SKF Microlog Analyzer GX series

CMXA 75

Portable data collector / FFT analyzer

The SKF Microlog GX series are high performance, one to three channel, route-based portable data collector / FFT analyzers that provide unmatched versatility and functionality in a rugged, industrial design. Developed for use in a wide range of industries, the SKF Microlog GX series is approved for use in hazardous environments requiring ATEX, IECEx and Class I Division 2 certifications.

Key features

- Marvell 806 MHz PXA320 processor for exceptionally fast operation
- Bright 1/4 VGA color display that enhances visibility in all environments – dark or bright
- Rugged design
  - Two meter multiple drop
  - IP 65 rated
- Outstanding data storage capacity with 128 MB flash memory for internal storage and Secure Digital (SD) memory expansion slot
- Multi-language support – 15 language options
- Choose between instruments that have single channel input, or two channels plus simultaneous three channel triaxial input
- Multi-plane balancing application
- Intuitive graphical user interface
- Long-life battery for up to eight hours of operation
- Wide range of accessories to expand functionality even further
- Field upgradeable from an entry level instrument to an advanced analyzer

State-of-the-art technology

With a robust, high-speed data processor, the SKF Microlog GX series captures full feature route and non-route dynamic (vibration) and static (process) measurements from many sources. Fixed mode autoranging automatically selects an input range based on the sensor type and sensitivity. Three channel simultaneous triaxial input with the separate tachometer input enables faster, more comprehensive data collection without adding to collection time. The SKF Microlog GX series also includes a triggering functionality that enables the unit to examine the trigger signal first, and then automatically set the trigger level. For even faster data collection, users can configure up to 12 measurements for automatic, one button data collection at a measurement location.

Modular approach offers seamless expansion

The modular design of the SKF Microlog GX series offers customers the option to upgrade and expand functionality without having to buy another instrument. Accessories are inter-changeable between models. The SKF Microlog GX is shipped with the full SKF Microlog suite of modules installed. To add additional functionality, units can be upgraded to more advanced models, simply purchase the module and enter the supplied license key.

For companies who are interested in an entry-level route-based data collector, the SKF Microlog GX-R model offers ease of use and implementation with single route, single channel data collection. This model features a measurement range of 20 kHz F_{max} and up to 3 200 FFT lines of resolution.

For more advanced analysis features, the SKF Microlog GX-M model has an increased measurement range of 40 kHz F_{max} and 12 800 FFT lines. The SKF Microlog GX-M includes multiple routes, and non-route data collection, two channel FFT analysis, three channel simultaneous triax and the Balancing module.

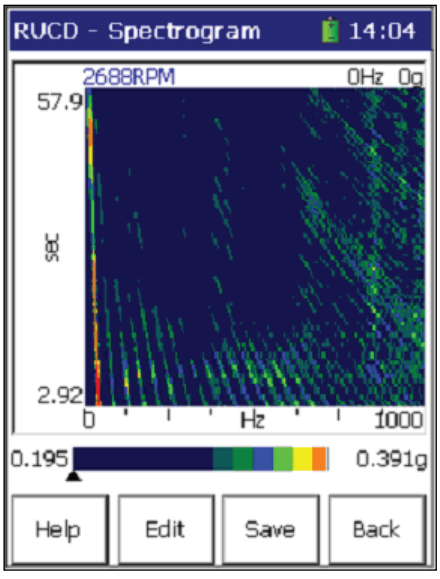
Additional features are added to create the SKF Microlog GX-S model, which includes the Data Recorder module and the Bump Test module. The SKF Microlog GX-M and GX-S can also be upgraded to include a Run up Coast down module that is used to record and analyze data from machines where noise or vibration levels are changing with speed or time, and the Frequency Response Function (FRF) module, which uses a modal hammer to establish the properties of mechanical structures.

Application modules

Complete specifications and details about the SKF Microlog modules are available in the SKF Microlog Module Suite catalog (SKF publication CM/P8 11083 EN).

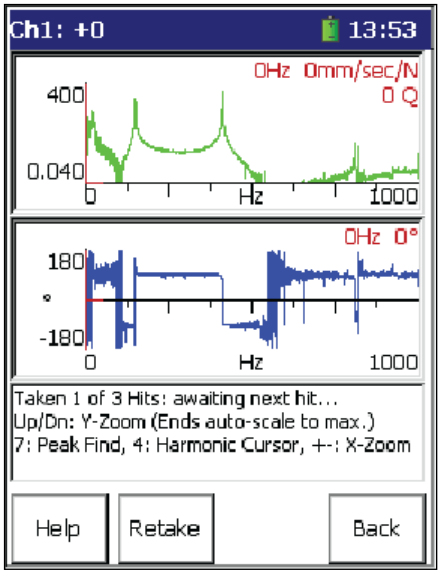
Run up Coast down

The Run up Coast down module analyzes data from machines where noise or vibration levels are changing with speed, time or load (applications that cause transient phenomena) to establish the critical / resonant speeds of a machine. The module simultaneously acquires a vibration and a tachometer signal and stores the data as a time waveform (.wav file) for further analysis. The module can create Bode, Nyquist, waterfall, color spectrogram or tables of data all from a single captured event.



Frequency Response Function

The Frequency Response Function (FRF) module is designed to enable a user to quickly establish a structure's properties (accelerance, apparent mass, mobility, impedance stiffness or compliance). Color coding of the FRF indicates the selectable level of coherence. A key feature of this module is its ability to automatically detect and reject double hits. The module can also measure the transfer function between two transducers while a machine is running. The measurements can be imported into a variety of modal analysis software for animation.



Balancing

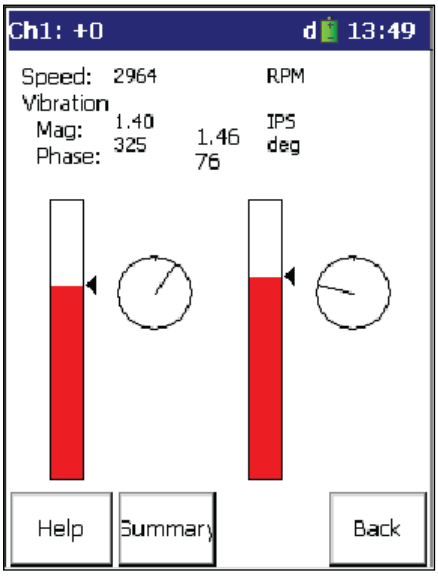
The Balancing application resolves single-plane, two-plane and static-couple balances (three planes) with high precision. Clear, comprehensive setup menus and easy-to-follow display screens with graphical data representations combined with the ability to set an acceptance limit ensure easy operation. The SKF Microlog GX series can accept a variety of trigger signals including key phasors, tachometers and strobes.

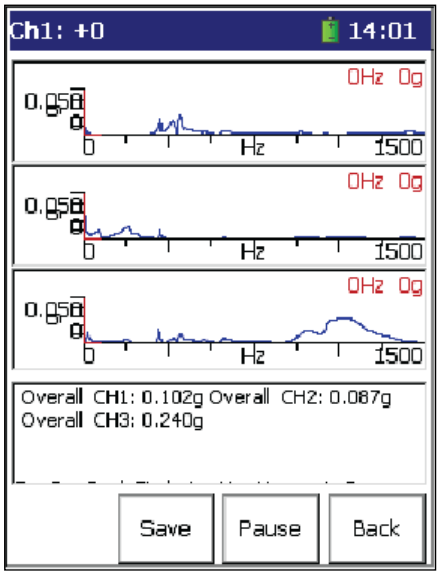
Bump Test

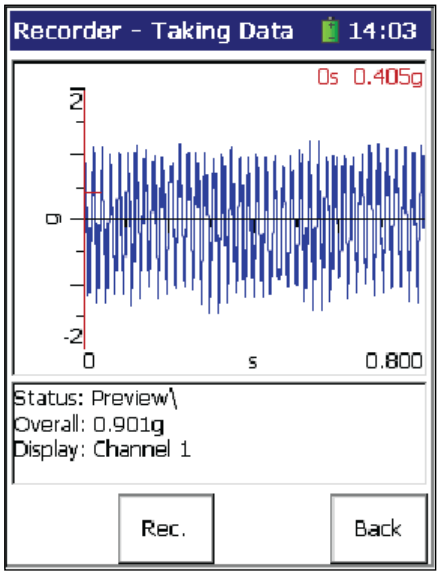
A Bump (rap) Test is an impact test carried out to excite the machine and measure its natural frequencies. This helps to determine if resonance is responsible for high noise or vibration levels or if there is a potential machinery problem. Using three channels allows the user to determine if there are any directional resonant frequencies present. There is no requirement for an instrumented hammer to be connected to capture the data.

Data Recorder

Signals from sensors connected to the SKF Microlog GX series are digitally recorded and stored as standard .wav files allowing a user to listen to and filter signals. These files can also be sent via email or transferred directly to SKF's Analysis and Reporting module for post-processing. Using the storage capacity of SD cards allows a user to record many hours of continuous raw data for analysis at a later date or upon return to the office.

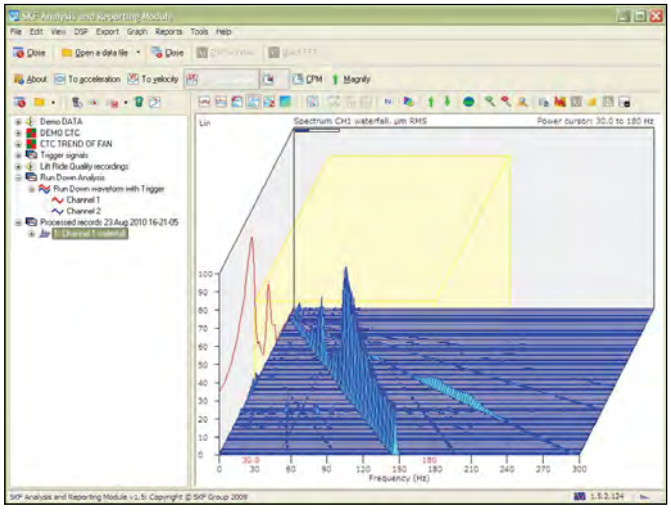






Analysis and Reporting module

The Analysis and Reporting module is a PC based software application for transferring, displaying and analyzing data generated by the application modules of the SKF Microlog GX series. Once uploaded, data is automatically displayed in the application's main window, and a single mouse click is all that is needed to view the data in a powerful, interactive graphical plot. The Analysis and Reporting module also provides a range of post-processing features that allow you to get the most out of your data.

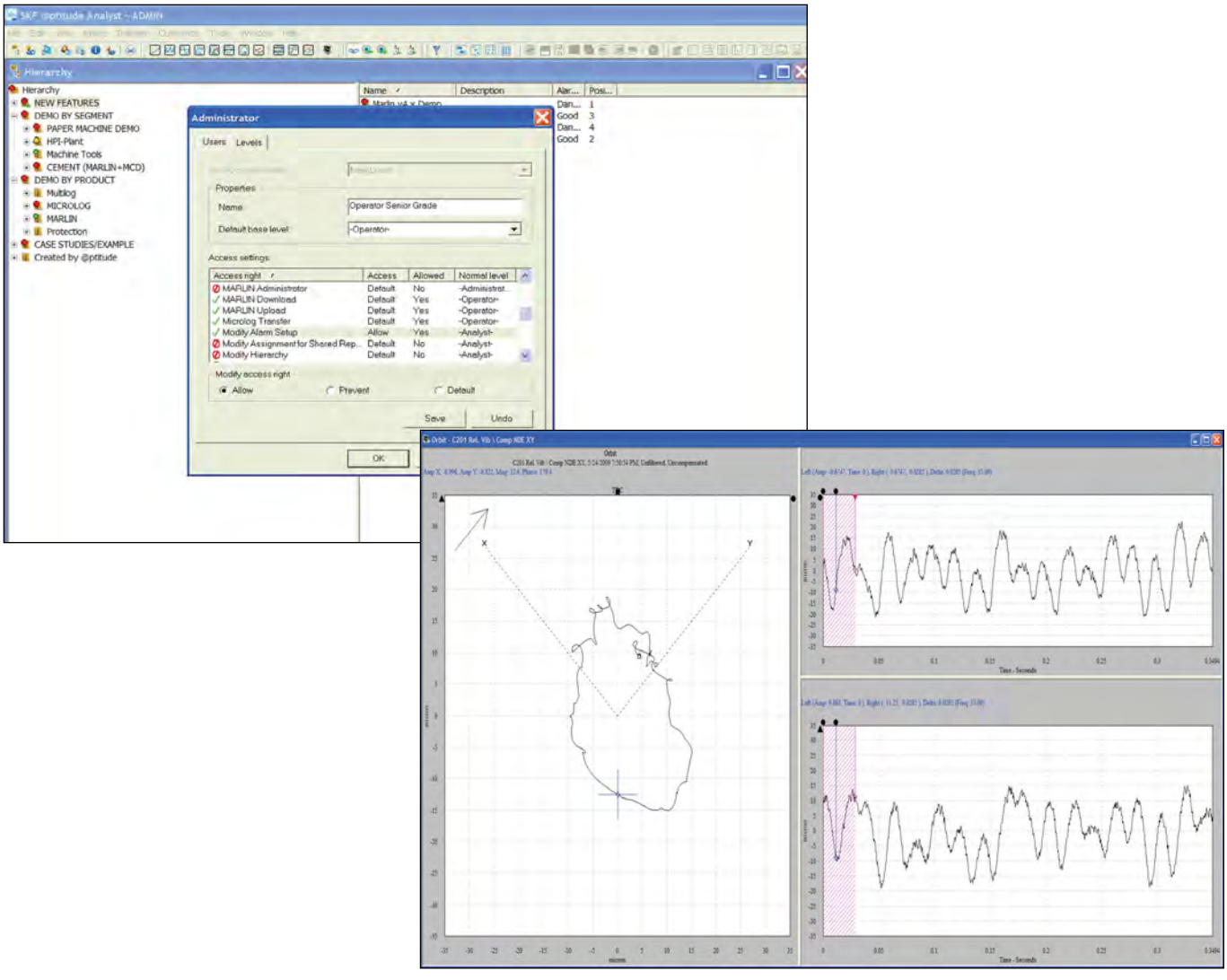


Asset data available fast, enterprise wide and in the formats you want

The route based SKF Microlog GX series transfers data to SKF @ptitude Analyst software, a comprehensive software solution with powerful diagnostic and analytical capabilities. SKF @ptitude Analyst provides fast, efficient and reliable storage, analysis, and retrieval of complex asset information and makes the information accessible throughout your entire organization. With this powerful analysis tool, you are in complete control – from the way you set up hierarchies, filtered workspaces, routes, and analysis parameters, to the customized format for reporting. You can collect information based on location, machine type, frequency, or other selections. SKF @ptitude Analyst allows you to determine the appropriate limits for alarm conditions and how alarms are categorized. You receive consistent, reliable data in the format that suits you best. SKF @ptitude Analyst can incorporate data from other sources, such as OPC servers, and seamlessly interface with your organization's Computerized Maintenance Management System (CMMS), Enterprise Resource Planning (ERP) or other information management systems.

Key features

- One software program to manage asset condition data from portable and on-line devices
- Easy for novice or experienced users to learn and use
- Interconnectivity with multiple enterprise-wide software programs and systems
- Scalable and flexible to meet your unique needs
  - Start with one of three base models and expand functionality according to your needs
  - Easy personalization for individual users
  - Application add-ons extend core functionality without migration to other base models
  - User access control to support functional roles and department needs
  - User programmable functions compute your company's KPIs (Key Performance Indicators)
- Supports Oracle and Microsoft SQL Server database managers
- Compliance reporting and scheduling help direct tasks and workforce



Specifications

Input sources

Acceleration, velocity, and displacement from hand-held or installed vibration 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
- Visual inspections: Added to measurement as coded notes

Preprocessing

- Enveloper (demodulator): With four selectable input filters for enhanced bearing and gear mesh fault detection
- Filter selection:
  - 5 Hz to 100 Hz
  - 50 Hz to 1 kHz
  - 500 Hz to 10 kHz
  - 5 kHz to 40 kHz
- Input parameters:
  - Tachometer: TTL / analogue programmable to ±40 V
  - RPM range 1 to 99 999
  - Tachometer power supply output +5 V at 100 mA
- Input over-voltage protection:
  - AC ±50 V peak
  - DC ±50 V sustained
- Dynamic range: >90 dB (24 bit ADC sigma-delta)
- Input connectors:
  - CH1: Six pin Fischer, CH1, CH2, CH3
  - CH2: Six pin Fischer, CH2, CH3
  - USB host / CHR / headphone: USB keyboard, CHR, headphones
  - USB Device / power / trigger: Seven pin Fischer trigger in, trigger tachometer power supply, USB COMMS, charger
- Input signal range: ±25 V maximum

Data processing and storage

- Microprocessor: Marvell 806 MHz PXA320
- Internal storage: 128 MB (capable of storing approximately 4 000 spectra)
- SD card: SD memory card up to 16 GB

Measurement

- Range:
  - Route measurements: DC to 40 kHz (GX-R: 20 kHz)
  - Non-route measurements: DC to 40 kHz (not available in GX-R)
- Averaging: 1 to 255 time averages, 1 to 4 096 spectral averages
- Averaging type: RMS, exponential
- Cursor: Fixed and cursor lock. Single, harmonic and peak pick.
- Trigger modes: Free run or external trigger (trigger slope and amplitude)
- Resolution: Programmable 100, 200, 400, 800, 1 600, 3 200, 6 400 and 12 800 lines
- Measurement windows: Hanning, flat top and rectangular
- Multi-point automation: Up to 12 measurements can be listed for one button push automated data collection at each measurement location

Data displays

- Single and dual channel spectrum, single and dual channel time, phase table, process, orbit, cross channel phase (GX-R: single-channel spectrum, time, phase table, and process)
- Simultaneous spectrum, time waveform, peak hold averaging
- Up to 12 bands (fixed or order base) downloadable from host software

Power

- Battery: Li-ion smart battery pack
- Eight hours continuous operation minimum

Physical data

- Dedicated keys: Up, down, right, and left two enter keys for right and left hand operation, four function keys
- Hot keys: Peak find, harmonic, expand
- LCD screen: Color 1/4 VGA 320 × 240 pixels (54 × 72 mm) viewable
- Case: High impact ABS with IP 65 dust and splash rating
- Weight: 715 g *(1.6 lb.)*
- Size (height × width):
  - Narrowest point: 186 × 93 mm *(7.4 × 3.7 in.)*
  - Widest point: 186 × 134 mm *(7.4 × 5.4 in.)*
- Drop test: 2 m *(6.6 ft.)*, to MIL STD 810 specifications

Environmental

- Certifications:
  - ATEX: Ⓔx II 3 G Ex ic IIC T4 Gc (Ta = –10 °C to +50 °C)
  - IECEx: Ex ic IIC T4 Gc (Ta = –10 °C to +50 °C)
  - CE rated
  - CSA, Class I, Division 2, Groups A, B, C, D
  - Special conditions per certifications
- IP Rating: IP 65
- Temperature ratings:
  - Operating temperature: –10 to +50 °C *(14 to 122 °F)*
  - Storage temperature: –20 to +60 °C *(–4 to +140 °F)*
- Humidity: 95% non-condensing

Communications

- USB communication

Host software

- The SKF Microlog GX series requires SKF @ptitude Monitoring Suite, version 4.1.2 or newer software and USB communication

Ordering information

SKF Microlog GX-S data collector / FFT analyzer

The GX-S [CMXA 75-S-K-SL] standard kit includes:

- CMXA 75-S unit, programmed for two-channel non-route and route measurements and one or two plane static, or dynamic couple balancing, bump test and data recorder modules
- Two (2) accelerometers, general purpose, low profile, side exit, industrial, non-NI, with 1/4-28 and M6 mounting studs [CMSS 2200]
- Two (2) accelerometer coiled cables, 1,8 m *(6 ft.)* [CMAC 5209]
- Two (2) medium duty magnetic bases, 35 mm *(1.5 in.)* diameter [CMSS 908-MD]
- For additional components available for this kit, see "Kit Components"

SKF Microlog GX-M data collector / FFT analyzer

The GX-M [CMXA 75-M-K-SL] standard kit includes:

- CMXA 75-M unit, programmed for two-channel non-route and route measurements and one or two plane static, or dynamic couple balancing applications
- Two (2) accelerometers, general purpose, low profile, side exit, industrial, non-NI, with 1/4-28 and M6 mounting studs [CMSS 2200]
- Two (2) accelerometer coiled cables, 1,8 m *(6 ft.)* [CMAC 5209]
- Two (2) medium duty magnetic bases, 35 mm *(1.5 in.)* diameter [CMSS 908-MD]
- For additional components available for this kit, see "Kit Components"

SKF Microlog GX-R data collector / FFT analyzer

The GX-R [CMXA 75-R-K-SL] standard kit includes:

- CMXA 75-R unit, programmed for single-channel, single route measurements (does not include non-route on the Balancing module)
- One (1) accelerometer, general purpose, low profile, side exit, industrial, non-NI, with 1/4-28 and M6 mounting studs [CMSS 2200]
- One (1) accelerometer coiled cable, 1,8 m *(6 ft.)* [CMAC 5209]
- One (1) medium duty magnetic base, 35 mm *(1.5 in.)* diameter [CMSS 908-MD]
- For additional components available for this kit, see "Kit Components"

***** Not included in ATEX kit.

ATEX (II 3 G Ex ic IIC T4 Gc) and IECEx (Ex ic IIC T4 Gc) Zone 2 certified kits

CMXA 75-S-K-SL-Z2 kit includes:

- Two (2) accelerometers, ATEX approved, top exit 100 mVg [CMSS 793-EE], replace the two CMSS 2200 accelerometers
- Shoulder strap for ATEX units [CMAC 5113]
- Balance of kit same as CMXA 75-S-K-SL standard kit

CMXA 75-M-K-SL-Z2 kit includes:

- Two (2) accelerometers, ATEX approved, top exit 100 mVg [CMSS 793-EE], replace the two CMSS 2200 accelerometers
- Shoulder strap for ATEX units [CMAC 5113]
- Balance of kit same as CMXA 75-M-K-SL standard kit

CMXA 75-R-K-SL-Z2 kit includes:

- Two (2) accelerometers, ATEX approved, top exit 100 mVg [CMSS 793-EE], replace the two CMSS 2200 accelerometers
- Shoulder strap for ATEX units [CMAC 5113]
- Balance of kit same as CMXA 75-R-K-SL standard kit

CSA (Class I, Division 2, Groups A, B, C, D) certified kits

CMXA 75-S-CP-SL kit includes:

- Two (2) accelerometers, CSA approved, general purpose, industrial [CMSS 793-CA], replace the two CMSS 2200 accelerometers
- Balance of kit same as CMXA 75-S-K-SL standard kit

CMXA 75-M-CP-SL kit includes:

- Two (2) accelerometers, CSA approved, general purpose, industrial [CMSS 793-CA], replace the two CMSS 2200 accelerometers
- Balance of kit same as CMXA 75-M-K-SL standard kit

CMXA 75-R-CP-SL kit includes:

- One (1) accelerometer, CSA approved, general purpose, industrial [CMSS 793-CA], replace the one CMSS 2200 accelerometer
- Balance of kit same as CMXA 75-R-K-SL standard kit

Kit components (included for all kits)

- CD-ROM, user manuals, utilities, asset information page, and literature
- USB communication/power splitter straight cable, 2 m *(6.6 ft.)* [CMAC 5095]
- Battery pack [CMAC 5031]
- Universal power supply [CMAC 5090]
- Rubber bump sleeve [CMAC 5015]
- Hard shell carrying case [CMAC 5029]
- Hand strap [CMAC 5020]
- Shoulder strap [CMAC 5010]
- Shoulder strap for ATEX units [CMAC 5113]
- Two (2) screen protectors*****
- Connector cover set with lanyards
- 4 GB SD card [CMAC 5077]

Field upgrades to SKF Microlog GX series

- GX-M to GX-S field upgrade [CMXA 75-GXM/S-SL]
- GX-R to GX-M field upgrade kit [CMXA 75-GXR/M-SL] includes:
  - One (1) accelerometer, low profile [CMSS 2200]
  - One (1) cable, sensor, coiled [CMAC 5209]
  - One (1) magnetic base accelerometer, medium duty, 3,81 cm *(1.5 in.)* diameter [CMSS 908-MD]
- Data Recorder module [CMXA MOD-REC-SL]
- Run up Coast down module [CMXA MOD-RUCD-SL]
- Frequency Response Function module [CMXA MOD-FRF-SL]
- Bump Test and FFT Analyzer modules [CMXA MOD-ABB-SL]
- SKF Spindle Assessment module [CMXA MOD-MTX-SL]

Optional accessories

A number of accessories are available to complement the GX Series. For technical details or information on any item, please contact your local SKF Reliability Systems sales representative. Specifications and photographs of the SKF Microlog series accessories are available in the SKF Microlog Accessories catalog (SKF publication CM2412 EN).

Hardware

- Infrared thermometer [CMAC 4200-SL]
- Infrared thermometer, CE compliant [CMAC 4200-CE-SL]
- Triax accelerometer kit [CMAC 4370-K]
- Laser tachometer kit [CMAC 5030-K]
- Laser tachometer kit with ATEX certified tachometer [CMAC 5030-K-Z2]
- Modal hammer kit for use on structures with a mass of 210 g *(7.6 oz.)* and above [CMAC 5056]
- Modal hammer kit for use on structures with a mass of 56 g *(2.0 oz.)* and above [CMAC 5057]
- Modal hammer kit without accelerometers [CMAC 5058]
- ICP Microphone with integral preamplifier kit [CMAC 5084]
- AC / DC current clamp [CMAC 5208]
- SKF Microlog Analyzer field balancing accessory kit (with optical sensor) [CMCP 850-01]
- SKF Microlog Analyzer field balancing accessory kit (with laser sensor) [CMCP 850-02]
- SKF Microlog Analyzer field balancing accessory kit (with laser tachometer) [CMCP 850-03]
- Optical phase reference kit [CMSS 6155XK-U-CE]
- Optical phase reference magnetic holder [CMAC 6156]
- Strobe light [CMSS 6165K-AX]
- Smart laser sensor tachometer kit [CMSS 6195AX-K]

Battery and power supply

- Universal power supply [CMAC 5090]
- Battery [CMAC 5031]

Accelerometers

- Accelerometer, general purpose, low profile, side exit, industrial, non-NI, with 1/4-28 and M6 mounting studs [CMSS 2200]
- Accelerometer, general purpose, low profile, side exit, industrial, non-NI, with M8 mounting stud [CMSS 2200-M8]
- Accelerometer, ATEX approved, general purpose, industrial [CMSS 793-EE]
- Accelerometer, CSA approved, general purpose, industrial [CMSS 793-CA]
- Accelerometer, small footprint with integrated cable [CMSS 2111]
- Accelerometer, small diameter [CMSS 732A]
- Medium duty magnetic base, 35 mm *(1.4 in.)* diameter [CMSS 908-MD]

Cables

Accelerometer cables

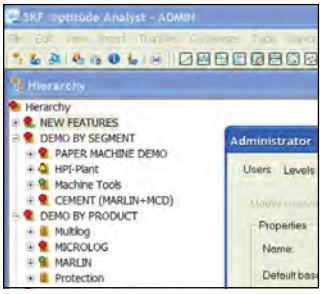
- Triaxial accelerometer coiled cable [CMAC 5009]
  - for use with triax accelerometer kit CMAC 4370-K
- High frequency accelerometer cable [CMAC 5061]
  - for use with CMSS 732A accelerometer
- Accelerometer coiled cable, 1,8 m *(6 ft.)* [CMAC 5209]
- Accelerometer coiled cable with safety breakaway, 1,8 m *(6 ft.)* [CMAC 5209-06S]
- Accelerometer coiled cable, 3 m *(10 ft.)* [CMAC 5209-10]

Tachometer cables

- BNC tachometer straight cable, 1 m *(3.3 ft.)* [CMAC 5211]
- Laser tachometer kit, straight cable, 2 m *(6.6 ft.)* [CMAC 5213]
  - for laser tachometer kit CMAC 5030-K (sold with kit only)
- Laser tachometer kit, straight cable, 2 m *(6.6 ft.)* [CMAC 5214]
  - for laser tachometer kit CMAC 5030-K (sold individually)

Extension cables

- CHX signal input straight extension cable, 5 m *(16.4 ft.)* [CMAC 5036]
- CHX signal input straight extension cable, 10 m *(32.8 ft.)* [CMAC 5037]
- Tachometer straight extension cable, 5 m *(16.4 ft.)* [CMAC 5043]
  - for use with laser tachometer kit CMAC 5030-K
- Tachometer straight extension cable, 10 m *(32.8 ft.)* [CMAC 5044]
  - for use with laser tachometer kit CMAC 5030-K



Miscellaneous cables

- Cable converter, two pin MIL to BNC [CMAC 3715]
- USB communication/power splitter straight cable, 2 m *(6.6 ft.)* [CMAC 5019]
- Fischer to BNC signal input straight cable, lightweight for hammer kits, 1 m *(3.3 ft.)* [CMAC 5023]
- Fischer to BNC signal input cable [CMAC 5088]
- Power / trigger splitter straight cable, 30 cm *(11.8 in.)* [CMAC 5032]
- Audio headphone straight cable [CMAC 5078]
- Infrared thermometer gun cable [CMAC 5087]
- Input to strobe light cable [CMAC 5404]
- Output from strobe light cable [CMAC 5406]

Miscellaneous accessories

- Shoulder strap [CMAC 5010]
- Shoulder strap for ATEX units [CMAC 5113]
- Rubber boot [CMAC 5015]
- Hand strap [CMAC 5020]
- Carrying case [CMAC 5026]
- Hard shell carrying case [CMAC 5029]
- Fischer and audio connector cover set [CMAC 5075]
- Shoulder strap, leather, hazardous areas [CMAC 5113]
- Audio headset, hard hat compatible [CMAC 5403]
- Screen protector (5 pieces) kit [CMAC 6139]
- 4 GB SD card [CMAC 5077]

Product Support Plans

SKF is committed to providing the highest degree of customer support in the industry. Product Support Plans (PSP) extend the standard product warranty for an additional length of time to continue your unlimited access to Technical Support, global repair coverage and more.

Protect your investment

Product Support Plans help to make sure that your equipment is maintained to the highest standards. Condition monitoring products are an investment, and a Product Support Plan is a great way to protect your investment for years.

Greater peace of mind

- Firmware and / or software upgrades keep your products advancing with current industry standards*****
- Unlimited technical support from knowledgeable professionals can save you time and frustration by quickly resolving problems
- Data accuracy with unlimited calibrations that comply with ISO standards
- Loaner equipment supplied when your product is brought in for service*****
- Hassle-free repairs. We've got you covered with parts, labor and shipping.

Premier product support plans also include a full SKF @ptitude Exchange subscription. SKF @ptitude Exchange is SKF's knowledge portal, complete with white papers, articles, interactive services, tutorials and more – available 24 hours a day to help build your staff's asset maintenance and reliability expertise.

***** Provided with Premier PSP coverage.

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