

Piston Pumps with Reservoir

1-0107-2-US

- for grease up to NLGI grade 2
- with electric drives
- for progressive and multiline systems



KFA1 / KFA10



KFG1-5-W2-M



KFGS30-5

Because of their delivery rates and reservoir capacities these grease pump units are designed to supply small- and medium-size systems. They come with 2 or 3 pump outlet ports.

The possible operating voltages are 90 to 264 V AC, 47 to 440 Hz, or 12 or 24 V DC.

Safety elements like pressure-limiting valves, overpressure indicators or rupture discs must be provided for in order to protect the pump unit from overloads. Information on this point can also be found in leaflet 1-0107-6-US, page 3 "Accessories".

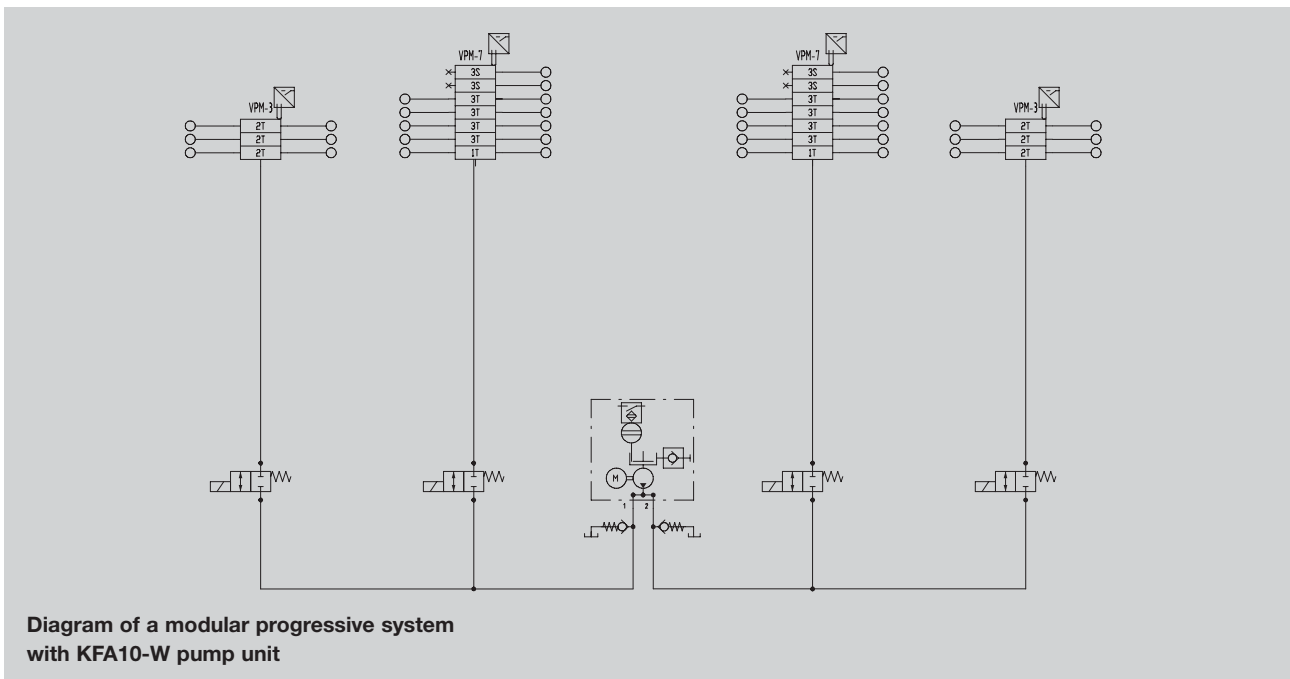


Diagram of a modular progressive system with KFA10-W pump unit

Piston pumps with reservoir – Models KFA1-M (-W) / KFA10 (-W)



The pump can be outfitted with a maximum of two pump elements.

Versions for various operating voltage are available.

With lubricant-level switch		
Order No.	Order No.	Operating voltage
KFA1-M	KFA1-M-W	24 V DC
KFA10	KFA10-W	115 V AC, 50 or 60 Hz
		230 V AC, 50 or 60 Hz

Pump elements

Order No.	Delivery rate ¹⁾ [cm ³ /min]	Connection thread
KFA1.U1	2	M14x1.5
KFA1.U2	1.5	
KFA1.U3	1	

¹⁾ The indicated delivery rates refer to the delivery of NLGI grade 2 grease at a temperature of +20 °C and a back pressure of 50 bars. Temperatures and pressures that deviate therefrom will change the delivery rate. Take the indicated values as a basis when configuring a centralized lubrication system.

Pressure-limiting valves

Order No.	Opening pressure [bars]	Connection thread	Connection for tube diam.
161-210-012	300 ±20	M14x1.5	6
161-210-016			10

Please indicate in addition to the order No.: operating voltage, quantity and order No. of pump elements with pressure-limiting valve.

Order example

KFA1-M-W, 24 V DC

outfitted with pump element

outlet 1 – KFA1.U1

outlet 2 – KFA1.U3

and 2 pressure-limiting valves 161-210-012

Technical data

Unit

Model KFA1-M

Operating voltage 24 V DC

Typ. power consumption 0.5 A at 24 V
at max. operating pressure and 20° C

Max. back pressure 300 bars

Mode/ON time S3 – 20 % – 50 minutes

Perm. operating temperature . . . –25 °C to +75 °C

Model KFA10

Operating voltage 115 V AC, 50 or 60 Hz

230 V AC, 50 or 60 Hz

Typ. power consumption 1 A at 115 V / 50 Hz

at max. operating pressure and 20 °C 1.3 A at 115 V / 60 Hz

0.45 A at 230 V / 50 Hz

0.66 A at 230 V / 60 Hz

Max. back pressure 300 bars

Mode/ON time S3 – 10 % – 50 minutes

Perm. operating temperature . . . 0 °C to +40 °C

Models KFA1-M and KFA10

Type of enclosure, DIN EN 60529 IP 55

Reservoir capacity 1 kg

Number of outlet ports max. 2 (1.1 and 1.2)

Lubricant grease up to NLGI grade 2

with EP additives,

max. flow pressure 700 mbars

Please note: only use grease that has been approved by Willy Vogel AG.

Approved lubricants list “Lubricants for Progressive Systems, NLGI grade 2”, see “www.vogelag.com” or please request from “info@vogel-berlin.de”.

Lubricant-level switch

Type of contact 1 changeover

Max. rated voltage 24 V DC

Max. switching current 0.5 A

Socket box M12x1 (4-PIN)

Notice:

The installation's ambient surroundings and cable connections have a decisive influence on the unit's electromagnetic compatibility. During the installation it is therefore necessary to assure the EMC of the entire system.

Applicable protection measures for operation:

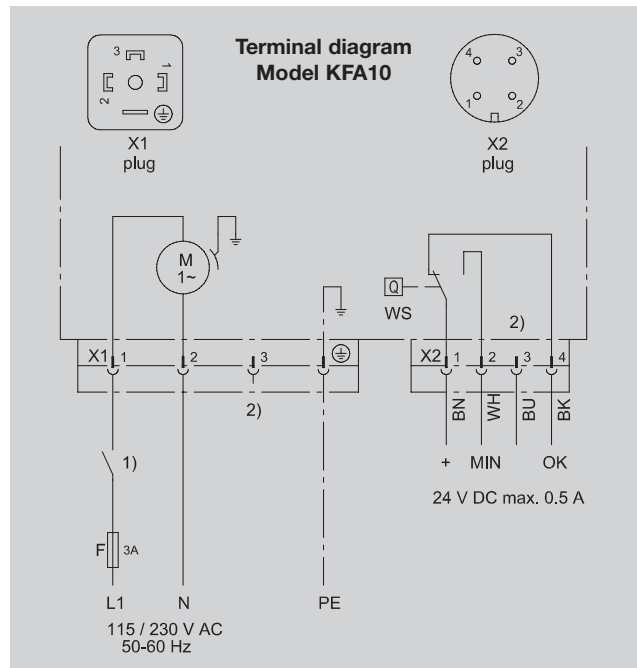
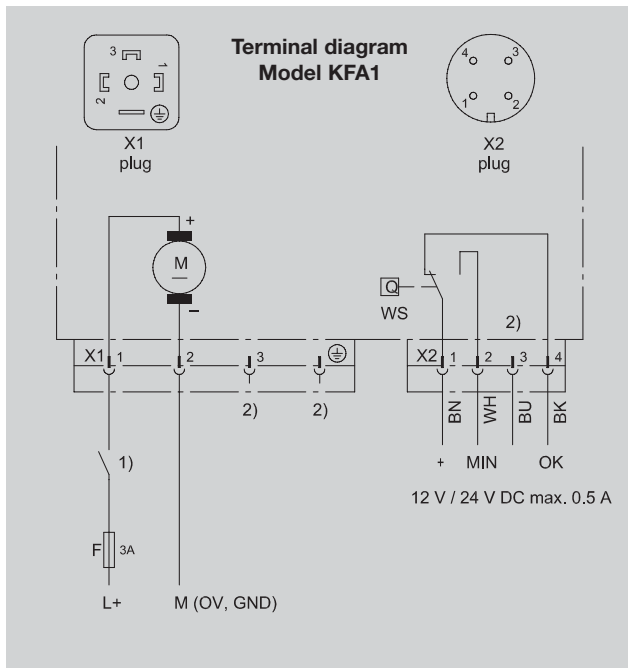
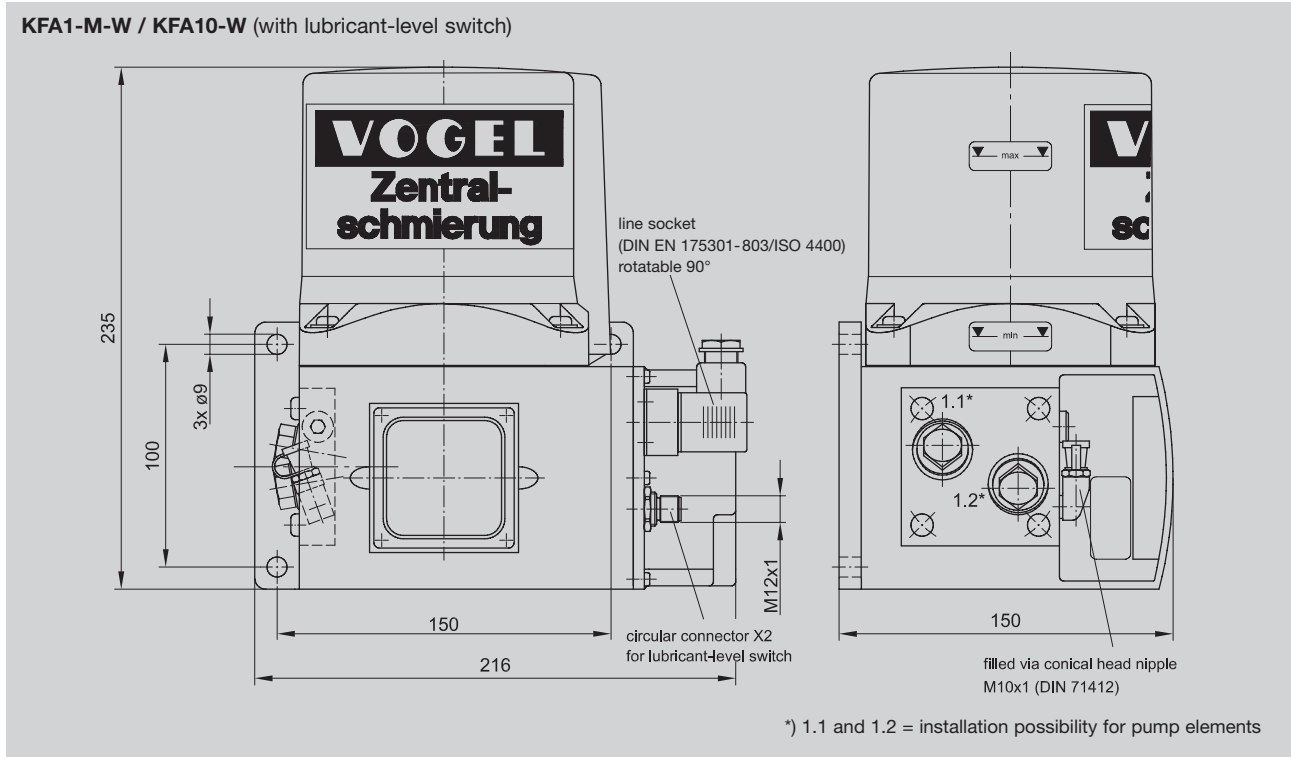
– “Protective Extra Low Voltage” (PELV)

Standards: IEC 60204-1

IEC 60364-4-41

– The unit has to be disconnected for insulation and voltage tests to EN 60204-1:1992.

Operating instructions for KFA and KFAS piston pumps: 951-130-185



Legend, model KFA1

- L+** +potential, supply voltage (main machine switch ON)
- M** -potential, supply voltage (OV, GND)
- X1** plug-in connection, supply voltage
- X2** plug-in connection, lubricant-level switch
- WS** lubricant-level switch contact illustration: full reservoir
- F** fuse (line protection)
- 1)** external control system: relay contact "pump ON"
- 2)** PIN without internal connection

Applicable protection measures for operation:

"Protective Extra Low Voltage" (PELV)
 Standards: IEC 60204-1
 IEC 60364-4-41

X2 PIN	Color code abbreviations	Core color
1	BN	brown
2	WH	white
3	BU	blue
4	BK	black

Legend, model KFA10

- L1/N** supply voltage (main machine switch ON)
- PE** protective earth conductor
- X1** plug-in connection, supply voltage
- X2** plug-in connection, lubricant-level switch
- WS** lubricant-level switch contact illustration: full reservoir
- F** fuse (line protection)
- 1)** external control system: relay contact "pump ON"
- 2)** PIN without internal connection

Piston pumps with reservoir – Models KFG1-5(W2-M) / KFG3-5(W2-M)



Technical data

Motor

Operating voltage 12 V DC / 24 V DC

Fuse 5 A / 3 A

Unit

Max. back pressure 300 bars

Perm. operating temperature . . . -25 °C to +75 °C

Type of enclosure DIN EN 60529 . IP 55

Reservoir capacity 2 or 6 kg

Reservoir material PA6i (2 kg reservoir)

. PMMI (6 kg reservoir)

Number of outlet ports max. 3 (1.1, 1.2 and 1.3)

(If less than 3 outlet ports are needed, screw plugs are used in place of pump elements.)

Lubricant grease up to NLGI grade 2

compatible with: plastics, NBR elastomers, copper and copper alloys.

Max. flow pressure 700 mbars

Please note: only use grease that has been approved by Willy Vogel AG.

Approved lubricants list “Lubricants for Progressive Systems, NLGI grade 2”, see “www.vogelag.com” or please request from “info@vogel-berlin.de”.

Lubricant-level switch

Function:

Switch opens when lubricant drops to critical level.

Fault also signaled in the event of a wire break.

Operating voltage 10 to 30 V DC

Switching frequency 100 Hz

Continuous current ≤ 200 mA

Natural current consumption . . . 6 to 12 mA

Voltage drop ≤ 1.8 V at I_{continuous}

EC directives EN 60947-5-2

Notice:

The installation's ambient surroundings and cable connections have a decisive influence on the unit's electromagnetic compatibility. During the installation it is therefore necessary to assure the EMC of the entire system.

Applicable protection measures for operation:

– “Protective Extra Low Voltage” (PELV)

Standards: IEC 60204-1

IEC 60364-4-41

– The unit has to be disconnected for insulation and voltage

tests to EN 60204-1:1992.

Order No.	With lubricant-level switch Order No.	Reservoir capacity [kg]
KFG1-5	KFG1-5W2-M	2
KFG3-5	KFG3-5W2-M	6

Please indicate in addition to the order No.: operating voltage, quantity and order No. of pump elements (max. 3) with pressure-limiting valve.

Order example

KFG1-5W2, 24 V DC

outfitted with pump element

KFG1.U1 (left 1.1)

KFG1.U2 (middle 1.2)

KFG1.U3 (right 1.3)

and 3 pressure-limiting valves 161-210-012

Pump elements

Order No.	Delivery rate ¹⁾ [cm ³ /min]	Connection thread
KFG1.U0	6	
KFG1.U1	2.5	
KFG1.U2	1.8	M14x1.5
KFG1.U3	1.3	
KFG1.U4	0.8	

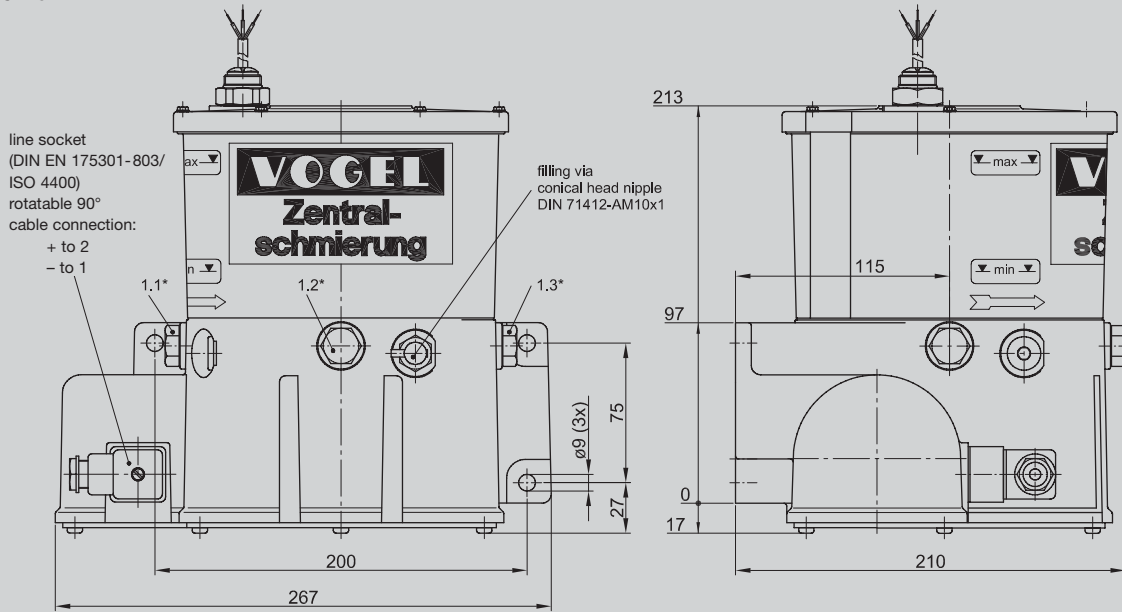
¹⁾ The indicated delivery rates refer to the delivery of NLGI grade 2 grease at a temperature of +20 °C and a back pressure of 50 bars. Temperatures and pressures that deviate therefrom will change the delivery rate. Take the indicated values as a basis when configuring a centralized lubrication system.

Pressure-limiting valves

Order No.	Opening pressure [bars]	Connection thread	Connection for tube diam.
161-210-012	300 ±20	M14x1.5	6
161-210-016			10

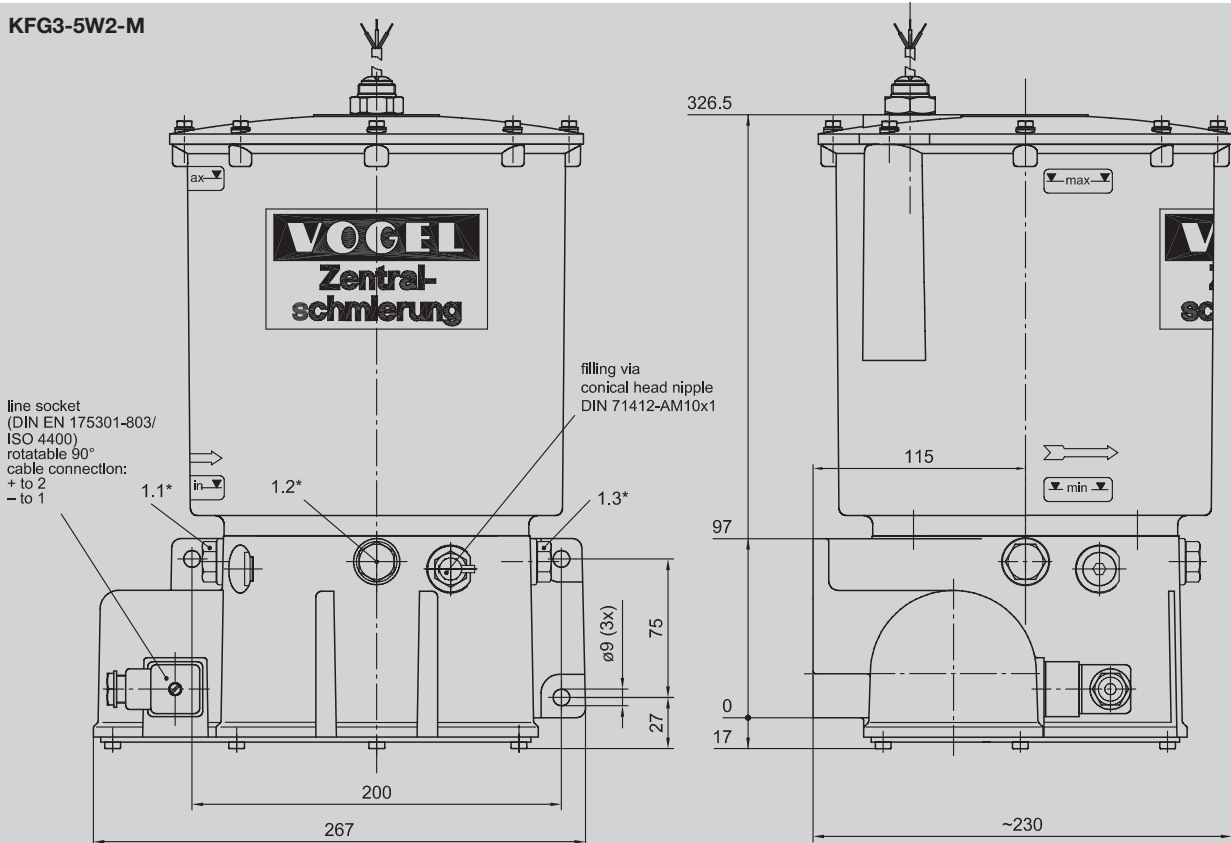
Operating instructions for KFG and KFGS piston pumps: 951-130-184

KFG1-5W2-M



*) 1.1 to 1.3 = installation possibility for pump elements

KFG3-5W2-M

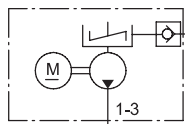


*) 1.1 to 1.3 = installation possibility for pump elements

Dimensions in mm

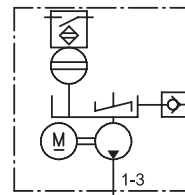
Hydraulic layout

(without lubricant-level monitoring)



Hydraulic layout

(with lubricant-level monitoring)



Piston pumps with reservoir, integral control unit – Models KFGS1-5(W2) / KFGS3-5(W2)



KFGS1-5

Technical data

Motor see page 4
Unit see page 4
Lubricant see page 4

Integral IG502-I control unit

Modes and parameters
 Interval, adjustable 0.1...99.9 h
 Contact, adjustable 0.1...99.9 min or 1...999 pulses
 (pump running time)
 Elapsed-hours counter 0.1...99999.9 h non-erasable
 Fault-hours counter 0.1...99999.9 h non-erasable
 Monitoring, adjustable
 with cycle switch (CS) or without monitoring (OFF)
 Basic factory setting: timer mode
 Pump running time tCO = 4 min
 Interval time tPA = 1 h
 Monitoring COP = OFF

Notice:

The installation's ambient surroundings and cable connections have a decisive influence on the unit's electromagnetic compatibility. During the installation it is therefore necessary to assure the EMC of the entire system.

Applicable protection measures for operation:

- "Protective Extra Low Voltage" (PELV)
 Standards: IEC 60204-1
 IEC 60364-4-41
- The unit has to be disconnected for insulation and voltage tests to EN 60204-1:1992.

Operating instructions for KFG and KFGS piston pumps: 951-130-184

Order No.	with lubricant-level switch Order No.	Reservoir capacity [kg]
KFGS1-5	KFGS1-5W2	2
KFGS3-5	KFGS3-5W2	6

Please indicate in addition to order No.: operating voltage, quantity and order No. of pump elements (max. 3) with pressure-limiting valve.

Order example

KFGS1-5W2, 24 V DC
 outfitted with pump element
 1 KFG1.U1 (left 1.1)
 1 KFG1.U2 (middle 1.2)
 1 KFG1.U3 (right 1.3)
 and 3 pressure-limiting valves 161-210-012

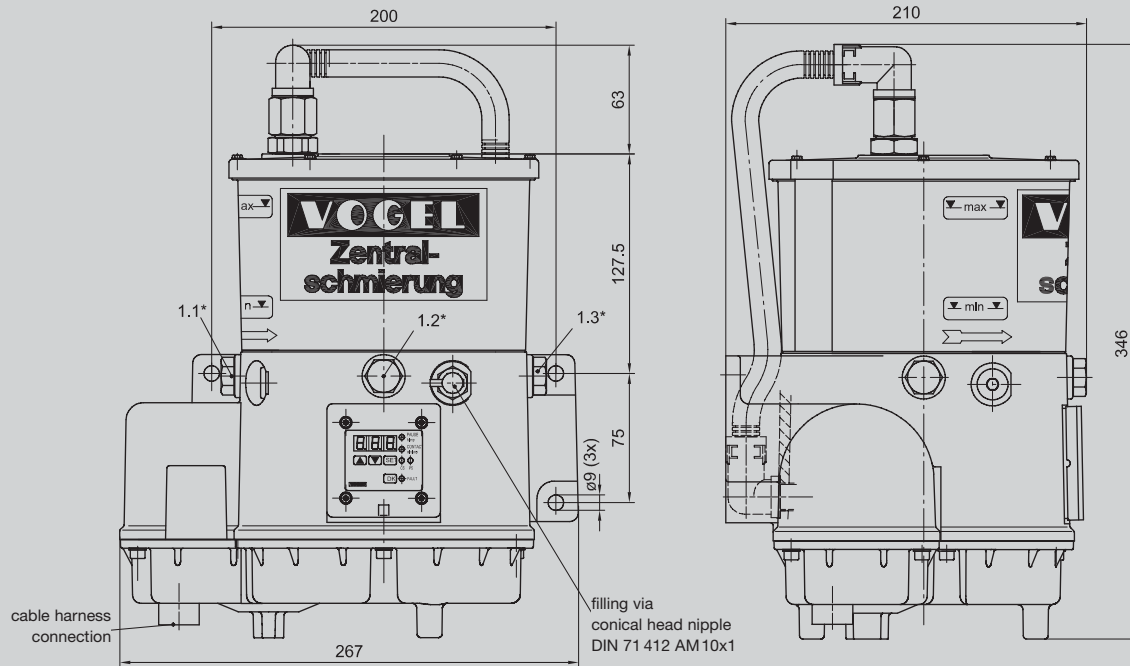
Pump elements and pressure-limiting valves

see page 4

Cable harness, order No. 997-000-630,

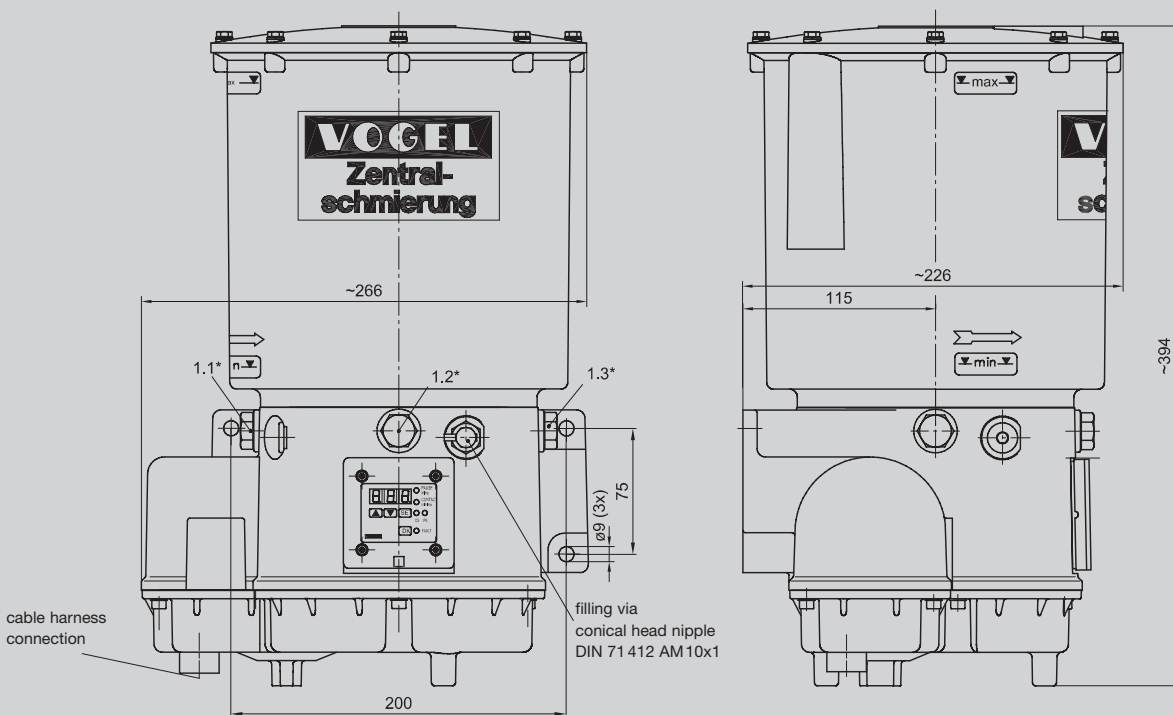
not included in scope of delivery and has to be ordered separately.

KFGS1-5W2



*) 1.1 to 1.3 = installation possibility for pump elements

KFGS3-5



*) 1.1 to 1.3 = installation possibility for pump elements

Dimensions in mm

Hydraulic layout see page 5

Piston pumps with reservoir, integral power pack – Models KFG10-5(W2) / KFG30-5(W2)



Technical data

Unit see page 4
Lubricant see page 4
Lubricant-level switch see page 4

Integral switched-mode power supply

Input

Input voltage 90 - 264 V AC; 47 - 440 Hz
 Input current 1.5 A/115 V; 0.9 A/230 V
 Starting current 40 A/115 V; 20 A/230 V
 Fuse 4 A/250 V

Output

Output voltage 24 V DC ± 2%
 Leakage current < 0.5 mA/240 V AC
 Overload protection yes
 Overvoltage protection yes
 Safety: VDE 085/11.93 / EN 60950 / IEC 950 / UL 1950
 Ausgang PELV (safety separation)
 Safety class 1
 EMC EN 55022 Cl. B, IEC 1000-4-2, 3, 4, 5
 IEC 1000-4-2, 3

Motor mode

-25 °C to +40 °C S1
 +40 °C to +60 °C S2 – 15 minutes or
 S3 – 20% – 30 Minuten

Notice:

The installation's ambient surroundings and cable connections have a decisive influence on the unit's electromagnetic compatibility. During the installation it is therefore necessary to assure the EMC of the entire system.

Operating instructions for KFG and KFGS piston pumps:
 951-130-184

Order No.	with lubricant-level switch Order No.	Reservoir capacity [kg]
KFG10-5	KFG10-5W2	2
KFG30-5	KFG30-5W2	6

Please indicate in addition to order No.:
 operating voltage, quantity and order No. of pump elements
 (max. 3) with pressure-limiting valve.

Order example

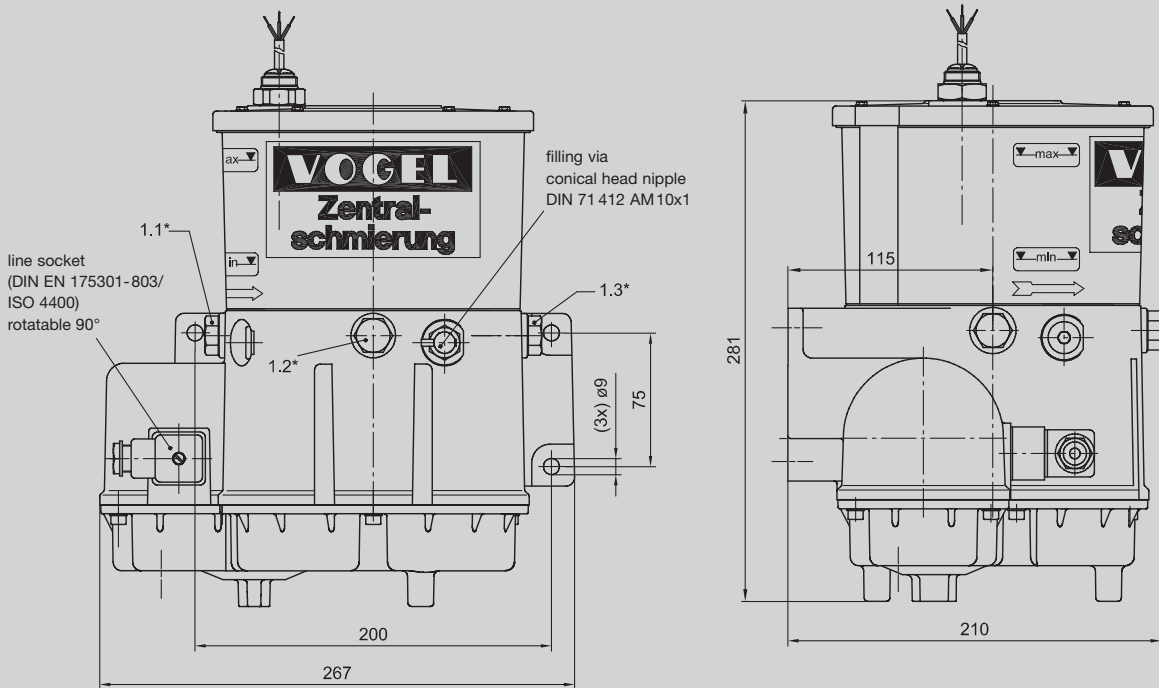
KFG10-5W2

outfitted with pump element
 KFG1.U1 (left 1.1)
 KFG1.U2 (middle 1.2)
 KFG1.U3 (right 1.3)
 and 3 pressure-limiting valves 161-210-012

Pump elements and pressure-limiting valves

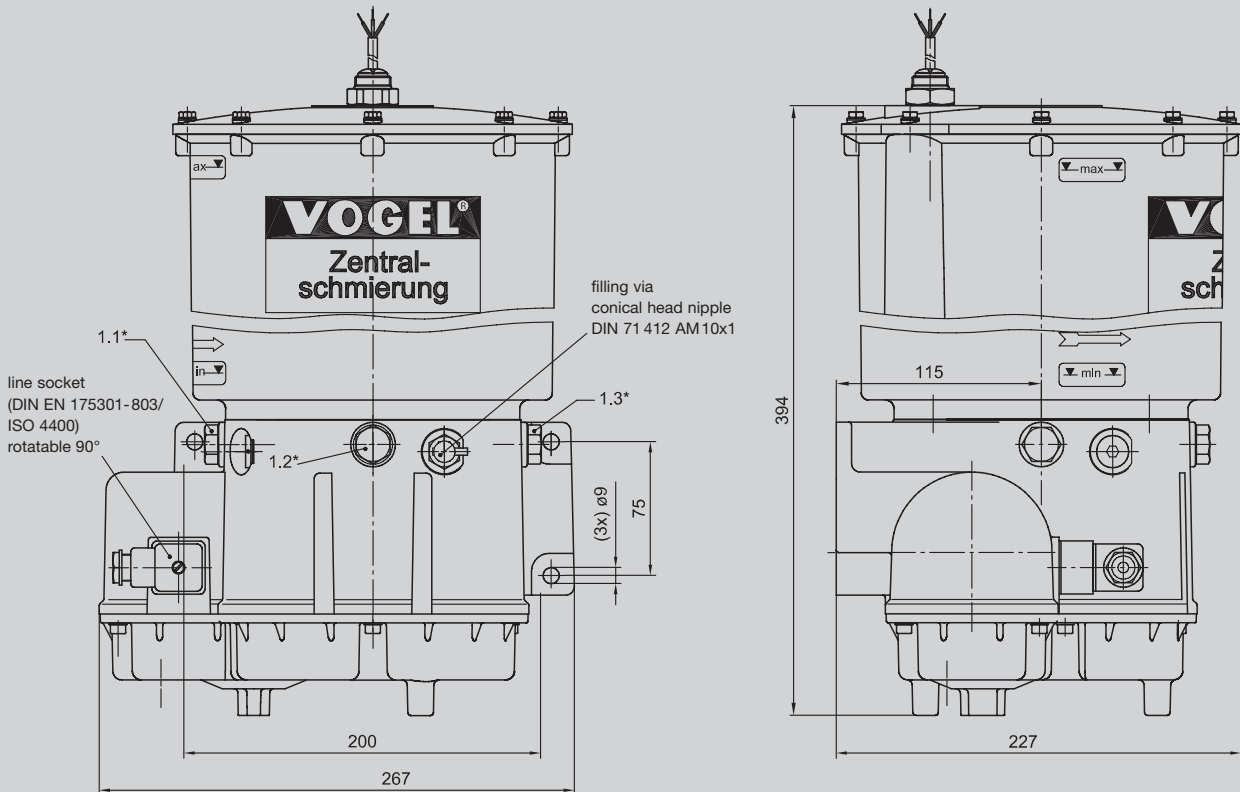
see page 4

KFG10-5W2



*) 1.1 to 1.3 = installation possibility for pump elements

KFG30-5W2



*) 1.1 to 1.3 = installation possibility for pump elements

Dimensions in mm

Hydraulic layout see page 5

Piston pumps with reservoir, integral power pack and control unit – Models KFGS10-5(W1) / KFGS30-5(W1)



Technical data

- Unit** see page 4
- Lubricant** see page 4
- Lubricant-level monitoring**
 Type: reed contact
 Function: The unit switches off when the critical lubricant level is reached, a fault is shown on the display (FLL).
- Integral switched-mode power supply** see page 8
- Motor mode** see page 8
- Integral IG502-I control unit** see page 6

Notice:

The installation's ambient surroundings and cable connections have a decisive influence on the unit's electromagnetic compatibility. During the installation it is therefore necessary to assure the EMC of the entire system.

Operating instructions for KFG and KFGS piston pumps: 951-130-184

Order No.	with lubricant-level switch Order No.	Reservoir capacity [kg]
KFGS10-5	KFGS10-5W1	2
KFGS30-5	KFGS30-5W1	6

Please indicate in addition to order No.:
 operating voltage, quantity and order No. of pump elements (max. 3) with pressure-limiting valve.

Order example

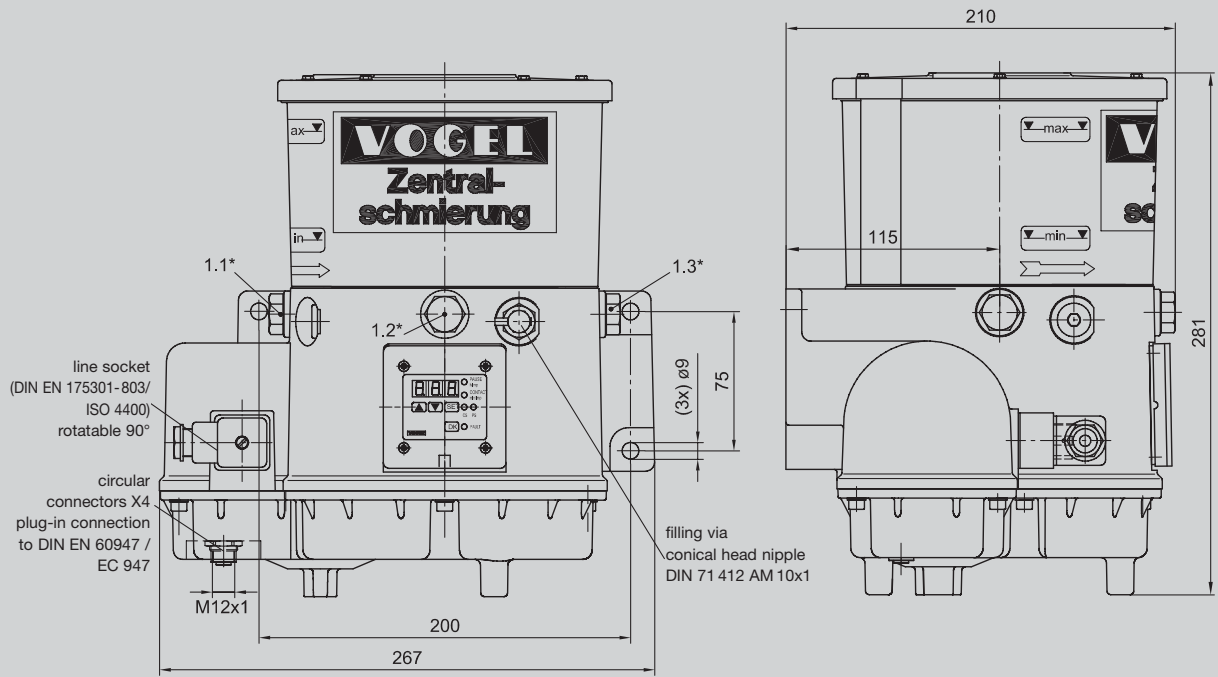
KFGS10-5W1

- outfitted with pump element
- 1 KFG1.U1 (left 1.1)
- 1 KFG1.U2 (middle 1.2)
- 1 KFG1.U3 (right 1.3)
- and 3 pressure-limiting valves 161-210-012

Pump elements and pressure-limiting valves

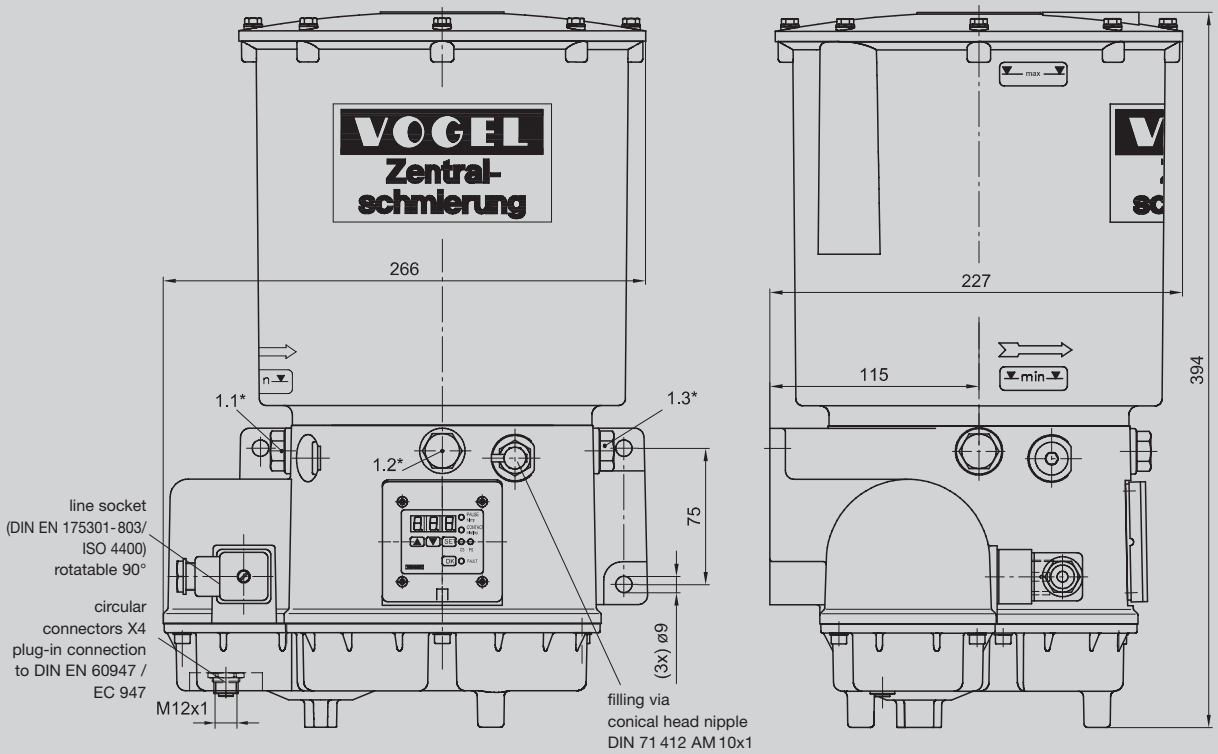
see page 4

KFGS10-5W1



*) 1.1 to 1.3 = installation possibility for pump elements

KFGS30-5W1



*) 1.1 to 1.3 = installation possibility for pump elements

Dimensions in mm

Hydraulic layout see page 5

Leaflet information

1-0107-1-US Progressive Feeders
 1-0107-4-US Grease Pump Units (models PF, PFP, PFH)
 1-4002-1-US Motor Pump Unit GSJB
 DSK 2-008-00-US Grease Pump Unit FF
 DSK 2-005-00-US Grease Pump Unit FB
 1-0107-5-US Piston Pumps (Typ PPU, PHU)
 1-0107-6-US Accessories for Progressive Systems

Notice!

All products from VOGEL may be used only for their intended purpose. If operating instructions are supplied together with the products, the provisions and information therein of specific relevance to the equipment must be observed as well.

In particular, we call your attention to the fact that hazardous materials of any kind, especially the materials classified as hazardous by EC Directive 67/548/EEC, Article 2, Par. 2, may only be filled into VOGEL centralized lubrication systems and components and delivered and/or distributed with the same after consultation with and written approval from VOGEL.

All products manufactured by VOGEL are not approved for use in conjunction with gases, liquefied gases, pressurized gases in solution and fluids with a vapor pressure exceeding normal atmospheric pressure (1013 mbars) by more than 0.5 bar at their maximum permissible temperature.



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