

Eaton – convincing in terms of safety, performance and operational availability.



xEnergy Bus Bar Top – The switchgear for the future.



Powering Business Worldwide

A partner for all cases.

Technology leader Eaton consolidates its importance in panel building: through type-tested switchgear systems that grow with your needs.

Eaton Corporation, headquartered in Cleveland, Ohio (USA), is pursuing a diversified business strategy and is the undisputed technology leader in multiple categories. Its Electrical Sector alone is a global leader in products and services for power distribution, safe power supply and industrial automation.

With proven brands such as Cutler-Hammer®, F&G®, Moeller®, Powerware®, Holec®, MEM®, Santak® and MGE Office Protection Systems™, Eaton provides customer-oriented PowerChain Management® solutions for energy systems in data centres, hospitals, industrial sectors, hotel industry, retail, food industry, and water treatment plants.

Successful full-service provider

Eaton is already operating as a worldwide specialist for switchgear systems. The declared intent of being a full-service provider is a decisive factor for its success. No matter for which application, at Eaton you will get everything from a single source, from power distributors, to busbars up to single components. Eaton is focused on complying with the current standards and being a pioneer in safety. As is currently the case of the new IEC/EN 61439 standard.



Eaton - 5 times successful

- as the world leading provider of products and services in the areas of electrical control, power distribution, uninterrupted power supply, and industrial automation
- as a global market leader in the design, manufacture and marketing of complete series of drive systems and components for medium and heavy duty vehicles during operation
- as the world leading supplier of the commercial and military aviation as well as aerospace industries with an extensive technology portfolio of hydraulic, fuel supply, motion control and propulsion systems
- as a major supplier of critical components reducing emissions and fuel consumption and improving the stability and performance of cars, light trucks and utility vehicles
- as the world leading manufacturer of reliable, highly efficient hydraulic systems and components for mobile and industrial applications in many sales areas, from mining to the entertainment industry



xEnergy: Distributes energy systematically. Saves efficiently. Thinks ahead.

In Eaton you will find a business partner who supports your expertise in all respects. xEnergy is a switchgear system with multiple options for reliable power distribution and individual possibilities to adjust to your customers' needs.

The xEnergy system offer thinks ahead. That is, it is designed to meet growing requirements. Aimed at maximum efficiency in the implementation of your individual projects, Eaton xEnergy Busbar Top creates the ideal prerequisites for building infrastructures up to 4000A.

Each functional module of our switchgear systems is perfectly prepared and consistently thought out - from the device

itself, the mounting system, the housing, right up to the software tools.

Systematically switching = Customising the future

You too can decide in favour of this technically sophisticated and economical unit consisting of switching and protection devices, embedded systems and switchgears. It helps to optimally switch and control power - in short, to master it.

The system is designed as a construction kit and allows for intelligent combinations.

The advantage for you is multifaceted. Not only can you generate optimum added value in your own switchgear building and trust that with Eaton you will build safety-tested switchgears, but you can also be confident that you will always be on the cutting edge. In addition, you also save time, money and space.

xEnergy Bus Bar Top

Eaton is tailored to your requirements as a panel builder: That is why the xEnergy system offer was extended with additional solutions that facilitate your work. The main focus is a new user-oriented switch-gear: xEnergy Bus Bar Top.

In the development of xEnergy Bus Bar Top, utmost attention has been paid to the compatibility of new components with the proven xEnergy system (main busbar Bus Bar Back). Thanks to its modular concept, the system grows with the specific customer requirements.

Free choice - free access

An essential feature of the **new system is the new patented Open Frame structure** with a freely selectable rail position. Using the newly developed modular busbar carrier, currents up to 4000A are possible (copper mounting of at least $1 \times 30/10 = 800A$, up to a maximum of $12 \times 30/10 = 4000A$).

A further valuable feature: Permanent availability of electrical equipment and installations is an increasingly important issue, and production downtime needs to be avoided when and wherever possible. This is why greater emphasis than ever is now placed on thermographic inspections on live electrical connections of CU bars instead

of performing mechanical tests on such connections. If predictive/preventive maintenance is done on a regular basis, any potential hotspots can be identified at a very early stage, so - thanks to the Open Frame structure - maintenance personnel can act immediately to fix the problem before a component fails. Removing all top covers provides access to all important CU screw-type connections and consequently allows doing the thermographic test on the installation under **full load**.

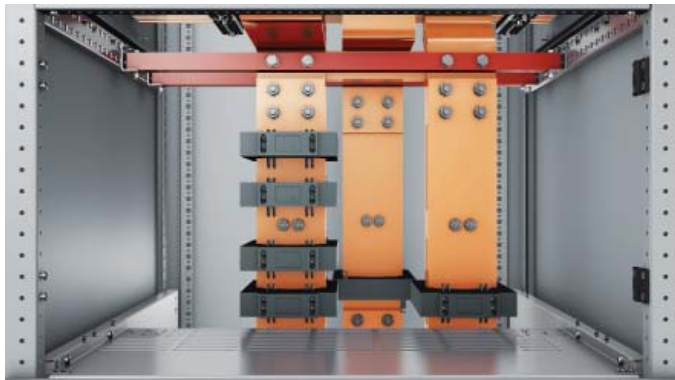
The unit is equipped with fully featured connections at the back. This makes maintenance and expansion easier.



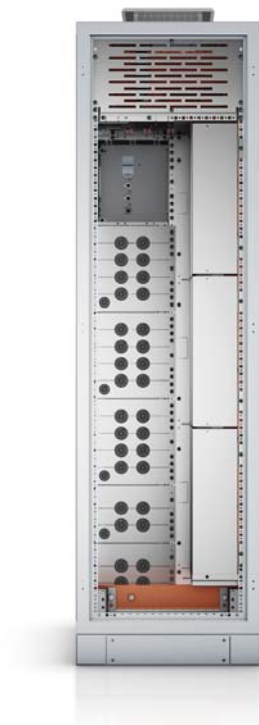
Modular, multi-talented

Open circuit breakers and compact circuit breakers can be installed above or next to each other in the xEnergy power field, for use as inputs, outputs or couplings. Our incoming cubicles can be fitted with measurement modules. They also have space for special versions with up to 4 current transfor-

mers per phase (as usual in the Middle East). The current transformers are installed on copper terminals, connected to the phase conductors. In order to provide the best layout for current transformers installation, the phase conductors are routed into the enclosures at different depths.



The incoming cubicles provide space for special versions with up to 4 current transformers per phase.



Outgoing feeder panels are just as easy and flexible to configure. A large number of switching combinations is possible, such as an NZM3 with remote operator and/or plug-in socket and rotary handle. The internal separation can be configured for 4b form up to type 7. The cable connection compartments are modular in construction. This has the advantage that no panels or covers obstruct access to the interior of the compartment during installation and hookup.

In brief: xEnergy Bus Bar Top provides an easy to install, technically fully-featured and cost-effective power distribution system which saves you time and effort during installation and maintenance.

System description

Tested for compliance with:	IEC/EN 61439
Copper:	per EN13601-CU-ETP-R250-SH
Ambient temperature:	50 °C
Relative humidity:	50 % at 40 °C
Protection:	Protection class 1, earth terminal
Protection rating:	IP31, IP42, IP55
Impact resistance:	IK10
Rated insulation voltage:	1000V
Rated operating voltage:	690V
Insulation coordinates:	III/3
Insulation voltage:	8kV
Over-voltage category:	IV
Contamination class:	3
Rated frequency:	40 – 60 Hz
Bus bar rated current:	4000A
Bus bar rated transient current ICW:	up to 105kA (1 s); 65kA (3 s)
Bus bar rated peak current IPK:	up to 220kA
Cabinet height:	2000 mm
Depth:	800 mm (additional cable panels available from 400 mm to 800 mm)
Cabinet widths:	425, 600, 800, 850, 1000, 1100, 1200, 1350 mm
Standard colour:	7035 structure

Advantages

- Simple connection to the main busbar
- The bars are available at all times
- The busbar connections can be inspected thermographically and mechanically at any time
- Significantly reduced installation time



Whether the application is a health or computer centre, industrial or a sewage plant: panel builders trust Eaton.

The experts in safe power distribution understand the importance of availability and the costs of outages better than any other supplier.

Eaton's xEnergy solution is a type-approved switching solution which offers unbeatable personal and system safety, while reducing outages to a minimum. Available in a variety of basic configurations, the system is built in robust steel panelling to suit the client's current requirements, with room for any expansions and combinations down the line. In brief: xEnergy has the right solution for every need.

Service in seconds

Whether it's a hospital or factory, a server farm, shopping centre or sewage plant: unscheduled outages cost money. That's why Eaton takes special care that the user friendliness of its systems is adapted to the requirements of each individual client. XF's with fixed components can result in even longer outages, and the field of application must be chosen in relation to calculated downtimes.

On the other hand, XR's using quick mounting modules require only a few minutes for swapping components out, and with the high end XW version, this is reduced to just a few seconds.

With its plug&play technology and the option for live swapping of components, downtimes is finally a thing of the past and the requirement for skilled staff is also reduced to a minimum.



Advantages

- Type-approved, modular and flexible
- Tested/safe combination of switchgear and housings
- Compatible with a vast number of components
- The solution for any field of application (from power distribution to motor control centres)
- Time saving
- Outstanding safety
- Supplied as flatpack or fully assembled control cabinet
- Software tools and training for easy planning and implementation
- Long service life even in the most demanding conditions



X Benefits of xEnergy Bus Bar Top

Open circuit breaker series IZMX16/40

This xEnergy panel allows the circuit breakers to be installed individually, next to and above each other.

- Widths 425/600/800 mm
- Fixed or removable
- 3- or 4-pole
- Feasible as a Single, Stacked or Side-by-Side solution
- Can be used as a coupling panel (compatible with mechanical interlock)
- 630 - 4000A
- 4b form up to type 7
- IP31, IP42, IP55
- Simple, cost-effective cable connection system
- Can be operated externally
- Switchgear compatible with components (e.g. mutual locking)



XF outgoing sections for fixed outgoers up to 630A in Form 2b

- Outputs with circuit breakers PKZ, NZM, FAZ
- For main busbars running at the top under the lid
- Panel height 2000 mm, depth 800 mm + additional rear cable connection space of 400 mm to 800 mm available as required
- Back plane connection
- 3- or 4-pole and 3P+N
- IP31, IP42, IP55
- Circuit breaker compatible with all accessories. e.g. rotary drives
- Transparent doors (glass) available
- Distribution bars up to 2000A



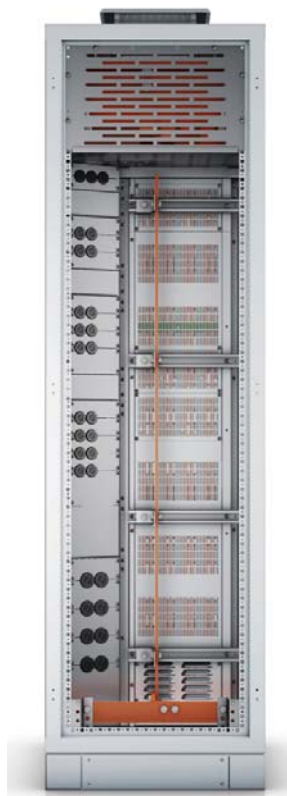
XF outgoing feeder panels for fixed outputs up to 630A in Form 4b

- Panel widths 600 mm (800/1000 mm with additional side cable connection space as supplementary functional space)
- Module width 600 mm
- Each module has its own front panel
- 3- or 4-pole and 3P+N
- 4b form up to type 7
- IP31, IP42, IP55
- Circuit breaker compatible with all accessories. e.g. rotary drives
- Transparent doors (glass) available
- Distribution bars up to 2000A
- Clear division of functional spaces



Box Solution

- Panel widths 600 mm (800/1000 mm with additional side cable connection space as supplementary functional space)
- Module width 600 mm
- Each module has its own door
- 3- or 4-pole and 3P+N
- 4b form up to type 7
- IP31, IP42, IP55
- Circuit breaker compatible with all accessories. e.g. rotary drives
- Distribution bars up to 2000A
- Clear division of functional spaces
- Can be operated from behind the door or with door coupling handle



XW plug&play outgoing feeder panels

- Panel widths 600 mm (800/1000 mm with additional side cable connection space)
- 3- or 4-pole
- Distribution bar rated current $I_n = 1000\text{--}1600\text{A}$
- IP31, IP42, IP55
- Shelves individually height adjustable to fit the module
- Maximum installation height = 1600 mm
- Rear cable connection space completely insulated from equipment space, main busbar space and distribution busbar space

- Busbars completely insulated from the front with self-closing cover flap
- Available inserts:
 - o Power outputs up to 400A
 - o Direct starter 0.06 – 132kW
 - o Reversing starter 0.06 – 132kW
 - o Star-delta starter 5.5 – 110kW
- Outputs from 132 to 250kW as well as power outputs up to 630A are available as fixed solutions
- Integrated SmartWire DT solutions
- Integrated soft starter solutions

XG general purpose blank panels

- General purpose blank panels
- Rail mounting systems
- Individual fixed systems on installation panels
- Control technology – field-high or divided installation panels
- Panel height 2000 mm
- Panel depth 800 mm
- Panel width 425/600/800/850/1000/1100/1200/1350 mm
- IP31, IP42, IP55



Eaton xEnergy Bus Bar Top Support

Configurator included at no additional charge

In order to make planning and configuring xEnergy as easy as possible, we offer our tried and tested xEnergy Configurator software at no additional charge.

- User friendly xEnergy selection options
- Windows based wizards
- Functional, self-explanatory construction
- Short training period with Look and Feel
- Versatile applications
- Project management and system structure
- The system generates the correct distributor in relation to the guided system choice

- Parts lists for devices, inserts and distributors
- Generation of front views for offers, drag and drop customisation

Further information

- Detailed catalogue with ordering and technical sections
- Information includes instruction leaflets, construction guides and technical manuals

All data freely available from www.xEnergy-partner.com

For any further information, please write to SupportDistributionBoardAustria@eaton.com

Now also available
in IP42
(tested at 50° Celsius
ambient temperature)



XP Power panels/ feeds/outputs/ couplings

- Feeds, outputs and couplings up to 4000A
- Cable connections routed from below; additional cable panels can be installed below and above
- Feasible as a Single, Stacked or Side-by-Side solution
- The busbars can run at the top under the lid, through the middle or below, and as a busbar connection in a vertical execution
- Panel height 2000 mm, depth 800 mm + additional cable space of 400 to 800 mm depth
- Internal separation 4b form up to type 7
- Back plane connection



Compact circuit breaker NZM3/4 in form 4b

xEnergy panels allow the circuit breakers to be installed individually or in pairs, next to and above each other.

- Widths 425/600/800 mm
- Fixed or removable
- 3- or 4-pole
- Can be used as a coupling panel
- 250 - 630A (NZM3)
- 630 - 1600A (NZM4)
- Form 4b
- IP31, IP42, IP55
- Simple, cost-effective cable connection system
- Can be operated externally or with door coupling handle
- Switchgear is compatible with components (e.g. motor lift, socket, etc.)



Distribute, switch, protect - systematically.



IZM

Variable circuit breakers up to 4000A

Height, width and depth of the switch are always the same, increased operational safety with robust construction and communications, cost-optimised design thanks to modular construction, suited to installation worldwide, for xEnergy and xVTL.



NZM

Compact circuit breakers up to 1600A

Available in four switching capacities, compact and space-saving, ideal as master switches for machine controllers, feed switches in installation distributors or output switches in power distribution.

1



Power Xpert® FMX

Medium voltage current distribution with SF₆ free vacuum technology

An innovative and compact switchgear system with fixed circuit breakers for applications up to 24kV, ideal for use in power provider distribution networks and industrial and public utility applications. FMX sets new standards in ease of connection, compactness, operational safety and user friendliness.



Xiria Ring Cable Station

Medium voltage current distribution with SF₆-free vacuum technology

For outstanding operational safety in applications up to 24kV, hermetically sealed housings constructed with top quality components and mechanisms make Xiria a service-free solution. Available in two basic configurations (for ring cable connections and for protecting power transformers and their associated cable connections) for unrestricted use in fully automated grids.



Power Xpert® XP

Current busbar systems in copper and aluminium

Its sandwich-type design makes XP ideal for a vast range of applications from 500 to 6300A, able to handle any of the challenges faced by electrical systems, with much lower power dispersion than cable-based solutions - which means energy saving and reduced emissions.



CS

Wall housings in solid steel panelling

Ideal for applications requiring effective protection against direct contact with live components, available in 45 housing sizes.



CI

Modular insulated material housing

Designed for the most challenging conditions, as an individual housing, wall-mounted or free-standing distributor, type-approved for all current applications.



SASY 60i

Modular busbar system

For effective power distribution in the control cabinet, in combination with the latest cutouts and circuit breakers, a complete solution for switching, control and distribution, with UL certification.



PKZ

Motor and system cutout

The essence of quality and innovation, available with swap-out trip block on demand.



PKE

Motor cutout

Easy to equip with manual switches, trip indication and other components, for a complete, easy-to-design solution



DIL

Circuit breaker

Designed for individual solutions, depending on the client's industry.

Service / Software / Support

Eaton actively supports the ZVEI Service Initiative „Services in Automation“. For our service offering, this means: **tailor-made service, easy identification of available services, guaranteed competency for the services offered, and determination of the desired results and performance data in consultation with the client.**

Service



Type-approved quality

Eaton is DIN ISO 9001 certified. You can rely on Eaton product quality. Eaton switching solutions use building blocks constructed from precisely-specified IEC/EN 61439 type-approved functional modules. The building block system is designed for local (DIN VDE, CEI, NF, UNE) installation requirements.

Eaton also offers all relevant circuit breaker combinations for the desired protection type up to 4000 A. The type-approval of the entire product, consisting of switchgear, installation equipment and control cabinet per IEC/EN 61439 guarantees a high level of safety. And its modularity means that the system is easy to expand as your needs grow.

Custom deliveries

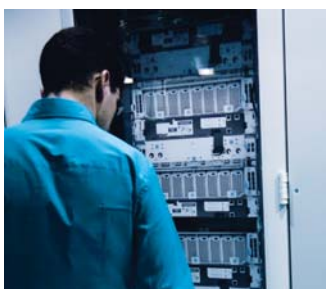
Eaton supplies its entire product range as a flatpack, functionally packed in component families, or as a fully assembled cabinet if so desired. Short delivery times make it easy to respond promptly to our customers' requests for information and changes.

- Easy configuration and ordering, with software tools for generating parts lists
- Fast deliveries from stock thanks to our streamlined logistics
- Easy part handling with practical packing units
- Safe and time-saving assembly, using Eaton assembly instructions

The system offering is optimised for installation of Eaton's internationally available switching and circuit breaker equipment, and is supplemented by configuration and planning tools. We have the right tool for every phase of your power distribution project!



Technical support



Eaton offers expert, reliable technical support. For new clients, we offer training in the construction of a type-approved switchgear system solution.

This has the benefit that the client works directly with the panel builder to build his first switchgear system, which means that he learns how best to proceed.



Software

Eaton offers you the tools you require. Our planning, documentation and calculation software tools support planners as well as control cabinet builders and installers. The Eaton Toolbox is perfectly designed for the job: from grid planning to system planning and tenders, up to the order itself. Eaton Tools, with its system specific data, ensures a simpler, faster and more efficient solution for real life applications.

CurveSelect

Eaton's characteristic curve program for protection equipment is available free of charge and enables you to represent the application-specific characteristic curves of multiple safety circuits in the same time and current scales. This considerably simplifies the assessment of the interaction of NZM and IZM circuit breakers, PKZ motor cutouts, ZB motor relays and circuit breakers as well as NH fuses.

Freely definable curves (Free-StyleCurves = FSC) enable direct comparison of:

- the selected motor cutout and motor starter characteristics,
- feed switches and the upline medium voltage protection,
- planned expansions and available protection equipment.

CurveSelect supports you in designing and documenting your plant.

xSpider

A graphic design system for rating low voltage grids equipped with Eaton protection equipment. xSpider is available for download free of charge. The software includes a database of Eaton protection equipment (MCBs, MCCBs, ACBs, Sicherungen, Motorstarter). MatSelect database for managing product and material data in in-house and standardised classification systems.

Configurator for xEnergy

Quickly and easily configures an xEnergy switchgear combination. Draw up tenders in real time and generate the exact parts list at the click of a button.



Eaton partner programme

The key to your success with xEnergy switchgear system solutions is the Eaton partner programme. Membership has many benefits: Not only do you get your information from the horse's mouth. You are also the first to be notified about interesting facts and new developments in the xEnergy system.

As soon as you register with www.xenergy-partner.de you are welcomed into xEnergy Partner Net, and all the advantages of the Eaton partner programme are instantly available to you.

For further information:
www.xenergy-partner.de



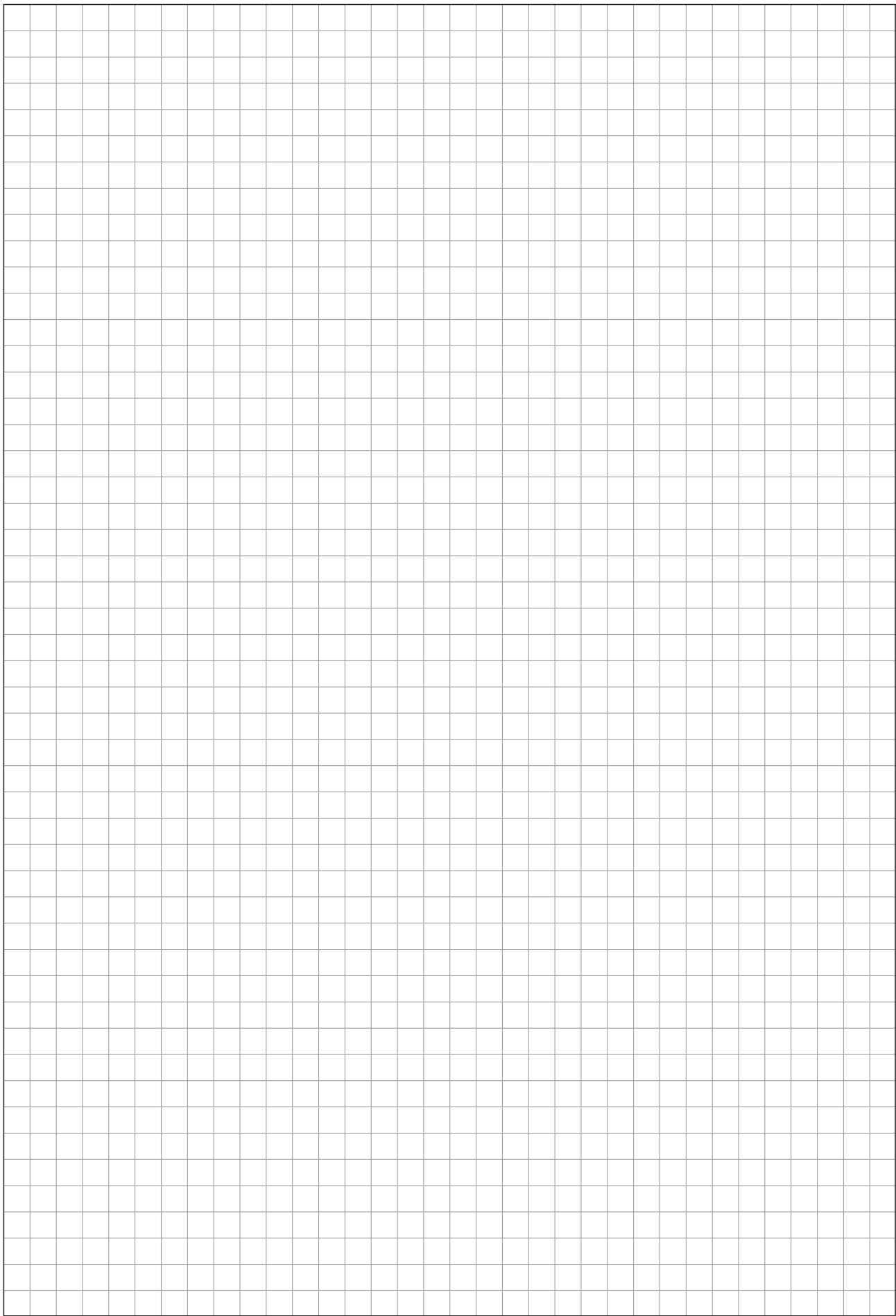
EATON

xEnergy
Licensed Partner

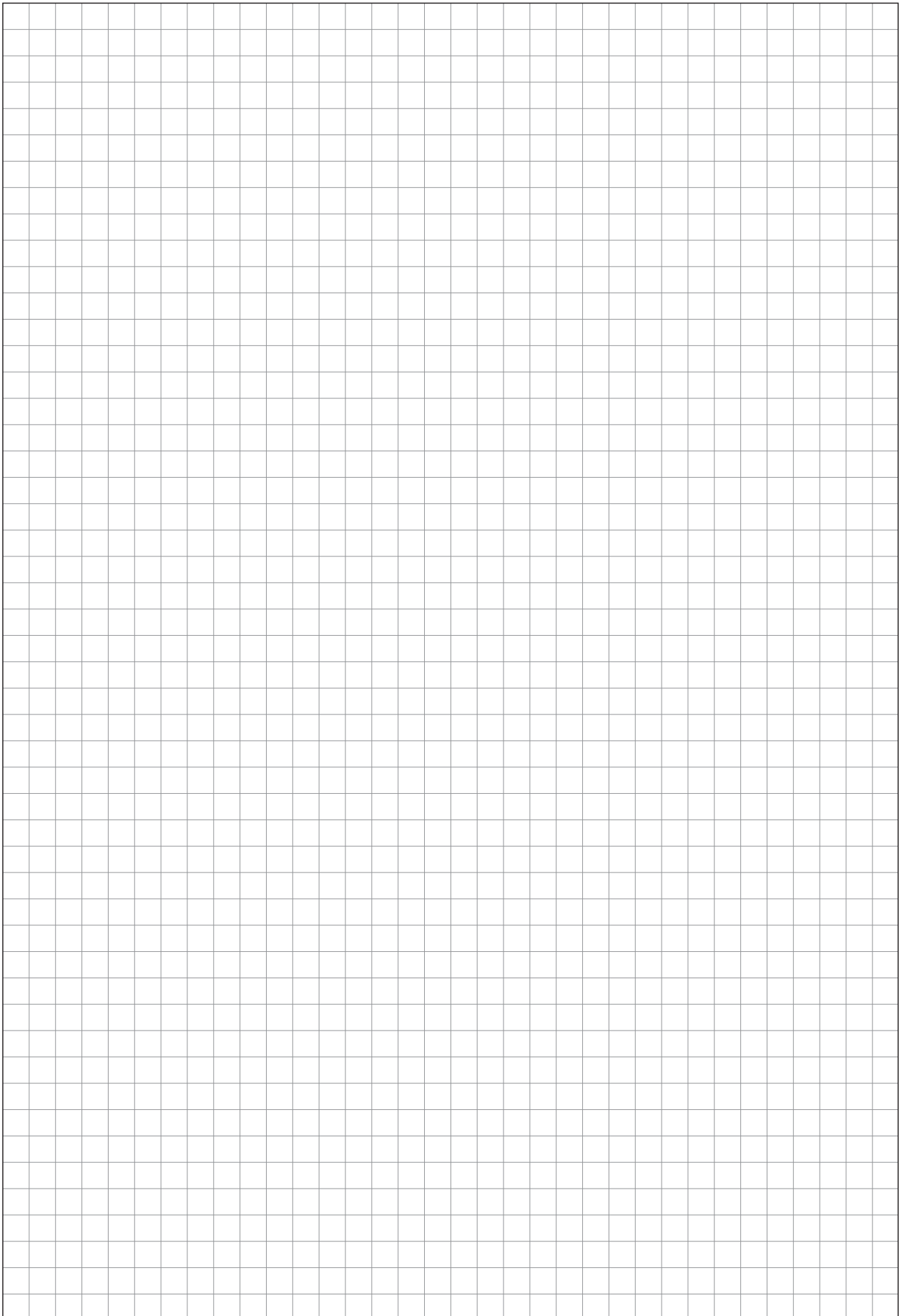
Advantages

- Designation as a certified partner on the Eaton website
- Access to BA's, AWA's, configurator, certificates and technical data sheets
- Up-to-date product information
- Software downloads
- installation instructions
- Information material for your clients, e.g. catalogues, flyers
- Declarations of Conformity and Guidelines per IEC Standards

Note



Note



Eaton is dedicated to ensuring that reliable, efficient and safe power is available when it's needed most. With unparalleled knowledge of electrical power management across industries, experts at Eaton deliver customized, integrated solutions to solve our customers' most critical challenges.

Our focus is on delivering the right solution for the application. But, decision makers demand more than just innovative products. They turn to Eaton for an unwavering commitment to personal support that makes customer success a top priority.

For more information, visit www.eaton.eu/electrical



To contact an Eaton salesperson
or local distributor/agent, please visit
www.eaton.eu/electrical/customersupport

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