USER'S MANUAL

> DLSentinel

DATALOGIC

ORIGINAL INSTRUCTIONS (ref. 2006/42/EC)

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Datalogic S.r.l.
Via S. Vitalino 13
40012 Calderara di Reno
Italy

DLSentinel User's Manual
Ed.: 12/2017

08/03/2018

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Effective. November 10, 2017.

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REFERENCES

CONVENTIONS

This manual uses the following conventions:

"DL.Sentinel" refers to the Datalogic User Interface client application running on a PC.

"User" or "Installer" refers to anyone using DLSentinel.

"Device" refers to physical devices used in the safety application: i.e. Laser Sentinel.

"You" refers to the System Administrator or Technical Support person using this manual to install, configure, operate, maintain or troubleshoot a plant equipped with DLSentinel.

REFERENCE DOCUMENTATION

The documentation related to DLSentinel is listed below:

- Device specific Help On Line
- This User's Manual
- Laser Sentinel Instruction Manual

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Datalogic provides several services as well as technical support through its website. Log on to **www.datalogic.com** and click on the **SUPPORT** link which gives you access to:

- **Downloads** by selecting your product model from the dropdown list in the Search by Product field for specific Data Sheets, Manuals, Software & Utilities and Drawings;
- **Repair Program** for On-Line Return Material Authorizations (RMAs) plus Repair Center contact information;
- **Customer Service** containing details about Maintenance Agreements;
- **Technical Support** through email or phone.

1 DLSENTINEL GRAPHIC USER INTERFACE

1.1 PROGRAM DESCRIPTION

DLSentinel software is a User Interface client application that provides device configuration for the Laser Sentinel series of safety laser scanners. It is installed in and runs on Windows-based PCs (usually laptops), and connection takes place through an Ethernet TCP/IP interface.

Main features

A summary of the DLSentinel main features is listed below:

- Settings for changing the device's password and to manage the network configuration
- User and Session Language configuration in real time
- System configuration
- Report
- Manual

1.2 BEFORE USING DLSENTINEL

In order to employ the device, the DLSentinel GUI is necessary to create a safety configuration, in which the user will insert all the parameters, configure inputs and output and create monitored areas.

1.3 INSTALLING DLSENTINEL

The DLSentinel client application software needs to be installed on your PC to configure the safety laser scanner.

1.3.1 Minimum System Requirements

To ensure proper interfacing with the system, the personal computer must meet the following minimum requirements:

COMPONENT	RECOMMENDED	MINIMUM
Processor(s)	Pentium 4	Pentium 4
Clock frequency	>= 3 GHz	>= 2 GHz
RAM	2 GB	1 GB
Free hard drive space	70 MB	70 MB
Monitor resolution	1280x768	1024x768
Supporting Operating System	Windows XP Windows 7 Windows 8 Windows 10	

Besides the components listed in the table above, your PC must be equipped with the following hardware and software drivers:

- Installed Ethernet network card and installed driver
- One free 100 Mbps Ethernet port

1.3.2 Program installation

DLSentinel is a Datalogic safety laser scanner configuration tool providing several important advantages:

- Intuitive Graphical User Interface for rapid configuration;
- Defined configuration directly stored in the device;
- Discovery and IP address setting features to facilitate remote configuration
- Device Monitoring

To install DLSentinel:

1. On the PC that will be used for configuration, (running Windows XP, 7, 8, or 10), download the DLSentinel.zip file. Extract the file, run the installation program and follow the installation procedure.

2. When the installation is complete the DLSentinel entry is created in the Start > All Programs menu under “Datalogic” as well as a desktop icon. Double-click the desktop icon to run it.

Note: A dedicated computer running DLSentinel must be connected to a safety laser scanner through the Ethernet port to perform the configuration and monitoring features.

1.4 DLSENTINEL USER INTERFACE

After launching DLSentinel in order to configure devices or handle reports, the DLSentinel Task Selection presents the following principal areas:

1. **Main Menu and Toolbar Area** – The DLSentinel main features.

2. **Task Selection Area** – Presents a list of the task that can be performed from DLSentinel. These selections are also available in the File and the Scanner Menus (**Main Menu Area**).

3. **Status Bar** – A reserved area that keeps specific information about the connected device. It displays information on the current network status, the connected device status, the connector and the Application type.

4. **Help Online** – a Help Guide that includes all the info and parameters to create a proper configuration. For the next configuration steps, the help online is available/visible only by clicking on the dedicated button.

1.4.1 Main menu

FILE	
New Configuration	To create a new Device Configuration.
Open Configuration from PC	To open a previously saved Configuration on the local drive.
Read from PC:	
→	**Report** - Shows a Safety System Configuration Report saved on PC.
Save	Saves the current configuration or report on PC.
Exit	To exit the DLSentinel user interface.

SCANNER	
Discovery	Searches for a Device connected to the Network (LAN).
Open Configuration from device	To open a configuration from a Device.
Apply Configuration	To apply a configuration to a connected Device.
Read from device:	
→	**Report** - Shows a Safety System Configuration Report saved on PC.
Settings:	
→	**Change Network Configuration**
→	**Change Access Controls**
→	**Reset Password**
Update Firmware	To update the Firmware file.

OPTIONS	
Change Language	Allows the user to change the display language used for DLSentinel in real time. The selected language will also be used for successive sessions.
Change GUI Log Level	
→	**Verbose**
→	**Information**
→	**Error**
Change GUI Log Options	

HELP	
DLSentinel User Guide	Opens DLSentinel User Manual.
Laser Sentinel Instruction Manual	Shows Laser Sentinel Instruction Manual.
Zip GUI Log	
About	Opens a window that contains DLSentinel release version information.

1.4.2 Toolbar buttons

ICON	DESCRIPTION
	**Getting Started**: allows the user to start a session by clicking on one of the Task Selection options.
	**Save**: saves the current configuration or report session.
	**Configuration Validator:** this tool allows you to check the new configuration in DLSentinel before sending it to the device. By clicking on this option a validation test will be made on the entire configuration in DLSentinel. A pop-up window will appear displaying either a list of configuration errors or validating the configuration.
	**Monitoring**: starts a monitoring session.
	**Help Online**: displays a window that includes the help online guide and it shows the parameters depending on the selected configuration step.

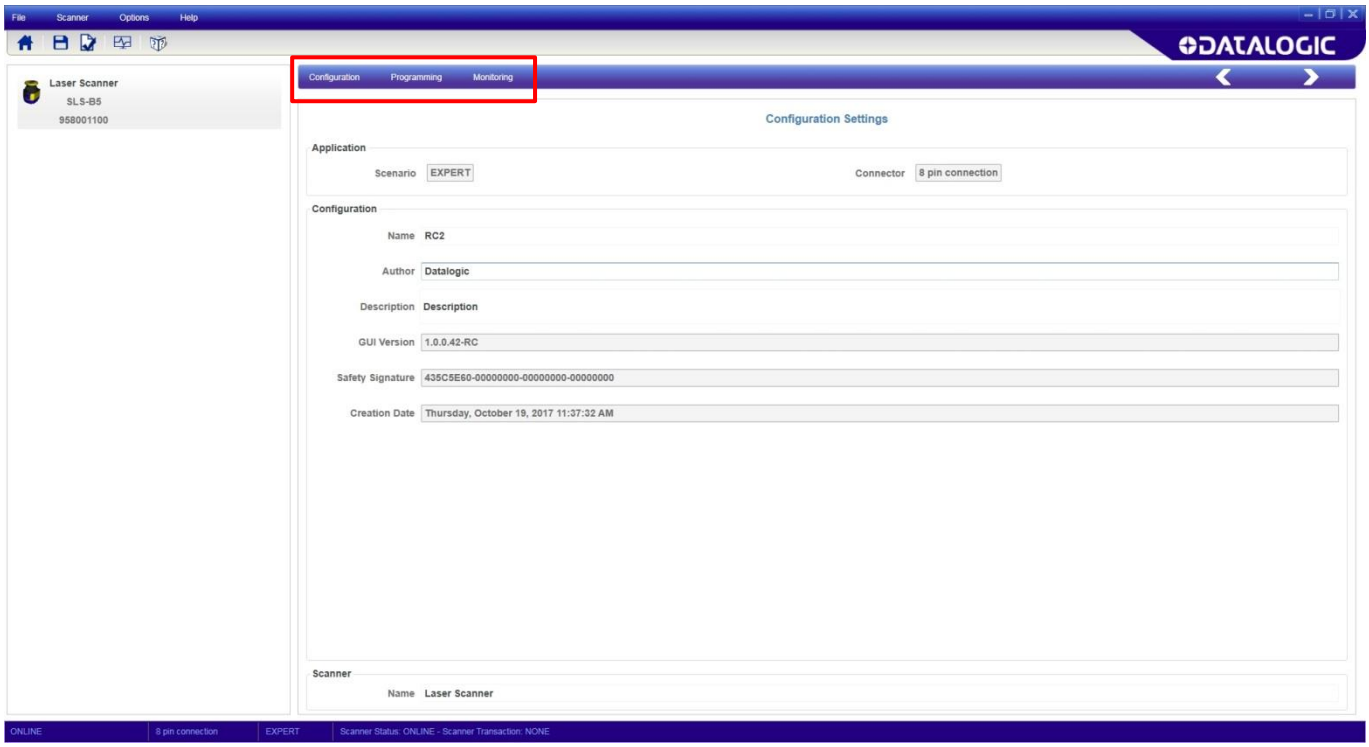
1.4.3 Task selection

The right side of the main window includes the list of the Task selection. The list is explained in the chart below.

ICON	DESCRIPTION
	**New Safety System Configuration (Virtual Scanner)**: to create a new Safety System Configuration on a Virtual Scanner.
	**Open Safety System Configuration from PC**: to open and edit a Configuration saved on PC.
	**Modify Safety System Configuration from a Scanner on the Network**: to edit a Safety System Configuration from a Scanner on the Network.
	**Monitor Safety System**: to enter the monitoring function of a connected Device.
	**Read the Safety System Report from a Scanner on the Network**: to view, print or save a Safety System Configuration Report.
	**Read a Safety System Report from PC**: to view or print a Safety System configuration reports stored on PC.

1.5 LASER SENTINEL CONFIGURATION CHECKLIST

DLSentinel allows creating, testing and validating a device configuration. Complete configuration can only be performed on a connected device (Online).



1. **CONFIGURATION:** create the configuration through Settings, Outputs, Zone Set, Inputs. Detection, Zones.

2. **PROGRAMMING:** upload the configuration and generate the report file.

3. **MONITORING:** test and monitor the device functioning with the new configuration.

4. **PROGRAMMING:** validate the configuration (accept it or reject it).

2 LASER SENTINEL CONFIGURATION

2.1 NEW CONFIGURATION SELECTION

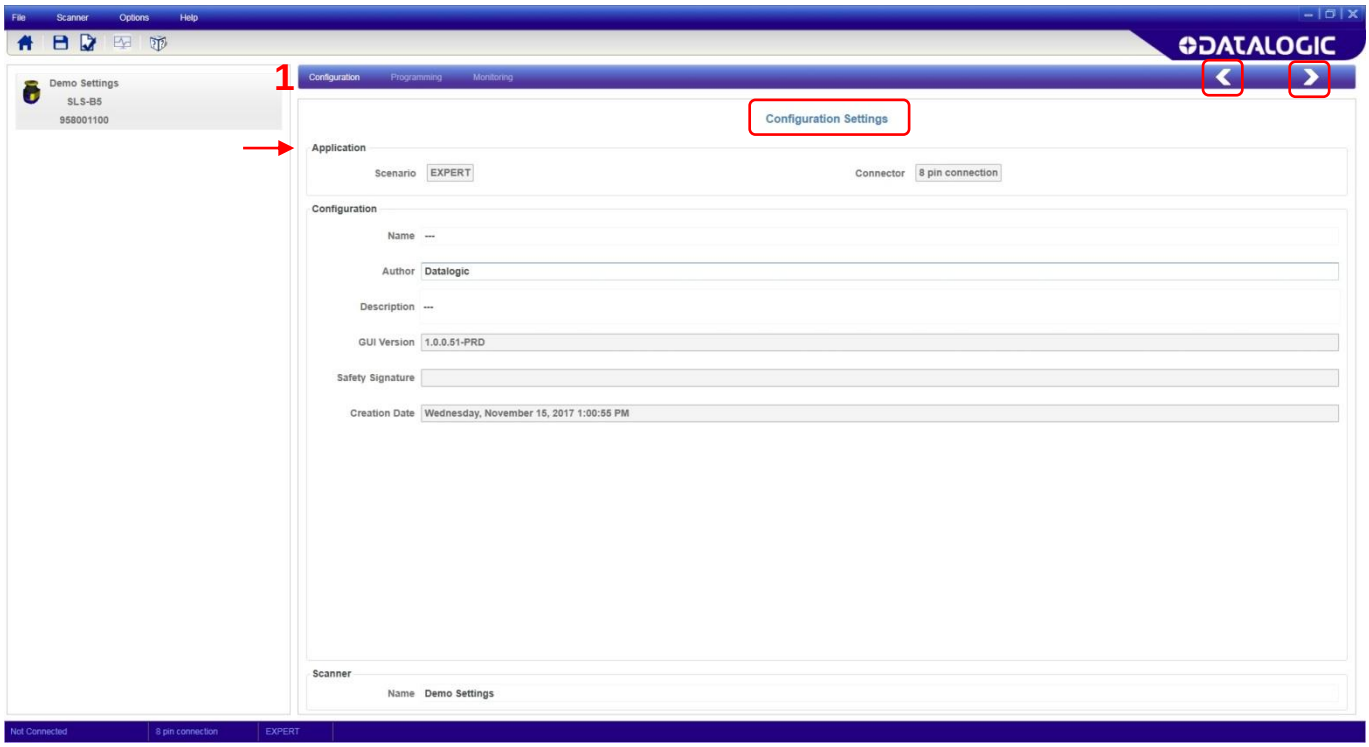
Click on the New Configuration task to create a new configuration and save it on a local PC (for upload to a device at a later time). It is also possible to discover a device and upload the configuration through the Programming menu.

Click on the white right-pointing arrow on the upper right side of the main panel.

1. **Configuration Settings** displays the **Application** type:

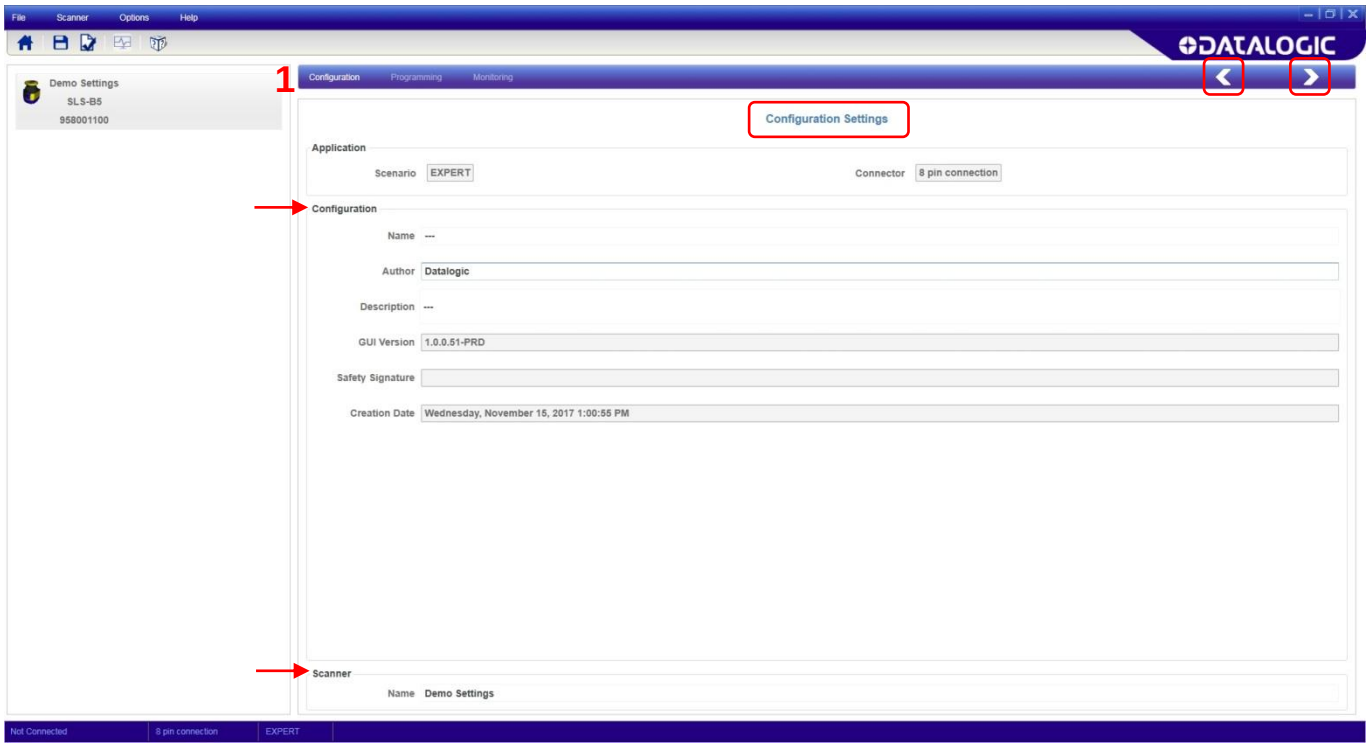
   - **Scenario** to select the configuration type (depending on the application).
     → **Expert:** provides the maximum configuration possibilities for the device. It contains the entire set of parameters, regardless of the devices use.

   - **Connector** to select the connector type (depending on the device model and application).
     → **8-pin connection**: The configuration will manage the pins relative to this connector.



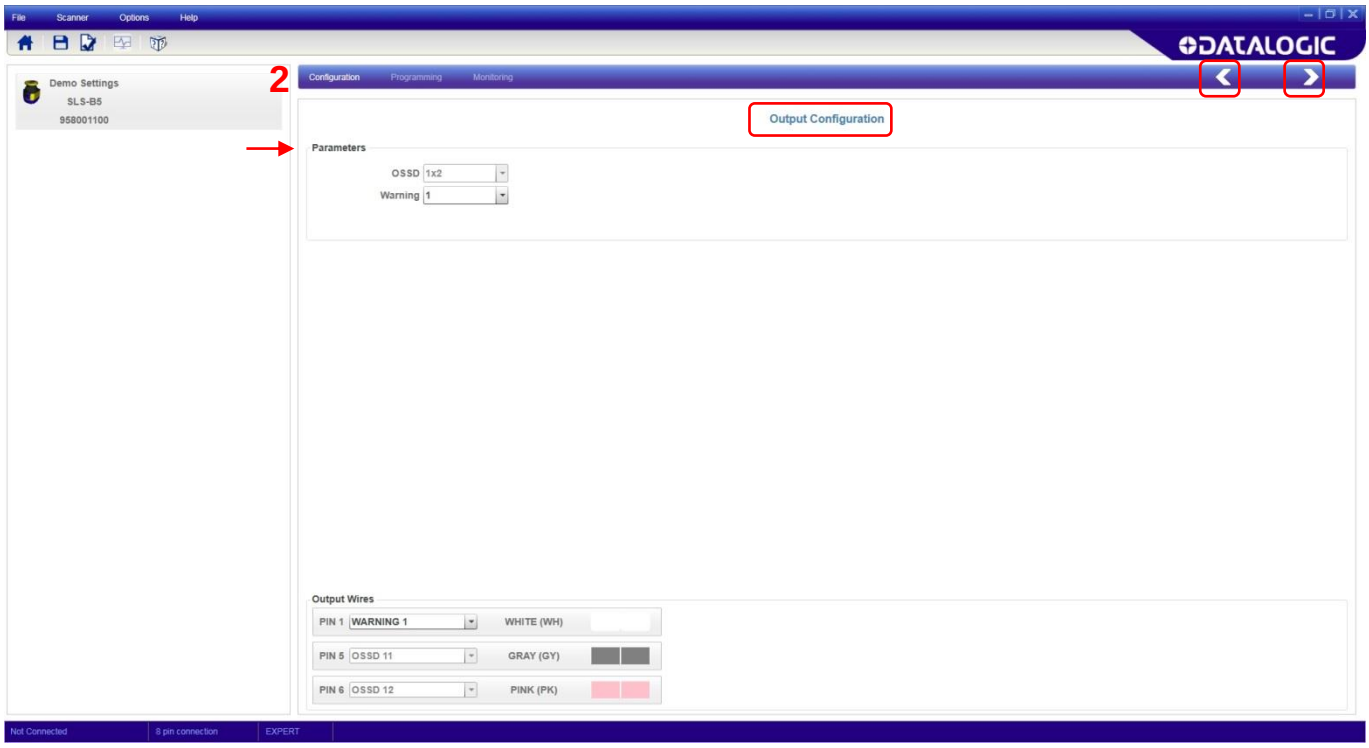
It is possible to edit some parameters in **Configuration**, such as:

- **Name**: A name to identify the configuration.
- **Author**: A name to identify the author.
- **Description**: A short text description to identify the configuration.
- **GUI Version**: (Read-only). The software version of DLSentinel.
- **Safety Signature**: (Read-only). This is automatically generated to be a unique identifier that includes the scanner, configuration, creation date-time.
- **Creation Date**: (Read-only). The date and time the configuration was created.
- **Scanner**: A name to identify the scanner.



Note: To proceed with the configuration, click on the white right-pointing arrow on the upper right side on the main panel. To go back to the previous page, click on the white left-pointing arrow.

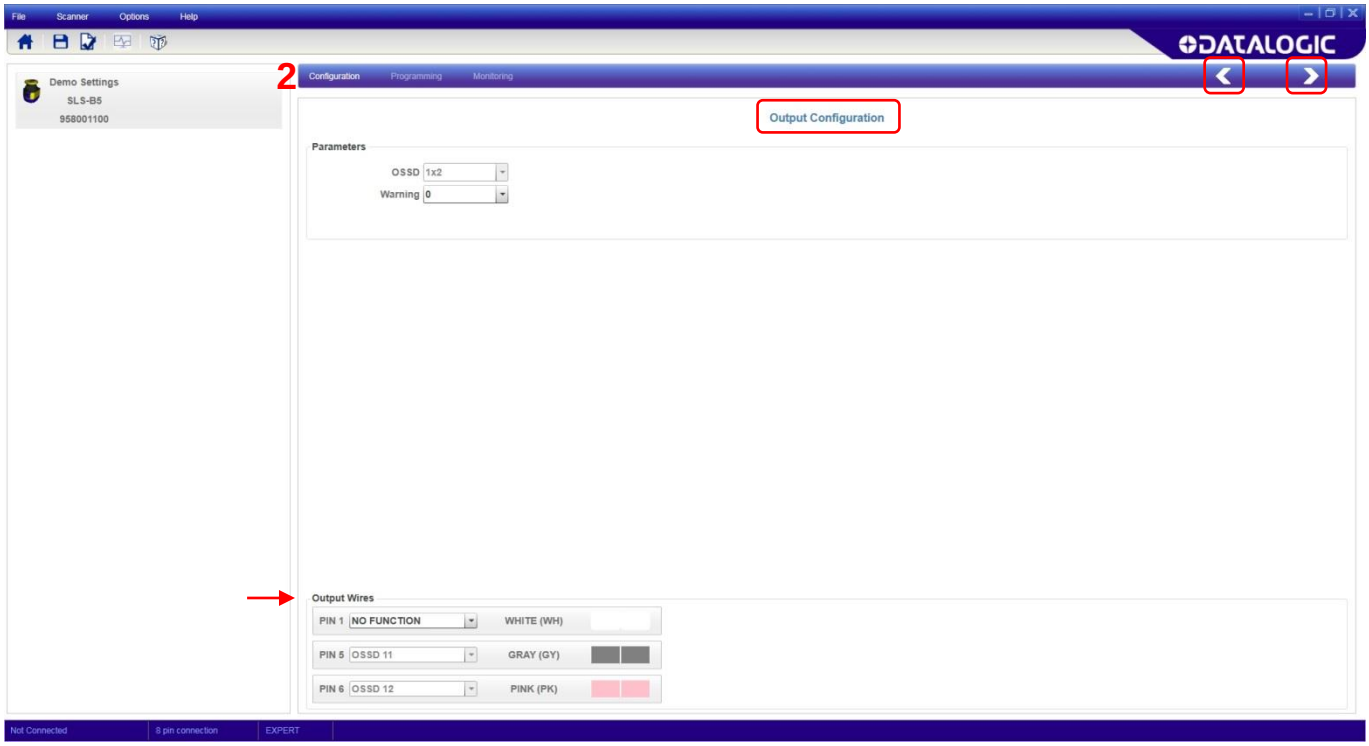
2. In the **Output Configuration** the following parameters are displayed:



Output Parameters

- **OSSD:** to select how many OSSD pairs use for the configuration. This component is connected to the machine control system and associated with the Safety Zone. If an object is detected in the Safety Zone, the OSSD pair switches to the Off-State effectively shutting down the machine.
    - **1x2** (**One Pair)** All OSSD outputs are managed in pairs, two pins (x2). Pins 5 and 6 are automatically assigned to OSSD 1/1 and 1/2.

- **Warning:** to select how many Warning Zones to use for the configuration. This is the area outside the Safety Zone, where an object can be detected but the device will not switch to the Off-State. It can be used to light a warning lamp or sound a siren. The B5 model can have a maximum of one Warning Zone. The Warning function is assigned to Pin 1.



Output Wires

This parameter group assigns the signals of the output functions to the scanner pins. Each pin is also associated with color-coded cable wiring, according to safety equipment regulations and standards.

- **Pin 1 (White Wire)**

  If a Warning Zone function is selected, this pin must be assigned as the Warning output. Otherwise, it must be assigned here as No Function in order to be used as a Reset, Restart or Area Switch input. See the Zone Set and Input configuration steps.

- **Pin 5 (Gray Wire)**

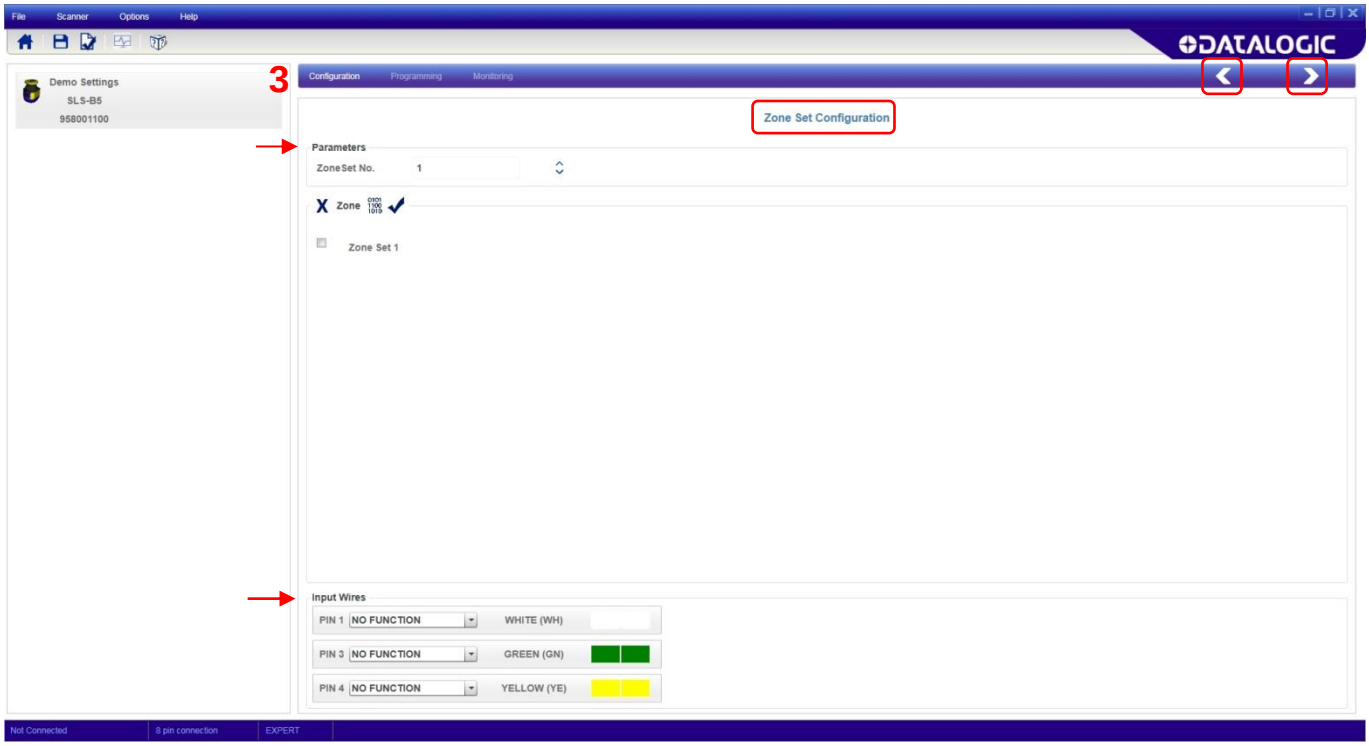
  This pin is automatically assigned to the safety output OSSD 1/1 (pair 1, output 1).

- **Pin 6 (Pink Wire)**

  This pin is automatically assigned to the safety output OSSD 1/2 (pair 1, output 2).

Note: To proceed with the configuration, click on the white right-pointing arrow on the upper right side on the main panel. To go back to the previous page, click on the white left-pointing arrow.

3. **Zone Sets Configuration** displays the following parameters:



Zone Set Parameters

- **Zone Set No.**: to select how many Zone Sets to use for the configuration (maximum three). The default value is one Zone Set (no Area Switching). By pressing the up arrow more Zone Sets can be added.

- **Input Delay Max [msec]**

  This parameter is valid when there are at least two Zone Sets. It determines the delay to apply between switching from one Zone Set to the next. The input delay allows waiting for the Area Switching inputs to stabilize from their transient states before accepting the Zone Set. Otherwise the activation and deactivation of the inputs could put the device in undesired or invalid and temporary switching zone input combinations and therefore cause the device to enter the fault state.

  The minimum input delay (default) value is 30 msec. It can be increased in 30 msec increments.

- **Zone**

  This parameter group allows editing the Area Switch input combinations depending on how many Zone Sets are selected.

  By selecting more than one Zone Set in the Zone Set No. parameter, a number of Area Switches (AS#) equal to the number of unassigned inputs will appear in the graphic.

  It is possible to set the input switch coding with specific buttons. See the table below.

X	By selecting a Zone Set through the checkbox and clicking on this button, the Zone Set will be removed.
0101 1100 1010	By clicking on this button, the Zone Set Combination will be automatically set.
✓	By clicking this button the created combination will be verified.

Otherwise you can click inside the AS box to manually change its state. To be valid, all Area Switching must differ by two input bit states.

Input Wires
This parameter group assigns the signals of the input functions to the scanner pins. Each pin is also associated with color-coded cable wiring, according to safety equipment regulations and standards.

- **Pin 1 (White Wire)**

  If a Warning Zone function has been selected, this pin will be assigned as the Warning output and is not available for Area Switching. Otherwise, it can be assigned here as an Area Switch input. Selecting No Function here allows it to be used as a Reset or Restart input. See the Input configuration step.

- **Pin 3 (Green Wire)**

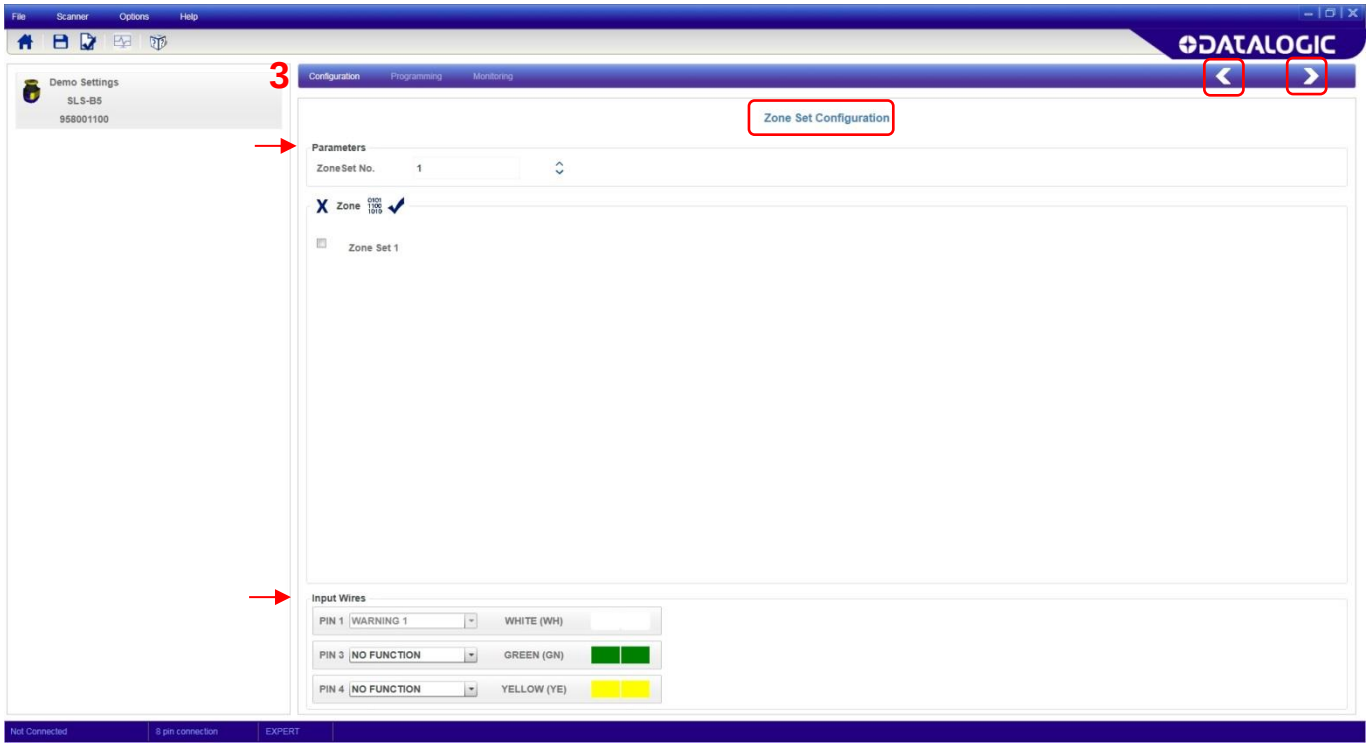
  This pin can be assigned to an Area Switch input.

- **Pin 4 (Yellow Wire)**

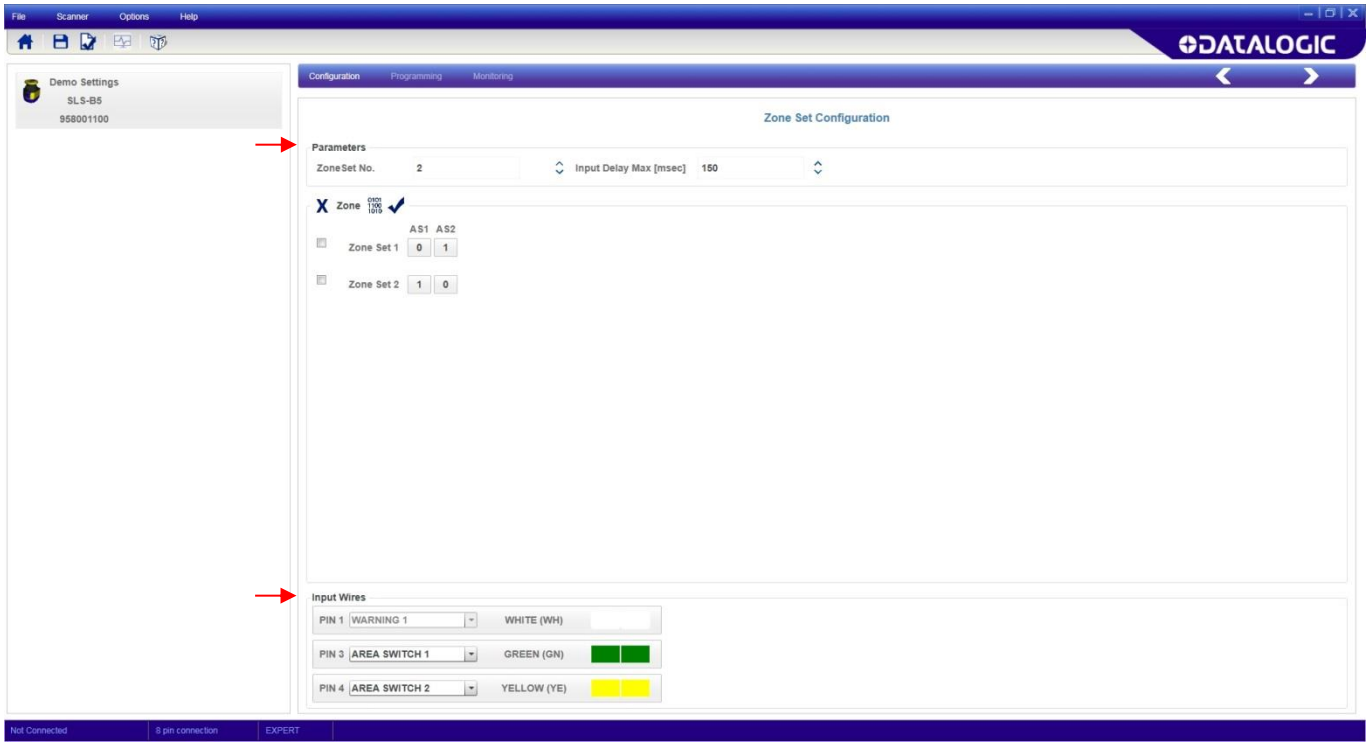
  This pin can be assigned to an Area Switch input.

Zone Sets configuration example:

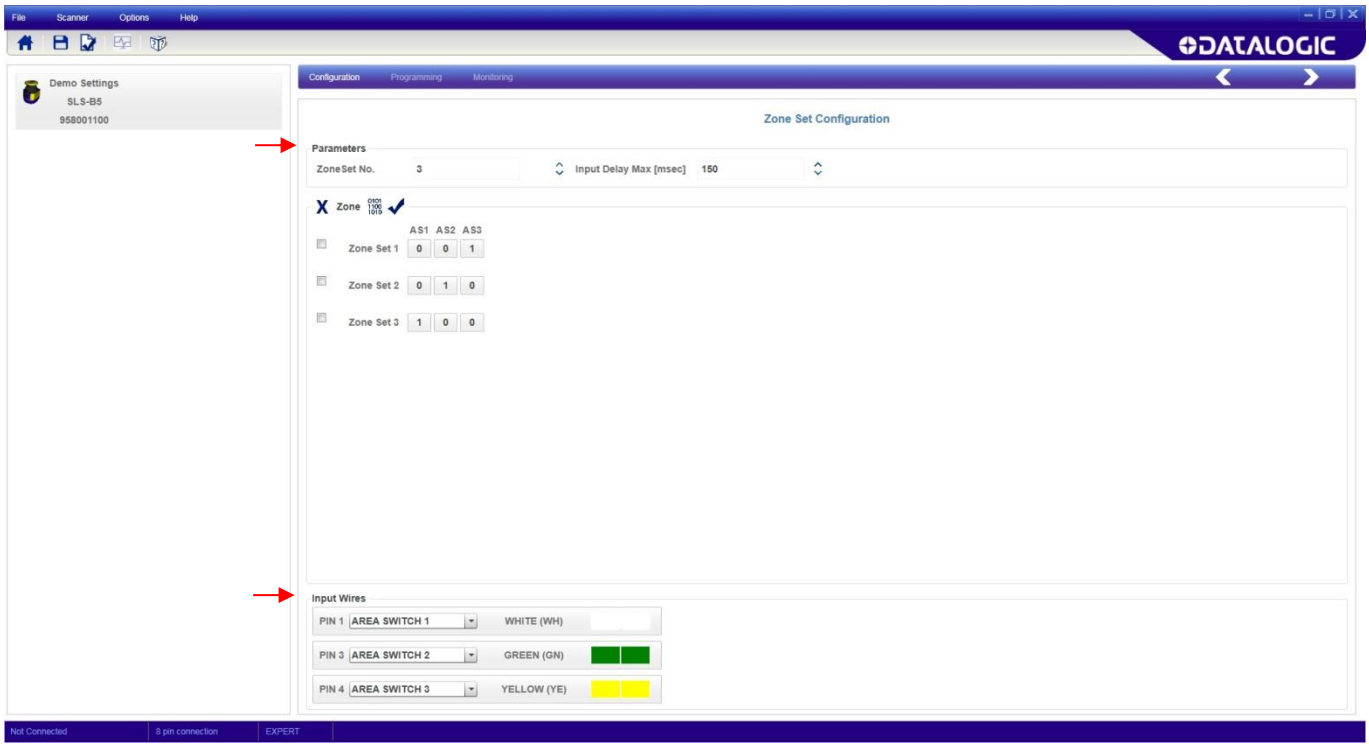
- If the configuration includes only one Zone Set, it is not necessary to insert any parameter. Also Pin 3 will be assigned automatically to the **Reset** function and Pin 4 to **No Function**.



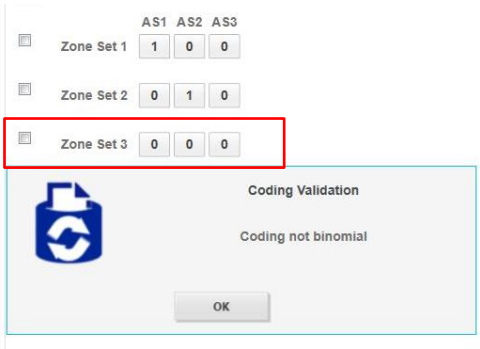
- If two Zone Sets are selected, Pins 3 and 4 must be assigned to the **Area Switch** functions (AREA SWITCH 1, AREA SWITCH 2).



- If three Zone Sets are selected (in this case the Warning function is not available), Pins 1, 3 and 4 must be assigned to the **Area Switch** functions (AREA SWITCH 1, AREA SWITCH 2 and AREA SWITCH 3).

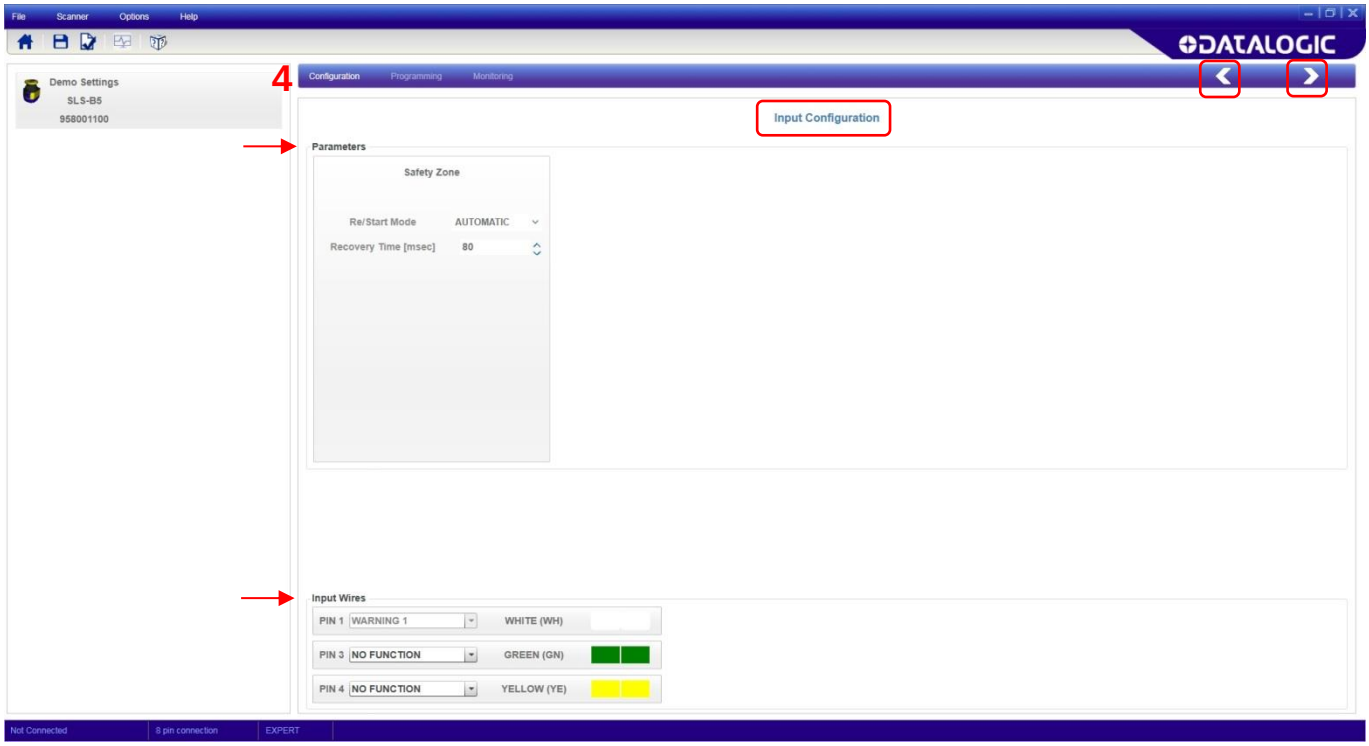


If more Zone Sets are selected, make sure to create a valid input coding combination: the zone sets must differ by two input bit states with respect to any other zone set.
For example, the combination shown below is not possible because Zone Set only differs by one input bit state with respect to Zone Set 1 or 2. By clicking on the validation button a pop-up window that shows the coding validation error will be displayed.



Note: To proceed with the configuration, click on the white right-pointing arrow on the upper right side on the main panel. To go back to the previous page, click on the white left-pointing arrow.

4. The **Input Configuration** displays the following parameters:



Input Parameters

- **Restart Mode:** For each Safety Zone you can select the restart mode.

  → **Automatic**: The Laser Sentinel automatically returns the OSSD pair to the On-State after all detected objects are removed from the Safety Zone and the configured Recovery Time elapses.

  → **Manual**: The Laser Sentinel returns the OSSD pair to the On-State after all detected objects are removed from the Safety Zone and a manual Restart switch (push-button) is pressed for at least 500 msec. If the Restart switch is pressed while an object is still inside the Safety Zone, the Laser Sentinel switches to a failure lockout state and must be Reset.

- **Recovery time:** This parameter is only significant for Automatic Restart Mode. The recovery time is the time between the object removal from the Safety Zone and the OSSDs achieving the On-State. Select the time to elapse before the OSSD pair returns to the On-State. The minimum Recovery Time is 80 msec. This can be increased to 60000 msec in 1 msec increments.

Input Wires
This parameter group assigns the signals of the input functions to the scanner pins. Each pin is also associated with color-coded cable wiring, according to safety equipment regulations and standards.

- **Pin 1 (White Wire)**

  If this pin has been assigned as the Warning output or as an Area Switch input, it is not available as a manual Restart and/or Reset input.
  If this input is not used, select No Function.

- **Pin 3 (Green Wire)**

  If this pin has been assigned as an Area Switch input, it is not available as a manual Restart and/or Reset input. If this input is not used, select No Function.

- **Pin 4 (Yellow Wire)**

  If this pin has been assigned as an Area Switch input, it is not available as a manual Restart and/or Reset input. If this input is not used, select No Function.

Note: To proceed with the configuration, click on the white right-pointing arrow on the upper right side on the main panel .To go back to the previous page, click on the white left-pointing arrow.

5. The **Detection Configuration** displays the following parameters:

Detection Parameters

- **Number of Scan:** Select the number of scans required to validate detection. This parameter has a direct impact on the **Response Time** which is the time from when an object is detected in the Safety Zone to when the OSSD switches to the OFF-State.
  The Number of Scans determines the Response Time which ranges from 62 to 482 ms in 30 ms increments.

Resolution

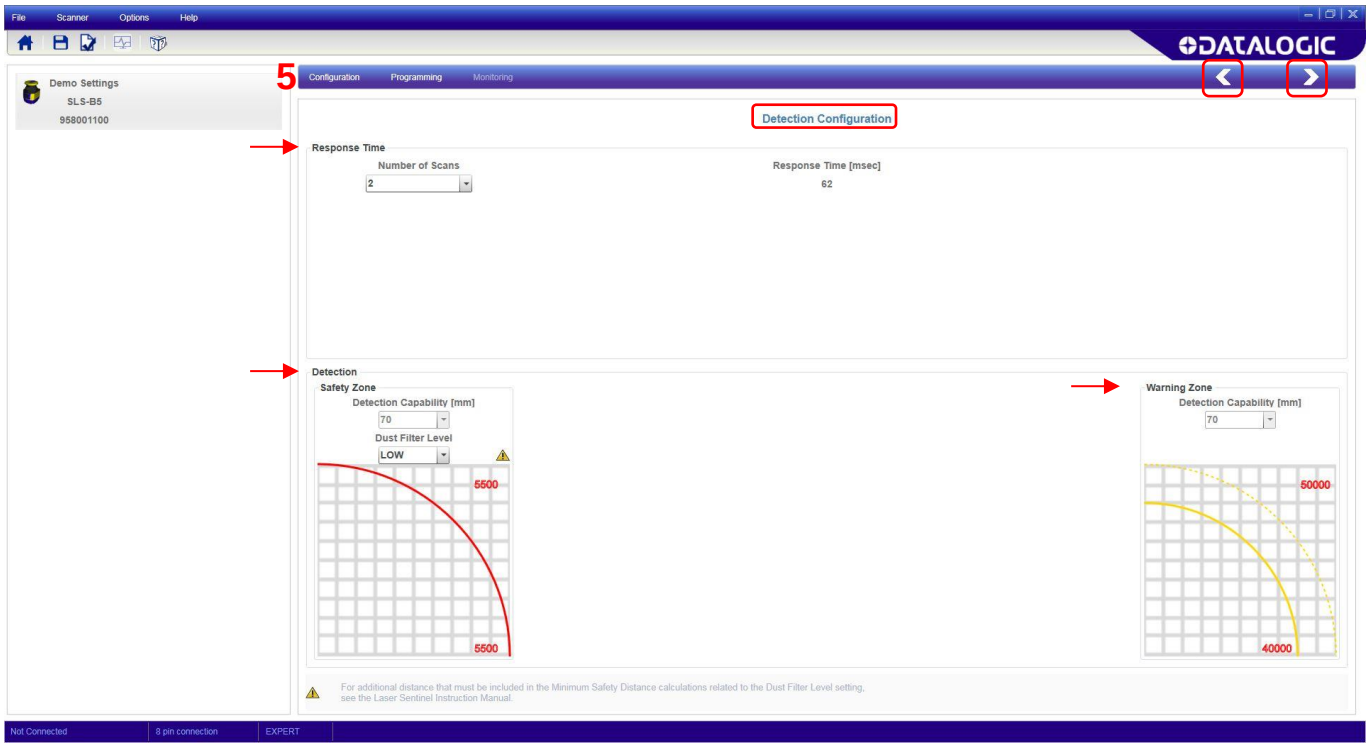
- **Detection Capability** The detection capability is the capacity to detect an object of given dimensions within the detection zone. The detection capability for these models is fixed at 70 mm. Objects greater than or equal to this value can be detected both for the Safety and Warning Zones.

- **Dust Filter Level** must be set according to different conditions specific to the application. In general, it is the sensibility to various levels of airborne particles that impact the response of the Laser Sentinel detection.

  → **High** Dust Filter Level is used in dirty environments to filter (ignore) detection of airborne particles from being confused with objects to detect. The Laser Sentinel is less sensitive to dust and therefore avoids shutting down the machinery unnecessarily.

  → **Mid**

  → **Low** Dust Filter Level is used in cleaner environments where airborne particles have little effect on object detection.



Dust Filter Level should be set to the lowest value that still allows the machinery to work without detections due to dust.

Note: In addition to the level of airborne particles in the Laser Sentinel environment, some special lighting conditions also affect the detection sensibility. These conditions are:

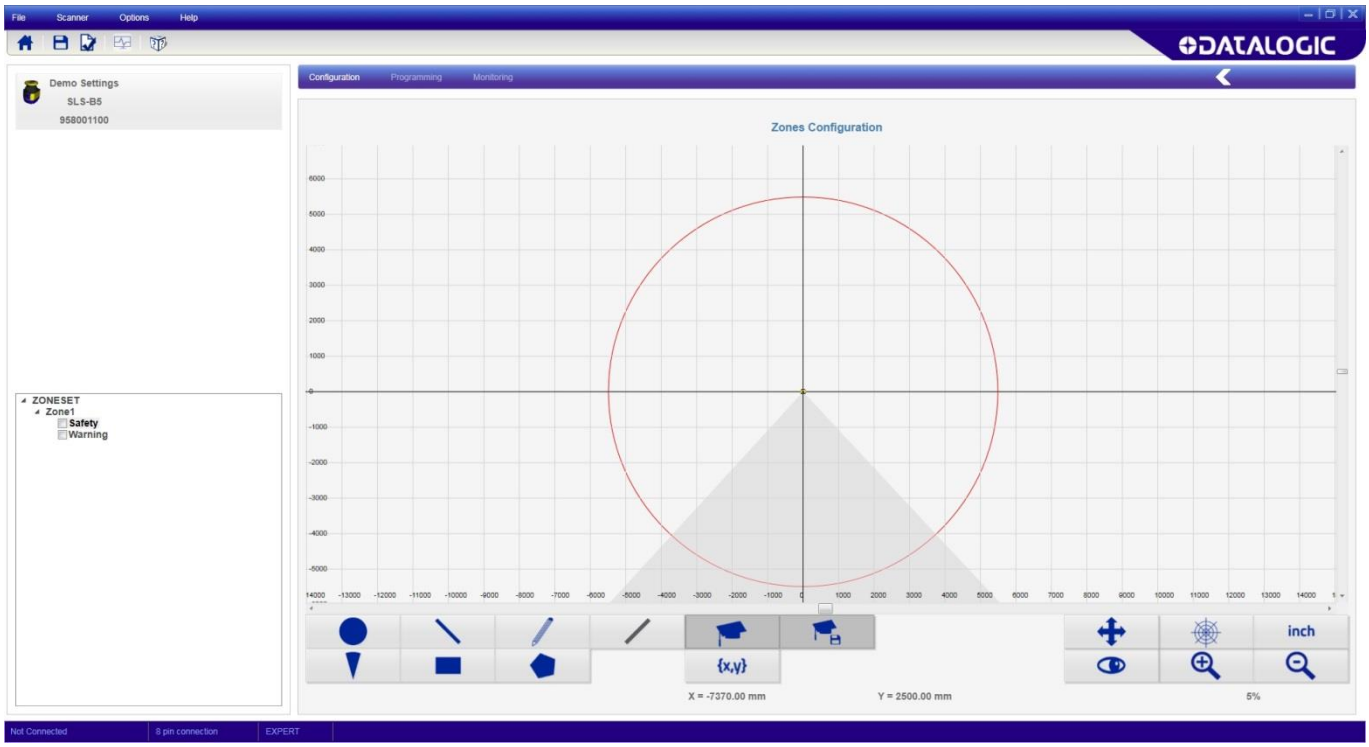
- high reflective backgrounds within 2.5 meters of the Safety Zone boundary
- the presence of bright light within +/- 5° of the detection plane.

The additional distance must be included in the Minimum Safety Distance calculations for these cases.

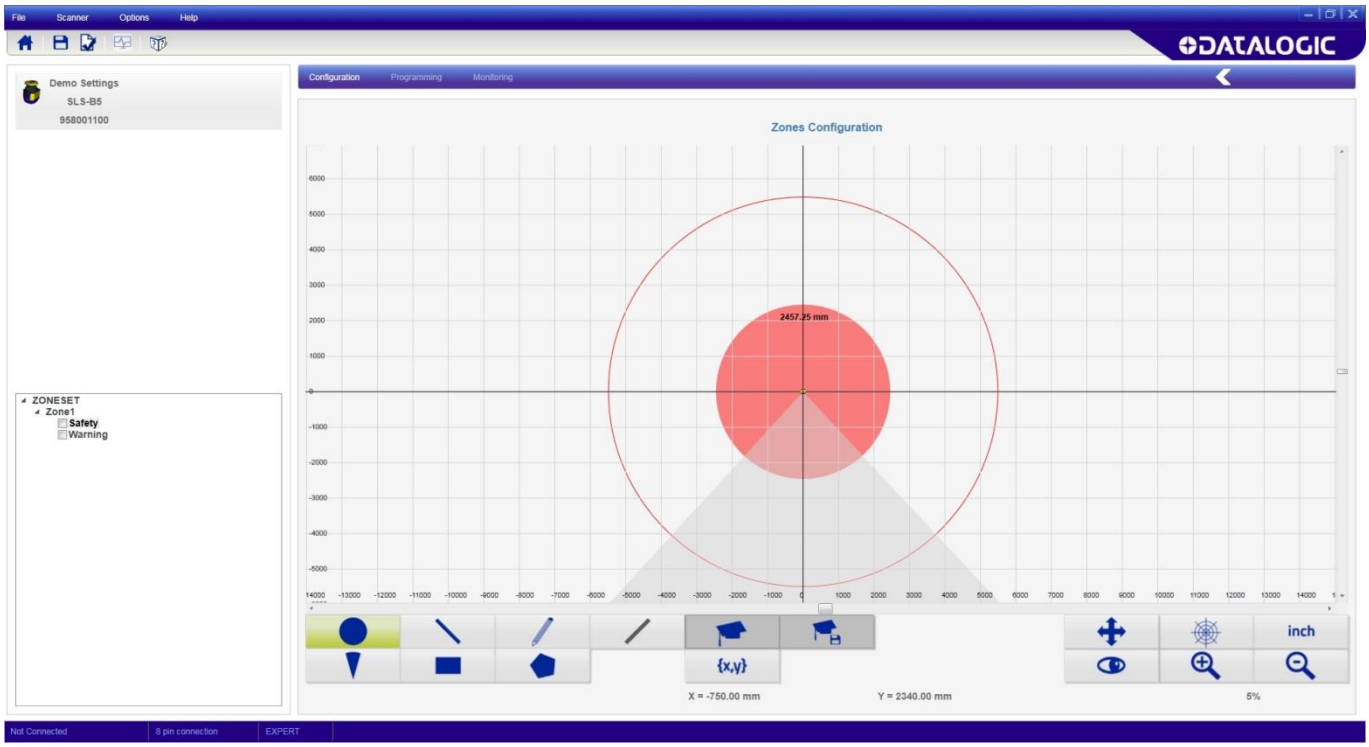
See the graphs in the Laser Sentinel Instruction Manual for these additional distances.

Note: To proceed with the configuration, click on the white right-pointing arrow on the upper right side on the main panel. To go back to the previous page, click on the white left-pointing arrow.

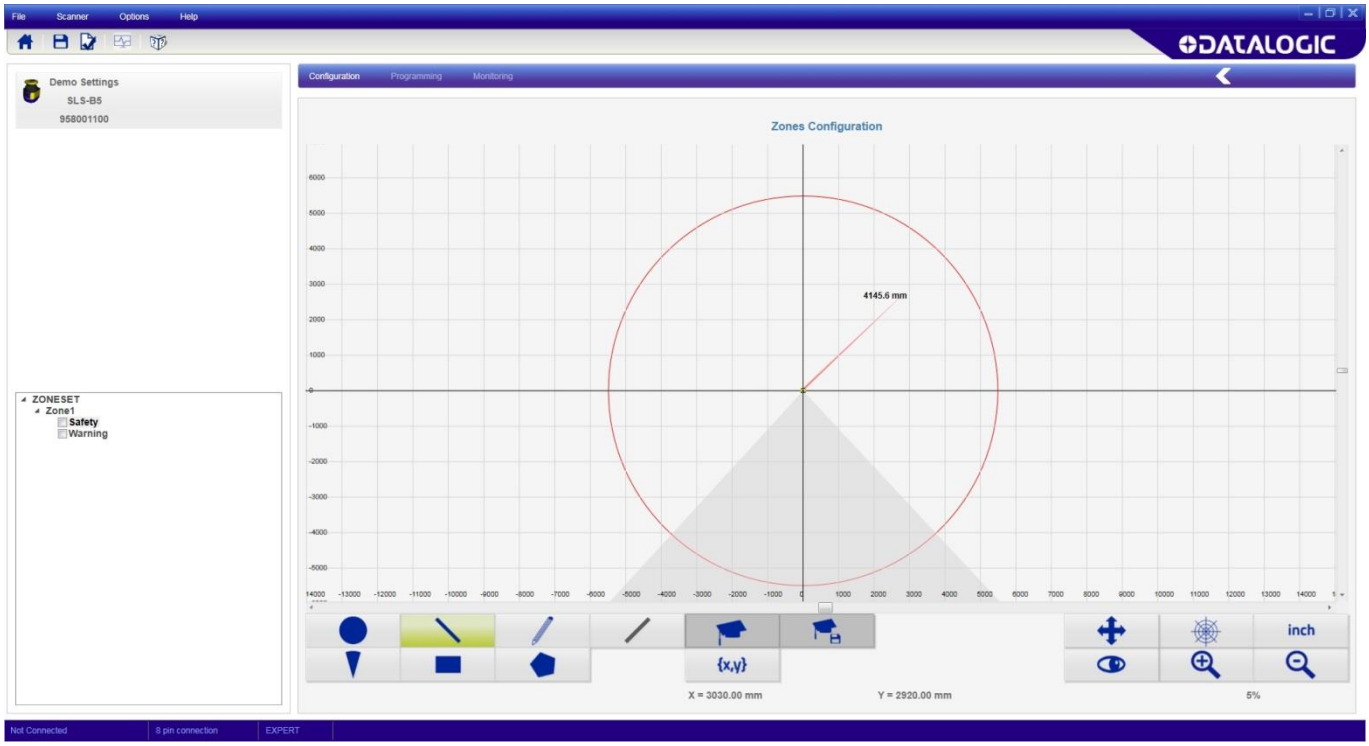
6. In the **Zone Set Configuration**, tools are provided to draw the Safety and Warning Zones. It is possible to select different shapes and different functions to manage the graph.



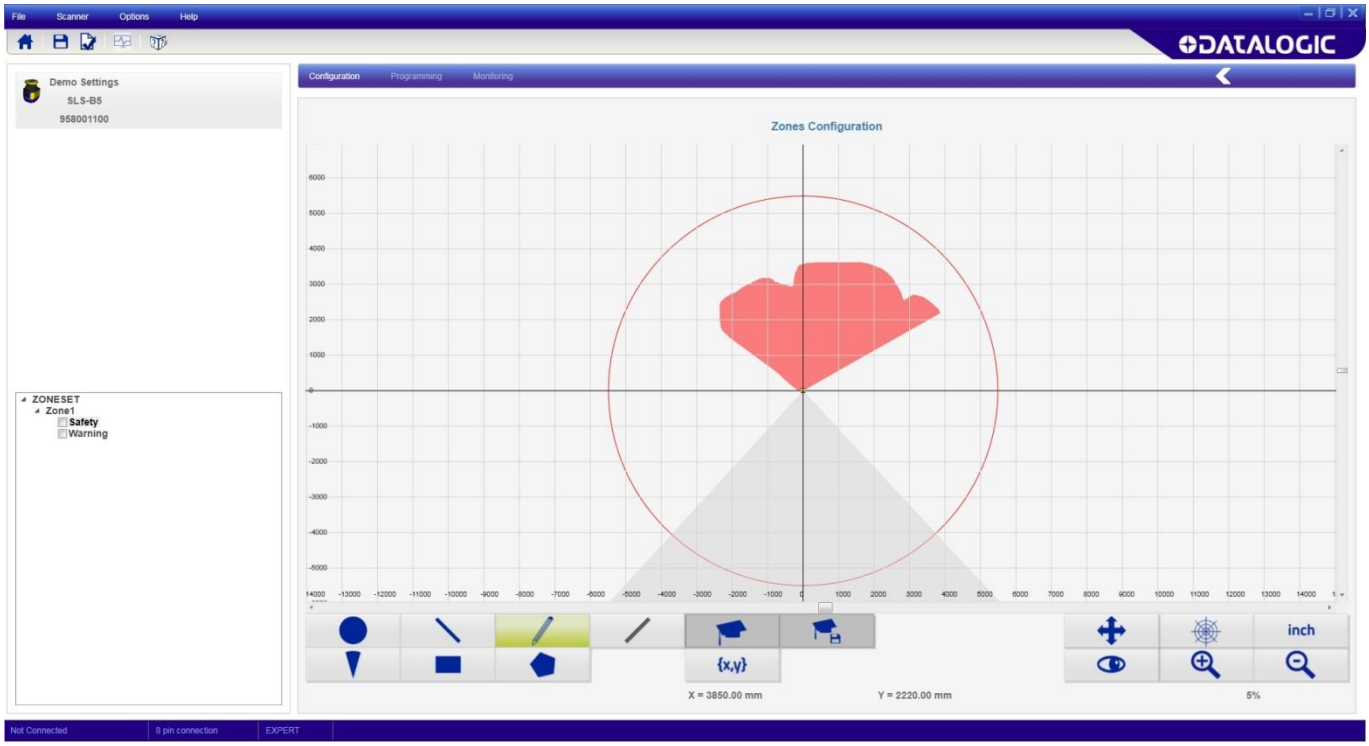
ICON	DESCRIPTION
	Click this button to draw a circle shaped area by holding pressed the left button of the mouse. Once finished release the left button.



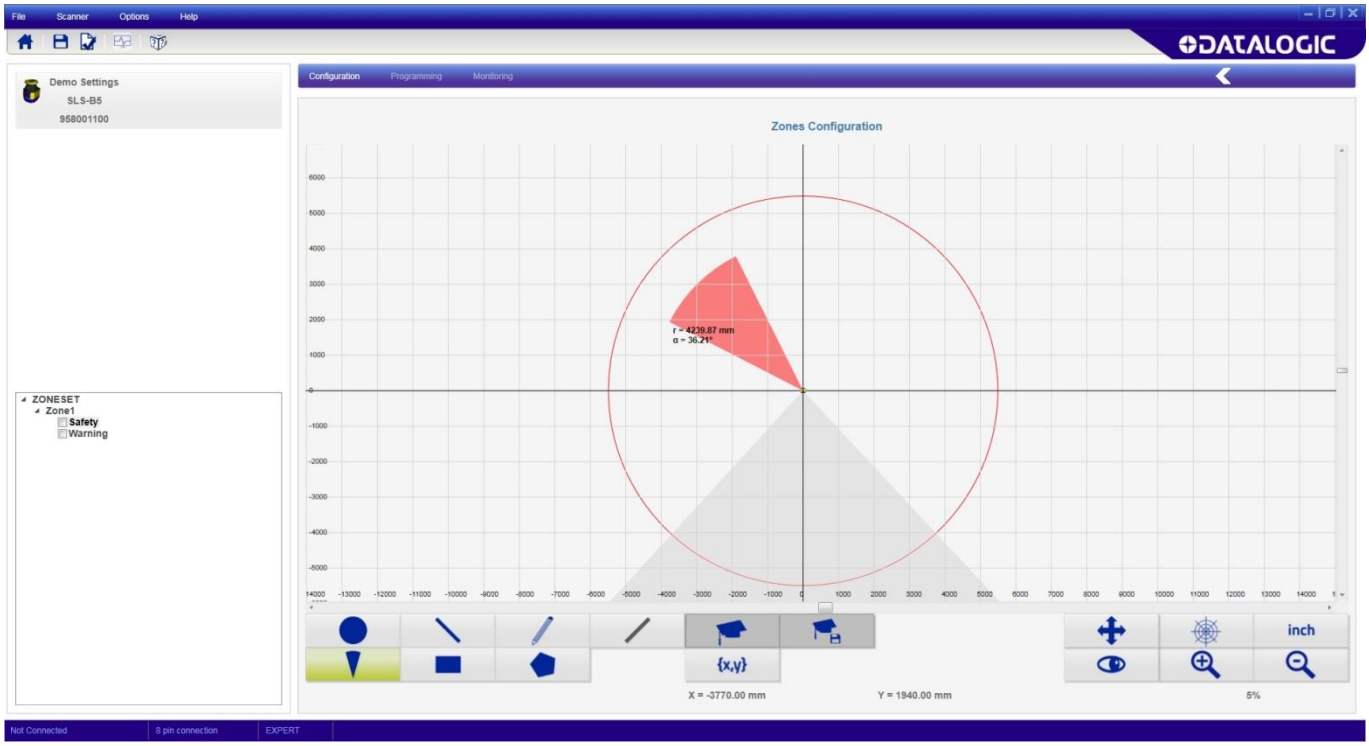
ICON	DESCRIPTION
	Click this button to draw a line shaped area by holding pressed the left button of the mouse. Once finished release the left button.



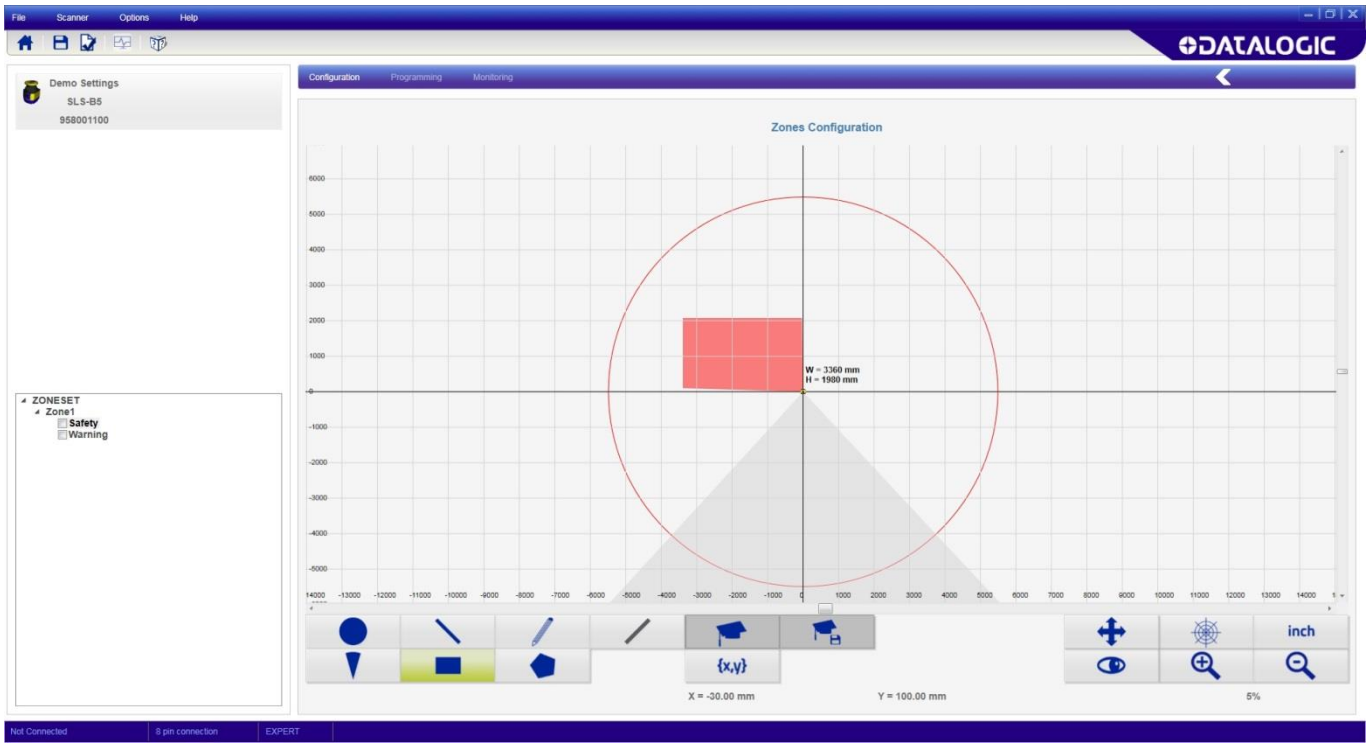
ICON	DESCRIPTION
	Click this button to free-hand draw the area by holding pressed the left button of the mouse. Once finished release the left button.



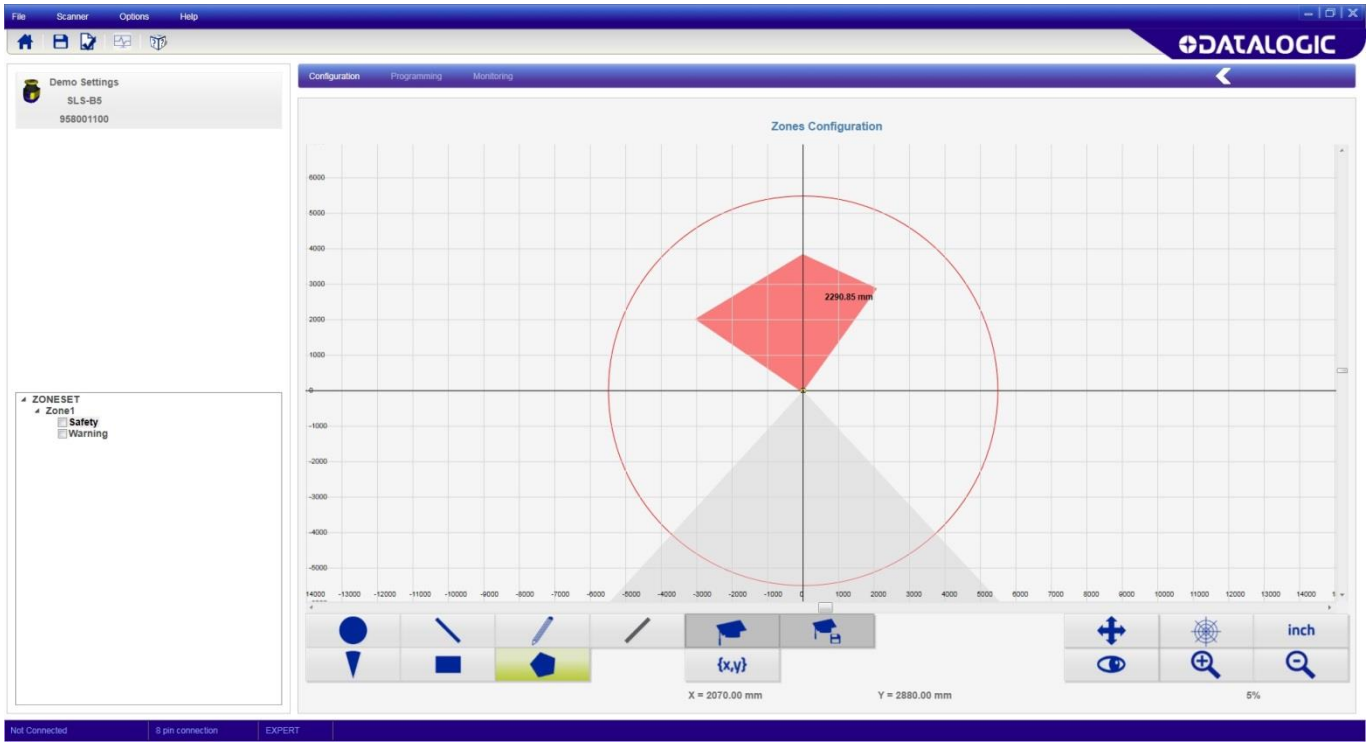
ICON	DESCRIPTION
	Click this button to draw an arc shaped area by holding pressed the left button of the mouse. Once finished release the left button.



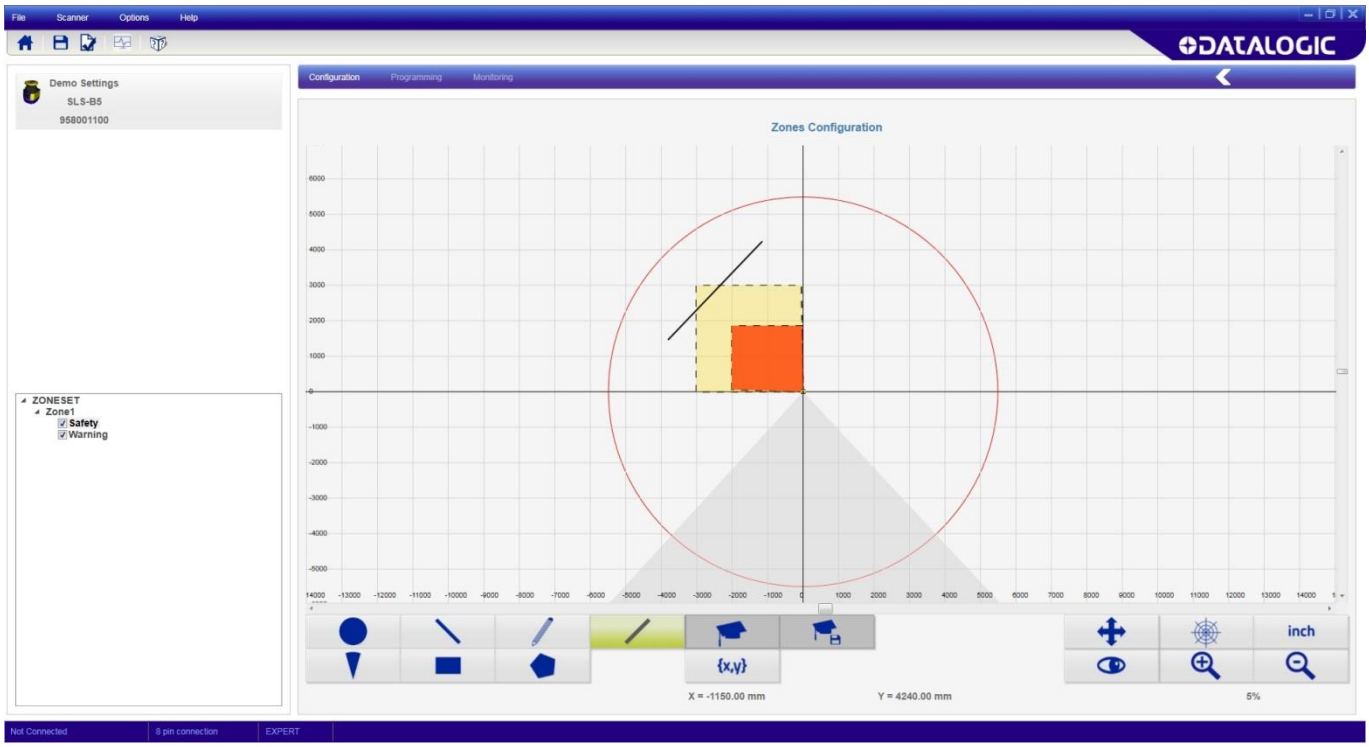
ICON	DESCRIPTION
	Click this button to draw a rectangle shaped area by holding pressed the left button of the mouse. Once finished release the left button.



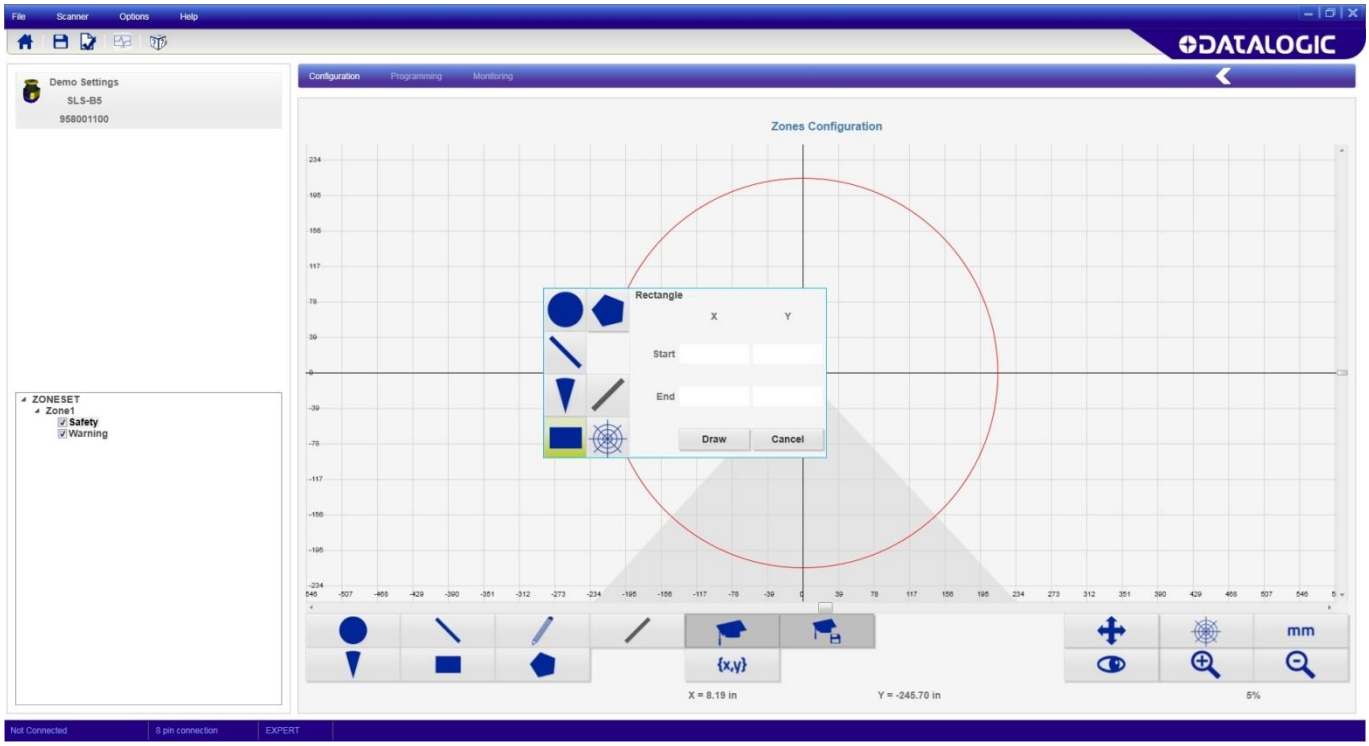
ICON	DESCRIPTION
	Click this button to draw a polygon shaped area by holding pressed the left button of the mouse. Once finished release the left button.



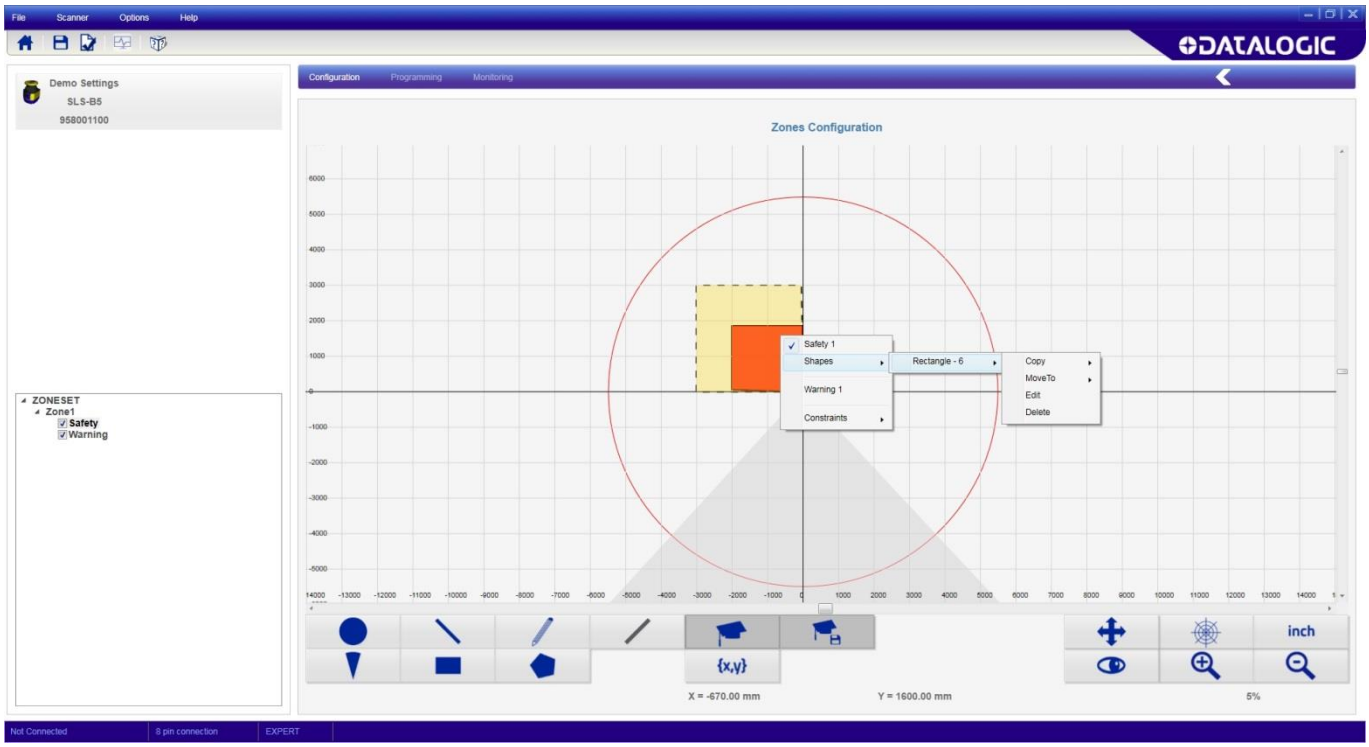
ICON	DESCRIPTION
	Click this button to draw constraints by holding pressed the left button of the mouse. Once finished release the left button.



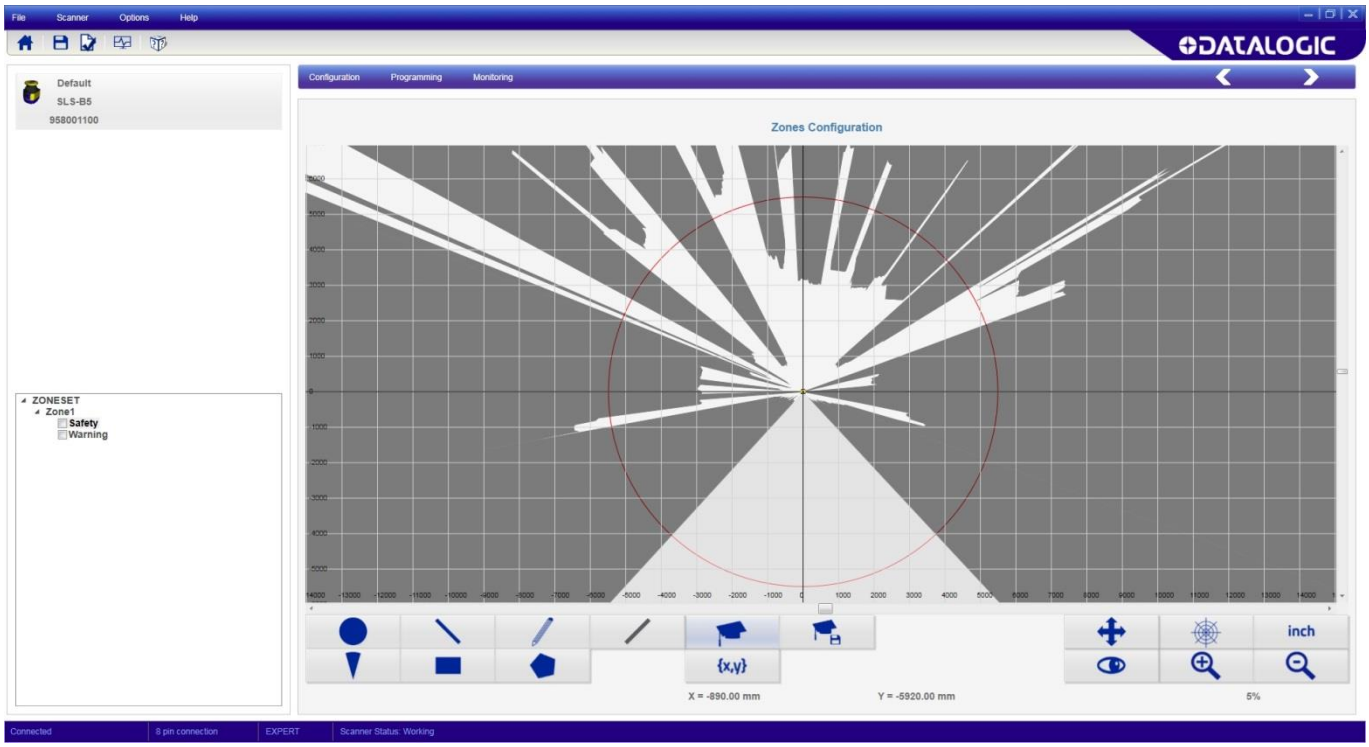
ICON	DESCRIPTION
{x,y}	Click this button to draw an area by inserting the measurements and coordinates



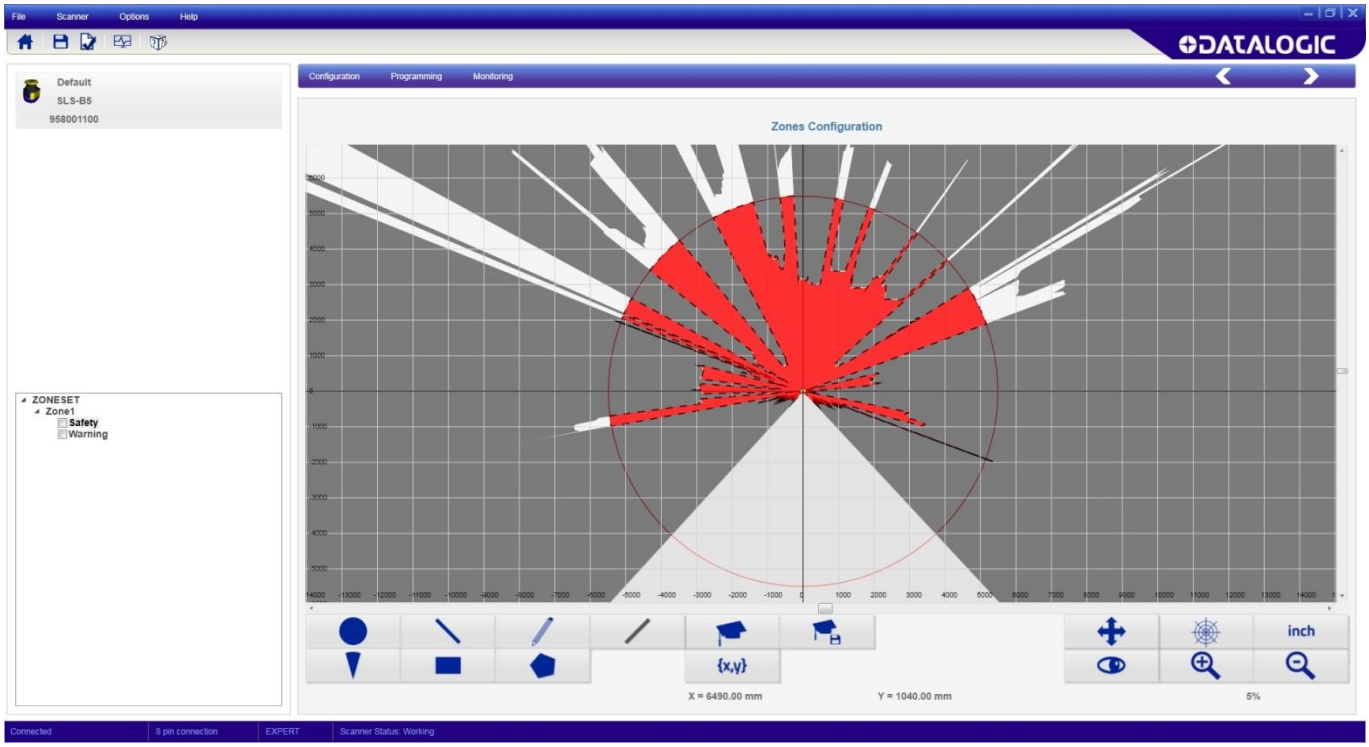
Once the area has been drawn, it is possible to access an edit menu by right-clicking on the selected area. This menu allows to copy, move, edit and delete the area.



ICON	DESCRIPTION
	Click this button to enter the Teach In feature. This function scans and shows the area surrounding the device. It displays a white area which is free from obstacles and therefore can be assigned to a safety or a warning zone. The grey areas are detected obstructions..

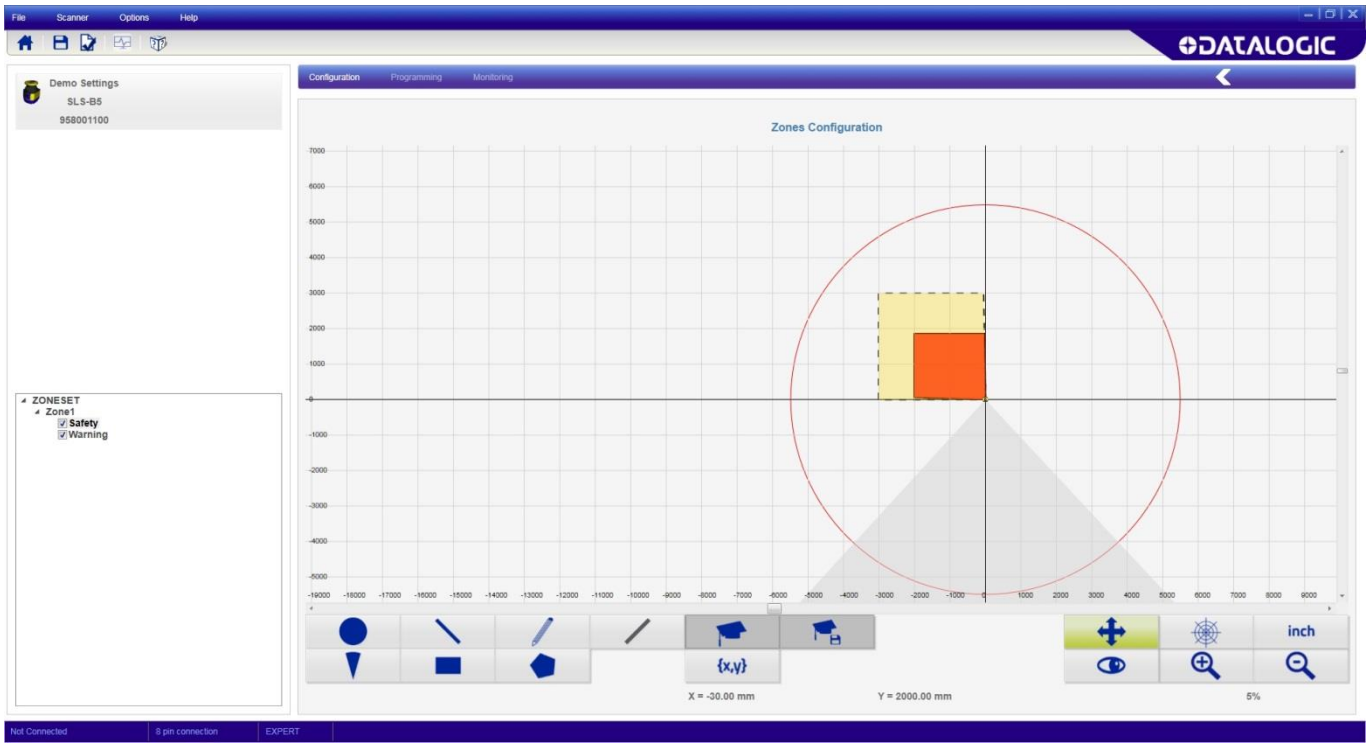


ICON	DESCRIPTION
	This function is the Teach In Area Assignment, to assign a zone type to the detected white area. After choosing Teach In, select the checkbox of either the safety zone or warning zone in the left pane and then click this button to assign it.

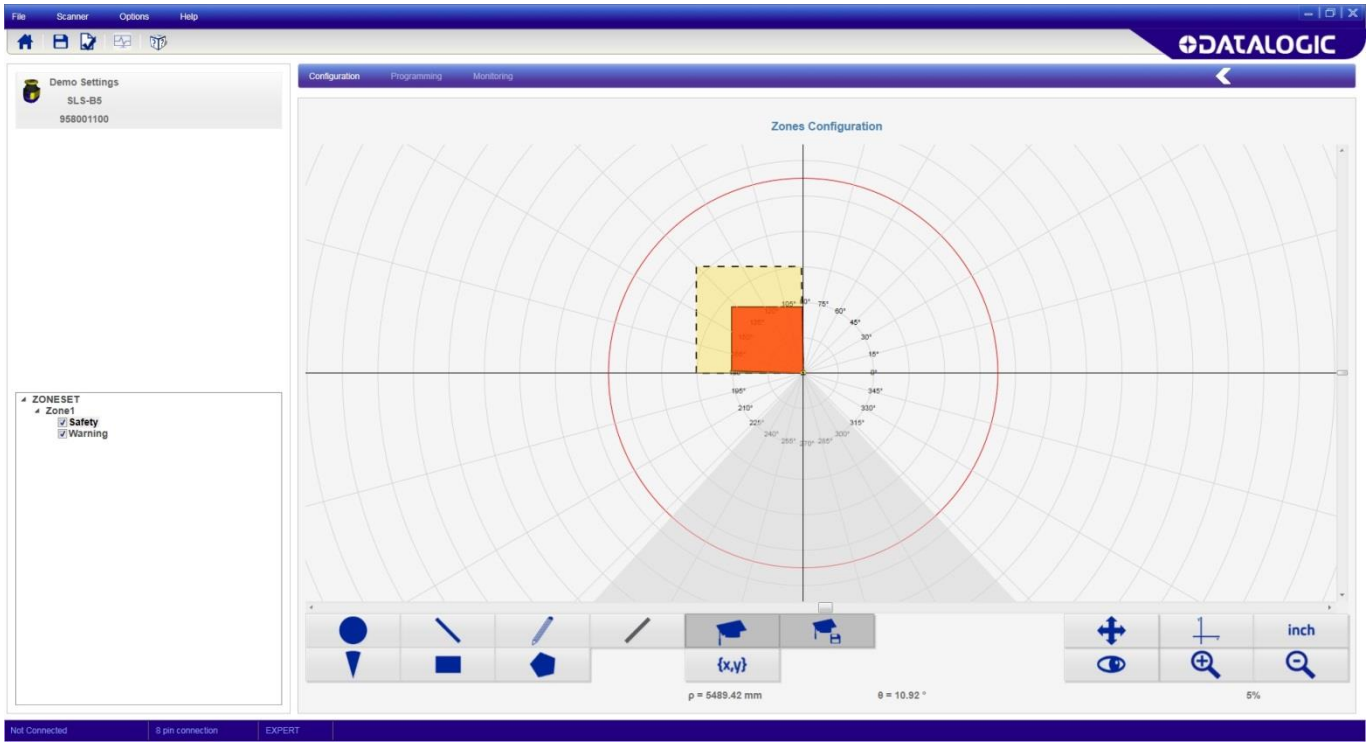


Teach In and Draw Teach in Zone are available only if the device is online.

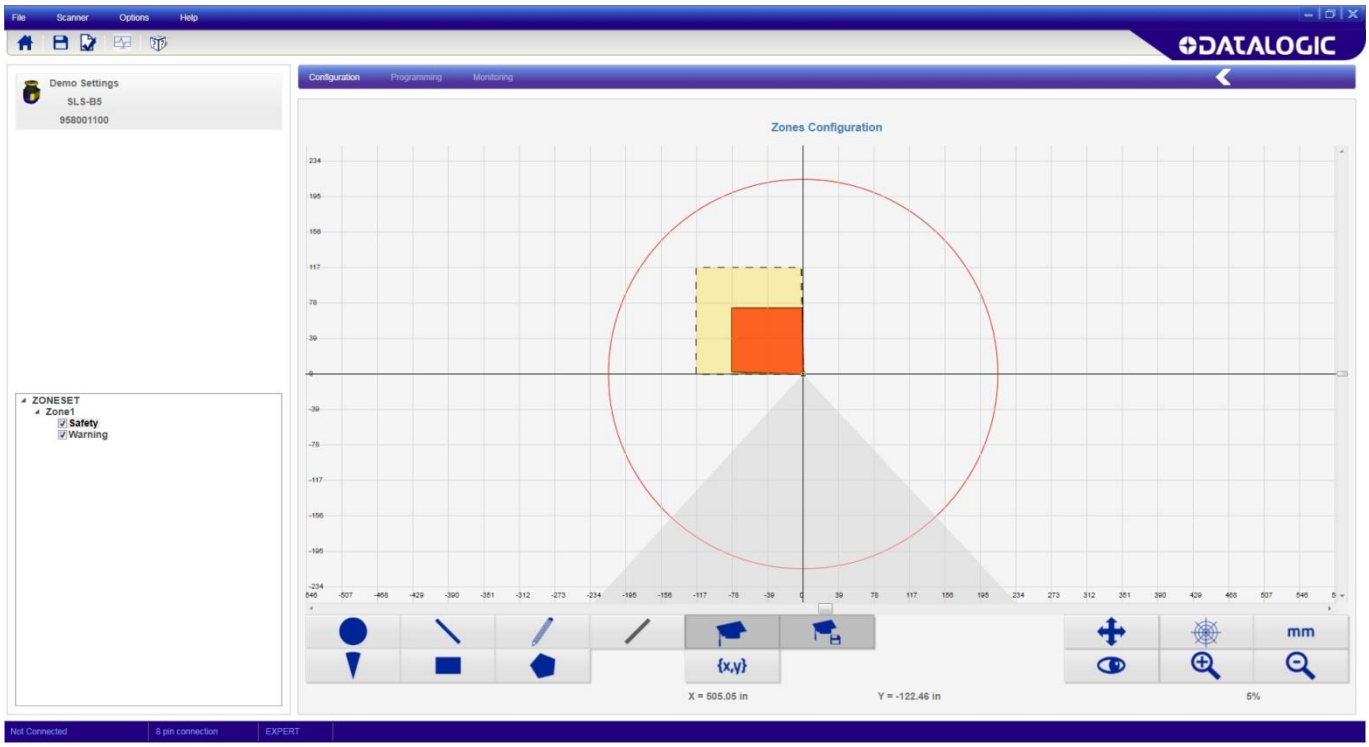
ICON	DESCRIPTION
	Click this button to move the graph. Once finished re-click on the button.



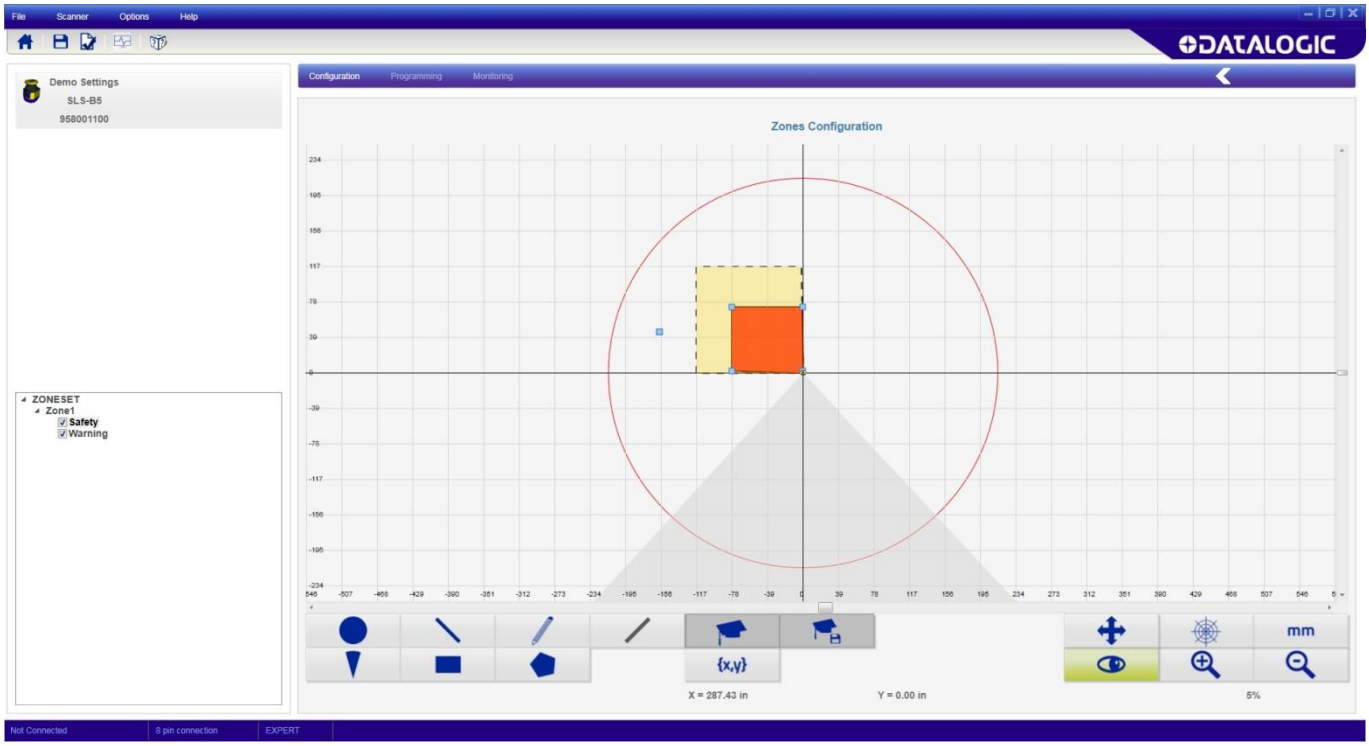
ICON	DESCRIPTION
	Click this button to toggle the graph coordinates.



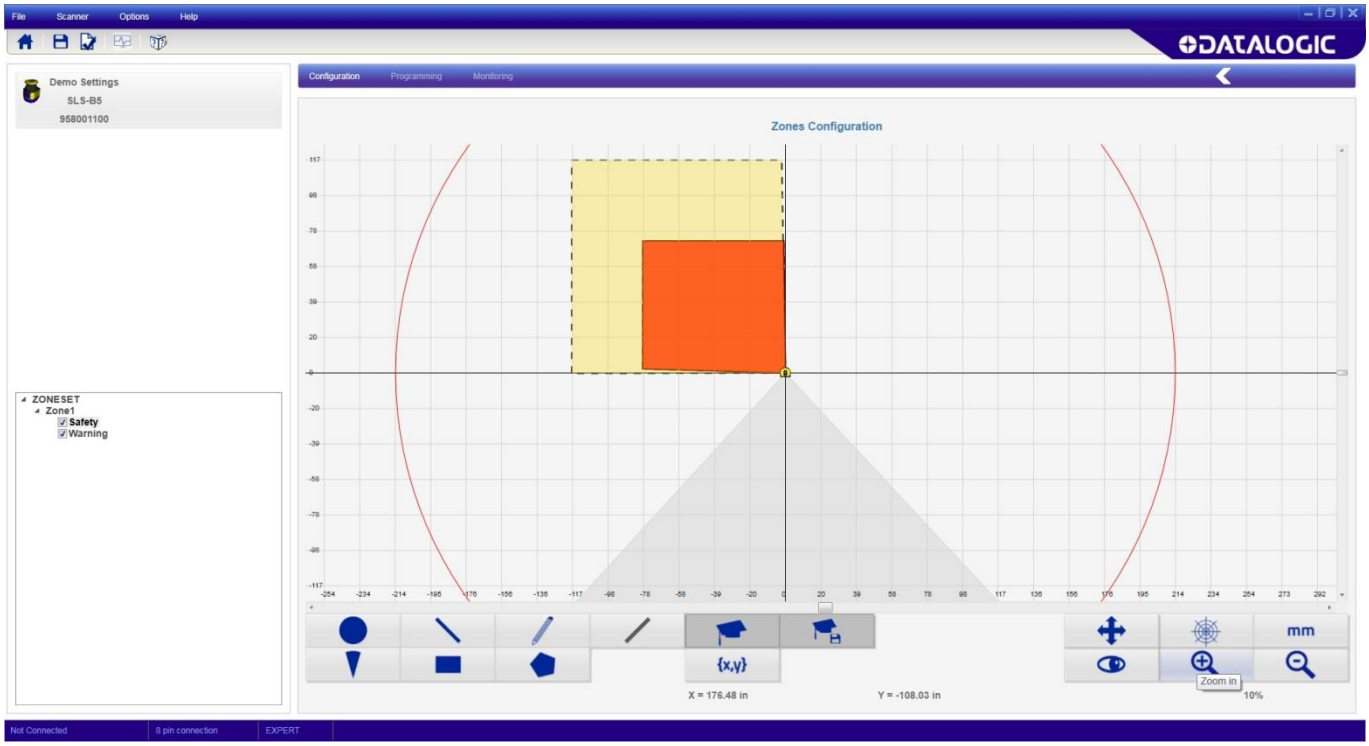
ICON	DESCRIPTION
inch	Click this button to toggle the graph unit of measurement.



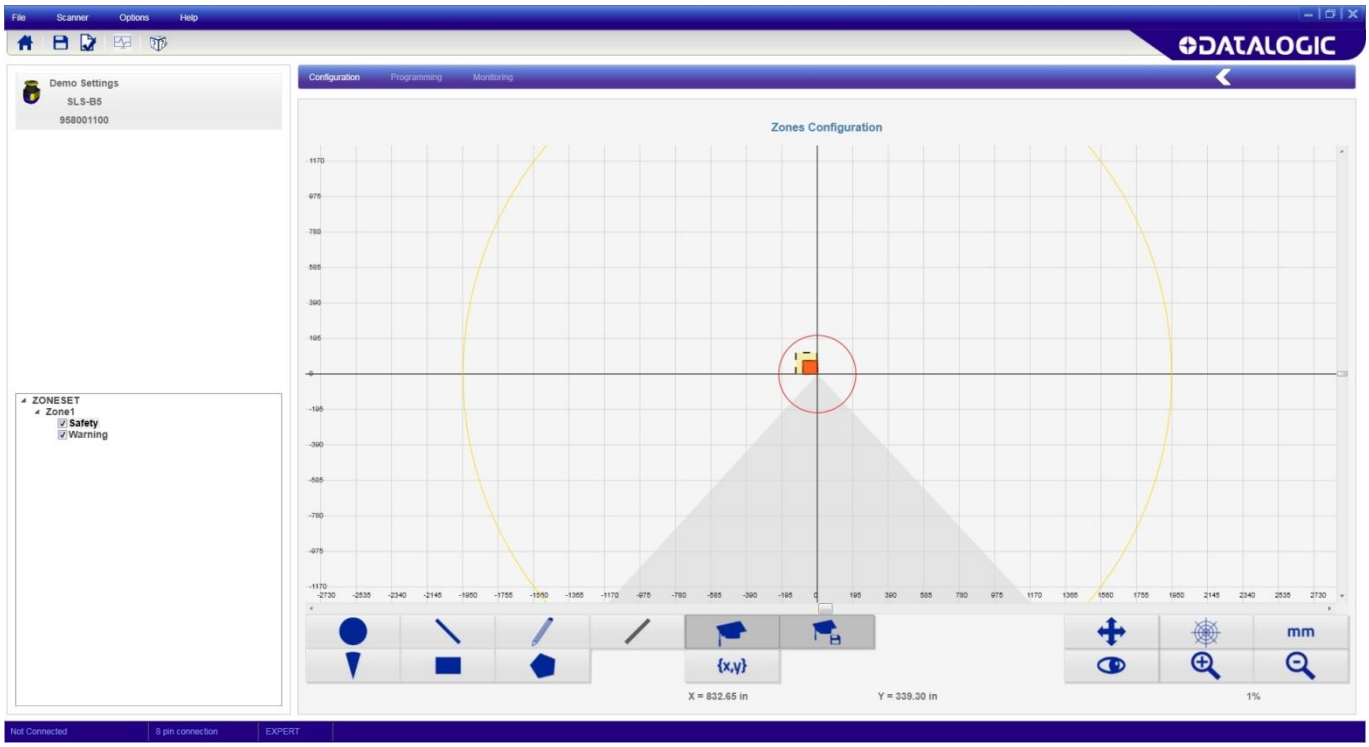
ICON	DESCRIPTION
	Click this button to show the area points and edit it. Once finished re-click on the button.



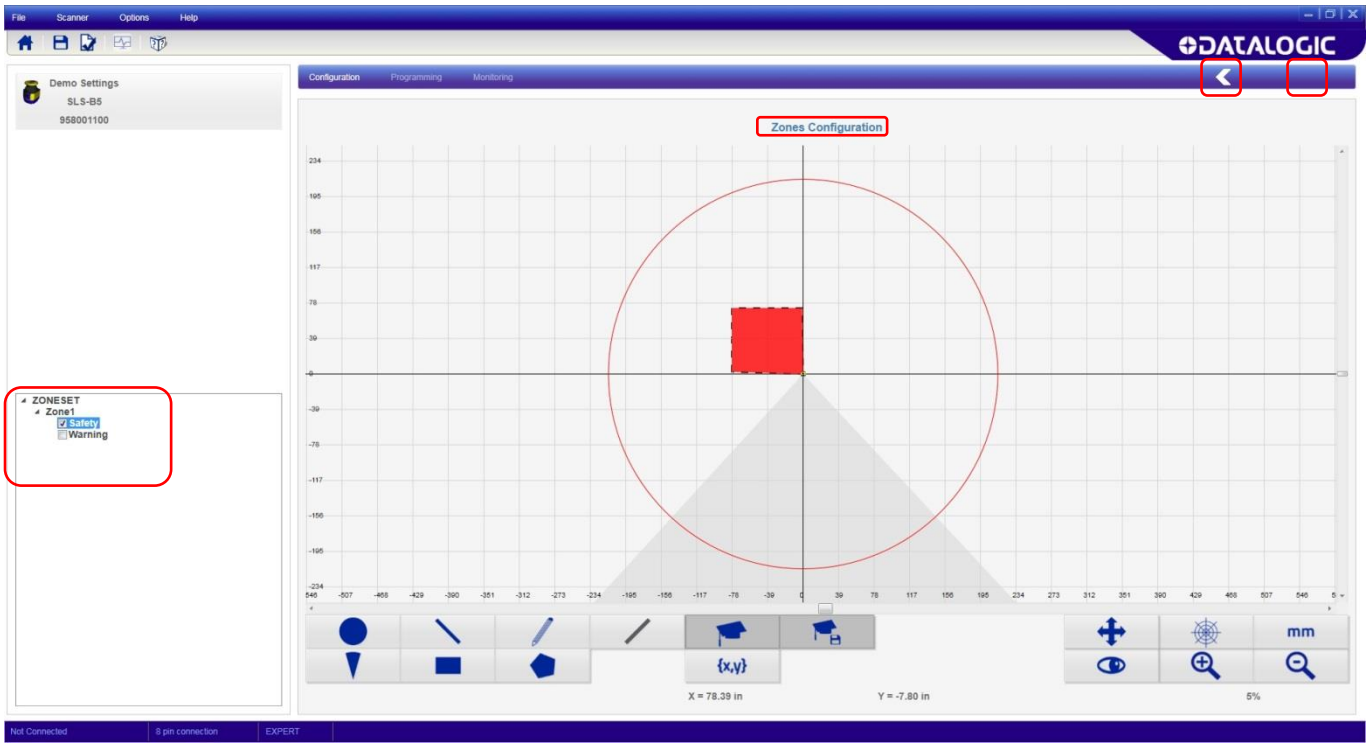
ICON	DESCRIPTION
	Click this button to zoom in the graph. Once finished re-click on the button.



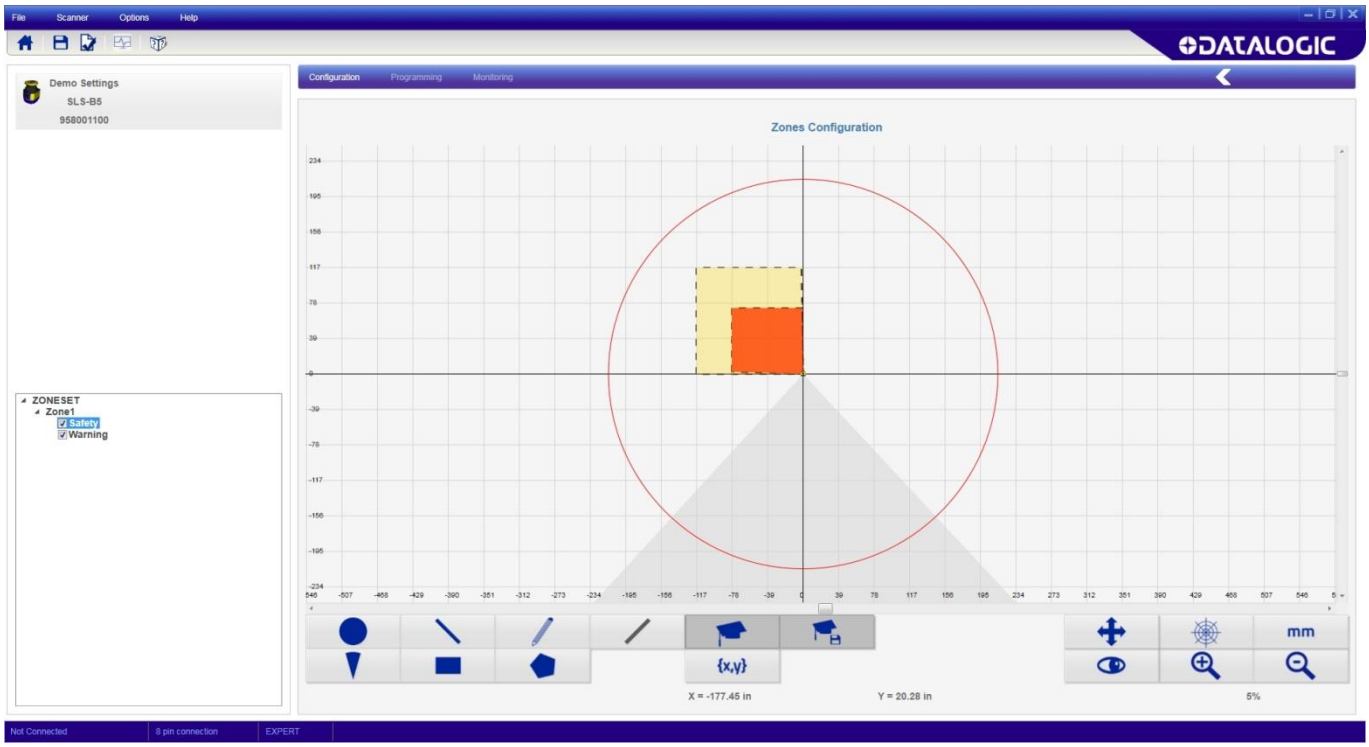
ICON	DESCRIPTION
	Click this button to zoom out the graph. Once finished re-click on the button.



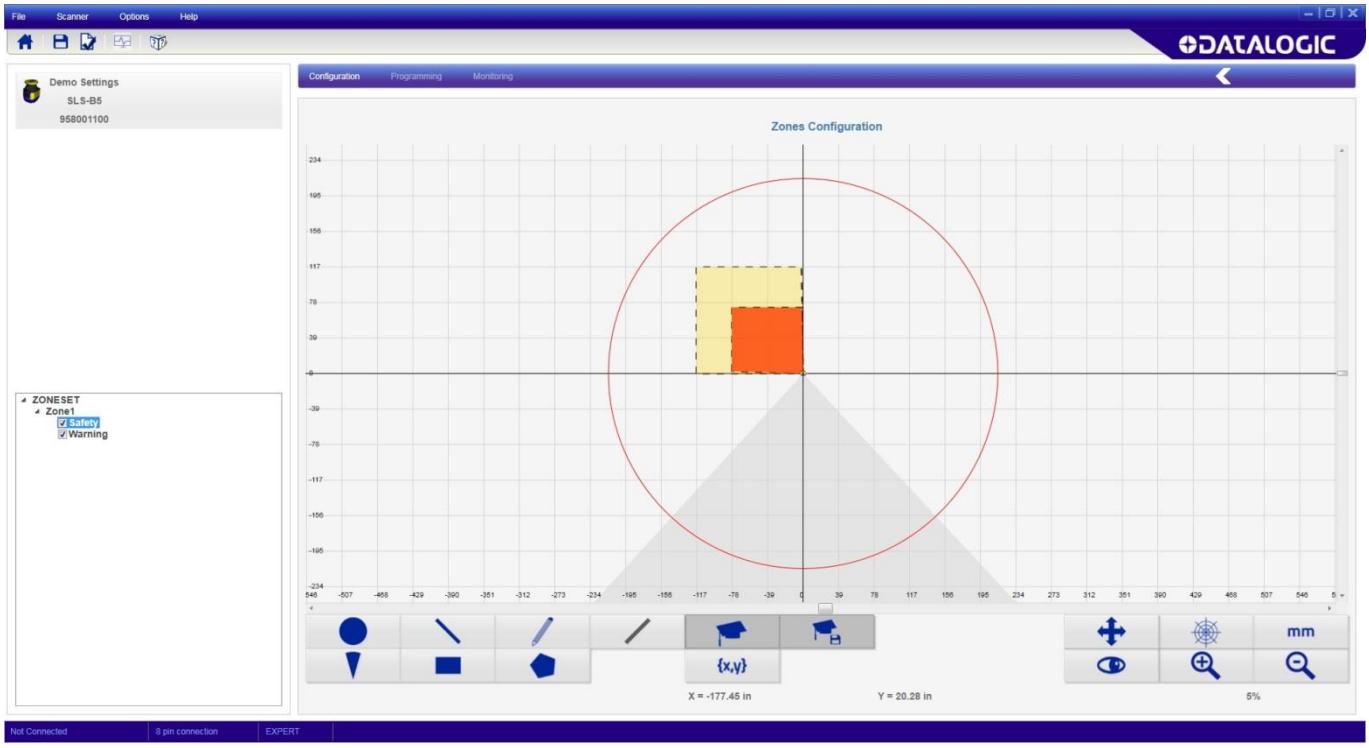
The panel on the left side allows selecting which area handle on the graph and for example to manage them individually.

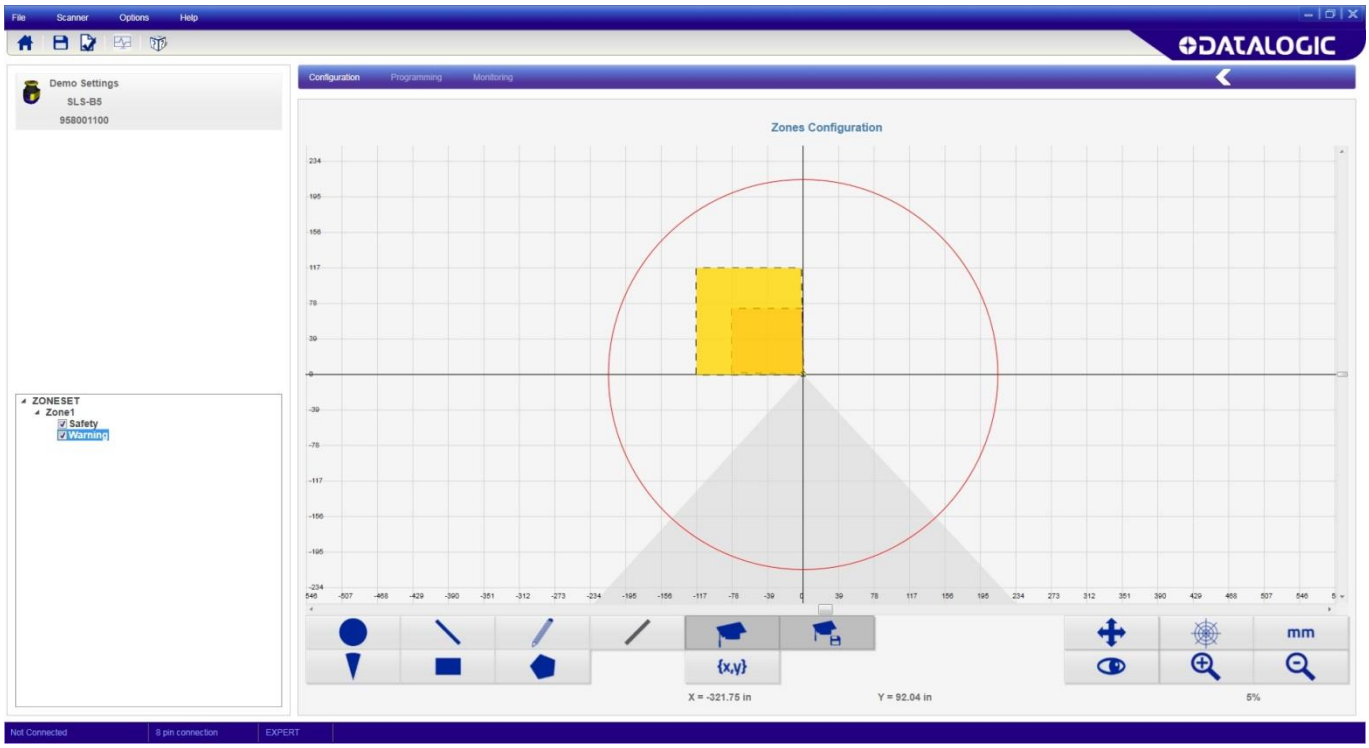


By clicking on the number (outside the check box), it is possible to highlight a specific area. For example a Safety Zone over a Warning Zone.



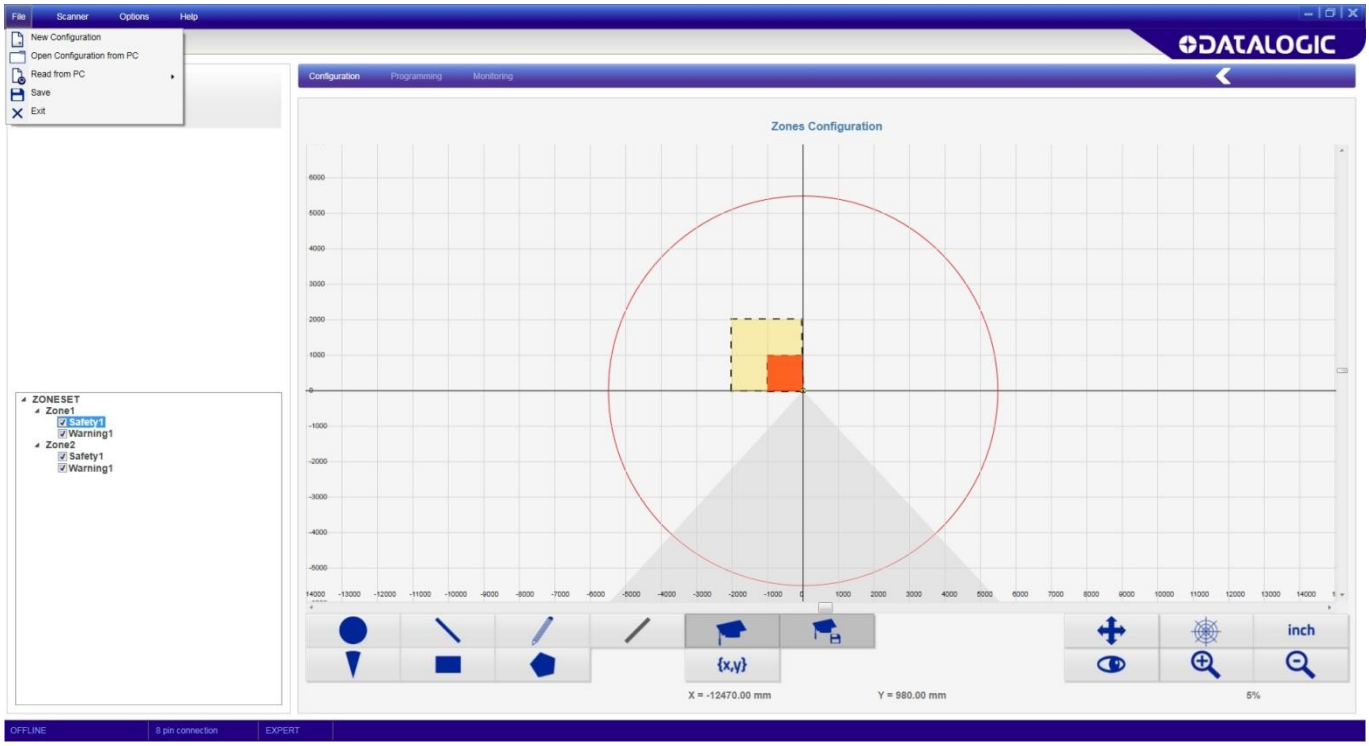
By clicking on the check box, it is possible to select and edit a specific area. This parameter allows showing or hiding them together or individually.
By clicking on the name of the area (outside the check box), it is possible to highlight a specific area. For example a Safety Zone over a Warning Zone.

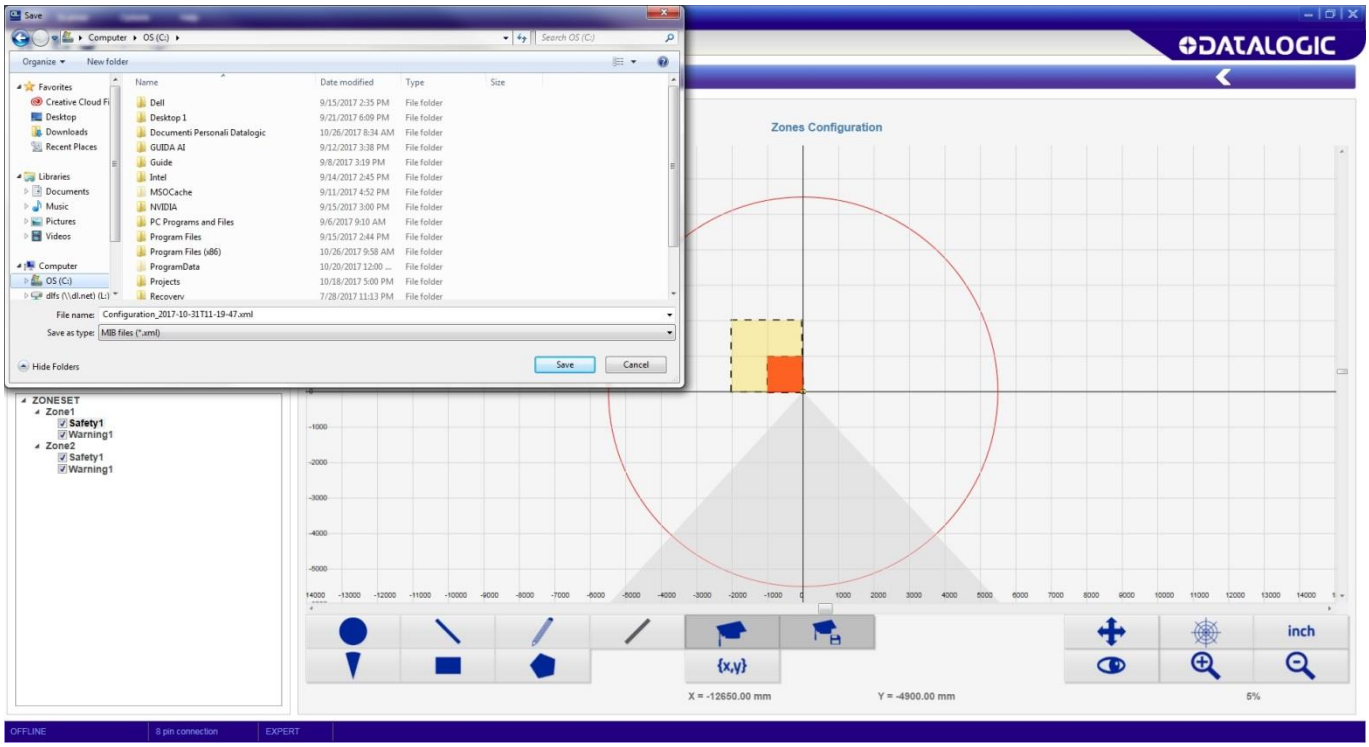




2.1.1 Save the Configuration

Once the configuration is done, it is possible to save it on the PC by clicking on FILE > SAVE.





2.1.2 Programming

Once the configuration is done, it is possible to load it on the device by selecting the function **Programming** on the menu. Follow the steps below:

1. By clicking on Programming, DLSentinel will enter Discovery mode to search for a connected device.

2. The User Interface opens and displays the device with its own default IP Address (192.168.0.10).

3. Double-click on the discovered device to place it in the Device Configuration panel.

4. Click on the white right-pointing arrow on the upper right side on the main panel to proceed.

5. A pop-window will appear suggesting to align the IP Address of the device with the computer LAN. Click OK to proceed and insert the DLSentinel password in order to proceed (default password "**admin**", if not changed).

6. Then change the IP Address parameters in the Network Configuration window to align them with the computer LAN.

Laser Sentinel also reserves the successive IP Address for internal functions.

7. Click OK to accept the new IP Address parameters. The device enters the Offline status, click ok to proceed.

8. DLSentinel will automatically rediscover the device with new IP Address. Double-click on the device to enter Programming.

Now it is possible to conclude the configuration:

1. In **Configuration Upload** click on Load to upload the configuration on the device. To send the configuration to the device you must insert the password (default password "**admin**", if not changed).
   Then test its functioning by entering **Monitoring** (Refer to par. 2.1.3)
   Once the new configuration is uploaded, Laser Sentinel will display the icon below:

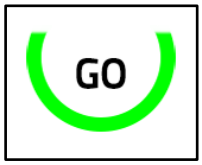
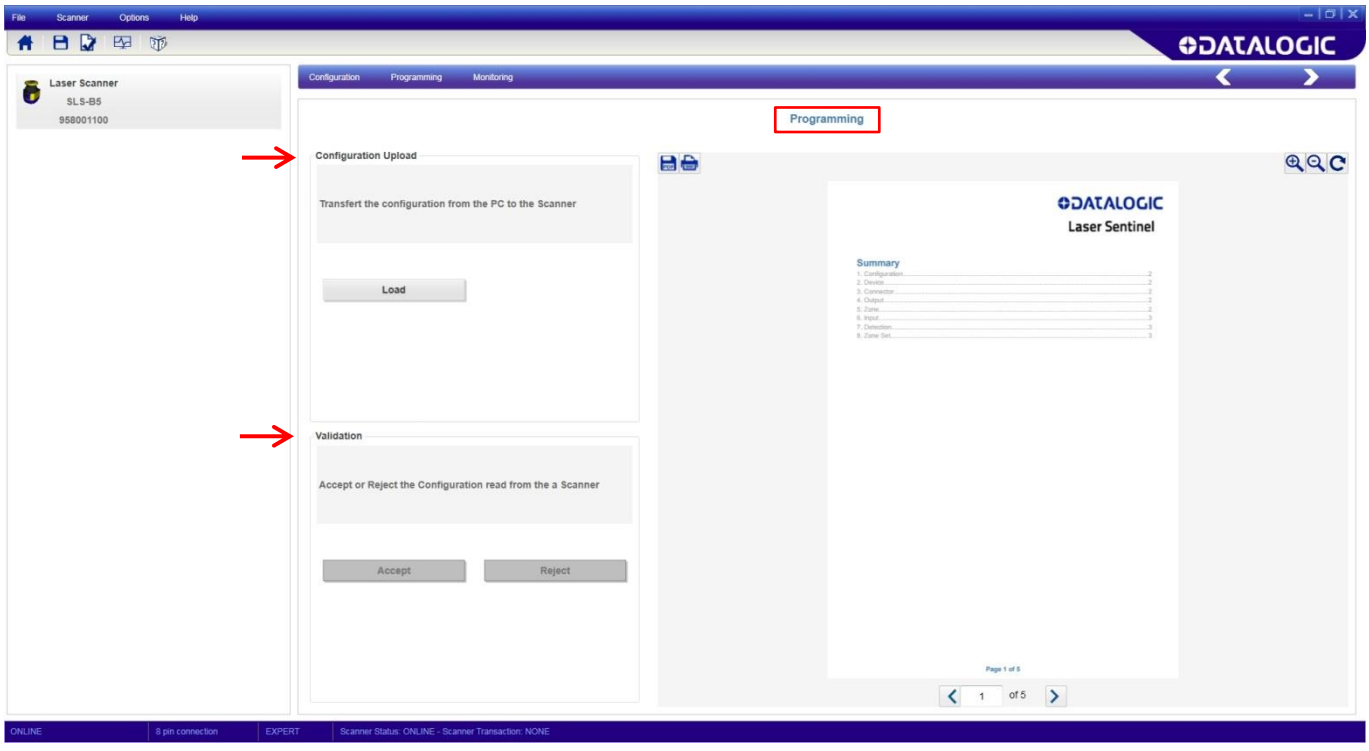


Figure 1 - Pending Configuration Acceptance Icon displayed

2. **Report** file is displayed on the right side of the panel. This document sums up the configuration steps with all the chosen parameters. It is possible to save it as a PDF file and print it.

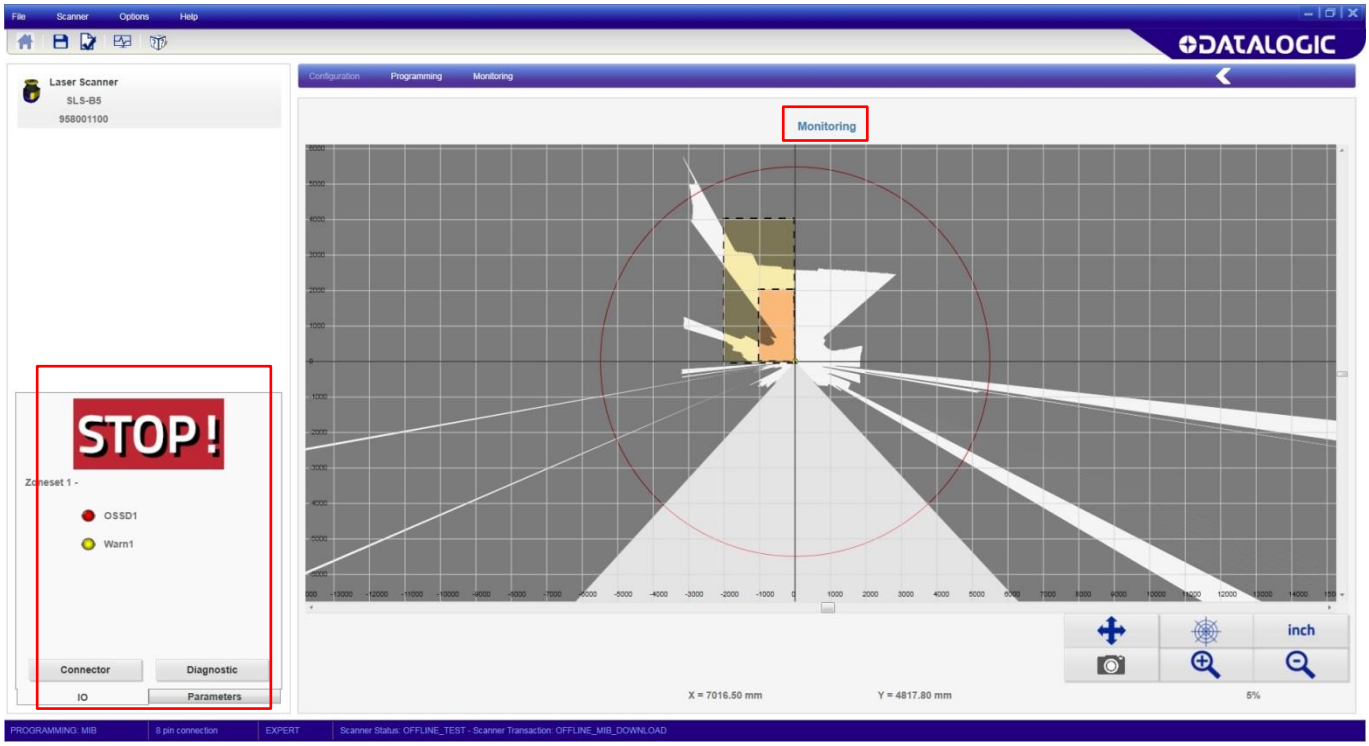
3. **Validation** after testing the configuration in monitoring and checking the Safety Report, you can accept or reject the configuration.



Note: To proceed with the configuration, click on the white right-pointing arrow on the upper right side on the main panel. To go back to the previous page, click on the white left-pointing arrow.

2.1.3 Monitoring

Once the configuration is uploaded, it is possible to test it by selecting the function **Monitoring** on the menu. Use this function to check the configuration status and if it is properly functioning.



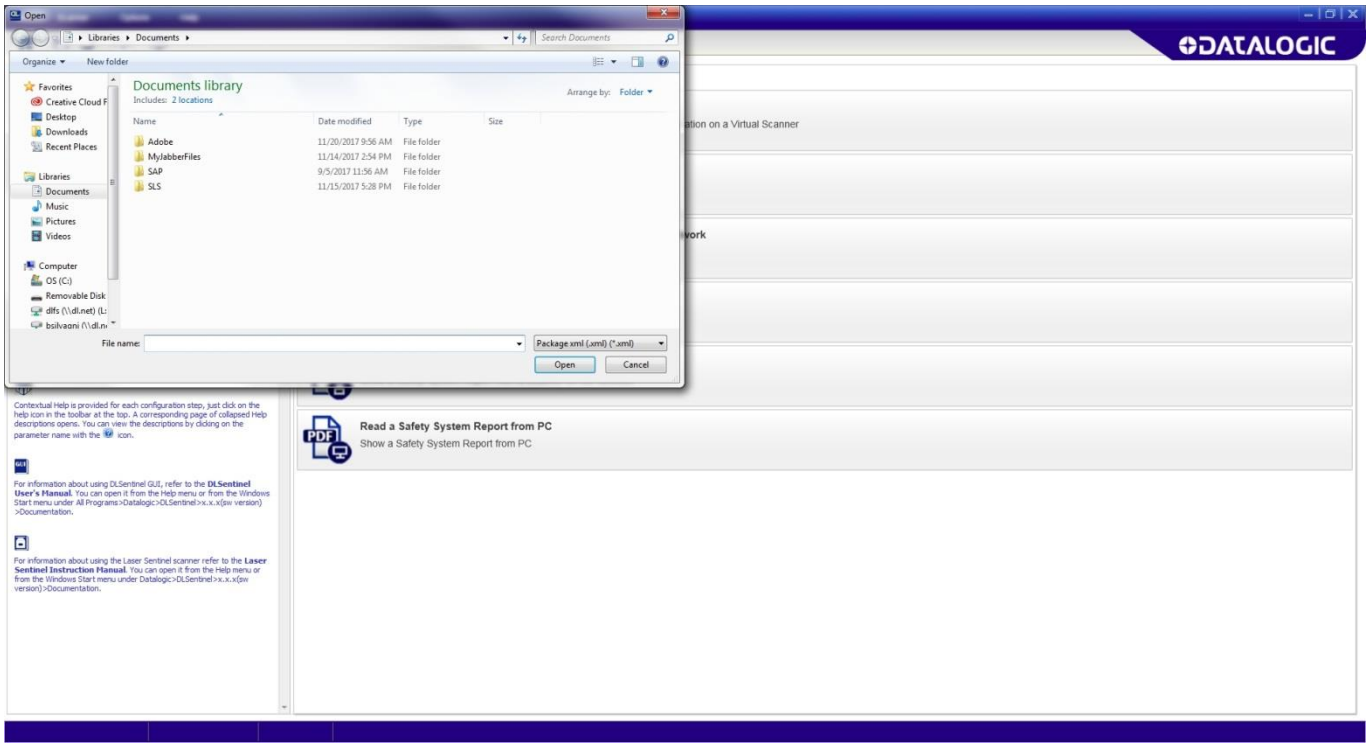
On the panel on the left, the DLSentinel shows the device status (if it is correctly functioning). It is also possible to view some parameters, for example the pin assignment and the recovery time.

Note: To go back to the previous page, click on the white left-pointing arrow.

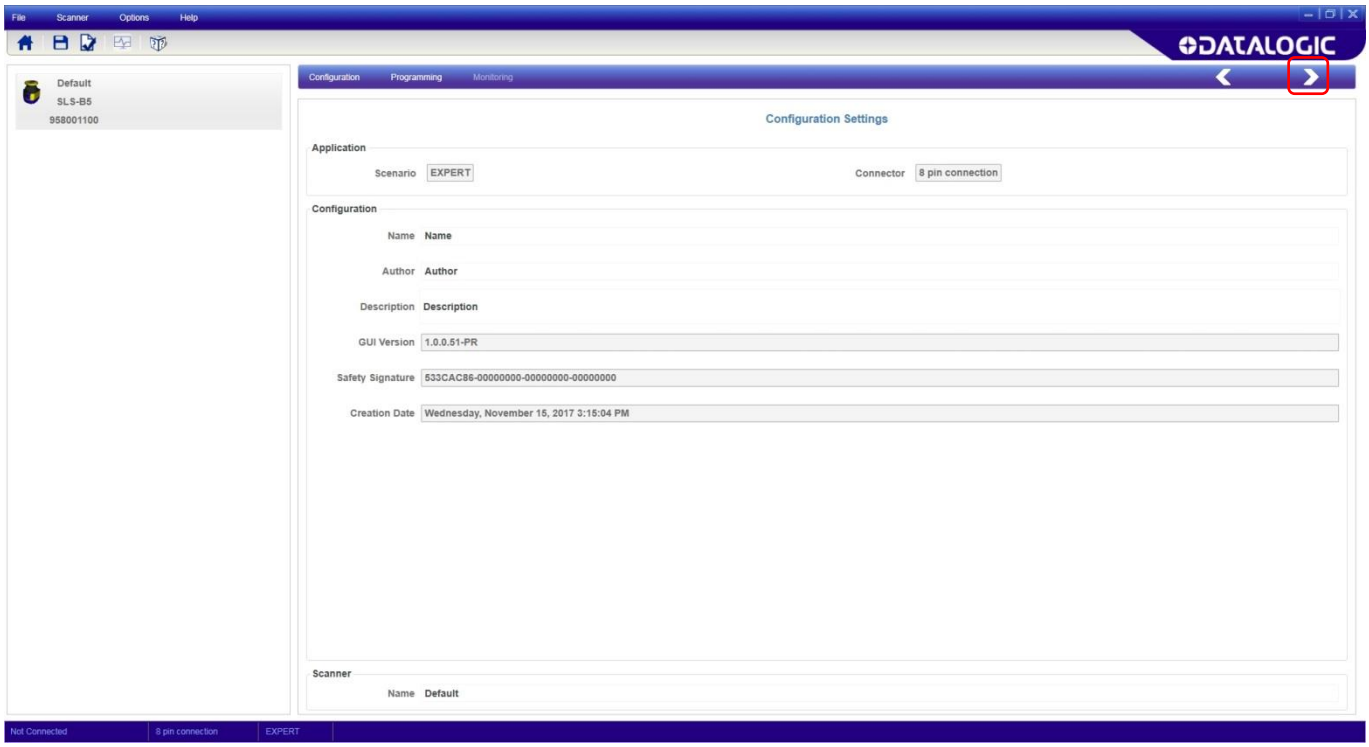
2.2 OPEN A SAFETY SYSTEM CONFIGURATION

Click on Open a Safety System Configuration from PC task, to open and upload a previously saved configuration on a device.

Select the Configuration File to open.

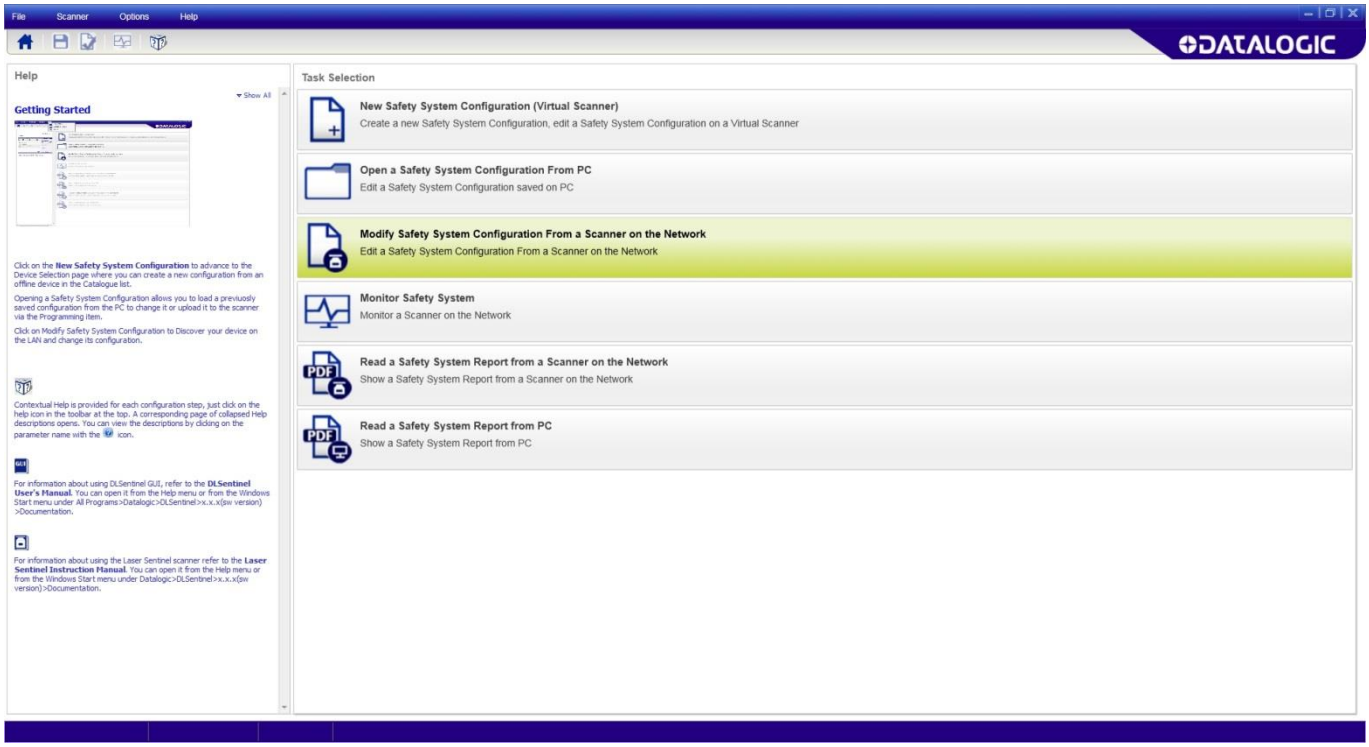


Once the configuration is opened click on the white right-pointing arrow on the upper right side on the main panel to proceed or to edit the configuration or enter Programming to upload it on the device.

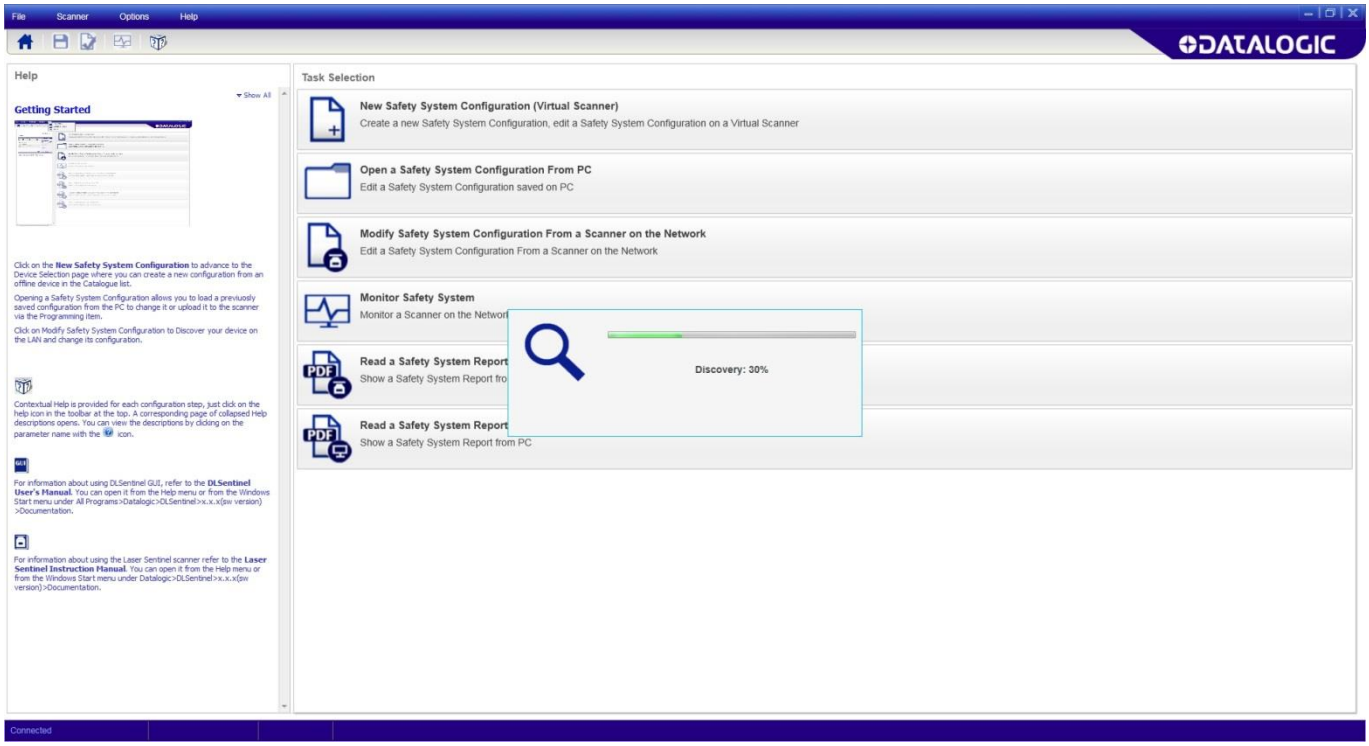


2.3 MODIFY SAFETY SYSTEM CONFIGURATION FROM A SCANNER ON THE NETWORK

Click on Modify a Safety System Configuration from PC task, to edit a configuration on a device on the Network.



By clicking on Modify, DLSentinel will enter Discovery mode to search for a connected device.

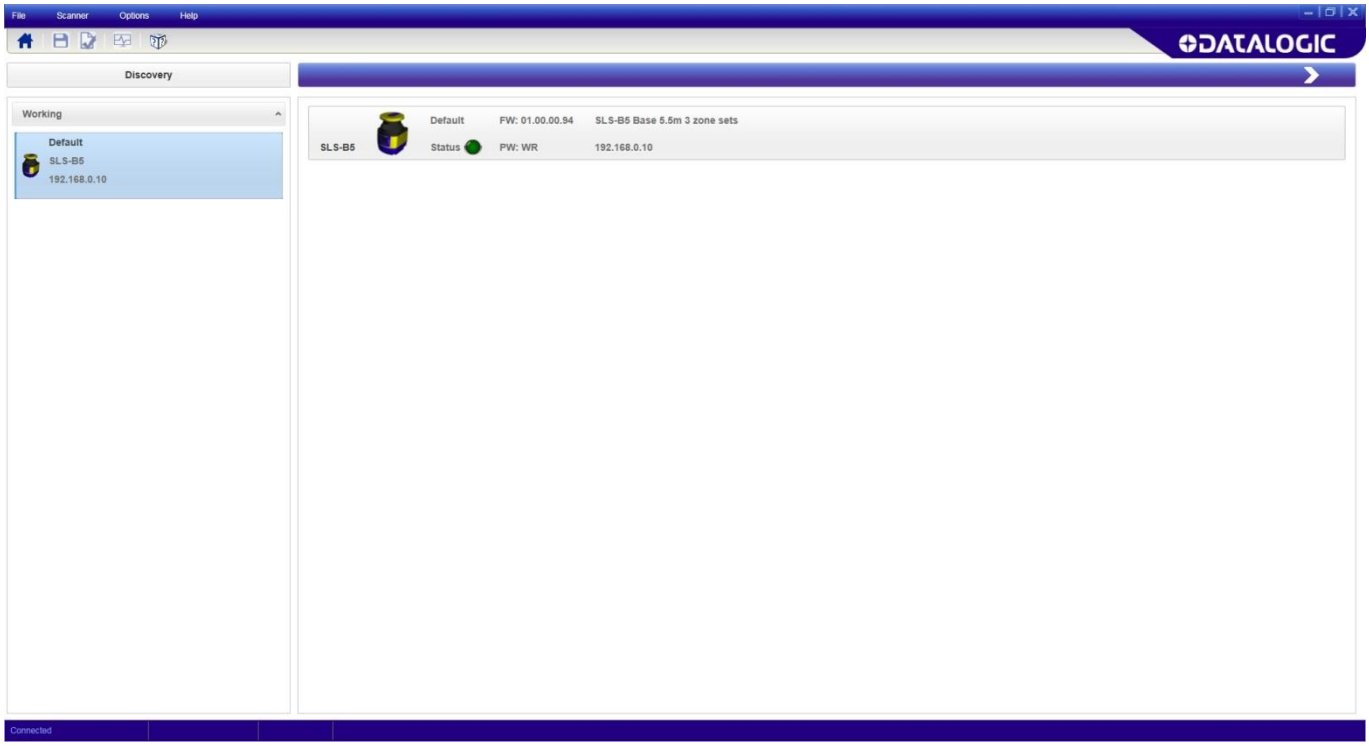


If the Laser Sentinel and the PC LAN are not aligned, it will be necessary to set the network configuration settings.

To align the Device and PC LAN IP Addresses follow the steps below:

1. The User Interface opens and displays the device with its own default IP Address (192.168.0.10).

2. Double-click on the discovered device to place it in the Device Configuration panel.



3. Click on the white right-pointing arrow on the upper right side on the main panel to proceed.

4. A pop-window will appear suggesting to align the IP Address of the device with the computer LAN. Click OK to proceed and insert the DLSentinel password in order to proceed (default password “**admin**”, if not changed).

5. Then change the IP Address parameters in the Network Configuration window to align them with the computer LAN.

Laser Sentinel also reserves the successive IP Address for internal functions.

6. Click OK to accept the new IP Address parameters. The device enters the Offline status, click ok to proceed.

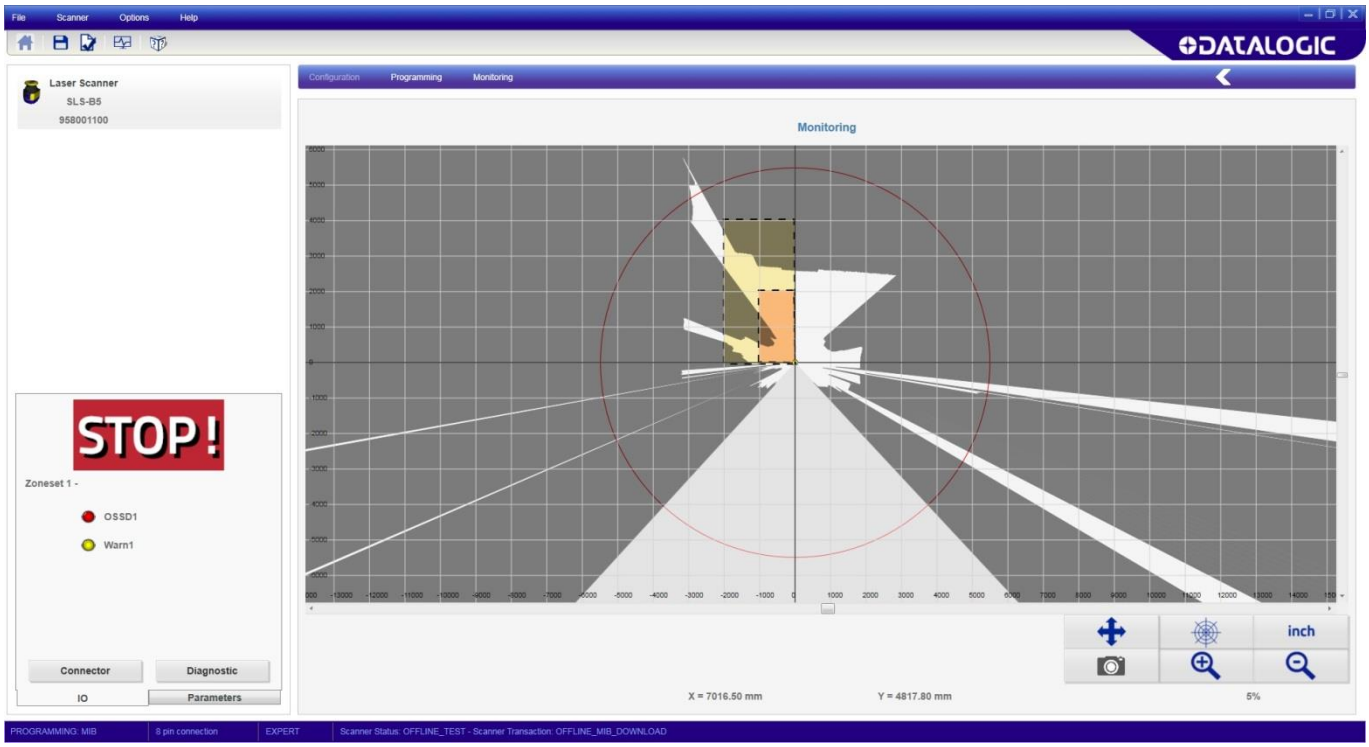
7. DLSentinel will automatically rediscover the device with new IP Address. Double-click on the device to modify the configuration.

8. Once the device is selected click on the white right-pointing arrow on the upper right side on the main panel to proceed or to edit the configuration or enter Programming to upload it on the device.

3 PROGRAMMING AND MONITORING FUNCTIONS

3.1 MONITORING

Monitoring is a DLSentinel function that verifies if the created configuration is properly functioning by monitoring the current working area. You have access to this function only by selecting an online device.



The Monitoring function allows checking the following information:

- The OSSDs GO/STOP status.
- The connector pin assignment, colors and functions.
- If the Laser Sentinel detects an object in the Safety and Warning zones.
- Any diagnostic errors that caused the OSSDs Off status.
- The surrounding space detected by the device in real time.
- The switching among the Zone Sets.
- The selected Parameters

Fig. 2 - Monitoring Subpanel

Note: If Monitoring is selected before uploading a new configuration, it displays the previous configuration and the present OSSDs and Warning status.

The table below shows the Monitoring Menu.

ICON	DESCRIPTION
	Click this button to save the Monitoring info in a .txt file.
	Click this button to zoom in the graph. Once finished re-click on the button.
	Click this button to zoom out the graph. Once finished re-click on the button.
	Click this button to toggle the graph unit of measurement.
	Click this button to toggle the graph coordinates.
	Click this button to move the graph. Once finished re-click on the button.

Note: If Errors are detected, the monitoring function displays a popup window with all the detected errors. The device will switch into a Lock status.

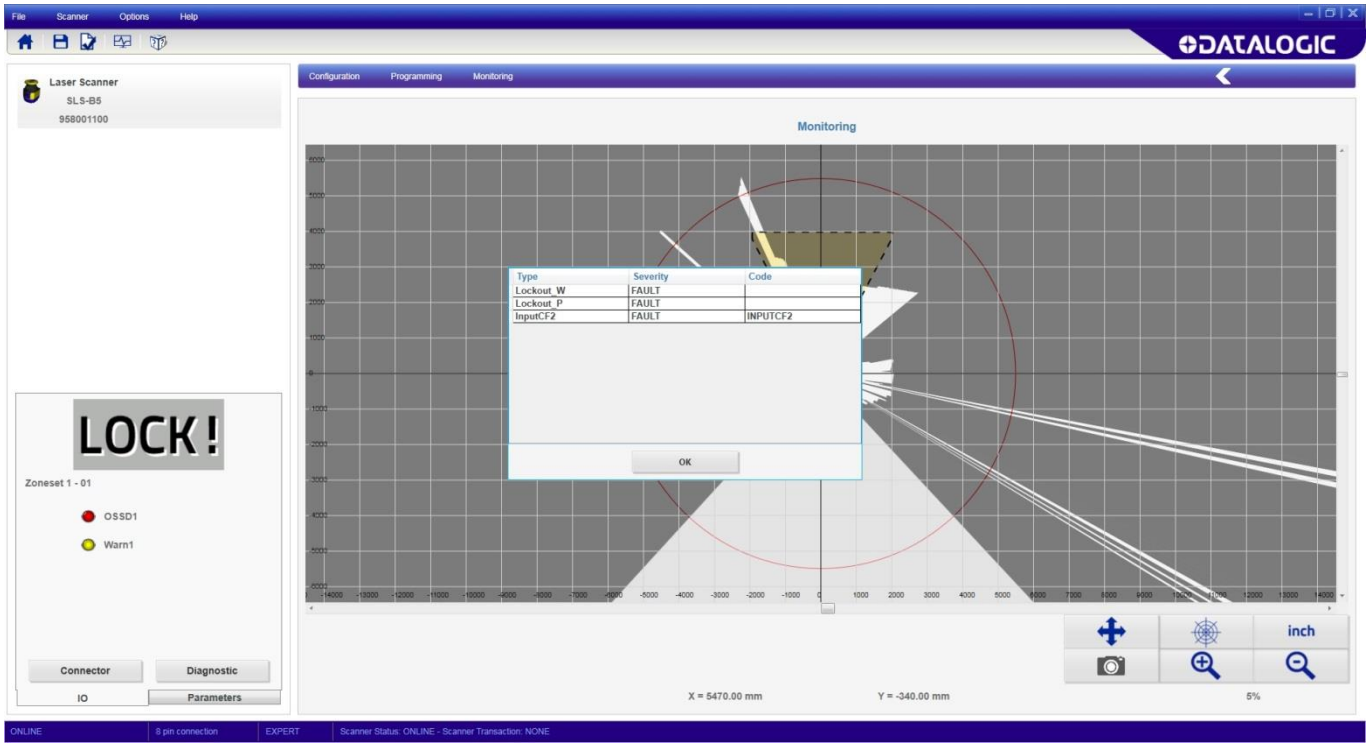
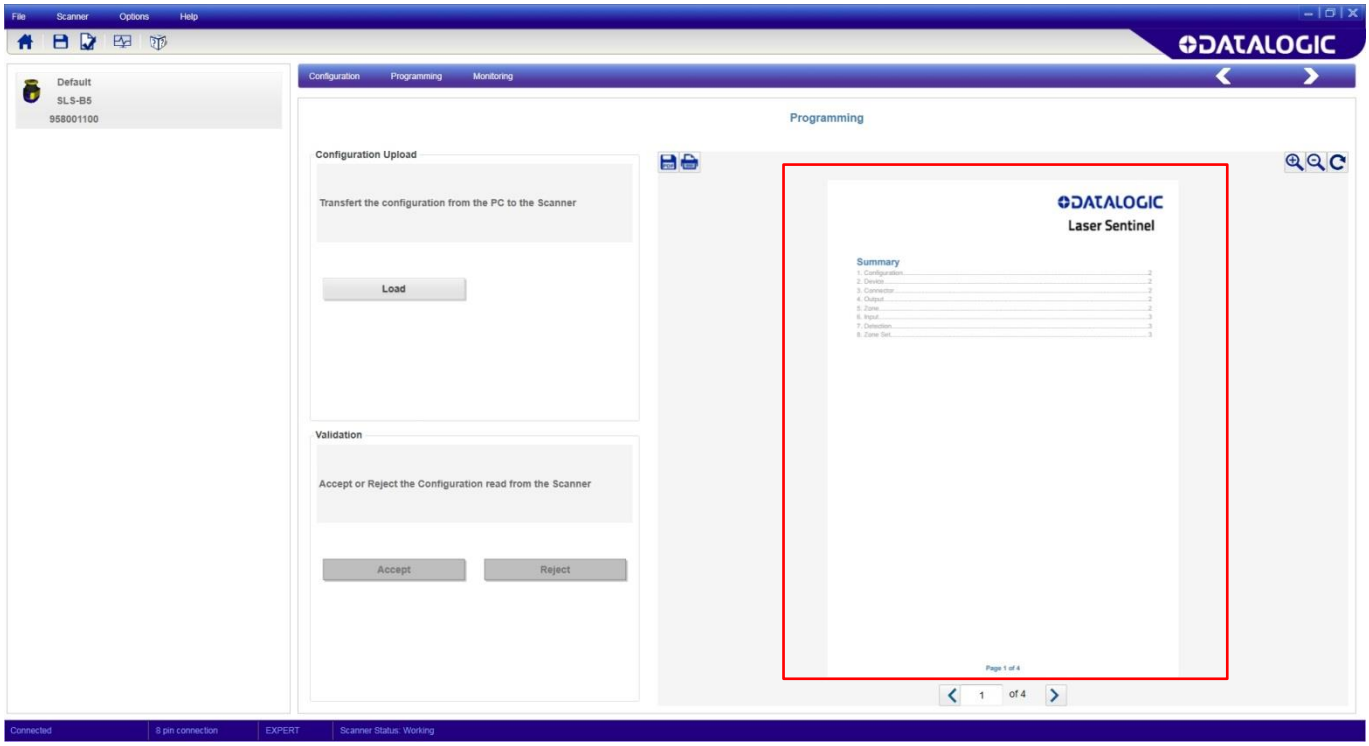


Fig. 3 - Lock Status and Device Errors

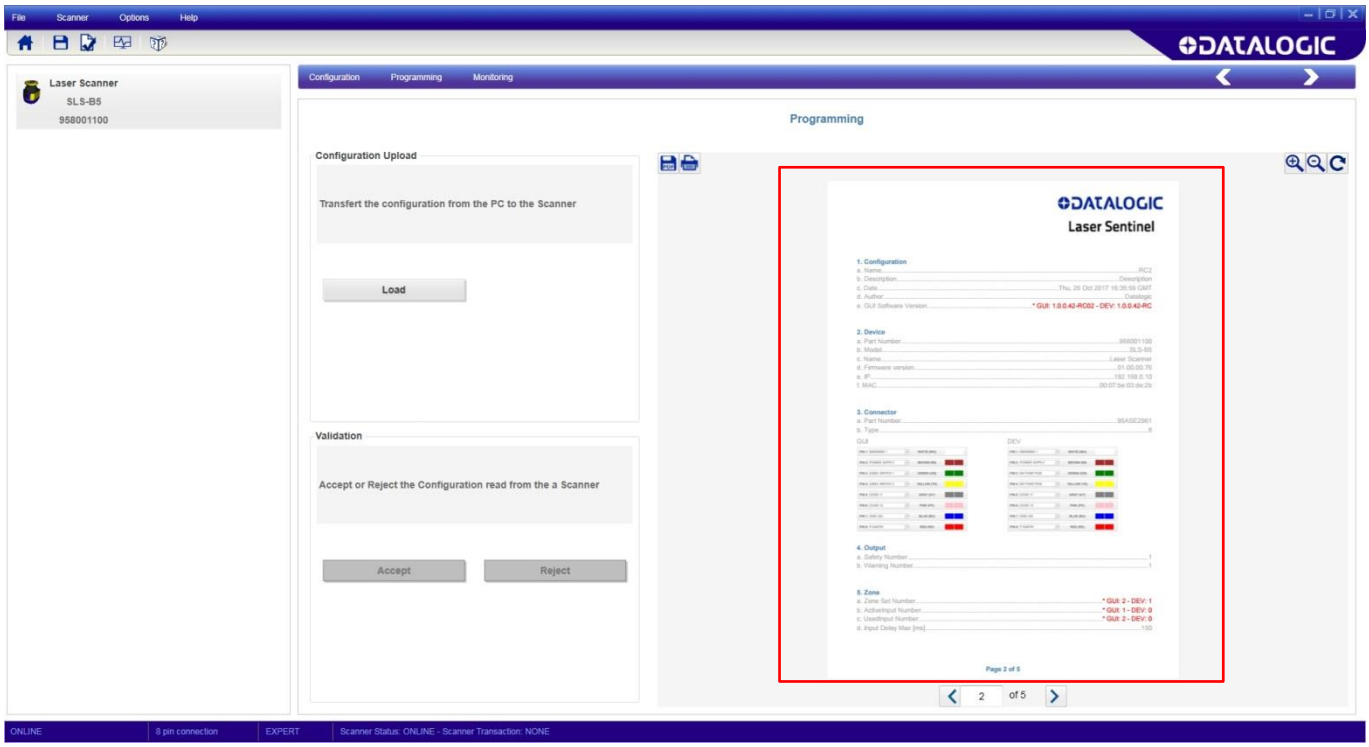
3.2 PROGRAMMING

Programming is a DLSentinel function that allows uploading a configuration to the device, generating the Safety Report and validating the uploaded configuration (after testing it through the **Monitoring** function, refer to par. 3.1)
The steps below show a proper Programming procedure:

1. Once the configuration has been created or loaded, enter the **Programming** function.
   A **Report** file is generated by DLSentinel.

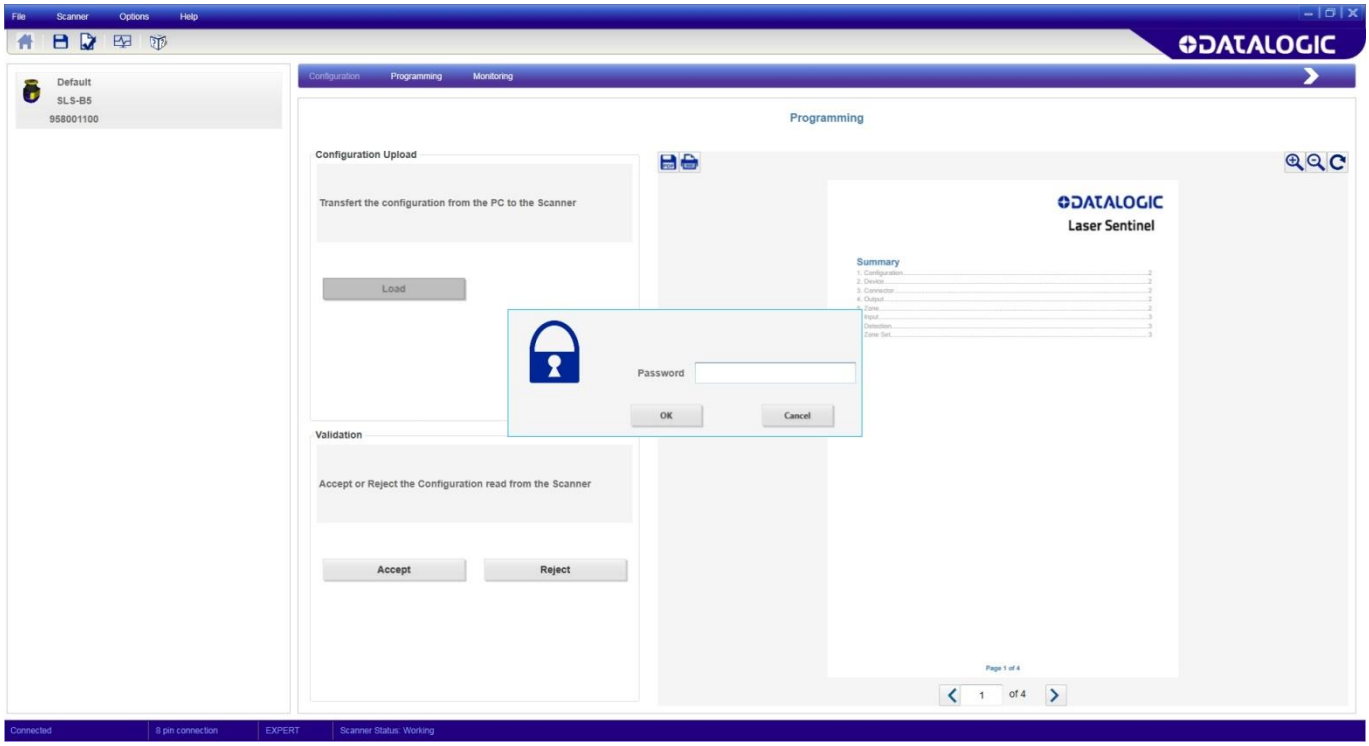


The Safety Report is a file that sums up all the parameters selected for a configuration and is generated by DLSentinel after uploading a configuration. The Report file is displayed on the right side of the panel. It is possible to save it as a PDF file and print it. Make sure to read the Safety Report and check all the selected parameters

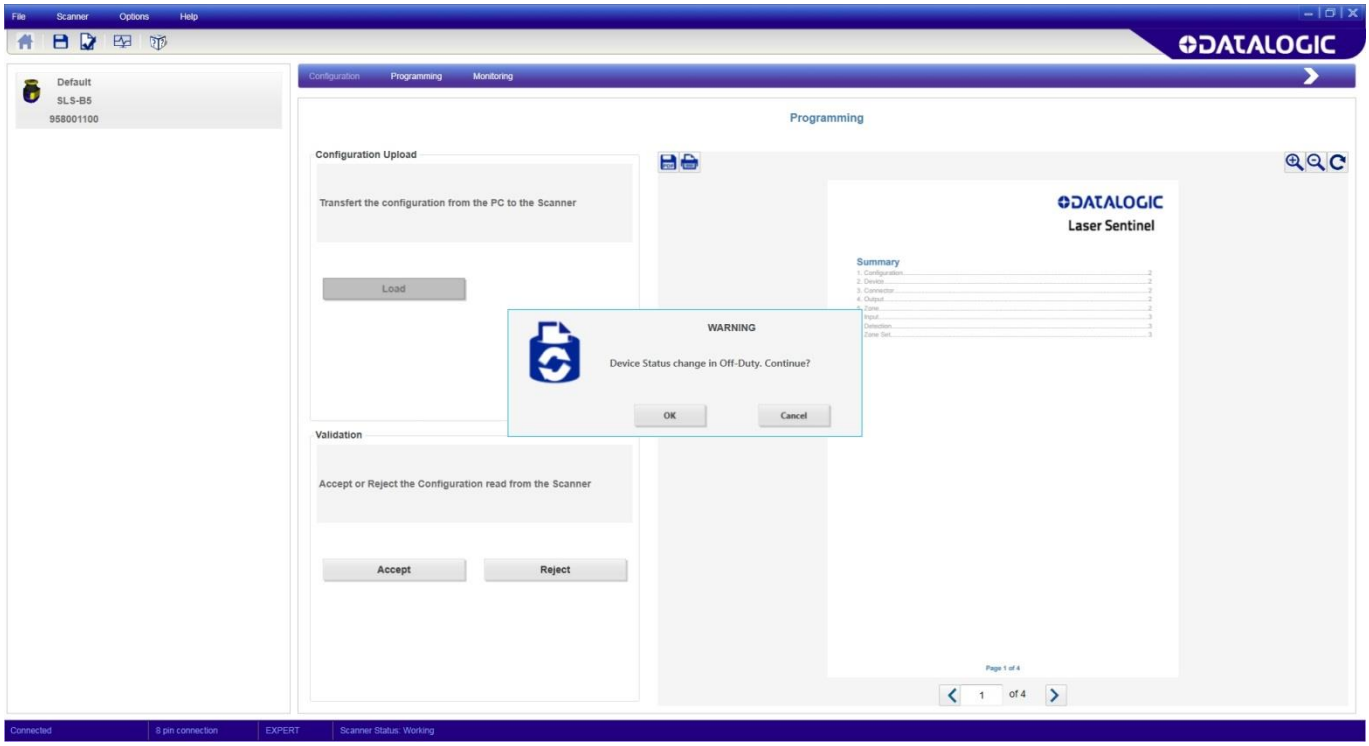


Note: The Safety Report displays the new and the previously used parameters (marked in red).

2. In **Configuration Upload** to upload the configuration from the pc to the device you must insert the password.



3. While uploading the configuration on the device, Laser Sentinel will enter the Off status.



4. Test the configuration functioning by entering **Monitoring**.

5. After testing it and checking the **Report** accept or reject the configuration in **Validation.**
   After Validation procedure, Laser Sentinel will display the icon below:

Figure 4 - Configuration Accepted Icon displayed

By validating the configuration you take on responsibility for the created configuration accepting the hazard due to configuration errors.

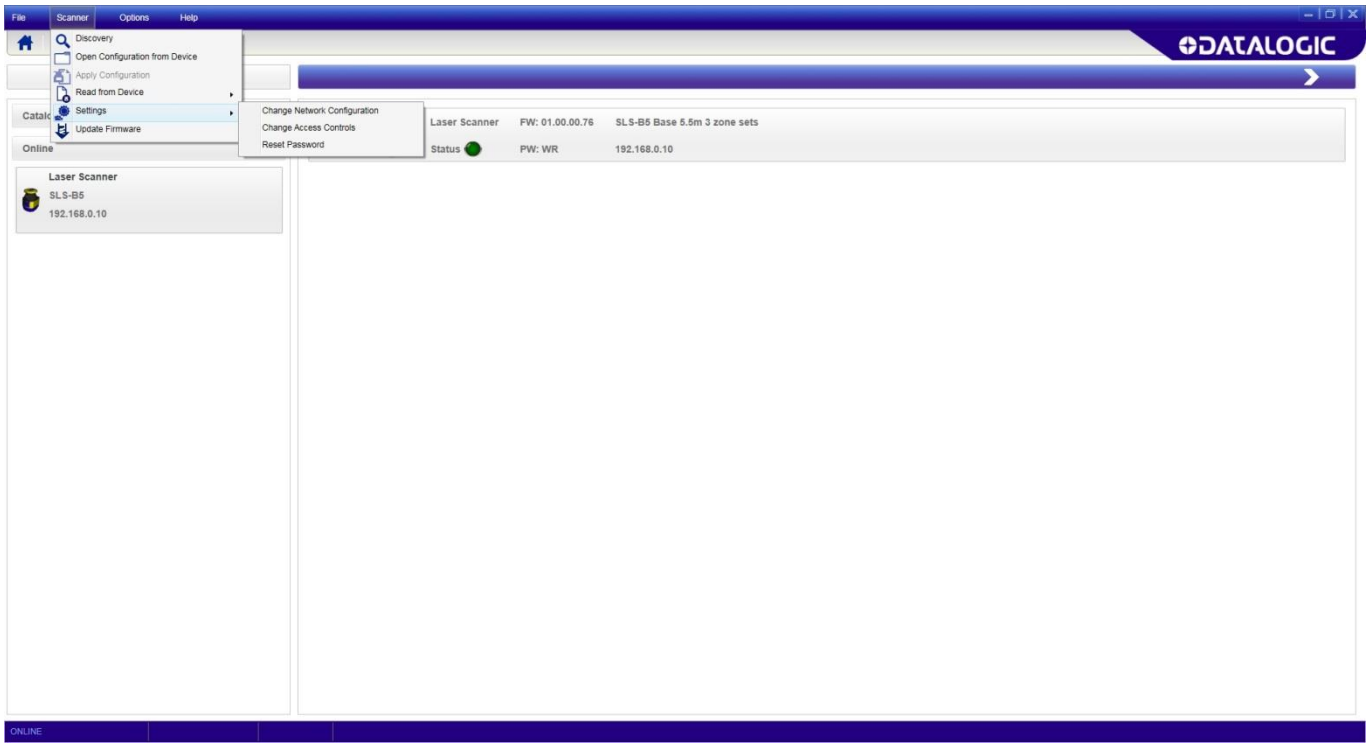
APPENDIX

ACCESS CONTROL

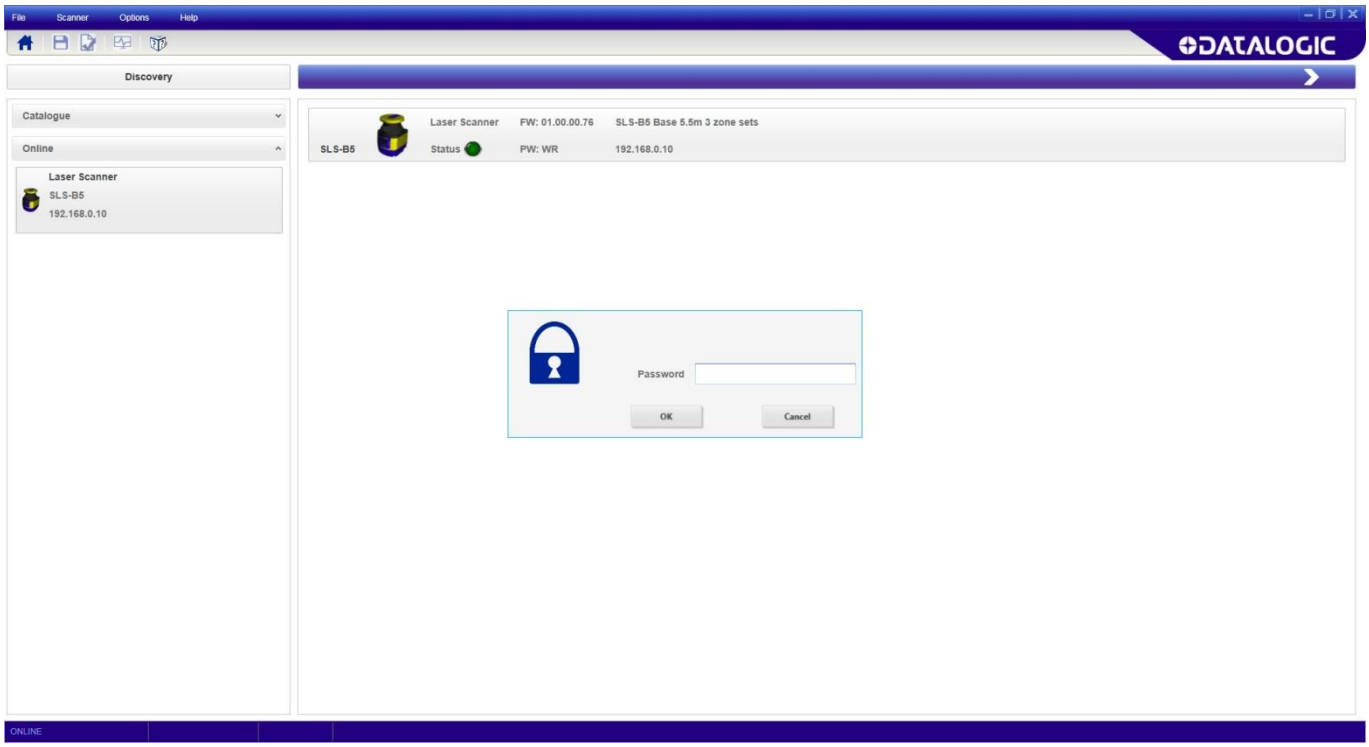
Assign or change passwords

To assign or change the password, the device must be connected (Online).

1. In the DLSentinel Device Selection, click on Scanner and select Settings > Change Access Control.

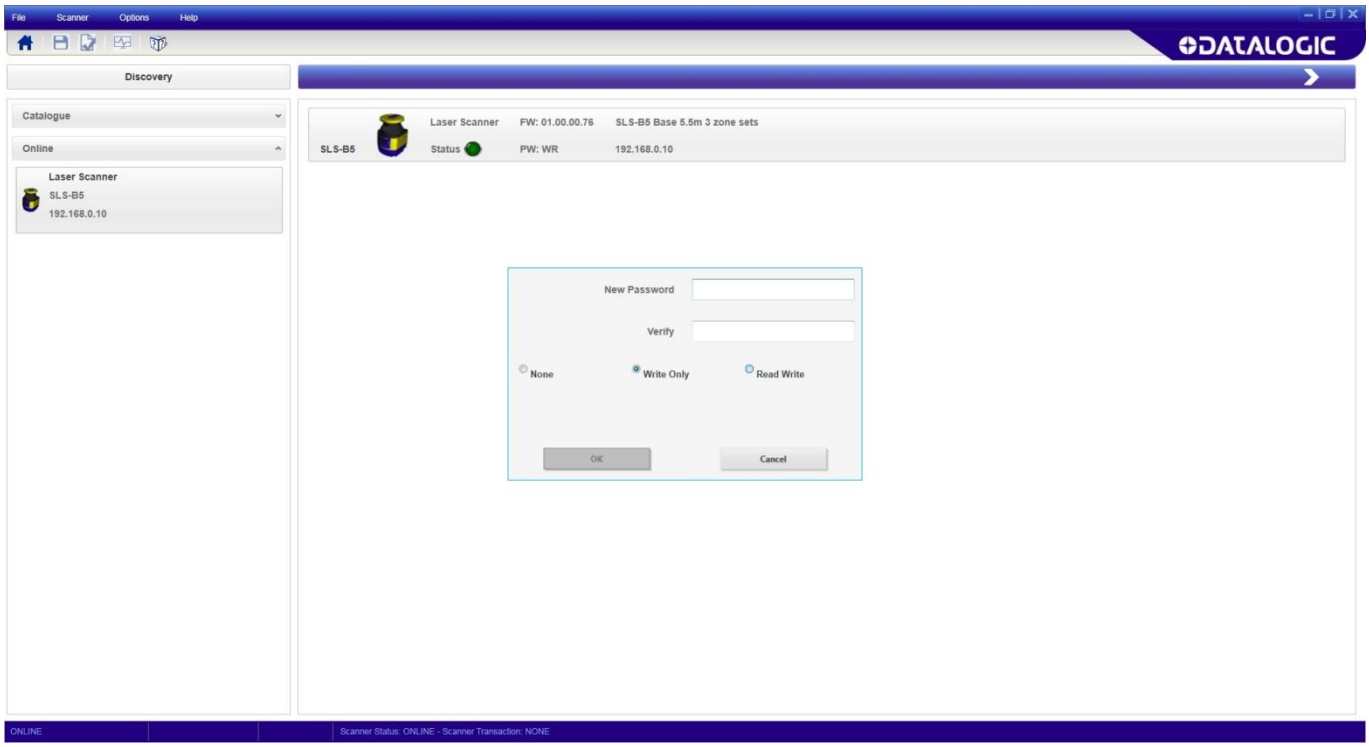


2. To change or assign the password or access type, you must insert the current one.



3. Enter the new password twice then choose the password type: Write Only (required only when loading the configuration to the device), Read / Write (required when connecting and when loading a configuration to the device) or None (no password required).

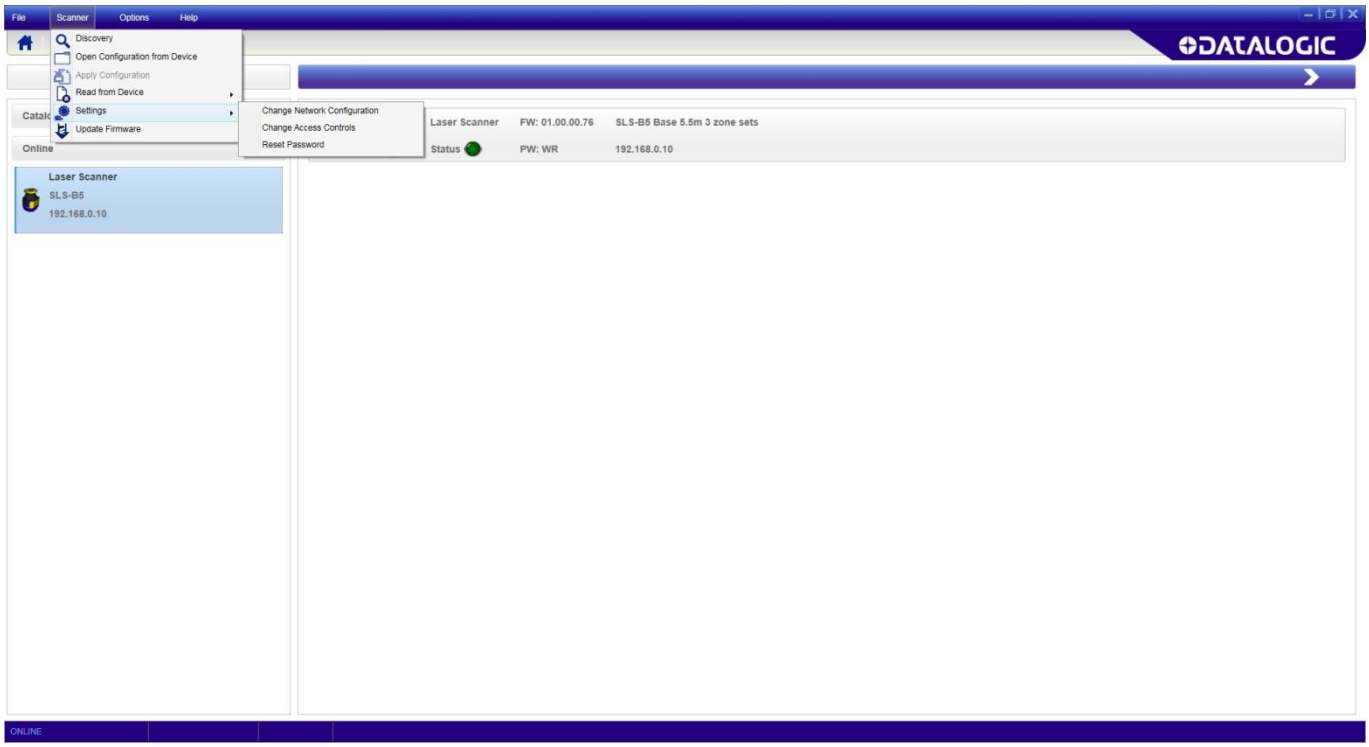
4. Then click ok to proceed.



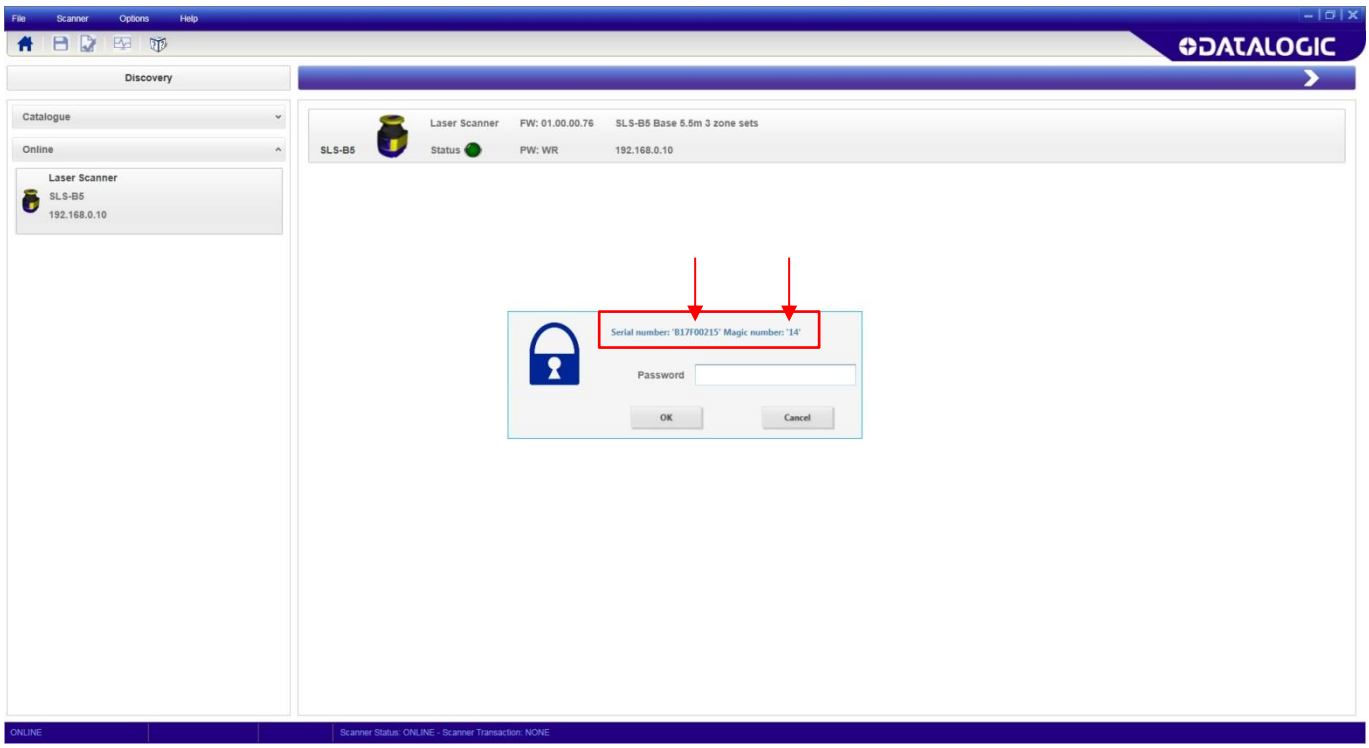
Reset a password

To reset a password, the device must be connected (Online).

1. In the DLSentinel Device Selection window, click on Scanner and select Settings > Reset Password.



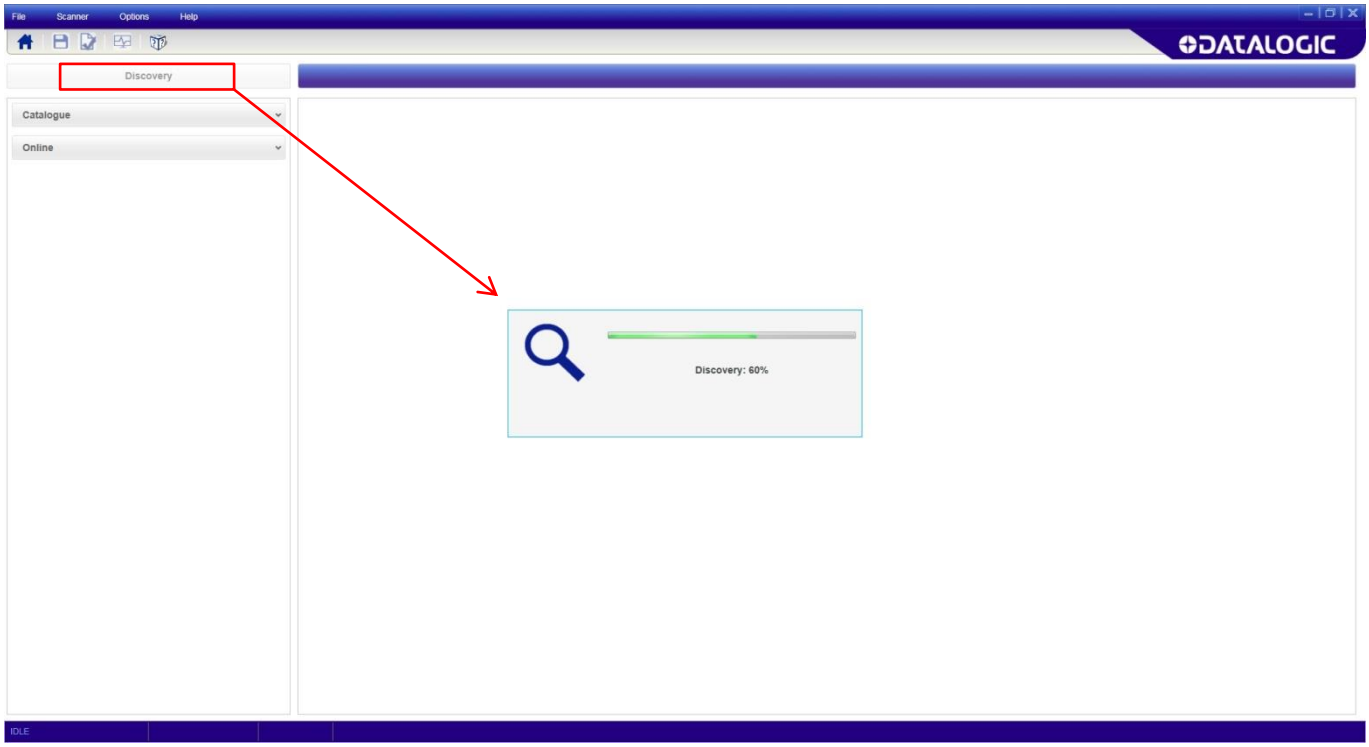
2. Contact Datalogic Technical Support and send the serial and the magic number shown. A new password will be communicated to the User.



DLSENTINEL DEVICE DISCOVERY

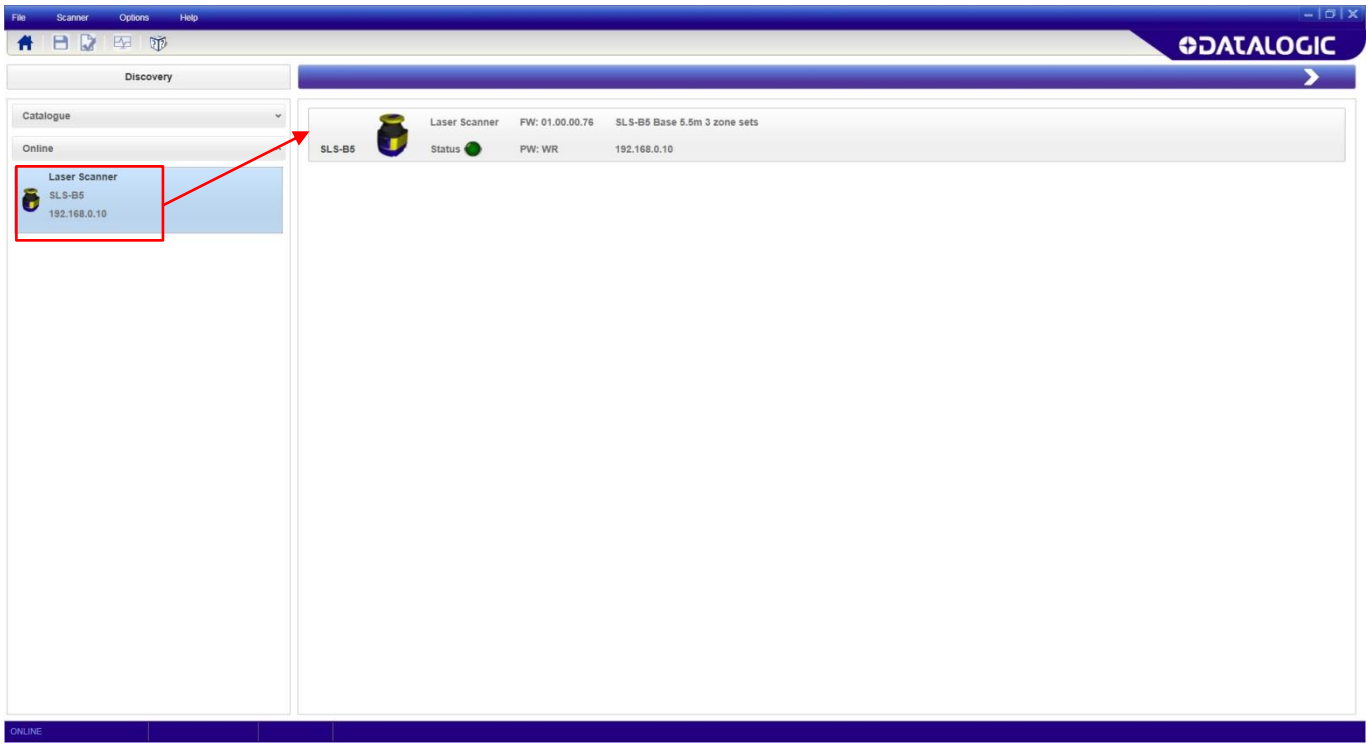
DLSentinel has a discovery feature to find the connected device.

Click on the Discovery button to search for the connected device.



The User Interface opens and displays the device with its own default IP Address (192.168.0.10).

Double-click on the discovered device to place it in the Device Configuration panel.

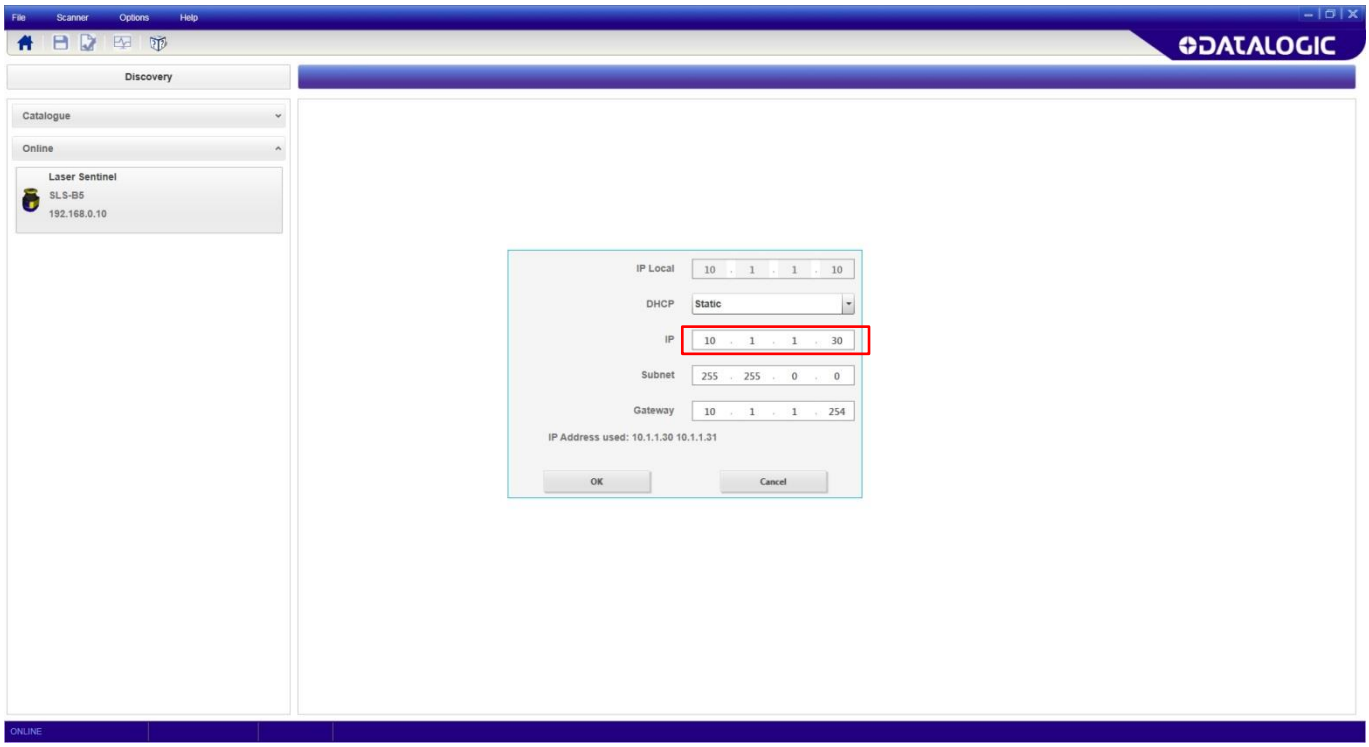


From the Scanner menu select Settings > Change Network Configuration. Here the user must insert the DLSentinel password in order to proceed (default password "**admin**", if not changed).

Then change the IP Address parameters in the Network Configuration window to align them with the computer LAN.

Laser Sentinel also reserves the successive IP Address for internal functions.

Click OK to accept the new IP Address parameters. The device enters the Offline status, click ok to proceed.

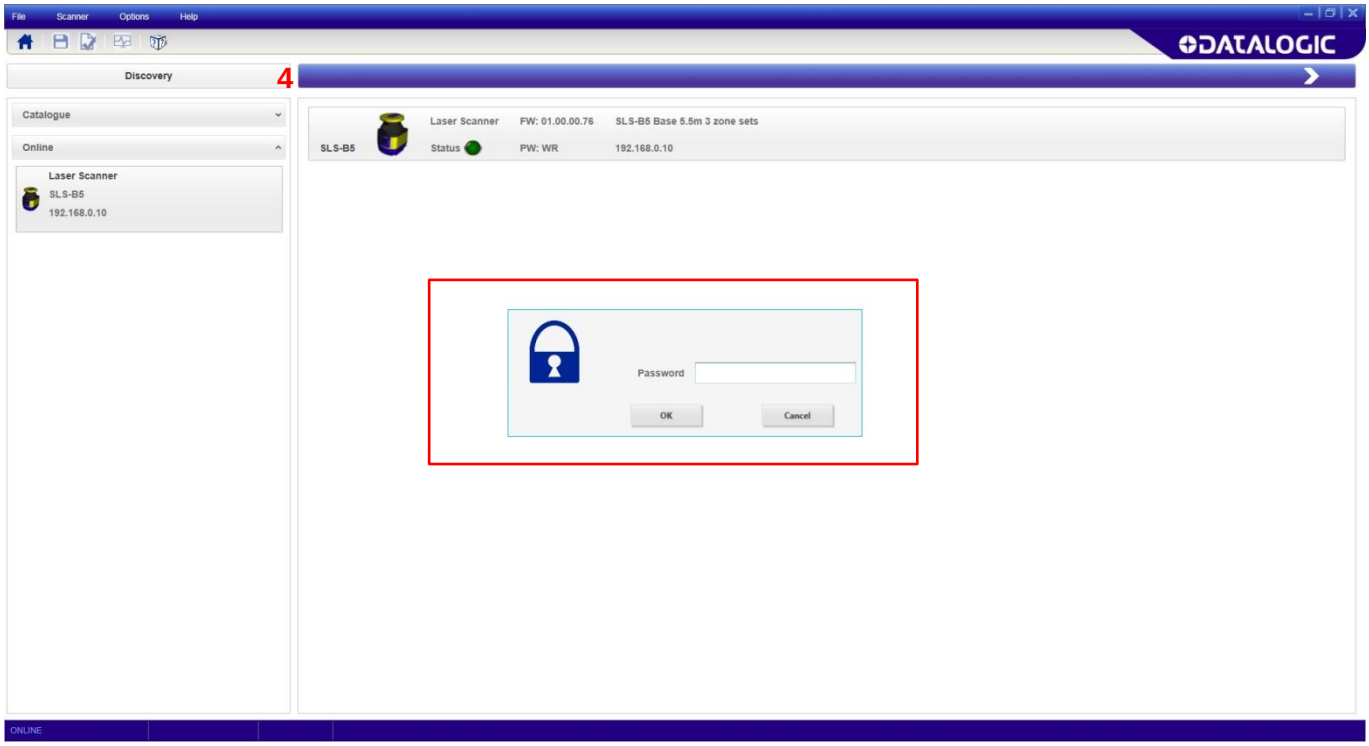


DLSentinel will automatically rediscover the device with new IP Address. Double-click on the device to start a new configuration.

FIRMWARE UPDATE

In order to update the firmware, proceed as follows:

1. Start the DLSentinel GUI and select the new configuration task.
2. Enter the Discovery modality and select an online device.
3. Once the device is selected, click **Scanner** on the menu and choose the firmware update option.
4. Insert the device password (default password if not changed by the User) in order to access to the firmware update option.



5. In the Firmware update section (**Package section**), click on ZIP Archive to search and select a previously downloaded new firmware version (from the Datalogic website).
6. Once it is selected the new firmware version. Then click on Load (**Configuration Upload**). During the Firmware Update the device will go offline.
7. When the firmware version is completely loaded, the user enters in the Offline-Test modality to create a configuration and test the new firmware version.
8. If the firmware version is compatible with the device (so that the device configuration is correct with no failures) the user has to click on Accept, otherwise click on Reject (**Validation**).

USING STATIC IP ADDRESSING

It is possible to connect a device to the DLSentinel GUI using the Ethernet TCP/IP interface, the Ethernet IP Addressing parameters must be aligned between the configuration PC and the scanner. The following procedures must be used:

The default Laser Sentinel static assignment Ethernet IP Address is: **192.168.0.10**.

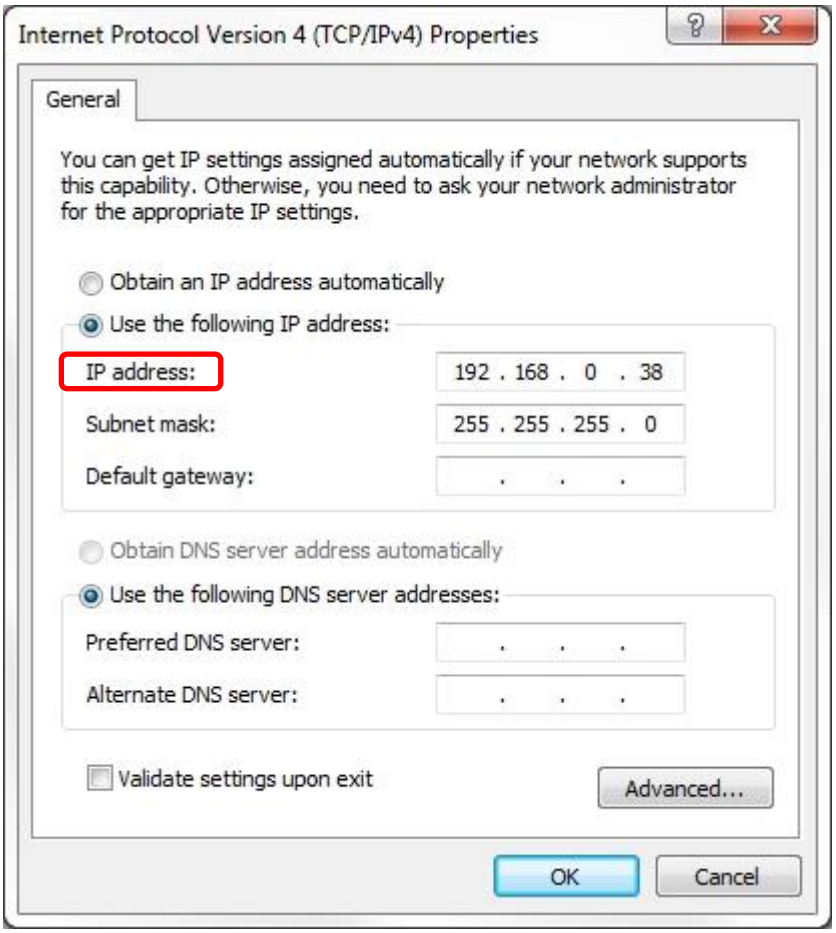
The successive IP Address also will be reserved for internal functions (**192.168.0.10** and **192.168.0.11**)**.**

1. Before changing the Ethernet network settings on the PC running the GUI, close any open applications which use network resources (i.e. Outlook, or Web browser).

2. On the Configuration PC, from the Control Panel>Network and Sharing Center, click on the Local Area Connection link and open the properties window.

3. Select the Internet Protocol Version 4 (TCP/IPv4) item and open the properties window.

4. Set the IP Address fields as follows and click *OK* to save.



DATALOGIC

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