MNS – ACS880
Switchgear mounted industrial drives

Power and productivity
for a better world™

Switchgear mounted industrial drives

AC Drives are designed for installation in a normal industrial environment. However, various auxiliary equipment for control, safety and communication are often needed.

Modern technological processes increasingly require not only constant-speed drives but also speed-controlled drives controlled via the same fieldbuses and connected to the same process station.

It is an advantage to the electricity supply if the drives are installed in separate switchgear with a common supply. This solution enables centralized filtering of harmonics and elimination of disturbances. The possible auxiliary equipment can be placed in the same compartment which is especially designed for the purpose.

ACS880, the newest technology in drive solutions
ACS880 takes compatibility to a whole new level.

Direct torque control (DTC) means precise speed and torque control to all processes and practically all AC-motors, from basic to demanding applications.

Fieldbus adapters enable connectivity with all major automation networks. Drive-to-drive link allows fast communication between drives without any additional hardware.

All ACS880 drives have the same easy-to-use user interface. The control panel supports over 20 languages and the menus and messages can be modified to meet the requirements of each process.

Verified complete MNS switchgear

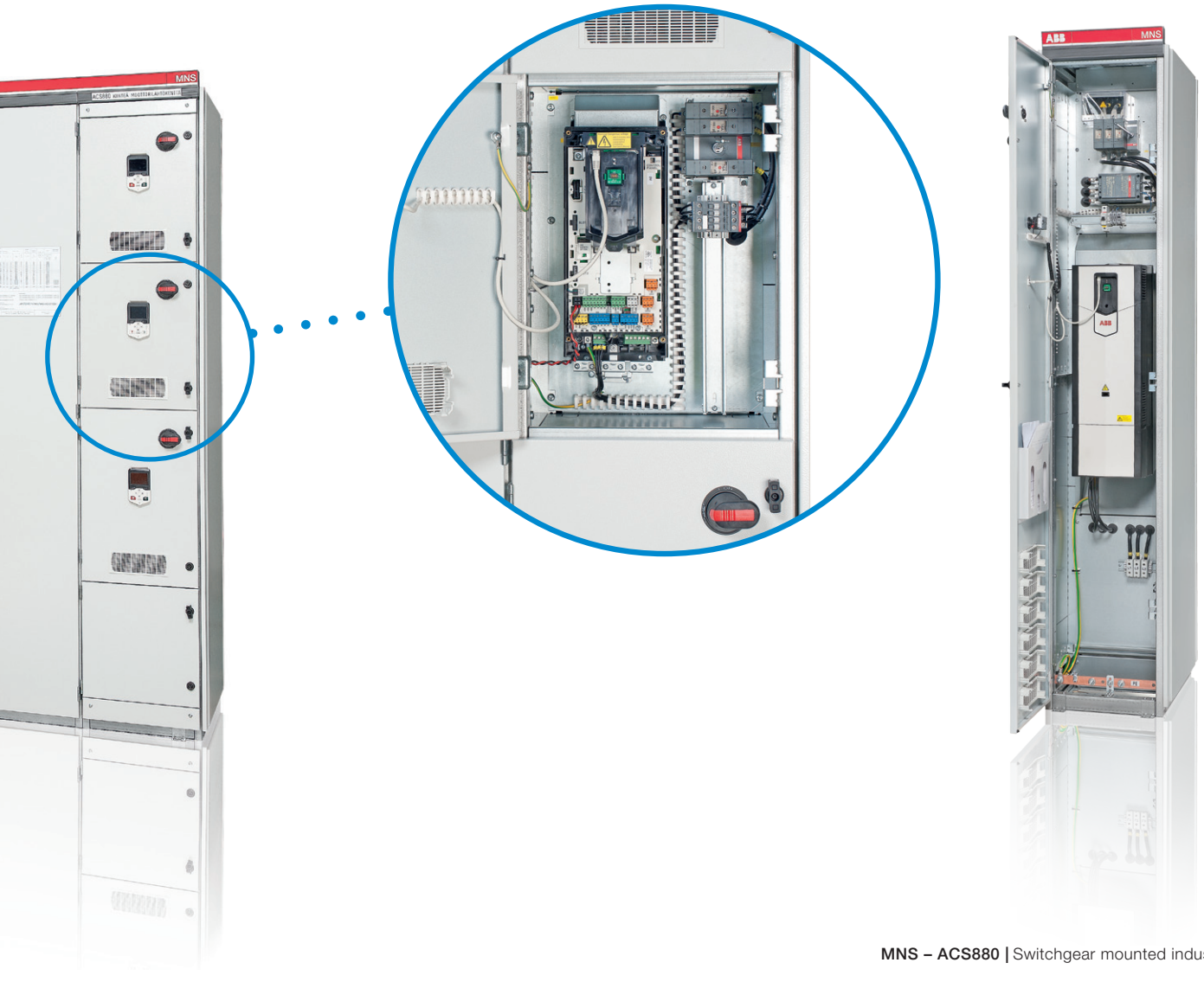
The drive with its auxiliary equipment can be installed in the MNS compartment alone, in a group of several units or as a part of MNS MCC.

A modern, fieldbus controlled drive often requires additional components for functioning. Installing the wholeunit in the factory makes sure the installation and commissioning on site is fast and smooth.

The drive installations in MNS switchgear is based on solutions designed and tested specifically for this purpose. They offer a suitable environment for sensitive equipment as well as space for maintenance and installation. Drives are integrated into the switchgear and communicate via fieldbuses, enabling extensive factory acceptance tests (FAT) and thereby shortening the times needed for testing and commissioning on site.

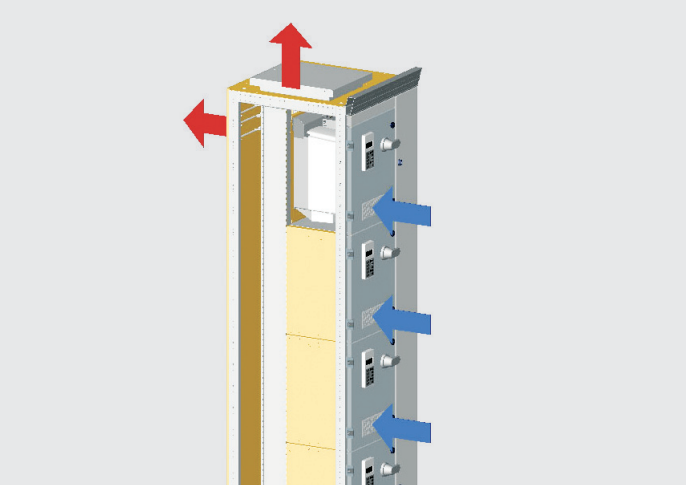
The switchgear includes factory-tested fieldbus and auxiliary circuit cablings as well as the drive supply cable. Switchgears also have common auxiliary voltage supply and the only cabling that has to be done on site is the motor cabling.

The MNS switchgear makes it possible to build larger separate functional units where all the drives required by an industrial process or an aspect of it can be located in one place. A switchgear can include drives of different sizes and a common AC supply. The delivery times are short due to the high level of standardization.



Efficient cooling, longer lifetime

In MNS installations with drives, special attention has been paid to ventilation. They are through ventilated, which means that the cooling air is taken in from the switchgear room, led through the compartment and blown out as shown in the picture.



Innovative user interface

From the very beginning the ACS880 design team has included user interface designers and product design professionals. Thanks to its innovative and easy-to-use user interface, the drive has already earned an honorary mention in a respected design competition

The menus and messages of the control panel can be modified to meet the requirements of each process.

Segregated ACS880-solutions

The MNS switchgear with drives is equipped with cable compartments to ensure safe and easy cabling. It also makes it possible to prepare for unusual cable sizes.

Each drive unit has its own main device switch-fuse. The operating handle of the switch-fuse interlocks the apparatus compartment door when the switch-fuse is in operating position. If it is necessary to make adjustments or measurements without interrupting the power supply, it is possible to bypass the interlocking.

If required, the user interface of the drive can be mounted on the door of the apparatus compartment, so the setting of parameters can be done safely without opening the door.

Verified safety by testing

All MNS ACS880 solutions have been tested in the ABB laboratory in accordance with IEC61439-1 and IEC61439-2. The temperature rise tests have been made using a full motor load with no diversity factor.

Efficient cooling ensures a long working lifetime for the equipment.

The picture shows a temperature rise test.

MNS technical data

Standards and tests	IEC 60439-1:2004 DIV VDE 0660, part 500 IEC 61439-1, IEC 61439-2 IEC 60529, EN 60529 IEC 61641 (technical report) PSK 1801:2001
Rated insulation voltage U_i	1000 VAC
Rated operation voltage U_e	400, 500, 690 VAC
Rated frequency	50/60 Hz
Rated current I_n	Max. 6300 A
Rated short-time withstand current I_{cw}	Max. 100 kA
Rated peak withstand current I_{pk}	Max. 250 kA
Arcing withstand	50 kA, 300 ms, 760 V
EMC environment	2
Degree of protection	IP 31
Surface treatment	Zink phosphating 1-2 g/m^2
Frame, roof and rear plates	Hot galvanized sheet steel
Inside parts	Hot galvanized sheet steel
doors and side walls	Painted RAL 7035, light gray
Switchgear size	
Height	2200 mm
Depth	600 mm

Drive unit data

Frame size	Rated power	Rated power		Quantity
		Width mm	Height mm	pcs/ cubicle
R1	0.75-5.5	400	500	4
R1	0.75-5.5	600	300	6
R2	7.5-11	400	500	4
R2	7.5-11	600	300	6
R3	15-18.5	400	600	3
R3	15-18.5	600	600	3
R4	22-30	400	1000	2
R5	37-45	400	1400	1
R6	55-75	400	2125	1
R7	90-110	400	2125	1
R8	132-160	800	2125	1
R9	160-250	1000	2125	1

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