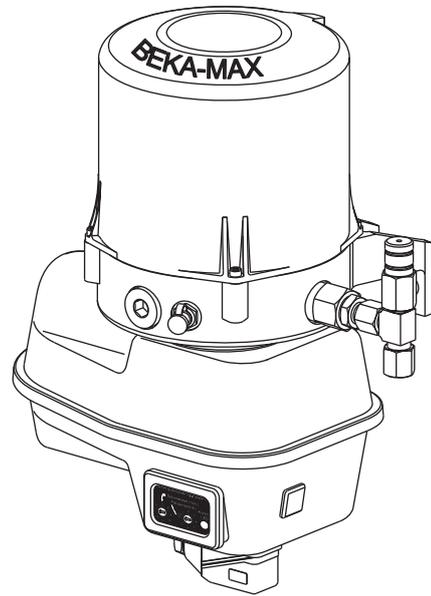


Integrated electric controller S-EP 4

with Hirschmann connector

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EP-1 pump with integrated controller S-EP 4



1. Functional features

The integrated electric controller S-EP 4 is used for the time- or cycle-dependent control of a central lubrication device. This controller can be used for progressive systems (EP-1 pumps) and multi-line systems (OC pumps).

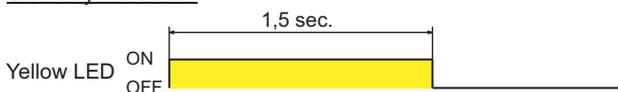
The integrated electric controller S-EP 4 is available with 2 types of control:

- A) Time control
- B) Stroke control

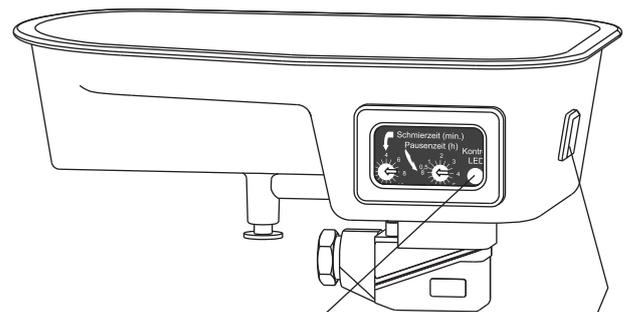
The type of control must be indicated when ordering.

After turning on the ignition, regardless the preset program, the yellow LED illuminates for 1,5 sec. and indicates that the controller is in operation (standby indicator).

Standby indicator:



Integrated controller S-EP 4



Yellow LED showing function

Button for activating interim lubrication

S-EP 4 with Hirschmann connector

2. Time control

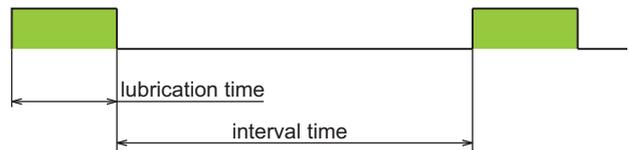
When operating the button on the side of the casing, or the external button, the lubrication system is brought into operation and the pump is running. When the lubrication cycle is completed, the pump stops and the interval time begins. The lubrication cycles are automatically initiated according to the set lubrication or interval time.

When the ignition is switched off during the lubrication or interval time, the cycle is stopped and the data is stored. When the ignition is switched on again, the operation process will continue from the point where it was interrupted.

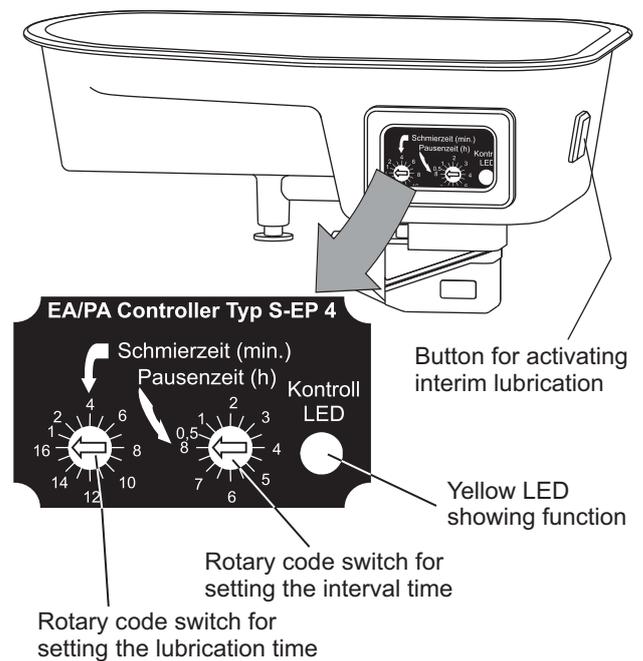
After switching on, an interim lubrication can be initiated by pushing the button on the side of the casing of the pump. Pushing the button can also be used to check if the pump is in operation. The pump will immediately start a lubrication cycle. The elapsed or stored lubrication or interval time will be reset and the pump will start over.

An interim lubrication can also be initiated by using an external button. The output signals of the yellow LED can also be indicated by a signal lamp in the drivers cabin (option).

Diagram of cycle sequence:

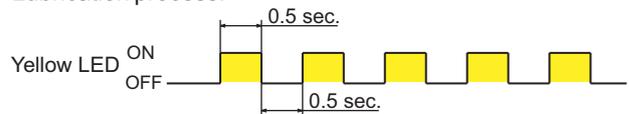


Integrated controller S-EP 4

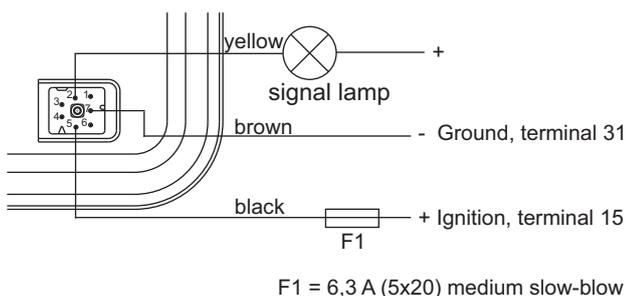


Before connecting the pump to the electrical system, please observe the voltage of the pump motor.

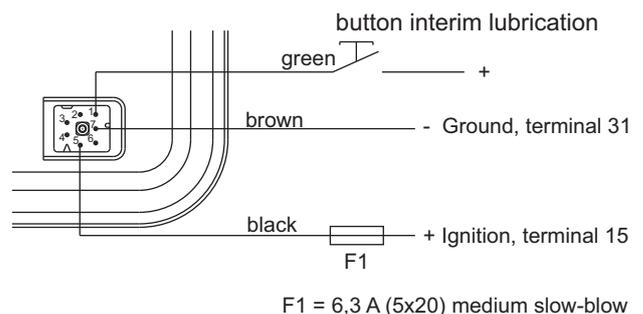
Lubrication process:



Terminal diagram for external signal lamp:



Terminal diagram for external button:



Wijzigingen voorbehouden!

S-EP 4 with Hirschmann connector

2. Time control (continuation)

Technical data:

Operating voltage: 10 - 60 V
 Max. power load: I = 6,0 A
 Fuse (not included in device): F 6,3 A (5x20) slow-blow
 Output signal lamp: I = 1 A
 Temperature range: - 35°C to +75°C
 Protection class: IP 65

The lubrication time and the interval time can be set by adjusting the rotary code switches positioned behind the viewing window of the controller.

To adjust these setting, the red frame of the viewing window, has to be removed with a flat screwdriver. Then the 4 Phillips screws have to be loosened and the viewing windows removed.

The controller is available with 2 different lubrication time ranges: 1 to 16min. or 2 to 32 min. The interval time will remain the same.
 The time range must be indicated when ordering.

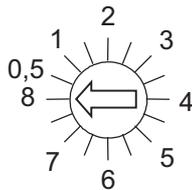
If the viewing window and the red frame are improperly installed, water can enter the controller which may cause a malfunction. This will void the warranty.

Setting the parameters

Interval time:

0.5 to 8 h

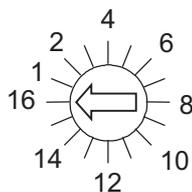
16 notches
 1 notch = 0.5 h



Lubrication time:

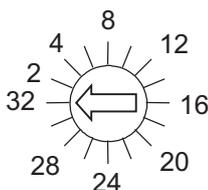
Time range I:
 1 to 16 min.

16 notches
 1 notch = 1 min.



Time range II:
 2 to 32 min.

16 notches
 1 notch = 2 min.



S-EP 4 with Hirschmann connector

3. Stroke control

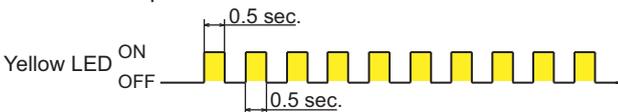
The S-EP 4 controller can also be delivered as a stroke controller, for monitoring a progressive greasing system. In this case a proximity switch is attached to the progressive distributor. The proximity switch converts the piston strokes into electrical signals and transmits them to the S-EP 4 controller.

The number of strokes (1 t/m 16) can be set by adjusting the rotary code switch positioned behind the viewing window of the controller.

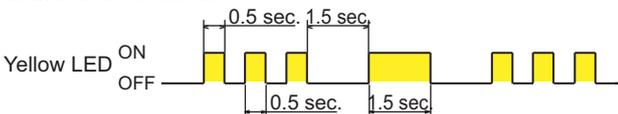
After setting the interval-time, the lubrication system is brought into operation and the pump is running. After reaching the set number of strokes, the pump stops and the interval time begins.

The stroke controller pulsbesturing has a monitoring time of 4 min. and 20 sec., i.e. each piston stroke of the progressive distributor must be completed within 4 min. and 20 sec.. If this is not the case, the control indicates a malfunction and the yellow LED starts blinking.

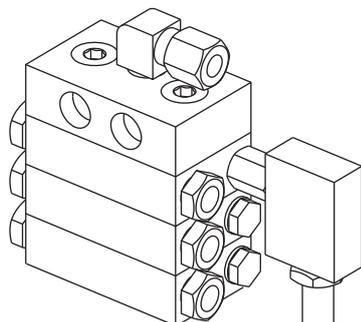
Lubrication in process:



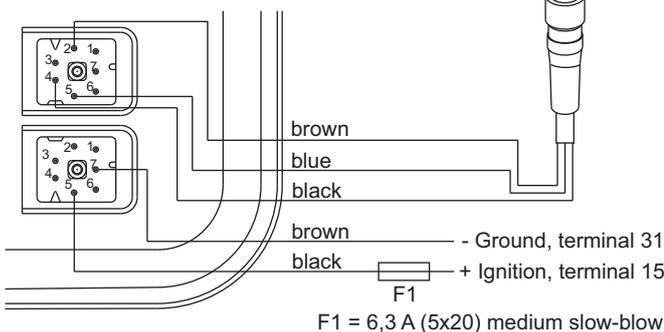
Malfunction strokes:



Distributor with attached proximity switch:

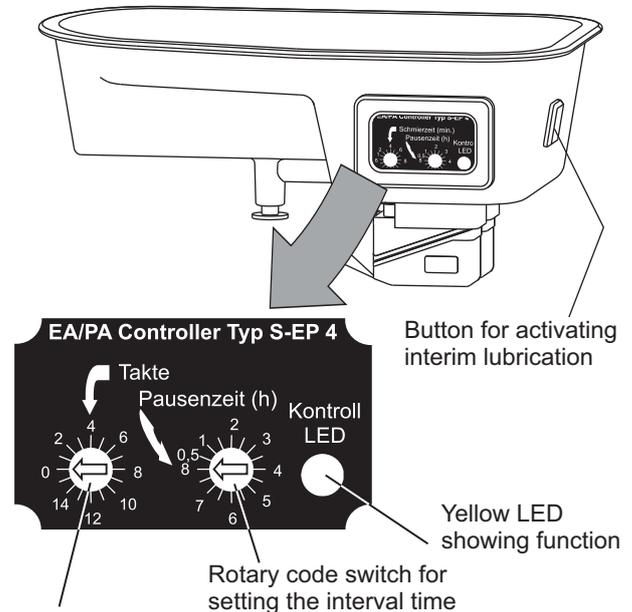


Wiring diagram:



Wijzigingen voorbehouden!

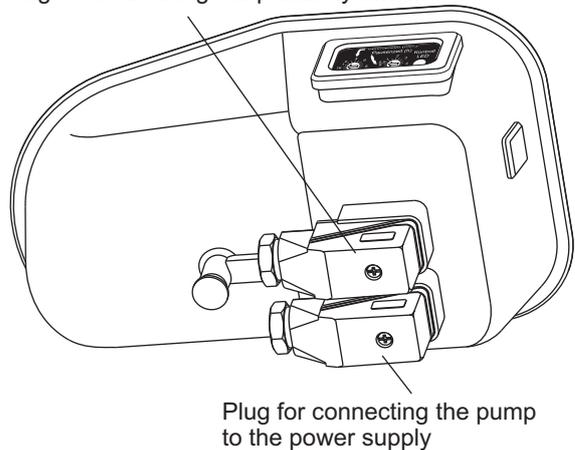
Integrated electric controller S-EP 4



Rotary code switch for setting the lubrication time

Controller with plug for proximity switch (bottom view):

Plug for connecting the proximity switch



Technical data proximity switch:

Operating voltage:	10 - 60 V DC
Connecting method:	PNP-turnkey
Max. current load:	200 A
Connection:	M12x1 plug
Indicator operation/malfunction:	yellow LED
Housing material:	stainless steel
Protection class:	IP 67
Temperature range:	-40°C to +85°C

S-EP 4 with Hirschmann connector
4. Grease level monitoring

Grease pumps can also be equipped with grease level monitoring. Therefore, a capacitive proximity is installed into the pump reservoir. If the lubricant sinks below minimum the signal send to the S-EP 4 controller changes.

Technical data capacitive proximity switch:

Operating voltage:	10 - 60 V DC
Connecting method:	PNP-contact
Protection class:	IP 67
Temperature range:	- 25°C t/m +70°C
Connection:	compact plug on reservoir
Pole allocation:	nr. 1 = 10 - 60 V DC
	nr. 2 = ground
	nr. 3 = NC contact
	⏏ = vacant

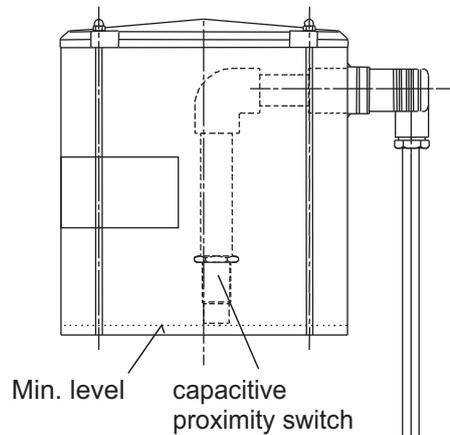
If the grease level is too low, the controller registers the signal. If the pump reservoir remains empty for more than 10 sec., the pump stops and the red LED blinks slowly. As soon as the reservoir is filled again, a lubrication cycle can be started by pushing the button of the controller.

In order to connect the level monitoring to the built-in electronic controller S-EP 4, the controller is equipped with a second plug connector.

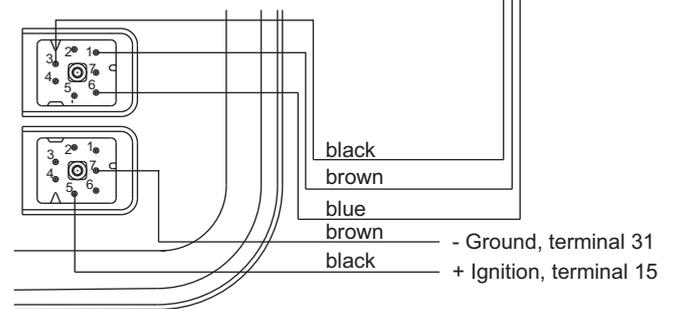
Om de niveaubewaking aan te sluiten aan de ingebouwde elektronische besturing S-EP 4, is de besturing voorzien van een tweede stekkeraansluiting. The grease level control can be ordered in both time- or stroke controlled devices.

Applying grease level monitoring must be specified when ordering.

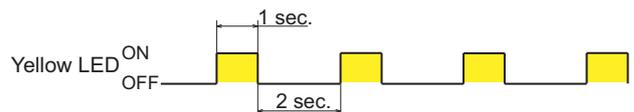
Reservoir of a EP-1 pump with grease level monitoring



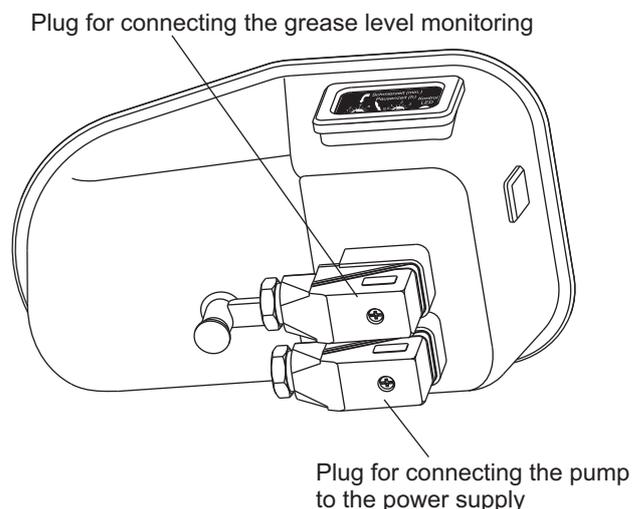
Wiring diagram:



Signal grease level too low:



Controller with plug for grease level monitoring (bottom view):



S-EP 4 with Hirschmann connector

5. Permanent error notification

As an option the S-EP 4 controller can also be equipped with a permanent error notification. In this case when an error occurs, the external signal lamp does not blink but provides a constant signal.

With the help of an external lamp or horn, this signal will warn when an error occurs. The lamp burns continuously or the horn emits a signal, until the error is corrected.

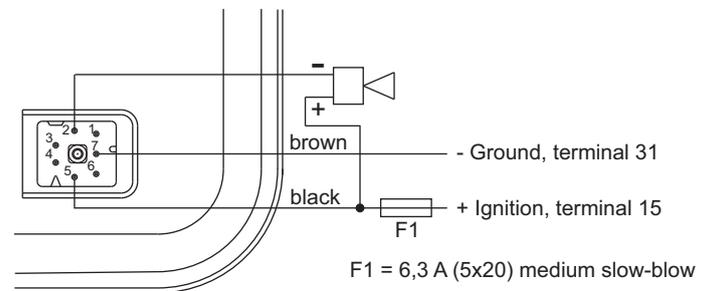
The yellow LED behind the viewing glass on the controller indicates, with the normal blinking frequencies, the operating status of the controller.

The lamp, horn and connecting cable are not included when ordering.

Technical data:

Outlet permanent error notification: 1 A

Wiring diagram:

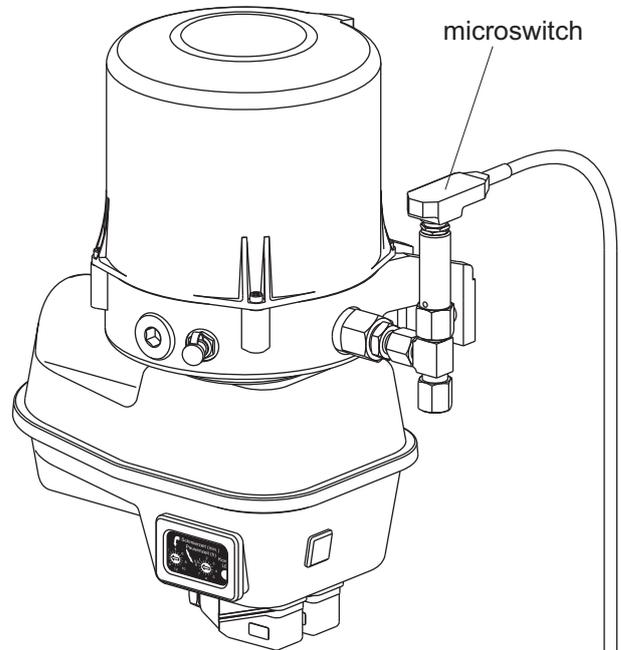


S-EP 4 with Hirschmann connector

6. Pressure relief valve with microswitch

As an option the S-EP 4 controller can be used to monitor the max. operating pressure of a progressive lubrication system. To achieve this, a pressure relief valve with microswitch is fitted to the pumpelement. In case of a malfunction e.g. caused by the blockage of a lubrication point, the pressure will built up of more than 250 bar. This causes the pressure relief valve in operation and ratifies the microswitch, which emits a signal to the controller. The pump is turned off by the controller and the yellow LED blinks indicating a malfunction.

Pressure relief valve with microswitch on a pumpelement installed in an E P-1 pump



Technical data microswitch:

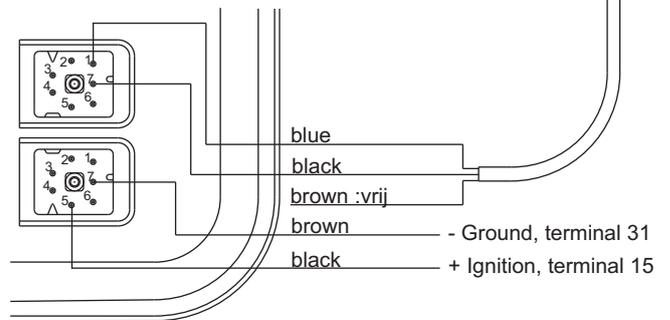
Operating voltage:	10 - 60 V DC
Max. power load:	I = 1,7 A
Connecting method:	changeover switch
Protection class:	IP 67
Temperature range:	-25°C to +70°C

Before connecting the pump to the electrical system, please observe the voltage of the pump motor.

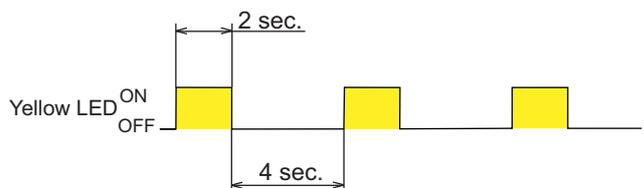
A pressure relief valve with microswitch cannot be installed on a standard S-EP 4 controller, as this would require 2 plug connectors.

If a pumpelement has to be equipped with a pressure relief valve with microswitch, this has to be indicated when ordering.

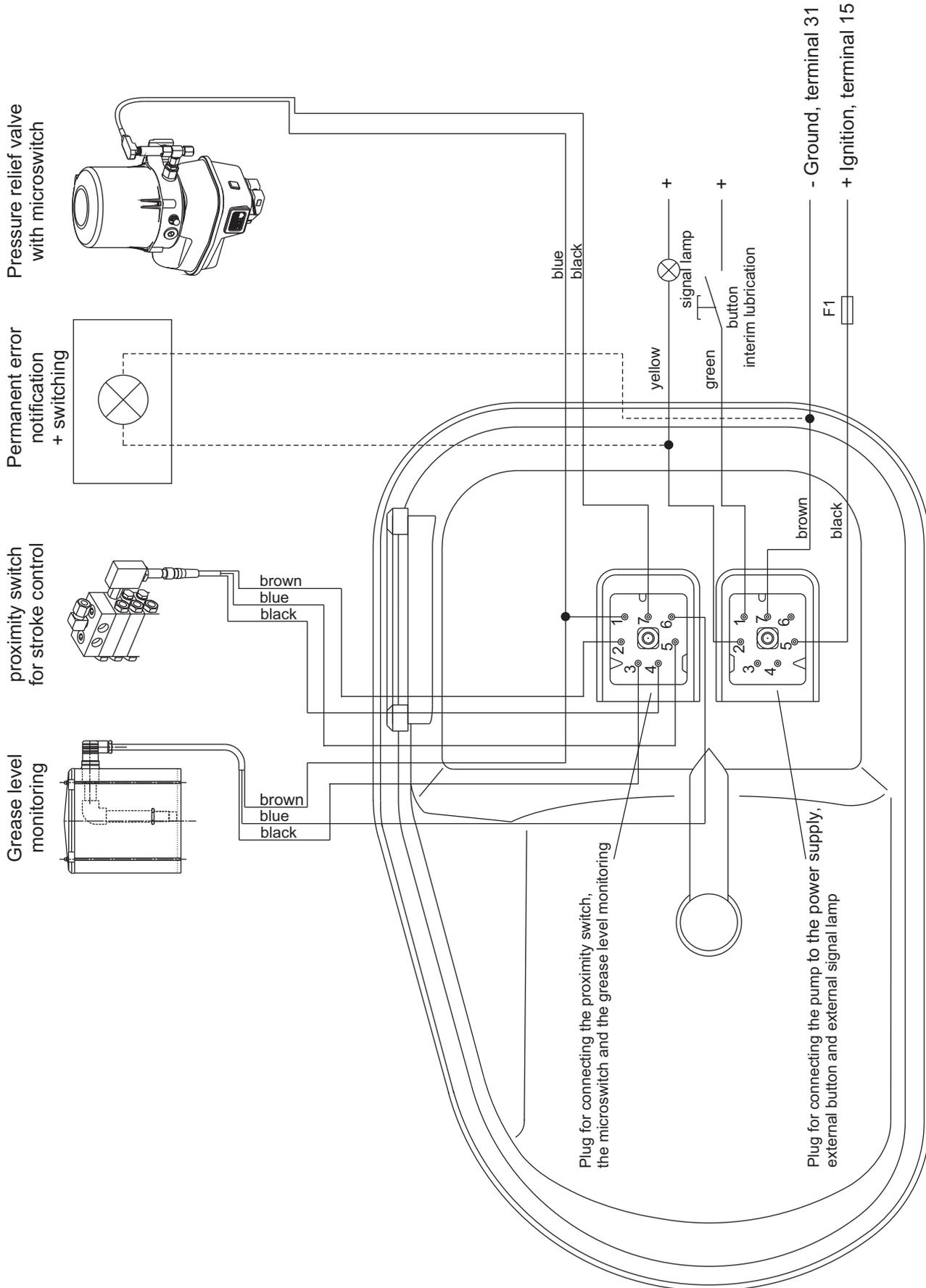
Wiring diagram of a microswitch on the S-EP 4 controller:



Error indication microswitch:



S-EP 4 with Hirschmann connector
7. Terminal diagram

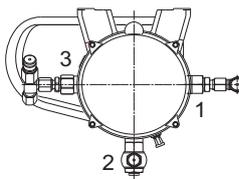


F1 = 6,3A (5x20) medium slow-blow

S-EP 4 with Hirschmann connector

8. Ordering key EP-1 with integrated controller S-EP 4

Construction type		2147 . X . X . X . X . X . XX													
Motor voltage															
12V	24V														
1	2														
Outlet position															
Fig.															
1	1	2	3	4	0										
2	1	2	3	4	0										
3	1	2	3	4	0										
PE-120															
PE-120 V															
PE-60															
PE-170															
Without															
		Fig.	Code	Fig.	Code	Fig.	Code	Fig.	Code	Fig.	Code				
		001	G	002	K	003	N	004	R						
		010	U	020	L	030	P	040	S						
		011	J	022	M	033	Q	044	T						
		100	1	200	4	300	V	400	X						
		110	2	220	5	330	W	440	Y						
		111	3	222	6	122	8	444	Z						
		120	7	112	9	211	Spec. uitv.	I							



Order example:
 Outlet position: 1 2 3
 Fig.: 1 2 2
 Code: 8

Other combination on demand!

				2 parts	1 part
Size of reservoir (kg)	1,9	2,5	4	8	8
Code	5	1	2	3	8

Lubricating time		
I	1 to 16 min.	1
II	2 to 32 min.	2

Button	Yes	No
Code	1	0

Special models	00
	04
	05

Special models:
 04 = Grease level monitoring connected to the controller
 05 = Grease level monitoring not connected to the controller

9. Ordering key integrated controller S-EP 4 for EP-1 and OC-1

Construction type		2147 . 9000 . X . X . 00										
Lubricating time												
I	1 to 16 min.	1										
II	2 to 32 min.	2										
Button	Yes	No										
Code	1	0										
Special model	00											

Wijzigingen voorbehouden!