

Rexroth IndraDrive

Drive Components ACS01
Safety Instructions and Directions for Use

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Edition 02

EN Rexroth IndraDrive ACS01 Safety Instructions and Directions for Use

ZH Rexroth IndraDrive ACS01 安全说明与使用指南

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Drive Components ACS01

Safety Instructions and Directions for Use

R912007828
Edition 02

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⚠ WARNING

In case of non-compliance with a safety instruction containing the signal word "WARNING", death or serious injury could occur.

⚠ CAUTION

In case of non-compliance with a safety instruction containing the signal word "CAUTION", minor or moderate injury could occur.

General Information

Operating Instructions

Improper use of drive components (ACS01) and non-compliance with safety instructions can cause personal injury. Only commission the drive components when the following requirements have been fulfilled:

- ▶ You have the Operating Instructions of the drive components at hand.
- ▶ You have checked that the Operating Instructions at hand comply with the supplied types of the drive components.
- ▶ You have taken the contents of the Operating Instructions into account.

You can order the Operating Instructions with our Rexroth sales representative or download them from the Internet (<http://www.BoschRexroth.com/MediaDirectory>). In the case of problems with the download, please contact dokusupport@boschrexroth.de.

Signal Words of the Safety Instructions

The signal words of the safety instructions in this documentation have the following significances:

General Safety Instructions and Directions for Use

⚠ WARNING

Danger to life in case of non-compliance with the below-mentioned safety instructions!

Serious personal injury in the case of improper conduct!

- ▶ Do not attempt to put the drive components into operation until you have read and observed the safety instructions.
- ▶ Only qualified staff or competent persons are allowed to mount, electrically connect and commission the drive components. A competent person knows the relevant standards and regulations. A competent person must be able to judge the delegated work and identify potential hazards.
- ▶ Observe all instructions to be found on the drive components and in the Operating Instructions, as well as the standards and regulations applicable to your drive system.

The drive components can cause hazards.

Protect yourself from the following hazards:

- ▶ Improper transport and mounting
- ▶ Magnetic and electromagnetic fields
- ▶ Electrical voltage
- ▶ High temperatures of the drive components
- ▶ Improper handling of batteries

If you do not understand an instruction in this documentation or in the Operating Instructions, or if you have any questions, please contact the Rexroth service, before you start working (tel.: 4008807030, e-mail:

SVF@boschrexroth.com.cn or
www.boschrexroth.com/electrics).

Appropriate Use

Drive components made by Rexroth are designed to control electrical motors and monitor their operation.

It is the prerequisite for the intended use and the safe handling of the drive components that you proceed appropriately and correctly in the case of the following activities:

- ▶ Transport
- ▶ Storage
- ▶ Mounting
- ▶ Installation (electrical connection system)
- ▶ Commissioning
- ▶ Operation
- ▶ Dismounting
- ▶ Disposal

The drive components are exclusively designed for commercial and industrial use. Only operate the drive components under the specified conditions (see index entries "Data", "Dimensions", "Instructions for use" and "EMC" in the Operating Instructions). Using drive components in potentially explosive areas is forbidden.

Transport and Storage**⚠ WARNING****Risk of injury during transport by improper handling!**

- ▶ Only use suitable and sufficiently sized lifting gear and means of transport.
- ▶ Secure eyebolts before using them and check them for tight fit.
- ▶ Never be under hanging loads.
- ▶ Use suitable personal protective equipment (e.g. safety shoes).

Store the drive components in their original packages, in a dry, dust-free, vibration-free place, and protect them from light and direct solar radiation.

Mounting

Before mounting the drive components, observe the following instructions:

- ▶ The drive components are designed for control cabinet mounting.
This excludes drive components with a degree of protection of at least IP65 in accordance with IEC 60529.
- ▶ Depending on the site of installation, the control cabinet must provide sufficient protection against penetration of foreign objects and ingress of liquids. The degree of protection must be at least IP54 in accordance with IEC 60529.
- ▶ Ensure a safe location for the control cabinet.
- ▶ For installation and mounting, observe the additional conditions (see index entries "Data", "Dimensions" and "Installation" in the Operating Instructions).

⚠ WARNING**Personal injury during mounting work!****Danger by falling drive components.**

- ▶ Use personal protective equipment (e.g. safety gloves, safety shoes) and suitable mounting devices.
- ▶ When mounting drive components of a machine:
Before starting to work, secure the machine against movements and unauthorized operation.
- ▶ Before unfastening mechanical connections, secure the drive components against falling.

Electrical Connection

For information on the electrical connection of the drive components, see the Operating Instructions (see index entries "Connection points" and "Equipment grounding conductor").

⚠ WARNING**High electrical voltage!****Danger to life, risk of injury by electric shock.**

- ▶ Disconnect the mains power supply before accessing the drive components and secure the mains power supply from reconnection.

- ▶ Before accessing the drive components, wait for the drive components to discharge.
- ▶ Always operate drive components with a permanently installed equipment grounding conductor (= protective grounding conductor).

In addition, observe the following instructions:

- ▶ The leakage current of the drive components is greater than 3.5 mA. Therefore, observe the requirements on the minimum cross section of the equipment grounding conductor (see "Equipment grounding conductor" in the Operating Instructions).
- ▶ Observe the data on the type plate of the drive component and the connection diagram in the Operating Instructions.
- ▶ Observe the data for the mains connection lines with regard to the minimum cross section, installation method, ambient temperature and insulation material (see Operating Instructions).
- ▶ Establish permanently safe electrical connections.
- ▶ Keep the control cabinets free from dust, dirt and moisture.
- ▶ Only use original connection accessories by Rexroth.

Commissioning

WARNING

High electrical voltage!

Danger to life, risk of injury by electric shock.

- ▶ Always operate drive components with a permanently installed equipment grounding conductor.
- ▶ Do not open protective coverings or protective housings when drive components conduct voltage.
- ▶ Do not connect or disconnect electrical connections when the electrical connections conduct voltage. For this purpose, first disconnect the mains power supply and secure the mains power supply from reconnection. Before accessing a drive component, allow the component to discharge within the time specified on the component.

Before commissioning, the following requirements must have been fulfilled:

- ▶ The drive components are undamaged and free of dirt.
- ▶ The equipment grounding conductor has been permanently connected at all drive components (see "Equipment grounding conductor" in the Operating Instructions).

- ▶ All electrical connections of the drive components were checked (see index entry "Connection points" in the Operating Instructions).
- ▶ Fuses have been correctly installed and the Bb relay contacts have been wired.
- ▶ Monitoring systems (e.g. diagnostic messages and error messages) of the drive components do not display any errors.
- ▶ Cooling water connections are tight.

WARNING

Electromagnetic and magnetic fields!

Danger to persons with active medical implants (e.g. heart pacemakers) or passive metallic implants (e.g. hip implants).

- ▶ Persons with active medical implants or passive metallic implants risk danger by electromagnetic and magnetic fields in the immediate vicinity of drive components and the associated current-carrying conductors. Entering these areas can cause danger to these persons.
- ▶ Before entering areas with magnetic and electromagnetic fields, persons with active medical implants or passive metallic implants should seek advice from their physician.

Operation

During operation:

- ▶ Observe the allowed ambient and operating conditions of the drive components (see index entries "Data", "Dimensions" and "Installation" in the Operating Instructions).
- ▶ In the case of any deviations from normal operation (e.g., increased temperatures, exceptional noise, increased vibrations):
 1. Switch off the drive component and allow the component to discharge within the time specified on the component.
 2. Determine the cause of the deviation and restore the normal operation.
 3. Contact Rexroth if you are unable to restore the normal operation.

⚠ CAUTION

Hot surfaces (> 60 °C)! Risk of burns!

- ▶ Do not touch hot surfaces (e.g. heat sinks).
 - ▶ Wait for the time required to allow the drive components to cool down (at least 15 minutes).
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⚠ CAUTION

Improper handling of batteries! Risk of injury!

- ▶ Do not attempt to reactivate or recharge low batteries (risk of explosion and cauterization).
 - ▶ Do not dismantle or damage batteries.
 - ▶ Do not throw batteries into open flames.
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Rexroth IndraDrive

驱动元件 ACS01

安全说明与使用指南

R912007827

版本 02

概述

操作说明
 安全说明的信号字
 通用安全说明与使用指南
 正确使用
 运输与储存
 安装
 电气连接
 调试
 运行

概述

操作说明

不当使用驱动元件(ACS01)以及不遵守安全说明均有受伤的危险。

仅在满足了下列条件时，才可对驱动元件进行调试：

- ▶ 手边拥有驱动元件的《操作说明》。
- ▶ 经核对手边的《操作说明》符合驱动元件的供应类型。
- ▶ 已认真阅读了《操作说明》的内容。

您可向我们的 Rexroth 销售代表索要《操作说明》，也可从我们的网站 (<http://www.BoschRexroth.com/MediaDirectory>) 下载。下载如有问题，请联系 dokusupport@boschrexroth.de。

安全说明的信号字

本文中安全说明的信号字具有下列含义：

警告

若不遵守含有“警告”信号字的安全说明，可能造成伤亡。

小心

若不遵守含有“小心”信号字的安全说明，可能造成轻度或中度受伤。

1 通用安全说明与使用指南

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警告

不遵守下列安全说明会引起生命危险！

不当操作有遭受重伤的危险！

- ▶ 请在运行驱动元件之前确保已阅读并遵守安全说明。
- ▶ 仅合格员工或有资质人员才可安装、进行电气连接和调试驱动元件。有资质人员了解有关标准和规定。有资质人员必须能够判别所委派的工作以及识别潜在的危害。
- ▶ 遵守有关驱动元件的所有说明和本《操作说明》中的所有说明，以及适用您的驱动系统的标准和规定。

驱动元件有危害。

保护您自己免受以下伤害：

- ▶ 不当运动和安装
- ▶ 磁场和电磁场
- ▶ 电压
- ▶ 驱动元件高温
- ▶ 电池不当处理

在您开始工作之前，如不理解本文档和《操作说明》中的任何说明，或有任何疑问，请联系 Rexroth 服务部（电话：4008807030，电子邮件：SVF@boschrexroth.com.cn 或 www.boschrexroth.com/electrics）。

正确使用

Rexroth 制造的驱动元件设计用于控制电机并监控其运行。

用于预期用途和安全处理驱动元件的前提条件是正确并适当地进行下列活动：

- ▶ 运输
- ▶ 存储
- ▶ 安装
- ▶ 安装（电气连接系统）
- ▶ 调试
- ▶ 运行
- ▶ 拆卸
- ▶ 处理

驱动元件设计专用于商业和工业用途。仅在指定条件下运行驱动元件（参见《操作说明》的"数据"、"尺寸"、"使用说明"和"EMC"章节）。严禁在有爆炸危险的区域使用驱动元件。

运输与储存

警告

运输过程中搬运不当有受伤危险!

- ▶ 仅采用适当的且尺寸合适的提升装置和运输方式。
- ▶ 使用之前固定好有眼螺栓，并检查是否拧紧。
- ▶ 切勿逗留在悬挂负载下方。
- ▶ 采用适当的个人防护设备（例如，安全靴）。

应使用原始包装将驱动元件储存在干燥、无尘以及无振动的地方，避免阳光直射。

安装

安装驱动元件之前，请遵守下列说明：

- ▶ 驱动元件设计用于控制柜安装。
但不包括符合 IEC 60529 具有至少为 IP65 保护等级的驱动元件。
- ▶ 根据安装场地的情况，控制柜必须具有充足的保护措施，以防异物刺穿和液体渗入。保护等级必须至少为 IEC 60529 规定的 IP54。
- ▶ 确保控制柜位于安全的场所。
- ▶ 有关安装的更多信息，请遵守额外条件（参见《操作说明》中的"数据"、"尺寸"和"安装"章节）。

警告

安装工作期间有受伤危险!

驱动元件有跌落危险。

- ▶ 使用个人防护设备（例如安全手套、安全靴）和适当的安装设备。
- ▶ 安装机器的驱动元件时：
开始工作之前，确保机器不会移动和未经授权操作。
- ▶ 在解除机械连接之前，固定好驱动元件，以防掉落。

电气连接

有关驱动元件的电气连接信息，参见操作说明（参见"连接点"和"设备接地导线"章节）。

警告

高电压!

有生命危险以及触电受伤危险。

- ▶ 进入驱动元件之前断开主电源，确保主电源不会重新连接。
- ▶ 进入驱动元件之前，等待驱动元件放电。
- ▶ 仅可使用永久安装的设备接地导线（=保护性接地导线）运行驱动元件。

此外，遵守下列说明：

- ▶ 驱动元件的漏电电流大于 3.5 mA。因此，遵守设备接地导线的最小横截面要求（参见《操作说明》中的"设备接地导线"）。
- ▶ 遵守驱动元件的铭牌数据和《操作说明》中的连接图。
- ▶ 遵守主电源连接线关于最小横截面、安装方法、环境温度 and 绝缘材料的数据（参见《操作说明》）。
- ▶ 确保电气连接永久安全。
- ▶ 保持控制柜无尘、无污且防潮。
- ▶ 仅使用 Rexroth 制造的原装连接附件。

调试

警告

高电压!

有生命危险以及触电受伤危险。

- ▶ 仅可使用永久安装的设备接地导线运行驱动元件。
- ▶ 驱动元件带有电压时，请勿打开保护盖或保护罩。
- ▶ 电气连接带有电压时，请勿连接或断开电气连接。为此，首先断开主电源，确保主电源不会重新连接。进入驱动元件之前，让元件在规定的时间内放电。

进行调试之前，必须满足下列要求：

- ▶ 驱动元件无损且无尘。
- ▶ 所有驱动元件必须永久连接了设备接地导线（参见《操作说明》中的"设备接地导线"）。
- ▶ 检查了驱动元件的所有电气连接（参见《操作说明》中的"连接点"）。
- ▶ 必须正确安装保险丝，Bb 继电器触点必须接线。
- ▶ 驱动元件的监控系统（例如，诊断消息和故障消息）未显示任何故障。
- ▶ 冷却水连接密闭。

警告

电磁场/磁场！

对佩戴主动医疗植入装置（例如心脏起搏器）或被动金属植入物（例如髋部植入物）的人员有危害。

- ▶ 佩戴主动医疗植入装置或被动金属植入物的人员在靠近驱动元件以及相关带电导线时，电磁场和磁场会对其产生危害。进入这些区域会对上述人员造成危害。
- ▶ 在进入有磁场和电磁场的区域之前，佩戴主动医疗植入装置或被动金属植入物的人员应先咨询其医师。

运行

操作期间：

- ▶ 请遵守驱动元件的允许环境和运行条件（参见《操作说明》中的"数据"、"尺寸"和"安装"章节）。
- ▶ 如发现不正常运行（例如，温度升高、异常噪音和震动加大）：
 1. 关闭驱动元件，让元件在规定的时间内放电。
 2. 找出异常原因，并恢复至正常运行。
 3. 如果无法恢复到正常运行，请联系 Rexroth。

小心

表面高温 (> 60 °C)！有灼伤危险！

- ▶ 请勿触摸高温表面（例如散热片）。
- ▶ 等待直至驱动元件降温（至少 15 分钟）。

小心

电池不当处理！有受伤的危险！

- ▶ 请勿重新激活电量低的电池，或对其进行再充电（有爆炸和烧灼危险）。
- ▶ 请勿拆解或损坏电池。
- ▶ 请勿将电池扔到明火中。



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