Catalogue|2015

## Prisma G

Wall-mounted and floor-standing enclosures for Electrical Distribution up to 630 A


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the optimised, tested and IEC compliant solution, for low voltage electrical distribution and control switchboards.


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> A solution based on more than 25 years of experience in low voltage switchboards.
> Integrating Schneider Electric switchgear offerings and ensuring electrical, mechanical and communication functions complete consistency.
> Quality production, certified ISO 9001.

## 00

Pack 160 enclosures / Prisma G Pack 250 Enclosuresupto630 A IP30, IP31, IP43, IP55


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## Cubicles P up to 4000 A IP30, IP55



## Prisma G



Electrical switchboards ...

The Prisma G functional system can be used for all types of low voltage distribution switchboards up to 630 A, in commercial and industrial environments.


Switchboard design is very simple

(1) A metal structure

The switchboard is made up of one or more enclosures, combined width-wise and/or height-wise, with a choice of doors (plain or transparent).
2 A distribution system A complete offer of centralised or row distribution blocks, with busbars in duct or on rear of enclosure, provides current distribution over the full height of the switchboard.
(3) Complete functional units

Built around each device, the functional unit includes: - a dedicated mounting plate for device installation - a front plate to block direct access to live parts - prefabricated busbar connections to connect devices to the busbar

- cable-running accessories can be clipped onto the back of double-profile modular rails. Each functional unit contributes to a function in the switchboard.
The system includes everything required for functional unit mounting, supply and connection. The Prisma G and functional unit components, in particular, have been designed and tested according to device characteristics. This design approach ensures a high degree of reliability in system operation and optimum safety.


Advantages of Prisma switchboards
$t$
(1) A dependable electrical installation The total compatibility of Schneider Electric devices with the Prisma enclosure is a key advantage in ensuring a high level of installation dependability.
(2) An upgradeable electrical installation Thanks to modular design, Prisma switchboards can be easily modified to integrate new functional units as needed.
Maintenance operations, carried out with the switchboard de-energised, are fast and straight-forward due to easy access to devices.
3 Total safety for personnel Work in a switchboard must be carried out by authorised persons in compliance with all applicable safety regulations. To increase the safety of personnel, devices are installed behind protective front plates; only the operating handles are accessible. Additional internal protection (partitions, barriers) is available to protect against direct contact with live parts.
Terminal shields are mandatory for installing Compact NSX and INS/INV devices in Prisma for even more personnel safety.

0System design has been validated by type tests as per standard IEC 61439-1 \& 2 and benefits from the combined experience of Schneider Electric over many years.


## Electrical characteristics



Comply with IEC 62208 and EN 62208 standards:

- rated insulation of main busbars at rear of enclosure: 1000 V
- InA: 630 A
- rated peak withstand current Ipk: 53 kA
- rated short-time withstand current Icw:
$25 \mathrm{kArms} / 1$ second
- short-circuit current: 50 kA
- frequency: $50 / 60 \mathrm{~Hz}$.


## Readly available close by

The kit concept makes handling and transport easier and you get to benefit from Schneider Electric's efficient international logistics. Your distributor, hand-picked by Schneider Electric can give you the very best advice.

Mechanical characteristics


- Steel sheet metal
- Electrophoresis treatment + hot-polymerised polyester epoxy powder, white colour RAL 9001.
- Enclosures supplied in kit form, totally
dismountable, designed to be assembled and wired horizontally on a work station.
■ Can be combined side by side and one on top of another
- Degree of protection:
- IP30: with or without door
- IP31: with door + canopy
- IP43: with door + gasket + canopy
- IP55: IP55 Prisma G offer, supplied in kit form
- degree of protection against mechanical impacts:
- IK07: without door
- IK08: with door (plain or transparent)
- IK10: for Prisma G IP55

■ Enclosure dimensions:

- 3 widths:
- L = 300: duct
- L = 600: Wall-mounted and floor-standing enclosures, 24 modules width
- L = 850: Floor-standing enclosure, 33 modules height, 36 modules width
$\square$ depth with door
- enclosures G IP30: 250 mm
- enclosures G IP55: 260 mm
$\square$ heights:
- Prisma G IP30: 11 heights: 330 mm to 1830 mm
- Prisma G IP55: 7 heights: 450 mm to 1750 mm

■ Inside switchboards.

Electrical switchboards built using the Prisma functional system and
Schneider Electric recommendations fully comply with international standard IEC 61439-1\&2.

## Simple, functional systems for safe, up to 630 A



## Switchboards that are safe...

With Prisma G you can be sure to build $\mathbf{1 0 0} \%$ Schneider Electric switchboards that are safe, optimised:
> All components (switchgear, distribution blocks, prefabricated connections, etc.) are perfectly rated and coordinated to work together;
> All switchboard configurations, even the most demanding ones, have been tested.
You can prove that your switchboard meets the current standards, at any time.

You can be sure to build a reliable electrical installation and give your customers full satisfaction in terms of dependability and safety for people.

## ...esthetics

Prisma G with its discreet design,
blends harmoniously into all tertiary buildings,
including in entrance halls and passageways.

## Available power

Safety of people
and property

## Controlled costs

and delivery times
Upgradeability

## upgradeable LV switchboards

## ...optimised and upgradeable

With Prisma G you can build just the right switchboard for your customer, sized precisely to fit costs and needs. With this complete, prefabricated and tested system, it's easy to upgrade your installation and still maintain the performance levels.
> The wall-mounted and floor-standing enclosures combine easily with switchboards already in service.
> Devices can be replaced or added at any time.


Simple moves for cabling in the workshop


All connection points are fully accessible and easy to check.

Efficient installation and connection work on site


Easy connection on site, whatever the cable cross-section or installation location.

Easy
maintenance throughout the switchboard


Easy and direct access to devices, in a switchboard in service.

## The switchboard, central to the electrical installation

## Both the point of arrival of energy and a device for distribution to the site applications, the LV switchboard is the intelligence of the system, central to the electrical installation.


#### Abstract

It plays an essential role in the availability of electric power, while meeting the needs of personal and property safety. Its definition, design and installation are based on precise rules; there is no place for improvisation. The IEC 61439 standard aims to better define "low voltage switchgear and controlgear assemblies", ensuring that the specified performances are reached. It specifies in particular $>$ the responsibilities of each player, distinguishing those of the original equipment manufacturer; the organisation that performed the original design and associated verification of an assembly in accordance with the standard, and of the assembly manufacturer - the organisation taking responsibility for the finished assembly; $>$ the design and verification rules, constituting a benchmark for product certification.


All the component parts of the electrical switchboard are concerned by the IEC 61439 standard. Equipment produced in accordance with the requirements of this switchboard standard ensures the safety and reliability of the installation.


#### Abstract

A switchboard must comply with the equirements of standard IEC 61439-1 and 2 to guarantee the safety and reliability of the installation. Managers of installations, fully aware of the professional and legal liabilities weighing on their company and on themselves, demand a high level of safety for the electrical installation.

What is more, the serious economic consequences of prolonged halts in production mean that the electrical switchboard must provide excellent continuity of service, whatever the operating conditions.


## The Schneider Electric solution

> Specify switchboards that comply with standard IEC 61439-1 and 2.
> Guarantee a level of safety that has been 100 \% tested, from the day the switchboard is installed and throughout its service life.
> Ensure a lasting investment through easy upgrading of the installation in compliance with the standard.
> Guarantee that the switchboard complies with the technical specifications.

## Prisma tested switchboards

## The conformity of the switchboard has been tested

 and proven.A Prisma switchboard is:
> made up of Schneider Electric low voltage devices and components that all comply with the applicable standards;
$>$ based on configurations in our catalogue;
$>$ made up of Prisma and Linergy mechanical and electrical components that have been subjected to the verification of original equipment manufacturer;
> mounted and wired by a panelbuilder in compliance with professional standards;
> subjected to the individual verification.
Schneider Electric makes available to the panelbuilder everything required to create tested Prisma switchboards, including the basic configurations in the low voltage distribution catalogue, all the documentation for switchboard design and mounting, calculation and design software, etc. Panelbuilders can demonstrate conformity with standard IEC 61439-1 and 2 by presenting the declarations or certificates of conformity for type tests carried out by independent laboratories (ASEFA, ASTA, KEMA, etc.) and supplied by Schneider Electric. The panelbuilder is responsible for the individual routine verification and delivers the corresponding declarations of conformity.

## Original Manufacturer and Assembly Manufacturer: Both involved

## in tested assemblies

## Standard IEC 61439 clearly defines

the type of verifications that must be conducted by both organisations involved in final conformity of the solution: the Original Manufacturer, guaranteeing assembly system design and the Assembly Manufacturer, responsible for the final conformity of the switchboard.

Assembly Manufacturer (Panel builder)

The organisation (whether or not the same as the OM) responsible for the completed

## assembly.

He is responsible for
"Routine verifications"
on each panel produced, according to the standard.
If he derivates from the instructions of the original manufacturer he has to carry out again design verifications.

> Checks that its requirements have been fully integrated by the Assembly Manufacturer. Depending on the application, the specifier could be the end-user or a design office.

## Original

## Manufacturer

The organisation that has carried out the original design and the associated verification of an assembly system.

He is responsible for the
"Design verifications" listed by IEC 61439-2 including many electrical tests.

# The main 10 functions of standard IEC 61439 

For each of the following 10 functions, the standard IEC 61439 requires design verifications from the system manufacturer - mainly through type-tests - and routine verifications on each panel from the Panel Builder to achieve 3 basic goals: safety, continuity of service and compliance with end-user requirements.

## (๑) Continuity of service

Maintenance and modification capability
Capability to preserve continuity of supply without impairing safety during assembly maintenance or modification
> Electrical condition of the assembly or various circuits
$>$ Speed of exchange of the functional units
> Test facilities...
Electro-Magnetic compatibility
To properly function (immunity) and not to generate EM disturbances (emission) in specified environmental conditions:
> Industrial networks or locations (Environment A)
> Domestic, commercial, and light industrial locations (Environment B).

## \ Compliance with end-user requirements

## Capability to operate the electrical installation

To properly function, according to:
> The electrical diagram of the overall system and related information (voltages, coordination...)
$>$ The specified operating facilities (e.g. free or restricted access to Man Machine Interfaces, isolation of the outgoing circuits...).

## Capability to be installed on site

> To withstand handling, transport, storage... and installation constraints
> Capability to be erected and connected (type of enclosure, type, material and cross sectional areas of external conductors).
Protection of the assembly against mechanical and atmospheric environmental conditions
> Presence of water or solid foreign bodies (IP according to IEC 60529)
> External mechanical impacts (optional IK according to IEC 62262)
$>$ Indoor or outdoor installation (humidity, UV).

## IEC 61439-1 paragraph 11.4

Protection against electric shocks and integrity of protection circuits
The following should be checked visually: > presence of protective shields against direct and indirect contacts on live parts; $>$ presence of the PE conductor. The continuity of protection circuits is ensured by compliance with the assembly instructions delivered with each product.

IEC 61439-1 paragraph 11.5 Integration of incorporated components
The assembly manufacturer must comply with the instructions of the original equipment manufacturer for installation and wiring of the components used.

## IEC 61439-1 paragraph 11.6

Internal electric circuits and connections
Schneider Electric recommends marking the nut with a tinted acrylic lacquer, indelible and temperature-resistant.
This allows:
> not only self-checking to check effective tightening to torque;
$>$ but also identification of any loosening.

## IEC 61439-1 paragraphe 11.9

Dielectric properties
The main circuits, and the auxiliary and control circuits connected to the main circuit, shall be subjected to the test voltage in accordance.

IEC 61439-1 paragraph 11.10
Wiring, operating performance and function
Verification of wiring and marking conformity with the drawings, parts list and diagram.

## Standard individual check sheet

in accordance with the IEC 61439-1 and 2 standard from the assembly manufacturer (panelbuilder)

Job No.:
Switchboard No.:
Drawing No./Rev. No.: $\qquad$

|  | Chapter | Verified |
| :--- | :--- | :--- |
| Degrees of protection provided by enclosures | 11.2 | $\square$ |
| Insulation clearances and creepage distances | 11.3 | $\square$ |
| Protection against electric shocks and integrity <br> of protection circuits | 11.4 | $\square$ |
| Integration of incorporated components | 11.5 | $\square$ |
| Internal electric circuits and connections | 11.6 | $\square$ |
| Terminals for external conductors | 11.7 | $\square$ |
| Mechanical operation | 11.8 | $\square$ |
| Dielectric properties | 11.9 | $\square$ |
| Wiring, operating performance and function | 11.10 | $\square$ |

Date of verification:
............ / ............ /. $\qquad$

Verifications performed by:
$\qquad$

## Examples of switchboard configurations

$\left.\begin{array}{ll}\hline \text { Incomer } \\ \text { NG160 A }\end{array}\right]$


## Incomer

Compact NSX250
Fixed, front connection
Toggle
Incoming cables via top on incoming connection block

Distribution
Linergy BW rear busbar

## Outgoing devices

Acti 9 + NG160 devices

| Supply | Linergy FM + Linergy FH comb <br> busbar + Linergy DS distribution <br> block 4P + Linergy DX |
| :--- | :--- |
| Cable running | Straps + cover + trunking |
| Connection | Linergy TR, TB terminal block in <br> duct |

## IP30 enclosure

Wall-mounted enclosure, $\mathrm{W}=595 \mathrm{~mm}, \mathrm{H}=1450 \mathrm{~mm}$


## With Prisma,

 your solution is $100 \%$ optimised

## Flexible design for building applications and their operation

Thanks to Prisma solutions, design offices can design and customise switchboards easily and quickly:
> organisation by functional units, each corresponding to an application in the building (lighting, HVAC, lifts, etc.)
> organisation by dedicated physical zones: one for functional units (switchgear, mounting plates, front plates), one for power distribution, and one for connections.

## 100 \% dependable and optimised design, in compliance with costs and deadlines

By supporting design offices with the services and software tools (Ecodial, Rapsody...) needed to quickly design switchboards, we help them to highlight their professionalism: switchboards with tested architectures to meet the most stringent specifications.
Our tools and services also enable them to meet requirements concerning compliance with costs and deadlines: optimised selection of the appropriate components for each switchboard (switchgear, distribution systems, enclosures with perfect electrical and mechanical consistency), front panel design and fast cost studies.

## 100 \%

of dedicated building switchboard architectures are tested in compliance with IEC standards and can be customised.

## Easy design with Rapsody software

A time-saver in the design and quotation phases.

More flexibility since modifications and upgrades are possible throughout the project.

easy steps to design a switchboard

1


2


3


4


5


Define the switchboard's electrical and environmental characteristics,
in a few clicks. the devices to be installed, with no risk of error.

Customise, and easily modify the single-line diagram. Move or duplicate devices. Generate current distribution and connection systems.

Choose the switchboard and let the software set up the enclosure.
A list of mounting and connection accessories is proposed to make mounting work easier.

Automatically export the information required to make a clear, comprehensive and professional quotation.

Starting with the electrical diagram: IP30 switchboard


## Install the incomer

- order the mounting plates and the front plates
■ the incoming connection block - the power supply block for the Linergy BW busbars.


Install the modular devices

Order the mounting plates and front plates taking into account: ■ supply to the rows - cable running.


$\left.\begin{array}{l|l|l|l}\text { Mo of vertical } & \text { Modular rail } & \begin{array}{l}\text { Modular } \\ \text { front plate }\end{array} \\ \text { modules }\end{array}\right)$

| $\stackrel{\text { ®0, }}{\stackrel{\circ}{\circ}}$ | Device | No. of vertical modules | Modular rail | Modular front plate |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { \& } \\ & \text { ®̀ } \\ & \hline 0 \end{aligned}$ | All Multi 9 or Acti 9 devices |  |  |  |
|  | All supply systems (Linergy FH) with cable straps and trunking sections | 4 | 03001 | 03204 |
|  | Multi 9 or Acti 9 devices $\leq 40 \mathrm{~A}$ |  |  |  |
|  | Supply via 63/80 A Linergy FM or Linergy FH with cable straps | 3 | 03001 | 03203 |


| $\begin{aligned} & \stackrel{\circ}{\circ} \\ & \stackrel{\circ}{\circ} \\ & \stackrel{\rightharpoonup}{\circ} \end{aligned}$ | Device | No. of vertical modules | Useful <br> length of rail <br> (mm) | Rear modular rail | Transparent front plate |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\stackrel{\sim}{0}$ TeSys U model |  |  |  |  |  |
| 0 | TeSys U model | 4 | 432 | 03004 | 03342 |

■ Linergy FM distribution block > see page 96

- Cable running > see page 74


## Determine the size of the switchboard

| - count the number of occupied modules | 19 modules |  |  |
| :---: | :---: | :---: | :---: |
| - determine the corresponding wall-mount enclosure | 21 modules |  |  |
| ■ order the additional plain front plate. | Plain front plate <br> > see page 68 | 500 mm wide plain front plate <br> 1 module ( $\mathrm{H}=50 \mathrm{~mm}$ ) <br> 2 modules ( $\mathrm{H}=100 \mathrm{~mm}$ ) <br> 3 modules ( $\mathrm{H}=150 \mathrm{~mm}$ ) | Cat. no. 03801 03802 03803 |



|  | Linergy BW busbars |  | 160 A | 250 A | 400 A | 630 A |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\stackrel{\circ}{\circ}$ | Three-pole | $\mathrm{W}=1000 \mathrm{~mm}$ | 04111 | 04112 | 04113 | 04114 |
| \% |  | $W=1400 \mathrm{~mm}$ | 04116 | 04117 | 04118 | 04119 |
| \% | Four-pole | $\mathrm{W}=1000 \mathrm{~mm}$ | 04121 | 04122 | 04123 | 04124 |
| - |  | $\mathrm{W}=1400 \mathrm{~mm}$ | 04126 | 04127 | 04128 | 04129 |

Select the Linergy TR terminal blocks and the Linergy TB earth bar


응 Designation

Cat. no Mounting plate for terminal block and Linergy TB earth bar | Modular rail, $W=1600 \mathrm{~mm}$ | 04226 |
| :--- | :--- |
| $12 \times 3 \mathrm{~mm}$ direct earth bar with 1 terminal $35^{2} \mathrm{~L} 330$ Linergy TB | 04201 |
| 4 earth block $12 \times 4^{2}$ quick connection Linergy TB | 04214 |
| 4 earth block $3 \times 16^{2}$ quick connection Linergy TB | 04215 |

Select the enclosures



3
Cable tie supports

Accessories for lifting, handling wall mounting, finishing parts, etc.

|  | No. of vertical modules | Height of enclosure | Enclosure | $\begin{aligned} & \text { Plain } \\ & \text { door } \end{aligned}$ | Transparent door |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Wall-mount enclosure (IP30) |  |  |  |  |
|  | 6 | 330 | 08102 | 08122 | 08132 |
|  | 9 | 480 | 08103 | 08123 | 08133 |
|  | 12 | 630 | 08104 | 08124 | 08134 |
|  | 15 | 780 | 08105 | 08125 | 08135 |
|  | 18 | 930 | 08106 | 08126 | 08136 |
|  | 21 | 1080 | 08107 | 08127 | 08137 |




# Prisma functional system 

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## Functional units

Upgradeable Prisma functional units: the best electrical and mechanical + communication consistency.
Functional units include switchgear mounting plates, front plates, connections, barriers for ensuring the best level of continuity of service, safety of life and property.

Compact NSX up to 630 A
> 36


Compact INS-INV250-630 A > 46


Source changeover systems
Compact NSX > 48


Fupact INF from 32 to $160 \mathrm{~A}>50$


NG1 25, NG160, INS 4O to 160, iC 20 - Asti $9>54$


## Schneider

## Installation architectures for the measurement function

Compact NSX circuit breakers equipped with Micrologic 5/6 A or E trip units provide measurements that can be read on the FD 121 or FDM128 display module or directly on the circuit breaker. This makes it possible to optimise the space required by the functional unit.
Installation times have also been reduced with respect to system with current transformers.
What is more, installation and connections are made easier because the FDM121 or FDM128 may be installed:
> via a direct cut-out in a plain door
> onthefrontofaW600 enclosureforoneor four $96 \times 96$ devices
> on partial door cut-out.


## A new front plate

The front of Compact NSX circuit breakers has an eye-pleasing curved profile, making Prisma switchboards even more attractive. Prisma front plates are designed for all types of controls (toggle, motor mechanism, rotary handle). functional switchboard is very easy and made of a functional unit system:
> dedicated mounting plates for Compact NSX offer
> matching power connections Linergy DP distribution block and prefabricated connections, connection blocks, power supply blocks)
> partitioning
> compliance with the safety perimeter, by design.


## Presentation

To ensure the supply of energy at all times, certain electrical installations are connected to two sources:
> normalsourceS1
> replacement source S 2 which steps in to supply the installation if the normal source is not available.

A mechanical and/or electrical interlocking system between two Compact switch-disconnectors or circuit breakers (or a mixture) avoids simultaneous connection of the two sources during switching. In Prisma G, a manual changeover with mechanical interlocking of devices may be installed.

This is the simplest system. A human operator is required and consequently, the transfer from the normal source to the replacement source is delayed.
A manual source-changeover system comprises two or three manually controlled devices (circuit breakers or switch-disconnectors) that are mechanically interlocked.
The interlocking system avoids simultaneous connection (even transient) of the two sources.


For more information on the communication functions of Compact NSX, see the ULP system user manual, ref. TRV99100, and the Compact NSX catalogue, ref. LVPED208001_EN.
See catalogue "Compact, Masterpact source changeover systems", ref. LVPED21122EN

## Presentation of Fupact fusegear for Prisma G

Fusegear

## Presentation

Whatever the switchboard configuration, Prisma range offers tested and certified solution guaranteeing the safety of life and properties.

## 2 families of Fupact fusegears

## Fupact INF

Fupact INF ensures your power application for:
> distribution switchboards
> disconnection, isolation, locking and primary control of incoming circuits
> emergencystop,
> motor feeders (protect motors against single-phasing).
Fupact fusegears have a test position for greater flexibility, easy to use.


## Fupact ISFT

Fupact ISFT fuse-switch disconnectors are particularly suited for:
> secondary distribution circuits
> powering and control of industrial motors as local isolation device.

> Fupact fusegears have dedicated mounting plates and front plates.
> The upstream and downstream connections are made by the panelbuilder.
> Vertical mounting allows to install several Fupact fusegears.

Positioning and mounting of the devices in the switchboard and the percentage of space occuped take into account temperature rise, short-circuit withstand capacities, clearances.


Functional system
Functional units

Modular devices

## Modular devices

Acti 9
NG160, NG125, iC12O circuit breakers
INS40/160 switch disconnector

## Presentation

A double-profile modular rail offering a high level of performance
Made of an aluminium alloy with amagnetic properties, the rail design is extremely rigid. The rail supports are crimp mounted.

## Fast mounting

The supports have positioning studs to guide the rail on the rear uprights. Only two mounting screws are required.

## Multiple functions

A number of devices clip directly onto the rails, including Linergy FM 80 and 200 A distribution systems, all horizontal cable-running accessories such as cable straps and trunking supports, as well as the supports for Linergy TB earth bars.

## Supply from all directions

Supply to the rows, using Linergy FH comb busbars or Linergy FM distribution systems via:
> Linergy BS or insulated busbar Linergy BW installed behind the devices.
> Linergy BS busbar installed in a busbar compartment.
Centralised power supply
Via Linergy DX or DS distribution blocks, Linergy DP.


## Distribution

Linergy FM 80 and 200 A device feeders
> Fast and secure front connection using spring terminals.
> Reliable connections, will not loosen over time, insensitive to vibrations and thermal variations.
> All types of modular devices can be mixed.
> Easy balancing of phases.
> Interchangeable devices.
> Easy installation upgrades.
> Fully insulated (IPxxB).

## Linergy FH comb busbars

> Direct connection to device terminals or via a connector.
> Fully insulated.
> Can becut to length.
Linergy DX quick distribution blocks
> See page 90
Linergy DP distribution blocks
> See page 92
Linergy DS screw distribution blocks
> Seepage 94

## Cable running

## Straps

> Easy and fast to install.
> Low cost.
> Perfectly organised and integrated cable running.
> Professional finish.
> Mounting at the back of modular rail, very compact dimensions.

## Trunking

> Traditional solution.


Functional system
Functional units

## Compact NSX100/250 horizontal mounting

Circuit breakers

| Mounting | Horizontal fixed ${ }^{(1)}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| Devices | Toggle |  |  |  |  |  |  |
|  | NSX100/250 |  |  |  |  |  |  |
| Number of devices per row | 1 |  |  |  |  |  |  |
| Nb. of vertical modules | 5 |  |  |  |  |  |  |
| Mounting plates | 03030 |  |  |  |  |  |  |
| Front plates cut-out | 03232 [4] |  |  |  |  |  |  |
| [Nb. of vertical upstream modules] | 03801 [1] |  |  |  |  |  |  |
| Upstream connection |  |  |  |  |  |  |  |
| Incoming connection block | cables via top: 04066 cables via bottom: 04067 |  |  |  |  |  |  |
| (1) Maximum size of connection cables: $70 \mathrm{~mm}^{2}$. For cable cross-sections greater than $70 \mathrm{~mm}^{2}$, use of a cable duct is recommended. |  |  |  |  |  |  |  |
| Mounting | Horizontal fixed |  |  |  |  | Horizontal plug-in |  |
|  |  |  |  |  | DD380589.eps |  |  |
| Devices | Toggle |  | Direct rotary h | andle | Motor mechanism module | Toggle |  |
|  | NSX100/250 | NSX100/250 with ammeter module or Vigi | NSX100/250 | Vigi <br> NSX100/250 | NSX100/250 | NSX100/250 |  |
| Number of devices per row | 1 | 1 | 1 | 1 | 1 | 1 |  |
| Nb . of vertical modules | 4 | 4 | 4 | 4 | 4 | 4 |  |
| Mounting plates | 03030 | 03033 | 03031 | 03031 | 03032 | 03032 |  |
| Front plate cut-out [ Nb . of vertical modules] | 03232 [4] | 03292 [4] | 03232 [4] | $\begin{aligned} & 03292 \text { [4] } \\ & \text { + LV429285 } \\ & \text { (collar) } \end{aligned}$ | 03234 [4] | 03290 [4] |  |
| Upstream connection |  |  |  |  |  |  |  |
|  |  |  |  |  |  | Plug-in base | Device |
| Short/Long terminal shields | $\begin{aligned} & \text { 3P: LV429517 } \\ & \text { 4P: LV429518 } \end{aligned}$ |  |  |  |  | $\begin{aligned} & \text { 3P: LV429517 } \\ & \text { 4P: LV429518 } \end{aligned}$ | $\begin{aligned} & \text { 3P: LV429515 } \\ & \text { 4P: LV429516 } \end{aligned}$ |
| + connection adapter for plug-in base | - |  |  |  |  | $\begin{aligned} & \text { 3P: LV429306 } \\ & \text { 4P: LV429307 } \end{aligned}$ |  |


| Downstream distribution | Linergy DP 250 A distribution block | Insulated Linergy BW busbars |  | Rear Linergy BS busbars | Linergy BS multi-stage busbars |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| Type of connected devices | All types | Toggle NSX | NSX with ammeter module or Vigi NSX | All types | All types |
| Busbars/ distribution blocks | $\begin{array}{\|ll} \text { 3P: } 04033 & \text { > page } 92 \\ \text { 4P: } 04034 & \\ \hline \end{array}$ | > page 84 |  | > page 86 | > page 87, 88 |
| Power supply block | - | $04060{ }^{(2)}$ | $04060{ }^{(2)}$ | ${ }^{(3)}$ |  |
| Long terminal shields | - | - | - | $\begin{aligned} & \text { 3P: LV429517 } \\ & \text { 4P: LV429518 } \end{aligned}$ |  |

[^0]
## Compact NSX100/250 vertical mounting

## Circuit breakers


(2) 1 device centred on mounting plate.

| Mounting |
| :--- |


| Downstream distribution | Linergy DP 250 A distribution block in duct | Insulated BW busba | Linergy ars ${ }^{(3)}$ | Rear Linergy BS busbars | Linergy BS multi-stage busbars or multistage distribution block |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| Type of connected devices | All types | NSX | Vigi NSX | All types | All types |
| Distribution block/busbars | $\begin{aligned} & \text { 3P: } 04033 \\ & \text { 4P: } 04034 \\ & + \text { + } 3011 \\ & >\text { page } 92 \\ & \hline \end{aligned}$ | > page 84 |  | > page 86 | > page 87, 88 |
| Power supply block | - | 04061 | 04061 | - | - |
| Connection block | - | 04064 | must be made | must be made | 04065 |
| Short/long terminal shields | - | 3P: LV429515 4P: LV429516 | 3P: <br> LV429517 <br> 4P: <br> LV429518 | $\begin{aligned} & \text { 3P: LV429517 } \\ & \text { 4P: LV429518 } \end{aligned}$ | $\begin{aligned} & \text { 3P: LV429515 } \\ & \text { 4P: LV429516 } \end{aligned}$ |
| (3) Space available at the top of the enclosure after mounting the universal pow - NSX100/250 = 7 modules <br> - Vigi NSX100/250 = 9 modules. <br> Space required by power supply block on Linergy BW busbars $=5$ modules. |  |  |  |  |  |

Functional system
Functional units

## Compact NSX400/630 horizontal mounting

Circuit breakers

| Mounting |
| :--- |


| Downstream distribution | Insulated Linergy BW busbars |  | Rear Linergy BS busbars | Linergy BS multi-stage busbars |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Type of connected devices | NSX4 | NSX630 | All types | All types |
| Busbars | > page |  | > page 86 | > page 87, 88 |
| Power supply block with connections | 04070 | 04071 | connection must be made | connection must be made |
| Long terminal shields | - |  | $\begin{aligned} & \text { 3P: LV432593 } \\ & \text { 4P: LV432594 } \\ & \hline \end{aligned}$ | $\begin{array}{\|l} \hline \text { 3P: LV432593 } \\ \text { 4P: LV432594 } \\ \hline \end{array}$ |

Functional system
Functional units

## Compact NSX400/630 verticalmounting

## Circuit breakers

| Mounting |
| :--- |


| Downstream distribution | Insulated Linergy BW busbars | Rear Linergy BS busbars | Linergy BS multi-stage busbars |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Type of connected devices | All types | All types | All types |
| Busbars | > page 84 | > page 86 | > page 87, 88 |
| Power supply block | $04074{ }^{(1)}$ | connection must be made | connection must be made |
| Long terminal shields | $\begin{aligned} & \text { 3P: LV432593 } \\ & \text { 4P: LV432594 } \end{aligned}$ | $\begin{aligned} & \hline \text { 3P: LV432593 } \\ & \text { 4P: LV432594 } \end{aligned}$ | $\begin{aligned} & \hline \text { 3P: LV432593 } \\ & \text { 4P: LV432594 } \end{aligned}$ |

(1) Connection must be made.

| Upstream connection |  |
| :--- | :--- |
| Long terminal shields | 3P: LV432593 |
|  | 4P: LV432594 |
| Cable-ties | $\mathbf{0 8 8 6 6 + 0 8 8 6 8}$ |


| Downstream <br> distribution | Insulated <br> Linergy BW <br> busbars | Rear Linergy <br> BS busbars | Linergy BS <br> multi-stage <br> busbars |
| :--- | :--- | :--- | :--- | :--- |

(2) Space required by power supply block on insulated Linergy BW busbars $=5$ modules.

Easypact EZC100/630 horizontal mounting

Circuit breakers


Functional system
Functional units

## Easypact EZC100/630 vertical mounting

## Circuit breakers

| Mounting |
| :--- |


|  |  |  | Mounting |  | Vertical fixed |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  |  |  | Devices |  | Toggle <br> EZC400/630 <br> 1P |  |  |
|  |  |  | Number of devices | er row | 1 |  |  |
|  |  |  | Nb. of vertical modu |  | 13 |  |  |
|  |  |  | Mounting plate |  | 03073 |  |  |
|  |  |  | Front plates cu |  | 03273 [9] |  |  |
|  |  |  | [ Nb . of vertical up | tream | 03802 [2] |  |  |
|  |  |  | modules] do | nstream 0 | 03802 [2] |  |  |
|  |  |  | Upstream con | nection |  |  |  |
|  |  |  | Long terminal shiel |  | $\begin{aligned} & \text { 3P: LV429593 } \\ & \text { 4P: LV429594 } \end{aligned}$ |  |  |
| Distribution | Distribution block Linergy DX 1P, 160 A | Rear Linergy B | busbars |  | Linergy BS mult | -stage busbars |  |
|  |  |  |  |  |  |  |  |
| Type of connected devices | EZC100 | EZC100 | EZC250/EZCV250 | EZC400/630 | EZC100 | EZC250/EZCV250 | EZC400/630 |
| Distribution block | $\begin{array}{\|l\|} 04031(x \mathrm{Nb} . \text { of pole) } \\ +03001 \text { (rail) } \\ >\text { page } 90 \end{array}$ | $\leqslant 400 \mathrm{~A}$ |  |  | $\leqslant 630 \mathrm{~A}$ |  |  |
| Busbars | - | > page 86 |  |  | > page 87, 88 |  |  |
| Connection block | must be made | must be made |  |  | must be made |  |  |
| Long terminal shields | $\begin{aligned} & \text { 3P: EZATSHD3P } \\ & \text { 4P: EZATSHD4P } \end{aligned}$ | $\begin{aligned} & \text { 3P: EZATSHD3P } \\ & \text { 4P: EZATSHD4P } \end{aligned}$ | $\begin{aligned} & \text { 3P: EZETSHD3PN } \\ & \text { 4P: EZETSHD4PN } \end{aligned}$ | $\begin{array}{\|l\|l\|} \hline \text { 3P: LV429593 } \\ \text { 4P: LV429594 } \\ \hline \end{array}$ | 93 3P: EZATSHD3P <br> 4 4P: EZATSHD4P | 3P: EZETSHD3PN 4P: EZETSHD4PN | $\begin{aligned} & \text { 3P: LV429593 } \\ & \text { 4P: LV429594 } \end{aligned}$ |

Functional system
Functional units

## Easypact CVS100/250 horizontal mounting

## Circuit breakers

| Mounting |
| :--- |

(1) Maximum size of connection cables: $70 \mathrm{~mm}^{2}$. For cable cross-sections greater than $70 \mathrm{~mm}^{2}$, use of a cable duct is recommended.

| Mounting | Horizontal fixed with cable duct |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| Devices | Toggle |  |  |  | Rotary handle |  |  |
|  | CVS100/250, 3P/4P | Vigi CVS100/250, 3P/4P |  |  | CVS100/250, 3P/4P | Vigi CVS100/250, 3P/4P |  |
| Number of devices per row | 1 1 1 |  |  |  | 1 | 1 |  |
| Nb . of vertical modules | 4 4 |  |  |  | 4 | 4 |  |
| Mounting plates | 03030 - 0 |  | 03033 |  | 03031 | 03031 |  |
| Front plate cut-out [ Nb . of vertical modules] | 03230 [4] 0 |  | 03238 [4] |  | 03232 [4] | 03292 [4] + collar LV429285 |  |
| Upstream connection |  |  |  |  |  |  |  |
| Long terminal shields | 3P: LV429517 3P: LV429517 <br> 4P: LV429518 4P: LV429518 |  |  |  | $\begin{array}{\|l} \text { 3P: LV429517 } \\ \text { 4P: LV429518 } \end{array}$ | $\begin{aligned} & \text { 3P: LV429517 } \\ & \text { 4P: LV429518 } \end{aligned}$ |  |
| Cable-ties | 08866 + 08868 |  |  |  |  |  |  |
| Downstream distribution | Linergy DP 250 A distribution block | Insulated Linergy BW busbars |  |  |  | Rear Linergy BS busbars | Linergy BS multi-stage busbars |
|  |  |  |  |  |  |  |  |
| Type of connected devices | All types | Toggle <br> CVs CVS or Vigi CVs |  |  | Direct rotary handle | All types | All types |
| Busbars / Distribution blocks | $\begin{array}{ll} \text { 3P: } 04033 \text { > page } 92 \\ \text { 4P: } 04034 \end{array}$ | > page 84 |  |  |  | >page 86 | > page 87, 88 |
| Power supply block | - | $04060{ }^{(2)}$ | $04060{ }^{(2)}$ | $\begin{array}{\|l\|} \hline 040611^{(3)} \\ + \text { connection must be made } \end{array}$ |  | connection must be made |  |
| Long terminal shields | - | - | - | $\begin{aligned} & \text { 3P: LV429517 } \\ & \text { 4P: LV429518 } \end{aligned}$ |  | $\begin{array}{\|l} \text { 3P: LV429517 } \\ \text { 4P: LV429518 } \\ \hline \end{array}$ |  |

(2) Supplied with connections.
(3) Connection must be made.

Note: for insulated flexible bars connections, see page 66.

Functional system
Functional units

## Easypact CVS100/250 verticalmounting

## Circuit breakers


(1) 1 device centred on mounting plate.



[^1]Functional system Functional units

Easypact CVS400/630 horizontal mounting

## Circuit breakers



| Downstream distribution | Insulated Linergy BW busbars |  | Rear Linergy BS busbars | Linergy BS multi-stage busbars |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Type of connected devices | CVS40 | CVS630 | All types | All types |
| Busbars | > page |  | > page 86 | > pages 87, 88 |
| Power supply block with connection | 04070 | 04071 | connection must be made | connection must be made |
| Long terminal shields | - |  | $\begin{array}{\|l\|} \hline \text { 3P: LV432593 } \\ \text { 4P: LV432594 } \\ \hline \end{array}$ | $\begin{aligned} & \text { 3P: LV432593 } \\ & \text { 4P: LV432594 } \\ & \hline \end{aligned}$ |

Functional system
Functional units

## Easypact CVS400/630 verticalmounting

## Circuit breakers

| Mounting |
| :--- |


| Downstream distribution | Insulated Linergy BW busbars | Rear Linergy BS busbars | Linergy BS multi-stage busbars |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Type of connected devices | All types | All types | All types |
| Busbars | > page 84 | > page 86 | > pages 87, 88 |
| Power supply block | $04074{ }^{(1)}+$ connection must be made | connection must be made | connection must be made |
| Long terminal shields | $\begin{array}{\|l\|} \hline \text { 3P: LV432593 } \\ \text { 4P: LV432594 } \end{array}$ | $\begin{aligned} & \hline \text { 3P: LV432593 } \\ & \text { 4P: LV432594 } \\ & \hline \end{aligned}$ | $\begin{array}{\|l\|} \hline \text { 3P: LV432593 } \\ \text { 4P: LV432594 } \end{array}$ |

(1) Connection must be made.


| Downstream <br> distribution | Insulated <br> Linergy BW <br> busbars | Rear <br> (2) |
| :--- | :--- | :--- | :--- |
| Linergy BS |  |  |
| busbars |  |  |, | Linergy BS |
| :--- |
| multi-stage |
| busbars |

(2) Space required by power supply block on insulated Linergy BW busbars $=5$ modules.

Functional system
Functional units

Compact INS-INV250/630 horizontal mounting

Switch-disconnectors

| Downstream distribution |
| :--- |
|  |

## Compact INS-INV250/630 vertical mounting

## Switch-disconnectors



## (2) Copper spacer.



Functional system
Functional units

Manual source changeover system

## Compact NSX100/250 circuit breakers changeover system

Downstream distribution

| Long terminal shields | 3P: LV429517 <br> 4P: LV429518 |
| :--- | :--- |

Functional system
Functional units

Manual source changeover system

Compact INS-INV250 switch-disconnector changeover system

| Mounting | Fixed <br> (Changeover with mechanical interlocking) |  | Fixed <br> (Complete source changeover assembly) |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Devices | Front, direct rotary handle INS-INV250 |  | Front, direct rotary handle INS250 |  |
|  | 3P | 4P | 3P | 4P |
| Nb . of vertical modules | 9 | 9 | 9 | 9 |
| Mounting plate | $\begin{array}{\|l\|} \hline 03043 \\ +2 \times \text { LV431064 (raiser) } \\ \hline \end{array}$ | $\begin{aligned} & 03043 \\ & +2 \times \text { LV431064 (raiser) } \end{aligned}$ | 03043 | 03043 |
| Front plates cut-out <br> [Nb. of vertical upstream <br> modules] downstream | 03235 [5] | 03235 [5] | 03247 [5] | 03247 [5] |
|  | 03802 [2] | 03802 [2] | 03802 [2] | 03802 [2] |
|  | 03802 [2] | 03802 [2] | 03802 [2] | 03802 [2] |
| Mechanical interlocking | 31073 | 31073 | - | - |
| Complete source-changeover assembly | - | - | $100 \mathrm{~A}: 31140$ $160 \mathrm{~A}: 31144$ $200 \mathrm{~A}: 31142$ $250 \mathrm{~A}: 31146$ | $100 \mathrm{~A}: 31141$ $160 \mathrm{~A}: 31145$ $200 \mathrm{~A}: 31143$ $250 \mathrm{~A}: 31147$ |
| Upstream connection |  |  |  |  |
| Long terminal shields | LV429518 | LV429518 | LV429518 | LV429518 |
| Cable-ties | 08866 + 08867 |  |  |  |
| Coupling accessory | LV429359 | LV429359 | LV429359 | LV429359 |
|  | Downstream distribution |  |  |  |
|  |  | Long terminal shields | LV429518 |  |

Functional system
Functional units

Fupact INF horizontal mounting

Fusegear

(1) Not needed if direct distribution.

| Downstream distribution |
| :--- | Insulated Linergy BW busbars ${ }^{(2)}$

[^2]The distribution system is installed under the functional unit.

Functional system
Functional units

Fupact INF verticalmounting

Fusegear

(1) Not needed if direct distribution.

| Downstream distribution | Distribution block Linergy DX 1P, 160 A |  | Insulated Linergy BW busbars ${ }^{(2)}$ |  | Rear Linergy BS busbars |  | Linergy BS multi-stage busbars |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | $\begin{aligned} & \text { 㯎 } \\ & \stackrel{0}{0} \\ & \stackrel{.0}{2} \\ & \hline 0 \end{aligned}$ |
| Type of connected devices | INF100/160 |  | INF100/160 |  | INF100/160 |  | INF100/160 |  |
|  | 3P | 4P | 3P | 4P | 3 P | 4P | 3P | 4P |
| Distribution block / busbars | $3 \times 04031$ | $4 \times 04031$ | > page 84 |  | > page 86 |  | > pages 87, 88 |  |
|  | $\begin{aligned} & +03002 \\ & >\text { page } 91 \end{aligned}$ | $\begin{aligned} & +03002 \\ & >\text { page } 91 \end{aligned}$ |  |  |  |  |  |  |
| Power supply block universel | - |  | 04061 |  | - |  | - |  |
| Connection block | must be made |  | must be made |  | must be made |  | must be made |  |
| Long terminal shields | $3 \times$ LV480445 | 4x LV480445 | $3 \times$ LV480445 | $4 \times$ LV480445 | $3 \times$ LV480445 | $4 \times$ LV480445 | $3 \times$ LV480445 | $4 \times$ LV480445 |

(2) The mounting plate for INF Fupact does not leave a passage for the busbar; it can only be installed below the plate.

The distribution system is installed under the functional unit.

Functional system
Functional units

## Fupact ISFT160/250 <br> horizontal mounting

Fusegear

| Mounting |
| :--- |


| Downstream distribution | Insulated Linergy BW busbars | Rear Linergy BS busbars | Linergy BS multi-stage busbars |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Type of connected devices | ISFT160 \| ${ }^{\text {ISFT250 }}$ | ISFT160 \| ISFT250 | ISFT160 \| ISFT250 |
| Busbars | > page 84 | > page 86 | > pages 87, 88 |
| Universal power supply block | 04061 | - | - |
| Connection block | must be made | must be made | must be made |
| Long terminal shields | 49869 49872 | 49869 49872 | 49869 49872 |

Functional system
Functional units

Fusegear

Fupact ISFT100/100N, ISFT160/250 vertical mounting


| Upstream connection | Comb busbar |
| :---: | :---: |
|  |  |
| Connected Type | ISFT100 |
| devices Number | 2304 |
| Comb busbat | 49861 49862 49863 |
| Coupler to connect 2 busbars | 49890 |
| Tooth cover | 49864 |
| Set of 3 connectors | 49865 (25 to $95 \mathrm{~mm}^{2}$ ) |
|  | 49860 (3 x $10 \mathrm{~mm}^{2}$ ) |

(1) Not needed if direct distribution.

| Downstream distribution | Distribution block Linergy DX 1 P, 160 A | Insulated Linergy BW busbars | Rear Linergy BS busbars | Linergy BS multi-stage busbars |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| Type of connected devices | ISFT100N \| ISFT160 | ISFT100N \| ISFT160 | ISFT100N \| ISFT160 | ISFT100N \| ISFT160 |
| Connectors / distribution block / busbars | $\begin{array}{\|l} 3 \times 04031+03002 \\ >\text { page } 91 \end{array}$ | > page 84 | > page 86 | > pages 87, 88 |
| Universal power supply block | $-$ | 04061 | - | - |
| Connection block | must be made | must be made | must be made | must be made |
| Long terminal shields |  |  | LV480756 49869 |  |


| Mounting | Vertical fixed |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| Devices | On mounting plate |  |  |  |  |  |  |
| Number of devices per row | 1 | 1 |  |  |  |  |  |
| Nb. of vertical modules | 6 | 9 |  |  |  |  |  |
| Mounting plates | 03123 | 03125 |  |  |  |  |  |
| Cut-out front plate | 03327 | 03329 |  |  |  |  |  |
| Upstream connection |  |  |  |  |  |  |  |
| Long terminal shields | 49869 | 49872 |  |  |  |  |  |
| Downstream distribution | Distribution block Linergy DX 1 P, 160 A | Insulated Linergy BW busbars |  | Rear Lin | BS busbars | Linergy duct | usbars in |
|  |  |  |  |  | 高喜 |  |  |
| Type of connected devices | ISFT160 | ISFT160 | \| ISFT250 | ISFT160 | ISFT250 | ISFT160 | ISFT250 |
| Distribution block / busbars | $\begin{aligned} & 3 \times 04031+03011 \\ & >\text { page } 91 \end{aligned}$ | > page 8 |  | > page 86 |  | > page 8 |  |
| Power supply block universel | - | 04061 |  | - |  | - |  |
| Connection block | must be made | must be |  | must be m |  | must be |  |
| Long terminal shields | 49869 | 49869 | 49872 | 49869 | 49872 | 49869 | 49872 |

## Modular devices

| Mounting | Circuit breaker |  |  | Switch-disconnector |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
| Devices | NG160, NG160NA NG125, NG125NA, Vigi NG125, <br> C120, Vigi C120, iC120, Vigi iC120 <br> Vigi NG160  |  |  | INS40/160 INS100/160 <br> with long terminal shields |  |  |  |
| Nb . of vertical modules | 5 | 5 |  | 4 | 5 |  |  |
| Rail (48 modules of 9 mm ) | 03002 (adjustable) ${ }^{(1)}$ | 03001 |  | 03001 | 03001 |  |  |
| Modular front plate | 03205 | 03205 |  | 03204 | 03205 |  |  |
| Blanking plates <br> $>$ <br> $>$$\frac{\text { page } 163}{}$ strip <br> divisible | 03220 |  |  | 03220 |  |  |  |
|  | 03221 |  |  | 03221 |  |  |  |
| (1) Can be completed by a rail + raiser (cat. no. 04227) to instal modular devices on. |  |  |  |  |  |  |  |
| Mounting | Circuit breaker |  |  | Switch-disconnector |  |  |  |
|  |  |  |  |  |  |  |  |
| Devices | NG160, NG160NA | NG125, NG125NA,Vigi NG125, C120, Vigi C120, iC120, Vigi iC120 |  | INS40/160 | INS100/160 with long terminal shields |  |  |
| Nb . of vertical modules | 5 | 4 |  | 4 | 5 |  |  |
| Rail (20 modules of 9 mm ) | 03011 (adjustable) ${ }^{(2)}$ | 03010 |  | 03010 | 03010 |  |  |
| Front plates modular | 03214 [4] | 03214 |  | 03214 [4] | 03214 [4] |  |  |
| modules] downstream | 03811 [1] | - |  | - | 03811 [1] |  |  |
| Blanking plates <br> $>$ page 163 strip <br> divisible | 03220 | 03220 |  | 03220 | 03220 |  |  |
|  | 03221 | 03221 |  | 03221 | 03221 |  |  |
| (2) Can be completed by a rail + raiser (cat. no. 04227) to install modular devices on. |  |  |  |  |  |  |  |
| Downstream distribution | Insulated Linergy BW busbars | Rear Linergy BS busbars | Linergy BS Multi-stage busbars in duct | Distribution block Linergy DX 1P, 160 A | Distribution block Linergy DX 4P, 160 A |  | Linergy DS Multi-stage distribution |
|  |  |  |  |  |  |  |  |
| Type of connected devices | All types | All types | All types | All types | All types |  | All types |
| Distribution block / busbars | > page 84 | > page 86 | > page 87 | $\begin{aligned} & 04031 \\ & >\text { page } 91 \end{aligned}$ | $\begin{aligned} & 04046 \\ & >\text { page } 91 \end{aligned}$ | 04045 <br> > page 91 | > page 94 |
| Connections block | > page 85 | - | must be made | 04149 | supplied with 04046 | 04047 | must be made |

Other devices behind transparent front plates


Other modular devices
 (1) RH10, RH21, RH99, RMH relay and RM12T Multiplexer.
(2) IM9, IM9-OL, IM2O, IM2OH.
(3) For installation at the top or bottom of the enclosure, use a 3-module modular front plate (03203).

Functional units

Modular devices

| Mounting | Distances between centres: $\mathbf{2 0 0} \mathbf{~ m m}$ | Distances between centres: 150 mm |  | Vertical |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| Devices | All modular devices | Modular devices $\leqslant 40 \mathrm{~A}$ |  | All mo device |  |
| Rail lenght (modules of 9 mm ) | 48 | 48 | 48 | 48 | 64 |
| Nb . of vertical modules | $4{ }^{(1)}$ | 3 | 8 | 9 | 12 |
| Rail (48 modules of 9 mm ) | 03001 | 03001 | $03001 \times 3$ | 04226 | 04226 |
| Modular front plate | 03204 | 03203 | 03223 | 03228 | 03229 |
| Blanking plates strip | 03220 | 03220 | 03220 | 03220 |  |
| >page 163 divisible | 03221 | 03221 | 03221 | 03221 |  |

(1) For a modular row with a 160 A (half row) and 200 A Linergy FM distribution block positioned directly below a non-modular mounting-plate (Compact, etc.), or at the top of a switchboard, add one additional module (i.e. 4+1) and a plain upstream front plate (03801).


Functional units

Industrial control devices

TeSys D, TeSys K contactors

| Mounting | For 600 mm wide enclosures | For 300 mm wide duct |
| :---: | :---: | :---: |
|  |  |  |
| Devices | LC1D• or LC1K• ( $\leqslant 40 \mathrm{~A}$ ) | LC1D• or LC1K• ( $\leqslant 40 \mathrm{~A}$ ) |
| Useful length for rail | 432 mm | 180 mm |
| Nb . of vertical modules | 3 | 3 |
| Modular rail | 03004 (in rear) | 03011 (adjustable) |
| Plain front plate | 03803 | 03813 |

TeSys GV2/GV3 circuit breakers


Combined TeSys GV2 circuit breaker

+ TeSys GV3P•e1 contactor

| Mounting |
| :--- |

## TeSys, Altistart, Phaseo

Industrial control devices

Tesys U starter-controler

.
(2) If the communication module is installed, the transparent front plate is mandatory. If not, the 2 front plates can be replaced by one plain front plate (cat.no 03805 in wall-mounted or floor-standing enclosure, 03815 in duct).
(3) Or plain front plate (cat.no 03804 in wall-mounted or floor-standing enclosure, 03814 in duct).

Soft starters Altistart 01

| Mounting |
| :--- |

Supply and LV/LV Phaseo transformer


Functional system
Functional units

Kilowatt-hour meters
Class II

Other devices

| Mounting |
| :--- |


(1) Order one additional horizontal partition in case of installation other than at the top of enclosure.

Note: meters can be installed directly on mounting plate equipped with $6 \mathrm{~mm}^{2}$ earthing braid (cat.no 08910) and combined with partitioning or front plates.

Functional units

## Other devices

| Mounting | Behind front plate ${ }^{(1)}$ |  |  |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Devices | 3-phase kilowatt-hour meters $(3 \mathrm{Ph}+\mathrm{N})$ | Connection blocks | 3-phase kilowatt-hour meters ( $3 \mathrm{Ph}+\mathrm{N}$ ) + connection block |
| Number of devices per row | 2 | 2 | 1+1 |
| Nb. of vertical modules | 6 | 6 | 6 |
| Mounting plate | 03160 | 03160 | 03160 |
| Front plates at transparent | 03343 | 03343 | 03343 |
| your choice plain | 03806 | 03806 | 03806 |
| Horizontal partitioning | 04331 | 04331 | 04331 |
| Earthing braid ${ }^{(2)}$ | 08910 | 08910 | 08910 |
| Accessories | M5 spacers for mounting plate > page 70 |  |  |


\section*{| Mounting | Behind front plate ${ }^{(1)}$ |
| :--- | :--- |}


(1) Order one additional horizontal partition in case of installation other than at the top of enclosure.
(2) Meters can be installed directly on mounting plate equipped with $6 \mathrm{~mm}^{2}$ earthing braid (cat.no 08910) and combined with partitioning or front plates.

## Other devices

## 2 types of device mounting $72 \times 72$ and $96 \times 96$

## (1)

> On an interface with plastic mounting plates clipped onto the metal front plate with cut-outs


■ The interface is made up of a metal front plate and plastic mounting plates that clip onto the front plate.

- The devices are attached in the cut-outs of the plastic mounting plates and insulated from the front plate.


■ A system at the rear of the mounting plates guides the wires.


- Each mounting plate can receive an adhesive label. - Plain mounting plates are available to blank off any unused locations.


## (2)

> Directly on a metal front plate with cut-outs


- Devices are attached directly to the metal front plate.
- Blanking plates are available to blank off any unused locations.


## 3 mounting types in Prisma G IP30


$>$ In the device zone of wall-mounted and floor-standing enclosures


## (2)

> On a partial door with cut-outs in wallmounted and floor-standing enclosures


- With flexible trunking to protect and guide wiring to door (04235).


## (3)

> On a plain door with cut-outs, on an inclined visor by $30^{\circ}$


Note: device mounting on door: earthing braid (ref. 08910) or earthing wire (ref. 08911).

Functional system
Functional units

Other devices

Human-switchboard interface
Devices $72 \times 72$ and $96 \times 96$ Devices $144 \times 144$ Lamps and pushbuttons $\varnothing 22$


Direct mounting on a metal front plate with cut-outs
$72 \times 72$ devices


[^3]Functional system
Functional units
Power supply block and prefabricated connections

## Connections blocks <br> Power supply blocks <br> Horizontal mounting

## Incoming connection blocks <br> Devices $\leqslant 630$ A

| Description |
| :--- |
|  |

## Power supply block with connections between Compact device and Linergy BW isolated busbar <br> Devices $\leqslant 250$ A


Power supply block 250 A

+ prefabricated connections 250 A


| Compact NSX100/250 | Compact INS250, <br> INV100/250 |
| :--- | :--- |
| Horizontal | Horizontal |
| $\mathbf{0 4 0 6 0}$ | $\mathbf{0 4 0 6 0}$ |
| ppage 36 | $>$ page 46 |


| Compact INS250, INV100/250 |
| :--- |
| Vertical |
| 04060 + connection 04062 |
| $>$ page 47 |

Power supply block with connections between Compact device and Linergy BW isolated busbar Devices 400-630 A


Functional system
Functional units
Power supply block and prefabricated connections

# Connections blocks <br> Power supply blocks <br> Vertical mounting 

|  |  | Universal power supply block + prefabricated connections between Compact device and Linergy BW isolated busbar <br> Devices 100-250 A |  |
| :---: | :---: | :---: | :---: |
| Description | Universal power supply 250 A <br> + prefabricated connections 250 A | Universal power su <br> + prefabricated con | $\begin{aligned} & \text { ly } 250 \mathrm{~A} \\ & \text { ctions } 250 \mathrm{~A} \end{aligned}$ |
|  |  |  |  |
| Devices | Compact NSX100/250 | Compact NSX100/250 | $\left\lvert\, \begin{aligned} & \text { Compact INS250, } \\ & \text { INV100/250 } \end{aligned}\right.$ |
| Mounting | Vertical | Vertical, in duct | Vertica, in duct |
| Catalogue number | $04061+$ connection 04062 | $04061+$ connection 04064 | $04061+$ connection 04064 |
| Configuration | > page 37 | > page 37 | > page 47 |

Universal power supply block + prefabricated connections between Compact device and Linergy BW isolated busbar
Devices 400-630 A

| Description |
| :--- |

Universal power supply block, connections to be made between Compact device and Linergy BW isolated busbar

Devices $\leqslant 250$ A

| Description | Universal power supply 250 A + connection must be made |  |
| :---: | :---: | :---: |
|  |  |  |
| Devices | Compact NSX100/250 (dire mechanism module) | otary handle, motor |
| Mounting | Horizontal | Vertical |
| Catalogue number | 04061 + connection must be made | 04061 + connection must be made |
| Configuration | > page 36 | > page 37 |



When mounting Schneider Electric prefabricated connections, short terminal shields can be used or not if the function is already integrated in prefabricated connections.

Note: for some devices, it is recommended to use Schneider Electric prefabricated connections. If not, switchgears must be equipped with long terminal shields for personnel safety.

Functional system
Prefabricated connections

## Other prefabricated connections

## Devices/Linergy BS multi-stage busbars connections

|  | Linergy BS multistage lateral busbars, 250 A | Linergy BS multistage lateral busbars, 630 A |
| :---: | :---: | :---: |
|  |  |  |
| Devices | Compact NSX-INS-INV |  |
| Mounting | Vertical, in duct | Vertical, in duct |
| Catalogue number | 04065 | 04075 |
| Configuration | > page 47 | > page 47 |

Linergy BS and Linergy FM busbars connections $\leqslant 200 \mathrm{~A}$


## Connections between two sets of Linergy BS busbars

|  | Connection between 2 sets of Linergy BS <br> busbars |  |
| :--- | :--- | :--- |
|  |  |  |
| Devices |  |  |
| Catalogue number |  |  |
| Allows connection of |  |  |

Choice of accessories depending on devices

| Device to connect |  | Catalogue numbers |
| :---: | :---: | :---: |
| Fupact | INF100/160 vertical | Connection must be made + rail 03002 |
|  | ISFT vertical | Connection must be made + rail 03002 or 03011 |
| INS | INS40/125/160 | 04149 |
| NG | NG160 | 04149 |
| C120, iC120 |  | 04149 |
| Compact | NSX100/250 with or without Vigi horizontal | 04033 (3P) 04034 (4P) |
|  | NSX100/250 with or without Vigi vertical | 04033 (3P) 04034 (4P) + rail 03002 or 03011 |
|  | INS-INV250 horizontal | 04033 (3P) 04034 (4P) |
|  | INS-INV250 vertical | 04033 (3P) 04034 (4P) + rail 03002 or 03011 |
|  | INS-INV250 lateral handle vertical | 04033 (3P) 04034 (4P) + rail 03002 or 03011 + spacer 04037 |

## Insulated flexible bars



The insulated flexible bars are tested in a type-tested switchboard environment. Their design takes into account the switchboard architecture where they are often in close proximity to a protection device (circuit breaker or fuse) with significant heat losses.
The sizes for the flexible bars indicated below take into account the heat losses of Schneider Electric devices in a Prisma switchboard.

## Characteristics

| Length | 1800 mm |
| :--- | :--- |
| Rated insulation voltage (Ui) | 1000 V |

## Connection between device busbar

The flexible bars are determined taking into account the connected device, whatever the internal temperature of the switchboard.
The bar sizes indicated below take into account the derating curves of devices.

| Devices | Size (mm) | Catalogue numbers |
| :--- | :--- | :--- |
| NSX100 | $20 \times 2$ | 04742 |
| NSX160/250 | $20 \times 3^{(1)}$ | 04743 |
| NSX400 | $32 \times 5$ | 04751 |
| NSX630 | $32 \times 8$ | 04753 |
| INS125/160 | $20 \times 2$ | 04742 |
| INS250 | $20 \times 3$ | 04743 |
| INS400 | $32 \times 5$ | 04751 |
| INS630 | $32 \times 6$ | 04752 |
| 200 A Linergy FM | $20 \times 3$ | 04743 |
| Fupact 250 | $24 \times 5$ | 04746 |
| Fupact 400 | $32 \times 5$ | 04751 |
| Fupact 630 | $32 \times 8$ | 04753 |
| Easypact CVS100 | $20 \times 2$ | 04742 |
| Easypact CVS160/250 | $20 \times 3$ | 04743 |
| Easypact CVS400 | $32 \times 5$ | 04751 |
| Easypact CVS630 | $32 \times 8$ | 04753 |

(1) To connect a Compact NSX250 to Linergy BW busbars, use a $24 \times 5 \mathrm{~mm}$ flexible bar (04746).

Note: the references $87646(3 P)$ and $87647(4 P)$ can be used up to 250 A, when binding of insulated flexible bars, to withstand Isc.


## Connection between busbars

Flexible bars are designed for connections between busbars taking into account the following characteristics:

- a maximum temperature of $60^{\circ} \mathrm{C}$ inside the switchboard. This corresponds to the average temperature inside a switchboard for an ambient temperature of $35^{\circ} \mathrm{C}$ $\square$ the maximum withstand temperature for the insulating material is $125^{\circ} \mathrm{C}$.

| le ${ }^{(1)}$ max | Size $(\mathrm{mm})$ | Catalogue numbers |
| :--- | :--- | :--- |
| 200 A | $20 \times 2$ | 04742 |
| 250 A | $20 \times 3$ | 04743 |
| 400 A | $24 \times 5$ | 04746 |
| 520 A | $32 \times 5$ | 04751 |
| 580 A | $32 \times 6$ | 04752 |
| 660 A | 04753 |  |
| (1) Rated operational current. | $32 \times 8$ |  |

## Designing connections

> page 179

Functional system
Partitioning of functional units

## Partitioning

## Horizontal partitioning

The metal partitions are used to:

- separate the functional units from one to another
- create a physical separation between devices and a terminal block, for example.

| Used for |
| :--- |
| Catalogue numbers |

## Vertical partitioning

The metal partition creates a physical separation between the device compartment and a wide duct.

It is used to:

- separate the devices from busbars or a distribution block installed in the duct,
- set up a special zone for terminal blocks in the duct.


Functional system
Front plates and accessories

## Front plates, rails, slotted mounting plates

Plain and transparent front plates

| Used for |
| :--- |

Other front plates

| Used for |
| :--- |

Accessories for front plates

| Used for | Front plate hinge kit | Self adhesive front plate grips | Front-plate locking handles | Blanking plates |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| Catalogue numbers | 08585 | 01093 | 01094 | 03220 | 03221 |
| Characteristics | Set of 2 hinges | Set of 20 white RAL9001 | Set of 10 | $\begin{aligned} & \text { E Strip } \\ & \text { H }=46 \mathrm{~mm}, \\ & \mathrm{~L}=1 \mathrm{~m} \end{aligned}$ | $\begin{aligned} & \text { - Divisible } \\ & \text { - Set of } 4 \\ & \text { H }=46 \mathrm{~mm} \text {, } \\ & \mathrm{L}=90 \mathrm{~mm} \\ & \hline \end{aligned}$ |

Functional system
Front plates and accessories

## Front plates, rails, slotted mounting plates

Rails


Adjustable rails

Rail to be cut W600


Slotted mounting plate

|  | Enclosure W600 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
|  | Flat | Recess |  |  | F |
|  | 03170 | 03171 | 03172 | 03173 | 0 |
| s | 4 | 4 | 6 | 9 | 4 |
|  | 200 mm | 200 mm | 300 mm | 450 mm | 2 |
|  | 440 mm | 420 mm |  |  |  |
| ront plate | 140 mm | 160 mm |  |  |  |



Clip-nuts


Raiser for rails and slotted mounting plates

## Raiser



| Catalogue number | $\mathbf{0 4 2 2 4}$ |
| :--- | :--- |
| Characteristics | Set of 5 |
|  | Height: 10 mm, length 27 mm <br> Colour: RAL 9001, insulating material |

Self-tapping screws

| Self-tapping screws |  |
| :---: | :---: |
|  | (2) (2) |
| M5 | 03183 |
| Characteristics | Set of 20 <br> Mounting on functional uprights |

Universal angle bracket


Hexagonal spacers, $30^{\circ}$ supports


## Installation accessories for terminal block and earth bar



On mounting plate
Used for

## Dedicated mounting plate, in device compartment

This mounting assembly is used to easily install and connect a large number of terminal blocks in a minimum amount of space. It is particularly useful when a duct is not warranted or cannot be installed.

| Used for | In device compartment |
| :---: | :---: |
|  |  |
| Number of vertical modules | 5 (250 mm) |
| Catalogue number | 04223 |
| Characteristics | Mounting brackets, fixed to the functional uprights at the top or bottom of the enclosure, is equipped with four 200 mm symetrical rails. They are installed vertically to facilitate cable running. <br> To facilitate mixing of different size terminal blocks and ensure convenient connections from the front or the side, the distance between rails and the depth of each rail can be adjusted. <br> - The assembly has cut-outs that can be used to easily tie down the connection wires. <br> - Linergy TB earth bars and Linergy TR terminal blocks layout, supplied separately, can be installed between the rows of terminal blocks to form different configurations, e.g.: <br> - four sets of terminal blocks <br> - 3 sets of terminal blocks + one or two Linergy TB earth bars ( $\mathrm{W}=290 \mathrm{~mm}$ ). <br> > page 106 | terminal block and earth bar

## Installation on the side or in the width of the enclosure

This solution saves considerable space in the device zone and avoids the need for the 300 mm wide duct.


Linergy TR terminal blocks
> page 104.
Linergy TB earth bars
> page 106.

Functional system
Finishing parts

Finishing parts
Labels

## Identification labels



Adhesive labels for mimic diagrams


Accessories


Organisation of switchboard

Straps and covers


Trunking supports


Functional system
Organisation of switchboard

Cable running

Trunking

| Type | Vertical trunking $80 \times 60 \mathrm{~mm}$ | Horizontal trunking $60 \times 30 \mathrm{~mm}$ | Brackets |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Catalogue numbers | 04267 | 04257 | 04206 |
| Characteristics | $\begin{aligned} & \text { Set of } 18 \\ & \mathrm{~L}=2000 \mathrm{~mm} \end{aligned}$ | $\begin{aligned} & \text { Set of } 4 \\ & \mathrm{~L}=450 \mathrm{~mm} \\ & \text { Supplied with } 8 \text { supports } \end{aligned}$ | $\mathrm{H}=15 \mathrm{~mm}$ <br> For vertical trunking installation |
| Used with | Prisma G wall-mounted and floor-standing enclosures | Prisma G wall-mounted and floor-standing enclosures + Pack 160 enclosures | Pack 160 enclosures |

Cable trunking for doors

| Type | Flexible trunking for wiring to door |  | Cable trunking |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Catalogue numbers | 04235 |  | 04233 |
| Characteristics | $L=500 \mathrm{~mm}$, inner $\varnothing=19 \mathrm{~mm}$ |  | Set of 30 adhesive trunking $30 \times 30 \mathrm{~mm}, \mathrm{~L}=2000 \mathrm{~mm}$ |

Grommets for wiring through front


Cable-tie supports


[^4]Fixed lighting

## Fixed lighting



| Catalogue number | $\mathbf{0 8 9 6 4}$ |
| :--- | :--- |
| Presentation | This system is generally used to illuminate the front of |
|  | a switchboard. |
| $\square$ | The kit is made up of: |
| $\square$ | a base |
| $\square$ a neon tube |  |
| $\square$ a front plate with cut-out (1 module) |  |
| $\square$ a door contact. |  |

Switchboard portable lamp

## Baladeuse de tableau



Functional system
Accessories

## Management of the internal temperature

## Ventilation

In most cases and notably for IP30 switchboards, the heat dissipation by convection takes place naturally and does not require fans.
However, when the switchboard is installed in temperate environments or when the degree of protection is high (IP54), ventilation accessories are indispensable.

For more in-depth information on selecting air-conditioning accessories and the thermal management of switchboards > page 199 to page 206.


## Management of the internal temperature

## Heating elements

The resistors prevent condensation, corrosion and superficial leakage currents. They maintain a positive temperature in the enclosures when external temperatures drop very low.
Install heaters according to the desired power level at the bottom of the enclosure, respect a safety area of a least 10 cm around the device.
Vertical installation is recommended to ensure optimum convection.
The resistance heaters are equipped with a PTC - type sensor (positive temperature coefficient). Thanks to these heaters, the surface temperature stabilises at $75^{\circ} \mathrm{C}$ when the ambient is at $-5^{\circ} \mathrm{C}$.

| Heating resistor |  |  |
| :---: | :---: | :---: |
|  |  |  |
| Catalogue numbers | NSYCR55WU2 | NSYCR250W230VV |
| Power rating |  | 250 W |
| Characteristics | - Vertical mounting. <br> - Aluminium case with fins. <br> - Temperature: <br> - turns off at $60^{\circ} \mathrm{C}$, <br> - turns on at $25-30^{\circ} \mathrm{C}$ <br> (temperature of the resistor itself). <br> - Equipped with a symetrical rail for rapid mounting (clips on). <br> ■ Input voltage: 110-250 V. | - Vertical mounting. <br> - Aluminium case with fins. <br> - Temperature: <br> - turns off at $60^{\circ} \mathrm{C}$, <br> - turns on at $25-30^{\circ} \mathrm{C}$ <br> (temperature of the resistor itself). <br> - Equipped with a symetrical rail for rapid mounting (clips on). <br> - Input voltage: 230 V . |

## Regulating

Used to control the temperature inside electrical switchboards in conjunction with heating resistors and fans.
This thermostat can control the activation of a fan and a heater and regulate their temperature independently.
Double adjustable thermostat
Double temperature control with a resistance heater and a fan with separate operation
■ Red button: with normally closed contact (NC) for controlling the resistance heaters.
■ Blue button: with normally open contact (NO) for controlling the fans, signalling systems or alarms.

| Thermostat |  |
| :---: | :---: |
|  |  |
| Catalogue number | NSYCCOTHD |
| Characteristics | Setting range: $0^{\circ} \mathrm{C}$ to $+60^{\circ} \mathrm{C}$. Power rating: 30 W <br> Input voltage: 120 V AC: $15 \mathrm{~A}-230 \mathrm{VAC}: 10 \mathrm{~A}$ <br> Fixing: clips onto a modular rail. |
|  | Thermal management of switchboards >page 199 |

## Linergy distribution and connection systems

Distribution and connection
Panorama of the solution 82

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## Linergy

Distribution and connection

## Panorama of the solution

Linergy and Prisma G: an optimised and high-performance type-tested offer (IEC 61439-1 \& 2 standard)

## > For incoming devices

Linergy DX 160 A and Linergy DP 250 A distribution block


- Reliable spring-terminal connections for outgoing circuits, requiring no maintenance
- Horizontal or vertiical installation in minimum space

Linergy BS 160 to 630 A distribution block


- Traditional, highly polyvalent solution
- Many installation possibilities
$>$ For rows of modular devices


## Linergy DX 125 at 160 A distribution block



- Reliable spring-terminal connections requiring no maintenance
- Fast installation
- Easy upgrades through replacement or addition of devices
- Easy balancing of phases

Linergy FH 100 to 125 A comb busbars


- Fast and direct connections, adaptable to all needs
- Easy, economical connections


## Customised organisation of your switchboard

> Busbars up to 630 A for all switchboard architectures

Linergy BW busbars:
compact and insulated for fast upgrades.


Prefabricated connections, optimised and fully insulated.

Linergy BS busbars: for traditional distribution.


Rear Linergy BS busbars.


Lateral busbars. The bars are staggered for easy access to connection points.

## > Row distribution blocks for modular devices

Linergy FH comb
busbars:
a simple, cost-effective
solution.


Linergy FH comb busbars. Linergy FH comb busbars are fully insulated. Device can de connected in a single operation.

Linergy FM device feeder:
a fast, flexible and reliable solution.


Linergy FM device feeder 80 A.

The Linergy FM device feeder snaps easily onto the back of the rails.
All types of modular devices can be mixed in the same row and phase balancing is simple. It's easy to change or add devices.
> Centralised distribution blocks for switchboard incomers


Linergy DX 160 A 4P: practical and aesthetic. Modular monobloc distribution block for fast connections


Linergy DX 160 A 1P: "à la carte" distribution block.
Modular combinable components for fast connections.


Linergy DS 160 A: a traditional solution.
Installation on modular rail on mounting-plate.
Screw-terminal connections.


Linergy DP 250 A: modular and compact.
Installed directly downstream of Compact circuit breakers and switches without taking up any extra vertical modules. Fast connections in spring-loaded terminals.

Linergy distribution systems
Power busbars

Linergy BW
Insulated busbars up to 630 A


## Description

■ Compact busbar, IPxxB, ready for installation (supplied complete with supports and end caps)
■ Shaped busbar, threaded M6 with 25-mm pitch, can be cut with 200-mm pitch
( 150 mm for the 125 A )
■ Busbar installed on insulating supports, screwed onto the rear uprights
■ Wide selection of tested pre-wired connectors
■ Clip-on covers to protect against direct contact (IPxxB). Can easily be cut to allow
connections to pass through to the switchgear

- Ends protected by end caps

| Linergy BW busbar |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 125 A |  | 160 A |  | 250 A |  | 400 A |  | 630 A |  |
| Rated peak withstand current | (lpk) | $20 \mathrm{kÂ}$ |  | 30 kA |  | $30 \mathrm{kÂ}$ |  | 52.5 kA |  | 52.5 kA |  |
| Rated insulation voltage | (Ui) | 500 V AC |  | 750 V AC |  | 750 V AC |  | 750 V AC |  | 1000 V AC |  |
| Rated impulse withstand voltage | (Uimp) | 8 kV |  | 8 kV |  | 8 kV |  | 8 kV |  | 8 kV |  |
| Rated short-time current | (Icw) | $8.5 \mathrm{kArms} / 1 \mathrm{~s}$ |  | $10 \mathrm{kArms} / 1 \mathrm{~s}$ |  | $13 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  | $20 \mathrm{kArms} / 1 \mathrm{~s}$ |  | $25 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  |
| Thermal stress | ( $\mathrm{A}^{2} . \mathrm{s}$ ) | $7.225 \times 10^{7}$ |  | $1.000 \times 10^{8}$ |  | $1.690 \times 10^{8}$ |  | $4.000 \times 10^{8}$ |  | $6.250 \times 10^{8}$ |  |
| Length (mm) |  | 450 | 750 | 1000 | 1400 | 1000 | 1400 | 1000 | 1400 | 1000 | 1400 |
| Catalogue numbers | 3P | 04103 | 04107 | 04111 | 04116 | 04112 | 04117 | 04113 | 04118 | 04114 | 04119 |
|  | 4P | 04104 | 04108 | 04121 | 04126 | 04122 | 04127 | 04123 | 04128 | 04124 | 04129 |

Accessories

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | IPxxB tap-off terminals |  | 200 A connections | IPxxB insulating covers | Class 8.8 fixing accessories |
|  | 12 tap-off blocks For 1 cable of $6 \mathrm{~mm}^{2}$ (32 A max.) and 1 cable of $10 \mathrm{~mm}^{2}$ (40 A max.) Ui: 750 V In: 55 A max. ${ }^{(1)}$ | 12 tap-off blocks <br> For 1 cable of 1 to $16 \mathrm{~mm}^{2}$ <br> Ui: 750 V <br> In: 55 A max. with only <br> 1 cable |  | Covers which can be clipped on and cut to size are used to isolate the connectors of a connection with cables of cross-section 10 to $25 \mathrm{~mm}^{2}$ | M6 x $12+20 \mathrm{M} 6$ contact washers |
| Used for connecting | - All switchgear equipped with enclosed terminals <br> - Linergy FM 160/200 A | ```■ All switchgear equipped with enclosed terminals ■ Linergy FM 63/80/160/200 A``` | $\begin{aligned} & \text { Linergy FM } \\ & 200 \mathrm{~A} \end{aligned}$ |  |  |
| Set of | 12 | 12 | 4 | 8 | 20 |
| Catalogue numbers | 04151 | 04152 | 04021 | 04150 | 04158 |

(1) Imax $=55$ A for all connected cables.

## Spare parts

Rated operational current at $40^{\circ} \mathrm{C}$

## Composition

## Catalogue numbers

(le)
Linergy BW busbar supports

| 125A | 160 A | 250 A | 400 A | 630 A |
| :---: | :---: | :---: | :---: | :---: |
| 2 busbar supports + 2 end caps + packet of fixing accessories |  |  |  |  |
| - | 01210 | 01210 | 01210 | 01211 |
|  |  |  |  |  |
| IPxxB clip-on covers |  |  |  |  |
| 200 |  |  |  |  |
| 2 |  |  |  |  |
| - | 01201 | 01201 | 01201 | 01201 |

Linergy distribution systems
Power busbars

Linergy BW
Insulated busbars up to 630 A

| Mounting | Vertical |  |  |  |  | Horizontal |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Universal power supply units with connections |  |  |
|  | Power supply units without connections |  | Universal power supply units |  |  |  |  |  |
| Switchgear | Fixed <br> - Enclosed <br> horizontal <br> NSX100/250 with rotary handle or remote control - Vertical Fupact INF100/160, Fupact ISFT100/250 ISFT100/250 | Fixed <br> - Enclosed <br> NSX400/630 with or <br> without Vigi <br> - Enclosed <br> INS-INV320/630 | Fixed E Enclosed with toggle switch - Enclose INS-INV25 | Fixed In Inct with or without Vigi - In duct INS-INV250 | Fixed <br> - In duct NSX400/630 <br> with or without <br> Vigi <br> - In duct <br> INS-INV320/630 | Fixed <br> - NSX100/250 <br> horizontal with or <br> without Vigi <br> - INS-INV250 <br> horizontal | Fixed <br> - NSX400 <br> ■ INS-INV320/400 <br> horizontal | Fixed - NSX630 <br> horizonta <br> ■ INS- INV500 <br> INV500/630 horizontal <br> horizontal |
| Catalogue numbers | 04061 | 04074 | 04062 | 04064 | 04073 | 04060 | 04070 | 04071 |


| Pre-wired connectors |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
|  | Connections |  | IPxxB $3 / 4 \mathrm{P}$ monobloc connection | IPxxB 3/4P monobloc connection | Connections 4P |
|  | $35 \mathrm{~mm}^{2}$ ferrule $+45^{\circ}$ angled connector | $\begin{aligned} & 45 \mathrm{~mm}^{2} \text { ferrule } \\ & +45^{\circ} \text { angled } \\ & \text { connector } \end{aligned}$ | Quick connection on the busbar equipped with a male ferrule for enclosed terminals. Neutral identified by the colour blue |  | Supplied with mounting hardware |
| Rated operational (le) current at $40^{\circ} \mathrm{C}$ | 125 A | 160 A | 160A | 160 A | 200 A |
| Length | 230 mm | 250 mm | 440 mm | 165 mm | 230 to 330 mm |
| Used for connecting | - NG125, INS terminals cat. no. 28947 or 28948 | - INS160, NG125, NG160 |  |  | - Linergy FM 200A |
| Set of | 4 | 4 | 1 | 1 | 4 |
| Catalogue numbers | 04145 | 04146 | 04148 | 04147 | 04021 + 04150 insulated covers |

Rear flat busbars up to 400 A


## IEC 61439-1 \& 2

## Description

The busbar can be 3-pole or 4-pole with ratings between 160 A and 400 A . 2 lengths are available: 1000 and 1400 mm , which can be cut as required. The number of supports depends on the installation maximum rated current. The supports allow installation of a 5th busbar with 15 or $20 \times 5 \mathrm{~mm}$ cross-section to create the earth collector.

## Copper busbars 160 à 400 A

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 160 A |  | 250 A |  | 400 A |  |
| Rated peak withstand current | (lpk) | 30 kA |  | $40 \mathrm{kÂ}$ |  | $55 \mathrm{kÂ}$ |  |
| Rated insulation voltage | (Ui) | 1000 VAC |  | 1000 V AC |  | 1000 V AC |  |
| Rated short-time current | (Icw) | $10 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  | $13 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  | $25 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  |
| Thermal stress | ( $\mathrm{A}^{2} . \mathrm{s}$ ) | $1.000 \times 10^{8}$ |  | $1.690 \times 10^{8}$ |  | $6.250 \times 10^{8}$ |  |
| Conductor cross-section |  | $15 \times 5 \mathrm{~mm}$ |  | $20 \times 5 \mathrm{~mm}$ |  | $32 \times 5 \mathrm{~mm}$ |  |
| Installation |  | Threaded M6 holes every 25 mm all the way up Connection by: 16 to $50 \mathrm{~mm}^{2}$ flexible cables with crimped lugs |  |  |  |  |  |
| Set of |  | 4 |  |  |  |  |  |
| Length (mm) |  | 1000 | 1400 | 1000 | 1400 | 1000 | 1400 |
| Catalogue numbers |  | 04161 | 04171 | 04162 | 04172 | 04163 | 04173 |

## Insulating busbar support

|  |  | Ho |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Distance between supports depending on Icw ${ }^{(1)}$ | $\leqslant 10 \mathrm{kArms} / 1 \mathrm{~s}$ | 450 mm | 450 mm | 450 mm |
|  | $\leqslant 13 \mathrm{kArms} / 1 \mathrm{~s}$ | - | 450 mm | 450 mm |
|  | $\leqslant 15 \mathrm{kArms} / 1 \mathrm{~s}$ | - | 450 mm | 450 mm |
|  | $\leqslant 20 \mathrm{kArms} / 1 \mathrm{~s}$ | - | - | 300 mm |
|  | $\leqslant 25 \mathrm{kArms} / 1 \mathrm{~s}$ | - | - | 225 mm |
| Installation |  | On the rear uprights Screwed onto a solid or pre-slotted plate (fixing centres $450 \times 200 \mathrm{~mm}$ ) |  |  |
| Catalogue numbers |  | 04191 | 04191 | 04191 |

## IPxxB insulating protective shield

| Length | 470 mm |
| :--- | :--- |
| Height | 100 mm |
| Composition | Supplied with fixings |
| Catalogue numbers | 04198 |
| (1) Linergy FM 200 A distribution blocks with connections ref. 04029 can act as intermediate supports (max. distance apart 200 mm) in addition to the support <br> ref. $\mathbf{0 4 1 9 1}$ at the top and bottom. |  |

Linergy distribution systems
Power busbars

## Linergy BS

Multi-stage busbars up to 630 A


## IEC 61439-1 \& 2

## Description

Multi-stage busbars are installed in a sheath $\mathrm{L}=300 \mathrm{~mm}$.
We strongly recommend dividing the current between 2 cubicles or enclosures joined on either side.
All the connection points are easily accessible from the front.
The busbar orientation makes them easier to tighten and facilitates running the cables between them.
The current can be 3-pole or 4-pole with ratings between 160 A and 630 A .
2 lengths are available: 1000 and 1400 mm , which can be cut as required.
The number of supports depends on the installation maximum rated current.

160 to 630 A copper busbars

|  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 160 A |  | 250 A |  | 400 A |  | 630 A |  |
| Rated peak withstand current | (lpk) | $30 \mathrm{kÂ}$ |  | $40 \mathrm{kÂ}$ |  | $55 \mathrm{kÂ}$ |  | $55 \mathrm{kÂ}$ |  |
| Rated insulation voltage | (Ui) | 750 V AC |  | 750 V AC |  | 750 VAC |  | 750 VAC |  |
| Rated short-time current | (Icw) | $10 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  | $13 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  | $20 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  | $25 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |  |
| Thermal stress | ( $\mathrm{A}^{2} . \mathrm{s}$ ) | $1.000 \times 10^{8}$ |  | $1.690 \times 10^{8}$ |  | $4.000 \times 10^{8}$ |  | $6.250 \times 10^{8}$ |  |
| Supply at incoming terminals |  | Connection by: 16 to $50 \mathrm{~mm}^{2}$ flexible cables with crimped lugs |  |  |  |  |  |  |  |
| Conductor cross-section |  | $15 \times 5 \mathrm{~mm}$ |  | $20 \times 5 \mathrm{~mm}$ |  | $32 \times 5 \mathrm{~mm}$ |  | $32 \times 8 \mathrm{~mm}$ |  |
| Installation |  | Flat copper busbar with threaded M6 holes every $25 \mathrm{~mm}^{2}$ all the way up |  |  |  |  |  |  |  |
| Set of |  | 4 |  |  |  |  |  |  |  |
| Length (mm) |  | 1000 | 1400 | 1000 | 1400 | 1000 | 1400 | 1000 | 1400 |
| Catalogue numbers |  | 04161 | 04171 | 04162 | 04172 | 04163 | 04173 | must be made | 04174 |

Insulating busbar support


| Distance between supports depending on Icw ${ }^{(1)}$ | $\leqslant 10 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ | 450 mm | 450 mm | 450 mm | 450 mm |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\leqslant 13 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ | - | 450 mm | 450 mm | 450 mm |
|  | $\leqslant 15 \mathrm{kArms} / 1 \mathrm{~s}$ | - |  | 450 mm | 450 mm |
|  | $\leqslant 20 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ | - | - | 300 mm | 300 mm |
|  | $\leqslant 25 \mathrm{kA} \mathrm{rms} / 0.6 \mathrm{~s}$ | - | - | 300 mm | - |
|  | $\leqslant 25 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ | - | - | - | 300 mm |
| Installation |  | Installation on functional uprights of duct (Prisma G). Screwed onto a solid or pre-slotted plate ( $450 \times 200 \mathrm{~mm}$ fixing centres) |  |  |  |
| Catalogue numbers |  | 04192 | 04192 | 04192 | 04192 |

IPxxB insulating protective shield


## Length <br> Height

Composition
Catalogue numbers

250 mm
1500 mm
Fixing accessories supplied with support ref. 04192
04197

Linergy distribution systems
Power busbars
Linergy BS
Multi-stage distribution blocks up to 630 A

## IEC 61439-1 \& 2

## Description

The multi-stage distribution block can be installed horizontally in the device zone or vertically in the 300 mm wide duct of enclosures and cubicles.
The distribution block is made up of:
■ two staggered supports made of an insulating material

- four slanted copper bars with holes every 25 mm .


## Multi-stage distribution blocks

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 160 A | 250 A | 400 A | 630 A |
| Rated peak withstand current | (lpk) | 30 kA | 30 kA | $40 \mathrm{kÂ}$ | $40 \mathrm{kÂ}$ |
| Rated insulation voltage | (Ui) | 750 V AC |  |  |  |
| Rated operational voltage | (Ue) | 440 V AC |  |  |  |
| Rated impulse withstand voltage | (Uimp) | 8 kV |  |  |  |
| Rated short-time current | (Icw) | $10 \mathrm{kArms} / 1 \mathrm{~s}$ | $13 \mathrm{kArms} / 1 \mathrm{~s}$ | $20 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ | $25 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |
| Thermal stress | ( $\mathrm{A}^{2} . \mathrm{s}$ ) | $1.000 \times 10^{8}$ | $1.690 \times 10^{8}$ | $4.000 \times 10^{8}$ | $6.250 \times 10^{8}$ |
| Total connection capacity |  | 4 incomers per phase: $\varnothing 12.2 \mathrm{~mm}$ clearance holes 13 outgoers per phase 16 to $50 \mathrm{~mm}^{2}$ : M6 tapped holes |  |  |  |
| Busbar cross-section |  | $15 \times 5 \mathrm{~mm}$ | $20 \times 5 \mathrm{~mm}$ | $32 \times 5 \mathrm{~mm}$ | $32 \times 8 \mathrm{~mm}$ |
| Dimensions (mm) |  |  |  |  |  |
| Installation |  | Screwed in horizontal position on functional uprights in enclosures and cubicles (Prisma G) Screwed in vertical position on sheathed uprights (Prisma G) Screwed onto a solid or pre-slotted plate (fixing centres $450 \times 200 \mathrm{~mm}$ ) |  |  |  |
| Composition |  | 2 multi-stage supports made of an insulating material 4 slanted copper busbars, with holes every 25 mm 1 pack of $36 \mathrm{M} 6 \times 16$ screws + contact washers 1 IPxxB front insulating shield |  |  |  |
| Catalogue numbers |  | 04052 | 04053 | 04054 | 04055 |

Linergy distribution systems
Power busbars

## Linergy BS

Common accessories up to 630 A

| Incomer accessories |  |  |  |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
|  | Connectors for copper or aluminium cables |  |  |
| Rated operational current at (le) $40^{\circ} \mathrm{C}$ | 160 A | 250 A | 400 A |
| Supply at incoming terminals | 16 to $70 \mathrm{~mm}^{2}$ cables | 16 to $185 \mathrm{~mm}^{2}$ cables | 70 to $300 \mathrm{~mm}^{2}$ cables |
| Composition | Supplied with fixings at busbar end |  |  |
| Set of | 4 |  |  |
| Catalogue numbers | 07051 | 07052 | 07053 |



Connections to the distribution block


Linergy distribution systems
Distribution blocks

## Linergy DX <br> Quick distribution blocks

## IEC 60947-7-1, IEC 61439-2

## Description

■ Downstream circuits are connected from the front, to spring terminals.
■ Contact pressure automatically adapts to the size of the conductor.

- Contacts are insensitive to vibrations and thermal variations.

■ Only one cable (flexible or rigid) can be inserted per terminal.

| Quick distribution blocks |  |  |
| :---: | :---: | :---: |
| Number of poles | 4P, upstream incoming | 4P, downstream incoming |
|  |  |  |
| Rated operational current at $40^{\circ} \mathrm{C}$ | 63A | 63 A |
| Rated conditional short-circuit breaker (Isc) of an assembly | The reinforced breaking capacity due to cascading in circuit breaker combinations is maintained. The worst-case situations have been tested. | The reinforced breaking capacity due to cascading in circuit breaker combinations is maintained. The worst-case situations have been tested. |
| Rated peak withstand current (lpk) | - | - |
| Rated insulation voltage (Ui) | 500 V AC | 500 V AC |
| Rated operational voltage (Ue) | 440 V AC | 440 V AC |
| Rated impulse withstand voltage (Uimp) | 6 kV | 6 kV |
| Rated short-time current Icw (Icw) |  |  |
| Thermal stress ( ${ }^{2}$. s ) | - | - |
| Rated operational frequency | $50 / 60 \mathrm{~Hz}$ | $50 / 60 \mathrm{~Hz}$ |
| Degree of protection | IPxxB | IPxxB |
| Incoming terminals | 1 tunnel terminal $25^{2} / \mathrm{Ph}$ | 1 tunnel terminal $25^{2 / P h}$ |
| Total connection capacity, outgoing terminals | 24 connections: <br> $4 \times 6^{2 /}$ phase <br> $12 \times 6^{2} /$ neutral | 24 connections: <br> $4 \times 6^{2}$ /phase <br> $12 \times 6^{2} /$ neutral |
| Dimensions ( $\mathrm{H} \times \mathrm{W} \times \mathrm{D}$ ) | $\begin{aligned} & 96.5 \times 72 \times 62 \\ & 8 \times 9 \mathrm{~mm} \text { pitch } \end{aligned}$ | $\begin{aligned} & 96.5 \times 72 \times 62 \\ & 8 \times 9 \mathrm{~mm} \text { pitch } \end{aligned}$ |
| Installation | Clipped onto a DIN rail | Clipped onto a DIN rail |
| Other |  |  |
| Standard for installation inside Prisma | IEC 61439-2 | IEC 61439-2 |
| Glow-wire 60695-2-11 | $960{ }^{\circ} \mathrm{C}$ | $960^{\circ} \mathrm{C}$ |
| Degree of pollution | 3 | 3 |
| Catalogue numbers | 04040 | 04041 |

## Accessories

Catalogue numbers

Linergy distribution systems
Distribution blocks

## Linergy DX

## Quick distribution blocks

## Advantages

■ A reliable electrical connection, no maintenance required (tightness guaranteed over time).
■ Quick connection.

- Easy phase balancing.

■ Ease of rewiring if the switchboard is expanded or modified.


## Linergy distribution systems

Distribution blocks
Linergy DP
Quick distribution blocks


## IEC 60947-7-1, IEC 61439-1 and 2

## Description

■ The Linergy DP quick distribution block is designed for installation directly downstream of Compact NSX and INS up to 250 A. It can also be clipped onto a modular rail.

## Avantages

■ It is quick to mount in the horizontal position. Electrical connections are made directly to the device terminals.
■ It is the same width as the devices and does not take up any additional space in the switchboard.
■ The connection terminals are slanted to facilitate cable entry and avoid exceeding the bending radius of the flexible and rigid cables.

| Quick distribution blocks for Compact devices |  |  | 3P | 4P |
| :---: | :---: | :---: | :---: | :---: |
| Number of poles | 3P | 4P |  |  |
|  |  |  |  |  |
| Rated operational current (le) | 250 A | 250 A | 250 A | 250 A |
| Rated peak withstand current (lpk) | 30 kA | 30 kA |  |  |
| Rated short-time current (Icw) | $8.5 \mathrm{kArms} / 1 \mathrm{~s}$ | $8.5 \mathrm{kArms} / 1 \mathrm{~s}$ |  |  |
| Thermal stress (A2.s) | $7.225 \times 10^{7}$ | $7.225 \times 10^{7}$ |  |  |
| Total connection capacity, outgoing terminals | 27 connections: <br> $6 \times 10^{2} /$ phase <br> $3 \times 16^{2} /$ phase | 36 connections: $6 \times 10^{2} /$ phase $3 \times 16^{2} /$ phase | 2 connections: $2 \times 35^{2} /$ pole | 2 connections: $2 \times 35^{2} /$ pole |
| Incomer terminals | 1 cable lug $120 \mathrm{~mm}^{2}$ per pole |  |  |  |
| Dimensions (HxW $\times$ D) | $105 \times 138 \times 63$ | $140 \times 138 \times 64$ |  |  |
| Installation | On mounting plate or DIN rail |  | On mounting plate |  |
| Product certifications | ASEFA - KEMA |  |  |  |
| Standard for installation inside Prisma | IEC 61439-1-2 |  |  |  |
| Glow-wire 60695-2-11 | $960{ }^{\circ} \mathrm{C}$ |  |  |  |
| Catalogue numbers | 04033 | 04034 | 04155 | 04156 |

## Additional block

|  |  |  |
| :---: | :---: | :---: |
| Description | $\begin{aligned} & 2 \times 35^{2} \\ & 3 P \text { for Linergy DP } \\ & 250 \mathrm{~A} \end{aligned}$ | $\begin{aligned} & 2 \times 35^{2} \\ & 4 \mathrm{P} \text { for Linergy DP } \\ & 250 \mathrm{~A} \end{aligned}$ |
| Catalogue numbers | 04155 | 04156 |



## Linergy distribution systems <br> Distribution blocks <br> Linergy DP <br> Quick distribution blocks

Technical data
Common characteristics

| Rated conditional short-circuit <br> current of an assembly | (Isc) | The reinforced breaking capacity due to cascading <br> in circuit-breaker combinations is maintained. <br> The worst-case situations have been tested. |
| :--- | :--- | :--- |
| Rated insulation voltage | (Ui) | 750 V AC |
| Rated operational voltage | (Ue) | 690 VAC |
| Rated impulse withstand voltage | (Uimp) | 8 kV |
| Network frequency |  | $50 / 60 \mathrm{~Hz}$ |
| Degree of protection | IPxxB |  |
| Degree of pollution | 3 |  |
| Overvoltage category | III |  |
| Additional technical characteristics |  |  |
| Reference temperature | $40^{\circ} \mathrm{C}$ |  |
| Operating temperature | $-25^{\circ} \mathrm{C}$ to $55^{\circ} \mathrm{C}$ |  |

Installation


Linergy distribution systems
Distribution blocks


## IEC/EN 60947-7-1, IEC/EN 61439-1 \& 2

## Description

■ Single-pole or four-pole distribution block that can be installed on a standard DIN rail or on a mounting plate.

- Compatible with Prisma G and P, Pragma, Mini Pragma and Resbo series switchboards.
■ Incomers and feeders are connected to screw terminals that accept rigid or flexible cables with ferrule.
■ Optional: additional neutral terminal strip for four-pole distribution block.


## Avantages

■ Simplified power supply for main incomers.
■ Easy phase balancing.
■ Easy, effortless cabling due to excellent accessibility.

- Visible cabling.
- Insulation between phases.
- The single-pole distribution blocks are adjacent and bridgeable via the second incoming hole for parallel connection.

| Screw distribution blocks |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Number of poles | 1P |  |  | 4P |
|  |  |  |  |  |
| Rating | 125 A | 160 A | 250 A | 100 A |
| Number of connections | 10 | 13 | 14 | $4 \times 7$ |
| Terminal capacity |  |  |  |  |
| Diameter | $2 \times \varnothing 9.5 \mathrm{~mm}$ | $2 \times \varnothing 12 \mathrm{~mm}$ | $1 \times \varnothing 15.3 \mathrm{~mm}$ | $2 \times \varnothing 7.5 \mathrm{~mm}$ |
|  | $2 \times \varnothing 7.5 \mathrm{~mm}$ | $3 \times \varnothing 7.5 \mathrm{~mm}$ | $1 \times \varnothing 10 \mathrm{~mm}$ | $5 \times \varnothing 5.5 \mathrm{~mm}$ |
|  | $6 \times \varnothing 5.8 \mathrm{~mm}$ | $8 \times \varnothing 5.8 \mathrm{~mm}$ | $4 \times \varnothing 6 \mathrm{~mm}$ | - |
|  | - | - | $8 \times \varnothing 7.5 \mathrm{~mm}$ | - |
| Rated peak <br> withstand <br> current $(\mathrm{lpk})$ $\mathrm{Ipk} / 60 \mathrm{~ms}$ <br>  $\mathrm{Ipk} / 6 \mathrm{~ms}$ | 25 kÂ | 36 kA | 60 kÂ | 14 kA |
|  | - | - | - | $24 \mathrm{kÂ}$ |
| Rated short-time withstand current (Icw) (IEC/EN 60947-7-1) | $4.2 \mathrm{kArms} / 1 \mathrm{~s}$ | $8.4 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ | 14.4 kA rms/1 s | $3 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}$ |
| Width (number of 9 mm pitches) | 3 | 4 | 5 | 8 |
| Dimension (HxW x D) | $85 \times 27 \times 50.5$ | $85 \times 36 \times 50.5$ | $85 \times 45 \times 50.5$ | $100 \times 71 \times 50.5$ |
| Weight (g) | 125 | 163 | 239 | 210 |
| Neutral terminal strip (optional) | - | - | - | LGYN1007 |
| Catalogue numbers | LGY112510 | LGY116013 | LGY125014 | LGY410028 |

Linergy distribution systems
Distribution blocks

## Linergy DS

## Technical data



On LGY412560 and LGY416048 references. Input cabling facilitated by side terminals.

| Common characteristics |
| :--- |
| In compliance with IEC/EN 60947-7-1 and IEC/EN 61439-1 \& 2 |
| Rated insulation voltage (Ui) |
| Rated operational voltage (Ue) |
| Rated impulse withstand voltage (Uimp) |
| Rated conditional short-circuit current of an <br> assembly |
| $230 \mathrm{VAC}(\mathrm{Ph} / \mathrm{N})$ <br> Network frequency <br> Pollution degreeUp to the breaking capacity of <br> Schneider Electric feeder circuit breakers, <br> even in cascading configuration |
| Overvoltage category |
| Additional technical characteristics |
| Reference temperature |
| Operating temperature |
| Dielectric withstand (IEC/EN 60947-1) |



Linergy distribution systems
Device feeders

Linergy FM
Quick device feeders


## Description

■ Distribution over full rows of modular devices.

- The distribution block is generally supplied by busbars in enclosures and cubicles.

■ Easy phase balancing.

- Mix of devices and functions in the same row.
- Installation $\geqslant 160 \mathrm{~A}$ : clipped onto the back of a modular rail or screwed onto a solid or pre-slotted plate.

Distribution blocks

| Number of poles |  |  | 4P | 4P |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  <br> $\square$ $\square$ |
|  |  |  | 63 A | 80 A |
| Rated peak withstand current (lpk) |  |  | $15 \mathrm{kÂ}$ | 16 kA |
| Rated conditional short-circuit current (Isc) of an assembly |  |  | The cascading reinforced breaking capacity when combining circuit breakers is maintained. The worst-case scenarios have been tested. The characteristics are exactly right for the connected devices. Circuit breakers and switches still have their temperature derating curves, and their whole performance is maintained. |  |
| Insulation voltage |  | (Ui) | 500 V AC | 500 V AC |
| Rated voltage |  | (Ue) | 440 V AC | 440 V AC |
| Rated impulse withstand voltage |  | (Uimp) | 6 kV | 6 kV |
| Maximum current |  | (Imax) | - | - |
| Thermal stress |  | ( $\mathrm{A}^{2} . \mathrm{s}$ ) | $2.400 \times 10^{6}$ | $2.400 \times 10^{6}$ |
| Rated operational frequency |  |  | $50 / 60 \mathrm{~Hz}$ |  |
| Degree of protection |  |  | IPxxB | IP20 |
| Width | 9 mm modules |  | 24 | 48 |
|  | 18 mm modules |  | 12 | 24 |
| Supply at incoming terminals |  |  | Enclosed terminals for cables up to $25 \mathrm{~mm}^{2}$ | Enclosed terminals for flexible cables 6 to $25 \mathrm{~mm}^{2}$ or rigid cables 10 to $35 \mathrm{~mm}^{2}$ |
| Downstream connection capacity, cable to be used without ferrules | Max. 4 mm ${ }^{2}$ | Phase | 2 | - |
|  |  | Neutral | 4 | - |
|  | Max. 6 mm ${ }^{2}$ | Phase | 2 | - |
|  |  | Neutral | 4 | - |
|  | Max. $10 \mathrm{~mm}^{2}$ | Phase | - | 18 |
|  |  | Neutral | - | 18 |
| Accessories included | Pre-stripped copper connections |  | $10 \times 4 \mathrm{~mm}^{2}+6 \times 6 \mathrm{~mm}^{2}(\mathrm{~W}=100 \mathrm{~mm})$ | 12 blue + 12 black |
|  | Protection cover |  | - | - |
|  | Fixings |  | - | - |
| Catalogue numbers |  |  | 04008 | 04000 |

Installation


Clipped onto the back of a modular rail, or screw fixing.


Clipped onto the back of a modular rail, or screw fixing.


Can be mounted in Pragma Evolution enclosures and in Prisma Pack 160.

Linergy FM
Quick device feeders


| 4P | 2P | 3P | 4P | 4P |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
| 160 A | 200 A | 200 A | 200 A | 200 A |
| 27 kA | 25 kA | 25 kA | 30 kA | 20 kA |

The cascading reinforced breaking capacity when combining circuit breakers is maintained. The worst-case scenarios have been tested.

| 750 VAC | 750 VAC | 750 VAC |  | 750 VAC |
| :---: | :---: | :---: | :---: | :---: |
| 690 VAC | 690 VAC | 690 VAC |  | 690 V AC |
| 8 kV | 8 kV | 8 kV |  | 8 kV |
| 50 A for feeder for $10 \mathrm{~mm}^{2}$ cable/63 A for feeder for $210 \mathrm{~mm}^{2}$ cables |  |  |  |  |
| $6.700 \times 10^{6}$ | $6.700 \times 10^{6}$ | $6.700 \times$ |  | $6.700 \times 10^{6}$ |
| $50 / 60 \mathrm{~Hz}$ |  |  |  |  |
| IPxxB |  |  |  |  |
| 24 | 48 |  |  | 72 |
| 12 | 24 |  |  | 36 |
| Direct onto the row by cable $50 \mathrm{~mm}^{2}$ with crimped lug, or flexible bar $20 \times 3$ from busbar with prefabricated connection |  |  |  | - |
| - | - |  |  | - |
| - | - |  |  | - |
| - | - |  |  | - |
| - | - |  |  | - |
| 6 | 12 |  |  | 18 |
| 6 | 18 |  |  | 27 |
| $20 \times 4 \mathrm{~mm}^{2}+6 \times 6 \mathrm{~mm}^{2}(\mathrm{~W}=100 \mathrm{~mm})$ |  |  |  | - |
| For rows (1PxxB) | - |  |  | - |
| For rows | - |  |  | - |
| 04018 | 04012 | 04013 | \|04014 | 04026 |

## Connections to the device feeders



Spare parts


Linergy distribution systems
Device feeders

## Linergy FH <br> Horizontal comb busbar for 27 mm pitch for NG125

## IEC 60664-1

## Description

Comb busbars make it easier to install C120 and NG125 circuit breakers.
■ Supplied with 2 lateral end-caps, IP 2.
■ Outgoing feeders can be marked.

- Cutting markings on the copper bars and the insulating material.

| NG125 | 27 mm poles, cuttable |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Number of poles | 1P | 2P | 3P | 4P |
|  |  |  |  |  |
|  | Each com busbar reference includes: <br> $1 \times$ single or 2 pole comb busbar +8 tooth-caps +2 side plates $1 \times 3$ or 4 pole comb busbar +4 tooth-caps +2 side plates To insulate teeth that have been left free can be insulated by tooth-caps |  |  |  |
| Rated operational current at $40^{\circ} \mathrm{C}$ | 125 A (63 A max by outgoer ) |  |  |  |
| Rated conditional short-circuit (Isc) current of an assembly | Compatible with the breaking capacity of C120 and NG125 circuit breakers |  |  |  |
| Insulation voltage (Ui) | 620 V AC |  |  |  |
| Rated voltage (Ue) | 500 V AC |  |  |  |
| Fire resistance to IEC 695-2-1 | Self-extinguishing $960{ }^{\circ} \mathrm{C}, 30 \mathrm{~s}$ |  |  |  |
| Colour | RAL 7016 (anthracite grey) |  |  |  |
| Use |  |  |  |  |
|  | Power supply by connector recommended |  |  |  |
| Number of 27 mm modules | 16 | 16 | 15 | 16 |
| Set of | 1 |  |  |  |
| Catalogue numbers | 14811 | 14812 | 14813 | 14814 |

Installation


Comb busbars allow dismountability (1-2)


Linergy distribution systems
Device feeders

## Linergy FH <br> Horizontal comb busbar for 18 mm pitch for Acti 9



## IEC 60947-7-1, IEC 61439-2

## Description

Comb busbars make it easier to install Acti 9 circuit breaker.

- Can be sawn and cut in a single pass.

■ Supplied with two IP20 lateral end-caps except for 57 module references.

- The side plates are compulsory after cutting.
- The phases are identified by symbols on each side of the comb busbar for installation in all positions.
- Cutting marks on the insulating material
- The special comb busbars for circuit breakers with 9 mm auxiliaries have a 9 mm gap for inserting iOF and iSD.

| Acti 9 | 18 mm poles, cuttable |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of poles | 1P | 2P | 3P | 4P | 3 (N+P) | Aux $+1 P$ | Aux $+2 P$ | Aux +3 P | Aux +4P | 3 (Aux+1P) | 3 (Aux+N+1P) |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Rated operational  <br> current at $40^{\circ} \mathrm{C}$ (le) | 100 A |  |  |  |  |  |  |  |  |  |  |
| Rated conditional (Isc) short-circuit current of an assembly | Compatible avec le pouvoir de coupure des disjoncteurs Acti 9 |  |  |  |  |  |  |  |  |  |  |
| Insulation voltage (Ui) | 500 V AC |  |  |  |  |  |  |  |  |  |  |
| Rated voltage (Ue) | 415 V AC |  |  |  |  |  |  |  |  |  |  |
| Fire resistance to IEC 695-2-1 | Self-extinguishing $960{ }^{\circ} \mathrm{C}, 30 \mathrm{~s}$ |  |  |  |  |  |  |  |  |  |  |
| Colour | RAL 7016 (anthracite grey) |  |  |  |  |  |  |  |  |  |  |
| Use |  |  |  |  |  |  |  |  |  |  |  |
|  | Power supply by connector recommended |  |  |  |  |  |  |  |  |  |  |
| Type | L1... | L1L2... | L1L2L3... | NL1L2L3... | $\begin{array}{\|l\|} \hline \text { NL1NL2... } \\ \ldots \text { NL3 } \end{array}$ | AuxL1... | AuxL1L2... | AuxL1L2L3 | AuxNL1... ..L2L3 | AuxL1... <br> AuxL2 ..AuxL3 | AuxL1. AuxL2.. .AuxL3 |
| Set of | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Catalogue numbers 6 modules of 18 mm | A9XPH106 | - | - | - | - | - | - | - | - | - | - |
| 12 modules of 18 mm | A9XPH112 | A9XPH212 | A9XPH312 | A9XPH412 | A9XPH512* | - | - | - | - | - | - |
| 18 modules of 18 mm | - | - | - | - | A9XPH518* | - | - | - | - | - | - |
| 24 modules of 18 mm | A9XPH124 | A9XPH224 | A9XPH324 | A9XPH424 | A9XPH524* | - | - | - | - | - | - |
| 57 modules of 18 mm | A9XPH157 | A9XPH257 | A9XPH357 | A9XPH457 | A9XPH557* | A9XAH157 | A9XAH257 | A9XAH357 | A9XAH457 | A9XAH657 | A9XAH557* |

* This comb busbar is only compatible in top feeding for simple lug devices and bottom feeding on double lug devices.

Installation


| Accessories |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of poles | 1P | 2P | 3P | 4P | - | - | - |
|  |  |  |  |  |  |  |  |
|  | Side plates |  |  |  | Tooth covers | Connectors |  |
|  |  |  |  |  | Monoconnect | Double terminals |
|  | Lateral end-caps providing IP20 protection |  |  |  |  | To insulate teeth that have been left free | Comb busbar power supply. Horizontal incomer on each side. For 35 mm 2 cable. Tightening torque 4 N.m |  |
| Set of | 10 | 10 | 10 | 10 | 20 | 4 | 4 |
| Catalogue numbers | A9XPE110 | A9XPE210 | A9XPE310 | A9XPE410 | A9XPT920 | A9XPCM04 | A9XPCD04 |
|  |  |  |  |  |  |  | Schneider <br> Electric |

Linergy distribution systems
Device feeders

## Linergy FH <br> Horizontal comb busbar for 18 mm pitch for Acti 9

## IEC 60947-7-1, IEC 61439-2

## Description

Comb busbars make it easier to install Acti 9 circuit breakers.
The phases are identified by symbols on each side of the comb busbar. Dismountability of devices with Acti 9.

| Acti 9 | 18 mm poles, not cuttable |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Number of poles | 1P | 2P | \|3P | \| 4 P | 3 (N+P) |
|  |  |  |  |  |  |
| Rated operational current at $40^{\circ} \mathrm{C}$ (le) | 100 A |  |  |  |  |
| Rated conditional short-circuit (Isc) current of an assembly | Compatible with the breaking capacity of Acti 9 circuit breaker |  |  |  |  |
| Insulation voltage (Ui) | 500 VAC |  |  |  |  |
| Rated voltage (Ue) | 415 V AC |  |  |  |  |
| Fire resistance to IEC 695-2-1 | Self-extinguishing $960{ }^{\circ} \mathrm{C}, 30 \mathrm{~s}$ |  |  |  |  |
| Colour | RAL 7016 (anthracite grey) |  |  |  |  |
| Use |  |  |  |  |  |
|  | Power supply by connector recommended |  |  |  |  |
| Type |  | L1L2 | L1L2L3 | NL1L2L3 | NL1NL2NL3 |
| Set of | 1 | 1 | 1 | 1 | 1 |
| Catalogue numbers 12 modules of 18 mm | A9XPM112 | A9XPM212 | A9XPM312 | A9XPM412 | A9XPM512 ${ }^{(1)}$ |

(1) This comb busbar is only compatible in top feeding for simple lug devices and bottom feeding on double lug devices.


Linergy distribution systems
Device feeders

## Linergy FH <br> Horizontal comb busbar for 9 mm pitch for Acti 9, C60

## IEC 60439-1

## Description

## Comb busbars ensure:

■ Easy, reliable mounting of $1 P+N$ and $3 P+N, T L, C T, I D, V, B P$ and $C m$ switchgear: tooth positioning opposite the device terminals is ensured by indexing of copper parts
C60/ID Group Feeder comb busbars contain two different parts:

- connection of Group Feeder switchgear: C60 $(3 P+N)$ or ID $(3 P+N)$ circuit breaker in 18 mm modules, powered by cables, through the bottom, directly by the terminals
- connection of Acti 9 switchgear in 9 mm modules.


C60/ID Group Feeder comb busbars alone

| Number of poles | $3 \mathrm{P}+\mathrm{N}$ |
| :--- | :--- | :--- | :--- |



Linergy distribution systems
Device feeders

Linergy FH
Horizontal comb busbar for 9 mm pitch for Acti 9


## IEC 60439-1

## Description

■ Connection of Clario, Prodis and Librio switchgear in 9 mm modules.
■ The special comb busbars for circuit breaker have a gap of 9 mm for inserting OF, SD, OF-SD/OF auxiliaries.
■ The comb busbars for $3 P+N$ circuit breakers and auxiliaries are compatible with Prisma switchboard.
■ 1P + N comb busbars are compatible with Prisma and Pragma 24.

| Acti 9 |  | 9 mm poles, cuttable |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Number of poles |  | $1 \mathrm{P}+\mathrm{N}$ | $3 \mathrm{P}+\mathrm{N}$ | $1 \mathrm{P}+\mathrm{N}$ | $3 \mathrm{P}+\mathrm{N}$ |
|  |  | $\operatorname{lin}_{111}=1$ <br> A9N21036 |  |  |  |
|  |  | Comb busbars ${ }^{\text {a }}$ |  |  |  |
| Rated operational current at $40^{\circ} \mathrm{C}$ | (le) | 63A |  |  |  |
| Rated conditional short-circuit current of an assembly | (Isc) | Compatible with the breaking capacity of Acti 9 circuit breaker |  |  |  |
| Insulation voltage | (Ui) | 500 VAC |  |  |  |
| Rated voltage | (Ue) | 230 V AC (P + N ) - 400 V AC ( $3 \mathrm{P}+\mathrm{N}$ ) |  |  |  |
| Degree of protection |  | IP20 |  |  |  |
| Degree of pollution |  | 3 |  |  |  |
| Fire resistance to IEC 695-2-1 |  | Self-extinguishing $960{ }^{\circ} \mathrm{C}, 30 \mathrm{~s}$ |  |  |  |
| Colour |  | RAL 7035 |  |  |  |
| Number of 18 mm modules |  | 56 | 56 | 56 | 56 |
| Catalogue numbers |  | A9N21035 | A9N21036 | A9N21037 | A9N21038 |


|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Accessories |  |  |  |  |
|  |  |  |  |  |  |
|  | Side plates |  | Connectors (grey) | Neutral connectors (blue) | Tooth caps (1 x 18 mm module) |
| Set of | 20 |  | 10 | 10 | 10 |
| Catalogue numbers | A9N21039 | A9N21040 | A9N21041 | A9N21042 | A9N21050 |

Push-in technology terminal blocks

## Presentation

The new NSYTRP push-in terminal blocks use the most cost effective connection technique in the market. This technique drastically reduces wiring time and eliminates the need for regular re-tightening.
The insertion force of the NSYTRP push-in terminal blocks is up to $50 \%$ lower companing with other terminal blocks with direct connection.
This allows easy and direct plugging of solid conductors or flexible conductors with cable-ends (ferrules) of $0.34 \mathrm{~mm}^{2}$ and up to $6 \mathrm{~mm}^{2}$.


## Screw technology terminal blocks

## Presentation

NSYTRV screw technology terminal blocks are components which are well-known and widely used throughout the world and are suitable for the vast majority of connection applications, due to their wide range of functions and connection possibilities.
NSYTRV terminal blocks ensure quality, safety and the operational availability of equipment.
In addition to these advantages, they optimise the setting up and operation of installations, due to their simplicity and integrated functions.


## Spring technology terminal blocks

## Presentation

Spring technology is a type of connection that requires no maintenance and ensures the separation of mechanical and electrical functions.

NSYTRR spring terminals significantly reduces wiring time and eliminates the need for regular re-tightening. This technology allows the connection of flexible conductors with or without cable ends, but also of solid conductors with nominal c.s.a. of $0.13 \mathrm{~mm}^{2}$ up to $25 \mathrm{~mm}^{2}$.
NSYTRR terminal blocks ensure quality, safety and the operational availability of equipment.
In addition to these advantages, they optimise the setting up and operation of installations, due to their simplicity and integrated functions.


Linergy distribution systems
Terminal blocks

Linergy TR
Terminal blocks


|  |  |  | Connection technology |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Type of terminal block | Cross-section area | Colour | Screw tech | Spring tech | Push-in tech | Miniature screw for 15 mm DIN rail | Miniature spring for 15 mm DIN rail | Miniature spring for direct mount |
| Passthrough | $2.5 \mathrm{~mm}^{2}$ (2 pts) | Grey | NSYTR V22 | NSYTR R22 | NSYTR P22 | NSYTR V22M | NSYTR R22M | NSYTR R22MF |
|  |  | Blue | NSYTR V22BL | NSYTR R22BL | NSYTR P22BL | NSYTR V22MBL | NSYTR R22MBL | NSYTR R22MFBL |
|  |  | Orange | NSYTR V22AR | NSYTR R22AR | NSYTR P22AR | - |  | NSYTR R22MFF* |
|  | $2.5 \mathrm{~mm}^{2}$ (3 pts) | Grey |  | NSYTR R23 | NSYTR P23 | - | - | - |
|  |  | Blue | - | NSYTR R23BL | NSYTR P23BL | - | - | - |
|  |  | Orange | - | NSYTR R23AR | NSYTR P23AR | - | - | - |
|  | $\begin{aligned} & 2.5 \mathrm{~mm}^{2} \\ & (4 \mathrm{pts}, 1 \text { level) } \end{aligned}$ | Grey | - | NSYTR R24 | NSYTR P24 | - | NSYTR R24M |  |
|  |  | Blue | - | NSYTR R24BL | NSYTR P24BL | - | NSYTR R24MBL | NSYTR R24MBL |
|  | $\begin{aligned} & 2.5 \mathrm{~mm}^{2} \\ & (4 \mathrm{pts}, 2 \text { levels }) \end{aligned}$ | Grey | NSYTR V24D | NSYTR R24D | NSYTR P24D | - | - | - |
|  |  | Blue | NSYTR V24DBL | NSYTR R24DBL | NSYTR P24DBL | - | - | - |
|  | $4 \mathrm{~mm}^{2}$ (2 pts) | Grey | NSYTR V42 | NSYTR R42 | NSYTR P42 | NSYTR V42M | - | - |
|  |  | Blue | NSYTR V42BL | NSYTR R42BL | NSYTR P42BL | NSYTR V42MBL | - | - |
|  |  | Orange | NSYTR V42AR | NSYTR R42AR | - | - | - | - |
|  | $4 \mathrm{~mm}^{2}$ (3 pts) | Grey | NSYTR V43 | NSYTR R43 | NSYTR P43 | - | - | - |
|  |  | Blue | NSYTR V43BL | NSYTR R43BL | NSYTR P43BL | - | - | - |
|  |  | Orange | - | - | - | - | - | - |
|  | $\begin{aligned} & 4 \mathrm{~mm}^{2} \\ & (4 \mathrm{pts}, 1 \text { level }) \end{aligned}$ | Grey | NSYTR V44 | NSYTR R44 | NSYTR P44 | - | - | - |
|  |  | Blue | NSYTR V44BL | NSYTR R44BL | NSYTR P44BL | - | - | - |
|  | $\begin{aligned} & 4 \mathrm{~mm}^{2} \\ & (4 \mathrm{pts}, 2 \text { levels) } \end{aligned}$ | Grey | NSYTR V44D | NSYTR R44D | - | - | - | - |
|  |  | Blue | NSYTR V44DBL | NSYTR R44DBL | - | - | - | - |
|  | $6 \mathrm{~mm}^{2}$ (2 pts) | Grey | NSYTR V62 | NSYTR R62 | - | - | - | - |
|  |  | Blue | NSYTR V62BL | NSYTR R62BL | - | - | - | - |
|  | $10 \mathrm{~mm}^{2}$ (2 pts) | Grey | NSYTR V102 | NSYTR R102 | - | - | - | - |
|  |  | Blue | NSYTR V102BL | NSYTR R102BL | - | - | - | - |
|  | $16 \mathrm{~mm}^{2}$ (2 pts) | Grey | NSYTR V162 | NSYTR R162 | - | - | - | - |
|  |  | Blue | NSYTR V162BL | NSYTR R162BL | - | - | - | - |
|  | $150 \mathrm{~mm}^{2}$ (2 pts) | Grey | NSYTRV1502BB | - | - | NSYTR V22MPE | NSYTR R22MPE |  |
| Earth protection | $2.5 \mathrm{~mm}^{2}$ (2 pts) | Green | NSYTR V22PE | NSYTR R22PE | NSYTR P22PE | - | - | - |
|  | $2.5 \mathrm{~mm}^{2}$ (3 pts) | Green | - | NSYTR R23PE | NSYTR P23PE | - | - | - |
|  | $2.5 \mathrm{~mm}^{2}$ (4 pts) | Green | - | NSYTR R24PE | NSYTR P24PE | - | - | - |
|  | $4 \mathrm{~mm}^{2}$ (2 pts) | Green | NSYTR V42PE | NSYTR R42PE | NSYTR P42PE | NSYTR V42MPE | - | - |
|  | $4 \mathrm{~mm}^{2}$ (3 pts) | Green | NSYTR V43PE | NSYTR R43PE | NSYTR P43PE | - | - | - |
|  | $4 \mathrm{~mm}^{2}$ (4 pts) | Green | NSYTR V44PE | NSYTR R44PE | NSYTR P44PE | - | - | - |
|  | $6 \mathrm{~mm}^{2}$ (2 pts) | Green | NSYTR V62PE | NSYTR R62PE | - | - | - | - |
|  | $10 \mathrm{~mm}^{2}$ (2 pts) | Green | NSYTR V102PE | NSYTR R102PE | - | - | - | - |
|  | $16 \mathrm{~mm}^{2}$ (2 pts) | Green | NSYTR V162PE | NSYTR R162PE | - | - | - | - |
| Knife disconnect | $2.5 \mathrm{~mm}^{2}$ (2 pts) | Grey | NSYTR V42ST ${ }^{(1)}$ | NSYTR R22SC | NSYTR P22SC | - | - | - |
|  |  | Orange | NSYTR V42STAR ${ }^{(1)}$ | NSYTR R22SCAR | - | - | - | - |
|  | $2.5 \mathrm{~mm}^{2}$ (3 pts) | Grey | - | NSYTR R23SC | NSYTR P23SC | - | - | - |
|  |  | Orange | - | NSYTR R23SCAR | - | - | - | - |
|  | $\begin{aligned} & 2.5 \mathrm{~mm}^{2} \\ & \text { (2 levels) } \end{aligned}$ | Grey | NSYTRV42SCD ${ }^{(1)}$ | NSYTRR24SCD | - | - | - | - |
| Fuse disconnect | $\begin{aligned} & 4 \mathrm{~mm}^{2} \text { (2 pts) } \\ & \text { Fusible } \\ & 5 \times 20 \mathrm{~mm} \end{aligned}$ | Black | NSYTR V42SF5 | - | - | - | - | - |
|  |  | Black (12 V) | NSYTR V42SF5LD ${ }^{(2)}$ | - | - | - | - | - |
|  |  | $\begin{aligned} & \text { Black } \\ & (230 \text { V) } \end{aligned}$ | NSYTR V42SF5LA ${ }^{(2)}$ | - | - | - | - | - |
| Basic disconnect ${ }^{(3)}$ | $4 \mathrm{~mm}^{2}$ (2 pts) | Grey | NSYTRV 42TB | NSYTR R22TB | NSYTR P42TB | - | - | - |
| Measuring transducer | $\begin{aligned} & 6 \mathrm{~mm}^{2} \text { (2 pts) } \\ & \text { Disconnect } \\ & 6 \mathrm{~mm}^{2}(2 \mathrm{pts}) \\ & 6 \mathrm{~mm}^{2}(2 \mathrm{pts}) \end{aligned}$ | Grey/Orange | NSYTR V62TTD | - | - | - | - | - |
|  |  | Grey | NSYTR V62TT | - | - | - | - | - |
|  |  | Green | NSYTR V62TTPE | - | - | - | - | - |

[^5][^6](2) With light indicator.
(3) Fuse or component carrier not supplied.

Linergy distribution systems
Terminal blocks

Linergy TR
Terminal blocks

| vive |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Connection technology | Accessories |  |  |  |  |
| Miniature spring for direct mount | End plate for screw TBs | End plate for spring TBs | End plate for push-in TBs | Plug-in bridge | Marking strips 10 characters |
| NSYTR R22MP | NSYTRA C22 | NSYTRA CR22 | NSYTRA CR22 | NSYTRA L22 | NSYTRA B510 |
| NSYTR R22MPBL | NSYTRA C22BL | NSYTRA CR22BL | NSYTRA CR22BL | NSYTRA L23 | NSYTRA B520 |
| - | - | - |  | NSYTRA L24 | NSYTRA B530 |
| - | - | NSYTRA CR23 | NSYTRA CR23 | NSYTRA L25 | NSYTRA B540 |
| - | - | NSYTRA CR23BL | NSYTRA CR23BL | NSYTRA L210 | NSYTRA B550 |
| - | - | - | - | NSYTRA L210BL |  |
| NSYTR R24MP | - | NSYTRA CR24 | NSYTRA CR24 | NSYTRA L210GR | NSYTRA B590 |
| NSYTR R24MPBL | - | NSYTRA CR24BL | NSYTRA CR24BL | NSYTRA L220 | NSYTRA B5100 |
| - | NSYTRA CE24 | NSYTRA CRE24 | NSYTRA CRE24 |  | NSYTRA B51100 |
| - | - | - | - |  |  |
| - | NSYTRA C22 | NSYTRA CR42 | NSYTRA CR42 | NSYTRA L42 | NSYTRA B610 |
| - | NSYTRA C22BL | - | - | NSYTRA L43 | NSYTRA B620 |
| - | - | - | - | NSYTRA L44 | NSYTRA B630 |
| - | NSYTRA C23 | NSYTRA CR43 | NSYTRA CP43 | NSYTRA L45 | NSYTRA B640 |
| - | - | - | - | NSYTRA L410 | NSYTRA B650 |
| - | - | - | - | NSYTRA L410BL |  |
| - | NSYTRA C24 | NSYTRA CR44 | NSYTRA CP44 | NSYTRA L410GR | NSYTRA B690 |
| - | - | - | - | NSYTRA L420 | NSYTRA B6100 |
| - | NSYTRA CE24 | NSYTRA CRE44 | - |  | NSYTRA B61100 |
| - | - | - | - |  |  |
| - | NSYTRA C22 | NSYTRA CR62 | - | NSYTRA L62 | NSYTRA B810 |
| - | NSYTRA C22BL | - | - | NSYTRA L610 | NSYTRA B820 |
| - | NSYTRA C22 | NSYTRA CR102 | - | NSYTRA L102 | NSYTRA B1010 |
| - | NSYTRA C22BL | - | - |  | NSYTRA B1020 |
| - | NSYTRA C162 | NSYTRA CR162 | - | NSYTRA L162 | NSYTRA B1010 |
| - | - | - | - |  | NSYTRA B1020 |
|  | NSYTRAC952 | - | - | NSYTRA L1502 | - |
| - | NSYTRA C22 | NSYTRA CR22 | NSYTRA CR22 |  |  |
| - | - | NSYTRA CR23 | NSYTRA CR23 |  |  |
| - | - | NSYTRA CR24 | NSYTRA CR24 |  |  |
| - | NSYTRA C22 | NSYTRA CR42 | NSYTRA CR42 |  |  |
| - | NSYTRA C23 | NSYTRA CR43 | NSYTRA CP43 |  |  |
| - | NSYTRA C24 | NSYTRA CR44 | NSYTRA CP44 |  |  |
| - | NSYTRA C22 | NSYTRA CR62 | - |  |  |
| - | NSYTRA C22 | NSYTRA CR102 | - |  |  |
| - | NSYTRA C162 | NSYTRA CR162 | - |  |  |
| - | Included | NSYTRA CR23 | NSYTRA CPK22 |  |  |
| - | Included | - | - |  |  |
| - | - | NSYTRA CR24 | NSYTRA CPK23 |  |  |
| - | - | - | - |  |  |
| - | NSYTRA CE24 | Included | - |  |  |
| - | Included | - | - |  |  |
| - | Included | - | - |  |  |
| - | Included | - | - |  |  |
| - |  | NSYTRA CR23 | NSYTRA CR42 |  |  |
| - | NSYTRA CT22 | - | - |  |  |
| - | NSYTRA CT22 | - | - |  |  |
| - | NSYTRA CT22 | - | - |  |  |

## Linergy connection systems

Terminal blocks and bars

Linergy TB
Earth bars


## Description

This range of earth bars is installed:
■ in the duct which can constitute a dedicated area, completely separate from the equipment
■ or in the switchgear compartment, at the top or the bottom.

| Fast-connecting earth bar |
| :--- |
| Cross-section (mm) |
| Effective length (mm) |
| Total length (mm) |
| Composition |
| Catalogue numbers |
| Accessories |


| Accessories |
| :--- |


| Accessories |
| :--- |
| Composition |
| Catalogue numbers |

Installation accessories
> pages 70 to 72 .

Linergy connection systems
Terminal blocks and bars
Linergy TA
Auxiliary connections


## Description

For distributing auxiliary voltages in power and regulation equipment.

## Terminal block for auxiliary wiring

|  |  |  |
| :--- | :--- | :--- | :--- |

Four-pole auxiliary bus duct


|  | Duct for 4 conductors <br> 166 tap-off points with Faston connectors, <br> per linear meter |
| :--- | :--- |
| Rated operational current at $40^{\circ} \mathrm{C}$ (le) | 32 A |
| Rated insulation voltage | (Ui) |
| Length (mm) | 1760 V AC |
| Composition | Supplied with 2 end clamps and 1 lateral clamp <br> for mounting on cable-tie supports |
| Catalogue numbers | $\mathbf{0 4 2 0 3}$ |

# Prisma G enclosures 

Prisma G W600, W300
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## For safe and upgradeable electrical switchboards


> 100 \% reliable and in compliance with existing standards
All the components (switchgear, splitter blocks, prefabricated connections, etc.) have been designed to work together. All switchboard configurations have been tested.

## > Optimised, upgradeable installation

With Prisma G, you can build the right switchboard for your customer, sized precisely to fit costs and needs. Thanks to the organisation around functional units, the installation evolves simply while preserving its original performance.

## > Ease of setup

The complete accessibility of all mounting and connection points facilitates assembly and cabling in the workshop. The functional units are clearly identified: operations are intuitive and reliable, and connection and checking are performed naturally.


Prisma G enclosures
Prisma G W600, W300

## Presentation

Enclosures

IP30, IP31, IP43

Metallic indoor enclosures to compose.
Commercial buildings: hotels, offices, shops, etc. Industry: technical room, etc.

| Enclosure delivered flat: total accessibility |  |
| :--- | :--- |
| Designed for electrical continuity | 630 A <br> ■IP30 <br> $\boxed{I K} 07 / 08$ |

Gland plate
Dismountable
and cuttable


## Main characteristics

Steel sheet metal with electrophoresis treatment + hot-polymerised polyester epoxy powder.
Enclosure:
■ width: 595 mm , with duct: 305 mm

- height: 330 to 1380 mm

■ depth: 205 mm without door / 250 mm with door

- properties of metal enclosures > page 198.


## Designation

| G IP30 - IP31 - IP43 enclosure |  |
| :--- | :--- |
| Rated operational current | $630 \mathrm{~A}-\mathrm{Isc}=50 \mathrm{kA}$, Icw $=25 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}, \mathrm{Ipk}=53 \mathrm{kA}$ |
| Colour | White colour RAL 9001 |
| Standards conformity | EN 62208, IEC 61439-2 |
| Degree of protection | IP30 with or without door, |
|  | IP31 with canopy + door, |
|  | IP43 with canopy + door + gasket |

# Wall-mounted and <br> floor-standing enclosures 

IP30, IP31, IP43

## IP30 630 A enclosures

Reversible doors (opening to left or right), equipped with a handle and keylock (key 405).

| Wall-mounted enclosures, W600 |  |  |  |  | Ducts, W300 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | [ | (1) |
| Nb. of vertical modules of 50 mm | Height in mm | Enclosure | Plain door | Transparent door | Nb . of vertical modules of 50 mm | Height in mm | Rear + top and bottom plates ${ }^{(1)}$ | Plain door | Transparent door |
| 6 | 330 | 08102 | 08122 | 08132 | 6 | 330 | 08172 | 08182 | - |
| 9 | 480 | 08103 | 08123 | 08133 | 9 | 480 | 08173 | 08183 | - |
| 12 | 630 | 08104 | 08124 | 08134 | 12 | 630 | 08174 | 08184 | - |
| 15 | 780 | 08105 | 08125 | 08135 | 15 | 780 | 08175 | 08185 | - |
| 18 | 930 | 08106 | 08126 | 08136 | 18 | 930 | 08176 | 08186 | - |
| 21 | 1080 | 08107 | 08127 | 08137 | 21 | 1080 | 08177 | 08187 | 08197 |
| 24 | 1230 | 08108 | 08128 | 08138 | 24 | 1230 | 08178 | 08188 | 08198 |
| 27 | 1380 | $\begin{aligned} & 08109 \text { / } \\ & 081199^{(2)} \end{aligned}$ | 08222 | 08232 | 27 | 1380 | 08179 | 08282 | 08292 |

(1) Supplied with a combination kit for enclosure + duct association.
(2) Wall-mounted enclosure extension.

## Floor-standing enclosures IP30

Reversible doors (opening to left or right), equipped with a handle and keylock (key 405).
■ Two basic floor-standing enclosures cannot be combined.

- To create a switchboard comprising a number of enclosures, use a basic
floor-standing enclosure and one or more floor-standing enclosure extensions.
■ Floor-standing enclosure extensions are supplied with a combination kit for the
basic floor-standing enclosure.
■ Cables can be run on the sides of the plinth (diameter $\leqslant 140 \mathrm{~mm}$ ).



## Wall-mounted and floorstanding enclosures

IP30, IP31, IP43

Accessories to increase the degree of protection IP

(1) Whatever the duct position.
(2) Ducts on the sides.


Spare parts (rear accessories, door accessories, sides, uprights, etc.) > page 137

Prisma G enclosures
Prisma G W600, W300

IP30, IP31, IP43

Combinations
To make the combination more rigid, particularly during transport, it is mandatory to use a set of cross-members secured to the rear of the switchboard.

| Combination kits | Horizontal |  |  |  |  |  |  |  | Vertical |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Possible combinations |  |  |  |  |  |  |  |  |  |
| For wall-mounted enclosure | 1 wall-mounted enclos. +1 duct | 1 wallmounted enclos. +2 ducts | 2 wall-mounted 2 enclos. | 2 wall-mounted enclos. +1 duct |  | all-mounted los. +2 ducts |  | -mounted s. +3 ducts | 2 wallmounted enclos. |
| Set of two lifting/reinforcement cross-members or vertical uprights | 08812 | 08811 | 08811 | 08813 | 088 |  | 088 |  | $08817{ }^{(1)}$ |
| + combination kit ${ }^{(2)}$ | - | $\bigcirc$ | 08816 保 | 08816 | 088 |  | 088 |  | 08816 |
| For floor-standing enclosure | 1 fl. standing enclos. +1 duct | 1 fl. standing enclos. + 2 ducts | 1 fl. standing enclos. + 1 enclos. extension | 1 fl. standing enclos. +1 duct +1 enclos. extension |  | standing los. +2 ducts + clos. extension |  | all-mounted los. +3 ducts + clos. extension | 1 fl. standing enclos. +1 wall-mounted enclos. |
| Set of two lifting/reinforcement cross-members or vertical uprights | 08812 | 08811 | 08811 | 08813 | 088 |  | 088 |  | $08817{ }^{(1)}$ |
| + combination kit ${ }^{(2)}$ | - | - | - - | - | - |  | - |  | 08816 |
| + plain plate | - | - | - - | - | - |  | - |  | 08882 |
| Combination kits | Multiple |  |  |  |  |  |  |  |  |
| Possible combinations |  |  |  |  |  |  |  |  |  |
| For wall-mounted enclosures | 2 wall-mounted enclosures + 2 ducts | 4 wallmounted enclosures | 4 wall-mounted enclosures +2 ducts | 4 wall-mounted enclosures +4 ducts |  | 4 wall-mounted enclosures +6 ducts |  | 2 additional ducts | 2 additional wall-mounted enclosures |
| Set of two lifting/reinforcement cross-members | 08812 | 08811 | 08813 | 08814 |  | 08826 |  | must be made | must be made |
| Set of two vertical uprights ${ }^{(1)}$ | 08817 | 08817 | 08817 | 08817 |  | 08817 |  | - | - |
| + combination kit ${ }^{(2)}$ | 08816 | 08816 | 08816 | 08816 |  | 08816 |  | 2 supplied with the ducts | 2 supplied with the enclosure extensions |
| + multiple combination kit | 08818 | 08818 | $2 \times 08818$ | $3 \times 08818$ |  | $4 \times 08818$ |  | 08818 | 08818 |
| For floor-standing enclosure | 1 fl. standing enclos. + 1 wall-mounted enclos. + 2 ducts | 1 fl. standing enclos. +1 enclos. extension +2 wall-mounted enclos. | 1 fl. standing enclos. +1 enclos. extension +2 ducts +2 wall-mounted enclos. | 1 fl. standing enclos. +1 enclos. extension +4 ducts + 2 wall-mounted enclos. |  | 1 fl. standing enclos. +1 enclos. extension +6 ducts + 2 wall-mounted enclos. |  | 2 additional ducts | 2 fl. standing enclos. +2 additional wall-mounted enclos. |
| Set of two lifting/reinforcement cross-members | 08812 | 08811 | 08813 | 08814 |  | 08826 |  | must be made | must be made |
| Set of two vertical uprights | 08817 | 08817 | 08817 | 08817 |  | 08817 |  | - | - |
| + combination kit ${ }^{(2)}$ | 08815 | 08815 | - | - |  | - |  | - | - |
| + multiple combination kit萮 | 08818 | 08818 | $2 \times 08818$ | $3 \times 08818$ |  | $4 \times 08818$ |  | 08818 | 08818 |
| + plain plate | 08882 | $2 \times 08882$ | $2 \times 08882$ | $2 \times 08882$ |  | $2 \times 08882$ |  | - | 08882 |

(1) For more than 33 combined modules, these vertical uprights are mandatory.
(2) A combination kit is supplied with each duct or enclosure extension. It can be necessary to use one kit more than those already supplied.

## Installation possibilities

Switchboards can be mounted on a wall in three manners: with the hook-on rail system, via the inside of the enclosure or using external wall-mounted brackets. Combined enclosures can be mounted using the lifting/reinforcement crossmembers set of two lifting/reinforcement cross-members.


## Plinth raiser

For floor-standing enclosure


| Catalogue numbers | $\mathbf{0 8 8 0 5}$ | $\mathbf{0 8 8 0 7}$ |
| :--- | :--- | :--- |
| Characteristics | For basic floor-standing enclosure or <br> extension $\mathrm{W}=600 \mathrm{~mm}$ | For a duct <br> $\mathrm{W}=300 \mathrm{~mm}$ |

Flush-mounting kit

## For wall-mounted enclosure



Prisma G enclosures
Prisma G W600, W300


## Cut-out metal plates

Enclosures (wall-mounted, floor-standing, ducts) are supplied with a plastic gland plate installed on the top or bottom for wall-mounted enclosures and the top for floor-standing enclosures. For some connections needs, the existing plastic gland plate can be replaced by this metal gland plate.
Metal plates with cut-outs + plastic gland plates


## Gland plates

## Metal plate with cut-outs

This plastic gland plate can be replaced by an interface plate with cut-outs for special cable entry systems made of an insulating material (plain, with knockouts or membrane-type).
Metal plate with cut-outs


Gland plates, plain with knockouts or membrane-type
The gland plates are easy to install using the mounting kit (supplied with each gland plate) that positions and holds the nuts during installation.
This makes it possible to mount the gland plates using a single tool

| Gland plates | Plain | With knockouts |  |  | Membrane-type |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |
| Catalogue numbers | 08881 | 08891 | 08892 | 08895 |  | 08872 | 08896 | 08897 |
| M12 | - | 4 | - - | - | From 5 to 7 mm diam. | 4 | 2 | - |
| M12 or M20 | - | 4 | - | - | From 6 to 10 mm diam. | - | 6 | - |
| M16 or M25 | - | 4 | - | 5 | From 7 to 12 mm diam. | - | 8 | - |
| M20 | - | - | - $\quad 8$ | 8 | From 8 to 12 mm diam. | 4 | - | - |
| M20 or M32 | - | - | 2 | - | From 10 to 14 mm diam. | 12 | 16 | - |
| M25 or M40 | - | - | 2 | - | From 12 to 18 mm diam. | - | 2 | - |
|  |  |  |  |  | From 14 to 20 mm diam. | 4 | - | - |
|  |  |  |  |  | From 17 to 32 mm diam. | - | 1 | - |
|  |  |  |  |  | From 20 to 26 mm diam. | 1 | - | - |
|  |  |  |  |  | From 28 to 60 mm diam. | - | - | 2 |
| Number of entries | - | 12 | 4 | 13 |  | 25 | 35 | 2 |

## Accessories

## Trunking spreader

| Trunking spreader |  |
| :--- | :--- |
| Cat. no. | For a professional-looking connection between the trunking and <br> the enclosure. <br> Can be installed at the top or bottom. <br> The spreader is marked for cut-outs for standard trunking sizes. <br> The maximum capacity is two 250 x 80 mm trunking sections. |

Partial doors, Plain door ready to be equipped

| Type | Plain partial door | Partial door with cut-out | Plain door with cut-out W600, W850 |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Catalogue numbers | 08850 | $\begin{array}{\|l\|} \hline 08851+03904{ }^{(1)} \\ 08851+03928 \end{array}$ | $08850+03928$ |
| Characteristics | Height: 6 modules. <br> Useful height behind a partial door: 5 modules. Installation on a wall-mounted enclosure at least 12 modules high ( $H \geqslant 630$ mm ). Reversible (opening to left or right), equipped with a handle and keylock (key 405). <br> Note: each wall-mounted enclosure and basic floor-standing enclosure or extension can be equipped with only one partial door. The front must be completed with another door. |  | Inclined visor by $30^{\circ}$. Allows mounting of measurement, inspection, indication $72 \times 72,96 \times 96$, Ø 16 or Ø $22 \mathrm{~mm}, 45 \times 45$ devices. <br> See page 61. |

Prisma G enclosures
Prisma G W600, W300

## Door accessories

IP30, IP31, IP43

Door handles and padlocking

|  | EURO handle | ASSA/ABLOY handle | Standard handle | Padlocking |
| :---: | :---: | :---: | :---: | :---: |
|  |  | $\sqrt[3]{(2)}$ |  |  |
| Catalogue numbers | 08932 | 08933 | 08931 | 08938 |
| Characteristics | Supplied without barrel | Supplied without barrel | Supplied with barrel lock (key no. 405) <br> RAL 7016 | The kit can be installed on the door handles equipped with any of the barrel locks and inserts above. |

## Barrel locks, inserts

The barrel locks and inserts below can be mounted on handle 08931 and on all the door handles of the Prisma G IP30.


## Earthing braid

The earthing braid is used to earth a door or partial door with devices.

|  | Earthing braid, 6 mm² | Earthing wire, 6 mm² |
| :---: | :---: | :---: |
|  |  |  |
| Catalogue numbers | 08910 | 08911 |
| Characteristics | Equipped with a 4 mm diameter lug at one end and a 6 mm diameter lug on the other | Equipped with a 5 mm diameter lug at one end and a 6 mm diameter lug on the other |
|  |  |  |

Prisma G enclosures
Prisma G W600, W300

## Spare parts

IP30, IP31, IP43

Accessories (IP30)


|  |  | 3 |  | Wall-mounted and floor-standing enclosure accessories | 01018 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 4 | (1) 4 kit pillars + pillar head |  |
|  |  |  |  | (2) 2 A -angle parts |  |
|  |  | \% | \% | (3) 2 B -angle parts |  |
| 5 | 6 | $7$ | 8 | (5) 1 earthing braid plug |  |
|  |  |  |  | (6) 4 base blanking plugs |  |
|  | 0 |  | (8) | (7) 4 spacers |  |
|  |  |  |  | 8 4 nuts HX grooved |  |




## Prisma G enclosures

Prisma G W600, W300

## Spare parts

IP30, IP31, IP43

## Side (IP30)



## Wall-mounted enclosures

| Side for 6-module wall-mounted enclosures | $\mathbf{0 1 0 4 0}$ |
| :--- | :--- |
| Side for 9-module wall-mounted enclosures | $\mathbf{0 1 0 4 1}$ |
| Side for 12-module wall-mounted enclosures | $\mathbf{0 1 0 4 2}$ |
| Side for 15-module wall-mounted enclosures | $\mathbf{0 1 0 4 3}$ |
| Side for 18-module wall-mounted enclosures | $\mathbf{0 1 0 4 4}$ |
| Side for 21-module wall-mounted enclosures | $\mathbf{0 1 0 4 5}$ |
| Side for 24-module wall-mounted enclosures | $\mathbf{0 1 0 4 6}$ |


| Floor-standing enclosures |  |
| :--- | :--- |
| Side for 27-module floor-standing enclosures | $\mathbf{0 1 0 3 5}$ |
| Side for 30-module floor-standing enclosures | $\mathbf{0 1 0 3 4}$ |
| Side for 33-module floor-standing enclosures | $\mathbf{0 1 0 3 3}$ |

## Central uprights (IP30)



Floor-standing enclosures

| Association profile for 27-module wall-mounted / floor-standing enclosures | $\mathbf{0 1 0 3 0}$ |
| :--- | :--- |
| Association profile for 30-module floor-standing enclosures | $\mathbf{0 1 0 2 9}$ |
| Association profile for 33-module floor-standing enclosures | $\mathbf{0 1 0 2 8}$ |

## Plinths (IP30)

Floor-standing enclosures

1) Left drilled base bracket + Right drilled base bracket
24 self-threading screws
Accessories for plinth
2) Left base bracket + Right base bracket
4 2 self-threading screws
Plinth front, 600 mm
102 Base cover + plinth
2 2 self-threading screws
Plinth front, $\mathbf{3 0 0} \mathbf{~ m m}$
1
2

Prisma G W600, W300
IP30, IP31, IP43

Front cover support uprights (IP30)

|  | 2 front cover support uprights - 6 modules | 01250 |
| :---: | :---: | :---: |
|  | 2 front cover support uprights - 9 modules | 01251 |
|  | 2 front cover support uprights - 12 modules | 01252 |
|  | 2 front cover support uprights - 15 modules | 01253 |
|  | 2 front cover support uprights - 18 modules | 01254 |
|  | 2 front cover support uprights - 21 modules | 01255 |
|  | 2 front cover support uprights - 24 modules | 01256 |
|  | 2 front cover support uprights - 27 modules | 01257 |
|  | 2 front cover support uprights - 30 modules | 01258 |
|  | 2 front cover support uprights - 33 modules | 01259 |

Prisma Genclosures
Prisma G W600, W300

## Dimensions

IP30, IP31, IP43

## Wall-mounted enclosures



Floor-standing enclosures


## Ducts



|  | Nb. of vertical <br> modules | H | H1 |
| :--- | :--- | :--- | :--- |
| Wall-mounted <br> enclosures / duct | 6 | 330 | - |
|  | 9 | 480 | - |
|  | 12 | 630 | - |
|  | 15 | 780 | - |
| 18 | 930 | - |  |
| Floor-standing <br> enclosures / duct | 21 | 1080 | - |
|  | 24 | 1230 | - |
|  | 27 | 1380 | - |
|  | 30 | 1530 | 1380 |

## Dimensions

Prisma G W600, W300

IP30, IP31, IP43

## Cable entry



## Trunking spreader



## Wall-mounted installation

Wall-mounted enclosures and ducts


Wall-mounted and Ducts floor-standing enclosures


|  | Nb. of vertical <br> modules <br> Wall- <br> mounted <br> enclosures | 6 | H1 |
| :--- | :--- | :--- | :--- |
|  | 9 | H2 |  |
|  | 12 | 396 | 580 |
|  | 15 | 546 | 730 |
|  | 18 | 696 | 880 |
|  | 21 | 846 | 1030 |
|  | 24 | 996 | 1180 |
|  | 27 | 1146 | 1330 |
| Floor- | 27 | 1488 | 1580 |
| standing <br> enclosures | 30 | 17838 | 1730 |
|  | 33 |  | 1880 |

Floor-standing plinth fixation


Depth behind front plate Functional uprights Modular rail


Fixed rail
Cat. no. 03001 or 03010

Adjustable rail
Cat. no. 03002 or 03011

Recessed mounting plate
Cat. no. 03171, 03172, 03173,
03176, 03177 or 03178

Recessed rail Cat. no. 03003

Rear rail
Cat. no. 03004

Flat plate
Cat. no. 03170 or 03175

Prisma G enclosures
IP55

## Presentation

IP55

## Great capability for meeting the requirements of your installation


> Safety of people
and property
> Continuity of service
> Robustness
> Ergonomics and complete accessibility
$>$ Optimisation and upgradeability
> 100 \% reliable and in compliance with existing standards
All the components (switchgear, splitter blocks, prefabricated connections, etc.) have been designed to work together. All switchboard configurations have been tested. Even the most demanding.

## > Optimised, upgradeable installation

Prisma G IP55 is the only switchboard in this category designed as a "kit".
All configurations and combinations are possible, with full access. Thanks to the organisation around functional units, the installation evolves simply while preserving its original performance.

## > Ease of setup

The complete accessibility of all mounting and connection points facilitates assembly and cabling in the workshop. The functional units are clearly identified: operations are intuitive and reliable, and connection and checking are performed naturally.


Prisma G enclosures
Prisma G W600, W300

## Presentation

Weatherproof enclosures

IP55

Metallic indoor enclosures to compose
Severe environments: industrial and agricultural buildings, basements, kitchens, etc.

| Enclosure delivered flat: total accessibility Designed for electrical continuity | $\begin{aligned} & \text { ■ } 630 \mathrm{~A} \\ & \text { ■ IP55 } \\ & \text { ■ IK10 } \end{aligned}$ |
| :---: | :---: |

Designed for electrical continuity
■ IP55

- IK10



## Description

Steel sheet metal with electrophoresis treatment + hot-polymerised polyester epoxy powder.
Enclosure:

- width: 575 mm , with duct: 325 mm
- height: 450 to 1750 mm
- depth: 260 mm with door
- properties of metal enclosures > page 198


## Main characteristics

| IP55 enclosure |  |
| :--- | :--- |
| Rated operational current | $630 \mathrm{~A}-\mathrm{Isc}=50 \mathrm{kA}, \mathrm{Icw}=25 \mathrm{kA} \mathrm{rms} / 1 \mathrm{~s}, \mathrm{Ipk}=53 \mathrm{kA}$ |
| Colour | White colour RAL 9001 |
| Standards conformity | EN 62208, IEC 61439-2 |
| Degree of protection | IP55 with door |
| Degree of protection against <br> mechanical impacts | IK10 |
| Isolation | Class 1 |
| Doors | ■ Pain or transparent, opening to right or left <br> Supplied with a handle and keylock (key 405) <br> Distance behind plain door $=78 \mathrm{~mm}$, <br> Distance behind transparent door $=73 \mathrm{~mm}$ |
| Earthing | Earthing braid delivered with enclosure |
| Combination | $>$ page 131 |

## Enclosures

Prisma G W600, W300

IP55

## Enclosures and doors

Reversible doors (opening to left or right), equipped with a handle and keylock (key 405).

| Type |
| :--- |


| Type |  | Ducts, W300 |  | Wall-mounted enclosures, W300 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | NTM |  |  |  |  |  |
| Nb . of vertical modules of 50 mm | Height in mm | Rear + plain door | Top and bottom plates | Rear + plain door | Top and bottom plates | Side panels | Struts (set of 2) |
| 7 | 450 | 08342 | 08372 | 08342 | 08372 | 08352 | $2 \times 01025$ |
| 11 | 650 | 08343 | 08372 | 08343 | 08372 | 08353 | $2 \times 01025$ |
| 15 | 850 | 08344 | 08372 | 08344 | 08372 | 08354 | $2 \times 01025$ |
| 19 | 1050 | 08345 | 08372 | 08345 | 08372 | 08355 | $2 \times 01025$ |
| $\underline{23}$ | 1250 | 08346 | 08372 | 08346 | 08372 | 08356 | $2 \times 01025$ |
| $\underline{27}$ | 1450 | 08347 | 08372 | 08347 | 08372 | 08357 | $2 \times 01025$ |
| 33 | 1750 | 08349 | 08372 | 08349 | 08372 | 08359 | $2 \times 01025$ |

Spare parts > page 137
Dimensions > page 138

Canopy

| Using | For wall-mounted | For duct |
| :--- | :--- | :--- |
| enclosures |  |  |

Dimensions > page 138

IP55

Combination kits

|  | Components catalogue numbers |  |  |
| :---: | :---: | :---: | :---: |
|  | Horizontal/vertical <br> combination kit "L" combination kit | Square combination kit Single pillar | Mounting upright |
| Catalogue numbers | 08381 | 08383 | 08391 |
| Characteristics | 2 double pillars 1 triple pillar <br> +1 single pillar | 1 quadruple pillar Supplied with basic <br> enclosures | ic $\quad \mathrm{L}=1950 \mathrm{~mm}$ |
|  | Mounting example |  |  |
|  |  |  |  |
|  |  |  |  |
| Wall-mounted enclosures | 1 Basic enclosure <br> 2 Rear plate for enclosure extension <br> 31 set of two side panels | 11 basic enclosure <br> 2. 1 rear + door for duct <br> 31 set of two top and bottom plates for duct <br> 41 rear plate for enclosure extension <br> 51 set of two side panels | 11 basic enclosure <br> 23 rear plates for enclosure extensions <br> 31 set of two top and bottom plates for enclosure extensions $\square$ 1 set of two side panels |
| Combination kits | 41 horizontal/vertical combination kit 08381 | 61 "L" combination kit 08382 <br> 71 horizontal/vertical combination kit 08381 | 1 square combination kit 08383 2 horizontal/vertical combination kits $2 \times 08381$ |
| Mounting uprights | - | - | 3 mounting uprights W $=1950 \mathrm{~mm}$ (to reinforce the switchboard) $3 \times 08391$ |

Note: for combinations of more than two enclosures, the switchboard must be reinforced using mounting uprights (08391).

## Lifting



## Enclosures mounting

IP55

Mounting accessories

| Upright |  | Plinth |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Mounting uprights | Plinth gusset | Plinth cover panel (for enclosure) | Plinth cover panel (for duct) |
| Catalogue numbers | 08391 | 08392 | 08393 | 08394 |
| Characteristics | - $W=1950 \mathrm{~mm}$ <br> - Colour: RAL 7016 <br> - Supplied with: <br> - two adjustable fixing brackets, <br> - one joint for combination with a plinth or another upright. <br> Leave space behind the switchboard for cable running and to improve ventilation. | $\mathrm{H}=150 \mathrm{~mm}$ Colour: RAL 7016 | $\mathrm{W}=600 \mathrm{~mm}$ Colour: RAL 7016 | $W=300 \mathrm{~mm}$ Colour: RAL 7016 |
| Quantity to order | For one enclosure, order two uprights. For each enclosure extension or duct, order one additional upright. | For the basic enclosure, order two gussets and one 600 mm wide plinth cover panel. For each enclosure extension or duct, order one additional gusset and the corresponding cover panel. |  |  |


| Mounting example |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | On uprights | On plinth | On wall structure | Free-standing structure |
|  |  |  |  |  |
| Catalogue numbers | $3 \times 08391$ | $3 \times 08392+08393+08394$ | $\begin{aligned} & 3 \times 08391+3 \times 08392+08393+ \\ & 08394 \end{aligned}$ | $\begin{aligned} & 4 \times 08391+4 \times 08392+ \\ & 2 \times 08393 \\ & \hline \end{aligned}$ |
| Designation | 3 mounting uprights | 3 gussets <br> + 1 plinth cover panel for enclosure <br> + 1 plinth cover panel for duct | 3 uprights +3 gussets <br> + 1 plinth cover panel for enclosure <br> +1 plinth cover panel for duct | ```4 uprights +4 gussets +2 plinth cover panels for enclosure``` |
| Remarks | The uprights are used to mount on a wall one or more enclosures combined horizontally or vertically. | The plinth, installed in the factory or on-site, raises the switchboard to protect it and facilitate spreading of cables arriving from a trough. The wall-fixing brackets supplied with the plinth ensure that the switchboard cannot topple over. | The switchboard can be mounted on the structure in the factory or on site. <br> Two wall-fixing brackets supplied with the basic enclosure ensure that the switchboard cannot topple over. | The free-standing structure is simply two wall structures combined back-to-back. The switchboard can be positioned anywhere. It can be fixed to the floor and moved easily using the lifting rings (08396). <br> It can be equipped with one or more enclosures with Schneider sockets. |

Mounting on a pole
2 reinforcement cross-members to support the enclosure


# Wall-mounted enclosures gland plates 

IP55

## Gland plates

Enclosures are supplied with metal gland plates installed on the top or bottom panel of the enclosures ( 2 plates) or 300 mm wide ducts (1 plate).
These plates can be replaced by metal plates with cut-outs for special cable entry systems made of an insulating material (plain, with knockouts or membrane-type). They are designed for entry of cables of different cross-sectional areas via the bottom of a switchboard while maintaining the IP55 degree of protection. The gland plates are easy to install using the mounting kit (supplied with each gland plate) that positions and holds the nuts during installation.
This makes it possible to mount the gland plates using a single tool.


Other gland plates

|  |  |  |
| :---: | :---: | :---: |
| Catalogue numbers | 08898 | 08899 |
| From 7 to 26 mm diameters | 39 | - |
| From 33 to 72 mm diameters | - | 2 |
| Total number of entries | 39 | 2 |

Spare parts > page 137
Dimensions > page 138

Prisma G enclosures
Prisma G W600, W300

## Partial doors and functional units for partial door

IP55

| Partial doors |  |  |
| :---: | :---: | :---: |
| Type | Plain | With cut-outs |
|  |  |  |
| 4 modules ( $\mathrm{H}=200 \mathrm{~mm}$ ) for enclosure from 11 to 27 modules | 08374 | 08376 |
| 6 modules ( $\mathrm{H}=300 \mathrm{~mm}$ ) for enclosure at least 33 modules high | 08375 | 08377 |
| Installation | - On a wall-mounted enclosure at least 11 modules high ( $\mathrm{H}=650 \mathrm{~mm}$ ). <br> - The front must be completed with another door (plain or transparent). <br> Each enclosure or extension can be equipped with only one partial door. |  |
| Characteristics | - | Designed for two mounting plates with 22 mm diameter devices or Schneider Electric industrial sockets. <br> They are supplied with an insulating plain mounting plate that can be used to: blank off a reserve hole, <br> install all types of devices (sockets, EPO devices, measurement devices). <br> The dimensions of the two holes are $200 \mathrm{~mm} \times 112 \mathrm{~mm}$. |
|  | - Hinges that open $170^{\circ}$ <br> - Equipped with a 8 mm male triangle insert (key not supplied). |  |

## Functional units for partial doors

They can be installed:
■ horizontally on the partial doors with cut-outs
■ horizontally or vertically at any point on a door or side panel.

| Type | Plain | For 22 mm diameter devices | For industrial sockets |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 誉 |  |  |  |
| Catalogue numbers | 08861 | 08862 | 08863 | 08864 |
| Characteristics | - Can be used to: <br> - blank off partial doors with cut-outs <br> - mount any type of device (EPO devices, measurement devices, sockets) | For installation of eight 22 mm diameter devices (lights, switches, pushbuttons, etc.) <br> - Supplied with 4 blanking plug | - With two $65 \times 85 \mathrm{~mm}$ holes - Intended for the installation of: - 10/16 A residential sockets - flush-mount 16 A sockets, inclined or straight, IP44/IP67 | Intended for the installation of: - residential sockets ( $10 / 16 \mathrm{~A}$ ) in the $65 \times 85 \mathrm{~mm}$ hole (1a) or flush-mounted inclined or straight 16 A sockets, IP44/IP67, IK08, in the $65 \times 85 \mathrm{~mm}$ hole (1b) a inclined 16 and 32 A sockets IP44 and IP67 in the $90 \times 100 \mathrm{~mm}$ hole (1) |
|  |  |  |  |  |

IP55

## Side panels with cut-outs

These panels are designed to replace the standard side panel.
They can be mounted on the left or right-hand side
Side panels with cut-out


| Nb. of vertical modules <br> of $\mathbf{5 0} \mathbf{~ m m ~}$ | Height <br> $\mathbf{i n ~} \mathbf{~ m m}$ | Nb. of $\mathbf{1 0 3 \times \mathbf { 2 5 5 } \mathbf { ~ m m }}$ <br> holes | Catalogue numbers |
| :--- | :--- | :--- | :--- |
| 7 | 450 | 1 | $\mathbf{0 8 3 6 2}$ |
| $\mathbf{1 1}$ | 650 | 2 | $\mathbf{0 8 3 6 3}$ |
| 15 | 850 | 2 | $\mathbf{0 8 3 6 4}$ |
| 19 | 1050 | 2 | $\mathbf{0 8 3 6 5}$ |
| 23 | 1250 | 2 | $\mathbf{0 8 3 6 6}$ |
| 27 | 1450 | 2 | $\mathbf{0 8 3 6 7}$ |
| 33 | 1750 | 2 | $\mathbf{0 8 3 6 9}$ |

The cut-outs are designed for the installation of Pratika PK industrial sockets up to 63 A either directly or on $103 \times 225 \mathrm{~mm}$ adaptation plates of the Kaedra enclosure range.
Installation is direct (in $103 \times 225 \mathrm{~mm}$ cut-outs) for:
■ 16/32 A interlocked LV sockets, IP44/IP65, IK08
■ 16 A VLV sockets with 160 VA safety transformers, IP44/IP65, IK08.
Industrial sockets and functional units $103 \times 225 \mathrm{~mm}$

|  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Industrial sockets and functional units | 16/32 A interlocked LV sockets <br> 16 A VLV sockets with safety transformers | 16 A and 32 ALV <br> VLV sockets <br> RJ45 sockets | $\begin{aligned} & \square 63 \mathrm{ALV} \\ & \text { sockets } \end{aligned}$ | 16 or 32 A VLV sockets (after uncapping of the opening) <br> - Pushbuttons | blanking plate |
| Size for industrial sockets | $103 \times 225 \mathrm{~mm}$ | $\begin{aligned} & 65 \times 85 \mathrm{~mm} \\ & +90 \times 100 \mathrm{~mm} \\ & \hline \end{aligned}$ | $100 \times 107 \mathrm{~mm}$ | $65 \times 65 \mathrm{~mm}$ | - |
| Functional units catalogue numbers | Direct installation | 13142 | 13144 | 13143 | 13143 |

Prisma G enclosures
Prisma G W600, W300

## Door accessories

IP55

## Locks

■ The small plain and transparent doors (7 to 23 modules) are supplied with a small
handle comprising a barrel lock no. 405.
■ The large plain and transparent doors (27 to 33 modules) are supplied with a large handle comprising a barrel lock no. 405.
■ The partial doors are supplied with an 8 mm male triangle insert.

- All doors can receive as optional equipment:
- a large or small handle with a barrel lock no. 405. The latter can be replaced by other barrel locks or special inserts
- a large EURO handle, supplied without a barrel lock
$\square$ door inserts (squares, triangles, double bars, screwdriver slots).
Handles for replacement

(1) Do not suit to barrels with an automatic return stroke of the key.


## Padlocking



Handle barrel locks and inserts
These components may equip handles after removing the standard barrel lock no. 405.

(1) Others $A$ and $E$ combinations are available from Ronis, please contact us.

## Partial door inserts

These inserts simply replace the standard male triangle insert ( 8 mm ).

| Door insert |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 蓇 |  |  |  |  |  |  |
| Type | Screwdriver slot insert | 3 mm double bar insert | Male triangle insert |  |  | Male square insert |  | 6 mm female square insert |
|  |  |  | 7 mm | $\begin{aligned} & 8 \mathrm{~mm} \\ & \text { (CNOMO) } \\ & \hline \end{aligned}$ | 9 mm | 6 mm | 8 mm |  |
| Catalogue numbers | 09981 | 09982 | 09983 | 09984 | 09985 | 09986 | 09988 | 09989 |

[^7]Prisma G enclosures
Prisma G W600, W300

Spare-parts

IP55

Accessories (IP55)

Set of spare parts for wall-mounted enclosure
2


Spare parts for closing system


Prisma G enclosures
Dimensions
Prisma G W600, W300
IP55

## Doors



| Nb. of <br> vertical <br> modules | C | E | H |
| :--- | :--- | :--- | :--- |
| 7 | 420 | 284 | 450 |
| 11 | 620 | 484 | 650 |
| 15 | 820 | 684 | 850 |
| 19 | 1020 | 884 | 1050 |
| 23 | 1220 | 1084 | 1250 |
| 27 | 1420 | 1284 | 1450 |
| 33 | 1720 | 1584 | 1750 |

## Canopy



## Enclosure combinations



Prisma G enclosures
Prisma G W600, W300

## Dimensions

IP55

## Gland plates



Partial door with cut-outs


Side panels with cut-outs


7 modules


From 11 to 33 modules
(1) Cat. no. 08376 for wall-mounted enclosures from 11 to 27 modules (2) Cat. no. 08377 for wall-mounted enclosures at least 33 modules

Functional mounting plates



Cat. no 08861


Cat. no 08863


Cat. no 08864


Cat. no 08862

## Wall structure



## For safe and upgradeable electrical switchboards, a range of 850 mm width enclosures, available in IP30 and IP55


$>$ Due to dimensional constraints
> Safety of people and property
> Continuity of service
> Optimisation and upgradeability
> Ergonomics and complete accessibility
> Controlled costs
(installation, maintenance)
and delivery times IP55, 300 and 600 mm widths, with all horizontal combinations possible.

Presentation
Floor-standing enclosures

IP30, IP31, IP43

Metallic indoor enclosures to compose.

- Commercial buildings: hotels, offices, shops, etc.
- Industry: technical room, etc.



## Description

Steel sheet metal with electrophoresis treatment + hot-polymerised polyester epoxy powder.
Floor-standing enclosures:
width: 850 mm

- height: 1830 mm
- depth: 205 mm without door / 238 mm with door, + 13.5 mm (handle)

■ properties of metal enclosures > page 198

## Main characteristics



| Prisma G enclosures IP30-IP31-IP43 |  |
| :---: | :---: |
| Rated operational current | In = $630 \mathrm{~A}, \mathrm{Isc}=50 \mathrm{kA}, \mathrm{Icw}=25 \mathrm{Arms} / 1 \mathrm{~s}, \mathrm{lpk}=52.5 \mathrm{kA}$ |
| Colour | White colour RAL 9001 |
| Standards conformity | EN 62208, IEC 61439-1/2 |
| Degree of protection | IP30 with or without door, IP31 with canopy + door, IP43 with canopy + door + gasket |
| Degree of protection against mechanical impacts | IK08 with door, IK07 without door |
| Isolation | Class 1 |
| Doors | - Plain or transparent, opening to right or left - By design, electrical continuity of moving parts - Supplied with a handle and keylock (key 405) Distance behind door $=58 \mathrm{~mm}$ (possibility of push-buttons, lamps installation). |
| Mounting | > page 116 |

Prisma G enclosures
Prisma G W850

IP30, IP31, IP43

## Floor-standing enclosures IP30

Reversible doors (opening to left or right), equipped with a handle and keylock (key 405).
■ Cables can be run on the sides of the plinth (diameter $\leqslant 140 \mathrm{~mm}$ ).

(1) See page 148 for doors accessories.
(2) See page 148 for plain gland plates.

Accessories to increase the degree of protection IP

|  | Canopy to increase the IP value from IP30 to IP31 |  | Gasket for the door to increase the IP value from IP31 to IP43 |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Used with | 1 floor-standing enclosure $\mathrm{W}=850$ | 1 floor-standing enclosure +1 duct W850 $+300{ }^{(1)}$ | Enclosures or a duct from 6 to 33 modules |
|  | I |  |  |
| Catalogue numbers | 08836 | 08837 | $08841 \times 2$ |
| Designation | The addition of a canopy over a wall-mounted or floor-standing enclosure equipped with a door ensures compliance with the degree of protection IP31. |  | When the switchboard is equipped with a canopy, a gasket for the doors ensures compliance with the degree of protection IP43. $\mathrm{L}=5.3 \mathrm{~m}$ |

Multiple combinations and lifting

|  | Floor-standing enclosure + 300 mm wide duct | Two floor-standing enclosures |
| :---: | :---: | :---: |
|  |  |  |
|  | Set of two lifting/reinforcement cross-members for floor-standing enclosure, $\mathrm{W}=850 \mathrm{~mm}+\operatorname{duct} \mathrm{W}=300 \mathrm{~mm}$ | IP30 combination kit for floor-standing enclosures |
| Catalogue numbers | 08809 | 08815 |
| Characteristics | The combination kit (two combination brackets) is supplied with the duct. To make the combination more rigid, particularly during transport, it is mandatory to use a set of cross-members secured to the rear of the switchboard. |  |

## Plain gland plates for plinth



Plinth raiser


Plinth: spare part


## IP30 Horizontal partitioning

The metal partitions are used to:

- separate the functional units from one to another
- create a physical separation between devices and a terminal block, for example.

| Used for | Floor-standing enclosure W850 | Duct W300 |  |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Catalogue numbers | 04336 | 04332 |  |
| Characteristics | - Metal <br> - It is mounted directly on the functional uprights. <br> - Lateral and rear cut-outs are available for cable running or the installation of busbars at the rear of the switchboard. |  |  |

IP30, IP31, IP43

## 850 mm wide enclosure



## Door




## Fixing to floor



Depth behind front plate
Functional uprights


Modular rail


03001/03010.

03003.


03002/03011.

03004.

Slotted mounting plate


03171/03172/03173/03176/03177/ 03178.


03170/03175.

## Weather proof enclosures

IP55

Metallic indoor enclosures to compose.
Severe environments: industrial and agricultural buildings, basements, kitchens, etc.
Floor-standing enclosure delivered flat: total accessibility

```
■630 A
```

■630 A
■ IP55
■ IP55
■ IK10

```
■ IK10
``` Designed for electrical continuity


\section*{Description}

Steel sheet metal with electrophoresis treatment + hot-polymerised polyester epoxy powder.
Floor-standing enclosures:
■ width: 850 mm
- height: 1750 mm + socle 150 mm
- depth: 260 mm with door.
- properties of metal enclosures > page 198

Main characteristics
\begin{tabular}{|c|c|}
\hline \multicolumn{2}{|l|}{Prisma G enclosures IP55} \\
\hline Rated operational current & \(630 \mathrm{~A}, \mathrm{Isc}=50 \mathrm{kA}, \mathrm{Icw}=25 \mathrm{Arms} / 1 \mathrm{~s}, \mathrm{Ipk}=52.5 \mathrm{kA}\) \\
\hline Color & White colour RAL 9001 \\
\hline Standards conformity & EN 62208, IEC 61439-2 \\
\hline Degree of protection & IP55 with door \\
\hline Degree of protection against mechanical impacts & IK10 \\
\hline Isolation & Class 1 \\
\hline Doors & - Plain or transparent, opening to right or left - Supplied with a handle and keylock (key 405) Distance behind plain door \(=78 \mathrm{~mm}\), Distance behind transparent door \(=73 \mathrm{~mm}\) \\
\hline Earthing & Earthing braid delivered with enclosure \\
\hline Combinations & > page 116 \\
\hline
\end{tabular}

\section*{Floor-standing enclosures}

Prisma G W850

IP55

\section*{Floor-standing enclosures}

Reversible doors (opening to left or right), equipped with a handle and keylock (key 405).


Plinth
Sold separately.


Combination
\begin{tabular}{l|l|l|l} 
& Components catalogue numbers \\
& & & \\
& & & \\
\hline
\end{tabular}

\section*{Horizontal partitioning}

The metal partitions are used to:
- separate the functional units from one to another
- create a physical separation between devices and a terminal block, for example.
\begin{tabular}{|c|c|c|c|c|}
\hline Used for & Floor-standing enclosures, width 850 mm & \multicolumn{3}{|l|}{Ducts W300} \\
\hline  &  & 咟 &  &  \\
\hline Catalogue numbers & 04336 & 04332 & & \\
\hline Characteristics & \multicolumn{4}{|l|}{\begin{tabular}{l}
- Metal. \\
- It is mounted directly on the functional uprights. \\
- Lateral and rear cut-outs are available for cable running or the installation of busbars at the rear of the switchboard.
\end{tabular}} \\
\hline
\end{tabular}

Prisma G enclosures
Prisma G W850

IP55


Cable entry


Fixing to floor


Wall-mounted


Depth behind front plate
Functional uprights


03001.

03003.

Slotted mounting plate


03171/03172/03173/03176/ 03177/03178.

03002.

03004.


03170/03175.

Prisma G enclosures
Prisma G W850

Common accessories
W850 mm

\section*{Accessories}


Prisma G enclosures
Prisma G W850

Front plates, rails
W850 mm

\section*{Accessories}

\section*{Plain and modular front plates}


\section*{Accessories for front plates}
\begin{tabular}{l|l|l|l} 
Used for & Front plate hinge kit & \\
& & & \\
\hline
\end{tabular}

Rails
\begin{tabular}{l|l|l}
\hline Used for & N850 Enclosures \\
\hline
\end{tabular}

\section*{Identification labels}


The adhesive label holders are supplied with a paper label and a
transparent cover.

\section*{Adjustable rails}


Prisma G enclosures
Prisma G W850

Functional units

\section*{Compact NSX100/630 horizontal mounting W850 mm}
\begin{tabular}{l} 
Mounting \\
\hline Devices \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Downstream distribution & Linergy & 250 A & \multicolumn{4}{|l|}{Insulated Linergy BW busbars} & \multicolumn{2}{|l|}{Rear Linergy BS busbars} \\
\hline  &  &  &  &  & & &  &  \\
\hline Devices & Compact NSX250 & Vigicompact
NSX250 & \[
\begin{aligned}
& \text { Compact } \\
& \text { NSX100/250 }
\end{aligned}
\] & Compact NSX400 & Compact NSX630 & Vigicompact NSX100/250 & Compact
NS \(\times 250\) & Compact NSX400/630 \\
\hline Busbars / Distribution blocks & \[
\begin{aligned}
& \text { 3P: } 04033 \\
& \text { 4P: } 04034 \\
& \hline
\end{aligned}
\] & \[
\text { > page } 92
\] & > page 84 & > page 84 & > page 84 & > page 84 & > page 86 & > page 86 \\
\hline Power supply block with connection & - & - & 04060 & 04070 & 04071 & 04060 & connection mus & t be made \\
\hline Long terminal shield & - & - & \[
\begin{aligned}
& \text { 3P: LV429517 } \\
& \text { 4P: LV429518 }
\end{aligned}
\] & - & - & \[
\begin{aligned}
& \text { 3P: LV429517 } \\
& \text { 4P: LV429518 }
\end{aligned}
\] & \[
\begin{array}{|l}
\text { 3P: LV429517 } \\
\text { 4P: LV429518 }
\end{array}
\] & \[
\begin{aligned}
& \text { 3P: LV432593 } \\
& \text { 4P: LV432594 }
\end{aligned}
\] \\
\hline
\end{tabular}

Prisma G enclosures
Prisma G W850

Functional units

Compact INS-INV 100/630 horizontal mounting
W850 mm


Prisma G enclosures
Prisma G W850

Functional units

\section*{Easypact CVS100/630 horizontal mounting \\ W850 mm}
\begin{tabular}{l} 
Mounting \\
\hline \multicolumn{1}{|c|}{850} \\
\\
\\
\hline Devices \\
\hline
\end{tabular}
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Downstream distribution & Distribution block Linergy DP 250 A & \multicolumn{5}{|l|}{Insulated Linergy BW busbars} \\
\hline  &  &  & &  & & \\
\hline Type of connected devices & All types & Toggle CVS100/250 & CVS100/250 or Vigi CVS100/250 & | CVS400 & | CVS630 & Direct rotary handle \\
\hline Busbars / Distribution blocks & \[
\begin{array}{|l|l|l|}
\hline \text { 3P: } 04033 \\
\text { 4P: } 04034 \\
\gg \text { page } 92 \\
\hline
\end{array}
\] & \multicolumn{5}{|l|}{> page 84} \\
\hline Power supply block with connections & - & 04060 & 04060 & 04070 & 04071 &  \\
\hline Long terminal shields & - & - & - & - & - & \[
\begin{array}{|l}
\text { 3P: LV429517 } \\
\text { 4P: LV429518 } \\
\hline
\end{array}
\] \\
\hline
\end{tabular}
(1) Connection must be made.
\begin{tabular}{|c|c|c|c|c|}
\hline Downstream distribution & \multicolumn{2}{|l|}{Rear Linergy BS busbars} & \multicolumn{2}{|l|}{Linergy BS multi-stage busbars} \\
\hline  &  & &  & \\
\hline Type of connected devices & CVS100/250 & CVS400/630 & CVS100/250 & CVS400/630 \\
\hline Busbars / Distribution blocks & \multicolumn{2}{|l|}{> page 86} & \multicolumn{2}{|l|}{> page 87} \\
\hline Power supply block with connections & \multicolumn{2}{|l|}{connection must be made} & \multicolumn{2}{|l|}{connection must be made} \\
\hline Long terminal shields & \[
\begin{array}{|l|}
\hline \text { 3P: LV429517 } \\
\text { 4P: LV429518 }
\end{array}
\] & \[
\begin{aligned}
& \text { 3P: LV432593 } \\
& \text { 4P: LV432594 }
\end{aligned}
\] & \[
\begin{aligned}
& \hline \text { 3P: LV429517 } \\
& \text { 4P: LV429518 }
\end{aligned}
\] & \[
\begin{aligned}
& \hline \text { 3P: LV432593 } \\
& \text { 4P: LV432594 } \\
& \hline
\end{aligned}
\] \\
\hline
\end{tabular}

\section*{Modular devices switchboard incomer 80/160 A}

\section*{Functional units}
\begin{tabular}{|c|c|c|}
\hline Mounting & \multicolumn{2}{|l|}{Modular devices} \\
\hline  &  & \\
\hline Devices & All modular devices type of Acti 9 & Modular devices type of Acti \(9 \leqslant 40 \mathrm{~A}\) \\
\hline Type of power supply & All supply systems (Linergy FH, Linergy FM) with cable straps or trunking & Supply via 63/80 A Linergy FM or Linergy FH with cable straps \\
\hline Modular rail \({ }^{(1)}\) & 03006 & \\
\hline Modular front plates [ Nb . of vertical modules] & 03217 [4] & 03216 [3] \\
\hline
\end{tabular}
\begin{tabular}{l} 
Mounting \\
\hline
\end{tabular}
\begin{tabular}{l} 
Mounting \\
\hline \multicolumn{1}{|c|}{} \\
\hline
\end{tabular}

\footnotetext{
(1) Capacity of modular rail: 36 modules ( 18 mm ).
(2) To add modular devices to the row, order a raised DIN rail ( \(W=342 \mathrm{~mm}\) ).
}

\section*{Prisma Genclosures \\ Prisma G W850}

\section*{Linergy distribution and accessories}

\section*{Linergy distribution system}


Presentation See pages 82 and 83
At the head of a switchboard, the incoming device can be supplied by one of the following:
■ busbars mounted in rear of the enclosure
■ centralised distribution blocks
- row distribution blocks.

All the products of Linergy range \(<630\) A are compatible with the 850 mm width offers and their mounting rules are similar.

A specific device feeder Linergy FM, with 750 mm length, has been designed to answer to your needs:
- a reliable stable electrical connection, no maintenance required (tightness
guaranteed over time)
- quick connection

■ easy phase balancing
■ easy upgradeability.


\title{
Pack 160 enclosures, Prisma G Pack 250
}

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Premounted metallic indoor enclosures can be ordered with a single catalogue number.

An enclosure + modular rails + front plates + blanking plates + a plastic gland plate + an earth bar + a template for drilling wall-mounting holes.
wall-mounting holes.

\section*{enclosure ready} to beequipped

\begin{tabular}{|c|c|}
\hline \multicolumn{2}{|l|}{Pack enclosures} \\
\hline Rated operational current & \(160 \mathrm{~A}-\mathrm{Isc}=50 \mathrm{kA}, \mathrm{Icw}=10 \mathrm{kArms} / 1 \mathrm{~s}, \mathrm{Ipk}=30 \mathrm{kA}\) \\
\hline Colour & White RAL 9001 \\
\hline Compliance with standards & EN 62208, IEC 61439-2, NFC 61-910 \\
\hline Degree of protection & IP30 with or without door \\
\hline Degree of protection against mechanical impact & IK08 with door IK07 without door \\
\hline Insulation & Class 1 \\
\hline Doors & \begin{tabular}{l}
- Plain or transparent, opening to right or left \\
- By design, electrical continuity of moving parts (hinges...) \\
- Supplied with a handle and keylock (key 405) \\
- No possibility to install push buttons (distance behind door \(=42 \mathrm{~mm}\) )
\end{tabular} \\
\hline Mounting & Pact enclosures easily integrated in using flush-mounting kit \\
\hline \multicolumn{2}{|l|}{\begin{tabular}{l}
The design of Pack enclosures ensures easy device access and mounting. Optimised depth and an extra-thin door ensure perfect integration in all environments. \\
Models with 4, 5 and 6 rows are particularly well-suited for the incomer function: \\
- more space available for wiring of the incoming device \\
- optimised number of front plates.
\end{tabular}} \\
\hline
\end{tabular}

\section*{Pack wall-mounted and flush-mounted enclosures}


\section*{Wall-mounted enclosures for modular devices}

\section*{Enclosures include:}

■ 1 modular rail per row ( \(\mathrm{L}=24\) modules of 18 mm ).
The recessed rail at the top of 4, 5, 6-row enclosures is for NG160 installation and supplied with another rail +4 raisers to complete the row with modular devices.
- 1 front plate with cut-out per row (height depending on model)
- 1 plastic gland plate
- divisible blanking plates: 3 for 2 and 3 rows enclosures, 6 for 4 to 6 rows
enclosures
- earth bar with 40 straples

Doors are:
- reversible, opening to left or right,

■ supplied with a handle and barrel with keylock (key 405)
■ barrel locks and inserts > see page 120.


Flush-mounting kit > see page 163

\section*{Enclosure extension}

Meters can be installed at different levels on the functional uprights of enclosures. Class 1: Depending on preferences and needs, meters can be installed directly on mounting plates equipped with earthing braids and combined with partitioning or front plates.
The mounting plates can be raised using M5 spacers.

\section*{Doors are:}
- reversible, opening to left or right

■ supplied with a handle and barrel with keylock (key 405),
■ barrel locks and inserts > see page 120


\section*{Kilowatt-hour meters Other functional units for extension enclosures}

\section*{Kilowatt-hour meters, Class 2}

Class 1: Depending on preferences and needs, meters can be installed directly on mounting plates (without insulating plate) equipped with earthing braids of \(6 \mathrm{~mm}^{2}\) (08910) and combined with partitioning or front plates. The mounting plates can be raised using M5 spacers > see page 70.
\begin{tabular}{|c|c|c|c|c|}
\hline Installation & \multicolumn{2}{|l|}{In Pack wall-mounted enclosures} & \multicolumn{2}{|l|}{In an enclosure extension} \\
\hline &  &  &  &  \\
\hline Device & Single-phase meters & 3-phase meters & Single-phase meters & 3-phase meters \\
\hline Nb. of devices per row & 3 & 2 & 3 & 2 \\
\hline Nb . of vertical modules & 6 & 9 & 6 & 9 \\
\hline Mounting plate & 03157 & 03152 & 03157 & 03152 \\
\hline Insulating plate & 03154 & 03154 & 03154 & 03154 \\
\hline Horizontal partitioning \({ }^{(1)}\) & 04333 & 04333 & - & - \\
\hline Front plate \(\frac{\text { transparent }}{\text { plain }}\) & \[
\begin{aligned}
& 03343 \\
& \text { or } 03806
\end{aligned}
\] & \[
\begin{aligned}
& 03344 \\
& \text { or } 03807
\end{aligned}
\] & \[
\begin{aligned}
& 03343 \\
& \text { or } 03806
\end{aligned}
\] & \[
\begin{array}{|l|}
\hline 03344 \\
\text { or } 03807
\end{array}
\] \\
\hline Enclosure & Pack enclosure & Pack enclosure & 08012 & 08013 \\
\hline Door & Depending on enclosure & Depending on enclosure & 08092 (transparent) or 08082 (plain) & 08093 (transparent) or 08083 (plain) \\
\hline Earthing wire 6 mm \({ }^{2}\) & 08911 & 08911 & 08911 & 08911 \\
\hline Combination uprights (set of 2) & - & - & \(08817{ }^{(2)}\) & \(08817{ }^{(2)}\) \\
\hline
\end{tabular}
(1) If not installed at the top of a Pack enclosure, order an addition horizontal partition (04333).
(2) To make the combination more rigid, particularly during transport, it is mandatory to use a set of combination uprights secured to the rear of the switchboard.


\section*{Use}

Allows adding modular devices to the row, if the 03008 rail is used.

\section*{Front plates, W600}
> page 68 and page 164.

\section*{Accessories}

Gland plates
\begin{tabular}{l|l|}
\hline Gland plates \\
\hline Catalogue numbers & \begin{tabular}{l} 
Top or bottom plate with \\
plastic gland plate \\
08878 \\
Characteristics
\end{tabular}
\end{tabular}

\section*{Trunking spreader}

\section*{Trunking spreader}


Catalogue numbers
08821

\section*{Canopy}

Canopy for IP31


Catalogue numbers

Characteristics

The canopy cannot be mounted on the existing top plate. It therefore comes with a special top plate that must be mounted in place of the existing top plate.
The existing top plate is remounted at the bottom of the enclosure to allow cable entry and exit via the bottom.
The addition of a canopy over a wall-mounted or floor-standing enclosure equipped with a door ensures compliance with the degree of protection IP31.

\section*{Gasket}

\section*{Gasket for IP43}


\section*{Combination uprights}
\begin{tabular}{ll} 
Catalogue numbers & \begin{tabular}{l} 
Set of 2 uprights. \\
Particularly during transport, it is mandatory to use a set of \\
combination uprights secured to the rear of the switchboard, \\
to make the combination more rigid.
\end{tabular} \\
\hline
\end{tabular}

Wall mounting


Flush-mounting kit
Flush-mount kit


Catalogue numbers

\section*{Blanking plates}

\section*{Blanking plates}



Finishing parts > page 73

\section*{Accessories \\ Spare-parts}

\section*{Cable-tie supports}
> page 75.

\section*{Cable running}
> page 74.

\section*{Earthing braid}

The earthing braid is used to earth a door or wicket door with devices.


Spare-parts
01264

Modular rail
Pack modular rail
1 DIN rail 432 mm lenght
2 fixing brackets
2 2 self threading screws M5 x 10

Gland plate (IP30)


\section*{Distribution and connection in Pack enclosures with Linergy}


\section*{Presentation}

At the head of a switchboard, the incoming device can be supplied by one of the following:
- busbars mounted in rear of the enclosure
- centralised distribution blocks
- row distribution blocks.


Prefabricated connections 125 to 160 A


Linergy DX distribution block


Linergy DS distribution block


Linergy FH comb busbars
黄
\begin{tabular}{|l|l|}
\hline
\end{tabular}

Linergy FM distribution block


Cable straps

\begin{tabular}{|l|l|}
\hline \(04008,04000,04018,04012,04013,04014,04026\) & 96,97 \\
&
\end{tabular}

04239, \(04243 \times 74\)
Trunking


08867
75

\section*{Wall-mounted enclosures of 2 and 3 rows}
\begin{tabular}{l|l}
\hline Nb. of rows & H \\
\hline 2 & 480 \\
\hline 3 & 630 \\
\hline
\end{tabular}


Wall-mounted enclosures of 4, 5 and 6 rows


\section*{Door}


\section*{Dimensions}

\section*{Gland plates}


\section*{Trunking spreader}


\section*{Wall-mounted}
\begin{tabular}{l|l|l} 
Nb. of rows & H1 & H2 \\
\hline 2 & 396 & 546 \\
\hline 3 & 546 & 696 \\
\hline 4 & 696 & 846 \\
\hline 5 & 846 & 996 \\
\hline 6 & 996 & 1146 \\
\hline
\end{tabular}


\section*{Useful depth behind front plate}


Supplied modular rail.


Upper rail in wall-mounted enclosures of 4, 5 and 6 rows.


Rail cat. no. 03008.


Rail cat. no. 03004.


Rail cat. no. 03003.

Prisma G Pack 250 A enclosures
IP30

Presentation
Wall-mounted and floor-standing enclosures

Metallic indoor wall-mounted and floor-standing enclosures delivered in a kit with a limited number of references.
- Commercial buildings: hotels, offices,shops, etc.


Total accessibility - Dismountable side panels: flat wiring

\section*{Confortable wiring}
- Steel sheet metal with inside painting, not aggressive for the hands of the wiring staffs

Common accessories with Prisma G



Each enclosure is delivered with \(\mathrm{H}=150 \mathrm{~mm}\) front plates and rails for modular devices (quantity according the number of rows) and a plastic gland plate.
Wall-mounted and floor standing enclosures W600

(1) Reversible doors, opening to left or right, equipped with a handle and keylock (key 405).

Zone A to complete depending on the incoming device

(1) To add modular devices to the row.

\title{
Wall-mounted and floor standing enclosures + duct
W \(600 \mathrm{~mm}+\mathrm{W} 300 \mathrm{~mm}\) enclosures + duct
W600 mm + W300 mm
}

(1) Supplied with a combination kit for enclosure + duct association.
(2) Reversible doors, opening to left or right, equipped with a handle and keylock (key 405).

Zone A to complete with 2 rails (Ref. 03001) + 2 front plates (Ref. 03203)


Zone (B) to complete ( \(\mathrm{H}=450 \mathrm{~mm}\) ) with the incoming device
\begin{tabular}{|l|l|l}
\hline Incoming device Zone B & Cat. no. & Composition \\
\hline Compact INV250 & \(\mathbf{0 3 2 6 7}\) & \begin{tabular}{l}
1 mounting plate INV \\
1 front plate INV \\
2 modular rails \(\mathrm{L}=600 \mathrm{~mm}\) \\
2 front plates L \(=600 \mathrm{~mm}\)
\end{tabular} \\
\hline & & 1 founting plate \\
& & \(\mathbf{0 3 0 5 0}\) \\
Compact NSX100/250 & \(\mathbf{+ 0 3 2 5 3}\) & 1 front plate \\
Vertical fixed, toggle & \(\mathbf{0 3 0 5 0}\) & 1 mounting plate \\
\hline Vigicompact NSX100/250 & \(\mathbf{+ 0 3 2 9 3}\) & 1 front plate \\
Vertical fixed, toggle & \(\mathbf{0 3 0 5 0}\) & 1 mounting plate \\
\hline Easypact CVS100/250 & \(\mathbf{+ 0 3 2 5 0}\) & 1 front plate \\
Vertical fixed, toggle & \(\mathbf{0 3 1 2 3}\) & 1 mounting plate \\
\hline Fupact ISFT160 & \(\mathbf{+ 0 3 3 2 7}\) & 1 front plate H \(=300 \mathrm{~mm}\) \\
Vertical fixed, toggle & \(\mathbf{+ 0 3 8 1 3}\) & 1 front plate H \(=150 \mathrm{~mm}\) \\
\hline Fupact ISFT250 & \(\mathbf{0 3 1 2 5}\) & 1 mounting plate \\
Vertical fixed, toggle & \(\mathbf{+ 0 3 3 2 9}\) & 1 front plate \\
\hline
\end{tabular}

\section*{Zone (c) to complete}

The table below gives the cat. no of plain front plates to be installed to complete the duct.
\begin{tabular}{l|l|l}
\begin{tabular}{l} 
Cat. no. \\
of the duct \\
\(\mathbf{0 8 1 7 4}\)
\end{tabular} & \begin{tabular}{l} 
Dimensions of zone C (mm) \\
to complete \\
150
\end{tabular} & Cat. no. \\
\hline \(\mathbf{0 8 1 7 5}\) & 300 & \(03813 \times 1\) \\
\hline \(\mathbf{0 8 1 7 6}\) & 450 & \(03816 \times 1\) \\
\hline \(\mathbf{0 8 1 7 7}\) & 600 & \(03817 \times 1\) \\
\hline \(\mathbf{0 8 1 7 8}\) & 750 & \(03816 \times 2\) \\
\hline \(\mathbf{0 8 1 7 9}\) & 900 & \(03815 \times 3\) \\
\hline \(\mathbf{0 8 2 7 2}\) & 900 & \(03816 \times 3\) \\
\hline \(\mathbf{0 8 2 7 3}\) & 1050 & \(03817 \times 2\) \\
\hline \(\mathbf{0 8 2 7 4}\) & 1200 & \(03817 \times 2+03813 \times 1\) \\
\hline
\end{tabular}

Other combinations are possible to complete the zone © , including 7 heights of 300 mm width front-plates:
\begin{tabular}{l|l} 
Height (mm) & Cat. no. \\
\hline 50 & 03811 \\
\hline 100 & 03812 \\
\hline 150 & 03813 \\
\hline 200 & 03814 \\
\hline 250 & 03815 \\
\hline 300 & 03816 \\
\hline 450 & 03817 \\
\hline
\end{tabular}

\title{
Installation / lifting accessories Accessories to increase the degree of protection IP
}

\section*{Installation possibilities}

Switchboards can be mounted on a wall in three manners: with the hook-on rail system, via the inside of the enclosure or using external wall-mounted brackets. Combined enclosures can be mounted using the lifting/reinforcement crossmembers set of two lifting/reinforcement cross-members.
\begin{tabular}{|c|c|c|c|}
\hline & Hook-on rail system & Mounting via the inside & Mounting using the external wall-mounted brackets \\
\hline & \begin{tabular}{l}
 \\
)
\end{tabular} &  &  \\
\hline Catalogue numbers & Delivered with the enclosure & - & 08804 \\
\hline Characteristics & \begin{tabular}{l}
The enclosure comes with 2 cross-members secured to the back of the enclosure (top and bottom) and a support rail (with levelling adjustment) for screw-mounting on the wall. The enclosure is easily mounted on the hook-on rail system. \\
End the fixation with \(2 \times 8 \mathrm{~mm}\) diameter screws, at the bottom of enclosure
\end{tabular} & The enclosure can be mounted through the spacers in the 4 holes provided on the enclosure using 8 mm diameter screws (2 knockouts can be removed if necessary to provide 2 other holes). & 4 external wall-mounted brackets. \\
\hline
\end{tabular}

\section*{Plinth raiser}


\section*{Lifting accessories}

The lifting rings are used to move a single wall-mounted or floor-standing enclosure. For combined enclosures, use the lifting/reinforcement cross-members (see below).


Accessories to increase the degree of protection IP

Prisma G Pack 250 A enclosures IP30

\section*{Gland plates \\ Cable running}

\section*{Gland plates}

Enclosures (wall-mounted, floor-standing, ducts) are supplied with a plastic gland plate installed on the top or bottom for wall-mounted enclosures and the top for floor-standing enclosures.
The existing plastic gland plate can be replaced by this metal gland plate or by an interface plate with cut-out.


\section*{Cable running}
\begin{tabular}{|c|c|}
\hline Cable running & Pages \\
\hline \multicolumn{2}{|l|}{Horizontal/vertical cable straps + covers} \\
\hline  & 74 \\
\hline \multicolumn{2}{|l|}{Horizontal/vertical trunkings + supports} \\
\hline  & 74 \\
\hline \multicolumn{2}{|l|}{Cable-tie supports} \\
\hline  & 75 \\
\hline
\end{tabular}

Finishing parts labels

\section*{Pages}

Adhesive labels


Adhesive drawing holder


Blanking plates modular device (blanking strip or divisible)


Door handles and padlocking
See page 120
\begin{tabular}{|c|c|c|c|c|}
\hline & EURO handle & ASSA/ABLOY handle & Standard handle & Padlocking \\
\hline &  &  &  &  \\
\hline Catalogue numbers & 08932 & 08933 & 08931 & 08938 \\
\hline Characteristics & Supplied without barrel & Supplied without barrel & Supplied with barrel lock (key no. 405) RAL 7016 & The kit can be installed on the door handles equipped with any of the barrel locks and inserts above \\
\hline
\end{tabular}

Earthing braid See page 120
The earthing braid is used to earth a door or partial door with devices.

\section*{Spare parts}
> see pages 121 to 123 .

\section*{Dimensions}
> see page 124.

\section*{Prisma G Pack 250 A enclosures \\ Linergy distribution \\ Linergy distribution and accessories}


Presentation pages 82 and 83 .
At the head of a switchboard, the incoming device can be supplied by one of the following:
- busbars mounted in rear of the enclosure

■ centralised distribution blocks
- row distribution blocks.

Linergy distribution
Catalogue numbers
Pages
Linergy BW insulated busbars up to 250 A

\begin{tabular}{|l|l|l}
\hline \(04103,04104,04107,04108,04111,04121,04116,04126,04112,04122\), \\
04117,04127
\end{tabular}\(| 84\)

Linergy BS rear busbars


Linergy BS multi-stage distribution block up to 250 A/ Linergy BS multi-stage busbars up to 250 A
Linergy DP quick distribution blocks

|04161, 04171, 04162, 04172, 04052, 04053

04033, 04034, 04155, 04156
92

Linergy DX distribution block


Linergy DS screw distribution blocks


LGY112510, LGY116013, LGY125014,
LGY410028, LGYN1007, LGY412548, LGYN12512, LGY412560,
LGY416048, LGYN12515 LGY416048, LGYN12515

Linergy FM quick device feeders


04008, 04000, 04018, 04012, 04013, 04014, 04026

Horizontal comb busbars Linergy FH
\begin{tabular}{|c|c|}
\hline  & \\
\hline
\end{tabular}

98 to 102

Linergy TB earth bar, neutral bar

\begin{tabular}{|l|l} 
04201, 04214, 04215, 04200, 04202, 04210 & 106 \\
\hline
\end{tabular}

\footnotetext{
Note: see pages 64, 65, 66 for Linergy distribution connections.
}

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Additional information
\begin{tabular}{|c|c|c|}
\hline & Designing Prisma power circuits Presentation and approach & 178 \\
\hline & Designing connections \(\leqslant 630 \mathrm{~A}\) & \\
\hline & Device connections & 179 \\
\hline & Compact circuit breakers NSX100 to 630 & 180 \\
\hline & Incoming connection block and power supply block on Linergy BW busbars & 182 \\
\hline & Designing connections with cables & \\
\hline & Tubular lugs & 183 \\
\hline & Designing the PEN conductor & \\
\hline & Power circuit & 184 \\
\hline & Connection of power cables & 185 \\
\hline \multicolumn{3}{|l|}{Standards} \\
\hline & Standards & 186 \\
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\hline & Selection of enclosures according to the premises & 191 \\
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\hline \multicolumn{3}{|l|}{Thermal characteristics} \\
\hline & Thermal management of switchboards & \\
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\hline & Tools required for mounting and connection & 207 \\
\hline
\end{tabular}

\section*{Additional information Electrical characteristics}

\section*{Designing Prisma power circuits Presentation and approach}

The Prisma Plus system takes into account the installation and connection conditions of Schneider Electric devices.
The entire installation complies with standard IEC 61439-1 and 2 of tested switchboard.


In the following pages you will find a number of examples, validated for Prisma switchboards, intended to assist in determining the busbars as well as the upstream and downstream connections for the installation.
The examples assume that the devices have already been selected.
A complete process involves a number of steps before making final choices (transformer, conductors, protection, etc.).
Schneider Electric offers a number of tools to assist in designing a complete installation (technical guides, software).

\section*{Busbar sizing}

The factors that must be taken into account in determining the size of busbars include:
■ the diversity factor.
Not all the loads supplied by a set of busbars are used at full rated load or at the same time. The diversity factor is the means to determine the maximum load current used to size the busbars.
Standard IEC 61439-1 and 2 § 4.7 specifies the table below:
\begin{tabular}{l|l}
\hline Number of circuits & Rated diversity factor (RDF) \\
\hline 2 and 3 & 0.9 \\
\hline 4 and 5 & 0.8 \\
\hline 6 and 9 & 0.7 \\
\hline 10 and more & 0.6 \\
\hline
\end{tabular}
- the degree of protection IP.

■ the ambient temperature around the switchboard.

\section*{Supply of devices for outgoers \(\leqslant 630 \mathrm{~A}\)}

\section*{Flexible copper bars with an insulating cover.}

To determine the required sizes for flexible bars, see the tables starting on \(>\) see page 179 which indicate the correct size for each type of connected device.
■ an insulated flexible bar (not connected) must meet standards IEC 60243-1,
(dielectric, > see page 179), NFC 32201 (insulation) and IEC 60332-1 (fire)
\(\square\) a flexible bar connected to a device in an enclosure must comply with standard
IEC 61439-1 and 2.

\section*{Cables}

To determine the cables required, see the tables. on > see page 181.
They can be used to determine:
■ the size of cables as a function of:
\(\square\) the circuit breaker rating
\(\square\) the current
\(\square\) the ambient temperature around the switchboard
\(\square\) the permissible current for individually tied cables or touching cables as a function of:
\(\square\) the size of the cables
\(\square\) the degree of protection for the switchboard.

\section*{Designing connections \(\leqslant 630 \mathrm{~A}\) Device connections}

\section*{Flexible copper bars with an insulating sheath}

\section*{Switchboards that comply with standard IEC 61439-1 and 2}

It is imperative to use the values indicated below that have been validated for the installation of devices in Prisma switchboards.
The parameters determining the size of flexible bars are:
- the environment in which the devices are installed:
\(\square\) position in the enclosure
\(\square\) dimensions of other conductors in the circuit
\(\square\) ambient temperature around the switchboard
- the characteristics of the connected devices:
\(\square\) device heat losses
- the type of installation (horizontal or vertical)
- the type of device (fixed or withdrawable).

Only the equipment manufacturer with in-depth knowledge on:
- the characteristics of the installed devices
- the configuration of the installation in the enclosure can provide the correct sizes of flexible bars for a given permissible current. Insulated flexible bars brings flexibility, easy ans quick installation

\section*{Insulated flexible bars are better solution than cables:}

■ better insulation temperature withstand ( \(125^{\circ} \mathrm{C}\) for bars, \(105^{\circ} \mathrm{C}\) for cables) and a larger exchange surface for an equivalent size, i.e. a smaller size for a given current - greater rigidity offering better electrodynamic characteristics for short-circuit currents
- no intermediate parts (lugs) for a direct connection between the device and the busbars therefore less temperature rise and less risk of error ■ fast implementation of prefabricated connections already cut to length, formed and drilled.

\section*{Technical characteristics}
- thickness of the insulation: variable depending on the bar size, 2 mm on average
- rated insulation level \(\mathrm{Ui}=1000 \mathrm{~V}\)

■ impulse withstand voltage Uimp \(=12 \mathrm{kV}\)
- maximum withstand temperature of insulating material \(=125^{\circ} \mathrm{C}\).

\section*{Connection}

In all enclosures with IP \(\leqslant 55\)
- the switchboard internal temperature is \(60^{\circ} \mathrm{C}\)
- the withstand temperature of the insulating material is \(125^{\circ} \mathrm{C}\).

If the withstand temperature of the insulation is only \(105^{\circ} \mathrm{C}\), use the next largest flexible bar.
The bar sizes (S) indicated below take into account the derating curves of devices.
Connection of devices and distribution blocks to busbars
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Device & INS125 & INS160 & INS250 & \[
\begin{array}{|l|l|}
\hline \text { INS320 } \\
\text { INS400 }
\end{array}
\] & \[
\begin{aligned}
& \text { INS500 } \\
& \text { INS630 }
\end{aligned}
\] & \[
\begin{aligned}
& \text { INF250 } \\
& \text { ISFT250 }
\end{aligned}
\] & \[
\begin{aligned}
& \text { INF400 } \\
& \text { ISFT400 }
\end{aligned}
\] & \[
\begin{array}{|l|l}
\text { INF630 } \\
\text { ISFT630 }
\end{array}
\] \\
\hline S (mm) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 3\) & \(32 \times 5\) & \(32 \times 6\) & \(24 \times 5\) & \(32 \times 5\) & \(32 \times 8\) \\
\hline
\end{tabular}

To connect a Compact NSX250 to Linergy BW busbars, use a \(24 \times 5 \mathrm{~mm}\) flexible bar (04746).
\begin{tabular}{l|l} 
Device & \begin{tabular}{l} 
Linergy FM distribution \\
block (200 A)
\end{tabular} \\
\hline\(S(\mathrm{~mm})\) & \(20 \times 3\) \\
\hline
\end{tabular}

Disconnectors, terminal blocks, connections, busbars to busbars
\begin{tabular}{l|l|l|l|l|l|l|l|l|}
\hline Imax. (60
\end{tabular}

\section*{Additional information} Electrical characteristics

Designing connections \(\leqslant 630\) A
Compact circuit breakers NSX100 to 630

\section*{Compact NSX100 to NSX250}

Insulated flexible copper bars
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{Devices} & \multicolumn{6}{|l|}{Rated current of a circuit \(\mathrm{Inc}_{\text {c }}(\mathrm{A})\)} \\
\hline & & \multicolumn{6}{|l|}{Ambient temperature around the switchboard} \\
\hline & & \(25^{\circ} \mathrm{C}\) & \(30^{\circ} \mathrm{C}\) & \(35^{\circ} \mathrm{C}\) & \(40^{\circ} \mathrm{C}\) & \(45^{\circ} \mathrm{C}\) & \(50^{\circ} \mathrm{C}\) \\
\hline \multicolumn{8}{|l|}{IP \(\leqslant 55\)} \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { NSX100 } \\
& \text { TMD-TMG }
\end{aligned}
\]} & Size per phase & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) \\
\hline & \(\mathrm{Inc}_{\text {c }}(\mathrm{A})\) & 100 & 97.5 & 95 & 92.5 & 90 & 85 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX125 } \\
& \text { TMD-TMG }
\end{aligned}
\]} & Size per phase & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) \\
\hline & \(\mathrm{I}_{\mathrm{c}}(\mathrm{A})\) & 125 & 122 & 119 & 116 & 113 & 100 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX160 }^{(1)} \\
& \text { TMD-TMG }
\end{aligned}
\]} & Size per phase & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) \\
\hline & \(\mathrm{Inc}_{\text {c }}(\mathrm{A})\) & 160 & 156 & 152 & 147 & 144 & 140 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX250 } \\
& \text { TMD }
\end{aligned}
\]} & Size per phase & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) \\
\hline & \(\mathrm{Inc}_{\text {c }}(\mathrm{A})\) & 250 & 244 & 238 & 231 & 225 & 198 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { NSX100 } \\
& \text { STR }
\end{aligned}
\]} & Size per phase & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) & \(20 \times 2\) \\
\hline & \(\mathrm{I}_{\mathrm{cc}}(\mathrm{A})\) & 100 & 100 & 100 & 100 & 100 & 100 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX160 } \\
& \text { STR }
\end{aligned}
\]} & Size per phase & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) \\
\hline & \(\mathrm{I}_{\mathrm{c}}(\mathrm{A})\) & 160 & 160 & 160 & 160 & 160 & 160 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX250 } \\
& \text { STR }
\end{aligned}
\]} & Size per phase & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) & \(20 \times 3\) \\
\hline & \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\) & 250 & 250 & 237.5 & 237.5 & 225 & 225 \\
\hline
\end{tabular}
(1) For a withdrawable NSX160 or NSX250 equipped with a Vigi or an insulation-monitoring module, multiply the In values by 0.9 .
(2) For a withdrawable NSX250 equipped with a Vigi or an insulation-monitoring module, multiply the In values by 0.86.

\section*{Compact NSX400 to NSX630}

Insulated flexible copper bars
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{Devices} & \multicolumn{6}{|l|}{Rated current of a circuit \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\)} \\
\hline & & \multicolumn{6}{|l|}{Ambient temperature around the switchboard} \\
\hline & & \(25^{\circ} \mathrm{C}\) & \(30^{\circ} \mathrm{C}\) & \(35^{\circ} \mathrm{C}\) & \(40^{\circ} \mathrm{C}\) & \(45^{\circ} \mathrm{C}\) & \(50^{\circ} \mathrm{C}\) \\
\hline \multicolumn{8}{|l|}{\(\mathrm{IP} \leqslant 55\)} \\
\hline \multirow[t]{2}{*}{NSX400B/F/N/H/S/L fixed} & Size per phase & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) \\
\hline & \(\mathrm{I}_{\mathrm{c}}(\mathrm{A})\) & 400 & 400 & 400 & 390 & 380 & 370 \\
\hline \multirow[t]{2}{*}{NSX400B/F/N/H/S/L with Vigi} & Size per phase & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) \\
\hline & \(\mathrm{I}_{\mathrm{cc}}(\mathrm{A})\) & 400 & 390 & 380 & 370 & 360 & 350 \\
\hline \multirow[t]{2}{*}{NSX400B/F/N/H/S/L withdrawable} & Size per phase & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) & \(32 \times 5\) \\
\hline & \(\mathrm{I}_{\mathrm{cc}}(\mathrm{A})\) & 400 & 390 & 380 & 370 & 360 & 350 \\
\hline \multirow[t]{2}{*}{NSX630B/F/N/H/S/L fixed} & Size per phase & \(32 \times 6\) & \(32 \times 6\) & \(32 \times 6\) & \(32 \times 6\) & \(32 \times 6\) & \(32 \times 6\) \\
\hline & \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\) & 630 & 615 & 600 & 585 & 570 & 550 \\
\hline \multirow[t]{2}{*}{NSX630B/F/N/H/S/L with Vigi or withdrawable} & Size per phase & \(32 \times 8\) & \(32 \times 8\) & \(32 \times 8\) & \(32 \times 8\) & \(32 \times 8\) & \(32 \times 8\) \\
\hline & \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\) & 570 & 550 & 535 & 520 & 505 & 490 \\
\hline
\end{tabular}

\section*{Designing connections \(\leqslant 630 \mathrm{~A}\) Compact circuit breakers NSX100 to 630}

\section*{Cables}

Schneider Electric provides cabling recommendations according to the rating of the circuit breaker.
The size of cables must be selected according to:
- the level of current
- the ambient temperature around the conductors
- the degree of protection for the switchboard.

When mounting Schneider Electric prefabricated connections, short terminal shields can be used or not if the function is already integrated in prefabricated connections.

Note: For some devices, it is recommended to use Schneider Electric prefabricated connections. If not, switchgears must be equipped with long terminal shields for personnel safety.

Compact NSX100 to NSX250
Copper cable, withstand temperature \(=105^{\circ} \mathrm{C}\)
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{Devices} & \multicolumn{6}{|l|}{Rated current of a circuit \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\)} \\
\hline & & \multicolumn{6}{|l|}{Ambient temperature around the switchboard} \\
\hline & & \(25^{\circ} \mathrm{C}\) & \(30^{\circ} \mathrm{C}\) & \(35^{\circ} \mathrm{C}\) & \(40^{\circ} \mathrm{C}\) & \(45^{\circ} \mathrm{C}\) & \(50^{\circ} \mathrm{C}\) \\
\hline \multicolumn{8}{|l|}{\(\mathrm{IP} \leqslant 55\)} \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { NSX100 } \\
& \text { TMD-TMG }
\end{aligned}
\]} & Size & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) \\
\hline & \(\mathrm{Inc}_{\text {c }}(\mathrm{A})\) & 100 & 97.5 & 95 & 92.5 & 90 & 85 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX125 } \\
& \text { TMD-TMG }
\end{aligned}
\]} & Size & \(70 \mathrm{~mm}^{2}\) & \(70 \mathrm{~mm}^{2}\) & \(70 \mathrm{~mm}^{2}\) & \(70 \mathrm{~mm}^{2}\) & \(70 \mathrm{~mm}^{2}\) & \(70 \mathrm{~mm}^{2}\) \\
\hline & \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\) & 125 & 122 & 119 & 116 & 113 & 100 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX160 }{ }^{(1)} \\
& \text { TMD-TMG }
\end{aligned}
\]} & Size & \(95 \mathrm{~mm}^{2}\) & \(95 \mathrm{~mm}^{2}\) & \(95 \mathrm{~mm}^{2}\) & 95 mm \({ }^{2}\) & 95 mm \({ }^{2}\) & \(95 \mathrm{~mm}^{2}\) \\
\hline & \(\mathrm{Inc}_{\mathrm{c}}(\mathrm{A})\) & 160 & 156 & 152 & 147 & 144 & 140 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX250 } \\
& \text { TMD-TMG }
\end{aligned}
\]} & Size & \(120 \mathrm{~mm}^{2}\) & \(120 \mathrm{~mm}^{2}\) & \(120 \mathrm{~mm}^{2}\) & \(120 \mathrm{~mm}^{2}\) & \(120 \mathrm{~mm}^{2}\) & \(120 \mathrm{~mm}^{2}\) \\
\hline & \(\mathrm{Inc}_{\text {c }}(\mathrm{A})\) & 250 & 244 & 238 & 231 & 225 & 198 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX100 } \\
& \text { STR }
\end{aligned}
\]} & Size & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) & \(50 \mathrm{~mm}^{2}\) \\
\hline & \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\) & 100 & 100 & 100 & 100 & 100 & 100 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX160 } \\
& \text { STR }
\end{aligned}
\]} & Size & 95 mm \({ }^{2}\) & 95 mm² & 95 mm² & 95 mm \({ }^{2}\) & 95 mm \({ }^{2}\) & 95 mm \({ }^{2}\) \\
\hline & \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\) & 160 & 160 & 160 & 160 & 160 & 160 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX250 } \\
& \text { STR } \\
& \hline
\end{aligned}
\]} & Size & 120 mm \({ }^{2}\) & 120 mm \({ }^{2}\) & \(120 \mathrm{~mm}^{2}\) & \(120 \mathrm{~mm}^{2}\) & \(120 \mathrm{~mm}^{2}\) & \(120 \mathrm{~mm}^{2}\) \\
\hline & \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\) & 250 & 250 & 237.5 & 237.5 & 225 & 225 \\
\hline
\end{tabular}
(1) For a withdrawable NSX160 or NSX250 equipped with a Vigi or an insulation-monitoring
module, multiply the In values by 0.9 .
(2) For a withdrawable NSX250 equipped with a Vigi or an insulation-monitoring module, multiply the In values by 0.86 .

\section*{Compact NSX400 to NSX630}

\section*{In case of cable connection}

Cable connection is not recommended if the cable sizes are too large. Choose insulated flexible bar (see table opposite and list of insulated flexible bars).

\section*{Additional information \\ Electrical characteristics}

\section*{Designing connections \(\leqslant 630\) A Incoming connection block and power supply block on Linergy BW busbars}

\section*{Compact NSX100 to NSX630}

\section*{Horizontal mounting}

Determining the permissible current of NSX100 to NSX630 connection and power supply blocks as a function of the ambient temperature around the switchboard and their IP degree of protection.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{4}{|l|}{Device} & \multicolumn{12}{|l|}{Rated current of a circuit \(\mathrm{I}_{\mathrm{nc}}(\mathrm{A})\)} \\
\hline & & & & \multicolumn{12}{|l|}{Ambient temperature around the switchboard} \\
\hline & & & & \multicolumn{2}{|l|}{} & \multicolumn{2}{|l|}{} & \multicolumn{2}{|l|}{\(35^{\circ} \mathrm{C}\)} & \multicolumn{2}{|l|}{\(40^{\circ} \mathrm{C}\)} & \multicolumn{2}{|l|}{\(45^{\circ} \mathrm{C}\)} & \multicolumn{2}{|l|}{\(50^{\circ} \mathrm{C}\)} \\
\hline & & & & IP \(\leqslant 31\) & IP > 31 & IP \(\leqslant 31\) & IP > 31 & \(\mathrm{IP} \leqslant 31\) & IP > 31 & \(\mathrm{IP} \leqslant 31\) & IP > 31 & IP \(\leqslant 31\) & IP > 31 & \(\mathrm{IP} \leqslant 31\) & IP > 31 \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { NSX100 } \\
& \text { TMD-TMG }
\end{aligned}
\]} & Incoming connection block & via the top via the bottom & \[
\begin{aligned}
& 04066 \\
& 04067
\end{aligned}
\] & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{95} & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{92} & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{90} & \multirow[t]{2}{*}{97} & \multirow[t]{2}{*}{87} & \multirow[t]{2}{*}{95} & \multirow[t]{2}{*}{85} & \multirow[t]{2}{*}{92} & \multirow[t]{2}{*}{-} \\
\hline & Power supply block & & 04060 & & & & & & & & & & & & \\
\hline \multirow[t]{2}{*}{NSX100STR} & Incoming connection block & via the top via the bottom & \[
\begin{aligned}
& 04066 \\
& 04067
\end{aligned}
\] & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{97} & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{95} & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{92} & \multirow[t]{2}{*}{100} & \multirow[t]{2}{*}{90} & \multirow[t]{2}{*}{97} & \multirow[t]{2}{*}{\(\square\)} \\
\hline & Power supply block & & 04060 & & & & & & & & & & & & \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \hline \text { NSX160 } \\
& \text { TMD-TMG }
\end{aligned}
\]} & Incoming connection block & via the top via the bottom & \[
\begin{aligned}
& 04066 \\
& 04067
\end{aligned}
\] & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{152} & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{147} & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{144} & \multirow[t]{2}{*}{156} & \multirow[t]{2}{*}{140} & \multirow[t]{2}{*}{152} & \multirow[t]{2}{*}{136} & \multirow[t]{2}{*}{147} & \multirow[t]{2}{*}{\(\square\)} \\
\hline & Power supply block & & 04060 & & & & & & & & & & & & \\
\hline \multirow[t]{2}{*}{NSX160STR} & Incoming connection block & via the top via the bottom & \[
\begin{aligned}
& 04066 \\
& 04067
\end{aligned}
\] & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{156} & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{152} & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{147} & \multirow[t]{2}{*}{160} & \multirow[t]{2}{*}{144} & \multirow[t]{2}{*}{156} & \multirow[t]{2}{*}{\(\square\)} \\
\hline & Power supply block & & 04060 & & & & & & & & & & & & \\
\hline \multirow[t]{2}{*}{\[
\begin{aligned}
& \text { NSX250 } \\
& \text { TMD-TMG }
\end{aligned}
\]} & Incoming connection block & via the top via the bottom & \[
\begin{aligned}
& 04066 \\
& 04067
\end{aligned}
\] & \multirow[t]{2}{*}{238} & \multirow[t]{2}{*}{213} & \multirow[t]{2}{*}{231} & \multirow[t]{2}{*}{207} & \multirow[t]{2}{*}{225} & \multirow[t]{2}{*}{200} & \multirow[t]{2}{*}{219} & \multirow[t]{2}{*}{193} & \multirow[t]{2}{*}{213} & \multirow[t]{2}{*}{185} & \multirow[t]{2}{*}{207} & \multirow[t]{2}{*}{\(\square\)} \\
\hline & Power supply block & & 04060 & & & & & & & & & & & & \\
\hline \multirow[t]{2}{*}{NSX250STR} & Incoming connection block & via the top via the bottom & \[
\begin{aligned}
& 04066 \\
& 04067
\end{aligned}
\] & \multirow[t]{2}{*}{250} & \multirow[t]{2}{*}{219} & \multirow[t]{2}{*}{245} & \multirow[t]{2}{*}{213} & \multirow[t]{2}{*}{238} & \multirow[t]{2}{*}{207} & \multirow[t]{2}{*}{225} & \multirow[t]{2}{*}{200} & \multirow[t]{2}{*}{219} & \multirow[t]{2}{*}{193} & \multirow[t]{2}{*}{213} & \multirow[t]{2}{*}{\(\square\)} \\
\hline & Power supply block & & 04060 & & & & & & & & & & & & \\
\hline \multirow[t]{2}{*}{NSX400B/F/ N/H/S/L fixed} & Incoming connection block & & 04076 & \multirow[t]{2}{*}{400} & \multirow[t]{2}{*}{360} & \multirow[t]{2}{*}{390} & \multirow[t]{2}{*}{350} & \multirow[t]{2}{*}{380} & \multirow[t]{2}{*}{340} & \multirow[t]{2}{*}{370} & \multirow[t]{2}{*}{330} & \multirow[t]{2}{*}{360} & \multirow[t]{2}{*}{320} & \multirow[t]{2}{*}{350} & \multirow[t]{2}{*}{\(\square\)} \\
\hline & Power supply block & & 04070 & & & & & & & & & & & & \\
\hline \multirow[t]{2}{*}{NSX630B/F/ N/H/S/L fixed} & Incoming connection block & & 04076 & \multirow[t]{2}{*}{570} & \multirow[t]{2}{*}{520} & \multirow[t]{2}{*}{555} & \multirow[t]{2}{*}{505} & \multirow[t]{2}{*}{540} & \multirow[t]{2}{*}{490} & \multirow[t]{2}{*}{525} & \multirow[t]{2}{*}{470} & \multirow[t]{2}{*}{510} & \multirow[t]{2}{*}{450} & \multirow[t]{2}{*}{495} & \multirow[t]{2}{*}{-} \\
\hline & Power supply block & & 04071 & & & & & & & & & & & & \\
\hline \multicolumn{4}{|l|}{- connection not possible.} & \multicolumn{12}{|l|}{\begin{tabular}{l}
The indicated performance characteristics are valid for: \\
- Compact NSX100/160/250/400 circuit breakers used as incoming or outgoing devices \\
■ Compact NSX630 circuit breakers used as incoming device.
\end{tabular}} \\
\hline
\end{tabular}

\section*{Additional information}

\section*{Electrical characteristics}

\section*{Designing connections \\ with cables}

\section*{Tubular lugs}

\section*{Tubular lugs for incoming connection blocks}

Maximum size of lugs for connection to the different incoming connection blocks.
\begin{tabular}{l|l|l|l} 
& \begin{tabular}{l} 
Standard Cu \\
lugs
\end{tabular} & \begin{tabular}{l} 
Narrow Cu \\
lugs
\end{tabular} & \begin{tabular}{l} 
Narrow \\
bimetal lugs
\end{tabular} \\
\hline \begin{tabular}{l} 
Incoming connection block for NSX-INS250 \\
supplied via the top or bottom, cat. no. 04066 and \\
04067
\end{tabular} & \(150 \mathrm{~mm}^{2}\) & \(240 \mathrm{~mm}^{2}\) & \(185 \mathrm{~mm}^{2}\) \\
\begin{tabular}{l} 
In-duct incoming connection block for NSX630, \\
cat. no. 04076
\end{tabular} & \(240 \mathrm{~mm}^{2}\) & \(300 \mathrm{~mm}^{2}\) & \(300 \mathrm{~mm}^{2}\) \\
\hline
\end{tabular}

\section*{Narrow bimetal lugs}


Catalogue numbers selection
\begin{tabular}{l|l|l}
\begin{tabular}{l} 
Catalogue numbers \\
Lugs for aluminium cable \({ }^{(1)}\)
\end{tabular} & Cable size \(\left(\mathrm{mm}^{2}\right)\) & Quantity \\
\(\mathbf{2 9 5 0 4}\) & 150 & 3 \\
\hline \(\mathbf{2 9 5 0 5}\) & 150 & 4 \\
\hline \(\mathbf{2 9 5 0 6}\) & 185 & 3 \\
\hline \(\mathbf{2 9 5 0 7}\) & 185 & 4 \\
\hline \(\mathbf{3 2 5 0 4}\) & 240 & 3 \\
\hline \(\mathbf{3 2 5 0 5}\) & 240 & 4 \\
\hline \(\mathbf{3 2 5 0 6}\) & 300 & 3 \\
\hline \(\mathbf{3 2 5 0 7}\) & 300 & 4 \\
\hline
\end{tabular}
(1) Supplied with 2 or 3 interphase barriers.

\section*{Designing the PEN conductor Power circuit}

\section*{Size of PEN protective conductor}

\section*{Practical guidelines}

The size of the PEN is determined in the same manner as a neutral conductor, i.e.:
■ for copper single-phase circuits or sized y \(16 \mathrm{~mm}^{2}\), it must be the same size as
the phase conductors
\(\square\) for copper three-phase circuits sized > \(16 \mathrm{~mm}^{2}\), it can be:
\(\square\) the same size as the phase conductors
\(\square\) smaller on the condition that:
- the current likely to flow in the neutral during normal operation is less than the permissible current for the conductor
- the power rating of single-phase loads does not exceed \(10 \%\) of the total rating. The conductor must be accessible to enable connections both in the factory and on site, as well as checks on the tightness of connections.

\section*{Implementing the PEN protective conductor}

\section*{Practical guidelines}

According to standard IEC 61439-1 and 2, the practical guidelines for implementing the PEN are the following:
■ at the entry to the assembly, the PEN connection must be next to the phase
connections
■ within the assembly, the PEN does not need to be insulated from the exposed
conductive parts (except on sites where there is a risk of fire or explosion)
■ the size of the conductor must be at least equal to that of the neutral
■ the size must remain constant throughout the main busbars
■ the change from a TNC to a TNS system must take place at a single point in the switchboard, via a marked neutral-disconnection bar that is accessible and can be dismantled to facilitate the impedance measurement of the fault loop ■ after the TNS creation point, it is forbidden to recreate a TNC system.
The PE and the neutral must meet their specific requirements.

\section*{Connection of power cables}

To ensure protection of persons, first connect the switchboard protective conductor to the earth electrode.
- Tie the cables as close as possible to the connections to avoid any mechanical stresses on the device terminals. When not using cable glands, also attach the cables near to the electrical switchboard.
■ Cables must never be in contact with or passed between live conductors.
- Sharp edges of the framework must be protected where cables pass to avoid damaging the conductors.
- Comply with a minimum radius of curvature of 6 to 8 times the cable outside diameter.
- All power connections must be made with class 8.8 mounting hardware and elastic contact washers, tightened to the torque indicated in the table below.
\(\square\) When connecting aluminium cables to copper terminals, use bimetal lugs or interfaces.
■ Separate the different types of circuits into separate cable bundles (power, control, \(48 \mathrm{~V}, 24 \mathrm{~V}, \mathrm{DC}, \mathrm{AC}\), etc).

\section*{Cable bundles}
\begin{tabular}{l|l}
\begin{tabular}{l} 
Cable cross-sectional area \\
\(\left(\mathbf{m m}^{2}\right)\)
\end{tabular} & Max. number of cables per bundle \\
\hline\(C S A \leqslant 10\) & 8 \\
\hline \(16<C S A \leqslant 50\) & 4 \\
\hline\(C S A \geqslant 50\) & Tie individually \\
\hline
\end{tabular}

\section*{Tying the cable bundles}
\begin{tabular}{l|l|l} 
Type of tie & \begin{tabular}{l} 
Maximum lcw \\
\((\mathbf{k A} / \mathbf{r m s ~ 1 s})\)
\end{tabular} & \begin{tabular}{l} 
Distance between ties \\
\((\mathbf{m m})\)
\end{tabular} \\
\hline Width: 4.5 mm & 10 & 200 \\
Load: 22 kg & 15 & 100 \\
& 20 & 50 \\
\hline Width: 9 mm & 20 & 350 \\
Load: 80 kg & 25 & 200 \\
& 35 & 100 \\
\hline
\end{tabular}

For cable sizes of \(50 \mathrm{~mm}^{2}\) or more, use 9 mm wide fixing ties.
Recommended tightening torque for mechanical and electrical connections with 8.8 class screws.
\begin{tabular}{l|l} 
Diameter of screw & \begin{tabular}{l} 
Tightening torque \((\mathbf{N m})\) \\
(with nut + contact washer)
\end{tabular} \\
\hline M3 & 1.5 \\
\hline M4 & 3.5 \\
\hline M5 & 7 \\
\hline M6 & 13 \\
\hline M8 & 28 \\
\hline M10 & 50 \\
\hline M12 & 75 \\
\hline
\end{tabular}

\section*{What is a standard?}

\section*{A common reference}
"A standard helps to define a common language between economic stakeholders (producers, users and consumers), to clarify and harmonize practices and to define the levels of quality, safety, compatibility, and least environmental impact of products, services and practices.
Standards facilitate trade, both national and international, and help to better structure the economy and facilitate the everyday life of everyone."

\section*{Afnor definition}

\section*{IEC international standards}

The IEC (International Electrotechnical Commission) is a worldwide organisation for standardisation comprising all national electrotechnical committees (IEC National Committees).
The object of the IEC is to promote international cooperation on all questions concerning standardisation in the electrical and electronic fields.
To that end, the IEC publishes International Standards.
Their preparation is entrusted to technical committees and any IEC National Committee interested in the subject dealt with may participate in the preparatory work.

\section*{National standards}

\section*{In Europe}

The IEC documents are first studied by CENELEC, which establishes:
■ either a European standard (EN), often identical to the IEC standard, which then
becomes the applicable national standard in all the member countries
■ or, in the event of differences, a harmonisation document (HD).
Other IEC member countries
Each country is autonomous and can accept the IEC standard as the national standard, with or without modifications.
Even though they are IEC members, countries such as Japan and the United States continue to develop their own standardisation systems.
Countries without a standardisation system
It is possible to refer to an IEC standard in the framework of a project.


\section*{CEI/IEC}

Commission Electrotechnique Internationale
CENELEC
Comité Européen de Normalisation ELECtrotechnique
UTE
Union Technique de l'Électricité
VDE
Verband der Elektrotechnik, Elektronik und Informationstechnik
e.v. (German electrotechnical, electronics and computer
technology standardisation organisation)
BSI
British Standards Institution

\section*{The different types of standards}

There are different types of standards, including:
- management standards
- installation standards
- product standards.


Design and manufacture.


Switchgear and controlgear.


Switchgear and controlgear assemblies.


Installation.

\section*{Management standards}

ISO 9004: Quality-management systems - guidelines for performance improvements. Used in setting up a quality-management system.

ISO 9001: Quality management systems - requirements. Used for certification audits.

ISO 14004: Environmental-management systems. General guidelines on the principles, systems and supporting techniques.

ISO 14001: Environmental-management systems. Specification with guidance for use.

The majority of Schneider Electric development centres and factories are certified ISO 9001 and ISO 14001.

\section*{Low voltage installation standards}

The set of IEC 60364 standards defines the main principles and rules for the design and the mounting of the electrical installation:
- determining general characteristics of installations
- protection
- selection and installation of equipment
- verification and maintenance of installations

\section*{Switchgears standards}

They apply to devices or assemblies and are aimed at ensuring correct operation and safety of the concerned products:
- standards on low voltage switchgear and controlgear:
- IEC 60947-1: general rules
- IEC 60947-2: circuit breakers
- IEC 60947-3: switches and disconnectors
- IEC 60947-4: contactors
- IEC 60947-7-1: terminal blocks for copper conductors
- IEC 62208: empty enclosures.
- The IEC 61439 switchboard standard:
\(\square\) characterizes the electrical switchboard and specifies the design, construction and verification rules
\(\square\) describes in detail all low voltage switchgear and controlgear: definitions, technical characteristics, conditions of use, and construction and verification requirements
- applies to power switchgear and controlgear assemblies (PSC assemblies) whose rated voltage does not exceed 1000 V in alternating current or 1500 V in direct current.

Regulations in a given country may make certain standards legally binding and may also create additional safety requirements.

In addition to providing proof of the conformity of its quality-management system, a product manufacturer can demonstrate the quality of products by providing proof that the design and manufacture comply with the requirements in the applicable standard.
Proof of conformity may be a declaration by the manufacturer or a certificate supplied by an independent organisation.
\(>\) More informations in pages 20 to 23.

\section*{Standards}

\section*{Enclosure standards}

Standard IEC 62208 lay down definitions, classifications, characteristics and test requirements for enclosures used for switchgear and controlgear assemblies.
They apply to empty enclosures before installation of the devices by the panelbuilder, as supplied by the manufacturer.
They apply to one-piece enclosures and to enclosures supplied in kit form.

\section*{Type tests of standard IEC 62208}

1 - Static load
2 - Hoisting
3 - Axial loads of metal inserts
4 - IK code
5 - IP code
6 - Thermal stability
7 - Resistance to heat
8 - Resistance to abnormal heat and to fire
9 - Dielectric strength
10 - Protective-circuit continuity
11 - Weather resistance
12 - Corrosion resistance
13 - Marking

\section*{C \(\in\) marking}

C \(\in\) marking is a regulatory symbol attributed under the sole responsibility of the manufacturer and intended for the verification authorities of the European countries that enforce the European regulations.
It allows free circulation of a product in the European Union and certifies that it complies with the basic requirements in all the applicable European directives. ( \(\in\) marking is not a quality symbol and does not indicate conformity with a standard

The C \(\epsilon\) declaration is intended exclusively for the authorities in charge of verifying compliance with the applicable regulations and it is drafted, signed and held for presentation to the authorities by the manufacturer.
For the Prisma range, the declaration is the responsibility of the Schneider Electric unit that has designed and developed the product.
For LV switchboards, the declaration is the responsibility of the panelbuilder.
The following products receive \(C \in\) marking:
\(\square\) all products that are liable to endanger the safety of persons, animals and property
(LV directive)
■ all products likely to emit electromagnetic disturbances above a standardised threshold or to be disturbed during operation (EMC directive).

\section*{Consequences:}
- the Prisma range falls under the LV directive only

■ LV switchboards are covered by the LV directive and may also fall under the EMC directive, depending on the type of devices incorporated.

For the Prisma range, C \(\in\) marking is applied:
■ on the packing of "mechanical" components
■ on the product itself for "electrical" components.
For the LV assemblies created by the panelbuilder, \(C \in\) marking is applied:
■ on the packing
- on the rating plate (if applicable)

■ on one of the documents accompanying the switchboard when it is shipped.

\section*{Standards}

\section*{Degree of protection}

Standard IEC 60364-5-51 lists and codifies a large number of external influences to which electrical installations can be subjected, including the presence of water, solid objects, shocks, vibrations, corrosive substances, etc.

\section*{IP code}

Standard IEC 60529 (IP code, February 2001) indicates the degrees of protection provided by an enclosure for electrical devices against access to hazardous parts, against penetration of solid foreign objects and against penetration of water. These standards do not apply for the protection against the risks of explosion or conditions such a humidity, corrosive vapour, fungus or vermin.
The IP code is made up of two characteristic numerals and can include an additional letter when the actual protection for persons against access to the hazardous parts is better than that indicated by the first numeral.
The first numeral characterises the protection provided against the ingress of solid foreign objects and the protection of persons. The second numeral characterises the protection provided against the ingress of water with harmful effects.


\section*{2nd numeral}

Protection against ingress of water
1 Protected against vertically dripping water (condensation)


2 Protected against dripping water up to \(15^{\circ}\) from vertical


3
Protected against spraying water up to \(60^{\circ}\) from vertical


4 Protected against splashing water from all directions


5 Protected agains water jets from all directions


6 Protected against powerful water jets from all directions


7 Protected against the effects of temporary immersion in water


8 Protected against the effects of continuous immersion in water

\section*{Standards}

\section*{Additional letter}

The additional letter is used only if the actual protection of persons is higher than that indicated by the first characteristic numeral of the IP code.
\begin{tabular}{l|l}
\multicolumn{1}{c|}{ Additional letter } & Protection \\
A & A Protected against access with back of hand \\
\hline B & B Protected against access with a 12 mm diameter finger \\
\hline C & C Protected against access with a 2.5 mm diameter tool \\
\hline D & D Protected against access with a 1 mm diameter wire \\
\hline
\end{tabular}

If only the protection of persons is of interest, the two characteristic numerals are replaced by the letter " X ", e.g. IPXXB.

\section*{Illustration of the above explanations:}


\section*{Remarks}

■ The degree of protection IP must always be read and understood numeral by numeral and not as a whole.
For example, an IP31 wall-mount enclosure is suitable for an environment that requires a minimum degree of protection IP21. However an IP30 wall-mount enclosure is not suitable.
■ the degrees of protection indicated in this catalogue are valid for the enclosures as presented. However, the indicated degree of protection is guaranteed only when installation and device mounting are carried out in accordance with professional standards that conserve the initial degree of protection.

\section*{IK code}

Standard IEC 62262 defines an IK code characterising the capacity of products to resist mechanical impacts from all sides.
\begin{tabular}{l|l} 
IK code & Impact energy (joules) \\
\hline 01 & 0.14 \\
\hline 02 & 0.2 \\
\hline 03 & 0.35 \\
\hline 04 & 0.5 \\
\hline 05 & 0.7 \\
\hline 06 & 1 \\
\hline 07 & 2 \\
\hline 08 & 5 \\
\hline 09 & 10 \\
\hline 10 & 20 \\
\hline
\end{tabular}

IK codes can be selected according to the risks of impacts on a given site.
\begin{tabular}{l|l|l} 
& Site & Recommended IK \\
\hline No risk of major impact & Technical premises & 07 \\
\hline \begin{tabular}{l} 
Significant risk of impact that \\
can damage devices
\end{tabular} & Hallways & 08 (switchboard with door) \\
\hline \begin{tabular}{l} 
Maximum risk of impact that \\
can damage the switchboard
\end{tabular} & Workshops & 10 \\
\hline
\end{tabular}

\section*{Additional information Enclosure characteristics}

\section*{Selection of enclosures according to the premises}

The IP and IK degrees of protection provided by an enclosure must be specified as a function of the various external influences defined by standard IEC 30364-5-51, in particular:
■ presence of foreign solid bodies (code AE)
- presence of water (code AD)
- mechanical stress (code not specified)
- capability of persons (code BA)
-...
Prisma switchboards are designed for indoor installation.
Unless the rules, standards and regulations of a specific country stipulate otherwise, Schneider Electric recommends the following IP and IK values based on French guide UTE C 15-103 (March 2004).

\section*{Using the table}

1 Opposite the relevant premises, read the recommended IP and IK values.
2 The \(■\) symbol indicates the enclosure or cubicle satisfying the criteria of the UTE guide.
Any enclosure or cubicle with a higher degree of protection can also be used.
3 If several degrees of protection are possible (refer to the standard for more details) and the \(\quad\) and \(\square\) symbols are indicated (e.g. \(\mathbf{2 4}^{\square} / 5^{\circ}\) ), enclosures that correspond to the higher degree of protection ( \(\square\) ) are suitable for the lower degree of protection (ㅁ).

\section*{Example:}

Selection of an enclosure for a laundry room.
Minimum degree of protection: IP21/IK02
A wall-mounted enclosure with a door (plain or transparent), a canopy and a gasket offer IP43/IK08 degrees of protection and are therefore suitable for this application.
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Type of premises & \multicolumn{7}{|l|}{Enclosures} \\
\hline & \multicolumn{2}{|l|}{Wall-mounted enclosure} & without door & with door & with door + canopy & with door + canopy + gasket & IP55 \\
\hline & \multicolumn{2}{|l|}{Floor-standing enclosure} & without door & with door & with door + canopy & with door + canopy+ gasket & \\
\hline & \multicolumn{2}{|l|}{Min. IP/IK required} & IP30/IK07 & IP30/IK08 & IP31/IK08 & IP43/IK08 & IP55/IK10 \\
\hline & IP & IK & & & & & \\
\hline \multicolumn{8}{|l|}{Domestic or comparable premises or locations} \\
\hline Porch & 24 & 07 & & & & & \(\square\) \\
\hline \multicolumn{8}{|l|}{Bathrooms (see washrooms)} \\
\hline Bicycles, motorcycles, tricycles, etc. (premises for) & 20 & 07 & \(\square\) & & & & \\
\hline Water, sewer and heating connections & 23 & 02 & & & & \(\square\) & \\
\hline Laundries & 21 & 02 & & & - & & \\
\hline Cellars, garages, furnace rooms & 20 & 02/07 & \(\square\) & & & & \\
\hline Bedrooms & 20 & 02 & \(\square\) & & & & \\
\hline Trash rooms & 25 & 07 & & & & & \(\square\) \\
\hline Halls in cellars & 20 & 07 & & & & & \\
\hline Courtyards & 24/25 & 02/07 & & & & & \(\square\) \\
\hline Kitchens & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{8}{|l|}{Shower rooms (see washrooms)} \\
\hline Indoor stairways and alleys & 20 & 02/07 & \(\square\) & & & & \\
\hline Outdoor stairways and outdoor alleys without roofs & 24 & 07 & & & & & \\
\hline Outdoor alleys with roofs & 21 & 02 & & & \(\square\) & & \\
\hline Attics (roof space) & 20 & 02 & \(\square\) & & & & \\
\hline Garden shelters & 24/25 & 02/07 & & & & & \(\square\) \\
\hline Latrines & 20 & 02 & \(\square\) & & & & \\
\hline Dustbin rooms & 25 & 02/07 & & & & & \(\square\) \\
\hline Ironing room & 20 & 02 & \(\square\) & & & & \\
\hline Access ramps to garages & 25 & 07 & & & & & \(\square\) \\
\hline
\end{tabular}

\section*{Additional information}

Enclosure characteristics

\section*{Selection of enclosures according to the premises}


\section*{Additional information}

Enclosure characteristics

\section*{Selection of enclosures according to the premises}


\section*{Additional information}

Enclosure characteristics

\section*{Selection of enclosures according to the premises}
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{Type of premises} & \multicolumn{7}{|l|}{Enclosures} \\
\hline & & Wall-m enclosu & punted
ure & without door & with door & with door + canopy & with door + canopy + gasket & IP55 \\
\hline & & \multicolumn{2}{|l|}{Floor-standing enclosure} & without door & with door & with door + canopy & with door + canopy + gasket & \\
\hline & & Min. IP/ required & & IP30/IK07 & IP30/IK08 & IP31/IK08 & IP43/IK08 & IP55/IK10 \\
\hline & & IP & IK & & & & & \\
\hline \multicolumn{9}{|l|}{Technical premises} \\
\hline \multicolumn{2}{|l|}{Battery rooms} & 23 & 02/07 & & & & \(\square\) & \\
\hline \multicolumn{2}{|l|}{Lifts (machine rooms and pulley rooms)} & 20 & 07/08 \({ }^{\text {- }}\) & \(\square\) & - & & & \\
\hline \multicolumn{2}{|l|}{Electrical rooms} & 20 & 07 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Control rooms} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Workshops} & 21//3' & 07/08" & & & \(\square\) & \(\square\) & \\
\hline \multicolumn{2}{|l|}{Laboratories} & 21/23= & 02「/07 \({ }^{\text { }}\) & & & \(\square\) & \(\square\) & \\
\hline \multicolumn{2}{|l|}{Air conditioning washers} & 24 & 07 & & & & & \(\square\) \\
\hline \multicolumn{2}{|l|}{Garages (used exclusively for parking vehicles) of an area not exceeding \(100 \mathrm{~m}^{2}\)} & 21 & 07 & & & - & & \\
\hline \multicolumn{2}{|l|}{Machine rooms} & 31 & 07/08 & & & \(\square\) & & \\
\hline \multicolumn{2}{|l|}{Water pressurisers} & 23 & 07/08 & & & & \(\square\) & \\
\hline \multicolumn{9}{|l|}{Boiler houses and adjoining premises (power in excess of 70 kW )} \\
\hline \multirow[t]{3}{*}{Boiler rooms} & coal fuel & 51/61" & 07/08" & & & & & \(\square\) \\
\hline & other fuel & 21 & 07/08 & & & \(\square\) & & \\
\hline & electrical & 21 & 07/08 & & & \(\square\) & & \\
\hline \multirow[t]{3}{*}{Fuel storage areas} & coal & 50'/60" & 08 & & & & & \(\square\) \\
\hline & oil & 20 & 07/08 \({ }^{\text {" }}\) & \(\square\) & \(\square\) & & & \\
\hline & liquefied gas & 20 & 07/08" & \(\square\) & \(\square\) & & & \\
\hline \multicolumn{2}{|l|}{Cinder tips} & 50 & 08 & & & & & \(\square\) \\
\hline \multicolumn{2}{|l|}{Pump rooms} & 21//* & 07/08 \({ }^{\text {- }}\) & & & \(\square\) & \(\square\) & \\
\hline \multicolumn{2}{|l|}{Pressure reduction rooms (gas)} & 20 & 07/08 \({ }^{\text {² }}\) & \(\square\) & \(\square\) & & & \\
\hline \multicolumn{2}{|l|}{Steam or hot water facilities} & 21/23 \({ }^{\prime \prime}\) & 07/08" & & & \(\square\) & \(\square\) & \\
\hline \multicolumn{2}{|l|}{Expansion vessel rooms} & 21 & 02 & & & - & & \\
\hline \multicolumn{9}{|l|}{Garages and car parks of an area exceeding \(100 \mathrm{~m}^{2}\)} \\
\hline \multicolumn{2}{|l|}{Parking lots} & 21 & 07/10" & & & \(\square\) & & \(\square\) \\
\hline \multicolumn{2}{|l|}{Carwash areas (inside premises)} & 25 & 07 & & & & & \(\square\) \\
\hline \multirow[t]{2}{*}{Petrol stations} & inside & 21 & 07 & & & \(\square\) & & \\
\hline & outside & & & & & & & \\
\hline \multicolumn{2}{|l|}{Lubrication areas} & 23 & 08 & & & & \(\square\) & \\
\hline \multicolumn{2}{|l|}{Battery recharging areas} & 23 & 07 & & & & \(\square\) & \\
\hline \multicolumn{2}{|l|}{Workshops} & 21 & 08 & & & \(\square\) & & \\
\hline \multicolumn{9}{|l|}{Public building (other than for the general public)} \\
\hline \multicolumn{2}{|l|}{Offices} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Libraries} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Archives} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Computer rooms} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Design offices} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Rooms containing reprographic machines} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Sorting rooms} & 20 & 07 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Refectories in restaurants or canteens} & 21 & 07 & & & - & & \\
\hline \multicolumn{2}{|l|}{Large kitchens} & & & & & & & \\
\hline \multicolumn{2}{|l|}{Sports rooms} & 20 & 07/08" & \(\square\) & \(\square\) & & & \\
\hline \multicolumn{2}{|l|}{Barracks} & 20 & 07 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Meeting rooms} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Waiting rooms, lounges, halls} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Medical consulting rooms, not fitted with specific equipment} & 20 & 02 & \(\square\) & & & & \\
\hline \multicolumn{2}{|l|}{Demonstration and exhibition rooms} & 20 & 02/07 & \(\square\) & & & & \\
\hline
\end{tabular}

\section*{Additional information}

Enclosure characteristics

\section*{Selection of enclosures according to the premises}
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Type of premises & \multicolumn{7}{|l|}{Enclosures} \\
\hline & Wall-m enclos & ounted re & without door & with door & with door + canopy & with door + canopy + gasket & IP55 \\
\hline & \multicolumn{2}{|l|}{Floor-standing enclosure} & without door & with door & with door + canopy & \multirow[t]{2}{*}{\begin{tabular}{l}
with door + canopy + gasket \\
IP43/IK08
\end{tabular}} & \\
\hline & \multicolumn{2}{|l|}{Min. IP/IK required} & IP30/IK07 & IP30/IK08 & IP31/IK08 & & IP55/IK10 \\
\hline & IP & IK & & & & & \\
\hline \multicolumn{8}{|l|}{Farm premises or locations} \\
\hline Alcohol (storage) & 23 & 07 & & & & \(\square\) & \\
\hline Closed cattle sheds & 35 & 07 & & & & & \(\square\) \\
\hline Laundries & 24 & 07 & & & & & \(\square\) \\
\hline Wood storage rooms & 30 & 10 & & & & & \(\square\) \\
\hline Threshing floors & 50 & 07 & & & & & \(\square\) \\
\hline Distilling cellars & 23 & 07 & & & & \(\square\) & \\
\hline Vat rooms (wine) & 23 & 07 & & & & \(\square\) & \\
\hline Courtyards & 35 & 07 & & & & & \(\square\) \\
\hline Poultry barns & 35 & 07 & & & & & \(\square\) \\
\hline Stables & 35 & 07 & & & & & \(\square\) \\
\hline Fertiliser (storage) & 50 & 07 & & & & & \(\square\) \\
\hline Stables & 35 & 07 & & & & & \(\square\) \\
\hline Manure heaps & 24 & 07 & & & & & \(\square\) \\
\hline Haylofts & 50 & 07 & & & & & \(\square\) \\
\hline Haystacks, forage (storage) & 50 & 07 & & & & & \(\square\) \\
\hline Granaries, barns & 50 & 07 & & & & & \(\square\) \\
\hline Straw (storage) & 50 & 07 & & & & & \(\square\) \\
\hline Greenhouses & 23 & 07 & & & & \(\square\) & \\
\hline Grain silos & 50 & 07 & & & & & \(\square\) \\
\hline Milking rooms & 35 & 07 & & & & & \(\square\) \\
\hline Pig sties & 35 & 07 & & & & & \(\square\) \\
\hline Chicken houses & 35 & 07 & & & & & - \\
\hline \multicolumn{8}{|l|}{Miscellaneous installations} \\
\hline Fair facilities & 33 & 08 & & & & \(\square\) & \\
\hline Water treatment facilities & 24/25 & 07/08 & & & & & - \\
\hline \multicolumn{8}{|l|}{Thermodynamic installations, air-conditioned rooms and cold rooms} \\
\hline \multirow[t]{3}{*}{Height above from 0 to 1.10 m ground from 1.10 to 2 m above 2 m under evaporator or water drain pipe} & 25 & 07 & & & & & \(\square\) \\
\hline & 24 & 07 & & & & & \(\square\) \\
\hline & 21 & 07 & & & - & & \\
\hline ceiling and up to 10 cm underneath & 23 & 07 & & & & ■ & \\
\hline Temperature \(\leqslant-10^{\circ} \mathrm{C}\) & 23 & 07 & & & & \(\square\) & \\
\hline \multirow[t]{2}{*}{\begin{tabular}{ll} 
Compressor & room \\
& \begin{tabular}{l} 
integral unit located \\
outside or on a terrace
\end{tabular}
\end{tabular}} & 21 & 08 & & & \(\square\) & & \\
\hline & 34 & 08 & & & & & \\
\hline
\end{tabular}

\section*{Additional information}

Enclosure characteristics

\section*{Selection of enclosures according to the premises}
\begin{tabular}{l|l|l|l|l|l|l|l|l|l}
\hline Type of premises & Enclosures \\
& \begin{tabular}{l} 
Wall-mounted \\
enclosure
\end{tabular} & without door & with door & & \\
\hline
\end{tabular}

\section*{Additional information}

Enclosure characteristics

Selection of enclosures according to the premises


\section*{Properties of metal enclosures}

Schneider Electric enclosures comply with standard IEC 62208 for empty enclosures. The sheet metal used for Schneider Electric enclosures receives an anti-corrosion epoxy electrophoresis treatment and a coating of a thermosetting, polyester-resinmodified epoxy powder for colour and appearance.
This two-coat system provides excellent finish and corrosion protection.
The characteristics of this coating are much better than those of traditional epoxy powders:
■ improved colour stability
- wider operating temperature range.

\section*{Mechanical properties of enclosures}

Static load on doors, wall-mounted and floor-standing enclosures and cubicles
\begin{tabular}{l|l} 
Floor-standing enclosure & 64 kg \\
\hline Wall-mounted enclosure & 48 kg \\
\hline Floor-standing enclosure door & 4 kg \\
\hline Wall-mounted enclosure door & 4 kg \\
\hline
\end{tabular}

\section*{Mechanical properties of powder coated surfaces}

\section*{Test conditions}

Test piece made of 1 mm thick steel sheet, degreased, iron phosphated, final rinsing with \(100000 \Omega \mathrm{~cm}\) DI water, 15 microns of anti-corrosion
electrophoresis treatment and 35 microns of powder paint.
\begin{tabular}{l|l|l|}
\hline Adhesion (cross-hatch and pull-off) & class 0 required & \((\) (ISO 2409) \\
\hline Impact strength \({ }^{(1)}\) & \(>1 \mathrm{~kg} / 50 \mathrm{~cm}\) & (ISO 6272) \\
\hline Mandrel bending test \({ }^{(2)}\) & \(<10 \mathrm{~mm}\) & (ISO 6860) \\
\hline Persoz hardness & 300 s & (ISO 1522)
\end{tabular}
(1) No cracking of the paint film after dropping a weight of one kilogram on the test piece from a height of 50 centimetres.
(2) Film cracks over a length of 10 millimetres maximum.

\section*{Artificial ageing test on powder coating}

Test conditions: two tests carried out on the same 1 mm thick steel sheet test piece.
■ cyclical damp-heat test:
- as per standard IEC 68-2-30
- six 24-hour cycles at temperatures higher than \(40^{\circ} \mathrm{C}\)
- continuous resistance to neutral salt mist:
\(\square\) the tests were carried out over a period of 400 hours, far more than the 48 hours required by the standard for indoor installations
- as per standard IEC 68-2-11 and ISO 7253
- 400 hours without blistering for normal surface on test piece
- 250 hours for a scratched surface.

Evaluation of corrosion as per ISO 4628:
■ adhesion: class y 1
■ blistering: degree 1 dim. 1
- rusting: Ri 1
- cracking: class 1
- flaking imp. 1 dim. 1

■ propagation of corrosion under scratch with respect to the scratch axis: 3 mm max.

\section*{Chemical properties of powder coating}

Tests carried out at ambient temperature on phosphated test pieces coated with a 150 to \(\mathbf{2 0 0}\) micron film.
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{3}{|l|}{Test duration (months)} & 2 & 4 & 6 & 8 & 10 & 12 \\
\hline Acids & & Concentration & & & & & & \\
\hline & Acetic & 20 \% & & & & & & \\
\hline & Sulphuric & \(30 \%\) & & & & & & \\
\hline & Nitric & \(30 \%\) & & & & & & \\
\hline & Phosphoric & \(30 \%\) & & & & & & \\
\hline & Hydrochloric & 30 \% & & & & & & \\
\hline & Lactic & 10 \% & & & & & & \\
\hline & Citric & \(10 \%\) & & & & & & \\
\hline Bases & Soda & 10 \% & & & & & & \\
\hline & Ammonia & 10 \% & & & & & & \\
\hline Water & Distilled water & & & & & & & \\
\hline & Seawater & & & & & & & \\
\hline & Tap water & & & & & & & \\
\hline & Diluted bleach & & & & & & & \\
\hline Solvents & Petrol & & & & & & & \\
\hline & High alcohols & & & & & & & \\
\hline & Aliphatics & & & & & & & \\
\hline & Aromatics & & & & & & & \\
\hline & Ketones, esters & & & & & & & \\
\hline & Tri-perchlorethylene & & & & & & & \\
\hline & Film intact. & & & & & & & \\
\hline & Film damaged (blisters, & rs, yellowing, lo & f sh & & & & & \\
\hline
\end{tabular}

Thermal management of switchboards

\section*{General}

A switchboard is designed for operation under normal ambient conditions. Most devices do not operation correctly outside a temperature range of -10 and \(+70^{\circ} \mathrm{C}\).
It is therefore important to maintain the switchboard internal temperature within this temperature range by:
- correctly sizing the switchboard during design
- correcting the temperature using suitable means.

\section*{Management of the internal temperature}

\section*{Cooling}

There are a number of way to dissipate heat from the switchboard. The drawings below present the various means.

\section*{Convection}


IP>31
\(I P \leqslant 31\)
Ensured naturally in Prisma enclosures.

Forced-air ventilation with air-air exchanger


IP \(>31\)
On special request.

Forced convection and cooling


IP>31

For these extreme cases, many installers prefer to set up the switchboards with other electrotechnical and electronic devices in air-conditioned electrical rooms.

\section*{Heating}

The means employed to raise the internal temperature in a switchboard is a resistorbased heater, used to:
■ avoid condensation by limiting variations in temperature
\(\square\) ensure that the switchboard does not freeze.

\section*{Thermal management of switchboards}

General



\section*{Calculation of the internal temperature}

Calculation of the temperature is the means to check that the enclosure can evacuate the dissipated power of the installed devices.

\section*{Important note}

Correct thermal management of the switchboard depends on compliance with the installation requirements for the distribution system (power circuits). Incorrect installation will have major consequences on the connected device, but almost none on the internal temperature of the enclosure.
Once the circuit has been correctly sized, it is necessary to check whether the assembly (devices + distribution system + cables) have a level of dissipated power \(P(W) \leqslant\) the \(P(W)\) that the enclosure can handle.

Method defined by IEC 890 technical report
This IEC guide for switchboards proposes a calculation method to determine three levels of internal temperature, depending on the dissipated power of the devices and distribution blocks installed in the switchboard.
Users can consult this document when it is necessary to determine precisely the internal temperature in view of optimising the switchboard.
On request, Schneider Electric can carry out a thermal study to check that the installed assembly and the thermal capacity of the enclosure are compatible.

\section*{Comparative method}

A number of qualified and tested configurations serve as the basis for indicating the thermal capacity of Prisma enclosures.
This is en empirical means to check whether the dissipated power of the desired configuration is close to that of a tested configuration.

Method using charts taking into account enclosure characteristics To speed up calculations, Schneider Electric produces charts based on the company's experience and a number of assumptions on the installation. They can be used sufficiently precisely to determine the variations in temperature and the dissipated-power levels for the different types of wall-mount enclosures, floor-standing enclosures and cubicles.

\section*{Additional information Thermal characteristics}

\section*{Thermal management of switchboards \\ Comparative method}

\section*{Comparative method}

You will have no problems with your switchboard if:
\(\square\) the volume of the enclosure is greater than that of the tested enclosure with a similar assembly
■ the \(\mathrm{P}(\mathrm{W})\) of the installed assembly is less than the \(\mathrm{P}(\mathrm{W})\) of the tested configuration in the same size enclosure.


\section*{Wall-mounted enclosure, 23 modules, IP30}

Diversity factor: 0.7
Ambient temperature around the switchboard: \(35^{\circ} \mathrm{C}\) \(P(W)=170 \mathrm{~W}\)

\section*{Additional information Thermal characteristics \\ Thermal management of switchboards \\ Comparative method}

\section*{Comparative method}

You will have no problems with your switchboard if:
■ the volume of the enclosure is greater than that of the tested enclosure with a similar assembly
■ the \(\mathrm{P}(\mathrm{W})\) of the installed assembly is less than the \(\mathrm{P}(\mathrm{W})\) of the tested configuration in the same size enclosure.

Wall-mounted enclosure, 23 modules, plain door, IP30
Diversity factor: 0.7
Ambient temperature around the switchboard: \(35^{\circ} \mathrm{C}\) \(P(W)=200 \mathrm{~W}\)


Floor-standing enclosure, 33 modules, IP30
Diversity factor: 0.7
Ambient temperature around the switchboard: \(35^{\circ} \mathrm{C}\) \(\mathrm{P}(\mathrm{W})=270 \mathrm{~W}\)


Thermal management of switchboards
Example

Once the dissipated power of the devices has been determined and the enclosure with its IP selected, transfer the results (sum of the dissipated power and width of the device zone) to the chart corresponding to the enclosure IP.


Draw a line parallel to the others on the chart and read the corresponding difference in temperature.
For the given example, the heat rise is \(22^{\circ} \mathrm{C}\) at mid-height in the enclosure.
The internal temperature \(=\) external temperature + heat rise
\[
=35^{\circ} \mathrm{C}+22^{\circ} \mathrm{C}=57^{\circ} \mathrm{C}
\]
\(57^{\circ} \mathrm{C}<60^{\circ} \mathrm{C}\) stipulated by the standard, i.e. the result is acceptable for an IP3 cubicle.
This gives roughly:
Internal temperature \(=60^{\circ} \mathrm{C}\) at mid-height in the enclosure for a low IP value.
\(=70^{\circ} \mathrm{C}\) at mid-height in the enclosure for a high IP value.

\section*{Thermal management of switchboards \\ Charts}

\section*{Quick calculation charts for internal temperatures}

The indicated internal heat rise is that measured at mid-height in the enclosure.


Test conditions:
600 mm wide enclosure mounted directly on wall without fixing lugs.

IP3X floor-standing enclosure


\section*{Test conditions:}

600 mm wide enclosure on floor against a wall.


Test conditions:
600 mm wide enclosure mounted directly on wall without fixing lugs.

IP43 floor-standing enclosure


Test conditions:
Mounted on wall with fixing lugs or on mounting uprights.

IP55 wall-mounted and floor-standing enclosures


\section*{Test conditions:}

600 mm wide enclosure mounted directly on wall without fixing lugs or mounting uprights.

\section*{Thermal management of switchboards \\ Ventilation}

\section*{Switchboard ventilation}

The air enters the lower section via the fans and exits the upper section:
- through a ventilated roof

■ or through a ventilation opening.
The air throughput of the fans is determined by the equation:
\[
D=3,1 \times\left(\frac{P}{\Delta T}-K S\right)
\]

The chart below can be used to determine the necessary throughput, based on the dissipated power, the difference in temperature (internal - external) and the exposed surface area of the enclosure.

\section*{Example}

Consider an IP3X cubicle, 650 mm wide and 400 mm deep, containing components (devices, connections, busbars, etc.) dissipating 1000 W .
The ambient temperature around the cubicle is \(50^{\circ} \mathrm{C}\).
Given that the average temperature at mid-height should not exceed \(60^{\circ} \mathrm{C}\), the
difference in temperature DT is equal to \(60-50=10^{\circ} \mathrm{C}\).
The exposed surface of the cubicle (non adjacent to a wall or other cubicle) is
\(4.46 \mathrm{~m}^{2}\).
(back \(=1.3 \mathrm{~m}^{2}\), front \(=1.3 \mathrm{~m}^{2}\), roof \(=0.26 \mathrm{~m}^{2}\), side panels \(=1.6 \mathrm{~m}^{2}\) ).
What is the necessary throughput of the ventilation system?
The throughput can be calculated as:
\[
D=3,1 \times\left(\frac{1000}{10}-5,5 \times 4,46\right)
\]
\(D=234 \mathrm{~m}^{3} / \mathrm{h}\).
In the range of Prisma accessories, select a system with a throughput of \(300 \mathrm{~m}^{3} / \mathrm{h}\).


\section*{Calculation data}
\(\mathbf{P}\) : power dissipated by the devices, connections and busbars (in Watts)
\(\mathbf{P}_{r}\) : power of the heating resistor (in Watts)
\(\mathrm{T}_{\mathrm{m}}\) : maximum internal temperature in the device zone (in \({ }^{\circ} \mathrm{C}\) )
\(\mathrm{T}_{\mathrm{i}}\) : average internal temperature (in \({ }^{\circ} \mathrm{C}\) )
\(\mathrm{T}_{\mathrm{e}}\) : average external temperature (in \({ }^{\circ} \mathrm{C}\) )
\(\Delta \mathrm{T}_{\mathrm{m}}=\mathrm{T}_{\mathrm{m}-\mathrm{e}} \mathrm{T}_{\mathrm{e}}\)
\(\Delta T^{m}=T_{i} T_{i}{ }^{-}\)
S : total free surface area of the enclosure (expressed in \(\mathrm{m}^{2}\) )
K : thermal-conduction coefficient of the material \(\left(\mathrm{W} / \mathrm{m}^{2}{ }^{\circ} \mathrm{C}\right)\)
\(\mathrm{K}=5.5 \mathrm{~W} / \mathrm{m}^{2}{ }^{\circ} \mathrm{C}\) for painted sheet metal
D : ventilation throughput (in \(\mathrm{m}^{3} / \mathrm{h}\) )
Note: the dissipated power of each device is provided by the manufacturer. Add approximately \(30 \%\) to account for the connections and the busbars.

\title{
Thermal management of switchboards \\ Heating
}

\section*{Switchboard heating}

The heating resistor, placed in the bottom of the switchboard, maintains the internal temperature \(10^{\circ} \mathrm{C}\) higher than the external temperature.
When the switchboard is not in operation, the heater compensates the dissipated power normally emitted by the switchboard.
The power of the heating resistor is calculated:
\(\square\) using the equation: \(\operatorname{Pr}=(\Delta T \times S \times K)-P\)
■ or using the charts below, based on the exposed surface area of the enclosure and the desired difference in temperature.
Chart to determine the heating resistor for small wall-mounted enclosures (exposed surfaces \(\leqslant 1 \mathrm{~m}^{2}\) )


Chart to determine the heating resistor for all types of enclosures


\section*{Calculation data}

P : power dissipated by the devices, connections and busbars (in Watts)
\(\mathbf{P}_{\mathrm{r}}\) : power of the heating resistor (in Watts)
\(\mathrm{T}_{\mathrm{m}}\) : maximum internal temperature in the device zone (in \({ }^{\circ} \mathrm{C}\) )
\(\mathrm{T}_{\mathrm{i}}\) : average internal temperature (in \({ }^{\circ} \mathrm{C}\) )
\(\mathrm{T}_{\mathrm{e}}\) : average external temperature (in \({ }^{\circ} \mathrm{C}\) )
\(\Delta \mathrm{T}_{\mathrm{m}}=\mathrm{T}_{\mathrm{m}-} \mathrm{T}_{\mathrm{e}}\)
\(\Delta \mathrm{T}^{\mathrm{m}}=\mathrm{T}_{\mathrm{i}}^{\mathrm{m}} \mathrm{T}^{-}\)
\(\mathbf{S}\) : total free surface area of the enclosure (expressed in \(\mathrm{m}^{2}\) )
K : thermal-conduction coefficient of the material \(\left(\mathrm{W} / \mathrm{m}^{2}{ }^{\circ} \mathrm{C}\right)\)
\(\mathrm{K}=5.5 \mathrm{~W} / \mathrm{m}^{2}{ }^{\circ} \mathrm{C}\) for painted sheet metal
D: ventilation throughput (in \(\mathrm{m}^{3} / \mathrm{h}\) )

Note: the dissipated power of each device is provided by the manufacturer
Add approximately 30 \% to account for the connections and the busbars.

\section*{Tools required for mounting and connection}

- Vacuum cleaner to clean the switchboards
- Ratchet wrench with sockets
- Torque wrench with sockets and ring bits to tighten the electrical connections to the correct torque (max. torque 50 Nm )
■ Open-ended spanners ( 15 to 27 mm )
■ Electrician's knife
- 7, 8, 10, 13, 16, 17 and 19 mm sockets
- Bit holder socket
- 4,5,6, 8 and 10 mm hexagonal-head bits
- Pozidriv no. 1, 2 and 3 bits
- Rubber mallet
- Level
- Measurement and inspection tools and instruments
- Drill

■ Semi-circuit nosed pliers
- Cable-tie pliers

■ Wire stripper
- Crimping tool

■ Diagonal cutter
- Wire cutters
- Flat-nosed pliers
- Bit holder for screwdriver

■ Extension
- Electric saw
- Jig saw
- Clamp for cubicle alignment
- Buzzer or tester

■ 3, 4, 5, 5.5 and 8 mm flat screwdrivers
- Posidriv no. 2 crosshead screwdriver (to mount handle)

■ Hydraulic jacks that can be operated in horizontal position to lift cubicles and move them sideways if necessary
■ Coloured, indelible and temperature resistant acrylic varnish
- Electric screwdriver

\title{
Energy management has never been simpler
}

Simple-to-install Smart Panels connect your building to real savings in 3 steps


\footnotetext{
Smart Panels connect you to energy savings
}


\section*{3 SAVE}

- allows control (open, close, reset...) of various equipments.
Data displayed on graphics or recorded into files are of a great interest for optimizing the use of energy in the building.
As an example, they definitely help validating the change of temperature settings, time scheduling in a Building Management System or other automated devices.
to Ethernet
- shows essential electrical information and alarms concerning the electrical network,
- allows control (open, close, reset...) of various equipments.
This touch screen is well appreciated for real time value checking and control, directly on the front panel of the main switchboard.
On a PC display with common browser
- shows monitoring web pages hosted into the local Ethernet interface,
- alarm events generate automatic email notifications,

\section*{"Smart Panels" mean visible information}

Grouping most of the electrical protection, command and metering components, the switchboards are now significant sources of data locally displayed and sent via communication networks.

\section*{2 CONNECT}

\section*{... and ready to be linked to expertise}

Smart Panels use reliable, simple to install and use displays, and Ethernet and Modbus interfaces on the Enerlin'X communication system.
Information is safely transmitted through the most efficient networks:
- Modbus SL inside switchboards, between components
- Ethernet, on cable or WiFi, inside the building and connecting switchboards, computers,
- Ethernet on DSL or GPRS, for access to on-line services by Schneider Electric.
Energy experts, wherever they are, are now able to provide advises based on permanently updated data of the building.


\section*{On-line Energy Management services}

\section*{StruXureWare Energy Operation} automates data collection via an open, scalable, and secure energy management information system.
With the help of the Schneider Electric energy management services team, data is then turned into actionable information to enable customers to understand their facilities' performance on an ongoing basis.

Energy Operation leverages companies' current investments in their existing systems, and can be used to communicate advanced results and performance to a broad audience for a shared understanding throughout an organisation.
35, rue Joseph Monier
As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.```


[^0]:    (2) Supplied with connections. - (3) Connection must be made.

[^1]:    (2) Space available at the top of the enclosure after mounting the universal power supply block:

    - CVS100/250 $=7$ modules
    - Vigi CVS100/250 = 9 modules

    Space required by power supply block on insulated Linergy BW busbars $=5$ modules.

[^2]:    (2) The mounting plate for INF Fupact does not leave a passage for the busbar; it can only be installed below the plate.

[^3]:    (1) RHU, RH10P, RH21P, RH99 relay, RM12T Multiplexer.
    (2) PM200/PM700/PM800, FDM121.
    (3) The visor (cat. no. 03928) can be installed on a plain door with cut-outs.

    Note: To maintain the IP55 degree of protection, the measurement devices must be installed behind a transparent door. If they are installed on a plain door, use the corresponding mounting plates.

[^4]:    Note: for the connection of power cables, see page 75.

[^5]:    * Grey terminal with flange.

[^6]:    (1) $4 \mathrm{~mm}^{2}$ terminal, with 2 test points.

[^7]:    Finishing parts > see page 73

