

FAG



Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC

User manual

SCHAEFFLER

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Lubricator FAG CONCEPT2-..-24VDC

About the user manual The purpose of this user manual is to assist the user become acquainted with the mains-powered lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC and use them for the intended purpose.

This user manual describes the installation and use of the mains-powered lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC and is intended to help in:

- avoiding hazards
- increasing the reliability and service life of the device.

This user manual is part of the device and contains important information. It is valid only for the mains-powered lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC.

Symbols The warning and hazard symbols are defined along the lines of ANSI Z535.6–2006.

NOTICE

In case of non-compliance, damage or malfunctions in the product or the adjacent construction will occur. ◀

Note There follows additional or more detailed information that must be observed.

Availability This user manual is supplied with each device and can also be ordered retrospectively.

Note If the user manual is absent, incomplete or illegible, the user may lack important information relating to safe use of the device and this may lead to incorrect usage. It must be ensured that this user manual is always complete and legible and that any persons using the device have the user manual available.

Legal guidelines The information in this manual corresponded to the most recent status at the close of editing. The illustrations and descriptions cannot be used as grounds for any claims relating to devices that have already been delivered. Schaeffler Technologies AG & Co. KG accepts no liability for any damage or malfunctions if the device or accessories have been modified or used in an inappropriate manner.

Original user manual This user manual is the original user manual.

Lubricator FAG CONCEPT2-..-24VDC

General safety guidelines This chapter brings together all the important safety regulations. Any person charged with working on the lubricator must read this chapter and observe the guidelines.

Principles Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC correspond to the current level of technology and the recognised rules of safety practice. If the safety guidelines are not observed, risks to life and limb for the user or third parties and extensive damage to other material assets may nevertheless arise during use. Non-compliance with the safety guidelines may have the following consequences:

- failure of important functions of the equipment
- failure of specified methods for maintenance and overhaul
- endangerment of persons through electrical, mechanical and chemical action
- endangerment of the environment through leakage of hazardous substances.

Marking Each lubricator FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC is marked using a serial number and nameplate. The nameplate contains information on the manufacturer and the CE symbol, *Figure 1*.

- ① Space for nameplate
- ② Serial number (SN)



Figure 1
Markings

**Usage
for the intended purpose**

Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC are authorised for use only in a normal industrial environment or outdoors. The lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC may only be used in accordance with the technical data, see page 45.

Only original cartridges and original replacement parts may be used, in order to prevent malfunctions or failure of the pumps.

Unauthorised modifications to the structure of the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC are not permissible. We assume no liability for any damage to machinery or injury to persons arising from such actions.

Usage for the intended purpose also includes the following:

- All guidelines in the user manual are observed.
- All maintenance work is implemented.
- All relevant specifications on occupational safety and accident prevention must be observed during all life cycles of the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC.
- Your company must have the necessary specialist training and authorisation for carrying out the necessary work on the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC.

**Usage not
for the intended purpose**

Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC may not be used in or on vehicles.

The lubricators may not be used in environments with an explosion risk.

Lubricator FAG CONCEPT2-..-24VDC

- Warranty** The manufacturer shall assume liability for warranties in relation to operational security, reliability and performance only under the following conditions:
- Mounting, connection, maintenance and repairs must be carried out by authorised and skilled personnel.
 - If hot or cold machine parts constitute a hazard, measures must be taken locally to prevent contact with these parts.
 - Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC must be used in accordance with the information in the technical datasheets.
 - The limit values indicated in the technical data may not be exceeded under any circumstances.
 - Conversion and repair work on the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC may only be carried out by the manufacturer.

Selection and qualification of personnel Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC may only be mounted, commissioned, operated and maintained by qualified personnel. The scope of competence, area of responsibility and monitoring of personnel must be precisely regulated by the site operator.

A person defined as qualified personnel:

- is authorised to carry out mounting of the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC
- has all the necessary knowledge
- is familiar with the safety guidelines
- has read and understood this manual.

If personnel do not possess the necessary knowledge, they must be given the necessary training and instruction.
Upon request, Schaeffler can offer appropriate training courses.

Work on electrical devices Work on electrical devices may only be carried out by a trained electrician.

An electrician is in a position, on the basis of his technical training, knowledge and experience as well as his knowledge of the appropriate regulations, to assess the work assigned to him and recognise possible hazards.

Warning notice Read this document before commissioning the device. Make sure you are certain that the product is suitable without restrictions for the relevant applications.

Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC are not classified as a safety component in accordance with the Machinery Directive 2006/42/EC.

The devices may only be installed by a trained electrician.

Carry out the installation in accordance with the national and international regulations covering the installation of electro-technical equipment.

Before mounting the device, check for any external damage. If damage or some other defect is found, the device must not be commissioned.

Any interference in or modifications to the device, or the addition or removal of inappropriate components is impermissible, can endanger occupational safety and may render null and void any warranty claim.

Any work on wiring, opening or closing of electrical connections may only be performed while disconnected from the power supply and in a voltage-free state.

The use of the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC is only permissible within the boundaries of the condition stated and illustrated in the user manual.

Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC may only be operated within the limits described in the datasheet. If the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC are operated outside these limits, the devices may be damaged or destroyed.

Do not carry out repairs on damaged lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC. Any repairs necessary must be carried out by Schaeffler Technologies AG & Co. KG.

Any unused outlets on the lubricator FAG CONCEPT2-2P-24VDC must **not be closed off**.

The closing plugs installed on the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC may not be removed or replaced.

Dismount the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC only while in a voltage-free state.

Lubricator FAG CONCEPT2-..-24VDC

Safety specifications All important safety specifications are described in the following sections.

Guidelines for the site operator If movable, rotating, hot or cold machine parts constitute a hazard, measures must be taken locally to prevent contact with these parts. The protection against contact must not be removed in the case of movable or rotating parts.

Leakages of hazardous substances must be directed away such that hazards to persons and the environment do not occur.

Legal requirements must be observed.

Hazards resulting from electrical energy must be eliminated.

Transport and storage Use suitable lifting gear for transport.

In transport, the relevant safety and accident prevention guidelines must be observed. Where necessary, suitable protective equipment must be worn.

Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC must not be thrown or subjected to strong impacts.

Lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC must be stored under cool, dry conditions, in order to avoid promoting corrosion of individual parts of the device.

Mounting The housings of the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC must not be subjected to direct sunlight or direct radiated heat. Risk of condensation.

Mounting and connection of the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC may only be carried out by qualified personnel and in compliance with accident prevention regulations.

Work on electrical devices When making connections to an electrical device, the following must be observed:

- connection to the voltage supply only by trained electricians
- correct wiring of the electrical components of the device
- comparison of the voltage data with the available mains voltage.

Maintenance and repair work Maintenance and repair work may only be carried out by qualified professionals and in compliance with accident prevention regulations. Personal protective equipment must be used for all work.

The lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC must be placed in a voltage-free state before starting repair work. All maintenance and repair work must be carried out when the device is completely shut down.

During maintenance and repair work, the device must be secured against intentional or unintentional recommissioning.

If any safety devices must be removed during maintenance or repair, these must be refitted once the work is complete and their function must be checked.

When carrying out maintenance and repair work, only suitable tools may be used and these must be used correctly.

Any indirect process materials must be disposed of in accordance with the appropriate safety datasheets from the lubricant manufacturer.

Troubleshooting and rectification Troubleshooting and rectification may only be carried out by qualified professionals and in compliance with accident prevention regulations. Personal protective equipment must be used for all work.

Disposal Any used lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC and grease-soaked materials must be disposed of by environmentally acceptable methods.

Electronic devices must be disposed of in accordance with the relevant regulations.

Constructional modifications (conversion) For safety reasons, autonomous modifications of the lubricators FAG CONCEPT2-1P-24VDC and FAG CONCEPT2-2P-24VDC are not permitted.

Modification and changes to the device are only permissible in agreement with the manufacturer. Only original replacement parts and accessories authorised by the manufacturer may be used. If other parts are used, this may invalidate any liability for any consequences. The manufacturer will accept neither warranty claims nor claims for damages for components retrofitted by the site operator.

In order to comply with directives on electromagnetic compatibility (EMC), no modifications may be made to the electrical installation (cables, shielding).

Lubricator FAG CONCEPT2-...-24VDC

Scope of delivery The lubricator FAG CONCEPT2-...-24VDC is available in various designs.

FAG CONCEPT2-...-24VDC The scope of delivery comprises:

- a lubricator FAG CONCEPT2-...-24VDC with one or two outlets
- hose connectors mounted on the outlets for medium pressure polyamide hose 6×4 (outside diameter 6 mm and inside diameter 4 mm)
- user manual.

Required accessories In order to obtain a complete system ready for operation, the following accessories must also be ordered, *Figure 2*:

- grease cartridge LC250
- hose connectors for lubrication point
- hoses
- connection cable or mains power pack including connection cable.

The available accessories can be found on page 45.

- ① Lubricator FAG CONCEPT2-...-24VDC
- ② Grease cartridge LC250
- ③ Hose connectors
- ④ Hose
- ⑤ Connection cable for mains power pack
- ⑥ Mains power pack
- ⑦ Connection cable



Figure 2
Complete system capable of operation

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Description

Design

The mains-powered lubricators FAG CONCEPT2-1P-24VDC with one outlet and FAG CONCEPT2-2P-24VDC with two outlets are highly efficient, microprocessor-controlled piston pumps for specific and appropriate minimal quantity lubrication of one or two lubrication points with grease, *Figure 3*. In this latest generation of lubrication pump, the pause times between lubrication operations can be controlled individually for each lubricant outlet. The input and output data are visualised by means of the LCD display on the front face of the lubricator housing.

Minimum quantity lubrication ensures the controlled and efficient supply of a lubrication point with selected, very high quality lubricants.

The lubricator FAG CONCEPT2-...-24VDC can be operated by means of an external controller or by the integral time control system. The voltage supply required is DC 24 V. The lubricant is located in a cartridge with a lubricant capacity of 250 cm³. The delivery pressure is a maximum of 50 bar.



Lubricator FAG CONCEPT2-..-24VDC

Definitions of terms

Function	Description
run	Back pressure checking by special dispensing: <ul style="list-style-type: none">For test and trial purposes, the lubricant pump fitted can be used for the delivery of small quantities of lubricant by means of a simple input/action. In this case, the pressure between the lubrication point and the lubrication pump is estimated, taking account of numerous factors. The displayed value gives an initial guide to the pressure range in bar.
Pro	Programming mode for setting lubrication intervals when using time control
On Pu0	Lubricator ready for operation Operating mode: time control
FIL	Control function for commissioning (bleeding of lubricator)
OFF	Lubricator switched off
PAU Pu1	Lubricator ready for operation Operating mode: pulse control

Pump The lubricator FAG CONCEPT2...-24VDC has one pump body that contains either one piston pump (1P) or two piston pumps (2P), *Figure 4*. Each piston pump has one outlet.



Figure 4
Lubricator
FAG CONCEPT2...-24VDC

Pump bodies and outlets

During a function, each active outlet is shown on the display by a number (1 or 2), *Figure 5*.



Figure 5
Overview of outlets

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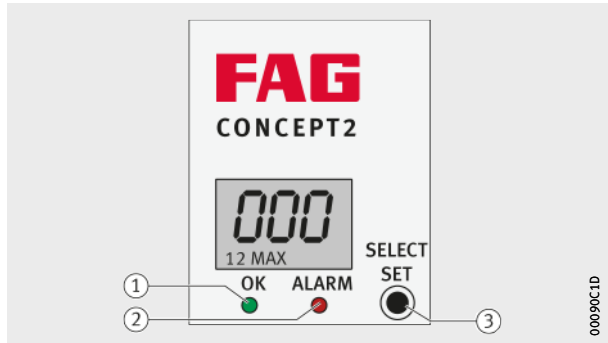
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Lubricator FAG CONCEPT2-..-24VDC

Control panel The control panel comprises a display, a key and two LEDs, *Figure 6*. The control panel is used for the input of parameters as well as the output of status messages, see *table*.

- ① LED OK
- ② LED ALARM
- ③ Key SELECT/SET

Figure 6
Control panel



Control elements and displays

Description	Display
Messages (OK)	Green LED
Messages (ALARM)	Red LED

Cartridge The cartridge contains the lubricant and has a volume of 250 cm³, *Figure 7*.

Figure 7
Cartridge



Communication interface and connection to FAG CONCEPT2-..-24VDC

Electrical connection of the lubricator FAG CONCEPT2-..-24VDC is carried out via the communication interface. On the underside of the lubricator is a 4 pin connector with an external thread to which the connection cable or mains power pack is connected, *Figure 8*.



Figure 8
Connector for FAG CONCEPT2-..-24VDC

Connector assignment of connector M12×1

PIN	Assignment	Colour
PIN 1	Input voltage DC 24 V (–5% to +5%), operating voltage stabilised at DC 24 V	Brown
PIN 2	Pulses for activation of individual pump outlets (only when using pulse control)	White
PIN 3	Output, ground (GND)	Blue
PIN 4	Output signal	Black

The data relate to a voltage supply of DC 24 V, see *table*.

Power supply

Designation	Value
Peak current I_{max} during pump operation	250 mA
typical	< 150 mA
Idle current ready	< 20 mA
typical	10 mA
Maximum output current (at PIN 4), no inductive loads	100 mA

The peak current is increased by the output current drawn, for example 250 mA + 100 mA = 350 mA.



Recommendation: Protection by delayed-action fuse 1 A.

Lubricator FAG CONCEPT2-..-24VDC

Basic operation All changes to settings are made using the action pin in the upper housing part. The action pin is the bleed screw in the upper housing part. The action pin is a magnetic switch with which the key SELECT/SET can be activated.



For reasons of functional safety, no inputs can be made using the action pin while the pump motors are running. Even if external control by means of a PLC is used, no inputs will be recognised during this time.

Removing the action pin The action pin is removed as follows, *Figure 9*:

- ▶ Loosen the action pin by rotating it from CLOSE to OPEN.
- ▶ Remove the action pin from the upper housing part.



Figure 9
Removing the action pin

Securing the action pin The action pin is secured as follows:

- ▶ Insert the action pin in the upper housing part.
- ▶ Secure the action pin by rotating it from OPEN to CLOSE.

Function Once the lubricator FAG CONCEPT2-...-24VDC has been successfully mounted and commissioned, it is ready for operation. The integrated pumps deliver the lubricant to the outlets, while the internal controller monitors the time intervals between lubrication operations when using time control.

For connection to an existing machine or equipment controller, for example an external controller (PLC), the lubricator has a four-pin connector for connection of M12×1 jack. This connection is used for communication with an external controller as well as voltage supply. The voltage for operation and for switching the lubricator FAG CONCEPT2-...-24VDC on and off is DC 24 V (–5% to +5%). When voltage is applied and the lubricant pump is switched to On, it is in operation. If no malfunctions are present, which means that the lubricator is OK, the supply voltage is applied to the output PIN 4. A continuous LOW signal indicates an error. If the voltage is switched off, the lubrication system stops and saves the current mode. At restart, for example due to power up, the saved mode is resumed. The lubricator can thus be linked to machine operation and relubrication can be carried out as a function of operating hours. The operating mode is outputted via PIN 4.

Transport and storage Use suitable lifting gear for transport. Do not throw the lubricator FAG CONCEPT2-...-24VDC or subject it to strong impacts.

For transport, observe the relevant safety and accident prevention guidelines. Where necessary, wear suitable protective equipment. For storage of the lubricator FAG CONCEPT2-...-24VDC, the storage location must be kept cool and dry, in order to avoid promoting corrosion of individual parts of the device.

Lubricator FAG CONCEPT2...-24VDC

Mounting

Mechanical mounting

For mounting of the lubricator, two hexagonal socket head screws M6×50 or longer in accordance with DIN 912 are required, which are not included in the scope of delivery, *Figure 10*.



Figure 10
Mounting dimensions
of FAG CONCEPT2...-24VDC

Dimensions

Dimension	Value	Unit
Distance between holes	a	68 mm
Distance between hole centre and lower edge of lubricator	b	33 mm
Hole diameter	d	6,6 mm

Locating the lubricator

The lubricator is located as follows:

- ▶ Screw mount the lubricator FAG CONCEPT2...-24VDC on the intended mounting area. Ensure a free space of at least 100 mm above the upper edge of the lubrication system, so that the cartridge cover can be removed.
- ▶ Place the lubricator directly on the wall and locate it by means of two hexagonal socket head screws M6×50 in accordance with DIN 912.
- ▶ Secure the screws against loosening by means of a medium strength screw retaining fluid.
- ▷ The lubricator is now fixed to the wall.

Commissioning

Carrying out commissioning Commissioning of the lubrication system comprises the following steps:

- fitting the lubricant cartridge
- preparing the lubrication points and lubricant pipes
- filling the lubricant pipes and hose connectors
- connection of the lubrication system to the voltage supply or external controller
- bleeding the lubricator
- connecting the lubricant pipes.

Fitting the lubricant cartridge The lubricant cartridge is fitted as follows, *Figure 11*, page 20:

NOTICE

The upper housing part is preloaded. Risk of injury due to parts springing off when opening the upper housing part. Carefully loosen the collar ring and upper housing part. ◀

- ▶ Rotate the collar ring on the upper housing part anticlockwise.
- ▶ Carefully remove the upper housing part.
- ▶ Remove the retaining cover of the grease cartridge.
- ▶ Fit the cartridge. Ensure that the stud engages in the hole in the lower part.
- ▶ Set the upper housing part under light pressure and tighten the collar ring finger tight until it stops.
- ▷ The grease cartridge is now fitted.

Lubricator FAG CONCEPT2-..-24VDC



Figure 11
Fitting the lubricant cartridge

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Connecting the lubricator to the lubrication point

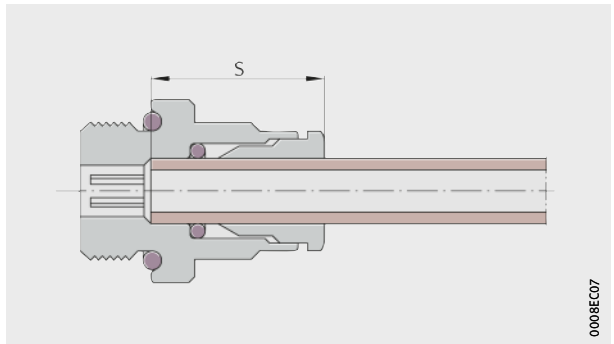
Before connecting the lubricator to the lubrication points, observe the following:

- Where possible, mixing of different greases should be avoided.
- If the grease to be used is different from the grease present at the lubrication point, the old grease must be completely removed from the lubrication point and the lubrication point should be prefilled with the new grease. If this is not feasible for design reasons, as much of the old grease as possible must be removed and the lubrication point must be prefilled as necessary with the new grease.
- It must always be ensured that the lubrication points are appropriately prefilled.

Always ensure that all the hoses are completely inserted in all the hose connectors, in order to ensure the sealing integrity of the system, *Figure 12*.

Hose connectors for hose 6×4 mm:
insertion depth $S = 16$ mm

Figure 12
Insertion depth



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Lubricator FAG CONCEPT2-..-24VDC

- Connecting the lubricator**
- ▶ Screw the hose connector into the lubrication point. Observe the thread size.
 - ▶ Insert one hose end into the hose connector of the lubrication point.
 - ▶ Lay the hose from this point to the selected connector in the lubricator FAG CONCEPT2-..-24VDC. Lay the hoses as straight as possible and with large bending radii.
 - ▶ Observe the maximum hose length.
 - ▶ Cut the hose off at its final length. Ensure that the hose end is cut straight, in order to prevent any leakage. We recommend the use of a special hose cutter. This can be found in the section on accessories.
 - ▶ Remove the hose end again from the lubrication point.

NOTICE

Damage due to high pressure. Damage to the hoses due to excessive pressure in filling using a hand-lever press. When filling the hoses using a hand-lever press, the pressure must not exceed 70 bar. <

- ▶ Fill the hose using a hand-lever press until grease emerges from the hose end. Use the same grease as in the FAG CONCEPT2 cartridge.
- ▶ Insert the hose end into the hose connector of the lubrication point until it stops.

- ▶ Make two more slow strokes with the hand-lever press in order to fill the hose connectors. Do not exceed the maximum pressure of 70 bar.
- ▶ Remove the hand-lever press from the hose.
- ▶ Carry out the steps for hose mounting, cutting to length and prefilling for all lubrication points as described.
- ▶ Bleed the lubricator before mounting the hose, see page 24.
- ▶ After bleeding, insert the prefilled hose or hoses into the hose connectors of the lubricator until they stop.
- ▶ Open the grease outlet holes at the lubrication point so that the grease can exit the housing via the grease outlet holes. This will prevent the back pressure increasing and possibly pressing the seals out of their seat during operation.
- ▷ The lubricator is now connected to the lubrication points and can be put into operation.

The available accessories can be found on page 48.

Lubricator FAG CONCEPT2-..-24VDC

Connecting the operating voltage

The operating voltage is connected as follows:

- ▶ Connect the 4 pin connector socket to the lubricator.
- ▶ Apply the voltage.
- ▷ The display shows “OFF”.
- ▷ Inputs can now be made to the lubricator.

Bleeding the lubricator

The lubricator is bled as follows, once the operating voltage has been applied:

- ▷ The display shows “OFF”.
- ▶ Keep the key SELECT/SET pressed for as long as necessary until the display shows “FIL”.
- ▶ Release the key quickly.
- ▷ The function FIL is selected.
- ▷ The lubricator has now been bled.
- ▷ A total of 60 delivery strokes are carried out, during which the two outlets are active alternately. The total duration for carrying out the function FIL once is approx. 15 minutes.
- ▶ Carry out the function FIL for as long as necessary until grease emerges from the outlets. It may be necessary to carry out the function FIL several times until lubricant emerges.

The function FIL can be stopped by keeping the key SELECT/SET pressed until the delivery stroke has been completed and the red LED lights up.

- ▶ Then release the key quickly.

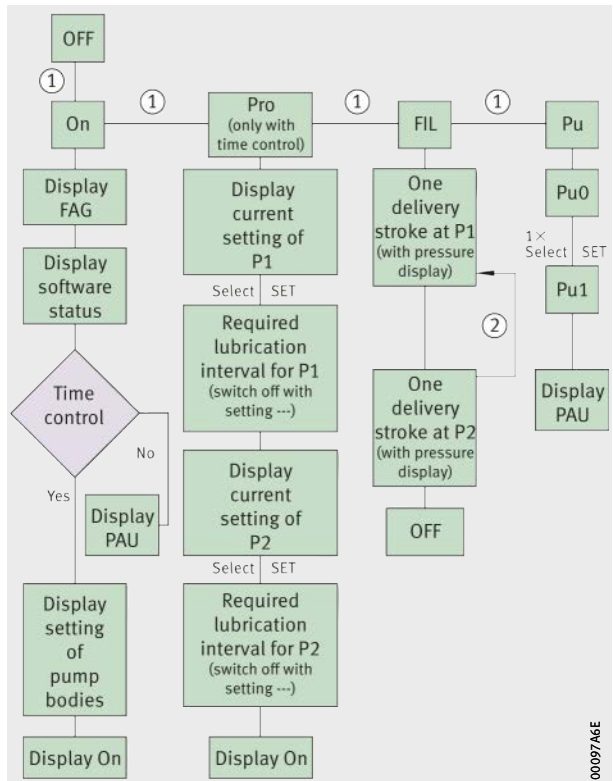
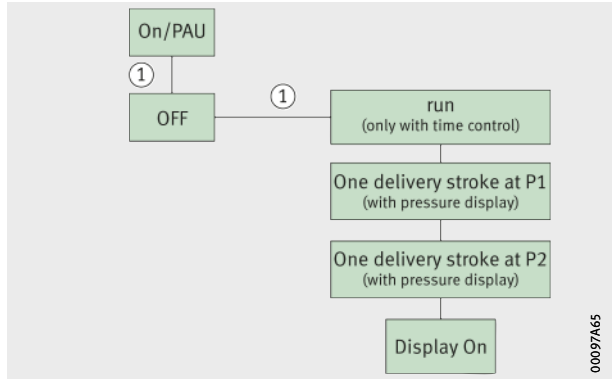
Operation

Menu levels

All the menu levels that can be selected on the lubricator are shown in *Figure 13* and *Figure 14*.

① Red LED 3 times

Figure 13
Selectable menu levels
in mode On/PAU



① Red LED 3 times

② Repeated automatically 30 times

Figure 14
Selectable menu levels
in mode OFF

Lubricator FAG CONCEPT2-..-24VDC

Operating modes The lubricator FAG CONCEPT2-..-24VDC can be operated in two different modes:

- time control (time mode) by means of the integrated microcontroller (default setting)
- pulse control by means of connection to an external controller.

If the lubricator FAG CONCEPT2-..-24VDC is to be operated with an external controller, the operating mode must be reset to pulse control.

Resetting of operating mode to pulse control The operating mode is reset to pulse control as follows:



For safety reasons, the operating mode can only be changed in OFF mode.

- ▶ Keep the key SELECT/SET pressed for as long as necessary until the display shows "Pu".
- ▶ Release the key quickly.
- ▷ The current setting Pu0 (time control) is displayed.
- ▶ Press the key SELECT/SET once.
- ▷ The display will change to Pu1 (pulse control).
- ▷ After a short time, the display will flash twice for confirmation. The operating mode is now set to pulse control and PAU is shown in the display.

- Time control** A menu item is selected as follows:
- Press the key SELECT/SET until the required menu item appears in the display
 - Confirm the selected menu item by releasing the SELECT/SET key.

Functions	Display	Description of function
	OFF	Lubricator is switched off. Possible settings that can be activated in OFF mode: <ul style="list-style-type: none"> ■ On: Switch on the lubricator ■ Pro: Set the lubrication intervals ■ FIL: Bleed the pump ■ Pu: Change the operating mode.
	On	Lubricator is switched on. The internal microcontroller monitors compliance with lubrication intervals. Possible settings that can be activated in On mode: <ul style="list-style-type: none"> ■ run: Special dispensing and back pressure checking by special dispensing ■ OFF: Switch off the lubricator.
	Pro	Set the lubrication intervals
	FIL	Bleed the pump
	Pu	Change the operating mode
	run	Special dispensing and back pressure checking by special dispensing: <ul style="list-style-type: none"> ■ For test and trial purposes, the lubricant pump fitted can be used for the delivery of small quantities of lubricant by means of a simple input or action. In this case, the pressure between the lubrication point and the lubricant pump is estimated, taking account of numerous factors. The displayed value gives an initial guide to the pressure range in bar.

Lubricator FAG CONCEPT2-..-24VDC

Pro (input of lubrication interval)

The function Pro is used to input the lubrication intervals for the outlets.

The lubrication intervals for the two outlets can be set independently of each other. The lubrication intervals are inputted using minutes as a unit. Per lubrication interval, the relevant pump performs a delivery stroke of 0,15 ml of lubricant. A pump can be switched off by means of the setting “-”.



For safety reasons, the input of lubrication intervals only functions in OFF mode.

Examples

- A lubrication interval for P1 = 200 min means:
 - Every 200 minutes, a quantity of 0,15 ml of lubricant will be dispensed at outlet P1.
- A lubrication interval for P2 = 500 min means:
 - Every 500 minutes, a quantity of 0,15 ml of lubricant will be dispensed at outlet P2.

Default setting

- The default setting for each pump fitted is:
- Lubrication interval = 300 min.

Inputting the lubrication intervals

The lubrication intervals are inputted as follows:

- ▶ Keep the key SELECT/SET pressed for as long as necessary until the display shows “Pro”.
- ▶ Release the key quickly.
- ▷ The current setting for pump 1 is displayed.
- ▶ Set the required lubrication interval for pump 1 by pressing the key SELECT/SET.
- ▶ Release the key SELECT/SET as soon as the required lubrication interval appears in the display.
- ▷ The display will flash twice for confirmation. The lubrication interval for pump 1 has been inputted.
- ▷ The current setting for pump 2 is displayed.
- ▶ Set the required lubrication interval for pump 2 by pressing the key SELECT/SET.
- ▶ Release the key SELECT/SET as soon as the required lubrication interval appears in the display.
- ▷ The display will flash twice for confirmation. The lubrication interval for pump 2 has been inputted.

Function FIL This function is required for:

- commissioning
- bleeding of the pump.

When the function FIL is called up, a total of 60 delivery strokes are carried out, during which the two outlets are active alternately. The total duration for carrying out the function FIL once is approx. 15 minutes.


The function FIL can be stopped by keeping the key SELECT/SET pressed until the delivery stroke has been completed and the red LED lights up. Then release the key quickly.

Note The lubricator FAG CONCEPT2-...-24VDC must be bled before it is used for the first time. The operation is complete as soon as lubricant emerges from the outlet. It may be necessary to carry out the function FIL several times until lubricant emerges.

The lubricator is bled as follows:

- ▷ The display shows “OFF”.
- ▶ Hold the key SELECT/SET down until the display shows “FIL”.
- ▶ Release the key quickly.
- ▷ The function FIL is selected.
- ▷ The pump will be bled.
- ▷ The outlets are active alternately 30 times and deliver lubricant.
- ▶ Carry out the function FIL for as long as necessary until grease emerges from the outlets. It may be necessary to carry out the function FIL several times until lubricant emerges.

Lubricator FAG CONCEPT2-..-24VDC

Function Pu The function Pu is used to change the operating mode.
 For safety reasons, the operating mode can only be changed in OFF mode.

The operating mode is selected as follows:

- ▶ Keep the key SELECT/SET pressed for as long as necessary until the display shows “Pu”.
- ▶ Release the key quickly.
- ▷ The current setting is displayed.
- ▶ Press the key SELECT/SET to change the operating mode
Pu0 = time control or Pu1 = pulse control.
- ▷ After a short time, the display will flash twice for confirmation.

Function run The function run is used to check the function of the pumps.
The function can only be called up in On mode.

The function run allows:

- special dispensing
- back pressure checking.

Carrying out special dispensing Special dispensing is carried out as follows:

- ▶ Keep the key SELECT/SET pressed for as long as necessary until the display shows “run”.
- ▶ Release the key quickly.
- ▷ The menu item run has been selected.
- ▷ The display will show the current pressure at the outlet.
Special dispensing of lubricant will be carried out at both outlets.

- Pulse control** A menu item is selected as follows:
- Press the key SELECT/SET until the required menu item appears in the display.
 - Confirm the selected menu item by releasing the SELECT/SET key.

Display	Description of function
OFF	Lubricator is switched off. Possible settings that can be activated in OFF mode: <ul style="list-style-type: none"> ■ On: Switch on the lubricator ■ FIL: Bleed the pump ■ Pu: Change the operating mode.
PAU	Lubricator is switched on. The operating mode pulse control has been selected. Possible settings that can be activated in PAU mode: <ul style="list-style-type: none"> ■ OFF: Switch off the lubricator.
FIL	Bleed the pump
Pu	Change the operating mode

Lubricator FAG CONCEPT2-..-24VDC

Function FIL This function is required for:

- commissioning
- bleeding of the pump.

When the function FIL is called up, a total of 60 delivery strokes are carried out, during which the two outlets are active alternately. The total duration for carrying out the function FIL once is approx. 15 minutes.

The function FIL can be stopped by keeping the key SELECT/SET pressed until the delivery stroke has been completed and the red LED lights up. Then release the key quickly.

Note The lubricator FAG CONCEPT2-..-24VDC must be bled before it is used for the first time. The operation is complete as soon as lubricant emerges from the outlet. It may be necessary to carry out the function FIL several times until lubricant emerges.

The lubricator is bled as follows:

- ▷ The display shows “OFF”.
- ▶ Hold the key SELECT/SET down until the display shows “FIL”.
- ▶ Release the key quickly.
- ▷ The function FIL is selected.
- ▷ The pump will be bled.
- ▷ The outlets are active alternately 30 times and deliver lubricant.
- ▶ Carry out the function FIL for as long as necessary until grease emerges from the outlets. It may be necessary to carry out the function FIL several times until lubricant emerges.

Function Pu The function Pu is used to change the operating mode.
The operating mode is selected as follows:



For safety reasons, the operating mode can only be changed in OFF mode.

- ▶ Keep the key SELECT/SET pressed for as long as necessary until the display shows “Pu”.
- ▶ Release the key quickly.
- ▷ The current setting (Pu0 = time control, Pu1 = pulse control) is displayed.
- ▶ Press the key SELECT/SET once to change the operating mode.
- ▷ After a short time, the display will flash twice for confirmation.

Pulse signals for controlling the outlets

Pulse signals for controlling the outlets:

- Indication in seconds
- Accuracy $\pm 0,2$ s
- Pause time between 2 pulses: > 30 s.

Note

While pulse signals are present at input PIN 2, the display PAU will flash for the duration of the pulse length. Activation of the lubricator is only sensible if no error is outputted on the device at the time of activation.



The lubricator FAG CONCEPT2-...-24VDC is designed for minimal quantity lubrication. Each outlet is designed for a dispensing quantity of approx. $7\,500\text{ cm}^3$.

Lubricator FAG CONCEPT2-..-24VDC

Pump 1 – one delivery stroke Activation of pump 1 (outlet 1), *Figure 15*:

- Lubricant quantity per pulse:
 - 0,15 cm³
- Pulse length:
 - 2 s.

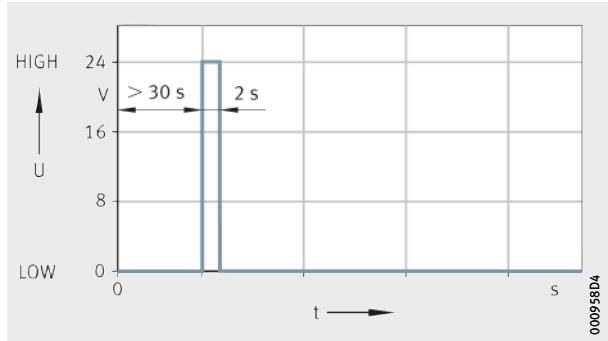


Figure 15

Pump 1 – one delivery stroke

Pump 1 – two delivery strokes Activation of pump 1 (outlet 1), *Figure 16*:

- Lubricant quantity per pulse:
 - 0,15 cm³
- Pulse length:
 - 2 s
- Pause time between 2 pulses:
 - > 30 s.

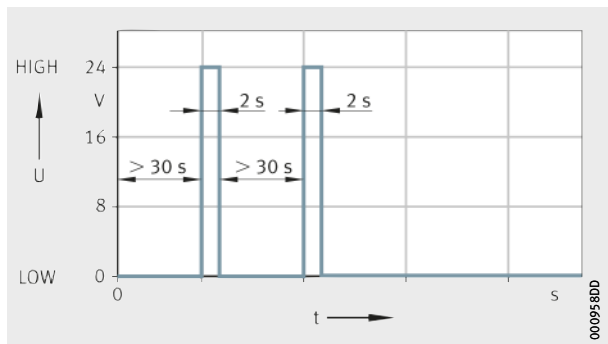


Figure 16

Pump 1 – two delivery strokes

For more than two delivery strokes, activation is carried out on an analogous basis.

Pump 2 – one delivery stroke

Activation of pump 2 (outlet 2), *Figure 17*:

- Lubricant quantity per pulse:
 - 0,15 cm³
- Pulse length:
 - 4 s.

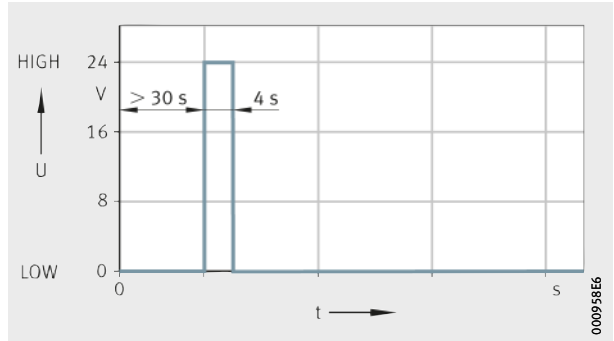


Figure 17

Pump 2 – one delivery stroke

Pump 2 – two delivery strokes

Activation of pump 2 (outlet 2), *Figure 18*:

- Lubricant quantity per pulse:
 - 0,15 cm³
- Pulse length:
 - 4 s
- Pause time between 2 pulses:
 - > 30 s.

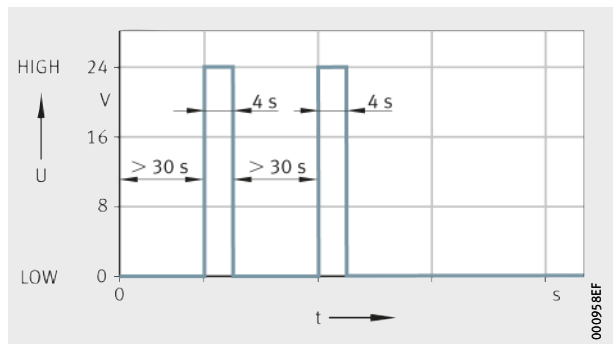


Figure 18

Pump 2 – two delivery strokes

For more than two delivery strokes, activation is carried out on an analogous basis.

Lubricator FAG CONCEPT2-..-24VDC

Note The lubricator is equipped with a feedback function (feedback = motor run control). After activation of the outlets, the output signal at PIN 4 is switched for the time of the actual delivery stroke (approx. 8 s to 10 s per outlet) from HIGH to LOW (0 V). The number of confirmed delivery strokes can be used to estimate depletion (1 delivery stroke = 0,15 cm³).



At low temperatures, the number of delivery strokes per lubrication interval must be kept as small as possible.

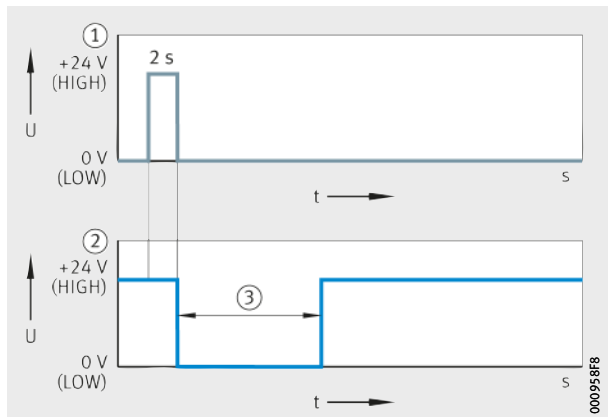
Output signals at PIN 4

The possible output signals that may be present at PIN 4 are described in *Figure 19* to *Figure 22*, page 37. These signals can be used for diagnosis of the operating status of the lubricator FAG CONCEPT2-..-24VDC.

- ① Input signal (PIN 2)
- ② Output signal (PIN 4)
- ③ Delivery stroke approx. 8 s – 10 s

Figure 19

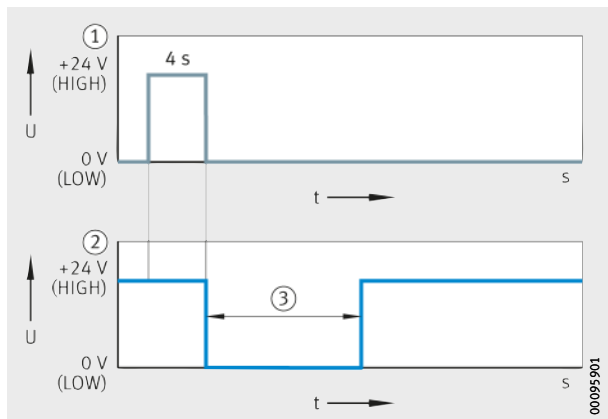
Activation of pump 1



- ① Input signal (PIN 2)
- ② Output signal (PIN 4)
- ③ Delivery stroke approx. 8 s – 10 s

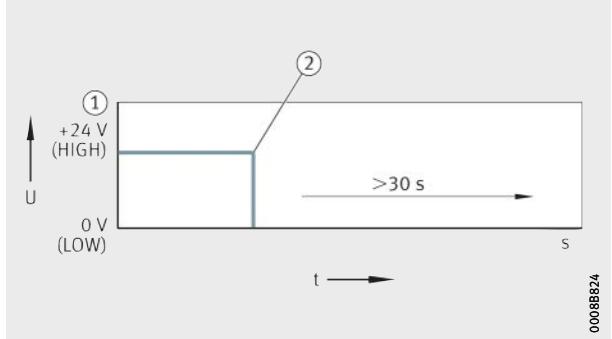
Figure 20

Activation of pump 2



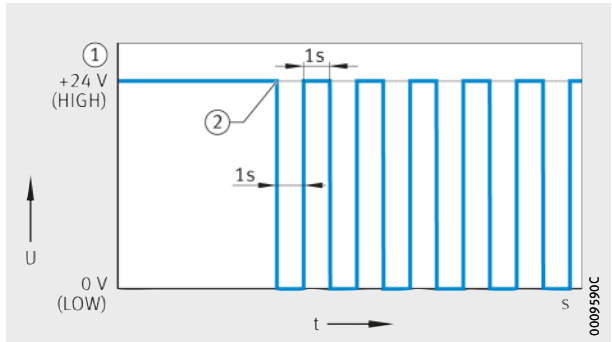
- ① Output signal (PIN 4)
- ② Error or malfunction detected

Figure 21
Errors E1 to E8



- ① Output signal (PIN 4)
- ② 20% residual fill level detected

Figure 22
Detection of 20% residual fill level



Troubleshooting and rectification

This chapter describes the error messages and malfunction messages as well as their remedy, see *table*.

If an error occurs in a pump body, this is indicated by the display. In addition, the LED ALARM will light red.

Error messages

Error	Description
E1	Empty level display
E2	Original cartridge missing
E3	Pump motor too slow
E4	Internal electrical defect
E5	Not assigned
E6	Not assigned
E7	Back pressure too high
E8	Not assigned

Lubricator FAG CONCEPT2-..-24VDC

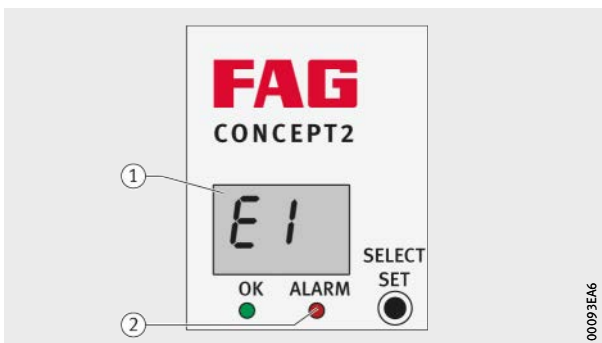
E1 – Empty level display Output signal at PIN 4 = LOW (0 V), *Figure 23.*

Error E1

Display Control panel	Cause	Remedy
<ul style="list-style-type: none"> ■ LED ALARM ■ Display: E1 	The cartridge is empty. The pump function of all pumps has been stopped.	Fit new original cartridge. The error message will be cancelled automatically.

- ① Display: Error E1
- ② ALARM (red LED)

Figure 23
Display: Error E1



00093EAA

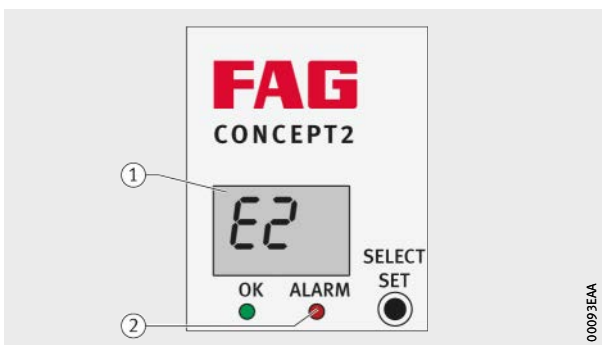
E2 – Original cartridge missing Output signal at PIN 4 = LOW (0 V), *Figure 24.*

Error E2

Display Control panel	Cause	Remedy
<ul style="list-style-type: none"> ■ LED ALARM ■ Display: E2 	The original cartridge is missing. The pump function of all pumps has been stopped.	Fit new original cartridge. The error message will be cancelled automatically.

- ① Display: Error E2
- ② ALARM (red LED)

Figure 24
Display: Error E2



00093EAA

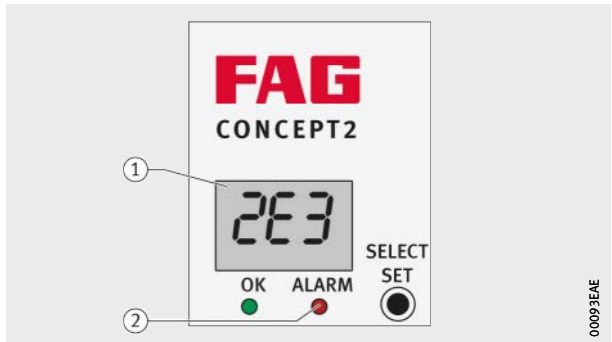
E3 – Pump motor too slow – Output signal at PIN 4 = LOW (0 V), *Figure 25.*

Error E3

Display Control panel	Cause	Remedy
<ul style="list-style-type: none"> ■ LED ALARM ■ Display of pump (in this case P2) ■ Display: 2E3 	<p>Undervoltage. The pump body motor does not achieve the shutdown current within a specified time. The pump function of the affected pump has been stopped.</p>	<p>Eliminate the cause. Cancel the error by switching the lubricator to OFF and then back to ON. Alternatively, the voltage supply can be interrupted briefly. The pump will restart.</p>

- ① Display: Error 2E3
- ② ALARM (red LED)

Figure 25
Display: Error 2E3



Lubricator FAG CONCEPT2-..-24VDC

E4 – Internal electrical defect Output signal at PIN 4 = LOW (0 V), *Figure 26.*

Error E4

Display Control panel	Cause	Remedy
<ul style="list-style-type: none"> ■ LED ALARM ■ Display of affected pump (in this case P2) ■ Display: 2E4 	<p>Internal electrical defect. The pump function of the affected pump has been stopped.</p>	<p>Cancel the error by switching the lubricator to OFF and then back to ON. Alternatively, the voltage supply can be interrupted briefly. The pump will restart. If this occurs again, log the pump for inspection.</p>

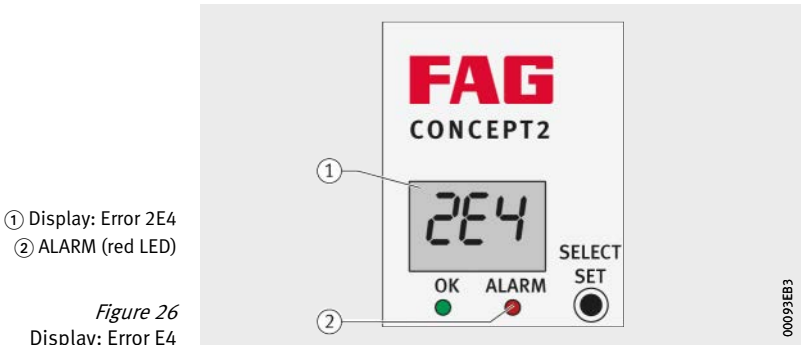


Figure 26
Display: Error E4

E5 Not assigned

E6 Not assigned

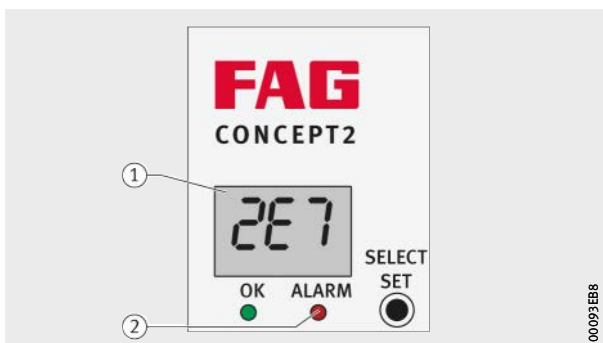
E7 – Back pressure too high Output signal at PIN 4 = LOW (0 V), *Figure 27.*

Error E7

Display Control panel	Cause	Remedy
<ul style="list-style-type: none"> ■ LED ALARM ■ Display of affected pump (in this case P2) ■ Display: 2E7 	<p>The back pressure was too high three times in succession. The pump function of the affected pump has been stopped.</p> <p>Possible errors:</p> <ul style="list-style-type: none"> ■ lubrication point blocked ■ hose length too long ■ grease too hard or too stiff. 	<p>Eliminate the cause of the high back pressure (> 50 bar). Cancel the error by switching the lubricator to OFF and then back to ON. Alternatively, the voltage supply can be interrupted briefly. The pump will restart.</p>

- ① Display: Error 2E7
- ② ALARM (red LED)

Figure 27
Display: Error E7



00093EB8

E8 Not assigned

Lubricator FAG CONCEPT2-..-24VDC

Maintenance The only maintenance work to be carried out by the site operator is the replacement of lubricant cartridges.

Replacing the cartridge When replacing the cartridge, the depleted cartridges must be disposed of in accordance with the appropriate safety datasheets from the lubricant manufacturer.

Note The depleted cartridges contain residues of lubricant and must be disposed of together with waste materials containing oil.

When replacing a cartridge, the following must be observed:

- The lubricator must be supplied with voltage in order that the internal counter is reset and the empty level detection system (counting of delivery strokes) works correctly.
- The lubricant cartridge may only be replaced in On/PAU mode, in order to reset the counter status.
- Only use new lubricant cartridges. If the cartridges are used or are no longer completely filled, the empty level detection system will no longer function correctly.

NOTICE

The upper housing part is preloaded. Risk of injury due to parts springing off when opening the upper housing part. Carefully loosen the collar ring and upper housing part. ◀

The empty cartridge is replaced as follows, *Figure 28*, page 43:

- ▶ Ensure that the lubricator is supplied with voltage and is in On/PAU mode.
- ▶ Rotate the collar ring on the upper housing part anticlockwise.
- ▶ Carefully remove the upper housing part.
- ▶ Lift off the empty cartridge.
- ▶ Remove the retaining cover of the new cartridge.
- ▶ Fit the new cartridge. Ensure that the stud engages in the hole in the lower part.
- ▶ Set the upper housing part under light pressure and tighten the collar ring finger tight until it stops.
- ▷ The error message shown will be cancelled automatically.
- ▶ Bleed the system as necessary.
- ▷ The lubricator is now ready for operation.



Figure 28
Replacing the cartridge

00090E84

Lubricator FAG CONCEPT2-...-24VDC

- Decommissioning** In decommissioning, the following must be observed:
- The machine must be shut down.
 - The whole installation must be placed in a voltage-free state.
 - The lubricator must be in a voltage-free state.
 - The lubricant pipes must be in an unpressurised state.

Disposal In order to prevent environmental contamination, disposal of the lubricator FAG CONCEPT2-...-24VDC must be carried out in accordance with the directives of the relevant country of use. Components that are defective and cannot be repaired must be disposed of by environmentally acceptable methods. All materials used (plastics, metals, electronic subassemblies) must be fed separately to recycling facilities. Any used lubricators FAG CONCEPT2-...-24VDC and grease-soaked materials must be disposed of by environmentally acceptable methods. The depleted lubricant cartridges contain residues of lubricant and must be disposed of together with waste materials containing oil or soaked with grease. Electronic devices must be disposed of in accordance with the relevant regulations. If there are problems relating to disposal in compliance with legal requirements and in an environmentally responsible manner, the complete lubricator FAG CONCEPT2-...-24VDC can be returned to Schaeffler Technologies AG & Co. KG for disposal.

Technical data and accessories

This chapter contains the technical data, accessories and replacement parts for the lubricator FAG CONCEPT2...-24VDC.

Technical data

Technical data for lubricator FAG CONCEPT2...-24VDC, see *table* and *Figure 29*, page 46.

FAG CONCEPT2...-24VDC

Description	Value	Unit	
Lubricant volume (cartridge)	250	cm ³	
Metering volume per delivery stroke	0,15	cm ³	
Maximum number of outlets	2	–	
Hose connector for hose outside diameter	6	mm	
minimum pressure capacity of hose	100	bar	
Maximum operating pressure (at DC 24 V)	50	bar	
Operating voltage (DC)	24	V	
Operating temperature range	–20 to +70	°C	
Dimensions (with hose connectors)	Width	91	mm
	Height	223	mm
	Depth	112	mm
Mass without cartridge and lubricant	approx. 1 000	g	
Protection type	54	IP	
Connection socket (A coding)	M12×1, 4 pin	–	
Housing material	Polyamide 6.6	–	

Further technical data:

- Lubrication medium:
 - Grease to NLGI class 2
- Functional principle:
 - Piston pump
- Integrated controller with microprocessor
- Integrated electronic pressure monitoring (measurement of back pressure).

Lubricator FAG CONCEPT2-..-24VDC

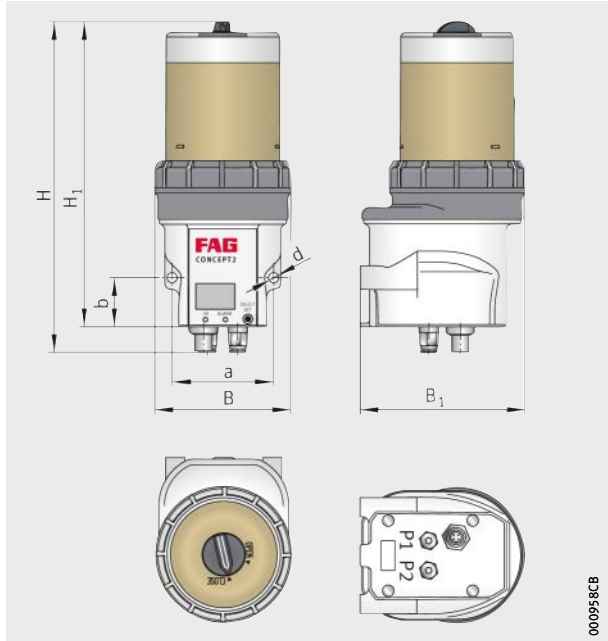


Figure 29
Dimensions
of FAG CONCEPT2-..-24VDC

Dimensions

Dimensions		Value	Unit
Total height	H	223	mm
Height of action pin to lower edge of lubricator	H ₁	206	mm
Total width	B	91	mm
	B ₁	112	mm
Distance between holes	a	68	mm
Distance between hole centre and lower edge of lubricator	b	33	mm
Hole diameter	d	6,6	mm

Accessories This chapter contains the accessories and replacement parts for the lubricator FAG CONCEPT2-...-24VDC.

Connection cable and mains power pack Connection cable and mains power pack, see *tables*.

Standard connection cable

Designation	SAP no.	Ordering designation
<ul style="list-style-type: none"> ■ Connection cable with 4 strands ■ Plug M12×1 ■ Length 10 m 	075378361-0000-10	ARCALUB-X. CABLE-M12-10M

Connection cable with LED head

Designation	SAP no.	Ordering designation
<ul style="list-style-type: none"> ■ Connection cable with 4 strands ■ Plug M12×1 with LED head ■ Angled 90° ■ Length 5 m 	075592240-0000-10	ARCALUB-X. CABLE-M12-5M-LED
<ul style="list-style-type: none"> ■ Connection cable with 4 strands ■ Plug M12×1 with LED head ■ Angled 90° ■ Length 10 m 	077879805-0000-10	ARCALUB-X. CABLE-M12-10M-LED
<ul style="list-style-type: none"> ■ Connection cable with 4 strands ■ Plug M12×1 with LED head ■ Straight ■ Length 5 m 	083788964-0000-10	ARCALUB-X. CABLE-M12-5M-LED-S
<ul style="list-style-type: none"> ■ Connection cable with 4 strands ■ Plug M12×1 with LED head ■ Straight ■ Length 10 m 	083788980-0000-10	ARCALUB-X. CABLE-M12-10M-LED-S

Mains power pack DC 24 V

Designation	SAP no.	Ordering designation
Mains power pack DC 24 V	083872507-0000-10	ARCALUB-X. POWER-SUPPLY-UNIT

Lubricator FAG CONCEPT2-..-24VDC

Grease cartridges For the lubricator FAG CONCEPT2-..-24VDC, standard grease cartridges containing 250 cm³ of various greases are available, see *table*.

Standard grease cartridges 250 cm³

Designation	SAP no.	Ordering designation
Arcanol BIO2	087333988-0000-10	ARCALUB-C2.LC250-BIO2
Arcanol CLEAN-M	087334194-0000-10	ARCALUB-C2.LC250-CLEAN-M
Arcanol FOOD2	087334020-0000-10	ARCALUB-C2.LC250-FOOD2
Arcanol LOAD150	087329077-0000-10	ARCALUB-C2.LC250-LOAD150
Arcanol LOAD220	087329115-0000-10	ARCALUB-C2.LC250-LOAD220
Arcanol LOAD400	087329131-0000-10	ARCALUB-C2.LC250-LOAD400
Arcanol LOAD460	087329140-0000-10	ARCALUB-C2.LC250-LOAD460
Arcanol LOAD1000	087329280-0000-10	ARCALUB-C2.LC250-LOAD1000
Arcanol MULTI2	087328038-0000-10	ARCALUB-C2.LC250-MULTI2
Arcanol MULTITOP	087328810-0000-10	ARCALUB-C2.LC250-MULTITOP
Arcanol MOTION2	087334216-0000-10	ARCALUB-C2.LC250-MOTION2
Arcanol SPEED2,6	087334046-0000-10	ARCALUB-C2.LC250-SPEED2,6
Arcanol TEMP90	087329816-0000-10	ARCALUB-C2.LC250-TEMP90
Arcanol TEMP110	087329840-0000-10	ARCALUB-C2.LC250-TEMP110
Arcanol TEMP120	087329980-0000-10	ARCALUB-C2.LC250-TEMP120
Arcanol TEMP200	087329999-0000-10	ARCALUB-C2.LC250-TEMP200

Upon customer request, the cartridges can also be filled with a special grease.

Accessories for filling of hoses This chapter contains the filling accessories for the filling of hoses using a hand-lever press.

Filling accessories

Designation	SAP no.	Ordering designation
Hand-lever press	039064115-0000-10	ARCA-GREASE-GUN
Hose cutting tool	083788620-0000-10	ARCALUB-X.HOSE-CUTTOOL

**Standard grease containers
for filling of hand-lever press**

Designation	SAP no.	Ordering designation
400-g cartridge containing		
Arcanol BIO2	060581247-0000-10	ARCANOL-BIO2-400G
Arcanol CLEAN-M	069429111-0000-10	ARCANOL-CLEAN-M-400G
Arcanol FOOD2	019143648-0000-10	ARCANOL-FOOD2-400G
Arcanol LOAD150	055358152-0000-10	ARCANOL-LOAD150-400G
Arcanol LOAD220	064741028-0000-10	ARCANOL-LOAD220-400G
Arcanol LOAD400	019143818-0000-11	ARCANOL-LOAD400-400G
Arcanol LOAD460	065825144-0000-10	ARCANOL-LOAD460-400G
Arcanol MULTI2	019143893-0000-11	ARCANOL-MULTI2-400G
Arcanol MULTITOP	019144016-0000-11	ARCANOL-MULTITOP-400G
Arcanol SPEED2,6	062447610-0000-10	ARCANOL-SPEED2,6-400G
Arcanol TEMP90	019144172-0000-10	ARCANOL-TEMP90-400G
Arcanol TEMP110	019144075-0000-10	ARCANOL-TEMP110-400G
1-kg can containing		
Arcanol TEMP120	038652200-0000-10	ARCANOL-TEMP120-1KG
Arcanol TEMP200	019144121-0000-10	ARCANOL-TEMP200-1KG
5-kg bucket containing		
Arcanol LOAD1000	019003463-0000-10	ARCANOL-LOAD1000-5KG

**Hose connectors
for hand-lever press**

Designation	SAP no.	Ordering designation
Hose connectors for hoses of 6 mm outside diameter		
M10×1	075527626-0000-10	ARCALUB-X.TUBEFIT-M10X1-SAT106G
G1/8	084465905-0000-10	ARCALUB-X.TUBEFIT-G1/8-SAT186G

Lubricator FAG CONCEPT2-..-24VDC

Accessories for FAG CONCEPT2-..-24VDC

This chapter contains the accessories for the lubricator FAG CONCEPT2-..-24VDC, see *tables*.

Hoses for FAG CONCEPT2-..-24VDC

Designation	SAP no.	Ordering designation
<ul style="list-style-type: none"> ■ Hose PA 12 ■ 6×4 mm ■ Black ■ Unfilled ■ Length 5 m 	076691217-0000-10	ARCALUB-X. HOSE-PA12-5M
<ul style="list-style-type: none"> ■ Hose PA 12 ■ 6×4 mm ■ Black ■ Unfilled ■ Length 10 m 	076691497-0000-10	ARCALUB-X. HOSE-PA12-10M
<ul style="list-style-type: none"> ■ Hose PA 12 ■ 6×4 mm ■ Black ■ Unfilled ■ Length 50 m 	085842109-0000-10	ARCALUB-X. HOSE-PA12-50M

Hose connectors for FAG CONCEPT2-..-24VDC (hose 6×4 mm)

Designation	SAP no.	Ordering designation
Hose connector for hose 6×4 mm		
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector M5 ■ Straight 	077937490-0000-10	ARCALUB-X. TUBEFIT-M5-SAT056G
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector M5 ■ Angled 	079567401-0000-10	ARCALUB-X. TUBEFIT-M5-SAT056W
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector M6 ■ Straight 	075527472-0000-10	ARCALUB-X. TUBEFIT-M6-SAT066G
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector M6 ■ Angled 90° 	075676621-0000-10	ARCALUB-X. TUBEFIT-M6-SAT066W

**Hose connectors
for FAG CONCEPT2...-24VDC
(hose 6×4 mm)
(continued)**

Designation	SAP no.	Ordering designation
Hose connector for hose 6×4 mm		
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector M8×1 ■ Straight 	079567428-0000-10	ARCALUB-X. TUBEFIT-M8X1-SAT086G
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector M8×1 ■ Angled 	079567584-0000-10	ARCALUB-X. TUBEFIT-M8X1-SAT086W
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector M10×1 ■ Straight 	075527626-0000-10	ARCALUB-X. TUBEFIT-M10X1-SAT106G
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector M10×1 ■ Angled 90° 	076968553-0000-10	ARCALUB-X. TUBEFIT-M10X1-SAT106W
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector G1/8" ■ Straight 	084465905-0000-10	ARCALUB-X. TUBEFIT-G1/8-SAT186G
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector G1/8" ■ Angled 	084465964-0000-10	ARCALUB-X. TUBEFIT-G1/8-SAT186W
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector G1/4" ■ Straight 	079567606-0000-10	ARCALUB-X. TUBEFIT-G1/4-SAT146G
<ul style="list-style-type: none"> ■ Hose, push fit ■ Threaded connector G1/4" ■ Angled 	079567622-0000-10	ARCALUB-X. TUBEFIT-G1/4-SAT146W

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