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TIMKEN
Where You Turn

TIMKEN

CMT Series

Stand-Alone Continuous Machine Tester



CONDITION MONITORING
SOLUTIONS

CMT Series

Stand-Alone Continuous Machine Tester



Timken offers a wide range of condition monitoring solutions, including the continuous machine tester (CMT) series, which will help you:

- Monitor your critical equipment
- Avoid unplanned downtime
- Increase profits through early detection and
- Improve workplace safety.



Protect your assets!

Dependable condition monitoring

Safeguard your critical machinery. The CMT is a stand-alone monitoring device, ideal for helping to protect unmanned machines.



The continuous machine tester uses two leading condition monitoring methods. On each machine, you can select the combination of measurements that best meets your specific needs:

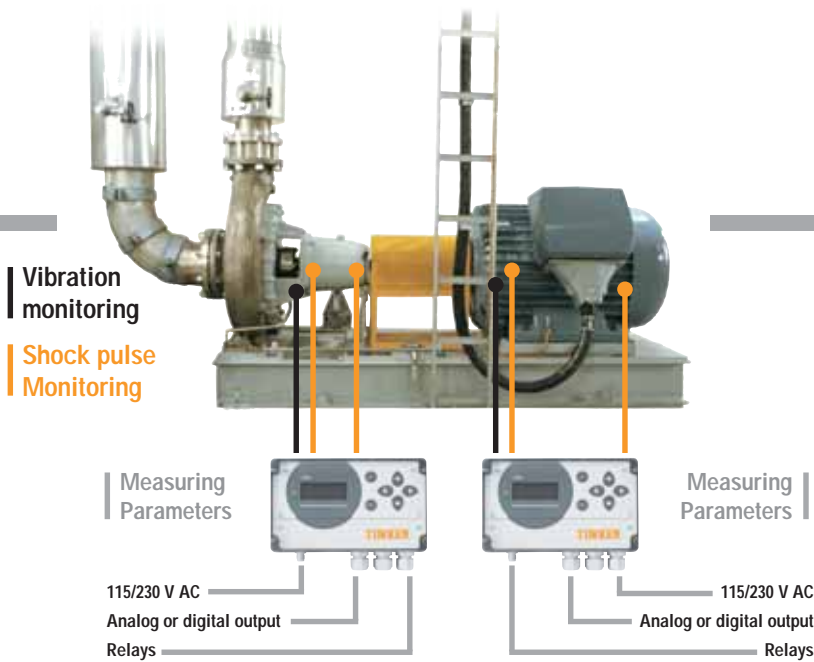
- **Shock-pulse measurement** for ball and roller bearings supplies data on bearing damage, lubrication condition and the effects of alignment and load. In many applications, the bearings are the only machine elements that need monitoring.



- **Vibration severity measurement** is the ISO-recommended method for general condition monitoring. It detects the most common mechanical faults, such as imbalance, misalignment and structural weakness.



More than 90 percent of all mechanical faults can be identified by detecting increases in vibration and/or shock-pulse levels. Planned-maintenance and condition-based alarms can prevent accidents and unscheduled downtime.



Cost-efficient options

Condition monitoring can directly impact the bottom line and in some cases provide a necessary safety precaution. Choose the channel combination that provides maximum protection at an economical cost for your organization. Measuring ranges, two-step alarm levels, alarm delays and relay combinations can be programmed and condition evaluation is automatic. Install and receive the confidence of knowing your critical equipment is being effectively monitored.

Dependable condition monitoring

Effective asset management requires preventive maintenance based on condition information. The CMT measuring unit uses the two most reliable methods for automatic machine fault detection. It measures:

- **Shock pulse** for early warning of bearing mechanical damage or inadequate lubrication.
- **Vibration severity measurement** for detection of imbalance, misalignment and loose parts.

Early condition alert offers ample planning time for scheduling repairs, maintenance and downtime. The analog or digital outputs can send online condition information to your PLC, PC or process control systems.

Product features:

- Status display, two alarm levels
- Automatic condition evaluation
- Easy programming of measuring range, alarm levels, alarm delays
- Polycarbonate casing, IP65
- Signal input, to include up to two vibration channels and two shock pulse channels
- Analog (4-20 mA) or digital (MODBUS) outputs available
- Relay outputs: Main 1 x 250 V; each channel 1 x 125 V relay
- Power supply 230 V AC, 115 V AC, 15-30 V AC/DC
- Transducer line test
- Intrinsically safe (ex-proof) accessories

Available options:

- CMT-1: One-channel vibration
- CMT-12: One-channel vibration, two-channels shock pulse
- CMT-2: Two-channels vibration
- CMT-22: Two-channels vibration, two-channels shock pulse

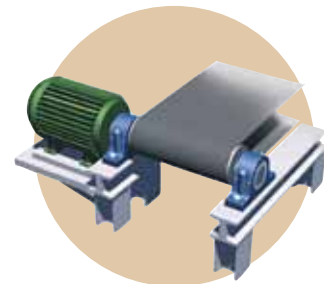
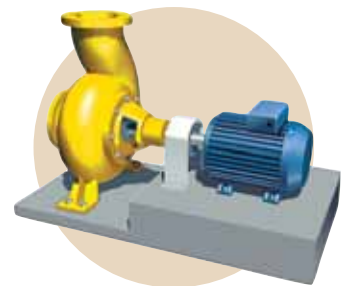
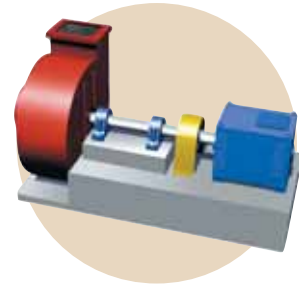
Efficient and profitable production

Breakdowns happen, but catastrophic shutdowns can be avoided. With a continuous monitoring device, thresholds can be set for automatic machine shutdown. Thus, maximum economic impact can be achieved on your most critical machines by avoiding lost production and costly repairs.

Quality condition monitoring equipment has a very short payback time. Consider the downtime costs for your last machine failure and then make a sound investment in Timken condition monitoring solutions.

Simple, reliable, proven

The CMT is easy to install on all types of rotating machinery. A wide range of transducers and installation accessories have proved reliable in many harsh industrial environments.



A wide range of transducers and accessories have proven reliable in many harsh industrial environments.



Technical Specifications

General

Channels: max. 2 VIB + 2 SPM
Analog or digital (MODBUS) outputs: 4-20 mA,
1 per channel, programmable ranges
Relays: 250 V (1), 125 V (max. 4)
Power supply: 230 V AC, 115 V AC,
15-30 V AC / V DC
Temperature range: 32° F to 122° F (0° C to 50° C)
Casing: polycarbonate/PVC, IP65
Display screen: LCD 4 x 16 characters
Status display: green, yellow, red LED
Dimensions: 200 x 144 x 77 mm
Weight: 1150 grams

Vibration channel (VIB)

Measuring range: 0.5 to 49.9 mm/s RMS
0.00 to 1.90 inch/s RMS
Resolution: 0.1 mm/s, 0.01 inch/s
Frequency, lower limit: 3, 10 or 100 Hz
Frequency, upper limit: 1000 or 2000 Hz
Alarm limits: two, programmable
Alarm delay: 0 to 600 seconds

Bearing channel (shock pulse)

Timken monitoring methods: dBm/dBc
Measuring range: 0 to 99 dBsv
Resolution: 1 dBsv
Alarm limits: two, programmable
Alarm delay: 0 to 600 seconds
System security: transducer line test

Ordering numbers

Standard configurations

CMT-1: one channel VIB
CMT-2: two channels VIB
CMT-12: one channel VIB, two channels shock pulse
CMT-22: two channels VIB, two channels shock pulse

Transducers and measuring cables

TRV-18 vibration transducer, 3-1000 Hz, M8
TRV-19 vibration transducer, 3-1000 Hz, UNF 1/4"-28
TRV-20 vibration transducer, 2-5000 Hz, M8
TRV-21 vibration transducer, 2-5000 Hz, UNF 1/4"-28
TRX-18 isolated installation foot for TRV-18, TRV-20
TRX-19 isolated installation foot for TRV-19, TRV-21
40000 shock pulse transducer for cable length below 13 ft.
42000 shock pulse transducer for cable length 13-330 ft.
45011-L cable for transducers (L = length in feet)



Fully committed

In every industry, the goal is the same – maximize uptime, safety and profitability.

Any unscheduled downtime must be avoided. Any unsafe condition must be identified.

Any repair must be made immediately.

The Timken Corporation has a broad offering of condition monitoring products and services that includes portable instruments, continuous monitoring devices and online systems. We can help you maximize uptime with the development of cost-effective solutions to achieve maximum output and reliable service. Increasing the useful life and productivity of your machinery directly impacts the bottom line.

When you choose Timken, you gain access to an industry leader with more than 100 years of experience in industrial applications. Every design, production phase and service call is driven by one thing – exceeding the expectations of our customers. You can rely on Timken for products, services, analysis and ongoing technical support to help maximize uptime, reduce maintenance costs and improve productivity. Timken is committed to being your friction management solutions provider.

Friction management solutions

Industrial customers turn to Timken to provide comprehensive friction management solutions. Extending beyond bearings, these solutions include related parts and accessories, expert sales and service support, integrated logistics and a host of other programs to help keep your systems running efficiently. We help customers analyze performance and recommend solutions that make sense for their unique operating systems and conditions.

First, the bearing. Then:

How do you monitor the health of your bearing?
You can use StatusCheck, handheld devices or Timken Reliability Services.

How do you plan to lubricate the bearing?
There are many advantages to using Timken lubricants.



Do you need a simplified method of lubricating bearings?
Use Timken G-Power and M-Power single-point lubricators.

Do you plan to protect machinery from contamination?
There are many advantages to using Timken's line of industrial seals.