

High Sensitivity Accelerometers

1.5
Sensors

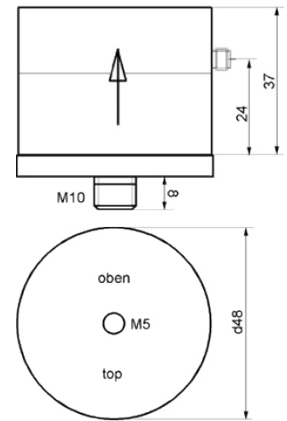
Properties

- Suited for seismic measurement and building vibration, particularly at low frequencies
- Extremely sensitive piezo system provides excellent resolution and lowest noise
- KB12VD with particularly high sensitivity-to-mass ratio
- KB12VD with air damping for resonance attenuation and overload protection by friction coupling
- KB12VD and KS48C with IEPE voltage output
- KS48C with protection grade IP67

KB12VD
KS48C



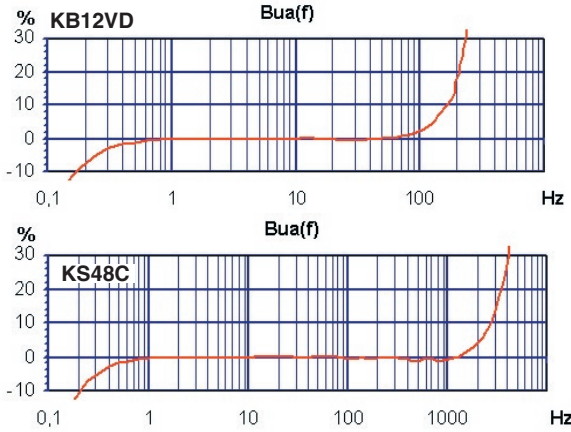
KB12(VB)



		KB12VD	KS48C	
Output type		IEPE	IEPE	
Piezo design		Bender	Shear	
Voltage sensitivity – Std (+/-2% available)	B_{ua}	10 000 $\pm$ 10 % ⁽¹⁾	1000 $\pm$ 5 % ⁽¹⁾	mV/g
Range	$a_{\pm} / a_{-}$	$\pm$ 0,6	$\pm$ 6	g
Destruction limit	a_{max}	200	1000	g
Linear frequency range	f_{3dB}	0,05 .. 260	0,07 .. 4000	Hz
	$f_{10\%}$	0,16 .. 160	0,2 .. 2600	Hz
	$f_{5\%}$	0,25 .. 130	0,3 .. 2000	Hz
	f_r	> 0,35 (+15 dB)	> 7 (+25 dB)	kHz
Resonant frequency	f_r	> 0,35 (+15 dB)	> 7 (+25 dB)	kHz
Transverse sensitivity	Γ_{90MAX}	< 5	< 5	%
Residual noise, wide band	$a_{n wide band}$	<1 (0,5..300)	<14 (0,5..10000)	μg (Hz)
Noise densities	0,1 Hz a_{n1}	0,3	1	$\mu g/\sqrt{Hz}$
	1 Hz a_{n2}	0,06	0,6	$\mu g/\sqrt{Hz}$
	10 Hz a_{n3}	0,03	0,1	$\mu g/\sqrt{Hz}$
	100 Hz a_{n4}		0,06	$\mu g/\sqrt{Hz}$
Constant current supply	I_{CONST}	2 .. 20	2 .. 20	mA
Output bias voltage (I_{CONST} =4 mA; T=25°C)	U_{BIAS}	12 .. 14	12 .. 14	V
Output impedance (I_{CONST} =4 mA)	r_{OUT}	< 130	< 130	Ω
Environmental characteristics				
Operating temperature range	T_{min}/T_{max}	-20 / 80	-20 / 120	°C
Temp. coefficient of sensitivity	$TK(B_{ua})$	$\pm 0,02$ (-20..40°C) >0,08 (40..80°C)	-0,02 (<40°C) -0,03 (>40°C)	%/K
Temperature transient sensitivity	b_{aT}	0,002	0,0005	ms ² /K
Acoustic noise sensitivity	b_{aP}	0,1		ms ² /kPa
Mechanical data				
Weight without cable	m	150 / 5,3	165 / 5.8	g / oz
Case material		Aluminium	Edelst. Stainl. St.	
Cable connection		radial	axial	
Socket		UNF10-32	Binder 713	
Mounting thread		M5 / M10	M8	

(1) These accelerometers are also available 2 % sensitivity tolerance at extra charge.

Typical Amplitude Response



Connection KS48C:

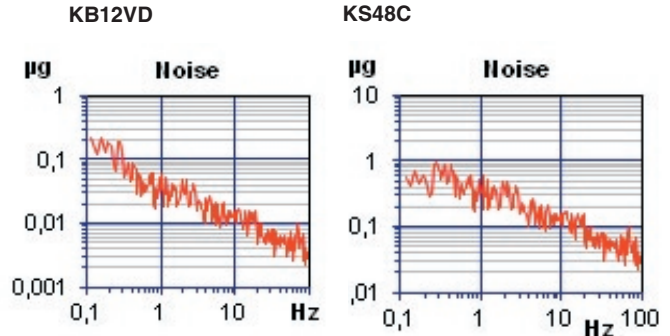


View at sensor socket

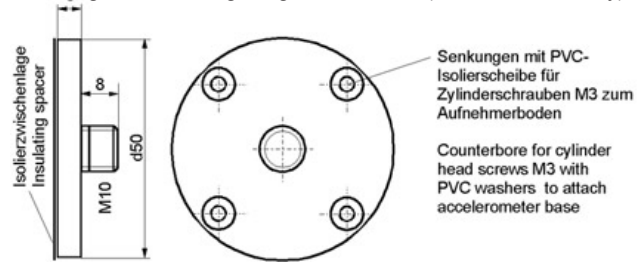
Pin Assignment

- 1: Signal ground
- 2: Unused
- 3: Signal output
- 4: Unused

Noise Characteristics



Befestigungs- und Isolierflansch für KB12VD (Standardzubehör):
Mounting and insulating flange for KB12VD (standard accessory):



Suitable Accessories

	KB12VD	KS48C
Connection accessories	• 009-UNF-UNF-1,5: Low noise cable 2 x UNF 10-32; 1.5 m • 009-UNF-BNC-1,5: Low noise cable 2 x UNF 10-32 / BNC; 1.5 m • 010-UNF-BNC-5: Low noise cable UNF 10-32 / BNC; 5 m • 010-UNF-BNC-10: Low noise cable UNF 10-32 / BNC; 10 m • 017: Adapter UNF 10-32 / BNC	• 080G/W: 4-poliger Stecker Typ <i>Binder</i> 713 gewinkelt (W) bzw. gerade (G) mit Schraubklemmen und Pg7-Zugentlastung für Kabel Ø 4..6 mm; IP67 • 085-B713G-PIG-5/085-B713W-PIG-5: geschirmtes Anschlusskabel, 5 m lang; PUR-Mantel Ø 5 mm; mit Stecker Typ <i>Binder</i> 713 gewinkelt (W) bzw. gerade (G), Schutzgrad IP67 und offenen Enden • 085-B713G-BNC-5/085-B713W-BNC-5: geschirmtes Anschlusskabel, 5 m lang; PUR-Mantel Ø 6 mm; mit Stecker Typ <i>Binder</i> 713 gewinkelt (W) bzw. gerade (G), Schutzgrad IP67 und BNC-Stecker 080G/W: angled (W) or straight (G) plug with 4 pins Mod. <i>Binder</i> 713 with screw terminals and Pg7 cable gland for cable Ø 4..6 mm; IP67 085-B713G-PIG-5/085-B713W-PIG-5: shielded cable; 5 m long; PUR jacket Ø 6 mm; with angled (W) or straight (G) plug <i>Binder</i> 713 (IP67) and pigtail 085-B713G-BNC-5/085-B713W-BNC-5: shielded cable; 5 m long; PUR jacket Ø 6 mm; with angled (W) or straight (G) plug <i>Binder</i> 713 (IP67) and BNC plug
Mounting accessories	• 003: Mounting stud M5 • 045: Thread adapter M5 / UNF 10-32 • 046: Thread adapter M5 / 1/4"-28 • 008: Magnetic base M5 (Attention - shock load) • 330: Triaxial mounting cube M10 • 729: Floor plate with tripod (KS823B)	• 043: Gewindestift M8 • 044: Gewindeadapter M8 / M5 (innen) • 206: Isolierflansch M8 • 229: Edelstahl-Klebeband M8 • 208: Haftmagnet M8 • 230: Triaxial-Befestigungswürfel M8 • 729: Bodenplatte mit Dreifuß (KS823B) • 700: Unterwasser-Druckgehäuse • 043: Mounting stud M8 • 044: Thread adapter M8 / M5 (innen) • 206: Insulating flange M8 • 229: Stainless steel adhesive pad M8 • 208: Magnetic base M8 • 230: Triaxial mounting cube M8 • 729: Floor plate with tripod (KS823B) • 700: Under water pressure hull

Bestellinformation • Ordering Information

KB12VD/01: Sensor with accessories kit including cable 009-UNF-BNC-1,5, instruction manual, data sheet

KS48C/01: Sensor with accessories kit including magnet 208, insulating flange 206, M8 mounting stud 043, cable 085-B713G-BNC-5

KB12VD; KS48C: Sensor with data sheet



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