

---

## Product Manual



## Copyright Information

*All of the information herein is the exclusive proprietary property of Roll-2-Roll Technologies LLC, and is disclosed with the understanding that it will be retained in confidence and will neither be duplicated nor copied in whole or in part nor be used for any purpose other than for which it is disclosed.*

*Information in this document is believed to be reliable and accurate. However no responsibility is assumed as a result of its use nor for any inaccuracies, infringement of patent or other rights of third parties resulting from its use.*

*The information in this document is subject to change without any notice.*

# TABLE OF CONTENTS

<b><u>INTRODUCTION</u></b>	5
<i><u>Product Overview</u></i>	5
<i><u>Product Description</u></i>	5
<b><u>SAFETY INSTRUCTIONS</u></b>	7
<i><u>Instructions for use</u></i>	7
<i><u>Proper use</u></i>	7
<i><u>Improper use</u></i>	7
<i><u>Pinch Points</u></i>	8
<i><u>Static discharges and grounding</u></i>	8
<b><u>OPERATOR INTERFACE</u></b>	9
<i><u>Operator Interface Screen</u></i>	9
<i><u>Automatic/Manual Operation</u></i>	10
<i><u>Servo-Centering Operation</u></i>	11
<i><u>Jog-left/Jog-right Operation</u></i>	12
<i><u>Guide Point Adjustment</u></i>	13
<i><u>Web Position Indicator</u></i>	14
<i><u>Web Detected Indicator</u></i>	14
<i><u>Sensor Position Indicator</u></i>	15
<i><u>Find Sensor Button</u></i>	15

<u><i>Communication Indicator</i></u>	16
<u><i>Edge/Contrast Web Position Sensing</i></u>	16
<u><i>Advanced Settings Screen</i></u>	17
<u><i>Motor Speed</i></u>	17
<u><i>Minimum Contrast</i></u>	18
<u><i>Web Width</i></u>	18
<u><i>Analog Output</i></u>	18
<u><i>Digital Output</i></u>	18
<u><i>INSTALLATION AND COMMISSIONING</i></u>	20
<u><i>Unpacking</i></u>	20
<u><i>Mounting dimensions</i></u>	22
<u><i>Mounting</i></u>	23
<u><i>Sensor installation</i></u>	24
<u><i>Power connection</i></u>	24
<u><i>Commissioning</i></u>	25
<u><i>General maintenance</i></u>	26
<u><i>Accessories / Options</i></u>	26
<u><i>Sensors</i></u>	26
<u><i>Rollers</i></u>	27
<u><i>TROUBLESHOOTING</i></u>	28
<u><i>SPECIFICATIONS</i></u>	29

<b><u>TECHNICAL SUPPORT AND SERVICE</u></b>	<b>30</b>
<i><u>Contact information</u></i>	<b>30</b>
<i><u>Return shipping instructions</u></i>	<b>30</b>
<b><u>REVISION HISTORY</u></b>	<b>31</b>
<i><u>Document Revision</u></i>	<b>31</b>

# *INTRODUCTION*

## **Product Overview**

The ARIS web guiding system brings an innovative way of guiding the web to the converting industry; a guiding system that does not require any setup or manual re-calibration after product changeovers. The technology in ARIS can adjust automatically to the physical characteristics of the web material, correctly positioning the material through the process.

ARIS is designed for the exclusive use in industrial and lab equipment that process materials in web form as they move through a converting or raw material manufacturing process. Web guides are installed inline with the flow of material through the process. The guide provides steering of the material to maintain lateral alignment at any point where such alignment is critical to the process.

The ARIS web guiding system is a simple, yet sophisticated plug-and-play system that requires no adjustments. Once the guide has been properly installed and the sensor positioned with respect to the desired web position, it is just a matter of switching the guide to automatic mode.

The unique compact, aesthetic, and functional design makes it easy to install and operate. The sensor assembly is positioned directly under the roller so it does not protrude outside of the guide's footprint.

There are three basic processes in the ARIS web guiding system: detection of the position of the web, processing of the information of web position, and correction of the web position.

## **Product Description**

The ARIS web guiding system has three major assemblies: the roller platform assembly, the control unit assembly, and the sensor assembly. Each assembly is maintenance free.

The roller platform assembly is composed of the grooved guide rollers, the roller assembly plate, and the installation bolts (Fig. 1).



Fig. 1: Roller platform assembly

The control unit assembly (Fig. 2) contains the electronics control system, the operator interface, and the actuator. The front panel contains the operator interface. The rear panel contains the power supply cable, the sensor connecting plug, and the identification plate. The top of the control unit contains the guide roller assembly bearings. The bottom of the unit contains the installation threaded holes for the M6 mounting screws supplied with the assembly. Under no circumstance should the control unit be opened. **Opening of the control unit voids any warranty of the equipment.**



Fig. 2: Control unit, operator interface side.

The sensor assembly is a completely enclosed unit that includes its own connecting cable that plugs into the control unit assembly back plate. Fig. 2 shows the sensor assembly on the downstream side of the web guide. Under no circumstance should the sensor assembly be opened or disassembled. **Opening of the sensor assembly voids any warranty of the equipment.**

# ***SAFETY INSTRUCTIONS***

The ARIS web guiding system is an electromechanical device that operates on low voltage. However, it does present a few safety requirements that must be followed in order to assure safe operation of the system.

## **Instructions for use**

The ARIS web guiding system must be properly transported and stored to avoid crushing of body parts . Only persons who have the necessary qualifications should work on the installation, commissioning, operation, and maintenance of the web guiding system.

Notes:

- Please read the product manual and properly follow its instructions.
- Be aware of all national, state, and local requirements for accident prevention and environmental protection.

## **Proper use**

The ARIS web guiding system is made for indoor uses only. ARIS is designed for the exclusive use in industrial and lab equipment that process materials in web form as they move through a converting or raw material manufacturing process.

## **Improper use**

Any use outside the technical specifications shall be considered improper use of the web guiding system and voids any warranty of the equipment. Any replacement parts or modification necessities should be made by Roll-2-Roll Technologies.

## **Pinch Points**

- The roller assembly and the control unit assembly will present a gap between the two assemblies. This entire area must be considered a pinch point. The force of the actuator motor can cause damage to body parts due to crushing if these are caught in a pinch point. Additionally, the gap between the rollers and the roller



support plates must be considered a pinch point. The guide rollers are not powered and are only driven by the friction of the web on the rollers as the web travels over the rollers. However, while the material is threaded and transported over the guide rollers this creates pinch points between the web and the roller. Under no circumstance should the roller or the web be touched while the web is transported.

- Any installation, maintenance, or inspection work on or around the guide must be performed when the guide is turned off or unplugged. It is recommended that caution should be exercised when handling the guide under power to avoid having body parts caught in the pinch points.
- The complete guide assembly has an estimated weight between 22 lbs and 35 lbs depending on the model number. Care should be taken when handling the guide during shipping, transportation, or installation to avoid crushing of body parts or of other equipment from impact due to mishandling of the guide and to avoid personal injury. The web guide system should be securely and properly assembled before placing it in operation. Internal safety rules should be observed during the assembly process.
- ARIS web guiding system is an automatic control device that may stop and start at any time without notice. Hence standard safeguards must be in place to prevent any kind of injury.

## **Static discharges and grounding**

The electronic elements of the guide are sensitive to static discharges. Make sure that the guide assembly, the power supply, and the machine on which the guide operates is properly grounded to avoid shock.

# *OPERATOR INTERFACE*

## **Operator Interface Screen**

The ARIS web guiding system operation is accomplished through the operator interface located on the side of the guide control box assembly. The interface uses a language independent icon based screen that allows ease of operation. Fig. 3 presents an image of the Operator Interface screen:



Fig. 3: ARIS Operator Interface (Manual Mode)

The interface is a touch screen panel. Never use sharp or pointed tools of any kind to operate the interface. Best practice is to have operators use their fingers to press the different icons for operation of the guide. Care must be taken to clean the touch screen surface periodically.

Its icon based design allows for a language independent operation without the need of translation of the screen for set-up and operation in different countries.

## Automatic/Manual Operation



Manual



Automatic

The web guide can be put into manual or automatic operation mode by pressing this icon. The guide is in manual operation when the icon is red and is in automatic mode when the icon is green. When the guide is in manual mode and the icon is pressed, the guide will switch to automatic mode. When the guide is in automatic mode and the icon is pressed the guide will be put into manual mode. Changing from one mode to another can result in change in the web guide position causing process upsets. Caution must be exercised when changing the operating mode and should be done by those who completely understand the consequence of this change.

- The guide should be placed in manual operation during initial setup of the guide, or during routine maintenance of the production line.
- The guide must be placed in automatic operation when the production line is in production mode.

**WARNING:** No personnel should be manually handling the guide or the material around the guide when the guide is in automatic operation. Failure to follow this warning could result in crushing of body parts at pinch points around and within the web guiding system.

**WARNING:** Care must be taken that only one person is working on the guide when it is in manual operation. Failure to follow this warning could result in crushing of body parts at pinch points around and within the web guiding system.

A few icons on the operator interface changes as the guide is switched between manual and automatic mode based on the available options in each mode. Fig. 4 shows the operator interface while the web guiding system is in automatic mode.

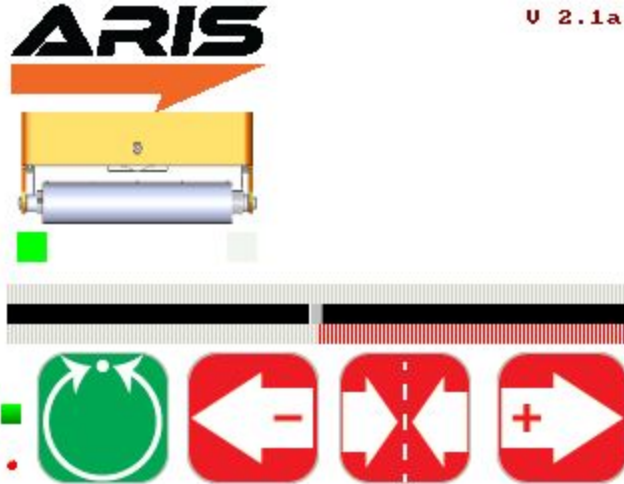


Fig. 4: ARIS Operator Interface (Automatic Mode)

### Servo-Centering Operation



Servo-centering off



Servo-centering on

The servo-centering operation automatically centers the guide roller assembly of the guide.

- During normal operation the icon will be in red.
- Upon pressing the icon, the icon turns green and the guide automatically moves the rollers to a factory preset center position. Once centered the icon returns to red indicating that it has finished the procedure and that servo-centering is off.

The servo center feature allows the guide to be centered quickly to facilitate threading of the web during changeover.

**WARNING:** Servo centering can be performed only when the web guiding system is in manual mode. Pressing the servo center icon during automatic operation will perform a different function.

**WARNING:** This is an automatic procedure of the web guiding system. No personnel should be performing manual work on or around the guide during the servo-centering procedure. Failure to follow this warning could result in crushing of body parts at pinch points around and within the web guiding system.

## Jog-left/Jog-right Operation



Jog-left off



Jog-right off



Jog-left on



Jog-right on

The Jog-left/Jog-right icons allow the operator to manually move the guide roller assembly to the left or to the right as needed. These operations can be performed only when the web guide is in manual operating mode.

- The Jog-left/Jog-right operation icon indicates the operation is off when the icon is red.
- When the operator turns the Jog-left or Jog-right ON by pressing the icon, the guide will start moving to the left or right position. The respective icon will turn green during the Jog operation and will turn back to red when the operation is stopped.

The Jog operation can be stopped at any time by pressing the respective icon any time during the jog. If the guide reaches the extreme position, the jog operation will stop automatically. This operation can only be performed when the guide is in manual setting.

The left position of the guide is defined as the left side of the guide if the operator is viewing the guide from the downstream position (facing the sensor). Similarly, the right position of the guide is defined as the right side of the guide if the operator is viewing the guide from the downstream position.

**WARNING:** Jog-Left and Jog-Right operation can be performed only when the web guiding system is in manual mode. Pressing the icons during automatic operation will perform a different function.

**WARNING:** This is a manual procedure of the web guiding system. No personnel should be performing work on or around the guide during the jog procedure. Failure to follow

this warning could result in crushing of body parts at pinch points around and within the web guiding system.

## Guide Point Adjustment

The guide point of the web guiding system (reference or the desired location of the web with respect to the sensor) is set to 50% of the sensing window of the sensor when shipped from the factory. In this setting the web will be guided to a position exactly in the middle of the sensing window. The guide point can be adjusted to a different location ranging from 25% to 75% of the sensing window. This setting is absolute irrespective of the sensor position. The current guide point setting is indicated by the guide point indicator as shown in Fig. 5.

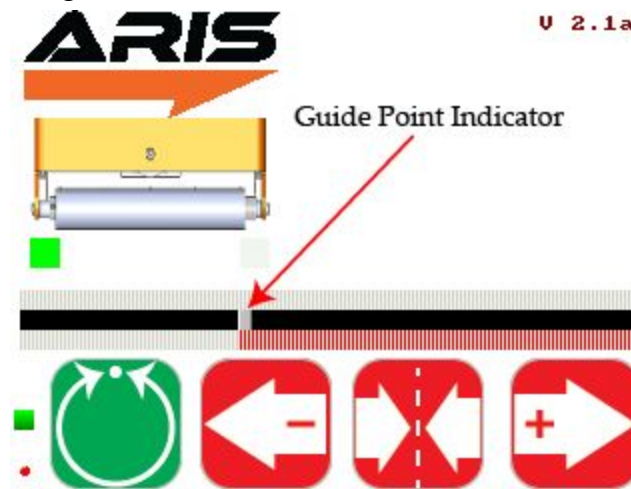


Fig. 5: Guide Point Indicator

The guide point can be adjusted by pressing the left (-) and right (+) arrow icons on the operator interface while the web guiding system is in automatic mode. Every single touch of the left or right icon will respectively decrease or increase the guide point by 5%. This change is immediately displayed by the guide point indicator. Pressing the middle icon (servo-centering icon) will reset the guide point to 50%.

**WARNING:** Guide Point adjustment can be performed only when the web guiding system is in automatic mode. Pressing the icons during manual operation will perform a different function.

**WARNING:** Guide Point adjustment should be made only if it is necessary and should be carried out by personnel with good knowledge about the consequences of the change. The performance of the guiding system may deteriorate if the guide point is too far away from

the desired 50% setting. Some of the changes might have no effect if the web guide is in an extreme position.

## Web Position Indicator

A horizontal bar graph indicator (see Fig. 6) is available on the operator interface to indicate the position of the web as seen by the sensor.

Depending on the position and orientation of the sensor the bar graph may increase:

- from left to right for an edge sensor located on the right side of the guide
- from right to left for an edge sensor that is located on the left side of the guide.

The top web position indicator displays the right edge of the web and the bottom web position indicator indicates the left edge of the web. When two sensors (one left and one right) are connected or if a wide sensor is connected the edge position indicator may indicate both the left and the right edge of the web.

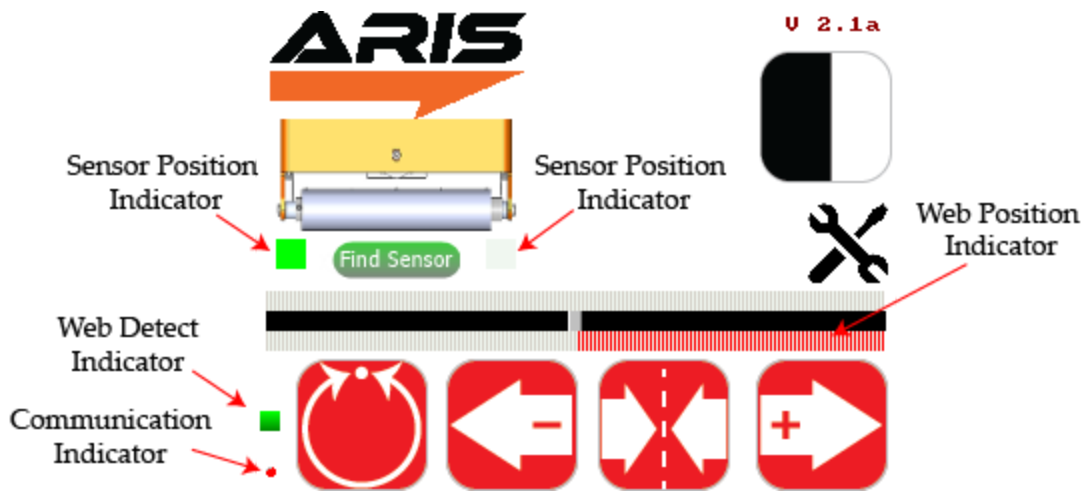


Fig. 6: ARIS Operator Interface

## Web Detected Indicator

A small square indicator on the bottom left part of the screen (see Fig. 6) indicates the presence and absence of the web as seen by the sensor.

- Whenever the sensor sees a web or a web edge, the indicator turns green.
- When the web is outside the sensing window the green indication goes off.

This web detect indicator can be used for troubleshooting purposes. If this indicator turns off intermittently while a web is in front of the sensor it may indicate that the sensor is finding it difficult to accurately sense the web. This indicates a low contrast condition for

the sensor. Such a condition may occur for optical grade clear webs with low scattering in the infrared spectrum.

## **Sensor Position Indicator**

The position of the sensor is indicated by two square indicators on the display (see Fig. 6) that are located downstream of the web guide picture.

- The indicator turns green to display the position and orientation of the sensor with respect to the guide and the web edge.
- If no sensor is attached to the web guiding system then both the indicators will not turn green.
- If two sensors (one right and one left) are attached to the web guiding system or if a wide sensor with center guiding option is used, both indicators may turn green.
- It is important to ensure that the sensor position indicator accurately indicates the actual position of the sensor with respect to the guide.
- The operator can find the correct position of the sensor by pressing the find sensor button that automatically detects the position of the sensor.

## **Find Sensor Button**

The find sensor button (see Fig. 6) can be used to automatically detect the position and orientation of the sensor with respect to the web guide and the web edge. Once the button is pressed the button will change state (as shown in Fig. 7) until the web edge is found.

- This button should be used whenever the sensor position is changed or when the edge orientation is changed.
- When the edge orientation changes, the bar graph will also change orientation.
- Find sensor button is activated only when the web guiding system is in manual mode.





Fig. 7: Find sensor operation

## Communication Indicator

A round indicator at the left bottom of the operator interface (see Fig. 4) indicates the communication between the electronic hardware and the operator interface.

- This indicator is used for troubleshooting purpose.
- During normal operation this indicator will switch between red and green at a frequency of about 2 to 4 Hz.

## Edge/Contrast Web Position Sensing



Edge sensing



Contrast sensing

Depending on the type of sensor (infrared or white light or ultraviolet) the ARIS web guiding system can operator in either edge sensing mode or contrast sensing mode. The default configuration is edge sensing with infrared light source.

In edge sensing mode the sensor will look for the web edge scanning from the outside to the inside of the sensor. For a left sensor the scan goes from left to right, while for a right sensor the scan goes from right to left.

Contrast sensing mode will only work with white light sensor. This sensing mode can be used to detect a line or a contrast in the web. In contrast sensing mode the web position, of the first contrast change in the web, as the sensor scans from inside to outside is

detected. An additional setting to optimize the sensor performance is available for advanced users through the advanced setting screen.

**WARNING:** Do not use contrast sensing method with an infrared sensor unless there is a specific need that has been already identified and tested.

**WARNING:** The Edge/Contrast sensing method selection is visible, and can be changed, only when the web guiding system is in manual mode.

**WARNING:** Both edge and contrast sensing method may work with white light. However the direction of scanning is different. Additionally optical clear material may be difficult to sense with a white light option.

## Advanced Settings Screen

The ARIS web guiding system is a truly plug and play system without any need for setup or calibration. However, it may be necessary to adjust a few parameters in rare occasions based on the processing conditions. The advanced setting screen (see Fig. 8) will allow the user to adjust three parameters: motor speed, minimum contrast and web width.

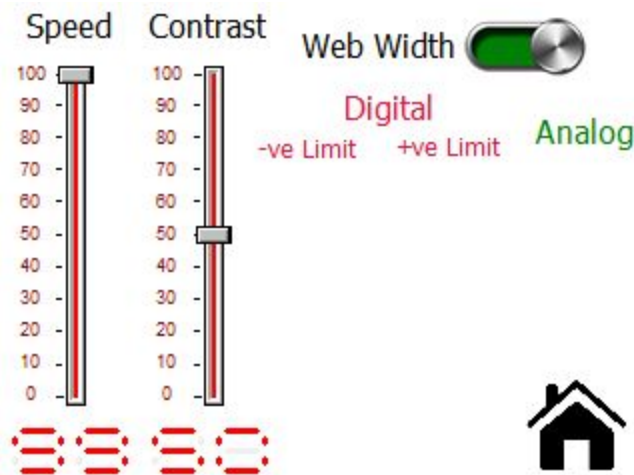


Fig. 8: Advanced Settings Screen

### Motor Speed

In rare occasions when the web guide reaction speed needs to be reduced the speed slider can be used to vary the speed. The default setting corresponds to 99% of the maximum speed and the speed can be reduced all the way up to 0%. The speed reduction may be necessary while handling delicate material such a thin foils.

**WARNING:** When the speed is set to 0% the web guide will not respond in the automatic mode.

## Minimum Contrast

When contrast web position sensing method is chosen the contrast slider can be used to set the minimum contrast that the web position sensor can detect. The default setting is 50 with a minimum of 0 and a maximum of 100. This relative scale adjusts the contrast sensitivity of the sensor output.

**WARNING:** The minimum contrast setting will have no effect when edge position sensing method is used.

**WARNING:** A very low contrast setting will make the sensor to be extremely sensitive to minute contrast difference.

## Web Width

The web width selection slider (an optional setting) can be used to set the type of width output from the web guiding system. This setting is valid only when two sensors, one left and one right, or a wide sensor is used.

### Analog Output

When the width output is set to be analog, the ARIS web guiding system sends an analog output ranging between 0 to 10 Volts based on the percentage of the sensor(s) covered by the web. For example, with a wide sensor if the web covers 60% of the sensor window 6 Volts is output. If two sensors are used, one left and one right, then the output will be the total percentage of the two sensors covered by the web on either side.

### Digital Output

The digital output option can be used for event based web monitoring. When this option is selected additional settings are available to the user as shown in Fig. 9.

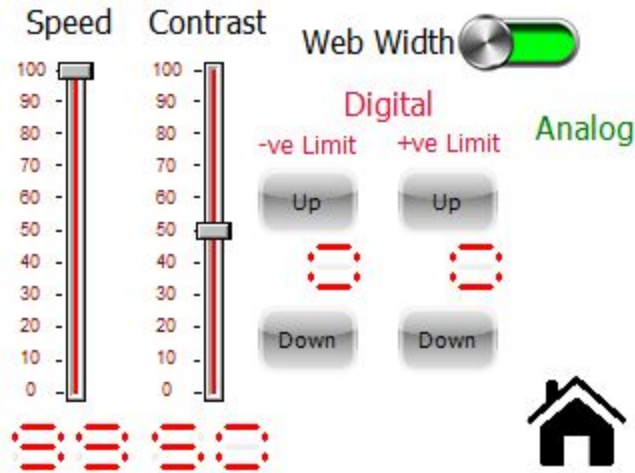


Fig. 9: Digital width output settings.

A lower (-ve limit) and an upper (+ve limit) web width tolerance can be set to trigger outputs based on web width. By default the lower and upper limits are set to zero. The resolution of the tolerances is in millimeters. By using the up and down buttons the lower limit and the upper limit can be changed. Any change in the limits must be accepted by pressing the “Accept Limits” button that becomes visible when the limits are changed (see Fig. 10). The nominal web width is recorded at the instant when the “Accept Limits” button is pressed. As soon as the “Accept Limits” button is pressed the button disappears indicating the limit acceptance as shown in Fig. 11.

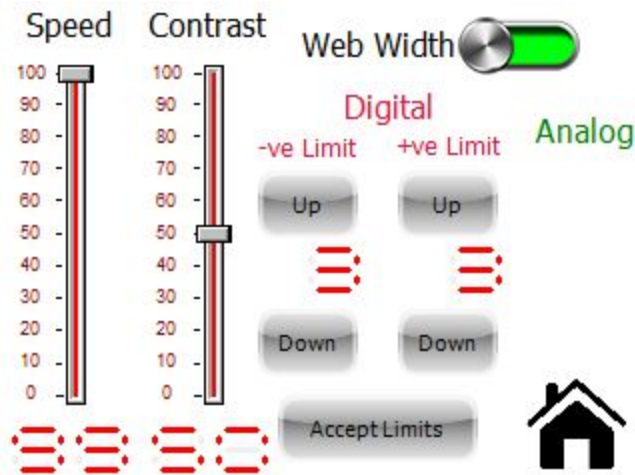


Fig. 10: Accept Limits button is visible after a limit change.

When the web width goes above the positive limit a positive high signal (+10V) is sent out by the ARIS web guiding system. Similarly when the web width goes below the

negative limit a negative low signal (-10V) is sent out. When the web width is within the positive and negative width limits 0V is output.

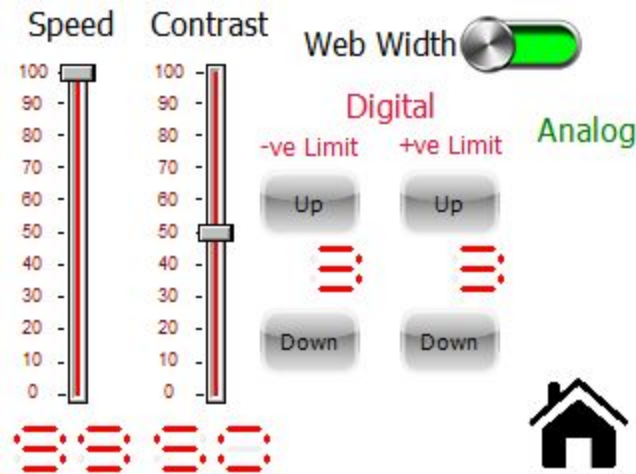


Fig. 11: User interface after the pressing Accept Limits button.

**WARNING:** This option may not be available on all the web guiding systems.

**WARNING:** If only one edge sensor is present then the output from the web guiding system, irrespective of the web width setting, will be an analog voltage between 0 to 10 Volts proportional to the web position (the percentage of the sensor covered by the web).

**WARNING:** Whenever a different web material with different nominal width is used the nominal width and the limits must be reset.

## ***INSTALLATION AND COMMISSIONING***

### **Unpacking**

The ARIS web guiding system will arrive packaged in a cardboard enclosure specially designed for the guide. Although the packaging is designed to protect the product from shock due to transportation, care should be taken in handling the box with the guide to avoid damaging the guide.

- When opening the container, make sure you open the box in the upright position. The upright position can be verified by the printing on the outside of the box.
- Inside you will find the guide system with a 2.5 m long power cord attached to the unit. Optional pre-wired power adaptors are also available for quick installation.

- Additionally, the sensor unit is shipped uninstalled from the guide unit and will be packaged within the protective cardboard enclosures. Remove the protective cardboard enclosures carefully to avoid dropping the sensor assembly.

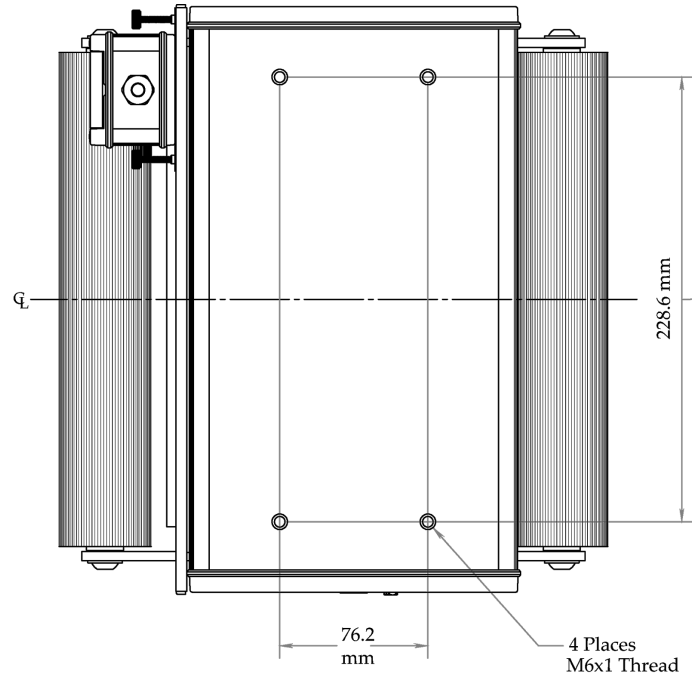
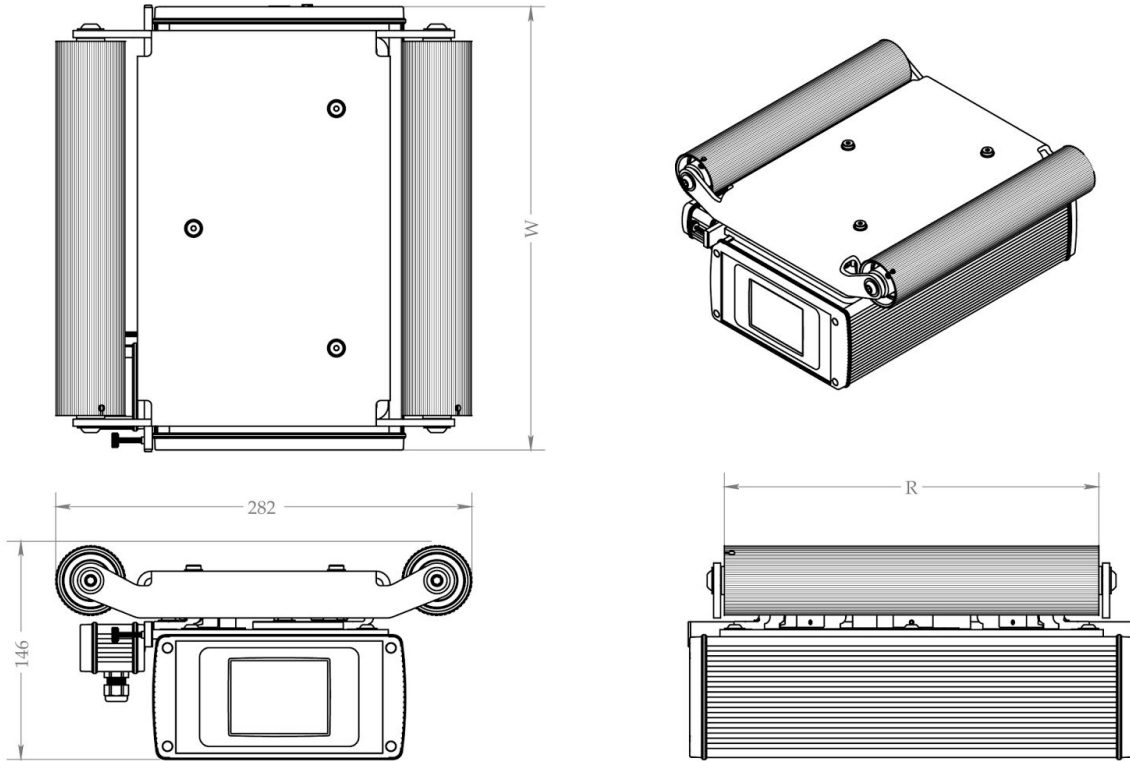


Fig. 12: Bottom view of the ARIS web guiding system - location of threaded mounting holes

# Mounting dimensions



**NOTES:**

- All dimensions in mm
- Refer to table below for dimensions W and R

Roll Face inch [mm] <i>R</i>	Guide Span inch [mm]	Roll Diameter inch [mm]	Width inch [mm] <i>W</i>	Max correction inch [mm]	Max correction speed in/sec [mm/sec]
10 [254]	11.25 [285.7]	2 [50]	11.85 [301]	± 1.06 [27]	5.315 - 6.889 [135-175]
12 [304.8]			11.85 [301]		
15 [381]			16.85 [428]		
17 [431.8]			16.85 [428]		
20 [508]			21.85 [555]		
22 [558.8]			21.85 [555]		

## Mounting

Once the unit is outside of the cardboard packaging you may proceed to install the unit.

- The unit comes with four M6 threaded mounting holes located on the bottom of the enclosure (see Fig. 12).
- Four M6 bolts and spacers are provided with the web guiding system which can be used to mount the web guide on the machine frame.
- Do not drill additional holes to the bottom of the control unit!
- You may be required to prepare an installation plate to install the unit to your production machine. The location of the bolts for installation is diagramed above for preparation of the installation plate. Make sure the guide is centered with the center of the flow of material.

The guide has a downstream side and an upstream side (see Fig. 13).

- The downstream side will have the sensor mounting rail underneath the downstream roller.
- Make sure to install the guide with proper oriented by following the web direction sticker on the roller platform assembly. The sensor must always be on the downstream side of material flow.



Fig. 13: Downstream (left) and upstream (right) orientation of the web guide.

- Secure the guide to the machine by bolting the guide with the M6 bolts that are provided with the guide.
- Tighten each bolt with an allen wrench by hand until each bolt is locked securely. Do not over tighten the bolts.



## Sensor installation

Next, proceed to install the sensor assembly to the guide.

- The sensor assembly is composed of the sensor, sensor connecting cable, and two sensor slide carriages with M3 thumb screws. All these elements are factory shipped assembled as a ready to install unit.
- Each sensor slide carriage will have a locking thumbscrew. Unscrew both thumbscrews to allow the carriage to slide into the sensor slide that is mounted under the roller assembly on the downstream side of the guide.
- The sensor face has an infrared lid. Make sure the infrared lid faces the web material when the sensor assembly is slid into the guide rail.
- Carefully slide the sensor carriages into the sensor slide.
- Once the sensor has been installed in the sensor slide, install the plastic caps on the ends of the slide. These are snap-on plastic caps that can be found on the top of the roller assembly in a clear plastic bag.

**WARNING:** Even though the sensor working distance is less than 25 mm, the sensor operation may be affected by any object in the field of view of the sensor which is at a distance of 150 mm. Make sure that no object is present within this safe field of view range to ensure proper operation of the sensor.

**WARNING:** The infrared light source is invisible to the naked eye. Please do not stare directly into the sensor at any time. This can potential damage eyesight and may cause blindness.

**WARNING:** The white light source is visible to the naked eye. Please do not stare directly into the sensor at any time. This can potential damage eyesight.

## Power connection

The ARIS web guiding system operates under 24 VDC power. The unit comes with a 2.5 meter long power cable for the customer to connect to an appropriately grounded 24 V DC power source.

The unit and the equipment to which the unit is installed must be properly grounded.

There are three conductors in the power cable.

- the red colored conductor is the 24 V power.
- the black colored conductor is the DC return or electronic circuit ground.
- the white colored conductor is the earth ground or PE.

For safety and normal operation the equipment to which the guiding system is installed must be properly grounded. Once power is connected, the operator interface will turn on automatically. The guide is ready, commissioning and operational.

Preconfigured quick connect power supply option is also available for quick installation.

An additional earthing screw is also provided for proper grounding.

**WARNING:** Even though the mounting holes provide grounding of the ARIS web guiding system, please use all possible options to safely earth the web guide. Improper grounding may result in static buildup that can potentially result in malfunction of the web guiding system.

## Commissioning

The ARIS web guiding system is a real plug-and-play system. A properly installed ARIS web guide requires correct threading of the web over the guide rollers and initial positioning of the sensor based on the desired position of the web to provide optimum performance. Once the material is threaded over the guide rollers and the sensor has been properly positioned, all the operator has to do is to press the automatic operation icon on the operator interface.

The following section describes the steps and conditions required for automatic operation of the ARIS web guiding system.

1. Power ON the system
2. Automatic/Manual operation set to “Manual” (Automatic/Manual icon pressed to red)
3. Jog the guide to left extreme and then to right extreme to correct for any transportation related guide roller assembly movements.
4. Press the Servo-Center button to center the guide rollers.
5. Thread the material over the rollers. The material wrapped over the rollers must be at a 90 degree angle both at the entry and exit of the guide rollers.
6. Verify that the material is aligned in the desired position with respect to the upstream and downstream position of the web. Place web under normal operation tension.
7. Adjust sensor position on the desired edge of the web. Then manually position the sensor so that the edge of the web is at the middle of the sensing window. This

can be done by observing the web edge position indicator on the display. When the bar is in the middle position then the web edge is in the middle of the sensing window.

8. Tighten the sensor thumbscrews to secure the sensor position on the sensor rail.
9. Press the “Find Sensor” button on the operator interface so that the guiding system automatically find the position and orientation of the edge sensor.
10. Press the Automatic/Manual operation icon to “Automatic” (Automatic/Manual icon pressed to green).
11. The guide will automatically adjust the position of the web material to guide it to the correct position.

## General maintenance

The ARIS web guiding system is virtually maintenance free. However, the sensor lid should be cleaned to remove any dust particles that might accumulate on the surface.

- You may use any lens cleaning solutions available in the market.
- Do not use petroleum based products as these can damage the sensor cover and affect its performance.
- This cleaning can be done as part of a weekly maintenance schedule or as required by usage or environmental conditions.

## Accessories / Options

### Sensors

The default sensor for ARIS Web Guiding System is the 48 mm infrared sensor. Other options for sensor include 16 mm and 221 mm.

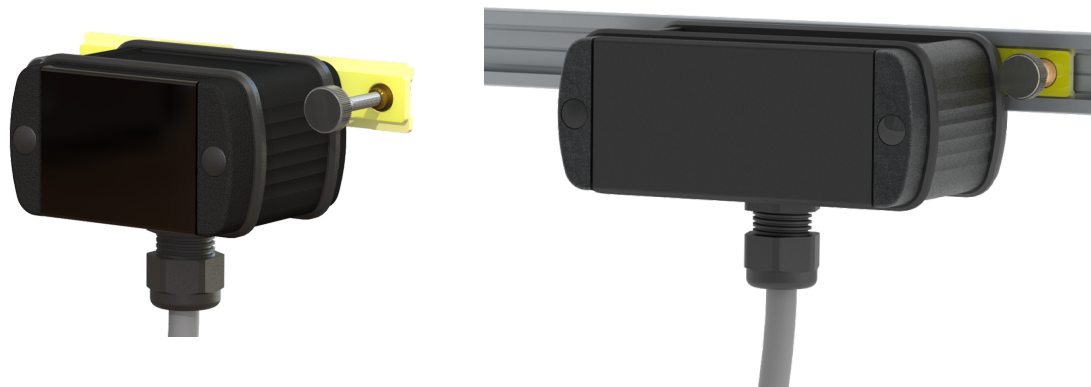


Fig.14: The sensor options with 16 mm (left) and 48 mm (right) sensor.

## Rollers

ARIS web guiding system can be assembled with grooved or smooth rollers.

- For speeds above 500 feet/ minute or 3 to 4 mm/sec we recommend the use of grooved rollers.

# ***TROUBLESHOOTING***

<b>Problem</b>	<b>Probable Cause</b>	<b>Action</b>
Sensor indicator does not light up and the sensor does not find the web.	Faulty sensor cable or connection.	Ensure that the sensor cable is properly connected. Disconnect the cable and reconnect it and use the find sensor button procedure. If that does not fix the problem try a different sensor head. If that does not fix the problem, please call support.
The touch screen does not work and the communication indicator is not blinking.	Communication between the electronic hardware and the operator interface is lost.	Power cycle the web guiding system to see if the communication is reestablished. If that does not fix the problem, please call support.
The web guide is not moving in automatic mode.	Faulty cable or connection. or Software soft stop reached.	Check the sensor cables and connection to ensure that the sensor sees the web. If the sensor works properly, then try to manually jog the web guide away from the center position. The web guide will stop jogging when the software soft stop is reached. While jogging, the actuator may produce a noise because of the hard stop. It is normal. Once the software stops jogging, push the automatic button again. If that does not fix the problem, please call support.

# ***SPECIFICATIONS***

## **General Specifications**

---

<b>Guide Weight</b>	-	21 lbs - 30 lbs
<b>Roll Face</b>	-	10, 12, 15, 17, 20, 22 inches / 254, 304.8, 381, 431.8, 508, 558.8 mm
<b>Operating Temperature</b>	-	0-60° C
<b>Operator Interface</b>	-	Color touch screen
<b>Language</b>	-	Language independent icons

## **Actuator**

---

<b>Motor Type</b>	-	Linear stepper - Lead screw
<b>Input Supply</b>	-	24 V DC
<b>Error Frequency</b>	-	2 Hz - 8 Hz
<b>Control Frequency</b>	-	50 - 200 Hz
<b>Maximum Web Tension</b>	-	225 N
<b>Linear Force</b>	-	250 - 1000 N
<b>Nominal Actuating Travel</b>	-	±27 mm
<b>Correction Rate</b>	-	135 - 175 mm/sec
<b>Displacement Resolution</b>	-	0.000275

## **Sensor**

---

<b>Sensor Type</b>	-	Fiber optic
<b>Sensor Resolution</b>	-	0.0635 mm Material Independent
<b>Sensor Range</b>	-	16 mm and 48 mm
<b>Accuracy</b>	-	>99.2%

# ***TECHNICAL SUPPORT AND SERVICE***

## **Contact information**

Roll-2-Roll Technologies LLC is dedicated to providing exceptional service and support to its customers. Please feel free to contact us for any technical support, installation support and service requirements.

Roll-2-Roll Technologies LLC  
1414 S Sangre Rd  
Stillwater, OK 74074  
Website: <https://www.r2r-tech.com>

Technical Support Phone: +1 (888) 290-3215 - ext 3  
General Support Phone: +1 (888) 290-3125 - ext 1

Technical Support Email: [engineering@r2r-tech.com](mailto:engineering@r2r-tech.com)  
General Support Email: [support@r2r-tech.com](mailto:support@r2r-tech.com)

## **Return shipping instructions**

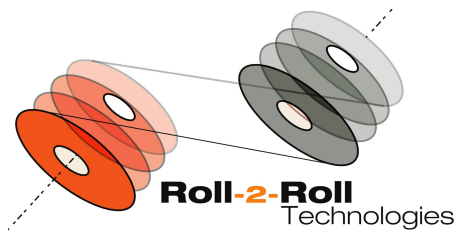
Please contact us to obtain a return merchandise authorization (RMA) number before returning the product to us. If returning the product, please follow the instructions on the RMA form for quick and efficient service.

# *REVISION HISTORY*

## **Document Revision**

<b>Version</b>	<b>Date</b>	<b>Changes</b>
1.0	Sep 2015	Initial Release Version
1.1	Feb 2016	Comprehensive revision and new sections added: safety instructions, mounting dimensions, accessories/ options, troubleshooting, specifications.
2.0	Jun 2016	Updated documentation for new hardware, firmware and OI.





**Roll-2-Roll Technologies LLC**

**1414 S Sangre Rd**

**Stillwater, OK 74074**

**[www.r2r-tech.com](http://www.r2r-tech.com)**

**[info@r2r-tech.com](mailto:info@r2r-tech.com)**

**+1-(888)-290-3215**