Complete electrical engineering solutions for residential applications

- houses
- shops
- schools
- sports centres
- small offices
- hotels
- stadia
- etc.
Complete electrical engineering solutions for residential applications

To live, work and recreate comfortably and safely is usually the aim of construction projects in the residential sector. In construction projects for homes, shops, small offices, hotels, etc. the wishes and requirements of the end user are usually high on the list of priorities. The electricity supply plays an important role in this because of the many possibilities that it can offer in the area of comfort and safety.

But in construction projects, a comfortable and safe electricity supply at end-user level is only part of it all. At project level, an electrical infrastructure will have to be constructed that makes it possible to fulfil the requirements and wishes of the end users.

Reliable and flexible

Eaton’s product solutions for residential applications are very extensive and are without exception characterised by very high reliability. In addition to various low voltages, Eaton can also be of service to you in the area of medium-voltage solutions. And thus Eaton offers you total solutions for your entire project.

Eaton as your project partner

Choosing Eaton is choosing an electrical engineering partner with know-how and experience of all the phases of a construction project. From the initiative phase to the actual delivery of a construction project. As a result you are guaranteed an optimum interpretation for the complete electrical infrastructure of your project; from the connection to the public mains to the individual elaboration at end-user level.

Eaton, your expert partner in every phase of the construction process

<table>
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<tr>
<th>Initiative</th>
<th>Specification</th>
<th>Design</th>
<th>Implementation</th>
<th>Mounting</th>
<th>Living / working</th>
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<tr>
<td>0</td>
<td>3</td>
<td>6</td>
<td>12 - 24</td>
<td>24 - 36 months</td>
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For the end user and the investor

Intensive attention to the wishes and requirements of end users lays the foundation for a healthy and long-term return on investments in real estate. By offering clients what they want – now and in the future - you are guaranteeing yourself a first-rate point of departure on a highly competitive market.

Eaton is the right partner for complete electrical engineering solutions for residential real estate projects. Our solutions offer a fitting answer to the current developments, opportunities and solutions for end user and investors.

<table>
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<th>Trends &amp; Challenges</th>
<th>Added value for investors</th>
<th>Eaton product solutions within an area of attention:</th>
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<td>Preventing power failure (= continuity)*</td>
<td>Reducing energy costs**</td>
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<td>Electrical installation independent of the construction process.</td>
<td></td>
<td>X</td>
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<td>Possibility of adapting the building to the wishes and requirements of the users.</td>
<td>X</td>
<td>X</td>
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<td>Reduction of the energy consumption.</td>
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<tr>
<td>Reliable power supply for living and working environment in homes.</td>
<td>X</td>
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<td>Living and working areas have connections for audio/video/telephone and Internet</td>
<td></td>
<td>X</td>
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<tr>
<td>Lengthening the life of the electrical infrastructure by adding new functions and functionalities.</td>
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<td>Reacting to changing environmental requirements.</td>
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<td>X</td>
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<tr>
<td>Life cycle of sustainable living.</td>
<td>X</td>
<td>X</td>
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<td>Care at home instead of care in hospital.</td>
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<td>X</td>
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</tbody>
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* : Indirect added value - offering reliability / continuity to end users.
** : Direct added value - savings on operating costs.
*** : Direct added value - savings on initial costs and operating costs.

**Explanation of bullets Eaton product solution:**
• = Safety  • = Energy management
• = Flexibility  • = Care
• = Comfort

The areas of attention

To give you an impression of our possibilities, we have subdivided our product solutions into the following functional areas of attention:

- **Internal electrical infrastructure:**
  - Safety
  - Flexibility
  - Comfort
  - Energy management
  - Care

- **External electrical infrastructure**

The above division is based on a difference in functionality. Naturally, the various functionalities can also be excellently combined with each other within a specific application.

Our complete range of product solutions offers a suitable elaboration of practically any application desired in the construction of homes, shops, small offices, hotels, etc. This applies both to new construction projects and renovation projects.

With Eaton you have:

- An expert discussion partner with specialist know-how and experience of all the phases of the construction project.
- A partner with a very extensive range of product solutions for low and medium voltage.
- An innovative partner.
- A flexible partner geared to cooperation.
- A partner for both new construction and renovation projects.
- A strong, independent partner.
Internal electrical infrastructure

Standards have been drawn up for houses, small offices, leisure applications, as well as other residential applications, to ensure that electricity is used safely. However, these standards cover the basic requirements only and in many cases have not kept up with today’s technology and the needs of end users. More can be done and users want more.

Using electricity safely

A distribution box protects the electrical system in the event of an overload, a short-circuit or an earthing fault. In all of these instances a section of the electrical system is switched off, thus eliminating any likelihood of fire and injury. In addition to distribution boxes that comply with legally enforceable standards, in this area Eaton also offers solutions that go a step further and are closer to present-day requirements of the occupants of the building.

System 55 (up to 125 A) and Medusa (up to 80 A) plastic distribution systems, for houses and offices.

Memera plastic and sheet steel distribution system up to 125 A, for houses and offices.

Halyester plastic distribution system up to 1600 A, for indoor and outdoor installation, water and dust-proof.

Capitole sheet steel distribution system up to 2500 A, for industrial, office and commercial buildings.

Tabula sheet steel distribution system up to 1600 A (self-build system), for industrial, office and commercial buildings.

Visible sheet steel distribution system up to 1600 A, for houses and offices.
Protection of electronic equipment
Overvoltage protection protects electronic equipment against indirect lightning strikes. An indirect strike occurs when lighting strikes in the immediate vicinity of a building. The current surge thus released tries to find its way to earth and in doing so comes across electricity, telecommunications and community aerial system cables, as a result of which the current surge can enter the building. Overvoltage can cause irreparable damage to computers, videos, television sets, audio equipment, etc. Eaton Holec offers effective solutions for protection against indirect lightning strikes.

Protection against brownouts and blackouts.
Electricity is of vital importance in our present-day community. We cannot do without it, nor do we wish to. Problems involving mains voltage can have tiresome and even disastrous consequences for work processes as well as users. Whether the cause lies in an internal fault – within the electrical installation – or in an external fault – the electricity supplied from the mains, Eaton can offer you a made-to-measure solution: for houses and small offices to hotels and theme parks.

Protection against fire and burglary
Protecting a building against fire and burglary is closely associated with the electrical system. Timely detection of such incidents as well as immediate triggering of action in response (such as setting off the sprinkler system or alerting the police to a break-in), can save a great deal of personal, tangible and intangible losses. Eaton will also be delighted to provide a sound interpretation of this part of the overall solution in consultation with you.
Switching and distribution unit

All Eaton switching and distribution units for residential applications, from the smallest to the largest, are easy to adapt and expand, thus providing for the practical desire for flexibility.

Internal infrastructure

The occupants and/or use of a building will change several times throughout its life. It is therefore an attractive feature for the owner as well as the occupants of a building that the switching and distribution unit is easy to adapt or expand.

Flexibility

Internal electrical infrastructure

That which applies to the distribution system, clearly applies to the electrical infrastructure in the building as well. Take-off points such as wall sockets as well as light and other switches should be capable of being fitted without having to cut and chase out the fabric of the building to any significant extent. Xanura home automation (see below) and the Elux concept make this possible. Furthermore, the Elux concept provides a highly flexible solution for data communications and telephony.

Comfort

Kitchen solutions

Within a short space of time kitchens have grown to become centres of electrical appliances and equipment. This requires that special attention be paid to the electrical system. Eaton offers practical solutions for new build as well as existing properties which ensure electricity is used safely and in comfort.
Home automation
Home automation (domotics) blends in seamlessly with the current trend towards living and working as individuals. End-users are no longer prepared to take off-the-peg solutions: they demand made-to-measure. Home automation offers you this facility. Home automation enables lighting and electrical appliances to be controlled and automated exactly as the user wishes. Virtually unlimited possibilities and considerable ease of operation make Eaton’s home automation system a fully-fledged and user-friendly automation system. Not just for the home but also for shops, small offices and other applications such as hotel rooms.

The Eaton home automation system:
• is for lighting and appliances
• is for new build and existing properties
• can be installed out of sight
• can be installed without having to cut and chase out the fabric of the building

Residential Gateway
The residential gateway is a black box which provides a software and hardware link between various devices in a house and in the outside world. Although this brings to mind the Internet it also covers links to telephone cables or community aerial systems. This enables numerous functions to be integrated and offered to users bundled with various services.

If the house has the required facilities, services such as energy management, remote metering, appliance maintenance diagnostics, linking media vehicles such as the TV with the Internet, displaying and receiving alarm messages by e-mail or SMS, video surveillance and full management and control of appliances and lighting in your home with Xanura. With the residential gateway you will be prepared for future developments.
The Eaton Care system

The Eaton Care system is a well-thought out home automation system which is simple to operate, offering the infrastructure required for extramural care facilities. It is based on matching the care provision exactly to the individual requirements of residents so they can remain independent for longer. The resident will continue to do what he or she is capable of, while potential hazards are reduced by special electronic facilities.

Open structure means flexibility

The open structure and communications of the Eaton Care system enable all kinds of specific electronic (care) components and systems to be linked to its infrastructure, independently of the component or system brand.

Recent studies suggest that numbers of senior citizens will double over the next 25 years. This will lead to increased activity, especially in the care sector. The Eaton Care concept enhances the ability of senior citizens to cope on their own, as a result of which they can stay independent for longer, living in their own trusted environment. Eaton thus offers one of the solutions to keep the consequences of ageing under control.
Houses adapted for the disabled
The Eaton Care concept is also eminently suitable for adapting houses for the disabled.

Residential Gateway
Within care applications, the residential gateway includes facilities such as an ‘online surgery’ with the GP; an interactive link can be set up using the TV and a webcam in which the doctor and his or her patient can see and hear each other. This and other care applications make living independently for longer possible and affordable.

Eaton Care system benefits
- Senior citizens’ houses can be converted to care homes without radical structural alterations
- Extremely flexible in implementation, according to the individual needs of the occupier
- Simple to modify in response to changing care needs
- Suitable for new build, refurbishment and upgrading
- The technology is out of sight and not intimidating for the user
- Operation is simple and has a low threshold
- The Eaton Care system has been specially developed for extramural care
- Combined with other care systems, it can also be applied to intramural care
- Simple to expand with systems to protect against brownouts and blackouts.
Energy saving
The Eaton home automation system provides numerous features to manage electricity consumption efficiently, such as:
- Automatically switching lighting and heating on and off in certain rooms depending on whether they are occupied or vacant.
- Setting lighting and heating programmes according to weather conditions or the time of year.
- Extensive facilities for monitoring day-to-day consumption
- Centralised off button for all lighting at the front door

Taken individually, these facilities probably contribute little to the overall result. However, a number of facilities combined (and in a project context) can result in substantial annual savings.

Residential Gateway
The residential gateway enables costs to be kept under control. It goes a step further than just managing your electricity consumption. The residential gateway can also manage consumption of other utilities such as gas, water and telephone as well as intranet and other services for you.

Guaranteed electricity supply
Another aspect of energy management is to guarantee the correct mains voltage within a building. For somewhat larger residential applications, such guaranteeing of the correct mains voltage usually goes beyond simply preventing brownouts and blackouts. Incidents such as sustained overvoltage or undervoltage can cause damage to critical operational processes with all the attendant consequences. As a specialist Eaton offers you the certainty that mains voltage related problems cannot interfere with your systems, data and controls.

Optimum enjoyment of the comfort that electrical energy provides for us on a day-to-day basis and maintaining awareness at the same time. Good for your wallet and good for the environment. In this area Eaton offers various possibilities for controlling houses, shops, small offices, farms, holiday chalets, hotels, theme parks, stadia, etc.

The correct voltage at all times. Eaton systems look after this
External electrical infrastructure

The electricity supply for large residential new build projects is provided in many cases by adding a new connection to the public electricity main, in which transformer stations are installed in order to provide the necessary step-down from medium to low voltage. The electricity supply is then distributed through street distribution boxes to the buildings.

Complete solutions

Eaton offers appropriate and extremely reliable product solutions for this entire external electrical infrastructure, including installation and the legally required management and maintenance. This involves customised solutions in every case, since electricity requirements can vary significantly for each project.
Company Information

Eaton’s Electrical business is a global leader in electrical control, power distribution, and industrial automation products and services. Through advanced product development, world-class manufacturing methods, and global engineering services and support, Eaton’s Electrical business provides customer-driven solutions under brand names such as Cutler-Hammer®, Durant®, Heinemann®, Holec® and MEM®, which globally serve the changing needs of the industrial, utility, light commercial, residential, and OEM markets. For more information, visit www.EatonElectrical.com.

Eaton Corporation is a diversified industrial manufacturer with 2003 sales of $8.1 billion. Eaton is a global leader in fluid power systems and services for industrial, mobile and aircraft equipment; electrical systems and components for power quality, distribution and control; automotive engine air management systems and powertrain controls for fuel economy; and intelligent drivetrain systems for fuel economy and safety in trucks. Eaton has 55,000 employees and sells products to customers in more than 100 countries. For more information, visit www.eaton.com.

For further information

Extensive information is available on all product solutions mentioned in this brochure. You will find further information at:

- www.et-installateur.nl
- www.xanura.nl
- www.vanhuistotthuis.nl

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