

SKF Axios

The first line of defense for your machinery

SKF Axios is a simple, wireless and scalable end-to-end predictive maintenance solution from SKF and Amazon Web Services (AWS). Ideal for virtually any industry including food processing, pulp and paper, pharmaceutical, utilities, universities, hospitals and more.

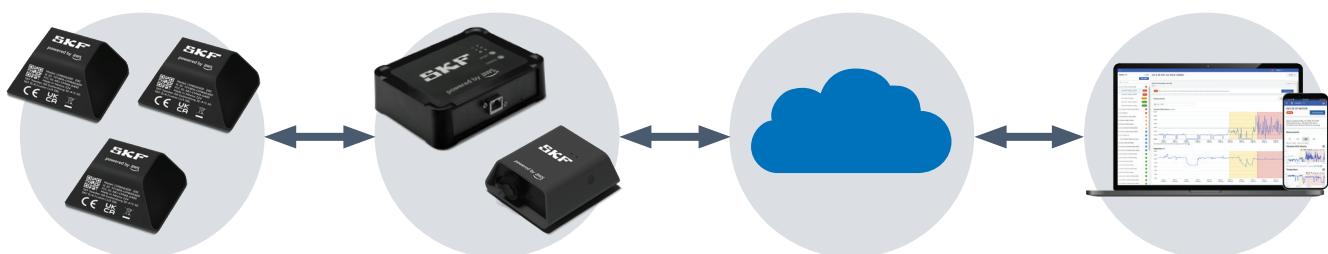


24/7 Wireless monitoring offers peace of mind

- **Fully automated wireless technology** for 3-axis vibration and temperature data collection
- **Works out of the box** and easy to install
- **No technical expertise** or vibration experience required
- **Uses machine learning** to detect anomalies and notify users
- **Cost-effective and scalable** – no need to make a case for capital expenditure
- SKF Axios sensors and gateways are backed by a **5-year warranty**.

Machine learning is key

SKF Axios collects and analyzes vibration and temperature data to **detect equipment anomalies** and provide notifications on the health of your machinery. When abnormal machine conditions are detected, users are alerted so they can respond with proper maintenance.



Sensors

Collect data from a wide range of machinery.

Gateways

Transfer data to the cloud via WiFi or Ethernet connection.

AWS cloud services

Use machine learning to analyze data and improve performance.

Apps

Enable users instant access to data and receive notifications on anomalies.



For more information, contact your SKF Representative or visit skf.com/axios



SKF Axios is IP69 Rated and is ideal for washdown applications.



Technical specifications for SKF Axios

Wireless Sensor

Measurements

3-axis MEMS accelerometer

Velocity: Frequency response up to 6 kHz, sampling frequency 26.7 kHz
 Maximum range: up to 16 g
 Temperature: -4 to 176 °F (-20 to 80 °C)
 Data collection frequency: Once an hour

Environmental

Operating temperature range: -4 to 176 °F (-20 to 80 °C)
 IP rating: IP69

Physical

Dimensions: 2.08 x 1.69 x 0.98 in (52.8 x 43.0 x 24.9 mm)
 Weight: 1.9 oz (54 grams)
 Mounting method: Instant adhesive / Epoxy

Wireless communication

Wireless protocol: Bluetooth Low Energy 5
 App – Sensor interface: NFC (Near Field Communication)
 Gateway to sensor range: 65 to 98 feet (20 to 30 m) typical, depending on plant topology

Power source

Power: Lithium metal non-rechargeable batteries
 Battery life: Estimated 5 years

Wi-Fi Gateway

Environmental

Operating temperature: 32 to 104 °F (0 to 40 °C)
 IP Rating: IP65

Physical

Dimensions: 3.6 x 3.1 x 1.5 in (9 x 7.8 x 3.8 cm)
 Weight: 3.3 oz (95 grams)

Network communication

Internet connectivity: Wi-Fi, 802.11b/g/n, ISM 2.4 GHz only

Power source

Power: Power 5.0V - 2.0 A DC
 AC adapter included for USA, UK and EU countries (indoors only)

Ethernet gateway

Environmental

Operating temperature: -4 to 140 °F (-20 to 60 °C)
 IP Rating: IP65

Physical

Dimensions: 5.5 x 4.2 x 1.6 in (13.9 x 10.7 x 4.1 cm)
 Weight: 8.2 oz (230 grams)

Network communication

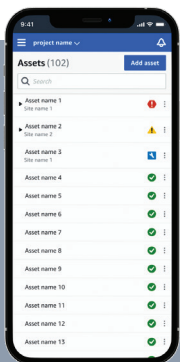
Internet connectivity: RJ45 10/100Mbps

Power source

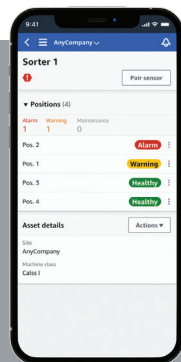
Power: Power over Ethernet (PoE)
 15.4 Watt class

Ordering information

Part designation	Description
CMWA 6400-5	SKF Axios Wireless sensor (5-pack)
CMWA 6710	SKF Axios Ethernet gateway
CMWA 6720	SKF Axios Wi-Fi gateway



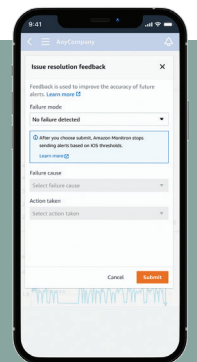
At-a-glance view of the health status of your assets.



View status at "Asset" and position levels (Alarm, Warning, Healthy).



View data trends and acknowledge alerts.



Enter resolution feedback to improve accuracy of future alerts.

For more information, contact your SKF Representative, email skfservices.sales@skf.com or visit skf.com/axios

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SKF Axios

Frequently Asked Questions



- **What type of machines can be monitored with SKF Axios?**

SKF Axios is designed for a variety of rotating equipment in safe operating conditions such as motors, pumps, fans, simple gearboxes, bearings, etc. It is not intended for use in consumer appliances and is currently not available for hazardous area applications such as power generation and offshore oil and gas stations.

- **How many sensors should be installed on a single machine? (example: electric motor)**

For small machinery (Class 1 and 2 according to ISO 20816 standard) and for the purpose of simple anomaly detection, one sensor per machine may be sufficient. For larger machinery (Class 3 and 4 according to ISO 20816 standard), two sensors per asset may be warranted. For large and critical machinery, more advanced solutions such as SKF Enlight Collect IMx-1 wireless system or SKF IMx-8 and 16 Multilog online systems should be considered.

- **What data is collected with SKF Axios sensors?**

SKF Axios sensors measure vibration in three axes and temperature.

- **What is the SKF Axios sensor battery life?**

The typical battery life of SKF Axios sensor is 5 years with a measurement frequency of one reading per hour. SKF Axios sensors are covered by a [five-year limited warranty](#).

- **Is SKF Axios water/fluid resistant?**

The SKF Axios sensor is IP69 rated, providing protection against dust ingress and high temperature / high pressure water exposure. SKF Axios gateways are IP65 rated, providing protection against dust ingress and some water exposure.

- **How do SKF Axios sensors communicate with the gateway?**

SKF Axios sensors communicate with SKF Axios gateways using Bluetooth Low Energy 5.

- **How do SKF Axios gateways connect to the Cloud?**

SKF Axios gateways connect via Wi-Fi or wired Ethernet connection.

- **How many sensors can connect to one gateway?**

The number of SKF Axios sensors connecting to one gateway depends on your plant topology. SKF recommends using one gateway for up to 50 sensors.

- **What is the typical range between SKF Axios sensors and gateways?**

The typical range is 65 to 98 feet (20 to 30 m), depending on your plant topology.

- **With what type of devices/operating systems can I use SKF Axios?**

SKF Axios is available in web-based and mobile apps. The mobile app is designed to be compatible with devices running iOS 14 or later and Android 8 or later. The mobile app can be downloaded from the Apple iOS App and Google Play Stores.



- **Is there a limit to the number of assets I can enter in the app?**

When you first get started, SKF will create an SKF Axios project for you and provide access details. You can add up to 50 sites per project and up to 100 assets per site. If extra sites or assets are needed, please contact [SKF Technical Support Group](#).

- **Is there a limit to the number of users who can use the app?**

You can add up to 100 users to your SKF Axios project.

- **Where do I find instructions for installation of sensors and gateways?**

For instructions to install and commission SKF Axios sensors and gateways, go to: [SKF Axios Quick Start Guide](#).

- **How are thresholds set in the app?**

When users add assets to SKF Axios, they must select the asset class. Thresholds are automatically set based on ISO 20816-1 standard asset classification. Within 2 to 3 weeks, SKF Axios Machine Learning models establish a baseline defining the asset's "normal" behavior. SKF Axios continues to fine-tune the baseline, building a better picture of "normal" as the sensor collects more data and as users provide feedback in the app.

- **What happens if SKF Axios is installed on an "unhealthy" asset?**

If SKF Axios is installed on an asset with an unhealthy status, an anomaly will be detected if the vibration measurement is above ISO thresholds. In this case, it is essential to report the issue in the app and correctly resolve it by selecting the failure mode and record the action taken. Resolving issues in the app enables the Machine Learning model to learn from the input when the machine operates in a "defective" state.

- **What actions are needed when SKF Axios detects an anomaly?**

When SKF Axios detects an anomaly, the mobile app sends a push notification to the phone. Users must investigate the issue through visual inspection or by using other data collection devices to diagnose the issue. Once the issue is identified, users may return to the app and resolve the issue by selecting the appropriate failure mode and action taken. User feedback contributes to the continuous improvement of SKF Axios Machine Learning models.

- **Can I export data from the app?**

Yes. From a position view, users can download a CSV file that includes timestamp, vibration and temperature for up to 10,000 measurements. If advanced data exports are required, please contact [SKF Technical Support Group](#) for more details.

- **Is SKF Axios secure?**

Yes. SKF Axios is powered by Amazon Web Services (AWS). AWS encrypts data at rest and in transit. Encrypted content is rendered useless without the applicable decryption keys.

- **Who owns the data hosted in the AWS cloud?**

Data collected with SKF Axios is owned by the customer. [SKF Technical Support Group](#) can provide all measurement data at the customer's request.

- **I have more questions on SKF Axios, who do I contact?**

For more information on SKF Axios, please contact: skfservices.sales@skf.com.

For more information, contact your SKF Representative, email skfservices.sales@skf.com or visit skf.com/axios.

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PUB 711-662 · March 2023