

C6A

Force Transducers

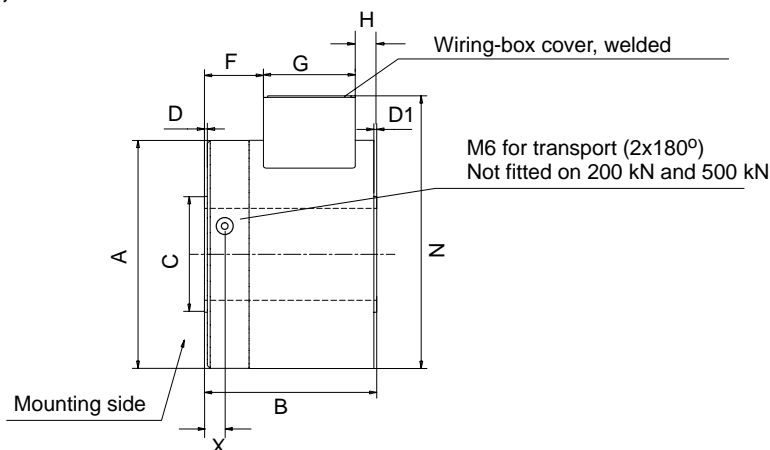


Special features

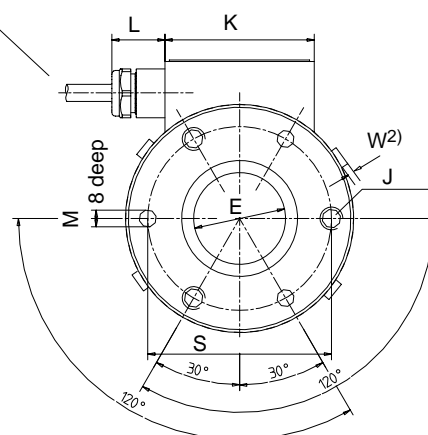
- Compressive force transducers
- Nominal forces 200 kN ... 5 MN
- Continuous inner bore for nominal forces from 200 kN to 2 MN
- Rust-resistant version for 200 kN and 500 kN nominal forces
- Extensive mounting accessories

Dimensions (in mm; 1 mm= 0.03937 inches)

C6A¹⁾, nominal forces 200 kN...2 MN



Cable: Ø 6,5 mm; 3 m long, shielded, unterminated



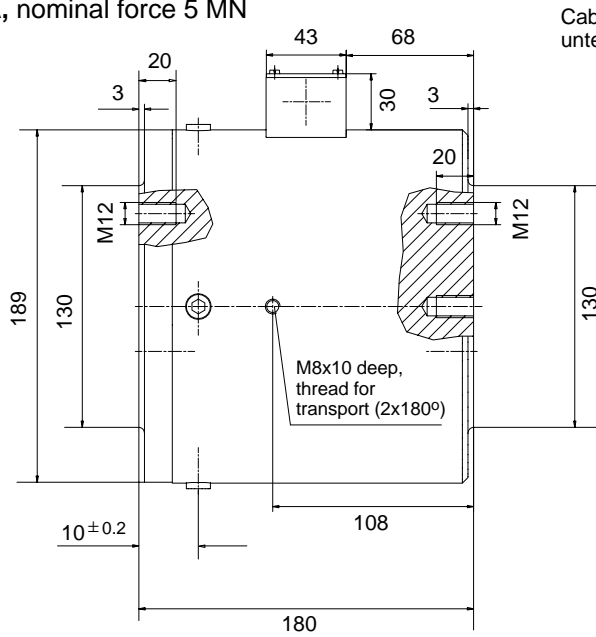
1) Force transducers for nominal loads ≤500kN, manufactured from rust-resistant material

2) For 1 MN and 2 MN only

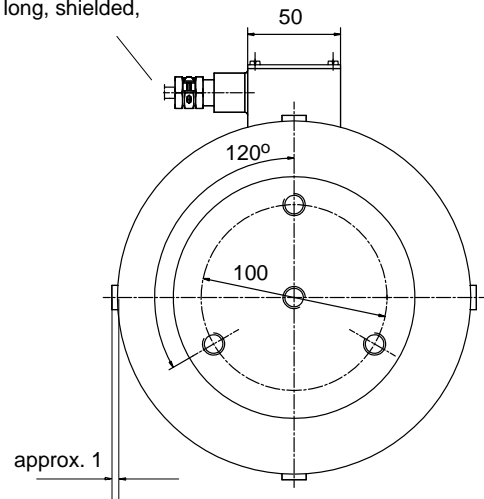
Nominal forces	A	B	C ±0.1	D	D1	E+0.1	F	G	H	J	K	L	M ^{H11}	N	S ±0.1	W	X
200 kN	80	60	40.4	1	1	32	19.5	32.5	8	M8-8deep	53	18.5	6	97.5	64	-	-
500 kN	80	60	52	1	1	32	19.5	32.5	8	M8-8deep	53	18.5	6	97.5	64	-	-
1 MN	168	100	88	2	3	68	29	43	28	M12-15deep	50	35	8	200	130	1	10
2 MN	168	100	106	2	3	68	29	43	28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

Dimensions continued (in mm)

C6A, nominal force 5 MN



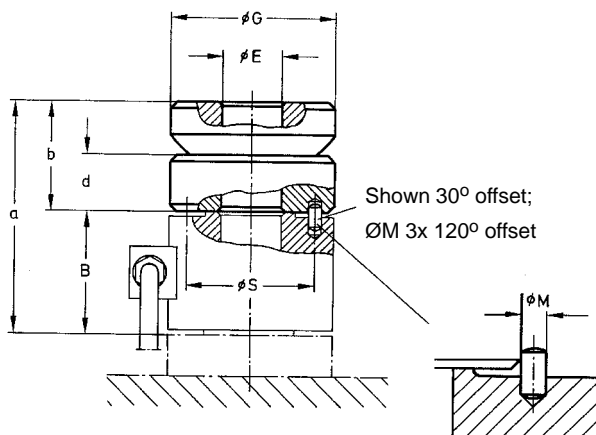
Cable: $\varnothing 6.5$ mm; 6 m long, shielded, unterminated



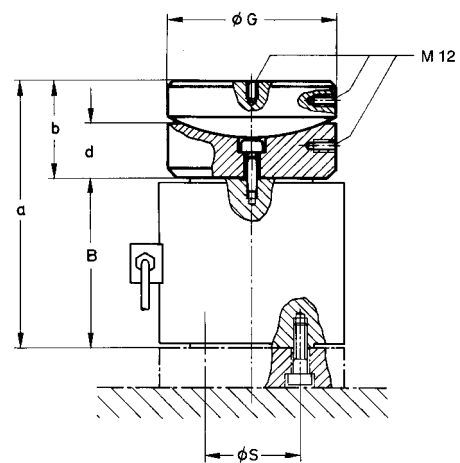
Mounting accessories

Spherical cap ZK (Compensation by oblique load introduction)

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



for 5 MN nominal forces

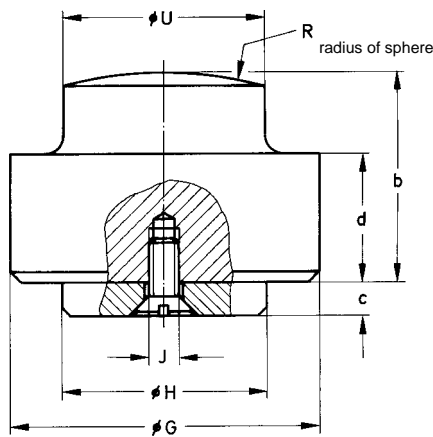


Nominal forces	ZK order no.	Weight in kg	B	E ^{+0.1}	G	M _{h11}	s	a	b	d
200...500 kN	1-C6/50T/ZK	1.7	60	32	82 _{-0.2}	6	64 ± 0.1	112	52	28
1 MN	1-C6/100T/ZK	3.8	100	68	121.5 _{-0.2}	8	130 ± 0.1	175	74.5	40
2 MN	1-C6/200T/ZK	11.6	100	68	159 _{-0.2}	8	130 ± 0.1	195	95	50
5 MN	1-C6/500T/ZK	20.6	180	—	178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

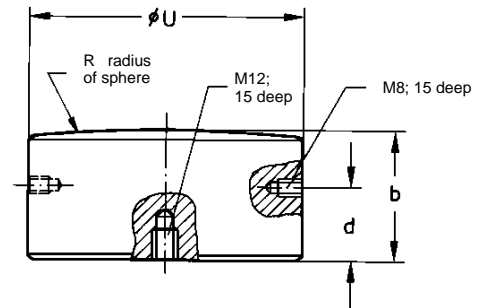
Mounting accessories continued

Load button ZL (for high-precision measurement)

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



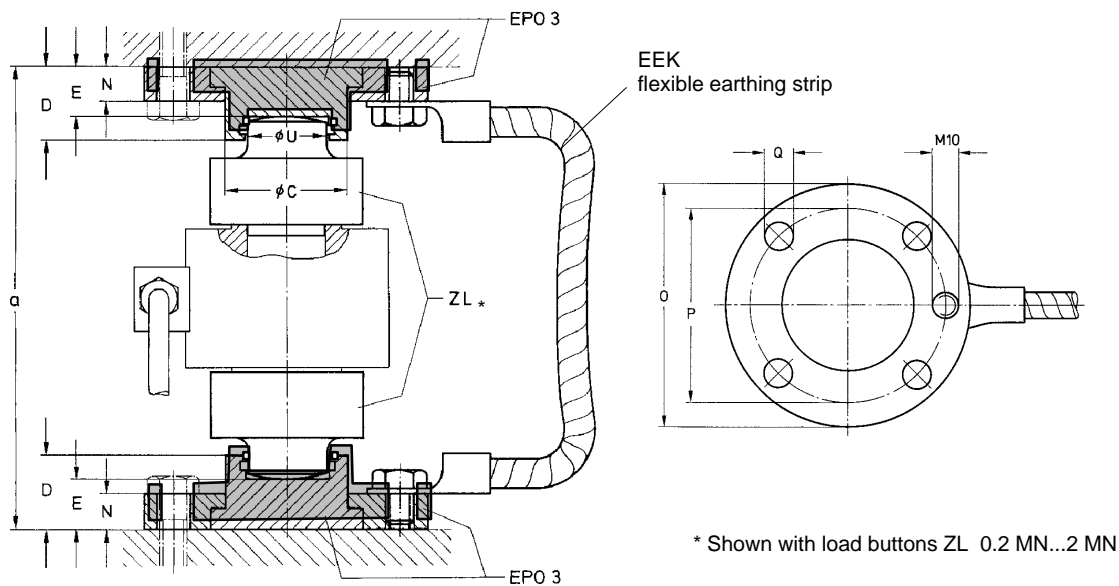
for 5 MN nominal forces



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

Pendle bearing support EPO3 (Compensation and oblique setting by displacement of the load introduction)

Consisting of 2x EPO3 and 2x ZL and 1x C6A force transducers



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	28	20	14	114	90	13	32	190
500 kN	1-EPO3/50T	3.4	81.9	50	39	18	148	120	17	44	228
1 MN	1-EPO3/100T	3.2	81.9	50	39	18	148	120	17	64	338
2 MN	1-EPO3/250T	13.0	139.5	80	67	25	225	190	22	85	394
5 MN	1-EPO3/500T	27.0	169.8	103	90	33	270	220	26	130	480

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 deviation²⁾	d _c	%					<±1
when used with hardened pressure plates		%	<±2.5				<±0.5
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,0}	%	<1				
Relative range of inversion (0.5F_{nom})	u	%	<±0.8				
Linearity deviation²⁾	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 range¹⁾	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	>5x10 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 force¹⁾	F _G	%	150				
Limit force¹⁾	F _L	%	150				
Breaking force¹⁾	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 force¹⁾	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 amplitude¹⁾ 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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