

# SKF Microlog Analyzer

## CMXA 51-IS

ATEX and IECEx certified – intrinsically safe  
portable data collector / FFT analyzer

### The SKF Microlog Analyzer CMXA 51-IS allows for collection of data in hazardous locations

Operations and maintenance personnel faced with hazardous environments in their plant locations must use specific data collection instruments with an “intrinsically safe” (IS) designation.

The SKF Microlog Analyzer CMXA 51-IS, an intrinsically safe, rugged and portable, hand-held instrument, allows for the collection of vibration, process, and dynamic data in hazardous environments. Such industries include petrochemical, water treatment and pharmaceutical, as well as others where IS regulations apply.

The SKF Microlog Analyzer CMXA 51-IS has achieved the Intrinsic Safety rating from the European regulatory agency, SIRA, and is rated Group I (Mining) and Group II (Petrochemical).

- ATEX and IECEx



- Ga Ex ia IIC T4 (Ta -20 to +50 °C)
- Ma Ex ia I (Ta 0 to +50 °C)
- Complete system includes ATEX approved sensor



### Features

- 1/4 VGA (240 x 320) backlit monochrome touch screen LCD
- Intuitive user interface with left or right hand operation and context sensitive “Help” function
- Four cursor keys, and numeric keypad for easy screen navigation and user input
- Acceleration Enveloping (gE), SKF technology for bearing assessment
- Red, amber, green LED indicators
- One data acquisition and one phase channel for compatibility with ICP accelerometers, velocity transducers, displacement probes, infrared temperature sensors, photo-optical pick-ups, DC inputs and manual entry
- WindowsCE operating system



# Integration

The SKF Microlog Analyzer CMXA 51-IS integrates with SKF @ptitude Monitoring Suite, a comprehensive software solution with powerful diagnostic and analytical capabilities.

For additional information on the SKF Microlog Analyzer CMXA 51-IS, contact your local SKF Reliability Systems Sales Representative or visit our web site at [www.skf.com/cm/microlog](http://www.skf.com/cm/microlog).



Notes00:23

00: Machine Normal

01: Not Operating

02: Fluctuating Vibr

03: Hot Bearing

04: Bad Belts

05: Abnormal Noise

06: Leaks

07: Loose Parts

08: Low Oil Level

09: Overhaul/Repair

Select

Cancel

Save

Overall - (Nonroute)00:19

Mach.: 270COMPR0001

Point: 3V-VEL

Descrip.: Torn Mando Lado Motor

316deg

500deg

Last: 0.000deg

Change: 100.0%

Help

Manual

Notes

Esc

Spectrum00:17

Mach.: 070BOMBA0031

Point: 1HVel

Descrip.: @111

R

5000

G

-5000

0

0.160s -656

Alarm: Ov1 Ov2

1.6

Help

Reset

Notes

Esc

Spectrum00:13

Mach.: 070BOMBA0031

Point: 2HEnv

Descrip.: @211

Taking Additional Measurements

2HVel

0.000mm/s

500.000mm/s

100.0%

2HAcc

0.000Gs

9.142Gs

100.0%

2HEnv

0.000gE

-----gE

-----%

Help

Reset

Notes

Esc

## Specifications

### Input sources

- Input signal types: ICP accelerometers, velocity transducers, displacement probes, infrared temperature sensors, AC / DC inputs, acceleration, photo optical pick-ups, manual entry
- Signal input: ICP (20 V at 3,5 mA), AC signal, DC signal, tachometer (trigger input – photo optical, etc.) power input – battery charge

### Input parameters

- Input signal range:
  - ICP: 0 to 20 V
  - Non ICP:  $\pm 12$  V, or 0 to 24 V for displacement
- Signal: RMS / peak / peak-to-peak / true peak / true peak-to-peak
- Transducer check: Bias voltage integrity (ICP)
- Auto range: Yes
- Dynamic range: >85 dB (20 bit ADC sigma-delta)
- Amplitude accuracy: 5%
- Input connectors:
  - Signal: Four pin Fischer, 102 type
  - Power in / battery charge: Two pin Fischer, 102 type
  - Trigger: Three pin Fischer, 102 type

### Measurement processing

- Measurement parameters: Acceleration, velocity, displacement, gE, temperature, phase, voltage, user specified
- Measurement types: Overall, spectrum, time waveform, phase, order normalized
- Range (route and non route): 3 to 40 Hz
- Frequency range: DC to 40 kHz maximum
- Integrated measurements: 5% Accurate >10 Hz
- Filters – high pass: 2 and 200 Hz hardware filter, second order
- Bearing condition: gE, dHFD
- gE Filters:
  - 5 Hz to 100 Hz
  - 50 Hz to 1 000 Hz
  - 500 Hz to 10 kHz
  - 5 kHz to 40 kHz

- FFT resolution: 100 to 6 400 lines (route), 100 to 12 800 (non-route)
- Averaging: Time, spectral, peak hold
- Alarms: Overall and spectrum
- Note codes: 100 note codes (select up to 6 from 100)
- 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 processing and storage

- Microprocessor: MIPS
- Memory:
  - OS 16 MB flash
  - Disk (user data) 8 MB flash

### Data displays

- Spectrum, time, phase table, and process
- Up to 12 bands (fixed or order base) downloadable from host software
  - Machine identification: Plant, train, machine and point ID, point description, units, alarm levels, previous measurements, alarm types

### Power

- Battery size: Custom rechargeable NiMH
  - 1 800 mAh removable battery pack
  - No loss of data during battery charges
  - Battery charges in the collector

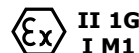
### Physical data

- 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
- LCD screen: 1/4 VGA Monochrome touch screen, 240 x 320 pixels (57 x 76 mm) viewable
- Size:
  - Narrowest point: 186 x 93 mm (7.44 x 3.72 in.)
  - Widest point: 186 x 134 mm (7.44 x 5.36 in.)
- Weight: 700 grams (1.51 lb.)



### Environmental

ATEX and IECEx



Ga Ex ia IIC T4 (Ta –20 to +50 °C)

Ma Ex ia I (Ta 0 to +50 °C)

CE rated

- IP rating: IP 65 (Dust and Waterproof)
- Temperature range storage: –20 to +60 °C (–4 to +140 °F)
- Temperature range operating: –10 to +50 °C (+14 to +122 °F), or as required by the safety approval
- Humidity: 0 to 80% relative humidity, non-condensing
- EMC:
  - EN61000-6-4 (Emission)
  - EN61000-6-2 (Susceptibility)
- Drop test: 1 meter (3.3 ft.), to ATEX specifications

### Communications

- Communication: RS 232, SKF Microlog protocol

### Printing

- PCL and PJ 200 compatible printers through interface

### Host software

- SKF @ptitude Analyst, version 3.1.3 or higher

## Ordering Information

### Standard kit

The SKF Microlog CMXA 51-IS-K-SL Intrinsically Safe (IS) Portable Data Collector / FFT Analyzer standard kit includes:

- SKF Microlog CMXA 51-IS-SL unit, programmed for one-channel route measurements and one-channel off-route
- CD-ROM with SKF Microlog CMXA 51-IS firmware, user manuals, utilities, asset information page and literature
- Accelerometer, ATEX (100 mVg) [CMSS 793-EE]
- Accelerometer cable, CA-40, Fischer four pin, 2 m (6.6 ft.) coil, to two pin MIL [CMAC 5115]
- AC / DC signal cable, CA-41, Fischer four pin, 2 m (6.6 ft.) straight, to BNC [CMAC 5116]
- Trigger cable, CA-43 Fischer three pin, 2 m (6.6 ft.) straight, to BNC [CMAC 5117]
- Magnetic base accelerometer (pull-strength, 20 kg, 1/4 × 28 UNF male thread Ø 35 mm two pole) [CMSS 908-MD]
- Intrinsically safe battery pack [CMAC 5105]
- Power adapter / charger [CMAC 5110]
- Hard shell carrying case (transit case) [CMAC 5118]
- Leather hand strap [CMAC 5252]
- Leather neck strap [CMAC 5113]
- Rubber boot [RB-1]
- Stylus [CMAC 5251]

### Optional accessories

A number of accessories are available to complement the SKF Microlog CMXA 51-IS. These include:

#### Accelerometers

- Accelerometer, ATEX (100 mVg) [CMSS 793-EE]
- Accelerometer, IS GPII ICP, MTN/1100I (100 mVg) [CMSS 2210]
- Magnetic base accelerometer (pull-strength, 20 kg, 1/4 × 28 UNF male thread Ø 35 mm two pole) [CMSS 908-MD]

#### Cables

- Accelerometer cable, CA-40, Fischer four pin, 2 m (6.6 ft.) coil, to two pin MIL [CMAC 5115]
- AC / DC signal cable, CA-41, Fischer four pin, 2 m (6.6 ft.) straight, to BNC [CMAC 5116]
- Trigger cable, CA-43 Fischer three pin, 2 m (6.6 ft.) straight, to BNC [CMAC 5117]

#### Battery and power supply

- Power adapter / charger [CMAC 5110]
- Intrinsically safe battery pack [CMAC 5105]

### Miscellaneous accessories

- Hard shell carrying case (transit case) [CMAC 5118]
- Leather hand strap [CMAC 5020]
- Leather neck strap [CMAC 5113]
- Intrinsically safe carrying pouch [CMAC 5111]
- Stylus [CMAC 5251]

#### Power cords

- Power cord, US [CMVA 3351]
- Power cord, Australia [CMAC 4222-AU]
- Power cord, Switzerland [CMAC 4222-CH]
- Power cord, Denmark [CMAC 4222-DU]
- Power cord, European [CMAC 4222-EUR]
- Power cord, Israel [CMAC 4222-IL]
- Power cord, Italy [CMAC 4222-IT]
- Power cord, Japan [CMAC 4222-JP]
- Power cord, United Kingdom [CMAC 4222-UK]

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

## Product Support Plans (PSP)

A range of Product Support Plans are available to protect your investment. Contact your local SKF Sales Representative for additional information.

Please contact:

#### SKF Reliability Systems

##### SKF Condition Monitoring Center – San Diego

5271 Viewridge Court • San Diego, California 92123 USA

Tel: +1 858-496-3400 • Fax: +1 858-496-3531

Web Site: [www.skf.com/cm](http://www.skf.com/cm)

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PUB CM/P8 11149 EN • October 2010

This publication supersedes publication CM2313 EN.

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