

Microlog[®] CMXA 50

Portable Data Collector/ FFT Analyzer



SKF's newest addition to it's line of portable data collectors/analyzers



The Microlog[®] CMXA 50 is a robust alternative for plants seeking to arm plant personnel with an easy to operate, feature-rich data collection and analysis tool. For novice to advanced users, the “50” bridges the gap between a high powered, comprehensive analysis solution such as the Microlog[®] CMVA 60, and the simplified MARLIN line of Personal Data Assistants for operator use. The CMXA 50's price point and functionality make it an essential addition to your existing system.

The CMXA 50 Microlog is SKF's newest addition to it's line of portable data collectors/analyzers. A two-channel, route-based instrument, the unit is small, lightweight and rugged. The CMXA 50 fits in one hand, weighs only 1.6 pounds, and yet is rated for a 2 meter (6.6 feet) drop. It collects, stores and trends vibration and process data, including enveloped acceleration – with 4 selectable input filters for enhanced bearing and gear mesh fault detection.

The CMXA 50 may be operated easily with minimal training or vibration analysis expertise. Context sensitive, onboard help is accessible with the press of a button.

Those responsible for machinery monitoring in plants where highly skilled vibration analysts are at a premium or staffing levels leave minimal time for training, will find the CMXA 50 a welcome addition, enabling them to optimize their existing reliability resources.

The Microlog CMXA 50 is the logical choice for plants in pursuit of a world-class program where engineering, reliability, condition monitoring, maintenance and operations personnel work together to improve asset efficiency and achieve greater plantwide reliability.

The CMXA 50 works with SKF Machine Analyst[™], the Asset Efficiency Optimization[™] software, and PRISM⁴ for Windows for storage, advanced analysis and plantwide reporting.

SPEED, ACCURACY AND ENHANCED ANALYSIS

The new Microlog's excellent data quality is the result of a spurious-free dynamic range of 90 dB, which dramatically enhances its capacity for detecting and identifying problems faster and more accurately. The speed of data collection is greatly enhanced because digital signal processing occurs at a 40 kHz real time rate, thanks to a Motorola 24-bit DSP processor. Multi-point automation further improves data collection efficiency with the capability to collect and process up to 12 measurement parameters per point at the press of a button. An internal multiplexer provides built-in support for tri-axial data collection as well.

The CMXA 50's maximum frequency range is 40,000 Hz, making the CMXA 50 an excellent choice for high speed gear and bearing fault detection. FFT resolution is 12,800 lines, enabling dramatically improved data displays and the capability to isolate and identify spectral components where two peaks are confusingly close.

In addition, up to 12 alarm bands are downloadable from PRISM⁴ for Windows or SKF Machine Analyst host-software- helping to reduce the likelihood of important machine changes going undetected.

TWO-CHANNEL, BALANCING AND NON-ROUTE CAPABILITIES

A powerful two channel capability is offered with the CMXA 50 for enhanced analysis. With unfiltered and filtered orbits, cross channel phase, simultaneous two-channel FFT and standard time waveforms, the CMXA 50 meets your basic and advanced one and two channel analysis needs.

The CMXA 50 also provides for a two-plane balancing program, enabling correction of a frequent source of bearing and machine related problems.

A non-route module is also available, offering the convenience of in-the-field additions or changes to downloaded routes.



CMXA 50 Microlog two-channel optional upgrade.

ADAPTABILITY, CONVENIENCE AND COST SAVINGS

The CMXA 50 enables routes and bitmap images of any CMXA 50 display to be saved to an ATA-Flash PC Card. This makes it possible to save, print and compare displays for ongoing analysis or reporting. Users may also easily store more and ever larger routes without having to repeatedly delete and download to accommodate for limited storage.

Long life, removable lithium-ion, off-the-shelf battery packs provide convenience and extended battery life.

The CMXA 50 is CE and IP 65 rated and certified by CSA and FM for Class I, Division 2, Groups A, B, C, D.

SPECIFICATIONS

INPUT SOURCES

Acceleration, Velocity, and Displacement from hand-held or installed sensors or monitoring systems.

AC/DC Sensors

Pressure Sensors

Temperature Sensors

Keyboard Entry: Measurements read from indicators or installed instruments entered in engineering units.

Universal Tachometer Input: Accepts pulse inputs, up to ± 40 Volts.

Visual Inspections: Added to measurement as coded notes.

PRE-PROCESSING

Envelope (Demodulator): With four (4) selectable input filters for enhanced bearing and gear mesh fault detection.

Filter Selection:

- 5 Hz – 100 Hz
- 50 Hz – 1,000 Hz
- 500 Hz – 10 kHz
- 5 kHz – 40 kHz

INPUT PARAMETERS

Tachometer:

- TTL/Analogue Programmable to ± 40 Volts
- RPM Range 1 to 99,999
- Tachometer power supply output +5 volts at 100 mA
- DC/AC/ICPTM input

Input Over-Voltage Protection: AC ± 50 V peak, DC ± 50 V

Dynamic Range: >90 dB (20 bit ADC sigma-delta)

Amplitude Accuracy: 5%

Input Connectors:

- *Channel 1:* 6 pin Fischer x, y, z input ICPTM/AC/DC
- *Channel 2:* 6 pin Fischer ICPTM/AC/DC, x and y, y and z input
- *Other I/O:* 7 pin Fischer Trigger In, Trigger tachometer power supply

DATA PROCESSING AND STORAGE

Microprocessor: MIPS R3000

DSP Processor: Motorola DSP56303

Memory:

- OS Storage 8 Mbytes Flash
- Disk (User data) 4 Mbytes Flash
- Internal RAM 16 Mbytes

PCMCIA: Type I or Type II

MEASUREMENT

Range: *Route Measurements:* 0.16 Hz to 20 kHz
Off Route Measurements: 0.16 Hz to 40 kHz

Averaging: Programmable from 1 to 9,999.

Averaging Type: Linear, synchronous time and continuous.

Cursor: Fixed and cursor lock. Single, harmonic and Peak Pick.

Trigger Modes: Trigger slope, and amplitude. Free run and external.

SPECIFICATIONS *(continued)*

MEASUREMENT *(continued)*

Resolution: Programmable 100, 200, 400, 800, 1600, 3200, 6400 and 12800 lines (12800 lines in Off Route only).

Measurement Windows: Hanning, Flattop and Rectangular.

Multi-Point Automation: Up to 12 measurements can be linked for one button push automated data collection for each measurement location.

DATA DISPLAYS

- Spectrum, Time, Phase Table, and Process
- Orbit, Cross Channel Phase and Dual Spectrum and Time Plots (Two-Channel Off Route only).
- Up to 12 bands (fixed or order base) downloadable from host software.

POWER

Battery Size: Canon BP 914/915

- Long life removable Lithium Ion battery packs.
- No loss of data during battery charges.
- Battery can be charged in the collector.

PHYSICAL DATA

Keyboard: Sealed chemical resistant elastomeric silicon, tactile touch, alpha-numeric.

Dedicated Keys: Up, down, right and left two enter keys for right and left hand operation.

Hot Keys: Peak Find, Harmonic, expand.

LCD Screen: 240 pixels x 160 pixels (57mm x 38mm) Viewable.

Case: High impact ABS with IP 65 dust and splash rating.

Size: • 186mm x 93mm (7.44" x 3.72") narrowest point
• 186mm x 134mm (7.44" x 5.36") widest point

Weight: 715 grams (1.6 lb)

ENVIRONMENTAL

CSA and FM: Class I, Division 2, Groups A, B, C, D

CE Rated

IP Rating: IP 65

Temperature Range Storage: -20°C to +60°C
(-4°F to +140°F)

Temperature Range Operating: -10°C to +50°C
(+14°F to +122°F) in Class I, Division 2, Groups A, B, C, D environments
-10°C to +60°C (+14°F to +140°F)

Humidity: 95% non-condensing

COMMUNICATIONS

Communication: 1200, 2400, 4800, 9600, 19200, 38400, and 115,200 baud rates and ability to input modem commands.

PRINTING

PCL compatible printers through interface. Screens can be saved to PC Card as a windows Bitmap.

ORDERING INFORMATION

Standard Kit

CMXA 50-K-SL Microlog Portable Data Collector/FFT Analyzer Kit, Base Model—Route Measurements

Each CMXA 50-K-SL Microlog Portable Data Collector/FFT Analyzer Kit consists of:

- CMXA 50 Unit, Programmed for One-Channel Route Measurements, Stand-Alone, includes Battery and Hard Shell Carrying Case
- **31872300-SL** CD-ROM, CMXA 50, User Manuals, Utilities, Machinery Data Sheets and Literature.
- **CMAC 5150** Power Adapter/Battery Charger
- **CMVA 3351** Cable, Power Cord, UL110, US
- **CMAC 5201** Cable, 9-Pin, RS-232
- **CMSS 797-CA** Accelerometer, Low Profile
- **CMAC 5209** Cable, CMXA 50 Fischer (7-Pin) to 2-Pin MIL, Coiled
- **CMSS 908-MD** Magnetic Base Accelerometer, Medium Duty, 1-1/2" (3.81cm) Diameter
- **CMAC 3715** Cable Converter, 2-Pin MIL/BNC
- **CMVA 50-QS** Quick Reference Card
- **CMAC 5012** Hard Shell Carrying Case

Other Standard Kits

- **CMXA 50-K-1-SL** CMXA 50-K-SL with One-Channel Off Route
- **CMXA 50-K-2-SL** CMXA 50-K-SL with Two-Channel Off Route
- **CMXA 50-K-3-SL** CMXA 50-K-SL with Balancing
- **CMXA 50-K-1-3-SL** CMXA 50-K-SL with One-Channel Off Route and Balancing
- **CMXA 50-K-2-3-SL** CMXA 50-K-SL with Two-Channel Off Route and Balancing

Field Upgrades to Base Model and Standard Kits

- **CMXA 50-02-1-SL** One-Channel Off Route Field Upgrade, Firmware Only
- **CMXA 50-02-2-SL** Two-Channel Off Route Field Upgrade, Firmware Only
- **CMXA 50-02-3-SL** Balancing Field Upgrade, Firmware Only

ORDERING INFORMATION *(continued)*

Optional Accessories

HARDWARE

- **CMAC 5008** Compact Laser Tachometer (includes: mounting bracket and short cable)
- **CMAC 5018** Compact Laser Tachometer Accessory Kit (tripod and long cable)
- **CMCP 850-01** Microlog Field Balancing Kit (with Optical Sensor)
- **CMCP 850-02** Microlog Field Balancing Kit (with Laser Sensor)
- **CMAC 5208** AC/DC Current Clamp
- **CMAC 4200-SL** Infrared Temperature Gun

BATTERY AND POWER SUPPLY

- **CMAC 5150** Power Adapter/Battery Charger
- **CMAC 5101** Spare Battery
- **CMAC 5103** External Battery Charger

ACCELEROMETERS

- **CMSS 908-MD** Magnetic Base Accelerometer, Medium Duty, 1-1/2" (3.81cm) Diameter
- **CMSS 797-CA** Accelerometer, Low Profile (Class I, Division 2, Groups A, B, C, D)
- **CMSS 2200** Accelerometer, Low Profile

CABLES

- **CMAC 5211** BNC Tachometer Input [1 Meter]
- **CMAC 3715** Cable Converter, 2-Pin Mil/BNC
- **CMAC 5201** Communication Cable, 9-Pin RS-232
- **CMVA 3351** Power Cord, UL 110, US
- **CMAC 5209** CMXA 50/CMSS 797-CA, Coiled
- **CMAC 5009** Triaxial Accelerometer Cable

COMMUNICATION ACCESSORIES

- **CMAC 4614** FLASH Storage Card 8 Mbyte

MISCELLANEOUS ACCESSORIES

- **CMAC 5011** Harness, Shoulder Strap, Hand Strap
- **CM-F0072S** Machine Data Sheets (25 Sheets)



INTERNATIONAL ACCESSORIES

NOTE: Contact your local SKF Sales Representative for any export restrictions.

NOTE: The North American cord sets will be shipped with all new units.

International Power Cord accessories, two (2) cord sets will be provided, the standard North American power cord and the requested International power cord.

- **CMAC 4222-AU** Power Cord, Australia
- **CMAC 4222-CH** Power Cord, Switzerland
- **CMAC 4222-DK** Power Cord, Denmark
- **CMAC 4222-EUR** Power Cord, European
- **CMAC 4222-IL** Power Cord, Israel
- **CMAC 4222-IT** Power Cord, Italy
- **CMAC 4222-JP** Power Cord, Japan
- **CMAC 4222-UK** Power Cord, United Kingdom

Product Support Plans

- **PSP 043** One (1), Two (2) or Three (3) Year Product Support Plans. Basic, Standard and Premier Packages Available.

SKF Reliability Systems

4141 Ruffin Road
San Diego, California 92123 USA
Telephone (+1) 858-496-3400
FAX (+1) 858-496-3531

Web Site: www.skf.com



SKF Reliability
Systems—
ISO 9001/
ISO 14001
Certified

Although care has been taken to assure the accuracy of the data compiled in this publication, SKF does not assume any liability for errors or omissions. SKF reserves the right to alter any part of this publication without prior notice.

- SKF is a registered trademark of SKF USA Inc.
- MARLIN, SKF Machine Analyst and Asset Efficiency Optimization are trademarks of SKF Reliability Systems.
- All other trademarks are the property of their respective owners.

CM2271 (Revised 8-02)
Copyright © 2002 by SKF Reliability Systems
ALL RIGHTS RESERVED

SKF Reliability Systems

