

# Prisma functional system

## Introduction

The Prisma functional system can be used for all types of low-voltage distribution switchboards up to 4000 A, in commercial and industrial environments.



### Switchboard design is very simple



- ① **A metal structure**  
made up of one or more frameworks combined side-by-side or back-to-back.
- ② **A distribution system**  
positioned in a lateral compartment or at the rear of the cubicle are used to distribute electricity throughout the switchboard.
- ③ **Complete functional units**
  - dedicated mounting plate for device installation
  - front plate to block direct access to live parts
  - devices for on-site connections.

The functional units are modular and are arranged rationally, one on top of another, within the enclosure. The components of the Spacial SFP and those of the functional units in particular have been designed and tested taking into account device characteristics. This design approach ensures a high degree of reliability in system operation and optimum safety for personnel.

### Advantages of Prisma system switchboards

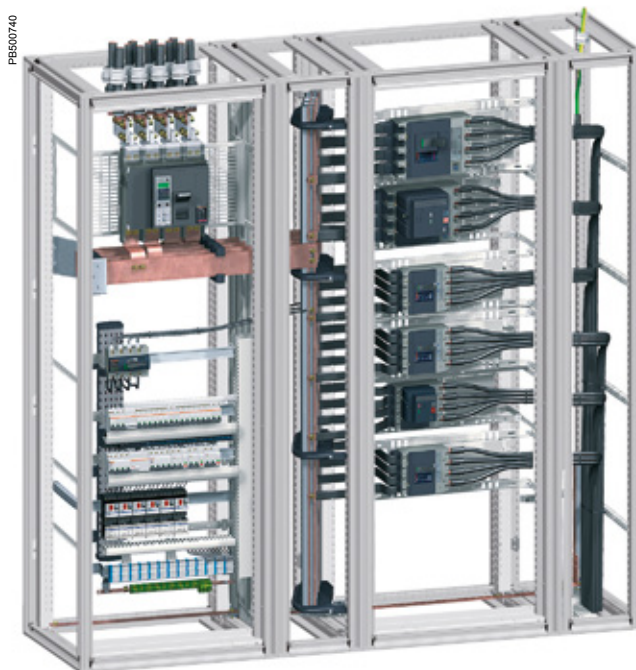


- ① **A safe electrical installation**  
The total compatibility of Schneider Electric devices with the Prisma system is a key advantage in ensuring a high level of installation dependability.
- ② **An upgradeable electrical installation**  
Thanks to modular design, Spacial SFP switchboards can be modified easily to integrate new functional units as needed.
- 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 create form 2, form 3 and form 4 separation to protect against direct contacts with live parts. Terminal shields are mandatory for installation of Compact NSX and INS/INV devices in Prisma system enclosures.

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Use of the components in the Prisma functional system ensures the creation of switchboards complying with standards IEC 62208, IEC 61439-2.



### Electrical characteristics



- Rated insulation level of main busbars: 1000 V.
- Rated operational current  $I_e$ : 4000 A.
- Rated peak withstand current  $I_{pk}$ : 220 kA.
- Rated short-time withstand current  $I_{cw}$ : 100 kA rms/1 second.
- Frequency: 50/60 Hz.

### Mechanical characteristics



- Steel sheet metal.
- Textured finish with epoxy-polyester powder.
- Grey colour RAL 7035.
- Can be dismantled.
- Can be combined side-by-side and back-to-back.
- Degree of protection: IP55 according to IEC 60529.
- Degree of protection against mechanical impacts: IK10 (IK08 for the glazed-door).
- Framework dimensions:
  - two widths:
    - W 300: cable compartment
    - W 700: device compartment or cable compartment
  - three depths:
    - D500 up to 1600 A with incoming Masterpact NT only
    - D600 up to 1600 A with incoming Masterpact NT only. Possibility to connect with cables from rear
    - D800 up to 4000 A with incoming Masterpact NT or NW. Possibility to connect to cables from rear or to connect to rear vertical busbars
  - height: 2000 mm
- Enclosures for indoor installation.



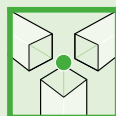
Electrical switchboards built using the Prisma functional system and Schneider Electric recommendations fully comply with international standard IEC 61439-2.

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### The forms according to IEC 61439-2

Decisions concerning the Form of separation and the degree of protection are the subject of an agreement between the manufacturer and the user.



In most installations, Spacial SFP cubicles do not require partitioning.

In this case, the switchboard is a Form 1.

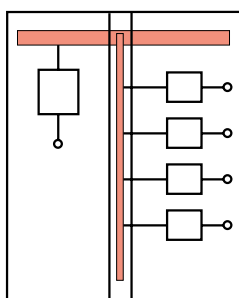
Safety being one of its foremost goals, Schneider Electric offers options and features that go well beyond the recommendations of the standard.

The protection of life and property is a standard feature due to:

- front plates that require a tool to be removed
- keylocks on doors, some of which provide access to live parts
- the systematic installation of terminal shields on Compact NSX circuit breakers and Compact INS and INV switch-disconnectors
- covering of the upstream and downstream terminals on the incoming device so that operators are perfectly safe at all points in the switchboard when the incoming device is off (open).

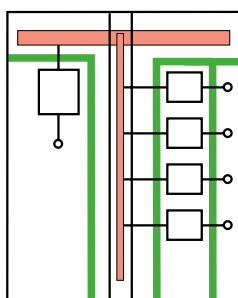
What is more, Spacial SFP offers different levels of partitioning to create separations inside the cubicles and thus create Form 2b, 3b, 4a and 4b electrical switchboards. Electrical switchboards must meet the degree of protection IP2X to comply with standard IEC 61439-2.

**Form 1**



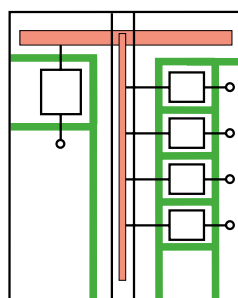
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**Form 2b**



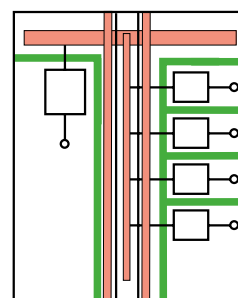
- Terminals for external conductors separated from busbars.
- The functional units and the terminals are separated from the busbars.

**Form 3b**



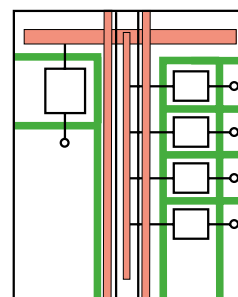
- Terminals for external conductors separated from busbars.
- The functional units are separated from each other and from the busbars.
- The terminals are separated from the busbars, but not from each other.

**Form 4a**



Terminals for external conductors in the same compartment as the associated functional unit.

**Form 4b**



Terminals for external conductors not in the same compartment as the associated functional unit, but in individual, separate, enclosed protected spaces or compartments.

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### Upgradeable Prisma functional units

Functional units include switchgear mounting plates, front plates, connection supports, barriers...

Masterpact  
NW08 to NW40



Masterpact  
NT06 to NT16



Compact NSX  
up to 630 A



Compact NS  
from 630b to 1600 A



Compact NS  
up to 3200 A



Easypact  
from 100 to 630 A



Compact INS-INV250-630 A



Compact INS-INV630-2500 A



Source changeover systems  
Compact/Masterpact



Source changeover systems  
Compact INS



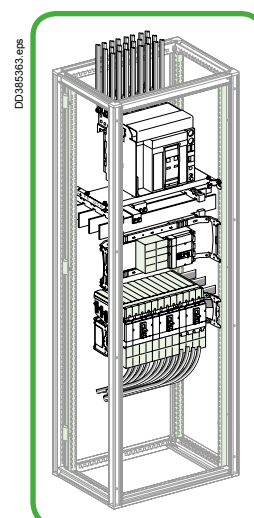
Fupact  
from 32 to 1250 A



Multi 9 - Acti 9



Accessories



For more informations, see the catalogue Prisma P DESW016EN.