



# Z6...

## Load cell



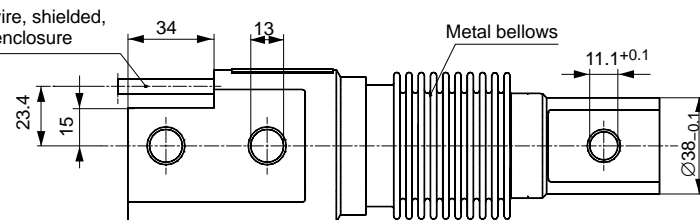
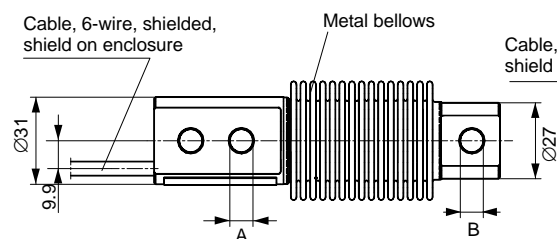
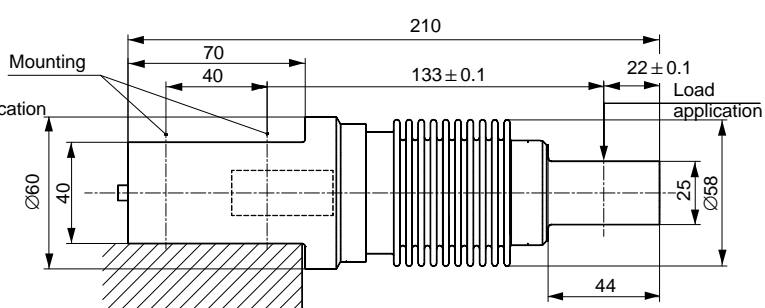
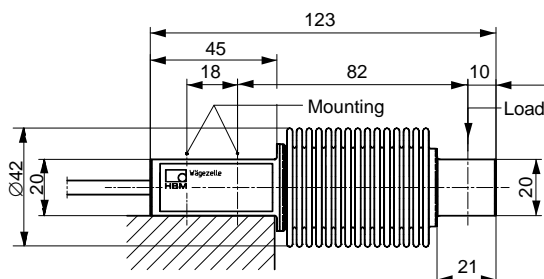
### Special features

- Welded-on metal bellows
- Nominal (rated) loads: 5 kg ... 1 t
- Load cells and installation aids made of rust-resistant materials
- Verifiable up to 6000 divisions, test report as per OIML R60
- Six-wire circuit
- Optimized for parallel connection
- Meets EMC requirements as per DIN EN 45501:2015
- Options:  
Ex-protection designs as per ATEX and IECEx

Dimensions (in mm; 1 mm = 0.03937 inches)

**Z6F**; Nominal (rated) loads 5 kg...500 kg

**Z6**; Nominal (rated) load 500 kg (G), 1 t (F)



	A	B
5...200 kg	8.2	8.2
500 kg	10.5	11.1

Cable Ø5.4; 3 m long (standard version)

## Specifications

Type		Z6(F/G)D1	Z6(F/G)C3	Z6FC3MI	Z6FC4	Z6FC6				
Accuracy class to OIML R 60		<b>D1</b>	<b>C3</b>	<b>C3/MI7.5</b>	<b>C4</b>	<b>C6</b>				
Number of scale intervals ( $n_{LC}$ )		<b>1000</b>	<b>3000</b>	<b>3000</b>	<b>4000</b>	<b>6000</b>				
Nominal (rated) load ( $E_{max}$ )	kg	5; 10; 20; 30; 50; 100; 200; 500	10; 20; 30; 50; 100; 200; 500	50; 100; 200	20; 30; 50; 100; 200; 500	20; 30; 50; 100; 200;				
	t	1	1	–	–	–				
Minimum scale division ( $v_{min}$ )	% of $E_{max}$	0.0360	0.0090	0.0066						
Return of minimum dead load signal ( $D_{DR}$ )		–	–	0.5· $E_{max}$ / 7500	–	–				
Nominal (rated) sensitivity ( $C_n$ )	mV/V			2						
Sensitivity tolerance with load appl. in spec. direction	%	+(1;–0.1)		±0.05 <sup>1)</sup>						
Temperature coefficient of sensitivity ( $TC_S$ ) <sup>2)</sup>	% of $C_n$ /10 K	±0.0500	±0.0080	±0.0080	±0.0070	±0.0040				
Temperature coefficient of zero signal ( $TK_0$ )		±0.0500	±0.0125	±0.0093	±0.0093	±0.0093				
Relative reversibility error ( $d_{hy}$ ) <sup>2)</sup>		±0.0500	±0.0170	±0.0066	±0.0130	±0.0080				
Non linearity ( $d_{lin}$ ) <sup>2)</sup>	% of $C_n$	±0.0500	±0.0180	±0.0180	±0.0150	±0.0110				
Load creep ( $d_{DR}$ ) in 30 min.		±0.0490	±0.0166	±0.0098	±0.0125	±0.0083				
Input resistance ( $R_{LC}$ )				350...480						
Output resistance ( $R_0$ )	Ω	356 ± 0.2		356 ± 0.12						
Reference voltage ( $U_{ref}$ )				5						
Nominal supply voltage range ( $B_u$ )	V			0.5...12						
Insulation resistance ( $R_{is}$ )	GΩ			> 5						
Nominal ambient temperature range ( $B_T$ )				–10...+40						
Operating temperature range ( $B_{tu}$ )	°C			–30...+70						
Storage temperature range ( $B_{st}$ )				–50...+85						
Limit load ( $E_L$ )				150						
Breaking load ( $E_d$ )	% of $E_{max}$			≥ 300						
Nominal (rated) load	kg	<b>5</b>	<b>10</b>	<b>20</b>	<b>30</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	<b>1000</b>
Relative permissible oscillatory stress	% of $E_{max}$	100	100	100	100	100	100	100	70	100
Nominal (rated) displacement ( $s_{nom}$ ) approx.	mm	0.24	0.3	0.29	0.28	0.27	0.31	0.39	0.6	0.55
Weight, (G) approx.	kg	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.3
Degree of protection (IP) as per EN60529 (IEC529)		IP 68 (tougher test conditions: 1 m water column; 100 h)								
Material:	Measuring body Bellows Cable inlet gland Cable sheath									Stainless steel <sup>3)</sup> Stainless steel <sup>3)</sup> Stainless steel / Viton® PVC

<sup>1)</sup> For load cell Z6FC3/10kg: ≤ ±0.1 %.

<sup>2)</sup> The values for linearity deviation, relative reversibility error and temperature effect on sensitivity are typical values. The sum of these values is within the cumulative error limits laid down by OIML R60.

<sup>3)</sup> As per EN 10088–1

## Options

### Ex protection versions per IECEx and ATEX

AI1/21 IECEx+ATEX zone 1/21 + FM intrinsically safe  
II 2G Ex ia IIC T6/T4 Gb, II 2D Ex ia IIIC T125°C Db\*

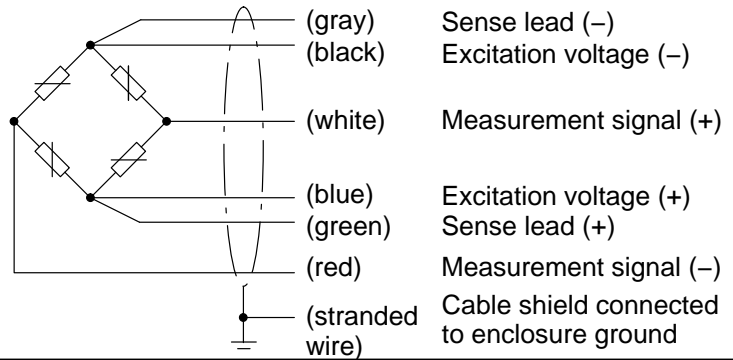
AI2/21\*\* IECEx+ATEX zone 2/21 not intrinsically safe  
II 3G Ex nA IIC T6/T4 Gc, II 2D Ex tb IIIC T125°C Db\*

\* with EU type examination certificate (BVS13ATEX E 108 X) and IECEx Certificate of Conformity (IECEx BVS 13.0109 X)

\*\* IECEx zone 2/21 includes option ATEX2/22 and also offers the additional customer benefit of usage with conductive dust as well.

### Cable assignment (6-wire configuration)

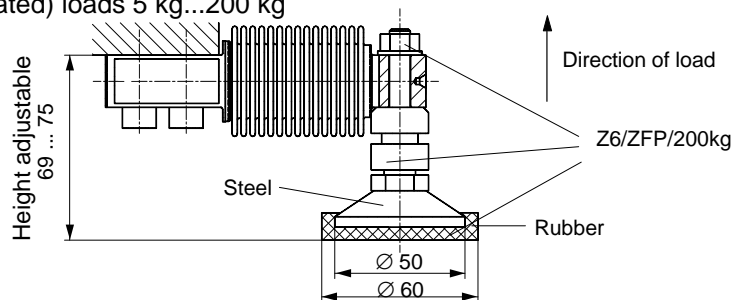
With this cable assignment, the output voltage at the measuring amplifier is positive when the transducer is loaded.



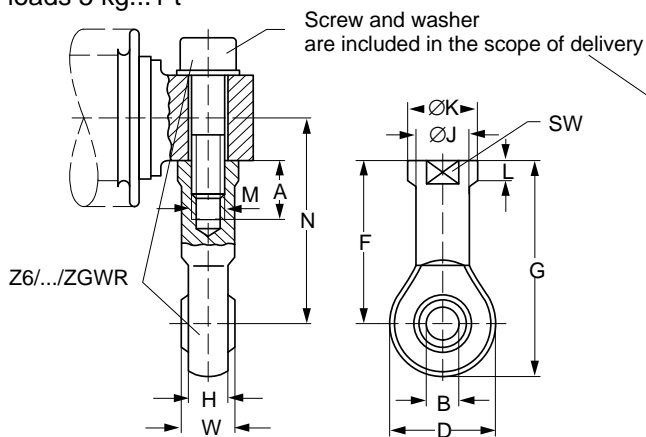
### Installation aids, not included in scope of delivery (Dimensions in mm; 1 mm = 0.03937 inches)

**Note:** All installation aids are made of non-rusting material. The rubber parts of the ZEL are made of chloroprene rubber.

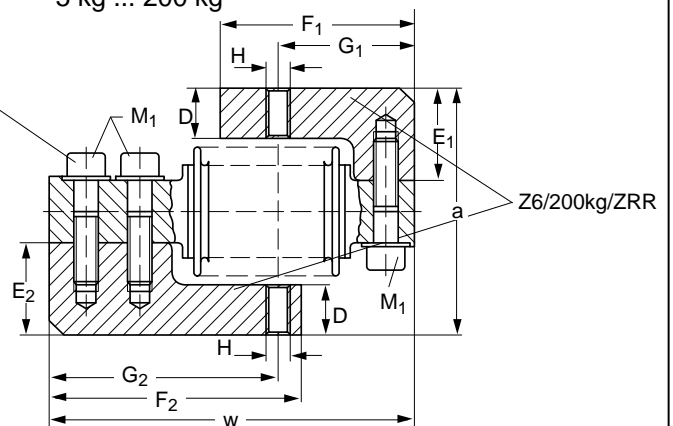
### Oscillating loading foot ZFP for nominal (rated) loads 5 kg...200 kg



### Knuckle eye ZGWR (maintenance-free) for nominal (rated) loads 5 kg...1 t



### Force feedback ZRR for nominal (rated) loads 5 kg ... 200 kg

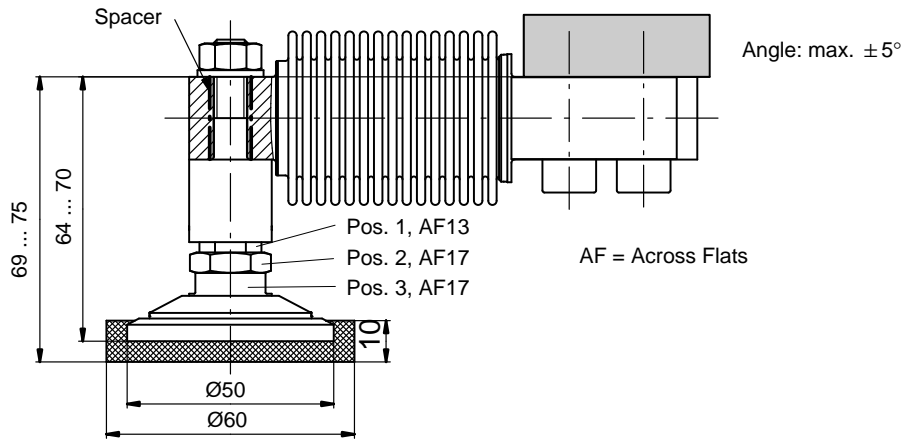


Nominal (rated) load	ZGWR	A	B	D	F	G	H	Ø J	Ø K	L	M	SW	W	N
5...200 kg	Z6/200kg/ZGWR	16	8 <sup>H7</sup>	24	36	48	9	12.5	16	5	M8	14	12	46
500 kg	Z6/1t/ZGWR	20	10 <sup>H7</sup>	28	43	57	10.5	15	19	6.5	M10	17	14	53
1 t	Z6/1t/ZGWR	20	10 <sup>H7</sup>	28	43	57	10.5	15	19	6.5	M10	17	14	55.5

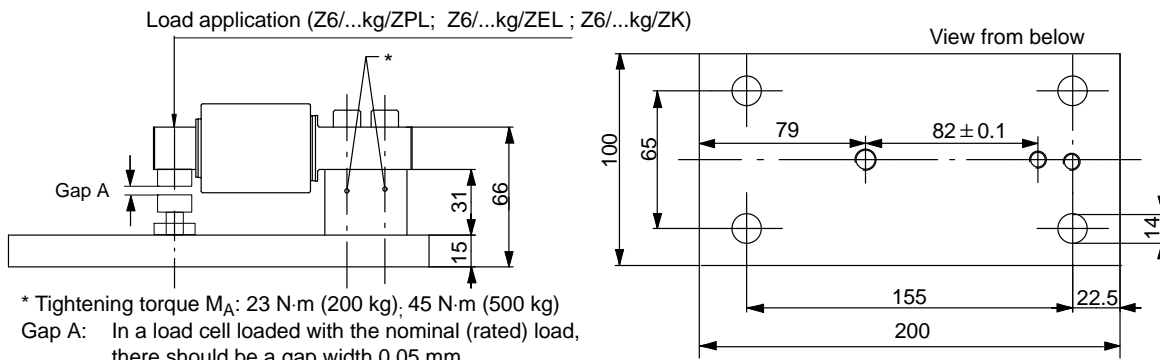
Nominal (rated) load	ZRR	D	E <sub>1</sub>	E <sub>2</sub>	F <sub>1</sub>	F <sub>2</sub>	G <sub>1</sub>	G <sub>2</sub>	H	M <sub>1</sub>	a	w	Depth
5...200 kg	Z6/200kg/ZRR	16	30	30	65	85	46	77	M8	M8x30	80 ± 1.1	123	15

Nominal (rated) load	Cone, conical pan ZK	Ø C	D	E	Ø U	X
5...200 kg	Z6/200kg/ZK	15	16	21	8.1 <sub>-0.05</sub>	26
500 kg	Z6/1t/ZK	18	24	32	11 <sub>-0.05</sub>	34
1 t	Z6/1t/ZK	18	24	32	11 <sub>-0.05</sub>	36.5

**Oscillating loading foot PCX** for nominal (rated) loads 5 kg... 500 kg (Z6/PCX/500kg);  
 1 set comprising 4 pieces Z6/PCX/500kg

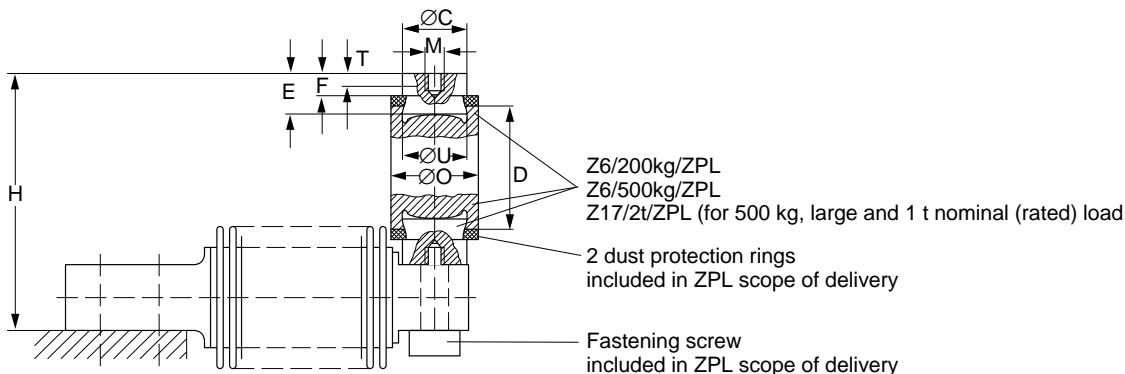


**Base plate / Mounting set** for nominal (rated) loads 5 kg (Z6/ZPU/200kg) ... 500 kg (Z6/ZPU/500kg)



\* Tightening torque  $M_A$ : 23 N·m (200 kg); 45 N·m (500 kg)  
 Gap A: In a load cell loaded with the nominal (rated) load, there should be a gap width 0.05 mm

### Pendulum bearing ZPL for nominal (rated) loads 5 kg...1 t

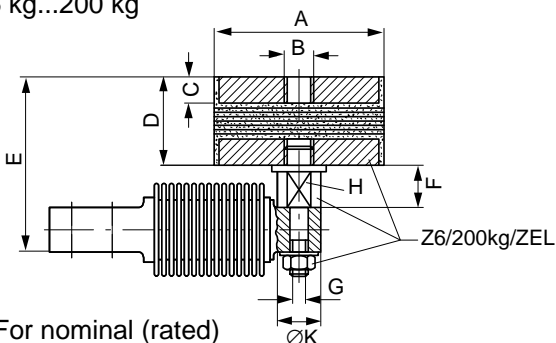


Nominal (rated) load	Pendulum bearing ZPL	Ø C	D	H	M	Ø O	T	E	F	Ø U	F <sub>R</sub> * (% of the load)	s <sub>max</sub> ** (mm)
5...200 kg	Z6/200kg/ZPL	20 <sub>-0.2</sub>	45	89 <sup>+0.6</sup> <sub>-0.8</sub>	M8	30	6.5	17	9	20 <sup>D10</sup>	2.8	3.5
500 kg	Z6/500kg/ZPL	20 <sub>-0.2</sub>	45	89 <sup>+0.6</sup> <sub>-0.8</sub>	M8	30	6.5	17	9	20 <sup>D10</sup>	2.8	3.5
1 t	Z17/2t/ZPL	30 <sub>-0.1</sub>	60	126.5	M10	46	8	22	14	30 <sup>D10</sup>	2	7.5

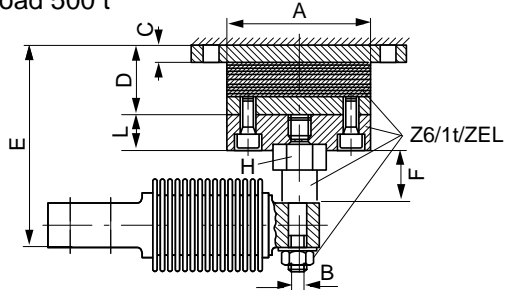
\* F<sub>R</sub>: Force feedback in N, with 1 mm lateral displacement

\*\* s<sub>max</sub>: Maximum perm. lat. displacement with nominal (rated) loading

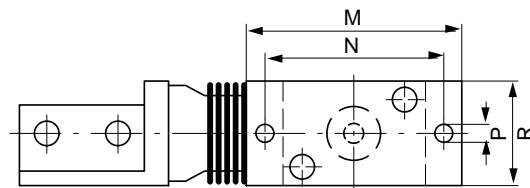
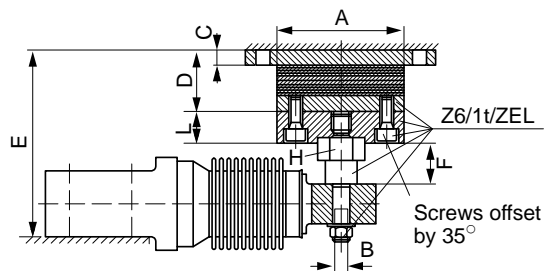
### Rubber-metal bearing ZEL for nominal (rated) loads 5 kg...200 kg



For nominal (rated) load 500 kg



For nominal (rated) loads 1 t



Correct installation position of the rubber-metal bearing

Nominal (rated) load	ZEL	A	B	C	D	E	F	G	H	K	L	M	N	P	R	F <sub>R</sub> *	s <sub>max</sub> **
5...200 kg	Z6/200kg/ZEL	75	M12	12	40	79 ± 1.3	18.5	M8	SW17	19	-	-	-	-	-	163	3
500 kg	Z6/1t/ZEL	80	M10	10	39	105 <sup>+2.1</sup> <sub>-2.2</sub>	26	-	SW27	-	20	120	100	9	60	400	4.5
1 t	Z6/1t/ZEL	80	M10	10	39	117 <sup>+2.1</sup> <sub>-2.2</sub>	26	-	SW27	-	20	120	100	9	60	400	4.5

\* F<sub>R</sub>: Force feedback in N, with 1 mm lateral displacement

\*\* s<sub>max</sub>: in mm, Maximum perm. lat. displacement with nominal (rated) loading

Order no.  
**K-Z6**

Code	Option 1: Design
<b>F</b>	Z6F
<b>G</b>	Z6G (big) <span style="float: right;">[only with Option 2 = C3 + Option 3 = 500]</span>

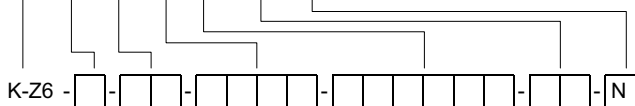
Code	Option 2: Accuracy
<b>D1</b>	D1 (OIML) <span style="float: right;">[not with Option 1 = G]</span>
<b>C3</b>	C3 (OIML)
<b>C4</b>	C4 (OIML) <span style="float: right;">[only with Option 3 = 20 / 30 / 50 / 100 / 200 / 500 + Option 5 = S3]</span>
<b>C6</b>	C6 (OIML) <span style="float: right;">[only with Option 3 = 20 / 30 / 50 / 100 / 200 / 500 + Option 5 = S3]</span>

Code	Option 3: Capacity
<b>5</b>	5 kg <span style="float: right;">[only with Option 2 = D1]</span>
<b>10</b>	10 kg <span style="float: right;">[only with Option 2 = D1 / C3]</span>
<b>20</b>	20 kg
<b>30</b>	30 kg <span style="float: right;">[only with Option 4 = N/(AI2/21)]</span>
<b>50</b>	50 kg
<b>100</b>	100 kg
<b>200</b>	200 kg
<b>500</b>	500 kg <span style="float: right;">[only with Option 2 = D1 / C3 / C4]</span>
<b>1000</b>	1 t <span style="float: right;">[only with Option 2 = D1 / C3]</span>

Code	Option 4: Ex protection
<b>N</b>	no Ex protection
<b>AI1/21</b>	IECEX-ATEX Zone 1/21 and FM
<b>AI2/21</b>	IECEX-ATEX Zone 2/21

Code	Option 5: Cable length
<b>S3</b>	3 m (standard)
<b>6</b>	6 m <span style="float: right;">[not with Option 2 = C6]</span>
<b>12</b>	12 m <span style="float: right;">[not with Option 2 = C6]</span>

Code	Option 6: Miscellaneous
<b>N</b>	without



[ ]: Not all codes can be combined with each other. Please take heed of the terms in square brackets!

Subject to modifications.  
 All product descriptions are for general information only. They are not to be understood as a guarantee of quality or durability.

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