ABB Low voltage systems
MNS Platform

Power and productivity
for a better world™

ABB Low voltage systems
MNS a long successful history

ABB is world wide leader in the production of low voltage switchgears with more the 1,4 million of MNS systems installed since the introduction in the market of this technology in 1973.
Due to a strong application of the modularity concept either for the mechanical or electrical development together with the use of unified components was possible to realize flexible and compact solutions at the same time.
During the years MNS system became a reference of the industrial market about safety, reliability and overall quality.
The huge ABB know-how about design and construction of low voltage systems for his clients is the result of a mixed experience coming from local and global markets.
The extraordinary know-how together with an extended network for support and assistance all around the world turn MNS in to the best choice.
Main characteristics of the switchgears of the MNS platform are flexibility together with the high technology content; due to this mix is possible to satisfy all the customer's request. Some of the features proposed by MNS: ACB and MCCB breakers with fix or withdrawable execution; power cables or bus duct entry either for the top or the bottom; special execution like anti seismic version.

Safety is one of the key point for the development of the ABB switchgears indeed all the MNS can be supplied in "Arc proof version" up to 100kA.
The MNS family is composed by three products that can be integrated each other:

- switchgears Power Center and Motor Control Center type MNS3.0 with front access for the plants where is required the energy distribution together with the control and the protection of the motors;
- Power Motor Control Center type MNS R for the distribution of high powers, designed with rear access;
- intelligent MCC type MNS *i*S designed to be connected with superior supervision systems like ECS & DCS in order to be integrated in the modern plant focus on the automation.

All the MNS switchgears due to the high quality standards are suitable to be installed in the industrial plants with critical conditions like steel plants, refineries, power plans od chemical plants.

MNS R
Rear Access Power Motor Control Center

Main characteristic of the MNS R switchgears is the rear connection for the power cables; this designed has an impact on the dimensions of the switchgears reducing the total width.
The ideal application of the MNS R is like Power Center for the energy distribution; due to the possibility to reduce the overall dimensions to installing more than one ACB in the same column without reducing the performances.
That configuration doesn't involve any limitation of space for the auxiliary instrumentation or reduction of the area dedicate to the power cable connection.
The access to the power cables is by doors that can be with or without hinges depending from the space available in the installation room.
The MCC panels contain the withdrawable modules for the motor feeders including the modules with variable speed drivers; the best solution to optimize the plant process and increase the energy efficiency.
Wherever there are space limitations in width, like on the offshore marine platforms, is possible join the MCC front access panel type MNS3 or MNS iS in the back to back configuration in order to reduce the overall dimension of the switchgear.

MNS R Main characteristics	
Rated current main busbars	up to 8000A
Rated current distribution Busbars	up to 4000A
Rated peak withstand current	up to 264kA
Rated short time withstand current	up to 120kA
Arc fault containment	up to 100kA
Rated operation voltage	690V AC / 750V DC
Rated frequency	50Hz / 60Hz
Segregation form	up to 4b / form 4 type 7
External degree of protection	IP30 / IP54
Internal degree of protection	IP2X

MNS3.0
Front Access Power Motor Control Center

One of the characteristic of the MNS3.0 switchgears is the modular structure based on the E module (25mm) that guarantees flexibility, compact design and reduce dimensions. MNS 3.0 offers the most suitable solution for all the applications like steel plants, paper mills, Chemical Oil & Gas, power plants, platforms and everywhere is required to guarantee the maximum safety standards together with plant availability, maintenance simplicity and minimum dimensions.
The access to the power cables for connecting all the feeders, all the maintenance functions and the installation ones can be operated from the front of the switchgear; so the MNS3.0 can be installed against the wall.
In order to guarantee the maximum service continuity the motor feeders are usually in the withdrawable execution.
Several motor starter configurations are available like: direct on line, reverse starting, star delta, with softstarters, with frequency converters.
About safety the distribution busbars are encapsulated inside the multifunction wall that segregates the phases creating a fault free zone, divides the main busbar from the other components and guarantees the IP2X also when the drawers are removed.

MNS3.0 Main characteristics	
Rated current main busbars	up to 6300A
Rated current distribution Busbars	up to 2000A
Rated peak withstand current	up to 250kA
Rated short time withstand current	up to 100kA
Arc fault containment	up to 100kA
Rated operation voltage	690V AC / 750V DC
Rated frequency	50Hz / 60Hz
Segregation form	up to 4b
External degree of protection	IP30 / IP54
Internal degree of protection	IP2X

MNS *i*S
The intelligent motor control center

MNS *i*S is the first innovative “intelligent” Motor Control Center; it means has been developed using the latest technologies and designed to be integrated in to the supervision and control systems that manage the modern production plants.
MNS *i*S is front access MCC with the peculiarity to have a compartment dedicate to the power cables and another one dedicate to the auxiliary instrumentation in order to increase the already high safety standards of the ABB’s switchgears.
Current and voltage measuring are performed by sensors instead of traditional transformers; the biggest advantage is the linearity of the sensors signal which are not affected by saturation.
Another innovation is the presence of temperature sensors on the power contacts of the drawers in order to prevent fault and relevant “out of service” period generated by wrong insertion of the modules.
Inside the switchgear there is the concentrator MLink that is the connection point with the external supervision and control systems using the well known communication protocols like ModBus e Profibus also with redundant configuration to guarantee the maximum availability.
With the software package named M*Service* is possible increase the availability of the system due to the proactive maintenance which means scheduling the maintenance activity according the real need of the components.

MNS *i*S Main characteristics	
Rated current main busbars	up to 6300A
Rated current distribution Busbars	up to 2000A
Rated peak withstand current	up to 250kA
Rated short time withstand current	up to 100kA
Arc fault containment	up to 100kA
Rated operation voltage	690V AC / 750V DC
Rated frequency	50Hz / 60Hz
Segregation form	up to 4b
External degree of protection	IP30 / IP54
Internal degree of protection	IP2X

ABB Service
Always close to the customers

The MNS switchgears are not simple components but systems realized project by project according the customers' specifications. That's involved the need to supply specific post sales support activities ; everything is possible with the Service department.
Those are the support activities performed by the Service department of ABB LPLS:

- Installation of the low voltage systems including all the necessary operations like: busbars junction, panel connection, wiring and final testing.
- Revamping and retrofitting on switchgears already in service in order to guranteee the maximum efficiency, extending the life cycle with the complete replacement of them.
- Extension of systems already installed reducing to the minimum the "out of service" period always keeping the highest safety standards on the plants.
- Spare parts availability up to 10 year after the products official phase out.
- Phase out product management in order to guarantee to the customer the best possible service in case of extensions or replacement. Currently those products are:
  - Switchgears type Normal Center
  - Switchgears type MNS2.0
  - Motor control units type Insum 1&2.
- Emergency interventions and extraordinary maintenance: fault search and elimination, component cleaning and replacement of damaged components if any.
- Training on the ABB Switchgears including theorical section and "hands on" exercises on the switchgears.
- Guarantee extension for switchgears already installed after ABB technical inspection.

ABB Low voltage systems
Presence on the Italian Market

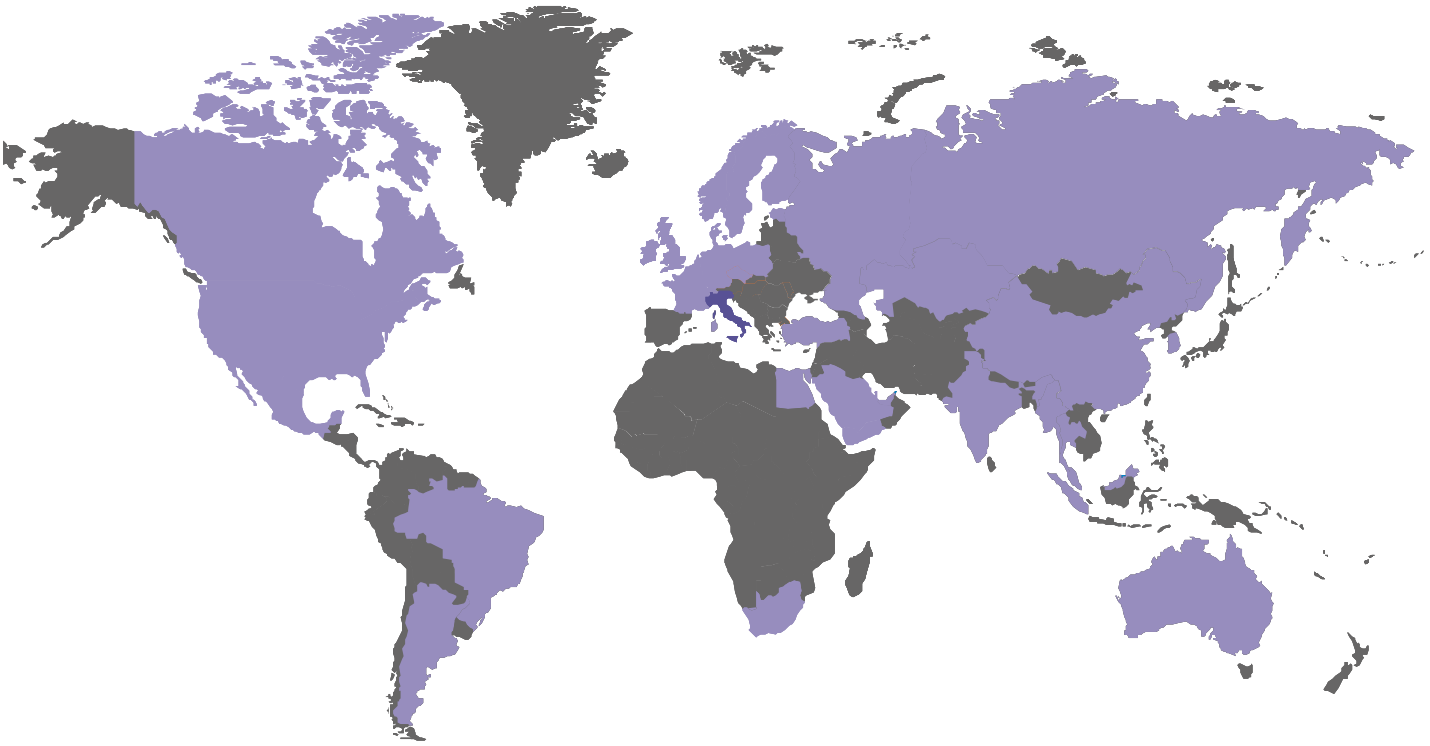

ABB low voltage systems guarantees the best local support to his customers through a worldwide network of local sales and service units (more than 35 active locations).
Switchgears are made in Italy from the local factory located in the Great Milan area (Lodi).
The Italian factory team is structured to support clients across all project phases: proposal, engineering, manufacturing, testing and commissioning.
The wide experience with national and international EPC's on several large projects in different segments and applications contributed to grow the business unit know-how level.
The Italian business unit, due to the extended know-how, in addition to one of the largest production sites, is one of the ABB low voltage systems Global Technology Centers that thanks to the proximity between R&D, factory and project teams is naturally transferring the project experience in the product development.

In particular the Italian Technology Center has the development responsibility for all MNS rear access and British Standard solutions.
For all the tests and relevant reports according the international standards ABB has his own accredited test laboratory located in Bergamo. In particular the ABB test laboratory is able to cover all IEC61439 and TR/IEC 61641-2008 test requirements.

Contact us

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