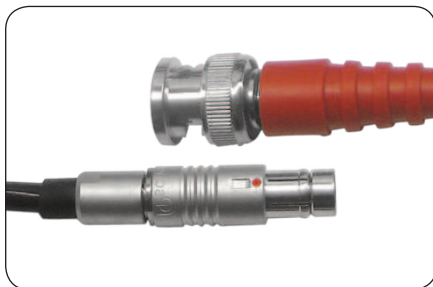# SKF Microlog Analyzer Accessories Catalog

Foreword

Unmatched versatility, reliability and functionality have made the SKF Microlog Analyzer series of data collectors the premier choice for portable, handheld condition monitoring units.

Designed to help users establish or upgrade an existing condition monitoring program, SKF Microlog Analyzers handle the tasks required to perform predictive maintenance on rotating machinery in countless industries.

Data capture from a range of sources

SKF Microlog Analyzers automatically collect both dynamic (vibration) and static (process) measurements from almost any source, including handheld and magnetically mounted accelerometers, permanently mounted vibration sensors or on-line monitoring systems. Temperature measurements can be collected with a non-contact infrared sensor or with a contact probe.
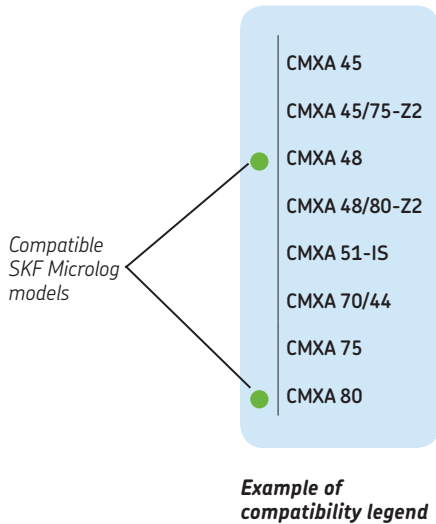
State-of-the-art operating technology

With robust, high-speed data processors and optimum data storage capacity, SKF Microlog Analyzers are equipped to operate within today's most advanced computerized maintenance management systems. Units can be purchased with a range of individual modules and accessories for specific types of analysis required to meet their plant's monitoring needs.

SKF

Product compatibility

Every product listed in this catalog contains a legend that shows which SKF Microlog models are compatible with that product. An example of the legend is shown below. For example, a product that contains the legend below would be compatible with SKF Microlog models CMXA 48 and CMXA 80.

Compatible SKF Microlog models

| CMXA 45 |
| CMXA 45/75-Z2 |
| ● CMXA 48 |
| CMXA 48/80-Z2 |
| CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 |
| ● CMXA 80 |

Example of compatibility legend

Note: The "CMXA 45/75-Z2" designation in the legend refers to both CMXA 45-Z2 and CMXA 75-Z2 ATEX Zone 2 certified models.
   The "CMXA 48/80-Z2" designation in the legend refers to both CMXA 48-Z2 and CMXA 80-Z2 ATEX Zone 2 certified models.

SKF Microlog models

The accessories in this catalog are applicable to the following SKF Microlog models:

- **CMXA 44:** SKF Microlog Analyzer MX series
- **CMXA 45:** SKF Microlog Advisor Pro
- **CMXA 45-Z2:** SKF Microlog Advisor Pro, certified for use in ATEX Zone 2 hazardous areas
- **CMXA 48:** SKF Microlog Consultant
- **CMXA 48-Z2:** SKF Microlog Consultant, certified for use in ATEX Zone 2 hazardous areas
- **CMXA 51-IS:** SKF Microlog Analyzer, certified for use in intrinsically safe (IS) areas
- **CMXA 70:** SKF Microlog Analyzer GX series
- **CMXA 75:** SKF Microlog Analyzer GX series
- **CMXA 75-Z2:** SKF Microlog Analyzer GX series, certified for use in ATEX Zone 2 hazardous areas
- **CMXA 80:** SKF Microlog Analyzer AX series
- **CMXA 80-Z2:** SKF Microlog Analyzer AX series, certified for use in ATEX Zone 2 hazardous areas

Note: For use of accessories in hazardous areas, reference the product safety instructions. Accessories listed as compatible with the CMXA 45/75/48/80 models may also be used with the corresponding Z2 (ATEX Zone 2 certified) models in areas known to be **non-hazardous**. Please consult your site safety officer for clarification.

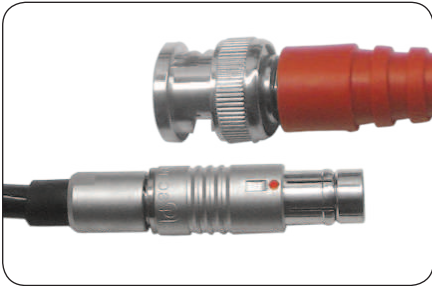## Accessories for discontinued SKF Microlog models

For a list of accessories available for discontinued SKF Microlog models, refer to the section *Accessories for obsolete products* ().

Contents

SKF – the knowledge engineering company

From one simple but inspired solution to a misalignment problem in a textile mill in Sweden, and fifteen employees in 1907, SKF has grown to become a global industrial knowledge leader.

Over the years we have built on our expertise in bearings, extending it to seals, mechatronics, services and lubrication systems. Our knowledge network includes 46 000 employees, 15 000 distributor partners, offices in more than 130 countries, and a growing number of SKF Solution Factories around the world.

Research and development

We have hands-on experience in over forty industries, based on our employees' knowledge of real life conditions. In addition our world-leading experts and university partners who pioneer advanced theoretical research and development in areas including tribology, condition monitoring, asset management and bearing life theory. Our ongoing commitment to research and development helps us keep our customers at the forefront of their industries.

Meeting the toughest challenges

Our network of knowledge and experience along with our understanding of how our core technologies can be combined helps us create innovative solutions that meet the toughest of challenges. We work closely with our customers throughout the asset life cycle, helping them to profitably and responsibly grow their businesses.

Working for a sustainable future

Since 2005, SKF has worked to reduce the negative environmental impact from our own operations and those of our suppliers. Our continuing technology development introduced the SKF BeyondZero portfolio of products and services which improve efficiency and reduce energy losses, as well as enable new technologies harnessing wind, solar and ocean power. This combined approach helps reduce the environmental impact both in our own operations and in our customers'.

SKF Solution Factories make SKF knowledge and manufacturing expertise available locally, to provide unique solutions and services to our customers.
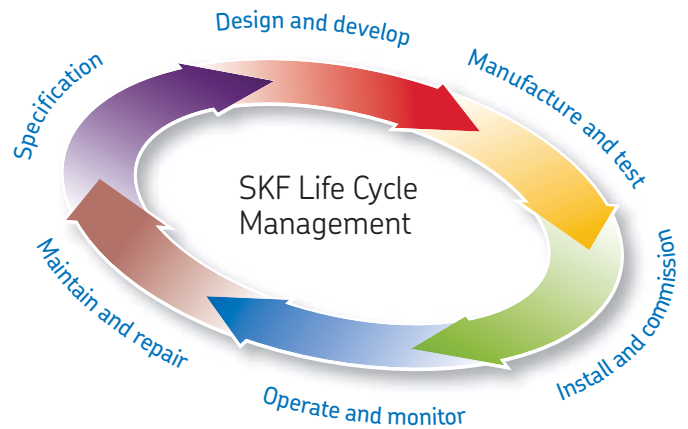
Working with SKF IT and logistics systems and application experts, SKF Authorized Distributors deliver a valuable mix of product and application knowledge to customers worldwide.

SKF

Our knowledge
– your success

SKF Life Cycle Management is how we combine our technology platforms and advanced services, and apply them at each stage of the asset life cycle, to help our customers to be more successful, sustainable and profitable.

SKF Life Cycle Management

Design and develop

Manufacture and test

Install and commission

Operate and monitor

Maintain and repair

Specification

Working closely with you

Our objective is to help our customers improve productivity, minimize mainten-ance, achieve higher energy and resource efficiency, and optimize designs for long service life and reliability.

Innovative solutions

Whether the application is linear or rotary or a combination of the two, SKF engineers can work with you at each stage of the asset life cycle to improve machine performance by looking at the entire application. This approach doesn't just focus on individual components like bearings or seals. It looks at the whole application to see how each component interacts with the next.

Design optimization and verification

SKF can work with you to optimize current or new designs with proprietary 3-D model-ing software that can also be used as a vir-tual test rig to confirm the integrity of the design.

Bearings
SKF is the world leader in the design, development and manufacture of high performance rolling bearings, plain bearings, bearing units and housings.

Machinery maintenance
Condition monitoring technologies and main-tenance services from SKF can help minimize unplanned downtime, improve operational efficiency and reduce maintenance costs.

Sealing solutions
SKF offers standard seals and custom engineered sealing solutions to increase uptime, improve machine reliability, reduce friction and power losses, and extend lubricant life.

Mechatronics
SKF fly-by-wire systems for aircraft and drive-by-wire systems for off-road, agricultural and forklift applications replace heavy, grease or oil consuming mechanical and hydraulic systems.

Lubrication solutions
From specialized lubricants to state-of-the-art lubrication systems and lubrication management services, lubrication solutions from SKF can help to reduce lubrication related downtime and lubricant consumption.

Actuation and motion control
With a wide assortment of products – from actu-ators and ball screws to profile rail guides – SKF can work with you to solve your most pressing linear system challenges.

SKF

Accelerometers

CMAC 4370-K

Triax accelerometer kit

SKF's triax accelerometer quickly and automatically measures horizontal, vertical and axial (triaxial) data with the press of a button. Triaxial measurements offer the user additional information on the condition of machinery, enabling a more complete diagnostic analysis. For example, measuring in a vertical direction often provides insight into how the shaft is restrained when considering bearing looseness. A horizontal orientation is preferred for bearing fault diagnosis and an axial measurement can provide clues as to the severity of shaft misalignment.

The SKF Microlog can acquire data simultaneously from all three axes. The triax accelerometer also enables measurement in any of the three axes where, in specialized cases, a single point accelerometer would be unable to measure data due to physical mounting restrictions or a difficult to access mounting surface.

For those who typically collect triaxial data, the sensor dramatically reduces data collection time. For users who up until now have collected only one data point per sensor location, triax offers the advantage of additional information for improved diagnostics. The triax accelerometer facilitates the efficient collection of accurate and repeatable machine date for enhanced decision making.

Specifications for triax accelerometer

Dynamic

- Sensitivity (±5%): 100 mVg
- Measurement range: 50 g, RMS
- Frequency range:
  - ±5%: 0,5 to 3 000 Hz
  - ±10%: 0,3 to 5 000 Hz
  - ±3 dB: 0,2 to 10 000 Hz
- Amplitude non-linearity: ±1% full scale maximum
- Resonance frequency, mounted, nominal: 25 kHz
- Transverse sensitivity: ≤ 5%

Electrical

- Power requirements:
  - Voltage source*: 18 to 30 V DC
  - Constant current diode: 2 to 20 mA

* Do not apply power to this instrument without current limiting in the range of 20 mA maximum. To do so will immediately destroy the integral amplifier. It is suggested that only SKF approved power units be utilized for powering this instrument.

- Electrical noise: 0,0005 g, RMS
- Output impedance: 100 Ω
- Bias output voltage: 12 to 13 V DC
- Discharge time constant: 0,6 s
- Case ground isolation, signal/power ground pin to case: 10 MΩ

Environmental

- Temperature range: –55 to +120 °C (*–65 to +250 °F*)
- Vibration limit: 1 000 g, RMS
- Shock limit: 2 000 g peak
- Base strain sensitivity: 0,001 g/µ strain at 250/µ Ω
- Thermal coefficient of sensitivity: 0,05%/°C (*0,03%/°F*)

Physical

- Dimensions: See drawing
- Weight: 115 g (*4.1 oz.*)
- Mounting: Captive $^1/_4$–28 mounting screw
- Case material: Aluminum alloy
- Sealing: Welded / glass to metal seal / O-rings, hermetic
- Connections:
  - Coaxial, radically mounted
  - Four pin MIL-C-26482, 8-4P
- Recommended magnetic base: CMSS 908-MD

Kit contents

- Triax accelerometer
- Anti-rotation pin mounted on the bottom surface of the sensor (the anti-rotation pin can be carefully un-threaded from the sensor so that it can be permanently mounted)
- CMAC 5009: Triaxial accelerometer cable
- CMAC 4300: Stud adapter
- CMSS 2620-3: Studs (three)
- Calibration certificate traceable to NIST
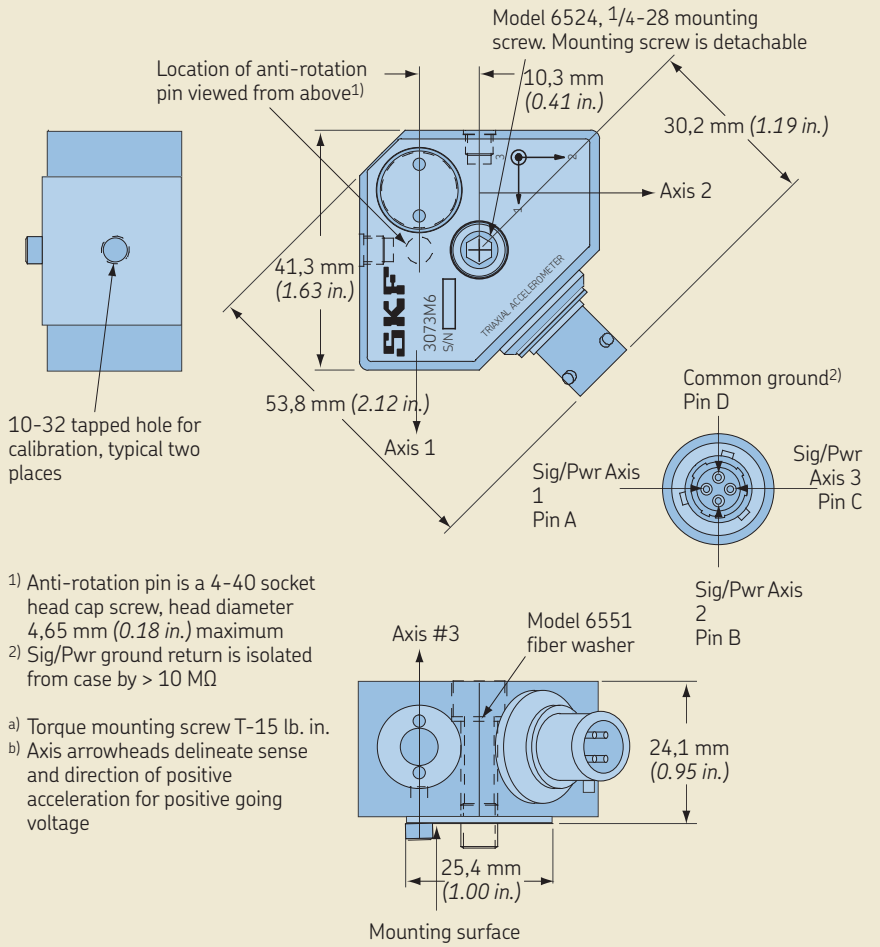
| CMXA 45 |
| CMXA 45/75-Z2 |
| CMXA 48 |
| CMXA 48/80-Z2 |
| CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 |
| CMXA 80 |

SKF

Triax accelerometer

CMAC 5009 triaxial accelerometer cable

Dimensions

Location of anti-rotation pin viewed from above[1]

Model 6524, 1/4-28 mounting screw. Mounting screw is detachable

10,3 mm (0.41 in.)

30,2 mm (1.19 in.)

Axis 2

41,3 mm (1.63 in.)

3073M6 S/N

TRIAXIAL ACCELEROMETER

53,8 mm (2.12 in.)

Axis 1

10-32 tapped hole for calibration, typical two places

Common ground[2] Pin D

Sig/Pwr Axis 3 Pin C

Sig/Pwr Axis 1 Pin A

Sig/Pwr Axis 2 Pin B

[1] Anti-rotation pin is a 4-40 socket head cap screw, head diameter 4,65 mm (0.18 in.) maximum
[2] Sig/Pwr ground return is isolated from case by > 10 MΩ

a) Torque mounting screw T-15 lb. in.
b) Axis arrowheads delineate sense and direction of positive acceleration for positive going voltage

Axis #3

Model 6551 fiber washer

24,1 mm (0.95 in.)

25,4 mm (1.00 in.)

Mounting surface

Optional accessories

CMAC 9600-01 toolkit for 1/4–28 stud

CMAC 4300 stud adapter

CMSS 2620-3 stud

CMSS 2111

Small footprint accelerometer with integral cable

The CMSS 2111 is a small footprint accelerometer that includes an integrated 2 m *(6.56 ft.)* cable along with a magnetic mount (CMSS 908-LD). This accelerometer is capable of working to a depth of 5 m *(16.4 ft.)* (additional cable length required).

CMXA 45

CMXA 45/75-Z2

CMXA 48

CMXA 48/80-Z2

CMXA 51-IS

CMXA 70/44

CMXA 75

CMXA 80

Specifications

Dynamic

- Sensitivity (±10%): 100 mVg
- Measurement range: ±50 g
- Frequency range (±3 dB): 0,5 to 10 000 Hz
- Non-linearity: ±1%
- Resonance frequency: 22 kHz
- Transverse sensitivity: ≤ 7%

Electrical

- Power supply:
  - Voltage source: 18 to 28 V DC
  - Constant current diode: 2 to 20 mA
- Electrical noise:
  - Broadband:
    · 1 Hz to 10 kHz: 350 µg
  - Spectral:
    · 10 Hz: 8 µg/√Hz
    · 100 Hz: 5 µg/√Hz
    · 1 kHz: 4 µg/√Hz
- Output impedance: < 150 Ω
- Bias output voltage: 8 to 12 V DC
- Discharge time constant: ≤ 0,3 s
- Settling time (within 1% of bias): ≤ 2,0 s

Environmental

- Temperature range: –55 to +120 °C *(–65 to +250 °F)*
- Shock limit: 5 000 g peak
- Enclosure rating: IP 68

Physical

- Dimensions (hex × height): 14 × 64 mm *(0.55 × 2.52 in.)*
- Weight (with cable): 99 g *(3.5 oz.)*
- Cable length: 2 m *(6.56 ft.)*
- Mounting: Magnet
- Case material: Stainless steel
- Cable type: Polyurethane
- Sealing: Molded
- Sensing element design: Ceramic, shear
- Connections:
  - Molded integral cable (top)
  - Fischer type 103 six pin

SKF
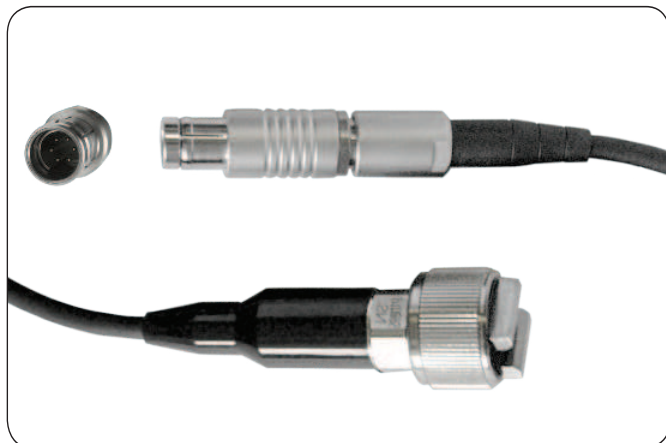
Optional accessories

CMSS 908-LD magnetic mounting base

CMAC 5220 quick connect mounting base (used with the SKF Marine Condition Monitoring kit)

CMAC 5221 quick connect mounting stud (used with the SKF Marine Condition Monitoring kit)

CMSS 908-LD magnetic mounting base specifications:
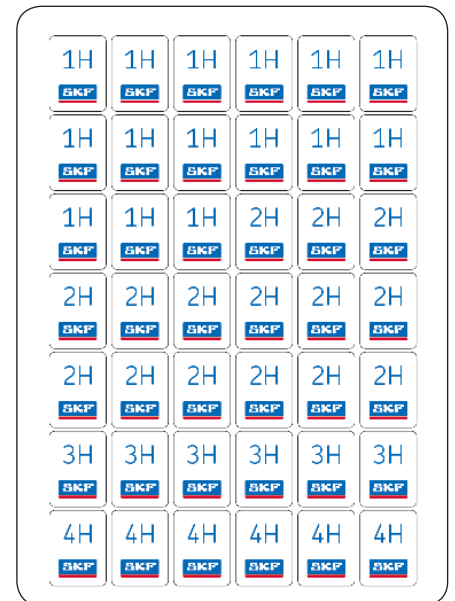
- Pull strength: 67 N *(15 lb.)*
- Outside diameter: 19 mm *(0.75 in.)*
- Mount: $1/4$–28 tapped hole; $1/4$–28 mounting stud provided
- Material: Stainless steel

CMAC 5222 labels for measurement locations (used with the SKF Marine Condition Monitoring kit)

Ordering information

- **CMSS 2111** Small footprint accelerometer with an integrated cable and a magnetic mount (CMSS 908-LD).

Optional accessories

- **CMSS 908-LD** Magnetic mounting base with $1/4$–28 stud
- **CMAC 5220** Quick connect mounting base with $1/4$–28 threaded hole for sensor mounting (used with the SKF Marine Condition Monitoring kit)
- **CMAC 5221** Quick connect mounting stud with $1/4$–28 threaded hole for machine mounting (qty. 50) (used with the SKF Marine Condition Monitoring kit)
- **CMAC 5222** Labels for measurement locations (qty. 100) (used with the SKF Marine Condition Monitoring kit)

CMSS 2114-K

High frequency accelerometer kit

The CMSS 2114-K is a high frequency accelerometer kit that includes a high frequency cable with an adhesive mounting base.

Specifications

Dynamic

- Sensitivity (±15%): 10 mVg
- Measurement range: ±500 g peak
- Frequency range (±3 dB): 5 to 60 000 Hz
- Non-linearity: ≤ 1%
- Resonance frequency: ≥ 95 kHz
- Transverse sensitivity: ≤ 5%

Electrical

- Power supply:
  - Voltage source: 18 to 30 V DC
  - Constant current diode: 2 to 20 mA
- Electrical noise:
  - Broadband:
    - 1 Hz to 10 kHz: 0,002 g RMS
  - Spectral:
    - 10 Hz: 160 µg/√Hz
    - 100 Hz: 40 µg/√Hz
    - 1 kHz: 15 µg/√Hz
    - 10 kHz: 10 µg/√Hz
- Output impedance: ≤ 100 Ω
- Bias output voltage: 8 to 12 V DC
- Discharge time constant: 0,02 to 0,06 s

Environmental

- Temperature range: −55 to +120 °C (−65 to +250 °F)
- Shock limit: 5 000 g peak
- Base strain sensitivity: ≤ 0,05 g µ

Physical

- Dimensions: See drawing
- Weight: 6 g (0.2 oz.)
- Mounting thread: 10-32, male
- Mounting torque: 1,13 to 2,25 Nm (10 to 20 in. lbs.)
- Case material: Stainless steel
- Sealing: Welded hermetic
- Sensing element design: Ceramic, shear
- Connections: 5-44 coaxial (top)

Note: All specifications are at room temperature unless otherwise specified.

352A60 high frequency constant current accelerometer

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

CMAC 5062 high frequency accelerometer cable

Adhesive mounting base

SKF

- 352A60: High frequency constant current accelerometer
- CMAC 5062: High frequency accelerometer cable, Fischer type 103 six pin to a 5-44 Microdot connector
- Adhesive mounting base

Note: Loctite 454 insensitive adhesive gel is the recommended adhesive. This item is not included in the kit.

Dimensions

2,8 mm
(0.11 in.)

5-44 coaxial connector

20,6 mm
(0.81 in.)

352A60

4,6 mm (0.18 in.)

3,3 mm
(0.13 in.)

10-32 mounting hole[1) 2)]

9,5 mm
(0.38 in.)

10,7 mm
(0.42 in.)
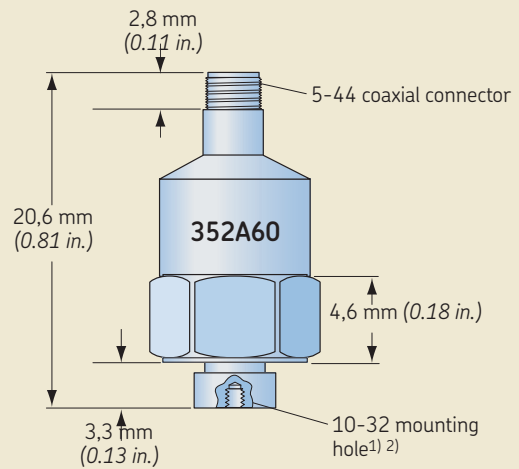
[1)] Stud removed for sensor with adhesive mount option.
[2)] M6 × 0,75 thread for Metric option

Ordering information

- **CMSS 2114-K** High frequency accelerometer kit, which includes a high frequency constant current accelerometer, cable and adhesive mounting base.

SKF

CMSS 2200 / CMSS 2200-M8

General purpose, low profile, side exit industrial accelerometer

The CMSS 2200 and CMSS 2200-M8 industrial accelerometers, with their side exit and two pin connector, offer a low profile for machinery with limited clearance. The sensor mounts in any orientation.

Features

- Rugged, economical and all around general purpose sensor
- 100 mV/g sensitivity to optimize use in multiple applications
- Exceptional bias voltage (BV) stability at elevated temperatures
- Designed for exceptional low noise level over a wide temperature range
- Meets stringent CE, EMC requirements
- Low profile with captive mounting bolts ($1/4$–28, M6 × 1,00 or M8 × 1,25) provided
- Corrosion resistant and hermetically sealed
- Reverse polarity wiring protection

Specifications

Dynamic

- Sensitivity: 100 mVg
- Sensitivity precision: ±10% at 25 °C (75 °F)
- Measurement range: 80 g peak
- Frequency range:
  - ±10%: 1,0 to 5 000 Hz
  - ±3 dB: 0,7 to 10 000 Hz
- Amplitude linearity: 1%
- Resonance frequency, mounted, minimum 22 kHz
- Transverse sensitivity: ≤ 5% of axial

● CMXA 45

CMXA 45/75-Z2

● CMXA 48

CMXA 48/80-Z2

CMXA 51-IS

● CMXA 70/44

● CMXA 75

● CMXA 80

Electrical

- Power requirements:
  - Voltage source: 18 to 30 V DC
  - Constant current diode: 2 to 10 mA, recommended 4 mA
- Electrical noise: 2,0 Hz; 20 µg/√Hz
- Output impedance: < 100 Ω
- Bias output voltage: 12 V DC
- Grounding: Case isolated, internally shielded

Environmental

- Temperature range: –50 to +120 °C (–60 to +250 °F)
- Vibration limit: 500 g peak
- Shock limit: 5 000 g peak
- Base strain sensitivity: 200 µg/µstrain
- Electromagnetic sensitivity, equivalent g, maximum: 70 µg/gauss
- CE: According to the generic immunity standard for Industrial Environment EN50082-2
  - Acceptance criteria: The generated "false equivalent g level" under the above test conditions should be less than 2 mg measured peak to peak
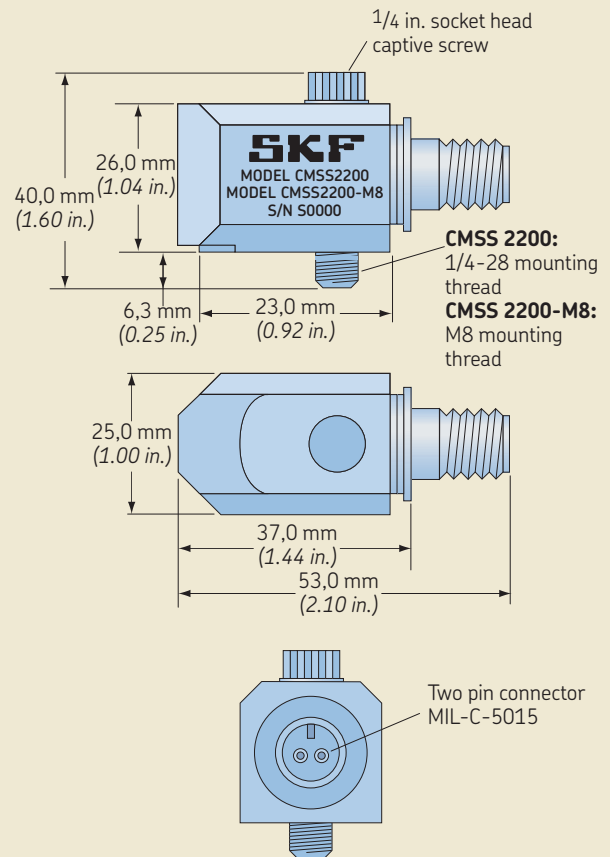
SKF

Physical

- Dimensions: See drawing
- Weight: 145 g *(5.1 oz.)*
- Mounting: See ordering information
- Mounting torque: 3,4 Nm *(30 in. lbs.)*
- Case material: 316L stainless steel
- Sealing: Hermetic
- Connections:
  - Pin A: Signal/Power
  - Pin B: Common
  - Mating connector: CMSS 932-68LC or CMSS 932-68TL, two pin, IP 68, locking collar or twist lock
- Recommended cable: Two conductor, shielded, fluorine based polymer jacket, 100 pF/m *(30 pF/ft.)*
  - CMAC 5209, CMAC 5209-06S or CMAC 5209-10
- Recommended magnetic base: CMSS 908-MD

Note: Specifications conform to ISA-RP-37.2 (1 to 64) and are typical values referenced at 25 °C *(75 °F)*, 24 V DC supply, 4 mA constant current and 100 Hz.

Note: This accelerometer is not recommended for use in hazardous environments.

Dimensions

1/4 in. socket head captive screw

26,0 mm *(1.04 in.)*

40,0 mm *(1.60 in.)*

MODEL CMSS2200
MODEL CMSS2200-M8
S/N S0000

CMSS 2200: 1/4-28 mounting thread
CMSS 2200-M8: M8 mounting thread

6,3 mm *(0.25 in.)*

23,0 mm *(0.92 in.)*

25,0 mm *(1.00 in.)*

37,0 mm *(1.44 in.)*

53,0 mm *(2.10 in.)*

Two pin connector MIL-C-5015

Ordering information

- **CMSS 2200** General purpose, low profile, side exit industrial accelerometer with MIL-C-5015 two pin connector. 1/4–28 and M6 mounting studs provided. Calibration sensitivity and nominal sensitivity are provided for each accelerometer package.
- **CMSS 2200-M8** General purpose, low profile, side exit industrial accelerometer with MIL-C-5015 two pin connector. M8 mounting studs provided. Calibration sensitivity and nominal sensitivity are provided for each accelerometer package.

Optional accessories

- **CMSS 908-MD** Medium duty magnetic base

CMSS 2210

Intrinsically safe (IS) industrial accelerometer

The CMSS 2210 industrial accelerometer is intrinsically safe and is ATEX and IECEx Group I and II approved.

Specifications

Dynamic

- Sensitivity (±10%): 100 mVg nominal at 80 Hz
- Frequency range: 2 Hz to 10 kHz ±5% (–3 dB at 0,8 Hz)
- Resonance frequency, mounted, nominal: 18 kHz
- Transverse sensitivity: < 5%

Electrical

- Constant current diode: 0,5 to 8 mA
- Electrical noise: 0,1 mg maximum
- Bias output voltage: 12 V DC, nominal

Environmental

- Temperature range:
    - T4: –55 to +115 °C (–65 to +240 °F)
    - T6: –55 to +65 °C (–65 to +150 °F)

Physical

- Dimensions: See drawing
- Weight: 100 g (3.5 oz.)
- Mounting torque: 8 Nm (70.8 in. lbs.)
- Case material: Stainless steel
- Sealing: IP 67
- Isolation: Base isolated
- Connections: MIL-C-5015 style two pin
- Recommended cables:
    - For CMXA 51-IS: CMAC 5115
    - For ATEX Zone 2 CMXA 45, 48, 75, 80: CMAC 5209
- Recommended magnetic base: CMSS 908-MD

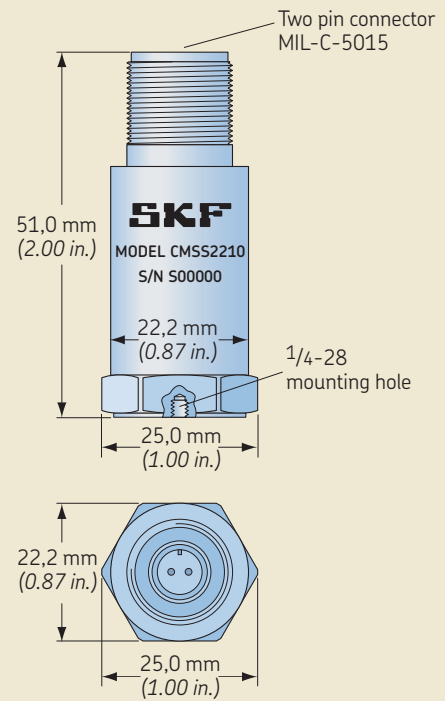| CMXA 45 |
| CMXA 45/75-Z2 |
| CMXA 48 |
| CMXA 48/80-Z2 |
| CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 |
| CMXA 80 |

SKF

Certifications

- Group I:
  - Baseefa02ATEX0245X and IECEx BAS 08.0013X
  - Ex I M1 Ex ia I: T_a = –55 to +115 °C (–65 to +240 °F)
- Group II**:
  - BAS02ATEX1057X and IECEx BAS 08.0013X
  - Ex II 1GD T135 °C (275 °F) Ex ia IIC T4
  - Ex iaD 20 T135 °C (275 °F): T_a = –55 to +115 °C (–65 to +240 °F)
  - Ex II 1GD T85 °C (185 °F) Ex ia IIC T6
  - Ex iaD 20 T85 °C (185 °F): T_a = –55 to +65 °C (–65 to +150 °F)
- 500 V isolation: Units will pass a 500 V isolation test
- Barrier: 1 × MTL7728+ (BAS01ATEX7217) or (P&F Z728 BAS01ATEX7005) or any other barrier that conforms to note 5 of ATX027

* **Warning:** The Ci and Li were previously lower. The installer must take account of the increase in internal capacitance and inductance present on this apparatus.

Dimensions

Two pin connector
MIL-C-5015

51,0 mm (2.00 in.)

MODEL CMSS2210
S/N S00000

22,2 mm (0.87 in.)

1/4-28 mounting hole

25,0 mm (1.00 in.)

22,2 mm (0.87 in.)

25,0 mm (1.00 in.)

Ordering information

- **CMSS 2210** Intrinsically safe (IS) industrial accelerometer.

Optional accessories

- **CMSS 908-MD** Medium duty magnetic base

CMSS 732A

Small diameter accelerometer

The CMSS 732A is an accelerometer with a 10 × 32 mounting stud.

Features

- Wide dynamic range
- Compact construction to fit in tight spaces
- Wide frequency range
- Small size, lightweight
- Hermetic seal
- Designed for stud mounting
- Optional magnetic base mounting

Specifications

Dynamic

- Sensitivity: 10 mV/g
- Sensitivity precision: ±5% at 25 °C (*75 °F*)
- Measurement range: 500 g peak
- Frequency range:
  - ±5%: 2,0 to 15 000 Hz
  - ±3 dB: 0,5 to 25 000 Hz
- Amplitude non–linearity: 1%
- Resonance frequency: 60 kHz
- Transverse sensitivity: 5% of axial
- Temperature response:
  - −50 °C (*−60 °F*): −5%
  - +120 °C (*+250 °F*): +5%

Electrical

- Power requirements:
  - Voltage source: 18 to 30 V DC
  - Constant current diode: 2 to 10 mA
- Electrical noise:
  - Broadband:
    - 2,5 Hz to 25 kHz: 200 µg
  - Spectral:
    - 10 Hz: 20 µg/√Hz
    - 100 Hz: 3 µg/√Hz
    - 1 000 Hz: 2 µg/√Hz
    - 10 000 Hz: 2 µg/√Hz
- Output impedance: ≤ 100 Ω
- Bias output voltage: 10 V DC
- Grounding: Case isolated, internally shielded

Environmental

- Temperature range: −50 to +120 °C (*−60 to +250 °F*)
- Vibration limit: 500 g peak
- Shock limit: 5 000 g peak
- Base strain sensitivity: 0,005 g/µ strain
- Electromagnetic sensitivity, equivalent g: 100 µg/gauss

Physical

- Dimensions: See drawing
- Weight: 13 g (*0.5 oz.*)
- Mounting: 10 × 32 tapped hole
- Case material: 316L stainless steel
- Connections:
  - Shell: Common
  - Pin A: Power/Signal
  - Output connector: 10 × 32 coaxial
  - Mating connector: R1
- Recommended cable: CMAC 5061
- Recommended magnetic base: CMSS B13

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

SKF

Optional accessories

CMSS B13 magnetic mounting base

CMSS B13 magnetic mounting base specifications:

- Description: Rare earth, two-pole magnet
- Pull strength: 16 kg *(35 lb.)*
- Outside diameter: 25 mm *(1.0 in.)*
- Mount: $1/4$–28 tapped hole (Metric studs available)
- Knurled gripping edge

Dimensions

12,2 mm
(0.48 in.)

23,6 mm
(0.93 in.)

1/2 in. hex

10-32
coaxial
connector

10-32
mounting hole

12,4 mm
(0.49 in.)

MODEL CMSS732A

S/N 00000
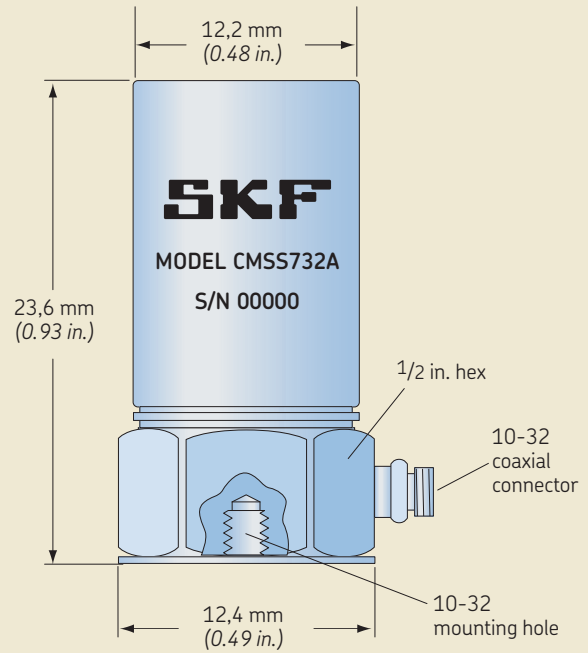
Ordering information

- **CMSS 732A** Small diameter, high frequency accelerometer. A 10 × 32 mounting stud is provided. Calibration sensitivity is provided on each accelerometer package with nominal sensitivity etched on each unit.

Optional accessories

- **CMSS B13** Magnetic base mounting
- **CMAC 5061** High frequency accelerometer cable

CMSS 793-CA

CSA approved, general purpose industrial accelerometer

The CMSS 793-CA is an industrial standard acceleration sensor with a top exit, two pin connector and agency approvals.

Features

- Class I, Division 1 certification
- Ground isolated
- Rugged construction
- Corrosion resistant and hermetically sealed for installation in high humidity areas
- ESD protection
- Reverse wiring protection

Specifications

Dynamic

- Sensitivity, ±5%, 25 °C (75 °F): 100 mVg
- Measurement range: 80 g peak
- Frequency range:
  - ±5%: 1,5 to 5 000 Hz
  - ±10%: 1,0 to 7 000 Hz
  - ±3 dB: 0,5 to 15 000 Hz
- Amplitude non-linearity: 1%
- Resonance frequency: 25 kHz
- Transverse sensitivity: ≤ 5% of axial
- Temperature response:
  - −50 °C (−60 °F): −10%
  - +120 °C (+250 °F): +5%

Electrical

- Power requirements:
  - Voltage source: 18 to 30 V DC
  - Constant current diode: 2 to 10 mA
- Electrical noise:
  - Broadband:
    · 2,5 Hz to 25 kHz: 600 µg
  - Spectral:
    · 10 Hz: 8 µg/√Hz
    · 100 Hz: 5 µg/√Hz
    · 1 000 Hz: 5 µg/√Hz
- Output impedance: ≤ 100 Ω
- Bias output voltage: 12 V DC
- Grounding: Case isolated, internally shielded

Environmental

- Temperature range: −50 to +120 °C (−60 to +250 °F)
- Vibration limit: 500 g peak
- Shock limit: 5 000 g peak
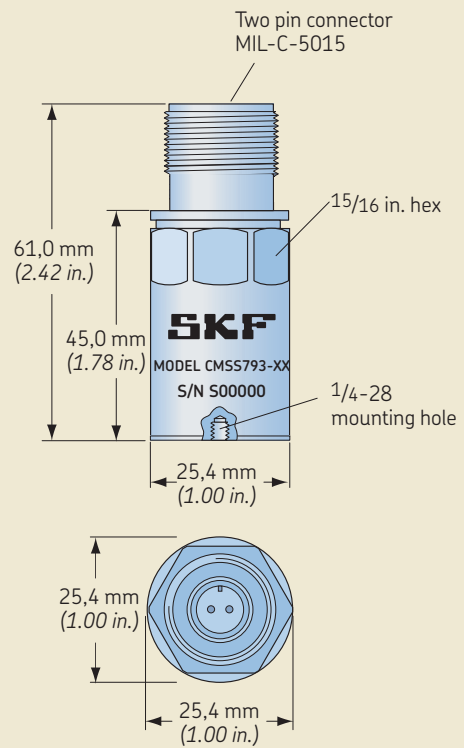- Base strain sensitivity: 0,0005 g/µ strain

Agency approvals

- Canadian Standards Association (CSA)
  - Class I, Division 1, Groups A, B, C, D
  - Class II, Division 1, Groups E, F, G
  - Class III, Division 1

CMXA 45

CMXA 45/75-Z2

CMXA 48

CMXA 48/80-Z2

CMXA 51-IS

CMXA 70/44

CMXA 75

CMXA 80

SKF

Physical

- Dimensions: See drawing
- Weight: 112 g *(4.0 oz.)*
- Mounting: $^1/_4$–28 tapped hole
- Case material: 316L stainless steel
- Sealing: Hermetic
- Sensing element design: PZT ceramic / compression
- Connections:
  - Shell: Ground
  - Pin A: Power/Signal
  - Pin B: Common
  - Output connector: MIL-C-5015 style two pin
  - Mating connector: R6 type
- Recommended cable: CMAC 5209, CMAC 5209-06S or CMAC 5209-10
- Recommended magnetic base: CMSS 908-MD

Dimensions

Two pin connector
MIL-C-5015

15/16 in. hex

61,0 mm
(2.42 in.)

45,0 mm
(1.78 in.)

MODEL CMSS793-XX
S/N S00000

SKF

$^1/_4$–28
mounting hole

25,4 mm
(1.00 in.)

25,4 mm
(1.00 in.)

25,4 mm
(1.00 in.)

Ordering information

- **CMSS 793-CA** CSA approved, general purpose industrial accelerometer. $^1/_4$–28 mounting studs are provided. Calibration sensitivity is provided on each accelerometer package with nominal sensitivity etched on each unit.

Optional accessories

- **CMSS 908-MD** Medium duty magnetic base

CMSS 793-EE

ATEX approved, intrinsically safe (IS), general purpose industrial accelerometer

The CMSS 793-EE is an industrial standard acceleration sensor with a top exit C5015 two pin connector and agency approvals.

Features

- Intrinsically safe certification
- Ground isolated
- Rugged construction
- Corrosion resistant and hermetically sealed for installation in high humidity areas
- ESD protection
- Reverse wiring protection

	CMXA 45
●	CMXA 45/75-Z2
	CMXA 48
●	CMXA 48/80-Z2
●	CMXA 51-IS
	CMXA 70/44
	CMXA 75
	CMXA 80

Specifications

Dynamic

- Sensitivity, ±5%, 25 °C *(75 °F)*: 100 mVg
- Measurement range: 80 g peak
- Frequency range:
  - ±5%: 1,5 to 5 000 Hz
  - ±10%: 1,0 to 7 000 Hz
  - ±3 dB: 0,5 to 15 000 Hz
- Amplitude non-linearity: 1%
- Resonance frequency: 25 kHz
- Transverse sensitivity: ≤ 5% of axial
- Temperature response:
  - −50 °C *(−60 °F)*: −10%
  - +120 °C *(+250 °F)*: +5%

Electrical

- Power requirements:
  - Voltage source: 18 to 30 V DC
  - Constant current diode: 2 to 10 mA
- Electrical noise:
  - Broadband:
    - 2,5 Hz to 25 kHz: 600 µg
  - Spectral:
    - 10 Hz: 8 µg/$\sqrt{}$Hz
    - 100 Hz: 5 µg/$\sqrt{}$Hz
    - 1 000 Hz: 5 µg/$\sqrt{}$Hz
- Output impedance: ≤ 100 Ω
- Bias output voltage: 12 V DC
- Grounding: Case isolated, internally shielded

Environmental

- Temperature range: −50 to +120 °C *(−60 to +250 °F)*
- Vibration limit: 500 g peak
- Shock limit: 5 000 g peak
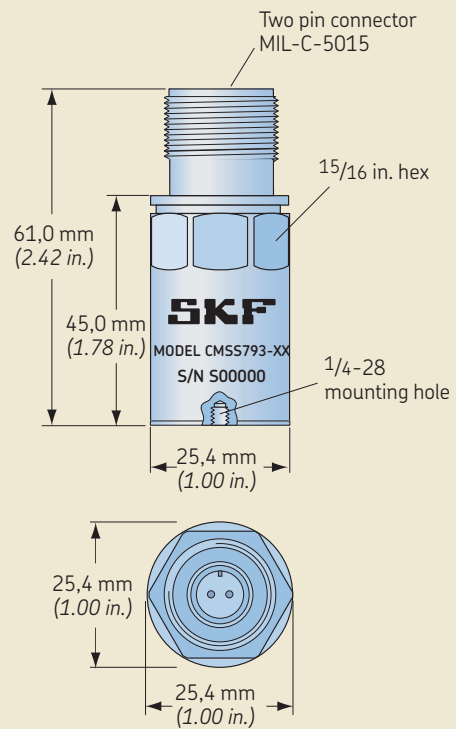- Base strain sensitivity: 0,0005 g/µ strain

Agency approvals

- Intrinsically safe −50 to +120 °C *(−60 to +250 °F)* for:
  - ATEX Zone 0
  - II 1 G
  - Ex ia IIC T4 Ga

Note: Must be installed per drawing 11535, revision F.

SKF

Physical

- Dimensions: See drawing
- Weight: 112 g *(4.0 oz.)*
- Mounting: $1/4$–28 tapped hole
- Case material: 316L stainless steel
- Sealing: Hermetic
- Sensing element design: PZT ceramic / compression
- Connections:
  – Shell: Ground
  – Pin A: Power/Signal
  – Pin B: Common
  – Output connector: MIL-C-5015 style two pin
  – Mating connector: R6 type
- Recommended cables:
  – For CMXA 51-IS: CMAC 5115
  – For ATEX Zone 2 CMXA 45, 48, 75, 80: CMAC 5209
- Recommended magnetic base: CMSS 908-MD

Dimensions

Two pin connector
MIL-C-5015

$15/16$ in. hex

61,0 mm
(2.42 in.)

45,0 mm
(1.78 in.)

SKF

MODEL CMSS793-XX

S/N S00000

$1/4$–28
mounting hole

25,4 mm
(1.00 in.)

25,4 mm
(1.00 in.)

25,4 mm
(1.00 in.)

Ordering information

- **CMSS 793-EE** ATEX approved, intrinsically safe (IS), general purpose industrial accelerometer. $1/4$–28 mounting studs are provided. Calibration sensitivity is provided on each accelerometer package with nominal sensitivity etched on each unit.

Optional accessories

- **CMSS 908-MD** Medium duty magnetic base

CMSS 908-MD

Medium duty magnetic base

The CMSS 908-MD is a multi-purpose magnetic base designed for industrial vibration monitoring applications. The low profile magnet has a $1/4$–28 mounting hole to allow compatibility with SKF accelerometers and provides a solid mechanical connection to the machine.

Specifications

- Diameter: 35 mm (*1.38 in.*)
- Height: 19 mm (*0.75 in.*)
- Mounting hole: $1/4$–28
- Pull strength: 23 kg (*50 lbs.*)

Accelerometer compatibility

The CMSS 908-MD medium duty magnetic base is compatible with the following accelerometers:

- CMAC 4370: Triax accelerometer
- CMSS 2200 / CMSS 2200-M8: General purpose, low profile, side exit industrial accelerometer
- CMSS 2210: Intrinsically safe (IS) industrial accelerometer
- CMSS 793-CA: CSA approved, general purpose industrial accelerometer
- CMSS 793-EE: ATEX approved, intrinsically safe (IS), general purpose industrial accelerometer

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Dimensions

1/4-28 mounting hole

19,0 mm (*0.75 in.*)

35,0 mm (*1.40 in.*)
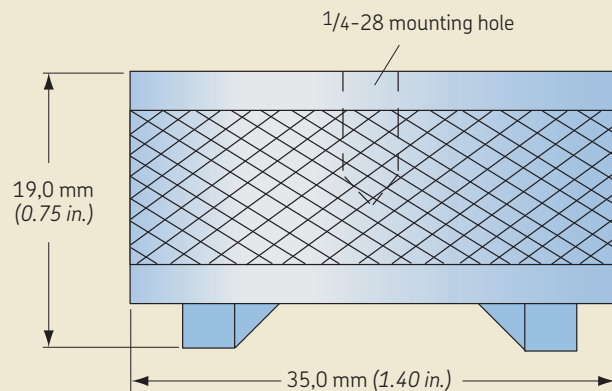
Ordering information

- **CMSS 908-MD** Medium duty magnetic base.

SKF

Cables

Miscellaneous cables

Important

SKF Microlog connectors use a locking mechanism for secure connections. To disconnect Fischer cables from the SKF Microlog connectors, pull on the **lower** portion of the connector, as illustrated below.

Correct way to disconnect cables

Wrong way to disconnect cables

SKF
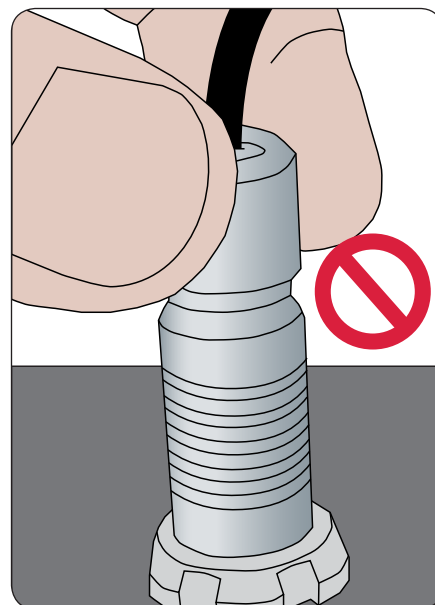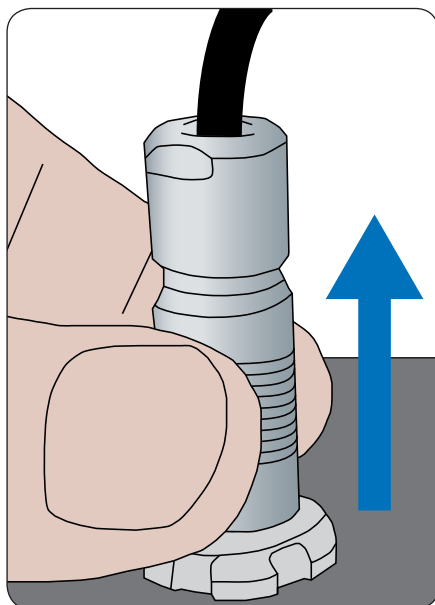
Cable recommendations

The following tables shows which cables are recommended for the accelerometers and hardware found in this catalog.

Cables recommended for accelerometers

		Cable model number						
Accelerometer model number	Accelerometer description	CMAC 5009	CMAC 5061	CMAC 5062	CMAC 5115	CMAC 5209	CMAC 5209-06S	CMAC 5209-10
CMAC 4370-K	Triax accelerometer kit	●						
CMSS 2114-K	High frequency accelerometer kit			●				
CMSS 2200	General purpose, low profile, side exit industrial accelerometer					●	●	●
CMSS 2200-M8	General purpose, low profile, side exit industrial accelerometer					●	●	●
CMSS 2210	Intrinsically safe (IS) industrial accelerometer				●			
CMSS 732A	Small diameter accelerometer		●					
CMSS 793-CA	CSA approved, general purpose industrial accelerometer					●	●	●
CMSS 793-EE	ATEX approved, IS, general purpose industrial accelerometer				●			

Cables recommended for hardware, etc.

		Cable model number														
Hardware model number	Product description	CMAC 5023	CMAC 5043	CMAC 5044	CMAC 5061	CMAC 5062	CMAC 5078	CMAC 5082	CMAC 5087	CMAC 5088	CMAC 5095	CMAC 5211	CMAC 5213	CMAC 5214	CMAC 5404	CMAC 5406
CMAC 4200-K-SL	Infrared thermometer								●							
CMAC 5030K	Laser tachometer kit		●	●									●	●		
CMAC 5030K-Z2	Laser tach. kit, ATEX certified		●	●									●	●		
CMAC 5056	Modal analysis hammer kit	●			●					●						
CMAC 5057	Modal analysis hammer kit	●				●				●						
CMAC 5058	Modal analysis hammer kit	●								●						
CMAC 5068	Docking station							●								
CMAC 5084	Microphone with integral preamplifier kit	●								●						
CMAC 5090	Universal power supply										●					
CMAC 5403	Audio headset						●									
CMSS 6155XK-U-CE	Optical phase reference kit											●				
CMSS 6165K-AX	Strobe light kit														●	●
CMSS 6195AX-K	Smart laser sensor tachometer											●				

CMAC 5009

Triaxial accelerometer coiled cable

The CMAC 5009 coiled cable connects to the SKF Microlog CH1 input connector at one end and to a triaxial accelerometer at the other end. The cable is recommended for use with the CMAC 4370-K triax accelerometer kit.

Specifications

- Connectors: Fischer type 103 six pin CH1 I/P to a four pin socket
- Length: 2 m *(6.56 ft.)* coiled

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Ordering information

- **CMAC 5009** Triaxial accelerometer coiled cable.

CMAC 5061

High frequency accelerometer straight cable

The CMAC 5061 accelerometer cable is used with the CMSS 732A accelerometer and with the CMAC 5056 modal analysis hammer kit.

Specifications

- Connectors: Fischer type 103 six pin to a 10-32 Microdot connector
- Length: 1,5 m *(5 ft.)* straight

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Ordering information

- **CMAC 5061** High frequency accelerometer straight cable.

SKF

CMAC 5062

High frequency accelerometer straight cable

The CMAC 5062 high frequency accelerometer cable is used with the 352A60 high frequency accelerometer in the CMSS 2114-K kit and in the CMAC 5057 modal analysis hammer kit.

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications

- Connectors: Fischer type 103 six pin to a Microdot
- Length: 3 m *(10 ft.)* straight

CMAC 5079

Splitter, four channel straight cable

The CMAC 5079 cable is used for connecting to either CH1 or CH2 on the CMXA 80 and CMXA 48. If connected to CH1, lead A gives channel 1 and lead B gives channel 4. If connected to CH2, lead A gives channel 2 and lead B gives channel 3.

	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
	CMXA 70/44
	CMXA 75
●	CMXA 80

Specifications

- Connectors: Two Fischer type 103 six pin female sockets to one Fischer type 103 six pin male
- Length: 45 cm *(1.5 ft.)* straight

Note: Two cables are required to collect four channel measurements

Note: For CMXA 45 and CMXA 75, this cable can be used in CH2 only to give three single axis simultaneous accelerometer inputs. A single accelerometer is connected to CH1 giving channel 1, then the cable into CH2 giving the same inputs as for CH2 of the CMXA 80.

CMAC 5115

ATEX certified accelerometer coiled cable

The CMAC 5115 cable is ATEX certified and is used to connect the accelerometer to the signal connector.

Specifications

- Connectors: Fischer type 102 four pin to two pin MIL
- Length: 2 m *(6.56 ft.)* coiled

| CMXA 45 |
| CMXA 45/75-Z2 |
| CMXA 48 |
| CMXA 48/80-Z2 |
| ● CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 |
| CMXA 80 |

Ordering information

- **CMAC 5115** ATEX certified accelerometer coiled cable.

CMAC 5209

Accelerometer coiled cable, 2 m *(6.56 ft.)*

The CMAC 5209 coiled cable connects to the CH1 or CH2 input connector at one end and to an accelerometer at the other end. The accelerometer connection is a two pin MIL connector.

Specifications

- Connectors: Fischer type 103 six pin to two pin MIL
- Length: 2 m *(6.56 ft.)* coiled

| ● CMXA 45 |
| ● CMXA 45/75-Z2 |
| ● CMXA 48 |
| ● CMXA 48/80-Z2 |
| CMXA 51-IS |
| ● CMXA 70/44 |
| ● CMXA 75 |
| ● CMXA 80 |

Ordering information

- **CMAC 5209** Accelerometer coiled cable, 2 m *(6.56 ft.)*.

SKF

CMAC 5209-06S

Accelerometer coiled cable with safety breakaway

The CMAC 5209-06S coiled accelerometer cable is similar to the CMAC 5209 cable, but also includes a safety breakaway.

Specifications

- Connectors: Fischer type 103 six pin to two pin MIL
- Length: 2 m (6.56 ft.) coiled

- ● CMXA 45
- ● CMXA 45/75-Z2
- ● CMXA 48
- ● CMXA 48/80-Z2
- CMXA 51-IS
- ● CMXA 70/44
- ● CMXA 75
- ● CMXA 80

CMAC 5209-10

Accelerometer coiled cable, 3 m (10 ft.)

The CMAC 5209-10 coiled cable connects to the CH1 or CH2 input connector at one end and to an accelerometer at the other end.

Specifications

- Connectors: Fischer type 103 six pin to two pin MIL
- Length: 3 m (10 ft.) coiled

- ● CMXA 45
- ● CMXA 45/75-Z2
- ● CMXA 48
- ● CMXA 48/80-Z2
- CMXA 51-IS
- ● CMXA 70/44
- ● CMXA 75
- ● CMXA 80

CMAC 5211

BNC tachometer straight cable

The CMAC 5211 cable connects to the power connector at one end (using the power connector's tachometer input pin) and to any male BNC connector on the other end. It can be used with any tachometer signal source that does not require the SKF Microlog to power it.

Note: The CMSS 6195 Laser Reference Kit (CMVA version kit) or CMSS 6155 Optical Phase Reference Kit (CMVA 60 version kit) requires a CMAC 5211 BNC tachometer cable to work with the SKF Microlog.

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications

- Connectors: Fischer type 103 seven pin trigger I/P to BNC
- Length: 1 m *(3.28 ft.)* straight

Ordering information

- **CMAC 5211** BNC tachometer straight cable.

CMAC 5213

Laser tachometer kit straight cable, 24 cm *(9.5 in.)*

The CMAC 5213 laser tachometer cable connects the tachometer to the SKF Microlog.

The CMAC 5213 cable is a shorter cable than is sold in the CMAC 5030K laser tachometer kit. This cable is only 24 cm *(9.5 in.)* long. This shorter cable is preferred if the user uses the CMAC 5030K kit's mounting bracket to attach the tachometer directly to the SKF Microlog.

●	CMXA 45
●	CMXA 45/75-Z2
●	CMXA 48
●	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications

- Connectors: Fischer type 103 seven pin to four pin socket
- Length: 24 cm *(9.5 in.)* straight

Ordering information

- **CMAC 5213** Laser tachometer kit straight cable, 24 cm *(9.5 in.)*.

CMAC 5214

Laser tachometer kit straight cable, 2 m *(6.56 ft.)* for CMAC 5030K

The CMAC 5214 laser tachometer cable connects the tachometer to the SKF Microlog.

The CMAC 5214 cable, which is also included in the CMAC 5030K and CMAC 5030K–Z2 laser tachometer kits, allows the user to place the tachometer on a stationary surface up to 2 m *(6.56 ft.)* away from the SKF Microlog.

●	CMXA 45
●	CMXA 45/75–Z2
●	CMXA 48
●	CMXA 48/80–Z2
	CMXA 51–IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications

- Connectors: Fischer type 103 seven pin to four pin socket
- Length: 2 m *(6.56 ft.)* straight

CMAC 5036

CH1 signal input straight extension cable, 5 m *(16.4 ft.)*

The CMAC 5036 cable, which is used for the CH1 signal input, is a straight extension cable that is 5 m *(16.4 ft.)* long. This cable can be used with single channel and triax sensors.

●	CMXA 45
	CMXA 45/75–Z2
●	CMXA 48
	CMXA 48/80–Z2
	CMXA 51–IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications

- Connectors: Fischer type 103 six pin female to Fischer type 103 six pin male
- Length: 5 m *(16.4 ft.)* straight

CMAC 5037

CH1 signal input straight extension cable, 10 m *(32.8 ft.)*

The CMAC 5037 cable, which is used for the CH1 signal input, is a straight extension cable that is 10 m *(32.8 ft.)* long. This cable can be used with single channel and triax sensors.

Specifications

- Connectors: Fischer type 103 six pin female to Fischer type 103 six pin male
- Length: 10 m *(32.8 ft.)* straight

●	CMXA 45
●	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

CMAC 5043

Tachometer straight extension cable, 5 m *(16.4 ft.)*

The CMAC 5043 straight extension cable is for use with the CMAC 5030K and CMAC 5030K-Z2 laser tachometer kits. This cable is 5 m *(16.4 ft.)* long and can be used in conjunction with the CMAC 5211 cable.

Specifications

- Connectors: Fischer type 103 seven pin female to Fischer type 103 seven pin male
- Length: 5 m *(16.4 ft.)* straight

●	CMXA 45
●	CMXA 45/75-Z2
●	CMXA 48
●	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

SKF

CMAC 5044

Tachometer straight extension cable, 10 m *(32.8 ft.)*

The CMAC 5044 straight extension cable is for use with the CMAC 5030K and CMAC 5030K–Z2 laser tachometer kits. This cable is 10 m *(32.8 ft.)* long and can be used in conjunction with the CMAC 5211 cable.

Specifications
- Connectors: Fischer type 103 seven pin female to Fischer type 103 seven pin male
- Length: 10 m *(32.8 ft.)* straight

● CMXA 45
● CMXA 45/75–Z2
● CMXA 48
● CMXA 48/80–Z2
CMXA 51–IS
● CMXA 70/44
● CMXA 75
● CMXA 80

Ordering information
- **CMAC 5044** Tachometer straight extension cable, 10 m *(32.8 ft.)*.

CMAC 3715

Cable converter, two pin MIL to BNC

The CMAC 3715 adapter, when combined with the CMAC 5209 accelerometer cable, allows the SKF Microlog to connect to any male BNC connector. This is useful for reading buffered outputs from protection systems, switch boxes or process signal sources.

The adapter does not block DC signals, so the user must be careful to avoid applying power to a buffered signal output.

Specifications
- Connectors: Two pin MIL to BNC
- Length: 8,5 cm *(3.35 in.)*

CMXA 45
CMXA 45/75–Z2
CMXA 48
CMXA 48/80–Z2
CMXA 51–IS
● CMXA 70/44
● CMXA 75
● CMXA 80

Ordering information
- **CMAC 3715** Cable converter, two pin MIL to BNC.

CMAC 5023

Signal input straight cable

The CMAC 5023 cable connects to the SKF Microlog CH1 or CH2 signal input connector at one end (using the input connector'sCH1 input pin) and to any male BNC connector at the other end. This lightweight cable is also used in the CMAC 5056, CMAC 5057 and CMAC 5058 modal analysis hammer kits.

Note: Refer to CMAC 5088 for a heavy duty version of this cable.

CMXA 45 ●
CMXA 45/75-Z2
CMXA 48 ●
CMXA 48/80-Z2
CMXA 51-IS
CMXA 70/44 ●
CMXA 75 ●
CMXA 80 ●

Specifications

- Connectors: Fischer type 103 six pin CH1 I/P to BNC
- Length: 1 m (*3 ft.*) straight

Ordering information

- **CMAC 5023** Signal input straight cable.

CMAC 5032

Power/Trigger splitter straight cable

The CMAC 5032 cable allows the connection of the tachometer, instrument power and USB communications (via the CMAC 5095 cable) simultaneously.

CMXA 45 ●
CMXA 45/75-Z2
CMXA 48 ●
CMXA 48/80-Z2
CMXA 51-IS
CMXA 70/44 ●
CMXA 75 ●
CMXA 80

Specifications

- Connectors: One Fischer type 103 seven pin plug to two Fischer type 103 seven pin sockets
- Length: 30 cm (*11.8 in.*)
- Cable: Eight-core 24 AWG screened cable

Ordering information

- **CMAC 5032** Power/Trigger splitter straight cable.

SKF

CMAC 5078

Audio headphone straight cable

The CMAC 5078 cable connects the CMAC 5403 headphones to the SKF Microlog.

Specifications

- Connectors: Fischer type 103 seven pin to female audio
- Length: 20 cm (*7.9 in.*) straight

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
	CMXA 70/44
●	CMXA 75
●	CMXA 80

Ordering information

- **CMAC 5078** Audio headphone straight cable.

CMAC 5082

USB / A to B straight cable

The CMAC 5082 USB cable is used to connect the CMAC 5068 docking station to the PC.

Specifications

- Connectors: USB Type A to USB Type B
- Length: 2 m (*6.56 ft.*) straight

	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
●	CMXA 48/80-Z2
	CMXA 51-IS
	CMXA 70/44
	CMXA 75
●	CMXA 80

Ordering information

- **CMAC 5082** USB / A to B straight cable.

CMAC 5087

Temperature gun interface straight cable

The CMAC 5087 cable is used to connect the CMAC 4200-K-SL infrared thermometer to the SKF Microlog.

Specifications

- Connectors: Fischer type 103 six pin to input adapter
- Length: 1,5 m (*4.9 ft.*) straight

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Ordering information

- **CMAC 5087** Temperature gun interface straight cable.

CMAC 5088

Signal input straight cable

The CMAC 5088 cable is a heavy duty version of the CMAC 5023 cable. The CMAC 5088 cable connects to the SKF Microlog CH1 or CH2 signal input connector at one end (using the input connector's CH1 input pin) and to any male BNC connector at the other end.

Note: Refer to CMAC 5023 for a lightweight version of this cable.

Specifications

- Connectors: Fischer type 103 six pin CH1 I/P to BNC
- Length: 2 m (*6.56 ft.*) straight

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Ordering information

- **CMAC 5088** Signal input straight cable.

SKF

CMAC 5095

USB communication/power splitter straight cable

The CMAC 5095 four-core shielded USB cable has a standard USB Type A plug. The cable is used for USB communications and power without the docking station.

The USB Type A plug is used to connect to the PC, while the in-line DC jack socket connects to the CMAC 5090 universal power supply and the Fischer plug connects to the SKF Microlog,

●	CMXA 45
●	CMXA 45/75-Z2
●	CMXA 48
●	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications
- Connectors: USB Type A and a standard 2,1 mm *(0.083 in.)* in-line DC jack socket to Fischer SE103A057-130 plug
- Length: 2 m *(6.56 ft.)* straight

CMAC 5116

AC/DC signal coiled cable

The CMAC 5116 cable is offered as an optional accessory. It is not part of the CMXA 51-IS ATEX certification; therefore, it must be approved by the site's safety officer before use in a hazardous area.

	CMXA 45
	CMXA 45/75-Z2
	CMXA 48
	CMXA 48/80-Z2
●	CMXA 51-IS
	CMXA 70/44
	CMXA 75
	CMXA 80

Specifications
- Connectors: Fischer four pin to BNC
- Length: 2 m *(6.56 ft.)* coiled

CMAC 5117

Trigger coiled cable

The CMAC 5117 cable is offered as an optional accessory. It is not part of the CMXA 51-IS ATEX certification; therefore, it must be approved by the site's safety officer before use in a hazardous area.

Specifications

- Connectors: Fischer three pin to BNC
- Length: 2 m (6.56 ft.) coiled

| CMXA 45 |
| CMXA 45/75-Z2 |
| CMXA 48 |
| CMXA 48/80-Z2 |
| ● CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 |
| CMXA 80 |

Ordering information

- **CMAC 5117** Trigger coiled cable.

CMAC 5201

Serial communication cable

The CMAC 5201 cable has nine pins (female at both ends) that all connect straight through. It is required for uploading/downloading data between the host computer and the SKF Microlog.

For uploading to laptop computers with a USB connection, there is no USB to Serial cable available from SKF; however, an aftermarket USB adapter may be purchased at most electronics stores or via the web.

| CMXA 45 |
| CMXA 45/75-Z2 |
| CMXA 48 |
| CMXA 48/80-Z2 |
| ● CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 |
| CMXA 80 |

Specifications

- Connectors: Nine pin female to nine pine female
- Length: 2 m (6.56 ft.)

Ordering information

- **CMAC 5201** Serial communication cable.

SKF

CMAC 5404

Strobe light input straight cable

The CMAC 5404 cable is used for input to the CMSS 6165 strobe light from the SKF Microlog.

Specifications

- Connectors: Fischer type 102 seven pin to input adapter
- Length: 2 m *(6.56 ft.)* straight

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Ordering information

- **CMAC 5404** Strobe light input straight cable.

CMAC 5406

Strobe light output straight cable

The CMAC 5406 cable is used for output from the CMSS 6165 strobe light to the SKF Microlog.

Specifications

- Connectors: Fischer type 103 seven pin to output adapter
- Length: 2 m *(6.56 ft.)* straight

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Ordering information

- **CMAC 5406** Strobe light output straight cable.

CMAC 5093

Signal input straight cable (microphone cable)

The CMAC 5093 cable has a BNC connector on one end to connect to the CMAC 5091 microphone and a Fischer connector on the other end to connect to the SKF Microlog.

This cable is used in the SKF Microlog Idler Sound Monitor kits.

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications

- Connectors: Fischer type 103 six pin to BNC
- Length: 51 cm (*20 in.*) coiled

Ordering information

- **CMAC 5093** Signal input straight cable (microphone cable).

Hardware

CMAC 4200-K-SL

Infrared thermometer

The SKF CMAC 4200-K-SL infrared thermometer with laser sighting is a rugged, easy to use, portable, non-contact thermometer. Ideal for a broad range of maintenance tasks, the CMAC 4200-K-SL may be connected directly to the SKF Microlog series analyzers for quick, accurate recording of surface temperatures. It is one of a variety of accessories offered by SKF to work with the SKF Microlog in enhancing the overall effectiveness of a predictive maintenance program.

The CMAC 4200-K-SL measures the amount of infrared energy emitted by an object and converts it to a display of the object's surface temperature. The handheld, infrared thermometer takes non-contact temperature measurement technology to a new level.

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Features

- Designed for physically challenging environments
- Easy to use
- Adjustable emissivity with on-board table
- Fast response time
- Accuracy ±1% of reading
- Wide temperature range

Graphic display

View more information at a glance. The CMAC 4200-K-SL infrared thermometer automatically creates a graphic display of the last 10 temperature points measured using the maximum and minimum temperature values to establish the range.
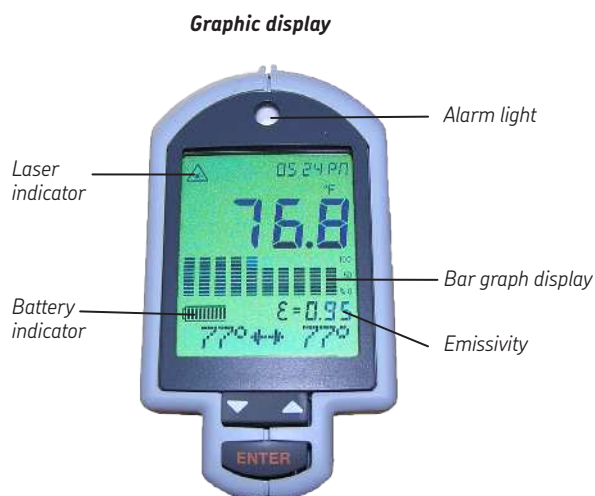
Specifications

- Temperature range: –30 to +900 °C *(–25 to +1 600 °F)*
- Display resolution: 0,1 °C *(0.2 °F)*
- Accuracy:
  - ±1% of reading, or ±1 °C *(±2 °F)*, whichever is greater at 23 °C *(73 °F)*
  - ±2 °C *(±4 °F)* for targets below 0 °C *(32 °F)*
- Repeatability: ±0,5% of reading, or ±1 °C *(±2 °F)*
- Response time (95%): 250 ms
- Spectral response: 8 to 14 μm
- Optical resolution: 60:1
- Ambient operating range: 0 to 50 °C *(30 to 120 °F)*; Laser maximum 45 °C *(115 °F)*
- Relative humidity: 10 to 95%, non-condensing at up to 30 °C *(85 °F)*
- Storage temperature: –20 to +50 °C *(–5 to +120 °F)* without battery
- Analog output: 1 mV/°C *(mV/°F)*
- Power: Two 1,5 volt AA alkaline batteries
- Tripod mount: ¼-20 UNC
- Dimensions: 200 × 170 × 50 mm *(7.9 × 6.7 × 2.0 in.)*
- Weight: 480 g *(22 oz.)*

Graphic display

Alarm light

Laser indicator

Battery indicator

Bar graph display

Emissivity

SKF

Kit contents

- CMAC 4200: Infrared thermometer
- 31784200 Nylon belt holster
- 31678902 Hard carrying case
- Operator's guide

CMAC 4200 infrared thermometer

31678902 carrying case

31784200 nylon belt holster

Required as separate purchase:
- CMAC 5087 temperature gun interface cable

CMAC 5087 temperature gun interface cable

Ordering information

- **CMAC 4200-K-SL** Infrared thermometer with adapter, operator's guide, nylon holster and hard carrying case.

Optional accessories

- **31784200** Nylon belt holster for infrared thermometer
- **31678902** Hard plastic carrying case
- **CMAC 5087** Temperature gun interface cable

CMAC 5030K

Laser tachometer kit

The CMAC 5030K laser tachometer kit contains a small tachometer for easy mounting. Along with the tachometer, this kit includes a bracket for mounting the tachometer directly to the SKF Microlog using the camera mount located on the bottom of the SKF Microlog. The kit also includes a two-meter cable to connect the tachometer to the SKF Microlog and a small tripod for a stationary mounting of the tachometer during the measurement. The key features of this laser tachometer kit include:

- Operating frequency up to 250 000 r/min
- Long optical range, up to 2 m *(6.56 ft.)*
- Wide angle of operation, up to 80°
- On target indicator standard
- Protection rating: IP 67

Specifications

- Material: Stainless steel body
- Color: Silver
- Laser type: Class 2
- Optical range: 100 to 2 000 mm *(0.33 to 6.56 ft.)*
- Power: 1 mW maximum
- Current consumption: 45 mA maximum
- Cable: Fischer seven pin type 103 to four pin socket, 2 m *(6.56 ft.)*
- Wavelength: 635 mm *(25 in.)*
- Angle of incidence: ±80°
- Speed range: 0,1 to 250 000 r/min
- Power input: 5 V DC or 8-24 V DC versions at 30 mA typically
- Operating temperature: –10 to +40 °C *(15 to 105 °F)*
- IP rating: IP 67
- Housing types: M20 threaded or plain body plus fixing slots
- Connections: Integral connector
- Dimensions: 70 × 20 mm *(2.76 × 0.79 in.)*
- Weight: 70 g *(2.5 oz.)*

Kit contents

- Compact laser tachometer
- CMAC 5215: Mounting bracket
- Reflective tape strips
- CMAC 5216: Mini mounting tripod
- CMAC 5214: Tachometer interface cable, 2 m *(6.56 ft.)*

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Compact laser tachometer

CMAC 5215 mounting bracket

Reflective tape strips

CMAC 5216 mini mounting tripod

CMAC 5214 tachometer interface cable

Ordering information

- **CMAC 5030K** Laser tachometer kit. Each kit includes a compact laser tachometer, mounting bracket, cable and mini tripod.

Optional accessories

- **CMAC 5215** Mounting bracket
- **CMAC 5216** Mini mounting tripod

SKF

CMAC 5030K–Z2

Laser tachometer kit – ATEX certified

The CMAC 5030K–Z2 laser tachometer kit contains a small tachometer that is ATEX certified; the sensor is designed for use in hazardous areas with certified hazardous area equipment. This kit is primarily designed for phase-related rotational speed applications, including very high speed monitoring.

Along with the tachometer, this kit includes a bracket for mounting the tachometer directly to the SKF Microlog using the camera mount located on the bottom of the SKF Microlog. The kit also includes a two-meter cable to connect the tachometer to the SKF Microlog and a small tripod for a stationary mounting of the tachometer during the measurement. The key features of this laser tachometer kit include:

- Tachometer is ATEX certified
- Operating frequency up to 250 000 r/min
- Long optical range, up to 2 m *(6.56 ft.)*
- Wide angle of operation, up to 80°
- On target indicator standard
- Protection rating: IP 67
- Integral connector
- Stainless steel housing
- Threaded or plain housing options
- Reverse polarity and short circuit protected

● CMXA 45
● CMXA 45/75-Z2
● CMXA 48
● CMXA 48/80-Z2
CMXA 51-IS
CMXA 70/44
● CMXA 75
● CMXA 80

Compact laser tachometer

CMAC 5215 mounting bracket

Reflective tape strips

Specifications

- Material: Stainless steel housing
- Color: Silver
- Optical range: 100 to 2 000 mm *(0.33 to 6.56 ft.)*
- Cable: Fischer seven pin type 103 to four pin socket, 2 m *(6.56 ft.)*
- Angle of incidence: ±80°
- Speed range: 0,1 to 250 000 r/min
- Power input: 5 V DC at 30 mA typically
- Operating temperature: –10 to +40 °C *(15 to 105 °F)*
- IP rating: IP 67
- Housing types: M20 threaded or plain body plus fixing slots
- Connections: Integral connector
- Dimensions: 70 × 20 mm *(2.76 × 0.79 in.)*
- ATEX certification: BAS02ATEX3259X
  – Ex II 3 G
  – EEx nL IIC T6

CMAC 5216 mini mounting tripod

CMAC 5214 tachometer interface cable

Kit contents

- Compact laser tachometer
- CMAC 5215: Mounting bracket
- Reflective tape strips
- CMAC 5216: Mini mounting tripod
- CMAC 5214: Tachometer interface cable, 2 m *(6.56 ft.)*

Ordering information

- **CMAC 5030K–Z2** Laser tachometer kit – ATEX certified. Each kit includes a compact laser tachometer, mounting bracket, cable and mini tripod.

Optional accessories

- **CMAC 5215** Mounting bracket
- **CMAC 5216** Mini mounting tripod

CMAC 5056 / CMAC 5057 / CMAC 5058

Modal analysis hammer kit

Features

- Frequency range up to 8 kHz
- Peak force 2 200 N *(500 lb. ft.)*
- Output 2,25 mV/N *(10 mV/lb. ft.)*
- Mass extender to provide additional force

These calibrated modal hammer kits may be used for impulse testing of the dynamic behavior of mechanical structures by striking the object with the hammer and measuring the resulting response with the accelerometer. The hammer imparts a constant force over a broad frequency range, which depends on the type of tip used.

The hammer has an integral, constant current quartz force sensor mounted on the striking end of the hammer head. The sensor converts the impact force into electrical signal for display and analysis.

It is designed with rigid quartz crystals and a built-in, microelectronic, unity gain amplifier. Due to the laser-welded construction of the sensor element, operation is reliable in adverse environments.

The striking end of the hammer has a threaded hole for installation of a variety of impact tips that are included in the kit. The tip transfers the impact force to the sensor and protects the sensor face from damage. Tips of different stiffness allow the variation of the pulse width and correspondingly the frequency content of the force.

Modal analysis and modeling is also available by fixing the accelerometer at one location, impacting the structure at one point and then moving the accelerometer to other points of interest. When used with the FRF module, the following modal parameters can be calculated and displayed:

- Apparent mass / accelerance
- Impedance/Mobility
- Stiffness/Compliance

CMXA 45
CMXA 45/75-Z2
● CMXA 48
CMXA 48/80-Z2
CMXA 51-IS
● CMXA 70/44
● CMXA 75
● CMXA 80

Specifications

CMAC 5056 Accelerometer (353B04)

Dynamic

- Sensitivity (±5%): 1,02 mV/(m/s^2) *(10 mVg)*
- Measurement range: ±4 905 m/s^2 peak *(±500 g peak)*
- Frequency range:
  − ±5%: 1 to 7 000 Hz
  − ±10%: 0,7 to 11 000 Hz
  − ±3 dB: 0,35 to 20 000 Hz
- Resonant frequency: ≥ 38 kHz
- Broadband resolution (1 to 10 000 Hz): 0,03 m/s^2 RMS *(0,003 g RMS)*
- Non-linearity: ≤ 1%
- Transverse sensitivity: ≤ 5%

Electrical

- Excitation voltage: 18 to 30 V DC
- Constant current excitation: 2 to 20 mA
- Output impedance: ≤ 100 Ω
- Output bias voltage: 8 to 12 V DC
- Discharge time constant: 0,5 to 2,0 s
- Settling time (within 10% of bias): < 5 s
- Spectral noise:
  − 1 Hz: 3 200 µg/√Hz
  − 10 Hz: 700 µg/√Hz
  − 100 Hz: 180 µg/√Hz
  − 1 kHz: 64 µg/√Hz

SKF

Environmental

- Overload limit (shock): ±98 100 m/s^2 pk *(±10 000 g pk)*
- Temperature range (operating): –55 to +120 °C *(–65 to +250 °F)*
- Base strain sensitivity: ≤ 0,0005 g/μ strain

Physical

- Size (hex × height): 12,7 × 29,0 mm *(0.50 × 1.14 in.)*
- Weight: 10,5 g *(0.38 oz.)*
- Sensing element: Quartz
- Sensing geometry: Shear
- Housing material: Titanium
- Sealing: Welded hermetic
- Electrical connector: 10-32 coaxial jack
- Electrical connection position: Top
- Mounting thread: 10-32 female

CMAC 5057 Accelerometer (353B16)

Dynamic

- Sensitivity (±10%): 1,02 mV/(m/s^2) *(10 mVg)*
- Measurement range: ±4 905 m/s^2 peak *(±500 g peak)*
- Frequency range:
  - ±5%: 1 to 10 000 Hz
  - ±10%: 0,7 to 20 000 Hz
  - ±3 dB: 0,35 to 30 000 Hz
- Resonant frequency: ≥ 70 kHz
- Broadband resolution (1 to 10 000 Hz): 0,05 m/s^2 RMS *(0,005 g RMS)*
- Non-linearity: ≤ 1%
- Transverse sensitivity: ≤ 5%

Electrical

- Excitation voltage: 18 to 30 V DC
- Constant current excitation: 2 to 20 mA
- Output impedance: ≤ 100 Ω
- Output bias voltage: 8 to 12 V DC
- Discharge time constant: 0,5 to 2,0 s
- Settling time (within 10% of bias): < 5 s
- Spectral noise:
  - 1 Hz: 3 200 μg/√Hz
  - 10 Hz: 700 μg/√Hz
  - 100 Hz: 180 μg/√Hz
  - 1 kHz: 64 μg/√Hz

Environmental

- Overload limit (shock): ±98 100 m/s^2 pk *(±10 000 g pk)*
- Temperature range (operating): –55 to +120 °C *(–65 to +250 °F)*
- Base strain sensitivity: ≤ 0,002 g/μ strain

Physical

- Size (hex × height): 7,1 × 17,3 mm *(0.28 × 0.68 in.)*
- Weight: 1,5 g *(0.05 oz.)*
- Sensing element: Quartz
- Sensing geometry: Shear
- Housing material: Titanium
- Sealing: Welded hermetic
- Electrical connector: 5-44 coaxial
- Electrical connection position: Top
- Mounting thread: 5-40 male
- Mounting torque: 0,90 to 1,35 Nm *(9 to 12 in. lbs.)*

CMAC 5056 / CMAC 5057 / CMAC 5058 Hammer

Dynamic

- Sensitivity (±15%): 2,25 mV/N *(10 mV/lb. ft.)*
- Measurement range: ±2 200 N peak *(±500 lb. ft. peak)*

Impact Tips

- Frequency range:
  - Hard tip (–10 dB): 8 kHz
  - Medium tip (–10 dB): 2,5 kHz
  - Soft tip (–10 dB): 375 Hz
  - Super soft tip (–10 dB): 200 Hz
- Resonance frequency: ≥ 22 kHz

Kit contents

The CMAC 5056 and CMAC 5057 hammer kits each contain an accelerometer, while the CMAC 5058 hammer kit does not. The CMAC 5056 hammer kit can be used on structures with a mass of 210 g *(7.6 oz.)* and above. The CMAC 5057 hammer kit can be used on structures with a mass of 56 g *(2 oz.)* and above.

   The accelerometers that are included with the CMAC 5056 and CMAC 5057 kits are constant current, low impedance, voltage-mode sensors. Microelectronic, built-in amplifiers standardize sensitivities within a few percent of nominal value.

CMAC 5056 / CMAC 5057 / CMAC 5058 kits include

- Calibrated hammer
- Cable – BNC to Fischer six pin (for a sturdier cable, CMAC 5088 may be used)
- Red hammer tips (two)
- White hammer tip
- Black hammer tips (two)
- Steel tip
- Blue tip covers (two)
- Petro wax
- Screws threaded on both ends (two)
- Hammer extender
- Carrying case

CMAC 5056 kit also includes

- 353B04 Accelerometer
- Magnetic accelerometer base
- CMAC 5061: Cable – Fischer six pin to Microdot

CMAC 5057 kit also includes

- 353B16 Accelerometer
- CMAC 5062: Cable – Fischer six pin to Microdot

Calibrated hammer

353B04 accelerometer (CMAC 5056 only)

353B16 accelerometer (CMAC 5057 only)

Hammer extender

Magnetic accelerometer base (CMAC 5056 only)

Red hammer tip

White hammer tip

Black hammer tip

Steel tip

Blue tip cover

Petro wax

Screw (threaded on both sides)

SKF

CMAC 5061 cable (CMAC 5056 only)

CMAC 5062 cable (CMAC 5057 only)

BNC to Fischer cable

Carrying case (contents may vary)

Ordering information

- **CMAC 5056** Modal hammer kit – for use on structures with a mass of 210 g *(7.6 oz.)* and above. Includes hammer, accelerometer, magnetic mount, adhesive mounting base with Petro wax, two cables, carrying case, certificate of conformance and calibration certificate.
- **CMAC 5057** Modal hammer kit – for use on structures with a mass of 56 g *(2 oz.)* and above. Includes hammer, accelerometer, adhesive mounting base with Petro wax, two cables, carrying case, certificate of conformance and calibration certificate.
- **CMAC 5058** Modal hammer kit includes hammer, BNC cable, carrying case, certificate of conformance and calibration certificate (accelerometer not included).

CMAC 5059

Modal analysis hammer kit

This calibrated modal hammer kit may be used for impulse testing of the dynamic behavior of mechanical structures by striking the object with the hammer and measuring the resulting response with an accelerometer. The hammer imparts a constant force over a broad frequency range, which depends on the type of tip used.

The hammer has an integral, constant current quartz force sensor mounted on the striking end of the hammer head. The sensor converts the impact force into electrical signal for display and analysis.

It is designed with rigid quartz crystals and a built-in, microelectronic, unity gain amplifier. Due to the laser-welded construction of the sensor element, operation is reliable in adverse environments.

The striking end of the hammer has a threaded hole for installation of a variety of impact tips that are included in the kit. The tip transfers the impact force to the sensor and protects the sensor face from damage. Tips of different stiffness allow the variation of the pulse width and correspondingly the frequency content of the force.

Modal analysis and modeling is also available by fixing the accelerometer at one location, impacting the structure at one point and then moving the accelerometer to other points of interest. When used with the FRF module, the following modal parameters can be calculated and displayed:

- Apparent mass / accelerance
- Impedance/Mobility
- Stiffness/Compliance

	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications

Dynamic

- Sensitivity (±15%): 0,23 mV/N (*1 mV/lbf*)
- Measurement range: ±22 240 N peak (*±5 000 lbf peak*)
- Resonant frequency: ≥ 12 kHz
- Non-linearity: ≤ 1%

Electrical

- Excitation voltage: 20 to 30 V DC
- Constant current excitation: 2 to 20 mA
- Output impedance: < 100 Ω
- Output bias voltage: 8 to 14 V DC
- Discharge time constant: ≥ 1 400 s

Physical

- Sensing element: Quartz
- Sealing: Hermetic
- Hammer mass: 1,1 kg (*2.4 lb.*)
- Head diameter: 5,1 cm (*2.0 in.*)
- Tip diameter: 5,1 cm (*2.0 in.*)
- Hammer length: 37 cm (*14.5 in.*)
- Electrical connection position: Bottom of handle
- Electrical connector: BNC jack

Kit contents

- Calibrated hammer
- Super soft plastic, gray tip
- Medium plastic, red tip
- Hard plastic, black tip
- CMAC 5088: Cable – BNC to Fischer six pin
- Carrying case

Hammer

Gray hammer tip

Red hammer tip

Black hammer tip

Carrying case

CMAC 5088 cable

Ordering information

- **CMAC 5059** Modal hammer kit. Includes hammer, three tips, cable, carrying case, certificate of conformance and calibration certificate.

CMAC 5084

Microphone with integral preamplifier kit

The CMAC 5084 microphone kit contains an array microphone for general purpose use. The constant current microphone enables acoustic type monitoring and is designed with a preamplifier. A CMAC 5023 signal input cable (Fischer six pin to BNC) is included to allow connection to the SKF Microlog. The kit also includes a calibration certificate.

- ● CMXA 45
- CMXA 45/75-Z2
- ● CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- ● CMXA 70/44
- ● CMXA 75
- ● CMXA 80

Specifications

Dynamic

- Frequency response (±2 dB): 20 to 10 000 Hz
- Frequency response (–2 to +5 dB): 20 to 20 000 Hz
- Sensitivity (at 1 kHz): 45 mV/Pa
- Inherent noise ($1/3$ octave at 250 kHz): < 15 dB
- Inherent noise (A weighted): < 30 dB
- Dynamic range (3% distortion limit): > 122 dB

Electrical

- Excitation voltage: 18 to 30 V DC
- Constant current excitation: 2 to 20 mA
- Output bias voltage: 5,5 to 14 V DC
- Output impedance: 150 Ω

Environmental

- Temperature range (operating): –10 to +50 °C *(15 to 125 °F)*

Physical

- Weight: 18,5 g *(0.66 oz.)*
- Size (overall): 12,7 × 66,2 mm *(0.50 × 2.61 in.)*
- Size (head): 7 × 28 mm *(0.28 × 1.10 in.)*
- Electrical connector (output): BNC jack
- Housing material: Stainless steel
- Nominal microphone diameter: 6,35 mm *(0.25 in.)*

Kit contents

- Microphone with preamplifier
- CMAC 5023: Signal input cable
- Calibration certificate

CMAC 5023 cable

Microphone with preamplifier

Ordering information

- **CMAC 5084** Microphone with integral preamplifier kit includes a microphone with preamplifier, CMAC 5023 cable and a calibration certificate.

SKF

CMAC 5208

AC/DC current clamp

The CMAC 5208 AC/DC current clamp is a battery-powered clamp-on current probe that is used on primary circuits with the SKF Microlog Analyzer to measure AC or DC currents up to 600 A peak AC, 600 A DC.

Features

- Solid state hall effect transducer
- AC (1 Hz to 5 kHz) and DC (0 to 1 Hz) measurement
- Ranges: 60 and 600 A
- Degaussing adjustment for zero noise offset

The AC/DC current clamp allows a user to easily and safely incorporate current monitoring within SKF Microlog routes. The jaws clamp around a conductor allowing current measurements without breaking the circuit. A Hall Sensor mounted in a gap in the core senses the magnetic field produced by the current being measured. An amplifier circuit generates an output signal of 1 mV/A (600 A range) or 10 mV/A (60 A range). Demagnetizing (degaussing) is accomplished by means of a push-button.

Lightweight and easy to carry, the AC/DC current clamp may be used throughout the plant or in control room environments. This current clamp is equipped with a connector that fits the CH1 or CH2 input connectors.

Specifications

Electrical

- Current range:
  - 40 A (AC) / 60 A (DC) range: 0,2 to 40 A (AC), (60 A peak) 0,4 to 60 A (DC)
  - 400 A (AC) / 600 A (DC) range: 0,5 to 400 A (AC), (600 A peak) 0,5 to 600 A (DC)
- Output signal:
  - 40 A (AC) / 60 A (DC) range: 10 mV/A
  - 400 A (AC) / 600 A (DC) range: 1 mV/A on 600 A range on 600 A (DC)
- Output termination: 1,8 m (6 ft.) BNC

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

- Overload: 1 000 A (AC) and 2 000 A (DC) continuous up to 1 kHz
- Rise and fall time:
  - 60 A range: ≤ 100 μs from 10 to 90% V_{out}
  - 600 A range: ≤ 70 μs from 10 to 90% V_{out}
- Insertion impedance:
  - 0,39 mΩ at 50 Hz
  - 58 mΩ at 1 000 Hz
- Load impedance: > 100 kΩ/100 pF (maximum)
- Frequency range: DC to 10 kHz at –3 dB
- Working voltage: 600 V RMS
- Common mode voltage: 600 V RMS
- Influence of adjacent conductor: < 10 mA/A at 50 Hz at 23 mm (0.905 in.) from the probe
- Influence of conductor in jaw opening: 0,5% reading (DC to 440 Hz)
- Influence of temperature: ≤ 300 ppm/°C or 0,3%/10 °C
- Influence of humidity: 10 to 90% relative humidity at reference temperature ≤ 0,5%

Electrical (continued)

- Accuracy*:
  - 40 A (AC) / 60 A (DC) range:
    - 1,5% of reading ±0,5 A (0,5 to 40 A)
    - 1,5% of reading (40 to 60 A)
  - 400 A (AC) / 600 A (DC) range:
    - 1,5% of reading ±1 A (0,5 to 100 A)
    - 2,0% of reading (100 to 400 A)
    - 2,5% of reading (400 to 600 A DC)
- Phase shift*:
  - 40 A (AC) / 60 A (DC) range:
    - ≤ 3° (10 to 20 A, 45 to 65 Hz)
    - ≤ 2° (20 to 100 A)
    - ≤ 1,5° (100 to 400 A)
  - 400 A (AC) / 600 A (DC) range:
    - ≤ 3° (10 to 100 A)
    - ≤ 1,5° (100 to 400 A)
- Noise:
  - 60 A range:
    - DC to 1 kHz: ≤ 8 mV or 0,8 A PP
    - DC to 5 kHz: ≤ 12 mV or 1,2 A PP
    - 0,1 Hz to 5 kHz: ≤ 2 mV or 0,2 A PP
  - 600 A range:
    - DC to 1 kHz: ≤ 1 mV or 1 A PP
    - DC to 5 kHz: ≤ 1,5 mV or 1,5 A PP
    - 0,1 Hz to 5 kHz: ≤ 500 µV or 0,5 A PP
- Auto off: 10 minutes (may be disabled at power up)
- Electrical certification: EN 61010-2-32

* Reference conditions: 18 to 28 °C (64 to 84 °F), 20 to 75% relative humidity, external magnetic field < 40 A/m, no DC component, no external current carrying conductor, test sample centered, 1 MΩ ≤ 100 pF load, zero adjustment prior to measurement (DC only) DC to 65 Hz, battery voltage = 9 V, ±0,1 V.

Environmental

- Case protection: IP 30 per IEC 529
- Operating temperature range: −10 to +55 °C (15 to 130 °F)
- Storage temperature range: −40 to +70 °C (−40 to +175 °F)
- Operating relative humidity:
  - 10 to 35 °C (50 to 95 °F), 90% ±5% relative humidity (without condensation)
  - 40 to 55 °C (105 to 130 °F), 70% ±5% relative humidity (without condensation)
- Altitude:
  - Operating: 0 to 2 000 meters (0 to 6 500 ft.)
  - Non-operating: 0 to 12 000 meters (0 to 39 000 ft.)

Mechanical

- Zero adjustment: Automatic zero
- Battery: 9 V alkaline
- Low battery indication: Green LED when battery voltage ≥ 6,5 V
- Battery life: Approximately 120 hours with alkaline battery
- Overload indication: Red LED indicates input greater than the selected range
- Jaw opening: 31 mm (1.2 in.)
- Maximum conductor size:
  - One 30 mm (1.18 in.) conductor, or
  - Two 24 mm (0.95 in.) conductors, or
  - Two bus bars 31,5 × 10,0 mm (1.24 in. × 0.40 in.)
- Dimensions: 224 × 97 × 44 mm (8.80 × 3.82 × 1.73 in.)
- Weight: 440 g (15 oz.)
- Vibration: Test per IEC 68-2-6
- Frequency range:
  - 5 to 15 Hz, Amplitude: 1,50 mm (0.06 in.)
  - 15 to 25 Hz, Amplitude: 1,00 mm (0.04 in.)
  - 25 to 55 Hz, Amplitude: 0,25 mm (0.01 in.)
- Mechanical shock: 100 G, test per IEC 68-2-27

Material

- Output lead: Double/Reinforced insulated 1,5 m (5 ft.)
- Handle: Gray polycarbonate + ABS, UL94 V0
- Jaws: Red polycarbonate, UL94 V0

Ordering information

- **CMAC 5208** AC/DC current clamp, includes an integral cable that connects directly to the SKF Microlog.

SKF

CMCP 850-01 / CMCP 850-02 / CMCP 850-03

SKF Microlog Analyzer field balancing accessory kit

Features

- Two accelerometers with magnetic bases
- Choice of optical or laser phase reference kit
- 7,6 m *(25 ft.)* cables
- Precision electronic balance scale
- Large trial weight kit
- Packaged in a rugged, watertight, hard carrying case

The SKF Microlog Analyzer field balancing accessory kit contains all of the accessories necessary to perform in-place field balancing of rotating machinery. This is a complete kit that provides the necessary transducers, magnetic bases, A/B switch, cables, trial weight kit, precision electronic balance scale, and more, all packaged in a rugged, watertight, hard case that makes balancing easier and more accurate. With the flip of a switch, two channels of vibration data can be input into the SKF Microlog. This eliminates the need to keep moving the vibration sensor back and forth between balance planes. A variety of adapters are included so that you can hook the SKF Microlog to other sensor sources, such as on-line systems and velocity probes.

The CMCP 850 is a complete kit for the SKF Microlog. In short, all you need to add is an SKF Microlog and you are ready to balance pumps, fans, motors, couplings, small turbines and more.

Field balancing kits are available with either the optical or laser phase kits or a laser tachometer kit.

Kit contents

CMCP 850-01 (with Optical Sensor) kit includes

- CMSS 6155XK-U-CE: Optical phase reference kit with universal power supply

CMCP 850-02 (with Laser Sensor) kit includes

- CMSS 6195AX-K: Laser phase reference kit with universal power supply

CMCP 850-03 (with Laser Sensor) kit includes

- CMAC 5030K: Laser tachometer kit, SKF Microlog powered

CMCP 850-01 / CMCP 850-02 / CMCP 850-03 kits include

- CMSS 2100: Accelerometers (two)
- CMSS 908-MD: Medium duty magnetic bases for accelerometers (two)
- CMCP 811: Set of assorted balance weights
- CMCP 625: Two pin 5015 to BNC adapters (two)
- CMSS 6156: Magnetic holder
- CMCP 665-6PIN: 7,6 m *(25 ft.)* BNC to Fisher 103 six pin accelerometer cables (two)
- CMCP 665-7PIN: 7,6 m *(25 ft.)* BNC to Fisher 103 seven pin accelerometer cable (one)
- CMSS T-5: Roll of reflective tape
- 600 g *(21.164 oz.)* digital scale
- Custom vise grips with M8 thread
- Banana to BNC adapters (three)
- Hex key set
- Tape measure
- Stainless steel rule: 15,2 cm *(6 in.)*
- Protractor: 180°, 15,2 cm *(6 in.)*
- Compass
- Clipboard with storage
- Polar plot tablet
- Application notes
- Watertight, hard carrying case

CMSS 6155XK-U-CE

Optical phase reference kit

The CMSS 6155XK-U-CE optical phase reference kit allows you to easily monitor speed and phase angles on any operating machine by triggering off of reflective tape or paint on the shaft surface. The optical phase reference system can measure speed and provide a trigger for absolute and relative phase measurements at distances up to 0,9 m (*3 ft.*).

The purpose of phase measurement

The angular distance between a reference location on a rotating shaft and some point defined on the shaft's vibration waveform (such as the high spot or heavy spot) is commonly called the phase angle. Phase angle is measured for four main reasons:

- Balancing, to locate the proper position on an unbalanced rotor for adding a compensating weight
- Startup and coast down response, to define critical speeds and to assess system damping
- Detecting changes in operating balance, to indicate problems such as changing electrical properties, fan build up and shaft cracks
- Detecting shaft misalignment, resonance and other machinery problems

Methods for establishing a phase reference

Phase angle measurement requires two inputs: a reference pulse triggered once each revolution and a vibration signal. The SKF Microlog triggers off a positive-going or negative-going V DC pulse, depending on how it is configured in the Trigger Slope polarity setting (+ or −) in Trigger Setup.

The once-per-revolution reference pulse required by the SKF Microlog is provided by a non-contact optical sensing system that produces a TTL pulse (5 to 0 V DC) when reflective tape or paint installed on the rotating shaft passes through the sensor's light beam, up to a maximum distance of 0,9 m (*3 ft.*).

The phase angle measuring process

The optical phase reference sensor systems for the SKF Microlog sense machinery speed and output a TTL signal synchronous with machine speed. This output signal is used by the SKF Microlog to measure the absolute phase of a vibration signal.

The phase angle measuring process works by aiming the sensor's light beam, using the optical phase reference sensor, at the reference mark on the rotating shaft. This establishes the zero phase reference relative to the vibration signal component. The vibration transducer produces a complex vibration signal for the process. The optical phase reference sensor sends out a phase reference signal to the SKF Microlog that is synchronous with the shaft speed. The SKF Microlog then reports the magnitude of the vibration component and its phase angle in relation to the vibration transducer.

Interface module

The interface module provides an interface between the optical phase reference sensor and the SKF Microlog. It also provides power to the sensor. The optical phase reference sensor can typically operate for 40 hours continuously using the interface module's internal rechargeable batteries, or indefinitely from the external recharger / power supply (when connected to the interface module).

Features

- Single pulse per revolution TTL trigger source
- Positive and negative pulse outputs
- Self-contained
- Rechargeable batteries
- Green LED on optical sensor indicates "ON" target operation
- Remote wake-up (with Wireless Monitoring System V/T)

The optical phase reference kit consists of a remote optical sensor equipped with a steady state DC light source and photo detector, an interface module, on-off switch, BNC connectors, internal rechargeable batteries and a recharger input. A universal plug-in charger module is also supplied. Standard camera tripods, user-supplied mounting brackets or the optional magnetic holder with movable arm (CMSS 6156) may be used for mounting.

| CMXA 45 |
| CMXA 45/75-Z2 |
| ● CMXA 48 |
| CMXA 48/80-Z2 |
| CMXA 51-IS |
| ● CMXA 70/44 |
| ● CMXA 75 |
| ● CMXA 80 |

Specifications

Interface module

- Power source: Four rechargeable Nickel Metal Hydride NiMH AA batteries provide up to 40 hours of continuous operation; complete recharge requires four hours
- Output signals:
  - TTL positive inverting pulse: 0 to 5 V
  - TTL negative non-inverting pulse: 5 to 0 V – switch selectable
- Bandwidth: 0 to 100 kHz
- Output connectors: BNC connector (female)
- Pulse width: Determined by size of reflective marker and rotational speed of equipment being monitored
- Operating temperature: 0 to 50 °C *(30 to 120 °F)*
- Weight: 235 g *(8.3 oz.)*
- Dimensions: 127 × 64 × 25 mm *(5.0 × 2.5 × 1.0 in.)*

Remote optical sensor

- Speed range: 1 to 250 000 r/min
- Operating envelope: Up to 0,9 m *(3 ft.)* and 45° from reflective target
- Illumination source: Visible red LED, 5 V DC at 30 mA
- Output signal: 5 to 0 V DC TTL compatible pulse
- On-target indicator: Green LED on end cap
- Material: 303 stainless steel
- Lens: Acrylic plastic
- Cable length: 2,4 m *(8 ft.)* from sensor to interface module
- Operating temperature: –10 to +70 °C *(15 to 160 °F)*
- Dimensions: Threaded tube – M16 × 1,5 mm length × 74 mm diameter *(2.9 in. length × 0.625 in. diameter)* supplied with two M16 jam nuts and mounting bracket

Kit contents

- CMSS 6155W-U-CE: Self-powered sensor
- CMSS 6155W: Interface module
- CMAC 5211: BNC tachometer input cable
- CMSS T-5: Reflective tape
- Mounting bracket with two M16 jam nuts
- Universal recharger / power supply with USA, UK, AUS and EURO adapter plugs
- User manual

CMSS 6155W interface module

CMSS 6155W-U-CE self-powered sensor

Universal recharger / power supply with adapters

Mounting bracket and jam nuts

CMSS T-5 reflective tape

CMAC 5211 BNC tachometer input cable

Optional accessories

CMSS 50401 extension cable

CMSS 6156 magnetic holder

Ordering information

- **CMSS 6155XK-U-CE** Optical phase reference kit includes a self-powered sensor, BNC tachometer input cable and user manual.

Optional accessories

- **CMSS 50401** 7,5 mm *(25 ft.)* CMSS 6155W Interface module to optical sensor extension cable
- **CMSS 6156** Optical phase reference magnetic holder with movable arm and remote optical sensor attachment hardware
- **CMSS T-5** Reflective tape for use with remote optical sensor, 1,5 m *(5 ft.)* roll × 12,7 mm *(0.5 in.)* wide

SKF

CMSS 6156

Optical phase reference magnetic holder

The CMSS 6156 optical phase reference holder with magnetic base is designed for use with the CMAC 5030K laser tachometer kit. It is a magnetic holder with a movable arm and remote optical sensor attachment hardware.

Specifications

- Measurements:
  - Magnetic base: 62 × 50 × 55 mm *(2.44 × 1.97 × 2.17 in.)*
  - Height: 240 mm *(9.45 in.)*
- Clamping force: 780 N
- Accessory mounting: 355,6 mm *(14 in.)* camera type stud

Compatibility

The CMSS 6156 optical phase reference magnetic holder is compatible with the following kits:

- CMSS 6155XK-U-CE Optical phase reference kit
- CMSS 6195AX-K Smart laser sensor tachometer kit

CMXA 45

CMXA 45/75-Z2

CMXA 48

CMXA 48/80-Z2

CMXA 51-IS

CMXA 70/44

CMXA 75

CMXA 80

SKF

CMSS 6165K-AX

Strobe light kit

The CMSS 6165 is a truly portable, battery-operated stroboscope that is suited for a wide range of industrial applications and is able to interface with the SKF Microlog CMXA series.

Sturdy and compact, the strobe can be operated anywhere in the plant or field to permit visual inspection (freeze motion), phase shift studies and digital measurement of rotary, reciprocating or linear motion of various equipment while it is in operation. The CMSS 6165 strobe light has a special "tuning" circuit that allows it to track vibration transducer (accelerometer) signals. This capability makes it different from general purpose strobe lights. It also has a narrow and wide bandwidth filter selection to discriminate fundamentals from harmonics. The narrow bandwidth filter limits the influence of harmonics around the selected frequency, providing a more stable phase reading.

The CMSS 6165 requires an input signal to synchronize the flash rate with an external source, typically a vibration transducer in the tracking mode or optical pickup in the external mode. Using a cable, this signal is applied to the input jack connector on the side of the strobe light. The CMSS 6165 generates a tachometer signal available on the output jack. The CMSS 6165K-AX strobe light kit is ideally suited for:

- Balancing
- Inspection of high speed rotating parts
- Motion analysis or phase shift measurement
- Over-speed trip tests
- On line coupling inspections
- r/min / r/sec measurements
- All applications suited to a general purpose, phase shifting stroboscope

Specifications

- Time base: Ultra stable crystal oscillator
- Display: LCD with six numeric digits 12,7 mm (0.5 in.) high
- Indicators: Battery level, on target, TIME, AUTO, ALT, TACH, LOCK and EXT icons
- Knob adjustment: Digital rotary switch with 36 detents per revolution; velocity sensitive
- Memory: Last setting before power down is remembered and restored on next power up; nine user flash rates can be set
- Output pulse: 40 microseconds positive/negative pulse (menu selectable), 3,3 V DC typical
- Input power: Internal rechargeable batteries 6 V DC, external AC recharger (115 to 230 V AC)

| CMXA 45 |
| CMXA 45/75-Z2 |
| CMXA 48 |
| CMXA 48/80-Z2 |
| CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 |
| CMXA 80 |

- Light output:
  - Average: 11 W at 3 000 flashes per minute, > 13 W above 3 450 flashes per minute
  - Instantaneous (per flash): 230 mJoule typical to 3 450 flashes per minute
- Flash duration: 10 to 25 microseconds (auto adjust with flash rate)
- Flash tube (lamp) life: 100 million flashes
- Run time: Two hours typical at 1 800 flashes per minute and over one hour at 6 000 flashes per minute with fully charged batteries
- Charge time: Four to five hours typical with PSC–pbxU
- Weight: 0,8505 kg (1.875 lbs.) including batteries

This product is designed to be safe for indoor use under the following conditions (per IEC61010-1):

- Operating temperature*: 0 to 40 °C (30 to 105 °F)
- Humidity: Maximum relative humidity 80% for temperatures up to 30 °C (90 °F), decreasing linearly to 50% relative humidity at 40 °C (105 °F)
- Flash range: 30 to 50 000 flashes per minute
- Tachometer measurements: 5 to 250 000 r/min
- Tracking filter: Selectable wide and narrow bandwidths; the filter may not lock below 100 flashes per minute
- External input: 10 or 100 mVg accelerometer (powered by an analyzer or by the strobe, menu selectable)

* Safety thermal feature will set unit into TACH Mode (stops flashing) in the event of internal overheating.

Note: The CMSS 6165 strobe light is not approved for use in hazardous locations.

Kit contents

- CMSS 6165: Strobe light
- CMAC 5404: Cable – Input to strobe light from the SKF Microlog
- CMAC 5406: Cable – output from strobe light to the SKF Microlog
- Accelerometer input cable with BNC connector, 2 m *(6.56 ft.)*
- BNC to BNC union connector
- CMAC 5405: Universal power supply / recharger (not compatible with older SKF Microlog models)
- 58-100-0290: Strobe light jacket and shoulder strap
- 58-100-1650: Spare lamp
- Protective carrying/storage case
- User manual

CMSS 6165 strobe light

CMAC 5404 strobe light input cable

CMAC 5406 strobe light output cable

Accelerometer input cable and BNC to BNC union connector

CMAC 5405 universal power supply / recharger

Carrying case (open)

58-100-0290 strobe light jacket and shoulder strap

58-100-1650 spare lamp

Carrying case (closed)

Optional accessories

CMSS 6165-SPC strobe light cover

Ordering information

- **CMSS 6165K-AX** Strobe light kit, includes a strobe light, cables, power supply, spare lamp, jacket and shoulder strap, carrying case, user manual, certificate of conformance and calibration certificate.

Optional accessories and replacement parts

- **CMAC 5404** Cable: Input to CMSS 6165 strobe light from SKF Microlog
- **CMAC 5405** Universal power supply / recharger 115/230 V AC for use with new model CMSS 6165 strobe light
- **CMAC 5406** Cable: Output from CMSS 6165 strobe light to SKF Microlog
- **CMSS 6165-SPC** Cover, clear plastic, splash-proof for CMSS 6165 strobe light
- **58-100-0290** CMSS 6165 strobe light jacket and shoulder strap for hands-free transport
- **58-100-1650** Strobe lamp

SKF

CMSS 6195AX-K

Smart laser sensor tachometer

The CMSS 6195AX-K smart laser sensor tachometer from SKF adds a powerful dimension to the capabilities of the SKF Microlog Portable Data Collector / FFT Analyzer. Ideal for measurement modes such as order/tracking analysis and synchronous time averaging, the smart laser sensor tachometer is an essential tool for the pro-active machinery analyst.

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Features

- "Smart" auto gain provides best performance in picking up target reflections
- Up to 19,8 m *(65 ft.)* maximum distance – sensor to target
- "On Target" indicator allows correct reflection path and accurate measurement
- Manual sensitivity knob provides dynamic fine-tuning of sensor response
- On/Off or charge switch
- Power / Battery condition indicator
- Class 3R visible laser and nose piece
- Accurate measurements from low contrast surfaces
- Normal operation in high ambient light environments
- External DC power or recharger port
- Tripod mounting bushing ($^1/_4$–20 UNC)

Specifications

- Laser: Visible red laser diode (650 nm) 3 mW peak power
- Classification: Class 3R laser product (per IEC60825-1)
- Beam diameter: 4 × 7 mm *(0.157 × 0.275 in.)* typical at 2 m *(6.56 ft.)*
- Laser diode life: 8 000 hours MTBF
- Operating range: Up to 19,8 m *(65 ft.)*, depending on target
- r/min range: 1 to 150 000 r/min
- Minimum trigger duration: 10 µs
- Power requirement: Internal rechargeable battery

- Charger: 100 to 240 V AC, 50 to 60 Hz with USA, UK, AUS and EURO adapter plugs
- Output signals:
  - TTL positive inverting pulse: 0 to 5 V
  - TTL negative non-inverting pulse: 5 to 0 V
- Output connector: DIN-5
- Indicators: On-target, laser on
- Sensitivity adjust: Single knob on top panel
- Modes: Normal, auto and charging
- Dimensions: 137,41 × 59,69 × 54,36 mm *(5.41 × 2.35 × 2.14 in.)*
- Weight: 300 g *(10.6 oz.)*, excluding cable
- Mounting: $^1/_4$–20 UNC bushing (tripod mount)
- Temperature:
  - Operating: -20 to +50 °C *(-5 to +120 °F)*
  - Storage: -30 to +60 °C *(-20 to +140 °F)*
- Humidity: 90% relative humidity, non-condensing

Kit contents

- CMSS 6195A: Self-powered sensor with smart laser sensor tachometer
- CMAC 5211: BNC tachometer input cable
- SLS-CA-BNC: BNC to five pin DIN cable, 2,5 m (*8 ft.*)
- 115/230 V AC universal charger with adapter plugs
- BNC to BNC coupling
- CMSS T-5: Reflective tape

CMSS 6195A self-powered sensor with smart laser tachometer

CMAC 5211 BNC tachometer input cable

SLS-CA-BNC cable

Universal charger with adapter plugs

BNC to BNC coupling

CMSS T-5 reflective tape

Optional accessories

CMSS 6156 magnetic holder

Ordering information

- **CMSS 6195AX-K** Smart laser sensor tachometer kit, includes a self-powered sensor complete with a smart laser sensor tachometer, 115 V AC / 230 V AC universal charger with USA, UK, AUS and EURO adapter plugs, 2,5 m (*8 ft.*) SLS-CA-BNC cable and reflective tape.

Optional accessories

- **CMSS 6156** Magnetic holder with movable arm and laser sensor attachment hardware
- **CMSS T-5** Reflective tape for use with the smart laser sensor tachometer, 1,5 m × 12,7 mm (*5 ft. × 0.5 in.*)

SKF

Power

CMAC 5031

Battery

The 7,2 V Lithium-Ion 2,6 Ah rechargeable battery pack provides customers with eight hours of continuous data collection or 20 hours idle. The charging time is 2,5 hours.

Specifications

Electrical

- Nominal voltage: 7,2 V
- Nominal capacity: 2,6 Ah
- Operating time:
  - Eight hours continuous data collection
  - 20 hours idling in a process product
- Charge time: 2,5 hours

Environmental

- Temperature range:
  - Charging: 0 to 45 °C (*30 to 115 °F*)
  - Rapid charge: 10 to 45 °C (*50 to 115 °F*)
  - Discharging: −20 to +60 °C (*−5 to +140 °F*)
  - Storage:
    - 1 week: −20 to +50 °C (−5 to +120 °F)
    - 6 months: −20 to +35 °C (−5 to +95 °F)

Physical

- Dimensions: 70,5 × 38,5 × 20,5 mm (*2.78 × 1.52 × 0.81 in.*)
- Weight: 103 g (*3.6 oz.*)
- Drop tested to MIL810E, 2 m (*6.6 ft.*) when installed in a CMXA 70 or CMXA 75

Protection

	Minimum	Typical	Maximum
• Over current (A):	–	5,2	–
• Short-circuit (A):	–	3,5	–
• Over voltage (V):	8,50	8,6	8,70
• Under voltage (V):	4,25	4,5	4,75

Approvals

- Emissions: EN61000-6-4:2001 Severity Level Class A
- Immunity: EN61000-6-2:2001 Severity Level Class A
- CSA: Class I, Division 2 Gas groups A, B, C and D (Canadian and US standards) when installed in a CMXA 70 or CMXA 75
- ATEX: EX II 3 G Ex ic IIC T4 Gc T_a = −10 to +50 °C (*15 to 120 °F*) when installed in a CMXA 75
- IECEx: Ex ic IIC T4 Gc T_a = −10 to +50 °C (*15 to 120 °F*) when installed in a CMXA 75
- Transportation: UN Directive ST / SG / AC.10/11 Rev.4, Part 111, sub-section 38.3
- Equivalent Lithium content: 1,47 g (*0.0519 oz.*)

●	CMXA 45
●	CMXA 45/75-Z2
	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
	CMXA 80

Ordering information

- **CMAC 5031** Battery.

SKF

CMAC 5070

Battery

The 7,2 V Lithium-Ion 6 600 mAh rechargeable battery pack provides customers with eight hours of continuous data collection or 10 hours idle. Charging time is six hours. The battery can be charged in the instrument through the docking station (CMAC 5068).

| CMXA 45 |
| CMXA 45/75-Z2 |
| ● CMXA 48 |
| CMXA 48/80-Z2 |
| CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 |
| ● CMXA 80 |

Specifications

Electrical

- Nominal voltage: 7,4 V
- Nominal capacity: 6,6 Ah
- Operating time:
  - Eight hours continuous data collection
  - Ten hours idling in a process product
- Charge time: 6 hours (in suspend mode)

Environmental

- Temperature range:
  - Charging: 10 to 45 °C (50 to 115 °F)
  - Discharging: –10 to +60 °C (15 to 140 °F)
  - Storage (1 year): –20 to +20 °C (–5 to +70 °F)

Physical

- Dimensions: 110,3 × 19,5 × 72,0 mm (4.34 × 0.77 × 2.83 in.)
- Weight: 290 g (10.2 oz.)

Protection

	Minimum	Typical	Maximum
• Over current (A):	5,00	8,33	8,89
• Short-circuit (A):	14,82	33,33	43,61
• Over voltage (V):	8,65	8,70	8,75
• Under voltage (V):	4,40	4,60	4,76

Approvals

- Emissions: EN61000-6-4:2001 Severity Level Class A
- Immunity: EN61000-6-2:2001 Severity Level Class A
- CSA: Class I, Division 2 Gas groups A, B, C and D (Canadian and US standards)
- Transportation: UN Directive ST / SG / AC.10 / 11 / Rev.3
- Equivalent Lithium content: 3,96 g (0.1397 oz.)

CMAC 5092

Battery, ATEX

The 7,2 V Lithium-Ion 6 600 mAh rechargeable battery pack provides customers with eight hours of continuous data collection or 10 hours idle. Charging time is six hours. The battery can be charged in the instrument through the docking station (CMAC 5068).

	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
●	CMXA 48/80-Z2
	CMXA 51-IS
	CMXA 70/44
	CMXA 75
●	CMXA 80

Specifications

Electrical

- Nominal voltage: 7,2 V
- Nominal capacity: 47,5 Wh/6,6 Ah
- Operating time:
  - Eight hours continuous data collection
  - 10 hours idling in a process product
- Charge time: Six hours (in suspend mode)

Environmental

- Temperature range:
  - Charging: 10 to 45 °C (*50 to 115 °F*)
  - Discharging: –10 to +60 °C (*15 to 140 °F*)
  - Storage (1 year): –20 to +20 °C (*–5 to +70 °F*)

Physical

- Dimensions: 110,3 × 19,5 × 72,0 mm (*4.34 × 0.77 × 2.83 in.*)
- Weight: 290 g (*10.2 oz.*)

Protection

	Minimum	Typical	Maximum
• Over current (A):	5,00	8,33	8,89
• Short-circuit (A):	14,82	33,33	43,61
• Over voltage (V):	8,65	8,70	8,75
• Under voltage (V):	4,40	4,60	4,76

Approvals

- Emissions: EN61000-6-4:2001 Severity Level Class A
- Immunity: EN61000-6-2:2001 Severity Level Class A
- CSA: Class I, Division 2 Gas groups A, B, C and D (Canadian and US standards)
- ATEX:
  - EN60079-0:2006, EN60079-11:2007
  - EX II 3 G Ex ic IIC T4 Gc T_a = –10 to +50 °C (*15 to 120 °F*)
- IECEx:
  - IEC 60079-0 (Ed.4.0); IEC 60079-11 (Ed.5)
  - Ex ic IIC T4 Gc T_a = –10 to +50 °C (*15 to 120 °F*)
- Transportation: UN Directive ST / SG / AC.10 / 11 / Rev.3
- Equivalent Lithium content: 3,96 g (*0.1397 oz.*)

Ordering information

- **CMAC 5092** Battery.

SKF

CMAC 5090

Universal power supply (non-IS)

The CMAC 5090 universal power supply is used for connecting the docking station to the power cord. This power adapter delivers power to the SKF Microlog while charging the battery when inside the instrument. It also features a connector to mate with the USB/splitter cable (CMAC 5095) or the docking station (CMAC 5068). Since this universal power supply can support 100 to 240 V input, it also comes with USA, UK, AUS and EURO adapter plugs.

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

CMAC 5105

Battery

The CMAC 5105 battery is the only ATEX certified battery pack to be used with the CMXA 51-IS unit. Please read the Battery Documentation in the CD included in all applicable kits for important information on this item.

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Specifications

- Type: NiMH
- Capacity: 1 800 mAh
- Operating time: 8 hours
- Charge time: 8 hours
- Dimensions: 66 × 55 × 21 mm (*2.60 × 2.17 × 0.83 in.*)

CMAC 5110

Power supply

	CMXA 45
	CMXA 45/75–Z2
	CMXA 48
	CMXA 48/80–Z2
●	CMXA 51–IS
	CMXA 70/44
	CMXA 75
	CMXA 80

The CMAC 5110 power adapter charges and powers the battery when connected to the CMXA 51-IS unit; however, it should only be used outside hazardous areas.

Note: The CMAC 5110 power supply requires a country–specific power cord.

Specifications

- Voltage rating: 8,6 V
- Current rating: 0,6 A
- Cable length requirement: 1 m, ±50 mm *(3.3 ft., ±2 in.)*

Ordering information

- **CMAC 5110** Power supply (IS).

CMAC 5405

Strobe light power supply

●	CMXA 45
	CMXA 45/75–Z2
●	CMXA 48
	CMXA 48/80–Z2
	CMXA 51–IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

The CMAC 5405 universal power supply / recharger supplies 115 or 230 V AC for use with the CMSS 6165 strobe light. The power supply also comes with both US and European adapter cables.

Ordering information

- **CMAC 5405** Strobe light power supply, includes US and European adapter cables.

SKF

Miscellaneous accessories

Idler sound monitor accessories

SKF spindle assessment accessories

SKF

CMAC 5010

Shoulder strap

This shoulder strap fastens directly to the rubber boot (CMAC 5015) or to the instrument itself. The strap features a metal plate to hold the sensor/magnet.

CMXA 45

CMXA 45/75-Z2

CMXA 48

CMXA 48/80-Z2

CMXA 51-IS

● CMXA 70/44

● CMXA 75

CMXA 80

Ordering information

• **CMAC 5010** Shoulder strap.

CMAC 5073

Shoulder strap

The CMAC 5073 shoulder strap is adjustable and features a removable steel plate that has been designed to hold a few transducers (if fitted with a magnetic mount). This plate is attached via two heavy-duty press studs and can be removed if not required. The strap also has a safety breakaway. The breakaway strength is adjustable and may be set to break easily or not so easily – to user preference.

CMXA 45

CMXA 45/75-Z2

● CMXA 48

● CMXA 48/80-Z2

CMXA 51-IS

CMXA 70/44

CMXA 75

● CMXA 80

Ordering information

• **CMAC 5073** Shoulder strap.

CMAC 5113

Shoulder strap, leather, hazardous areas

The CMAC 5113 shoulder strap is part of the SKF Microlog ATEX certification; it may be affixed to the SKF Microlog while in use in a hazardous area.

- ● CMXA 45
- ● CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- ● CMXA 51-IS
- ● CMXA 70/44
- ● CMXA 75
- CMXA 80

Ordering information

- **CMAC 5113** Shoulder strap, leather, hazardous areas.

CMAC 5020

Hand strap

The hand strap is provided in all kits and is designed for easier and safer operations of the instrument. It enables the operator to hold onto the unit with one hand and still press the keypad and fire buttons. The hand strap fastens directly to the rubber boot or instrument. It does not include a stylus, although it is equipped with a stylus holder.

- ● CMXA 45
- ● CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- ● CMXA 51-IS
- ● CMXA 70/44
- ● CMXA 75
- CMXA 80

Ordering information

- **CMAC 5020** Hand strap.

SKF

CMAC 5072

Hand strap

	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
●	CMXA 48/80-Z2
	CMXA 51-IS
	CMXA 70/44
	CMXA 75
●	CMXA 80

The hand strap is provided in all kits and is designed for easier and safer operations of the instrument. It enables the operator to hold onto the unit with one hand and still press the keypad and fire buttons. The hand strap fastens directly to the instrument.

Ordering information

- **CMAC 5072** Hand strap.

CMAC 5024

Instrument soft cover

●	CMXA 45
	CMXA 45/75-Z2
	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
	CMXA 80

This protective carrying case is designed to provide additional protection to the SKF Microlog. This instrument cover is to be used with the leather shoulder strap (CMAC 5113), which is sold separately.

Ordering information

- **CMAC 5024** Instrument soft cover.

CMAC 5071

Soft case

The CMAC 5071 soft case includes a plastic protective sleeve and a pouch that snaps to the back of the sleeve to hold cables, etc. These two pieces are only sold together.

CMXA 45

CMXA 45/75-Z2

● CMXA 48

CMXA 48/80-Z2

CMXA 51-IS

CMXA 70/44

CMXA 75

● CMXA 80

Ordering information

- **CMAC 5071** Soft case, includes protective sleeve and pouch.

CMAC 5111

Carrying pouch, leather, hazardous areas

The CMAC 5111 carrying pouch is part of the SKF Microlog ATEX certification; the unit may be in the carrying pouch while in use in a hazardous area.

CMXA 45

CMXA 45/75-Z2

CMXA 48

CMXA 48/80-Z2

● CMXA 51-IS

CMXA 70/44

CMXA 75

CMXA 80

Ordering information

- **CMAC 5111** Carrying pouch, leather, hazardous areas.

SKF

CMAC 5015

Rubber boot

This protective rubber boot (sleeve) is designed to provide additional protection to the SKF Microlog. While it is made out of heavy-duty rubber, the shoulder strap (CMAC 5010) should also be purchased.

Note: The CMAC 5015 is shipped with the SKF Microlog CMXA 51-IS to meet the IECEx requirements.

●	CMXA 45
●	CMXA 45/75-Z2
	CMXA 48
	CMXA 48/80-Z2
●	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
	CMXA 80

Specifications

- Temperature range: −60 to +130 °C (−75 to +265 °F)
- Material: Santoprene 8000 rubber
- Weight: 130 g (4.6 oz.)
- Dimensions: 20,0 × 12,5 cm (7.9 × 4.9 in.)

CMAC 5026

Carrying case (location for printer)

The CMAC 5026 carrying/service case contains a location for a portable printer. The case includes foam cutouts for the SKF Microlog unit, six accelerometers, a power supply and spare battery. The case also includes a pouch for the power cord and cables, as well as an elastic strap with a clip fastener used for holding the manual/documentation. The black case is made of double skinned ABS material, weighs 1 kg (2.2 lb.) and has dimensions of 45 × 35 × 17 cm (17.7 × 13.8 × 6.7 in.).

●	CMXA 45
	CMXA 45/75-Z2
	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
	CMXA 80

CMAC 5029

Carrying case, hard shell

The CMAC 5029 hard carrying case includes foam cutouts for the SKF Microlog, accelerometers and magnetic bases.

●	CMXA 45
●	CMXA 45/75–Z2
	CMXA 48
	CMXA 48/80–Z2
	CMXA 51–IS
●	CMXA 70/44
●	CMXA 75
	CMXA 80

Ordering information

- **CMAC 5029** Carrying case, hard shell.

CMAC 5069

Carrying case, hard shell

The CMAC 5069 hard carrying case includes foam cutouts for the SKF Microlog, accelerometers and magnetic bases. When opened, the cover includes a pouch for storing cables.

	CMXA 45
	CMXA 45/75–Z2
●	CMXA 48
●	CMXA 48/80–Z2
	CMXA 51–IS
	CMXA 70/44
	CMXA 75
●	CMXA 80

Ordering information

- **CMAC 5069** Carrying case.

SKF

CMAC 5118

Carrying case, hard shell

The CMAC 5118 carrying case is utilized to transport and store the SKF Microlog and its accessories. However, it requires approval by the site's safety officer prior to entering a hazardous area.

CMXA 45
CMXA 45/75-Z2
CMXA 48
CMXA 48/80-Z2
● CMXA 51-IS
CMXA 70/44
CMXA 75
CMXA 80

CMAC 5075

Fischer and audio connector cover set (3)

The CMAC 5075 kit consists of a set of three Fisher connector covers, including two type 103 covers and one type 102 cover.

● CMXA 45
● CMXA 45/75-Z2
● CMXA 48
● CMXA 48/80-Z2
CMXA 51-IS
CMXA 70/44
● CMXA 75
● CMXA 80

CMAC 5083

SDIO and dock connector cover

The CMAC 5083 SDIO and dock connector cover attaches to the bottom of the SKF Microlog with two screws and a tether. The cover protects the SD memory card slot and docking station connectors in harsh environments.

CMXA 45
CMXA 45/75-Z2
● CMXA 48
● CMXA 48/80-Z2
CMXA 51-IS
CMXA 70/44
CMXA 75
● CMXA 80

Ordering information

• **CMAC 5083** SDIO and dock connector cover.

CMAC 5068

Docking station

The CMAC 5068 docking station is used for docking the SKF Microlog while supplying it with power. This docking station requires the CMAC 5090 universal power supply.

CMXA 45
CMXA 45/75-Z2
● CMXA 48
● CMXA 48/80-Z2
CMXA 51-IS
CMXA 70/44
CMXA 75
● CMXA 80

Ordering information

• **CMAC 5068** Docking station.

SKF

CMAC 5074

Screen protector

The CMAC 5074 screen protector helps keep the LCD plastic cover of the SKF Microlog from scratching. CMAC 5074 includes a set of five non-glare, self-adhesive screen protectors.

CMXA 45

CMXA 45/75-Z2

● CMXA 48

CMXA 48/80-Z2

CMXA 51-IS

CMXA 70/44

CMXA 75

● CMXA 80

Ordering information

- **CMAC 5074** Screen protector (includes five).

CMAC 6139

Screen protector

The CMAC 6139 screen protector helps keep the LCD plastic cover of the SKF Microlog from scratching. CMAC 6139 includes a set of five replacement screen protectors.

● CMXA 45

CMXA 45/75-Z2

CMXA 48

CMXA 48/80-Z2

CMXA 51-IS

CMXA 70/44

● CMXA 75

CMXA 80

Ordering information

- **CMAC 6139** Screen protector (includes five).

CMAC 5077

SD memory card (4 GB)

CMAC 5077 is a 4 GB SanDisk (SD) memory card for use in the SKF Microlog. Note that the SKF Microlog series only supports SD cards (up to 16 GB); the SD memory card is the only CSA agency-approved memory card for the SKF Microlog.

Specifications
- 3,3 V DC
- 10 µF maximum
- 4 GB

A 4 GB version of the SD card is included with each SKF Microlog kit. Use of any other brand of SD card will result in invalidation of the instruments' CSA agency certification.

●	CMXA 45
●	CMXA 45/75-Z2
●	CMXA 48
●	CMXA 48/80-Z2
●	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

Ordering information

- **CMAC 5077** SD memory card (4 GB).

CMAC 5251

Stylus (IS)

The CMAC 5251 stylus for the SKF Microlog is safe for use in hazardous areas; any other kind of stylus would require approval from the site's safety officer.

	CMXA 45
	CMXA 45/75-Z2
	CMXA 48
	CMXA 48/80-Z2
●	CMXA 51-IS
	CMXA 70/44
	CMXA 75
	CMXA 80

Ordering information

- **CMAC 5251** Stylus (IS).

SKF

CMAC 5403

Audio headset, hard hat compatible

The CMAC 5403 audio headset connects to the SKF Microlog and allows users to listen to the audio output as an aid to machinery diagnostics (such as with the Idler Sound Monitor). The headphones are high quality and industrial grade. Special earpiece cups reduce surrounding noise and are softly molded to provide comfort during extended wear. The adjustable fabric head strap and neck band are designed for environments where a hard hat must be worn. The audio connection includes a standard 3,5 mm (*0.14 in.*) jack plug.

Note: To use the audio headset, the CMAC 5078 audio headphone cable is required.

- CMXA 45
- CMXA 45/75–Z2
- CMXA 48
- CMXA 48/80–Z2
- CMXA 51–IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Ordering information

- **CMAC 5403** Audio headset, hard hat compatible.

Optional availability

The CMAC 5403 audio headset is also available in the following two kits:
- **CMAC 5410** Idler sound monitor accessory kit for SKF Microlog models CMXA 45 and CMXA 75.
- **CMAC 5411** Idler sound monitor accessory kit for SKF Microlog models CMXA 80 and CMXA 48 (kit does not contain CMAC 5142 adapter plate).

CMAC 5222

Labels for measurement locations

The CMAC 5222 labels are used for marking measurement locations (points) during condition monitoring. These preprinted labels (stickers) are numbered with horizontal (H), vertical (V) and axial (A) designations.

Note: These preprinted labels are also available in the SKF Marine Condition Monitoring kit.

- CMXA 45
- CMXA 45/75–Z2
- CMXA 48
- CMXA 48/80–Z2
- CMXA 51–IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Ordering information

- **CMAC 5222** Labels for measurement locations (qty. 100).

Idler sound monitor accessories

CMAC 5078

Audio headphone straight cable

The CMAC 5078 cable connects the CMAC 5403 audio headset to the SKF Microlog.

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
	CMXA 70/44
●	CMXA 75
●	CMXA 80

Specifications

- Connectors: Fischer type 103 seven pin to female audio
- Length: 20 cm (*7.9 in.*) straight

Ordering information

- **CMAC 5078** Audio headphone straight cable.

Optional availability

The CMAC 5078 cable is also available in the following two kits:
- **CMAC 5410** Idler sound monitor accessory kit for SKF Microlog models CMXA 45 and CMXA 75.
- **CMAC 5411** Idler sound monitor accessory kit for SKF Microlog models CMXA 80 and CMXA 48 (kit does not contain CMAC 5142 adapter plate).

CMAC 5091

Microphone with preamplifier

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
	CMXA 70/44
●	CMXA 75
●	CMXA 80

The CMAC 5091 is a high frequency microphone used with the idler sound monitor. The constant current microphone enables acoustic type monitoring and is designed with a preamplifier.

The microphone is housed within the CMAC 5141 parabolic reflector and connected to the SKF Microlog via the CMAC 5093 microphone cable (CMAC 5141 and CMAC 5093 are sold separately).

When used with the parabolic reflector, the microphone can detect faulty idlers from up to 3 m (*10 ft.*) away.

Note: Refer to **page 56** for specifications on the microphone.

Note: The CMAC 5091 microphone is the same microphone as supplied with the CMAC 5084 microphone kit. The CMAC 5091 is sold separately as a replacement microphone for the idler sound monitor kit.

Ordering information

- **CMAC 5091** Microphone with preamplifier.

Optional availability

The CMAC 5091 microphone is also available in the following two kits:
- **CMAC 5410** Idler sound monitor accessory kit for SKF Microlog models CMXA 45 and CMXA 75.
- **CMAC 5411** Idler sound monitor accessory kit for SKF Microlog models CMXA 80 and CMXA 48 (kit does not contain CMAC 5142 adapter plate).

Idler sound monitor accessories (continued)

CMAC 5093

Signal input straight cable (microphone cable)

The CMAC 5093 cable has a BNC connector on one end to connect to the CMAC 5091 microphone and a Fischer connector on the other end to connect to the SKF Microlog.

Specifications

- Connectors: Fischer type 103 six pin to BNC
- Length: 51 cm (*20 in.*) coiled

● CMXA 45
CMXA 45/75–Z2
● CMXA 48
CMXA 48/80–Z2
CMXA 51–IS
CMXA 70/44
● CMXA 75
● CMXA 80

Ordering information

- **CMAC 5093** Signal input straight cable (microphone cable).

Optional availability

The CMAC 5093 cable is also available in the following two kits:
- **CMAC 5410** Idler sound monitor accessory kit for SKF Microlog models CMXA 45 and CMXA 75.
- **CMAC 5411** Idler sound monitor accessory kit for SKF Microlog models CMXA 80 and CMXA 48 (kit does not contain CMAC 5142 adapter plate).

CMAC 5141

Parabolic reflector

The CMAC 5141 parabolic reflector is an impact resistant case that holds the CMAC 5091 microphone. The parabolic reflector focuses sounds to the microphone and protects the microphone from damage.

The parabolic reflector can either be held in the hand or attached to the SKF Microlog via the optional CMAC 5142 adapter plate (for models CMXA 45 and CMXA 75 only).

When used with the high frequency microphone, faulty idlers can be detected from up to 3 m (*10 ft.*) away.

On windy days, an optional wind jammer (CMAC 5143) can be fit over the parabolic reflector to reduce wind noise.

● CMXA 45
CMXA 45/75–Z2
● CMXA 48
CMXA 48/80–Z2
CMXA 51–IS
CMXA 70/44
● CMXA 75
● CMXA 80

Ordering information

- **CMAC 5141** Parabolic reflector.

Optional availability

The CMAC 5141 parabolic reflector is also available in the following two kits:
- **CMAC 5410** Idler sound monitor accessory kit for SKF Microlog models CMXA 45 and CMXA 75.
- **CMAC 5411** Idler sound monitor accessory kit for SKF Microlog models CMXA 80 and CMXA 48 (kit does not contain CMAC 5142 adapter plate).

CMAC 5142

Adapter plate

The CMAC 5142 adapter plate (with locking screw) is used to attach the CMAC 5141 parabolic reflector to the back of the SKF Microlog (models CMXA 45 and CMXA 75 only).

With the adapter plate attached to the back of the SKF Microlog, the included velcro strap neatly holds the CMAC 5093 cable in place.

| CMXA 45 ● |
| CMXA 45/75-Z2 |
| CMXA 48 |
| CMXA 48/80-Z2 |
| CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 ● |
| CMXA 80 |

Ordering information

- **CMAC 5142** Adapter plate.

Optional availability

The CMAC 5142 adapter plate is also available in the following kit:
- **CMAC 5410** Idler sound monitor accessory kit for SKF Microlog models CMXA 45 and CMXA 75.

CMAC 5143

Wind jammer

The CMAC 5143 wind jammer is used to reduce wind noise that the microphone may pick up. With its integrated elastic band, the wind jammer stretches over the CMAC 5141 parabolic reflector until snug.

| CMXA 45 ● |
| CMXA 45/75-Z2 |
| CMXA 48 ● |
| CMXA 48/80-Z2 |
| CMXA 51-IS |
| CMXA 70/44 |
| CMXA 75 ● |
| CMXA 80 ● |

Ordering information

- **CMAC 5143** Wind jammer.

Optional availability

The CMAC 5143 wind jammer is also available in the following two kits:
- **CMAC 5410** Idler sound monitor accessory kit for SKF Microlog models CMXA 45 and CMXA 75.
- **CMAC 5411** Idler sound monitor accessory kit for SKF Microlog models CMXA 80 and CMXA 48 (kit does not contain CMAC 5142 adapter plate).

SKF

SKF spindle assessment accessories

CMAC 5121 / CMAC 5122
Pull force gauges

Pull force gauges are compact measuring devices used to check the force of the tool being pulled into the spindle taper. The specified pull force is very important for the quality of machining. Using the pull force gauge in preventive maintenance schedules will allow you to notice a reduction of the pull force and prevent problems before they occur. The pull force gauge minimizes the down times for your machines. Two different gauges are available:

- CMAC 5121: Measures pull force from 2,5 to 20,0 kN
- CMAC 5122: Measures pull force from 10,0 to 75,0 kN

Conventional gauges measure in accordance to the nominal component dimension. The manufacturing related tolerance range of the components could cause a false measuring result. CMAC 5121 and CMAC 5122 offer the possibility to take these tolerances into consideration during the measuring process.

All SK work holders from SK30 to SK60 (DIN/ISO/ANSI) and all HSK work holders according to DIN 69893 (HSK-A 32/B 40 to HSK-A 125/B 160) can be used.

Features
- Suitable for all types of clamping systems, regardless of manufacturer
- Exchanging adapters can be used for all tapered standards and sizes (SK, ANSI, BT, MAS, HSK, CAPTO and special standards)
- The system is light, compact, very easy to use and suitable for difficult space conditions
- The measured force is easily read on the LED display in kN, even in difficult lighting conditions
- Power supply includes a standard 9 V DC battery (Auto/Power/Off)
- Gripping channel for automatic changing and positioning in the tool magazine
- Automatic mode activates the pull force gauge by itself during the tool changing
- Adjustable tolerance range to simulate the range of the tool/spindle (±1 mm increments)
- Energy saving mode for long battery duration
- Internal memory stores up to 8 000 measurements (machine ID, date, time, pull force, adjusted range)
- USB connection to download the internal memory and charge the integrated battery
- Operating temperature range between 15 to 35 °C (*60 to 95 °F*)
- Maximum weight: 1,5 kg (*3.3 lb.*)

	CMXA 45
●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80

If the pull force falls below a specified value that will eventually occur due to mechanical fatigue (e.g., spring wear, breakage, etc.), then one or more of the following will result:

- Tool wear will significantly increase
- The tool vibrates and leaves a bad surface finish
- Fretting occurs in the spindle taper and tool holders
- Unexpected tool breakage
- Reduced tool life
- Safety of the machine operator is at risk

Early preventive actions can be taken to avoid unnecessary machine shut down and to avoid a number of other problems that cannot be defined (e.g., excessive tool wear, loss of tool life and tool breakage).

Accessories are available to extend the Spindle Assessment kit utilization and to maximize the utilization of the Spindle Test module firmware.

Ordering information

- **CMAC 5121** Pull force gauge, 2,5 to 20,0 kN (base unit).
- **CMAC 5122** Pull force gauge, 10,0 to 75,0 kN (base unit).

SKF spindle assessment accessories (continued)

CMAC 5123 through CMAC 5125

Pull force gauge taper rings

The CMAC 5123, CMAC 5124 and CMAC 5125 taper rings are used with the CMAC 5121 or CMAC 5122 pull force gauge. These different sized taper rings can be interchanged based on the size needed. The different sizes of taper rings available are as follows:

- CMAC 5123: SK30 (ISO/MAS)
- CMAC 5124: SK40 (ISO/MAS)
- CMAC 5125: SK50 (ISO/MAS)

These taper rings are used with the corresponding ISO and MAS adapters (CMAC 5126 through CMAC 5130). Accessories are available to extend the Spindle Assessment kit utilization and to maximize the utilization of the Spindle Test module firmware.

● CMXA 45
CMXA 45/75-Z2
● CMXA 48
CMXA 48/80-Z2
CMXA 51-IS
● CMXA 70/44
● CMXA 75
● CMXA 80

CMAC 5126 through CMAC 5136

Pull force gauge adapters

These adapters are used with the CMAC 5121 or CMAC 5122 pull force gauge. These different sized adapters can be interchanged based on the size needed.

Refer to the ordering information for the different sizes of adapters that are available.

The ISO and MAS adapters (CMAC 5126 through CMAC 5130) are used with the corresponding taper rings (CMAC 5123, CMAC 5124 or CMAC 5125). Accessories are available to extend the Spindle Assessment kit utilization and to maximize the utilization of the Spindle Test module firmware.

● CMXA 45
CMXA 45/75-Z2
● CMXA 48
CMXA 48/80-Z2
CMXA 51-IS
● CMXA 70/44
● CMXA 75
● CMXA 80

CMAC 5123 SK30 taper ring

CMAC 5124 SK40 taper ring

CMAC 5125 SK50 taper ring

CMAC 5126 SK30 (ISO) adapter

CMAC 5129 SK30 (MAS) adapter

CMAC 5132 32A (HSK) adapter

Ordering information

- **CMAC 5123** Pull force gauge taper ring, SK30.
- **CMAC 5124** Pull force gauge taper ring, SK40.
- **CMAC 5125** Pull force gauge taper ring, SK50.

Ordering information

- **CMAC 5126** Pull force gauge adapter, SK30 (ISO).
- **CMAC 5127** Pull force gauge adapter, SK40 (ISO).
- **CMAC 5128** Pull force gauge adapter, SK50 (ISO).
- **CMAC 5129** Pull force gauge adapter, SK30 (MAS).
- **CMAC 5130** Pull force gauge adapter, SK40 (MAS).
- **CMAC 5132** Pull force gauge adapter, 32A (HSK).
- **CMAC 5133** Pull force gauge adapter, 40A (HSK).
- **CMAC 5134** Pull force gauge adapter, 50A (HSK).
- **CMAC 5135** Pull force gauge adapter, 63A (HSK).
- **CMAC 5136** Pull force gauge adapter, 80A (HSK).

CMAC 5137

Run-out gauge

The CMAC 5137 analog run-out gauge (vipp indicator) is used together with the universal magnetic foot to measure tool nose run-out in the Spindle Assessment kit and the Spindle Test module.

The run-out gauge can measure in both directions and can enable to turn the outer ring for a zero setting.

CMAC 5137 includes an adapter for an 8 mm fixture and also includes a carrying case.

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Ordering information

- **CMAC 5137** Run-out gauge.

CMAC 5138

Depth micrometer

The CMAC 5138 depth micrometer is used to measure ejection measure (EM test) on spindle tool noses in the Spindle Assessment kit and the Spindle Test module. CMAC 5138 also includes a carrying case. Accessories are available to extend the Spindle Assessment kit utilization and to maximize the utilization of the Spindle Test module firmware.

- CMXA 45
- CMXA 45/75-Z2
- CMXA 48
- CMXA 48/80-Z2
- CMXA 51-IS
- CMXA 70/44
- CMXA 75
- CMXA 80

Specifications

- Accuracy: DIN863-2
- Resolution: 0,01 mm *(0.0004 in.)*
- Scale: 25,0 mm *(0.98 in.)*
- Pitch: 0,5 mm *(0.02 in.)*
- Flatness:
  - 60 mm: 1,3 µm
  - 100 mm: 2,0 µm
- Measuring pressure: 5 to 10 N *(3.7 to 7.4 ft. lb.)*

Ordering information

- **CMAC 5138** Depth micrometer.

SKF spindle assessment accessories (continued)

CMAC 5139 / CMAC 5140

Belt tension gauge

The CMAC 5139 and CMAC 5140 belt tension gauges are used to measure belt tension. By pressing the mechanical gauge on the belt, it indicates the belt tension value. It verifies the result together in the Spindle Assessment kit and the Spindle Test module.

CMAC 5139 is used to measure belt tension between 15 and 70 kg *(between 30 and 150 lbs.)*.

CMAC 5140 is used to measure belt tension between 50 and 150 kg *(between 100 and 300 lbs.)*.

●	CMXA 45
	CMXA 45/75-Z2
●	CMXA 48
	CMXA 48/80-Z2
	CMXA 51-IS
●	CMXA 70/44
●	CMXA 75
●	CMXA 80
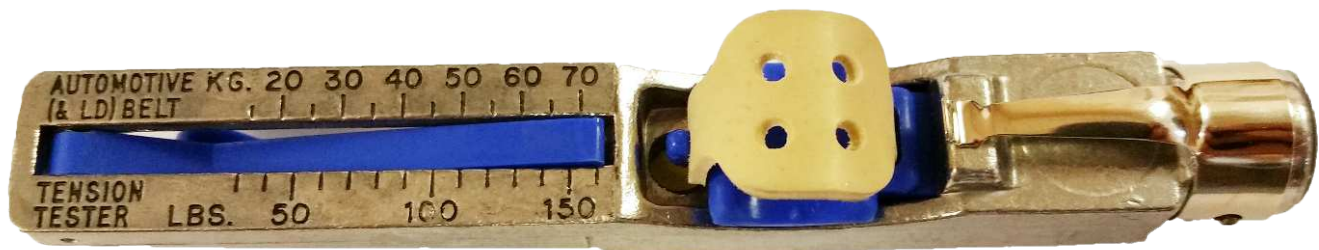
CMAC 5139 Belt tension gauge
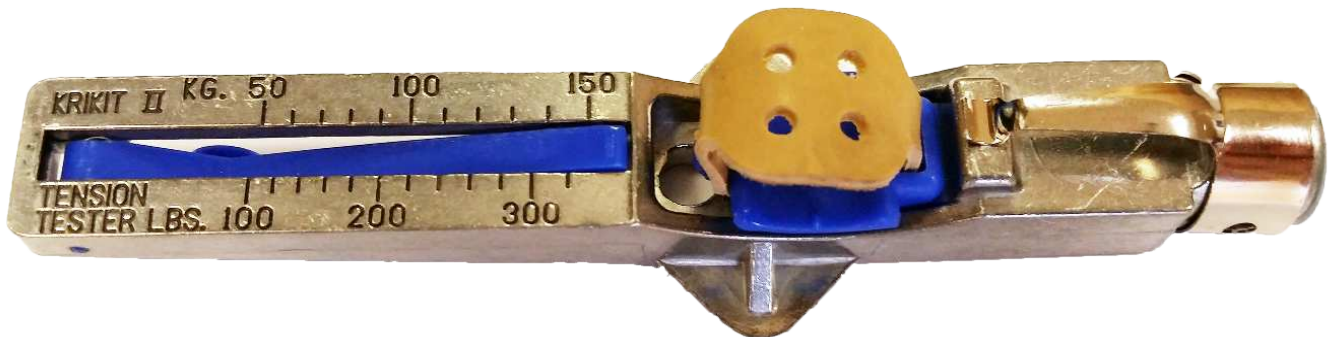
CMAC 5140 Belt tension gauge

Ordering information

- **CMAC 5139** Belt tension gauge, 15 to 70 kg *(30 to 150 lbs.)*.
- **CMAC 5140** Belt tension gauge, 50 to 150 kg *(100 to 300 lbs.)*.

SKF

Accessories for obsolete products

Model number	Description	CMVA Series	CMXA 70	CMXA 44
CMAC 4300	Accelerometer adapter for SKF Microlog / SKF MARLIN, ^{1}/4–28 stud	●		
CMAC 4321	Cable, SKF Microlog / PC direct access	●		
CMAC 4400	Lens savers for SKF Microlog (5)	●		
CMAC 4628	Adapter, BNC to LEMO, for CMSS 6190L	●		
CMAC 5004	Screen protector		●	●
CMAC 5017	Fischer connector cover set		●	●
CMAC 5022	Power supply (non-IS)		●	
CMAC 5152	Adapter cable, 3,5 mm female audio to BNC connector, CMVA 55 / CMVA 60 / CMVA 65	●		
CMAC 5153	Audio headphones with 3,5 mm male audio connector, CMVA 55 / CMVA 60 / CMVA 65	●		
CMAC 5211	Strobe light kit for SKF Microlog Analyzer GX series (CMXA 70) and CMVA series	●	●	●
CMAC 5401-K	Audio headphone strobe adapter kit, includes adapter, cables and headphones		●	●
CMAC 5402	Audio headphone strobe adapter, includes adapter and cables (no headphones)		●	●
CMSS 2100	General purpose, two-pin, industrial accelerometer, 100 mV/g (with ^{1}/4–28 and M8 mounting stud)	●		
CMSS 2100-K	Industrial accelerometer kit, includes CMSS 908-MD magnetic base and CMSS 60139-04 stinger	●		
CMSS 31476402-CE	Cable, SKF Microlog to CMSS 786M	●		
CMSS 31707500-CE	Cable, SKF Microlog to CMSS 2100 / 2106 / 2200 / 2206 / 787A / 793 / 786A (two pin MIL)	●		
CMSS 376	High temperature accelerometer, charge mode, 260 °C (500 °F)	●		
CMSS 50077A-CE	Cable, CMVA 60 / CMVA 10 / CMVA 40 to support module, 120 cm (4 ft.)	●		
CMSS 50080-CE	Cable, support module to PC, 120 cm (4 ft.)	●		
CMSS 50139/AUDIO	Cable, SKF Microlog audio	●		
CMSS 50156	Cable, CMVA 60 / CMVA 10 / CMVA 40 to BNC, with power, 150 cm (5 ft.)	●		
CMSS 50157	Adapter, SKF Microlog to Microdot (10-32)	●		
CMSS 50162-15	Cable, SKF Microlog to BNC, with power, 450 cm (15 ft.)	●		
CMSS 50197-CE	Cable, SKF Microlog to CMSS 6186 / CMSS TMDT2 (CE compliant)	●		
CMSS 50221	Cable, SKF Microlog to CMSS 793V	●		
CMSS 50236	Standard SKF Microlog connection cable	●		
CMSS 50238	Cable, SKF Microlog to modem	●		
CMSS 50247-2	Cable, SKF Microlog to BNC (3), without diode, 1,5 m (5 ft.)	●		
CMSS 50272-CE	Cable, CMSS 793 to SKF Microlog, IS (CE compliant)	●		
CMSS 50278-CE	Cable, CMSS 6135E adapter to CMSS 6165 strobe light	●		
CMSS 50280-CE	Cable, CMVA 65 video out	●		
CMSS 50288	Cable, CMSS 50289 to CMSS 376	●		
CMSS 50289	Charge amp SKF Microlog adapter	●		
CMSS 60139-04	Probe tip, 11,43 cm (4.5 in.) stinger, ^{1}/4–28 mounting	●		
CMSS 6135E	Phase adapter	●		
CMSS 6145K-1	Adapter, CMSS 6186 and accelerometer with CMSS 50236 cable	●		
CMSS 6155K-U-CE	Optical phase reference kit for use with CMVA 10 and CMVA 40	●		
CMSS 6155VK-U-CE	Optical phase reference kit for use with CMVA 55, CMVA 60 and CMVA 65	●		
CMSS 6160	Printer adapter	●		
CMSS 6165-SPC	Strobe light cover	●		
CMSS 6165K-VA	Strobe light kit for SKF Microlog CMVA series	●		
CMSS 6187-CE	Primary current clamp probe, 60 A / 600 A	●		
CMSS 6190-BNC	Audio headphones kit, includes audio headphone and adapter cable, CMVA 55 / CMVA 60 / CMVA 65	●		
CMSS 6195A-K	Laser phase reference kit (115/230 V), for use with CMVA 60 / CMVA 65	●		

Accessories for obsolete products (continued)

Model number	Description	CMVA Series	CMXA 70	CMXA 44
CMSS 786M	Twin sensor, multi-parameter (acceleration/SEE)	●		
CMSS 793LK	Low frequency accelerometer kit	●		
CMSS 793V	General purpose, industrial, two-pin velocity sensor	●		
CMSS AD-BLANK	Stainless steel discs (10 discs per package, minimum order 10 packages)	●		
CMSS R2-2-J5A-10	Cable, BNC to trigger source, 300 cm (10 ft.)	●		
CMSS R6-2-J5A-10	Cable, BNC to CMSS 793, two-pin MIL, 300 cm (10 ft.)	●		
CMSS T-5	Reflective tape for optical and laser phase reference	●		
CMSS TMDT2K	Digital thermometer kit	●		
CMVA 3351	Power cord, UL, 110 V, US	●		
CMVA 3355	AC/DC adapter, universal, for CMVA 6112 only, does not include power cord	●		
CMVA 3355-US	AC/DC adapter, universal, for CMVA 6112 only, includes CMSS 3351 power cord	●		
CMVA 50230-4	Battery pack, NiMH, for CMVA 60, CMVA 10 and CMVA 40	●		
CMVA 6112-CE	Support module, enhanced, replaces CMVA 6111 support module	●		
CMVA 6112-CE-RU	Support module, enhanced, Russian	●		
CMVA 6112K-CE	Support module kit, enhanced, replaces CMVA 6111K	●		
CMVA 6120-03-02	SKF Microlog carrying case, black nylon, for use with CMVA 10 and CMVA 40	●		
CMVA 6121	SKF Microlog hard carrying case, pelican, gray, for use with all models of SKF Microlog (foam not cut to shape)	●		
CMVA 6122	SKF Microlog carrying case, clear plastic moisture protection, for use with all models of SKF Microlog	●		
CMVA 6130	SKF Microlog carrying case, black cotton	●		
CMVA 6134-HD	SKF Microlog hard shell carrying case with logo (foam cut to shape)	●		
10873706	230 V AC fast recharger for use with strobe light		●	●
10873707	115 V AC fast recharger for use with strobe light		●	●

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Model number	Description	CMXA 45	CMXA 45/75–Z2	CMXA 48	CMXA 48/80–Z2	CMXA 51-IS	CMXA 70/44	CMXA 75	CMXA 80	Page
CMAC 3715	Cable converter, two pin MIL to BNC						●	●	●	37
CMAC 4200-K-SL	Infrared thermometer	●		●			●	●	●	46
CMAC 4370-K	Triax accelerometer kit	●		●			●	●		10
CMAC 5009	Triaxial accelerometer coiled cable	●		●			●	●		30
CMAC 5010	Shoulder strap	●					●	●		77
CMAC 5015	Rubber boot	●	●			●	●	●		81
CMAC 5020	Hand strap	●	●			●	●	●		78
CMAC 5023	Signal input straight cable	●		●			●	●	●	38
CMAC 5024	Instrument soft cover	●					●	●		79
CMAC 5026	Carrying case (location for printer)	●					●	●		81
CMAC 5029	Carrying case, hard shell	●	●				●	●		82
CMAC 5030K	Laser tachometer kit	●		●			●	●	●	48
CMAC 5030K-Z2	Laser tachometer kit – ATEX certified	●	●		●			●	●	49
CMAC 5031	Battery	●	●				●	●		70
CMAC 5032	Power/Trigger splitter straight cable	●					●	●		38
CMAC 5036	CH1 signal input straight extension cable, 5 m *(16.4 ft.)*	●		●			●	●	●	35
CMAC 5037	CH1 signal input straight extension cable, 10 m *(32.8 ft.)*	●		●			●	●		36
CMAC 5043	Tachometer straight extension cable, 5 m *(16.4 ft.)*	●	●	●	●		●	●		36
CMAC 5044	Tachometer straight extension cable, 10 m *(32.8 ft.)*	●	●	●	●		●	●		37
CMAC 5056	Modal analysis hammer kit – for structures 210 g *(7.6 oz.)* and above			●			●	●		50
CMAC 5057	Modal analysis hammer kit – for structures 56 g *(2 oz.)* and above			●			●	●		50
CMAC 5058	Modal analysis hammer kit – without accelerometer			●			●	●		50
CMAC 5059	Modal analysis hammer kit			●			●	●		54
CMAC 5061	High frequency accelerometer straight cable	●		●			●	●		30
CMAC 5062	High frequency accelerometer straight cable	●		●				●	●	31
CMAC 5068	Docking station			●	●				●	84
CMAC 5069	Carrying case, hard shell			●	●				●	82
CMAC 5070	Battery			●					●	71
CMAC 5071	Soft case			●					●	80
CMAC 5072	Hand strap			●	●				●	79
CMAC 5073	Shoulder strap			●	●				●	77
CMAC 5074	Screen protector			●					●	85
CMAC 5075	Fischer and audio connector cover set	●	●	●	●			●	●	83
CMAC 5077	SD memory card (4 GB)	●	●	●		●	●	●	●	86
CMAC 5078	Audio headphone straight cable	●		●				●	●	39, 88
CMAC 5079	Splitter, four channel straight cable			●					●	31
CMAC 5082	USB / A to B straight cable			●	●				●	39
CMAC 5083	SDIO and dock connector cover			●	●				●	84
CMAC 5084	Microphone with integral preamplifier kit	●		●			●	●		56
CMAC 5087	Temperature gun interface straight cable	●		●			●	●		40
CMAC 5088	Signal input straight cable	●		●				●	●	40
CMAC 5090	Universal power supply	●	●	●	●		●	●		73
CMAC 5091	Microphone with integral preamplifier	●		●				●	●	88
CMAC 5092	Battery, ATEX			●	●				●	72

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CMAC 5093	Signal input straight cable (microphone cable)	●		●				●	●	44, 89
CMAC 5095	USB communication/power splitter straight cable	●	●	●	●		●	●	●	41
CMAC 5105	Battery					●				73
CMAC 5110	Power supply					●				74
CMAC 5111	Carrying pouch, leather, hazardous areas					●				80
CMAC 5113	Shoulder strap, leather, hazardous areas	●	●			●	●	●		78
CMAC 5115	ATEX certified accelerometer coiled cable					●				32
CMAC 5116	AC/DC signal coiled cable					●				41
CMAC 5117	Trigger coiled cable					●				42
CMAC 5118	Carrying case, hard shell					●				83
CMAC 5121	Pull force gauge, 2,5 to 20,0 kN	●		●			●	●	●	91
CMAC 5122	Pull force gauge, 10,0 to 75,0 kN	●		●			●	●	●	91
CMAC 5123	Pull force gauge taper ring, SK30	●		●			●	●	●	92
CMAC 5124	Pull force gauge taper ring, SK40	●		●			●	●	●	92
CMAC 5125	Pull force gauge taper ring, SK50	●		●			●	●	●	92
CMAC 5126	Pull force gauge adapter, SK30 (ISO)	●		●			●	●	●	92
CMAC 5127	Pull force gauge adapter, SK40 (ISO)	●		●			●	●	●	92
CMAC 5128	Pull force gauge adapter, SK50 (ISO)	●		●			●	●	●	92
CMAC 5129	Pull force gauge adapter, SK30 (MAS)	●		●			●	●	●	92
CMAC 5130	Pull force gauge adapter, SK40 (MAS)	●		●			●	●	●	92
CMAC 5132	Pull force gauge adapter, 32A (HSK)	●		●			●	●	●	92
CMAC 5133	Pull force gauge adapter, 40A (HSK)	●		●			●	●	●	92
CMAC 5134	Pull force gauge adapter, 50A (HSK)	●		●			●	●	●	92
CMAC 5135	Pull force gauge adapter, 63A (HSK)	●		●			●	●	●	92
CMAC 5136	Pull force gauge adapter, 80A (HSK)	●		●			●	●	●	92
CMAC 5137	Run-out gauge	●		●			●	●	●	93
CMAC 5138	Depth micrometer	●		●			●	●	●	93
CMAC 5139	Belt tension gauge, 15 to 70 kg (30 to 150 lbs.)	●		●			●	●	●	94
CMAC 5140	Belt tension gauge, 50 to 150 kg (100 to 300 lbs.)	●		●			●	●	●	94
CMAC 5141	Parabolic reflector	●						●	●	89
CMAC 5142	Adapter plate	●						●		90
CMAC 5143	Wind jammer	●		●				●	●	90
CMAC 5201	Serial communication cable					●				42
CMAC 5208	AC/DC current clamp	●		●			●	●	●	57
CMAC 5209	Accelerometer coiled cable, 2 m (6.56 ft.)	●	●	●	●		●	●	●	32
CMAC 5209-06S	Accelerometer coiled cable with safety breakaway	●	●	●	●		●	●	●	33
CMAC 5209-10	Accelerometer coiled cable, 3 m (10 ft.)	●	●	●	●		●	●	●	33
CMAC 5211	BNC tachometer straight cable	●						●	●	34
CMAC 5213	Laser tachometer kit straight cable, 24 cm (9.5 in.)	●	●	●	●		●	●	●	34
CMAC 5214	Laser tachometer kit straight cable, 2 m (6.56 ft.)	●	●	●	●		●	●	●	35
CMAC 5222	Labels for measurement locations	●	●	●	●	●	●	●	●	87
CMAC 5251	Stylus (IS)					●				86
CMAC 5403	Audio headset, hard hat compatible	●		●				●	●	87
CMAC 5404	Strobe light input straight cable	●		●			●	●	●	43

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CMAC 5405	Strobe light power supply	●		●			●	●	●	74
CMAC 5406	Strobe light output straight cable	●		●			●	●	●	43
CMAC 5410	Idler Sound Monitor accessory kit	●						●		88
CMAC 5411	Idler Sound Monitor accessory kit			●					●	88
CMAC 6139	Screen protector	●						●		85
CMCP 850-01	SKF Microlog Analyzer field balancing accessory kit with optical sensor	●		●			●	●	●	59
CMCP 850-02	SKF Microlog Analyzer field balancing accessory kit with laser sensor	●	●				●	●	●	59
CMCP 850-03	SKF Microlog Analyzer field balancing accessory kit with laser sensor	●	●				●	●	●	59
CMSS 2111	Small footprint accelerometer with integral cable	●		●			●	●	●	12
CMSS 2114-K	High frequency accelerometer kit	●		●			●	●	●	14
CMSS 2200	General purpose, low profile, side exit industrial accelerometer	●		●			●	●	●	16
CMSS 2200-M8	General purpose, low profile, side exit industrial accelerometer with M8 studs	●		●			●	●	●	16
CMSS 2210	Intrinsically safe (IS) industrial accelerometer					●				18
CMSS 6155XK-U-CE	Optical phase reference kit			●			●	●	●	60
CMSS 6156	Optical phase reference magnetic holder	●		●			●	●	●	63
CMSS 6165K-AX	Strobe light kit	●		●			●	●	●	64
CMSS 6195AX-K	Smart laser sensor tachometer	●		●			●	●	●	67
CMSS 732A	Small diameter accelerometer	●		●			●	●	●	20
CMSS 793-CA	CSA approved, general purpose industrial accelerometer	●		●			●	●	●	22
CMSS 793-EE	ATEX approved, intrinsically safe, general purpose industrial accelerometer		●		●	●				24
CMSS 908-MD	Medium duty magnetic base	●	●	●	●	●	●	●	●	26

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