

SKF Microlog Accessories Catalog





Foreword

The SKF brand now stands for more than ever before, and means more to you as a valued customer.

While SKF maintains its leadership as the hallmark of quality bearings throughout the world, new dimensions in technical advances, product support and services have evolved SKF into a truly solutions-oriented supplier, creating greater value for customers.

These solutions encompass ways to bring greater productivity to customers, not only with breakthrough application-specific products, but also through leading-edge design simulation tools and consultancy services, plant asset efficiency maintenance programmes, and the industry's most advanced supply management techniques.

The SKF brand still stands for the very best in rolling bearings, but it now stands for much more.

SKF – the knowledge engineering company

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

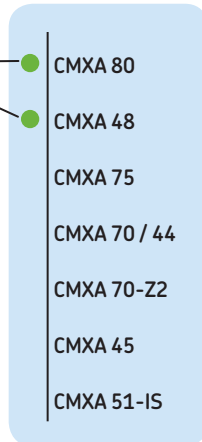
With robust, high-speed data processors and optimum data storage capacity, SKF Microlog Analyzers are equipped to operate within today's most advanced computerized maintenance management systems. Units can be purchased with a range of individual modules and accessories for specific types of analysis,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



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 80 and CMXA 48.

*Compatible
SKF Microlog
models*



Example of
compatibility legend

SKF Microlog models

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

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

Accessories for discontinued SKF Microlog models

For a list of accessories available for discontinued SKF Microlog models, please refer to page 78.

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Accelerometers



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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 data for enhanced decision making.



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

Specifications for triax accelerometer

Dynamic

- Sensitivity ($\pm 5\%$): 100 mVg
- Range full scale: 50 g, RMS
- Resolution (electrical noise): 0,0005 g, RMS
- Frequency response:
 - $\pm 5\%$: 0,5 to 3 000 Hz
 - $\pm 10\%$: 0,3 to 5 000 Hz
 - ± 3 dB: 0,2 to 10 000 Hz
- Discharge time constant: 0,6 s
- Mounted resonant frequency, nominal: 25 kHz
- Amplitude non-linearity: $\pm 1\%$ full scale maximum
- Transverse sensitivity maximum: 5%
- Strain sensitivity: 0,001 g per microstrain at 250/ $\mu\Omega$

Electrical

- Bias voltage range: 12 to 13 V DC
- Supply voltage range*: 18 to 30 V DC
- Supply current range: 2 to 20 mA
- Output impedance, nominal: 100 Ω
- Case ground isolation, signal / power ground pin to case: 10 M Ω

* 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.

Environmental

- Maximum vibration: 1 000 g, RMS
- Maximum shock: 2 000 g peak
- Temperature range: -54 to $+121$ $^{\circ}\text{C}$ (-65 to $+250$ $^{\circ}\text{F}$)
- Thermal coefficient of sensitivity: 0,03%/ $^{\circ}\text{F}$
- Environmental seal: Welded / glass to metal seal / O-rings, hermetic

Physical

- Weight: 115 g (4 oz.)
- Size (not including connector): 41 × 41 × 24 mm (1.625 × 1.625 × 0.950 in.)
- Mounting provision: Captive 1/4–28 mounting screw
- Connector, coaxial, radially mounted: Four pin MIL-C-26482, 8-4P
- Case material: Aluminum alloy
- 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



Triax accelerometer



CMAC 5009 Triaxial accelerometer cable



CMAC 4300 Stud adapter



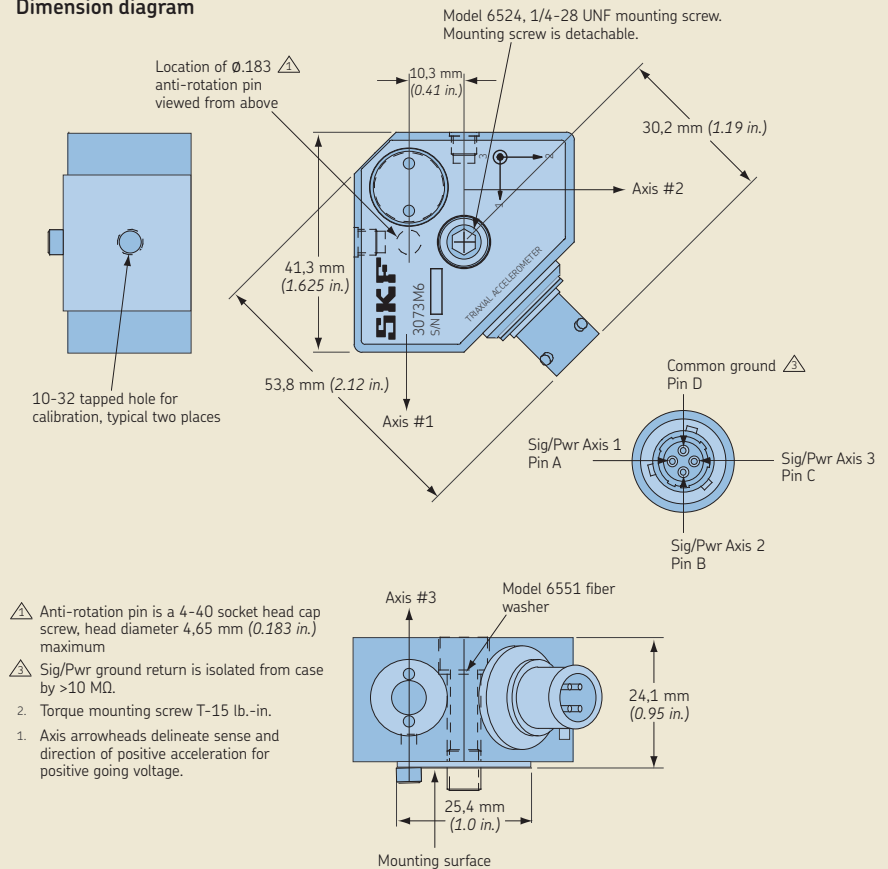
CMSS 2620-3 Stud

Optional accessories



CMAC 9600-10 Toolkit for 1/4-28 stud

Dimension diagram



Ordering information

CMAC 4370-K Triax accelerometer kit. Each kit includes a triax accelerometer, triax accelerometer cable, stud adapter and three studs. A calibration certificate traceable to NIST is also supplied with each instrument.

Optional Accessories

- **CMAC 9600-10** Toolkit for 1/4-28 stud
- **CMSS 908-MD** Medium duty magnetic base

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.

Specifications

Dynamic

- Sensitivity ($\pm 10\%$): 100 mVg
- Measurement range: ± 50 g
- Frequency range (± 3 dB): 0,5 to 10 000 Hz
- Resonant frequency: 22 kHz
- Broadband resolution (1 to 10 000 Hz): 350 μ g
- Non-linearity: $\pm 1\%$
- Transverse sensitivity: $\leq 7\%$

Electrical

- Settling time (within 1% of bias): $\leq 2,0$ s
- Discharge time constant: $\leq 0,3$ s
- Excitation voltage: 18 to 28 V DC
- Constant current excitation: 2 to 20 mA
- Output impedance: $< 150 \Omega$
- Output bias voltage: 8 to 12 V DC
- Spectral noise:
 - 10 Hz: 8 μ g/ $\sqrt{\text{Hz}}$
 - 100 Hz: 5 μ g/ $\sqrt{\text{Hz}}$
 - 1 kHz: 4 μ g/ $\sqrt{\text{Hz}}$

Environmental

- Overload limit (shock): 5 000 g peak
- Temperature range (operating): -54 to $+121$ °C (-65 to $+250$ °F)
- Enclosure rating: IP 68

Physical

- Size (hex $\times$ height): 14 $\times$ 64 mm (0.55 $\times$ 2.52 in.)
- Weight (with cable): 99,3 g (3.5 oz.)
- Cable length: 2 m (6.56 ft.)
- Mounting: Magnet
- Sensing element: Ceramic
- Sensing geometry: Shear
- Housing material: Stainless steel
- Sealing: Molded
- Electrical connector: Molded integral cable
- Electrical connection position: Top
- Cable type: Polyurethane
- Connector: Fischer type 103 six pin



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



Ordering information

CMSS 2111 Small footprint accelerometer with an integrated cable and a magnetic mount.

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 ($\pm 15\%$): 10 mVg
- Measurement range: ± 500 g peak
- Frequency range (± 3 dB): 5 to 60 000 Hz
- Resonant frequency: ≥ 95 kHz
- Broadband resolution (1 to 10 000 Hz): 0,002 g RMS
- Non-linearity: $\leq 1\%$
- Transverse sensitivity: $\leq 5\%$

Electrical

- Excitation voltage: 18 to 30 V DC
- Constant current excitation: 2 to 20 mA
- Output impedance: $\leq 100 \Omega$
- Output bias voltage: 8 to 12 V DC
- Discharge time constant: 0.02 to 0.06 s
- Spectral noise:
 - 10 Hz: 160 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 100 Hz: 40 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 1 kHz: 15 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 10 kHz: 10 $\mu\text{g}/\sqrt{\text{Hz}}$

Environmental

- Overload limit (shock): $\pm 5\,000$ g peak
- Temperature range: -54 to $+121$ °C (-65 to $+250$ °F)
- Base strain sensitivity: $\leq 0,05$ g μ

Physical

- Size (hex $\times$ height): 10,7 $\times$ 20,6 mm (0,42 $\times$ 0,81 in.)
- Weight: 6,0 g (0,21 oz.)
- Sensing element: Ceramic
- Sensing geometry: Shear
- Housing material: Stainless steel
- Sealing: Welded hermetic
- Electrical connector: 5-44 Coaxial
- Electrical connection position: Top
- Mounting thread: 10-32, male
- Mounting torque: 113 to 225 Ncm (10 to 20 in. lbs.)

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

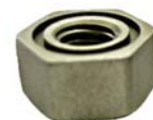


352A60 High frequency ICP accelerometer

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



CMAC 5062 High frequency accelerometer cable



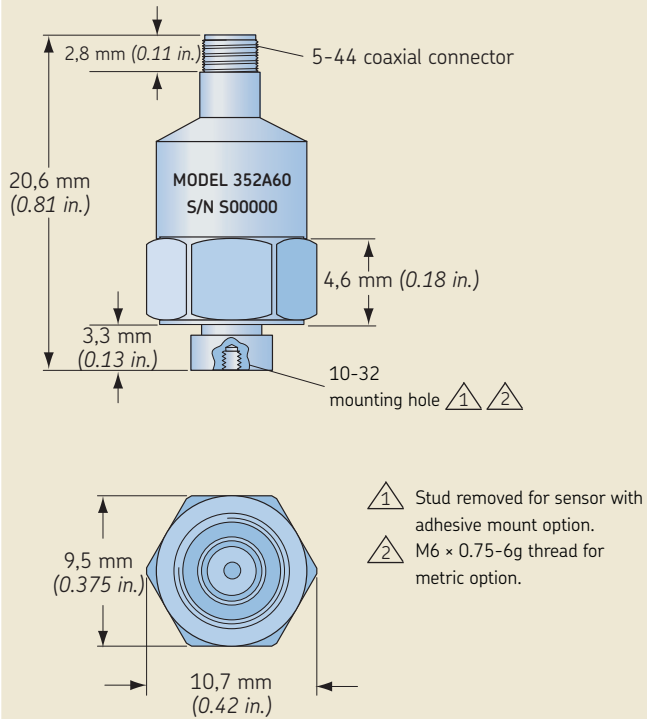
Adhesive mounting base

Kit contents

- 352A60: High frequency ICP accelerometer
- CMAC 5062: High frequency accelerometer cable, Fischer six pin to Microdot connector
- Adhesive mounting base

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

Dimension diagram



Ordering information

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

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.



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

Features

- Rugged, economical and all around general purpose sensor
- Sensitivity, 100 mVg to optimize use in multiple applications
- Exceptional bias voltage (BV) stability at elevated temperatures
- Designed for exceptional low noise level for low frequencies at elevated temperatures
- 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 (77 °F)
- Acceleration range: 80 g peak
- Amplitude linearity: 1%
- Frequency range:
 - ±10%: 1,0 to 5 000 Hz
 - ±3 dB: 0,7 to 10 000 Hz
- Resonance frequency: Mounted, minimum 22 kHz
- Transverse sensitivity: ≤5% of axial

Electrical

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

Environmental

- Temperature range: -50 to +120 °C (-58 to +248 °F), operating temperature
- Vibration limits: 500 g peak
- Shock limit: 5 000 g peak
- Electromagnetic sensitivity, equivalent g, maximum: 70 µg/gauss
- Sealing: Hermetic
- Base strain sensitivity: 200 µg/microstrain
- 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 peak to peak

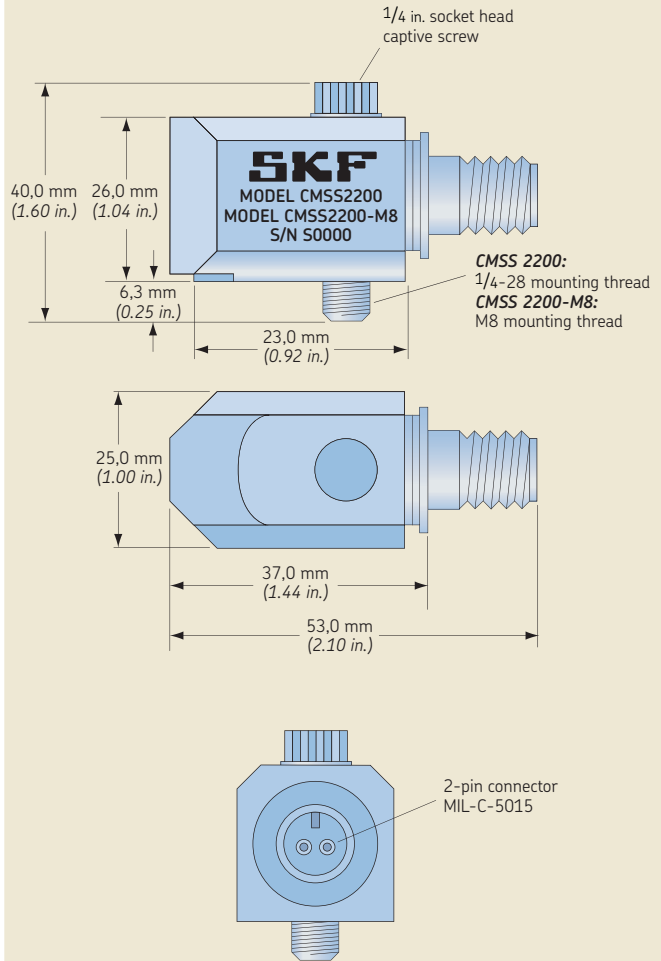
Physical

- Dimensions: 53 × 25 × 40 mm (2.1 × 1.0 × 1.6 in.)
- Weight: 145 g (5.1 oz.)
- Case material: 316L stainless steel
- Mounting: See ordering information
- Mounting torque: 3,4 Nm (30 in. lbs.)
- Pin A connector: Signal / Power
- Pin B connector: Common
- Mating connector: CMSS 3106F-10SL-4S or equivalent
- Recommended cable: Two conductor shielded, Teflon 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 24 °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.

Dimension diagram



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

- Standard sensitivity: 100 mVg $\pm 10\%$ nominal at 80 Hz
- Frequency response: 2 Hz to 10 kHz $\pm 5\%$ (-3 dB at 0,8 Hz)
- Mounted base resonance: 18 kHz, nominal
- Isolation: Base isolated
- Transverse sensitivity: $< 5\%$

Electrical

- Electrical noise: 0,1 mg maximum
- Current range: 0,5 to 8 mA
- Bias voltage: 12 V DC, nominal

Environmental

- Temperature range:
 - T4: $-55\text{ °C} \leq T_a \leq +115\text{ °C}$ ($-67\text{ °F} \leq T_a \leq +239\text{ °F}$)
 - T6: $-55\text{ °C} \leq T_a \leq +65\text{ °C}$ ($-67\text{ °F} \leq T_a \leq +149\text{ °F}$)

Physical

- Dimensions: 51 x 25 mm (2.0 x 1.0 in.)
- Weight: 100 g (3.5 oz.), nominal
- Sealing: IP 67
- Mounting torque: 8 Nm
- Case material: Stainless steel
- Recommended cable: CMAC 5115
- Recommended magnetic base: CMSS 908-MD

Certifications

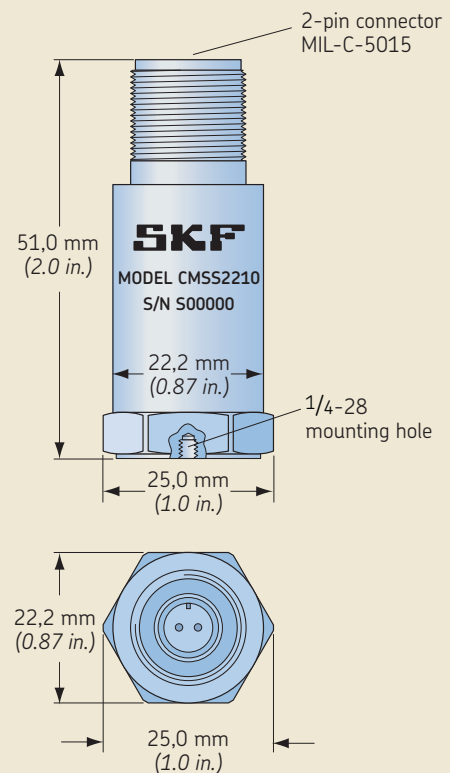
- Group I:
 - Baseefa02ATEX0245X and IECEx BAS 08.0013X
 - Ex I M1 Ex ia I: $-55\text{ °C} \leq T_a \leq +115\text{ °C}$ ($-67\text{ °F} \leq T_a \leq +239\text{ °F}$)
- Group II*:
 - BAS02ATEX1057X and IECEx BAS 08.0013X
 - Ex II 1GD T135 °C (275 °F) Ex ia IIC T4
 - Ex iaD 20 T135 °C (275 °F): $-55\text{ °C} \leq T_a \leq +115\text{ °C}$ ($-67\text{ °F} \leq T_a \leq +239\text{ °F}$)
 - Ex II 1GD T85 °C (185 °F) Ex ia IIC T6
 - Ex iaD 20 T85 °C (185 °F): $-55\text{ °C} \leq T_a \leq +65\text{ °C}$ ($-67\text{ °F} \leq T_a \leq +149\text{ °F}$)
- 500 V isolation: Units will pass a 500 V isolation test
- Barrier: 1 x 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.



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

Dimension diagram



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, $\pm 5\%$, 25 °C (77 °F): 10 mVg
- Acceleration range: 500 g peak
- Amplitude non-linearity: 1%
- Frequency response:
 - $\pm 5\%$: 2,0 to 15 000 Hz
 - ± 3 dB: 0,5 to 25 000 Hz
- Resonance frequency: 60 kHz
- Transverse sensitivity, maximum: 7% of axial
- Temperature response:
 - -50 °C (-58 °F): -10%
 - +120 °C (+248 °F): +5%

Electrical

- Power requirements:
 - Voltage source: 18 to 30 V DC
 - Current regulating diode: 2 to 10 mA
- Electrical noise, equivalent g:
 - Broadband, 2,5 Hz to 25 kHz: 200 μ g
 - Spectral:
 - 10 Hz: 20 μ g/ $\sqrt{\text{Hz}}$
 - 100 Hz: 3 μ g/ $\sqrt{\text{Hz}}$
 - 1 000 Hz: 2 μ g/ $\sqrt{\text{Hz}}$
 - 10 000 Hz: 2 μ g/ $\sqrt{\text{Hz}}$
- Output impedance, maximum: 100 Ω
- Bias output voltage: 10 V DC
- Grounding: Case grounded



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

Environmental

- Temperature range: -50 to +120 °C (-58 to +248 °F)
- Vibration limit: 500 g peak
- Shock limit: 5 000 g peak
- Electromagnetic sensitivity, equivalent g: 100 μ g/gauss
- Base strain sensitivity: 0,005 g/ μ strain

Connections

- Shell: Common
- Pin A: Power / signal

Physical

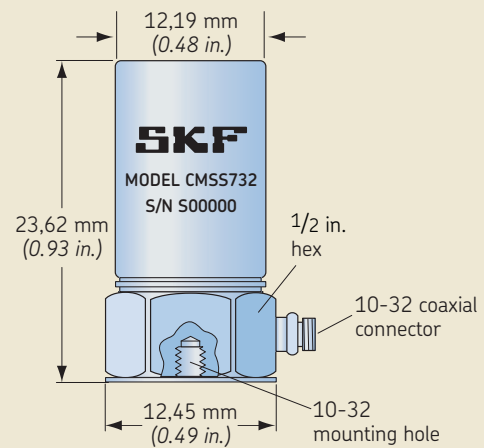
- Dimensions: 23,62 × 12,45 mm (0.93 × 0.49 in.)
- Weight: 13 g (0.46 oz.)
- Material: 316L stainless steel
- Mounting: 10 × 32 tapped hole
- Output connector: 10 × 32 coaxial
- Mating connector: R1
- Recommended cable: CMAC 5061
- Recommended mounting base: CMSS B13

Optional accessories



CMSS B13 Magnetic base mounting

Dimension diagram



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 C5015 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, $\pm 5\%$, 25 °C (77 °F): 100 mVg
- Acceleration range: 80 g peak
- Amplitude non-linearity: 1%
- Frequency response:
 - $\pm 5\%$: 1,5 to 5 000 Hz
 - $\pm 10\%$: 1,0 to 7 000 Hz
 - ± 3 dB: 0,5 to 15 000 Hz
- Resonance frequency: 25 kHz
- Transverse sensitivity, maximum: 5% of axial
- Temperature response:
 - -50 °C (-58 °F): -10%
 - +120 °C (+248 °F): +5%

Electrical

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



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

Environmental

- Temperature range: -50 to +120 °C (-58 to +248 °F)
- Vibration limit: 500 g peak
- Shock limit, minimum: 5 000 g peak
- Sealing: Hermetic
- Base strain sensitivity: 0,0005 g/ μ strain

Connections

- Shell: Ground
- Pin A: Power / signal
- Pin B: Common

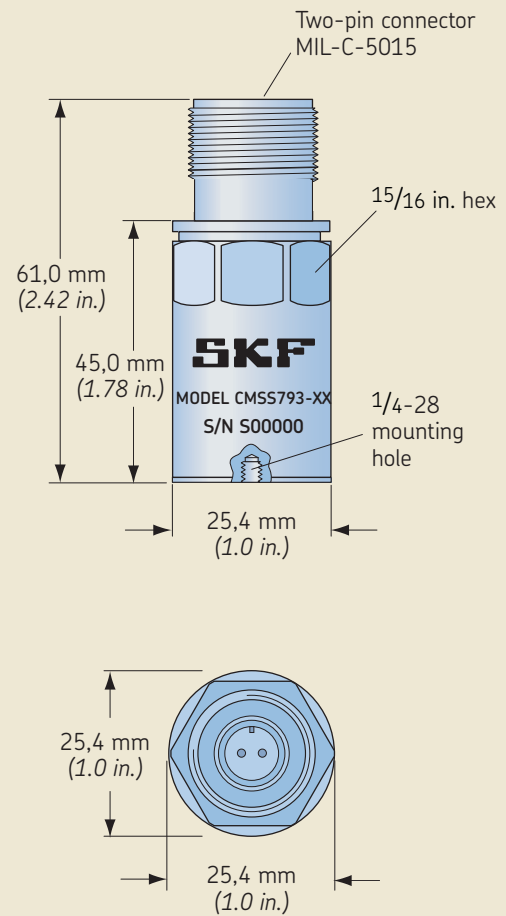
Agency approvals

- 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

Physical

- Dimensions: 61,0 × 25,4 mm (2.42 × 1.00 in.)
- Weight: 112 g (3.95 oz.)
- Sensing element design: PZT ceramic / compression
- Case material: 316L stainless steel
- Mounting: 1/4–28 tapped hole
- 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

Dimension diagram



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

Specifications

Dynamic

- Sensitivity, $\pm 5\%$, 25 °C (77 °F): 100 mVg
- Acceleration range: 80 g peak
- Amplitude non-linearity: 1%
- Frequency response:
 - $\pm 5\%$: 1,5 to 5 000 Hz
 - $\pm 10\%$: 1,0 to 7 000 Hz
 - ± 3 dB: 0,5 to 15 000 Hz
- Resonance frequency: 25 kHz
- Transverse sensitivity, maximum: 5% of axial
- Temperature response:
 - -50 °C (-58 °F): -10%
 - +120 °C (+248 °F): +5%

Electrical

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



CMXA 80

CMXA 48

CMXA 75

CMXA 70 / 44

● CMXA 70-Z2

CMXA 45

● CMXA 51-IS

Environmental

- Temperature range: -50 to +120 °C (-58 to +248 °F)
- Vibration limit: 500 g peak
- Shock limit, minimum: 5 000 g peak
- Sealing: Hermetic
- Base strain sensitivity: 0,0005 g/ μ strain

Connections

- Shell: Ground
- Pin A: Power / signal
- Pin B: Common

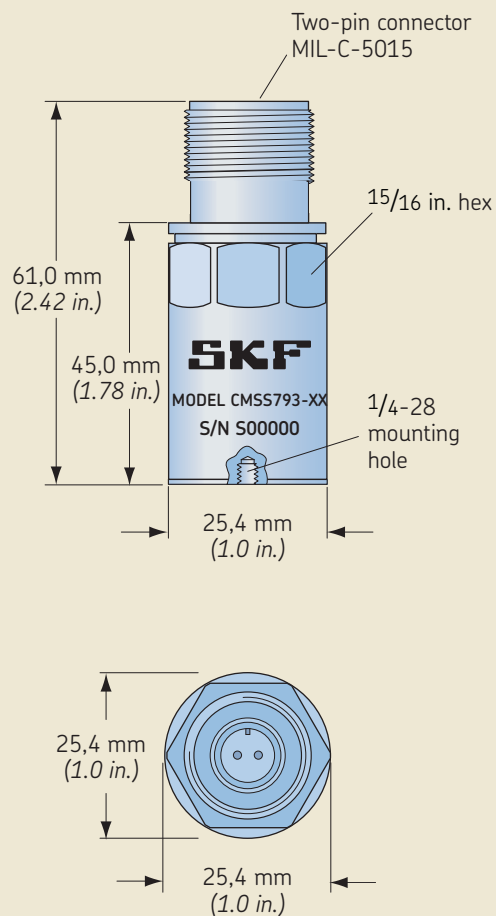
Agency approvals

- ATEX
 - Intrinsically safe -50 to +120 °C (-58 to +248 °F) for:
 - Class I, Zone 0, Ex ia IIC T4
 - Class I, Zone 0, Aex ia IIC T4
 - EEx ia IIC T4

Physical

- Dimensions: 61,0 × 25,4 mm (2.42 × 1.00 in.)
- Weight: 112 g (3.95 oz.)
- Sensing element design: PZT ceramic / compression
- Case material: 316L stainless steel
- Mounting: 1/4–28 tapped hole
- Output connector: MIL-C-5015 style two pin
- Mating connector: R6 type
- Recommended cable: CMAC 5115
- Recommended magnetic base: CMSS 908-MD

Dimension diagram



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 (1.4 in.)
- Height: 19 mm (0.75 in.)
- Pull strength: 23 kg (50 lbs.)
- Mounting hole: 1/4-28

Accelerometer compatibility

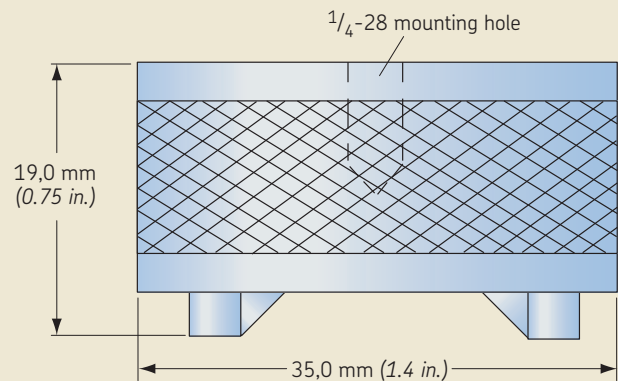
The CMSS 908-MD medium duty magnetic base is compatible with the following accelerometers:

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

Dimension diagram



Ordering information

CMSS 908-MD Medium duty magnetic base.

Cables



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Cable recommendations

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

Cables recommended for accelerometers

Accelerometer model number	Accelerometer description	Cable model number						
		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.

Hardware model number	Product description	Cable model number														
		CMAC 5019	CMAC 5023	CMAC 5043	CMAC 5044	CMAC 5061	CMAC 5062	CMAC 5078	CMAC 5082	CMAC 5087	CMAC 5088	CMAC 5211	CMAC 5213	CMAC 5214	CMAC 5404	CMAC 5406
CMAC 4200-K-SL	Infrared thermometer															
CMAC 5030K	Laser tachometer kit															
CMAC 5056	Modal analysis hammer kit															
CMAC 5057	Modal analysis hammer kit															
CMAC 5058	Modal analysis hammer kit															
CMAC 5068	Docking station															
CMAC 5084	ICP 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: 1,8 m (6 ft.) coiled

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



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 Microdot connector
- Length: 3 m (10 ft.) straight

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



Ordering information

CMAC 5061 High frequency accelerometer straight cable.

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.

Specifications

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

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



Ordering information

CMAC 5062 High frequency accelerometer straight cable.

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.

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

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



Ordering information

CMAC 5079 Splitter, four channel straight cable.

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



Ordering information

CMAC 5115 ATEX certified accelerometer coiled cable.

CMAC 5209

Accelerometer coiled cable, 1,8 m (6 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: 1,8 m (6 ft.) coiled

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



Ordering information

CMAC 5209 Accelerometer coiled cable, 1,8 m (6 ft.).

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: 1,8 m (6 ft.) coiled

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



Ordering information

CMAC 5209-06S Accelerometer coiled cable with safety breakaway.

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



Ordering information

CMAC 5209-10 Accelerometer coiled cable, 3 m (10 ft.).

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.

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.

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 laser tachometer kit, allows the user to place the CMAC 5030K tachometer on a stationary surface up to 2 m (6.56 ft.) away from the SKF Microlog.

Specifications

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



Ordering information

CMAC 5214 Laser tachometer kit straight cable, 2 m (6.56 ft.).

CMAC 5036

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

The CMAC 5036 cable, which is used for the CHX 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.

Specifications

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



Ordering information

CMAC 5036 CHX signal input straight extension cable, 5 m (16.4 ft.).

CMAC 5037

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

The CMAC 5037 cable, which is used for the CHX 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 80
- CMXA 48
- CMXA 75
- CMXA 70 / 44
- CMXA 70-Z2
- CMXA 45
- CMXA 51-IS



Ordering information

CMAC 5037 CHX signal input straight extension cable, 10 m (32.8 ft.).

CMAC 5043

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

The CMAC 5043 straight extension cable is for use with the CMAC 5030K laser tachometer kit. This cable is 5 m (16.4 ft.) long. This cable can be used in conjunction with CMAC 5023 or CMAC 5088 cables for other tachometers that are supplied.

Specifications

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

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



Ordering information

CMAC 5043 Tachometer straight extension cable, 5 m (16.4 ft.).

CMAC 5044

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

The CMAC 5044 straight extension cable is for use with the CMAC 5030K laser tachometer kit. This cable is 10 m (32.8 ft.) long. This cable can be used in conjunction with CMAC 5023 or CMAC 5088 cables for other tachometers that are supplied.

Specifications

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



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.)



Ordering information

CMAC 3715 Cable converter, two pin MIL to BNC.

CMAC 5019

USB communication / power splitter straight cable

The CMAC 5019 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 80
- CMXA 48
- CMXA 75
- CMXA 70 / 44
- CMXA 70-Z2
- CMXA 45
- CMXA 51-IS

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



Ordering information

CMAC 5019 USB communication / power splitter straight cable.

CMAC 5023

Signal input straight cable

The CMAC 5023 cable connects to the SKF Microlog's CH1 or CH2 signal input connector at one end (using the input connector's CHX / CH1 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.

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

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

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 5019 cable) simultaneously.

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

CMXA 80

CMXA 48

● CMXA 75

● CMXA 70 / 44

CMXA 70-Z2

● CMXA 45

CMXA 51-IS



Ordering information

CMAC 5032 Power / trigger splitter straight cable.

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 80

● CMXA 48

● CMXA 75

CMXA 70 / 44

CMXA 70-Z2

● CMXA 45

CMXA 51-IS



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



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



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's CH1 or CH2 signal input connector at one end (using the input connector's CHX / 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: 1,8 m (6 ft.) straight



Ordering information

CMAC 5088 Signal input straight cable.

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.

Specifications

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



Ordering information

CMAC 5116 AC / DC signal coiled cable.

CMXA 80

CMXA 48

CMXA 75

CMXA 70 / 44

CMXA 70-Z2

CMXA 45

CMXA 51-IS

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



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 GX series.

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

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

Specifications

- Connectors: Nine pin female to nine pin female
- Length: 1,8 m (6 ft.)



Ordering information

CMAC 5201 Serial communication cable.

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 103 seven pin to input adapter
- Length: 1,8 m (6 ft.) straight

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



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



Ordering information

CMAC 5406 Strobe light output straight cable.

Hardware



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Smart laser sensor tachometer, CMSS 6195AX-K	59

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.

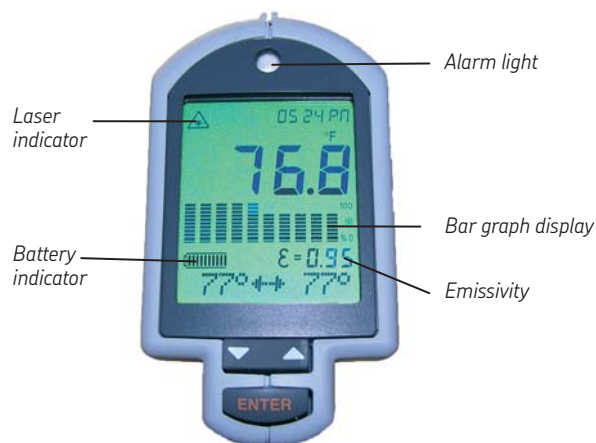
The CMAC 4200-K-SL measures the amount of infrared energy emitted by an object and converts it to a display of the object's surface temperature. The handheld, infrared thermometer takes non-contact temperature measurement technology to a new level.

Features

- Designed for physically challenging environments
- Easy to use
- Adjustable emissivity with on-board table
- Fast response time
- Accuracy $\pm 1\%$ 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.



Graphic display



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

Specifications

- Temperature range: -30 to $+900$ °C (-25 to $+1600$ °F)
- Display resolution: $0,1$ °C ($0,2$ °F)
- Accuracy:
 - $\pm 1\%$ 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: $\pm 0,5\%$ of reading, or ± 1 °C (± 2 °F)
- Response time (95%): 250 ms
- Spectral response: 8 to 14 microns
- Optical resolution: 60:1
- Ambient operating range: 0 to 50 °C (32 to 122 °F); Laser maximum 45 °C (113 °F)
- Relative humidity: 10 to 95%, non-condensing at up to 30 °C (86 °F)
- Storage temperature: -20 to $+50$ °C (-4 to $+120$ °F) without battery
- Analog output: 1 mV/°C ($mV/°F$)
- Power: Two 1,5 volt "AA" alkaline batteries
- Tripod mount: $1/4$ -20 UNC
- Dimensions: $200 \times 170 \times 50$ mm ($7.9 \times 6.7 \times 2.0$ in.)
- Weight: 480 g (22 oz.)

Kit contents

- CMAC 4200: Infrared thermometer
- CMAC 5087: Temperature gun interface cable
- 31784200 Nylon belt holster
- 31678902 Hard carrying case
- Operator's guide



CMAC 4200 Infrared thermometer



CMAC 5087 Temperature gun interface cable



31784200 Nylon belt holster



31678902 Carrying case



Ordering information

CMAC 4200-K-SL Infrared thermometer with adapter, standard connection cable, 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 rpm
- 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 nm (25 in.)
- Angle of incidence: $\pm 80^\circ$
- Speed range: 0,1 to 250 000 rpm
- Power input: 5 V DC or 8-24 V DC versions at 30 mA typically
- Operating temperature: -10 to $+40$ °C (14 to 104 °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
- Mounting bracket
- Reflective tape strips
- Mini mounting tripod
- CMAC 5214: Tachometer interface cable, 2 m (6.56 ft.)



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



Compact laser tachometer



Mounting bracket



Reflective tape strips



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.

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, ICP 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

Specifications

CMAC 5056 Accelerometer (353B04)

Dynamic

- Sensitivity ($\pm 5\%$): 1,02 mV/(m/s²) (10 mVg)
- Measurement range: $\pm 4\,905$ m/s² peak (± 500 g peak)
- Frequency range:
 - $\pm 5\%$: 1 to 7 000 Hz
 - $\pm 10\%$: 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/s² RMS (0.003 g RMS)
- Non-linearity: $\leq 1\%$
- Transverse sensitivity: $\leq 5\%$



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

Electrical

- Excitation voltage: 18 to 30 V DC
- Constant current excitation: 2 to 20 mA
- Output impedance: $\leq 100 \Omega$
- 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 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 10 Hz: 700 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 100 Hz: 180 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 1 kHz: 64 $\mu\text{g}/\sqrt{\text{Hz}}$

Environmental

- Overload limit (shock): $\pm 98\,100$ m/s² pk ($\pm 10\,000$ g pk)
- Temperature range (operating): -54 to $+121$ °C (-65 to $+250$ °F)
- Base strain sensitivity: $\leq 0,0005$ g/ μ strain

Physical

- Size (hex $\times$ height): 12,7 $\times$ 29,0 mm (0.50 $\times$ 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 ($\pm 10\%$): 1,02 mV/(m/s²) (10 mVg)
- Measurement range: $\pm 4\,905\text{ m/s}^2$ peak ($\pm 500\text{ g peak}$)
- Frequency range:
 - $\pm 5\%$: 1 to 10 000 Hz
 - $\pm 10\%$: 0,7 to 20 000 Hz
 - $\pm 3\text{ dB}$: 0,35 to 30 000 Hz
- Resonant frequency: $\geq 70\text{ kHz}$
- Broadband resolution (1 to 10 000 Hz): 0,05 m/s² RMS (0.005 g RMS)
- Non-linearity: $\leq 1\%$
- Transverse sensitivity: $\leq 5\%$

Electrical

- Excitation voltage: 18 to 30 V DC
- Constant current excitation: 2 to 20 mA
- Output impedance: $\leq 100\ \Omega$
- Output bias voltage: 8 to 12 V DC
- Discharge time constant: 0,5 to 2,0 s
- Settling time (within 10% of bias): $< 5\text{ s}$
- Spectral noise:
 - 1 Hz: 3 200 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 10 Hz: 700 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 100 Hz: 180 $\mu\text{g}/\sqrt{\text{Hz}}$
 - 1 kHz: 64 $\mu\text{g}/\sqrt{\text{Hz}}$

Environmental

- Overload limit (shock): $\pm 98\,100\text{ m/s}^2\text{ pk}$ ($\pm 10\,000\text{ g pk}$)
- Temperature range (operating): $-54\text{ to }+121\text{ }^\circ\text{C}$ ($-65\text{ to }+250\text{ }^\circ\text{F}$)
- Base strain sensitivity: $\leq 0,002\text{ g}/\mu\text{ strain}$

Physical

- Size (hex $\times$ height): 7,1 $\times$ 17,3 mm (0.28 $\times$ 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: 90 to 135 Ncm (9 to 12 in. lbs.)

CMAC 5056 / CMAC 5057 / CMAC 5058 Hammer

Dynamic

- Sensitivity ($\pm 15\%$): 2,25 mV/N (10 mV/lb. ft.)
- Measurement range: $\pm 2\,200\text{ N peak}$ ($\pm 500\text{ lb. ft. peak}$)

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: $\geq 22\text{ kHz}$

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 ICP, 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)



CMAC 5061 Cable (CMAC 5056 only)



CMAC 5062 Cable (CMAC 5057 only)



BNC to Fischer cable



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)



Carrying case (contents may vary)



Hammer extender

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 5084

ICP microphone with integral preamplifier kit

The CMAC 5084 ICP microphone kit contains an array microphone for general purpose use. The ICP powered 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 80
- CMXA 48
- CMXA 75
- CMXA 70 / 44
- CMXA 70-Z2
- CMXA 45
- CMXA 51-IS

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 $+50$ $^{\circ}\text{C}$ (14 to 122 $^{\circ}\text{F}$)

Physical

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

Kit contents

- ICP microphone with preamplifier
- CMAC 5023: Signal input cable
- Calibration certificate



CMAC 5023 Cable



ICP microphone with preamplifier

Ordering information

CMAC 5084 ICP microphone with integral preamplifier kit includes an ICP microphone with preamplifier, CMAC 5023 cable and a calibration certificate.

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 amps peak AC, 600 amps DC.

Features

- Solid state hall effect transducer
- AC (1 Hz to 5 kHz) and DC (0 to 1 Hz) measurement
- Ranges: 60 and 600 amps
- 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 per amp (600 amp range) or 10 mV per amp (60 amp 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
- Overload: 1 000 A (AC) and 2 000 A (DC) continuous up to 1 kHz
- Rise and fall time:
 - 60 A range: $\leq 100 \mu\text{s}$ from 10 to 90% V_{out}
 - 600 A range: $\leq 70 \mu\text{s}$ from 10 to 90% V_{out}
- Insertion impedance:
 - 0,39 m Ω at 50 Hz
 - 58 m Ω at 1 000 Hz
- Load impedance: $>100 \text{ k}\Omega/100 \text{ pF}$ (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: $<10 \text{ mA/A}$ at 50 Hz at 23 mm (0.905 in.) from the probe

Electrical (continued)

- Influence of conductor in jaw opening: 0,5% reading (DC to 440 Hz)
- Influence of temperature: $\leq 300 \text{ ppm}/^\circ\text{K}$ or 0,3%/10 $^\circ\text{K}$
- Influence of humidity: 10 to 90% relative humidity at reference temperature $\leq 0,5\%$
- Accuracy*:
 - 40 A (AC) / 60 A (DC) range:
 - 1,5% of reading $\pm 0,5 \text{ A}$ (0,5 to 40 A)
 - 1,5% of reading (40 to 60 A)
 - 400 A (AC) / 600 A (DC) range:
 - 1,5% of reading $\pm 1 \text{ A}$ (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:
 - $\leq 3^\circ$ (10 to 20 A, 45 to 65 Hz)
 - $\leq 2^\circ$ (20 to 100 A)
 - $\leq 1,5^\circ$ (100 to 400 A)
 - 400 A (AC) / 600 A (DC) range:
 - $\leq 3^\circ$ (10 to 100 A)
 - $\leq 1,5^\circ$ (100 to 400 A)

* Reference conditions: 18 to 28 $^\circ\text{C}$ (64 to 84 $^\circ\text{F}$), 20 to 75% relative humidity, external magnetic field $<40 \text{ A/m}$, no DC component, no external current carrying conductor, test sample centered, $1 \text{ M}\Omega \leq 100 \text{ pF}$ load, zero adjustment prior to measurement (DC only) DC to 65 Hz, battery voltage = 9 V, $\pm 0,1 \text{ V}$.



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

Electrical (continued)

- 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: $\leq 1,5$ mV or 1,5 A PP
 - 0,1 Hz to 5 kHz: ≤ 500 μ V or 0,5 A PP
- Auto off: 10 minutes (may be disabled at power up)
- Electrical certification: EN 61010-2-32

Environmental

- Case protection: IP 30 per IEC 529
- Operating temperature range: -10 to $+55$ °C (*14 to 131 °F*)
- Storage temperature range: -40 to $+70$ °C (*-40 to +176 °F*)
- Operating relative humidity:
 - 10 to 35 °C (*50 to 95 °F*), 90% $\pm$ 5% relative humidity (without condensation)
 - 40 to 55 °C (*104 to 131 °F*), 70% $\pm$ 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 $\geq 6,5$ 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 $\times$ 10,0 mm (*1.24 in. $\times$ 0.40 in.*)
- Dimensions: 224 $\times$ 97 $\times$ 44 mm (*8.80 $\times$ 3.82 $\times$ 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.

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



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

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 cables (two)
- 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 (English / Metric)
- Stainless steel rule: 15,2 cm (6 in.) (English / Metric)
- Protractor: 180°, 15,2 cm (6 in.)
- Compass
- Clipboard with storage
- Polar plot tablet
- Application notes
- Watertight, hard carrying case

Ordering information

CMCP 850-01 Microlog Analyzer field balancing accessory kit with optical sensor.

CMCP 850-02 Microlog Analyzer field balancing accessory kit with laser sensor.

CMCP 850-03 Microlog Analyzer field balancing accessory kit with laser sensor.

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.



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

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.

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 (32 to 122 °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 RPM
- 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 (14 to 158 °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



CMSS 6155W-U-CE Self-powered sensor

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



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

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

Ordering information

CMSS 6156 Optical phase reference magnetic holder.

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
- RPM / RPS 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 μ s 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 80
- CMXA 48
- CMXA 75
- CMXA 70 / 44
- CMXA 70-Z2
- CMXA 45
- CMXA 51-IS

- Light output:
 - Average: 11 W at 3 000 flashes per minute (FPM), >13 W above 3 450 FPM
 - Instantaneous (per flash): 230 mJoule typical to 3 450 FPM
- 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 FPM and over one hour at 6 000 FPM 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 (32 to 104 °F)
- Humidity: Maximum relative humidity 80% for temperatures up to 31 °C (88 °F), decreasing linearly to 50% relative humidity at 40 °C (104 °F)
- Flash range: 30 to 50 000 FPM
- Tachometer measurements: 5 to 250 000 RPM
- Tracking filter: Selectable wide and narrow bandwidths; the filter may not lock below 100 FPM
- 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, 1,8 m (6 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

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

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)
- 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 (-4 to +122 °F)
 - Storage: -30 to +60 °C (-22 to +140 °F)
- Humidity: 90% relative humidity, non-condensing

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
- RPM range: 1 to 150 000 RPM
- Minimum trigger duration: 10 µsec
- Power requirement: Internal rechargeable battery

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.)

Power



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Strobe light power supply, CMAC 5405	65

CMAC 5031

Battery

The 7,4 V Lithium-Ion 2,2 Ah rechargeable battery pack provides customers with nine hours of continuous data collection or 26 hours idle. The charging time is 2,5 hours.



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

Specifications

Electrical

- Nominal voltage: 7,4 V
- Nominal capacity: 2,2 Ah
- Operating time:
 - Nine hours continuous data collection
 - 26 hours idling in a process product
- Charge time: 2,5 hours

Environmental

- Temperature range:
 - Charging: 0 to 45 °C (32 to 113 °F)
 - Discharging: -20 to +60 °C (-4 to +140 °F)
 - Storage:
 - 1 month: -20 to +60 °C (-4 to +140 °F)
 - 3 months: -20 to +45 °C (-4 to +113 °F)
 - 1 year: -20 to +20 °C (-4 to +68 °F)

Physical

- Dimensions: 70,5 × 38,5 × 20,5 mm (2.78 × 1.52 × 0.81 in.)
- Weight: 105 g (3.7 oz.)

Protection

	Minimum	Typical	Maximum
• Over current (A):	5,06	5,91	6,51
• Short-circuit (A):	13,11	17,72	21,81
• Over voltage (V):	8,65	8,70	8,75
• Under voltage (V):	4,40	4,60	4,80

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 / AC10 / 27 Add.2
- Equivalent Lithium content: 1,32 g (0.0466 oz.)

Ordering information

CMAC 5031 Battery.

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) or with an external battery charger (CMAC 5076).



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

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 113 °F)
 - Discharging: -10 to +60 °C (14 to 140 °F)
 - Storage (1 year): -20 to +20 °C (-4 to +68 °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.)

Ordering information

CMAC 5070 Battery.

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 5019) 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 80
- CMXA 48
- CMXA 75
- CMXA 70 / 44
- CMXA 70-Z2
- CMXA 45
- CMXA 51-IS



Ordering information

CMAC 5090 Universal power supply, includes four plug adapters.

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.

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.)

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



Ordering information

CMAC 5105 Battery.

CMAC 5110

Power supply

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).

CMXA 80

CMXA 48

CMXA 75

CMXA 70 / 44

CMXA 70-Z2

CMXA 45

● CMXA 51-IS

CMAC 5405

Strobe light power supply

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.

● CMXA 80

● CMXA 48

● CMXA 75

● CMXA 70 / 44

CMXA 70-Z2

● CMXA 45

CMXA 51-IS



Ordering information

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

Miscellaneous Accessories



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



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



Ordering information

CMAC 5073 Shoulder strap.

CMAC 5113

Shoulder strap, leather, hazardous areas

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

CMXA 80

CMXA 48

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



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 80

CMXA 48

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



Ordering information

CMAC 5020 Hand strap.

CMAC 5072

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 instrument.

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



Ordering information

CMAC 5072 Hand strap.

CMAC 5024

Instrument soft cover

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.

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



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



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's ATEX certification; the unit may be in the carrying pouch while in use in a hazardous area.

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



Ordering information

CMAC 5111 Carrying pouch, leather, hazardous areas.

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 Mining requirements for drops.

Specifications

- Temperature range: -60 to +130 °C (-76 to +266 °F)
- Material: Santoprene 8000 rubber
- Weight: 130 g (4.6 oz.)
- Dimensions: 20,0 × 12,5 cm (7.9 × 4.9 in.)



Ordering information

CMAC 5015 Rubber boot.

CMAC 5026

Carrying case (location for printer)

The CMAC 5026 carrying / service case contains a location for the Pentax PocketJet 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.).



Ordering information

CMAC 5026 Carrying case (location for printer).

CMAC 5029

Carrying case, hard shell

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

CMXA 80

CMXA 48

● CMXA 75

● CMXA 70 / 44

● CMXA 70-ZZ

● CMXA 45

CMXA 51-IS



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 80

● CMXA 48

CMXA 75

CMXA 70 / 44

CMXA 70-ZZ

CMXA 45

CMXA 51-IS



Ordering information

CMAC 5069 Carrying case.

CMAC 5118

Carrying case, hard shell (IS)

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



Ordering information

CMAC 5118 Carrying case, hard shell (IS).

CMAC 5075

Fischer and audio connector cover set (3)

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

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



Ordering information

CMAC 5075 Fischer and audio connector cover set (3).

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



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



Ordering information

CMAC 5068 Docking station.

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



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



Ordering information

CMAC 6139 Screen protector, includes a set of five.

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



Ordering information

CMAC 5251 Stylus (IS).

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. 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.

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



Note: The CMAC 5078 audio headphone cable is required for use.

Ordering information

CMAC 5403 Audio headset, hard hat compatible.

Accessories for obsolete products

Model number	Product	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 5211	Strobe light kit for SKF Microlog Analyzer GX series (CMXA 70) and CMVA series	●	●	●
CMAC 5401-K	Audio headphone and strobe adapter kit		●	●
CMAC 5402	Audio headphone strobe adapter kit for SKF Microlog		●	●
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, CMVA60 / 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 6190L	Audio headphones with LEMO connector (not for use with CMVA 30)	●		
CMSS 6190L-K	Non-CMVA 60 Microlog audio headphones kit with LEMO connector (not for use with CMVA 30)	●		
CMSS 6190L-K-W	CMVA 60 Microlog audio headphones kit with LEMO connector	●		
CMSS 6195A-K	Laser phase reference kit (115 / 230 V), for use with CMVA 60 / CMVA 65	●		

Accessories for obsolete products (continued)

Model number	Product	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 Micrologs (foam not cut to shape)	●		
CMVA 6122	SKF Microlog carrying case, clear plastic moisture protection, for use with all Micrologs	●		
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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CMAC 4200-K-SL	Infrared thermometer	●	●	●	●		●		42
CMAC 4370-K	Triax accelerometer kit	●	●	●	●		●		8
CMAC 5009	Triaxial accelerometer coiled cable	●	●	●	●		●		26
CMAC 5010	Shoulder strap			●	●		●		68
CMAC 5015	Rubber boot			●	●	●	●	●	72
CMAC 5019	USB communication / power splitter straight cable	●	●	●	●	●	●		34
CMAC 5020	Hand strap			●	●	●	●	●	69
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CMAC 5030K	Laser tachometer kit	●	●	●	●		●		44
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CMAC 5044	Tachometer straight extension cable, 10 m (32.8 ft.)	●	●	●	●		●		33
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SKF – the knowledge engineering company

From the company that invented the self-aligning ball bearing more than 100 years ago, SKF has evolved into a knowledge engineering company that is able to draw on five technology platforms to create unique solutions for its customers. These platforms include bearings, bearing units and seals, of course, but extend to other areas including: lubricants and lubrication systems, critical for long bearing life in many applications; mechatronics that combine mechanical and electronics knowledge into systems for more effective linear motion and sensorized solutions; and a full range of services, from design and logistics support to conditioning monitoring and reliability systems.

Though the scope has broadened, SKF continues to maintain the world's leadership in the design, manufacture and marketing of rolling bearings, as well as complementary products such as radial seals. SKF also holds an increasingly important position in the market for linear motion products, high-precision aerospace bearings, machine tool spindles and plant maintenance services.

The SKF Group is globally certified to ISO 14001, the international standard for environmental management, as well as OHSAS 18001, the health and safety management standard. Individual divisions have been approved for quality certification in accordance with ISO 9001 and other customer specific requirements.

With over 100 manufacturing sites worldwide and sales companies in 70 countries, SKF is a truly international corporation. In addition, our distributors and dealers in some 15 000 locations around the world, an e-business marketplace and a global distribution system put SKF close to customers for the supply of both products and services. In essence, SKF solutions are available wherever and whenever customers need them. Overall, the SKF brand and the corporation are stronger than ever. As the knowledge engineering company, we stand ready to serve you with world-class product competencies, intellectual resources, and the vision to help you succeed.

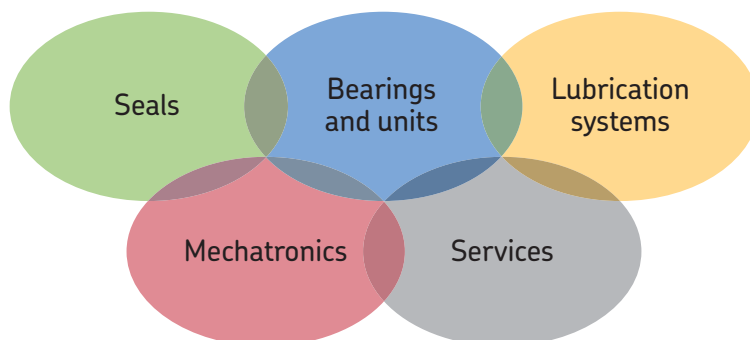


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Evolving by-wire technology

SKF has a unique expertise in fast-growing by-wire technology, from fly-by-wire, to drive-by-wire, to work-by-wire. SKF pioneered practical fly-by-wire technology and is a close working partner with all aerospace industry leaders. As an example, virtually all aircraft of the Airbus design use SKF by-wire systems for cockpit flight control.

SKF is also a leader in automotive by-wire technology, and has partnered with automotive engineers to develop two concept cars, which employ SKF mechatronics for steering and braking. Further by-wire development has led SKF to produce an all-electric forklift truck, which uses mechatronics rather than hydraulics for all controls.





Harnessing wind power

The growing industry of wind-generated electric power provides a source of clean, green electricity. SKF is working closely with global industry leaders to develop efficient and trouble-free turbines, providing a wide range of large, highly specialized bearings and condition monitoring systems to extend equipment life of wind farms located in even the most remote and inhospitable environments.



Working in extreme environments

In frigid winters, especially in northern countries, extreme sub-zero temperatures can cause bearings in railway axleboxes to seize due to lubrication starvation. SKF created a new family of synthetic lubricants formulated to retain their lubrication viscosity even at these extreme temperatures. SKF knowledge enables manufacturers and end user customers to overcome the performance issues resulting from extreme temperatures, whether hot or cold. For example, SKF products are at work in diverse environments such as baking ovens and instant freezing in food processing plants.



Developing a cleaner cleaner

The electric motor and its bearings are the heart of many household appliances. SKF works closely with appliance manufacturers to improve their products' performance, cut costs, reduce weight, and reduce energy consumption. A recent example of this cooperation is a new generation of vacuum cleaners with substantially more suction. SKF knowledge in the area of small bearing technology is also applied to manufacturers of power tools and office equipment.



Maintaining a 350 km/h R&D lab

In addition to SKF's renowned research and development facilities in Europe and the United States, Formula One car racing provides a unique environment for SKF to push the limits of bearing technology. For over 50 years, SKF products, engineering and knowledge have helped make Scuderia Ferrari a formidable force in F1 racing. (The average racing Ferrari utilizes more than 150 SKF components.) Lessons learned here are applied to the products we provide to automakers and the aftermarket worldwide.



Delivering Asset Efficiency Optimization

Through SKF Reliability Systems, SKF provides a comprehensive range of asset efficiency products and services, from condition monitoring hardware and software to maintenance strategies, engineering assistance and machine reliability programmes. To optimize efficiency and boost productivity, some industrial facilities opt for an Integrated Maintenance Solution, in which SKF delivers all services under one fixed-fee, performance-based contract.



Planning for sustainable growth

By their very nature, bearings make a positive contribution to the natural environment, enabling machinery to operate more efficiently, consume less power, and require less lubrication. By raising the performance bar for our own products, SKF is enabling a new generation of high-efficiency products and equipment. With an eye to the future and the world we will leave to our children, the SKF Group policy on environment, health and safety, as well as the manufacturing techniques, are planned and implemented to help protect and preserve the earth's limited natural resources. We remain committed to sustainable, environmentally responsible growth.



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PUB CM2412 EN • October 2010