

SKF Axios



User Manual

Part Number **15V-090-00097-100**

Revision **A – June 2022**



Read this manual carefully before using the product. Failure to follow the instructions and safety precautions in this manual can result in serious injury, damage to the product or incorrect readings. Keep this manual in a safe location for future reference.

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Product Registration

Please take a moment to [register](#) your product to receive exclusive benefits offered only to our registered customers, including technical support, tracking your proof of ownership and staying informed about upgrades and special offers. (Please visit our website for more details on these benefits.)

General Product Information

General information such as datasheets and catalogues are published on the [Condition Monitoring Systems](#) site on SKF.com. Supporting product information can also be downloaded from the [SKF Technical Support](#) self-service web portal.

Product Support Contact Information

Product Sales – For information on purchasing condition monitoring products, services and support on products out of warranty, please contact your [local SKF sales office](#) or [distributor](#).

Technical Support – SKF's Technical Support Group can be reached during normal business hours via phone. Always check the [self-service web portal](#) before contacting your nearest Technical Support Group (TSG) to see if the answer is already published. You may search the vast knowledge base within the self-service web portal for answers to commonly asked questions (FAQ), how-to articles, technical specs, installation and user manuals, best practices and more.

If further assistance is needed, click on **Open a support case** from within the self-service web portal.

Otherwise, [TSG](#) can be reached during normal local business hours by phone, and live chat (login required).

Customers in Europe, Middle East and Africa:

- Phone: +46 31 337 6500
- E-Mail: TSG-EMEA@skf.com
- Chat: www.skf.com/cm/tsg

Customers in the Americas, Asia and all other locations:

- Phone: 1-858-496-3627 or toll-free (USA) 1-800-523-7514
- E-Mail: TSG-Americas@skf.com
- Chat: www.skf.com/cm/tsg

Appendix A Issue resolution feedback that modifies the ML Model

Type of feedback	Feedback	Meaning	Impact on ML Model
Failure Mode	No Failure Detected	The user has checked the asset and has detected no issue or failure, meaning that the levels of vibration/temperature that triggered the Alarms/warning correspond to normal running measurement/asset conditions.	-If the Alarm/warning was triggered by ISO, this will then stop ISO warning/alarms on that position as they are not representative of that asset normal running conditions. -If the Alarm/warning was triggered by ML, then all measurement taken during the Alarm period will be added to the ML learning data sets and trigger a change in the ML baseline and thresholds.
Failure Mode	Undetermined (Keep monitoring)	This code is used when the user cannot pinpoint the cause of vibration and would like to keep monitoring the asset	This will close the alarm but not change the ML thresholds, meaning that the alarm will be triggered again if the same level of vibration is measured again.
Action taken	No Action (keep monitoring)	This code is used when the user cannot pinpoint the cause of vibration and would like to keep monitoring the asset.	This will close the alarm but not change the ML model, meaning that the alarm will be triggered again if the same level of vibration is measured again. This will also not mute ISO if the alarm was triggered by an ISO threshold.

APPENDIX A
Issue resolution feedback that modifies the ML Model



Type of feedback	Feedback	Meaning	Impact on ML Model
Action taken	Modify	The part/component or asset was modified after the issue was found.	This will trigger a new learning period to adapt for the new vibration levels of the modified components/parts.
Action taken	Overhaul	The part/component or asset was modified after the issue was found.	This will trigger a new learning period to adapt for the new vibration/temperature levels of the new components/parts.
Action taken	Replace	The part/component or asset was replaced after the issue was found.	This will trigger a new learning period to adapt for the new vibration/temperature levels of the new components/parts.

Type of feedback	Feedback	Picture
Failure Mode	No Failure Detected	
Failure Mode	Undetermined (Keep monitoring)	
Action taken	No Action (keep monitoring)	
Action taken	Modify	
Action taken	Overhaul	
Action taken	Replace	

Appendix B Issue resolution

When a sensor detects a machine abnormality, the status of the asset changes. When a problem occurs, you can see it in the **Assets** list in the SKF Axios app.

Below is a list of actions the user can take to analyze the issue, detect the root cause of the abnormality, and return the asset to a healthy state.

Example of Steps to Take:

1. Before acknowledging the Alarm/Warning, check what triggered it in the message banner of the app/webapp to determine if:
 - a. The Alarm was caused by Vibration and/or Temperature
 - b. The Alarm was triggered after exceeding the ISO Threshold or ML, or both.

Note: In some cases, both vibration and temperature can be increasing, this can be indicative of a more critical situation as both are not necessarily separate indicators of worsening condition of your asset. Always review the graphs of both temperature and vibration.

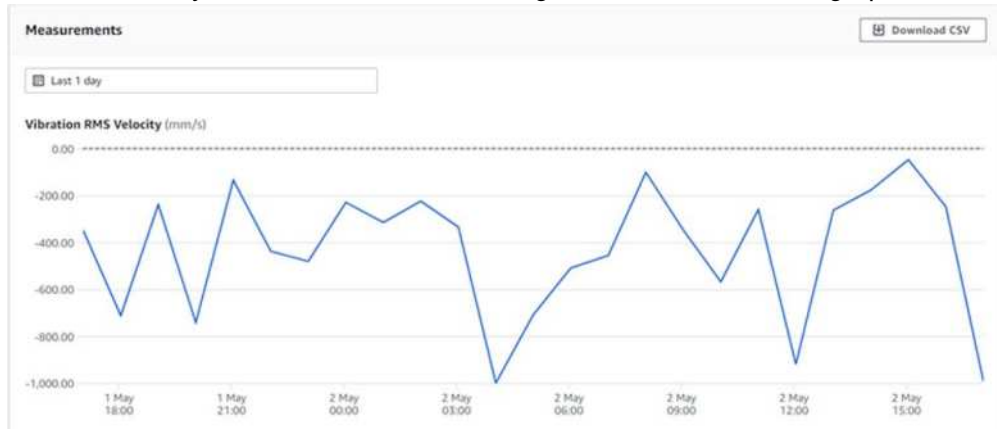
2. Check the evolution of the vibration/temperature measurement over time to look for any increase of vibration or temperature that can be an indicator of change in condition. (see picture below). The apps can show up to 30 days' worth of data.



Note: In several cases, a clear increase over time (like the picture above) will not be visible, this means that the level of vibration/temperature triggering the Alarm were:

- Higher than the vibration level measured during the learning period in 4 out of the 6 last running measurements.
- Higher than the ISO threshold in 4 out of the 6 last running measurements.
- Or the temperature measurement was 5°C (9°F) higher than the highest level measured during the learning period

3. You can also download the last 10,000 measurements from the webapp to measure the moving average of the vibration and temperature of your asset to check for any increase over time that might not be visible in the graph.



4. Once you have checked the level of vibration, you can acknowledge the alarm and start investigating the cause of the Alarm/Warning on the asset itself.

Note: Further input from additional condition monitoring technologies can help determine the root cause of the Alarm. For more information on how SKF condition monitoring solutions can help your facility, please visit www.skf.com

Example checklist

Feel free to add or remove action items based on the needs of your facility. This list is here to help you start analyzing your Asset and focus on your Root Cause Investigation

1. Visual inspection for damage, loose components, debris, alignment, tracking (Yes / No / NA)
2. Verify proper lubrication levels: (Yes / No / NA)
3. Inspect for any leaks: (Yes / No / NA)
4. Check belt for wear, damage, tracking, tension and joint: (Yes / No / NA)
5. Check drive chain components such as bearings, pulleys, belts, and rollers for wear, alignment and tension: (Yes / No / NA)
6. Check all cabling is free from moving parts: (Yes / No / NA)
7. Handheld vibration measurement comparison against base line or comparative test completed? (Yes / No / NA)
8. Handheld vibration measurement records a high- or low-level Alarm? (Yes / No / NA)
9. Inspection required with Thermal imaging? (Yes / No / NA)
10. Thermal recording within tolerance? (5% of nominal reading) (Yes / No / NA)
11. Inspection required with Stroboscope? (Yes / No / NA)
12. Motor current within normal operating parameters? (Yes / No / NA)

Act based on the findings you see from SKF Axios and from the checklist, fix the abnormality then resolve it on the app/webapp.

Appendix C Guidelines to help you name your Assets and Positions

The following guidelines are provided to help you create a machine hierarchy that is easy and consistent to manage and navigate, if your company does not already have standards in place.

Guidelines for naming Assets

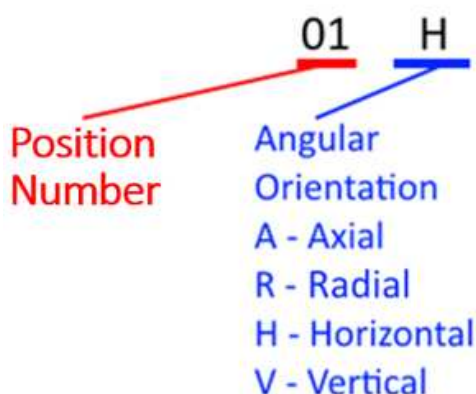
When naming assets, it is important to note that there is a 60-character limit. It is recommended to use this format in the name: **Physical Location / Driver or Functional Location ID / Name of the Machine or Asset Train**. This helps with creating uniformity within the hierarchy and allows for easily identifying assets

Example: Main Filter Rm/12-3456/Hyd Sup Pmp

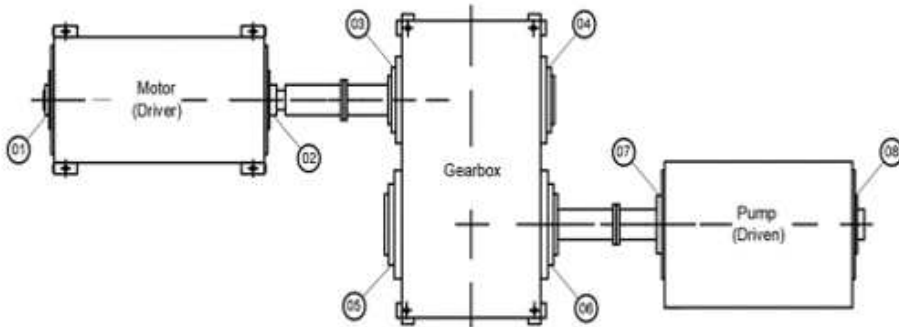
The Asset will not be created if the character limit is exceeded.

Guidelines for naming a Position

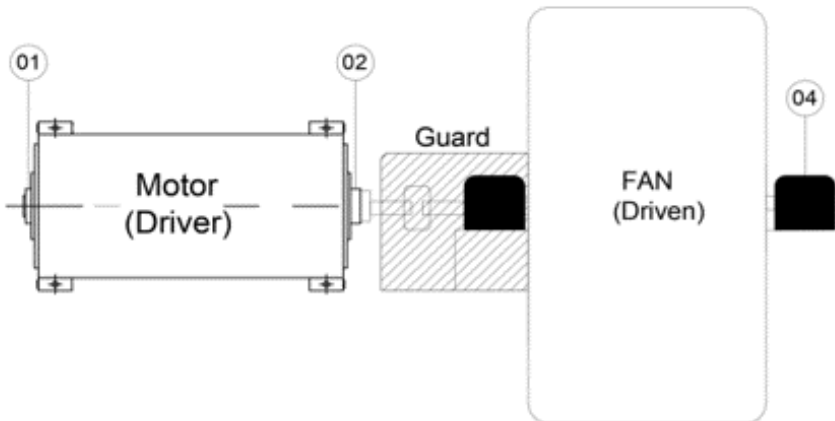
The 60-character limit also applies to naming positions. The application will not create the position if you exceed the character limit. It is recommended to use a combination of two-digit numbers, and a single letter that indicates the orientation of the sensor installation. Even though the sensor is triaxial, it is helpful to indicate in the position name the angular orientation to maintain consistency if sensors are changed out, or a sensor is knocked down. Please see the example:



We recommend, as a guideline, numbering the positions to follow the asset train – starting with “01” at the Non-Drive End (NDE) of the driver asset, through to the NDE of the driven asset. The following image is an illustration of this practice applied to a machine with a motor, gearbox, and a pump:



If it is not possible to take a measurement at a certain position, the number should be *skipped* – not applied to the next position. The following images show this practice applied on a motor-driven fan when the position at “03” is covered by guarding:



Assets (1) Add asset

▼ PM01 Mezz/23-4567/Sup Fan No sensor ⋮

View "PM01 Mezz/23-4567/Sup Fan"

01V NDE MTR	No sensor
02V DE MTR	No sensor
04H NDE FAN	No sensor

When naming the positions, it is also helpful to indicate the type of asset the sensor is installed on. For example, a sensor installed vertically (on top) on the NDE of a motor, would use: “01V NDE MTR”. Using this practice ensures the ability to easily locate a Position created for an Asset.

APPENDIX C

Guidelines to help you name your Assets and Positions



For a machine that is a motor-driven pump, there may be two sensors on the motor, and two sensors on the pump, which would look like the following in a hierarchy:

Assets (2) Add asset

▼ **Main Filter Rm/12-3456/Hyd Sup Pump** No sensor ⋮

View "Main Filter Rm/12-3456/Hyd Sup Pump"

01V NDE MTR	No sensor
02V DE MTR	No sensor
03H DE PMP	No sensor
04H NDE PMP	No sensor

▶ **PM01 Mezz/23-4567/Sup Fan** No sensor ⋮

Appendix D Gateway considerations

When implementing SKF Axios on site, the gateway's location is critical to ensure good communication with the sensors. The following information provides additional information to consider when determining the locations for gateway placement, and number of gateways needed.

Parameters that affect gateways

- The distance between the gateway and the sensors
- The number of sensors next to the gateway
- Position of the sensors on the asset

Distance between the gateway and sensors

- A maximum of 32 meters (104 ft) should be considered between the gateway and the sensors when determining the position of the gateways.
 - This distance does not factor in the number of sensors in one area, or the possibility of an interference between the gateway and sensors.

Number of sensors per Gateway

- In areas where there are high numbers of sensors installed, it is advised to have multiple gateways.
- In general, the number of sensors connecting to one gateway is advised not to exceed 100.
 - This provides a contingency for the sensors should a gateway go offline.

Other factors to consider

- Mounting the gateway higher than the sensors (2 m / 7 ft or above) can improve coverage
- Keeping an open line of sight between the gateway and sensors improves coverage
- Avoid mounting the gateway on building structures, such as exposed steel beams, as they can cause interference with signal
- If possible, install more than one gateway within transmission distance of your sensors. If a gateway becomes unavailable, the sensors will switch their data transmission to another gateway. Having multiple gateways helps eliminate data loss. There is no minimum distance required between two gateways

Gateway preparation

- When planning for gateways, consider possible work needed to install the gateways
 - The number of sensors next to the gateway
 - Possible Ethernet (RJ45) cabling, or Ethernet port to place at height
 - Possible need for a PoE capable switch(s) or PoE injector(s)

Appendix E Scaling up at your facility

Where should SKF Axios be installed

- Install SKF Axios on any asset where you want to detect change in vibration and/or temperature levels.
- To detect abnormalities in machine components, mount sensors in all locations where vibration and temperature can be measured effectively
Position of the sensors on the asset
- As rotating equipment develops issues (examples include, but are not limited to, misalignment, unbalance, looseness, debris accumulation, or lubrication issues), generally increased friction results. Excess friction results in increased vibration and leads to deteriorating operating conditions. By monitoring equipment, the SKF Axios helps identify changes over time, which may help prevent unplanned downtime.

How to determine the components where SKF Axios should be installed

The overall goal of SKF Axios is to identify changes in condition on your rotating equipment. These changes in condition may help with bringing attention to a developing issue with a machine or bring attention to a machine that will need planned maintenance.

Example of SKF Axios installed on a belt conveyor

- Specification of the belt conveyor - it has four rollers (drive roller, tension roller, driven roller, end roller), and a gearmotor.
- The components creating movement in a conveyor are the following:
 - The electric motor: in this case we will have a measurement point for each of the bearings in the motor (2 bearings in this case) → 2 measurement points.
 - The coupling (if there is one) between the electric motor and the gearbox → 1 measurement point.
 - The input and output of the gearbox at the least, in case of bigger gearboxes you can have measurement point for each bearing → At least 2 measurement points.
 - The drive roller will have a measurement point for each bearing on each side → 2 measurement points

- The tension roller will have a measurement point for each bearing as well → 2 measurement points.
- The end roller will have a measurement point for each bearing → 2 measurement points
- This means that for a standard belt conveyor, you should expect around 11 or more measurement points.
- When covering these points, you are monitoring the condition of the components that make your belt run, this gets you close to eliminating the causes of components that would stop the machine in case of breakdowns to worsening condition.
- This logic can also be used for Thermal routes, where we will focus on the motor, gearbox and the visible rollers and all electrical cabinets.

Considerations for building an Asset list where SKF Axios is installed

- Once the asset list file is filled, you can also create an installation SOP for your assets.
- Sensor position and name should be standardized from the beginning as shown in the [Appendix C Guidelines to help you name your Assets & Positions](#)

Possible information to track in an Asset list

- Asset designation.
- Position/location on site.
- Manufacturer.
- Model.
- Number of sensors.
- Sensor locations

Other useful information you may want to track

- Criticality of the asset.
- Is the asset hard to access or not? This information can prove useful to estimate amount of time needed for the sensor's installation.
- Asset description.
- Type of equipment: conveyor, sorter, elevator, HVAC, freezer, etc.

SKF Axios Quotas

Description	Quota
Maximum number of sites per project	50
Maximum number of assets per site	100
Maximum number of positions (or sensors) per asset	20
Maximum number of gateways per site	200
Maximum number of users per site	20

Appendix F Sensor safety and compliance

Use Responsibly. Before using SKF Axios Sensor, read all instructions and safety information. While using SKF Axios Sensor, follow all instructions and heed all warnings. Keep this document for reference.

PERSONAL SAFETY PRECAUTIONS

FAILURE TO FOLLOW THESE SAFETY INSTRUCTIONS COULD RESULT IN FIRE OR OTHER INJURY.

WARNING! The lithium metal batteries in this device cannot be recharged or replaced. Do not disassemble, bend, deform, puncture, or shred the device. Do not modify or immerse the device into water or other liquids. Do not expose the device to fire, explosion or other hazard. Promptly dispose of used device in accordance with applicable laws and regulations. If dropped and you suspect damage, take steps to prevent any ingestion or direct contact of fluids and any other materials from the battery with skin or clothes.

WARNING! This device is intended for commercial use only; it is not intended for household use.

WARNING! This equipment is not suitable for use in locations where children are likely to be present.

CAUTION! The SKF Axios Sensor devices can be placed on equipment outside; however, the SKF Axios Gateway must be located indoors as the power adapter is not intended for outdoor use.

CAUTION! Do not open the device. Do not modify, alter, reverse engineer, tamper with, or repair the device. Do not perform any servicing other than that contained in the installation guide.

CAUTION! Mounting. Check and obey the applicable safety regulations when installing the device. You are solely responsible for safely installing the device on any equipment or machine part.

This equipment is not suitable for use in places that may accommodate children. The material is not suitable for use in places where children are likely to be present.

The device is mounted using industrial adhesive. We recommend Cyanoacrylate types like Loctite © 454 and Loctite © 3090 or similar. Always consult and obey the safety and handling instructions of the adhesive manufacturer.

Consult [Mounting a sensor](#) for optimal placement of the device and commissioning.

DEVICE CARE PRECAUTIONS

FAILING TO FOLLOW THESE SAFETY INSTRUCTIONS COULD RESULT IN DAMAGE TO THE EQUIPMENT OR VOID THE WARRANTY.

Device Care and Use

Keep the SKF Axios Sensor dry.

This device has IP69 rating and should not be immersed in water or other liquids.

If the device is dropped or otherwise damaged, the device may be compromised when exposed to water.

Do not expose the device to pressurized water, high velocity water, or extremely humid conditions.

Do not spill any abrasive substances on the device.

Don't expose the SKF Axios Sensor to extreme temperatures.

Do not expose this device to extreme heat or cold. Store the device in a location where temperatures remain within the storage temperature ratings set forth in the technical data sheet. The device is designed to function within the operating temperature ratings set forth in the technical data sheet. If it is too hot or too cold, the device may not turn on or function properly until it has warmed or cooled, as the case may be, to within the applicable temperature ratings.

To reduce the risk of electrostatic discharge upon contact with this device, avoid such contact in extremely dry conditions.

Service Your Device

If you suspect the device is damaged, discontinue use immediately and contact SKF Technical Support. Contact details can be found [here](#). Faulty service may void the warranty.

USING THE DEVICE AROUND OTHER ELECTRONIC DEVICES

The device generates, uses, and can radiate radio frequency (RF) energy. If not used in accordance with instructions, may cause interference to radio communications and electronic equipment. External RF signals may affect improperly installed or inadequately shielded electronic operating systems, entertainment systems and personal medical devices. While most modern

electronic equipment is shielded from external RF signals, if in doubt, check with the manufacturer. For personal medical devices (such as pacemakers and hearing aids), consult your doctor or the device manufacturer to determine if they are adequately shielded from external RF signals.

FCC Compliance

This product complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This product may not cause harmful interference, and (2) this product must accept any interference received, including interference that may cause undesired operation. Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to a socket on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Pursuant to Section 15.21 of the FCC rules, changes, or modifications to a product by the user that are not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

The product meets the FCC Radio Frequency Emission Guidelines and is certified with the FCC under the FCC ID number found on the device.

Information Regarding Exposure to Radio Frequency Energy

The output power of the radio technology used in this device is below the radio frequency exposure limits set by the FCC. Install and operate the device with at least 20 cm (approximately 8 inches) between the device and your body.

RECYCLING OR DISPOSING OF DEVICE

In some areas, disposal of certain electronic devices is regulated. Dispose of or recycle the device in accordance with local laws and regulations.

TERMS AND WARRANTY

For legal terms and warranty information for **SKF Axios** Sensor, see [SKF Reliability Systems General Conditions of Sales](#). SKF Axios device may not leave the country to which the SKF Axios device was shipped.

Appendix G Wi-Fi Gateway Safety and compliance

Use Responsibly. Before using SKF Axios Gateway device and its accessories, including the power adapter, read all instructions and safety information. While using SKF Axios Gateway, follow all instructions and heed all warnings. Keep this document for reference.

PERSONAL SAFETY PRECAUTIONS

FAILURE TO FOLLOW THESE SAFETY INSTRUCTIONS COULD RESULT IN FIRE OR OTHER INJURY.

WARNING! This device is intended for commercial use only; it is not intended for household use.

WARNING! This equipment is not suitable for use in locations where children are likely to be present.

WARNING! Do not use the power adapter if it appears damaged. Immediately stop using damaged equipment.

CAUTION! SKF Axios Gateway is shipped with a power adapter. The device is only intended to be powered using the adapter included with the device.

CAUTION! SKF Axios Gateway and its power adapter are only intended for indoor use. Do not use the device outdoors.

CAUTION! Do not open the device. Do not modify, alter, reverse engineer, tamper with, or repair the device. Do not perform any servicing other than that contained in the installation guide.

CAUTION! Placement. Check and obey the applicable safety regulations when setting up the device. You are solely responsible for safe placement the device. Consult [Placing and installing a Wi-Fi Gateway](#) for optimal placement of the device and commissioning.

DEVICE CARE PRECAUTIONS

FAILING TO FOLLOW THESE SAFETY INSTRUCTIONS COULD RESULT IN DAMAGE TO THE EQUIPMENT OR VOID THE WARRANTY.

Device Care and Use

Keep the SKF Axios Gateway dry.

APPENDIX G

Wi-Fi Gateway safety and compliance



Do not use the device near water or wet locations. Do not place objects filled with liquids, such as glasses or vases, on the device, or otherwise expose the device to liquids or moisture. Do not expose the power adapter or cable to any liquids or moisture.

If the device does get wet, carefully unplug all cables without getting your hands wet and wait for the device to dry completely before plugging it in again. Do not attempt to dry the device with an external heat source, such as a microwave oven or hairdryer.

Do not expose the device to pressurized water, high velocity water, or extremely humid conditions.

Take care not to spill any food or liquid on the device. Do not spill any abrasive substances on the device.

Don't expose the SKF Axios Gateway to extreme temperatures.

Do not expose this device to extreme heat or cold. Store it in a location where temperatures remain within the storage temperature ratings set forth in the technical datasheet. The device and the included accessories are designed to function within the operating temperature ratings set forth in the technical datasheet. If it is too hot or too cold, the device may not turn on or function properly until it has warmed or cooled, as the case may be, to within the applicable temperature ratings.

To reduce the risk of electrostatic discharge upon contact with this device, avoid such contact in extremely dry conditions.

Use the power adapter and cable correctly and safely.

Unplug the power adapter during lightning storms or when you don't plan to use the device.

Service Your Device

If you suspect the device is damaged, discontinue use immediately and contact SKF Technical Support. Contact details can be found here. Faulty service may void the warranty.

USING THE DEVICE AROUND OTHER ELECTRONIC DEVICES

The device generates, uses, and can radiate radio frequency (RF) energy. If not used in accordance with instructions, may cause interference to radio communications and electronic equipment. External RF signals may affect improperly installed or inadequately shielded electronic operating systems, entertainment systems and

personal medical devices. While most modern electronic equipment is shielded from external RF signals, if in doubt, check with the manufacturer. For personal medical devices (such as pacemakers and hearing aids), consult your doctor or the device manufacturer to determine if they are adequately shielded from external RF signals.

FCC Compliance

This product complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This product may not cause harmful interference, and (2) this product must accept any interference received, including interference that may cause undesired operation. Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one

or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment to a socket on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Pursuant to Section 15.21 of the FCC rules, changes, or modifications to a product by the user that are not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

The product meets the FCC Radio Frequency Emission Guidelines and is certified with the FCC under the FCC ID number found on the device.

Information Regarding Exposure to Radio Frequency Energy

The output power of the radio technology used in this device is below the radio frequency exposure limits set by the FCC. Install and operate the device with at least 20 cm (approximately 8 inches) between the device and your body.

RECYCLING OR DISPOSING OF DEVICE

In some areas, disposal of certain electronic devices is regulated. Dispose of or recycle the device in accordance with local laws and regulations.

TERMS AND WARRANTY

For legal terms and warranty information for SKF Axios Gateway, see [SKF Reliability Systems General Conditions of Sales](#). SKF Axios device may not leave the country to which the SKF Axios device was shipped.

Appendix H Ethernet Gateway safety and compliance

Use Responsibly. Before using SKF Axios Gateway (Ethernet) device and its accessories, read all instructions and safety information. While using SKF Axios Gateway (Ethernet), follow all instructions and heed all warnings. Keep this document for reference.

PERSONAL SAFETY PRECAUTIONS

FAILURE TO FOLLOW THESE SAFETY INSTRUCTIONS COULD RESULT IN FIRE OR OTHER INJURY.

WARNING! This device is a Class A device and intended for commercial use only; it is not intended for household and residential use.

WARNING! This equipment is not suitable for use in locations where children are likely to be present.

CAUTION! Do not open the device. Do not modify, alter, reverse engineer, tamper with, or repair the device. Do not perform any servicing other than that contained in the installation guide.

CAUTION! Placement. Check and obey the applicable safety regulations when setting up the device. You are solely responsible for safe placement the device. Consult [Placing and installing an Ethernet Gateway](#) for optimal placement of the device and commissioning.

DEVICE CARE PRECAUTIONS

FAILING TO FOLLOW THESE SAFETY INSTRUCTIONS COULD RESULT IN DAMAGE TO THE EQUIPMENT OR VOID THE WARRANTY.

Device Care and Use

Do not place objects filled with liquids, such as glasses or vases, on the device, or otherwise expose the device to liquids or moisture.

Do not attempt to dry the device with an external heat source, such as a microwave oven or hairdryer.

Do not expose the device to pressurized water, high velocity water, or extremely humid conditions.

Take care not to spill any food or liquid on the device. Do not spill any abrasive substances on the device.

Don't expose the SKF Axios Gateway to extreme temperatures.

Do not expose this device to extreme heat or cold. Store it in a location where temperatures remain within the storage temperature ratings set forth in the technical datasheet. The device and the included accessories are designed to function within the operating temperature ratings set forth in the technical datasheet. If it is too hot or too cold, the device may not turn on or function properly until it has warmed or cooled, as the case may be, to within the applicable temperature ratings.

To reduce the risk of electrostatic discharge upon contact with this device, avoid such contact in extremely dry conditions.

Service Your Device

If you suspect the device is damaged, discontinue use immediately and contact SKF Technical Support. Contact details can be found here. Faulty service may void the warranty.

USING THE DEVICE AROUND OTHER ELECTRONIC DEVICES

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to a socket on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Pursuant to Section 15.21 of the FCC rules, changes or modifications to a product by the user that are not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

The product meets the FCC Radio Frequency Emission Guidelines and is certified with the FCC under the FCC ID number found on the device.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Information Regarding Exposure to Radio Frequency Energy

The output power of the radio technology used in this device is below the radio frequency exposure limits set by the FCC. Install and operate the device with at least 20 cm (approximately 8 inches) between the device and your body.

RECYCLING OR DISPOSING OF DEVICE

In some areas, disposal of certain electronic devices is regulated. Dispose of or recycle the device in accordance with local laws and regulations.

TERMS AND WARRANTY

For legal terms and warranty information for SKF Axios Gateway, see [SKF Reliability Systems General Conditions of Sales](#). SKF Axios device may not leave the country to which the SKF Axios device was shipped.