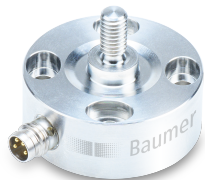
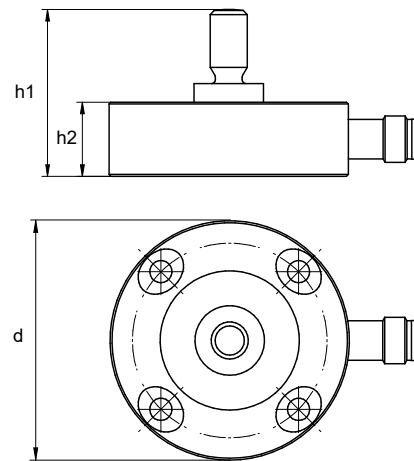


Quickstart



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

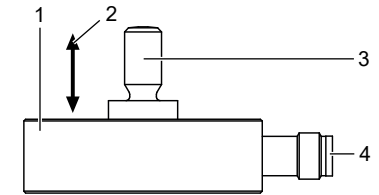
Applicable documents

- Download from www.baumer.com:
 - 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 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

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

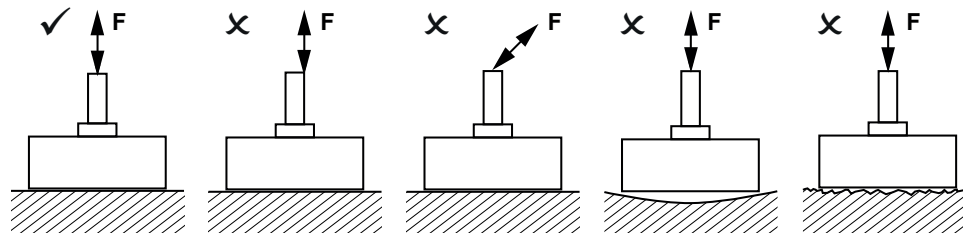
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3/31/2022, 81327764, V1
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Installation instructions

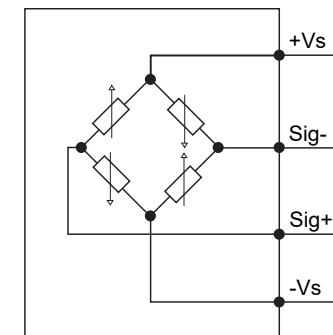


Force is to be applied centrally in axial direction.
The sensor's contact surface must be flat and sufficiently rigid.

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)¹

¹ 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.

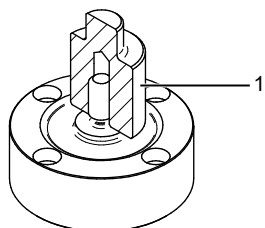
Instruction:

- 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

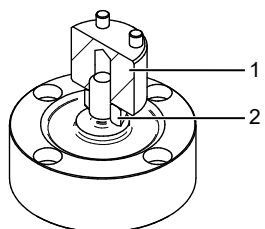


Instruction:

- 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

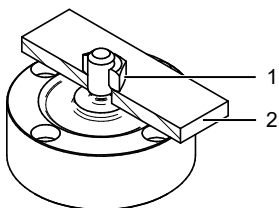


Instruction:

- 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

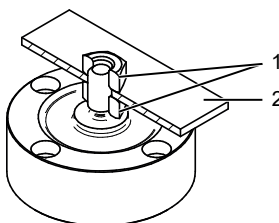


Instruction:

- 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.

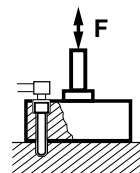
	DLM20	DLM30	DLM40
Diameter through hole [mm]	4.5	6.6	13.5
Lock nut height [mm]	2.2	3.2	6
Max. tool/plate thickness [mm]	2	3	7

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

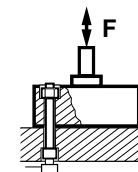


Instruction:

- 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).