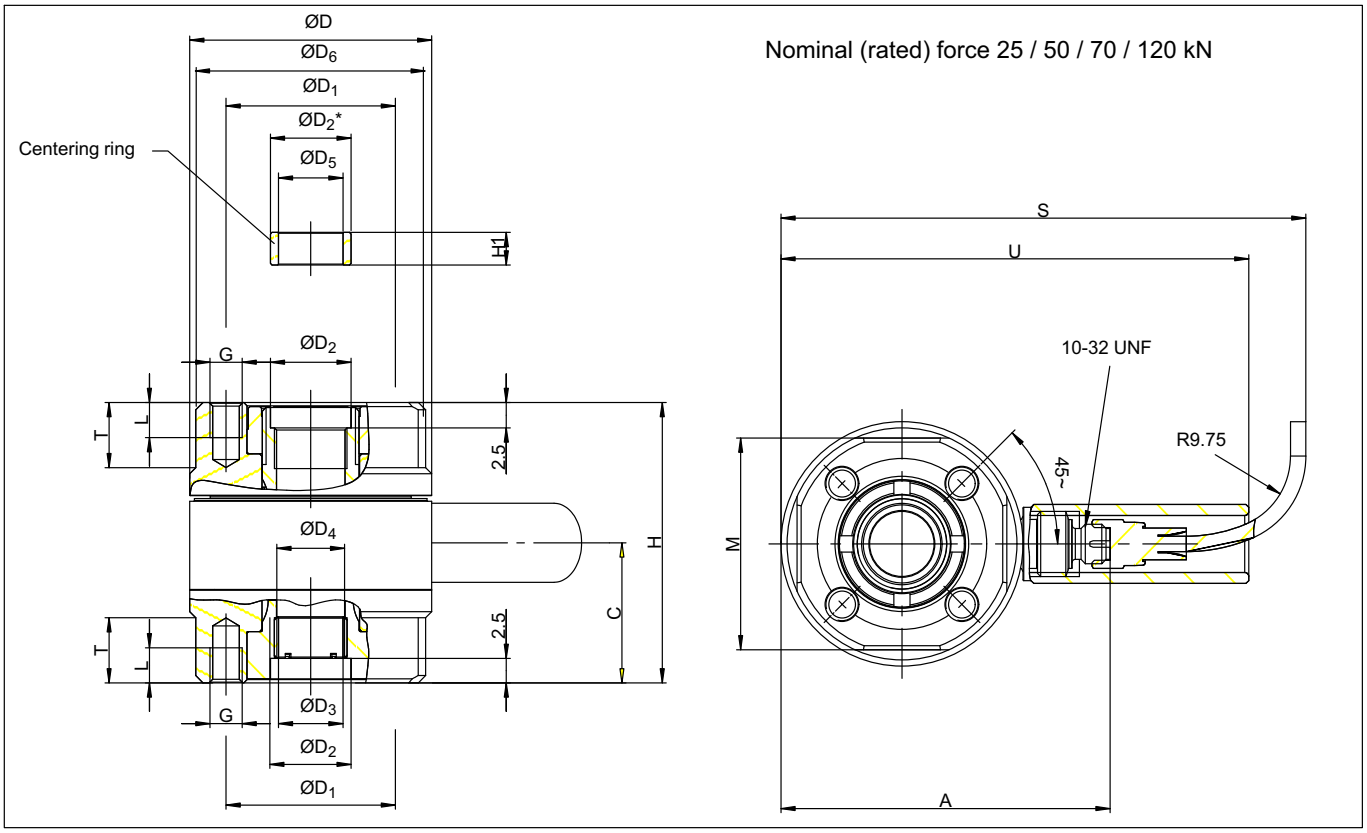
Data sheet

CFT+

Piezoelectric force transducer

Special features

- **Compressive force transducer**
- **Nominal (rated) forces 25 kN to 120 kN**
- **Low discrimination threshold, large measuring range**
- **High-quality, low-drift version**
- **Nominal (rated) force 25 kN: Use of gallium phosphate. Double the output signal in comparison to conventional quartz sensors**
- **Market-standard dimensions**



Type	D	D_1	D_2	D_2*	D_3	D_4	D_5	D_6
CFT+/25KN	20±0.1	14	6^{H8}	6^{f7}	4	4	$4^{+0.02}$	19.2
CFT+/50KN	30±0.1	21	10^{H8}	10^{f7}	8	8.5	$8^{+0.02}$	28.5
CFT+/70KN	36±0.1	26	14^{H8}	14^{f7}	11	12	$11^{+0.02}$	34.5
CFT+/120KN	54±0.1	40	21^{H8}	21^{f7}	17	18.5	$17^{+0.02}$	53

Type	M	H	H_1	G	T	L	A	C	S	U
CFT+/25KN	17	26±0.1	4.5	M3	6	3	30.50	13	55	28
CFT+/50KN	26	34±0.1	4	M4	8	4	40.05	16.5	56.33	35.4
CFT+/70KN	32	42±0.1	4	M5	9	5	46.15	21.5	62.35	38.4
CFT+/120KN	48	60±0.1	4	M8	13	8	64.15	32	80.35	47.4

Specifications

Type			CFT+			
Nominal (rated) force	F_{nom}	kN	25	50	70	120
Accuracy						
Relative reproducibility and repeatability errors with unchanging mounting position		%	0.05			
Accuracy class			0.5			
Rel. reversibility error	$v_{0.5}$	%	0.5			
Linearity deviation	d_{lin}		0.5			
Effect of lateral forces	d_q	N/N	0.06	0.032	0.045	0.08
Effect of the bending moment	d_{mb}	N/N·m	0.6	0.3	0.3	0.25
Influence of temperature on the sensitivity	TC_S	%/10 K	0.5			
Rated electrical output						
Sensitivity	C	pC/N	-7.1	-4.1	-4.1	-4.0
Sensitivity tolerance	d_c	%	5			
Insulation resistance	R_{is}	Ω	$>10^{13}$			
Connection			Coaxial connector 10-32 (Microdot)			
Temperature						
Nominal (rated) temperature range	$B_{t,nom}$	°C	-40…+120			
Operating temperature range	$B_{t,G}$		-40…+120			
Storage temperature range	$B_{t,S}$		-40…+120			
Characteristic mechanical quantities						
Maximum operating force	F_G	%	120			
Force limit	F_L		120			
Breaking force	F_B		120	300		420
Lateral limit force[1)]	F_q	N	300	1000	1800	5800
Torque limit[1)]	M_G	Nm	1.9	12	20	130
Bending moment limit with F_z=0N	$M_{b\ perm,\ 0\%}$		25	75	150	650
Bending moment limit with F_z=F_{nom}	$M_{b\ perm,\ 100\%}$		1	20	20	250
Nominal (rated) displacement ±15 %	s_{nom}	µm	19	30	30	31
Stiffness	F/S	N/µm	1616	1667	2333	3871
Fundamental frequency	F_{rb}	kHz	67	54	46	31
Tightening torque for the threaded connector	M_{mont}	Nm	1.3	2	4	21
Max. tensile force[2)]	F_{tens}	kN	2.5	10	14	24
Permissible oscillation stress	F_{rb}	% of F_{nom}	70	100		
General information						
Degree of protection per EN 60529			IP65, with cable 1-KAB145 IP67			
Measuring element material			Gallium phosphate	Quartz		
Weight	m	g	48	137	240	720

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

- CFT+ piezoelectric force transducer
- Mounting instructions
- Test record
- Plug protection
- Two centering rings
- Threaded bushings

Accessories

The accessories are not included among the items supplied.

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

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B05093_01_E00_02 HBM: public