Machine Diagnosis Instrument

Acceleration m/s² | Velocity mm/s | Displacement μm

These instruments enable maintenance staff to detect deterioration of machines and analyze its causes on-site.
The collected data can easily be transferred to a PC to create deterioration scenarios.

MK-210HEII Vibration Data Management System for Windows* Maintenance Pro

Pursuit of superior operability and visibility, and harmonization with a network, this next-generation diagnostic tool enables machines to be diagnosed more effectively.

- **You can determine maintenance actions on-site.**
  Maintenance staff can determine maintenance actions on-site because analysis of the causes of abnormal vibrations is automatically performed simply by inputting device specifications .
- **Robust design ensures durability and weather resistance.**
  Robust construction makes this unit impervious to dusty factory environments. What's more, the instrument is operable even in the rain.

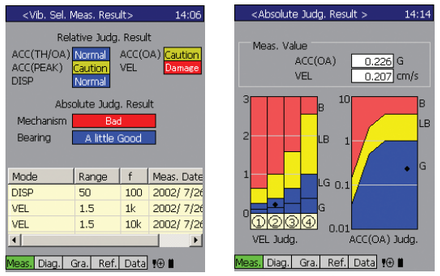
Precision Diagnostic Functions

Bearings	Damage to inner race, outer race, and balls; defect with retainer
Gears	Single-side contact, shaft center misalignment, tooth wear, defaced teeth, local defects
Mechanisms	Unbalance, misalignment, bent shafts, insufficient rack rigidity, shaft wear, play/looseness, misalignment on installation
Pumps and fans	Pressure pulsations, uniform wear, uneven wear, local defects
Motors	High-frequency vibrations, unbalanced voltage

■ General specifications

Main power source	Rechargeable battery pack (lithium ion rechargeable batteries) AC adapter (input 100 V AC ±10%, 50/60 Hz)
Continuous operating time	5 hours minimum (with no backlight use)
Recharge time	About 1 hour to full recharge
Enclosure construction	Dust- and water-resistant (comparable to IP66)
Operating temperature	0 to 50°C (90% RH, condensation-free)
Storage temperature	–10 to 60°C (90% RH, condensation-free)
Dimensions (main unit)	97 x 50 x 170 (W x D x H) mm
Weight	550 g (main unit + rechargeable battery pack)

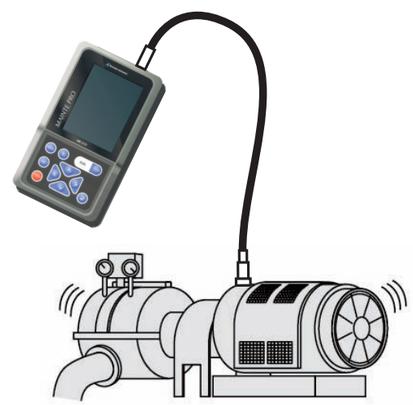
Note: Windows is a registered trademark of Microsoft Corporation.



Results of vibration-specific measurements

Results of absolute value judgment

MK-210HE II AUTO with Constant Monitoring Function (Maintenance Pro Auto)



MK-210HE II Maintenance Pro with a constant monitoring function

- **Measures vibration continuously for a set time.**
- **Automatically obtains FTT data when vibration values exceed the alarm level during measurement.**
- **Three-hour display option added to trend management graph. Trend data can be displayed in one-minute intervals.**

■ General settings specifications

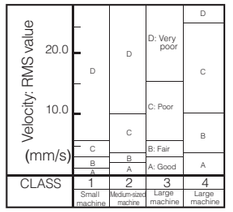
Vibration measurement interval	Choose from 1, 2, 5, 10, 30, or 60 minutes
Vibration measurement time	Choose from 5, 10, or 30 minutes; 1, 2, 4, 8, or 12 hours; and 1, 2, 5, 10, 20, or 31 days
Drive power source	Rechargeable battery pack or 100 V AC power supply (requires optional AC adapter)

MK-21 Vibrometer for Simple Diagnosis Use

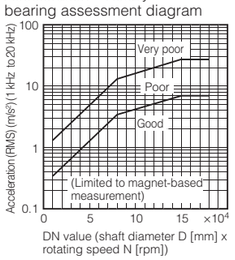
An easy to operate, portable vibrometer with diagnostic function

- **Features three measuring modes: acceleration, velocity, and displacement.**
  The required diagnostic functions are now integrated into a compact unit.
- **Incorporates diagnostic functions in reference to ISO 10816-1 (JIS B 0906).**
  This unit automatically diagnoses the status of rotating machinery according to the vibration severity standard.
- **Ensures easy, on-site bearing diagnosis.**
  You can easily diagnose bearings according to the judgment criteria displayed on the back of the unit.
- **Incorporates a vibration pickup with a magnet to ensure stable measurement accuracy.**
  Achieves accurate measurement by eliminating error factors caused by hand holding.

Velocity – Assessment diagram



Acceleration – Rotary bearing assessment diagram



The Model MK-21 Vibrometer for Simple Diagnosis is equipped with an automatic diagnosis function in reference to vibration severity standards (ISO10816, JIS B 0906). This allows even complete novices to use the vibrometer to diagnose facilities.
The assessment diagram provided on the back of the MK-21 also allows you to assess whether a rotary bearing is in conformance.

Note: The rotary bearing assessment diagram is an original standard of JFE Advantech Co., Ltd.

■ Main specifications

Sensor	Piezoelectric vibration pickup (with magnet)		
Measuring modes	Acceleration (ACC) Acceleration peak (ACC PEAK) Velocity (VEL) Displacement (DISP)		
Measuring range		Low range	High range
	Acceleration	0.0 to 20.0 m/s²	0 to 200 m/s²
	Acceleration peak	0.0 to 20.0 m/s²	0 to 200 m/s²
	Velocity	0.0 to 20.0 mm/s	0 to 200 mm/s
	Displacement	0 to 200 μm	0 to 1990 μm
Measuring frequency range	Acceleration : 1 kHz to 20 kHz Acceleration peak : 1 kHz to 20 kHz Velocity : 10 Hz to 1 kHz Displacement : 10 Hz to 1 kHz		
Arithmetic processing	Acceleration : RMS value Acceleration peak : PEAK value Velocity : RMS value Displacement : P-P value		
Display type	4-digit LCD with backlight		
Low battery indication	Low-battery mark appears on LCD		
Operating temperature range	0 to 50°C (90% RH, condensation-free)		
Storage temperature range	–10 to 60°C (90% RH, condensation-free)		
Power source	AA alkaline dry battery (x 1) (continuously operable for at least eight hours)		
Dimensions	69 x 154 x 30 (W x H x D) mm		
Weight	140 g (main unit + battery)		

MHC-Classic Plus/MHC-SloPoint Ultra-slow Rotating Bearing Diagnosis System

*Made by Holroyd Instruments Ltd.

Detection of deterioration in rotating machinery using high-frequency AE signals. Can be used with rotating machinery at ultra-slow speeds of 0.25 to 60 rpm.

- **User-friendly operation lets operators conduct automatic diagnosis without any specialized knowledge**
- **Available in two models: the portable MHC-Classic Plus and the SloPoint for on-line use.**

■ Main specifications

Model	MHC-Classic Plus	SloPoint
Sensor	Piezoelectric element resonance system 100 kHz (AE sensor)	
Measurement	P value Range: 0 to 99 I value Range: 0 to 99 E value Range: 0 to 100	P value Range: 0 to 80 I value Range: 0 to 80 E value Range: 0 to 99
Power source	Lithium battery 6R61/PP3 9V (x2) Continuous operating time of approx. 80 hours (when using lithium battery)	24 V DC (±10%) 50 mA
Operating temperature range	Main unit: 0 to 50 °C, Sensor: 0 to 70 °C	Main unit: 0 to 70 °C, Sensor: 0 to 70 °C
Dimensions	220 x 115 x 52 (H x W x D) mm	75 x 50 x 115 (H x W x D) mm
Weight	750 g	210 g