity and networkability, and EN 54-16* compliance
- Substantial cost savings of up to 30% due to energy-efficient, high-performance components
- Reliability of a highly experienced partner – Siemens has more than 160 years of experience in fire protection

* European standard EN 54-16 is mandated by law for all voice alarm systems with effect from 2011.

E100 can be used nearly everywhere – in industrial plants, office blocks and schools, in shopping malls, hotels and residential complexes as well as in multi-level car parks and exhibition halls.





Clear announcements – for fast reaction in every situation

With its spoken instructions, E100 ensures that people react quickly and leave the building in an orderly fashion.

■ **Comprehensive safety –
fire detection and evacuation
from one source**

For the best possible protection, Siemens offers you a reliable, total solution comprising fire detection and evacuation: The voice alarm system E100 can be readily integrated into fire detection and fire alarm systems such as Sinteso via a standard interface. If necessary, it can also be linked into Danger Management Systems from Siemens.

Via the systems' connection, E100 automatically receives fire alarm signals, analyzes them and activates the required voice messages that are stored in the system. Depending on the situation, the preprogrammed evacuation process will be activated according to the evacuation plan you and the fire brigade have agreed upon. That's how you get comprehensive safety from a single source as well as the assurance that your systems intercommunicate as effectively as possible.

■ **Individualized announcements –
tailored to the specific need**

E100 can be set individually to meet particular hazards, scenarios and areas. In case of an emergency, everyone who is at risk can thus be led quickly and safely away from the danger zone. Whether there's a fire, a fire safety drill or a chemical accident, state-of-the-art multi-channel technology with eight digital audio channels permits the simultaneous transmission of different kinds of information to different parts of the building.

Live voice microphone module – for live announcements in emergencies or in normal operation, e.g. for paging.



Speakers – wide choice of power ratings and designs, with high efficiency rating.



Desk mount microphones – e.g. for live announcements and release of prerecorded messages.





Announcements in the danger zone can contain different instructions from those given simultaneously on other floors – that way, evacuations of different groups of people can be staggered to prevent any outbreaks of panic.

■ **From automatic voice messages to live announcements**

Once it has been activated, the voice alarm system E100 functions in automatic mode using digital, prerecorded messages. After the arrival of the fire brigade, the system is usually switched to manual operation. From that point on, the evacuation will be managed by authorized persons who will be able to make live announcements via the live voice microphone module, alerting people to specific situations and dangers.

■ **Convenient additional functions for daily use – from background music to commercial messages**

E100 not only protects you in the event of danger, but also acts as a cost-efficient, normal public address system.

Thanks to amplifiers that are monitored continuously during operation, you can use the system for applications such as background music, paging or advertising. This saves you the need for a second system and the associated costs.

In an emergency, E100 has clear priorities, interrupting normal applications and switching immediately to alarm and evacuation mode. Authorized persons and members of emergency services can make “live” announcements at any time.

■ **Optimum speech intelligibility and high music quality – thanks to digital technology**

E100 offers outstanding voice and sound quality. Signal processing, storage and transmission as well as power amplification are digital, providing near CD quality of both transmitted announcements and music.

Highlights

- Optimum protection – thanks to a completely reliable total solution, including fire detection and Danger Management System
- Different announcements for different areas – thanks to state-of-the-art multi-channel technology
- Live announcements possible at any time – for additional information in specific situations
- Cost-efficient public address system for normal operation – through add-on functions
- Optimum intelligibility and high music quality – through the use of digital technology



Intelligent security functions – for a fast, orderly evacuation

E100 offers you well devised, intelligent safety functions to ensure safe and reliable evacuation even under particularly difficult conditions.

■ Dynamic escape route guidance – based on what’s really happening

E100 issues voice announcements giving recommended escape routes or instructions about which routes to avoid. The system adapts these instructions dynamically to the actual danger scenario. Different prerecorded messages are activated depending on the fire situation and the way the fire is spreading. Should the danger situation change, E100 adapts the announcements accordingly. If as the fire spreads escape routes are no longer passable, E100 reroutes the evacuation. It also initiates the evacuation of other zones that are now endangered.

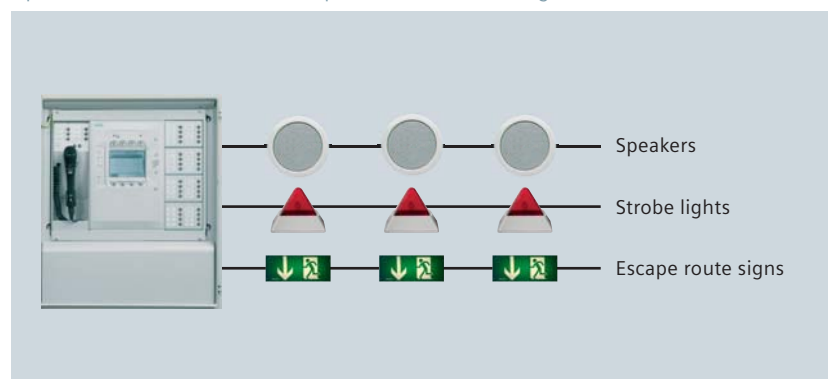
■ Optical orientation aids – for safe evacuation

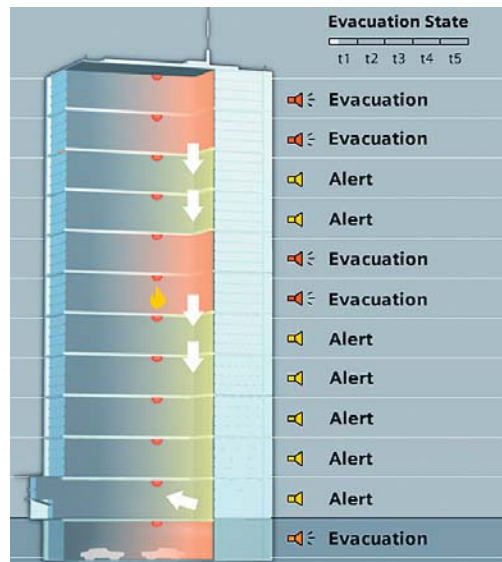
In addition to audio escape route guidance, E100 also has an optical alarm and display system. This is particularly important for people with impaired hearing and in areas with a high noise level. The system automatically activates strobe lights at the emergency exits so that they can be located easily, even when there’s smoke. E100 can also control escape route lights and display panels via its voice alarm control and indicating equipment, with no additional system required.

■ Double safety – just in case

Since all control units are networkable, the voice alarm system E100 features multiple means of protection. All of the control units are interconnected via D-Net in a redundant loop network. That way, information exchanges remain uninterrupted even if there’s a line fault. An integrated emergency power supply also provides extra protection against failure.

Optical orientation aids make escape routes easier to recognize.





A phased evacuation reduces crowding of escape routes and stairways, prevents panic and restricts evacuation to the extent necessary.

Phased evacuation

- 🔥 **Fire detection and alarming**
 The fire source was recognized by the fire detector and forwarded to the fire control panel, which in turn triggers the voice alarm system.
- 📣 **Evacuation**
 "A fire has been reported in this building. Please leave the building immediately."
- 📣 **Alert**
 "A fire has been reported in this building. Please remain calm and wait for further instructions."

In addition, the interface to the fire detection and fire alarm system, which can be configured to be redundant, helps improve availability. Thanks to this connection, E100 can be reset after activation via the fire alarm system control panel as well. Moreover, system faults from E100 are reported to the fire control panel where they are displayed and transmitted.

■ Reliable operation in an emergency – for maximum system availability

Thanks to a degrade mode, E100 offers an extremely high degree of system availability and thus outstanding protection in case of fire. In the unlikely event of a system processor failure, the amplifiers are simply triggered directly and an alarm tone will be sounded. This ensures highly reliable alarming at any time.

■ Phased evacuation – for optimized use of escape routes

E100 allows automatic phased evacuation that's individually tailored to your building. This is based on E100's freely programmable control logic and digital signal processing, which permit the simultaneous transmission of different signals and announcements to different parts of the building.

First, people in the immediate danger zone are instructed to leave the building, following the signed escape routes. The adjacent zones are then gradually evacuated until all occupants from the endangered areas are safe. That prevents escape routes from becoming overcrowded, which – in combination with reassuring announcements – prevents panic.

Highlights

- More safety – through dynamic escape route guidance and visual orientation aids
- High availability – thanks to system redundancy and decentralized storage of control data and announcements
- Phased evacuation – for optimized use of escape routes



Everything is perfectly easy – from configuration to operation

E100 is exceptionally user-friendly, ensuring high availability and reliable operation.

■ **Easy operation – thanks to a user-friendly user interface**

In an emergency, every second counts. That's why the clearly laid out LCD display with touchscreen is designed to simplify operation. Switch control modules provide a simple manual method of controlling announcements.

■ **Safe actions – thanks to automated procedures**

By automating many of the procedures, for example in combination with fire detection and fire alarm systems, E100 helps eliminate operator error caused by stress. This means, for example, that a phased evacuation can be pre-programmed so that it can run automatically in an emergency. Fire control and an optical escape route control are also automated.

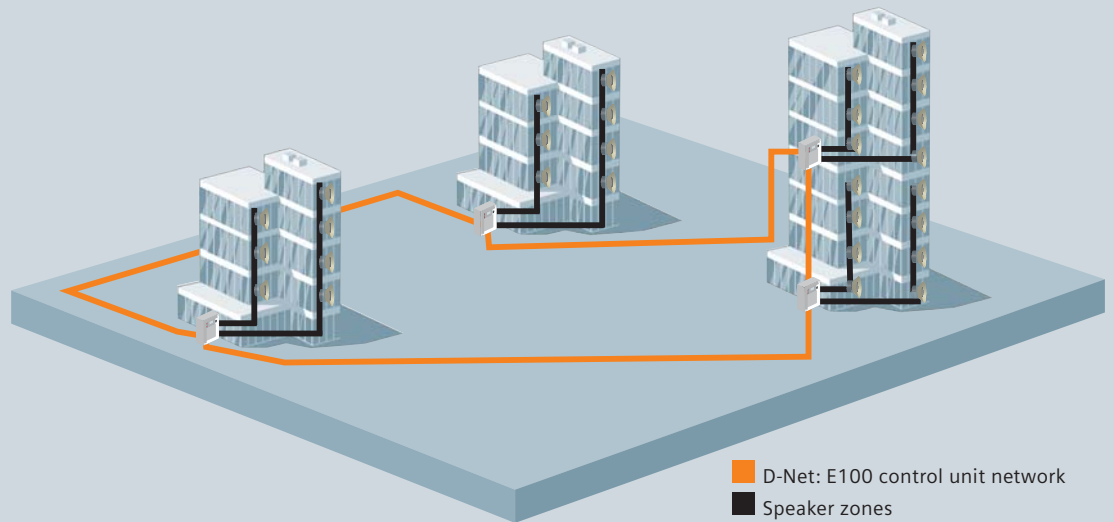
■ **Rapid availability – through easy configuration**

Thanks to its modular design, the E100 system can be installed quickly wherever it's needed. A software tool also provides a fast, reliable way of configuring the system on the PC. Then you can easily import the tailor-made configuration into your local system via a suitable interface. Your voice alarm system is ready for quick, dependable use.

Highlights

- Easy operation – thanks to a user-friendly interface
- Reliable actions – thanks to automated processes
- Quick system availability – thanks to a modular system design and intelligent configuration tool





Flexibility for every requirement – thanks to modular solutions from small to large

Installed centrally or locally, as a small or large network – the voice alarm system E100 can be tailored precisely to your requirements and your building.

■ A system that grows with your requirements

The voice alarm system E100 is suitable for any building size up to and including extensive building complexes. Its end-to-end networkability allows for all kinds of configurations – for use as a stand-alone system, in a small network or large network. Up to 32 voice alarm control and indicating equipment can be networked together over a total distance of up to 10,000 m.

Each control unit provides connections for up to 24 amplifiers and 10 desk mount microphones as well as a large

number of speakers, microphones, strobe lights etc. The system is controlled via the master control unit's operator panel.

Thanks to its high degree of system flexibility and modular design, E100 protects your investment over the long term. The system is able to grow with your requirements; if your needs change, it can always be adapted and expanded at minimal costs.

■ Increased safety and efficiency – thanks to a decentralized system design

Because the control units are networked, it's possible to build extensive, decentralized systems. Speakers, microphones and firefighters telephones can be simply connected to the nearest control unit. That helps reduce cabling and installation costs while increasing system availability. As a result, the system can be adapted to best meet the requirements of the particular building structure or modifications.

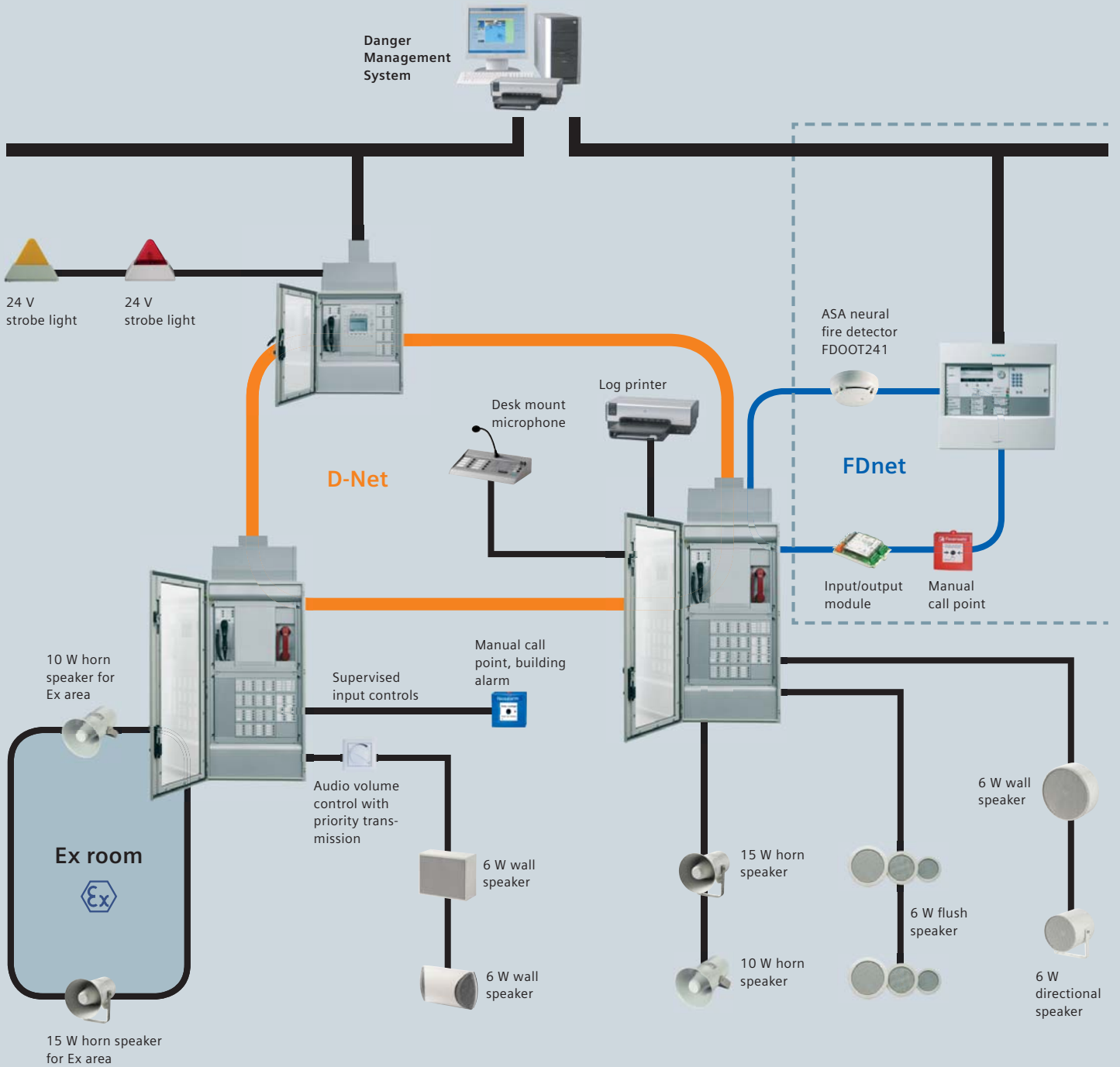
E100 also relies on distributed security when it comes to alarming: Tone signals and voice announcements are stored decentrally in every control unit.

Highlights

- Long-term investment protection – thanks to high system flexibility and easy expansion
- Right system configuration for every building – from a stand-alone system to a large network with up to 32 control units
- Increased security and cost efficiency – through a decentralized design and decentralized storage of tone signals and voice announcements




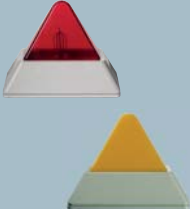










Everything at a glance – E100, perfectly integrated in a fire detection and fire alarm system



- Legend**
- D-Net
 - Speaker line
 - FDnet

E100 control unit network
 Can also be installed as a ring
 Field Device Network (fire alarm bus)

<p>Voice alarm control and indicating equipment</p>  <p>Speakers, microphones, strobe lights and firefighters telephones are connected to the control units. They can be equipped individually and networked together. Since requirements vary, there are four different control unit cabinets.</p>	<p>Speakers</p>  <p>There are a great number of different speakers available for optimum public address in all kinds of different environments – from ceiling/flush mounted and wall speakers to cylindrical and pressure chamber speakers and fire-resistant boxes.</p>
<p>Live voice microphone module</p>  <p>Authorized persons can transmit live announcements throughout the entire building or in individual sections of the building using the live voice microphone module, e.g. emergency information, paging or general instructions.</p>	<p>Strobe lights</p>  <p>Strobe lights are used for optical alarming and show the position of emergency exits in a clearly visible way. They are an important addition in environments with loud ambient noise, for example, and for people with impaired hearing.</p>
<p>Firefighters telephone</p>  <p>The firefighters master telephone allows voice communication to be set up to the wardens telephones throughout the building – independent of the building phone network. This way, emergency services can transmit instructions from the extensions to the control center. Announcements can also be made on site via any speaker zones.</p>	<p>Audio input</p>  <p>External audio equipment such as tuners, CD players or speech memories are connected to the voice alarm system via the audio input card. The plug-in card has two monitored analog audio inputs.</p>
<p>Desk mount microphones</p>  <p>Desk mount microphones allow live announcements to be made on pre-selected speaker zones. Alarm signals and recorded voice messages can also be activated manually via the keys.</p>	<p>Digital network card</p>  <p>The digital network card provides eight simultaneous digital audio channels and is responsible for audio management. The module controls up to 24 amplifiers and offers an integrated memory for signal tones and voice announcements.</p>
<p>Power supplies</p>  <p>The combined power supply and battery charger feeds the system with electricity and can also charge standby batteries of up to 65 Ah. If necessary, the power supply can be extended with extender modules.</p>	<p>Input and output cards</p>  <p>The E100 control unit receives information from the fire detection and fire alarm system via the input card and transmits fault messages to the fire control panel. E100 controls equipment such as LED displays, synoptic floor plan display, fire doors etc. via the output card.</p>
<p>Power amplifier</p>  <p>The digital Class D amplifiers are used to supply speaker circuits. Thanks to an effectiveness of more than 85%, they use less electricity and generate less heat loss.</p>	<p>Printer interface</p>  <p>The printer interface allows an external log printer to be connected to the voice alarm system. In this way, events, alarms and fault messages are printed out automatically for documentation purposes.</p>

Answers for infrastructure.

■ Megatrends driving the future

The megatrends – demographic change, urbanization, climate change and globalization – are shaping the world today. These have an unprecedented impact on our lives and on vital sectors of our economy.

■ Innovative technologies to answer the associated toughest questions

Throughout a 160-year history of proven research and engineering talent, with more than 50,000 active patents, Siemens has continuously provided its customers with innovations in the areas of healthcare, energy, industry and infrastructure – globally and locally.

■ Increase productivity and efficiency through complete building life cycle management

Building Technologies offers intelligent integrated solutions for industry, commercial and residential buildings and public infrastructure. Over the entire facility's life cycle, our comprehensive and environmentally conscious portfolio of products, systems, solutions and services in the fields of electrical installation technology, building automation, fire safety and electronic security, ensures the:

- optimum comfort and highest energy efficiency in buildings,
- safety and security for people, processes and assets,
- increased business productivity.



Siemens Switzerland Ltd
Industry Sector
Building Technologies Division
International Headquarters
Gubelstrasse 22
6301 Zug
Switzerland
Tel +41 41 724 24 24

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.

© Siemens Switzerland Ltd • Order no. 0-92178-en • 10904