Data Sheet

C6A

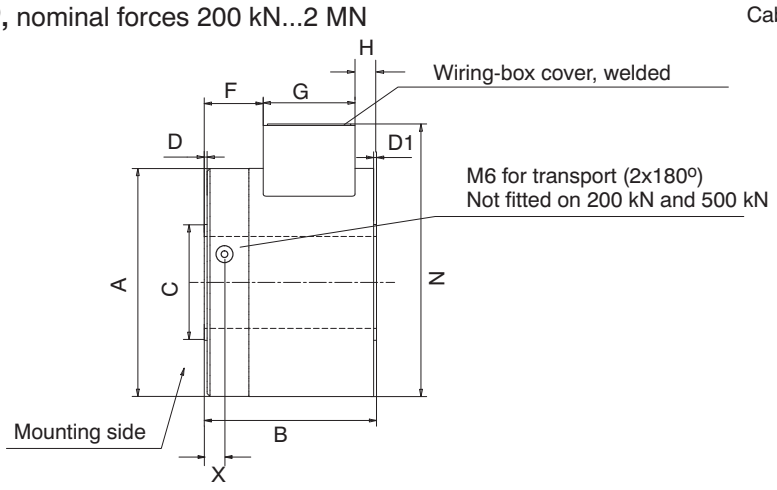
Force Transducer

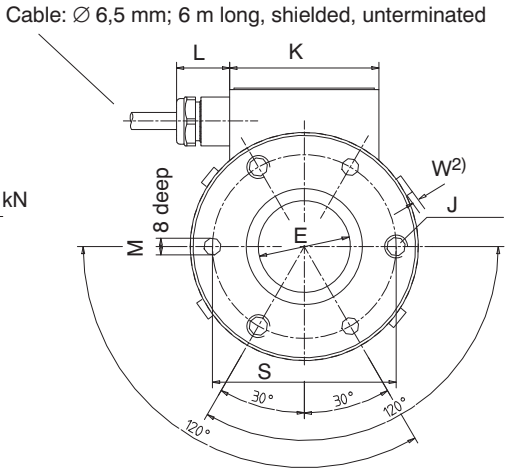
Special features

- **Compressive force transducer**
- **Nominal forces 200 kN ... 5 MN**
- **Continuous inner bore for nominal forces from 200 kN to 2 MN**
- **Rust–resistant version for 200 kN and 500 kN nominal forces**
- **Extensive mounting accessories**

Dimensions (in mm; 1 mm= 0.03937 inches)

C6A[1], nominal forces 200 kN...2 MN





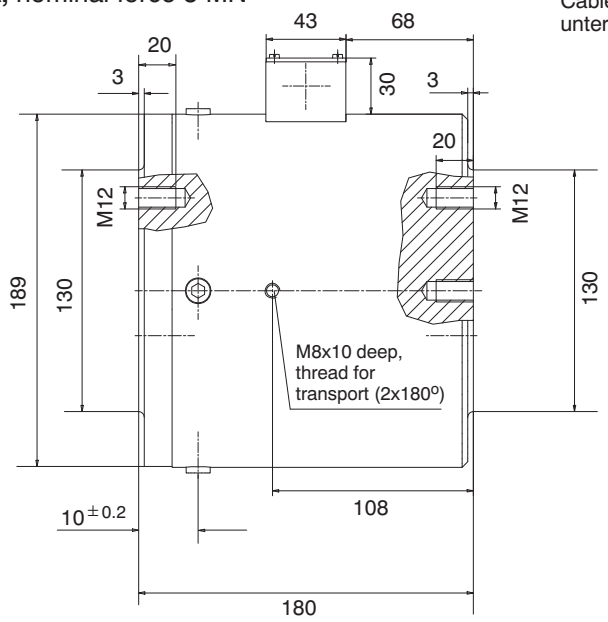
1) Force transducers for nominal loads ≤500kN, manufactured from rust-resistent material

2) For 1 MN and 2 MN only

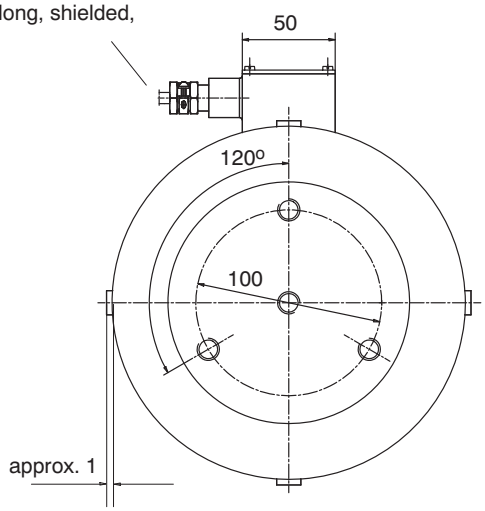
Nominal forces	A	B	C ±0.1	D	D1	$E^{+0.1}$	F	G	H	J	K	L	M^{H11}	N	S ±0.1	W	X
200 kN	80	60	40.4	1	1	32	19.5	32.5	8	M8 - 8 deep	53	18.5	6	97.5	64	–	–
500 kN	80	60	52	1	1	32	19.5	32.5	8	M8 - 8 deep	53	18.5	6	97.5	64	–	–
1 MN	168	100	88	2	3	68	29	43	28	M12-15deep	50	35	8	200	130	1	10
2 MN	168	100	106	2	3	68	29	43	28	M12-15deep	50	35	8	200	130	1	10

Dimensions continued (in mm)

C6A, nominal force 5 MN



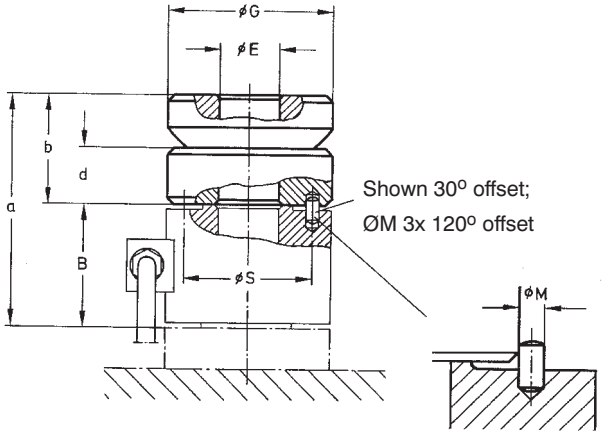
Cable: ∅6.5 mm; 6 m long, shielded, unterminated



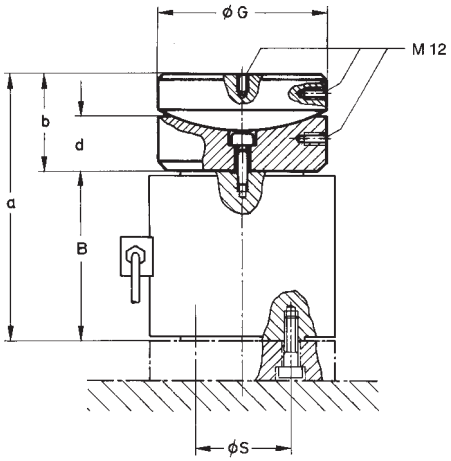
Mounting accessories

Spherical cap ZK (Compensation by oblique load introduction)

for nominal forces in range 200 kN...2 MN



for 5 MN nominal forces

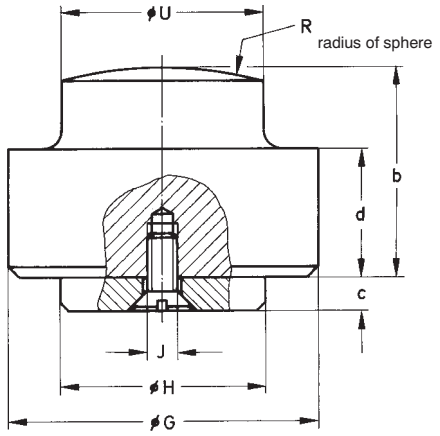


Nominal forces	ZK order no.	Weight in kg	B	$E^{+0.1}$	G	M_{h11}	s	a	b	d
200...500 kN	1-C6/50T/ZK	1.7	60	32	$82_{-0.2}$	6	64 ±0.1	112	52	28
1 MN	1-C6/100T/ZK	3.8	100	68	$121.5_{-0.2}$	8	130 ±0.1	175	74.5	40
2 MN	1-C6/200T/ZK	11.6	100	68	$159_{-0.2}$	8	130 ±0.1	195	95	50
5 MN	1-C6/500T/ZK	20.6	180	–	$178_{-0.3}$	–	100	284	103	61

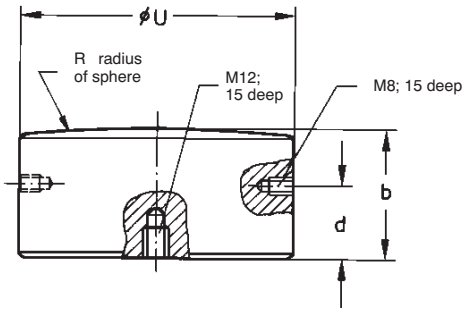
Mounting accessories continued

Load button ZL (for high−precision measurement)

for nominal forces in range 200 kN... 2 MN

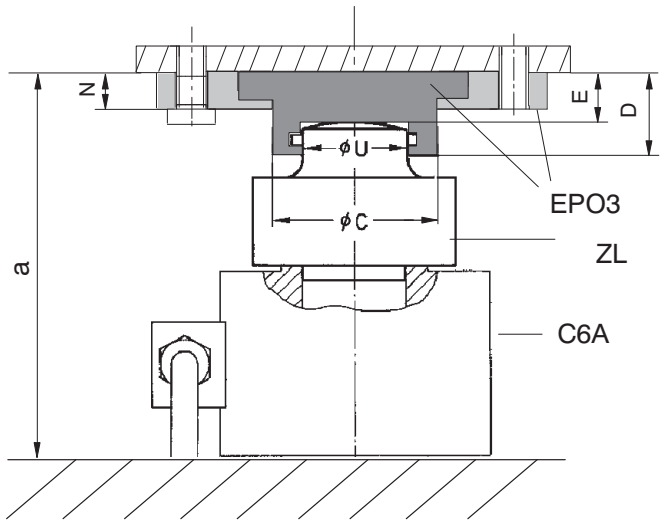


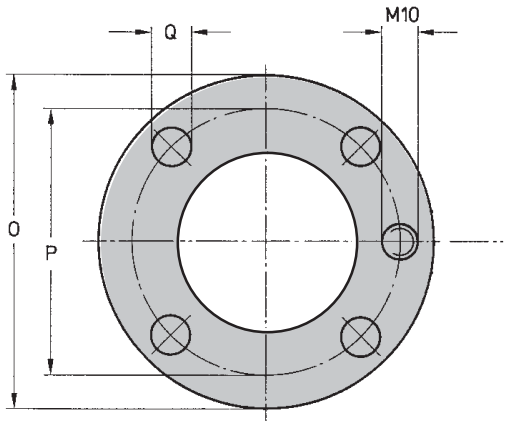
for 5 MN nominal forces



Nominal forces	ZL order no.	Weight in kg	G	$H_{-0.1}$	J	R	$U_{-0.2}$	b	c	d
200 kN	1-C6/20T/ZL	0.8	60	31.9	M5	300	32	45	5	30
500 kN	1-C6/50T/ZL	0.8	60	31.9	M5	300	44	45	5	30
1 MN	1-C6/100T/ZL	6.4	120	67.9	M6	600	64	80	8	60
2 MN	1-C6/200T/ZL	6.8	120	67.9	M6	600	85	80	8	60
5 MN	1-C6/500T/ZL	6.5	–	–	–	–	$129.8_{-0.05}$	60	–	35

Thrust piece EPO3





* Shown with load buttons ZL 0.2 MN...2 MN

Nominal forces	EPO3 order no.	Weight in kg	C	D	E	N	O	P	Q	$U_{-0.2}$	a
200 kN	1-EPO3R/20T	1.2	47.9	27.5	20	14	114	90	13	32	125
500 kN	1-EPO3/50T	3.4	81.9	50	39.5	20	148	120	17	44	144.5
1 MN	1-EPO3/100T	3.2	81.9	50	39.5	20	148	120	17	64	219.5
2 MN	1-EPO3/250T	13.0	139.5	80	67.5	25	225	190	22	85	247.5
5 MN	1-EPO3/500T	27.0	169.8	103	90	33	270	220	26	130	250

Specifications (data according to VDI standards 2638)

Type			**C6A**				
Accuracy class			0.5				
Nominal force	F_{nom}	MN	200 kN	500 kN	1 MN	2 MN	5 MN
Nominal sensitivity	C_{nom}	mV/V	2				
Relative sensitivity deviation[2]	d_c						
when used with hardened pressure plates		%		< ±2.5			< ±1
when used with load button ZL and pendle bearing EPO3		%		< ±0.5			< ±0.5
when used with spherical cap ZK		%		< ±2.5		< ±4	< ±0.5
Relative zero signal deviation	$d_{s,o}$	%			< 1		
Relative range of inversion ($0.5F_{nom}$)	u	%			< ±0.8		
Linearity deviation[2]	d_{lin}						
when used with hardened pressure plates		%		< ±1			< ±0.5
when used with load button ZL and pendle bearing EPO3		%		< ±0.5			< ±0.5
when used with spherical cap ZK		%		< ±1			< ±0.5
Effect of temperature on sensitivity/10 K by reference to nominal sensitivity	TK_c	%			< ±0.1		
Effect of temperature on zero signal/10 K by reference to nominal sensitivity	TK_0	%			< ±0.05		
Creep over 30 min, in nominal temperature range[1]	d_{crF+E}	%			< ±0.06		
Input resistance at reference temperature	R_e	Ω			>345		
Output resistance at reference temperature	R_a	Ω			356 ± 1.5		
Isolation resistance at test voltage 100 V	R_{is}	GΩ			$>5 \times 10^9$		
Reference excitation voltage	U_{ref}	V			5		
Operating range of the excitation voltage	$B_{U,GT}$	V			0.5 ... 12		
Reference temperature	t_{ref}	°C			+23		
Nominal temperature range	$B_{t,nom}$	°C			–10...+70		
Operating temperature range	$B_{t,G}$	°C			–30...+85		
Storage temperature range	$B_{t,S}$	°C			–50...+100		
Maximum operating force[1]	F_G	%			150		
Limit force[1]	F_L	%			150		
Breaking force[1]	F_B						
when used with hardened pressure plates		%			>300		
when used with load button ZL and pendle bearing EPO3		%		>300			>200
when used with spherical cap ZK		%		>200			>200
Static lateral limit force[1]	F_Q						
when used with hardened pressure plates		%			20		
when used with load button ZL and pendle bearing EPO3		%			20		10
when used with spherical cap ZK		%			10		
Permissible vibration amplitude[1] to DIN 50 100	F_{rb}	%			70		
Nominal displacement without mounting accessories (±15 %)	S_{nom}	mm	0.07	0.08	0.09	0.11	0.26
Natural frequency without coupled ground and without mounting accessories	f_G	kHz	4.5	8	6	7.5	4.3
Weight, without cable		kg	1.4	1.7	10.8	12.2	33
Degree of protection to DIN EN 60 529					IP67		
Cable length, 6–wire connection		m			6		

[1] related to the nominal force

[2] the differing tolerances when using different mounting accessoires are due to the transducer's low profile

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