



Vibration

Sensors
Signal Conditioners
Monitors
Meters
Calibrators

wind energy plants material testing structural health monitoring
modal analysis vibration severity
noise reduction vibration
drop testing
velocity frequency response
spectral analysis ship vibration
unbalance monitoring end-of-line test
shock testing
vibration exposure earthquake monitoring
noise vibration harshness (NVH)
whole vibration order tracking analysis
vibration immersion passenger comfort
machine condition monitoring
seismic vibration emergency shutdown
acceleration calibration crash test
fatigue testing quality control
hand-arm vibration green building
building vibration
balancing
pipelines human vibration
bearing monitoring displacement

VibroMetra PC Vibration Measuring System

- Why choose VibroMetra?**
- Purpose-built for vibration measurement, no unnecessary features
 - Modular design, cost-efficient for fewer channels
 - Supports IEPE microphones, force and pressure transducers
 - Offline measurement with background raw data recording for later analysis
 - Compact hardware, ideal for mobile use
 - Simple plug & play setup
 - Minimal training, first measurement in minutes
 - Export to standard graphics, text and binary formats
 - Free updates

Hardware: M312B
IEPE / USB: 2 IEPE, 1 digital trigger
Interfaces: 0.1 to 40,000 Hz

Available Software Modules:

- 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-METER
7.071 m/s²

VM-BAL
0.091 mm/s, 33.3°

VM-SCOPE
Time: 100.000

VM-PLOT
Time: 11:23:20

VM-FFT
512 lines

VM-FFT 3D
3D surface plot

VM-TRACK
Time: 4.000

VM-OCT+
Bar chart

VM-REC+
Bar chart

VM-METER+
7.071 m/s²

VM-OCT+
Bar chart

VM-STRUC(+)
Bar chart

VM-HAND(+)
Hand-Arm vibration

VM-BODY(+)
Whole-Body vibration

Download the free VibroMetra trial software at www.MMF.de

Vibration Meters and Monitors

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 (MTVV) Peak value, maximum peak value Total Vibration Value (a _{TV}) 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 to ISO 8041	Hand-Arm: W _h Whole-body: W _b , W _c , W _d , W _i , W _k , W _m
PC data transfer	USB interface, CSV A/B) calculation tool included



Size: 120 mm x 65 mm x 25 mm
 Power supply: 3 AAA cells or USB

- Available in the following kits:
- VM31-WB (Whole-Body Kit)
 - VM31-HA (Hand-Arm Kit)
 - VM31-HAWB (H/A and WB Kit)
 - VM31-M (Machine Vibration Kit)

Vibration Monitors

Model	M12	M14
M12 provides common analog signals: AC, DC, RMS, peak, 4-20 mA, relay		
M14 is fully digital with USB and RS-485 for setup and measurement; 4-20 mA and relay		
Vibr. acceleration	10 / 50 / 250 m/s²	1000 m/s²
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	5/10/20/50/100/200/500/1000 Hz
Low pass filters	FB2 plug-in modules; 0.1 to 50 kHz	0.1/0.2/0.5/1k/2k/5k/10kHz
Monitoring modes	true RMS or true peak-peak	true RMS or true 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	2 relays: 60 VAC/0.5 A
Sensor input	IEPE	IEPE
Level indication	LED bar graph	LED bar graph; bi-color
Power supply	12 to 28 VDC	8 to 28 VDC
Dimensions	22 x 76 x 111 mm³	13 x 100 x 114 mm³

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)

Vibration Meters

Model	VM22	VM23	VM24	VM25
VMID Measuring Points provide reliable magnetic coupling, identify the measuring point and set the instrument automatically				
Acceleration	-	-	0.1 - 240 m/s² 0.2 - 10,000 Hz 3 - 1000 Hz 1000 - 10,000 Hz	0.1 - 240 m/s² 0.2 - 10,000 Hz 3 - 1000 Hz 1000 - 10,000 Hz
Velocity	0.1 - 1000 mm/s 10 - 1000 Hz (ISO 10816)	0.1 - 1000 mm/s 2 - 100 Hz 10 - 1000 Hz	0.1 - 1000 mm/s 2 - 300 Hz 10 - 1000 Hz	0.1 - 1000 mm/s 2 - 300 Hz 10 - 1000 Hz
Displacement	-	0.01 - 60 mm 3 - 60 / 3 - 200 Hz	0.01 - 60 mm 2 - 300 Hz	0.01 - 60 mm 2 - 300 Hz
Parameters	true RMS	true RMS, peak - peak	true RMS, peak	true RMS, peak, crest, K(t)
Frequency analysis	-	512 lines (no graphics)	-	127 lines FFT
Temperature (infrared)	-	-	-	-40 - 125 °C
Rotary speed (optical)	-	-	-	1 - 9999 rpm
Memory / Interface	16,000 values/USB	16,000 values/USB	16,000 values/USB	16,000 values/USB

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			
USB Measurement	-	RMS/Pk and 360 lines FFT (1/10 kHz)	
Monitoring functions	RMS/Peak value	RMS/Peak value or 10 selectable FFT limits	FFT & RMS/Peak Measurement
Measuring ranges	acceleration: 0.1 - 1000 m/s²; 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	clamp terminals for relay & supply, Micro USB port inside		8-pin socket for USB/relay
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

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/s²; 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 Analyzers

Model	VM100A	VM100B	VM80
Inputs	9 IEPE; 1 tacho	3 IEPE; 1 tacho	4 IEPE; 1 tacho
Measuring functions	Included: FFT/FRF/PSD/ESD, plot of overall values (RMS, peak, crest) Optional: hand-arm and whole-body vibration, machine monitoring, envelope analysis, run-op/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		



About Metra

- Founded by Richard Weber in 1954 in Radebeul (near Dresden, Germany)
- Began producing piezoelectric sensors in the late 1950s
- Expanded to a broad range of vibration sensors and instruments (1960s-70s)
- Developed in-house piezoceramic materials
- Extensive research in piezoelectric sensor design
- First shear-type accelerometers developed in 1970
- Became one of Europe's largest accelerometer manufacturers in the 1980s
- Today: global manufacturer of vibration measurement equipment
- Family business in its third generation

Highest Quality Standards

- ISO 9001:2015 certified quality management
- ISO 17025:2018 accredited calibration lab
- 2-year standard warranty

Contact:

Learn more: www.MMF.de

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Vibration Transducers

General Purpose Shear Accelerometers

Model	KS76C10	KS76C100	KS77C10	KS77C100	KS56	KS57
Output	IEPE	IEPE	IEPE	IEPE	Charge	Charge
Range	± 600 g	± 60 g	± 600 g	± 60 g	± 4000 g	± 4000 g
Sensitivity	10 mV/g	100 mV/g	10 mV/g	100 mV/g	18 pC/g	18 pC/g
f_{min} (3 dB)	0.12 Hz	0.13 Hz	0.12 Hz	0.13 Hz	0.1 Hz	0.1 Hz
f_{max} (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.

Probe Accelerometers

Model	KST94C-4N	KST94C-9N
Output	IEPE	IEPE
Range	± 20 g	± 40 g
Sensitivity	100 mV/g	100 mV/g
Frequ. Range	40 to 3200 Hz (3 dB)	40 to 4500 Hz (3 dB)
Connector	UNF 10-32	UNF 10-32
Length	60 mm	60 mm
Diameter	25 mm	25 mm

Low Cost Accelerometers

Model	KS78C10	KS78C100
Output	IEPE+TEDS	IEPE+TEDS
Range	± 500 g	± 60 g
Sensitivity	10 mV/g	100 mV/g
f_{min} (3 dB)	0.65 Hz	0.2 Hz
f_{max} (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
Base	12 mm hex.	12 mm hex.

OEM Accelerometers

Model	KS90B	KS901B10	KS901B100
Output	Charge	IEPE	IEPE
Range	± 5000 g	± 500 g	± 60 g
Sensitivity	10 pC/g	10 mV/g	100 mV/g
f_{min} (3 dB)	0.1 Hz	0.65 Hz	0.2 Hz
f_{max} (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.
Size (mm)	11 x 10 Ø	12 x 10 Ø	12 x 10 Ø
Mounting	adhesive	adhesive	adhesive

High Sensitivity Accelerometers

Model	KS48C	KB12VD
Output	IEPE	IEPE
Range	± 6 g	± 0.6 g
Sensitivity	1000 mV/g	10 000 mV/g
f_{min} (3 dB)	0.1 Hz	0.08 Hz
f_{max} (3 dB)	4 kHz	260 Hz
Connector	M12, 4 pins	UNF 10-32
Weight	165 gr.	150 gr.
Height	36 mm	37 mm
Base	32 mm Ø	48 mm Ø

Industrial Accelerometers

Model	KS74C10	KS74C100	KS84B10	KS84B100	KS84B100	KS85.10	KS85.100	KS85.500
Output	IEPE	IEPE	IEPE + TEDS	IEPE + TEDS	IEPE + TEDS	IEPE + TEDS	IEPE + TEDS	IEPE + TEDS
Range	± 600 g	± 60 g	± 600 g	± 60 g	± 11 g	± 600 g	± 60 g	± 11 g
Sensitivity	10 mV/g	100 mV/g	10 mV/g	100 mV/g	500 mV/g	10 mV/g	100 mV/g	500 mV/g
f_{min} (3 dB)	0.12 Hz	0.13 Hz	0.2 Hz	0.2 Hz	0.3 Hz	0.2 Hz	0.2 Hz	0.3 Hz
f_{max} (3 dB)	21 kHz	16 kHz	23 kHz	20 kHz	20 kHz	18 kHz	20 kHz	17 kHz
Connector	TNC	TNC	M12, 4 pins	M12, 4 pins	M12, 4 pins	M12, 4 pins	M12, 4 pins	M12, 4 pins
Weight	28.5 gr.	32 gr.	58 gr.	61 gr.	61 gr.	83 gr.	86 gr.	86 gr.
Height	22 mm	22 mm	33 mm	33 mm	33 mm	28.5 mm	28.5 mm	28.5 mm
Base	16 mm hex.	16 mm hex.	22 mm hex.	22 mm hex.	22 mm hex.	24 mm hex.	24 mm hex.	24 mm hex.

Seat Pad Accelerometer

Model	KS963B100-S
Output	IEPE
Sensitivity	100 mV/g
Cable	2 m
Connector	Plug Binder 711
Height	12 mm
Diameter	200 mm
Pad material	silicone rubber

4-20mA Vibration Sensors

Model	KS184A Series	KS184V Series	KS184D Series
More than 260 types available			
M12 connectors			
Vibration mode	Acceleration	Velocity	Displacement
Output mode	RMS or peak	RMS or peak	peak-peak
Range	5 to 500 m/s ²	10 to 50.8 mm/s	10 to 50.8 mm
Lower frequ. limit	1.5/3/10/30/100/1000 Hz	1.5/3/10/30 Hz	3 Hz
Upper frequ. limit	0.1/0.3/1/5/10 kHz	0.1/0.3/1 kHz	300 Hz
Weight	60 gr.	60 gr.	60 gr.
Height/Base	33 / 22 mm hex.	33 / 22 mm hex.	33 / 22 mm hex.

Force Transducer

Model	KF24
For dynamic force measurement with highest resolution	
Output	Charge
Range	+2000 / -300 N
Sensitivity	300 pC/N
Connector	UNF 10-32
Weight	20 gr.
Height	17 mm
Base	16 mm hex.

Vibration Calibrators

Model	VC20	VC21	VC21D	VC120
Self-contained vibration calibrating system				
Adjustable frequency from 70 Hz to 10 kHz				
Frequency sweeps				
Sensitivity display with dimension unit				
Manual or PC control				
Strongest portable vibration calibrators in the market				
VC21: World's first portable calibration source for frequencies from 15.92 to 1280 Hz				
Load independent				
Quartz stabilized frequencies				
Accuracy display				
Battery powered				
Traceable to PTB standard				
VC21D with detachable clamping device for the dynamic calibration of non-contact displacement sensors (proximity probes)				
Frequencies and Amplitudes (RMS)	159.15 Hz: 10 m/s ² (10 mm/s; 10µm)	15.92 Hz: 1/2 m/s ² 40 Hz: 1/2/5 m/s ² 80 Hz: 1/2/5/10 m/s ² 159.2/320/640/1280 Hz: 1/2/5/10/20 m/s ²		70–10,000 Hz, adjustable via knob or USB, a = 1 m/s ² (fixed)
Accuracy	± 3 % at 10 to 40 °C; 5 % at -10 to 55 °C			± 3 % at 70 - 1000 Hz; ± 5 % at 1000 - 10 000 Hz; 23 °C ± 10 °C
Maximum load	600 gr.	500 gr. (depending on frequency)		400 gr.
PC interface	-	-	-	USB; PC software for setup, sweep and data base included

Charge and IEPE Amplifiers

Model	M72A1	M72A3	M72S1 (1)	M72B1	M72B3	M72R1 (1)	M208A	M208B	M29	M33	IEPE100
Sensors	Charge / IEPE + TEDS		Charge / IEPE		IEPE + TEDS	IEPE	IEPE	IEPE	IEPE	Charge	Charge
Inputs/Outputs	BNC / BNC; rear panel					BNC / BNC + D-Sub		BNC / BNC		BNC / BNC	
Channels	1	3	1	1	3	1	-		1	1	1
Charge gain	0.1 / 1 / 10 / 100 / 1000 mV/pC						-		-		0.1 / 1 / 10 mV/pC (2)
Voltage gain	0 / 20 / 40 / 60 dB						0.1 to 1000 incr.	1 / 10 / 100 / 1000	1	1/10/100/1000	-
Sensitivity tuning	0.001 to 9999 mV(pC)/m.u.					-	yes	-	-	-	-
Integration	none (acceleration); single (velocity); double (displacement)						with plug-in integrator modules		-	with FBV/FBD(3)	-
Frequ. range	0.1 Hz - 50 kHz						0.1 Hz - 100 kHz		0.1 Hz - 100 kHz	0.2 Hz - 50 kHz	0.1 Hz - 65 kHz
High pass	0.1 / 3 Hz						plug-in filters 3 to 1000 Hz		-	Plug-in filter(3)	-
Low pass	0.1 / 1 / 10 / 50 kHz						plug-in filters 0.1 to 100 kHz		-	Plug-in filter(3)	-
Dig. interfaces	-	-	USB (1)	-	-	USB (1)	serial; Ethernet	-	-	-	-
Meter display	output level in percent						RMS / peak		-	-	-
Indicators	IEPE; gain; filters; integrators; overload						IEPE; overload; low level		IEPE, power, overload	-	-
Dimensions (mm)	105 x 43 x 95	105 x 104 x 95	80W x 34U x 170	105 x 37 x 95	105 x 78 x 95	80W x 34U x 170	483 x 44 x 124 mm ³		40 x 55 x 45	54 x 55 x 45	44 mm x 24 Ø

Accredited Calibration – Your Added Value in Safety and Traceability

Optional accredited calibration in accordance with DIN EN ISO/IEC 17025 provides clear added value compared to factory calibration: it ensures traceability, quantifies measurement uncertainty and delivers internationally recognized, audit-ready results. Customers benefit from comparable data and a reliable foundation for quality assurance and equipment monitoring. Accredited calibration can be ordered together with the sensor, for vibration measuring devices, or for a complete vibration measurement chain, with only a minimal increase in delivery time. Compared to subsequent calibration, this approach avoids additional effort, downtime and costs, making it an efficient and future-proof investment in measurement quality and process reliability.

Custom Cable Assembly on Request

We offer customized cable lengths and matching connectors tailored to your needs. In-house assembly saves time, reduces coordination and ensures fast delivery. Cable assembly can be ordered with your sensors or devices for a ready-to-use solution.

Mounting and Connection Accessories

Model	Description	Model	Description
021	M3 x 6 mounting stud	002W	Adhesive wax
003	M5 x 8 mounting stud	108	Magnetic base M3, small
043	M8 x 10 mounting stud	308	Magnetic base M3, large
022	Adapter M3 female to M5	408	Magnetic base M4 female
045	Adapter M5 to UNF 10-32	008	Magnetic base M5 large
046	Adapter M5 to 1/4"-28	708	Magnetic base M5 small
044	Adapter M5 female to M8	208	Magnetic base M8 small
106	Insul. flange M3, small	508	Magnetic base M8 female large
006	Insulating flange M5	608	Curve magnet M5
206	Insulating flange M8	001	Accelerometer probe, M5
129	Adhesive insul. pad M3, small	141	Handle / curve adapter M5
329	Adhesive insul. pad M3, large	143	Hand-held adapter M5
029	Adhesive insulating pad M5		
229	Adhesive steel pad M8		

Sensor Cables

Model	Type	Plug 1	Plug 2	Temp.	Length
009-UNF-UNF-1,5	Charge/IEPE	UNF10-32	UNF10-32	120 °C	1.5 m
009-T-UNF-UNF-1,5	Charge/IEPE	UNF10-32	UNF10-32	200 °C	1.5 m
009-UNF-BNC-1,5	Charge/IEPE	UNF10-32	BNC	120 °C	1.5 m
009-SUB-UNF-1,5	Charge/IEPE	Submin.	UNF10-32	120 °C	1.5 m
009-T-SUB-UNF-1,5	Charge/IEPE	Submin.	UNF10-32	200 °C	1.5 m
010-UNF-BNC-5	Charge/IEPE	UNF10-32	BNC	120 °C	5 m
010-UNF-BNC-10	Charge/IEPE	UNF10-32	BNC	120 °C	10 m
010-TNC-BNC-1,5	Charge/IEPE	TNC	BNC	120 °C	1.5 m
009-SUB-BNC-1,5	Charge/IEPE	Submin.	BNC	120 °C	1.5 m
082-B713G-PIG-5	4-20 mA	M12 straight	pigtail	80 °C	5 m
082-B713W-PIG-5	4-20 mA	M12 angled	pigtail	80 °C	5 m
085-B713G-PIG-5	IEPE	M12 straight	pigtail	80 °C	5 m
085-B713W-PIG-5	IEPE	M12 angled	pigtail	80 °C	5 m
085-B713G-BNC-5	IEPE	M12 straight	BNC	80 °C	5 m
085-B713W-BNC-5	IEPE	M12 angled	BNC	80 °C	5 m
088-B711F-B711-10	IEPE, triaxial	Binder 711 fem.	Binder 711 mal.	80 °C	10 m
088-B718G-B711-5	IEPE, triaxial	Binder 718	Binder 711	80 °C	5 m
088-B718G-PIG-5	IEPE, triaxial	Binder 718	pigtail	80 °C	5 m
091-B707-B711-3	IEPE, triaxial	Binder 707	Binder 711	80 °C	3 m
091-CMR-B711-3	IEPE, triaxial	1/4"-28	Binder 711	80 °C	3 m
034-B711F-BNC	IEPE, triaxial	Binder 711 fem.	3 x BNC	80 °C	0.5 m

Termination Boxes

Model	Description
130	Triaxial mounting cube M3
030	Triaxial mounting cube M5
230	Triaxial mounting cube M8
330	Triaxial mounting cube M10
700	Underwater pressure hull for accelerometers, < 20 Bar, inner Ø 50 mm

Connection Accessories

Model	From	To
017	UNF 10-32 (female)	BNC (male)
117	UNF 10-32 (female)	BNC (female)
025	UNF 10-32 (female)	TNC (male)
016	UNF 10-32 (