

INTRODUCTION

The Metravi VT-145 Machine Condition Monitor with Vibration Tester is a handheld instrument based on the latest microprocessor design. It can measure Vibration, Infrared Temperature and features intelligent colour alarm functions.

The instrument is simple and easy to use, suitable for on-site machine operation and maintenance inspector to monitor machine condition, detect problems in time, and ensure reliable operation of machines.

VIBRATION MEASUREMENT

The Metravi VT-145 can measure the effective value of Vibration Velocity (mm/s RMS), Single Peak Acceleration (g P), Peak-to-Peak Displacement (um P-P) and high-frequency Acceleration value (BG Peak).

When measuring velocity, the instrument will automatically determine and indicate the machine alarm status in colour based on the built-in ISO10816-3 machine vibration standard.

TEMPERATURE MEASUREMENT

In addition to its vibration detection function, the Metravi VT-145 is also equipped with a non-contact Infrared Thermometer, which is mainly used for checking bearing temperature. The measuring range is -20°C ~ 120°C, and the measuring position is indicated by a red laser pointer.

STANDARDS

ISO10816-3 VIBRATION STANDARDS

Support classification: R-rigid support F-flexible support

Machine classification:

Group 1: Large machines with rated power $\geq 300\text{KW}$; motors with shaft height $\geq 315\text{mm}$.

Usually sliding bearing, rotation speed 120RPM - 15000RPM

Group 2: motors with rated power $15\text{KW} \leq P < 300\text{KW}$; shaft height $160 \leq H < 315\text{mm}$.

Usually with rolling bearings, speed $> 600\text{RPM}$

Group 3: Pumps with rated power $> 15\text{KW}$, multi-blade impeller and separately connected to the prime mover (Centrifugal, mixed flow, axial flow).

Group 4: Pumps with rated power $> 15\text{KW}$, multi-blade impeller and integrated with the prime mover (Centrifugal, mixed flow, axial flow)



*Technical Specifications & Appearance are subject to change without prior notice

STANDARDS

ISO10816-3 INTERNATIONAL STANDARD FOR MACHINE VIBRATION

ISO10816-3 is a special standard for measuring vibration intensity on machine bearings, bearing seats or supports. This vibration standard is applicable to units with a power greater than 15KW and an operating speed of 120-15000rpm, including the following machines:

- Steam turbines with power not exceeding 50MW
- The power of the steam turbine unit is greater than 50MW, and the rotation speed is lower than 1500rpm or higher than 3600rpm units included in ISO10816-2)
- Rotary compressor
- Industrial gas turbines with power not greater than 3MW
- Centrifugal, mixed flow or axial flow pumps
- Generators other than hydraulic generating units or pumping stations
- Various types of electric motors
- Blower or fan

ISO10816-3 VIBRATION VALUE STANDARD EVALUATION

Suitable for industrial machines with power greater than 15KW and rated speed of 120-15000RPM.

ISO 10816-3		Machinery Groups 2 and 4		Machinery Groups 1 and 3	
Velocity		Rated power			
mm/sec Peak	mm/sec RMS	15 kW – 300 kW		Group 1: 300 kW – 50 MW Group 3: Above 15 kW	
15.5	11.0	DAMAGE OCCURS			
10.0	7.1	RESTRICTED OPERATION			
6.3	4.5	UNRESTRICTED OPERATION			
4.9	3.5	UNRESTRICTED OPERATION			
3.9	2.8	UNRESTRICTED OPERATION			
3.2	2.3	UNRESTRICTED OPERATION			
1.9	1.4	NEWLY COMMISSIONED MACHINERY			
0.9	0.7	NEWLY COMMISSIONED MACHINERY			
0.00	0.0	NEWLY COMMISSIONED MACHINERY			
Foundation		Rigid	Flexible	Rigid	Flexible



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TECHNICAL SPECIFICATIONS

Input	: 100mV/g IEPE acceleration sensor, 80cm cable and BNC connector
Vibration measurement	: Velocity: 0-200mm/s RMS Frequency 10Hz-1kHz Displacement: 0-2000µm Peak-Peak Frequency: 10Hz-1kHz Acceleration: 0-20 g Peak Frequency: 10Hz-1kHz High frequency acceleration 0-20 g peak frequency range 1 kHz~12 kHz
Accuracy	: +/-5%
Alarm Indication	: Built-in ISO10816-3 machine vibration standard evaluation of vibration speed alarm state
Temperature	: -20~120°C with laser dot target indication
Accuracy	: ±2°C
Resolution	: 1°C; D:S 8:1
Display	: TFT colour display, 128x160 pixels
Power & Charger	: Lithium rechargeable battery, 3.7V 1600 mAh Recharge time 3 hours; Operating time >30 hours continuous
Operating Temperature	: -10°C to +50°C
Dimensions	: 115 x 75 x 25mm (LxWxT)
Weight	: 230g
Accessories	: Acceleration sensor (with 80cm length cable), Magnetic holders for sensors. Probe, Battery Charger, User Manual, Carrying Case



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