

# CLP

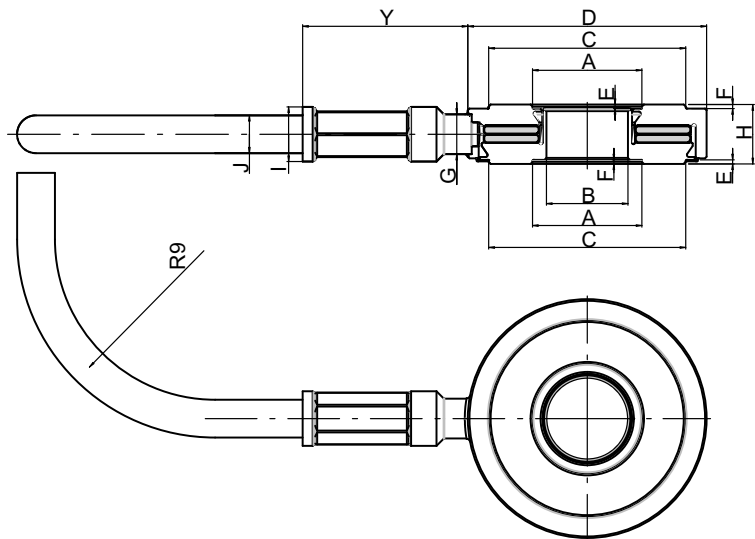
## Piezoelectric force washer

### Special features

- Symmetrical structure for improved linearity
- Nominal (rated) forces: 3 kN to 80 kN
- Rustless materials
- Integrated charge cable
- Extremely flat design for easy integration



Dimensions (in mm; 1 mm = 0.03937 inches)



Type	A	B	C	D	E	F	G	H	I	J	Y
CLP/3kN	4.05	2.7 <sup>H7</sup>	6.5	8 <sup>-0.05</sup>	0.12	0.15	2	3 <sup>-0.05</sup>	~2.7	1.9	~8.3
CLP/7kN	5.5	4.1 <sup>H7</sup>	9.9	12 <sup>±0.05</sup>	0.2	0.2	2	3 <sup>-0.05</sup>	~2.7	1.9	~8.3
CLP/14kN	7.8	6.1 <sup>H7</sup>	13.9	16 <sup>-0.05</sup>	0.29	0.32	2	3.5 <sup>-0.05</sup>	~2.7	1.9	~8.3
CLP/26kN	9.8	8.1 <sup>H7</sup>	17.9	20 <sup>-0.05</sup>	0.3	0.32	2	3.5 <sup>-0.05</sup>	~2.7	1.9	~8.3
CLP/36kN	11.8	10.1 <sup>H7</sup>	21.9	24 <sup>-0.05</sup>	0.29	0.32	2	3.5 <sup>-0.05</sup>	~2.7	1.9	~8.3
CLP/62kN	13.8	12.1 <sup>H7</sup>	27.9	30 <sup>-0.05</sup>	0.5	0.45	2	4 <sup>-0.05</sup>	~2.7	1.9	~8.3
CLP/80kN	15.8	14.1 <sup>H7</sup>	33.9	36 <sup>-0.05</sup>	0.52	0.52	2	5 <sup>-0.05</sup>	~2.7	1.9	~8.3

## Specifications

Type			CLP/...						
Nominal (rated) force	$F_{nom}$	kN	3	7	14	26	36	62	80
<b>Accuracy</b>									
Relative reversibility error	$v$	%	1						
Relative linearity error <sup>4)</sup>	$d_{lin}$	%	1						
<b>Electrical characteristics</b>									
Sensitivity (typical) <sup>1)</sup>	$S$	pC/N	-4.3						
Insulation resistance	$R_{is}$	$\Omega$	> 10 <sup>13</sup>						
<b>Temperature</b>									
Nominal (rated) temperature range	$B_{T, nom}$	°C	-20 ... +120						
Operating temperature range	$B_{T, G}$		-20 ... +120						
Storage temperature range	$B_{T, S}$		-20 ... +120						
<b>Characteristic mechanical qualities</b>									
Max. operating force	$F_G$	%	115						
Limit force	$F_L$		150						
Breaking force	$F_B$		200						
Maximum bending moment with <sup>2)</sup> with $F_z = 0\%$ of $F_{nom}$ with $F_z = 50\%$ of $F_{nom}$ with $F_z = 100\%$ of $F_{nom}$	$M_{b, perm}$	Nm	0	0	0	0	0	0	0
			1.5	5	15	35	65	134	244
			0	0	0	0	0	0	0
Static lateral limit force at an initial stress of at least 10% of $F_{nom}$ <sup>3)</sup>	$F_Q$	% of $F_{nom}$	10						
Nominal (rated) displacement	$s_{nom}$	$\mu\text{m}$	3	3	3.5	3.5	4	4	4.5
Fundamental resonance frequency	$f_G$	kHz	105			120		140	120
Relative permissible oscillatory stress	$F_{rb}$	% of $F_{nom}$	100						
<b>General information</b>									
Degree of protection per DIN 60529			IP65						
Sensor material			Stainless steel, quartz						
Cable sheath material			FPM (fluorinated rubber)						
Cable length		m	0.5 or 1						
Connector			10-32UNF						
Ground	$m$	g	4	5	6	6	10	15	29

1) Must be calibrated under mounting conditions

2)  $F_z$  is the force in the measurement direction

3) Related to a point of contact on the force application surface

4) Under initial stress of at least 20%

## Scope of delivery

Order number	
1-CLP/3kN	Piezoelectric force washer CLP/3kN with test certificate; cable length 1m
1-CLP/7kN	Piezoelectric force washer CLP/7kN with test certificate; cable length 1m
1-CLP/14kN	Piezoelectric force washer CLP/14kN with test certificate; cable length 1m
1-CLP/26kN	Piezoelectric force washer CLP/26kN with test certificate; cable length 1m
1-CLP/36kN	Piezoelectric force washer CLP/36kN with test certificate; cable length 1m
1-CLP/62kN	Piezoelectric force washer CLP/62kN with test certificate; cable length 1m
1-CLP/80kN	Piezoelectric force washer CLP/80kN with test certificate; cable length 1m
1-CLP/3kN-0.5M	Piezoelectric force washer CLP/3kN with test certificate; cable length 0.5m
1-CLP/7kN-0.5M	Piezoelectric force washer CLP/7kN with test certificate; cable length 0.5m
1-CLP/14kN-0.5M	Piezoelectric force washer CLP/14kN with test certificate; cable length 0.5m
1-CLP/26kN-0.5M	Piezoelectric force washer CLP/26kN with test certificate; cable length 0.5m
1-CLP/36kN-0.5M	Piezoelectric force washer CLP/36kN with test certificate; cable length 0.5m
1-CLP/62kN-0.5M	Piezoelectric force washer CLP/62kN with test certificate; cable length 0.5m
1-CLP/80kN-0.5M	Piezoelectric force washer CLP/80kN with test certificate; cable length 0.5m

## Accessories

Order number	
1-KAB143-0.5	Transducer connection cable (material: PFA), 0.5 m long, 10-32 UNF connector plug at both ends; for extension in combination with 1-CCO
1-KAB143-2	Transducer connection cable (material: PFA), 2 m long, 10-32 UNF connector plug at both ends; for extension in combination with 1-CCO
1-KAB143-3	Transducer connection cable (material: PFA), 3 m long, 10-32 UNF connector plug at both ends; for extension in combination with 1-CCO
1-KAB143-7	Transducer connection cable (material: PFA), 7 m long, 10-32 UNF connector plug at both ends; for extension in combination with 1-CCO
1-KAB143-10	Transducer connection cable (material: PFA), 10 m long, 10-32 UNF connector plug at both ends; for extension in combination with 1-CCO
1-KAB176-1	Transducer connection cable (material: PFA), 1 m long; 10-32 UNF connector plug on transducer side, BNC on amplifier side (e.g. suitable for digital charge amplifier CMD600); for extension in combination with 1-CCO
1-KAB176-2	Transducer connection cable (material: PFA), 2 m long; 10-32 UNF connector plug on transducer side, BNC on amplifier side (e.g. suitable for digital charge amplifier CMD600); for extension in combination with 1-CCO
1-KAB176-3	Transducer connection cable (material: PFA), 3 m long; 10-32 UNF connector plug on transducer side, BNC on amplifier side (e.g. suitable for digital charge amplifier CMD600); for extension in combination with 1-CCO
1-CCO	Coupling for piezoelectric sensors, both ends for plug 10-32UNF
1-CSB4/1	Summing box for connecting piezoelectric sensors in parallel, 10-32 UNF connectors

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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