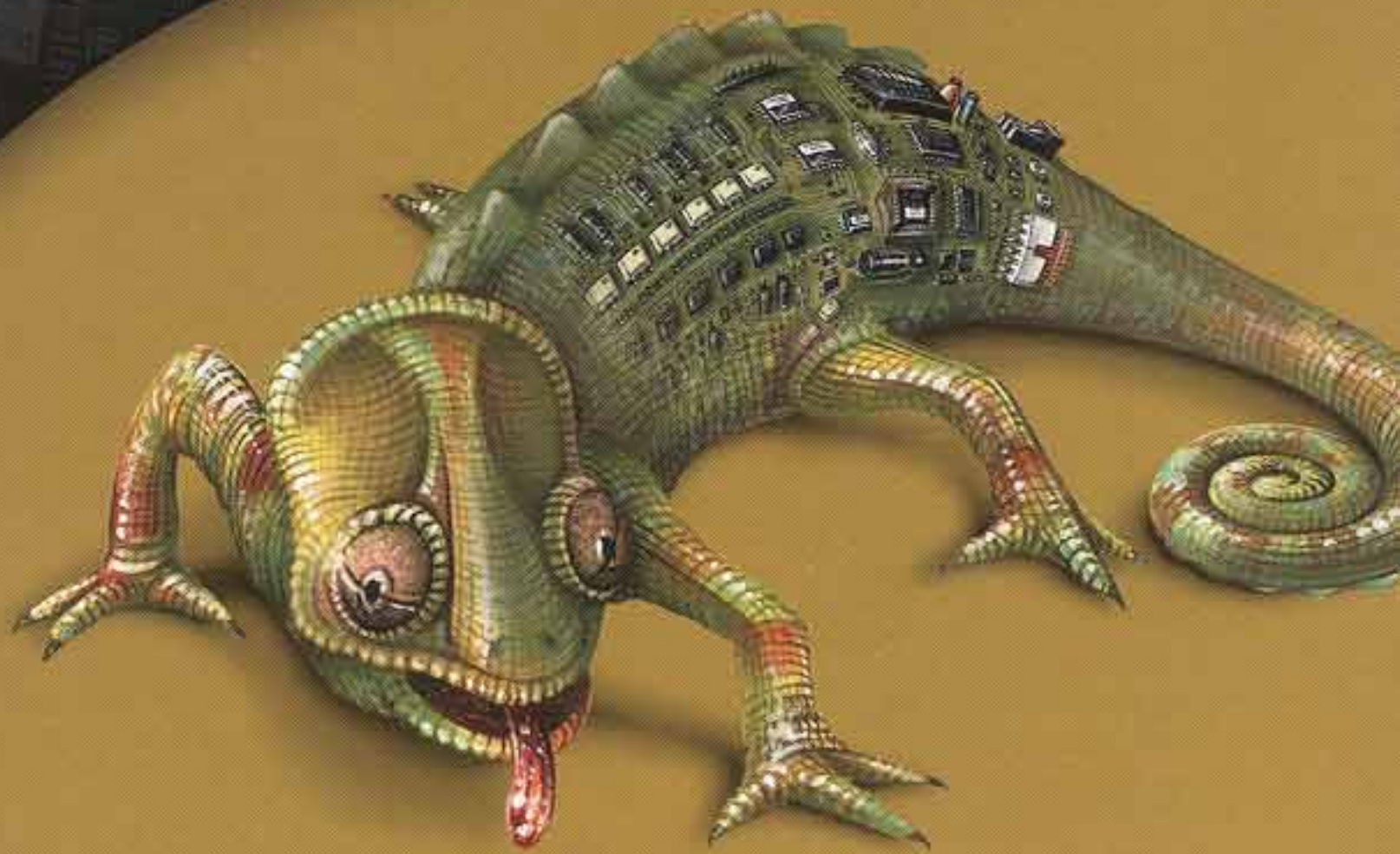


kameleon™

LOW VOLTAGE LIGHTING CONTROL



Completely
Adapted



A highly reliable **low-voltage lighting control solution** that adapts to any building management system



gentec
ENERGY MANAGEMENT

Reliable, flexible, autonomous, adaptable

The **K8 Series** is the most advanced Series of the **Kameleon** family of low-voltage lighting control systems. The **Kameleon K8 Series** is the tangible result of twenty years of innovation and research. Twenty years of continuous technology and product development that have positioned Gentec as one of the main architects of the future of the energy management industry.

The **Kameleon K8 Series** is the third and most recent generation of Gentec's low-voltage lighting control system. A mutation so innovative in terms of both software and hardware that it will leapfrog your lighting control systems from the Jurassic Age to a new, integrated approach: The **Kameleon Era**.

Kameleon K8 Series is a completely integrated low-voltage lighting control system that adapts and interacts, through its programming and operation architecture, to any building management system.

The **Kameleon K8 Series** was developed to meet the following objectives:

QUALITY: The quality of any system starts with the type of components that are used. For the **Kameleon K8 Series**, the higher level of quality has been obtained by the incorporation of the most reliable hardware available on the market, such as relays, switches, sensors, and dimmers. These components are operated and controlled by electronic boards that are designed and manufactured in Gentec's ISO 9001 (2000) Certified Facility and by the **Kameleon Software** developed by Gentec's team of highly experienced programmers.

RELIABILITY: The breakdown of a mechanical system won't affect the comfort of the building occupants until after a few hours; lighting, on the other hand, is a vital element in most buildings to assure business operations. Before being shipped to the end-user, each electronic panel and its components go through a series of testing procedures that guarantee the full operation of the system.

AUTONOMY: With its built-in scheduler, flash memory, and astronomical clock, the **Kameleon K8 Series** is a fully autonomous system that doesn't require any human intervention for its day-to-day operations. All events and schedules can be programmed years in advance and downloaded directly to the Time Clock Card of the panel. An outside Time Clock can also be installed to perform on-site programming and schedule modifications.

Complete integration and open technology

LonWorks®: the heart of Kameleon

Interoperability: the key to open building systems

Open system technology has been a major development in building automation strategies. LonWorks™ technology, developed by the Echelon® Corporation, supplies the essential ingredient for open building systems – Interoperability. LonWorks™ technology can be found in more than 3,500 products around the world.

Interoperability means that different products and systems, designed by different manufacturers to perform different tasks, can now be linked together to form flexible, functional control systems. For example, lighting control, motor drives, HVAC systems, security and fire alarms supplied by different manufacturers can work together in a cohesive automation system.

Interoperability presents many benefits for both the short and long term.

Immediate Benefits

Energy savings: Because they share the same information and follow common rules of operation, different control systems linked together can significantly reduce energy costs while acting in a coherent plan.

Lower design and installation costs: The need for customized hardware and software is greatly reduced. Point-to-point wiring between different systems is reduced because all subsystems share the same wiring.

Easier and faster system start-up: Since integrated systems run on common parameters such as schedules and operation commands, their configuration can be done through a single interface.

Long-Term Advantages

Easier system expansion and modification: New products and subsystems are integrated without requiring major system redesign or reprogramming. Furthermore, these additions will not compromise the system integrity.

Easier system reconfiguration: A new set of rules or a new schedule can be assigned to all systems while being entered only once through the main console. All new information is automatically propagated throughout the network and all boards are directly reprogrammed with these new parameters.

With the adoption of LonWorks® technology, the Kameleon K8 Series fulfills the objective of bringing to the market a complete hardware and software package capable of operating not only in stand-alone mode, but also within a complete control network. Like its namesake, it adapts perfectly to any environment it is put in.

Furthermore, by working with Echelon®, Gentec has access to a wide range of components that significantly enhance its overall adaptability capabilities. Such components include Echelon® routers that allow access to a plethora of communication media: twisted copper, fiber optics, infrared, radio, or Internet; and Echelon® gateways that allow the Kameleon K8 Series to communicate with systems using other communication protocols such as BACnet.



Gentec is a proud user
of Echelon® Technology



Kameleon Software:

Complete control
at your fingertips

Kameleon Software's operating system runs under Windows 9x/2000/XP or NT 4.0 environments. It can easily run simultaneously on multiple platforms in a client/server fashion. Its graphic interface is simple and intuitive, making it easy to configure, program, and operate.

System Configuration

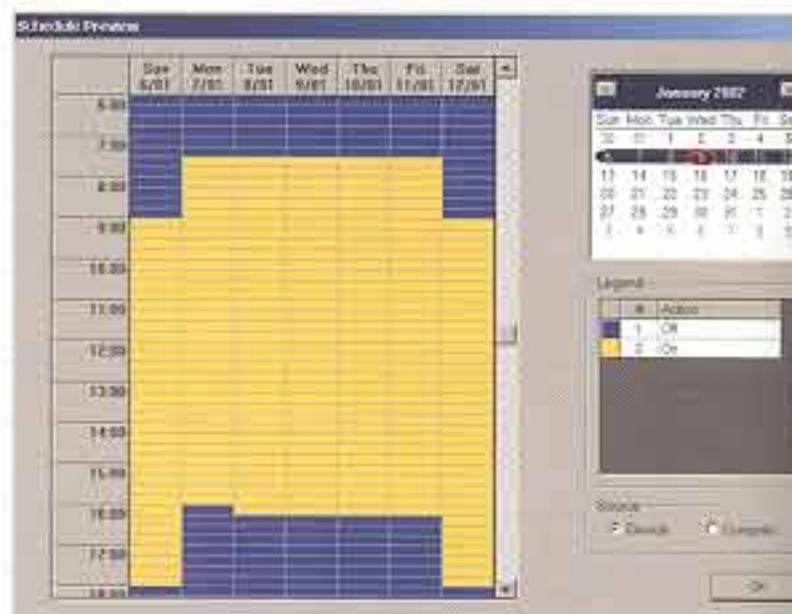
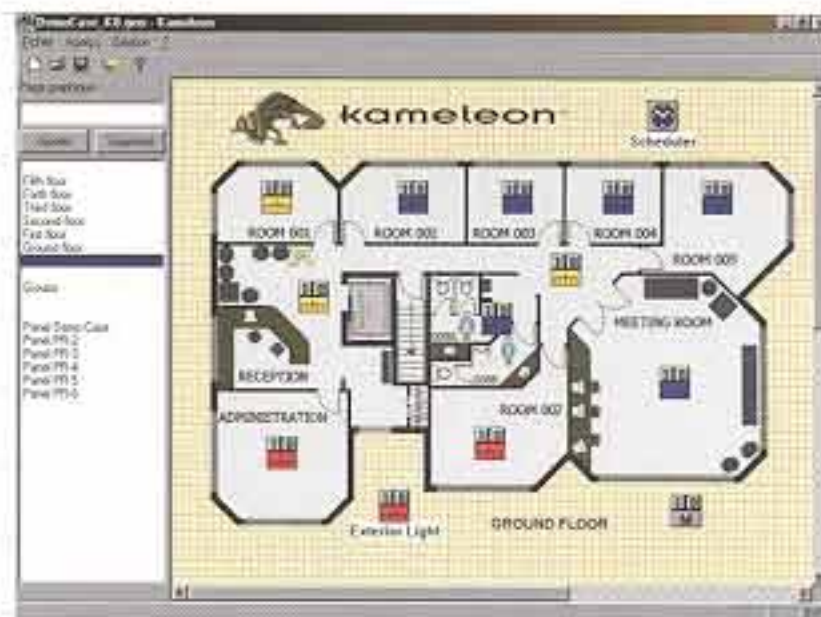
- Board management: addition of boards, operation diagnostics of each board, easy replacement
- Network management:
 - Multiple channels to extend the network
 - Usage of different communication media (twisted pair, power line, TCP/IP)

System Programming

- Group configuration
- Zone definition
- Switch-relay link configuration
- Schedule definition for each group or zone

System Operation

- General system architecture monitoring
- Override capability by single mouse-click
- Rescheduling capability
- Individual lighting circuits, groups, or zones real-time status view



Scheduler

- Many schedule types available: daily, weekly, monthly, one-time event
- Programming of a delayed operating schedule, i.e., a special schedule for the Holidays can be programmed in advance
- Ability to program events according to sunrise and sunset times
- Complete flexibility in schedule programming; day of the week, week within a month, first Monday of September, etc...

Data Logger

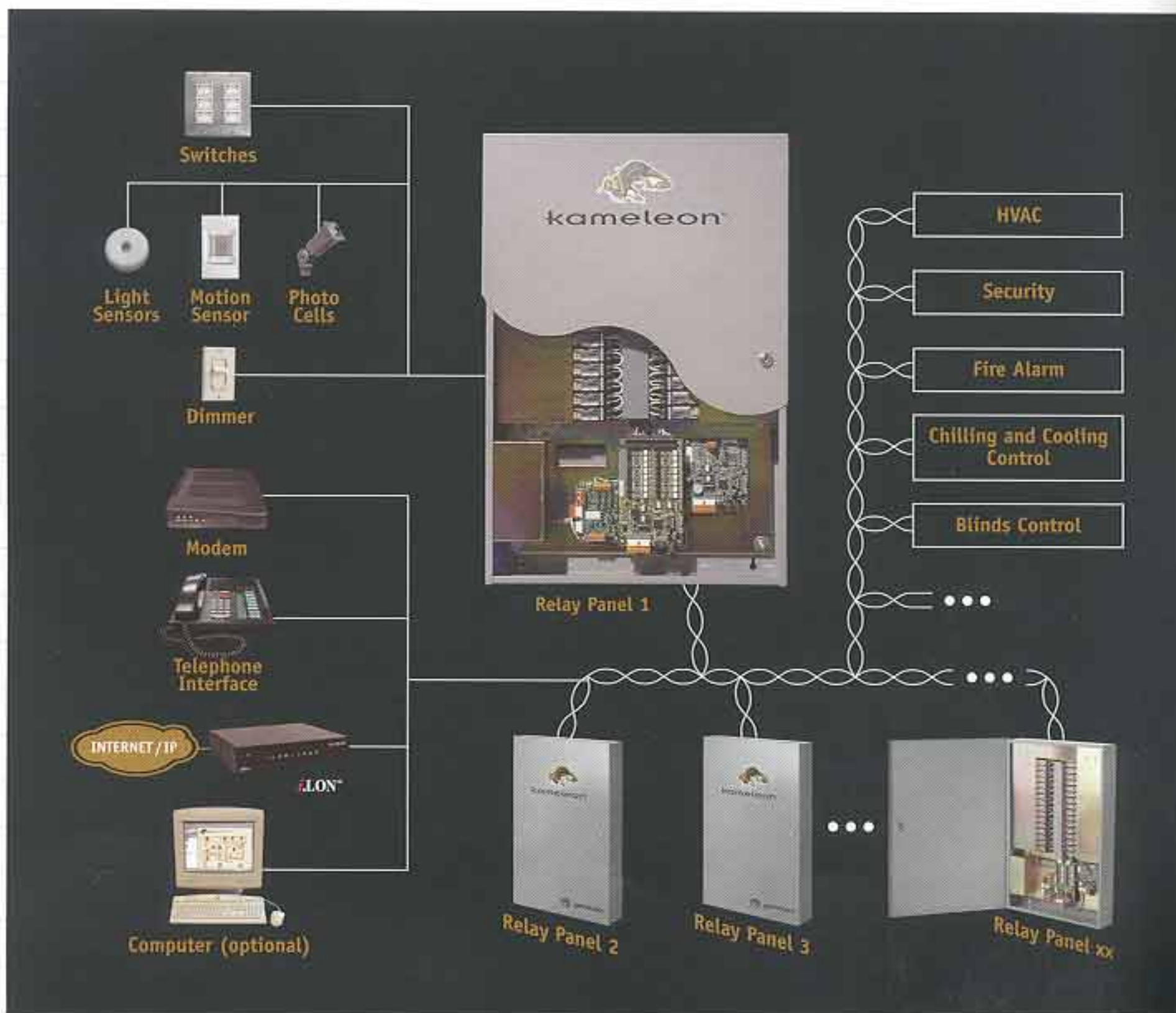
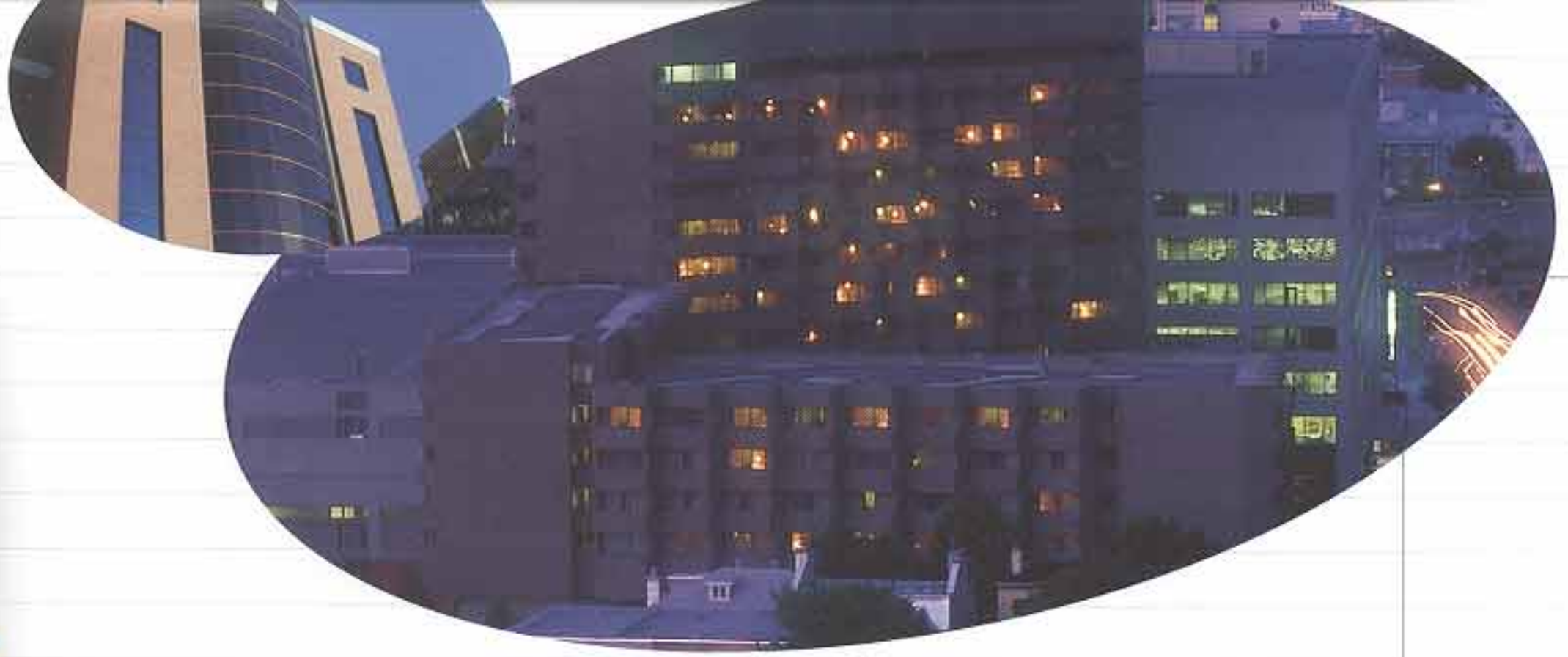
- Record of chronological sequence of events
- Compilation of operating hours
- Pre-defined reports generator
- Gathered information could be used to evaluate life expectancy of bulbs or generate electricity bills for lighting use outside regular business hours by tenants

Advanced Functions

Kameleon software also offers these important programming options:

- Dimming
- Schedule with flick warning
- Schedule extension delay
- Start-up or shut-down delay
- Scheduled enabled event
- Schedule exclusion of a switch
- Maintenance/cleaning function
- Etc...





Kameleon K8 Series' central nervous system

In order for its adaptation to be complete and effective, the Kameleon K8 Series consists of a central nervous system linked with several organs that allow it to be totally compatible with external systems. The electronic, data-processing, and hardware components that Gentec has selected for its Kameleon K8 Series are the highest quality, ensuring that the system remains stable and reliable in any situation.



Relay Panels

Relay Panels

The K8 Series Relay Panels present the following characteristics:

- 16, 32, and 64 relay capacity versions
- Multi-voltage option 120/277/347 VAC
- Easy handling mounting plate
- Yellow zinc plated protection plates
- Covered wiring duct
- Factory wired

CCE Input Card

The CCE Input Card acts as the interface between the controls and the external elements, most of which are various switches and dry contacts. The card can be configured with either 8 or 16 inputs and uses plug-type jacks.

CCE Output Card

The CCE Output Card controls 16 two-wire relays or 8 three-wire relays. When configured with 16 relays, the card monitors the real-time status of the circuits under control.

For both CCE Input and Output Cards:

- LonTalk® communication protocol
- Neuron® microprocessor
- Simple hook-up
- Easy-to-use programming interface
- LED card operation indicators
- Adapts perfectly to the client needs

CHR Card

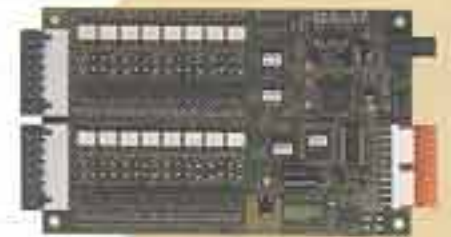
- Real-time clock; automatically switches between normal and daylight savings time within the installation location time zone
- Automatically calculates sunrise and sunset times
- Automatically synchronizes with other CHR Cards within the network
- Can be connected with up to 2 analog inputs (such as electric eyes) as well as dry-contact switches
- Serial port versions also available

Two-Wire Relays

- HID Compatible
- 20 A Load Resistance
- Manual override with DN/OFF indicator
- Optional auxiliary contact
- CSA and UL Listed

Breaker-Relay

- HID Compatible
- 20 A Load Resistance
- Three Position Handle: OFF, TRIP, ON
- Manual override with DN/OFF indicator
- CSA and UL Listed



CCE Input Card



CCE Output Card



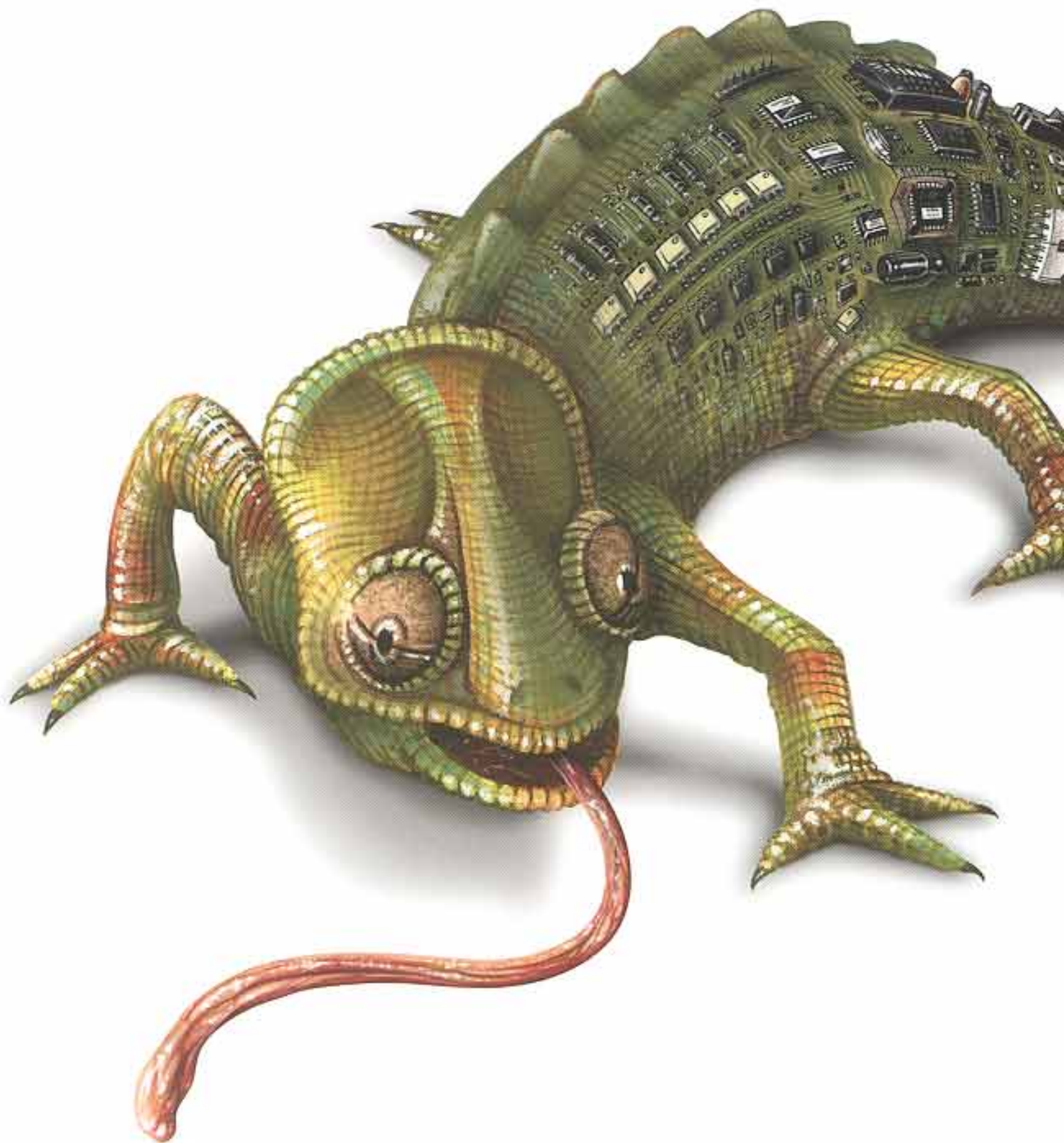
CHR Card



Two-Wire Relays



Breaker-Relay



FLEXIBILITY: The Kameleon K8 Series offers engineers and facilities managers all the flexibility they need to meet their requirements when dealing with lighting control inside their building, from a stand-alone system, to a soft-wired networked panels system or a fully programmable network system. In each case the end-user will be able to interact with the system through a console interface, a telephone interface, a modem or an Internet connection. Furthermore, Kameleon Software scheduling and event programming capabilities will easily support all common sequences encountered in lighting control.

INTEROPERABILITY: The Kameleon K8 Series was developed using open LonWorks technology from the Echelon® Corporation. By adopting LonTalk® communication protocols and incorporating Neuron® microprocessors into its electronic boards, the Kameleon K8 Series complies with LonMark™ Interoperability Guidelines and is ready to interoperate in highly functional, flexible, open building systems. The Kameleon K8 Series is also able to interoperate with equipment using other standards such as BACnet through the use of gateways and plug-ins.

ADAPTABILITY: In a retrofit or expansion project, the Kameleon K8 Series can be easily incorporated to the already existing lighting control system. The electronic boards of the K8 Series were developed with the ability to control the most common relays on the market such as GE three wire and Douglas two wire.

Kameleon: a complete line

Gentec's Kameleon line offers a wide range of solutions to suit any lighting control requirement.

From the standard pre-wired **KA** Series with basic control options for applications such as warehouses or small retail stores... to the fully programmable and console-operated **KB** Series, the Kameleon K Series will adapt to all possible configurations requested by the end-user. Because they are built around the same technology, each Series can easily be upgraded or work in a mix mode.

Service and guarantee

For more than 45 years, Gentec has been developing innovative solutions for energy management and lighting control; the most prestigious clients recognize our unique expertise. Besides high-quality products that are perfectly adapted to client needs and requirements, Gentec offers a distribution network and service locations accessible from coast to coast. In addition, all our products are guaranteed from one to two years, parts and service.



gentec
ENERGY MANAGEMENT

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