

HBM Force transducers 力传感器

HBM force transducers measure static and dynamic tensile and compressive loads and virtually without any displacement. They can be supplied in the most varied of designs and classes of accuracy. Typical application areas include bench testing, e.g. measuring force to check material quality and automation technology, e.g. for monitoring quality features when reshaping or bonding features when reshaping or bonding. HBM's own DKD calibration laboratory mirrors the Company's competence in the area of force measurement.

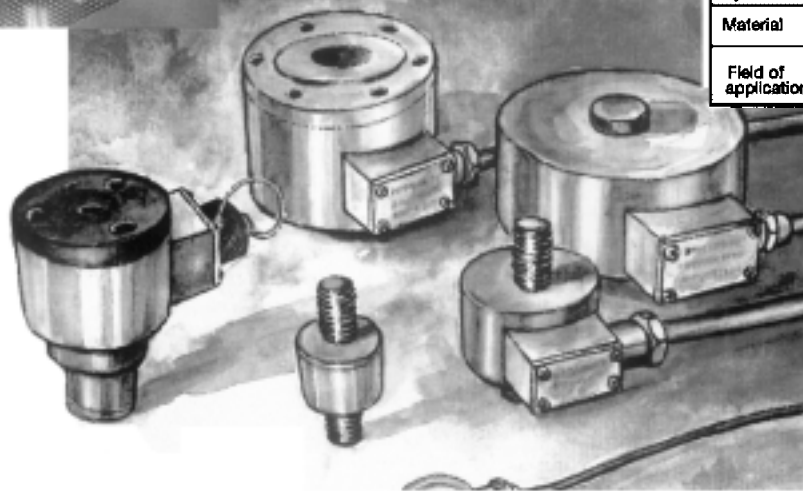
DKD Calibration services for force

In order to enable our customers to trace their force measurements to the national standards, the independent calibration laboratory at HBM has been accredited for the quantity "force" to EN 45001 by the Physikalisch-Technische Bundesanstalt PTB (German Metrology institute). We offer the services of this calibration laboratory within the framework of the DKD (German Calibration Service).

Type series	Z4A	C4	U2B	
Force transducers for				
N	0,05			
	0,1			
	0,5			
	1			
	5			
	10			
	20			
	50			
	100			
	200			
kN	0,5		●	
	0,6			
	1		●	
	1,2			
	2		●	
	5		●	
	10		●	
	20	●	●	●
	40			
	50	●	●	●
60				
100	●	●	●	
200	●	●	●	
300				
400				
500	●	●		
MN	1			
	2			
	5			
	10			
Accuracy class	0,02	0,02	0,1 ¹	
Max. operating force[%]	150	150	150	
Nominal temp range [°C]	+10...+40	+10...+40	-10...+70	
Protection system	IP 67	IP 67	IP 67 (IP 68)	
Material	Tempered steel	Tempered steel	Stainless steel	
Field of application	Reference standard/transfer standard	Reference standard/transfer standard	R&D Industry quality assurance	

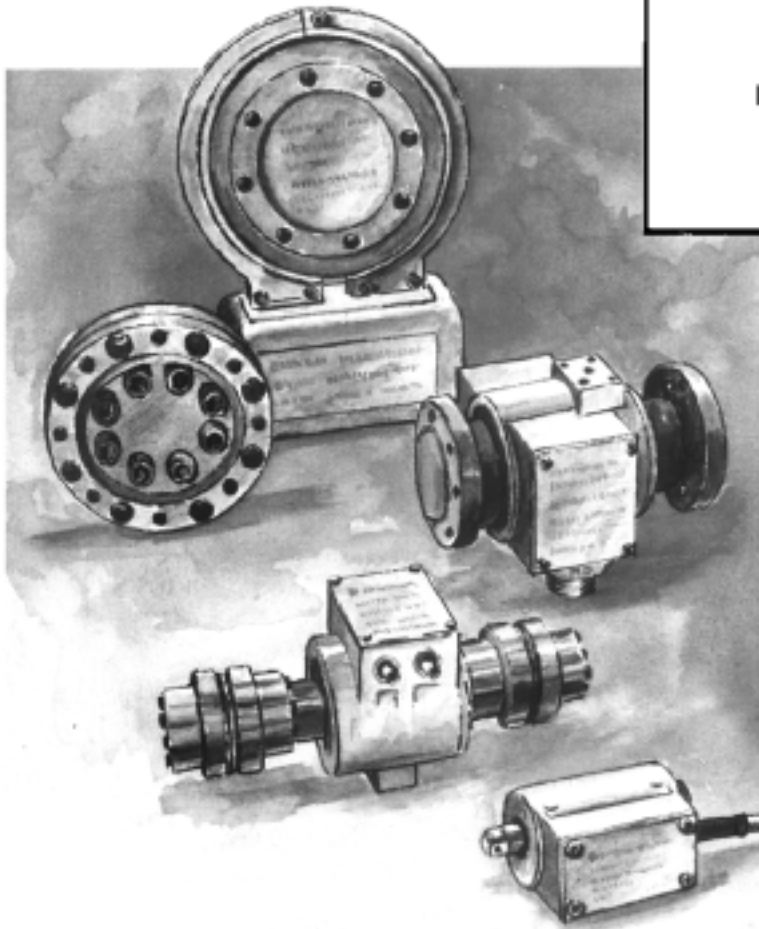
¹ At 500N: 0,2

² Force adjustments are in "kg" for this type of sensor, adjustment in "Newtons" is available on request



HBM Torque transducers 扭矩传感器

HBM torque transducers are used in many branches of industry and research: plant supervision and process monitoring, motive power engineering and materials handling technology, test bench technology, quality assurance, and research and development. The HBM torque range includes torque transducers and flanges, as well as nonrotational torque transducers for measuring reactions. Slip-ring or non-contacting signal transmission is used. Tested couplings are also available together with torque transducers. HBM also offers matching amplifiers and measurement technology software for processing and analysing measurement signals.



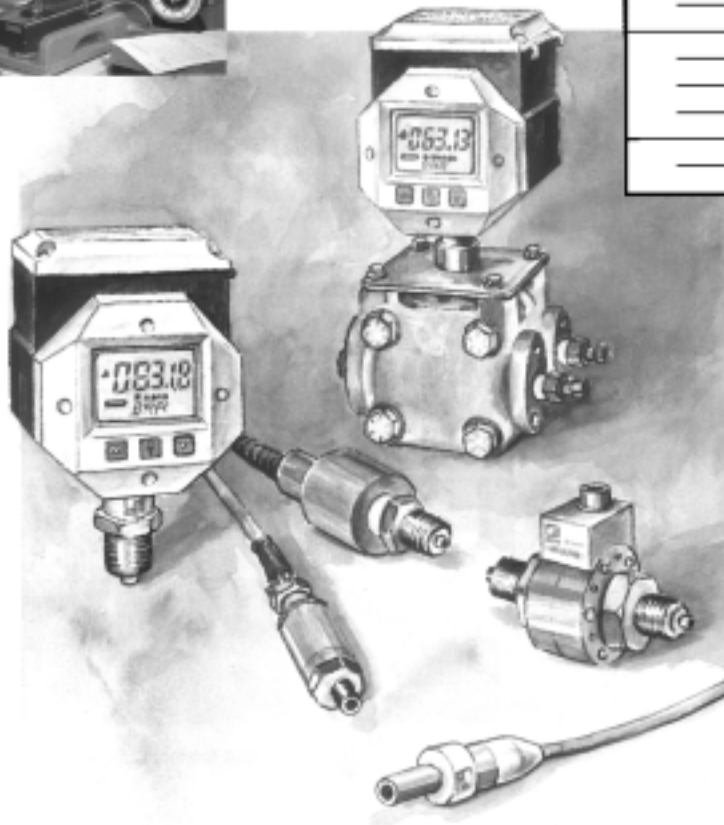
Type	
Torque introduction	
Signal	
Speed	
Angle of rotation measurement	
Accuracy class	
Permissible overload [%]	
Vibration amplitude [%]	
Optional couplings	
Nominal torque	
	0,1; 0,2; 0,5
Nm	1
	2
	5
	10
	20
	50
kNm	100
	200
	500
	1
	2
	3
	5
	10
	25

HBM Pressure transducers 压力传感器

Electrical pressure gauges from HBM are used for taking measurements in the most widely differing fields: hydraulic and pneumatic equipment, fluid-technology, chemical and process plant, air conditioning equipment, the food industry, construction etc. Absolute pressure, gauge pressure or differential pressure gauges are available to suit the respective fields of application. Transducers made from high-alloy stainless steels are suitable for determining static and dynamic pressure in aggressive fluids or gases.



Calibrating and balancing pressure transducers



Type	Trans	
	P 3MB	P 3MB
Transducer for	 Absolute pressure	 Gauge pressure
Special features	robust/accurate	robust/accurate
Accuracy class	0.1 / 0.15 / 0.2	0.2
Service range	% 0...200/ 0...150	0...100
Nominal temperature range	°C -10...+80	-20...+80
Max. medium temperature	°C +100	+100
Options	●	●
Nominal measuring range bar 0...		
0,01		
0,1		
0,2		
0,4		
0,5		
1	●	●
2		
4		
5	●	●
10	●●	
20	●●	
50	●●	
100	●●	
200	●●	
500	●●	
1000	●●	
2000	●●	
3000	●●	

● standard version
Technical data to DIN 16086

ICER		Pressure transmitter				Digital pressure gauge		
P 6A	P 8AP	P 15RVA1	P 15RVA2	P 19	P 19	PE 300	PE 350	PDE 300
Absolute pressure	Absolute pressure	Gauge pressure	Gauge pressure	Absolute pressure	Gauge pressure	Gauge pressure	Gauge pressure	Differential pressure
robust	low cost	analog output 0...10V	analog output 4...20mA	robust	robust	battery supply or external supply multi function display, zero and range setting		
0.2	0.3	1	1	0.5	0.5	0.15 / 0.2 / 0.3	0.2	0.5
0...200/ 0...150	0...150	0...200	0...200	0...+160	0...+160	-10...+110	-4...+103 -106...+106	-120...+120
-10...+60	-10...+70	-20...+70	-20...+70	-20...+70	-20...+70	-20...+70	-20...+70	-20...+70
+100	+100 / +140*	+105	+105	+105	+105	+110	+90	+110
●	●			●	●	●	●	●
					5, 6	5, 6		
					10, 16	10, 16		
					20, 25	20, 25	●	●●
					40, 50	40, 50, 60		●●
						100, 160	●	
						200, 250		●●
						400, 500	●	●●
				●	●		●	●●
●	●	●	●			●●		
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						●●		

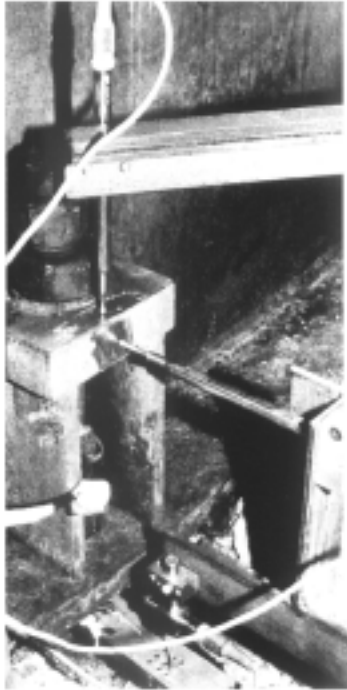
● explosion proof version * option high temperature

DKD calibration services for pressure

To enable our customers to trace their pressure measurements to the national standards, the independent calibration laboratory at HBM has been accredited for the quantity "pressure" to EN 45001 by the PTB [German Metrology Institute]. We are offering the services of this calibration laboratory within the framework of the DKD [German Calibration Service].



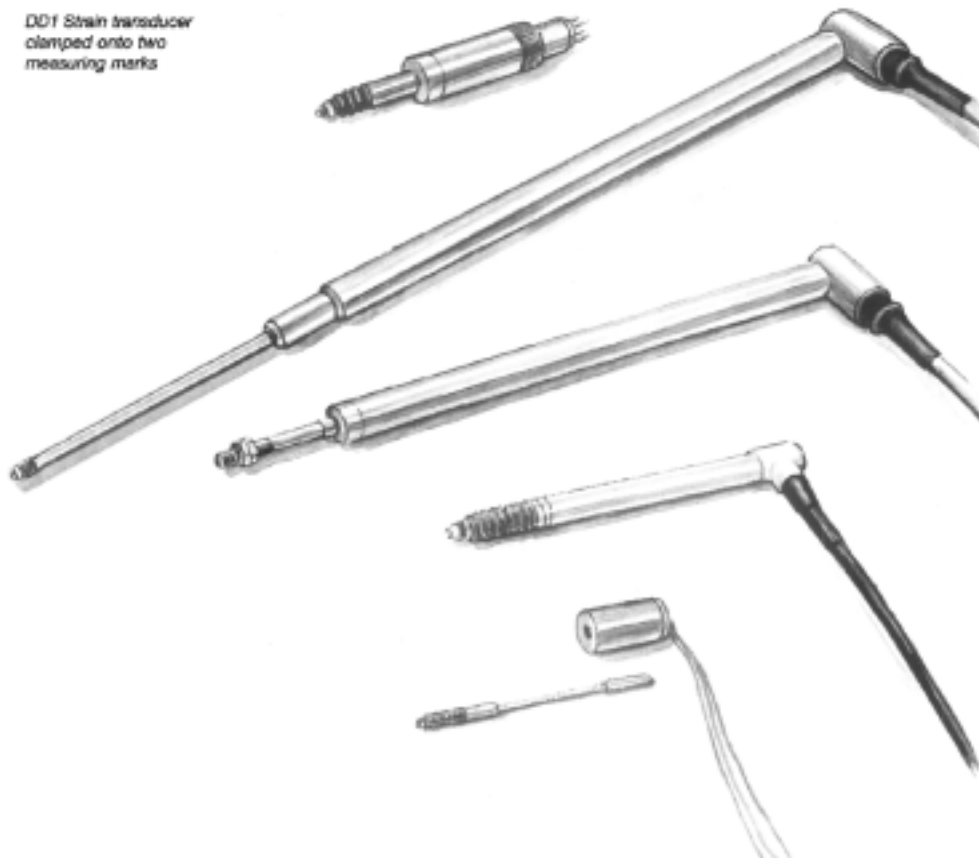
HBM 位移和应变力及加速度传感器







DD1 Strain transducer clamped onto two measuring marks

The inductive displacement measurement principle has penetrated many sectors of industry and research because it is both robust and maintenance-free. For years, HBM has been building inductive displacement transducers, which can be used universally for measuring displacement in conjunction with carrier frequency amplifiers. The areas of application here vary from precision measurement in the machine to simple displacement monitoring during manufacturing and assembly or the supervision of construction projects.

TYPE		WA	
Version	Probe	Plunge	
Nominal displacement [mm]	± 1		
	± 5		
	0...10	●	●
	0...20	●	●
	0...50	●	●
	0...100	●	●
	0...200		●
	0...300		●
0...500		●	
Type of connection	Half and full bridge		
Sensitivity	+ 80mV/V		
Linearity deviation in %	≤ ± 0.1/0.2		
Degree of protection	IP 67		



WET	W1EL/0	W1T3	W5TK
			
Probe	Plunger	Probe	Probe
●	●	●	
●			●
Half bridge	Half bridge	Half bridge	Half bridge
± 10mV/V	± 80mV/V	± 80mV/V	± 80mV/V
< 0.3/0.9	± 0.2	± 0.2	± 0.2/0.4
IP 64	IP 20	IP 20	IP 20

**Strain transducer
SLB700A**

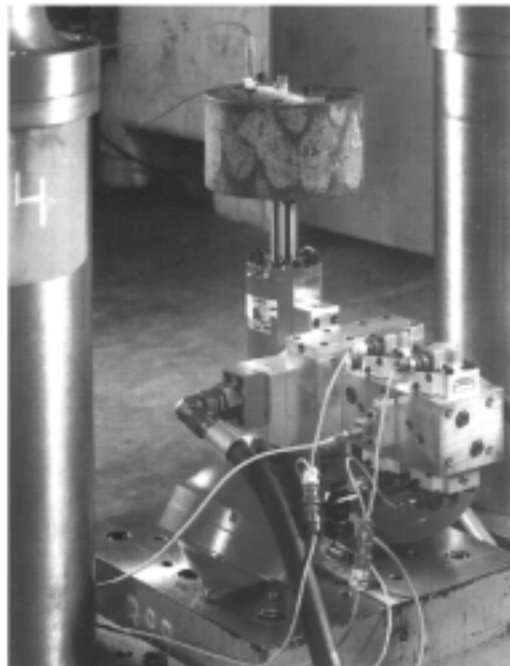
Simple bolt-on design
Nominal strain 500 µm/m
Strain gauge full bridge
Nominal sensitivity 1.5 mV/V

**Strain transducer
DD1**

For usage as clamp-type
Nominal displacement ± 2.5mm
Strain gauge full bridge
Nominal sensitivity ± 2.5mV/V

**Acceleration transducer
B12**

Simple bolt-on design
Inductive measuring system
Nominal acceleration depending on type
± 200 and ± 1000 m/s²



**Strain
Acceleration**

In addition to the comprehensive range of products for quantities such as force, torque, pressure, and displacement HBM also offers strain and acceleration transducers.

Strain transducers such as the SLB700A are used, e.g. for the monitoring of press uprights.

The B12 acceleration transducer enables constant accelerations to be measured and, in addition, vibrational and impact accelerations.

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