

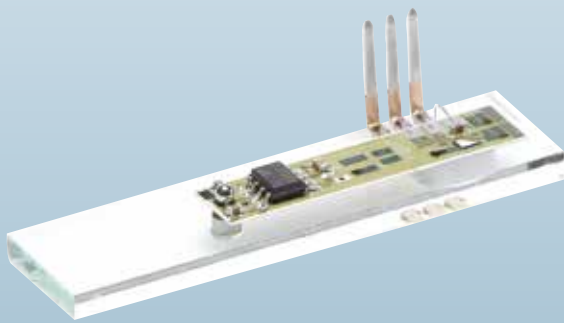
Force cells

## Cantilever Beam force cell

### Type 410

The type 410 measures force with the cantilever beam by an integrated piezo-resistive wheatstone bridge with front-end amplification circuit.

It uses hybrid thick film technology which guarantees an excellent stability and a long operating life. The special design of the force cell ensure batch production and with fully automated assembly an ideal performance to cost ratio for high quantities.



**Measuring range**  
**0 ... 53 – 265 Centi-Newton**

- + Compact construction for a wide range of industrial applications
- + Ideal for OEM batches in high quantities
- + High resistance to temperatures
- + No mechanical aging
- + No mechanical creep

## Technical overview

### Measuring pressure

0 ... 53 – 265 Centi-Newton

### Operating conditions

Temperature	Medium / ambient	0 ... +70 °C
	Storage	-10 ... +70 °C
Tolerable overload		< 1000 cN

### Electrical overview

Output	The signal varies ratiometrically with supplied voltage.	
	The non-ratiometrical value of the output signal is with a change of power supply of $\pm 5\%$ :	typ. 0.5 % fs max. 1.0 % fs
Power supply	Factory calibration	5 VDC
Load		$R_L \geq 50 \text{ k}\Omega$ ; $C_L \leq 10 \text{ nF}$
Current consumption	At 50 k $\Omega$ Load / 5 VDC power supply	< 3 mA
Electromagnetic compatibility	The product is designed exclusively for installation in equipment. The customer is responsible for CE conformity.	

### Dynamic response

Response time	< 1 ms
Load cycle	< 1000 Hz

### Protection standard

IP 00

### Electrical connection

PIN connector, RAST 2.5

### Mounting instruction

Fix the force sensor on the base plate (glass) ensuring there is no mechanical stress..

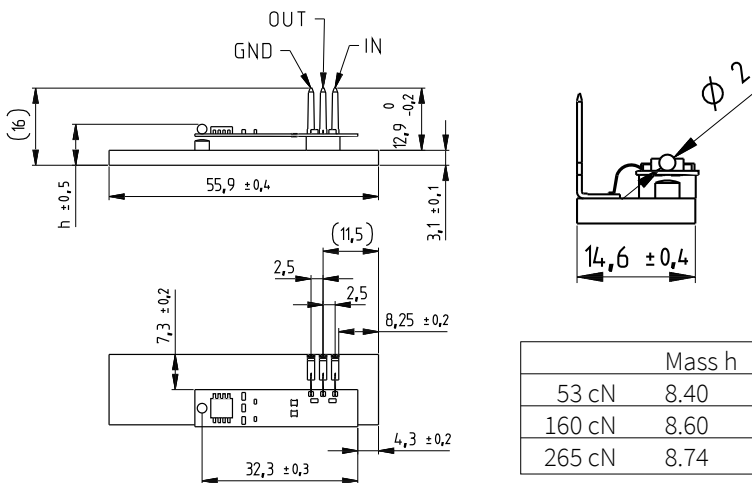
### Weight

~ 7.1 g

### Packaging

Multiple packaging in cardboard boxes with blister pack inserts (40 pcs<sup>1)</sup>)

## Dimensions in mm / Electrical connections



## Accuracy

Parameter		Unit	
Tolerance zero point	max.	% fs	$\pm 2.0$
Tolerance full scale	max.	% fs	$\pm 30.0$
Resolution		% fs	0.1
Total of linearity, hysteresis and repeatability	max.	% fs	$\pm 0.2$
Long term stability acc. to DIN EN 60770		% fs	$\pm 0.5$
TC zero point <sup>2)</sup>	max.	% fs/10K	$\pm 0.3$
TC sensitivity <sup>2)</sup>	max.	% fs/10K	$\pm 0.1$

## Order code selection table

		1	2	3	4	5
		410.	X	X	X	X
Measuring range	0 ... 53 cN	9	2			
	0 ... 160 cN	9	4			
	0 ... 265 cN	9	5			
Output / power supply	0.3 ... 2.8 V			1		
Electrical connection	PIN connection, RAST 2.5				1	
Compensation	With temperature compensated					1

<sup>1)</sup> Minimal order quantity

<sup>2)</sup> TC = Temperature coefficient

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