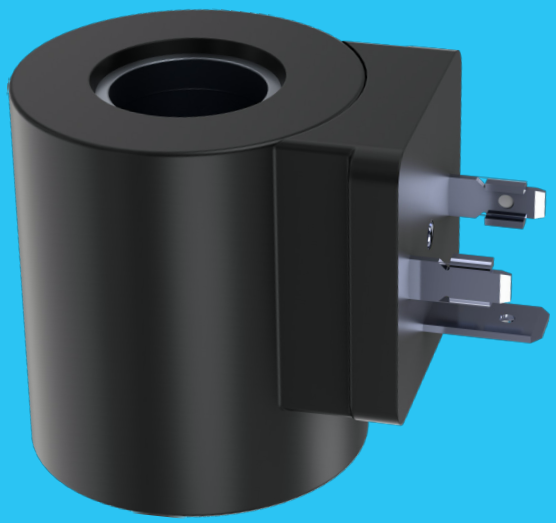
rexroth
A Bosch Company

Technical user manual

COIL D36

R901440933 - R901440934 - R901394229 - R901394231



RE 18324-42/2023-12, EN

The cover shows an example application.
The product delivered may differ from the
image on the cover.

Contents

1 General precautions and conformity

This instruction manual supplies the information required for assembly, commissioning, safe operation and disassembly of the module in question.
Keep these instructions safe in an easily accessible place and ensure they remain perfectly legible.
The operations described in this manual must be carried out exclusively by specialised personnel with suitable qualifications and duly authorised by the plant operator.
Install and use the device only after having read and understood this instruction manual and when you are familiar with the provisions in force concerning occupational safety and accident prevention.
Selection and installation of the devices, and also of the related control connections, requires detailed knowledge of industry standards and legal requirements on the part of the machinery manufacturer.
This technical user manual refers to the following coils:

- OD02U60130OU00 (R901440933), 96 Vdc DIN 43650 connector.
- OD02U60130AH00 (R901440934), 205 Vdc DIN 43650 connector.
- OD02360130OU00-36-K4 (R901394229), 96 Vdc DIN 43650 connector.
- OD02360130AH00-36-K4 (R901394231), 96 Vdc DIN 43650 connector.

This manual is to be used as an aid for installation and operation of the product and it supports technical personnel in all operating and maintenance activities.
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This manual also has the purpose of preventing potential health and safety hazards affecting the user and other persons.

2 Safety

2.1 General safety notes and prohibited uses

- Comply with the safety and environmental protection standards in force.
- Comply with the safety standards and provisions in force in the country in which the coil is installed/used.
- Use Rexroth products only if they are in perfect technical condition.
- Comply with the instructions shown on the product.
- The person responsible for assembling, using, disassembling or servicing Rexroth coils must not be under the influence of alcohol, narcotics or medicines that affect his/her reactions.
- Comply with the technical data and ambient conditions specified in the product documentation.
- Ensure the device is cleaned correctly to avoid the accumulation of dust, which could cause a fire hazard.
- Operate this product only if you are sure the end product (machine or plant) in which Rexroth products are incorporated complies with the provisions, safety directives, and specific operating standards in force in the respective country of use.
- Do not use the coil in explosive or flammable atmospheres (the module is not certified to 2014/34/EU ATEX).
- Do not use the module in a construction configuration other than the one specified by the manufacturer.
- Do not incorporate other systems and/or equipment not contemplated by the manufacturer in the construction project.
- Do not use the module with the case removed, damaged, or incorrectly closed.
- Do not connect the device to energy sources other than those specified by the manufacturer.
- Do not use the device without having first read and fully understood the instructions for use attached to this technical documentation and supplied with the module.
- Do not use commercial devices for purposes other than those intended by the manufacturer.
- Do not carry out maintenance tasks without first appropriately selecting the coil power supplies.
- Do not use the device in the absence of short-circuit protection.

2.2 Improper use and precautions

⚠ PRECAUTIONS

High voltage!

On electric coils having power supplies > 50Vac and/or 75Vdc, touching any live part of the product can result in fatal electrocution.

- The coil must be connected by an expert electrician or under the supervision of an expert electrician.
- Before all maintenance, repair, or installation operations, disconnect the power supply and perform a lock-out/tag-out procedure to prevent reconnection.
- Ensure the connection is made correctly and safely.
- Use exclusively power supply units with a PELV (Protective Extra Low Voltage) protection device. Safe interruption can be achieved, for example, by means of isolation transformers, safe opto-isolators, or battery powered operation without a mains connection

Electromagnetic radiation!

Because they emit electromagnetic radiation, coils may interfere with other electronic equipment and also suffer disturbances caused by external electromagnetic radiation, resulting in possible uncontrolled movements in the plant.

- Do not exceed electromagnetic radiation limit values.
- Use exclusively the prescribed connecting cables.
- Pay attention to CEM compliant wiring.
- Make sure the coils are properly connected to earth.

Burns hazard!

When the coil is supplied with power it is subject to a self-heating effect: temperature rise of the external parts of the device. Risk of burns if the operator accidentally touches external parts of the device.

⚠ CAUTION

- Any use other than that described under intended use is deemed to be nonconforming use and is therefore prohibited.
- Incorrect connection of the coil connector will result in failed excitation and consequently no displacement of the moving element of the valve.
- If the coil is excited using an incorrect power feeding voltage, the result may be an inappropriate valve reaction followed by possible damage.
- If the connector is immersed in liquid it will be damaged resulting in incorrect operation of the coil.
- If the machine manufacturer has not created a protection system, we recommend installing a fuse up-line from the coil rated at double the maximum current value the coil is designed to withstand.

3 Product overview

3.1 General specifications

Universal device suitable for the entire range of on/off valves.

3.2 Technical Standards

The coils are manufactured in compliance with the following technical standards:

- DIN VDE 0580, electromagnetic devices and components
- DIN EN IEC 60947-6-1, Low voltage switchgear and controlgear - Part 6-1: Multifunction equipment - Transfer switching equipment
- EN 60204-1, Safety of machinery - Electrical equipment of machines - Part 1: General requirements
- EN IEC 60068-2-27
- EN 175301-803
- EN ISO 12100
- EN 7010
- EN 60529
- DIN EN ISO 9227
- EN 60068-2-78
- EN 60068-2-30
- EN IEC 60947-1

The following technical standard was applied for validation of the coils:

- RNI 50113, Bosch Rexroth Norm

3.3 Description of operating principle

The current that flows through the coil winding creates a magnetic field. The magnetic field acts on the solenoid armature and causes it to move, thereby moving the valve control element (spool, sealing element).

The coil is accommodated in a steel housing, thus amplifying the magnetic field and protecting the device against mechanical damage.

In addition, the coil is embedded in plastic material to mould it into the housing. Also the part of the connector coupled to the coil is made of the same plastic material. A silicone seal protects the coil space from the ingress of moisture and dust.

3.4 Intended use

The product is an electronic component, designed for use in hydraulic systems. It is used for the composition of electrohydraulic valves, in combination with the mechanical section.
The coil must be used as follows:

- in compliance with the use and ambient conditions as per the data sheet

- in compliance with the performance limits
- in its original and undamaged condition
- no repairs can be carried out by the customer. Maintenance is to be carried out exclusively using authorised replacement parts. Replace defective products immediately with a new device or with genuine original replacement parts.
- Use of the DIN 43650 connector is mandatory.

3.5 Technical data

In reference to the technical data of the coils illustrated in the following instruction manual, end users should view the document available at this link:
`https://www.boschrexroth.com/it/it/media-details/04972e0d-ec02-4864-9625-320da5f16d96`

3.6 DIN 43560 connector

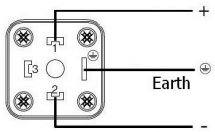

Figure 2 - DIN 43560 connector, male connector (viewed from coil).

- PIN1 = Power supply (+)
- PIN2 = Power supply (-)
- PIN3 = Not used
- PIN4 = Ground (GND)

4 Assembly and installation

4.1 Assembly information

Comply with following guidelines to ensure correct assembly of the coil. The coil must be mounted securely to the valve, fitting seals on each side and a nut. The nut must be tightened to the torque value defined in accordance with the valve installation context.

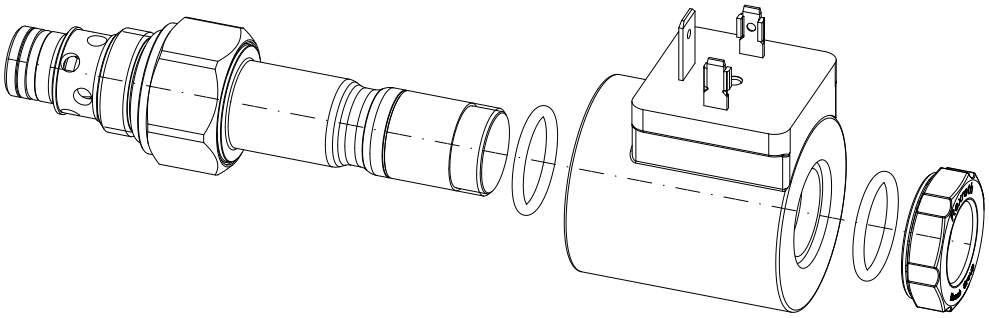

Figure 3 - Coil D36 Assembly

Do not use the equipment without short-circuit protection.
If the machine manufacturer has not created a protection system, we recommend installing a fuse up-line from the coil rated at double the maximum current value the coil is designed to withstand.

5 Maintenance

No type of routine maintenance is required for this device. We recommend replacing the coil immediately on the occurrence of faults or breakages.

6 Removal, deactivation, and scrapping

The equipment is composed of a steel frame.
All components installed inside the frame are sourced on the market and they contain materials typically used in the light industrial sector including: steel for the metal cage, copper for the solenoid, aluminium, polyamide resin with fibreglass fillers.
For recycling or disposal of the materials, refer to the national laws and regional regulations in force concerning the disposal of solid industrial waste and hazardous substances.

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Subject to change
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