

picoScan100 - Firmware release information



Document published 22 Apr 2025

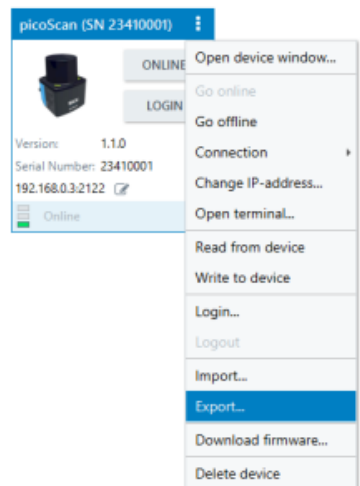
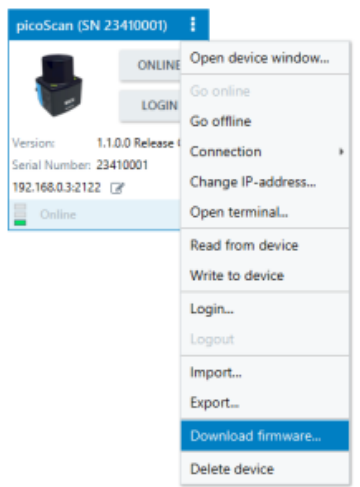
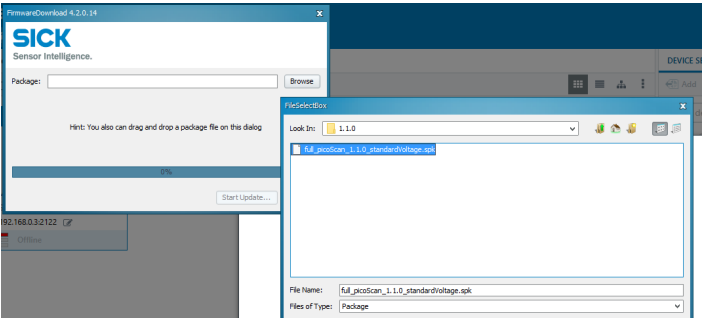
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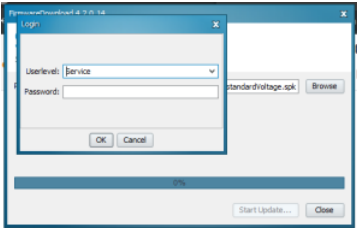

General information

- V1.x.x is a standard firmware for all picoScan150 variants.
 - V2.x.x is a standard firmware for all picoScan150 and picoScan120 variants.
 - Both picoScan150 and picoScan120 need separate firmware files (.spk).
 - The firmware file (.spk) of picoScan150 cannot be installed on picoScan120 and the other way around.
 - Downgrades to older firmware versions are not possible.
 - A firmware update typically does not affect the active parameter settings.
 - Purchased features (licenses) are not affected by firmware upgrades for picoScan150 variants.
 - After activation or deactivation of licenses a device reboot is necessary.
-

Update instructions

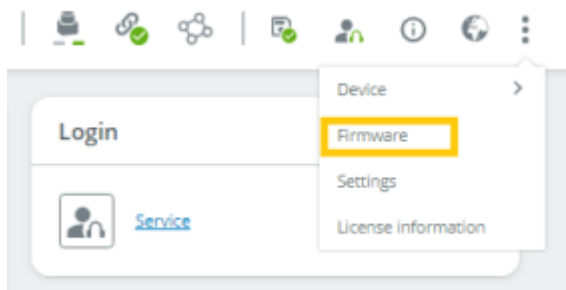
Firmware update via SOPAS ET (>= V1.0.2)

1	Save and unpack the files on your local hard disk (please use full admin rights on your PC).	
2	Make sure the picoScan100 is connected via Ethernet to your PC and booted up. Power supply must remain stable during the update process.	
3	Use SOPAS ET or AppManager for firmware updates. The following instructions refer to SOPAS ET only.	
4	Search for the connected picoScan100 and drag and drop the device into the SOPAS ET project. (Recommendation: Save your parameter file (.sopas file) before you start the update.)	 <p>The screenshot shows the SOPAS ET interface with a device card for 'picoScan (SN 23410001)'. The card displays 'Version: 1.1.0', 'Serial Number: 23410001', and '192.168.0.3:2122'. A context menu is open over the device card, and the 'Export...' option is highlighted in blue.</p>
5	Open the settings and choose <i>Download firmware</i> .	 <p>The screenshot shows the same SOPAS ET interface as in step 4. The context menu is still open, but now the 'Download firmware...' option is highlighted in blue.</p>
6	Select the firmware package (.spk) and start the update process.	 <p>The screenshot shows the 'FirmwareDownload 4.2.0.14' dialog box. The 'File Selection' window is open, showing the file 'full_picoScan_1.1.0_standardVoltage.spk' selected. The 'File Name' field shows 'full_picoScan_1.1.0_standardVoltage.spk' and the 'Files of Type' is set to 'Package'.</p>

7	Log-in to the picoScan100 with user level: <i>Service</i> and password: <i>servicelevel</i> The update procedure may take up to 2 minutes.	
8	Wait until the reboot is completed and the device LED turns green.	
9	Check the SOPAS window for the correct firmware version. Depending on the firmware update, the SOPAS ET device driver may need to be reinstalled by pressing "install device driver".	
10	Before the picoScan100 is used for operation, ensure the device works as expected and that all parameters are set as intended.	
11	In case of uncertainty: <ul style="list-style-type: none"> Set factory defaults in the device (user level "Service") Load your parameter file (.sopas) in the device 	
12	Done	

Firmware update via SOPASair / web browser (>= V2.1.0)

SOPASair offers the possibility of a firmware update:



Headless firmware update via HTTP/REST (>= V1.4.0)

Next to the GUI-based update process, the picoScan100 offers the possibility to update the firmware headless via HTTP. The firmware update takes place in two steps:

1. Transfer the firmware file (.spk) to the device via HTTP (PUT, <ip>/api/update)
2. Trigger the actual update via HTTP (POST, <ip>/api/RunFirmwareUpdate). The current status of the update can be monitored via (GET, <ip>/api/UpdateState).

A video tutorial is available here: [How to perform a firmware update via HTTP?](#) Further information about the HTTP endpoints can be found in the [OPEN API](#) description.

Firmware V2.1.0

Compatible for: picoScan120 and picoScan150

Release date: cw 16/2025

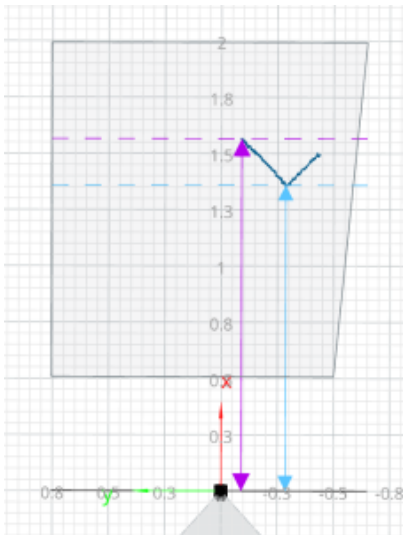
Effective from: S/N 2517xxxx (picoScan120 and picoScan150)

New Features

Perpendicular distance evaluation

Perpendicular Distance evaluation is available as part of the 2D Object Detection Advanced license package. With this feature it is possible to draw evaluation fields and evaluate the minimum and maximum perpendicular distance between objects entering the field and a reference line. A video on "How to output the perpendicular distance of a field?" can be found here: <https://support.sick.com/sick-knowledgebase/article/?code=KA-09379>. The new feature can be activated with the following options:

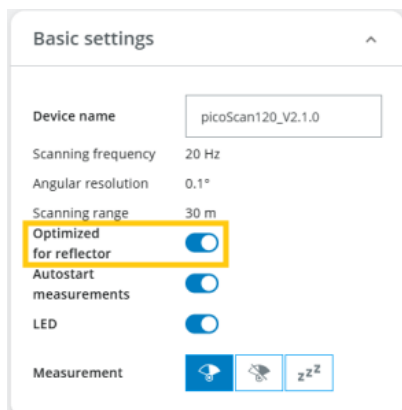
- Configuring a new device via the sales configurator and selecting the 2D Object Detection Advanced package.
- Activating the the corresponding license (1146093 PICOSCAN PERPENDICULAR DISTANCE) via the License Manager on a existing device.



Reflector detection improvements

With V2.1.0 several improvements related to the measurement performance on retro-reflectors have been implemented:

1. General improvement of reflector detection algorithm especially for false positive detection in ambient light conditions. Devices produced after >SN 2422xxxx have been more sensitive for false positive reflector detection. This behavior was improved.
2. Reflector information is now also available via LMDscandata. Whenever a reflector is detected it will be shown by the defined RSSI value 254. Like other SICK products e.g. LMS1xx.
3. Reflector detection filter for double echoes of reflector targets.
4. picoScan120 only: Added a "optimized for reflector" mode to picoScan120 for improved measurement performance on reflector targets. Therefore the different "Sensitivity" settings will disappear - there is no longer a benefit of having them for picoScan120. The "optimized for reflector" mode is designed to have the best perception on reflector targets. Due to this very small, transparent or mirroring objects can be overseen.

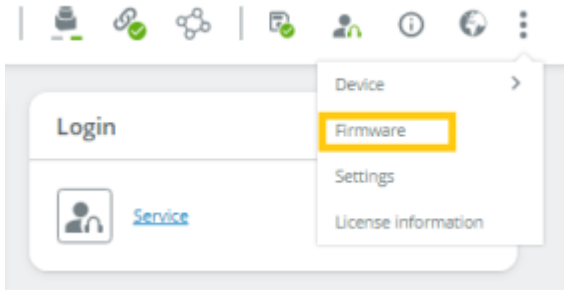


HTTPS

The picoScan100 now support HTTPS, ensuring secure and encrypted communication for enhanced data protection. A video on "How to create SSL certificates to enable HTTPS communication?" can be found here: <https://support.sick.com/sick-knowledgebase/article/?code=KA-09379>

Firmware update via SOPASair

SOPASair (web browser) now offers the possibility of a firmware update. Therefore SOPAS ET is not needed anymore for a firmware update.



Full screen scan view available as separate URL

To visualize measurement data or 2D object detection in a full screen mode, the picoScan100 offers a separate URL: `<IP>/#/scanview_fullscreen=` (e.g. `http://192.168.0.1/#/scanview_fullscreen=`)

Measurement data recording

It is possible to record and play back measurement and IMU data when used in combination with additional recorder software: <https://www.sick.com/de/en/downloads/media/swp681956>. A video on "How to use SOPASair (web browser) to record and playback measurement data (.sc)?" can be found here: <https://support.sick.com/sick-knowledgebase/article/?code=KA-09379>

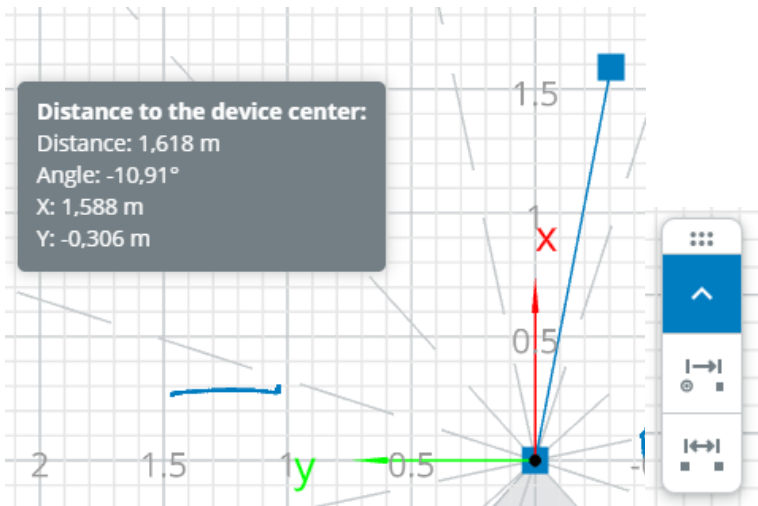
Improvements and fixes

2D Object Detection: detection history improvements

- Improved visualization of the object detection history table.
- Fixed known issue of inconsistent configuration, if evaluations are deleted, renamed or newly created with the same names.

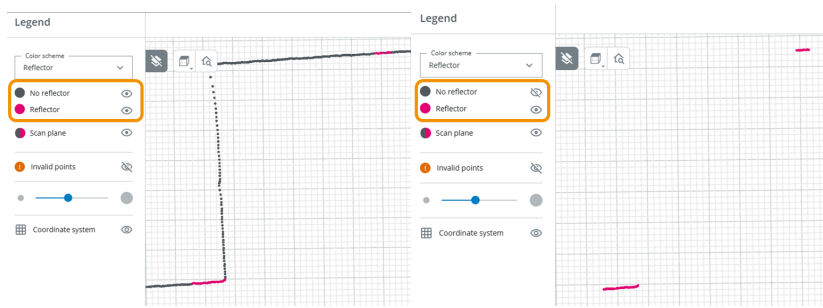
Improved measurement tool

It is now possible to measure the "distance to the device center" with the GUI measurement tool.



Improved GUI for reflector visualization

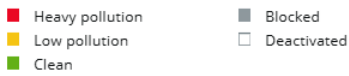
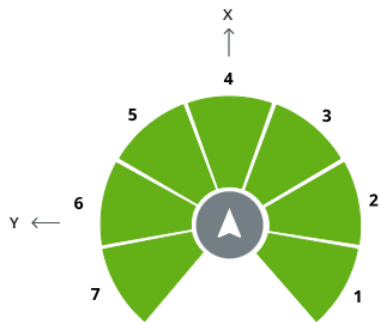
New "show and hide" option for the scan view visualization is now available. Show/Hide "Reflector" or "No Reflector" scan points in SOPASair. See picture below, "No Reflector" scan points are hidden:



Improved GUI for contamination indication

Rework of contamination indication element including user experience improvements and bug fixes.

Contamination display



Configuration

Warning/error output	No output ▼
Sensitivity	High ▼
Sector preselection	None ▼
Sector selection	Sector 1, Sector 2... ▼
Response time	<div> <div>—</div> <div>3</div> <div>sec</div> <div>+</div> </div>

LMDscandata includes I/O states

To have better compatibility to products like TiM or LMS1, LMDscandata now includes I/O states. Please refer to the product manual for more details.

Updated diagnosis GUI component

Diagnostics Overview is now showing more details about the messages. Now these icons are indicating the message category:



In addition to that the overview now shows if the message number and if e.g. a warning is activated or deactivated.

Improved output counter behavior (previous know issue)

Improved a miss counting of the outputs. When the output is HIGH, every configuration change which not affects the real status of the output lead the counter to count up. This is now fixed. In addition to that issue with Output counter was fixed. Once the counter is reset the counter value is "-" (=0) previously the counter value was set to "2" after reset.

Improved .sopas file imports

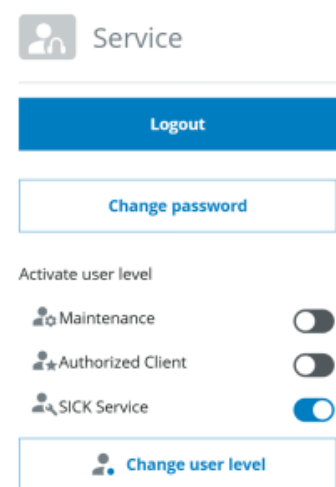
An import of SOPAS files can now be executed independently from the former firmware version the SOPAS file was created. If some information in the import SOPAS file does not matching the set up of the to-be-updated-device a warning message will appear.

Improved error and warning message handling

- During operation the error message "too many functions are active at the same time" occasionally appeared. The algorithm was optimized, so this error message appears less often.
- A warning message that the device temperature is too low is displayed at -5°C or less, as the motor start-up may be delayed. In rare cases this warning message was displayed at higher temperatures. This issue was fixed.

CoLa A/B user level *Maintenance* and *Authorized Client* disabled by default

To comply with the latest cybersecurity requirements, the user levels "Maintenance" and "Authorized Client" are disabled by default. Consequently, the Cola A/B interface operates similarly to the HTTP/REST interface. These user levels can be enabled through the GUI after logging in with the "Service" user level.



Note: When updating from firmware versions earlier than V2.1.0 to V2.1.0, any previously enabled user levels will remain active. Performing a factory reset will revert to the default settings: "Maintenance" and "Authorized Client" disabled, and "Service" enabled. For more information see: <https://support.sick.com/sick-knowledgebase/article/?code=KA-09889>

Fixed Known Issue Scan range filter (LMDscandata)

When the scan range filter is enabled, the first output beam had a distance value of "0". This behavior is fixed.



Behavioral changes

2D Object Detection

In case the maximum number of active fields (>20 fields) is exceeded, the application 2D Object Detection is not working anymore. Since firmware V2.1.0 the device status now also changes to "device not ready".

LED color during output state "waiting for restart" changed

The LED colors are now as follows:

LED 1 color	LED 2 color	Description
 (Yellow)	 (Green)	Restart after time or digital input

● = illuminated; ● = flashing

DHCP fallback default parameter changed to "Static IP"

The DHCP fallback default parameter has been "Repeat DHCP" and is changed to "Static IP" with this firmware.

API changes and publications

All API changes and publications are documented in the OpenAPI file (picoScan120: <https://www.sick.com/de/en/downloads/media/swp684461>; picoScan 150 : <https://www.sick.com/de/en/downloads/media/swp678507>)

perpendicularDistanceResult

The result of the perpendicular distance feature can be retrieved with "perpendicularDistanceResult". The telegram sends the minimum distance, the maximum distance and the timestamp.

EtherCoLaScanMode

The variable "EnableColaScan" has been removed and replaced with "EtherCoLaScanMode", offering enhanced configuration options for device discovery via broadcast scan (SOPAS ET default search). The new modes include:

- Enabled: Device can be discovered and the IP address can be changed.
- Time-Limited: Device can be discovered, but the IP address can be changed within 60 seconds after boot only (default).
- Restricted: Device can be discovered, but the IP address cannot be edited.
- Disabled: Device cannot be discovered.

EthernetUpdate

After updating the IP configuration the telegram "EthernetUpdate" needs to be sent to trigger the reconfiguration.

changePassword

Sets the password for the REST interface. For more details see https://github.com/SICKAG/sick_scan_rest_client

SetPassword

Sets the password for the CoLa A/B interface. For more details see https://github.com/SICKAG/sick_scan_rest_client

EnableUserLevel

Activates / deactivates a specific user level for the REST interface.

EnableLegacyUserLevel

Activates / deactivates a specific user level for the CoLa A/B interface.

EnableDetectionHistory

Returns/sets the detection history.

EvaluationsToLog

Returns/sets the evaluations which are logged (if they are in use).

ResetDetectionHistory

Resets the detection history logs.

httpsStatus

Returns the status of the HTTPS interface.

certificateBundleInfo

Returns information about the uploaded certificate bundle.

setCertificateBundleInfo

Uploads a certificate bundle in the PEM format via JSON.

removeCertificateBundleInfo

Removes the uploaded certificate bundle.

Known Issues

Contamination indication

The contamination indication segments show "clean", if the measurement is stopped or the device is in stand-by mode.

Possible file error when executing system diagnosis on high load

When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur. Recommendations: Please deactivate those filter bevor executing the system diagnosis.

Reset to factory settings

At the time the device is reset to factory settings, an error message may occur in the error log but can be safely ignored.

Startup time

Device availability may experience a slight delay with a very low probability. In this case, the device will be fully operational within 20 seconds.

Firmware update

Post-firmware update, there is a minimal chance of encountering a fatal error. Should this occur, the initial firmware update was not successful. In that case a subsequent firmware update is required. If the device operates in a stable mode (indicated by a green LED) for more than 10 minutes, the update was successful.

Angle range filter can not be disabled for data output format LMDscandata

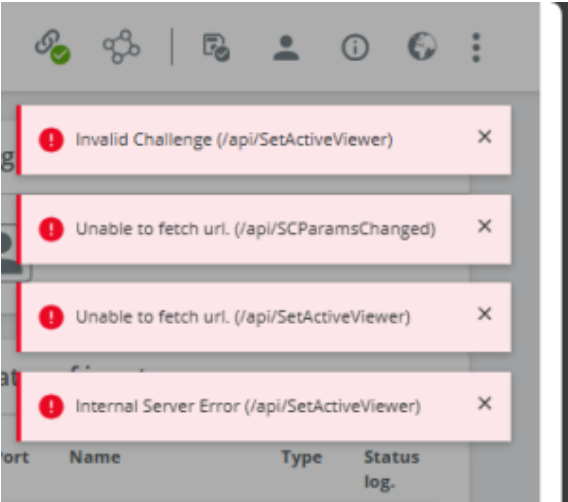
If you want to output the full field of view, set the start angle to -138° and the stop angle to 138° or perform a factory reset.

GUI: Invalid measurement point displayed at 0° in Application Data output

Invalid measurement point displayed in GUI. However this has no impact to the measurement data output via Compact or LMDscandata.

GUI: Notifications during and after factory reset, firmware update or reboot in SOPASair

During a factor reset, firmware update or reboot some notifications can appear but can be safely ignored.



Firmware V2.0.0

Compatible for: picoScan120 only

Release date: CW 45/2024

Effective from: S/N 2442xxxx

Initial firmware for picoScan120

Headless firmware update via REST available

A firmware update can be performed without a graphical user interface (e.g. SOPAS ET or AppManger). This is possible via the REST interface (HTTP). The firmware update takes place in two steps:

1. Transfer the firmware file (.spk) to the device via HTTP (PUT, <ip>/api/update)
2. Triggering the update via HTTP (POST, <ip>/api/RunFirmwareUpdate)
3. The current status of the update can be monitored via (GET, <ip>/api/UpdateState).

Further information can be found in the OpenAPI description.

[Knowledge Article](#) | [Support Portal](#) | [How to install the Insomnia plugin to fix "Access Denied" during HTTP POST request?](#)

[Knowledge Article](#) | [Support Portal](#) | [How to perform a firmware update via http?](#)

Known Issues

Possible file error when executing system diagnosis on high load

When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur. Recommendations: Please deactivate those filter before executing the system diagnosis.

Cola A/B only after reboot inactive

Cola A/B is not deactivated after setting the variable EtherAuxEnabled to false. A power cycle is needed in order that the modification takes effect.

Output counter does not work as intended

Output counter isn't showing the correct number. This feature should not be used to count the "Device Not Ready" signals.

Queue overflows occur when ethernet settings are changed

When changing the ethernet settings e.g. IP address an error message can occur. No impact for usage of picoScan120.

Various error messages while using SOPAS ET - recommended to use SOPASair

SOPAS ET can show several error messages, however SOPAS ET is not recommended to use. Instead use SOPASair to configure the picoScan120.

Angle range filter can not be disabled for data output format LMDscandata

If you want to output the full field of view, set the start angle to -138° and the stop angle to 138° or perform a factory reset.

Firmware V1.5.0

Compatible for: picoScan150 only

Release date: cw 45/2024

Effective from: S/N 2445xxxx

New Features

2D Object Detection Advanced feature update (license activation required)

The following new features are available as part of the 2D Object Detection function:

- Teach-in of the background:
 - Teaching-in the current environment to monitor the free field of view.
- Contour as reference:
 - New evaluation option to monitor the presence of a contour as reference.

The new features can be activated with the following options:

- Configuring a new device via the sales configurator and selecting the 2D Object Detection Advanced package.
- Activating the the corresponding license (1146090 PICOSCAN TEACH-IN) via the License Manager on a existing device.

Improvements and fixes

2D Object Detection: detection history improvements

- Visualization of events in field evaluation live view
- Automatic refresh of statistics and event tables
- Detection history enabled by default
- Improved handling of configuration changes and statistic overview

Optimized motor frequency tolerance for higher sensor availability

Output configuration

It is now possible to assign more than 20 evaluations to a single output

GUI optimizations

Scan segments are now visible

API

New telegram (REST and CoLa) to get field evaluation contours:

- REST (POST): <ipadress>/api/GetFieldEvaluationContour
- CoLa: sMN GetFieldEvaluationContour

New telegram to change the device password of the REST Interface:

- REST (POST): <ipadress>/api/changePassword

New REST telegram to change the device password of the CoLa Interface:

- REST (POST): <ipadress>/api/SetPassword

Known Issues

Detection history

If evaluations are deleted, renamed or newly created with the same names, the current configuration will be inconsistent with the saved detection history and displayed statistics.

Contamination indication

- The contamination indication segments show "clean", if the measurement is stopped or the device is in stand-by mode.
- Sector dropdown can be used and has no effect, when Accessories is set to "None" or "Weather protection hood".

Possible file error when executing system diagnosis on high load

When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur.
Recommendations: Please deactivate those filter bevor executing the system diagnosis.

Angle range filter (LMDscandata)

When the scan range filter is enabled, the first output beam has a distance value of "0". For example, if 50 beams are output, the first beam shows a distance value of "0," while the remaining 49 beams display the correct distance and RSSI values.

Angle range filter can not be disabled for data output format LMDscandata

If you want to output the full field of view, set the start angle to -138° and the stop angle to 138° or perform a factory reset.

Reset to factory settings

At the time the device is reset to factory settings, an error message may occur in the error log but can be safely ignored.

Firmware V1.4.1

Compatible for: picoScan150 only

Release date: cw 34/2024

Effective from: S/N 2435xxxx

Improvements and fixes

Browser compatibility

To ensure continued compatibility with browsers based on Chromium version 128 or higher, minor adaptations have been implemented.

Known Issues

Object detection

If the output properties within the field evaluation application are changed then the selected output is assigned correctly. If the field is then deleted, the previously selected output is not reset and still holds the previous configuration.

Detection history

Refresh button only works once. It updates the 'Last Updated' time, but not the table. When you open the page for the first time, the 'Last Updated' time has a default value.

If evaluations are deleted, renamed or newly created with the same names, the current configuration will be inconsistent with the saved detection history and displayed statistics.

Description online help "ignore missing echo"

The online help description for the function "ignore missing echo" is incorrect and describes the behavior if the function is deactivated.

Contamination indication

- The contamination indication segments show "clean", if the measurement is stopped or the device is in stand-by mode.
- Sector dropdown can be used and has no effect, when Accessories is set to "None" or "Weather protection hood".

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When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur.

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When the scan range filter is enabled, the first output beam has a distance value of "0". For example, if 50 beams are output, the first beam shows a distance value of "0," while the remaining 49 beams display the correct distance and RSSI values.

Angle range filter can not be disabled for data output format LMDscandata

If you want to output the full field of view, set the start angle to -138° and the stop angle to 138° or perform a factory reset.

Reset to factory settings

When a device is reset to factory settings, the "IMU Queue Overflow" error may occur but can be safely ignored.

Firmware V1.4.0

Compatible for: picoScan150 only

Release date: cw 31/2024

Effective from: S/N 2432xxxx

New Features

Firmware-Update via HTTP (REST)

A firmware update can be performed without a graphical user interface (e.g. SOPAS ET or AppManger). This is possible via the REST interface (HTTP). The firmware update takes place in two steps:

1. Transfer the firmware file (.spk) to the device via HTTP (PUT, <ip>/api/update)
2. Triggering the update via HTTP (POST, <ip>/api/RunFirmwareUpdate)
3. The current status of the update can be monitored via (GET, <ip>/api/UpdateState).

Further information can be found in the OpenAPI description.

Improvements and fixes

2D Object Detection functionality inactive

The 2D Object detection function was inactive on some devices with the previous firmware V1.3.0. This behavior is fixed with V1.4.0.

GUI optimizations

The PTP feature was visible in the user interface even on devices that did not have it included in the feature scope.

API

The 2D Object Detection application state information (/FieldEvaluationApplicationState) is removed from the API. This information can still be monitored by using /DeviceStatus.

Known Issues

Object detection

If the output properties within the field evaluation application are changed then the selected output is assigned correctly. If the field is then deleted, the previously selected output is not reset and still holds the previous configuration.

Detection history

Refresh button only works once. It updates the 'Last Updated' time, but not the table. When you open the page for the first time, the 'Last Updated' time has a default value.

If evaluations are deleted, renamed or newly created with the same names, the current configuration will be inconsistent with the saved detection history and displayed statistics.

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The online help description for the function "ignore missing echo" is incorrect and describes the behavior if the function is deactivated.

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Possible file error when executing system diagnosis on high load

When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur. Recommendations: Please deactivate those filter before executing the system diagnosis.

Angle range filter (LMDscandata)

When the scan range filter is enabled, the first output beam has a distance value of "0". For example, if 50 beams are output, the first beam shows a distance value of "0," while the remaining 49 beams display the correct distance and RSSI values.

Angle range filter can not be disabled for data output format LMDscandata

If you want to output the full field of view, set the start angle to -138° and the stop angle to 138° or perform a factory reset.

Reset to factory settings

At the time the device is reset to factory settings, an error message may occur in the error log but can be safely ignored.

Firmware V1.3.0

Compatible for: picoScan150 only

Release date: cw 18/2024

Effective from: S/N 2418xxxx

New Features

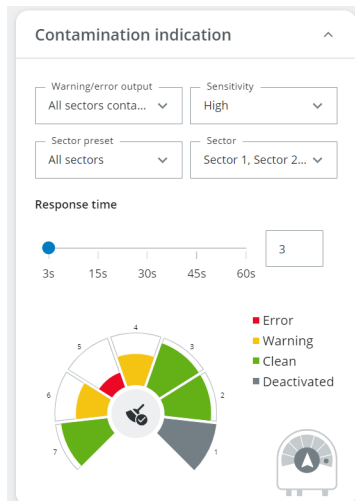
2D Object Detection

The new “Field Evaluation” application allows the definition of up to 48 individual fields (evaluations).

- Fields can be merged into groups
- Groups can be activated by telegram or input signal.
- The field status and application status can be monitored by telegram and output signal.
- Parametrization options:
 - The maximum blanking size and detection time can be individually configured
 - Distance-dependent: Measuring points inside a field are combined depending on distance.
 - Manipulation prevention: Object detection is triggered as soon as monitoring from the device to the field boundary is not sufficiently possible.
 - Ignore missing echo: A missing echo is treated as if it were a measuring point in the field.
 - Evaluation modes:
 - Blanking: Field evaluation reacts to all measurement points
 - Reflector: Field evaluation reacts only to measurement points marked as reflector
- Detection history can be activated with up to 200 entries. The oldest entry will be deleted in case of a new detection.

Contamination indication

The contamination indication evaluates 7 sectors regarding their contamination levels. The result can be monitored in the GUI, via digital outputs or via telegram. The response time can be adjusted.



New scan configuration with 15Hz scanning frequency 1° angular resolution (profile number 11)

This scan configuration can be used to retrofit e.g. TiM351 or TiM551.

Improvements and fixes

Multi-Echo available for scan configuration 40Hz/0,125°

Scan configuration 40Hz/0,125° (profile 10) also provides all available echoes. Until now, only one echo has been supported.

Time stamps in measurement data match the system time for Compact and MSGPACK

The start and stop time stamp of each scan segment in a Compact and MSGPACK match the system time.

IMU data streaming time out fixed

In rare cases, the IMU data streaming paused for ~1 second.

LMDscandata improvements

- An applied scan range filter limits the LMDscandata output (no zero values outside scan range will be transmitted).
- The device status information is added.
- The scanning frequency information is added.

Interval filter

The default and minimum value have been changed from 1 to 2.

Reset output counter telegram

The telegram mResetCounter no longer sets an IO port to default state.

GUI optimizations

Notifications added for better user experience.

LED behavior

Fixed LED indication on device state "RecoverableError".

Known Issues

Object detection

If the output properties within the field evaluation application are changed then the selected output is assigned correctly. If the field is then deleted, the previously selected output is not reset and still holds the previous configuration.

Detection history

Refresh button only works once. It updates the 'Last Updated' time, but not the table. When you open the page for the first time, the 'Last Updated' time has a default value.

If evaluations are deleted, renamed or newly created with the same names, the current configuration will be inconsistent with the saved detection history and displayed statistics.

Description online help "ignore missing echo"

The online help description for the function "ignore missing echo" is incorrect and describes the behavior if the function is deactivated.

Contamination indication

- The contamination indication segments show "clean", if the measurement is stopped or the device is in stand-by mode.
- Sector dropdown can be used and has no effect, when Accessories is set to "None" or "Weather protection hood".

Possible file error when executing system diagnosis on high load

When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur. Recommendations: Please deactivate those filter bevor executing the system diagnosis.

Angle range filter (LMDscandata)

When the scan range filter is enabled, the first output beam has a distance value of "0". For example, if 50 beams are output, the first beam shows a distance value of "0," while the remaining 49 beams display the correct distance and RSSI values.

Angle range filter can not be disabled for data output format LMDscandata

If you want to output the full field of view, set the start angle to -138° and the stop angle to 138° or perform a factory reset.

Reset to factory settings

At the time the device is reset to factory settings, an error message may occur in the error log but can be safely ignored.

Firmware V1.2.0

Compatible for: picoScan150 only

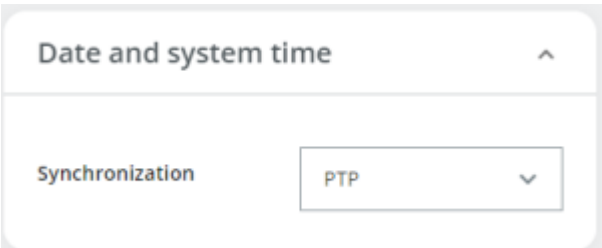
Release date: cw 09/2024

Effective from: S/N 2410xxxx

New Features

Precision Time Protocol (PTP) support

PTP is a synchronization mechanism ensuring precise coordination of data acquisition across multiple LiDAR units or other clients within a network. By synchronizing the internal clocks of devices, PTP enables accurate time-stamping of measurements, crucial for precise spatial mapping and object detection. This synchronization minimizes latency and ensures reliable data fusion in applications like autonomous vehicles or industrial automation.



Native ROS2 (digital add-on with license)

The device offers native ROS2 support using Data Distribution Service (DDS) to enable efficient real-time communication and optimizes interoperability with ROS2 standards. To enable the feature the corresponding license needs to be installed via the License Manager, the data output for MSGPACK, Compact or LMDscandata needs to be disabled and *Native ROS2* needs to be enabled with the telegram "RosConnectEnable".

License Manager Support

The License Manager is integrated and can be accessed via <http://192.168.0.1/#/license>.

SICK LicenseManager

License Overview

Container Serial No.

130-873345501

Firmcode 6001264

(de-)activate

License Name	License Version	Product Code	Unit Counter	Valid Until	License Quantity
PICOSCAN FOG FILTER	0	1060	0	n/a	1

Improvements and fixes

Boot time improvement

The boot time has been optimized. The device is ready (green LED is on and data output is available) after typ. 9.5 seconds.

Digital output behavior during startup improved

All outputs show the same electrical levels during the device startup phase.

Improved reflector detection

Retroreflectors can cause a measurement point at twice the distance. Edge hits with a second target could cause the first target to be incorrectly recognized as a reflector. This behavior has now been improved.

Input settings extended

Maximum debounce time increased to 1000ms.

Known issue "Possible incorrect distance data when using range extension mode" fixed

In rare conditions the scaling factor in the compact format was set wrongly.

Known issue "IMU data streaming does not use system time" fixed

The IMU data stream contains the system time stamp. It does update if a specific system time is set by the user, by an NTP server or by PTP.

GUI optimizations

- Updated picoScan sensor model in the scan view.
- Lowered GUI refresh time after a reboot to 10s.
- Only enabled user level are now shown in the login dropdown.
- Current configured angular resolution is not rounded.
- Fixed some visual flaws and wording.
- Fixed wrong appearance of distance measuring tool.

Removed redundant method "SaveParameters"

Parameters are stored permanently by applying the method "mEEwriteall".

Known Issues

Possible file error when executing system diagnosis on high load

When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur. Recommendations: Please deactivate those filter bevor executing the system diagnosis.

IMU data streaming time out

In rare cases, the IMU data streaming pauses ~1 second. The data stream continuous afterwards with the latest data.

Reset to factory settings

When a device is reset to factory settings, the "IMU Queue Overflow" error may occur but can be safely ignored.

Firmware V1.1.0

Compatible for: picoScan150 only

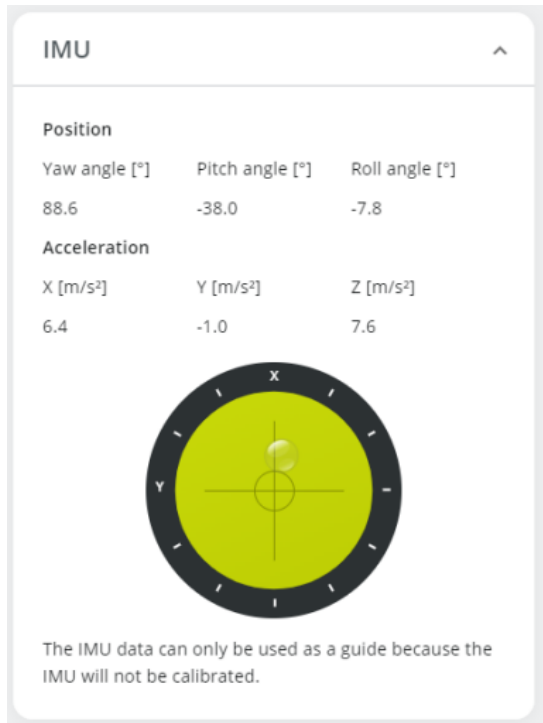
Release date: cw 50/2023

Effective from: S/N 2350xxxx

New Features

IMU (inertial measurement unit support)

IMU data is enabled with this release. IMU data is available in compact format. The following info is shown in the UI.



IMU type: BOSCH BHI160B (<https://www.bosch-sensortec.com/products/smart-sensors/bhi160b/>)

Cloning of communication parameters

Every system plug has a cloning memory on board. Communication parameters (IP-address, subnet mask, gateway) are stored automatically to the system-plug on saving parameters permanently. Parameters will be loaded on bootup. This enables a faster device exchange in case the system plug remains within the application as the communication parameters stay the same.

Improvements and Fixes

Reflector detection improved

Detection of reflectors in close ranges has been improved.

- Core: typ. $0.3 \text{ m} \leq x \leq 25 \text{ m}$
- Prime: typ. $0.3 \text{ m} \leq x \leq 60 \text{ m}$
- Pro: typ. $0.3 \text{ m} \leq x \leq 120 \text{ m}$

Additionally on target edges, no false positive reflector flag occur anymore. This improvement only applies to devices that have been calibrated in the production line.

Lock-up of measurement core in complex measurement scenarios fixed

In rare cases, complex measurement scenarios with many dynamic targets could lead to a temporary device error.

Angular error improved

Devices showed an angular error depending on the used dynamic sensing profile. This improvement only applies to devices that have been calibrated in the production line.

Bootup time optimization

Bootup time has been optimized to typ. 11 seconds.

Scan segment latency fixed

Occasionally, scan segments were transmitted with a delay of one segment. This has been fixed.

Sending command answer on reboot/loading factory defaults

When sending a reboot or factory-defaults command to the device, it performed a reboot immediately. It did not send an answer to the command. Now, the device sends an answer before executing those commands.

Input validation of ethernet configuration

It has been possible to set an invalid ethernet configuration. This has been fixed now.

DHCP on static fallback

Static DHCP fallback IP address works as expected.

GUI optimizations

General UI improvements.

Improved user experience with Microsoft Edge and Firefox.

Known Issues

Possible incorrect distance data when using range extension mode

The issues can only occur if the following conditions apply:

- Using a picoScan150 Pro-1 (Part no.: 1134610)
- Use of the Compact output data format
- Range extension setting is active in combination with scan profile 1,2,4,5 or 7
- Measure on a highly reflective target at a distance > 65m

The issue can be triggered by switching the scan configuration (changing the combination of scan frequency and angular resolution) or toggling the range extension mode. However, this effect can not be observed via the web browser, only within the compact data format output.

In general, it is recommended to read the distance scaling factor from the data format and scale the data accordingly. If the range extension mode is active, the distance scaling factor should be to 2 otherwise it should be 1. If you notice a deviation, the effect can be corrected by toggling the sensitivity mode (Command: SensitivityMode).

Web browser error (SOPASair)

When SOPASair (web browser) is used, the browser tab consumes memory over time. This can lead to an "Out of memory" error of the browser. A restart of the browser will bring up the device window again.

Possible file error when executing system diagnosis on high load

When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur. Recommendations: Please deactivate those filter bevor executing the system diagnosis.

IMU data streaming time out

In rare cases, the IMU data streaming pauses ~1 second. The data stream continuous afterwards with the latest data.

IMU data streaming does not use system time

The IMU data stream contains a time stamp (counter starts with boot up). It does not update if a specific system time is set by the user or by an NTP server.

Firmware V1.0.2

Compatible for: picoScan150 only

Release date: cw 36/2023

Effective from: S/N 2336xxxx

Features

Initial firmware for picoScan150.

Web browser error (SOPASair)

When SOPASair (web browser) is used, the browser tab consumes memory over time. This can lead to an "Out of memory" error of the browser. A restart of the browser will bring up the device window again.

Possible file error when executing system diagnosis on high load

When the system diagnosis gets called on a device where Particle filter, Moving average filter and Streaming is active an file error could occur. Recommendations: Please deactivate those filter bevor executing the system diagnosis.

IMU data streaming time out

In rare cases, the IMU data streaming pauses ~1 second. The data stream continuous afterwards with the latest data.

IMU data streaming does not use system time

The IMU data stream contains a time stamp (counter starts with boot up). It does not update if a specific system time is set by the user or by an NTP server.

Contact us

Product website

- <https://www.sick.com/picoScan100>

Support Portal

- <https://support.sick.com/>