SKF Multilog On-line System IMx-T

24/7 condition monitoring to improve machine reliability

The SKF Multilog On-line System IMx-T is the next generation of powerful, cost-effective solutions for a variety of condition monitoring applications. Together with SKF @ptitude Monitoring Suite software, SKF Multilog IMx-T provides a complete system for early fault detection and prevention, automatic advice for correcting existing or impending conditions and advanced condition-based maintenance to improve machine reliability, availability and performance.

Key features

• Mounted in a 19 in. rack
• Up to 64 dynamic or DC inputs and 32 digital inputs in each rack
• True simultaneous measurement of all channels
• Multi-parameter gating
• Enveloping
• Adaptive alarm levels
• Data buffering in non-volatile memory when communication is down
• Relay outputs
• Fully supported by SKF @ptitude Monitoring Suite software

SKF Multilog On-line System IMx-T is a key component in an advanced condition monitoring system. Designed to fit into a 19 in. rack enclosure, the SKF Multilog IMx-T is equipped with 16 to 64 analogue signal inputs. The dynamic signal inputs are configurable for a wide variety of sensors. Signals such as acceleration, velocity and displacement or other parameters are easily adopted. Each input can be configured for ICP (accelerometers), 4 to 20 mA or ±25 V. In addition to the analogue channels, 8 to 32 digital channels may be used for measuring speed, trigger or digital status, such as indicating when a measurement can take place. Several measurement points may be attached to one channel and both AC and DC measurements can be measured on the same channel.

Individual conditions for warning and alarm may be set for each point. Warning and alarm levels may be controlled by machine speed or load.

The SKF Multilog IMx-T works as a machine condition monitoring system with several other units together in a network with the SKF @ptitude Monitoring Suite. The system can even run in an existing LAN together with other computers, printers, servers, etc., or over the Internet.

The unit’s unique built-in hardware auto-diagnosis system continuously checks all sensors, cabling and electronics for any faults, signal interruption, shortcuts or power failure. Any malfunction triggers an alarm. In the case of system power failure, the system will automatically restart when the power returns.
SKF offers comprehensive solutions for protection and condition monitoring of all classes of rotating machinery, encompassing a variety of architectures that can be scaled to optimize functionality with respect to total installed cost.

**SKF Multilog On-line System IMx-T**

Provides a 19 inch rack format solution that is located in a non-hazardous area such as an instrument or control room. The SKF Multilog IMx-T combines high functionality with high channel density, which leads to lower requirements for a cabinet and associated infrastructure.

**SKF Multilog On-line System IMx-S**

A multi-channel, on-line condition monitoring device suitable for field installation in non-hazardous areas. The SKF Multilog IMx-S provides fully automated monitoring and analysis capabilities and is best suited for semi-critical and balance of plant equipment.
Skf @ptitude Monitoring Suite

Predictive maintenance software platform that brings all data from field instruments together for processing into actionable information regarding equipment reliability. The package provides the database for complex dynamic vibration data, and provides plots and tools for the experienced analyst. Skf @ptitude Decision Support is a data reduction engine and knowledge base for automating much of the analysis process. In addition, the cloud/server architecture allows for remote diagnostic services.
Technical data

Rack unit

Environmental
• 19-inch rack mounted, 6U high
• Dimensions:
  – Height: 266 mm (10.5 in.)
  – Width: 482 mm (19.0 in.)
  – Depth: 240 mm (9.4 in.)
• Weight: 10 kg (22 lb.)
• Temperature range: 0 to 50 °C (32 to 122 °F)

Power supply
• 90 to 264 V AC, 47 to 63 Hz, 150 W maximum output
• Redundant option, individual mains terminals

Backplane
• Two slots for power supplies
• Four slots, each for one input and one monitoring board (always mounted in pairs)
• Screw terminals, RJ45 and D-SUB connectors on back side (four slots)

Input board

Analogue inputs
• 16 analogue differential inputs
• Individual 24 V power supply, maximum 35 mA/channel
• Selectable ICP power supply (4 mA)
• Input range: ±25 V
• Impedance: > 100 kΩ

Digital inputs
• Eight digital opto-isolated inputs
• Individual 24 V power supply for four channels, maximum 30 mA/channel

Outputs
• Four relay driver outputs
• 16 software configurable 4 to 20 mA outputs

Monitoring board

Analogue measurement
• 24-bit AD conversion enables continuous transient capture (no gain or AC/DC switching necessary)
• Simultaneous sampling of all 16 channels (no multiplexing)
• Simultaneous sampling of different channels with different sampling rates
• Frequency range: From DC to 40 kHz
• Dynamic range: 120 dB
• Signal-to-noise ratio: 90 dB
• Cross-talk rejection: 100 dB
• Accuracy amplitude: ±2% (up to 20 kHz), ±5% (20 to 40 kHz)
• Accuracy phase: ±3° (up to 100 Hz)

Digital measurement
• Frequency range: 0.1 Hz to 12.5 kHz
  – Required pulse width:
    • >4 µs for electrical positive
    • >40 µs for electrical negative
• Accuracy frequency: 0.05% of measurement value (typically 0.01% up to 2.5 kHz)
• Pulse counting

Signal processing
• Time waveform
• Vector analysis with circular alarms
• FFT: 100 to 6 400 lines
• SKF Acceleration Enveloping
• Digital Peak Enveloping (DPE)
• Integration/Derivation in frequency domain
• Window function: Hanning
• Mathematical expressions
• Dynamic alarm levels, active range determined on multiple parameters
• Data storage on time, event or alarm condition
• Data buffering in flash memory when communication link is down
• Detection of sensor and cable fault
• Watchdog and self testing

Interface
• Ethernet: 10/100 Mbit RJ45, TCP/IP
• RS-232 service interface

Miscellaneous
• Calibration, traceable to BIPM
• CE certified according to EN61000-6-3 and EN61000-6-2
Ordering information

SKF Multilog On-line System IMx-T

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<tr>
<th>Part number</th>
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<tr>
<td>aa</td>
<td>Number of channels</td>
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For example, CMON 1000–16–2: SKF Multilog IMx-T rack with 16 channel and 2 power supplies.

Add-on kit:
- CMON 2208: Maximum number of 64 channels per rack. Screw terminals included. Consists of CMON 2207, CMON 2108, CMON 2106, and CMON 2305.

Components:
- CMON 2001: 19 inch rack for SKF Multilog IMx-T including backplane
- CMON 2207: SKF Multilog IMx-T CPU module complete (CPU card, adaptor card and front plate)
- CMON 2108: SKF Multilog IMx-T I/O card (front plate included)
- CMON 2106: Terminal card
- CMON 2200: Power supply without terminals
- CMON 2305: Screw terminal kit for 16 Analogue channels, 8 Digital channels and 5 Relay driver outputs
- CMON 2306: Power terminal for 1 power supply
- CMON 2307: SKF Multilog IMx-T connector for 4 to 20 mA output, without cable

Installation and training

Installation and training available through your local SKF supplier or representative.

Product Support Plans (PSP)

A range of Product Support Plans is available to protect your investment. Contact your local SKF sales representative for additional information.
The Power of Knowledge Engineering
Combining products, people, and application-specific knowledge, SKF delivers innovative solutions to equipment manufacturers and production facilities in every major industry worldwide. Having expertise in multiple competence areas supports SKF Life Cycle Management, a proven approach to improving equipment reliability, optimizing operational and energy efficiency and reducing total cost of ownership.

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