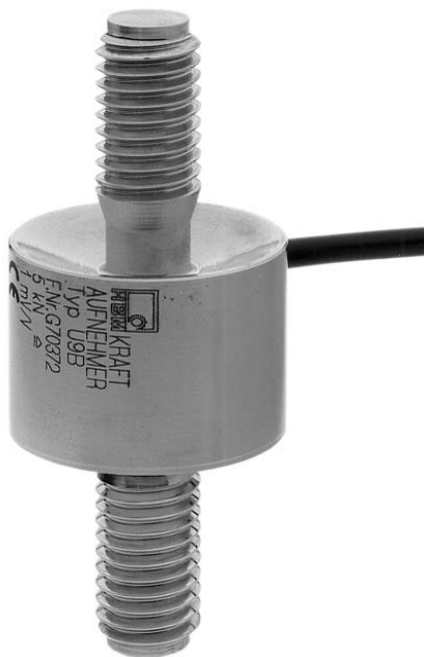


U9B

Force Transducers

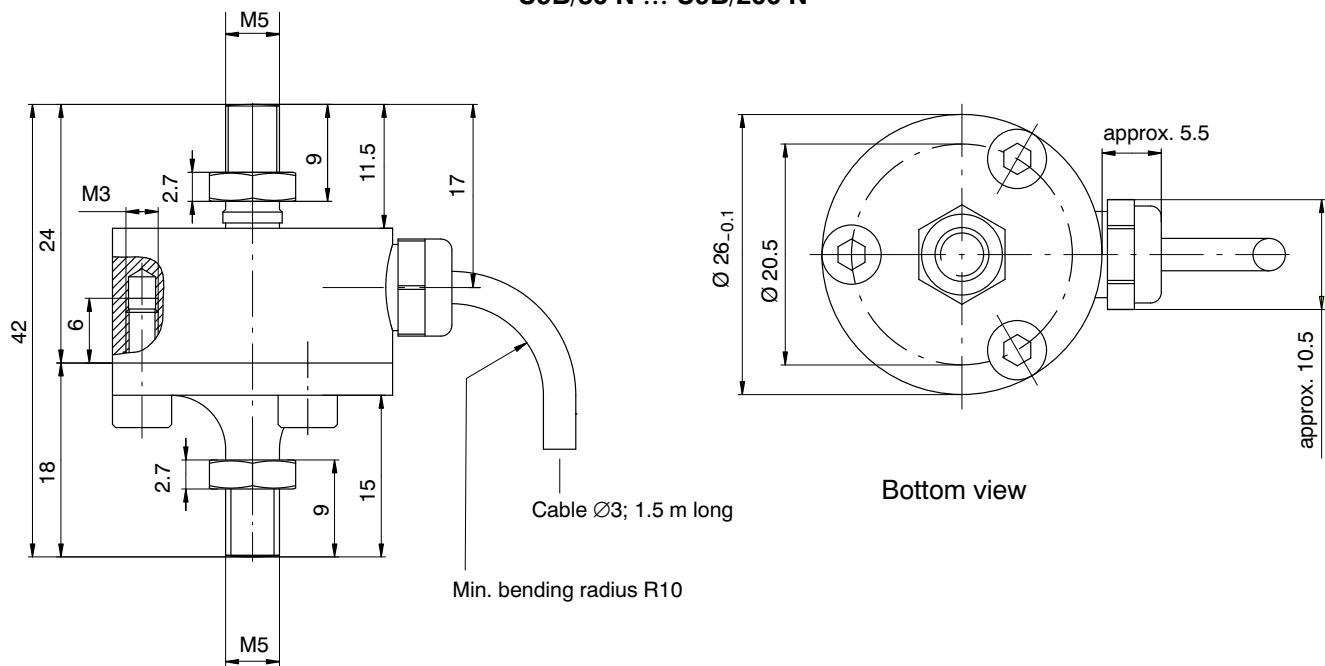


Special features

- Tensile / compressive force transducer in non-rusting material
- Nominal (rated) forces 50 N ... 50 kN
- Small size
- Accuracy class 0.5
- Maintenance-free knuckle eye as force-introduction aid

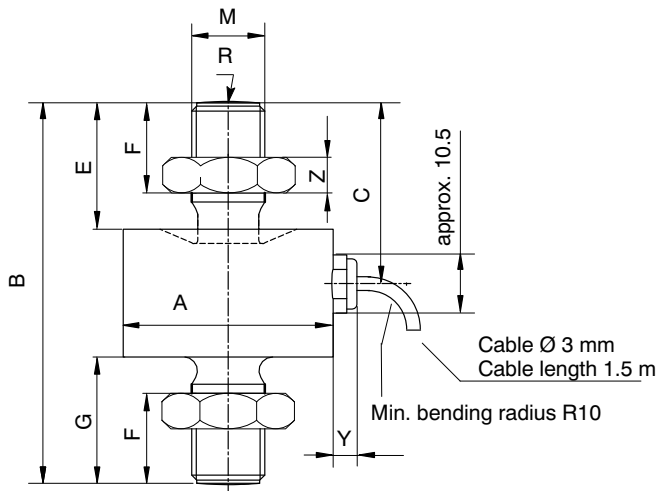
Dimensions (in mm; 1 mm = 0.03937 inches)

U9B/50 N ... U9B/200 N

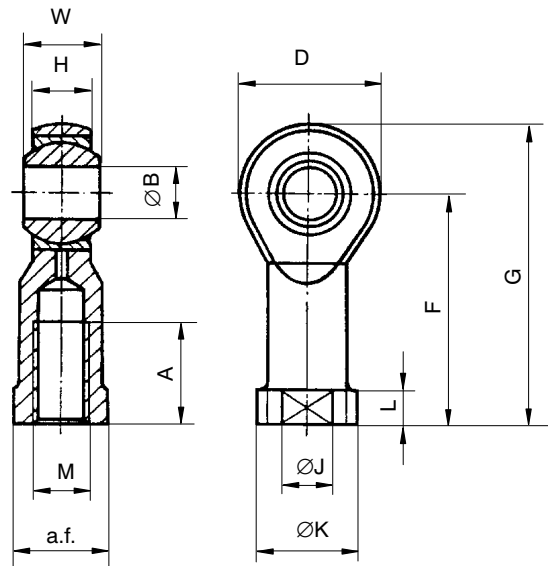


Dimensions (in mm; 1 mm = 0.03937 inches)

U9B/0.5 kN ... U9B/50 kN



Knuckle eye ZGW

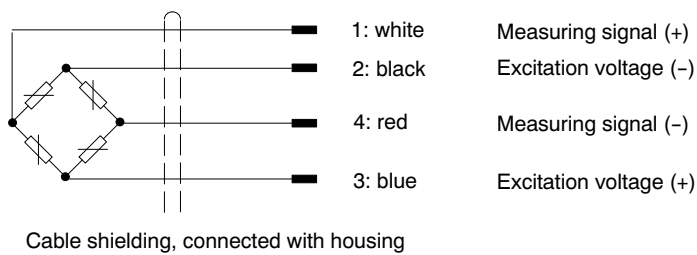


Rated (nominal) force U9B	A _{-0.1}	B	C	E	F	G	M	R	Y	Z
0.5 ... 1 kN	26	44.5	20.5	13	9.5	13.5	M5	20	approx. 5.5	2.7
2 ... 20 kN	26	60	28.5	21	16	21	M10	40	approx. 5.5	5
50 kN	46	84	40	28	21.5	28	M16x1.5	80	approx. 5.5	8

Knuckle eye:

Rated (nominal) force ZGW	A	B	D	F	G	H	J	K	L	M	a.f.	W
50 N ... 1 kN	10	5 ^{H7}	18	27	36	6	9	11	4	M5	9	8
2 ... 20 kN	20	10 ^{H7}	28	43	57	10.5	15	19	6.5	M10	17	14
50 kN	28	16 ^{H7}	42	64	85	15	22	27	8	M16x1.5	22	21

Cable assignment (Four wire circuit)



Specifications (VDI/VDE 2638 standards)

Type			U9B										
Nominal (rated) force	F_{nom}	N	50	100	200								
		kN				0.5	1	2	5	10	20	50	
Nominal (rated) sensitivity	C_{nom}	mV/V	1										
Accuracy class			0.5										
Relative sensitivity error	d_C	%	$\leq \pm 1$ tension / $\leq \pm 2$ compression										
Relative reproducibility error with unchanging mounting position	b_{rg}	%	$\leq \pm 0.5$										
Zero signal error	$(d_{s,0})$	mV/V	± 0.075				± 0.2						
Relative reversibility error (at $0.5 F_{nom}$)	$v_{0.5}$	%	$\leq \pm 0.5$										
Relative linearity error	d_{lin}	%	$\leq \pm 0.5$										
Relative creep over 30 min	d_{crF+E}	%	$\leq \pm 0.2$										
Effect of temperature on the sensitivity per 10 K in the nominal (rated) temperature range in the operating temperature range	TK_C	%	$\leq \pm 0.5$ $\leq \pm 0.8$										
Effect of temperature on the zero signal per 10 K in the nominal (rated) temperature range in the operating temperature range	TK_0	%	$\leq \pm 0.5$ $\leq \pm 0.8$										
Output resistance	R_a	Ω	300 ... 400				< 350						
Input resistance	R_e	Ω	> 345				300 ... 400						
Insulation resistance	R_{is}	G Ω	> 10^9										
Reference excitation voltage	U_{ref}	V	5										
Operating range of excitation voltage	$B_{U,G}$	V	0.5 ... 12										
Reference temperature	T_{ref}	$^{\circ}\text{C}$ [$^{\circ}\text{F}$]	+23 [+73.4]										
Nominal (rated) temperature range	$B_{T,nom}$	$^{\circ}\text{C}$ [$^{\circ}\text{F}$]	-10 ... +70 [+14 ... +158]										
Operating temperature range	$B_{T,G}$	$^{\circ}\text{C}$ [$^{\circ}\text{F}$]	-30 ... +85 [-22 ... +185]										
Storage temperature range	$B_{T,S}$	$^{\circ}\text{C}$ [$^{\circ}\text{F}$]	-30 ... +85 [-58 ... +185]										
Maximum operating force	(F_G)		120										
Breaking force	(F_B)	% of F_{nom}	> 200										
Static lateral force limit ¹⁾	(F_Q)		40					20					
Nominal (rated) displacement $\pm 15\%$	s_{nom}	mm	< 0.1				0.04	0.06	0.09	0.11	0.13		
Fundamental resonance frequency $\pm 15\%$	f_G	kHz	7.3	10	15.7	15.5	23.7	18.7	20	23	27.8	20	
Permissible oscillatory stress (vibration bandwidth per DIN 50100)	F_{rb}	% of F_{nom}	70										40
Weight, approx.		g	75				100				400		
Degree of protection per DIN EN 60529			IP67										
Cable length		m	1.5										

¹⁾ referred to a force application point 2 mm above membrane

**Order numbers:
Force transducer**

Order code	Rated (nominal) force										Unit
	1-U9B/ ...	50	100	200							
				0.5	1	2	5	10	20	50	kN

Ordering number example: 1-U9B/2kN

Accessories (to be ordered separately)

1-Z8/100kg/ZGW	Knuckle eye 50 N ... 1 kN
1-U9/20kN/ZGWR	Knuckle eye 2 kN ... 20 kN
1-U9A/50kN/ZGW	Knuckle eye 50 kN
D-15D/MONT	15pin D-sub connector, mounted to transducer cable
D-MS/MONT	MS3106P-EMV connector, mounted to transducer cable

Modifications reserved.
All details describe our products in general form only. They are not to be understood as express warranty and do not constitute any liability whatsoever.

Hottinger Baldwin Messtechnik GmbH

Im Tiefen See 45 · 64293 Darmstadt · Germany
Tel. +49 6151 803-0 · Fax: +49 6151 803-9100
Email: info@hbm.com · www.hbm.com

measure and predict with confidence

