

Z7A

Load cells

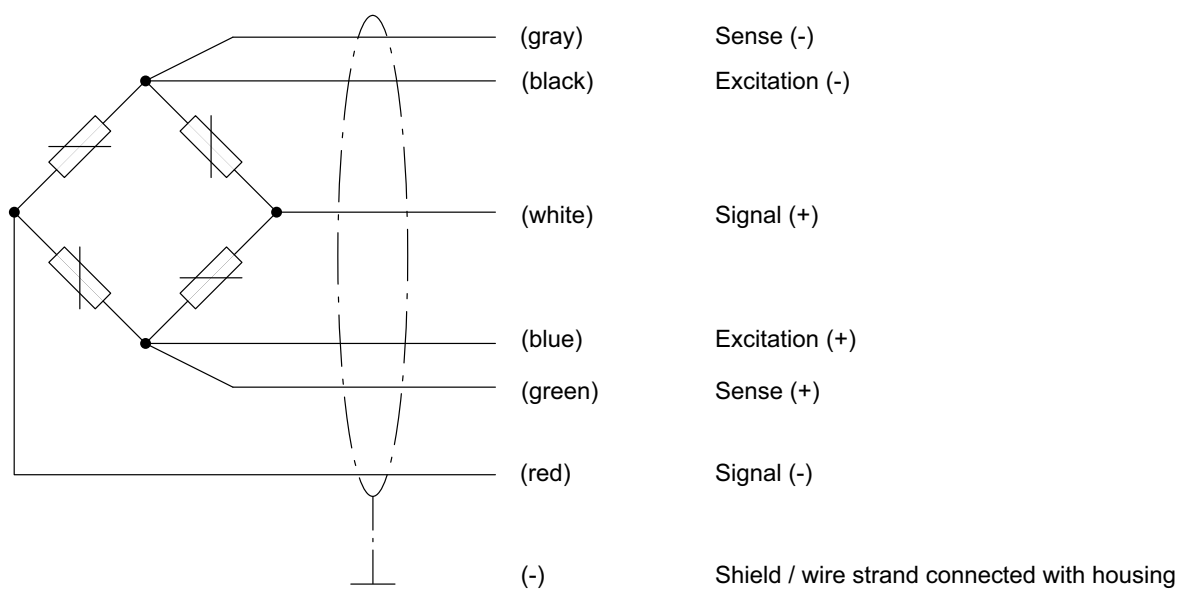
Special features

- Complies with OIML R60 regulations up to 3000 d
- Max. capacities: 500 kg ... 10 t
- Fulfills EMC requirements in accordance to EN 45 501
- Low transducer height
- Robust design

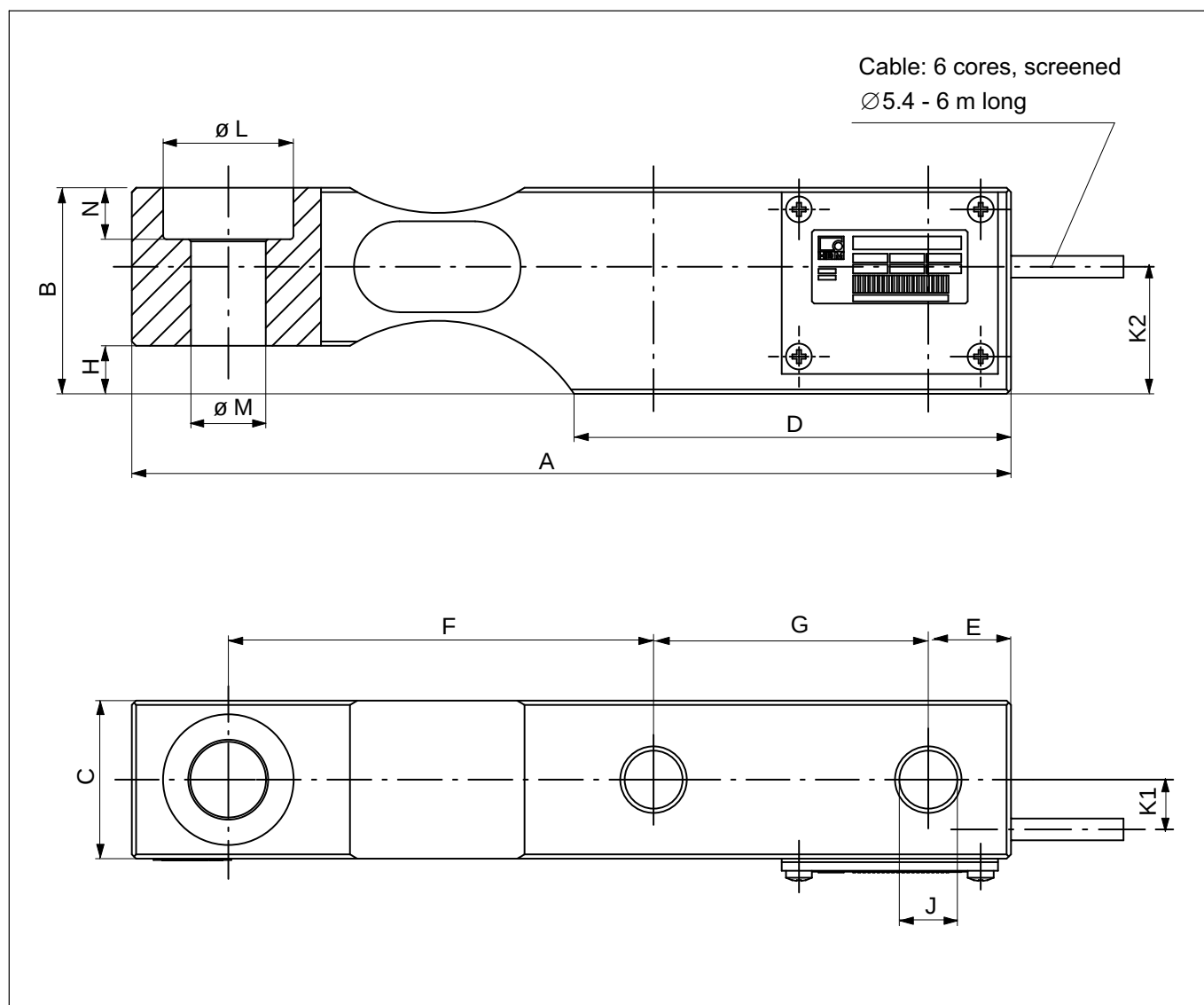


Wiring code

6-wire circuit



Dimensions Z7A (in mm, 1mm = 0.03937inches)



Nominal load in t	L ^{+0.2}	M ^{H11}	J	B	H	N	A	D	F	G	E	C	K1	K2	M* in N·m
0.5 and 1	30.2	17.5	13.4	47.6	11.1	11.9	203.2	101	98.3	63.5	19.1	36.5	10.6	29	135
2	30.2	17.5	13.4	47.6	11.1	11.9	203.2	102	98.3	63.5	19.1	36.5	10.6	29	135
5	41.3	25.5	22.5	70	22.2	15.9	235	118	123.7	66.5	20.6	47.6	16	46	660
10	51	32	27	82.6	19.1	20.7	279.4	140	139.7	82.6	25.4	60.3	21	51	1150

* Tightening torque with screws of property class 10.9 (with $\mu=0.16$).

Accessories, to be ordered separately:

- rubber-metal bearing ZEL
- Pendulum bearing ZPL

Specifications

Type		Z7A	
Accuracy class according to OIML R 60		D1	C3
Max. number of load cell verification intervals (n_{LC})		1 000	3 000
Max. capacity (E_{max})	t	0.5; 1; 2; 5; 10	2; 5; 10
Min. load cell verification interval (v_{min})	% of E_{max}	0.0357	0.0100
Sensitivity (C_n)	mV/V	2	
Sensitivity tolerance	%	< ± 0.1000	< ± 0.0500
Temperature effect on sensitivity (TK_C) ¹⁾	% of $C_n/10$ K	< ± 0.0350	< ± 0.0117
Temperature effect on zero signal (TK_0)		< ± 0.0500	< ± 0.0140
Hysteresis error (d_{hy}) ¹⁾		< ± 0.0500	< ± 0.0170
Non-linearity (d_{lin}) ¹⁾	% of C_n	< ± 0.1000	< ± 0.0333
Creep (d_{cr}) in 30 min.		< ± 0.0735	< ± 0.0167
Input resistance (R_{LC}) at reference temperature	Ω	> 350	
Output resistance (R_O) at reference temperature		356 $\pm$ 0.2	356 $\pm$ 0.12
Nominal rang of excitation voltage (U_{ref})	V	0.5...12	
Maximum excitation voltage (B_U)		18	
Reference temperature		+23 [+73.4]	
Nominal temperature range (B_T)	°C [°F]	-10...+40 [+14...+104]	
Operating temperature range (B_{tu})		-30...+70 [-22...+158]	
Storage temperature range (B_{tl})		-50...+85 [-58...+185]	
Safe load limit (E_L)	% of E_{max}	150	
Breaking load (E_d)		300	

Max. capacity (E_{max})	t	0.5	1	2	5	10
Relative static lateral force limit (E_{lq}) ²⁾		100	50	25 (100) ²⁾	15 (100) ²⁾	18 (100) ²⁾
Permissible dynamic load (F_{srel}) (vibration amplitude according to DIN 50100)	% of E_{max}	70				
Nominal displacement (s_{nom}), approx.	mm	0.25	0.30	0.35	0.45	0.70
Weight (G), approx.	kg	2.3	2.3	2.3	5	8
Degree of protection according to EN60529 (IEC529)		IP 67				
Material		Steel, galvanized Stainless steel / Viton® PVC				
Measuring body						
Cable gland						
Cable sheath						

¹⁾ The values stated for the non-linearity, the hysteresis and the temperature coefficient of sensitivity are standard values. The sum of these values is within the accumulated error limit according to OIML R60.

²⁾ The values given in parentheses refer to installation with stops preventing the transducer base from moving. In this case, major error effects have to be anticipated.

Options

Ex protection versions as 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 non-intrinsically safe, II 3G Ex nA IIC T6/T4 Gc, II 2D Ex tb IIIC T125°C Db*

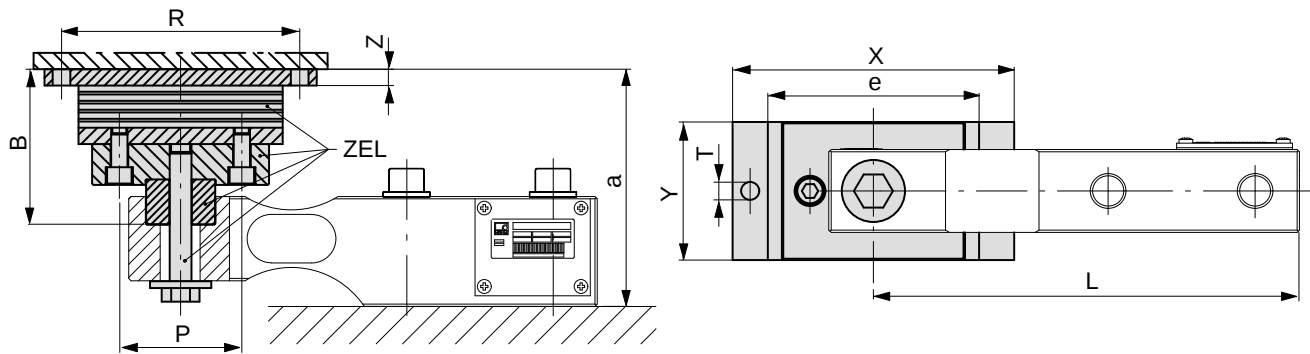
AI2/22 IECEx+ATEX Zone 2/22 non-intrinsically safe, II 3G Ex nA IIC T6/T4 Gc, II 3D Ex tc IIIC T125°C Dc*

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

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

Mounting aids (Dimensions in mm; 1mm = 0.03937 inches)

Rubber-metal bearing ZEL

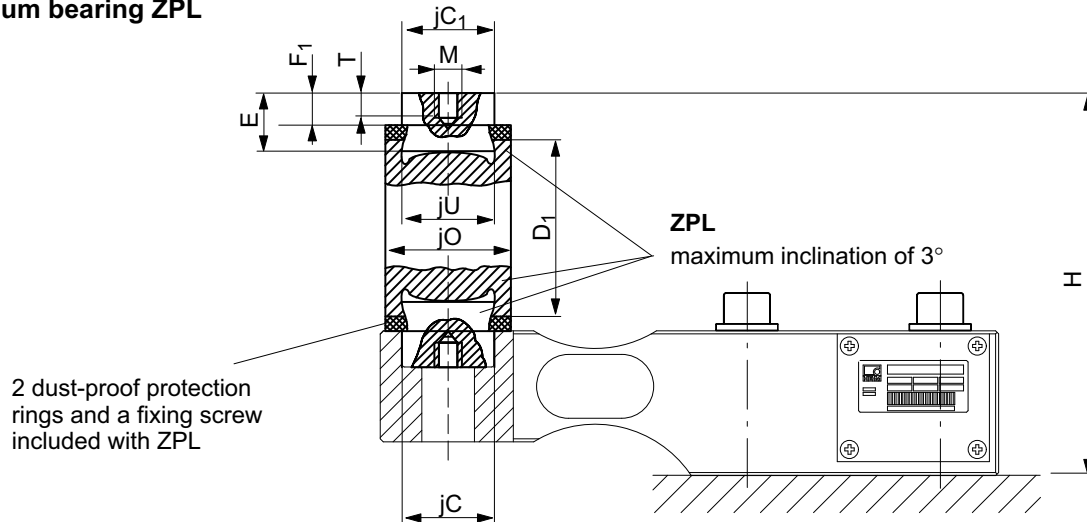


Max. capacity in t	Rubber-metal bearing ZEL	B	L	P	R	T	X	Y	Z	a	e	F_R^* (N)	s_{max}^{**} (mm)
0.5...2	Z17/2t/ZEL	76.3	180.9	70	100	9	120	60	10	$112^{+1,5}_{-1,7}$	80	400	4.5
5	Z17/5t/ZEL	93	210.8	70	125	11	150	100	10	$147^{+1,2}_{-2,0}$	100	620	8
10	HLCB/10t/ZEL	114.1	247.7	90	175	13	200	100	12	$176^{+1,8}_{-2,0}$	130	810	9.5

* F_R =restoring force for $s=1\text{mm}$.

** s_{max} =max. lateral displacement of load introduction with max. capacity.

Pendulum bearing ZPL



Max. capacity in t	Pendulum bearing ZPL	$C^{+0.2}$	$C_1^{-0.1}$	D_1	E	F_1	H	M	O	T	U D_{10}^{h9}	F_R^* (% of load)	s_{max}^{**} (mm)
0.5...2	Z17/2t/ZPL	30.2	30	60	22	14	130 ± 0.5	M10	46	8	30	2	7.5
5	Z17/5t/ZPL	41.3	41.1	73	26	16	169 ± 0.5	M10	48	8	30	1.5	6.9
10	Z17/10t/ZPL	51	50.8	82	32	21	196 ± 0.5	M12	58	10	40	1.8	9.3

* F_R =restoring force for $s=1\text{mm}$.

** s_{max} =max. lateral displacement of load introduction with nominal load.

Z7A load cells, optional versions

Order number	
K-Z7A	

Code	Option 1: Mechanical design
S	Standard

Code	Option 2: Accuracy class
D1	D1 (OIML)
C3	C3 (OIML) [only with Option 3 = 2 / 5 / 10]

Code	Option 3: Nennlast
500	500 kg [only with Option 2 = D1]
1	1 t [only with Option 2 = D1]
2	2 t
5	5 t
10	10 t

Code	Option 4: Explosion protection
N	No explosion protection
AI1/21	IECEX + ATEX zone 1/21 and FM
AI2/21	IECEX + ATEX zone 2/21 [only with Option 2 = C3 + Option 3 = 2]
AI2/22	IECEX + ATEX zone 2/22 [not with Option 2 = C3 + Option 3 = 2]

Code	Option 5: Cable length
S	6 m (standard) [only with Option 3 = 20 / 30]
12	12 m

Code	Option 6: Other
N	Standard

K-Z/A
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S

N

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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