

Assembly instructions | EN

AX2090-TS50

Transient voltage suppressor



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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 documentation and the following notes and explanations are followed when installing and commissioning the components.

It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning.

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.

We reserve the right to revise and change the documentation at any time and without prior announcement. No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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1.2 Documentation issue status

Version	Comment
1.0	First edition

1.3 Appropriate use

The AX2090-TS50-3000 transient boxes are accessory components for the AX5000 servo drive series. They are specifically designed for the Canadian market, to protect supply networks from overvoltages and to absorb current peaks.

The AX2090-TS50-3000 transient boxes are always installed as control cabinet components and may only be commissioned as integrated system components.

WARNING

Caution - 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.

The transient boxes may only be operated in closed control cabinets, under the conditions described in the "Technical data [[▶ 9](#)]" section.

2 Safety

2.1 Safety instructions

Safety regulations

Please note the following safety instructions and explanations!
 Product-specific safety instructions can be found on following pages or in the areas mounting, wiring, commissioning etc.

Exclusion of liability

All the components are supplied in particular hardware and software configurations appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

Personnel qualification


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

Description of symbols

In this documentation the following symbols are used with an accompanying safety instruction or note. The safety instructions must be read carefully and followed without fail!

⚠ 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>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 lead to injuries to persons.</p>
NOTE
<p>Damage to the environment or devices</p> <p>Failure to follow the instructions associated with this symbol can lead to damage to the environment or equipment.</p>


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

	<p>UL pointer</p> <p>This symbol indicates important information about the UL-compliant.</p>
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3 Guidelines and Standards

3.1 CSA approval

The AX2090-TS50-3000 transient box series was approved by the American UL certification authority for the Canadian market, in accordance with the standards and guidelines applicable in Canada.

	Transient box with CSA approval: AX52090-TS50-3000 – certified according to CAN / CSA C22.2 no. 274.
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The cRU logo should be shown on the name plate. If you wish to operate an AX2090-TS50-3000 in Canada, please check whether the name plate shows the cRU logo.

4 Technical data

This section contains general technical data and ordering information for the Beckhoff AX2090-TS50-3000 transient box. See below for name plate information (technical approvals, certifications, mains supply, etc.).

AX2090-TS50-3000	
Electrical data	
Rated input voltage [V _{AC}]	100 – 480
Max. pulse peak current [A]	3000 at 25 °C
Power derating	20% at 50 °C
Transient protection	Fuse AX3-430C or similar according to E128662

AX2090-TS50-3000	
Mechanical data	
Material	Housing: Cast aluminum Cover: Cast aluminum with CR foam rubber perimeter seal
Surface	Textured paint
Color	RAL 7001
Ambient temperature [°C]	-25 to +85
IP protection class	IP 66 (closed state) according to IEC 60 529
NEMA protection class	NEMA 4
Weight [kg]	1,56

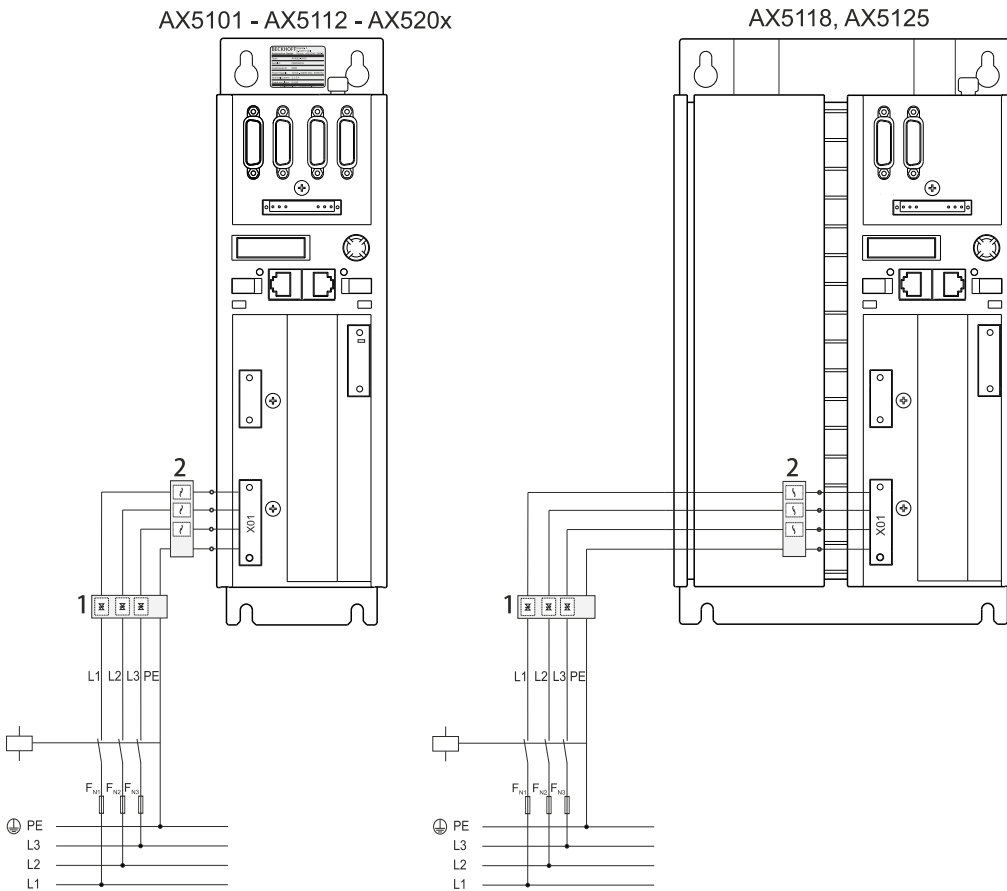
AX2090-TS50-3000	
Ordering information	Transient protection for servo drives of the AX5101 – AX5125 and AX520x series, required for CSA certification

4.1 Name plate

Item no.	Name
1	Order number
2	Max. pulse peak current
3	Rated input voltage
4	Input frequency
5	Barcode
6	Protection class
7	cRU-compliant (E195162)
8	Standard mains supply with earthed center

5 Installation of the transient box

5.1 Connection example



Item no.	Name
1	Transient box AX2090-TS50-3000
2	Mains filter (optional) AX2090-NF50-0014 (AX5101 - AX5112 and AX520x) Mains filter (optional) AX2090-NF50-0032 (AX5118 and AX5125)

Connection cables

When assembling the connecting cables note the following lengths:

- cable between the transient box and the mains filter (optional): min. 200 mm.
- cable between the mains filter and the AX5000 servo drive: max. 400 mm.

i EMC-compliant installation of the components and shield concept

For further information on EMC-compliant installation and the shield concept please refer to the Beckhoff website (www.beckhoff.com) under: Motion → Documentation → AX5000 – EMC leaflet.

5.2 Installation in the control cabinet

Beckhoff Automation GmbH & Co. KG recommends M6 screws with through-hole thread of strength grade 8.8 for installation of the transient box in the control cabinet. The screws should be tightened with a maximum tightening torque of 7.3 Nm.

⚠ WARNING

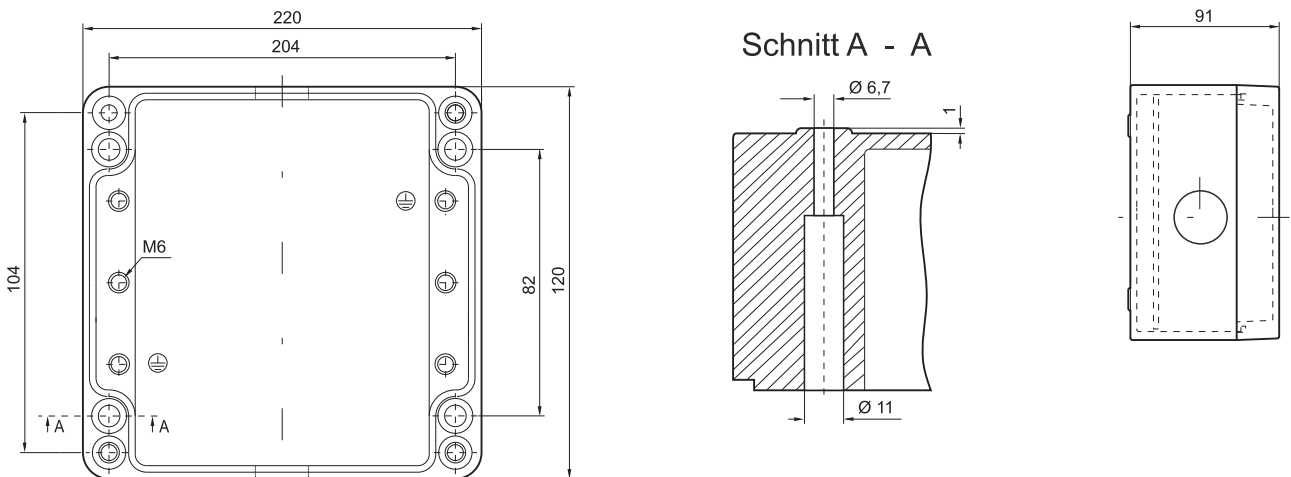
Caution - Risk of injury through electric shock!
The mounting plate must be earthed according to the statutory regulations.

NOTE

Earthing!
Improper earthing of the AX2090-TS50-3000 transient box can result in EMC problems.

5.3 Dimensions

AX2090-TS50-3000



Tightening torques for the fastening screws (cover)	
M6 x 40 (4 screws)	2 ⁺¹ Nm

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