

# VibroMetra PC Vibration Measuring System

## Why choose VibroMetra?

- Designed for vibration measurement - No ballast by unwanted functionality
- VibroMetra is modular making it particularly economic with fewer channels
- Also supports IEPE compatible microphones, force and pressure transducers
- Off-line measurement: Save raw data in the background for later analysis
- Compact hardware making VibroMetra particularly suited for mobile use
- Simple plug & play installation
- Short training time. Start first measurement within a few minutes
- Data export in common graphics, text and binary formats
- Free updates

## Hardware:

M312B

IEPE / USB  
2 IEPE, 1 digital trigger  
0.1 to 40,000 Hz

## Available Software Modules:

VM-BAL(+++)  
• Balancing of long and disk-shaped rotors, one or two planes  
• User guidance by clear text instructions  
• Up to six correction methods  
• Report function  
• Compact and handy VM-BAL Kit

VM-SCOPE(+)  
• Displays short vibration events, e.g. for drop testing  
• Memory for 10 second post and 1 second pre trigger  
• Acceleration (VM-SCOPE+ also velocity, displacement)

VM-PLOT(+)  
• Long-term recording for slow changing vibration events  
• Zoom and scroll functions for time graph  
• Acceleration (VM-PLOT+ also velocity, displacement)

VM-FFT(+)  
• FFT analyzer with 5 window functions, high frequency resolution  
• RMS and peak spectrum  
• Bearing analysis with bearing library in VM-FFT+  
• Power density spectrum in VM-FFT+  
• User-defined limits for alarms, e.g. for quality testing  
• Acceleration (VM-FFT+ also velocity, displacement)

VM-FFT 3D(+)  
• View of FFT change over time (3D)  
• Useful tool for run-up / coast-down analysis  
• VM-FFT 3D+: envelope, bearing and acoustic analysis

VM-TRACK(+)  
• Magnitude and phase as function of the rotary frequency  
• Quick detection of resonances  
• Acceleration (VM-TRACK+ also velocity, displacement)

VM-REC(+)  
• Real-time recording in binary or text format  
• Bar graph and numeric display  
• Pre and post triggering  
• Acceleration (VM-REC+ also velocity, displacement)

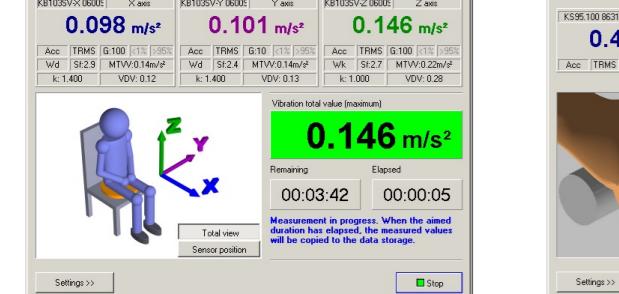
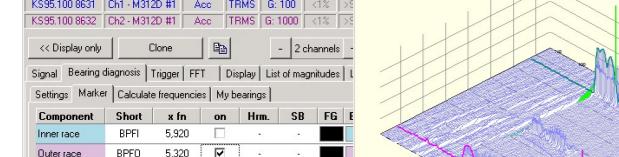
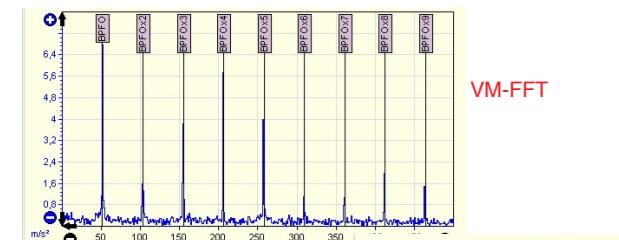
VM-METER(+)  
• RMS, peak value, instantaneous value  
• Vibration acceleration, velocity and displacement  
• VM-METER+: for phase, rpm, main frequency, acoustics

VM-OCT+  
• Third-octave band analyzer, VC/Nano criteria, sound level

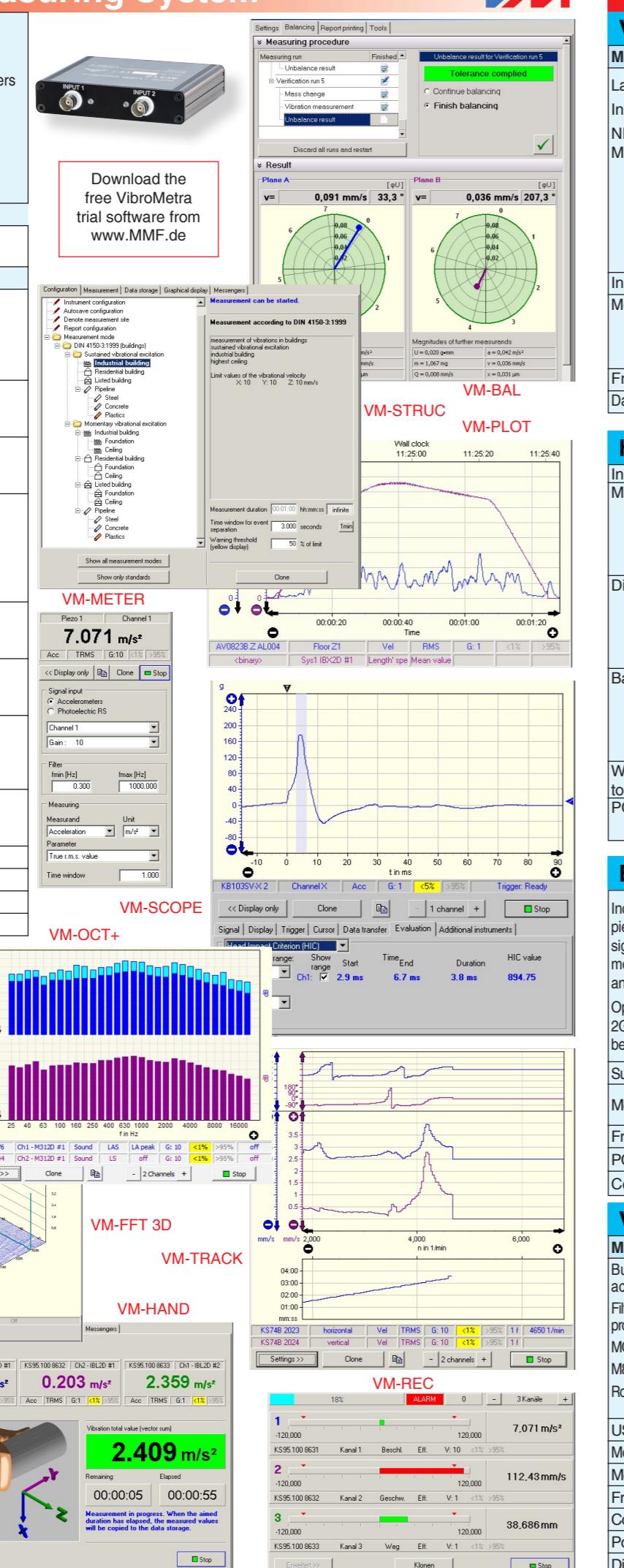
VM-STRUC(+)  
• Building vibration monitoring, DIN 4150-3

VM-HAND(+)  
• Hand-Arm vibration measurement, ISO 5349, ISO 8041-1

VM-BODY(+)  
• Whole-Body vibration measurement, ISO 2631, ISO 8041-1



Download the free VibroMetra trial software from [www.MMF.de](http://www.MMF.de)



# Vibration Analyzers and Meters

## Vibration Analyzer VM100

### Model VM100A VM100B

**NEU**  
Large touch screen  
Intuitive operation  
NFC detection for Measuring point

Inputs 9 IEPE; 1 tacho  
Measuring modules Included: FFT, plot of overall values (RMS, peak, crest)  
Optional: hand-arm / whole-body vibration, machine monitoring, envelope analysis, run-up/coast-down test, balancing, third-octave analysis (VC/Nano)  
Frequency range 0.4 Hz - 24 kHz; various high/low pass filters  
Data storage/transfer SD card, USB interface, CSV

## Human Vibration and Universal Meter VM31

### Inputs 4 IEPE channels

Measuring modes Hand-Arm vibration  
Whole-body vibration  
Acceleration  
Velocity  
Displacement

Display modes RMS, Maximum RMS (MTV)  
Peak value, maximum peak value  
Total Vibration Value ( $a_{\text{av}}$ )  
Vibration dose value (VDV)  
Crest factor

Band filters 0.1 - 2000 Hz (acc.)  
1 - 1000 Hz (acc.)  
2 - 300 Hz (vel.)  
10 - 1000 Hz (vel.)  
5 - 250 Hz (displacement)

Weighting filters Hand-Arm: Wh,  
Whole-Body: Wb, Wc, Wd, Wj, Wk, Wm  
PC data transfer USB interface, CSV  
A/8 calculation tool included

## Building Vibration Monitor VM40C

Includes triaxial piezoelectric sensor, signal conditioning, monitoring, recording and battery  
Optional accessories: 2G/4G modem, radio beacon light, printer

Supported standards DIN 4150-3; BS 7385; SN 640312a

Measuring ranges Acceleration: 0.01 - 15 m/s<sup>2</sup>; Velocity: 0.1 - 2400 mm/s at 1 Hz; 0.1 - 30 mm/s at 80 Hz

Frequency ranges 0.8 - 100 Hz; 0.8 - 395 Hz; 5 - 150 Hz (-3 dB)

PC interface USB for transfer of stored data

Cellular functions SMS; sensor data platforms ThingSpeak and AskSensors

## Vibration Switches • Digital Vibration Sensor

### Model VS10 VS11 VS12

Built-in piezoelectric accelerometer  
Filters and ranges programmable via USB  
MOS relay 60 V / 0.5 A  
M8 mounting stud  
Robust cases with IP67

USB Measurement - RMS/Pk and 360 lines FFT (1/10 kHz)

Monitoring functions RMS/Peak value

Measuring ranges acceleration: 0.1 - 1000 m/s<sup>2</sup>; velocity: frequency dependent

Frequency ranges HP: 0.1/2/5/10/20/50/100/200/500/1000 Hz; LP: 0.1/0.2/0.5/1/2/5/10 kHz

Connections Screw terminals for relay and supply, Micro USB socket inside

Power supply USB or 5 to 30 VDC

Dimensions (Ø x h) 50 mm x 52 mm | 50 mm x 52 mm | 50 mm x 36 mm

## Vibration Analyzers and Meters

### Model VM22 VM23 VM24 VM25

VMID Measuring Points provide reliable magnetic coupling, identify the measuring point and set the instrument automatically  
**VM ID**  
Main frequency display  
With FFT

Accelereration -  
0.1 - 240 m/s<sup>2</sup>  
0.2 - 10,000 Hz  
3 - 1000 Hz  
1000 - 10,000 Hz

Velocity 0.1 - 1000 mm/s  
10 - 1000 Hz (ISO 10816)  
2 - 100 Hz  
10 - 1000 Hz  
2 - 300 Hz  
10 - 1000 Hz

Displacement -  
0.01 - 60 mm  
3 - 600 mm  
2 - 300 Hz  
0.01 - 60 mm

Parameters true RMS  
true RMS, peak, crest, K(t)  
true RMS, peak - peak  
true RMS, peak, crest, K(t)  
127 lines FFT

Frequency analysis -  
512 lines (no graphics)  
Temperature (infrared)  
Rotary speed (optical)

Memory, interface 16,000 values/USB  
16,000 values/USB  
16,000 values/USB  
16,000 values/USB

## Vibration Monitoring

### Vibration Monitors

#### Model M12 M14

M12 provides common analog signals: AC, DC, RMS, peak, 4-20 mA, relay  
Available in the following kits:  
VM31-WB (Whole-Body Kit)  
VM31-HA (Hand-Arm Kit)  
VM31-HAWB (H/A and W/B Kit)  
VM31-M (Machine Vibration Kit)

RMS/peak or FFT monitoring

Size: 120 mm x 65 mm x 25 mm  
Power supply: 3 AAA cells or USB  
Band filters 0.1 - 2000 Hz (acc.)  
1 - 1000 Hz (acc.)  
2 - 300 Hz (vel.)  
10 - 1000 Hz (vel.)  
5 - 250 Hz (displacement)

Weighting filters Hand-Arm: Wh,  
Whole-Body: Wb, Wc, Wd, Wj, Wk, Wm  
PC data transfer USB interface, CSV  
A/8 calculation tool included

M14 is fully digital with USB and RS-485 for setup and measurement; 4-20 mA and relay

Vibr. acceleration 10 / 50 / 250 m/s<sup>2</sup>  
1000 m/s<sup>2</sup>  
Vibration velocity 10 / 50 / 250 mm/s  
1000 mm/s

Vibr. displacement 100 / 500 / 2500 μm

High pass filters FB3 plug-in modules; 2 to 1000 Hz

Low pass filters FB2 plug-in modules; 0.1 to 50 kHz

true RMS or true peak-peak

FFT (500 lines, 10 limits)

Analog and digital interfaces DC (RMS and pk-pk); AC wide-band; AC filtered; DC 4-20 mA; AC wide-band; DC 4-20 mA; USB; RS-485

Relay output 1 relay: 40 VAC/2 A

Sensor input IEPE

Level indication LED bar graph

Power supply 12 to 28 VDC

Dimensions 22 x 76 x 111 mm<sup>3</sup>

13 x 100 x 114 mm<sup>3</sup>

## Plug-In Filter Modules for M12, M33 and M208

The plug-in filter modules FB2 (low pass) and FB3 (high pass) are available with the following 3 dB cut-off frequencies:

**FB2:** 0.1 / 0.3 / 0.5 / 1.0 / 3.0 / 5.0 / 10 / 30 / 50 kHz  
Butterworth, 4th order low pass

**FB3:** 2 / 3 / 5 / 10 / 30 / 50 / 100 / 300 / 500 / 1000 Hz  
Butterworth, 2nd order high pass

**FBV/FBD:** Single / double integrator modules (M33 / M208)

## Contact:

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wind energy plants material testing 2024  
modal analysis structural health monitoring  
noise reduction vibration severity  
drop testing velocity frequency response Sensors  
velocity spectral analysis Signal Conditioners  
unbalance monitoring ship vibration Monitors  
shock testing end-of-line test Meters  
vibration exposure earthquake monitoring Calibrators  
noise vibration harshness (NVH) whole-body vibration order tracking analysis  
vibration immission passenger comfort  
machine condition monitoring seismic vibration emergency shutdown  
acceleration calibration fatigue testing quality control  
hand-arm vibration building vibration ground-borne vibration head injury criterion (HIC)  
balancing predictive maintenance pipeline vibration human vibration  
bearing monitoring displacement

70 YEARS



# Vibration Transducers

## General Purpose Shear Accelerometers

Model	KS76C10	KS76C100	KS77C10	KS77C100	KS56	KS57
Output	IEPE	IEPE	IEPE	IEPE	Charge	Charge
Range	$\pm 600 \text{ g}$	$\pm 60 \text{ g}$	$\pm 600 \text{ g}$	$\pm 60 \text{ g}$	$\pm 4000 \text{ g}$	$\pm 4000 \text{ g}$
Sensitivity	10 mV/g	100 mV/g	10 mV/g	100 mV/g	18 pC/g	18 pC/g
$f_{\min} \text{ (3 dB)}$	0.12 Hz	0.13 Hz	0.12 Hz	0.13 Hz	0.1 Hz	0.1 Hz
$f_{\max} \text{ (3 dB)}$	33 kHz	24 kHz	33 kHz	24 kHz	17 kHz	17 kHz
Connector	UNF 10-32	UNF 10-32	UNF 10-32	UNF 10-32	UNF 10-32	UNF 10-32
Weight	20 gr.	23 gr.	20 gr.	23 gr.	23 gr.	23 gr.
Height	17 mm	17 mm	17 mm	17 mm	17 mm	17 mm
Base	17 mm hex.	17 mm hex.	17 mm hex.	17 mm hex.	17 mm hex.	17 mm hex.

## Low Cost Accelerometers

Model	KS78C10	KS78C100
Output	IEPE+TEDS	IEPE+TEDS
Range	$\pm 500 \text{ g}$	$\pm 60 \text{ g}$
Sensitivity	10 mV/g	100 mV/g
$f_{\min} \text{ (3 dB)}$	0.65 Hz	0.2 Hz
$f_{\max} \text{ (3 dB)}$	23 kHz	22 kHz
Connector	UNF 10-32	UNF 10-32
Weight	10.2 gr.	11.2 gr.
Height	15.5 mm	15.5 mm
Size (mm)	11 x 10 Ø	12 x 10 Ø
Base	12 mm hex.	12 mm hex.

## OEM Accelerometers

Model	KS90B	KS901B10	KS901B100
High-quality shear-type accelerometers for integration into customer's products			
Output	Charge	IEPE	IEPE
Range	$\pm 5000 \text{ g}$	$\pm 500 \text{ g}$	$\pm 60 \text{ g}$
Sensitivity	10 pC/g	10 mV/g	100 mV/g
$f_{\min} \text{ (3 dB)}$	0.1 Hz	0.65 Hz	0.2 Hz
$f_{\max} \text{ (3 dB)}$	19 kHz	22 kHz	22 kHz
Connector	solder pins	UNF 10-32	UNF 10-32
Weight	5.1 gr.	4.6 gr.	5.6 gr.
Height	36 mm	37 mm	
Size (mm)	11 x 10 Ø	12 x 10 Ø	12 x 10 Ø
Mounting	adhesive	adhesive	adhesive

## High Sensitivity Accelerometers

Model	KS48C	KB12VD
For triaxial whole-body vibration measurement to ISO 2631		
with TEDS		
Output	IEPE	
Sensitivity	100 mV/g	
$f_{\min} \text{ (3 dB)}$	0.1 Hz	0.08 Hz
$f_{\max} \text{ (3 dB)}$	4 kHz	260 Hz
Connector	M12, 4 pins	UNF 10-32
Weight	165 gr.	150 gr.
Height	12 mm	
Diameter	200 mm	
Pad material	silicone rubber	

## Miniature and Modal Analysis Accelerometers

Model	KS91C	KS94C10	KS94C100	KS94L	KS9C10	KS95C100	KS93	KS96B10	KS96B100	KS97B10	KS97B100	KS98B10	KS98B100
Output	IEPE	IEPE	IEPE	L.P. IEPE	IEPE	IEPE	IEPE	IEPE+TEDS	IEPE+TEDS	IEPE+TEDS	IEPE+TEDS	IEPE+TEDS	IEPE+TEDS
Range	$\pm 600 \text{ g}$	$\pm 600 \text{ g}$	$\pm 60 \text{ g}$	$\pm 240 \text{ g}$	$\pm 600 \text{ g}$	$\pm 60 \text{ g}$	$\pm 6000 \text{ g}$	$\pm 500 \text{ g}$	$\pm 60 \text{ g}$	$\pm 500 \text{ g}$	$\pm 60 \text{ g}$	$\pm 500 \text{ g}$	$\pm 60 \text{ g}$
Sensitivity	10 mV/g	10 mV/g	100 mV/g	14 mV/g	10 mV/g	100 mV/g	5 pC/g	10 mV/g	100 mV/g	10 mV/g	100 mV/g	10 mV/g	100 mV/g
$f_{\min} \text{ (3 dB)}$	0.3 Hz	0.2 Hz	0.5 Hz	0.3 Hz	0.2 Hz	0.5 Hz	0.1 Hz	0.2 Hz	0.15 Hz	0.2 Hz	0.15 Hz	0.2 Hz	0.15
$f_{\max} \text{ (3 dB)}$	37 kHz	36 kHz	28 kHz	22 kHz	36 kHz	28 kHz	22 kHz	18 kHz	13 kHz	18 kHz	13 kHz	16 kHz	11 kHz
Connector	Submin. M3	Submin. M3	Submin. M3	Submin. M3	Submin. M3	Submin. M3	Submin.	UNF 10-32	UNF 10-32	UNF 10-32	UNF 10-32	UNF 10-32	UNF 10-32
Weight	1.3 gr.	2.4 gr.	3.2 gr.	3.2 gr.	2.4 gr.	3.2 gr.	2.7 gr.	2.4 gr.	3.2 gr.	3.2 gr.	3.0 gr.	3.8 gr.	
Height	6.7 mm	10 mm	10 mm	10 mm	9.5 mm	9.5 mm	7.5 mm	9 mm	9 mm	9 mm	10 mm	10 mm	
Base	8.2 mm Ø	10.5 mm Ø	10.5 mm Ø	10.5 mm Ø	10.6 mm Ø	10.6 mm Ø	10.6 mm Ø	9 x 9 mm	9 x 9 mm	9 x 9 mm	10 x 10 mm	10 x 10 mm	

## Triaxial Accelerometers

Model	KS903B10	KS903B100	KS943B10	KS943B100	KS943L	KS963B10	KS963B100	KS973.10	KS973.100	KS813B	KS823B
Output	IEPE+TEDS	IEPE+TEDS	IEPE	IEPE	L. P. IEPE	IEPE+TEDS	IEPE+TEDS	IEPE+TEDS	IEPE+TEDS	IEPE	
Range	$\pm 600 \text{ g}$	$\pm 60 \text{ g}$	$\pm 600 \text{ g}$	$\pm 60 \text{ g}$	$\pm 240 \text{ g}$	$\pm 500 \text{ g}$	$\pm 60 \text{ g}$	$\pm 600 \text{ g}$	$\pm 60 \text{ g}$	$\pm 55 \text{ g}$	$\pm 12 \text{ g}$
Sensitivity	10 mV/g	100 mV/g	10 mV/g	100 mV/g	14 mV/g	10 mV/g	100 mV/g	10 mV/g	100 mV/g	500 mV/g	
$f_{\min} \text{ (3 dB)}$	0.1 Hz	0.1 Hz	0.2 Hz	0.5 Hz	0.3 Hz	0.2 Hz	0.15 Hz	0.2 Hz	0.15 Hz	0.2 Hz	0.07 Hz
$f_{\max} \text{ (3 dB)}$	20 kHz	10 kHz	22 kHz	22 kHz	19 kHz	18 kHz	10 kHz	18 kHz	10 kHz	10 kHz	6 kHz
Connector	1/4"-28 UNF	1/4"-28 UNF	Binder 707	Binder 707	Binder 707	1/4"-28 UNF	1/4"-28 UNF	Binder 707	Binder 707	Binder 718	Binder 718
Weight	6.5 gr.	9 gr.	14 gr.	16 gr.	16 gr.	8.5 gr.	11 gr.	12.5 gr.	15 gr.	115 gr.	365 gr.
Height	14 mm	14 mm	11 mm	11 mm	11 mm	8.6 mm	8.6 mm	9.6 mm	9.6 mm	33 mm	58 mm
Base	14 x 14 mm	14 x 14 mm	22 x 20 mm	22 x 20 mm	22 x 20 mm	19.2 x 19.2	19.2 x 19.2	21.2 x 21.2	21.2 x 21.2	30 mm Ø	54 mm Ø

## Industrial Accelerometers

Model	KST74C10	KST74C100	KST84.100
		<img alt	