



Title: Gocator 4.x Setup Migration Guide

Table of Contents

1 Overview	2
2 Software and Hardware Requirements	2
3 Terminology	2
4 GUI Pages	2
5 Committing Settings	3
6 Status Logs	3
7 Sensor System Setup	3
7.1 Master Connection	3
7.2 Encoder Information	4
7.3 Alignment Reference	4
7.4 Layout and Overlap Setting	5
8 Scanning Setup	5
8.1 Scan Mode and Operation Modes	5
8.2 Raw Profile and Resampled Profile	6
8.3 Encoder Resolution and Travel Speed	6
8.4 Alignment State	7
8.5 Surface Generation	7
9 Job Management	7
10 Measurement Tools	7
10.1 Profile Linking	7
10.2 Data Source Naming	8
10.3 Profile Measurements	8
10.4 Surface Measurements	8
10.5 Anchoring	9
11 New Firmware Check	9
12 Web-Browser Login While Sensor Is Running	9



1 Overview

This guide describes the differences between setting up sensors using the Gocator 3.x and Gocator 4.x interfaces.

The Gocator 4.x interface builds on the Gocator 3.x interface, greatly improving the workflow in setting up a sensor and providing much new functionality. This document only covers areas where configuring settings is different between Gocator 3.x and 4.x, and does not cover all of the changes.

2 Software and Hardware Requirements

The Gocator 4.x interface is supported on all Gocator series *except for the Gocator 2000 series*. Download the latest Gocator 4.x firmware from <http://downloads.lmi3d.com>.

3 Terminology

The following is a summary of the changes in terminology in Gocator 4.x

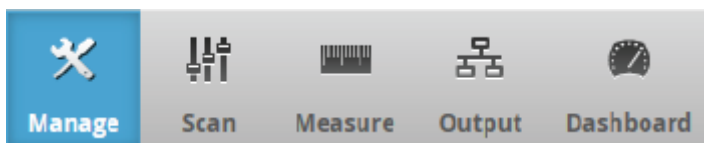
Gocator 3.x	Gocator 4.x	Explanation
Configuration	Job	Settings covering all aspects of sensor behavior.
System Calibration	Alignment	The procedure for adjusting sensor data coordinate system based on sensor mounting.
Part	Surface	Data that is acquired by the sensor are referred to as surface. Discrete <i>parts</i> are generated from 3D surface based on part detection logic.
Raw Profile, Resampled Profile	Profile, Uniform Spaced Profile	Raw profile in Gocator 3.x are referred to as profile in Gocator 4.x. Resampled profiles in Gocator 3.x are referred to as uniform spaced profile in Gocator 4.x.

4 GUI Pages

The pages (a.k.a. top-level menus) in both Gocator 3.x and 4.x are designed to guide you through the entire setup process. Some pages are renamed, but otherwise the scope of each page largely remains the same.



Gocator 3.x pages



Gocator 4.x pages

Gocator 3.x	Gocator 4.x	Purpose and Changes
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Page	Page	
Connect	Manage	Configure settings for sensor networking, motion alignment, job management, and sensor maintenance. <u>Changes</u> The Manage page in Gocator 4.x now includes setting for system layout and motion configuration.
Setup	Scan	Configure settings for acquisition and part detection parameters, as well as for performing alignment. <u>Changes</u> The layout settings are now moved to the Manage page.
Measure	Measure	Configure built-in measurements.
Output	Output	Configure how profile, surface (part in Gocator 3.x), and measurement data are output.
Dashboard	Dashboard	View health and measurements statistics. <u>Changes</u> The event logs are moved to the status bar displayed at the bottom of each page.

5 Committing Settings

In Gocator 3.x, the interface flashes yellow when a setting is committed. In Gocator 4.x, the commitment status is displayed on the right side of the status bar.



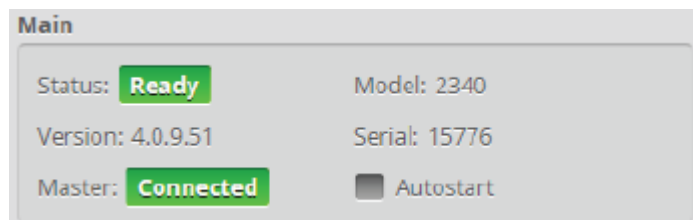
6 Status Logs

In Gocator 3.x, the status logs are displayed in event log in the Dashboard page. In Gocator 4.x, status information is displayed in the status bar at the bottom of the screen, visible on every page. You can view the log history by expanding the status bar by clicking on the up-arrow icon on the left side of the status bar.

7 Sensor System Setup

7.1 Master Connection

Gocator 4.x automatically detects whether a Gocator is connected to a Master. You no longer have to manually select the Master as in the Gocator 3.x firmware.



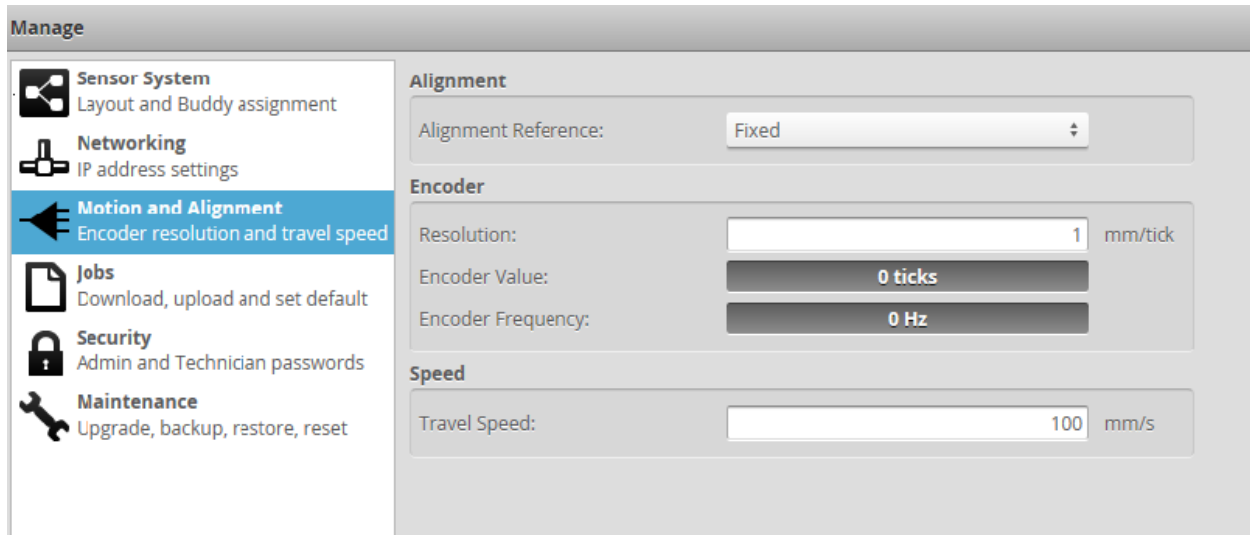
Gocator 4.x Main Sensor panel



When a Master is connected, the Master status reports *Connected* in the Main section under Sensor System on the Manage page.

7.2 Encoder Information

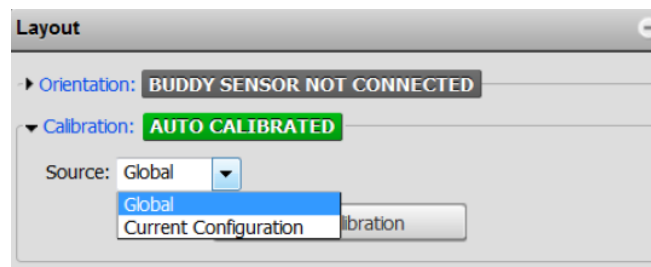
In Gocator 3.x, encoder information (current ticks, frequency) is shown in the dashboard. In Gocator 4.x, encoder information is shown in the Manage page under Motion and Alignment.



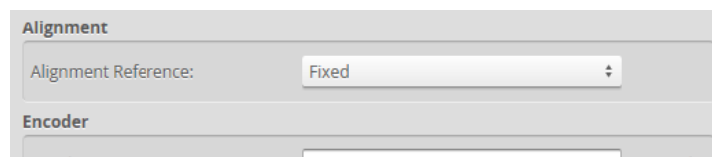
Gocator 4.x Motion and Alignment Panel

7.3 Alignment Reference

The Transformation Source setting in the Gocator 3.x corresponds to the Alignment Reference setting in Gocator 4.x.



Gocator 3.x Transformation Source



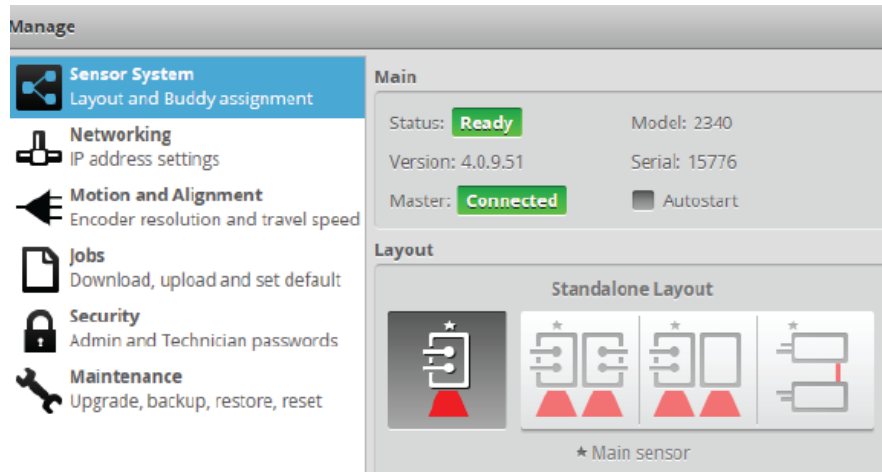
Gocator 4.x Alignment Reference

Global transformation source is equivalent to Fixed alignment reference. Current Configuration source is equivalent to Dynamic alignment reference.



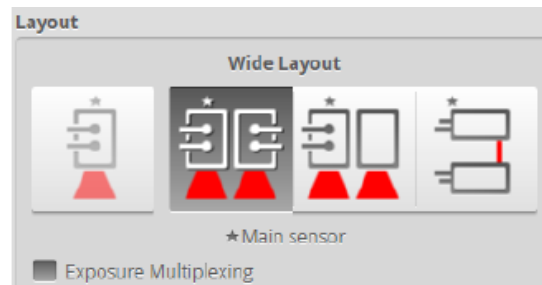
7.4 Layout and Overlap Setting

Sensor system layout and overlap is set up in the Layout panel in the Setup page in Gocator 3.x. In Gocator 4.x, layout and overlap is set up in the Manage page under Sensor System.



Gocator 4.x Layout panel

The Overlap setting is renamed to Exposure Multiplexing



Gocator 4.x Exposure Multiplexing

8 Scanning Setup

This section covers changes that affect the setup of scanning and acquisition.

8.1 Scan Mode and Operation Modes

The Operation Mode setting in Gocator 3.x is replaced by Scan Mode in Gocator 4.x.

Whole Part operation mode is renamed to Surface scan mode, and Raw operation mode is integrated into Profile scan mode. Refer to Raw Profile and Resampled Profile for more information.





Gocator 3.x Operation Mode panel

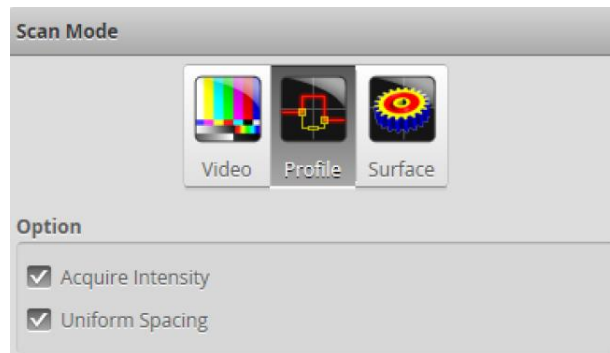


Gocator 4.x Scan Mode panel

8.2 Raw Profile and Resampled Profile

In Gocator 3.x, the sensor acquires resampled profile data in Profile operation mode and raw profile in Raw operation mode.

In Gocator 4.x, the profile type is controlled by enabling/disabling the Uniform Spacing setting in Profile scan mode.



Gocator 4.x Profile scan mode

8.3 Encoder Resolution and Travel Speed

In Gocator 3.x, encoder resolution and travel speed are set and cleared when Moving calibration is performed.

In Gocator 4.x, you can explicitly control whether encoder resolution and travel speed are affected by Moving alignment. To update these parameters automatically when moving alignment is performed, enable Encoder Calibration in the Alignment panel.



Gocator 4.x Alignment panel

8.4 Alignment State

Gocator 3.x distinguishes between CALIBRATED and MANUALLY CALIBRATED states. Gocator 4.x does not distinguish between automatic or manually aligned states.

8.5 Surface Generation

Gocator 4.x supports different methods for generating surfaces: continuous, fixed, variable, and rotational. Gocator 3.x only supports the continuous method.

9 Job Management

Configurations in Gocator 3.x are now referred to as *jobs* in Gocator 4.x. In Gocator 3.x, configurations are switched by selecting a configuration in the tool bar and clicking the load button.

Switching jobs in Gocator 4.x has been simplified: simply select the job in the tool bar. In Gocator 4.x, you can also clear the default setting of a job, leaving the sensor with no default jobs. In this case, the sensor boots up with a clean configuration

10 Measurement Tools

In Gocator 3.x, measurements are instantiated (e.g., Circle X, Circle Y). In Gocator 4.x, measurement *tools* (e.g., Circle) are instantiated, and each tool can output one or more measurements (e.g., Circle X and Circle Y).

10.1 Profile Linking

The grouping of measurements into measurement tools replaces the profile linking capability of Gocator 3.x.



10.2 Data Source Naming

In Gocator 3.x, the data sources are named Main or Buddy. In Gocator 4.x, the data sources are named according to the position of the sensor: Top, Bottom, Top-Left, and Top-Right.

The terms Main and Buddy are still used in Gocator 4.x in the Manage page.

10.3 Profile Measurements

The following table describes the changes to the profile measurement tools.

Tool / Measurement	Description
Gap and Flush	The Gap and Flush measurements are now measurements in the Panel tool.
Angle X	The Angle X measurement in Gocator 3.x is integrated into the Intersect tool. To measure the profile angle against the x-axis, choose X-axis as the baseline.
Box Area	The Box Area measurement in Gocator 3.x is integrated into the Area tool. To measure the area between the profile and the x-axis, choose X-axis as the baseline; otherwise, a user-defined line is used.
Difference	The Difference measurement available in Gocator 3.x is not yet available in Gocator 4.x.
Groove and Strip tools	In Gocator 4.x, multiple measurements of the same type can be dynamically added. This means for example that the Z position (or any of these tools' other measurements) of multiple grooves or strips can be returned.
Width, Height, Distance, and Center X / Z	The Width, Height, Distance, and Center measurements are now in the Dimension tool.

10.4 Surface Measurements

The following table describes the changes to the profile measurement tools.

Tool / Measurement	Description
Area	The Area measurement in Gocator 3.x is integrated into the Volume tool.
Bounding Box X and Y	Bounding Box X and Y in Gocator 3.x return the corner of the bounding box when rotation is enabled. In Gocator 4.x, Bounding Box X and Y always return the center of the bounding box. The corner position can be calculated using a script and the Bounding Box X, Y, Width, and Length measurements. Bounding Box Y in Gocator 3.x returns absolute Y position (i.e., based on encoder value). In Gocator 4.x, Bounding Box Y returns the Y position based on the Frame of Reference setting. The Global X and Global Y measurements in Gocator 4.x return the absolute positions.
Height	The Height measurement in Gocator 3.x is now the Thickness measurement in the Volume tool.



Texture	The Texture tool from Gocator 3.x is not yet supported in Gocator 4.x.
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10.5 Anchoring

In Gocator 3.x, all measurements can only have one anchoring source (this feature is called Fixturing in Gocator 3.x). Gocator 4.x greatly increases the flexibility by allowing measurements to be used as anchoring sources.

In addition, it is no longer necessary to register a template to enable anchoring.

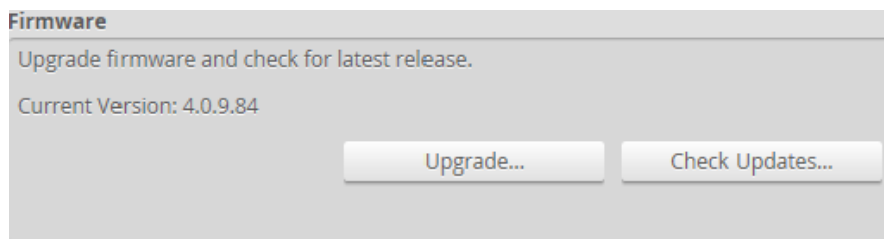
Refer to the Gocator User Manual on how to set up anchoring in the Gocator.

11 EtherNet/IP Assembly State

The EtherNet/IP sample assembly state (instance 0x321) is expanded to 380 bytes. The extended sample state assembly in Gocator 3.x is no longer needed.

12 New Firmware Check

In Gocator 3.x, checking for the availability of new firmware is located in the Help dialog box. In Gocator 4.x, this functionality is available under Maintenance in the Manage page.



Gocator 4.x Firmware Update Check

13 Web-Browser Login While Sensor Is Running

In Gocator 4.x, you can log in without affecting the sensor's operating state: if the sensor is running, the sensor will continue to run when you log in from the web browser.