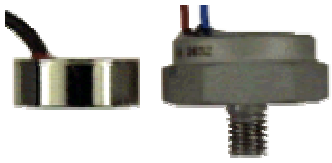
SEIKA / NTT BD3,10,100 BDK3, 10, 100



Acceleration

Sensors with very high overload resistance and integrated sensor electronics for high-level output at Frequencies from 1Hz to 1,5 kHz

Special features

- **Very high overload resistance**
- **Choice of housing style**
- **Low weight**
- **Linear frequency response over the entire working range**
- **Minimal resonance peaking at corner frequency**
- **Low 1Hz frequency border limit, interesting particularly on BDK..**
- **High Signal- noise ratio (in particular BD..)**
- **Very low cross-axis interference**
- **High long-time stability**
- **Integrated sensor electronics**
- **Very low power consumption (in particular BD..)**
- **Low-impedance signal output**
- **Galvanic isolated sensor electronics from the housing as option**
- **Long connection leads are possible**
- **Hermetically sealed**

Description

This series of dynamic accelerometers BD3, BDK3, BD10, BDK10, BD100, BDK100 are capacitive spring-mass based, with incorporated sensor electronics. Resonance peaks are minimised by means of a special gas-dynamic damping in the primary transformer.

The sensor electronics requires very low power consumption, and is characterised by very low drift and long-term stability.

Application

The accelerometers BD3, BDK3, BD10, BDK10, BD100, BDK100 are used where dynamic acceleration measurement is required, from very low frequencies without the influence of static acceleration. High overload resistance and long-term stability are also looked at as a positive part of the job.

Typical applications are.

- **Measuring on vehicles, production machines, buildings and in the general process industry**
- **Seismic measuring**
- **Vibrations measuring**
- **Safety measuring**
- **Dynamics distance and speed measuring**

SEIKA / NTT BD3,10,100 BDK3, 10, 100

Technical Data

Type	BD3 / BDK3	BD10 / BDK10	BD100 / BDK100
Measuring range	±3g (app.±30m/s^2)	±10g (app.±100m/s^2)	±100g (app.±1000m/s^2)
Resolution	<10^{-3}g	<5*10^{-3}g	<5*10^{-2}g
Frequency range for BD-Series	10...300Hz	10...800Hz	10...1500Hz
Frequency range for BDK-Series	1....300Hz	1....800Hz	1....1500Hz
Sensitivity U_b = 5Volt	app.150mV/g	app.60mV/g	app.10mV/g
Temperature drift on sensitivity	<+0,06% /°C		
Temperature drift on zero	<0,1mV/°C		
Zero offset	2,5±0,1Volt – general: 0,5Ub±4%		
Output impedance	app.100Ω		
Cross axis sensitivity	<1%		
Distortion factor	<1%		
Mechanical overload in measuring direction	ca.10 000g (ca.100 000m/s^2) !		
Nominal supply voltage (stable)	U_{bN} = 5 Volt		
Permissible voltage supply range (stable)	U_{bz}=2 ... 15 Volt		
Consumption Ub = 5V	BD..: app. 250uA (optional: 30uA) BDK..: app. 2mA		
Protection degree	IP65 / IP67 housing type 1		
Working temperature	-40°C to +85°C		
Storage temperature	-45°C to +90°C		
Weight in housing type 1 without cable	App. 17Grams		
Weight in housing type 2 without wire	app. 7Grams		
Standard electrical connection	3 high-flexible coloured wires ø1mm ca.180mm long (Other length as optional)		
Alternative electrical connection for housing type 1	0,5m high-flexible shielded 2 wire + shield, ø2,1mm round cable (Other length as optional)		

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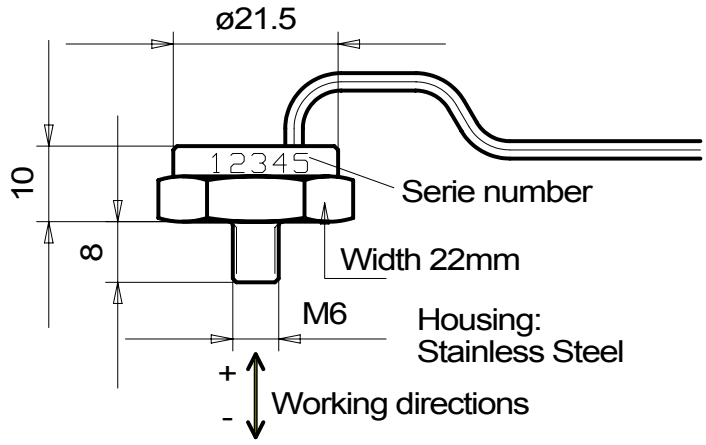
BDK3, 10, 100

Dimensions and connections

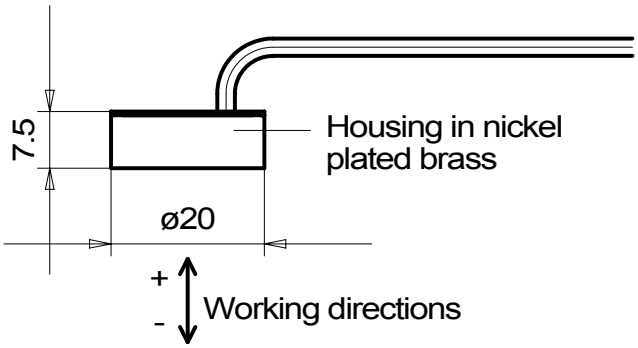


Cable connections:
red: Ub:+5V (stable)
blue: output signal
Shield: GND,(-Ub)
Housing isolated from electronics

Cable or 3 wire connection

3 wire connections:
red: Ub:+5V (stable)
white: output signal
blue: GND,(-Ub)
Housing isolated from electronics

Housing type 1

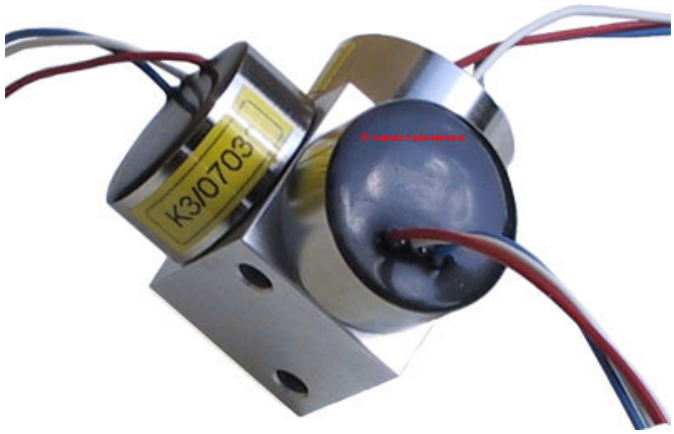


3 wire

Connections 3 wire
red: Ub:+5V (stable)
white: Output signal
blue: GND,(-Ub),housing

Housing type2

Caution! Do not reverse operating voltage polarity



BDK in special K3 housing for 3 axes acceleration