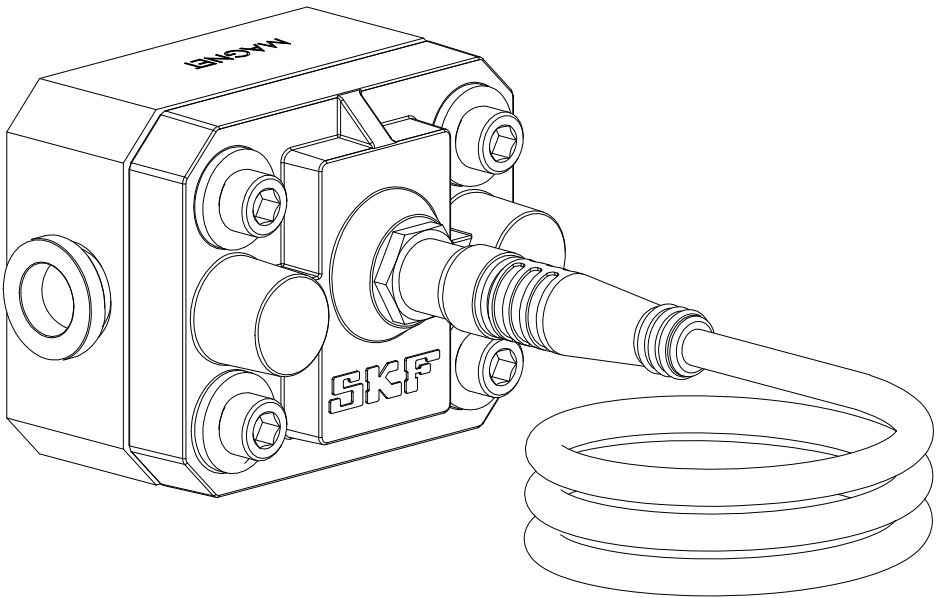


# Digital grease flow detector

## Model 800030



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Form number **400101B**

Read manual prior to installation or use of this product. Keep manual nearby for future reference.



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## Explanation of safety signals



Safety alert symbols identify potential physical injury hazards. Obey all safety messages below this symbol to avoid possible injury or death.



### SAFETY INSTRUCTION

Safety instruction sign indicates specific safety-related instructions or procedures.



### DANGER

Indicates hazardous situation which, if not avoided, will result in death or serious injury.



### WARNING

Indicates hazardous situation which, if not avoided, may result in death or serious injury.



### CAUTION

Indicates hazardous situation which, if not avoided, could result in minor or moderate injury.



### SAFETY INSTRUCTION

Protection of device may be impaired if used in a manner not specified by manufacturer.

# Safety

Read and observe operating instructions before installing and operating the flow detector.

Do not attempt to install, use, or trouble-shoot prior to fully understanding all safety and operational instructions.

# Application

Model 800030 was designed to generate a confirmation signal to verify lubrications events of a critical lubrication point. The unit would be installed between the lubrication point of the bearing and the lubricating device like the injector. Signals are communicated to SKF LMC 301 or PLC. Detecting both small 0.002 in.<sup>3</sup> (32 mm<sup>3</sup>) and large 0.5 in.<sup>3</sup> (8 195 mm<sup>3</sup>) flow of grease.

# Introduction

Model 800030 a positive displacement flow detector consisting of oval gears. One gear has a built-in diametric magnet. As the magnet turns with the gear, a rotating motion of magnetic flux results.

As the magnet rotates, a hall sensor detects the magnet flux motion. This motion is processed by an encoder creating and sending a digital signal to an outside controller. A blinking LED indicates processed signals.



## Notice

Follow all local safety regulations regarding installation, use and maintenance.

## Specifications

Media	Grease grade 0 to 2
Grease ports	1/8 in. NPTF
Wetted parts	Aluminum, steel, nitrile, rubber and nylon
Maximum pressure	3,000 psi (206 bar)
Maximum operation temperature	140 °F (60 °C)
Minimum operation temperature	-30 °F (-34 °C)
Sensitivity <sup>1)</sup>	0 – 140 °F –17 – 60 °C 0.002 – 0.5 in <sup>3</sup> (32 – 8 195 mm <sup>3</sup> ) per signal generated -30 – 0 °F (-34 – 17 °C) 0.005 – 0.5 in <sup>3</sup> (81,9 – 8 193 mm <sup>3</sup> ) per signal
Maximum altitude	10,000 ft. *3 048 m)
Maximum humidity	100%
Dimensions	2 x 1.6 x 1.9 in. (51 x 42 x 48 mm)
Protection	IP67
Weight	0.35 lbs. (0.159 kg)
Supply voltage	12 to 30 V DC
Polarity protection	12 to 30 V DC
Nominal supply current	5 mA
Maximum supply current	35 mA
Output signal	12 to 30 V DC
Maximum output signal	30 mA

<sup>1)</sup> Entrapped air may compromise minimum sensitivity level.

# Installation

## Installation guidelines

- Units are non-directional.
- Use thread sealant on all pipe threads.
- Do not overtighten line connections.
- Perform system tests, checking for proper functioning and connection sealing.



### Notice

Grease flow detector is to be installed in-line with grease line so that flow of lubricant is directed through sensor.

Assembly has an IP67 environmental rating and does not require additional enclosures.

Sensor is approved for indoor/outdoor use.



### Notice

Connector cable must be ordered separately.

Refer to **service parts list, page 7** for more information.



### Notice

Electronic controller module is non-repairable. Replace detector if electronic controller module is found to be damaged or faulty.

## Installation procedure

- 1 Shut off all grease flow through grease line.
- 2 Attach inlet and outlet connections to flow detector.
- 3 Attach one end of connector cable to flow detector.
- 4 Attach remaining end of connector cable to controller.
- 5 Test detector by opening grease line to supply grease flow to detector.
- 6 Verify LED is blinking, indicating that the flow detector is working properly.



### Notice

Detector requires a controller that accepts digital signal via a connector assembly part no. 280137.



### WARNING

Do not disassemble detector with fluid supplied to detector or line pressurized. Remove pressure and supply before disassembly.

Failure to comply may result in death or serious injury.

## Detector disassembly

- 1 Remove head bolts (2.4) and washers (2.3) from cover (2.1) (→ fig. 3).
- 2 Remove the detector cover (2.1) and o-ring (1.4).
- 3 Remove oval gears (1.2, 1.3).
- 4 Clean and inspect all parts. Replace any suspect, worn or damaged components.

Fig. 1

### Wire pin connections

- |   |               |
|---|---------------|
| 1 | Ground        |
| 2 | Output signal |
| 3 | Positive V DC |

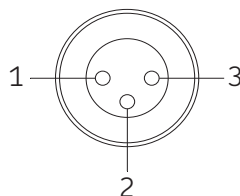


Fig. 2

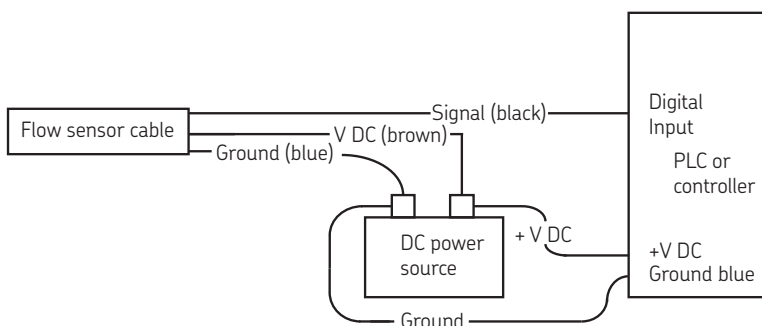
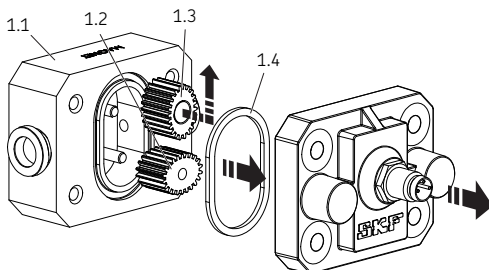
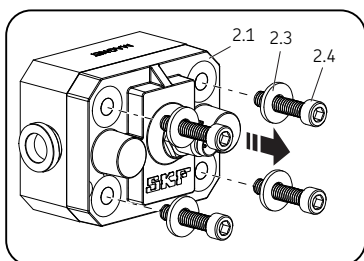


Fig. 3



# Detector assembly

- 1 Align rib on top of cover (2.1) with “magnet” on body (1.1) (→ fig. 4).
- 2 Insert both gears at 90° angles to each other (→ fig. 4).
- 3 Lightly grease the o-ring (1.4) and place it in the detector body (1.1).



## Notice

Check gear rotation by turning either gear.

If gears are not in mesh correctly or do not rotate freely, remove one gear and re-place correctly at 90° to other gear (→ fig. 4).

- 4 Place cover (2.1) on detector body (1.1), taking care not to damage o-ring (1.4).
- 5 Install washers and bolts (2.3, 2.4), tightening bolts in a diagonal pattern to 0.73 ft.lbf (1 Nm).
- 6 Visually check that the cover assembly (2.1) has been pulled down evenly (→ fig. 4).

## Testing procedure

- 1 Apply 12 to 30 V DC to pin 1 and 3 of connector (→ fig. 1 page 5).
- 2 Apply low air pressure or pressurized grease ( by grease gun, for example) to any port of the detector.
- 3 As a result of this action, the gears should turn, and LED should begin blinking.



## Notice

If gears do not turn or LED is not blinking, perform assembly steps again.

Fig. 4

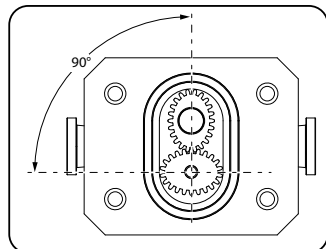
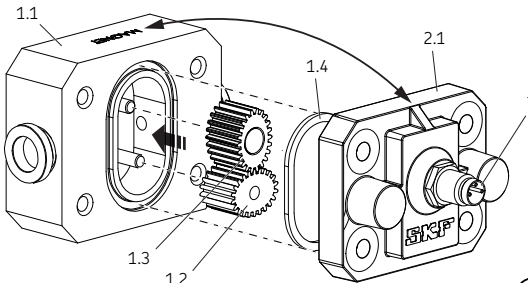
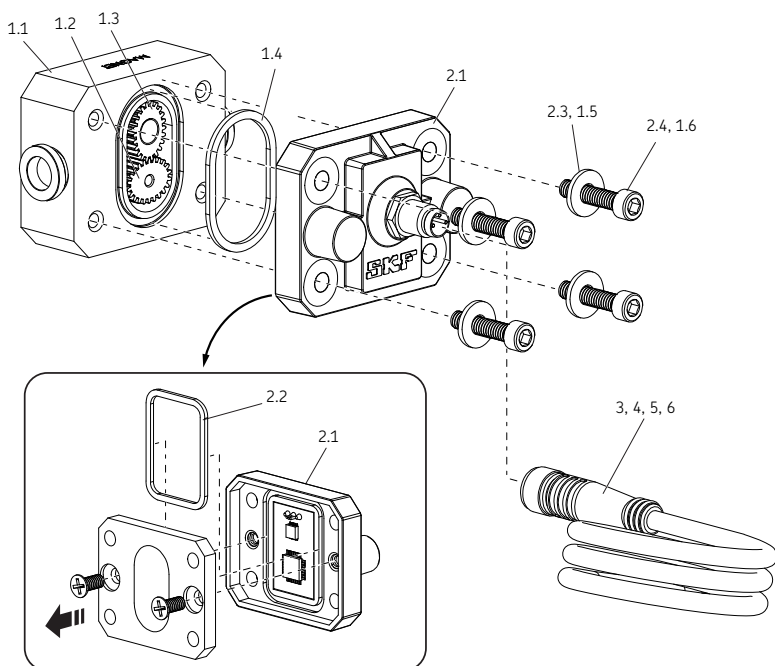


Fig. IPB 1



## Service parts/kits

Item no.	Pat no.	Description	Qty
1	280135	Body assembly kit	1
1.1		Body assembly	1
1.2		Oval gear	1
1.3		Gear with magnet	1
1.4		Square o-ring	1
1.5		Washer	4
1.6		8-32 x .75 THD-Lock.SHC screw	4
2	280136	Cover assembly kit	1
2.1		Cover assembly	1
2.2		Square o-ring	4
2.3		Washer	4
2.4		8-32 x .75 THD-Lock.SHC screw	4
3 <sup>1)</sup>	280137-03	Cable assembly 9.8 ft. (3 m)	1
4 <sup>1)</sup>	280137-15	Cable assembly 49.2 ft. (15 m)	1
5 <sup>1)</sup>	280137-30	Cable assembly 98.4 ft. (30 m)	1
6 <sup>1)</sup>	280137-45	Cable assembly 147.6 ft. (45 m)	1

<sup>1)</sup> Must be ordered separately.

## Troubleshooting\*

Problem	Possible cause	Remedy
Detector never registers grease output.	No signal from magnet.	Check magnets and gear if required.
	Damaged controller/PCB.	Replace detector.
	No grease passed through detector even lubrication cycle occurred without delivering grease to detector's inlet.	The system detected a failure correctly and lubrication device like the injector or grease line needs to be checked.
	Media flow is below minimum required flow rate.	Increase input.
	Dirt particles jamming the rotors.	Remove rotors and remove any dirt and contamination.
	Low viscosity of media.	Use grease grade 0 to 2.
	Air in the system.	Purge air from system.
The detector is not registering grease output every lubrication cycle. (Detector miss signal.)	Bad contact between connector and outlet wire connector.	Replace wire connector.
	Low input of media.	Increase input.
Grease leakage.	Screw loose or missing.	Tighten screws.
	Damaged o-ring.	Replace o-ring.
	The detector pressurized over maximum pressure rating.	Replace the detector and reduce inlet pressure.

\*Indicates change.



# Declaration of conformity

Declaration of conformity according to the EMC directive 2014/30/EU.

We declare that the model of the Digital grease flow detector in the version supplied by us, complies with the provisions of the above mentioned directive.

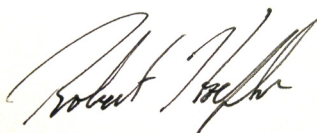
Applied harmonized standard in particular:  
EN61326-1 Electrical equipment for measurement, control and laboratory use. EMC requirements - Part 1: General requirements (IEC 61326-1)

Declaration of conformity according to directive 2014/35/EU relating to low voltage.

Safety evaluation.

We declare that the model of the Digital grease flow detector in the version supplied by us, complies with the provisions of the above mentioned directive.

Applied harmonized standards in particular:  
EN61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use -Part 1:  
General requirements (IEC 61010-1).



Robert Hoefler  
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## Warranty

The instructions do not contain any information on the warranty. This can be found in the General Conditions of Sales, which are available at: [www.skf.com/lubrication](http://www.skf.com/lubrication).

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