

CFT

Piezoelectric Force Transducer

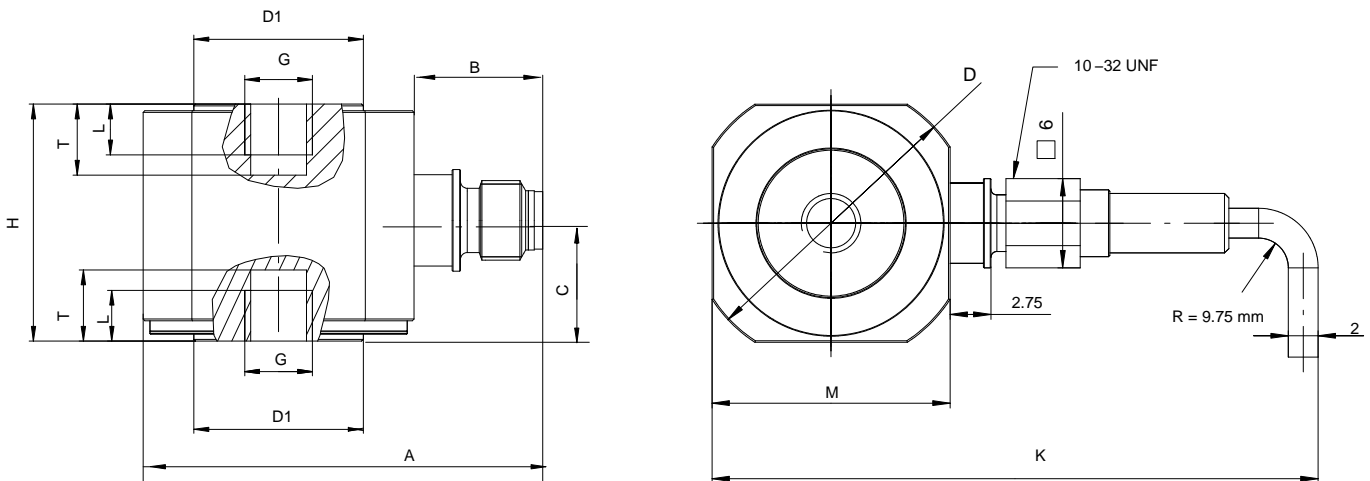


Special features

- Extremely compact force transducer for compressive forces
- Nominal (rated) forces: 5, 20 kN
- Good stiffness, robust design
- Suitable for press-fit and mounting applications with rapid force variation
- Stainless steel housing
- Flange connection on both sides and central bore make integration easy

CFT dimensions

Nominal (rated) force: 5, 20 kN



Type	D	D1	M	H	B	G	T	L	K	A	C
CFT/5 kN	13	5	11	10	7.45	M2.5	3.15	2.25	36	18.45	5.05
CFT/20 kN	19	10	16	14	7.45	M4	4.35	3	41	23.45	7.13

Specifications

Piezoelectric force transducer		CFT		
Nominal (rated) force	F_{nom}	kN	5	20
Accuracy				
Repeatability		%	0.1	
Accuracy class			0.5	
Relative reversibility error	$v_{0.5}$	%	0.5	
Linearity	d_{lin}	%	0.5	
Effect of lateral forces	d_q	N/N	0.06	0.05
Effect of the bending moment	d_{Mb}	%	0.8	0.6
Effect of temperature on sensitivity	TCS	%	0.5	
Electrical characteristics				
Sensitivity	C	pC/N	-7.7	
Sensitivity tolerance	d_c	%	5	
Insulation resistance	R_{is0}	Ω	$> 10^{13}$	
Connector			Coaxial connector 10-32 UNF (Microdot)	
Temperature				
Nominal (rated) temperature range	$B_{t, nom}$	$^{\circ}\text{C}$	-40 ... 120	
Operating temperature range	$B_{t, G}$	$^{\circ}\text{C}$	-40 ... 120	
Storage temperature range	$B_{t, S}$	$^{\circ}\text{C}$	-40 ... 120	
Characteristic mechanical quantities				
Max. operating force	F_G	%	110	
Limit force	F_L	%	110	
Breaking force	F_B	%	200	150
Lateral limit force ¹⁾	F_q	N	80	160
Limit torque ¹⁾	M_G	Nm	0.3	1
Limit bending moment with $F_z=0\text{N}$	$M_b \text{ perm. } 0\%$	Nm	2	4
Limit bending moment with $F_z=F_{nom}$	$M_b \text{ perm. } 100\%$	Nm	0.5	2
Nominal (rated) displacement $\pm 15\%$	s_{nom}	μm	11	18
Stiffness	F/S	10^5 N/mm	4545	11111
Fundamental resonance frequency	f_{rb}	kHz	40	36
Tightening torque for the threaded connector	M_{mont}	N-m	0.5	1
Maximum tensile force ²⁾	F_{tens}	kN	0.5	2
Permissible vibrational stress at compressive force	F_{rb}	% F_{nom}	100	
General information				
Degree of protection per EN 60529			IP65	
Measuring element material			Gallium phosphate	
Mass	m	g	8	22

¹ When loaded in the tensile direction, the sensor must only be loaded with 10% of the specified lateral force/limit torque

² Sensor is not calibrated in the tensile direction

Scope of Supply

Ordering number	
1-CFT/5 kN	Piezoelectric force transducer CFT/5 kN, manufacturing certificate, mounting instructions
1-CFT/20 kN	Piezoelectric force transducer CFT/20 kN, manufacturing certificate, mounting instructions

Accessories

Ordering number	
1-KAB143-x	Connection cable for piezoelectric sensors with a 10-32 UNF plug on both sides. Available in different lengths up to 7 m.
1-KAB145-x	Connection cable for piezoelectric sensors with a 10-32 UNF plug on both sides. Rugged design, mechanically protected with a steel spiral on the sensor side. Available in different lengths up to 7 m.
1-KAB176-x	Connection cable for piezoelectric sensors with a 10-32 UNF plug on one side and a BNC plug on the other cable end. Available in different lengths up to 3 m.
1-CCO	Cable coupling to extend piezoelectric connection cables. 10-32 UNF on both sides.
1-CSB4/1	Summing box for parallel connection of up to four piezoelectric sensors to one charge amplifier. Connector sockets: 10-32 UNF.

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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