

Assembly instructions | EN

AX2090-ND50

Mains choke

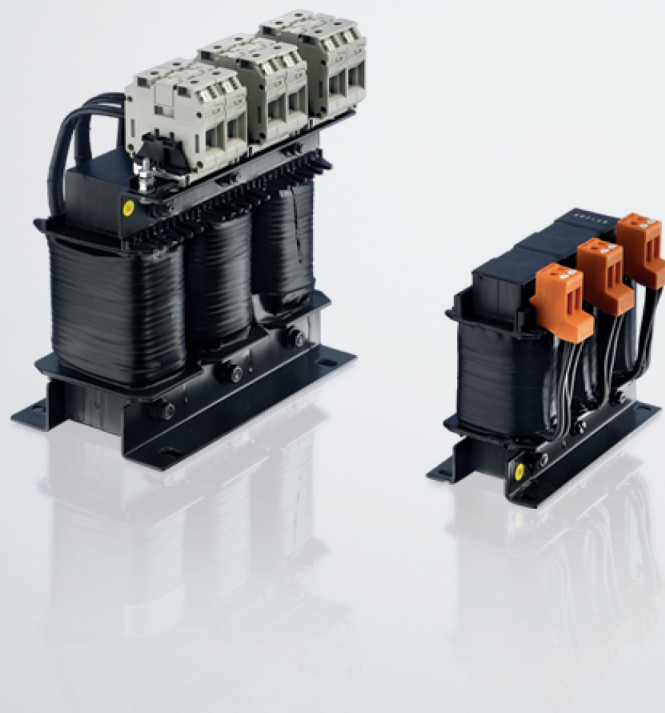


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1 Foreword

1.1 Notes on the documentation

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with the applicable national standards.

It is essential that the following notes and explanations are followed when installing and commissioning these components.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development.

For that reason the documentation is not in every case checked for consistency with performance data, standards or other characteristics.

In the event that it contains technical or editorial errors, we retain the right to make alterations at any time and without warning.

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1.2 Documentation issue status

Version	Kommentar
1.1	General update
1.0	First edition

1.3 Appropriate use

The mains chokes of the series “AX2090-ND50“ are exclusively intended for application in the control cabinet as power supply unit of the AX5000. The chokes are installed together with the servo drive as components in electrical systems and machinery and may only be used in this way.

2 Safety

2.1 General safety instructions

2.1.1 Personnel qualification

This description is only intended for trained specialists in control, automation and drive engineering who are familiar with the applicable national standards.

2.1.2 Description of safety symbols

The following safety symbols and associated safety instructions are used in this document. These safety instructions must be read and followed.


⚠ DANGER
<p>Serious risk of injury!</p> <p>Failure to follow the safety instructions associated with this symbol directly endangers the life and health of persons.</p>

⚠ WARNING
<p>Caution – Risk of injury!</p> <p>Failure to follow the safety instructions associated with this symbol endangers the life and health of persons.</p>

⚠ CAUTION
<p>Personal injuries!</p> <p>Failure to follow the safety instructions associated with this symbol can be lead to injuries to persons.</p>

NOTE
<p>Damage to the environment or devices!</p> <p>Failure to follow the safety instructions associated with this symbol can be lead to damage to the environment or equipment.</p>

● Tip or pointer
i This symbol indicates information that contributes to better understanding.

	<p>UL note</p> <p>This symbol indicates important information regarding UL certification.</p>
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2.2 Special safety instructions for AX2090-ND50

The safety instructions are designed to avert danger and must be followed during installation, commissioning, production, troubleshooting, maintenance and trial or test assemblies.

The mains chokes series AX2090-ND50 are not designed for stand-alone operation and must always be installed in a machine or system. After installation the additional documentation and safety instructions provided by the machine manufacturer must be read and followed.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations and guidelines.

DANGER

Serious risk of injury through electric shock!

Due to the DC link capacitors dangerous voltage ($> 890V_{DC}$) may persist at the DC link contacts "ZK+ and ZK- (DC+ and DC-)" and "RB+ and RB-" after the servo drive has been disconnected from the mains supply. After disconnecting the servo drive wait at AX5101 - AX5125 and AX520x; 5 minutes, at AX5140/AX5160/AX5172; 15 minutes, at AX5190/AX5191; 30 minutes and at AX5192/AX5193; 45 minutes and measure the voltage at the DC link contacts ZK+ and ZK- (DC+ and DC-). The device is safe once the voltage has fallen below 50 V.

WARNING

Risk of injury!

Electronic equipment is not fail-safe. The machine manufacturer is responsible for ensuring that the connected motors and the machine are brought into a safe state in the event of a fault in the drive system.

3 Installing the mains chokes

⚠ WARNING**Caution - Risk of injury through electric shock!**

De-energise all electrical components (servo drive, control cabinet etc.) before commencing the installation or deinstallation of the mains chokes.

⚠ WARNING**Caution - Risk of injury through electric shock!**

Mains chokes contain components that can store electrical charge. Wait 10 minutes after disconnecting the chokes and measure the voltage on conductors L1 to L3. The device is safe once the voltage has fallen below 50 V.

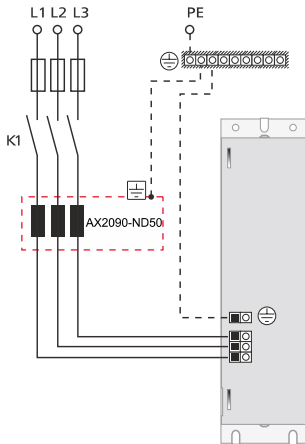
⚠ CAUTION**Caution – Improper grounding!**

Make sure when installing the mains chokes on a reasonable grounding. The installation should be on a suitable for ground mounting plate (chromated / galvanized) done.

Mounting:

- Position the main choke on the mounting surface.
- Mark out the positions of the threaded holes on the mounting surface.
- Centering and drill the screw holes. Then you cut the thread in the existing wells.
- Attach the mains choke with the appropriate screws on the mounting surface.

3.1 Circuit diagram



⚠ DANGER

Serious risk of injury!

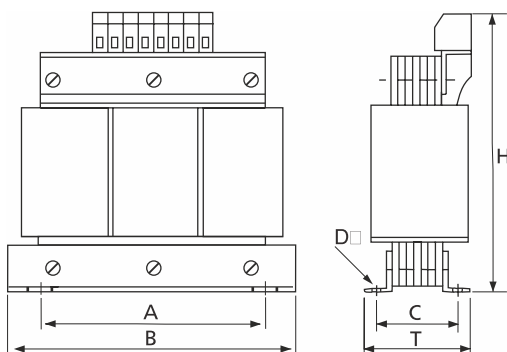
Due to the DC link capacitors dangerous voltage ($> 890V_{DC}$) may persist at the DC link contacts "ZK+ and ZK-" and "RB+ and RB-" after the servo drive has been disconnected from the mains supply. After disconnecting the servo drive wait at AX5160/AX5172; 15 minutes, at AX5190/AX5191; 30 minutes and at AX5192/AX5193; 45 minutes and measure the voltage at the DC link contacts ZK+ and ZK-. The device is safe once the voltage has fallen below 50 V.

Connection:

- Connect the protective conductor connection of the mains choke with the PE rail.
- Connect the connecting cable of the mains choke to the appropriate terminals of the servo drive.
- Connect the mains choke to the supply network.

3.2 Dimensional drawing

	AX2090-ND50-					
Dimension [mm]	0060	0072	0090	0110	0143	0170
B (Wigth)	190	190	230	230	240	240
H (Height)	200	240	300	300	330	330
T (Depth)	120	110	160	180	200	200
A	170	170	180	180	190	190
C	68	78	98	122	125	125
D	8	8	8	8	11	11



4 Technical data

Ambient conditions	Three-phase mains chokes AX2090-ND50
Rated voltage	3 x 460 V, -25% +10%, 50/60 Hz ¹⁾
Overload factor	2,0 x I _N for 30 s
Ambient temperature	-25 °C to +45 °C, with 1,3% (/°C) power reduction to +60°C
Mounting height	1000 m, with 6% (/1000m) power reduction to 4000 m
Rel. air humidity	15 %...95 %, no condensation permitted
Storage temperature	-25 °C to +70 °C
Protection	IP00
Short circuit voltage	UK 4 % at 400 V = 9,24 V UK 2 % at 400 V = 4,6 V
Permissible contamination	P2 to EN 61558-1
Thermal rating	I _{eff} < I _N
Recognition	UL / CSA

¹⁾ at mains frequency = 60 Hz power loss approx. 10 % higher!

Three-phase mains chokes

Data	AX2090-ND50-					
	0060	0072	0090	0110	0143	0170
Rated current [A]	60	72	90	110	143	170
Power loss total [W]	70	80	120	140	160	170
Inductance [mH]	0,25	0,20	0,16	0,13	0,10	0,09
Weight [kg]	7	10	13	15	25	25
Connection [mm ²]	16	16	35	35	70	70
Short-circuit voltage	4 % U _K					

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