

# Z6

## Load cell

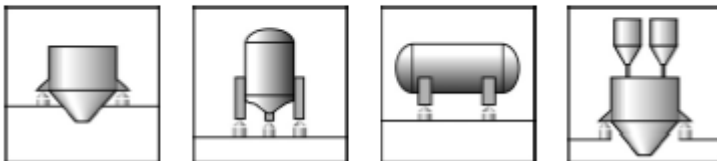


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### Special features

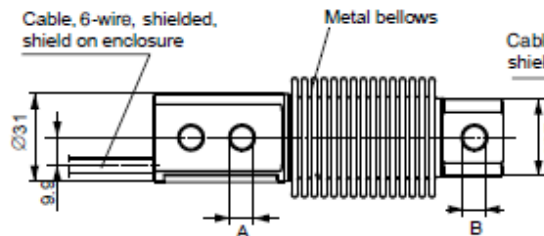
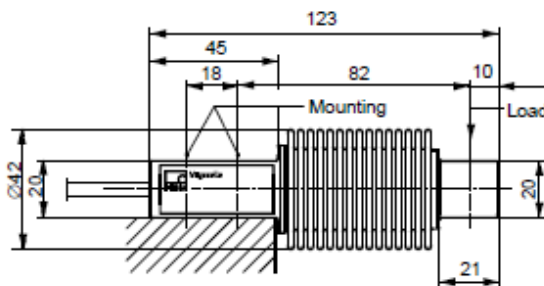


- Welded-on metal bellows
- Nominal (rated) loads: 5 kg ... 1 t
- Load cells and installation aids made of rust-resistant materials
- Verifiable up to 6000 parts, test report as per OIML R60
- Six-wire circuit
- Optimized for parallel connection by off-center load compensation
- Meets EMC requirements as per DIN EN 45501
- Options:  
Ex-protection designs as per ATEX 95



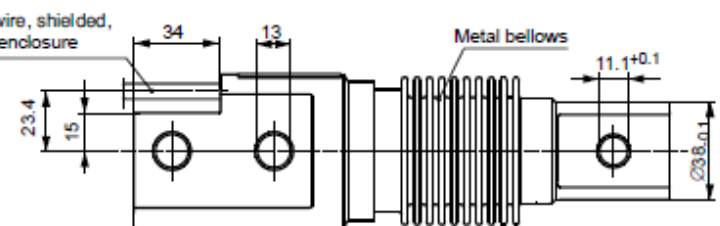
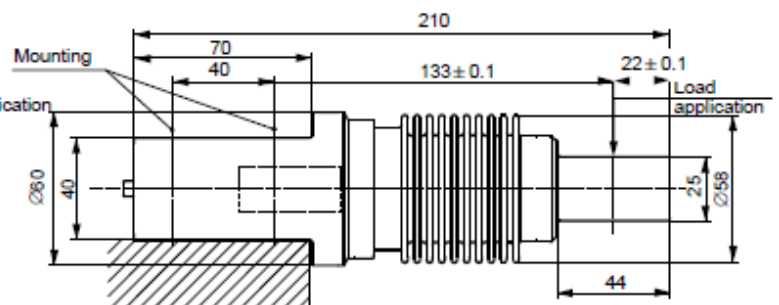
Dimensions (in mm; 1 mm = 0.03937 inches)

**Z6; Nominal (rated) loads 5 kg...500 kg**



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

**Z6; Nominal (rated) load 1 t**



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



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## Specifications

Type		Z6FD1	Z6FC3	Z6FC3MI	Z6FC4	Z6FC6			
Accuracy class to OIML R 60		D1	C3	C3/MI7.5	C4	C6			
Number of scale intervals ( $n_{LC}$ )		1000	3000	3000	4000	6000			
Nominal (rated) load ( $E_{max}$ )	kg	5; 10; 20; 50; 100; 200; 500	10; 20; 50; 100; 200; 500	50; 100; 200	20; 50; 100; 200; 500	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>	% of $C_n$	± 0.0500	± 0.0170	± 0.0066	± 0.0130	± 0.0080			
Non linearity ( $d_{lin}$ ) <sup>2)</sup>		± 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 ( $R_{LC}$ )	Ω	350...480							
Output resistance ( $R_0$ )		356 ± 0.12							
Reference voltage ( $U_{ref}$ )	V	5							
Nominal supply voltage range ( $B_U$ )		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 ( $B_{Tl}$ )		-50...+85							
Limit load ( $E_L$ )	% of $E_{max}$	150							
Breaking load ( $E_d$ )		≥ 300							
Nominal (rated) load	kg	5	10	20	50	100	200	500	1000
Relative permissible oscillatory stress	% of $E_{max}$	100	100	100	100	100	100	70	100
Nominal (rated) displacement ( $s_{nom}$ ) approx.	mm	0.24	0.3	0.29	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	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 <sup>®</sup> 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

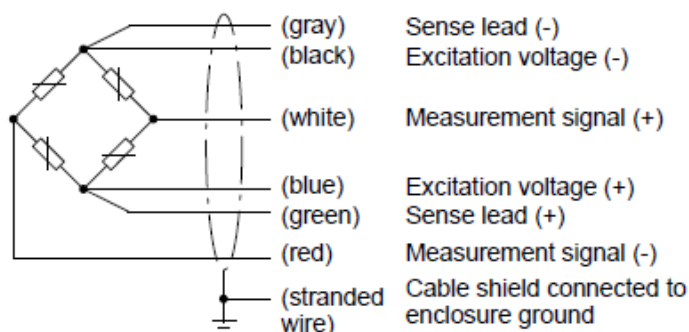
## Options:

Ex-protection designs as per ATEX 95:

- II 2 G EEx ia IIC T4 or T6 (Zone 1) \*)
  - II 3 G EEx nA II T6 (Zone 2)
  - II 2 D IP68 T80°C (Zone 21) \*)
  - II 3 D IP68 T80°C (Zone 22 for non-conductive dust)
- \*) with EC type examination certificate

### Cable assignment (6-wire configuration)

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



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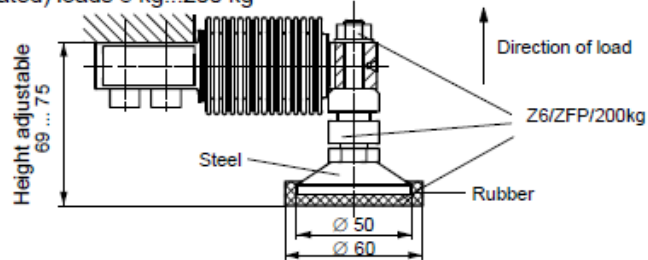


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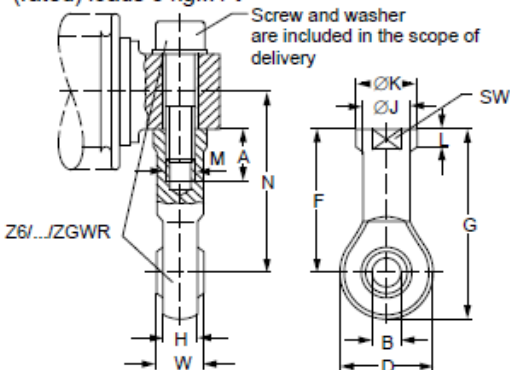
**Installation aids**, not included in scope of delivery (Dimensions (in mm; 1 mm = 0.03937 inches))

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

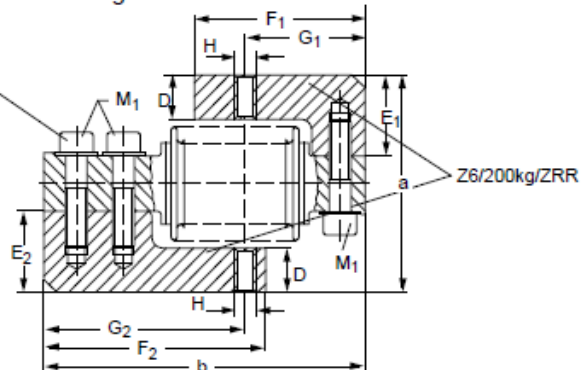
**Oscillating loading foot ZFP for nominal (rated) loads 5 kg...200 kg**



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



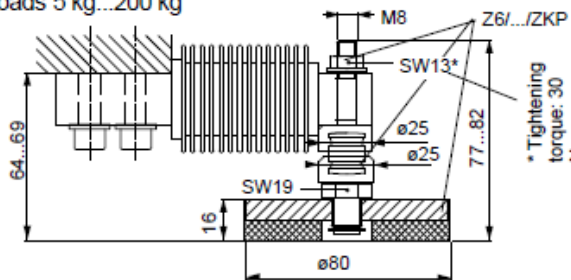
**Force feedback ZRR for nominal (rated) loads 5 kg ... 200 kg**



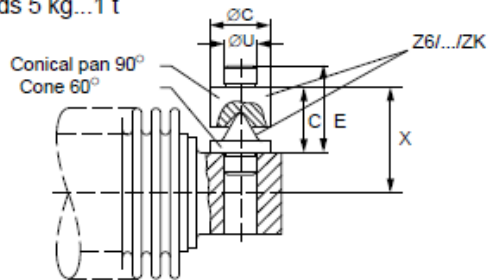
Nominal (rated) load	ZGWR	A	B	D	F	G	H	Ø J	Ø K	L	M	SW	W	N
5...200 kg	Z6/200kg/ZGWR	16	8 <sup>H7</sup>	24	36	48	9	12.5	16	5	M8	14	12	46
500 kg	Z6/1½ZGWR	20	10 <sup>H7</sup>	28	43	57	10.5	15	19	6.5	M10	17	14	53
1 t	Z6/1½ZGWR	20	10 <sup>H7</sup>	28	43	57	10.5	15	19	6.5	M10	17	14	55.5

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	b	Depth
5...200 kg	Z6/200kg/ZRR	16	30	30	65	85	46	77	M8	M8x30	80 ± 1.1	123	15

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



**Cone, conical pan ZK for nominal (rated) loads 5 kg...1 t**

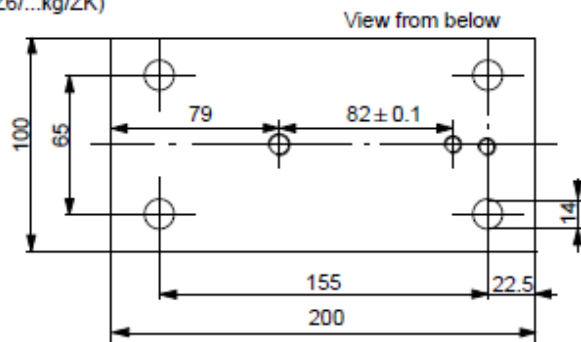
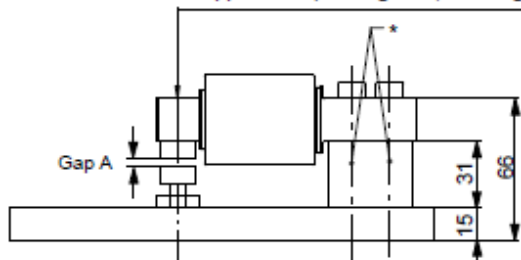


Nominal (rated) load	Cone, conical pan ZK	Ø C	D	E	Ø U	X
5...200 kg	Z6/200kg/ZK	15	16	21	8.1 <sub>-0.05</sub>	26
500 kg	Z6/1½ZK	18	24	32	11 <sub>-0.05</sub>	34
1 t	Z6/1½ZK	18	24	32	11 <sub>-0.05</sub>	36.5



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

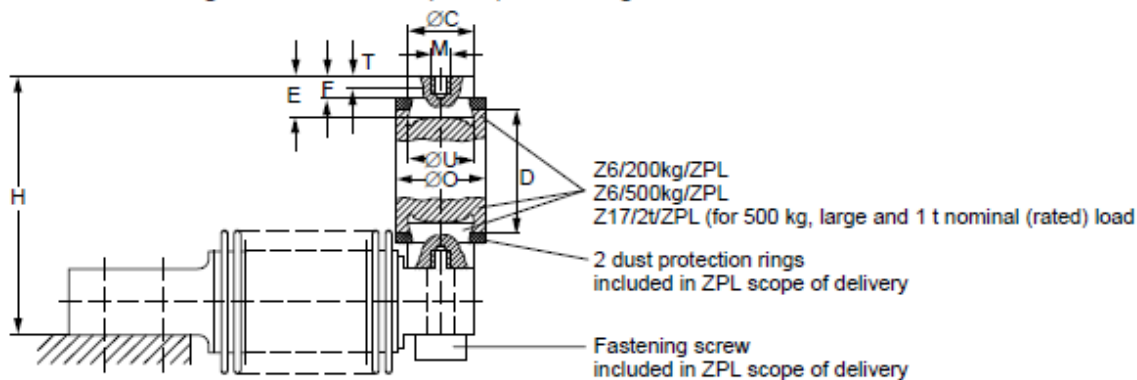
Load application (Z6/...kg/ZPL; Z6/...kg/ZEL; Z6/...kg/ZK)



\* 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

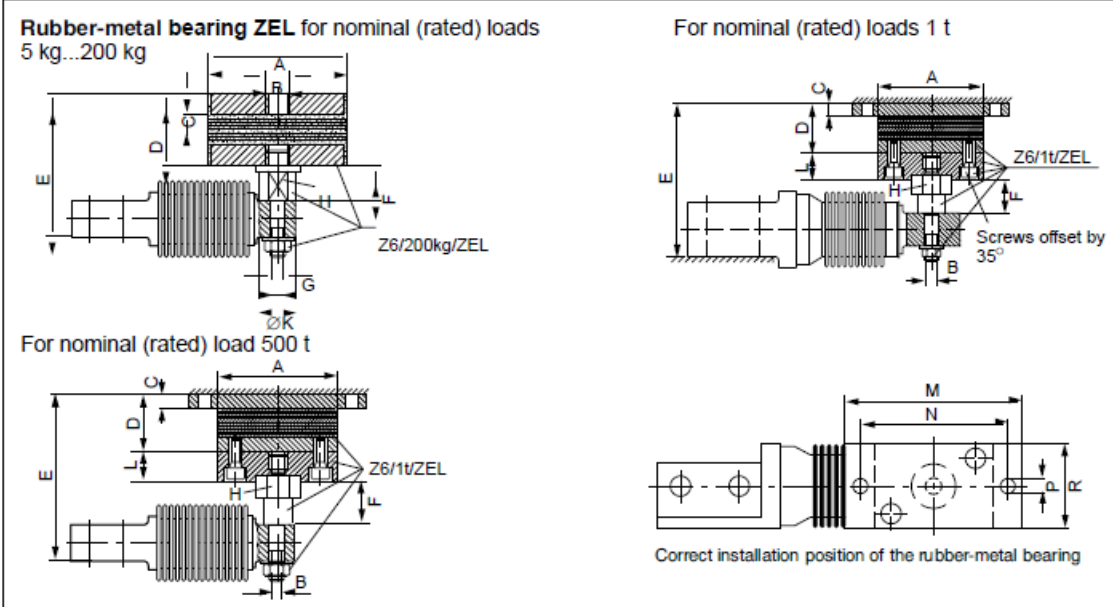
### Pendulum bearing ZPL for nominal (rated) loads 5 kg...1 t



Nominal (rated) load	Pendulum bearing ZPL	$\varnothing C$	D	H	M	$\varnothing O$	T	E	F	$\varnothing U$	$F_R^*$ (% of the load)	$s_{max}^{**}$ (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

\*  $F_R$ : Force feedback in N, with 1 mm lateral displacement

\*\*  $s_{max}$ : Maximum perm. lat. displacement with nominal (rated) loading



Nominal (rated) load	ZEL	A	B	C	D	E	F	G	H	K	L	M	N	P	R	F <sub>R</sub> <sup>*</sup>	s <sub>max</sub> <sup>**</sup>
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) [ only with Option 2 = C3 + Option 3 = 500 ]
Code	Option 2: Accuracy
<b>D1</b>	D1 (OIML) [ not with Option 1 = G ]
<b>C3</b>	C3 (OIML)
<b>C4</b>	C4 (OIML) [ only with Option 3 = 20 / 50 / 100 / 200 / 500 + Option 5 = S ]
<b>C6</b>	C6 (OIML) [ only with Option 3 = 50 / 100 / 200 + Option 5 = S ]
Code	Option 3: Capacity
<b>5</b>	5kg [ only with Option 2 = D1 ]
<b>10</b>	10kg [ only with Option 2 = D1 / C3 ]
<b>20</b>	20kg [ only with Option 2 = D1 / C3 / C4 ]
<b>50</b>	50kg
<b>100</b>	100kg
<b>200</b>	200kg
<b>500</b>	500kg [ only with Option 2 = D1 / C3 / C4 ]
<b>1000</b>	1t [ only with Option 2 = D1 / C3 ]
Code	Option 4: Ex protection (accord. to ATEX 95)
<b>N</b>	non ATEX
<b>1</b>	ATEX Zone 1 + 21 and FM <span style="border: 1px solid black; padding: 2px;">FM</span> <span style="border: 1px solid black; padding: 2px; font-size: 1.2em;">Ex</span>
<b>2</b>	ATEX Zone 2 + 22 (non-conductive dust)
Code	Option 5: Cable length
<b>S</b>	3m (standard)
<b>6</b>	6m [ not with Option 2 = C6 ]
<b>12</b>	12m [ not with Option 2 = C6 ]
Code	Option 6: Miscellaneous
<b>N</b>	without

K-Z6 -  -  -  -  -  -  -  -  -  -  **N**

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