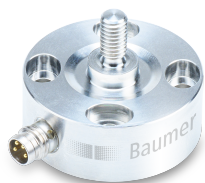
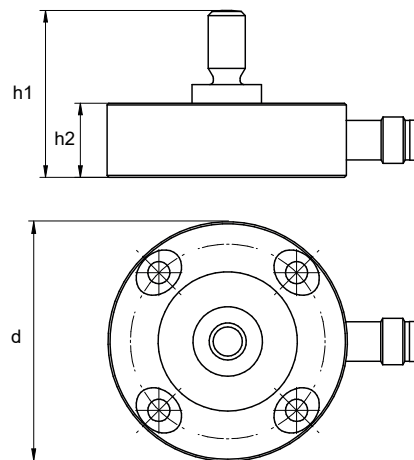


## Quickstart



**DLMx0-SO**  
Force sensor

## Dimensional drawing



	DLM20	DLM30	DLM40
h1 [mm]	18	30	82.5
h2 [mm]	8	15	21.7
d [mm]	25.8	39	59.8

## Scope of delivery

- 1 x sensor
- 4 x threaded insert
- 1 x quickstart

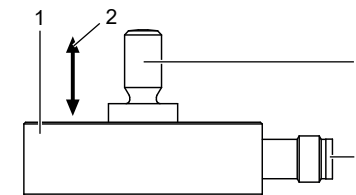
## Applicable documents

- Download from [www.baumer.com](http://www.baumer.com):
  - Operating manual
  - Data sheet
  - EU Declaration of Conformity
- Attached to product:
  - General information sheet (11042373)

## Functionality

It is a passive sensor without amplifier electronics. It is screwed in place at a machine element and measures the applied force. Any change in force measured at the spring by a strain gauge is converted into an electric signal. Compressive force makes the sensor deliver a positive measurement signal. The output signal is delivered in mV/V and proportionate to force.

## Structure



1	Sensor housing	2	Force measuring direction
3	Pressure / strain stamp	4	Connection 4-pin stamp

## Preventive maintenance

The sensor is maintenance-free. No special preventive maintenance is required. Regular cleaning and regular checking of the plug connections are recommended.

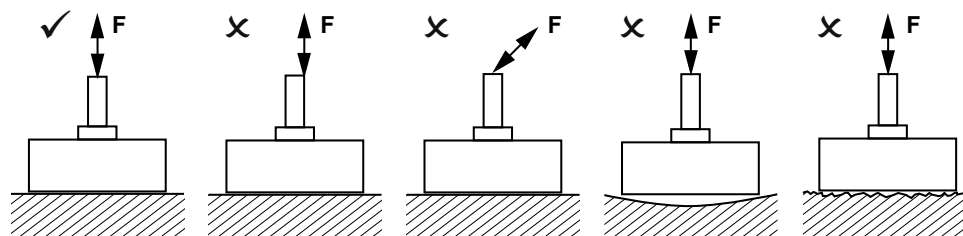
## EN

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8/24/2022, 81327764, V2  
ID 9007199582997515

## Installation instructions

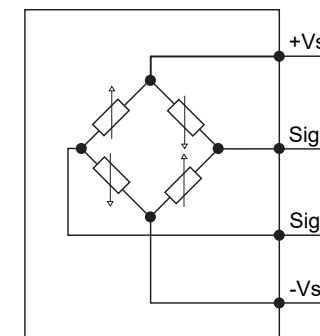


Force is to be applied centrally in axial direction.  
The sensor's contact surface must be flat and sufficiently rigid.

## Pin assignment

DLM20 (M5):	DLM30/40 (M8):	Pin	Assignment
		1	+Vs
		2	Sig+
		3	-Vs
		4	Sig-

## Connection diagram



Note on electromagnetic compatibility: Shielded supply cable is recommended. Ground the cable shield on both sides over a large surface and ensure potential equalization. Disconnect the system from power prior to connecting the device.

+Vs = 2 ... 7 VDC (UL Class 2)<sup>1</sup>

<sup>1</sup> Alternatively, the device must be protected by an external R/C or approved fuse (rated max. 100 W/Vp or max. 5 A under 20 V).

## Preparing installation

Sensor mount is 2 steps and can be done in different ways according to the installation situation.

### NOTICE

**The sensor will supply imprecise measurement results when mounted on an uneven surface.**

a) Mount the sensor on a prepared, flat surface.

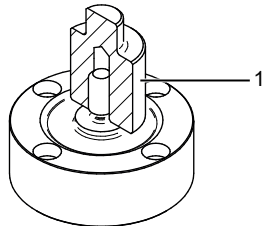
*Instruction:*

- ♦ Make sure the machine element is not under load.

## Sensor mount on main thread

	DLM20	DLM30	DLM40
Thread	M4	M6	M12
Tightening torque [Nm]	1	5	38

### Variant 1: Tool/mating part is installed at the catch

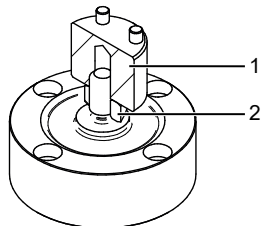


*Instruction:*

- Make sure the thread of the mating part (1) provides sufficient depth.
- Screw the sensor in place using a torque wrench and applying the specified torque.

	DLM20	DLM30	DLM40
Minimum depth of thread [mm]	9	13	25

### Variant 2: Tool/mating part is bolted and secured with lock nut

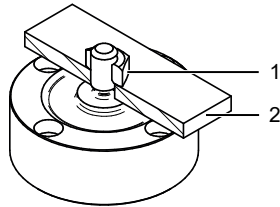


*Instruction:*

- Make sure the thread of the mating part (1) provides sufficient depth.
- Screw lock nut (2) into main thread using a torque wrench and applying the specified torque.

	DLM20	DLM30	DLM40
Minimum depth of thread [mm]	5	7	12
Lock nut height [mm]	2.2	3.2	6

### Variant 3: Tool/ mating part with through hole is fixed full contact with lock nut

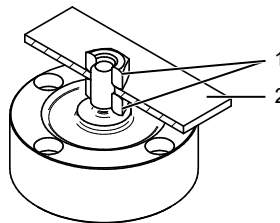


*Instruction:*

- Observe the maximum permitted tool / plate thickness (2).
- Screw lock nut (1) into main thread using a torque wrench and applying the specified torque.

	DLM20	DLM30	DLM40
Diameter through hole [mm]	4.5	6.6	13.5
Lock nut height [mm]	2.2	3.2	6
Max. tool/plate thickness [mm]	5	8	17

### Variant 4: Tool/mating part with through hole is fixed by a locknut on both sides



*Instruction:*

- Observe the maximum permitted tool / plate thickness (2).
- Screw the lock nuts (1) into main thread using a torque wrench and applying the specified torque.

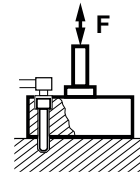
	DLM20	DLM30	DLM40
Diameter through hole [mm]	4.5	6.6	13.5
Lock nut height [mm]	2.2	3.2	6
Max. tool/plate thickness [mm]	2	3	7

## Sensor mount to screw-on plate

Using four screws, the force sensor is screwed to the contact surface either from above or below.

	DLM20	DLM30	DLM40
Pitch circle diameter [mm]	21	30	47
Rigidity class	10	16	25
Tightening torque [Nm]	0.2	1.5	6

### Variant 1: Sensor top mount

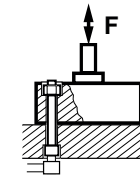


*Instruction:*

- Provide four threaded bores of the appropriate diameter at a 90 degree angle at the desired mounting surface. Observe the direction of the cable outlet.
- Select sensor-appropriate screws of the required length.
- Screw the sensor in place using a torque wrench and applying the torque specified in the table.

	DLM20	DLM30	DLM40
Thread	M2	M4	M6
Minimum depth of thread [mm]	4	6	10
Recommended length of screw [mm]	10	16	25

### Variant 2: Sensor mount from the bottom



*Instruction:*

- Provide four through holes of the appropriate diameter at 90 degrees at the desired surface. Observe the direction of the cable outlet.
- Select sensor-appropriate screws of the required length.
- Place the 4 threaded inserts attached from above into the oval-shaped drill hole.
- Screw the sensor in place using a torque wrench and applying the torque specified in the table.

	DLM20	DLM30	DLM40
Diameter holes [mm]	10	16	25

## Electrical sensor connection

*Instruction:*

- ♦ Perform electrical sensor connection according to the pin assignment /connection diagram.

## Sensor deployment

- After the installation: If possible, 10 times expose sensor to full load to minimize effects of settlement.
- Only operate the sensor within the defined nominal force range (see data sheet).