SKF Multilog On-line System WMx

CMWA 7810

Compact, eight-channel, field mounted wireless monitoring device

Introduction

SKF Multilog On-line System WMx is a compact, eight-channel, field mounted monitoring device that communicates using industry standard 802.11b/g wireless networking. It collects acceleration, velocity, displacement, temperature and bearing condition data and automatically uploads it for viewing, alarm evaluation, and analysis in SKF @ptitude software.

Key hardware features

- Certified to ATEX Zone 2
- Eight (8) channels (4 dynamic, 4 process)
- Simultaneous vibration measurements
- Two digital inputs for speed/triggering/gating
- IEEE 802.11b/g standard (WiFi)
- Supports WEP, WPA, or WPA2/PSK security
- External wake-up
- Spectrum/time domain data
- Up to 40 kHz bandwidth
- Up to 12 800 lines resolution
- Battery or 10 to 30 V DC power
- Compact, rugged, IP 67 housing
- SKF acceleration enveloping filters 2, 3 and 4
- Use with standard industrial sensors, including hazardous area certified sensors

SKF Multilog On-line System WMx is ideal for:

- Semi-critical/balance-of-plant machines in both safe and hazardous areas (e.g. pump farms)
- Monitoring "bad actors", troubleshooting
- Supplementing walk-around routes especially with installed sensors (at junction box)
- Remote monitoring via Internet
- Low-channel count, dispersed surveillance monitoring
- Traversing/moving machines
- "End of life" tracking of failing components (e.g. bearings)

Benefits

- Reduced cost of installation especially in hazardous areas
- Project acceleration/quick implementation
- Expanded monitoring coverage (e.g. tank farms)
- Maintain existing walk-around routes during manpower shortages
- Practical, temporarily installed 24/7 monitoring
- Easy relocation
- Derive additional value from installed WiFi infrastructure
- Fully untethered operation (e.g. for moving/traversing equipment such as overhead cranes)

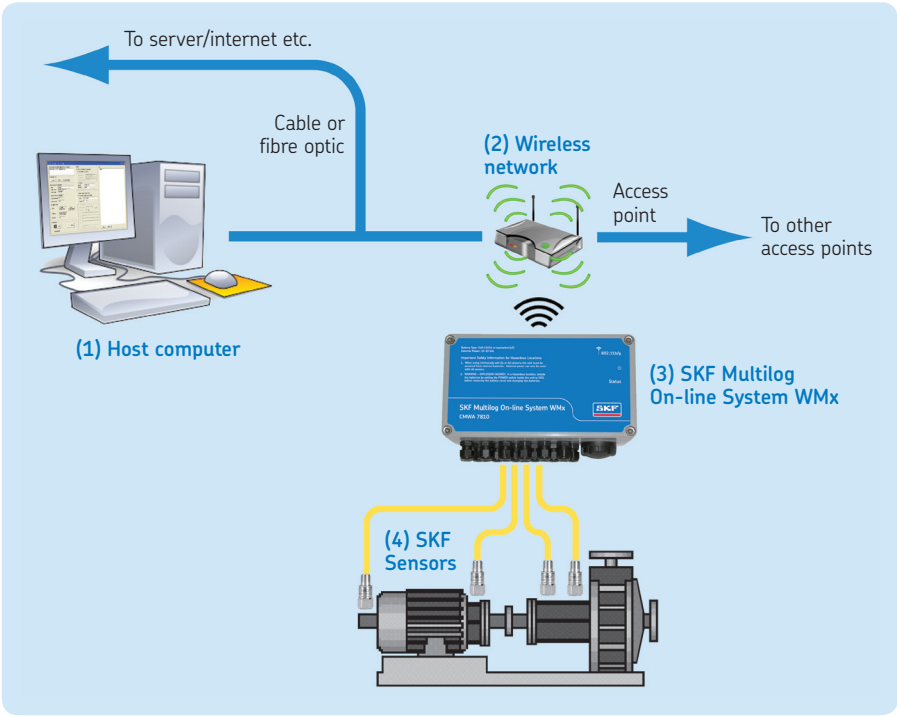
System components

Hardware and basic network

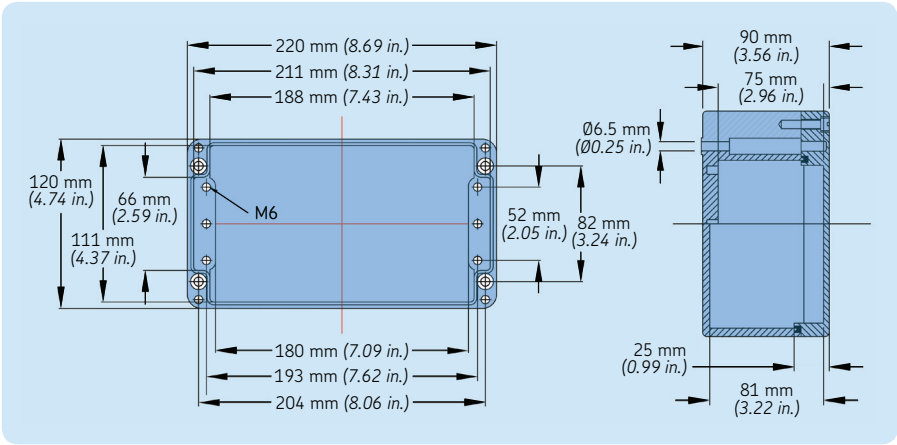
Primary components include:

1 Host computer*
2 Wireless network* supporting 802.11b/g
3 Wireless monitoring device (SKF Multilog On-line System WMx)
4 Sensors and cables*

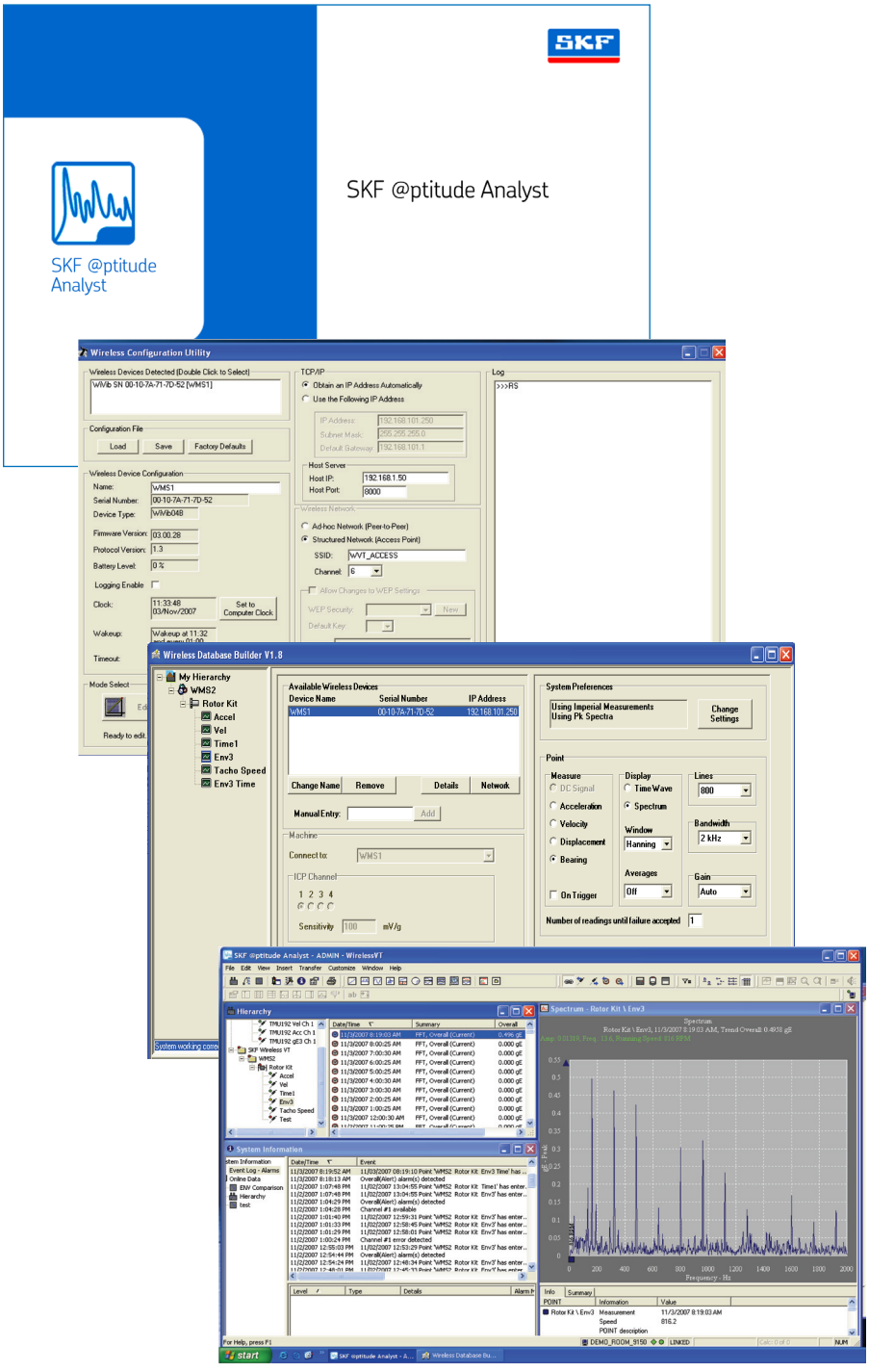
* Purchased separately.



SKF Multilog On-line System WMx dimensions



Software



Top to bottom:
- *SKF @ptitude Analyst software (purchased separately)*
- *Wireless network configuration*
- *Database builder*
- *Data viewing, analysis and reporting in SKF Analyst*

Be up and running in three easy steps:

1 SKF Wireless Configuration Utility is used to configure the hardware to talk to your wireless network.

2 SKF Wireless Database Builder makes it easy for you to design and setup access points, alarm parameters and other data points.

3 Data is automatically uploaded to SKF @ptitude Analyst for viewing, analysis and reporting.

Specifications

Inputs

- Four (4) dynamic/AC channels
  - Input: 10 V peak-peak
  - ICP power: 2,4 mA at 20 V DC
  - Other coupling: AC coupling, jumper-configurable
  - ±25 V range transducer check (e.g. bias voltage, displacement sensor gap) with user-selectable limits set in application
- Four (4) DC channels
  - Range: 0 to 3 V DC, 0 to +10 V fixed range or 4 to 20 mA input with built-in load resistors (jumper-configurable)
- Two (2) Trigger (tacho)/Gating inputs (one analog/digital, one digital)
  - Tachometer signal required: TTL or +5 to +24 V pulse, 6 to 600 000 pulses/minute (0,1 to 10 000 Hz)
  - Input: Isolated or non-isolated (jumper-configurable)
  - Power: 5 V DC, maximum 10 mA
- External wake-up: 5 to 24 V DC digital input from PLC

Measurements

- Dynamic/AC channels
  - Acceleration, velocity, or displacement generic AC (Save FFT, Time, or FFT and Time)
  - 2-channel Orbit
  - SKF Acceleration Enveloping
    - Filter 2 (50 to 1 000 Hz)
    - Filter 3 (500 to 10 000 Hz)
    - Filter 4 (5 000 to 40 000 Hz)
  - User-configurable Engineering Units (dynamic measurements)
- Static/DC channels: Generic DC, user-specified engineering units, offset and sensitivity (0 to 3 V DC, 0 to 10 V DC or 4 to 20 mA inputs), e.g. temperature

Data acquisition and processing

- Analog digital converter (ADC)
  - 24 bit simultaneous AC coupled measurements on channels 1 to 4
  - 16 bit multiplexed DC coupled measurements on channels 5 to 8

Specifications

Data acquisition and processing (continued)

- Sampling rates
  - Effective rate: 64 Hz to 102.4 kHz
  - Effective frequency bandwidth ranges: 25 to 40 kHz**
- Data block lengths
  - 256, 512, 1 024, 2 048, 4 096, 8 192, 16 384, 32 768**
  - Spectral lines: Up to 12 800
  - Windowing: Hanning or flat top

** Subject to valid combinations of bandwidth and data block lengths.

Wireless communications

- Network: Ethernet 802.11b/g WiFi
- Addressing: Static IP or DHCP
- Encryption: WEP, WPA, WPA2/PSK

Data acquisition modes

- Wake-up mode
  - Programmable from one minute to one day
  - External wake-up from PLC
- Continuous mode: Available for machine troubleshooting

Power

- Battery
  - 2 pieces (purchased separately)
  - Normal duty: SAFT LSH 14 Light (non-transport restricted)
  - Extended duty: SAFT LSH 14 (transport restricted Class 9)
  - Battery monitoring function
- External power: 10 to 30 V DC, isolated to 1 500 V

Serial communications

- One (1) USB port for configuration

On-board visual indicators

- Six (6) LEDs for communications, triggering, etc.
  - On/off
  - Wireless signal stregth
  - WiFi connection status
  - Data acquisition status
  - Configuration mode
  - Internal failure detection

Certifications

- Wireless
  - FCC: Part 15, Class B
  - ETSI:
    - EN 300 328 V1.6.1 (2004-11)
    - EN 301 489-1 V1.5.1 (2004-11)
    - EN 301 489-17 V1.2.1 (2002-08)
- Hazardous area
  - Directive:
    Ex II 3G Baseefa08ATEX0294X
  - Battery: Ex nAnL [ib] IIC
  - External powered: Ex nAnL IIC
    - T4 (–10 °C ≤ Ta ≤ +60 °C)
    - T5 (–10 °C ≤ Ta ≤ +60 °C)
    - T6 (–20 °C ≤ Ta ≤ +49 °C)
- European Community
  - CE
  - RoHS

Mechanical and environmental

- Protection: IP 67
- Enclosure: Fiberglass-reinforced polycarbonate
- Approximate weight with battery: 1,4 kg *(3 lbs)*
- Operating temperature: –10 to +60 °C *(14 to 140 °F)*
- Cable glands: 12 pieces, hazardous-area certified
- Enclosure dimensions
  - Height: 120 mm *(4.74 in.)*
  - Width: 220 mm *(8.69 in.)*
  - Depth: 90 mm *(3.56 in.)*

Recommended sensors

For ATEX Zone 2 hazardous area use:

- SKF Multilog WMx located in Zone 2 and battery powered
  - CMSS 786A-IS
  - CMSS 787A-IS
  - CMSS 786T-IS
  - CMSS 786F-IS
  - CMSS 786A-D2
  - CMSS 787A-D2
  - CMSS 786T-D2
  - CMSS 786F-D2
- SKF Multilog WMx located in Zone 2 and external powered
  - CMSS 786A-D2
  - CMSS 787A-D2
  - CMSS 786T-D2
  - CMSS 786F-D2

For safe area use:

- SKF Multilog WMx battery or externally powered
  - CMSS 2100
  - CMSS 2100T
  - CMSS 2100F
  - CMSS 2200

Example cable/connector assemblies:

- CMSS R6Q-J9T2A-16 (with accelerometer)
- CMSS R6GQ-J9T3A-16 (with accelerometer and temperature sensor)

Ordering information

- **CMWA 7810-01** Base hardware
- **CMWA 7810-K** Basic system***
- **CMWA 7810-K-SP1** with sensor pack 1***
- **CMWA 7810-K-SP2** with sensor pack 2***

*** Includes Database Builder Software

Required Software

- **CMSW 7400** SKF @ptitude Analyst

For additional information on SKF Reliability Systems products, contact:

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