



Prisma iPM: pre-fabricated Low Voltage distribution system

Tested assembly compliant to
IEC 61439 - 1 & 2

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Innovate with

Prisma iPM solution



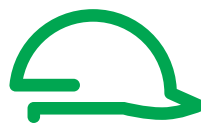
Prisma iPM

> An innovative solution based on the experience, expertise and switchgear offerings from the global specialist in energy management.

Using our Prisma iPM solution, you can easily design, implement and operate LV electrical distribution switchboard that are dependable, because they are optimised, tested and compliant with the IEC 61439-1 standard.



Improve the
continuity of
service



Ensure the
safety of life and
property



Control
deadlines
and costs

For all applications up to 4000 A



Commercial and industrial buildings, hotels, hospitals etc.: a Prisma iPM switchboard can be installed anywhere!



- Floor standing cubicle range
- Wall mounted enclosure ranges
- IP degree: from 30 to 54
- Icw: from 15 kA/s to 100kA/s
- Partitioning up to form 4b



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.

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 organization that performed the original design and associated verification of an assembly in accordance with the standard, and of the assembly manufacturer - the organization 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 61439-2 standard. Equipment produced in accordance with the requirements of this switchboard standard ensures the safety and reliability of the installation.

A switchboard must comply with the requirements 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 iPM tested switchboards

The conformity of the switchboard has been tested and proven.

A Prisma iPM 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 iPM 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 iPM 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.

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.



Safety

Voltage stresses withstand capability

To withstand long term voltages, and transient and temporary overvoltages according to the insulation coordination principles and requirements.

Current-carrying capability

To protect against burns and to withstand temperature rise:

- > when any circuit is continuously loaded, alone, to the specified current
- > when the assembly is loaded to the specified current according to the specified load pattern (between circuits and/or as a function of the time).

Short-circuit withstand capability

To withstand the stresses resulting from the prospective short-circuit current and from the associated data (High forces between conductors, temp. rise in a very short time, air ionization, overpressure).

Protection against electric shock

- > Hazardous-live-parts not to be accessible (basic protection)
- > Accessible conductive parts not to become hazardous-live (fault protection).

Protection against risk of fire or explosion

- > Resistance to internal glowing elements
- > **Note:** Protection of persons, and optional protection of the assembly, against arcing due to internal fault can be specified through a "special test" according to IEC 61641.



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).

Prisma iPM... 100% and more than



Short-circuit withstand capability

- Conditional short-circuit test is passed thanks to full coordination using Schneider Electric's devices associated with Prisma iPM distribution components from incoming to outgoing stages
- This panel design characteristic allows a much improved service continuity of the switchboard in case of electrical fault.



Protection against electrical shock

- IPxxB Prisma iPM offers standard components to achieve the right level of electrical protection.
- Terminal block covers
- Terminal shields for devices
- Partitioning for busbar and connections.



Voltage stress withstand capability

- Creepage distances and clearance distances: all functional units are designed from an early engineering stage taking into account minimum clearance distance for any type of assembly of Schneider Electric devices configuration. For instance the Compact NSX breaker can be installed with a rotary handle or motor control or plug-in base with guaranteed clearance distances.
- For creeping distances all busbar supports are designed to take into account minimum creepage distances required by the IEC standard.



IEC standard!



Maintenance and modification capability

- Beyond IPxxB for pane accessibility Prisma iPM functional system has been designed to offer a clear and logical electrical organisation. It enables safer and more secure accessibility for maintenance and upgrades.
- Interventions are made quicker with reduced risks of mistakes therefore decreasing down time and improving service continuity.



Linery busbar

- Linery busbar can safely be accessed for installation upgrade by removing a single Form 2 front barrier only.
- All conductors are shifted 25mm enabling qualified electricians to perform intervention from the front of the cubicle only no need to dismantle the side partitioning for access.
- Upgrade or maintenance interventions are made faster and more straight forward.



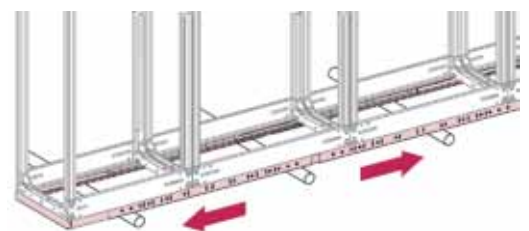
Capability to operate the electrical installation

- Prisma iPM components are designed to match Schneider Electric's devices with impulse voltage withstand reaching up to 12.8kV specification.
- Customers are guaranteed to have the right safety margin in case of network transients, increasing safety and installation service continuity over time.



Capability to be installed on site

- In addition to being lift-tested, Prisma iPM also features handling plinths in order to cover all possibilities for site installations where lifting space is too limited.



Dedicating ourselves to safe, simple & reliable low voltage switchboards from 100 to 4000A

Prisma iPM, a modular and prefabricated solution based on a complete system in kit form that perfectly integrates Schneider Electric switchgear offerings.

Energy is available in the buildings

The Prisma iPM solution perfectly integrates Schneider Electric switchgear and includes our distribution systems and enclosures. These quality components have been designed to operate together with optimised performance: mechanical, electrical and communications consistency. Switchboards designed and manufactured with the Prisma iPM solution have all the qualities needed to ensure energy availability. They are organised by function and by zone, which improves reliability and facilitates design, installation, operation and upgrading. All switchboard architectures are factory tested in line with specifications that go well beyond the IEC 61439-1 standard. The same continuity of service is ensured throughout the switchboard's entire life cycle.



> Example of floor standing switchboard



> Example of 28 modules wall mounted switchboard

1 A cable connection area with complete accessibility.

2 A zone for functional units* dedicated to each application in the building (lighting, HVAC, lifts, etc).

* A functional unit includes switchgear, mounting plate and front plate.

3 A zone for current distribution with innovative busbars. The multistage current distribution brings lightness, ergonomics, and easy front access.

4 IPXXB front plates for protecting people from any direct access to live parts and circuits opening and closing.

5 Attractive finish to fit into any facility.



> Example of 16 modules wall mounted switchboard

Technical data

Floor standing enclosures

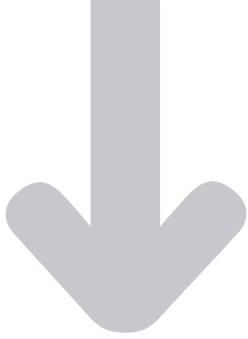
	A	l _{cw}	IP	IK	No. of mod.	height	width	depth	associability
Cu	4000 A	100 kA rms/1s	30/31/40/54	07	36	2000 mm	300 mm	400 mm	width
				08			400 mm	600 mm	
Al	2500 A	50 kA rms/1s	42/54	10			600 mm	800 mm	
							600 + 200 mm	1000 mm	
							800 mm		

Wall mounted enclosure

	A	l _{cw}	l _{pk}	IP	IK	No. of mod.	height	width	depth	associability
Full kits	630 A	25 kA rms/1s	53 kA	30/31/40/	07/08/	4	300 mm	600 mm (enclosure)	235 mm	width and height
				41/54	10	6	500 mm	300 mm (cable duct)	235 mm	
						12	700 mm		235 mm	
						16	900 mm		235 mm	
						20	1100 mm		235 mm	
						24	1300 mm		235 mm	
						28	1600 mm	600 mm (enclosure)	305 mm	width
		32	1800 mm	300 mm (cable duct)	305 mm					
Enclosures (partial kit)	630 A	25 kA rms/1s	53 kA	30/40/41	07/08	4	700 mm	600 mm	235 mm	
						8	900 mm			
						12	1100 mm			
						16	1300 mm			
						20				
						24				
						28				
32										

The Prisma iPM solution perfectly incorporates Schneider Electric switchgear:

- > Easycompact MVS
- > Easycompact CVS
- > Mastercompact NW
- > Mastercompact NT
- > Intercompact INS
- > Compact NS
- > Compact NSX
- > Easycompact EZC
- > Easycompact EZD
- > Fupact INF
- > Transfer switch equipment ATINS
- > Transfer switch equipment NS
- > Acti 9
- > NG 125
- > NS 80 HMA
- > GV2L
- > LC1 contactors
- > LRD thermal relay
- > ATV 28HD/HD/68C
- > ATS 46D



Some functional switchboard references

Retail

- Spain
- > El Corte Inglés Valdemoro
- > El Corte Inglés Girona

Hospital

- Spain
- > Hospital Puerta del Hierro
- > Clínica Quirón Barcelona

Building

- India
- > Panchsil - Yoo, Pune
- > National Aerospace laboratory, Bangalore
- > Ford, Chennai
- > Jindal Steel Works
- China
- > Shanghai Qiangshen R&D Center
- > Anhui Design Institute Building
- > Xinjiang Industrial and Commercial Bank
- > Beijing Villa
- > Beijing 798 Artistic Center
- > Tianjing Agriculture Bank
- > Fuzhou Industrial Bank
- Russia
- > Federation tower (biggest tower of "Moscow City" project)
- > TV tower "Ostankino"
- > Residence of President of Russia "Zavidovo"
- > Bolshoy Theatre
- > Kremlin mansion-house
- Spain
- > Ciudad de la Justicia Barcelona
- > Sincrotron, Cerdanyola
- > Fira 2000 Barcelona
- > Palacio Congresos Expo Zaragoza

Infrastructure

- China
- > Beijing Capital Airport
- > West-East natural gas transmission project
- Russia
- Lefortovsky tunnel (3 km length)
- Spain
- > New Madrid Airport
- > New Terminal Barcelona Airport
- > Highway M30 tunnels in Madrid
- > Palma de Mallorca Underground

Telecom

- China
- > Shanghai Telecom
- > Shenzhen Telecom
- > Zhejiang Mobile
- > Zhuhai Communication Building

Hotel

- Spain
- > Hotel Sky

School

- China
- > Marcau School



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