

# ABB low voltage systems MNS R

## Rear Access power motor control center



### IEC Low Voltage Systems

ABB is the worldwide leader in the production of low voltage systems with over 1.4 million of switchgears installed since the presentation of the MNS technology back in 1973; during the years MNS became the industrial standard due to his reliability, safety and quality.

The MNS platform is composed by different products in order to match all the customers' requirements depending from the applications, Power center or Motor Control Centers, or from the construction details like front of rear access.

### MNS R

MNS R is the rear access solution of the MNS platform; the rear connection of the power cables guarantee the maximum safety standards and also a reduce width of the switchgears. MNS R offer the latest technologies and solutions of the ABB Emax2 air circuit breakers like the new touch screen control and protection relays with a complete range of functionality: network analysis, synchro check, generator protection functions, load shedding.

In order to optimize the switchgear layout and reduce the overall dimensions is possible install more than one air circuit breakers inside a cubicle without performances derating or reduction of space available for the cables connection; each breaker has a dedicate auxiliary instrumentation compartment.

On the rear side the access to the power cables is guarantee by doors with hinges and key locks; depending on the customer's preference or space available in the installation room also closing plate with bolts can be supplied.

MNS R is also a rear access motor control center with compact columns 600mm wide; the cubicles can be equipped with a wide range of withdrawable drawers including the units with the variable speed drivers type ABB ACS 850 to control continuously the motors' speed increasing the plants energy efficiency.

To integrate the system in the plant control and supervision systems the switchgears can be equipped with multifunction protection and control units dedicate to the different applications, like line feeder or motor feeder. Those units can dialog with the control systems using the most suitable industrial communication protocols like IEC850, Modbus or Profibus.

On the plants where a reduce footprint is required, like marine platforms, is possible match rear access power center cubicles and front access MCC cubicles with back to back execution.

Safety is a key element in the design of the MNS switchgears tested against the internal arc according the TR61641 up to 100kA.

# Technical data

## Standards and Testing

**Standards:** Verification by testing \*

IEC61439-1/-2, CEI 61439-1

**Test Certificates**

ABB SACE, ACAE LOVAG, SINAL, Cesi and Ismes

## Electrical Data

### Rated Voltages

Rated insulation voltage Ui	1000V AC, 1500V DC **
Rated operating voltage Ue	690V AC, 750V DC **
Rated impulse withstand voltage Uimp	Up to 6 / 8 / 12kV **
Overvoltage category	II / III / IV **
Degree of pollution	3
Rated frequency	50 - 60Hz

### Rated Currents

Main busbars:	Rated current Ie	Up to 8000 A
	Rated peak withstand current Ipk	Up to 264 kA
	Rated short-time withstand current Icw	Up to 120 kA
Distribution bars:	Rated current Ie	Up to 4000 A
	Rated peak withstand current Ipk	Up to 264 kA
	Rated short-time withstand current Icw	Up to 120 kA

### Arc Proof

**Test according IEC 61641**

75kA, 0,5s at 690V  
100kA, 0,3s at 415V

## Mechanical Characteristics

### Dimensions

Height	2200mm
Width	300, 400, 600, 800, 1000, 1200mm
Depth	1025, 1200, 1400mm
Basic grid size	E = 25mm acc. to DIN 43660

### Surface Protection

Frame	Alu - Zinc coated
Internal subdivision	UNI EN 10130 Zinc coated
Transverse section	UNI ISO 4520 Zinc coated
Enclosure	Power coated RAL7035 (light grey)

### Degrees of Protection (IEC 60529, EN 60529)

With door open	IP20
With door close	IP30 standard up to IP54

### Normal Conditions

Installation	Internal for service
Ambient temperature	min -5 °C, max 40 °C, average 24h 35 °C
Relative umidity	max 50% at 40 °C
Maximum altitude	≤ 2000m

## Extras

Paint finish: external protection		Special colour on request
Busbar system: main and branch busbars		Sheated busbars, treated busbars (Ag/Sn)
Form of separation	According IEC 61439-2	Up to 4b
	According BS 61439-2	Up to 4b type7

\* Design verification by testing: where an Assembly has previously been tested in accordance with IEC 60439-1, and the results fulfil the requirements of the IEC 61439-1/-2, the verification of these tests need not to be repeated

\*\* Depending on the electrical equipment

## ABB SACE

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## Low Voltage Systems

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