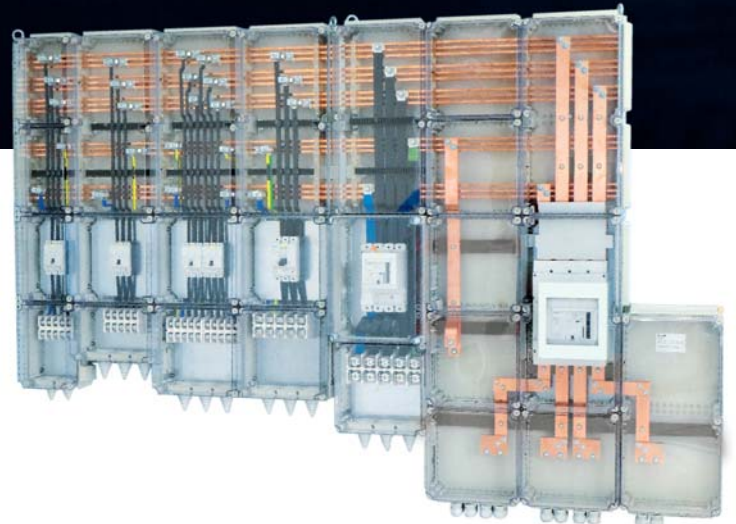


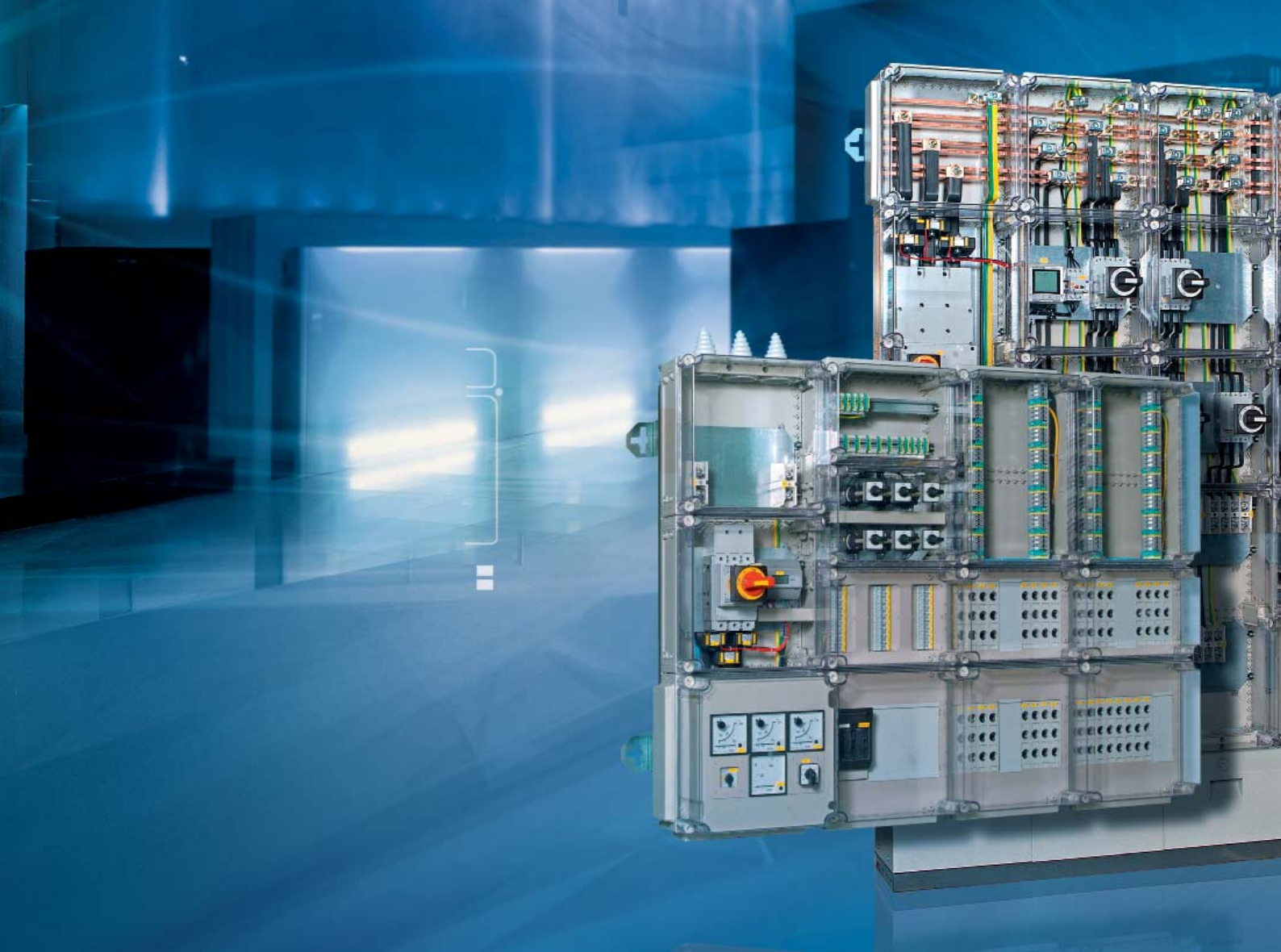
**Eaton** – Safe power distribution able to meet the most stringent requirements.



**Robust and multi-talented –**  
the all-insulated Ci distribution enclosure:  
The consistent power distribution system  
for up to 1600 A.



**EATON**  
*Powering Business Worldwide*



# The all-insulated Ci distribution enclosure.

**Requirements regarding electrical power distribution are constantly increasing. Eaton's products are not only the answer to these requirements, they also offer top reliability and flexibility for the customer.**

## **A consistent system for up to 1600 A**

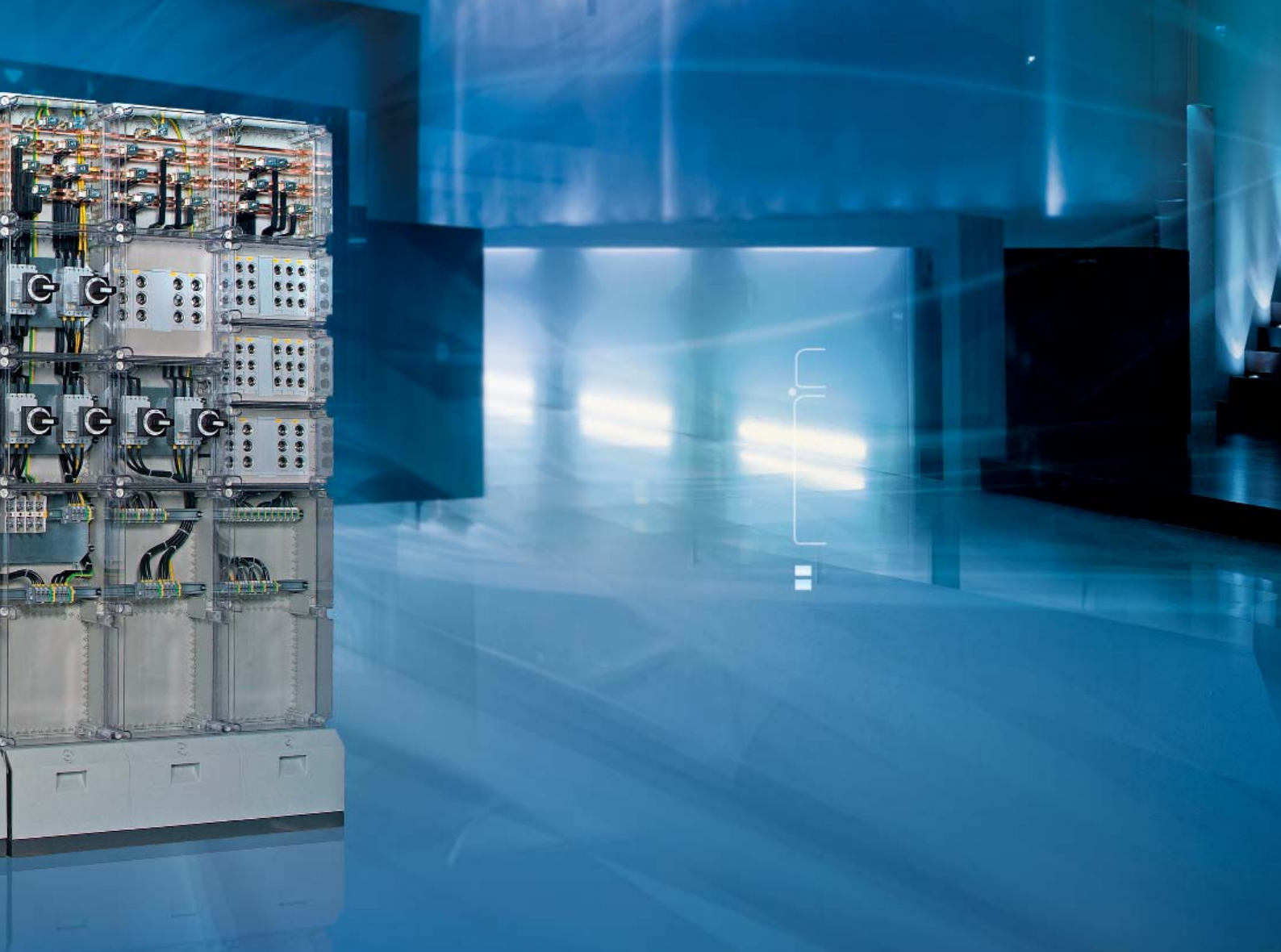
Eaton's all-insulated Ci power distribution enclosures have been designed to meet the most stringent requirements and offer a consistent system for up to 1600 A. These all-insulated distribution enclosures provide an IP65 degree of protection and are insensitive to almost any environmental impact such as dust, moisture and water.

## **Timeless optimized protection**

This type of enclosures made of high-quality polycarbonate offers additional protection against mechanical impacts and caustic substances. Thanks to their total insulation, Ci distribution enclosures provide for a timeless and optimized protection.

## **Cover equipped with 4 spring-loaded fittings**

Thanks to a cover equipped with 4 spring-loaded fittings, the Ci system provides special protection against extreme short-circuits and arc faults. Where necessary, it ensures pressure-relief by allowing the pressure to escape by lifting the cover a few millimetres and closing it again immediately.



**An easy system**

All three types of enclosures are based on the same system components: This reduces the storage place required for the system and makes their handling significantly easier.

**Safety comes first**

Total insulation is the safety measure that outperforms all other safety precautions by far because there is no touch voltage possible. Carrying voltage over to other parts of the system is therefore impossible.

**High system availability**

Reliable system availability is increased because short-circuits between live parts and protective conductors or mounting plates due to the slipping of a tool, for example, can be excluded.

**Economic efficiency for all parties involved**

**For the system planner:**  
Any of the common applications can be covered through as few as five enclosure sizes and four different depth levels.

**For the panel builder:**  
Sophisticated connecting technology allows grouping and arranging the enclosures in every direction without using any special tools. Four installation technologies are available to complete the system:  
Mounting plates, module rails, carrier rails and bus-bars.

**For the system integrator:**  
Supply lines can be inserted from any side, and cables can be interconnected in the socket.

# A tough system

## For all seasons

Eaton has a global reputation as a specialist in high-quality switchgear systems and is technology leader in the field of power distribution. As a successful supplier of complete systems, Eaton not only offers distribution systems for universal use, but also solutions developed to meet the requirements in harshest conditions and stands out through tested safety, reliability and optimal protection against extreme impacts. Eaton's CI insulated enclosures have become the globally leading and established standard in particularly challenging environments.



### In extremely polluted and harsh environments such as:

- Steel works
- Foundries
- Mining
- Woodworking industry
- Metalworking industry
- etc.

## Advantages

- 1 system for up to 1600 A
- Switchgear and enclosures are designed to provide perfect compatibility
- Lifting of the cover in case of a short-circuit without losing the protective function



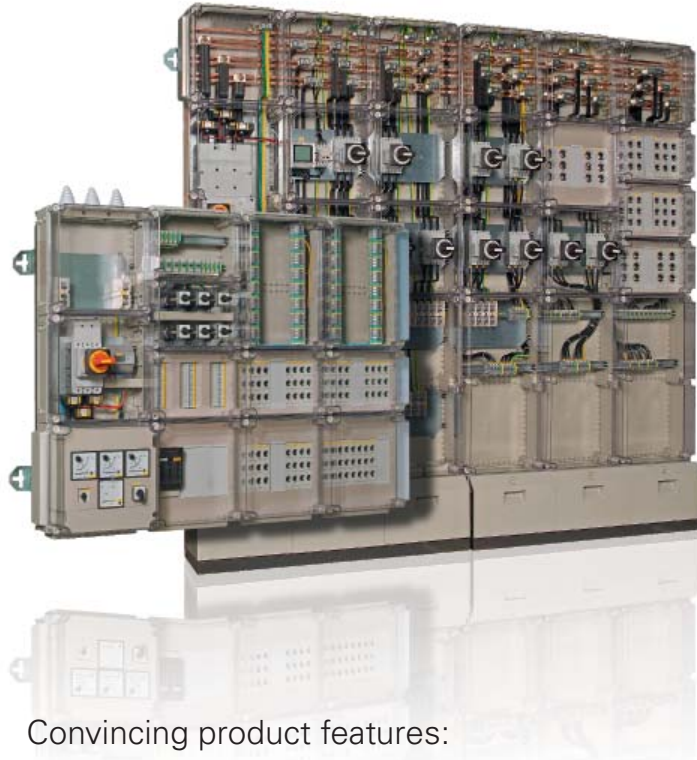
### In places requiring a system insensitive to moisture and caustic substances:

- Food industry
- Automated washing lines
- Refineries
- Sewage plants
- Water works
- Chemical industry
- etc.



### In places where safety requirements tolerate no compromise:

- Tradeshows and exhibition halls
- Hospitals
- Railway stations
- Airports
- etc.



### Convincing product features:

- 
- High IP65 degree of protection
  - Total insulation
  - Polycarbonate
  - Distribution system based on a 25 mm grid
  - Modular system
  - Cover resting on 4 spring-loaded fittings
  - Stable carrier-frame profiles
  - Captive, foamed sealings
  - Wedge-type connectors made of insulating material to interconnect the enclosures
  - Transparent covers
  - Consistent system for up to 1600 A
- 

### Advantages to get excited about:

- 
- A distribution system for universal use
  - Highest standard in terms of safety for people and operation
  - Many combination options based on a reduced number of modules
  - Easy to expand when necessary
  - Degree of protection is guaranteed regardless of an operator's level of care and attention
  - Entirely encapsulating insulation-material for high protection against corrosion
  - No special tools required
  - No carrying over of voltage to adjacent enclosures
  - Easier maintenance and system control
  - Complete solution for low-voltage distribution from a single supplier
-

# Tried and tested in the most extreme environments.

Enclosure made of high-quality polycarbonate – IP65 degree of protection

High-quality polycarbonate makes CI insulated enclosures especially shock-proof and resistant to acrid smoke.

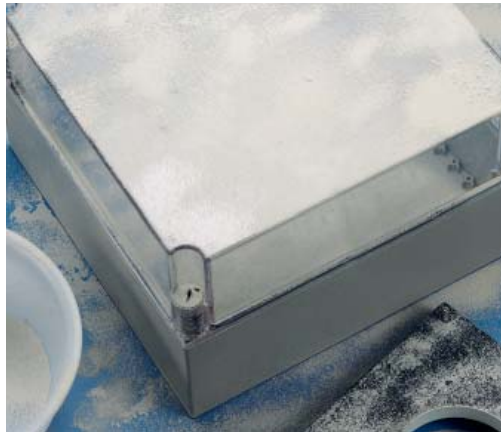
Total insulation offers a maximum of safety as it is a protective feature that is always "active" and does not wear out.

## Top operational safety

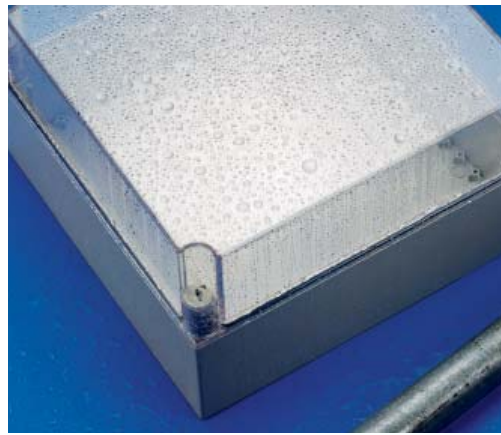
Thanks to transparent covers a short glance will do to check the correct operating status of the incorporated switchgear. Of course there are non-transparent covers available as well, or even covers with an integrated cylinder lock.

Protection against 6 detrimental factors or hazards

- Dust
- Moisture
- Water
- Caustic substances
- Mechanical impacts
- Extreme short-circuits



Suitable for environments particularly exposed to dust and pollution



High level of protection against moisture and water jets



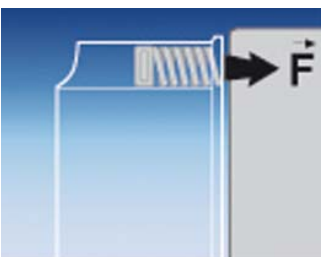
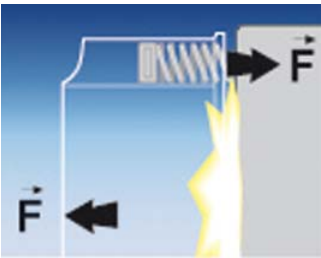
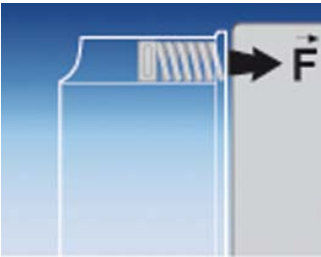
Particularly shock-proof and resistant to mechanical impacts



Resistant to acrid smoke and caustic substances

## Maximum safety thanks to pressure relief

The cover resting on 4 spring-loaded fittings ensures pressure relief in case of any short-circuit.

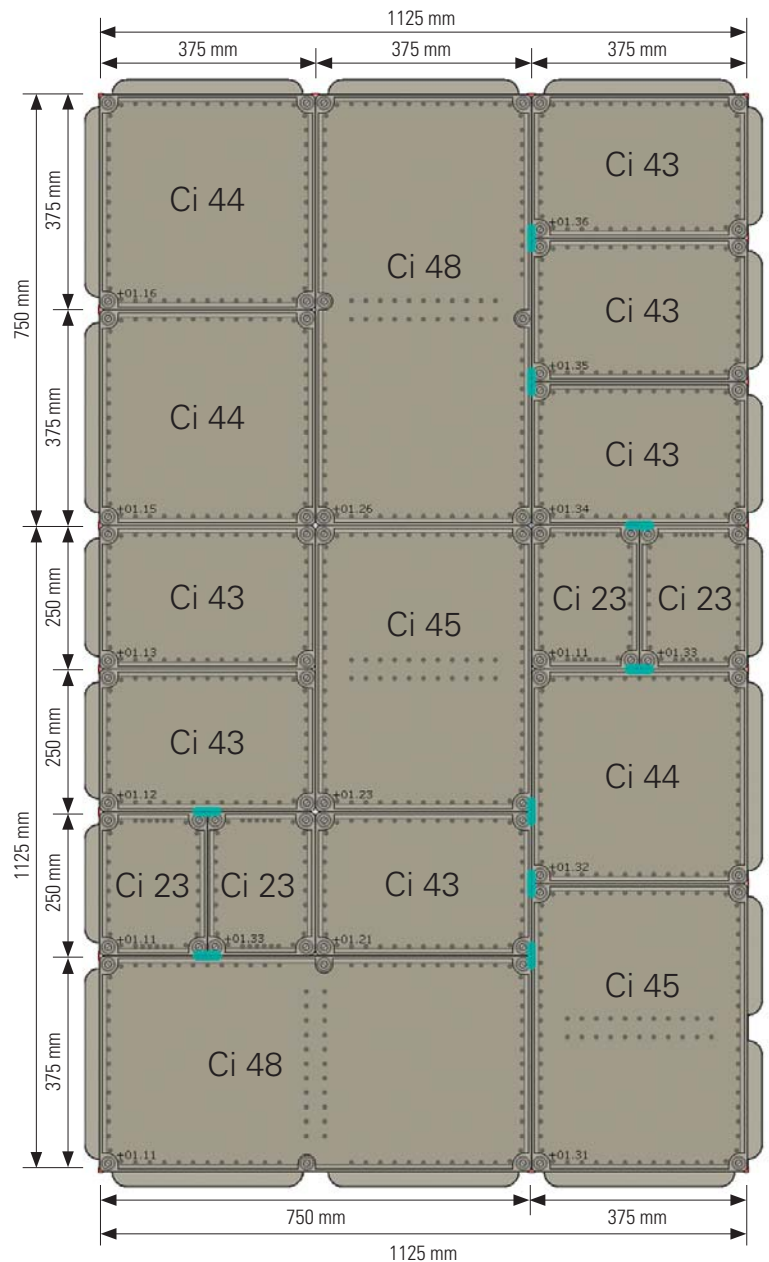


## Modular distribution system

Thanks to the uncomplicated possibilities of combining 5 different enclosure sizes, the modular design of the Ci insulated enclosure series offers a maximum of flexibility to optimally use the space available. A unique component is the flange spreader. It serves as an adapter and allows adding

smaller enclosures to larger ones without any problem.

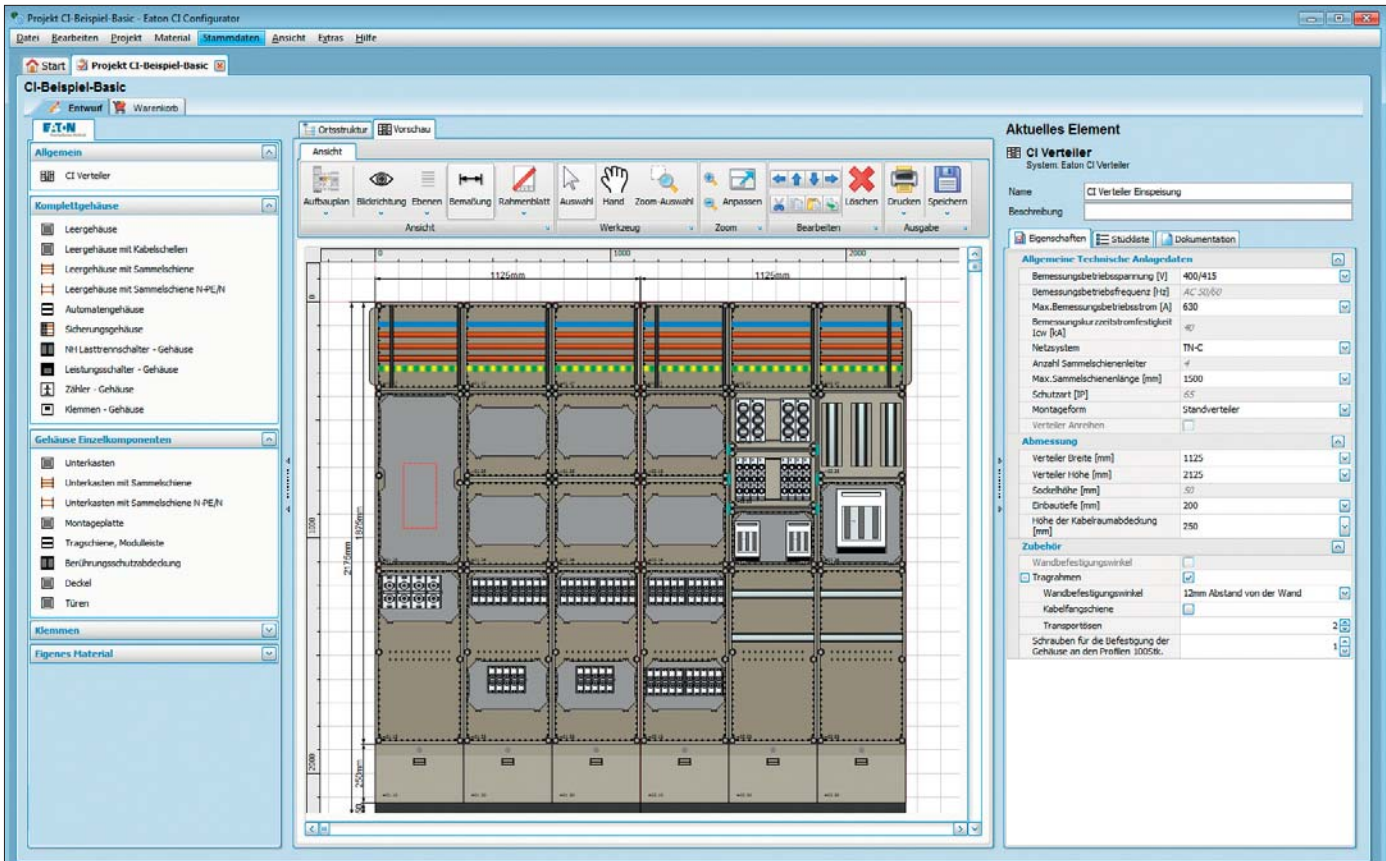
The Eaton Ci Configurator makes it incredibly easy to configure a system because it automatically adds the correct number of flange spreaders to your project.



### Advantages

- Symmetrical and asymmetrical flanging of enclosures is possible either one next to the other or one below the other
- This makes sure the space available in each individual project can be optimally used

# Easy configuration.



With the Eaton Ci Configurator especially designed for the Ci distribution system you can successfully plan your system with just a few mouse clicks – it's quick and easy, correct and it won't forget any details. The Ci Configurator is based on the know-how of experts and makes the configuration of your system as user-friendly as possible.

## Basic Ci Configurator

The Basic Configurator is free for Eaton customers and is useful for a quick selection and arrangement of the different Ci distribution system components.

### Easy to use:

On the right side you can select the required distributor objects, the respective templates will offer you the correct Ci distributor articles which you can then correctly combine with the preselected distributor frame in the graphic window at the centre thanks to a Drag & Drop function.

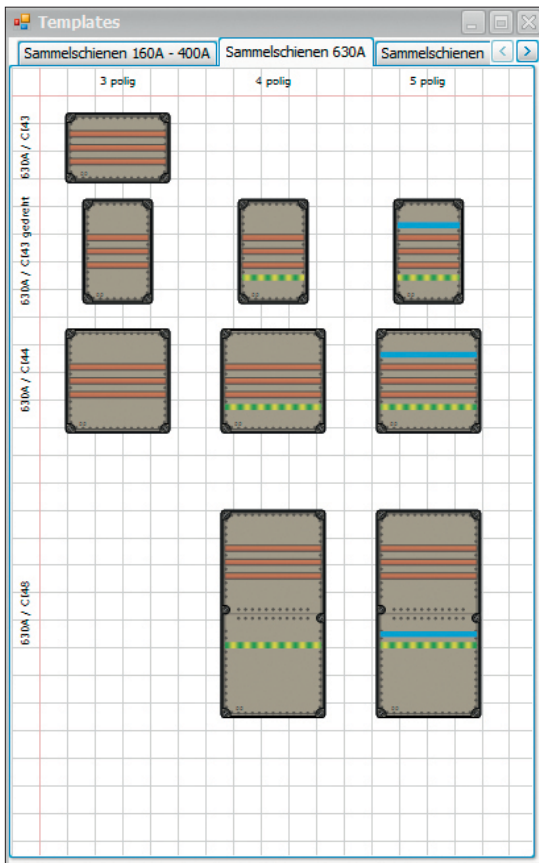
This programme is based on our system know-how and continuously checks the plausibility of your planning steps as you proceed.

- Identification of the equipment
- Local Explorer with easy navigation and modification of equipment
- Clear overview of costs: The required components will be displayed in the basket
- The Configurator will show you the weights, metal surcharges, prices, minimum quantities to be ordered
- The Configurator enables you to provide informative details: Export of parts lists including the system-related accessories, set-up pictures in different views for offers to your customers, CAE systems or workshop assembly. The Single Line output supports easy documentation tasks

## Everything is displayed on the monitor

- Interfaces to Microsoft TM Excel,
- Project management
- DXF vector graphics for importing data into CAE systems
- Version check and update via Internet
- Import of specific prices and discounts is possible
- Export of parts lists and set-up pictures
- Cross-project copying functions
- Calculation of metal surcharges





Drag & Drop the right CI distributor articles

| Element                            | BMK | Ort    | Beschreibung  |
|------------------------------------|-----|--------|---------------|
| Leistungshalter                    |     |        |               |
| CI Verteiler                       |     | +01    |               |
| NH Lasttrennschalter - Gehäuse (2) | F9  | +01.15 | Lager 1 bis 3 |
| NH Lasttrennschalter - Gehäuse (3) | F10 | +01.25 | Rampe         |
| NH Lasttrennschalter - Gehäuse (4) | F11 | +01.13 | Rolltor       |

Identification of equipment

| Element                                  | BMK | Ort       | Beschreibung                         |
|--|-----|-----------|--------------------------------------|
| CI Prüfverteiler 1600A                   |     |           | HS=1600A, Einpeisung NZM4-4, Abga... |
| CI Verteiler Abgänge NZM1 und NZM2       |     | +01       |                                      |
| Leergehäuse mit Sammelschiene (8)        |     | +01.14    |                                      |
| Leergehäuse mit Sammelschiene (3)        |     | +01.17    |                                      |
| Leergehäuse mit Sammelschiene (4)        |     | +01.24    |                                      |
| Leergehäuse mit Sammelschiene (9)        |     | +01.18    |                                      |
| Leergehäuse mit Sammelschiene N-PE/N (2) |     | +01.18    |                                      |
| Leergehäuse (2)                          |     | +01.25    |                                      |
| Montageplatte (5)                        |     | +01.25.10 |                                      |
| Leergehäuse (3)                          |     | +01.27    |                                      |
| Montageplatte (2)                        |     | +01.27.10 |                                      |
| Leergehäuse (4)                          |     | +01.28    |                                      |
| Montageplatte (3)                        |     | +01.28.10 |                                      |
| Leergehäuse (5)                          |     | +01.22    |                                      |
| Montageplatte (4)                        |     | +01.22.10 |                                      |
| Leergehäuse mit Kabelschellen (2)        |     | +01.34    |                                      |
| Montageplatte (6)                        |     | +01.34.10 |                                      |

Easy navigation and modification of equipment thanks to the Local Explorer

| Element                       | BMK | Ort | Beschreibung | Preis    | Wt     | Met    | MetSur | Pre    | Min    | Quant  |
|-------------------------------|-----|-----|--------------|----------|--------|--------|--------|--------|--------|--------|
| CI Verteiler                  |     |     |              | 1.000,00 | 100,00 | 100,00 | 100,00 | 100,00 | 100,00 | 100,00 |
| Leergehäuse mit Sammelschiene |     |     |              | 1.000,00 | 100,00 | 100,00 | 100,00 | 100,00 | 100,00 | 100,00 |
| Montageplatte                 |     |     |              | 1.000,00 | 100,00 | 100,00 | 100,00 | 100,00 | 100,00 | 100,00 |

Clear overview of costs: The required components, weights, metal surcharges, prices and minimum quantities to be ordered etc. are displayed in the basket.

The Basic CI Configurator is free for Eaton customers!

It can be downloaded from [www.eaton.eu](http://www.eaton.eu) Customer Support

## Made for use in practice

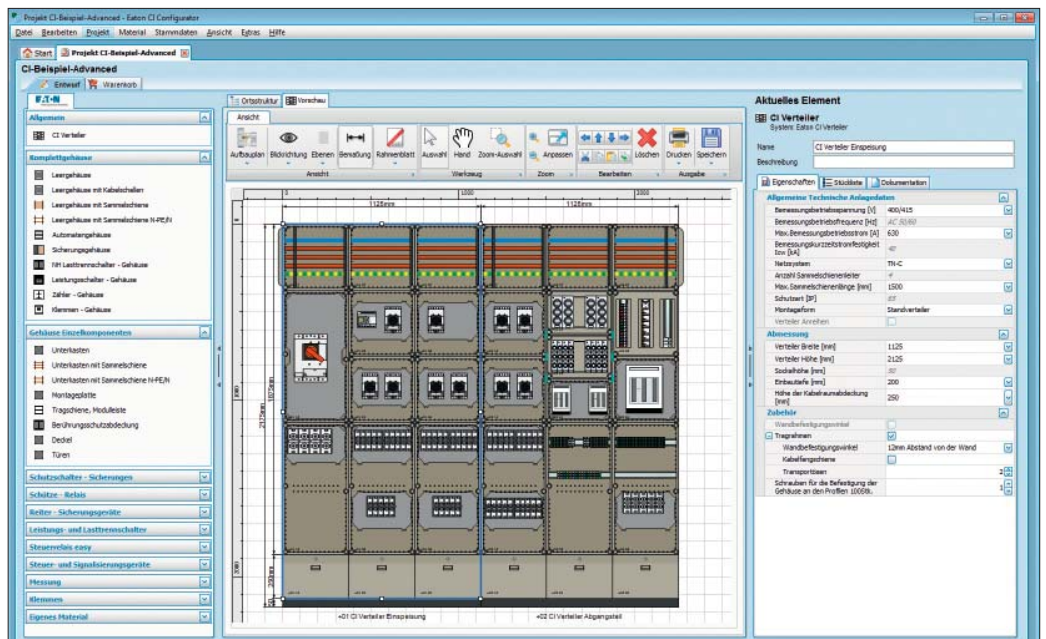
- Object-focused dimensioning
- Automatic function for dimensioning

- Automatic selection of CI system components and their arrangement
- Variable interior views: Frame, enclosure, components, casings and covers

- Basket with different sorting views and selectable data fields, e.g. weight, can be exported






## Advanced Ci Configurator (optional)

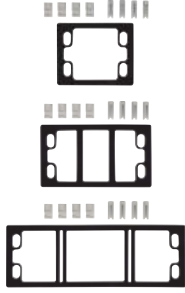






The AmpereSoft Advanced Ci Configurator can be purchased for a fee. It was developed by the AmpereSoft GmbH company and offers additional functions such as an integrated switchgear configuration for equipping Ci distribution enclosures.



# Safety made to measure.

## Distribution enclosure





| Size                           | Ci23  | Ci43  | Ci44  | Ci45   | Ci48  |
|--------------------------------|---|---|---|--|---|
| <b>Dimensions [mm]</b>         | <b>187,5 x 250</b>  | <b>375 x 250</b>  | <b>375 x 375</b>  | <b>375 x 500</b>   | <b>375 x 750</b>  |
| <b>Distribution enclosure</b>  |  |  |  |  |  |
| <b>Installation depth [mm]</b> | <b>125/150</b>  | <b>125/150/200</b>  | <b>125/150/200/250</b>  | <b>200</b>   | <b>200/250</b>  |
|                                | Ci23-125<br>098208  | Ci43-125<br>017527  | Ci44-125<br>012452  | Ci45-200<br>001896   | Ci48-200<br>078896  |
|                                | Ci23-150<br>012781  | Ci43-150<br>022273  | Ci44-150<br>017198  |  | Ci48-250<br>083642  |
|                                |   | Ci43-200<br>027019  | Ci44-200<br>021944  |  |   |
|                                |   |   | Ci44-250<br>026690  |  |   |

| Size   | Ci23  | Ci43  | Ci44  | Ci48   | Connection sets<br>for add-on assembly  |
|--|---|---|---|--|---|
| <b>Dimensions [mm]</b>                               | <b>187,5 x 250</b>  | <b>375 x 250</b>  | <b>375 x 375</b>  | <b>375 x 750</b>   |   |
| <b>Distribution enclosure<br/>with cable fitting</b> |  |  |  |   |   |
| <b>Installation depth [mm]</b>                       | <b>125/150</b>  | <b>125/150/200</b>  | <b>125/150/200/250</b>  | <b>200/250</b>   |   |
|  | KST32-125<br>069774   | KST34-125<br>076893   | KST44-125<br>088758   | KST48-200<br>098250  | BS2-Ci<br>090750  |
|  | KST32-150<br>072147   | KST34-150<br>074520   | KST44-150<br>091131   | KST48-250<br>010450  | BS3-Ci<br>097869  |
|  |   | KST34-200<br>079266   | KST44-200<br>093504   |  | BS4-Ci<br>014815  |
|  |   | KST43-125<br>081639   | KST44-250<br>095877   | <b>Cross-strut kits</b>  | <b>Flange spreader</b>  |
|  |   | KST43-150<br>084012   |   |  |  |
|  |   | KST43-200<br>086385   |   | STB3-Ci<br>219217  | FT-Ci<br>02319  |
|  |   |   |   | STB4-Ci<br>034223  |   |





The complete range of almost 700 well co-ordinated products for the CI programme is available in our Eaton online catalogue.

## Stand-alone enclosures

| Size            | Ci23        | Ci43      | Ci44      | Ci45      |
|-----------------|-------------|-----------|-----------|-----------|
| Dimensions [mm] | 187,5 x 250 | 375 x 250 | 375 x 375 | 375 x 500 |

| Stand-alone enclosures E |  |  |  |  |
|--------------------------|---|---|---|---|
| Installation depth [mm]  | 125/150   | 125/150/200   | 125/150/200/250   | 200   |
|                          | Ci23E-125<br>019570   | Ci43E-125<br>093133   | Ci44E-125<br>031436   | Ci45E-200<br>001891   |
|                          | Ci23E-150<br>021943   | Ci43E-150<br>095506   | Ci44E-150<br>033809   |   |
|                          |   | Ci43E-200<br>097879   | Ci44E-200<br>036182   |   |
|                          |   |   | Ci44E-250<br>038555   |   |














| Size            | Ci23        | Ci43      | Ci44      | Ci45      |
|-----------------|-------------|-----------|-----------|-----------|
| Dimensions [mm] | 187,5 x 250 | 375 x 250 | 375 x 375 | 375 x 500 |

| Stand-alone enclosures E<br>Covers RAL |  |  |  |  |
|--|---|---|---|---|
| Installation depth [mm]                | 125/150   | 125/150/200   | 125/150/200   | 200   |
|  | Ci23E-125-RAL7032<br>090152   | Ci43E-125-RAL7032<br>090154   | Ci44E-125-RAL7032<br>090157   | Ci45E-200-RAL7032<br>090160   |
|  | Ci23E-150-RAL7032<br>090153   | Ci43E-150-RAL7032<br>090155   | Ci44E-150-RAL7032<br>090158   |   |
|  |   | Ci43E-200-RAL7032<br>090156   | Ci44E-200-RAL7032<br>090159   |   |











| Size            | Ci23        | Ci43      | Ci44      | Ci45      |
|-----------------|-------------|-----------|-----------|-----------|
| Dimensions [mm] | 187,5 x 250 | 375 x 250 | 375 x 375 | 375 x 500 |

| Stand-alone enclosures X |  |  |  |  |
|--------------------------|---|---|---|---|
| Installation depth [mm]  | 125/150   | 125/150/200   | 125/150/200/250   | 200   |
|                          | Ci23X-125<br>010408   | Ci43X-125<br>019900   | Ci44X-125<br>031765   | Ci45X-200<br>098469   |
|                          | Ci23X-150<br>015154   | Ci43X-150<br>024646   | Ci44X-150<br>034138   |   |
|                          |   | Ci43X-200<br>029392   | Ci44X-200<br>036511   |   |
|                          |   |   | Ci44X-250<br>038884   |   |










## Base parts

| Size                   | Ci23  | Ci43  | Ci44  | Ci45  | Ci48  |
|------------------------|---|---|---|---|---|
| <b>Dimensions [mm]</b> | <b>187,5 x 250</b>  | <b>375 x 250</b>  | <b>375 x 375</b>  | <b>375 x 500</b>  | <b>375 x 750</b>  |
| <b>Base parts</b>      |  |  |  |  |  |
|                        |  |  |  |  |   |
|                        |  |  |  |  |   |
| <b>Depth [mm]</b>      | <b>120</b>  | <b>120</b>  | <b>120</b>  | <b>120</b>  | <b>120</b>  |
|                        | U-Ci23<br>060282  | U-Ci43<br>065028  | U-Ci44<br>067269  | U-Ci45<br>001894  | U-Ci48<br>083880  |
|                        | U-Ci23E<br>038793   | U-Ci43E<br>064896   | U-Ci44E<br>069642   | U-Ci45E<br>001893   |   |
|                        | U-Ci23X<br>057909   | U-Ci43X<br>062655   | U-Ci44X<br>067401   | U-Ci45X<br>098470   |   |






## Covers

| Size                                  | Ci23  | Ci43  | Ci44  | Ci45  | Ci48  |
|---------------------------------------|---|---|---|---|---|
| <b>Dimensions [mm]</b>                | <b>187,5 x 250</b>  | <b>375 x 250</b>  | <b>375 x 375</b>  | <b>375 x 500</b>  | <b>375 x 750</b>  |
| <b>Covers<br/>Transparent and RAL</b> |  |  |  |  |  |
|                                       |  |  |  |  |  |
| <b>for installation depths [mm]</b>   | <b>125/150</b>  | <b>125/150/200</b>  | <b>125/150/200/250</b>  | <b>200</b>  | <b>200/250</b>  |
|                                       | D125-Ci23<br>014830   | D125-Ci43<br>017203   | D125-Ci44<br>019576   | D200-Ci45<br>001895   | D200-Ci48<br>078901   |
|                                       | D150-Ci23<br>024322   | D150-Ci43<br>038560   | D150-Ci44<br>040933   | D200-Ci45-<br>RAL7032<br>098476   | D250-Ci48<br>083647   |
|                                       | D125-Ci23-<br>RAL7032<br>098471   | D200-Ci43<br>074155   | D200-Ci44<br>076528   |   | D200-Ci48-<br>RAL7032<br>098477   |
|                                       | D150-Ci23-<br>RAL7032<br>098472   | D125-Ci43-<br>RAL7032<br>002843   | D250-Ci44<br>081274   |   | D250-Ci48-<br>RAL7032<br>098478   |
|                                       |   | D150-Ci43-<br>RAL7032<br>098473   | D125-Ci44-<br>RAL7032<br>007589   |   |   |
|                                       |   | D200-Ci43-<br>RAL7032<br>005216   | D150-Ci44-<br>RAL7032<br>098474   |   |   |
|                                       |   |   | D200-Ci44-<br>RAL7032<br>009962   |   |   |
|                                       |   |   | D250-Ci44-<br>RAL7032<br>098475   |   |   |





## Mounting plates

| for size                       | Ci23  | Ci43  | Ci44  | Ci45   | Ci48  |
|--------------------------------|---|---|---|--|---|
| <b>Mounting plates</b>         |  |  |  |  |  |
|                                |  |  |  |  |  |
| <b>Material thickness [mm]</b> | <b>3 or 4</b>   | <b>3 or 4</b>   | <b>3 or 4</b>   | <b>3 or 4</b>  | <b>3 or 4</b>   |
|                                | M3-Ci23<br>019709   | M3-Ci43<br>029201   | M3-Ci44<br>031574   | M3-Ci45<br>003036  | M3-Ci48<br>036320   |
|                                | IM4-Ci23<br>086081  | IM4-Ci43<br>088454  | IM4-Ci44<br>090827  |  | IM4-Ci48<br>093200  |





## Accessory carrier rails

| for enclosure dimension [mm] | 187,5   | 250   | 375  | Spacers   |   |
|------------------------------|---|---|--|---|---|
| <b>DIN carrier rails</b>     |  |  |  |  |  |
| <b>Height [mm]</b>           | <b>7,5 or 15</b>  | <b>7,5 or 15</b>  | <b>7,5 or 15</b>   | <b>25 or 50</b>   | <b>10 or 15</b>   |
|                              | CL2<br>029064   | CL3<br>033810   | CL4<br>038556  | HS25-CI<br>002291   | ADT200-190<br>002289  |
|                              | CL2-15<br>031437  | CL3-15<br>036183  | CL4-15<br>040929   | HS50-CI<br>002292   | ADT125-110<br>002290  |

## Flange plates

| for enclosure dimension [mm] | 187,5   | 250   | 375  | 125   |
|------------------------------|---|---|--|---|
| <b>Flange plates</b>         |  |  |  |  |
|                              | FL2-X<br>086052   | FL3-X<br>093171   | FL4-X<br>024355  | FL1-X<br>078933   |
|                              | FL2-2<br>017898   | FL3-1<br>088425   | FL4-2<br>014863  |   |
|                              | FL2-3<br>020271   | FL3-2<br>090798   | FL4-3<br>017236  |   |
|                              |   | FL3-3<br>022644   | FL4-4<br>019609  |   |
|                              |   |   | FL4-5<br>021982  |   |

## Accessories for external add-on

| Spacers   | Hinges for covers   | Profiles for wall-fixing   | Bracket for wall-fixing   |
|---|---|--|---|
|  |  |  |  |
| ZRF3<br>067734  | DSCH-Ci<br>034224   | W16/32<br>090146   | BL-Ci<br>036168   |
| ZRF4<br>070107  |   |  | BL-Ci-VA<br>038541  |

# Perfection in every detail.



## 1. Total insulation

The benchmark for ultimate safety: Total insulation is not subject to wear and tear and is therefore absolutely maintenance-free. Also, insulating is safer than grounding.

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## 2. Closure bolt of the cover

The closure bolt of the cover features an "Open/Closed" display and can generally be lead-sealed. An incorporated spring provides for venting the cover following short-circuit disconnections of circuit-breakers: The cover rises, allows the pressure to escape and closes again. So, this ensures maximum safety for both operators and systems.

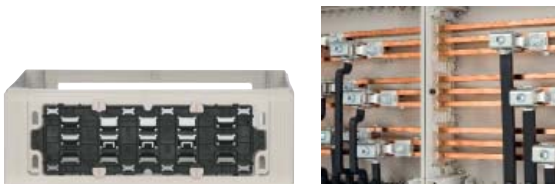
---



## 3. Divisible cable clamps

Cables are inserted from the front. The advantages for assembly are evident, especially with cross-sections > 50 mm<sup>2</sup>.

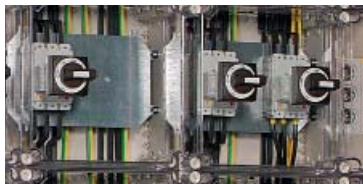
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## 4. Main busbars for up to 1600 A

For gaining a maximum of space: Busbar carriers can be fixed at the side panel of the enclosure. Even 3, 4 and 5-pole systems featuring the full cross-section of the protective conductor can be installed.

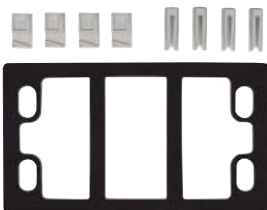
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## 5. Depth-adjustable mounting plates

Well-structured arrangement of flat conductors or cables behind the mounting plates – thanks to additional space gained by bringing the module carriers forward by either 10, 15, 25 or 50 mm.

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## 6. Wedge-type connectors

All enclosures are quick and easy to combine using wedge-type connectors so as to form larger distributor units. The sealing is accurately made to size and provides long-lasting tightness.

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## 7. Stable profiles of the carrier frame

CC-profiles in a stable and corrosion-resistant finish always ensure a safe fit of the system, whether it is a wall-mounted distribution enclosure, a floor-based or a floor-standing enclosure with a cable area casing and a base plinth.

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## 8. Cross-strut kits

Barrier-free access makes it easy to arrange rigid copper bars or cables of large diameters in the distribution enclosure.

# The right enclosure for your specific application.



## Ci insulated distribution enclosures

### **When time is what matters most.**

The bottom of the enclosures is open on two sides to allow for vertical cable insertion. This helps to save mounting time. For horizontal cable insertion the vertical side panels can be knocked out. Cable insertion into the distribution enclosure is done through flanges with metrical pre-punched openings or through cable fittings varying in number and size.



## Stand-alone enclosures Ci, E

### **When flexibility is what matters most.**

Metrical pre-punched openings to be knocked out of the enclosure bottom provide for an integrated cable insertion option from all sides. In addition, there are extensive areas allowing to be knocked out on all side panels. This is how a stand-alone enclosure can be transformed into a distribution enclosure, which helps to reduce stock requirements.



## Stand-alone enclosures Ci, X

### **When smart appearance is what matters most.**

The smooth and even side areas of the enclosure bottom prevent the development of filthy corners. Examples of application for this type of enclosure are the operators' level in the (serial) machine building industry, small-size control systems and photovoltaics.

# An example of application.



## CI enclosures as a ready-to-connect network and system protection

### **When safety is what matters most.**

To guarantee the stability of public networks, the VDE-AR-N 4105 standard includes a set of rules for decentralized power supply out of renewable energy sources - which is no problem for Eaton's ready-to-connect CI enclosures.

NAS160-Ci-1-K95  
Art. Nr. 168111

# Reference examples of IP65 environments.



## Modular design

Power distribution for the staff canteen at an aircraft factory: From cooling systems and various large-size cookers to food elevators and heat-retaining buffets in the serving area. Fed by two 800 A supply sources, this distribution system supplies the power necessary to provide meals for some 10,000 staff members every day on a high quality level. In addition, the system is used to run the light regulation, its back-up power supply and the instrumentation and control system of the building which is able to link both supply sources when necessary. The reason to opt for CI was its modular design which allows the installation of the required electrical power equipment in a minimum of space.



## High degree of protection

This low-voltage main distribution system is used to supply energy for frequency-regulated nitrogen pumps operating the currently biggest autoclave worldwide (a gas-tight lockable pressure vessel). Curing aircraft components made of carbon-fibre reinforced plastic (CFRP) requires a high level of nitrogen pressure. The autoclave is 35m long and has a diameter of around seven meters. This is where aircraft parts need to be „baked“ under high pressure at 180°C for 12 hours. In this case, the atmospheric moisture is the decisive criterion for the CI enclosure.



## Robustness

To control shipping traffic in one of Germany's biggest ports, marine pilots of the port authorities switch the light signals at the water gates via remote control. The signal position is reported back to the marine pilot via RF. A similar task is the one of navigational light controls used for marine navigation in narrow waterways. In this region where the air is highly charged with water of the North Sea, the control system needs to be resistant to corrosive environmental influences. This is why Eaton's robust CI enclosure was chosen.

We would like to take the opportunity and thank the Elektro Bellut GmbH company in Neu Wulmsdorf for this excerpt of their reference list of customers using a CI distribution system.





All components from a single source

Ventilation control: Floor-standing CI distribution enclosure with a cable-area casing and a 1000 A main busbar, supply line protected by an Eaton NZM4 main switch.  
Planned and implemented by Wagner & Müller GmbH & Co. KG, Aachen

Overview of busbar systems for up to 1600 A

| Rated operating current $I_e$ | Cross-section of bars |               | Centre-to-centre distance of bars |    |
|-------------------------------|-----------------------|---------------|-----------------------------------|----|
|                               | A                     | L1, L2, L3 mm | PE, N, PEN mm                     | mm |
| 160                           |                       | 12 x 5        | 12 x 5                            | 40 |
| 250                           |                       | 20 x 5        | 20 x 5                            | 50 |
| 400                           |                       | 20 x 10       | 20 x 5                            | 50 |
| 630                           |                       | 20 x 15       | 20 x 10                           | 50 |
| 1000                          |                       | 2 x 30 x 10   | 30 x 10                           | -  |
| 1600                          |                       | 3 x 40 x 10   | 2 x 20 x 15                       | -  |

Electrical characteristics

| Busbar system  |                         |          |            |            |            |            |             |             |            |
|--|-------------------------|----------|------------|------------|------------|------------|-------------|-------------|------------|
| Rated operating voltage                              | $U_e$                   | V AC     | 690        | 690        | 690        | 690        | 690         | 690         | 690        |
| Rated insulation voltage                             |                         |          |            |            |            |            |             |             |            |
| AC   | $U_i$                   | V AC     | 690        | 690        | 690        | 690        | 690         | 690         | 690        |
| DC   | $U_i$                   | V DC     | 800        | 800        | 800        | 800        | 800         | 800         | 800        |
| <b>Rated operating current</b>                       | <b><math>I_e</math></b> | <b>A</b> | <b>160</b> | <b>250</b> | <b>400</b> | <b>630</b> | <b>1000</b> | <b>1600</b> |            |
| Rated short-time withstand current                   |                         |          |            |            |            |            |             |             |            |
| $t = 0,1 \text{ s } \cos \varphi = 0,2$              | $I_{cw}$                | kA       | 20         | 25         | 35         | 40         | 80          | 80          |            |
| Rated short-time withstand current $t = 1 \text{ s}$ | $I_{cw}$                | kA       | 4          | 7          | 14         | 28         | 50          | 66          |            |
| Rated peak withstand current                         | $I_{pk}$                | kA       | 40         | 52,5       | 73,5       | 84         | 176         | 176         |            |
| Clearance between busbar supports                    |                         | mm       | $\leq 375$ | $\leq 375$ | $\leq 375$ | $\leq 375$ | $\leq 375$  | $\leq 375$  | $\leq 375$ |

**IEC**  
**61439**

To be able to guarantee the safety of low-voltage switchgear assemblies, the most varied properties of the individual components need to be compatible and are defined in a universally valid standard.

It is the IEC/EN 60439 series of standards which, at the end of 2014, will be replaced by the revised version known as **IEC/EN 61439**. Eaton builds its switch-

gear according to these rules and regulations applicable to low-voltage switchgear assemblies and makes the job of panel builders significantly easier. As the CI insulated distribution system is composed of a large number of individual, but standardized and tested modules, systems composed of such modules can be built in a cost-effective way, in top quality and in compliance with the standard.

Quite often there are additional tests carried out in independent test laboratories which go beyond the requirements of the standard. This enables us to also provide solutions for very special, customer-specific product applications.

For many of the most common applications, the CI programme offers fully pre-equipped enclosures available as complete functional units.

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](http://www.eaton.eu/electrical)



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Subject to technical modifications. No  
responsibility is taken for misprints or errata.  
Printed in Austria (01/13)  
Publication number BR014001EN  
Broschüre Ci  
Grafik: SRA  
DigiPics, Lithos: THEREDBOX [www.theredbox.at](http://www.theredbox.at)  
Druck: Rabl, Schrems