

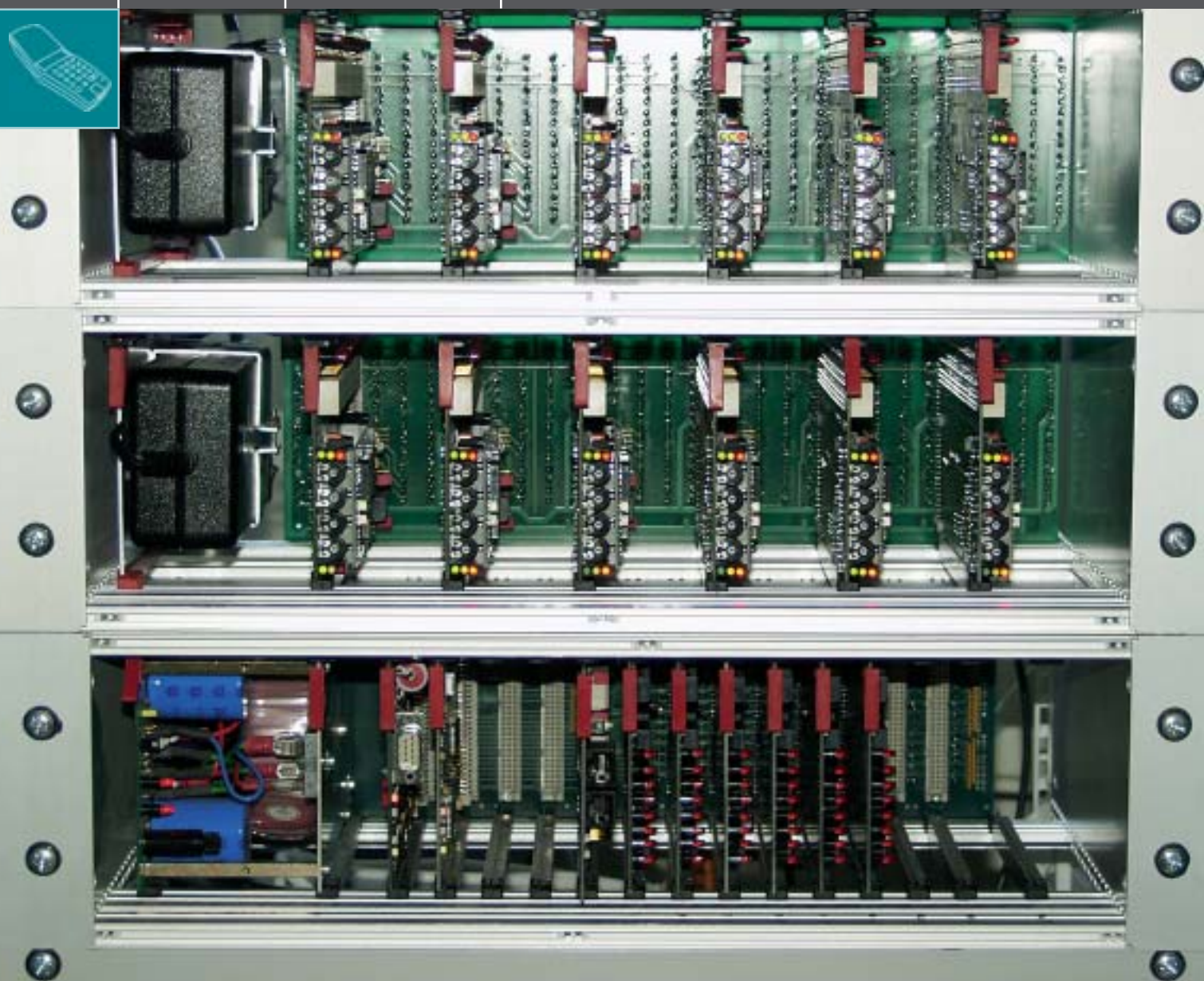
Gehrke

Kommunikationssysteme



multiswitch®
Voice Communication





Benefit from Our Expertise

Benefit from our extensive experience in voice, monitoring and information systems.

With the introduction of the new **multiwitch®** product family, Gehrke sets new standards for voice, monitoring and information systems. In cooperation with the Fraunhofer Institute, Gehrke has created a new, fully-digitalized system solution, including everything from the central

control unit to the terminal devices, meeting the requirements for future communication technology and offering maximum security. **multiwitch®** meets the standards of ISDN and network communication, offering communication solutions with high integration capability.



multiswitch® –

A Multifunctional System Solution

The core component of **multiswitch®** is a fully digitalized and multifunctional communication server that provides solutions based on both ISDN and Voice over IP,

which allows voice transmission on data networks. This system is based on current standards (e.g. Ethernet, ISDN, Voice over IP, etc.) and offers extraordinary flexibility for

integration in existing systems. It is not an isolated application.

For instance, our communication systems can use existing data

networks, and we can integrate the customer's existing communication technology in the overall solution.



Large number of potential applications

- Connection of conference and radio communication systems for police, fire departments and industry
- Vandal proof cell communication solutions for courthouses and police
- Emergency call and announcement functions in buildings such as parking garages, retirement homes and hospitals as well as for calling witnesses in courthouses
- Linking buildings and locations, with the connection displayed visually and acoustically on control center solutions
- Use of Ex protected stations in industry
- Elevator emergency calls with verbal instructions and automatic call forwarding, etc.

multiswitch® functionalities

- Digital and analog radio connection
- ISDN-S0 for access line and UPN/S0 for subscribers
- Voice over IP gateway
- Conference function (up to 48 conferences)
- Emergency call function (elevator emergency call, etc.)
- Alarm and failure-indication monitoring
- Alarm and interval signals
- PA system (ELA technology, 100V)
- Announcement functions
- Third-party system connection (video, etc.)
- Integrated voice storage
- Door communication and door control
- Cell communication (VDE 0834 / DIN 41050)
- Witness communication, etc.

This offers a large number of options, meeting the requirements of customers in a wide variety of industries:

Retirement homes,
Railroads,
Border patrols,
Military,
Fire departments,
Airports,
Courthouses,
Trade and shopping centers,
Harbor facilities,
Industrial and business Establishments,
Prisons,
Cultural facilities,
Banks and financial institutions,
Hospitals and sanitariums,
Parking garages,
Police and customs,
Schools and universities,
Traffic systems,
Residential and office buildings, etc.



Optimum **Integration** in Existing **Systems**

The **multiswitch**® system offers a wide variety of integration options in new or existing solutions for communication and security technology.

The core component of **multiswitch**® consists of an ISDN TK switching unit that is based entirely on the European ISDN standard. For all users, this has the clear benefit, all ISDN-compliant terminal devices from different manufacturers can be operated on the **multiswitch**® system. A wide range of terminal devices are available for industry-specific solutions, from elevator emergency call stations to cell stations from the system's terminal device product range. In addition, **multiswitch**® can be

connected to public or private ISDN networks using speech storage and voicemail solutions or to ISDN TK and DECT equipment. With the Voice over IP gateways included in the system, **multiswitch**® central control unit and terminal devices can also be linked via data networks. Potential-free contacts and relays, serial interfaces RS232, RS422 and RS485 as well as TCP/IP sockets are also available for connecting the various technologies.



multiswitch®

Connection Options



Stations on UPN and S0 subscriber lines

- Control center stations having up to 140 LED control buttons
- Stations for judges in courtrooms
- Membrane stations for medical applications
- Industry and Ex protected stations
- Radio communication stations
- Vandal proof cell stations
- Door stations
- Surface-mounted stations
- Office stations

System interfaces for integrating subsystems

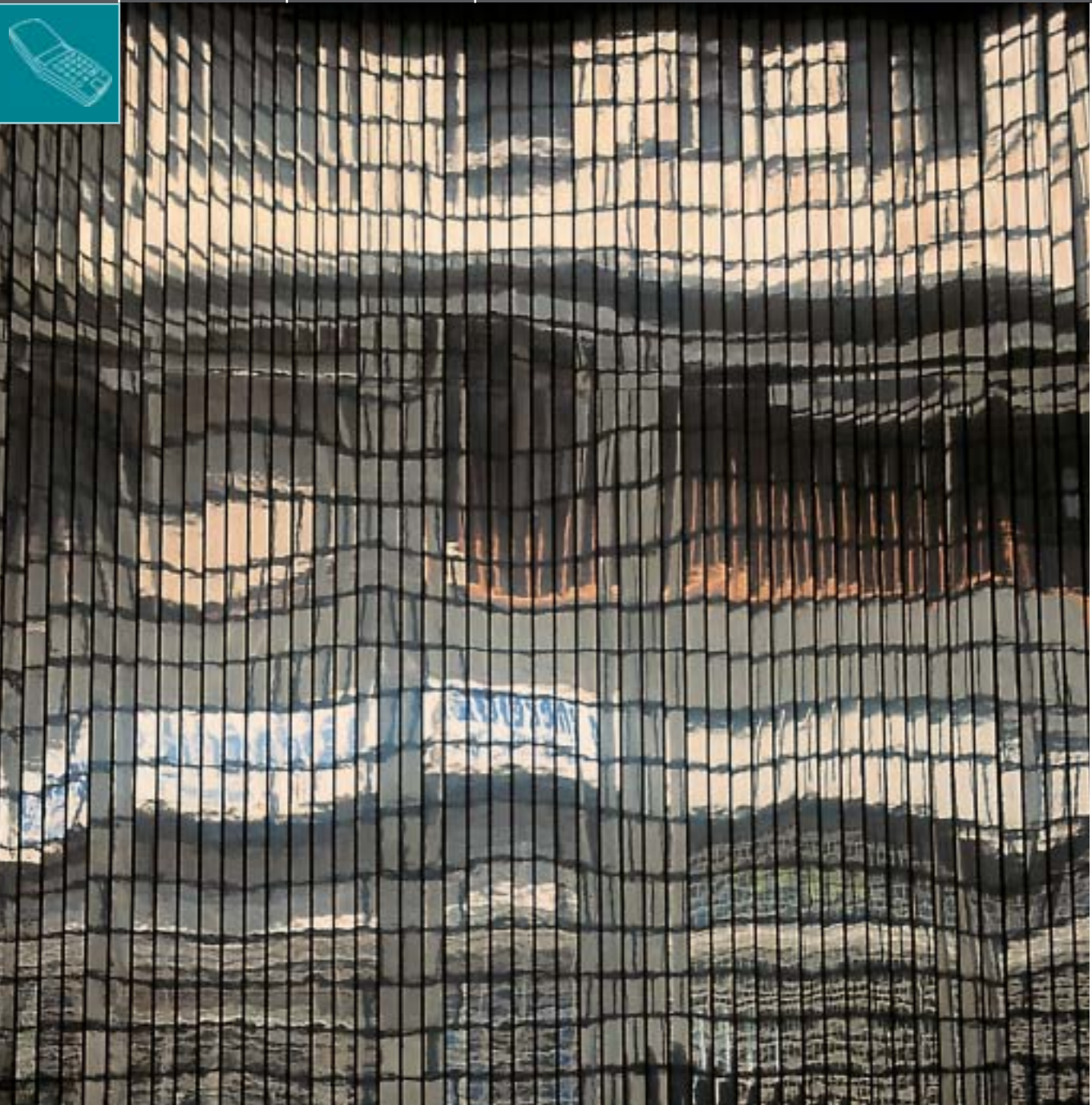
- Interface with 16 inputs
- Interface with 16 outputs
- Interface with 8 inputs and 8 outputs
- Interface with RS232- / RS422- / RS485 interfaces
- Interface with AF connection and decoupling / PA system connection
- Interface for providing 100V loudspeaker lines
- Interface for analog and digital radio connection

Standard ISDN terminal devices on S0 subscriber line

- ISDN phones (DSS1) PCs with ISDN cards (DSS1)
- Wireless ISDN-DECT phones (DSS1)
- ISDN video conferencing systems (DSS1)
- ISDN server for the transmission of video images (DSS1)

Voicemail and speech storage systems with call management and voice recognition

- Connection of ISDN-TK and DECT systems
- Connection of central control unit via Voice over IP gateways to Ethernet LAN
- Connection of central control unit to public or private ISDN network



Flexible Configuration – Easy Handling

High degree of expandability: Universal use for **multiwitch®** central control unit.

In industry, the modular structure of **multiwitch®** with standardized assemblies has proven highly effective.

multiwitch® allows universal use, which makes it an interesting central control unit solution for all communi-

cation and control tasks even for small companies. Expandability is almost unlimited, opening up a centrally managed world of communication for large companies and institutions, easy to operate and easy to follow.



For each central control unit, there are 64 connections, the same number as in previous intercom systems, but with only half the volume and with only half the number of wires. All connected devices work without any blocking whatsoever. The CPU card includes a serial interface that can communicate with a COM interface on a laptop computer. This allows maintenance work to be performed on the equipment using a computer program, and even remote maintenance is possible.

The **multiswitch®** central control unit is available as a stand-alone solution and as a 19-inch rack.



Central control unit 4032






The **multiswitch® 4032** central control unit contains a universal slot and four slots for subscriber cards (up to 32 terminals per central control unit).















Central control unit 4064

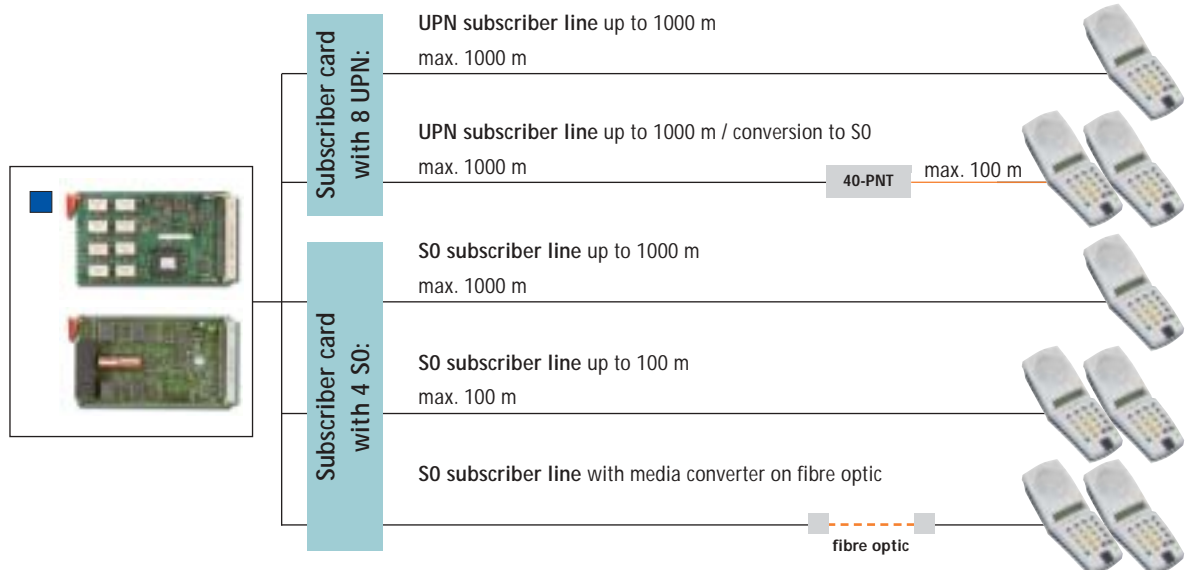
The **multiswitch® 4064** central control unit contains three universal slots and eight slots for subscriber cards (up to 64 terminals per central control unit).



 Power supply unit NT 4000-1	 Processor card slot CPU 4000-1	 Universal slots	 Slots for subscriber cards	 Group controller slot
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 	Processor card CPU 4000-1 for multiswitch®	 	Group controller GC 4000-1 for multiswitch® for up to 48 conferences
 	Access line card with 2 or 4 S0: AK4000-2S0, AK4000-4S0 in universal slot	 	I/O base module: I/O4000-GM in universal slot
 	Subscriber card with 4 S0: TA4000-4S0 in subscriber slot	 	Subscriber card with 8 UPN: TA4000-8UPN in subscriber slot

Whether you use copper cables or fiber optic cables, **multiswitch®** can be adjusted to fit your infrastructure:







multiswitch® System Interfaces

From radio communication systems to monitoring door conditions and emergency calls to controlling barriers, traffic lights and door openers, Gehrke has the right interface for the **multiswitch®** central control unit.

Interface cards are always placed on a digital speech interface in order to estab-

lish the connection to the central control unit. Digital speech interfaces are available in both S0 and UPN variants. This means that only a UPN two-wire circuit or an S0 four-wire circuit is needed between the central control unit and the place to be monitored, providing the full use of all benefits of these standards

(e.g. fibre optic technology for S0). Existing telephone lines, for instance, can be used for control and monitoring tasks. In addition, each station has a serial interface. This can be used to connect a control card with relay outputs and contact inputs.

Radio communication system, monitoring, control ...

Digital speech interface **40-TE-UPN/S0** with integrated speech storage for connection with a **UPN** or **S0** subscriber of the central control unit

The interface cards are placed on the digital speech interface 40-TE



UPN or S0



multiswitch® central control unit

Interface for radio connection
40-FUVER A/D

Radio eavesdropping and radio communication equipment via analog / digital radio transmitter and radio receiver equipment

Interface for AF connection and decoupling, PA system
40-NF

AF connection, such as the integration of alarm and interval signal generators; AF decoupling, as for announcements, alarm and interval signals on PA systems

Operation of 100V loudspeaker lines on the central control unit for small public announcement tasks

Interface with 16 inputs
40-16IN

Monitoring of doors, emergency calls, robbery, alarms, failure indication, conditions, calls, failures and security alerts

Interface with 16 outputs
40-16OUT

Control of subsystems, door openers, motorized locks, barriers, traffic lights, etc.

Interface with 8 inputs and 8 outputs
40-8IN8OUT

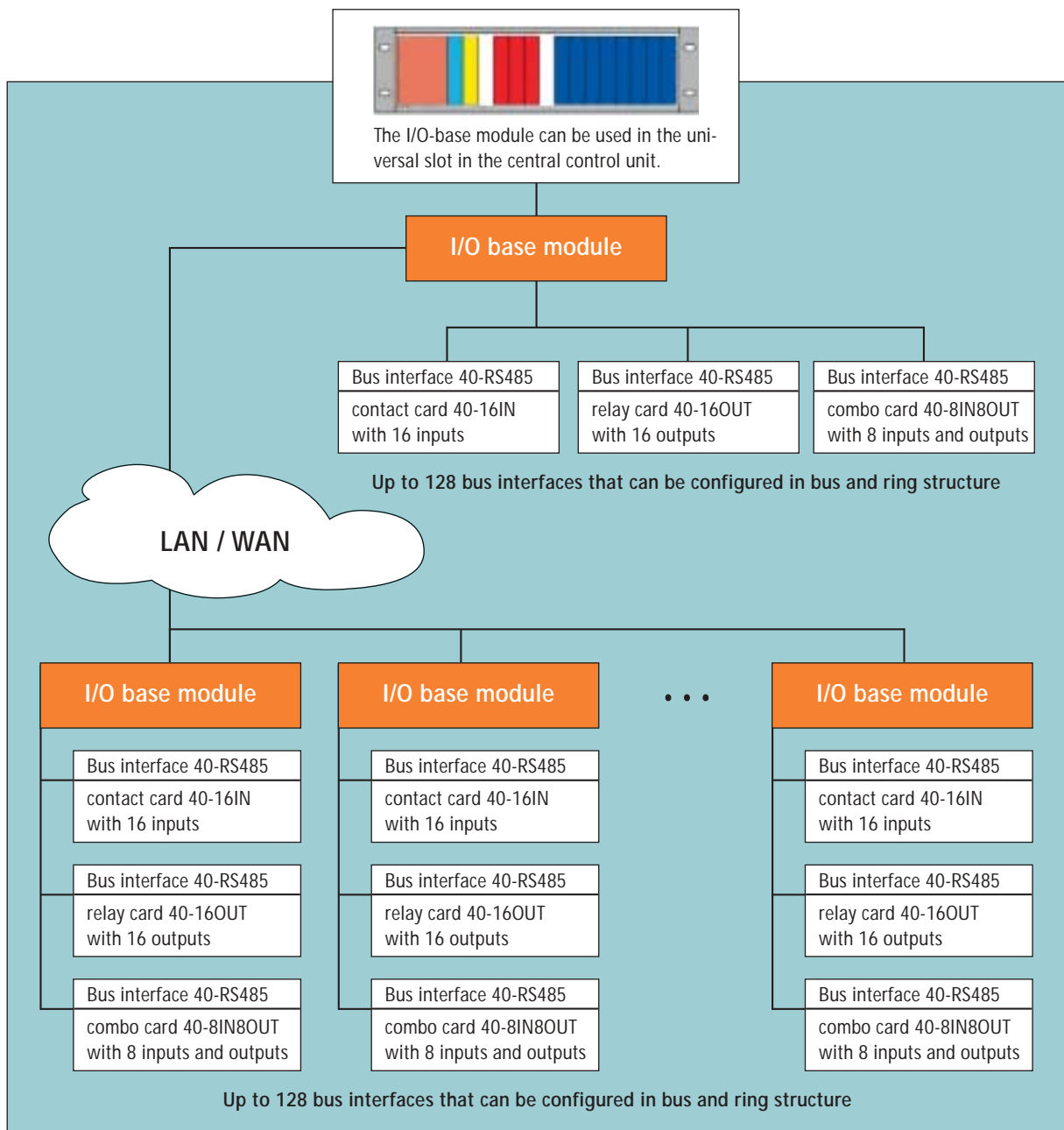
For the same control and monitoring tasks as with the 40-16IN and 40-16OUT cards

Integration in Complex Systems

Optimum connection
of subsystems using
the Gehrke base
module I/O 4000.

With the I/O base module 4000 of **multiwitch®** you can connect to subsystems via serial interfaces RS232, RS422 and RS485 or via TCP/IP sockets. Data from equipment, machines and sensors can be displayed or forwarded to control center and management systems. Components such as video crossbars,

SPC controls, burglar alarms, fire alarms, etc. can be easily integrated in the intercommunication system. In addition, our I/O base module has a TCP/IP socket. Data from the mobile finder, image storage and access controls are thus available to the **multiwitch®** central control unit.

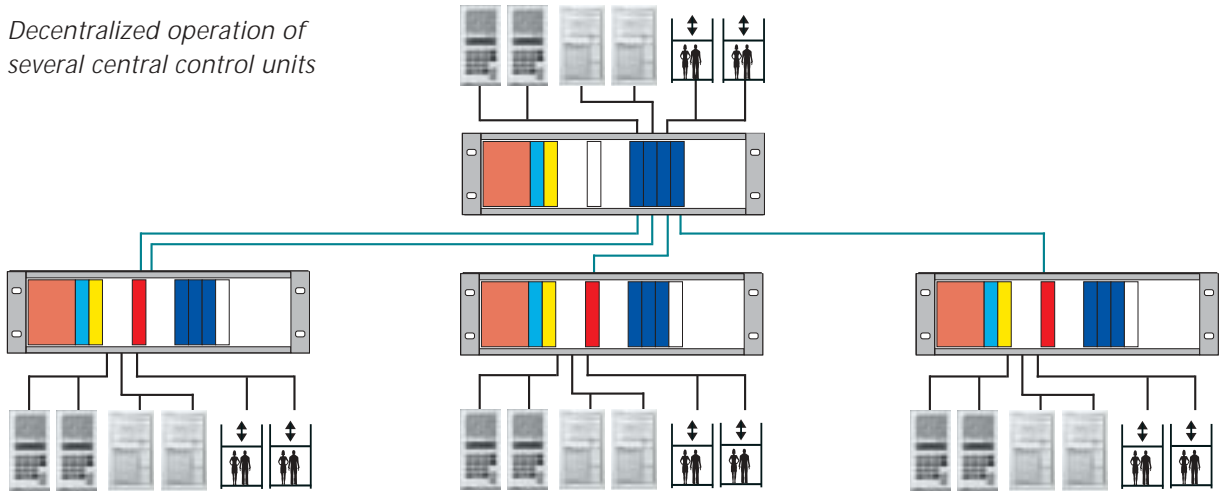




multiswitch® Networking Options

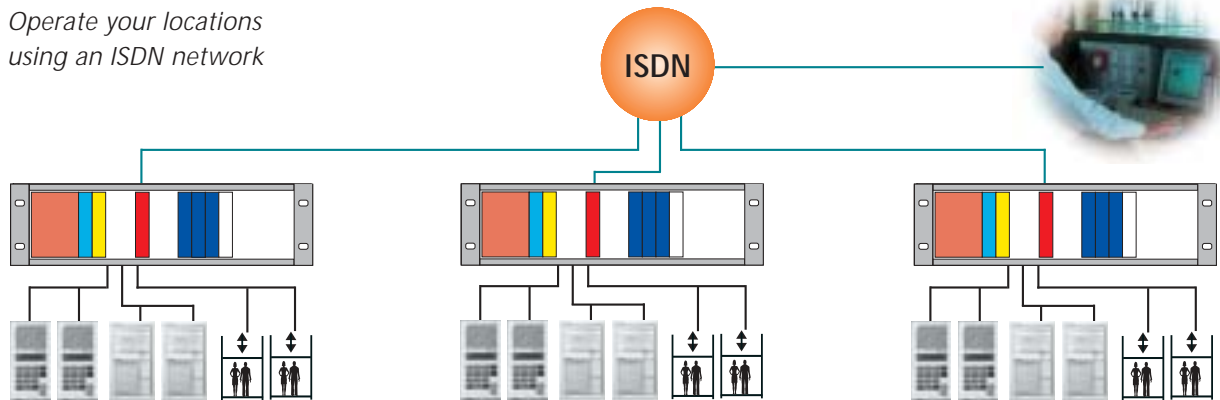
Variant 1: Direct networking of multiswitch® units

Decentralized operation of several central control units

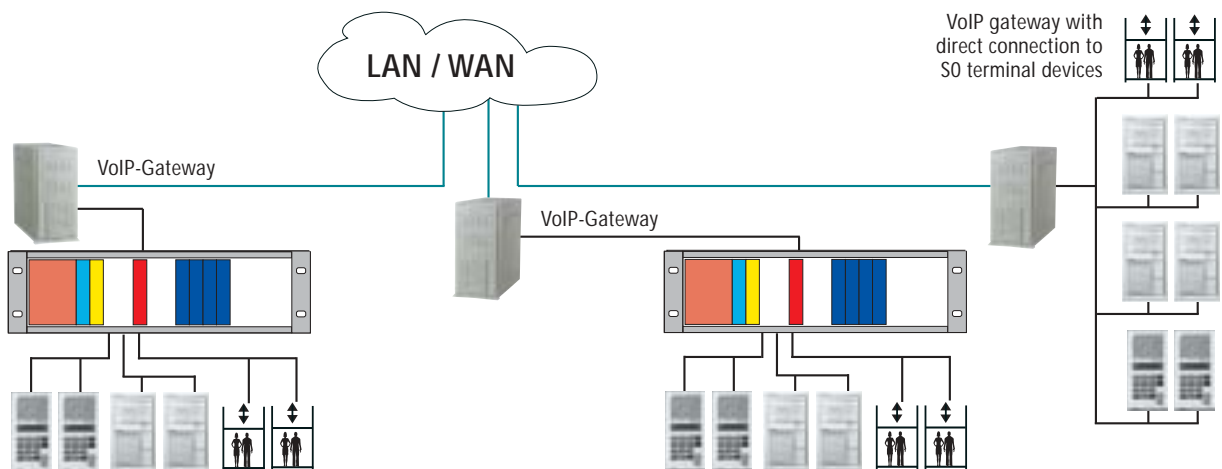


Variant 2: multiswitch® networking via ISDN network, utilization of available ISDN networks

Operate your locations using an ISDN network



Variant 3: multiswitch® networking via LAN/WAN, utilization of available data networks



Use your data network for voice communication



As Diverse as Their Applications:

multiswitch®,
from a single device
all the way to control centers
multiswitch® is the answer

The proven terminal devices used in **multiswitch®** are voice and control center systems tailor-made for the application.

One example of this is that every station has a serial interface that can be connected to a PC. The PC then efficiently manages all connections. All stations offer optimum acoustic conditions that can be adjusted to the relevant ambient conditions with the help of the integrated

acoustics parameters. The terminals can be used to make fast and direct internal and external calls. If the person you are trying to contact is not available, you can leave a message. With just the push of a button you can make collective and group calls and initiate conference calls. Using the station display and keyboard you can obtain data from devices, machines and sensors or perform control and switching functions.



Desktop master station with membrane keypad, DSP and display 413-A-UPN/SO



Substation with membrane keypad, DSP and display 418-1A-UPN



Door station module with DSP 417-M4-UPN



Surface-mounted master station with membrane keypad, DSP and display 413-E-UPN/SO



Surface-mounted substation with membrane keypad, DSP and display 418-1E-UPN



Judge station 408-R/1-3



Industrial master station with DSP and display 416-UPN



Industrial substation with DSP and display 419-1-UPN



Industrial substation with DSP 409-1-UPN



EX industrial master station with display 406-EX-UPN



Surface-mounted master station with DSP and display 403-E-UPN/SO



Vandal proof cell station 408-EV-UPN



Surface-mounted substation with DSP and 1 call button 408-1E-UPN



Surface-mounted school station 408-3E/SLS-UPN



Rear-mounted substation 408-0-UPN



Desktop master station with DSP and display 403-UPN/SO



Security guard master station with DSP and display 403-PF-UPN/SO



Surface-mounted radio-telephone control center with DSP 404-E-FLS4-UPN (picture includes console and handset)

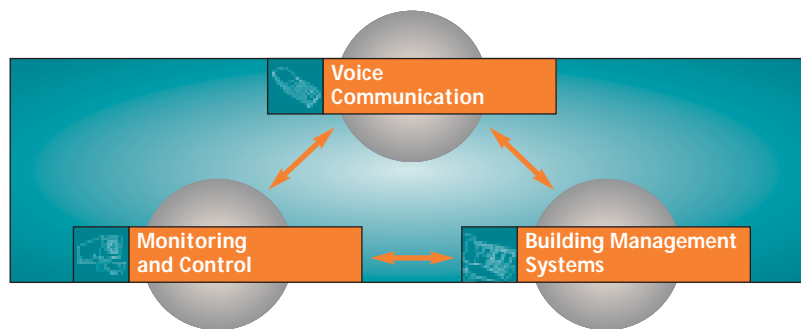


Everything from a Single Source

What matters to us is
the integration capability
of our products.

The products in each product group are matched to each other in an optimum way, thus allowing solutions for highly integrated applications in technical building management to be achieved.

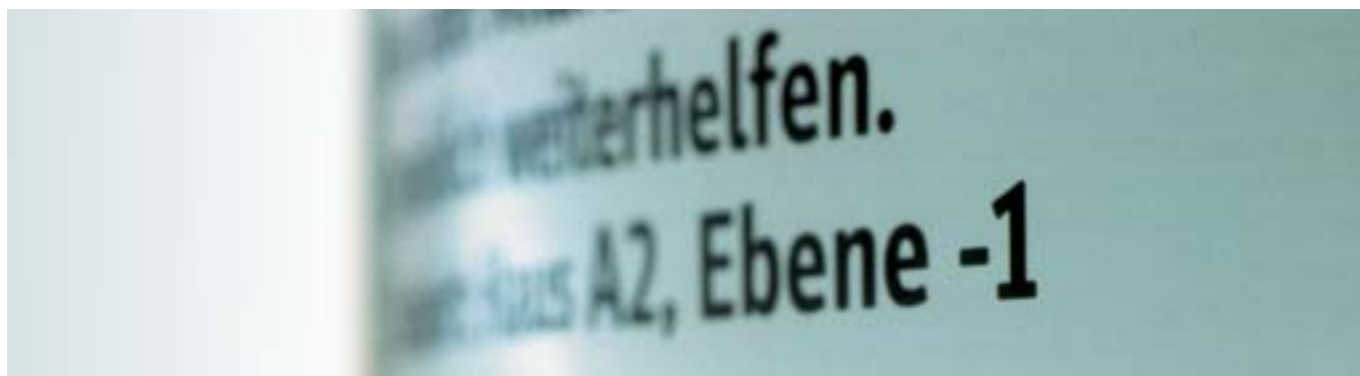
In following defined standards, we provide solutions with a high degree of flexibility for their integration in a wide variety of technical and IT infrastructures.





Security through Communication

Gehrke solutions are well-structured and secure systems tailored for diverse applications:



- Police
- Prisons
- Courthouses
- Hospitals
- University Hospitals
- Parking Garages
- Industry
- Retirement Homes
- Fire Departments
- Educational Facilities
- Banks and Money Institutions

Gehrke





At a Location Near You

- Sales Office
- Competence Center
- Sales Partner

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