

Operation manual

in accordance with ATEX Directive 2014/34/EU

Pump FZ-A / FZ-B ATEX version

BA_2020_D1_FAX_FBX (Rev. B)
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1. Introduction

This operating manual contains important information and warnings relating to all of the product's life phases. We therefore strongly advise that all people in the target groups mentioned below read this document carefully before assembly, commissioning and maintenance. Additionally, it must be ensured that the operating manual is available at the place of use at all times.

We reserve the right to make technical changes that are necessary for improvement to the illustrations and information in this operating manual. DELIMON retains the copyright to this operating manual. It contains regulations and drawings of a technical nature that may not be distributed, either in whole or in part, or used without authorisation for competition purposes or communicated to others.

1.1 Target groups

This operating manual is intended for assembly, operating and maintenance personnel.

1.2 Required knowledge and qualifications

Qualified mechanic

A person with suitable technical training, knowledge and experience who can recognise and prevent the hazards that may occur during transport, assembly, commissioning, operation, maintenance, repair and disassembly.

Qualified electrician

A person with suitable technical training, knowledge and experience who can recognise and prevent the hazards that can be caused by electricity.

Operator

A trained person who, based on their knowledge and experience, is capable of commissioning and operating the product. This also includes preventing potential hazards that may arise during operation.

Specialist for maintenance and servicing in potentially explosive atmospheres

Trained staff member, who is able to recognise hazards and risks in potentially explosive atmospheres through knowledge and experience and who is able to eliminate these hazards and risks by means of suitable measures. The qualified technician is familiar with the relevant rules and regulations as per ATEX Directive 2014/34/EU and 1999/92/EC and knows about types of ignition protection, installation procedures and area classifications.

1.3 The manufacturer's contact details

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Please address product returns for repairs to the 'Repair Department' at the Beierfeld plant.

1.4 Copyright

© Copyright DELIMON, all rights reserved

1.5 Warranty and disclaimer

Warranty

Please refer to our General Terms and Conditions for warranty information

Disclaimer

The manufacturer is not liable for damage caused by

- Unintended use
- Failure to comply with this operating manual

- Unauthorised modification of the product
- Use of non-genuine DELIMON spare parts

1.6 Abbreviations

The following abbreviations and symbols may be used in the document.

General abbreviations		Technical abbreviations / units	
ATEX	ATmosphere EXplosible	∅	diameter
re.	regarding		
©	Copyright	△ / Y	delta connection / star connection
approx.	approximately	°C	degrees Celsius
i.e.	Id est (in other words)	°F	degrees Fahrenheit
ESD	Electro Static Discharge	A	Amperes
etc.	et cetera	Ah	Ampere-hours
poss.	possibly	AC / DC	alternating current / direct current
where necc.	where necessary	cm ³ / ccm	cubic centimetres
AAR	As a rule	db (A)	sound pressure level
incl.	Including	Hz	Hertz (frequency)
min.	Minimum	I	Amperage
max.	Maximum	kg	kilograms
no.	Number	kW	kilowatts
PPE	Personal protective equipment	l	litres
ASO	and so on	ml	millilitres
e.g.	Exempli gratia (for example)	mm	millimetres
Time-related abbreviations		mm ²	square millimetres
h / hr.	hour	mm ³	cubic millimetres
Min.	minute	N / Nm	Newton / Newton meters
s / sec.	seconds	nc / no	N/O (normally open) contact / N/C (normally closed) contact
d	day	V	Volts
General symbols		W	Watts
○	list	Conversion factors	
➤	instruction (chronological)	Pressure	1 bar = 14.5 psi
📄	reference to other documents	Length	1 inch = 25.4 mm

2. Safety

This section describes general and product-specific safety instructions that must be observed and followed. Further safety instructions can be found at appropriate points in other sections of this operating manual. Please read this section carefully to understand the safety instructions throughout this document and on the product itself.

2.1 Intended use

The pump described below is intended for commercial use for supplying lubricant to industrial machinery and equipment - within the approved zone(s) / category(ies) of appropriate equipment ignition protection types. The pump may only be used by qualified operators. The pump is deemed as functional when connected to a power supply.

The following is also required for intended use:

- Connecting line (pipe or hose) from the pump outlet to at least one suitable lubrication point (e.g. bearing or chain) on an existing machine or system
- Lubricant that is free from contamination and suitable for feeding with the described pump according to the specification in this operating manual
- Compliance with all specifications, safety instructions and general instructions

The pump described may also be part of a more complex central lubrication system. This may include, for example, several pump outlets, downstream lubricant distributors and, if necessary, control and monitoring elements. The compatibility of all system components must be ensured (e.g. operating pressure, approved lubricants, temperature range, etc.).

Any use that extends beyond this is considered unintended use. The manufacturer is not liable for any damage resulting from this; the risk is borne solely by the operating company. The filling and feeding of substances that are classified as hazardous (according to the CLP Regulation 1272/2008) is only allowed following consultation with and written confirmation from Delimon. The use of any media that enters into food is not permitted.

2.2 Warnings, signs and symbols

This operating manual contains the following symbols according to DIN EN ISO 7010 to indicate health hazards and property damage and how to avoid them. Failure to observe the safety instructions may put people at risk.

Warnings:

Warning level	Consequence	Probability
 DANGER	Death or serious injury	Imminent
 WARNING	Severe injury	Possible
 CAUTION	Slight injury	Possible
ATTENTION	Property damage	Possible

Pictograms:

General warning signs		General mandatory signs		General prohibition signs	
	General warning		General mandatory sign		No unauthorised access
	Warning - electric voltage		Observe instructions	Other signs  CE mark  Waste electrical and electronic equipment symbol	
	Warning - slipping hazard		Wear safety goggles		
	Warning - tripping hazard		Wear hearing protection		
	Warning - substances that are harmful to health		Wear safety boots		
	Warning - flammable substances		Wear safety gloves		
	Warning - possibility of hand injuries		Wear face protection		
	Warning - possibility of hand injuries due to pulling in		Wear a safety hat		
	Warning - hot surface		Wear protective clothing		
	Warning - explosive atmosphere		Disconnect from the mains before commencing work		
	Warning - suspended load		Earth before use		
	Warning - possibility of injuries due to pressure injection		Keep closed		

Combined warnings:

	 WARNING
	Danger Example of a hazard warning

	 WARNING	
	Danger Example of a hazard warning, with information about how to avoid it	

2.3 General safety instructions

- The pumps are state-of-the-art and safe to operate.
- This operating manual must always be available at the machine's / system's place of use.
- This operating manual must be kept for further use.
- The described product was manufactured according to the current state of the art. However, unintended use could potentially put people at risk or result in property damage.
- If safety-related faults occur, the product must be taken out of operation immediately until they have been eliminated. In addition, the legal accident prevention and environmental protection regulations must be observed.
- Not only the general safety instructions specified in this section Safety must be observed, but also special safety instructions in the separate chapters.
- The product may only be used by qualified personnel, in a technically perfect condition and according to the information and safety instructions contained in this manual.
- Please read this operating manual carefully and familiarise yourself with the product and how it works. The operating steps' sequence must be observed.

2.4 Basic behaviour when using the pump

- For the pump to be operated, it must be in good working order, installed correctly and, if necessary, connected to the electrical system by a professional. In the event of any uncertainties, operation of the pump is prohibited until the issues have been clarified.
- Keep unauthorised or unqualified individuals away from the pump.
- Observe internal company instructions and relevant safety regulations.
- Wear personal protective equipment (PPE).
- Check protective and safety equipment (e.g. pressure limitation valves) regularly. They may not be removed or tampered with in any way.
- If safety equipment is replaced, it must be immediately reinstalled and tested to ensure that it is working.
- Never use parts of the pump or the connected central lubrication system as a standing or climbing aid.

2.5 Safety instructions for maintenance, inspection and assembly work

- The operation, maintenance, inspection and assembly personnel must be appropriately qualified for this work.
- The personnel's area of responsibility, competence and supervision must be regulated by the operating company. Operational precautions and work instructions must be observed.
- The operating company must ensure that personnel understand the contents of the operating manual in full.
- Only work on the pump when it is at a standstill, depressurised and disconnected from the mains (secured against accidental restart).
- Pumps or units that feed media that are harmful to health must be decontaminated.
- All safety and protective equipment must be reattached or put back into operation as soon as the work is completed.
- Product transport requires suitable transport and lifting equipment. Use marked paths.
- Maintenance and repair work should preferably be carried out at room temperature. The lubricant's flow properties change at low or high temperatures.
- Dry wet, slippery surfaces or cover them as appropriate.
- Cover hot or cold surfaces as appropriate.
- Work on electrical components may only be carried out by qualified electricians using suitable tools and when the components are de-energised. The valid wiring diagram and local regulations must be observed.

- Do not touch cables or electrical components with wet hands or cloths.
- Do not bypass fuses. Always use the same fuse type in the event of replacement.
- Ensure that the protective earthing conductor is connected correctly.
- Observe tightening torques (if specified). Use a calibrated torque wrench when tightening.
- Label individual parts after disassembly to avoid mixing them up.
- The operating manuals must be accessible to operators and maintenance personnel at all times.

Note:

DELIMON holds qualified training courses to ensure maximum safety and efficiency. Please get in touch with your contact or the DELIMON service address for further information.

2.6 Safety instructions for the operating company

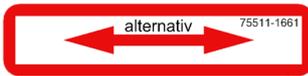
- If hot or cold machine parts lead to hazards, the customer must secure these parts against contact.
- Never remove contact protection for moving parts (e.g. pendulum lever) while the machine is in operation.
- Eliminate leaks so that people and the environment are not put at risk. Legal regulations must be observed.
- Take all necessary measures to eliminate the possibility of hazards caused by electrical energy (for details, see the regulations set down by the Association for Electrical, Electronic & Information Technologies (VDE) and local power supply companies).
- Ensure that only authorised persons are in the explosion-protected area.
- Before working in the explosion-protected area, there must be written permission for the work to be carried out.
- For work, which cannot be carried out in an explosive atmosphere (e.g. installation and repair work), it is the operator's responsibility to ensure and monitor a hazard-free dust and gas concentration levels in the given environment.
- The operator must ensure lightning protection for the entire system in accordance with local regulations.

2.7 Specific safety instructions for explosion protection

- For transport and handling of the pump within a potentially explosive atmosphere, there must be no sparking caused by falling, bumping, rubbing or slipping, e.g. by using suitable covers / wrapping.
- Assembly and repair work and electrical work may only be carried out, if no explosive atmosphere is present.
- The cleaning of the pump must only be carried out if there is no explosive atmosphere. In any event, it must be ensured that the cleaning aids used cannot lead to electrostatic charging during the cleaning process.
- Before commissioning, check for any damage to the pump caused by transportation (e.g. damage to the paint), as this can result in the loss of explosion protection.
- Ignition sources of all kinds (e.g. flames, sparks, hot surfaces) are strictly prohibited within the potentially explosive atmosphere.
- Always behave in a manner that avoids the risk of explosion.
- Tools and clothing must be approved for the potentially explosive atmosphere (ESD)
- If parts or devices of the explosion protection are defective or their function cannot be ensured, the pump and higher-level systems must be switched off immediately.
- Measures and equipment for explosion protection must never be ignored, modified or deactivated.
- The ignition temperature of the lubricant must be at least 50° Kelvin above the max. permissible surface temperature of the pump components.
- The ignition temperature of the environment (gases or dust) must be at least 50° Kelvin above the maximum possible surface temperature (according to ATEX specification) of the pump components.
- The application limits of the pump are clearly specified by the equipment categories, gas and dust groups as well as temperature classes.
- Electrical plug connections and conductors must never be unplugged when live. This may cause danger to life, if an explosive gas is present in the environment at that time.
- All electric drives must be protected against overload, short circuit and earth fault by a safety, monitoring and control device according to RL 2014/34/EU.
- Ordinary electrical equipment may be fitted in mounting housings; it may only be used in intrinsically safe circuits. The mounting housings must be approved for the ATEX zone in which they are used. In any event, the manufacturer must prepare a control drawing (proof of intrinsic safety) and add it to the delivery documentation.
- It must be ensured that the pump is always filled with fluid and that flammable media inside the pump are not heated above 80 % of their ignition temperature without the application of special measures. (Start-up)

2.8 Notes and pictograms on the pump

	<p>Warning – possibility of hand injuries</p> <p>Risk of injury due to the rotating scraper in the reservoir! Never reach into the reservoir while the pump is running. Hands or fingers can be crushed, cut off or broken.</p>
--	--



The pump can rotate in a clockwise and an anti-clockwise direction

Wichtiger Hinweis!

Nur sauberen Schmierstoff in Behälter füllen! Verschmutzungen führen zum Ausfall der Pumpe.
Important notice!
Make sure to fill only clean lubricant into the tank! Contaminations cause pump failure.

75511006

Information sign: only pour clean lubricant into the reservoir

All labels on the pump must be legible at all times.

2.9 Type plate

The type plate contains important specifications for identifying the pump. This must always be legible.

Example: FZ pump with approval for ATEX Zone 1

Example: FZ pump with approval for ATEX Zone 2 and 22

Artikelnummer / Code no. FAX06A12AA00	
Ty p / Ty pe Pumpe FAX	Seriennummer / Serial no. 123456-1
Betriebsdruck max. / Operating pressure 200 bar	Baujahr / Year of manufacture 10 / 2020
Gewicht / Weight 13,5 kg	<p>ExGuide 03 ATEX 0014 X II 2G Ex h IIB T4 Gb II 3G Ex h IIB T4 Gc II 3D Ex h IIB T125°C Dc -20°C ≤ Ta ≤ 40°C</p>
Spannung - Leistung / Voltage - Power 230/400V - 180W	
Delimon GmbH Arminstraße 15 40227 Duesseldorf Germany www.bijurdelimon.com Tel: +49 211 7774 0 Made in Germany	

Artikelnummer / Code no. FAX06A12AA00	
Ty p / Ty pe Pumpe FAX	Seriennummer / Serial no. 123456-1
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Spannung - Leistung / Voltage - Power 230/400V - 180W	
Delimon GmbH Arminstraße 15 40227 Duesseldorf Germany www.bijurdelimon.com Tel: +49 211 7774 0 Made in Germany	

2.10 General safety instructions for handling lubricants

Lubricants perform different tasks and are selected specifically for the application. Lubricants' main functions are:

- Reducing friction and wear
- Protecting against corrosion
- Reducing noise
- Protecting against dirt or foreign matter
- Extending the service life of bearings, chains, etc.
- Cooling

2.10.1 Selecting lubricants

Lubricants are usually selected during machines' and systems' design phase. They are selected by the machine manufacturer or, if appropriate, the machine operating company. The product's operating temperature or the ambient temperature must also be taken into account. DELIMON takes the lubricant specification into account during the project planning process and when selecting suitable central lubrication components. If it does not have any relevant experience with regard to the compatibility of given lubricants, Bijur Delimon also offers preliminary tests to assess the compatibility.

Material compatibility:

The used lubricants must generally be compatible with the following materials and seals:

Steel, grey cast iron, brass, copper, aluminium

NBR, FPM, FKM, ABS, PA, PU



Only lubricants specified for the product (see the section entitled 'Technical data') may be used. All other system components' specified lubricants must also be observed! Unsuitable lubricants can lead to functional failure of the product or the entire system.



Do not mix lubricants. This has an impact on the lubricating properties and feedability, and thus on the central lubrication system's function.



It must be ensured that flammable media inside the pump are not heated above 80 % of their ignition temperature without the application of special measures.



☞ When handling lubricants, the relevant safety data sheets and, if applicable, the hazard labels on the packaging must be observed

2.10.2 Lubricant ageing

If lubricants are stored in reservoirs or lines for an extended period of time, e.g. due to machine downtime, ageing phenomena may occur (e.g. separated lubricant components). Before putting the machine / system back into operation, check whether the lubricant is still suitable for use. If necessary, the lubricant must be replaced before the machine / system is put back into operation.

2.11 Foreseeable misuse

Misuse is considered to be unintended use, especially in the following cases:

- Operation outside the specified operating temperature range.
- Operation in a more critical explosion protection zone than specified on the type plate and in these operating instructions.
- Operation with explosive gases and vapours, where the ignition temperature is below the maximum specified surface temperature.
- Operation with explosive dusts with minimum ignition temperature and the glow temperature are below the specified maximum surface temperature.
- Subsequent alteration of the paint finish that does not comply with the requirements of the applicable ATEX standards.
- Overriding or removing safety equipment (e.g. pressure limitation valve)
- Adding and feeding unspecified or contaminated lubricants
- Adding and feeding lubricants that require written approval from Delimon or are generally prohibited (e.g. hazardous substances or food fat)
- Filling and transporting lubricants whose temperature is above the maximum permissible ambient temperature.
- Foreign bodies in the lubricant reservoir
- Operation in corrosive / aggressive environments without a suitable protective coating or enclosure
- Selecting an unsuitable installation site
- Tampering on the pump (e.g. shutting down an outlet)
- Replacing original attachments with unsuitable components, e.g. motor with too high a power / rotation speed

2.12 Product modifications

Modification or alteration of the pump is prohibited. Any modification will have unpredictable influence on the safety and will lead to the loss of the ATEX conformity.

2.13 The obligations of the operating company

The operating company must guarantee the prerequisites for safe and proper use of the pump throughout its entire life cycle. These are described again in detail below.

2.13.1 Determining hazards

Installing the pump in a machine or system belonging to the operating company may cause a more complex hazard situation. It is the operating company's responsibility to determine all hazards at the place of use and necessary counter-measures to ensure safety and health protection.

Explosion protection:

- The operator must ensure that the work equipment and installation materials are suitable for operation in potentially explosive atmospheres on the basis of a comprehensive assessment of the workplace. The operator must guarantee that the equipment is assembled, installed and operated in a way that does not cause an explosion.
- In the event of modifications and extensions, the operator must ensure that appropriate measures are implemented to comply with the minimum explosion protection requirements.
- The operator must identify the potentially explosive atmospheres by means of signs.
- The operator must document the measures taken to ensure explosion protection.
- The operator must provide written work instructions.
- The operator checks and monitors compliance with the measures and work instructions

2.13.2 Personnel qualification and training

The operating company shall ensure that all people authorised to use the pump have the necessary knowledge and qualifications before they use it for the first time.

The operator must instruct authorised personnel on explosion protection. This includes at least:

- the allocation of zones
- Scope and limits of the activities or responsibilities
- Use of the PPE
- Importance of warnings
- Emergency behaviour.

The operator must ensure that this operating manual and any associated documents are accessible at all times and that the contents of the same are read and understood. It shall also regulate the responsibilities of assembly, operation and maintenance personnel.

2.13.3 Providing personal protective equipment

The operating company must provide personal protective equipment that is suitable for the relevant place and purpose of use.

2.13.4 Instructing external assembly fitters

Before being deployed, external assembly fitters must be brought to the same required level of knowledge as the operating company's own personnel. This includes all of the product information, safety instructions, safety regulations and accident prevention regulations and regulation with regard to explosion protection issued by the operator.

2.13.5 Testing and ensuring proper use

The operating company shall ensure that the pump is being used as intended by taking suitable, periodic inspection measures. The periodic inspection should at least include:

- Function of the pump and safety equipment
- Checking for unauthorised tampering or conversion
- Legibility of all labels and the type plate
- Cleanliness of the reservoir contents, the pump and also the surrounding area (including the lubricant storage area)
- Condition of the electrical installation

2.13.6 How to behave in emergency situations

The operating company must ensure that the pump is shut down quickly in an emergency. To stop the pump, the power supply must be interrupted – for example by pressing an emergency shutdown switch on the pump or the higher-level machine. Personnel must be trained in the procedures to be followed in an emergency.

2.14 Dangers if the safety instructions are not observed

Failure to observe the safety instructions may result in personal injury as well as potential damage to the environment and the machine. In detail, failure to observe the safety instructions may result in the following hazards, for example:

- Failure of key machine / system functions
- Explosion hazard in hazardous areas
- Failure of prescribed maintenance and repair methods
- People being put at risk due to electrical, mechanical and chemical effects
- The environment potentially being polluted due to hazardous substances leaking

Failure to observe the safety instructions may lead to any claims for damages lapsing.

2.15 Residual risks

Risk	Possible in life phase										Preventative / remedial measure
Physical injury, property damage due to lifted parts falling	A	B	C					G	H	K	Keep unauthorised individuals away. Do not allow people to stand under lifted parts. Lift parts with suitable lifting equipment.
Personal injury / property damage due to electric shock if the connection cable is damaged		B	C	D	E	F	G	H			Check the connection cable for damage before using the pump for the first time, and at regular intervals thereafter. Do not mount the cable on moving parts or chafing points, or take appropriate safety precautions. Connect and check the potential equalisation.
Physical injury / property damage / environmental pollution due to spilled, leaked lubricant		B	C	D		F	G	H		K	Take care when filling the reservoir and connecting or disconnecting the lubricant lines. Only use hydraulic screw connections and lubrication lines that are suitable for the specified pressure. Do not install lubrication lines on moving parts or chafing points.
Life phases: A = Transport, B = Assembly, C = Commissioning for the first time, D = Operation, E = Cleaning, F = Maintenance, G = Fault, repair, H = Decommissioning, K = Disposal											

2.16 Residual risks ATEX

Residual risk	Preventative / remedial measure
Creation of an explosive atmosphere due to the dust circulation	Avoid dust accumulation by regular control and cleaning. Select a place of installation with preferably a clean environment and low dust exposure.
Heating of the lubricating points, which are undersupplied, to the ignition temperature level due to non-detected malfunction within the central lubrication system	The operator must examine critically whether operation without appropriate automated system monitoring leads to a potential hazard. If necessary, suitable remedial measures must be taken.
Use in a potentially explosive atmosphere without testing the potential equalisation for electrical continuity	The potential equalisation must be checked for continuity at regular intervals. The operator defines the intervals. In any case, the test must be carried out prior to commissioning and after repairs / maintenance.
Generation of electrostatic charges, sparks, e.g. due to components falling down or colliding with each other	Secure part against traps. If necessary, cover components to prevent sparks from forming.
Use of isolating switching amplifiers in potentially explosive atmospheres	Only install isolation amplifiers outside the potentially explosive area.

3. Product description

3.1 Introduction

The FZ-A /FZ-B (ATEX version) grease / oil lubrication pump is a positively driven piston pump. The operating principle is characterised by a very high level of reliability and constant delivery volume, even at a high back pressure. In contrast to other piston pumps, only one central piston is required to supply up to 12 outlets due to a special design.

Unlike the standard version of the FZ pump, the ATEX version is only available with flange motor and reduction gear. The drive types with free shaft end or pendulum lever are not available.

Difference: FZ-A and FZ-B pump (standard and ATEX version)

The two pumps only have a different pump body design. The FZ-B pump is available with 1 or max. 2 outlets and feeds 12 times or 2x 6 times the volume of the FZ-A pump due to internal volume combination.

3.2 Revision level

Current revision: Level B

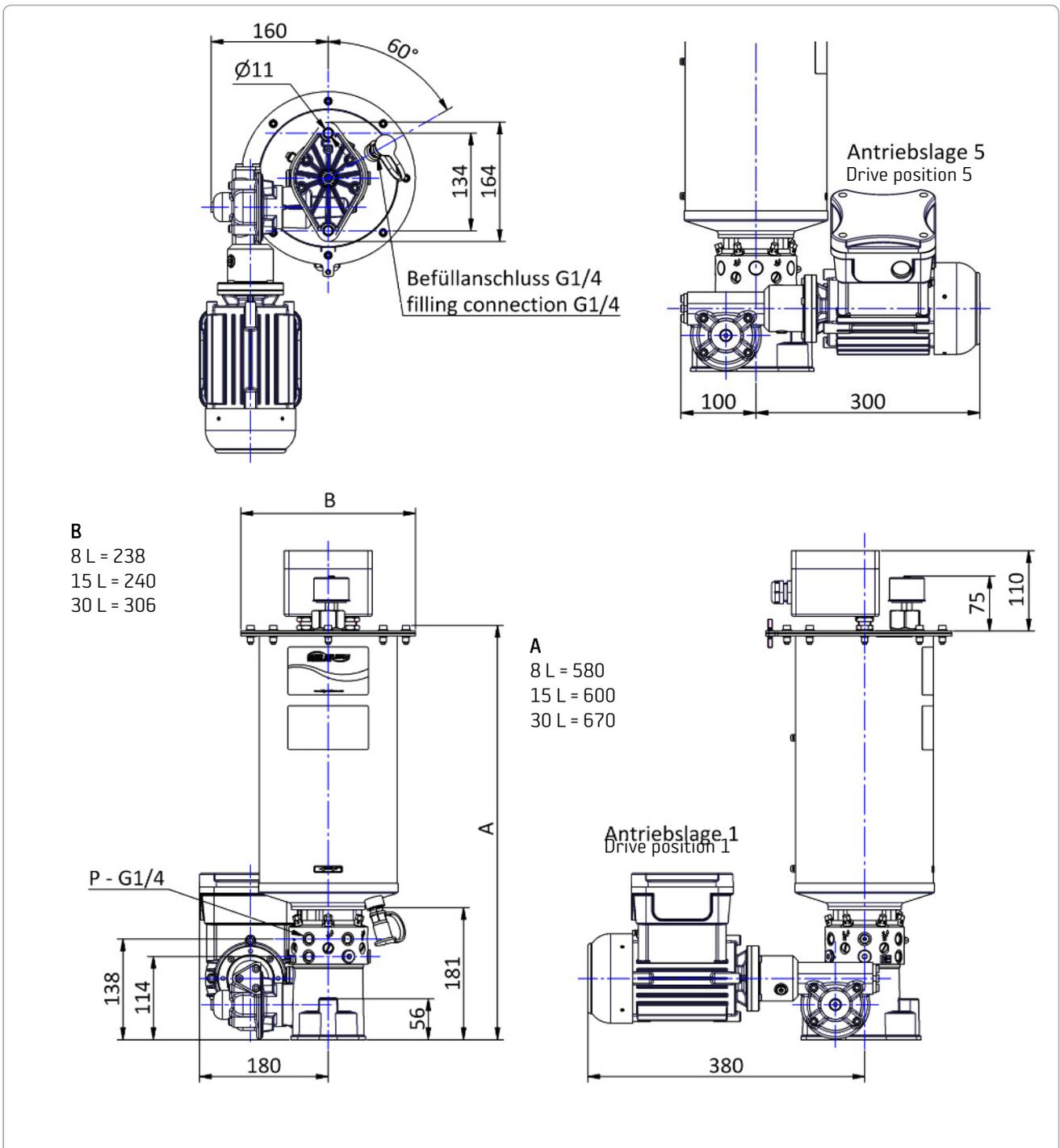
3.3 Technical data

ATEX Type of ignition protection:	The grease lubrication pumps can be used - depending on the marking - as follows: • Zone 1 (Gas Ex, category 2G, EPL Gb) in explosion groups IIA and IIB Zone 2 (Gas Ex, category 3G, EPL Gc) in explosion groups IIA and IIB Zone 22 (Dust Ex, category 3D, EPL Dc) in explosion groups IIIA and IIIB
ATEX Temperature category:	The qualification with respect to surface temperature is T4; for all gases, vapours, mists with an ignition temperature > 135 °C, the BMs are not a source of ignition. In the Dust Ex area, 125 °C is the reference temperature for additional safety considerations with regard to the glow temperature, etc. (only the operator can decide).
Mode of operation:	Central piston pump, positively driven
Use:	Multi-line and progressive systems
Outlets:	1 - 12
Reservoir:	8 l; 15 l; 30 l (with support as an option, recommended for 15 l and 30 l)
Reservoir filling:	via filling nozzle (G1/4")
Operating pressure:	max. 200 bar (pressure limitation with 160 bar or optionally 200 bar)
Drive:	electric, any direction of rotation
Electric drive:	<u>Standard motor:</u> Three-phase motor 230 V (D) / 400 V (Y) 50 Hz; IMB14-C90- size 63; 0.18 kW - 1,340 min ⁻¹ (☞ also see details in the motor data sheet in the annex) Operating mode: S1 <u>Reduction gear with a defined gear ratio (delivery rate*):</u> ○ 215:1 (approx. 0.62 cm ³ /min, or approx. 37.4 cm ³ /h)
Sound pressure level:	< 70 dB(A)
Approved lubricants:	Grease up to NLGI grade 2 (DIN 51818), oil with an operating viscosity from ISO VG 68
Temperature range:	-20°C ... +40°C
Relative humidity	max. 90%
Protection class:	IP65
Outlet thread:	G1/4" for pipe Ø 10 mm (max.)
Filling connection:	G1" (filling valve optional)

Coating and colour:	Pump base and reduction gear: RAL 5010 Gentian blue, C3-M lacquered Pump body: Grey cast iron (EN-GJS-400-1B - GGG40) nickel-plated (EN 12540-Fe//Ni8b) Pump reservoir: Zinc-nickel coating (DIN 50979-Fe//ZnNi8//An//TO) Motor: Grey cast iron RAL 5010 Gentian blue
Weight (not including lubricant):	<u>8 l reservoir</u> <u>15 l reservoir</u> <u>30 l reservoir</u> approx. 32 kg approx. 34 kg approx. 36 kg
Optional accessories:	<ul style="list-style-type: none"> ○ Pressure limitation valve(s) 200 bar (standard 160 bar) ○ Level switch (MIN /MAX)

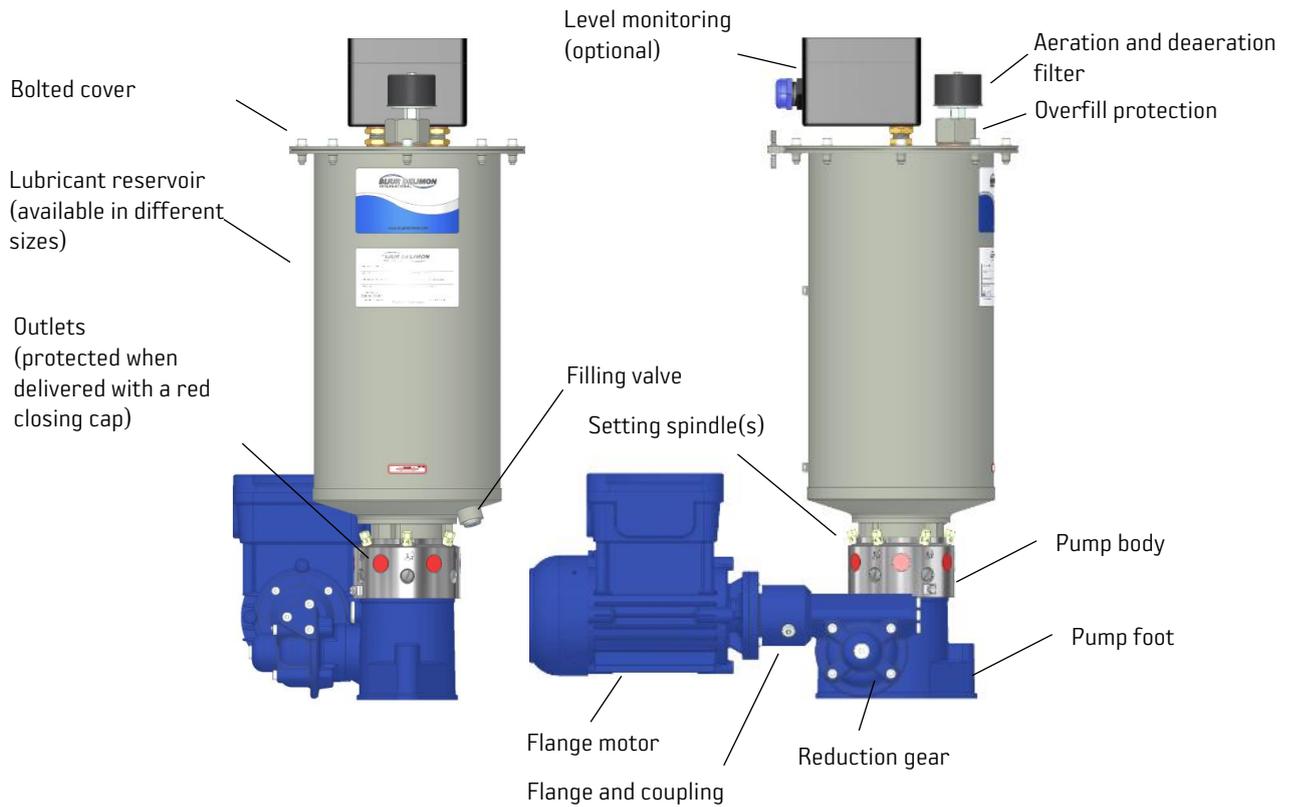
3.4 Dimensions

Pump's basic dimensions in mm:



3.5 Pump components

External main components of the pump:

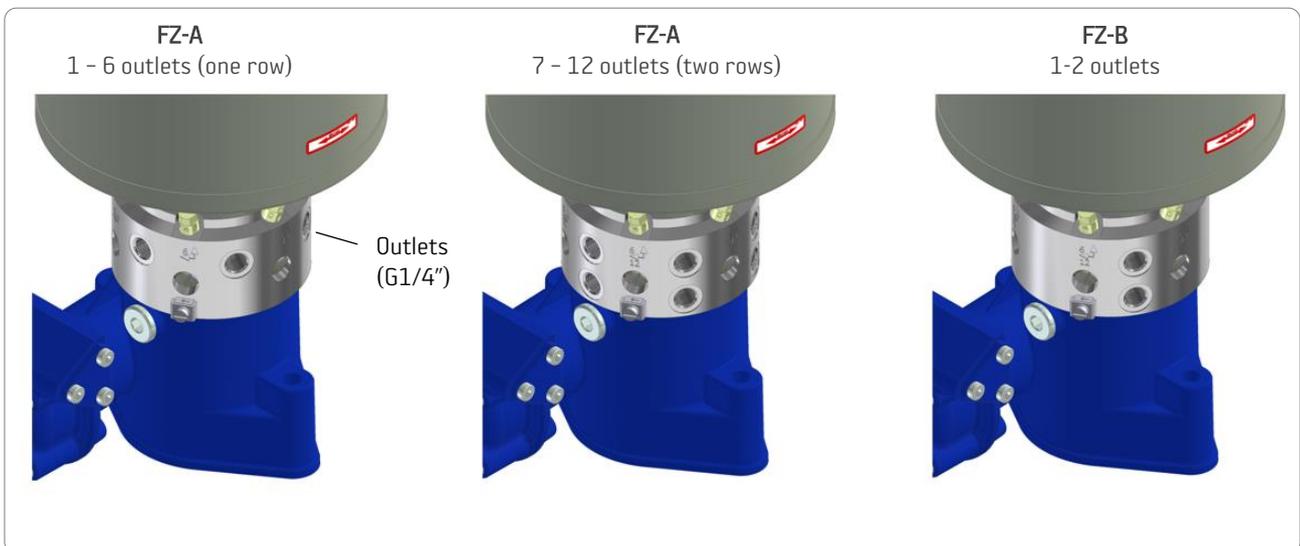


3.6 Overview of variants

Different pump bodies, drive variants and reservoir sizes can be combined due to the modular pump design. This section provides an overview of the different variants. Technical details can be found in the section below.

3.6.1 Pump body variants

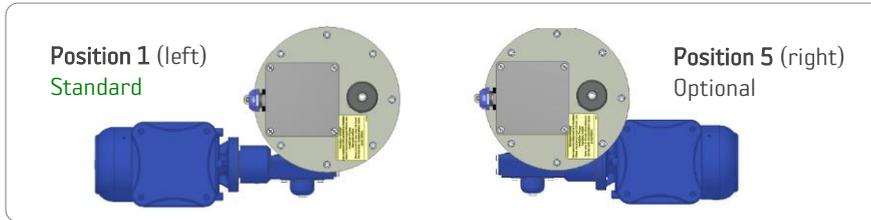
Depending on the number of outlets, the FZ pump versions differ in the pump body with the following features:



3.6.2 Drive variants

The FZ pump (ATEX version) is equipped with a flange-mounted three-phase motor. Other drive types are not possible as opposed to the standard version. There are two different drive positions to choose from:

Drive position:



3.6.3 Reservoir variants

Selection of the correct reservoir size depends primarily on the expected lubricant consumption. This should take the effort required for topping up, which would be reduced by larger reservoir volumes, into account. On the other hand, the lubricant's dwell time in the reservoir must also be taken into consideration. An insufficient lubricant replacement frequency may have a negative effect on the lubricating and feeding properties. The available installation space is also a selection criterion.



For 15 and 30 litre reservoirs, we advise using a reservoir support if the pump is exposed to vibrations or acceleration.

3.6.4 Accessories

The FZ pump can be equipped with a level monitoring system with 2 switching points for the use in zones 2 and 22 on request. For the use in zone 1 (Gas Ex) the level monitoring is compulsory. The pressure limitation at each outlet is set to 160 bar as standard in order to protect the pump and downstream components, which may only be approved for 160 bar. The pump can optionally be supplied with a 200 bar pressure limitation.



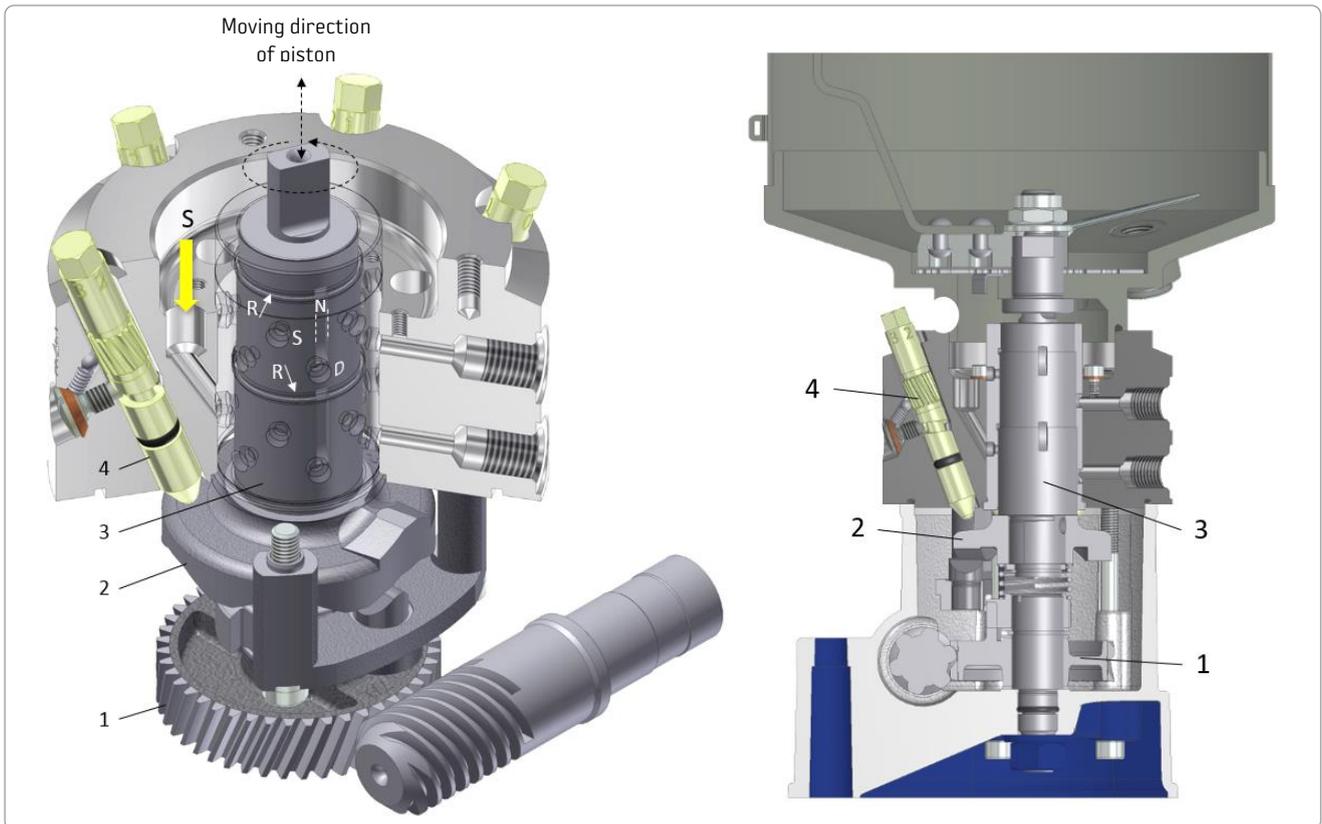
3.7 Technical details

3.7.1 Functionality

The FZ pump is a positively driven piston pump. The centrally arranged piston (3) is driven by a worm wheel (1). It performs both axial movements (stroke) and, simultaneously, rotary movements around its own axis. The piston's rotational speed depends on the selected gear ratio.

The lifting disc (2) has a cam on the top which, during the rotary movement, successively strikes against the six setting spindles (4) arranged on the pump's circumference, causing a piston suction stroke each time. The stroke movement and thus the delivery volume can be varied at each setting spindle.

During the suction stroke, the lubricant flows from the suction chamber (S) into the piston's vertical grooves and, from there, into the ring channels (R). During the pressure stroke, the lubricant is fed from the ring channel and into the pressure channel (D) and then into the outlet openings via a vertical groove.

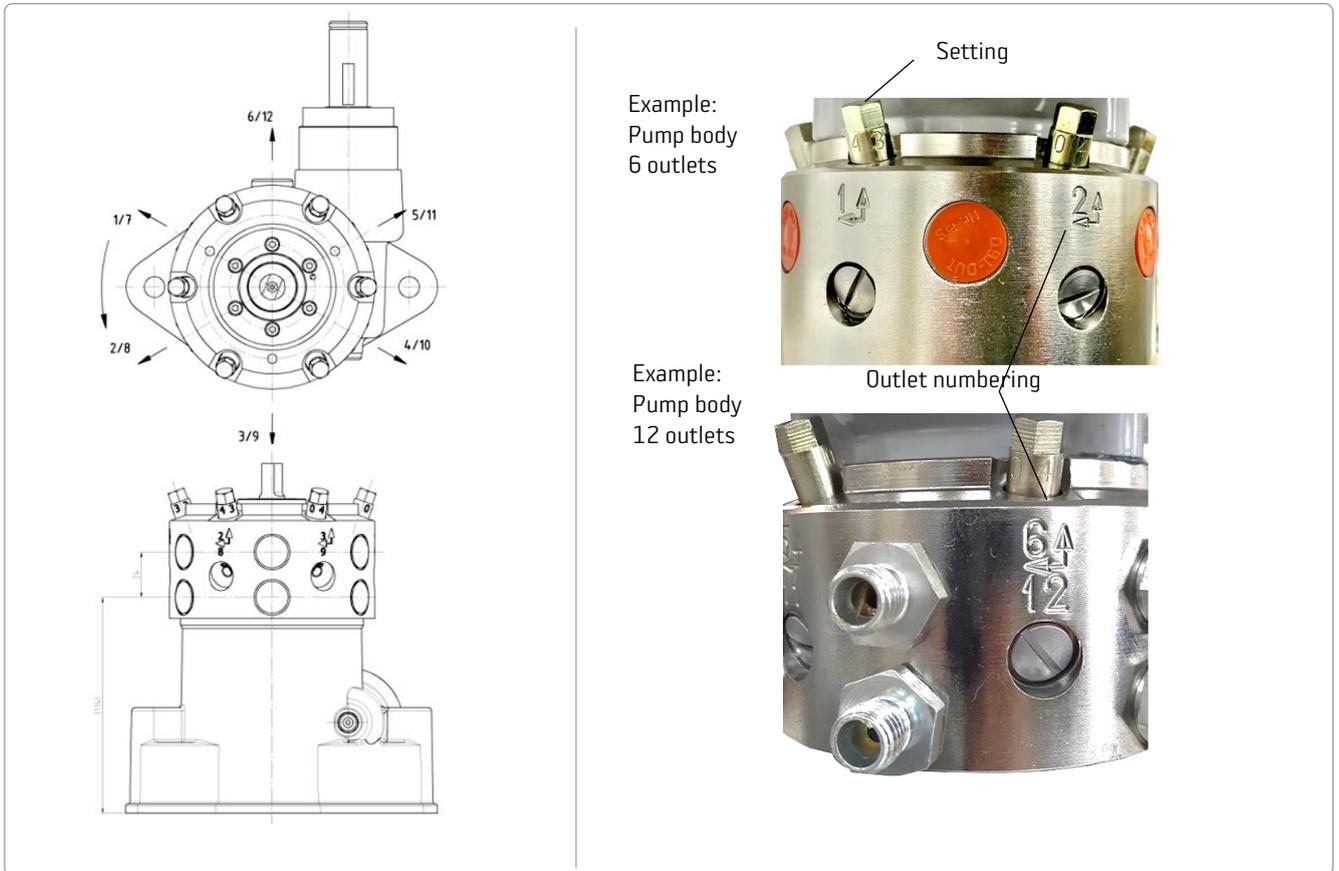


3.7.2 Outlet location and labelling

The FZ-A pump can be configured with up to 12 outlets. Depending on the number, one pump body either with one row of outlets (6x) or with two rows of outlets (12x), one above the other, is installed. Open outlets are provided with a screw fitting and pressure relief valve on delivery. These are clearly identifiable. If there are fewer than 6 or 12 outlets, shut-off outlets are closed with a sealing plug and there are no setting spindles available.

ATTENTION	
	<p>Pump damage possible</p> <p>The outlets' assignment must not be changed!</p> <p>Do not close the factory outlets!</p>

The outlets are arranged in a circle at increments of 60° and are visibly numbered on the pump body. Arrows indicate the corresponding setting spindle that the delivery volume can be adjusted with. If there are more than 6 outlets, two outlets are positioned in pairs, one on top of another (24 mm apart). In this case, the outlet volume can only be adjusted in pairs. This means that regulation at outlet 1 also inevitably applies to outlet 7 below too.



3.7.3 Delivery volume per outlet:

The guaranteed pump delivery volume when using grease is 0.1 cm³ per outlet and piston stroke. With low-viscosity lubricants such as oil, the delivery volume can also be higher and reach max. 0.15 cm³/stroke. However, all subsequent volume calculations refer to 0.1 cm³. The delivery volume per outlet is independent of the total number of outlets.

The pump's total delivery volume is then the sum of all outlets:

1 outlet	1x 0.1 cm ³ / piston stroke	Total: 0.1 cm ³ / piston stroke
2 outlets	2x 0.1 cm ³ / piston stroke	Total: 0.2 cm ³ / piston stroke
3 outlets	3x 0.1 cm ³ / piston stroke	Total: 0.3 cm ³ / piston stroke
...	...	
12 outlets	12x 0.1 cm ³ / piston stroke	Total: 1.2 cm ³ / piston stroke

The effective delivery volume / time is determined by the choice of drive. More detailed information and calculations are provided in the sections below for the relevant drive versions. The maximum possible delivery volume is 1.0 cm³ per outlet / min (10 revolutions or strokes / min x 0.1 cm³).

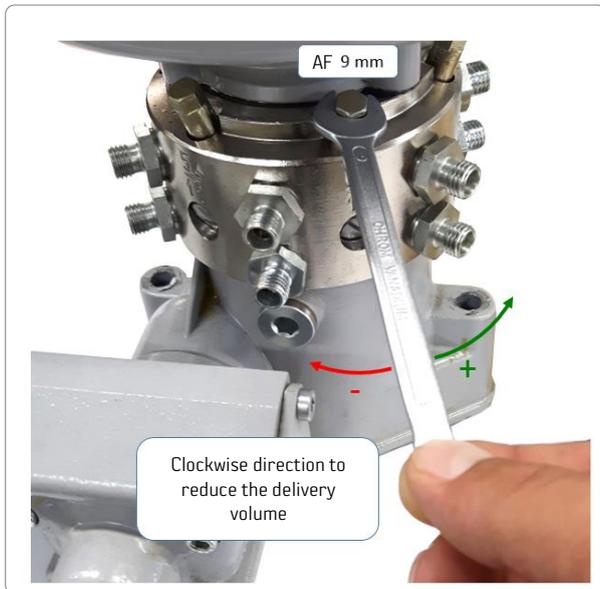
3.7.4 Adjusting the delivery volume:

The FZ pump has 1 to 6 setting spindles depending on the configuration. If there are more than 6 outlets, a setting spindle controls the delivery volume of the two outlets positioned one above the other. Engraved arrows clearly indicate the spindle → outlet association. The top and bottom outlets cannot, therefore, be regulated independently of each other. The pump is set to the maximum delivery volume at all outlets on delivery. Numbers from 1 to 4 are engraved on the spindles (4 = maximum delivery volume)

Important:

The spindle positions 1 - 4 do not cause a proportional change in volume, i.e. position 2 is not the same as 50%, for example. The actual change in the delivery volume very much depends on the lubricant used (suction behaviour) and must be tested under the given conditions. **When using grease, the setting spindle should not be turned to anything smaller than position 2!**

Please proceed as follows to subsequently adjust the delivery volume:



Note: You can connect outlets externally using connected pipelines to reduce the number of outlets or to specifically combine volumes.

3.7.5 Drive types in general

In contrast to the standard version, the ATEX version of the FZ pump is only available with a pre-assembled flange motor.

Drive provided by the customer	Pre-assembled drive
Not intended for ATEX version of FZ pump	Flange motor

3.7.6 Drive with a flange motor and reduction gear

For the pump configuration with its own flanged drive a reduction gear is always required to reduce the motor's rotation speed to the feed piston's permissible rotation speed. A 4-pole asynchronous motor whose shaft speed is slightly below that of the electric drive rotating field (1,500 rpm) due to functional slip is used as standard. Our standard motor's relevant shaft speed is **1,340 min⁻¹** (at 50 Hz) and **1,610 min⁻¹** (at 60 Hz), with which the following volume calculations were carried out.

Drive speed*:
1,340 min⁻¹ (50 Hz)
1,670 min⁻¹ (60 Hz)

Reduction gear:
1: Ratio: 215:1
Other ratios are not available for the ATEX version

FZ-A: Delivery volume / per outlet (50 Hz):
1: approx. 0.62 cm³ / min -> 37.4 cm³/h

FZ-B: Delivery volume 1 outlet (50 Hz):
approx. 7.44 cm³ / min -> 446.4 cm³/h

FZ-B: Delivery volume 2 outlets (50 Hz):
approx. 3.72 cm³ / min -> 223.2 cm³/h per outlets

 WARNING	
	<p>Loss of ATEX certification and risk of explosion</p> <p>The ATEX certification of the FZ pump is only valid in combination with the flange-mounted motor from the factory.</p> <p>An unauthorised modification will result in the loss of the ATEX certification.</p> <p>An unauthorised replacement of the motor with other performance data can lead to damage to the pump.</p> <p>An unauthorised replacement of the motor with different performance data may result in damage to the pump.</p>

3.7.7 Reservoir

The FZ pump offers different reservoir sizes, so it can be well adapted to the lubricant consumption. All reservoir options are made of metal and are zinc-nickel coated. The reservoir top is bolted on all versions and may only be opened for maintenance purposes and by authorised personnel. On request, a fill level switch (MIN/MAX) can be installed in the reservoir top (see the section entitled 'Accessories').

Note: When using in ATEX Zone 1, a fill level switch is mandatory.



A feed insert with scraper, which rotates while the pump is running, is installed in the reservoir base. The rotation speed corresponds to the piston speed (max. 10 rpm). The scraper ensures regular mixing of the lubricant and prevents deposits (when grease is used) on the inner wall of the reservoir, which can occur especially if the lubricant remains in the reservoir for a long time.

A screen plate is installed in the reservoir base to protect the pump suction chamber against coarse dirt.

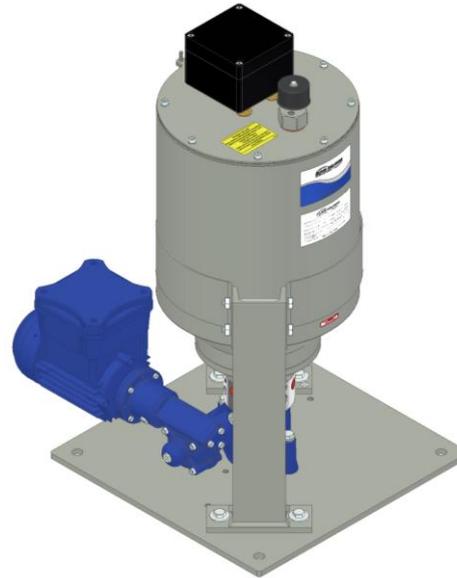
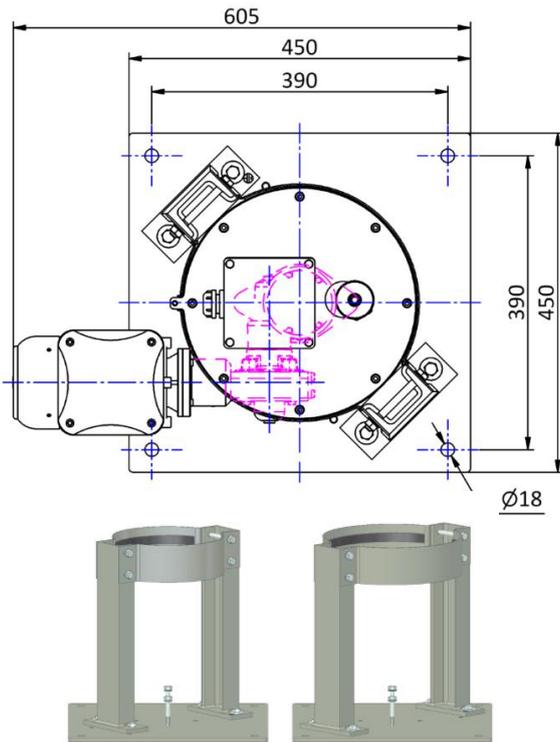
 WARNING		
 	<p>Hand injury due to the rotating scraper</p> <p>Never reach into the reservoir while the pump is running. There is a risk of hands and fingers being crushed and cut off. Only refill lubricant via the filling nozzle! No unauthorised access!</p>	

Filling connection:

<p><u>For delivery:</u> sealed with screw plug G1/4</p> 	<p><u>Version 1:</u> Use of loosely supplied filling nozzle</p> 	<p><u>Version 2:</u> Direct connection of a filling line via G1/4 screw-in fitting</p> 
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Reservoir support:

The 15 l and 30 l versions are available with a reservoir support and a base plate as an option. They have following dimensions and mounting sizes:



3.7.8 Fill level monitoring (accessories)

The FZ pump (ATEX version) can be equipped with a fill level monitoring system with 2 switching points (MIN/MAX) on request. This consists of two capacitive sensors, embedded in the lubricant reservoir via pipe extensions, which detect fixed switching points for MIN and MAX (see diagram and table below).

Both sensors are supplied factory-wired in a connection box mounted on the reservoir top. The interface to the power supply is provided by an isolation amplifier installed outside the ATEX area. Further details can be found on the following page.

Important:

For the use in ATEX zone 1 (Gas Ex) the fill level monitoring is compulsory. In the Dust Ex area (Zone 2 and 22), the fill level monitoring is optional.

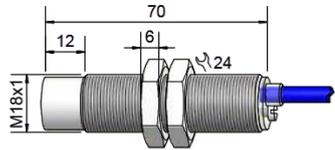
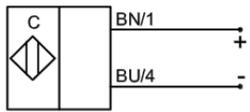
If the pump is configured with a level switch, it is automatically approved for zone 1. The combination of restriction for zone 2/22 and level switch is therefore not intended.

Switching points as of lid bottom:

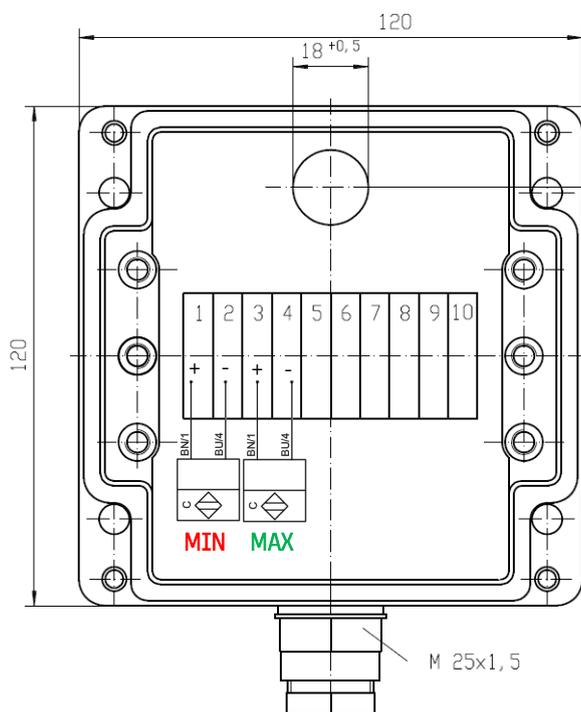
Reservoir	MAX	MIN	Vol. between MIN and MAX
8 l	95 mm	306 mm	approx. 6 l
15 l	95 mm	326 mm	approx. 10 l
30 l	95 mm	395 mm	approx. 22 l



Electrical data of the capacitive sensor:

Range of application and	Dust explosion hazardous areas, zone 20 Dust explosion hazardous areas, zone 0	
ATEX product labelling Gas ATEX product labelling Dust	<u>DMT 03 ATEX E 048</u> <u>IECEX BVS 07.0031</u> II 1G Ex ia IIC T1-T6 Ga Ex ia IIC T1-T6 Ga II 1D Ex ia IIIC T101°C Da Ex ia IIIC T101°C Da	
Norm	EN 60947-5-6	
Output function	NAMUR	
Installation type	non-flush	
Power supply version	2-wire DC	
Housing material	PTFE (FDA 21 CFR 177.1550)	
Perm. residual ripple max.	5%	
Switching frequency max.	50 Hz	
Switching distance Sn	8 mm	
Switching distance adjustable	2...10 mm	
Operating voltage	5...15 V DC, U _i = 15 V DC	
Output current active area free	< typ. 1.5 mA	
Output current active area occupied	> typ. 2.5 mA	Dimensions and connection diagram
Intrinsic inductance (L)	0.2 mH	
Intrinsic capacity (C)	250 nF	
Protective circuit / protection class	Installed / IP67	
LED display	yellow	
Connection cable	2m, PUR, 2x0.34 mm ²	
Permissible ambient temperature	-20°C ... +70°C	
Approvals:	CE, RoHS, UL CSA, ATEX	

Connection box with terminal assignment:



Functional sequence:

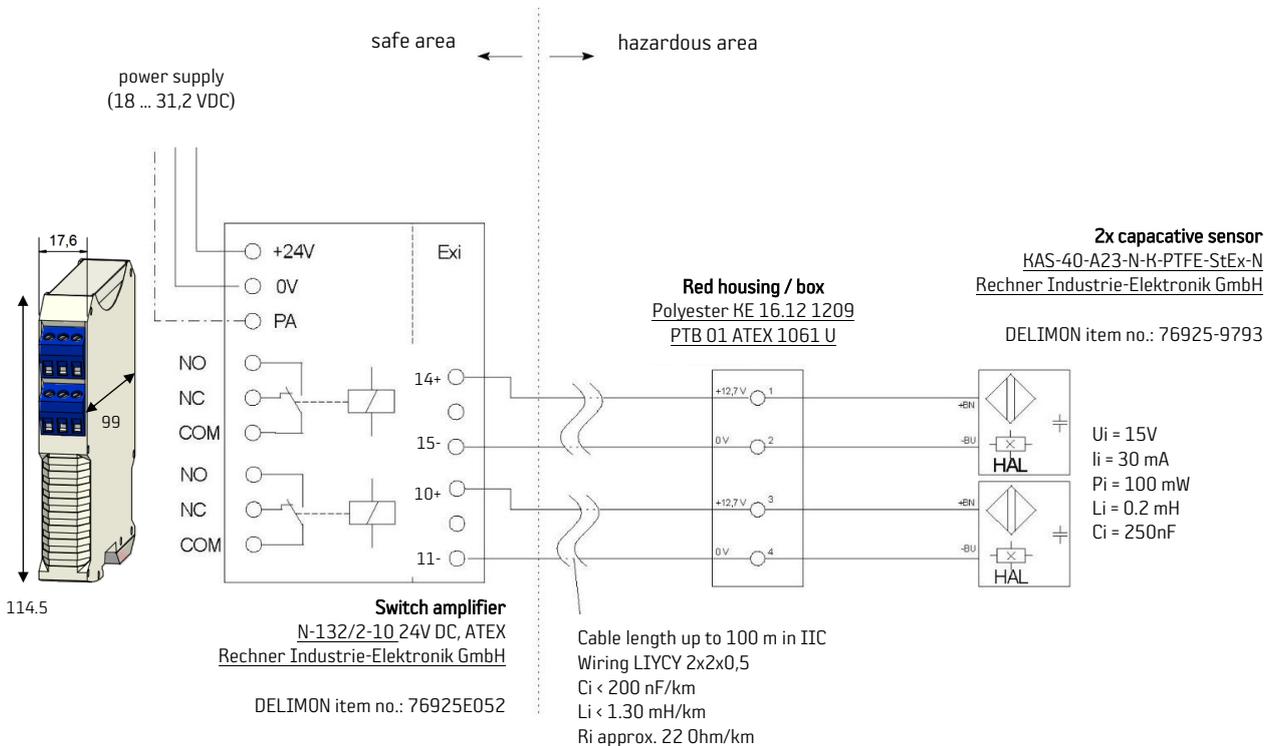
Inputs/ Outputs	
Connection 1 and 3 (+UB)	Operating voltage U; 15 V for the sensors
Connection 1 (+), 2 (-)	Fill level minimum when current <3 mA
Connection 3 (+), 4 (-)	Fill level maximum when current <1.5 mA

 WARNING		
	<p>It is not allowed to run the pump without lubricant in accordance with regulations within ATEX Zone 1 (Gas Ex).</p> <p>The operator must ensure, therefore, that the pump is switched off automatically immediately when the MIN fill level is reached.</p>	

To connect the fill level monitoring, an isolating switch amplifier type N-132/2-10 (Rechner Industrie-Elektronik GmbH) is required, installed outside the explosion hazard zone.

Important: The proper function of the fill level monitoring is only given using the specified isolating switch amplifier type/brand. This is also offered as an accessory with the item number 76925E052.

Example of a correct electrical installation:



DANGER		
	<p>Risk of explosion due to incorrect electrical connection</p> <p>The fill level monitoring may only be connected to the electrical system by a qualified electrician.</p> <p>The operator is responsible for compliance with the electrical limits.</p>	

3.7.9 Pressure limitation (accessory option 200 bar)

The FZ pump (ATEX version) is equipped with pressure control valve(s) 160 bar. In the event of overpressure (e.g. due to blocking distributors or clogged lines), both the pump and connected system components are protected against damage and any resulting hazards are avoided. The standard limitation of 160 bar ensures compatibility with all progressive distributors (e.g. ZP-A).

The pump can also optionally be configured with a 200 bar pressure limitation. As a result, the pumping range is increased, which can be an advantage especially in cold ambient temperatures. However, a prerequisite for this is that all other system components are also designed for 200 bar.

The following components and part numbers are available for replacement or retrofitting:

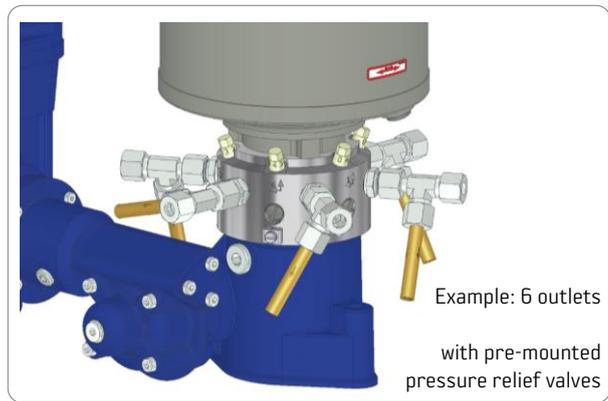
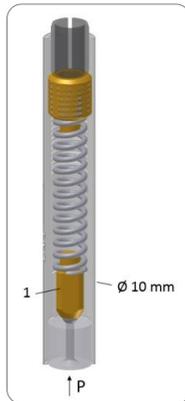
- 160 bar (valve code no.: 38132-1211, assembly w. screw connections: 38132-1711)
- 200 bar (valve code no.: 38132-1241, assembly w. screw connections: 38132D009)

Note:

The pressure relief valve NU-A has no potential ignition source and therefore does not fall within the scope of the ATEX directive.

NU-A mode of operation

If pressure in the central lubrication system exceeds the set value, a spring-loaded piston (1) is lifted, causing the lubricant to escape into the open or to flow back to the pump reservoir via a return line or to the pump's suction chamber.



ATTENTION	
	<p>Pump and system component damage possible</p> <p>The maximum operating pressure for the FZ pump is 200 bar.</p> <p>When selecting or setting the pressure limitation valve, the maximum permissible operating pressure <u>of all connected system components</u> must be taken into account.</p>

WARNING	
	<p>Risk of injury due to lubricant splashing out</p> <p>The pressure limitation valves must be positioned so that the opening is not directed at people, workstations, machines or, if applicable, hot surfaces.</p> <p>If necessary, suitable protective covers must be installed.</p> <p>Wear PPE during maintenance or adjustment work!</p>

Note: In the event of overpressure, lubricant escapes at high pressure from the pressure limitation valve's opening. Especially when using oil or other low-viscosity lubricants, it must be expected that a small volume (drops) of oil will splash out in the near-distance range.

CAUTION	
	<p>Risk of slipping due to leaking lubricant</p> <p>Clean up residues of leaked lubricant immediately.</p>

If the valve triggering remains undetected for an extended period of time (> 1 day in continuous operation), it is possible that the entire contents of the reservoir may escape via the valve. The pump operating company must ensure that suitable collection or recirculation precautions are taken to prevent any risks to people and the environment. The valve can be connected to a 10 mm recirculation line, for example. An inspection option must still be guaranteed.

Note: If the FZ pump is used for a progressive system, overpressure can be detected early on by exceeding a programmed monitoring time using a downstream monitored lubricant distributor.

3.8 Coding and sample order

Pump type

Pump FZ-A (ATEX version)
Pump FZ-B (ATEX version)

Number of outlets (FZ-B max. 2 outlets)

Outlets: 1 / 2 / 3 ... 12 with pressure limitation 160 bar

Revision

Level B

Drive type Zone 1: Reduction gear 215:1 and flange motor

Motor voltage 380/400/415V 50Hz (460 60 Hz)
Motor voltage 500V 50Hz
Motor voltage 480V 60 Hz

Drive type Zone 2 and 22: Reduction gear 215:1 and flange motor

Motor voltage 380/400/415V 50Hz (460 60 Hz)
Motor voltage 500V 50Hz
Motor voltage 480V 60 Hz

Drive position

Drive position 1 left (standard)

Drive position 5 right

Reservoir

Reservoir 8 l / 15 l / 30 l (Zinc-nickel coated)
30 l reservoir + support with base plate, 450 x 450 mm
15 l reservoir + support with base plate, 450 x 450 mm

Accessories

Without accessories
Fill level switch (MIN/MAX) for Zone 1 compatibility
Increased pressure limit 200 bar instead of 160 bar
Fill level switch (MIN/MAX) + increased pressure limit
200 bar instead of 160 bar for Zone 1 compatibility

Code:

FAX	06	B	14	A	A	00
FAX FBX						
01 / 02 / 03 ... 12						
B						
14 15 18						
24 25 28						
A E						
A / B / C E F						
00 01 20 21						

4. Transport, handling and storage

4.1 Checking the delivery

Before installation, check the delivery to ensure it is complete and in a good visual condition. Recognisable transport damage must be reported to the carrier immediately. No installation / commissioning may take place in this case. If the delivery is incomplete, please contact our Customer Service immediately!

4.2 Tools for transport and handling

Always use suitable lifting equipment for transport and handling. Wear PPE (gloves, safety boots).

 CAUTION		
	<p>Risk of slipping due to leaking lubricant Ensure that no lubricant leaks while the pump is being transported.</p> <p>Transport the pump vertically (reservoir top at the top)!</p>	 

4.3 Storage conditions

- Store preferably in original packaging
- Store vertically (reservoir lid at the top)
- Use an oil-tight base or reservoir
- Select a storage location that is protected against dust, moisture, extreme temperature fluctuations, vibrations and other mechanical effects
- Observe the approved temperature range

5. Assembly, installation and commissioning

Check the delivery before installation (see 4.1.) Installation and commissioning can only be carried out by qualified personnel with ATEX training and in compliance with this operating manual and the information on the type plate. It is essential that the nationally applicable installation regulations, e.g. EN 60079-14, are complied with during installation.

The product may only be commissioned in zone 1 or zone 2 (category 2G; EPL Gb and 3G; EPL Gc) and zone 22 (category 3D; EPL Dc) by professionals with a qualification similar to a competent person according to TRBS 1203.

	 DANGER	
	<p>Risk of explosion</p> <p>Before installing the pump and downstream components, ensure that all safety-relevant ATEX specifications are complied with or proof thereof is available.</p> <p>Assembly and maintenance work may only be carried out, if <u>no explosive atmosphere is present</u>.</p>	

5.1 Suitable installation locations

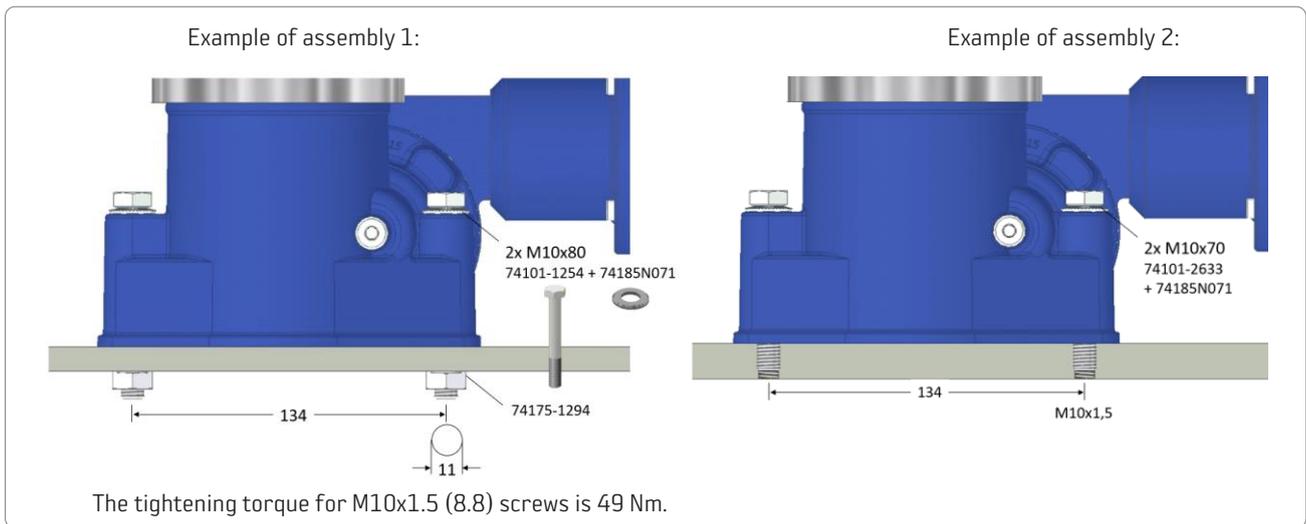
- Keep a sufficient distance from moving parts and sources of heat or cold.
- If necessary, take precautions according to the pump's and the attached components' IP protection class and permissible ambient temperature.
Note: On request, the FZ pump can be supplied as a pump unit with protective housing.
- Comply with legal regulations, specifications and safety distances.
- Choose a solid and stable mounting surface that is as free as possible from vibrations or movements and has high acceleration. Make sure it is clean!
- Ensure access to the pump for safe maintenance, inspection (of monitoring equipment) and filling.
- Ensure protection against severe contamination or moisture to ensure that the type plate and warning notices are permanently legible.
- If all of the above conditions are met, a central installation location is preferred for short line distances.

5.2 Minimum installation dimensions

The pump's basic dimensions are given in section 3.4. Where space is limited, it is particularly important to ensure that the height is sufficient. In addition to the heights specified in the table below, we recommend adding an extra min. 400 mm for maintenance and visually inspecting the inside of the reservoir.

5.3 Fixation options

The pump must be mounted vertically, on a flat surface, so that it is free of stress. Two screws are required for fixation, according to the following examples of assembly below. Assembly can be carried out with commercially available tools.



5.4 Assembling lubrication lines and system components

Before commissioning the pump, the outlet lines and, if necessary, other system components such as lubricant distributors are installed. Please note the following in this respect:

- All system components must comply with the given ATEX requirements.
- The pipe installation may only be carried out by qualified specialists using suitable standard tools.
- Long lines, especially lubrication point lines between the distributor outlet and lubrication point, should be installed pre-filled. This speeds up commissioning and ensures that the lubrication points are supplied immediately.
- All system components' operating manuals must be observed.
- The recommended tightening torques for the pipe fittings used must be observed.

ATTENTION	
	<p>Damage or blockages in the lubrication system possible</p> <p>It is essential to check and clean (e.g. by blowing out) pipelines for dirt and chips before assembly and after each sawing or cutting operation.</p> <p>Protect stored pipe lengths from contamination with closing caps.</p>

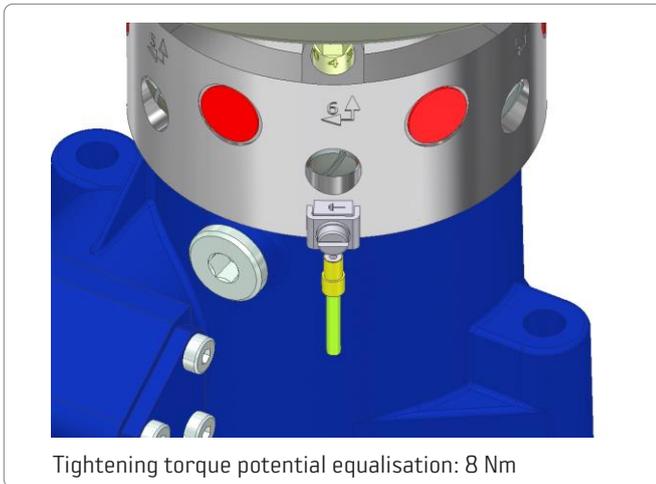
5.5 Electrical connection

The motor must be connected according to the circuit diagram. Suitable motor protection is required according to the motor's performance data and local regulations. If no Delimon electrical control unit is included in the scope of delivery, the motor protection must be procured by the customer. Only then may the pump be connected and put into operation.

DANGER		
	<p>Danger of death due to electric shock</p> <p>The pump may only be connected to the electrical system by a qualified electrician.</p>	
	<p>Ensure potential equalisation and test before commissioning.</p> <p>Observe the motor data sheet and documentation!</p>	

- Potential equalisation must be established. It must be handled in accordance with the installation regulations in the respective country (VDE 0100 Part 540, IEC 364-5-54). This must be checked before commissioning. Insulated construction is not permitted!
- The pump has a PE connection on the assembly surface (marked with the symbol "PE").
- The effectiveness of the discharge of the drive to the PE has to be checked regularly.
- The pumps must not be installed in plants with cathodic corrosion protection; in extreme cases, consult the manufacturer.
- It is particularly important to ensure that no vagrant currents (generated e.g. by motors operated on frequency converters, welding systems and/or cathodic corrosion protection systems) are conducted via the drives.

Connection for potential equalisation:



5.6 Filling the pump reservoir and lubrication lines

The FZ pump is filled via the filling nozzle. A suitable filling pump is required for this purpose. In contrast to the standard version of the FZ pump, the reservoir lid is not designed for filling.

For the first filling, proceed as follows:

- Have a suitable filling pump ready and ensure cleanliness of all parts used and the lubricant. It is important that the filling pump is approved for the given ATEX zone or that it is operated outside the explosive atmosphere.
- Connect the potential equalisation between the filling pump and the FZ pump. The connection fitting (e.g. coupling) by means of which the filling conduit is connected to the FZ pump must also be included in the potential equalisation.
- Connect the filling pump, e.g. with a tube (Ø10), e.g. using the coupling provided, to the filling connection at the bottom of the reservoir.
- Start the filling.
- Switch on the FZ pump and let it run with the max. delivery volume (setting spindle stage 4)
- Let the pump run until the lubricant escapes evenly and air-free at each outlet
- Switch off the pump and connect the lubrication lines. Before assembly, the lubrication lines must be cleaned by tapping and blowing out and pre-filled using a grease gun. Pre-filling speeds up the commissioning process and ensures the supply of lubricant to the lubrication points after commissioning.
- Switch on the pump and let it run until lubricant emerges air-free at the end of the lines.
- Fill the reservoir completely via the filling hose or filling conduit while the pump is running until:
 - When the MAX level monitoring signal (if present) is reached.
 - Leaks of grease from the overflow of the vent valve on the reservoir lid



ATTENTION	
	<p>Malfunction possible due to contamination in the lubricant</p> <p>Check the lubricant reservoir, lubricant and filling aids for contamination and clean them if necessary.</p>
	<p>Bearing damage due to undersupply possible</p> <p>Manually fill the bearings and lubrication line before assembly to ensure the lubricant supply after commissioning</p>

Important: The filling process should always be carried out under observation, with 2 people if necessary

If the bearings to be connected are also pre-filled with lubricant, the pipelines can be connected to the lubrication points. The system can then be put into operation

Procedure if the wrong lubricant was accidentally added:

- Switch off the pump and secure it against being switched back on again.
- Open the reservoir (see Chapter Maintenance) and empty / clean as far as possible.
- Add the correct lubricant.
- If necessary, run the pump with free outlets to feed lubricant out of the inaccessible pump body.

5.7 Commissioning the pump or lubrication system

Once professional mechanical and electrical installation has been carried out in full with pre-filled lines and a filled pump, controlled system commissioning can take place.

5.7.1 Manufacturer's settings

The pump is delivered with the following settings:

- Maximum delivery volume (all setting spindles in position 4)
- Pre-set pressure limitation valves according to the order (160 or 200 bar)

5.7.2 Checks before commissioning for the first time

Checklist before commissioning:

- Is there visible damage, or is assembly improper or unfinished (loose parts)?
- Are there visible leaks?
- Are all components' documents and data sheets available and known to the commissioning personnel?
- Are ATEX certificates of all relevant components available and do they meet the requirements?
- Is the safety equipment (e.g. pressure limitation valves, emergency shutdown switches) present and correctly installed?
- Has the electrical connection, including potential equalisation, been carried out correctly?
- Is the intended use of all the components ensured?
- Are all security precautions taken?
- Are all relevant instructions for explosion protection followed?
- Has the correct lubricant been added, free from contamination?
- Does the system comply with the project planning specifications?
- Are all the responsibilities regulated?
- Are the operating personnel trained?

5.7.3 Measures during commissioning

- During commissioning, the pump and the entire system are checked for leaks and other defects. Any defects discovered must be reported immediately to the responsible person and repaired by a qualified specialist.
- Bleed the system (see 5.6). If lubricant distributors are used, please refer to the information in the relevant assembly manual.
- Predefined lubrication intervals must be verified and, if necessary, corrected based on the actual delivery volumes (also see 5.8).
- Safety equipment installed by the customer (e.g. emergency shutdown switches) must be tested during commissioning.
- Factory pressure limitation valves on the pump only trip in the event of overpressure, which is usually caused by blockages in the system. A blockage must be simulated to test whether a valve is working. A pressure gauge or pressure switch behind the pump is also required. Please also observe the safety instructions in section 3.7.13
- Any corrections to the system layout or setting values must be updated in the system documentation after commissioning.

5.8 Determining running and break times

In many applications, lubricant is distributed as evenly as possible to the lubrication points at short intervals. Accordingly, the pump running and break times can be regulated using a higher-level control unit (in case there is no mechanical drive regulating the running times).

After commissioning, there may be deviations from calculated lubricant volumes and running times. This is due to many influencing factors, such as lubricant, system size, pipe dimensions and ambient conditions. This is why the values must be determined under given conditions during commissioning and why the programming must be adjusted if necessary.

A separate system description is available for further details about controlling progressive systems.

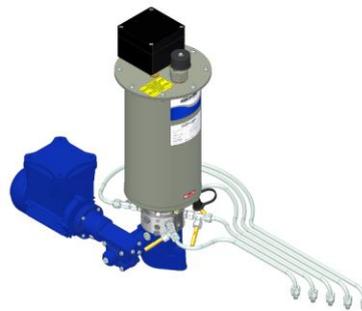
5.9 Examples of the systems

The FZ pump is suitable for directly supplying up to 12 lubrication points (multi-line system), or for use with progressive distributors (progressive system).

5.9.1 Multi-line system

The FZ pump in a multi-line system:

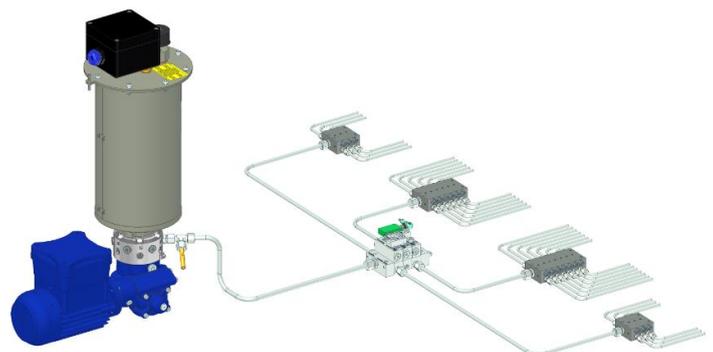
- Direct connection of the lubrication points to the pump outlets
- For up to 12 lubrication points in close distance
- Suitable for identical or similar delivery proportions of lubricant



5.9.2 Progressive system

The FZ pump in a **progressive system** with downstream distributors:

- Usually a single pump outlet that supplies one distributor and potentially several downstream sub-distributors
- Efficient piping
- Volume control and monitoring possible
- Suitable for a large number of lubrication points
- Large proportions of lubricant can be achieved



Suitable distributors for progressive systems:



The QR code on the left takes you to the Download area for the relevant product documentation.

Note:

The specified lubricant distributors do not have their own potential ignition source and can therefore be used as standard in the ATEX area without special labelling (without electrical monitoring). It is essential that each individual distributor is properly connected to the potential equalisation system. A suitable electrical monitoring for the given ATEX zone is available upon request.

6. Operation

6.1 Operating safety

The safety instructions according to section 2 apply to operating the pump. The operating company is responsible for compliance with the safety instructions.

6.2 Operating modes

The pump (incl. standard drive) is designed for continuous operation. The normal case, however, is interval operation, which is specified by the operating company. After commissioning, the lubrication intervals should be checked regularly and adjusted if necessary.

6.3 The pump's or lubrication system's control unit

The pump's control unit depends on the drive variant.

- For electric drive a power supply is required to start the pump. In the simplest case, this can be implemented with a switch and suitable motor protection. Usually, an electrical control system (provided by the client) is employed for the purpose of automating and processing monitoring electronics.

☞ Further information about controlling progressive systems can be found in our system description.

6.4 Topping up the lubricant

Following commissioning, lubricant must always be topped up in good time before the reservoir is emptied. Otherwise, air may enter the system, which in turn will lead to malfunctions. There is also a risk of the bearings to be lubricated being undersupplied undetected.

Topping-up time:

When using a level switch and control unit (recommended), an automatic warning is issued when the defined minimum level is reached. The MIN signal must be used as a warning to stop the pump in order to prevent complete draining of the pump (applies to use in ATEX zone 1).

If the pump does not have a fill level switch, a calculated refill interval is recommended based on the flow rate and running time, and an appropriate refill schedule should be prepared.

ATTENTION	
	<p>Malfunction possible due to contamination in the lubricant</p> <p>Only use clean lubricant!</p> <p>Check the lubricant reservoir, lubricant and filling aids for contamination and clean them if necessary.</p> <p>Observe the tips below!</p>

Tips for avoiding contamination in the lubricant:

- Keep the pump and its surrounding area as clean as possible!
- Use a suitable filling pump!
- Store the lubricant under clean conditions!
- Regulate access to lubricant supplies and responsibility for filling!
- Do not open the reservoir lid

6.5 Shutting down the pump

In the event of temporary shutdown, the following measures are to be implemented:

- Disconnect the pump from the power supply
- Release the residual pressure in the downstream lubrication system (see section 7.2)
- Open and empty the reservoir when it is outside the potentially explosive atmosphere and dispose of the lubricant properly.
- Clean the pump

 WARNING	
	<p>Hand injury due to the rotating scraper</p> <p>Never reach into the reservoir while the pump is running. There is a risk of hands and fingers being crushed and cut off. Empty the reservoir only when the pump is disconnected from the mains.</p>

Also observe the safety instructions in the section entitled 'Cleaning'.

In the event of final decommissioning, please observe section 10 entitled 'Disassembly, decommissioning and disposal'.

7. Inspection, testing and maintenance

The FZ pump is largely maintenance-free. For safe operation within the ATEX area, however, regular visual inspections and, if necessary, cleaning measures are required:

Check:	Measure taken:	Interval:
Visual condition, cleanliness, grease leakage from pressure relief valve	If necessary, clean, remove dust, collect leaked grease and, if necessary, clarify the cause of excess pressure.	Start with daily intervals, which can be extended to weekly if there is little soiling.
Ventilation filter condition	Replace filter cartridge, if necessary	4 weeks

7.1 Pressure test

To check the FZ pump's pressure build-up, you need:

- 1x pressure gauge up to 250 bar (manometer or electronic pressure switch)
- 1x adjustable pressure limitation valve (e.g. SA-G)

Procedure:

- Loosen and remove the outlet screw connection with pipeline and, if necessary, the NU-A pressure limitation valve.
- Let the pump run without pressure for approx. 30 s (collect lubricant) until the lubricant emerges without any bubbles.
- Switch off the pump.
- Connect the pressure gauge and, behind it, the adjustable pressure limitation valve.
- Set the pressure limitation valve to 200 bar.
- Switch on the pump and monitor the pressure. The pressure should reach 200 bar after a few seconds of operation. Lubricant must then slowly escape from the downstream pressure limitation valve at the outlet.

If the pump does not reach the pressure, you will find potential causes in section 9 ('Troubleshooting') below. Once the pressure test has been completed successfully, reconnect the pump to the system and allow it to run normally.

ATTENTION	
	<p>Pump damage possible</p> <p>Carry out this test only under constant supervision and with direct access to shutdown equipment.</p> <p>If the pressure limitation valve does not open and the pressure rises above 200 bar, switch off the pump immediately. 250 bar must never be exceeded under any circumstances.</p>

7.2 Relieving the system pressure

When checking the connection screw connections at pump outlets and all downstream system components, you must expect residual pressure in the system, e.g. due to blockages in the system.

Process for relieving system pressure:

- Wear PPE!
- Switch off the pump and secure it against being switched back on again
- Provide a base or a collection basin for lubricant (drops) escaping for a short time
- Carefully loosen the union screw(s) at each pump outlet until lubricant escapes (make gradual half-turns with brief interruptions).
- Carefully loosen the union screw(s) until no further lubricant escapes

Important:

Only small volumes of lubricant escape during the relief process. Depending on the system pressure and the medium's viscosity, sudden escape cannot be ruled out even over close distances. PPE is therefore absolutely essential.

The following safety instructions apply to all maintenance and inspection activities:

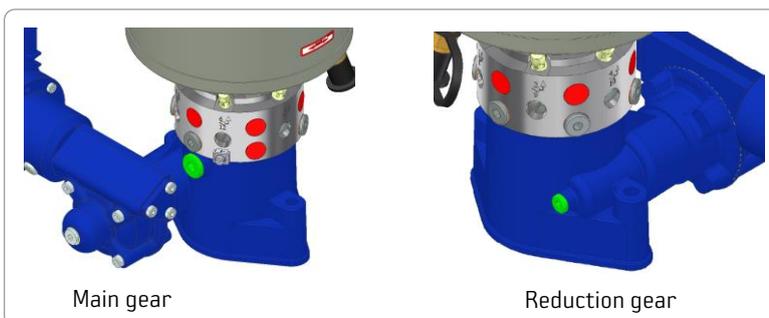
 WARNING		
  	<p>Risk of injury Before performing any inspection work, disconnect the pump from the power supply and secure it against being switched back on again.</p> <p>Wear PPE!</p> <p>Observe potential residual pressure in the system and relieve it in a controlled manner if necessary.</p> <p>Remove any leaked lubricant immediately.</p>	  

 CAUTION		
	<p>Skin irritation possible Avoid contact between the skin and lubricants at all costs.</p> <p>Wear PPE.</p> <p>Following contact with the skin, wash lubricant off immediately.</p> <p>Observe the lubricant manufacturer's safety data sheet.</p>	 

ATTENTION	
	<p>Loss of warranty claims possible Do not independently disassemble the pump within the warranty period.</p> <p>Always contact Delimon's Customer Service first if malfunctions occur.</p>

7.3 Gear oil

The gears are filled with lubricant grease (Gearmaster LX00 (Lubritech) or similar) by the manufacturer. The filling must only be replaced when disassembling and cleaning the gears. To do this, open the sealing plugs shown in green in the figure below.

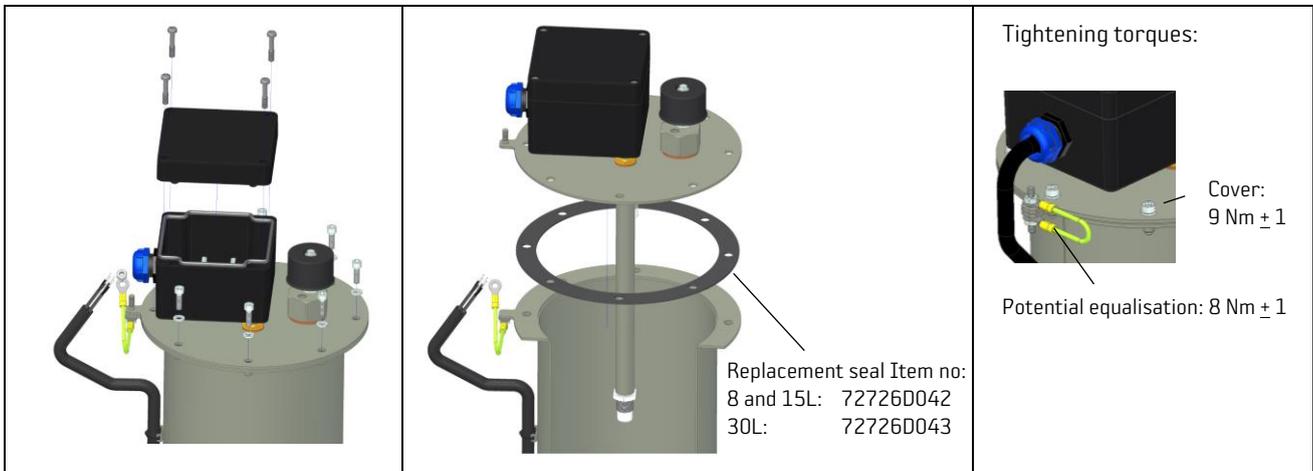


7.4 Open reservoir lid

The lubricant reservoir is sealed dust-tight and may only be opened for maintenance purposes.

Procedure:

- Open the cover of the connection box and disconnect the cable (only by qualified electricians).
- Disconnect potential equalisation at the cover (only by qualified electricians).
- Undo the screws on the cover
- Remove the cover with fill level monitoring and ventilation

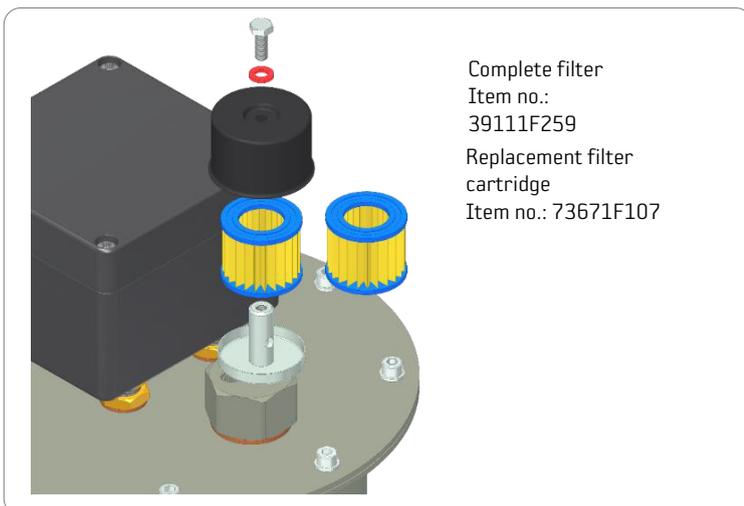


Assembly occurs in reverse order. Observe the specified tightening torques!

DANGER		
	Risk of explosion The potential equalisation must be tested by a qualified electrician after assembly and prior to recommissioning.	

7.5 Check and renew filter

The filter cartridge is replaced as required. The replacement interval largely depends on the ambient conditions. The initial control interval is recommended to be 4 weeks. The filter is disassembled to access the filter element as shown in the figure below. When assembling, the screw is hand-tightened.



8. Cleaning

Always keep the FZ pump in good condition. This means that the warning notices and type plate must be legible at all times. Dust and, if necessary, lubricant residues must be regularly removed (see also Chapter 7 - Inspection intervals). The pump function and inspection must not be affected by contamination.

Only material-compatible, solvent-free cleaning agents, which cannot cause static charge, may be used for cleaning. Cleaning agents must be removed without residue after cleaning.

 DANGER		
	<p>Danger of death due to electric shock</p> <p>Disconnect the pump from the power supply and secure it against being switched back on again before starting cleaning!</p> <p>Electrical and live parts may only be cleaned by a qualified electrician!</p> <p>Do not touch electrical or live parts with wet hands or cloths!</p> <p>Wear PPE!</p>	  

 WARNING		
	<p>Fire hazard</p> <p>Do not use flammable substances for cleaning.</p>	

 CAUTION		
	<p>Skin irritation possible</p> <p>Avoid contact between the skin and lubricants.</p> <p>Wear PPE.</p> <p>Following contact with the skin, wash lubricant off immediately.</p>	

ATTENTION		
	<p>Pump damage and functional impairment possible</p> <p>Do not use high-pressure cleaners or steam cleaners for cleaning (observe the IP protection class!)</p> <p>Keep the reservoir closed during cleaning. The cleaning agent or cleaning water must not mix with lubricant in the reservoir.</p> <p>Do not use aggressive cleaning agents.</p>	

The inside of the reservoir does not need to be cleaned regularly when it is used as intended.

9. Troubleshooting, fault elimination and repair

Fault	Potential cause(s)	Remedy
The pump motor is not running	Fill level switch MIN signal	Check the fill level or, if necessary, that the level switch is working
	Fault message issued by a higher-level control unit	Check the control unit for faults, possibly triggered by other system components
The motor is running, but the pump is not feeding	The lubricant is used up	Top up the lubricant (in this case, observe the instructions for commissioning for the first time in section 5.6)
	There are air bubble(s) in the lubricant	Bleed the pump (see section 5.6)
	The delivery volume is set too low (position 1 when using grease)	Turn the setting spindle up to position 4 and then, while observing the delivery volume, adjust it down to max. level 2
	Damage inside the pump e.g. due to too high a back pressure	Contact Customer Service; send the pump to Delimon. If the scraper in the reservoir does not rotate when the motor is running, the problem can be limited to the coupling on the motor.
The motor is running, but the pump does not build up any pressure, or only builds up a little pressure	Only low back pressure in the system	No action necessary; only the required pressure that may be further below the pump's operating pressure is built up
	Leakage in the system	Check the entire lubrication system for leaks and eliminate them if necessary
	Setting spindle(s) or feed piston(s) worn	Contact Customer Service; send the pump in.
Level switch malfunction	Connection error	Check wiring.
The pressure limitation valve opens	The system pressure is too high e.g. due to blockages, often caused by contamination	Loosen the line upstream of the lubrication point or (if present) the first lubricant distributor and systematically limit blockages
	The pressure limitation valve is defective	Check the system pressure with the help of a manometer. If necessary, replace the valve if no other cause is possible.

If a problem with the pump cannot be solved using the measures described, please get in touch with your contact at Delimon. The pump can be sent to Delimon for inspection and repair.

Important:

- Before returning the pump, empty the reservoir and clean the outside of the pump!
- Pack the pump properly and take suitable measures to prevent the operating equipment from leaking!

Alternatively, you can place an order for a Delimon service technician to check the pump on your premises.

ATTENTION	
	<p>Loss of warranty claims possible</p> <p>Loss of ATEX approval</p> <p>Any repair work may only be carried out by an authorised specialist company or by the manufacturer (Delimon).</p> <p>Always contact Delimon's Customer Service first if malfunctions or damage occur(s).</p>

10. Disassembly, decommissioning and disposal

Decommissioning the pump requires professional disassembly (mechanical and electrical), which may only be carried out by qualified specialists wearing PPE. No special tools are required for disassembly.

 DANGER		
	<p>Danger of death due to electric shock Disconnect the pump from the power supply and secure it against being switched back on again before starting disassembly!</p> <p>Electrical disassembly may only be carried out by a qualified electrician (Wear PPE!).</p>	
	<p>Risk of explosion Disassembly must not be carried out in an explosive atmosphere.</p>	
 WARNING		
	<p>Hand injuries possible Only reach into the reservoir when the power is off. Wear PPE.</p>	
	<p>Risk of falling due to leaking lubricant Clean up leaked lubricant immediately without any residues.</p>	 

The following procedure must be followed for decommissioning:

- Have a collection basin for escaping lubricant ready.
- Ensure that there is no explosive atmosphere.
- Disconnect the pump from the power supply and secure it against being switched back on again.
- Disconnect the electrical connection cables.
- If necessary, relieve residual pressure in the system (see section 5.2).
- Disassemble the connecting lines at the outlets and secure them against leakage.
- Disconnect potential equalisation
- Loosen the pump's fixing screws and prepare the pump for transport (if necessary, roughly empty the reservoir, ensure that no lubricant escapes during transport).
- When transporting the pump, observe the safety instructions in section 2 under all circumstances.
- Remove lubricant residues in the pump at a suitable place and take precautions for proper disposal.
- Dismantle electrical components (when disposing of them, follow instructions according to the locally applicable regulations and guidelines, e.g. [2012/19/EU - WEEE2](#)).



- Dispose of the pump (or have it disposed of) according to local regulations and guidelines.

11. Documents and drawings

Depending on the pump design and equipment, the following separate documents also apply:

- Motor operating instructions

If required documents are not available, please get in touch with your contact or our Customer Service. Otherwise, the pump documentation is considered to be incomplete.

12. Annexes

12.1 Declaration of CE conformity

12.2 Declaration of ATEX conformity

12.3 Motor data sheet

12.4 Motor Declaration of ATEX conformity

12.5 Level sensor ATEX Declaration of Conformity

EC-Declaration of conformity according to 2006/42/EC

The manufacturer:

Delimon GmbH, Arminstraße 15, 40227 Düsseldorf

Tel.: 0049 211 7774 285

herewith declares that the following product:

Product description: Explosion protected lubrication pump, type FAX
Article number: FAX __ B _____
Serial number: >293 ___

is in conformity with the relevant provisions of the EC-Machinery Directive 2006/42/EC

The machinery is also in conformity with the provisions of the:
EMC Directive 2014/30 / EU and the Low Voltage Directive 2014/35 / EU

The following European harmonized standards have been used:

DIN EN 12100 : 2010 Safety of machinery - Basic terms, general principles of design,
basic terminology, methodology, risk assessment

DIN ISO 10763 : 1994 Fluid technology - Seamless and welded precision steel tubes,
dimensions and nominal pressures

DIN EN 60204-1: 2006 + Safety of machinery - Electrical equipment of machinery,
A 1:2009+AC2010 Part 1: General requirements

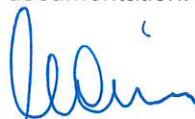
DIN EN ISO 14123-1 : 2015
EN 809 : 1998+A1:2009
TBRS 1151

We further declare that the specific technical documentation on request to be
transmitted to the market surveillance authorities.

Authorized representative for the technical documentation: Head of quality department

Düsseldorf; 09.12.2020

Date; Place



Christoph Mainzer
Managing Director

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Germany
kontakt@bijurdelimon.com
www.bijurdelimon.com

Amtsgericht (Local Court) Düsseldorf
HRB 40813
Managing Director:
Christoph Mainzer, John Pearce
David Pantazi

J.P. Morgan AG, Frankfurt am Main
Bank account no.: 6161 509 788, BLZ 501 108 00
IBAN: DE33501108006161509788
SWIFT BIC: CHASDEFX
Ust.-IdNr.: DE 813 228 741
Tax ID.: 133/5814/0866

**EC-Declaration of conformity
according to 2006/42/EC**

The manufacturer:

Delimon GmbH, Arminstraße 15, 40227 Düsseldorf

Tel.: 0049 211 7774 285

herewith declares that the following product:

Product description: Explosion protected lubrication pump, type FBX
Article number: FBX __ B _____
Serial number: >293 ___

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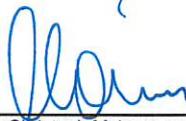
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Tax ID.: 133/5814/0866

**EU-KONFORMITÄTSERKLÄRUNG zur Bestätigung der
Übereinstimmung einer Baugruppe
mit der ATEX-Richtlinie 2014/34/EU**

**EU DECLARATION OF CONFORMITY to confirm
the conformance of a device
with the ATEX-Directive 2014/34/EU**

Der Hersteller

The manufacturer

DELIMON GmbH

Arminstraße 15, DE 40227 Düsseldorf

erklärt hiermit in alleiniger Verantwortung, dass die nachfolgende Maschine oder Baugruppe

hereby declares under sole responsibility, that the machinery or subassembly equipment described below

Bezeichnung

Description

Fettschmierpumpe FZ-A und FZ-B

Kennzeichnung mechanische Ausrüstung / Marking mechanical equipment:

CE  II 2G Ex h IIB T4 Gb und/oder and/or  II 3G Ex h IIB T4 Gc und/oder and/or  II 3D Ex h IIIB T125 °C Dc

Fertigungs-Nummer lt. Lieferpapieren und Typenschild

Serial number see shipping documents and type label

mit den Bestimmungen folgender harmonisierter Normen der Europäischen Union übereinstimmt:

conforms with the provisions of the following harmonized standards in the version of the European Union:

- EN ISO 80079-36:2016 Explosionsfähige Atmosphären – Teil 36: Nicht-elektrische Geräte für den Einsatz in explosionsfähigen Atmosphären - Grundlagen und Anforderungen
- EN ISO 80079-37:2016 Explosionsfähige Atmosphären – Teil 37: Nicht-elektrische Geräte für den Einsatz in explosionsfähigen Atmosphären - Schutz durch konstruktive Sicherheit "c", Zündquellenüberwachung "b", Flüssigkeitskapselung "k"

- EN ISO 80079-36:2016 Explosive atmospheres - Part 36: Non-electrical equipment for use in explosive atmospheres - Basic method and requirements
- EN ISO 80079-37:2016 Explosive atmospheres - Part 37: Non-electrical equipment for use in explosive atmospheres - Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"

Ebenfalls mit folgenden Europäischen und Nationalen Normen und technischen Vorschriften übereinstimmt:

Also conforms with the following European and National Standards and technical provisions in the version:

- Technische Regeln für Gefahrstoffe (TRGS) 727:2016, Vermeidung von Zündgefahren infolge elektrostatischer Aufladungen

- Technical rules for hazardous substances (TRGS) 727:2016, Avoidance of ignition hazards as consequence of electrostatic charging

Ausgefertigt in Düsseldorf am 23. Juni 2020

done at Düsseldorf on June, 23th 2020

Name des Unterzeichners

Name of signatory

John Pearce
Geschäftsführer / Managing Director

Unterschriftet für und im Namen der / Signed for and on behalf of Delimon GmbH

Unterschrift / signature





DATENBLATT FÜR 3-PHASEN-DREHSTROM-MOTOREN: IEC BAUREIHE
DATA SHEET FOR ASYNCHRONOUS THREEPHASE INDUCTION MOTORS: IEC SERIES

Kunde / Customer	CEMP
Angebot / Offer : 50000776	
Anlage / Plant	-

Tradurre - DESIGN DATA

Mechanische Schutzart	II2GD	Motorgehäuse / Frame	
Type of protection		Anschlusskasten / Terminal box	
Min. Umgebungstemp. / Min Amb.Temp.	-20 °C		
Relative Luftfeuchte / Relative humidity	90%		
Nennspannung / Rated Voltage	400 V +/- 5%		

II2GD Ex db eb IIC & Extb IIIC T135°C Db	IP65
EX eb	IP65
Max. Umgebungstemp. / Max Amb. Temp.	40 °C
Aufstellhöhe / Altitude	< 1000 mslm / masl
Nennfrequenz / Frequency	50 Hz +/- 2%

ELEKTRISCHE UND MECHANISCHE MOTORDATEN - PERFORMANCE AND CONSTRUCTION DATA

1	Stückzahl / Quantity		01
2	Motor type / Motor type		AC35r 63B 4
3	Seriennummer / Serial number		
4	Bauform / Shape		B14
5	Baumusterprüfbescheinigung / Certificate	TUV IT	14ATEX050X
6	Sonstige Abnahmen / Other certificate		
Nenn Daten / Rated data			
7	Polzahl / Pole	n°	4
8	Nennleistung / Rated power	kW	0.18
9	Nennstrom / Rated current	A	0.67
10	Voll-Last-Drehzahl / Full Load speed	1/min	1340
11	Wicklungs-Schaltung / Winding connection		Y
12	Isolations-Klasse / Insulation class		F
13	Temperaturerhöhung / Temperature rise		80K
14	Kühlart / Cooling type		IC411
15	Service Faktor / Service factor		1
16			
17			

Elektrische Daten / Electrical performances					
Lastfaktor / Load		4/4	3/4	2/4	
18	Drehzahl / Sp.	1/min	1340	1389	1429
19	Strom / Curr.	A	0.67	0.62	0.59
20	Wirkungsgr. / Eff	%	61.5	60.0	53.0
21	cos φ	-	0.62	0.53	0.42

Hochlauf-Daten / Starting performances			
22	Anlaufstrom / Nennstrom - LRC/FLC	%	245
23	Leistungsfaktor / LR power factor		0.45
	max. zul. Zeit mit blockiertem Läufer / LRWT		
24	100% Un (Warm / Warm)	sec	22
25	(Kalt / Cold)	sec	39
26	80% Un (Warm / Warm)	sec	35
27	(Kalt / Cold)	sec	60
	max. zulässige Hochlaufzeit / ART		
28	100% Un	sec	34
29	80% Un	sec	52

Drehzahl-Drehmoment-Daten / speed-torque values			
30	Nennmoment / Rated Torque	Nm	1.28
31	Kurzschlussmoment/Nennmoment - Lrt/Flt	%	230
32	Kippmoment / Nennmoment - Bdt/Flt	%	255
33			
34			
35			

Sonstige Daten / Other			
36			
37			
38			
39			

Betriebsdaten / Duty			
40	Betriebsart / Duty type	-	S1
41	Arbeitszyklen / Cyclic duration factor	-	-
42	Hochlaufzeit / Starting-hour	-	-
43	Zeit / Time		-

Lagerdaten / Bearings			
44	Lager AS / DE bearing	-	6202 2RS
45	Lager BS / NDE bearing	-	6202 2RS
46	Max. zul. Radialbelastung / Rad. load (X1)	N	360
47	max. zul. Axialbelastung / Max axial load	N	120
48	Fett-Sorte / Grease type		LGHP2 SKF or equivalent
49	Nachschmierintervall / Lubrication	h	-
50	Nachschmiermenge / Quantity grease	gr	-

Mechanische Daten / Mechanical specification			
51	Gewicht / Mass	kg	16
52	Trägheitsmoment / Moment of inertia	kgm2	0.0002
53	Leerlaufgeräusch / Noise at no load (1 m)	Lp dB(A)	44
54	Schwingstufe / Vibration level	IEC 34-14	A
55	Schwingungsobergrenze / Vibration limit	mm/sec	1.60
56			
57			

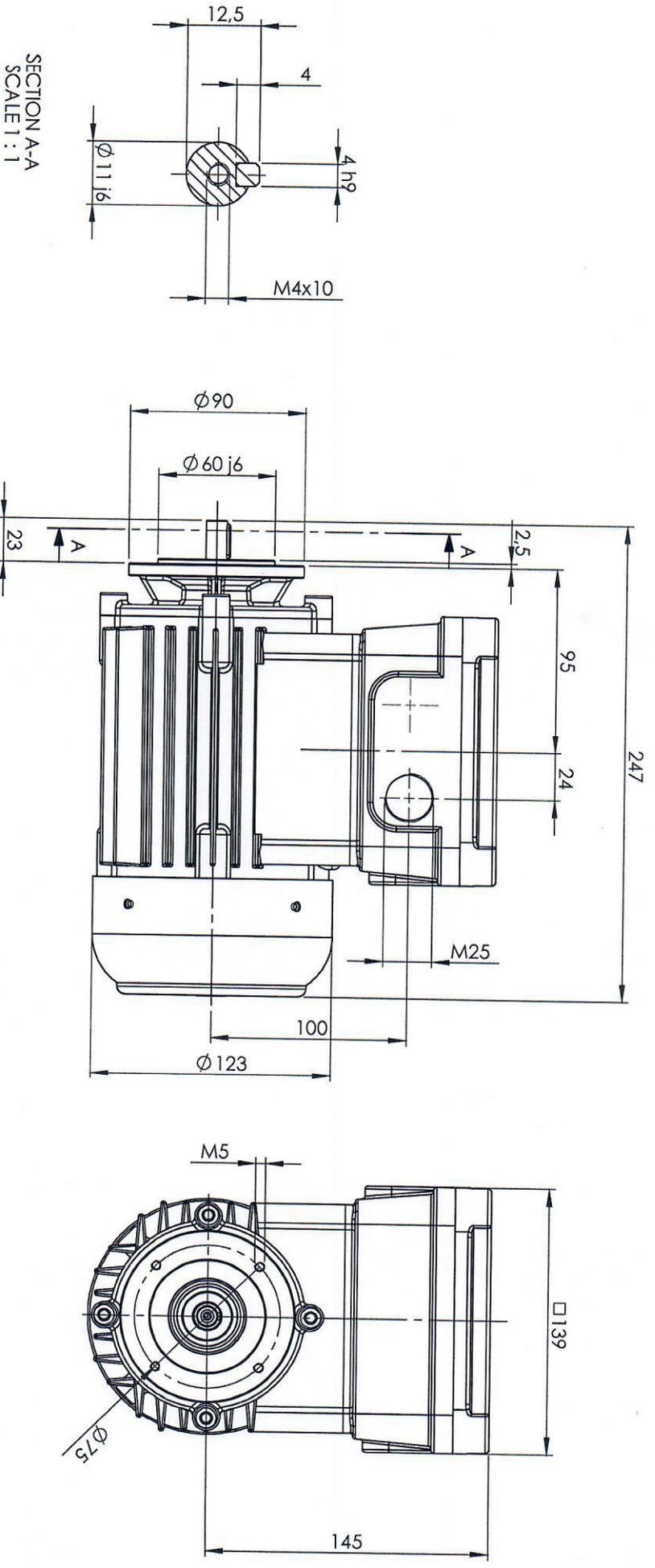
58			
59			
60			
61			
62			

Kabeleinführungen und Anstrichsystem / Cable entry and painting			
63	Kabeleinführungsgewinde / Cable entry	IEC 60423	1xM25 + 1xM20
64	Anstrichfolge / Painting cycle		STD
65	Decklack / Final colour	RAL	5010

66			
67			
68			
69			
70			
71			

Zubehör - Auxiliaries			
72	Temperaturfühler / Temperature detect.	winding	PTC
73	Temperaturfühler / Temperature detect.	bearing	-
74	Stillstandsheizung / Heaters	V / W	-
75	SPM-Nippel / SPM sensor		-
76	Kabelverschraubungen / Cable glands		NO
77			

Vorläufiges Datenblatt - Änderungen vorbehalten - Preliminary data sheet



Viti: 1 nella scatola morsetti, 1 sulla carcassa.
Screws: 1 in the terminal box, 1 on the frame.

Customer reference and additional information:

N.B.
Dimensions in mm, according to IEC 60072
Tolerances where not differently marked $\pm 2\text{mm}$.
* Tolerances $\pm 0,8$

Dimensions in mm
Tolerances allowed

Frame size: 63

Document N.B5A048060001C01 - Date 28/11/2008

Rev.

0

Motor type and description

CERTIFICATE

CERTIFICAT ◆ CERTIFICADO ◆ CERTIFIKAT ◆ CERTIFICATE ◆ ZERTIFIKAT ◆ 認 証 証 書

[1] **EU-TYPE EXAMINATION CERTIFICATE**

[2] **Equipment or Protective System intended for use in potentially explosive atmospheres Directive 2014/34/EU**

[3] EU-Type Examination Certificate number:

TÜV IT 14 ATEX 050 X Rev.4

[4] Equipment or Protective System: single and 3 phase asynchronous electric motors and brake motors series AC..r, DC/HC..r, size 65÷315L

[5] Manufacturer: Cemp S.r.l.

[6] Address: Via Piemonte, 16
I-20030 Senago (MI) - ITALY

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] TÜV Italia, notified body no. 0948 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive

The examination and test results are recorded in confidential report no. R 14 EX 044

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN60079-0:2012/A11:2013; EN60079-1:2007; EN60079-7:2007; EN60079-31:2014

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:



II 2G Ex d IIC T6...T3 Gb	Tamb: -50°C ÷ +60°C
II 2G Ex d e IIC T6...T3 Gb	Tamb: -50°C ÷ +60°C
II 2D Ex tb IIIC (or IIIB) T85°C...T150°C Db	Tamb: -50°C ÷ +60°C

This certificate may only be reproduced in its entirety and without any change, schedule included.

Issue date: 21st July 2017



SGQ N° 049A SSI N° 005G PRD N° 081B
SGAN° 018D ITX N° 001L ISP N° 051E
SCR N° 009F PRS N° 077C LAB N° 0076

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements



TÜV Italia S.r.l.
Notified Body N° 0948

Paolo Marcone
Paolo Marcone

Industry Service - Real Estate & Infrastructure
Managing Director

Translation

(1) 4th Supplement to the EC-Type Examination Certificate

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC Supplement accordant with Annex III number 6
- (3) No. of EC-Type Examination Certificate: **DMT 03 ATEX E 048**
- (4) Equipment: **Proximity switch type *AS-*0-***-***-***-*****
- (5) Manufacturer: **Rechner Industrie-Elektronik GmbH**
- (6) Address: **Gaußstr. 8-16, 68623 Lampertheim, Germany**
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.
- (8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the Test and Assessment Report BVS PP 03.2027 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2012 + A11:2013 General requirements
EN 60079-11:2012 Intrinsic safety "i"
EN 60079-26:2007 Equipment with equipment protection level (EPL) Ga

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.
- (11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:



II 1G Ex ia IIC T1 – T6 Ga
II 1D Ex ia IIIC T 101°C Da

additionally, for type *AS-*0-***-***-***-StEX

DEKRA EXAM GmbH
Bochum, dated 2015-12-09

Signed: Simanski

Signed: Dr. Wittler

Certification body

Special services unit