

# Compact Units for Grease

1-0016-US

NLGI Grade 000, 00  
Group MKF – 0.1 or 0.2 l/min



MKF1-KW2-10...



MKF2-K3-20...



MKF2-K3-22...



MKF2-KW6-22...

These **MKF** compact units were developed to supply intermittently operated single-line central lubrication systems with lubricant. The basic model contains a gear pump with drive motor as well as the set of valves required for pressure relief and limitation (safety valve). The lubricant reservoir material is plastic.

The units are controlled depending on their design

- by hand (unit with pushbutton DK),
- by an external control system
- by a built-in electronic control and monitoring unit timer or counter with adjustable interval and monitoring time.

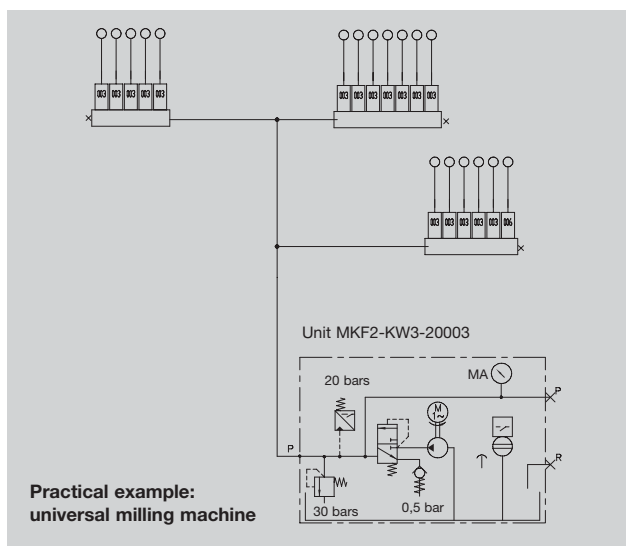
The control and monitoring unit is either a **timer for time-dependent control** or a **counter for load-dependent control**.

Special features:

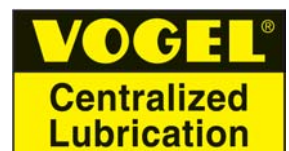
- preliminary lubrication (lubrication after the supply voltage is turned on)
- pump delay time
- pressure dependent cut-off
- monitoring of pressure build-up
- monitoring of pump running time

Possible monitoring elements:

- **Pressure switch (DS)**  
monitors the automatic pressure build-up.
- **Level indicator (WS)**
- **Pressure gauge (MA)**  
displays the pressure response in the main line.
- **Monitoring contact (d2)**  
turns off machine if pressure fails to build up.
- **Indicator light, green (SL1)**  
shows that pump is running
- **Indicator light, red (SL2)**  
indicates a fault if pressure fails to build up or if there is a low level of lubricant in the reservoir (only with built-in level indicator).



[www.vogelag.com](http://www.vogelag.com)



Order No.	Delivery rate [l/min]	Reservoir capacity [l]	manual/ external	Control		Components				Hydraulic layout	Wiring diagram	Drawing
				IG38-3	IZ38-3	DK	DS	WS	MA			
<b>MKF1-K2-10000</b>	0.1	1.8	external							1	1	1
<b>MKF1-K2-10001</b>	0.1	1.8	external				●			1	1	1
<b>MKF1-K2-10003</b>	0.1	1.8	external						●	1	1	1
<b>MKF1-KW2-10000</b>	0.1	1.8	external					●		1	1	1
<b>MKF1-KW2-10001</b>	0.1	1.8	external				●	●		1	1	1
<b>MKF1-KW2-10003</b>	0.1	1.8	external					●	●	1	1	1
<b>MKF1-KW2-10004</b>	0.1	1.8	external				●	●	●	1	1	1
<b>MKF2-K3-22005</b>	0.2	3		●		●	●			2	3	3
<b>MKF2-K3-22015</b>	0.2	3			●	●	●			2	3	3
<b>MKF2-K3-22016</b>	0.2	3			●	●	●		●	2	3	3
<b>MKF2-KW3-20001</b>	0.2	3	●			●	●	●		2	2	2
<b>MKF2-KW3-20003</b>	0.2	3	●			●	●	●	●	2	2	2
<b>MKF2-KW3-20004</b>	0.2	3	●			●		●	●	2	2	2
<b>MKF2-KW3-20005</b>	0.2	3	●			●		●		2	2	2
<b>MKF2-KW3-22003</b>	0.2	3		●		●	●	●	●	2	3	3
<b>MKF2-KW3-22013</b>	0.2	3			●	●	●	●	●	2	3	3
<b>MKF2-KW6-20003</b>	0.2	6	●			●	●	●	●	2	2	4
<b>MKF2-KW6-22001</b>	0.2	6		●		●	●	●		2	3	5
<b>MKF2-KW6-22003</b>	0.2	6		●		●	●	●	●	2	3	5

**Reservoir material: plastic**

● = components contained in the unit. **DK** = pushbutton / **DS** = pressure switch / **WS** = level indicator / **MA** = pressure gauge

**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 central 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.

See operating instruction 951-130-172.

**Technical data**

**Gear pump unit**

Flow rate at 50 Hz . . . . . 0.1 or 0.2 l/min  
 at 60 Hz . . . . . 0.12 or 0.24 l/min  
 at a back pressure of p = 5 bars  
 Operating pressure . . . . . 30 ±½ bars  
 corresponds to actual value of built-in safety valve  
 Operating temperature. . . . . +10 to +40 °C  
 Reservoir capacity . . . . . nominal 1.8, 3 or 6 l  
 Reservoir material . . . . . plastic  
 Type of enclosure. . . . . IP 54  
 Frequency/voltage . . . . . 50/60 Hz, 115 V AC or  
 50/60 Hz, 230 V AC  
 please indicate when ordering

**Medium** . . . . . grease, NLGI grade 000, 00  
 compatible with . . . . . plastics, NBR elastomers,  
 copper, copper alloys

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

Approved lubricants list see “www.vogelag.com” or  
 please request from “,info@vogel-berlin.de”.

**Motor with built-in thermostatic switch**

Mode of operation . . . . . S3, 20% (1.25 to 25 min)  
 duty cycle 1)  
 Power consumption approx. . . . . 50 Hz: 115 W; 60 Hz: 140 W  
 Speed . . . . . 50 Hz: 2700 rpm;  
 60 Hz: 3300 rpm

**Level indicator**

Function . . . . . opens in event of  
 low lubricant (PNP)  
 Voltage range . . . . . 10...65 V DC  
 Continuous current. . . . . ≤ 200 mA  
 Natural current consumption . . . . . 6...12 mA

**Pressure switch**

Type of contacts. . . . . NO-contact  
 Max. switching voltage . . . . . 42 V AC  
 Max. switching current. . . . . 2.5 A  
 (ohmic load)  
 Max. contact rating . . . . . 30 VA 2)

Switching pressure. . . . . 20 bars

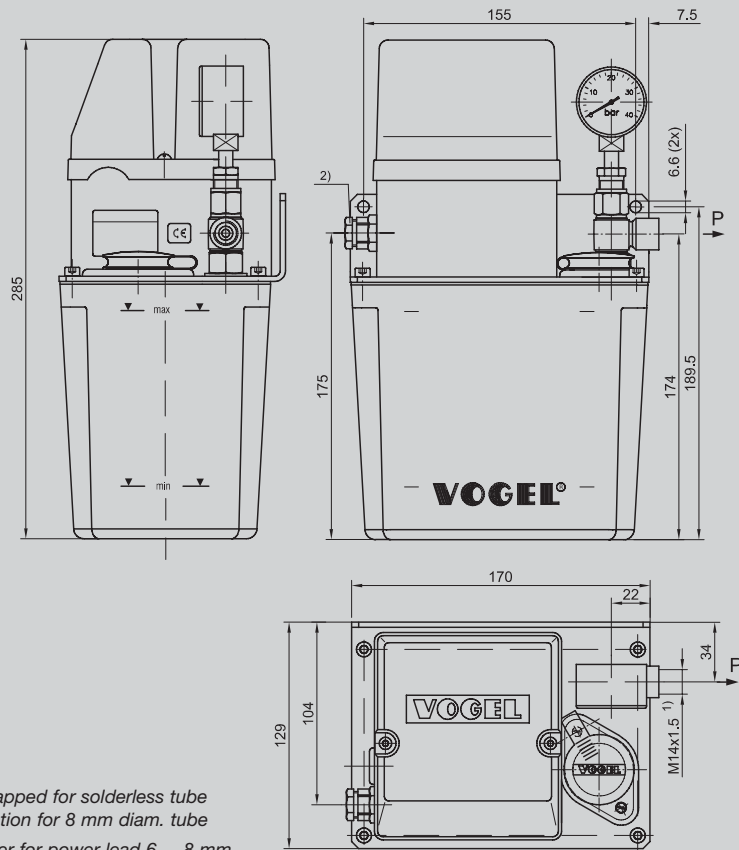
1) The 20% duty cycle is the ratio of the pump running time to the subsequent idle time

**Example:**

1 minute of pump running time requires at least 5 minutes of idle time.  
 The maximum permissible pump running time amounts to 3 minutes.  
 That results in a necessary idle time of 15 minutes.

2) Take appropriate measures to protect contacts when switching inductive loads.

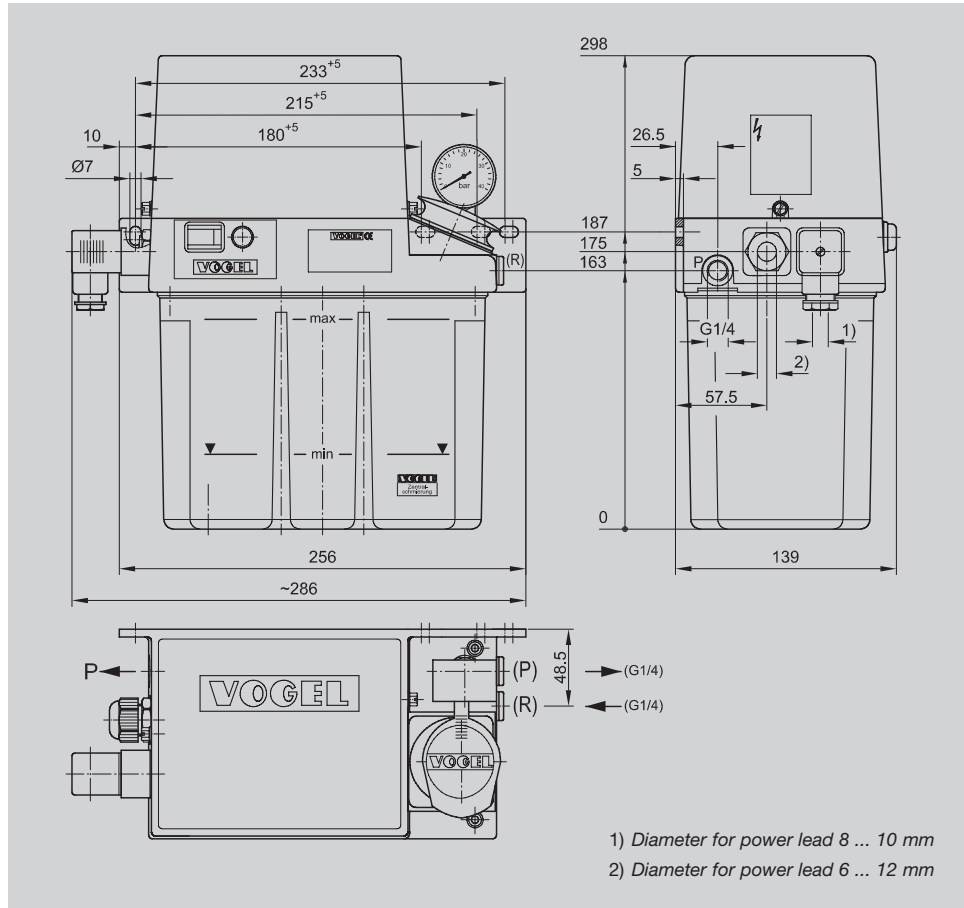
**MKF1-K(W)2-10...**



1) Ports tapped for solderless tube connection for 8 mm diam. tube  
 2) Diameter for power lead 6 ... 8 mm

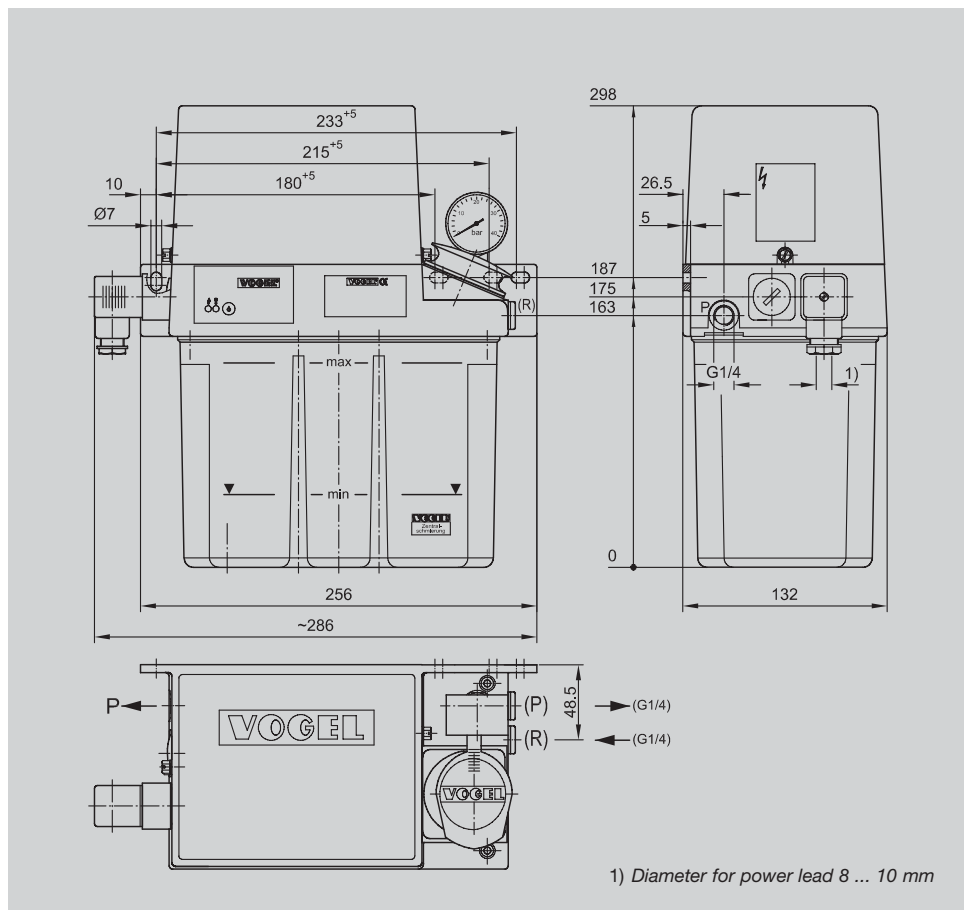
**Drawing 1**

**MKF2-K(W)3-20...**



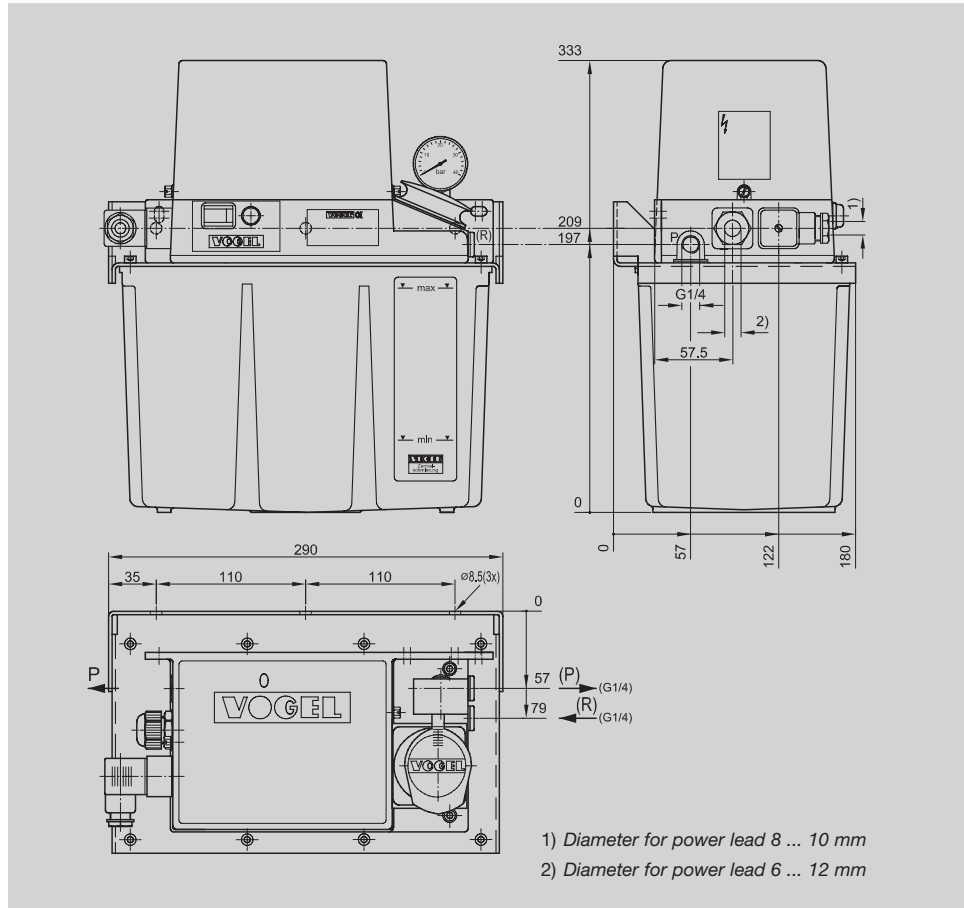
Drawing 2

**MKF2-K(W)3-22...**



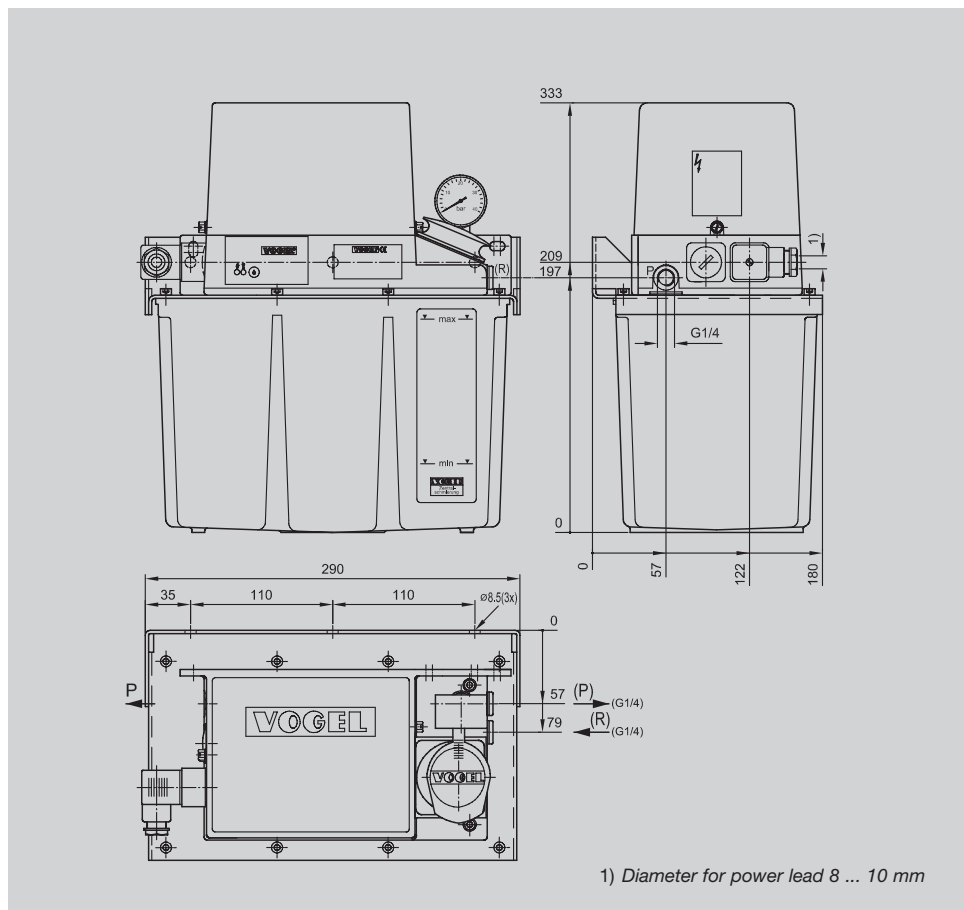
Drawing 3

**MKF2-KW6-20...**



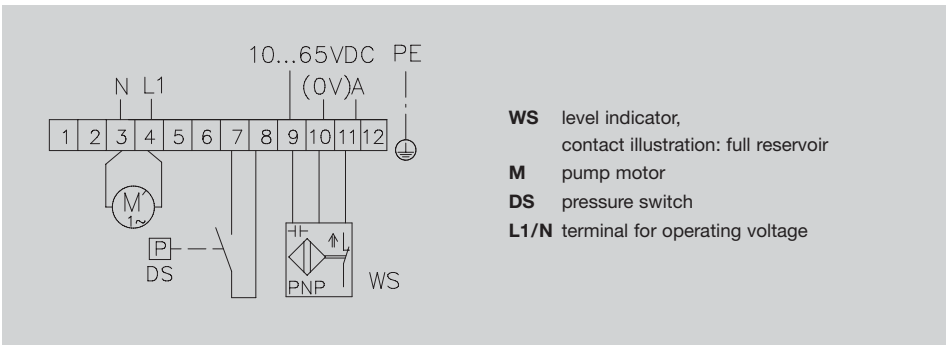
Drawing 4

**MKF2-KW6-22...**

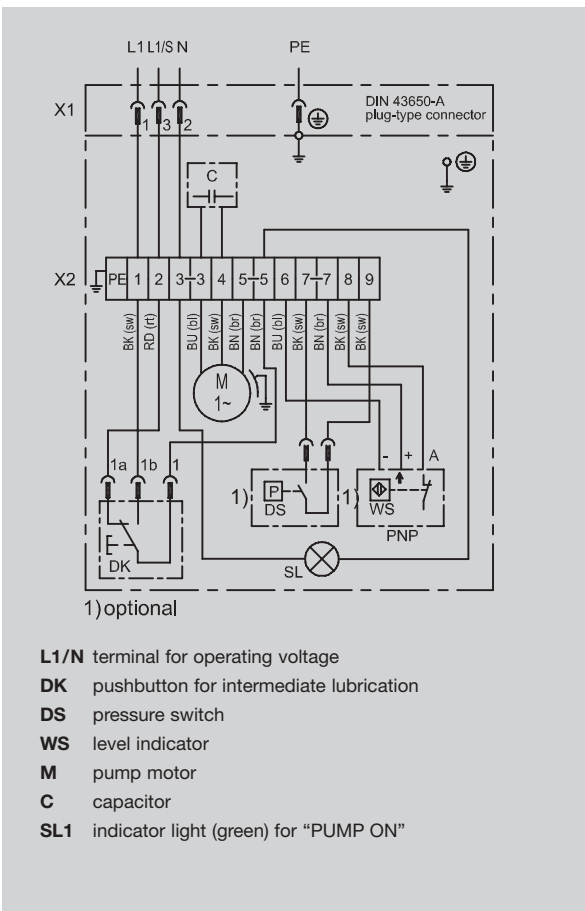


Drawing 5

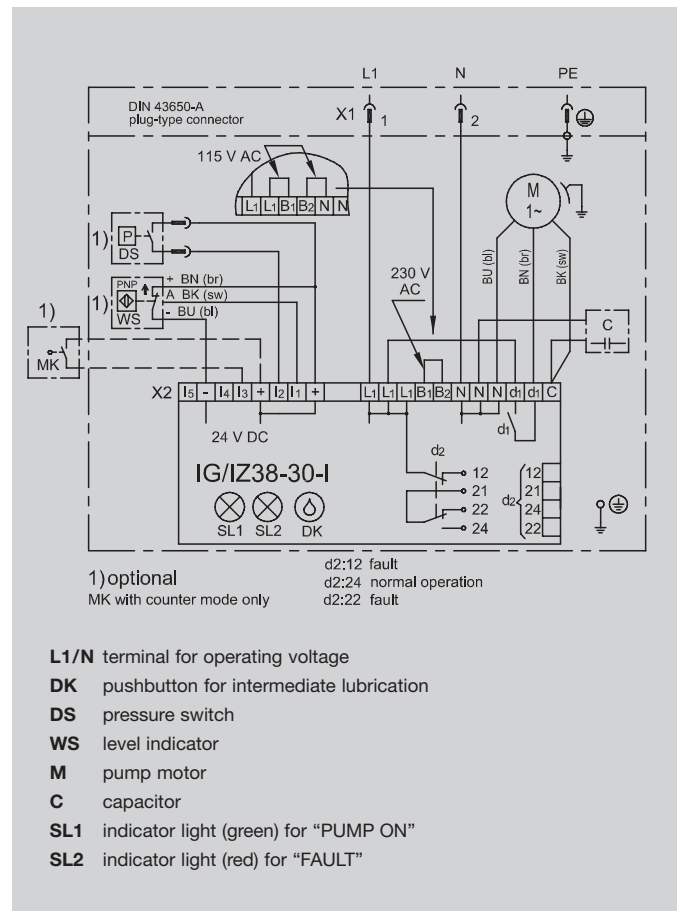
Wiring diagram 1



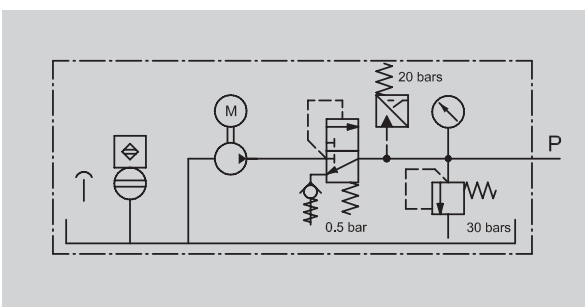
Wiring diagram 2



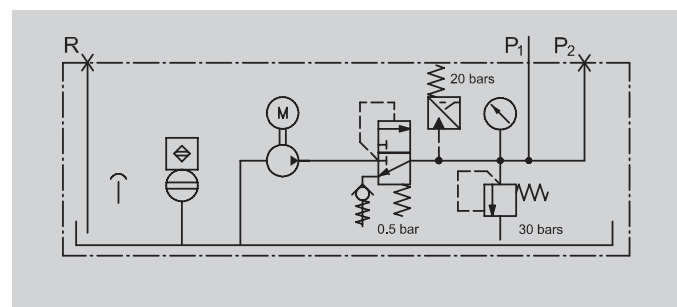
Wiring diagram 3



Hydraulic layout 1



Hydraulic layout 2



## Control unit

The compact units with 3- or 6-liter reservoirs may be equipped with an electronic control unit for intermittently operated single-line central lubrication systems. Optionally with

- **IG38-30-I for time-dependent control**
- **IZ38-30-I for load-dependent control**

### The units conform to the following directives:

Electromagnetic compatibility 89/336/EWG; 91/31/EWG  
Low voltage directive 73/23/EWG; 93/68/EWG

## Functions

- **IG38-30-I: timer** mode (time-dependent)
- **IZ38-30-I: counter** mode (load-dependent)
- Preliminary lubrication (lubrication after the supply voltage is switched on)
- Pump delay time
- Monitoring of pressure build-up
- Monitoring of pump runtime limitation
- Monitoring of lubricant level with wire-break detection (level indicator opens if lubricant level is critical)
- Terminal [-] permits operation with three-wire proximity switch.

## Technical data

Interval duration preselectable in 12 stages:

IG38-30-I (min)	}	1; 2; 4; 8; 16; 32; 64; 128;
IZ38-30-I (pulses)		256; 512; 1024; 2048

Pump delay time, nonadjustable . . . . . 15 s

Pump runtime limitation, nonadjustable . . . . . 60 s

Rated voltage . . . . . 115 or 230 V AC

Rated frequency . . . . . 50/60 Hz

Design . . . . . board-mounted



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