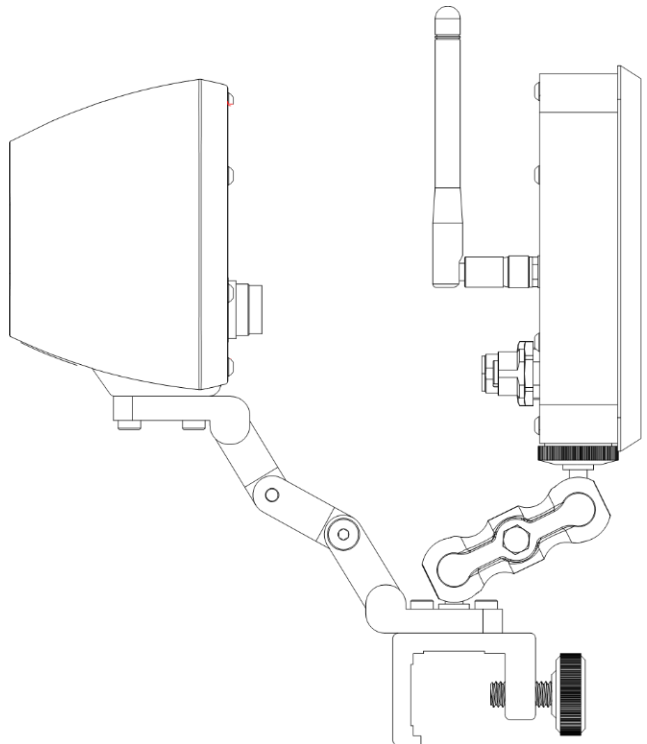
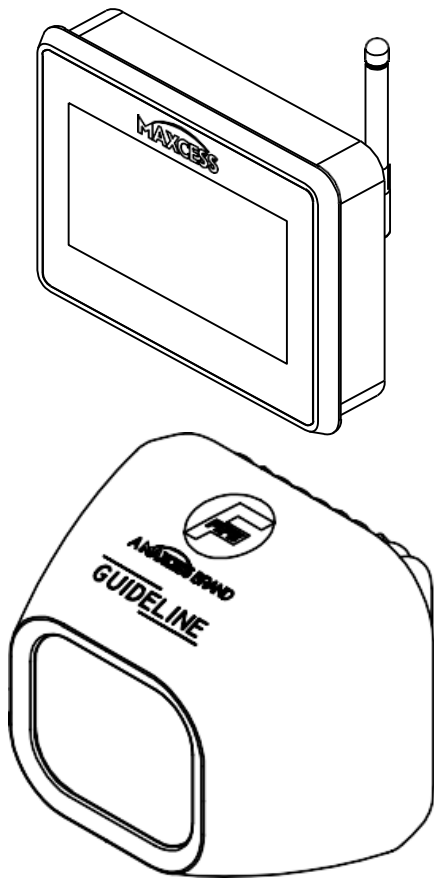




A **MAXCESS** BRAND

# GuideLine Color Line Guide Sensor with Operator Interface

User Manual



EN

2-325-B

# CONTENTS

1.0	INTRODUCTION	5
1.1	Operating Instructions Overview .....	5
1.2	Product Overview.....	5
1.3	Model Number.....	6
1.4	Serial Number.....	6
1.5	GuideLine Components.....	7
1.6	Ordering information.....	7
2.0	SAFETY	8
2.1	Instructions for Use .....	8
2.2	Symbols Used .....	8
2.3	Basic Safety Information.....	9
3.0	INSTALLATION	11
3.1	Product Dimensions.....	11
3.2	GuideLine Operator Interface Installation .....	12
3.3	GuideLine Sensor Mounting Bracket Installation .....	13
3.4	Sensor Adjustment and Positioning.....	15
3.5	Sensor Tilt Adjustment .....	16
3.6	GuideLine Spacer Assembly .....	17
3.7	GuideLine Cable Assemblies .....	18
3.8	GuideLine Block Diagram .....	20
3.9	Analog outputs.....	21
3.9.1	GuideLine Analog Outputs 1 and 2.....	21
4.0	GUIDELINE PASSWORD SECURITY	22
4.1	Overview .....	22
4.2	Set Password (first time use).....	23
4.3	Identifying Security Status.....	24
4.4	Admin Login.....	24
4.5	Enable Security .....	25
4.6	Login Timeout .....	25
4.7	Protect Menus.....	25
4.8	Change Password .....	26
5.0	OPERATOR INTERFACE (OI) AND SENSOR SETUP	27
5.1	White Balance and Brightness Setup .....	27
5.2	Enable Jobs.....	28
5.3	Name Jobs .....	29
5.4	Set-Up Jobs .....	30
5.4.1	Line Guiding Option.....	31
5.4.2	Pattern Menu .....	32
5.4.3	Edge Scan Menu.....	33
5.5	Ranges Set Up .....	34
6.0	GUIDELINE MENUS	35
6.1	Main Menu.....	35

# CONTENTS

6.1.1	Automatic Servo Control .....	36
6.2	Edge Menu .....	37
6.3	Select Job .....	38
6.4	About Menu.....	39
6.5	Admin Menu .....	40
6.6	Admin Login Menu.....	41
6.6.1	Security Logout Menu .....	41
6.7	Security Menu .....	42
6.7.1	Enable Security Menu .....	43
6.7.2	Login Timeout Menu .....	43
6.7.3	Protect Menus.....	44
	Change Password .....	45
6.7.4	Backup Menu .....	45
6.7.5	Restore Menu.....	46
6.8	Network Menu .....	47
6.8.1	Sensor Menu.....	48
6.8.2	Operator Interface Menu .....	50
6.8.3	Reset Manu.....	51
6.9	Service.....	52
6.9.1	Software/Firmware Updates .....	52
6.9.2	Measure Menu .....	53
6.9.3	Test Menu.....	53
7.0	FIFE SENSOR SERIAL BUS (FSBUS)	55
8.0	MAINTENANCE	56
	Operator Interface (OI).....	56
	Cleaning OI Display .....	56
	Sensor.....	56
	Cleaning Sensor Window.....	56
9.0	TROUBLESHOOTING	57
10.0	SPECIFICATIONS	58
11.0	SERVICE	60
12.0	MENU STRUCTURE	61
<b>FIGURES</b>		
	Figure 1 – Component Identification and Ordering Information .....	7
	Figure 2 – Dimensions: GuideLine Color Line Sensor and Operator Interface.....	11
	Figure 3 – Operator Interface Panel Mount Installation.....	12
	Figure 4 – GuideLine Sensor Mounting Bracket Installation (option 1) .....	13
	Figure 5 – GuideLine Sensor Mounting Bracket Installation (option 2) .....	14
	Figure 6 – GuideLine Sensor Adjustment and Positioning.....	15
	Figure 7 – GuideLine Sensor Maximum Up/Down Adjustment.....	16
	Figure 8 – GuideLine Spacer Assembly (P/N 29001 8266) .....	17

# CONTENTS

Figure 9 – Sensor to OI Cable (Fife Ethernet) P/N 290014408-XXX.....	18
Figure 10 – Female to Male Extension Cable (24 VDC Out to Sensor) P/N 290014409-XXX .	18
Figure 11 – GuideLine Sensor to Terminal Block (RS-485) P/N 290017941-XXX.....	19
Figure 12 – GuideLine Block Diagrams.....	20
Figure 13 – Typical Output Wiring Schematic.....	21
Figure 14 – Sensor White Balance and Brightness Reset .....	27
Figure 15 – Enabling Jobs .....	28
Figure 16 – Naming Jobs .....	29
Figure 17 – Edges Menu Access.....	30
Figure 18 – Line Menu.....	31
Figure 19 – Pattern Menu .....	32
Figure 20 – Edge Scan Menu.....	33
Figure 21 – Ranges Menu .....	34
Figure 22 – Operator Interface Main Menu .....	35
Figure 23 – Automatic Servo Control (ASC) Signal .....	36
Figure 24 – Edge Menu.....	37
Figure 25 – Select Job Menu .....	38
Figure 26 – About Menu.....	39
Figure 27 – Admin Menu .....	40
Figure 28 – Admin Login Menu.....	41
Figure 29 – Security Logout Manu .....	41
Figure 30 – Security Menu .....	42
Figure 31 – Enable Security Menu .....	43
Figure 32 – Login Timeout Menu .....	43
Figure 33 – Protect Menu .....	44
Figure 34 – Change Password Menu .....	45
Figure 35 – Backup Menu .....	45
Figure 36 – Restore Menu .....	46
Figure 37 – Network Menu .....	47
Figure 38 – Sensor Menu.....	48
Figure 39 – Sensor Maxnet Menu .....	49
Figure 40 – OI Menu.....	50
Figure 41 – OI Wi-Fi Setup Menu .....	51
Figure 42 – Reset Menu.....	51
Figure 43 – Service Menu .....	52
Figure 44 – Measure Menu .....	53
Figure 45 – Warning Screen .....	53
Figure 46 – Test Menus.....	54
TABLES	
Table 1 – OI and Sensor Specifications.....	59

# OVERVIEW

## 1.0 Introduction

### 1.1 Operating Instructions Overview

All of the information herein is the exclusive proprietary property of Maxcess International 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 disclosed.

Copyright 2022 all rights reserved.

Periodically there will be updates to this manual. The latest version is available on our website or by calling your regional office listed in the SERVICE section of this publication.

The GuideLine Color Line Guide Sensor with Operator Interface must not be installed or used in a machine or system which does not comply with the machinery directive 2006/42/EC.

The GuideLine was designed and manufactured to be installed as Partly Completed Machinery into a machine or partly completed machine.

The instructions must be read and used by all persons who have the responsibility of installing and maintaining the GuideLine.

These instructions must be retained and incorporated in the technical documentation for the machine or partly completed machinery into which the GuideLine is installed.

#### **CE marking**

The GuideLine is marked with the CE sign according to the EMC directive 2014/30/EC.

#### **Conventions used in this manual**

All dimensions and specifications are shown in the format mm [inches] unless specified otherwise.

#### **Language**

These are the original instructions, written in English.

### 1.2 Product Overview

The GuideLine Color Line Sensor is a smart sensor product, packaged with a powerful and simple to use operator interface. The GuideLine sensor is based on a color machine vision digital image sensor providing a line sensor for web guiding systems with an optical viewing range of 32mm. The sensor supports various line calibration modes to generate guide signals for use with a web guide controller for precise guiding of the material web.

# OVERVIEW

The Color Line Guide sensor is designed for continuous use in IP54 environments.

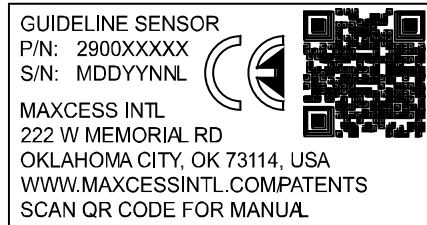
The GuideLine sensor is based on a wide angle, far-looking NIR (Near Infra-Red) digital image sensor.

The GuideLine Sensor has two independent analog outputs and up to four digital sensor signals when used in conjunction with a compatible controller. One analog output is used to signal the validity of the primary guiding signal.

The GuideLine Operator Interface (OI) offers a list of built-in functions for diagnostic, testing, and calibration. The OI also has Gateway capability that can automatically sense a Smart Actuator connected to the system and provide a pop-up menu screen so the customer can interact with the Smart Actuator.

## 1.3 Model Number

GuideLine SENSOR for the GuideLine Color Line Sensor.  
MAX OI 1 for the GuideLine Operator Interface.



## 1.4 Serial Number

**Serial Number format is MMDDYYNNNL**

MM = month

DD = day

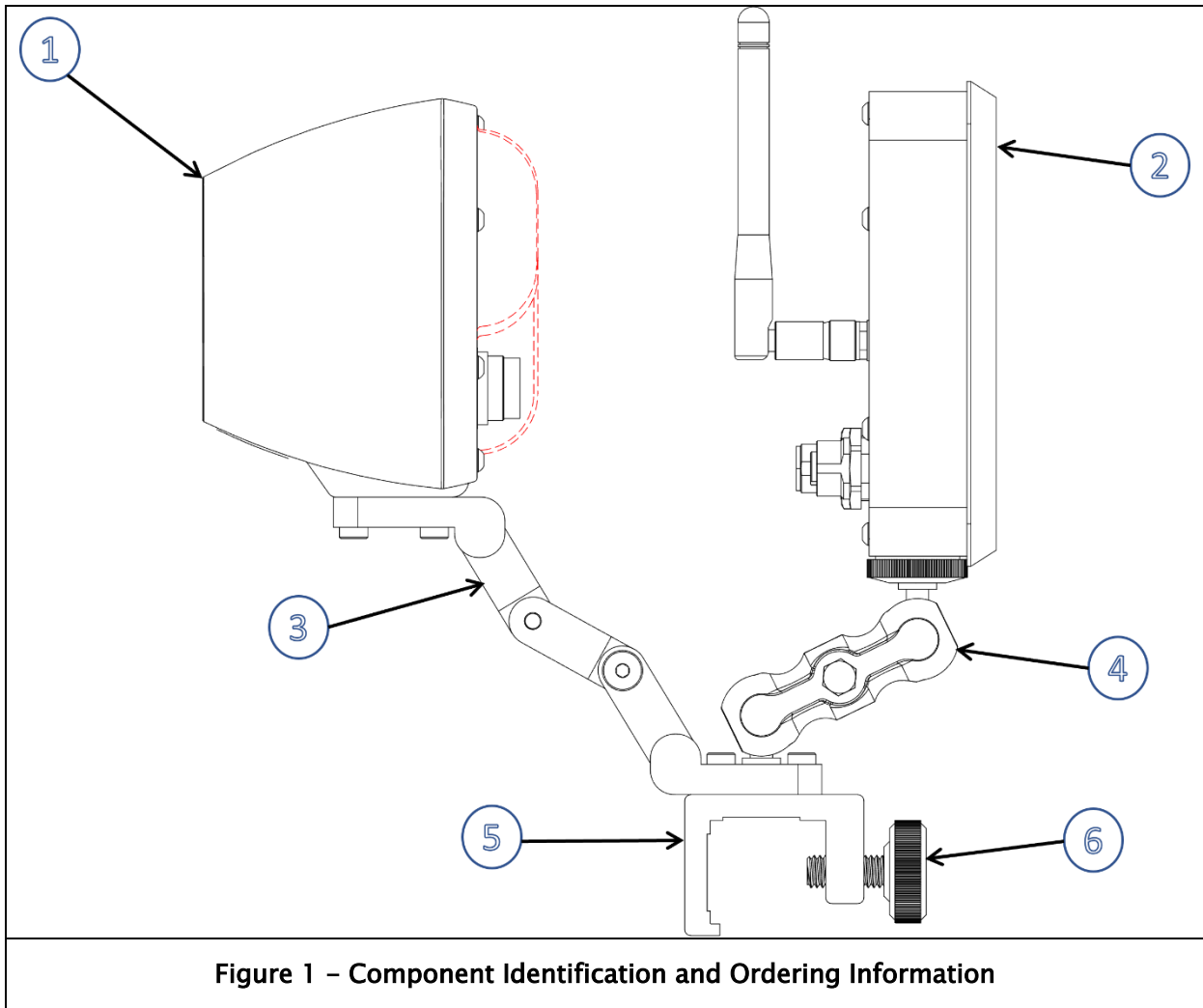
YY = last two digits of the year

NNN = a sequence number

L = manufacturing location

# COMPONENTS

## 1.5 GuideLine Components



## 1.6 Ordering information

Item No.	Description	Fife Part number	Drawing (reference)
1	GuideLine Color Line Sensor (with fins)	290013843	228188
2	Operator Interface (OI) Assembly	290014386	228185
3	Mounting Bracket (3 Links)	290014395	228421
4	Mini Double Ball Head Extension Arm 1/4-20 UNC	290014214	228354
5	Sensor Positioner for 1" Square Bar	29L71815002	71815
6	Adjusting Knob 5/16-18 UNC	29L90304002	90304

# SAFETY

## 2.0 Safety

### 2.1 Instructions for Use

To ensure safe and problem free installation of the GuideLine, it must be properly transported and stored, professionally installed, and placed in operation. Proper operation and maintenance will ensure a long service life of the device. Only persons who are acquainted with the installation, commissioning, operation, and maintenance of the system and who possess the necessary qualifications for their activities may work on the GuideLine.

Note: The safety information may not be comprehensive.

Please note the following:

- The content of these operating instructions
- Any safety instructions on the device
- The machine manufacturer's specifications
- All national, state, and local requirements for installation, accident prevention and, environmental protection

### 2.2 Symbols Used

The following safety identification symbols may be used in these operating instructions.



---

WARNING/CAUTION – General danger or important note  
Reference to general hazards that may result in bodily injuries or damage to device or material.

---



---

WARNING/CAUTION – Danger due to crushing.  
Reference to danger of injury caused by crushing.

---



---

WARNING/CAUTION – Danger due to cutting.  
Reference to danger of injury caused by cutting.

---



---

WARNING/CAUTION – Danger due to voltage and electric shock.  
Reference to danger of injury caused by electric shock due to voltage.

---



---

WARNING/CAUTION – Danger due to hot surfaces  
Reference to risk of injury caused by burning.

---



# SAFETY

## 2.3 Basic Safety Information

### Proper use

The GuideLine Color Line Guide Sensor with Operator Interface is intended to be used on machines or systems to aid in the guiding of a variety of web materials.

For indoor operation, see environmental specifications on page 58.

### Improper use

- Operation outside the technical specifications.
- Operation in an Ex-area or intrinsically un-safe area.
- Outdoor operation.
- Any other use than the proper use shall be deemed inappropriate.

### Installation and commissioning

- Any GuideLine that is damaged must not be installed or put into operation.
- Only perform installation, maintenance, or repair tasks on the GuideLine when the machine into which it has been installed has been stopped and is secured from being turned on.
- Only perform installation, maintenance, or repair tasks on the GuideLine when there is no electrical power in the system.
- The GuideLine must be securely mounted before being placed in operation.
- Only replacement parts obtained from Maxcess may be used.
- No modifications may be made to the GuideLine.
- Do not place electrical cables under mechanical strain.



WARNING - Death or injury can result from static electric shocks.



Moving webs of material can produce large static voltage potentials. Protect against electric shocks by ensuring that the GuideLine is properly connected to a Maxcess Color Line Guide controller and that the controller is properly grounded via the PE circuit of the building or machine.

# SAFETY

## *Basic safety information continued*

---



WARNING – Death or injury can result from unexpected movement of the machine into which the GuideLine is installed.

Protect against unexpected movement by removing electrical power from the GuideLine and the machine into which the GuideLine is being installed.

### **Operation**

None, as tasks from the operator are generally not required.

### **Maintenance and repair**



WARNING – Death or injury can result from unexpected movement of the machine into which the GuideLine is installed.

Protect against unexpected movement by removing electrical power from the GuideLine and the machine into which the GuideLine is installed.



WARNING – Danger of injury from crushing.

Maintenance and repair tasks on the GuideLine must be performed only when the machine into which it has been installed has been stopped and has been secured from being turned on again.

### **Decommissioning**

The GuideLine must be disposed of in accordance with all the applicable national, state, and local regulations.

# INSTALLATION

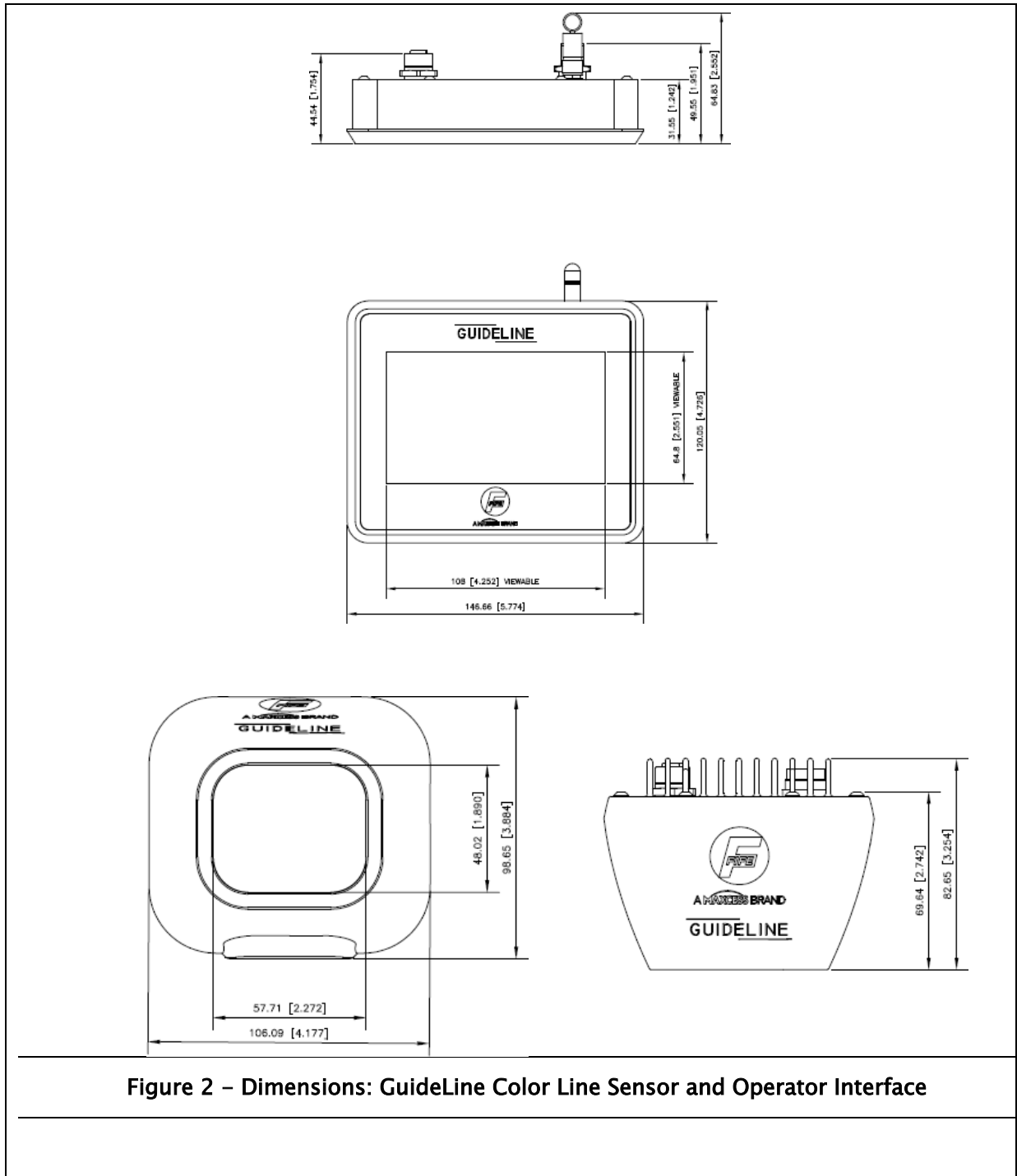
## 3.0 Installation



Use shielded cable for all cables except power cable.

## 3.1 Product Dimensions

Units are in millimeters [inches]



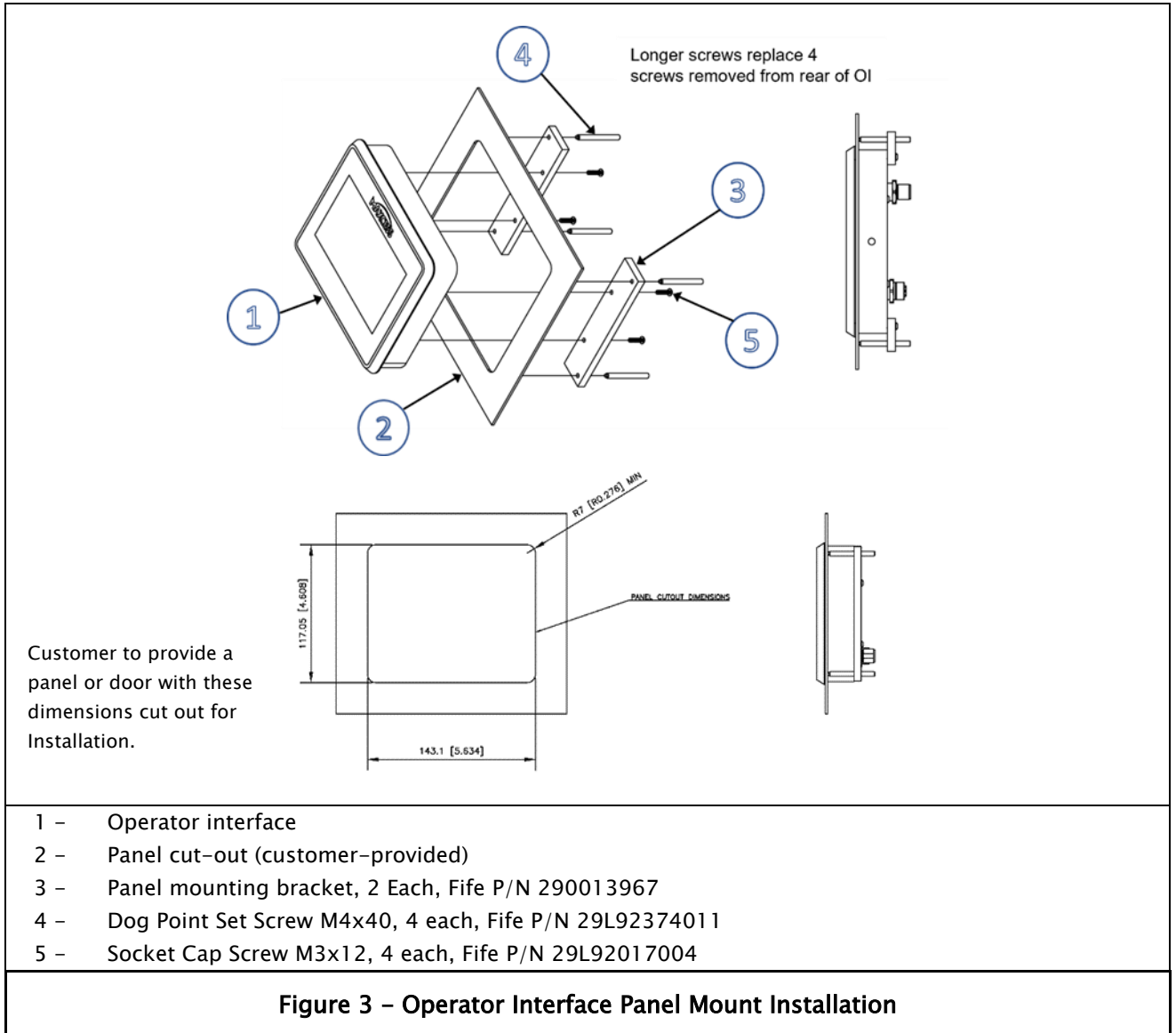
# INSTALLATION

## 3.2 Guideline Operator Interface Installation



CAUTION – Never place electrical cables under mechanical strain. Always provide mechanical support of wiring with either clamps or flexible/rigid conduit.

Units are in millimeters [inches]



### Instructions

- Remove four (4) existing screws from left and right sides of OI backplate. Discard screws.
- Install OI from front of opening and attach two (2) brackets (Item 3) to OI, using four (4) cap screws (Item 5). Ensure all 4 screws are tightened securely.
- Install four (4) Dog Point set screws (Item 4) and tighten securely to ensure OI does not move in opening.

## INSTALLATION

### 3.3 GuideLine Sensor Mounting Bracket Installation



CAUTION - Never place electrical cables under mechanical strain. Always provide mechanical support of wiring with either clamps or flexible or rigid conduit.

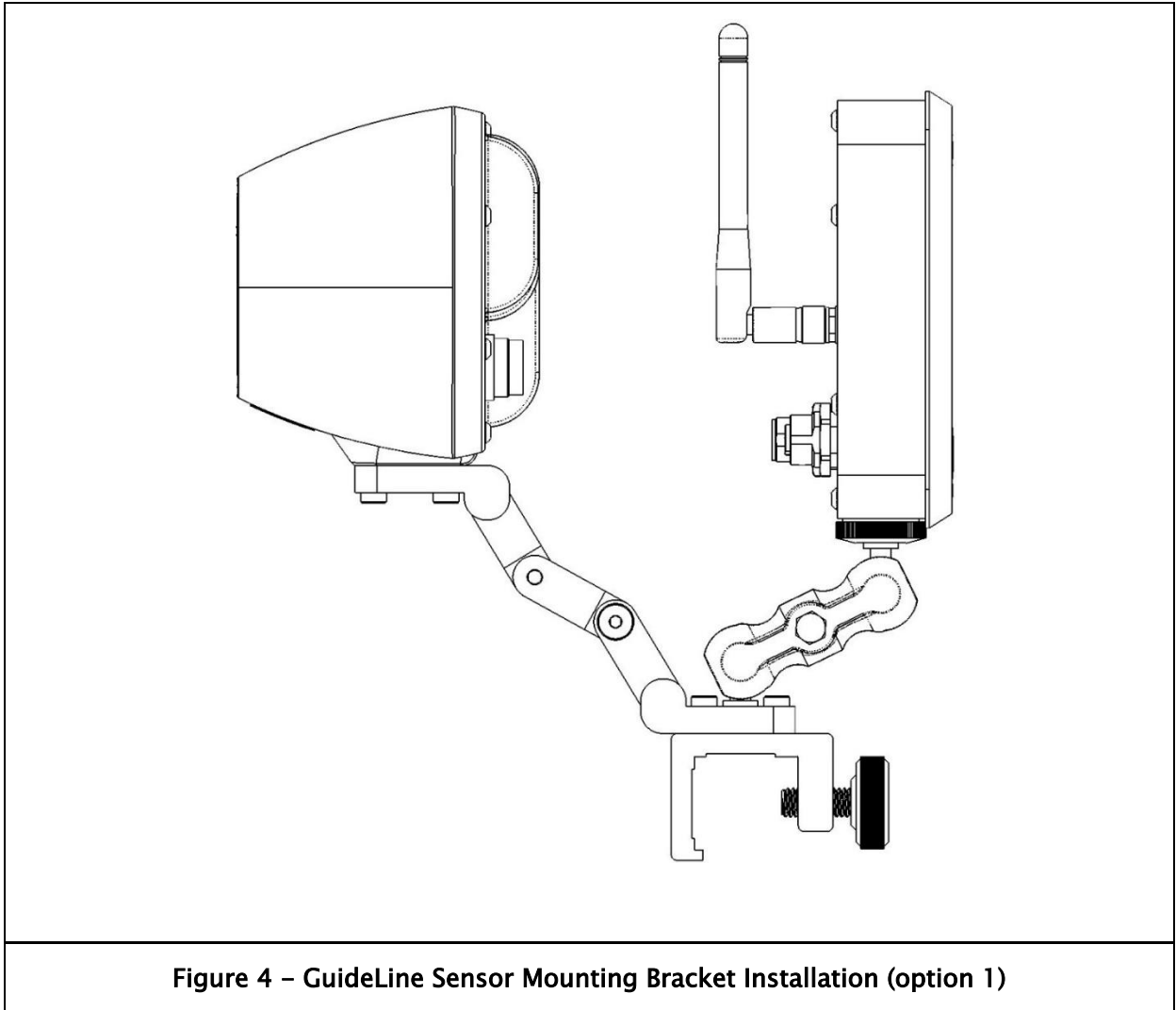
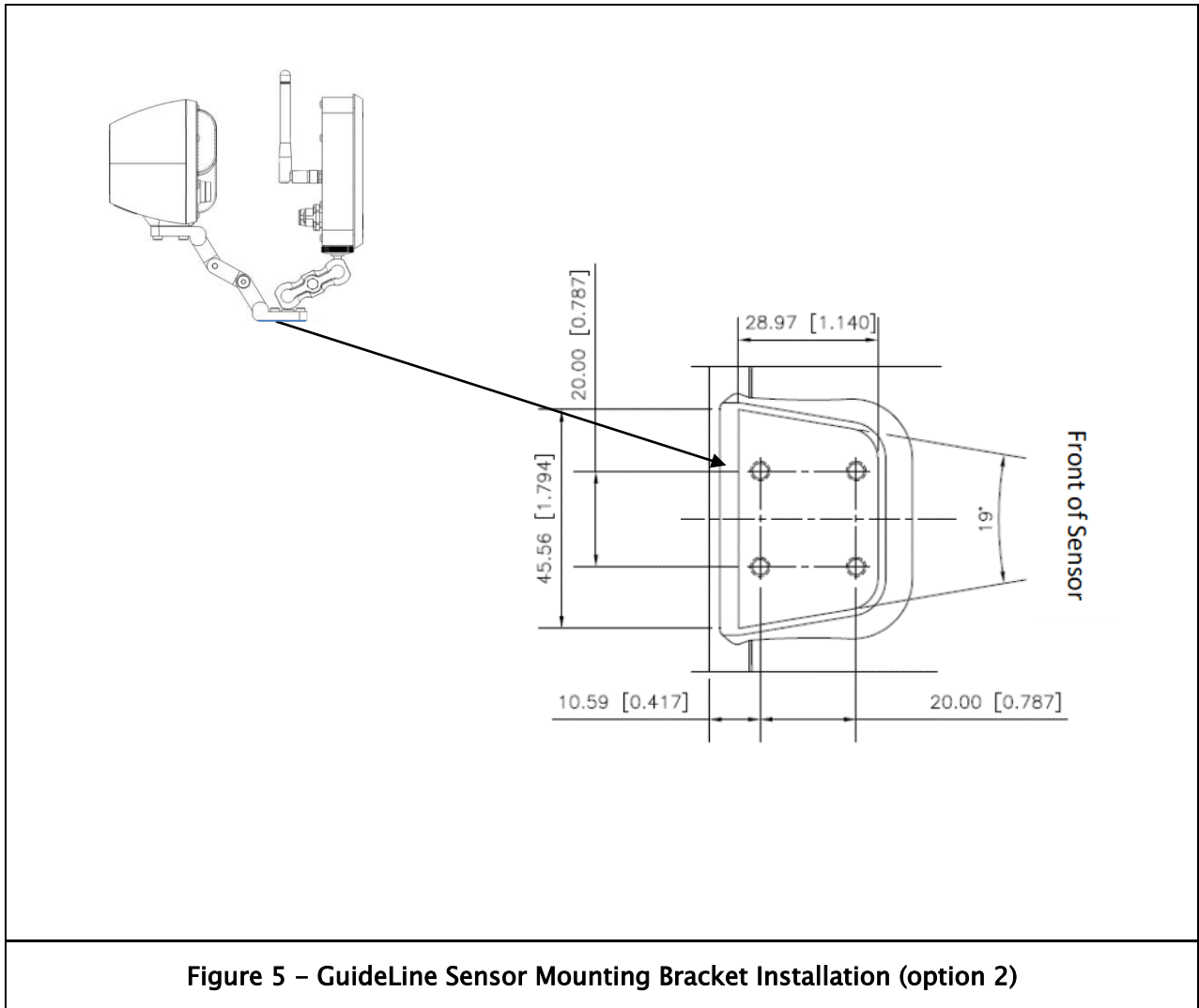


Figure 4 – GuideLine Sensor Mounting Bracket Installation (option 1)

#### Instructions

- Ensure suitable structure and location for proper sensor mounting.
- Loosen knob to allow mounting bracket to fit over web surface 1" square bar and tighten using knob.

## INSTALLATION

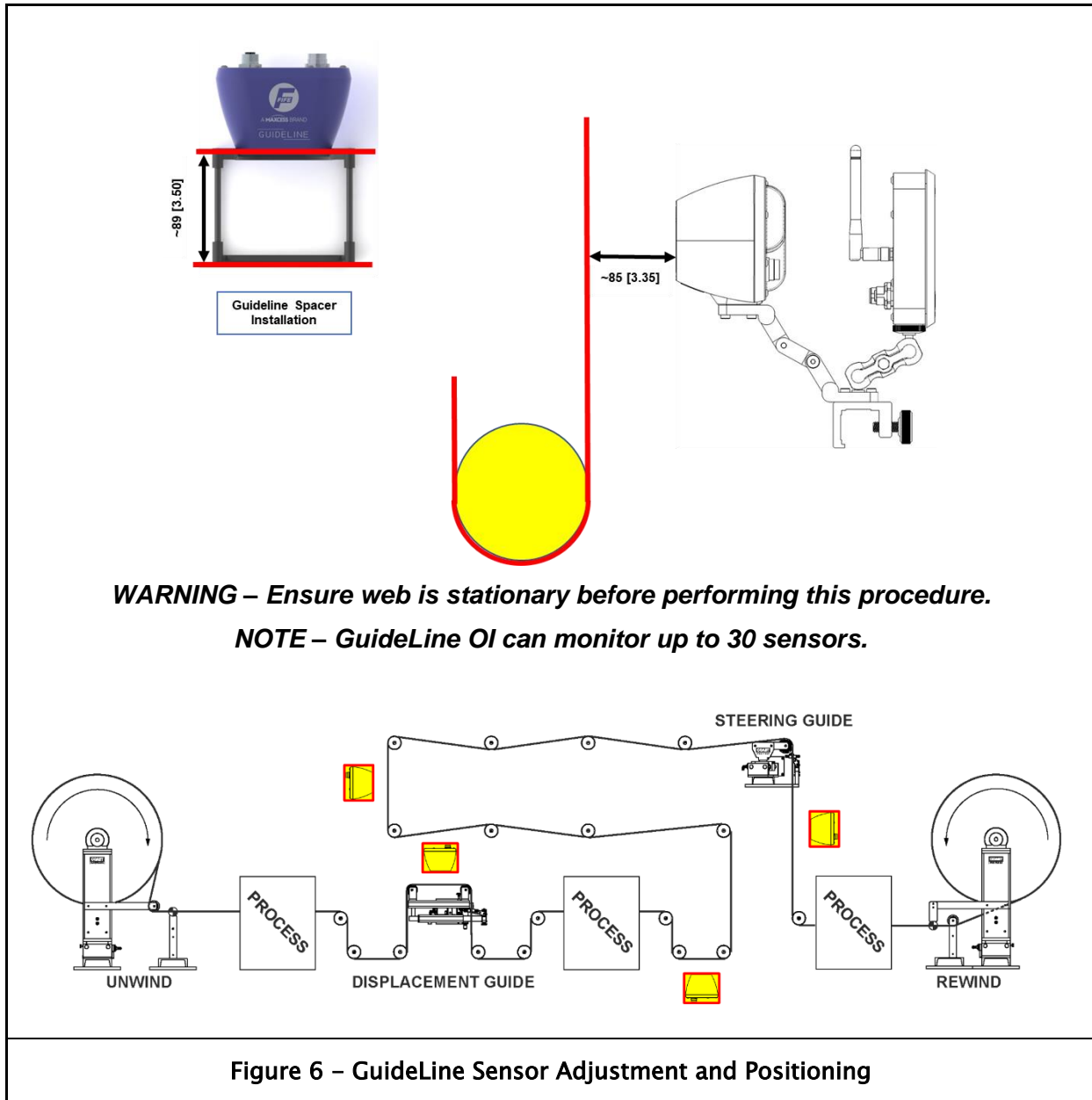


### Instructions

- Drill four (4) holes in accordance with above dimensional drawing. Ensure suitable structure and location for proper sensor mounting. Sensor should be mounted so scan area of sensor is perpendicular to web surface. (See Figure 6, below)
- Use four (4) M4 screws to attach sensor to structure.

# INSTALLATION

## 3.4 Sensor Adjustment and Positioning



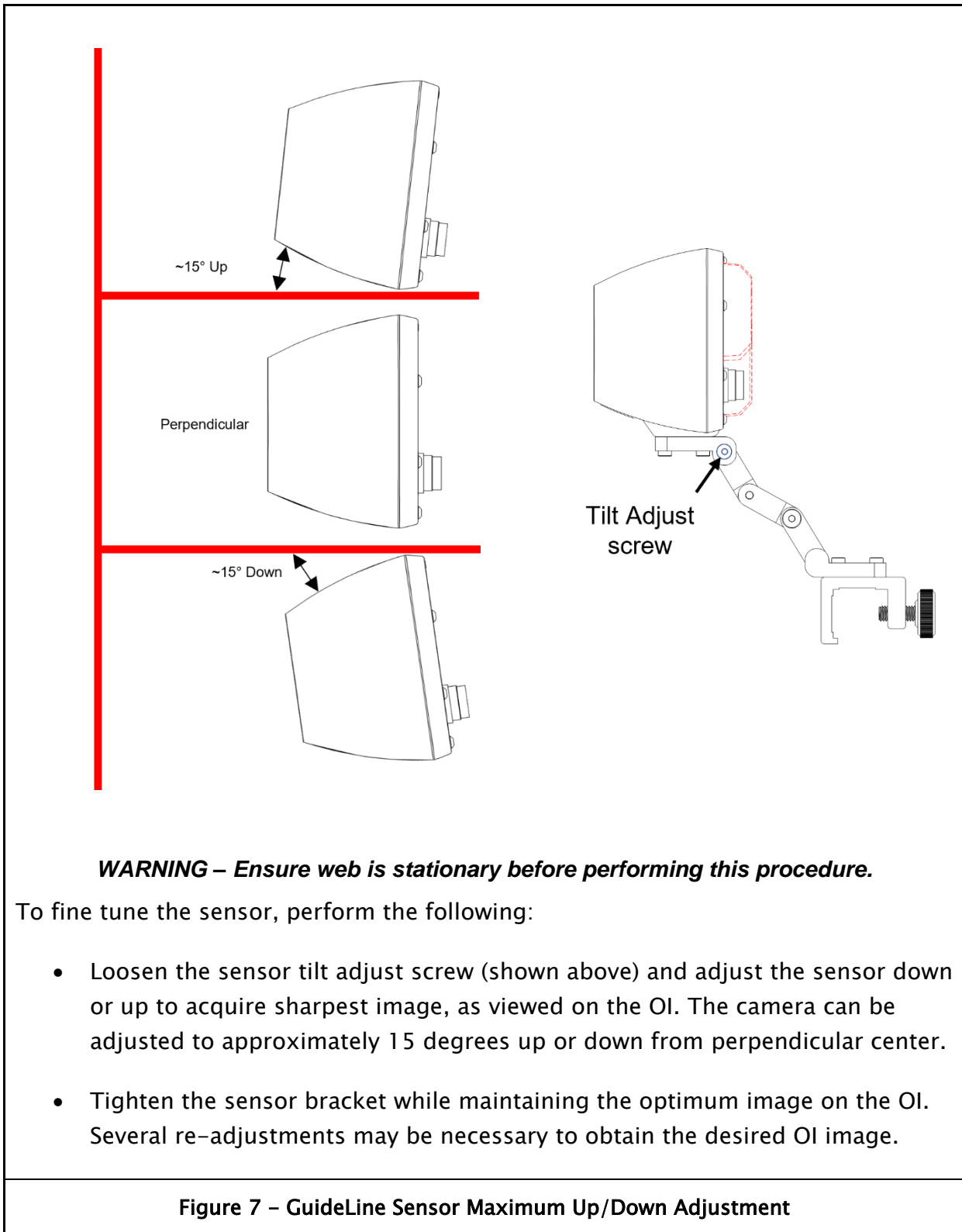
### Instructions

- Using Spacer (see Figure 8 – GuideLine Spacer Assembly (P/N 290018266)), mount sensor perpendicular to the web surface and set distance of ~85 [3.35] from front of sensor body to web surface. After removing Spacer, user can adjust the sensor's distance from the web to enhance the Guiding Line or Pattern to be used for optimum image clarity on the OI. Some web materials (such as highly reflective material), may require tilting the sensor up or down to achieve desired image on the OI. See Figure 7 for tilt adjustments.
- Sensor can be mounted in any suitable locations (as shown above), dependent on available structure to provide support for mounting bracket (Option 1 or 2).

# INSTALLATION

## 3.5 Sensor Tilt Adjustment

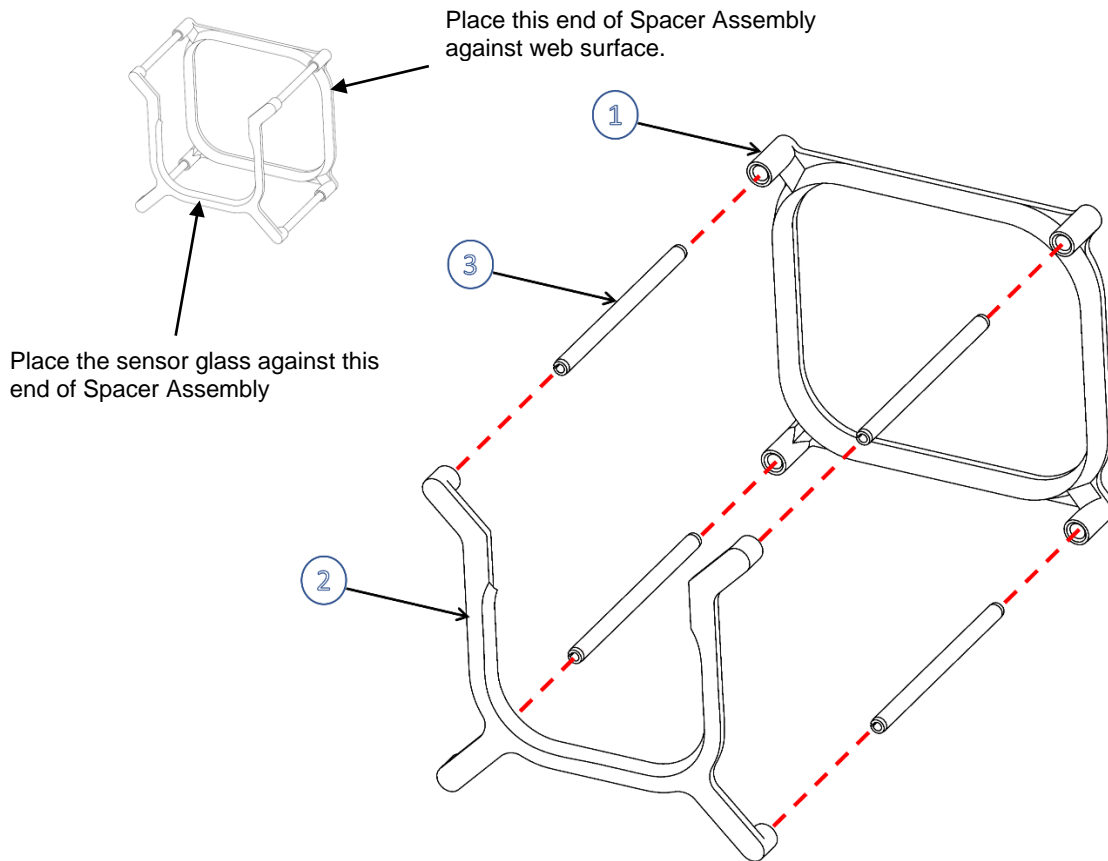
The following adjustment may be required for highly reflective materials.





# INSTALLATION

## 3.6 GuideLine Spacer Assembly



Item	Quantity	Description
1	1	GuideLine Spacer (Backplate Side)
2	1	GuideLine Spacer (Glass Side)
3	4	Roll Pin

Figure 8 - GuideLine Spacer Assembly (P/N 290018266)

Assemble the spacer assembly as follows:

- Install four (4) roll pins (Item 3) into spacer (item 1)
- Gently install spacer (item 2) into the ends of the four roll pins

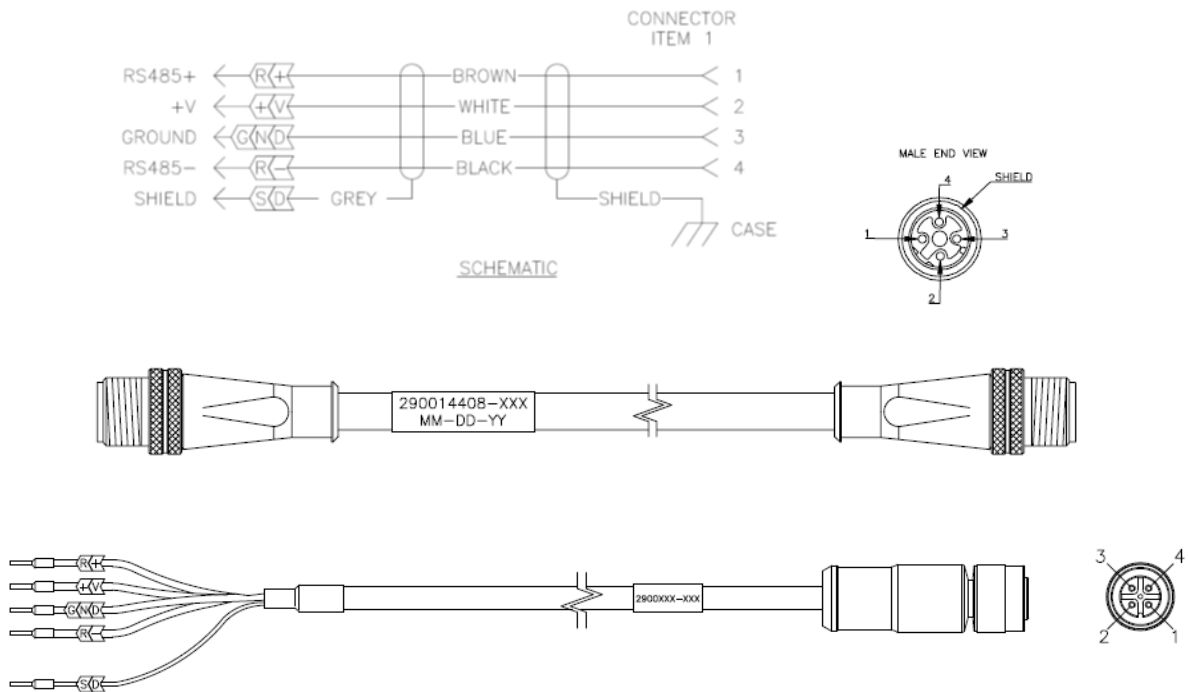
**NOTE – If user needs to dis-assemble the spacer assembly, use caution to prevent breaking of spacer assemblies. See below.**

For dis-assembly, use pliers to gently work the roll pins out of the spacer holes and return all parts back to assembly package. However, it may be advantageous to store assembly for future use.

# INSTALLATION

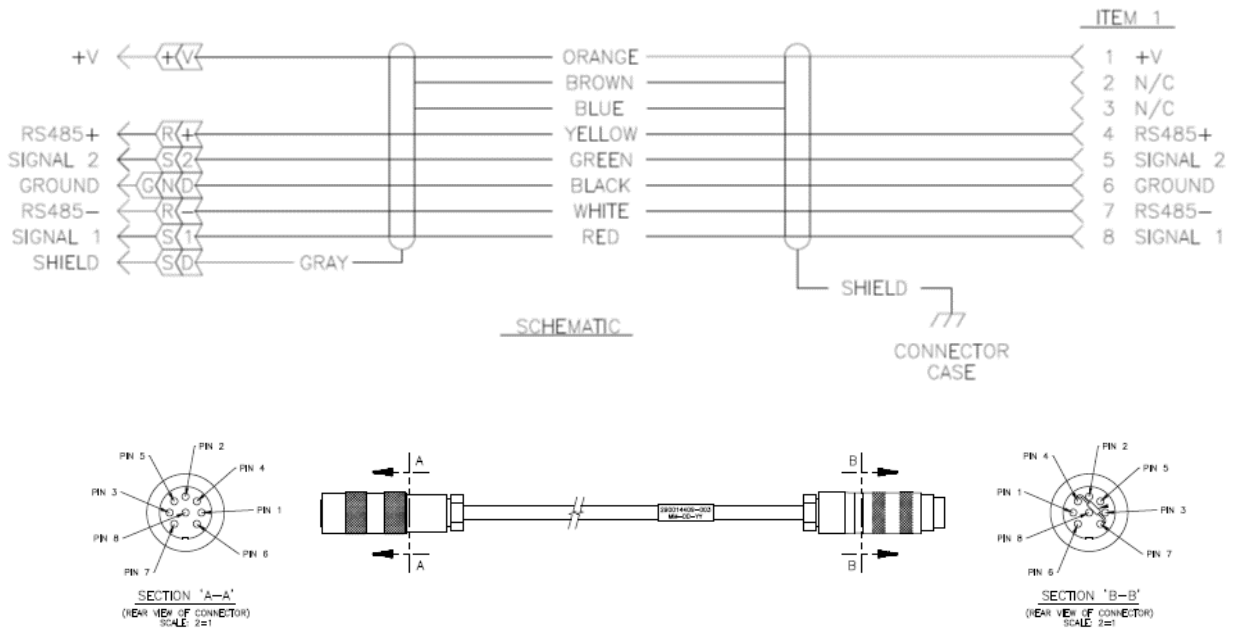
## 3.7 GuideLine Cable Assemblies

GuideLine Cable Assemblies are provided in figures 8, 9, and 10 below:



**NOTE - This cable is manufactured to the customer requested length (in Meters). This cable can be ordered with terminal ends vice connector, as shown above.**

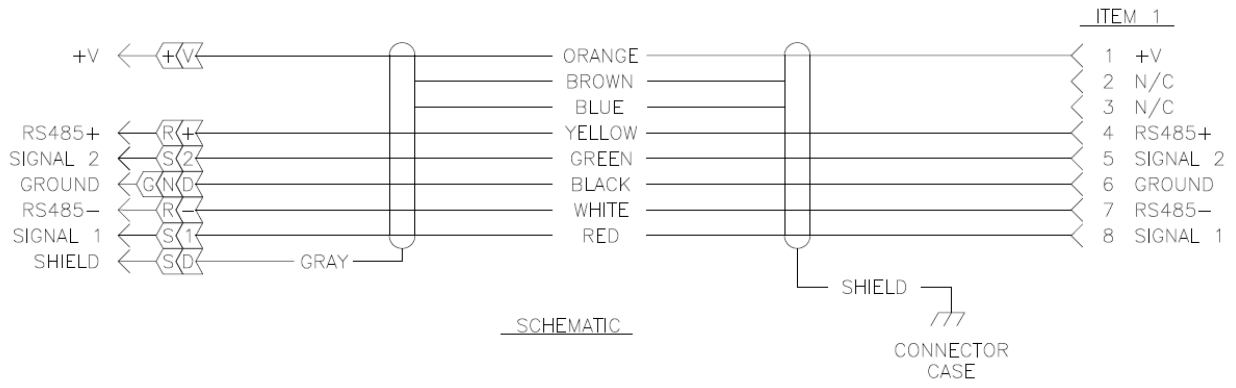
**Figure 9 - Sensor to OI Cable (Fife Ethernet) P/N 290014408-XXX**



**NOTE - This cable is manufactured to the customer requested length (in Meters)**

**Figure 10 - Female to Male Extension Cable (24 VDC Out to Sensor) P/N 290014409-XXX**

# INSTALLATION



**NOTE - This cable is manufactured to the customer requested length (in Meters)**

**Figure 11 - Guideline Sensor to Terminal Block (RS-485) P/N 290017941-XXX**

# INSTALLATION

## 3.8 GuideLine Block Diagram

GuideLine Sensor connector X1 can receive 24 VDC/1 Amp power from any Maxcess guide or controller (User must ensure guide or controller is 24 VDC/1 Amp and NOT 12 VDC/1 A.) Sensor connector X2 provides 54VDC POE out to the OI, which regulates the POE down to 24 VDC to power the OI.

The sensor can also be powered by a machine-safe 24 VDC/1 Amp power supply input to sensor connector X1 and output POE to OI via connector X2. The sensor can also output analog signals to PLCs and other non-Maxcess devices via sensor connector X1.

GuideLine OI draws 54 VDC POE from the sensor via X102 and regulates the POE down to 24VDC. See Figure 9 below. Cable between OI connector X102 and sensor connector X2 also provides communication between OI and Sensor.

The OI can also be powered from a machine-safe 24 VDC/1 Amp power supply via OI connector X101 (Optional).

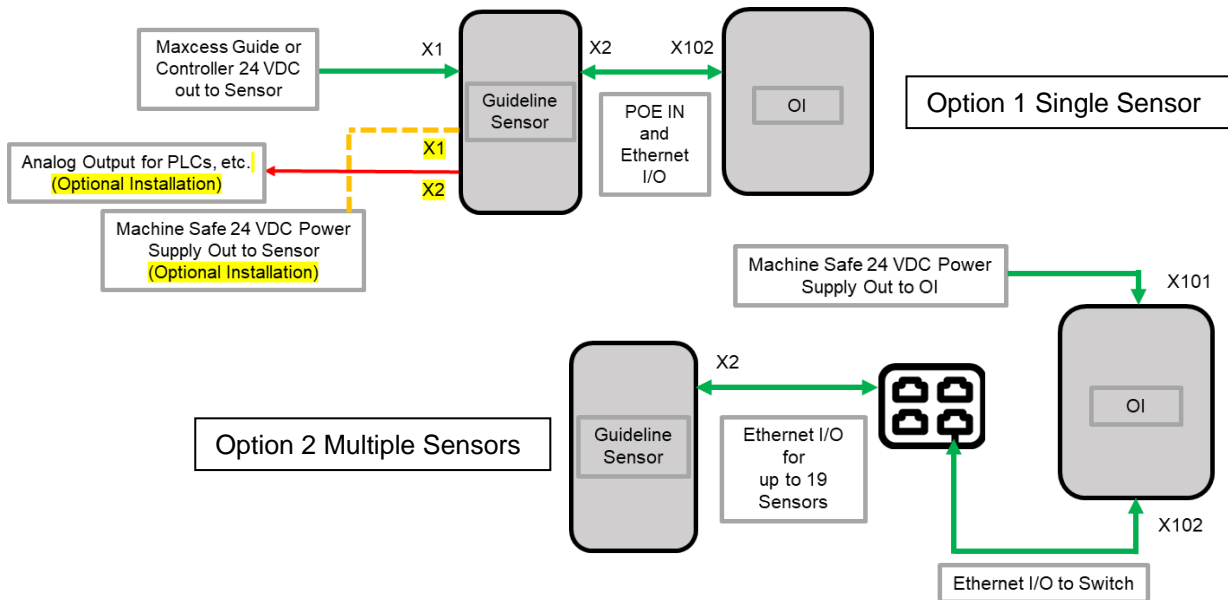


Figure 12 – GuideLine Block Diagrams

# INSTALLATION

## 3.9 Analog outputs

### 3.9.1 GuideLine Analog Outputs 1 and 2

The outputs are designed to provide real-time control signal to a web guide system. They provide proportional response to detected web offset.

Both of the outputs are formed by open-drain transistor pins and the Common Return signal.

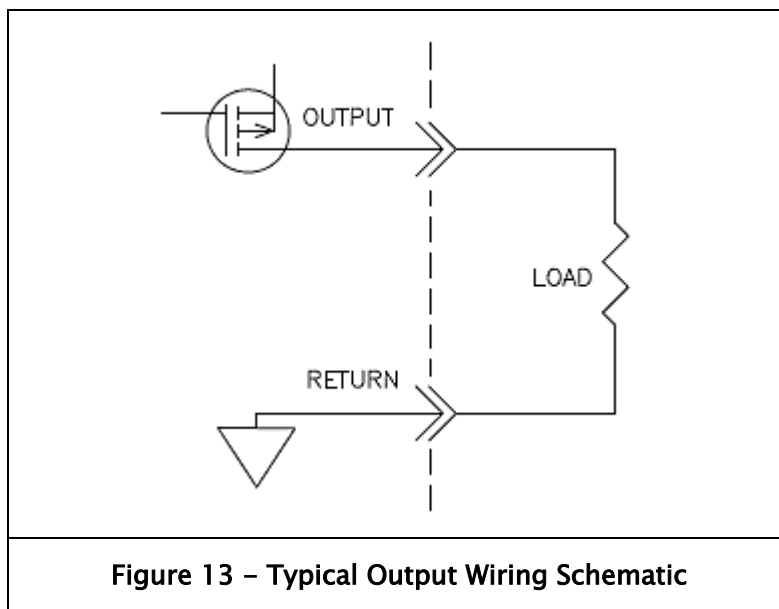
Each output requires an external load resistance value of 100 Ohms, connected between the output and return. (This applies only if a voltage output is needed in a stand-alone configuration.)

Outputs can be independently configured to deliver range of 0 to 10, 0 to 20 or 4 to 20 mA over the input load.

Outputs can be independently configured for an inverted polarity. For example, 0 to 10 can be switched to 10 to 0 output.

The default range setting for the Output 1 is 0 to 10 mA.

The default range setting for the Output 2 is 10 to 0 mA.



# SECURITY

## 4.0 GuideLine Password Security

### 4.1 Overview

Password security settings allow administrators or privileged operators to protect selected functions from being changed or performed by personnel who do not have the authority.

Definitions for the purpose of this chapter:

**Admin** (or privileged operator) has a password and full access to all menus.

**Operator** does not have a password and can only access unlocked button functions.

**Locked out** = password protected

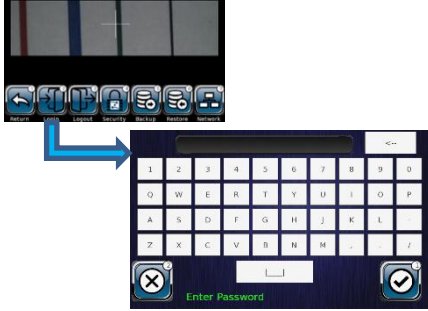
**Login screen** = password entry number pad/keyboard

**Basic steps to activate security:**

- Login to Admin menu.
  - Select the Menus you wish to protect.
  - Set and save a password.
  - Log out of the Admin menu.
-


# SECURITY

## 4.2 Set Password (first time use)

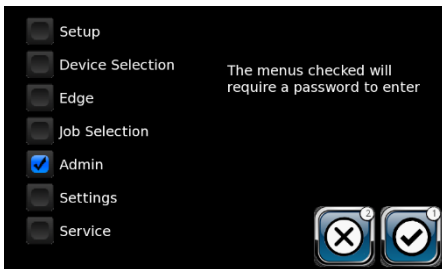


### LOGIN and Set Password

From the main screen, select SETUP > ADMIN > LOGIN to access the password screen.

Type password and press  to Login.

This sets your password at first time use.



### Menu Access Protection

Select the functions you wish to protect. In this example only Admin is selected for password protection. Admin should always be protected as Security is a sub menu of Admin.

#### Menu item

SETUP  
DEVICE SELECTION  
EDGE  
JOB SELECTION  
ADMIN  
SETTINGS  
SERVICE

#### Password locks out

All SETUP menu items  
Device Selection  
All EDGE menu items  
Select and Enable/Disable Jobs  
All ADMIN menu items  
All SETTINGS menu items  
All SERVICE menu items

---

If no functions are selected when security is activated, only the ADMIN Login menu will be locked.

---

### PASSWORD TYPE

Passwords can contain any character available on the GuideLine keyboard.

Password must be at least 1 character in length.



# SECURITY

## 4.3 Identifying Security Status



### Admin is Protected, Security NOT Enabled

- Admin menu protection is enabled but not activated.
- Admin needs to log in to Enable security.
- Locked buttons require a password for access; operators cannot access any function with a lock icon on its button.
- Admin can press any locked menu to open a password entry screen.

### Security IS Enabled.

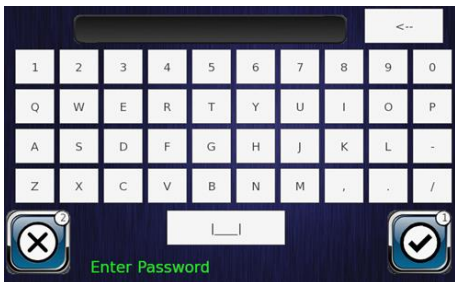
- Key icon is present at upper right of menu and Login Timeout (example 195) is counting down.
- When Login Timeout counts down to Zero (0), the Key icon disappears and Security is disabled, but all Protected Menus are valid.

## 4.4 Admin Login



From the main screen, select  
SETUP > ADMIN > PASSWORD

If the lock icon is present, enter password when prompted by the appearance of the login keyboard. Enter password and press the Enter Key

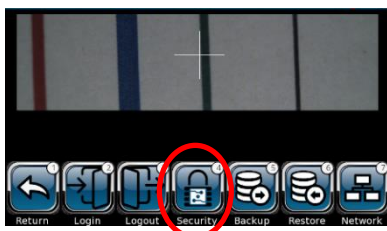


At the Admin menu screen, select Login and re-enter password when prompted. Then select OK checkbox



# SECURITY

## 4.5 Enable Security



From the Admin screen,  
Select Security screen.

At the Security screen:

1. Select Enable Security
2. When prompted, Select Yes checkbox to Enable security.

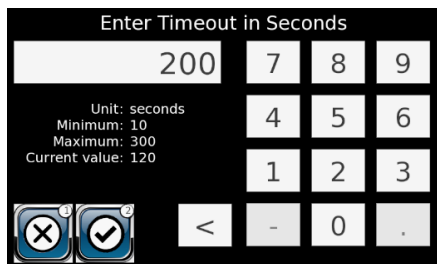


## 4.6 Login Timeout

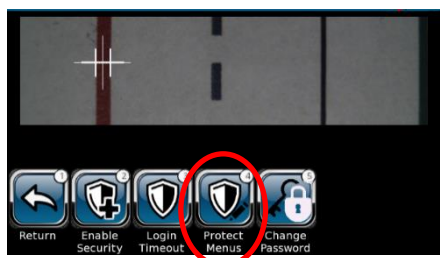


At the Security screen:

1. Select Login Timeout
2. The Timeout screen shows Minimum Value = 10, Maximum = 300, Selected shows 200. Administrator can choose any value within the range.



## 4.7 Protect Menus

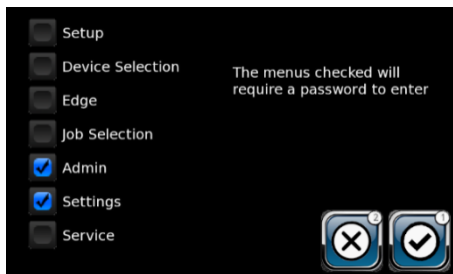


At the Security screen:

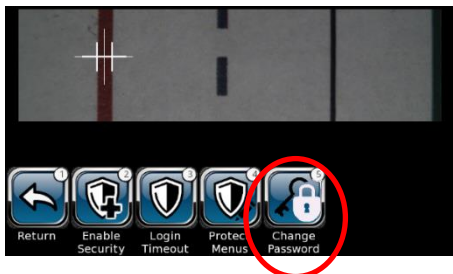
1. Select Protect Menus

## SECURITY

2. The Lock Menu screen shows which menus are currently protected. Admin is recommended for protection, because of Security access. Settings menu may need to be accessed by operators to make changes to existing Jobs or to setup new jobs.



### 4.8 Change Password



At the Security screen:

1. Select Change Password
2. A pop-up keyboard appears and prompts user to enter current Admin password.
3. Press the Return Key and then press Logout key at the Admin menu.

## OPERATION

### 5.0 Operator Interface (OI) and Sensor Setup

#### 5.1 White Balance and Brightness Setup

The White balance setup should be done at installation and can be done any time the Color screen has been changed or compromised.

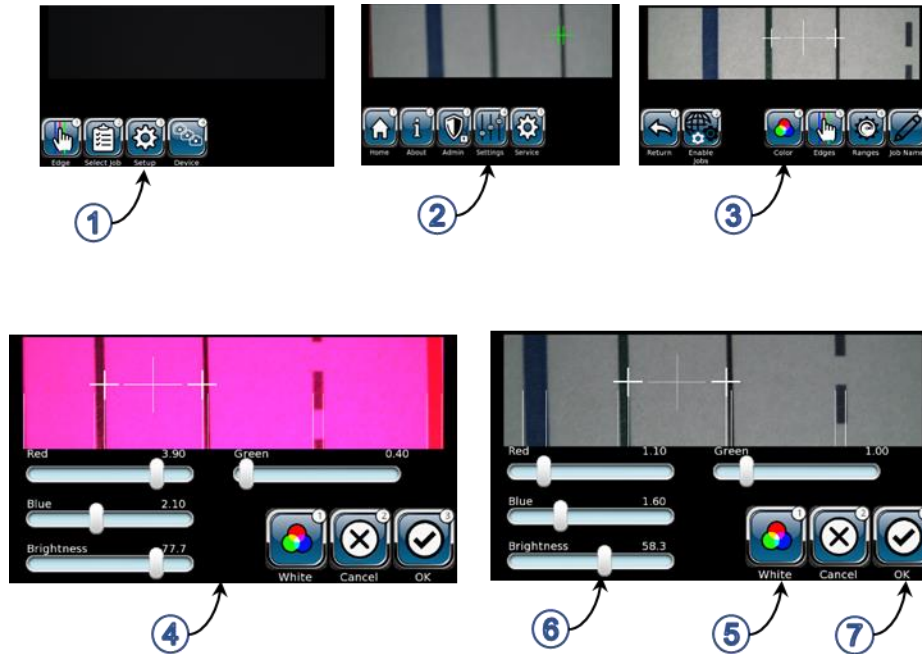







Figure 14 – Sensor White Balance and Brightness Reset

Perform the following steps to set/reset the White Balance and Brightness of the sensor:

- Step 1 – Select Setup from Main  menu.
- Step 2 – Select Settings from Setup  menu.
- Step 3 – Select Color from Settings  menu.
- Step 4 – Place a white card or clean sheet of paper in front of the sensor. Refer to [Figure 6](#) – GuideLine Sensor Adjustment and Positioning for reference points and distance from sensor to white card/paper.
- Step 5 – Press the White  button and ensure the RGB sliders automatically balance sensor color adjustment.
- Step 6 – Manually adjust Brightness to operator discretion.
- Step 7 – Press OK  to save changes and exit.

# OPERATION

## 5.2 Enable Jobs

The GuideLine has five (5) generic Jobs, Job1 through Job5. These Jobs must be enabled before they can be set up for production. For this example, the customer has two (2) Jobs that they normally use.

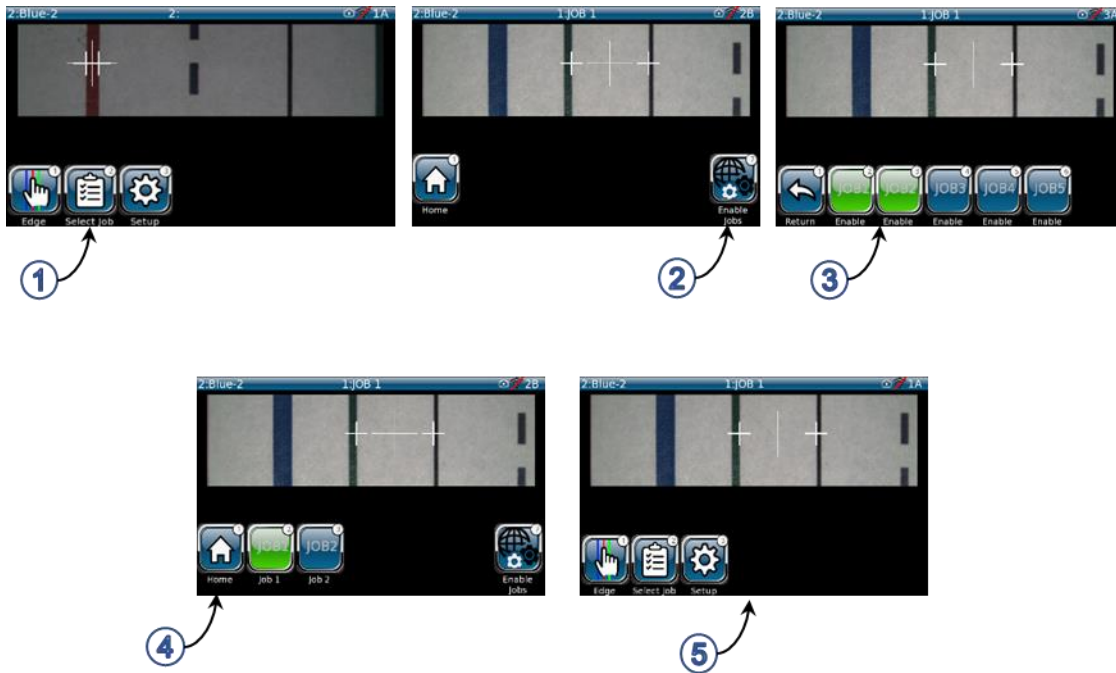




Figure 15 – Enabling Jobs

Perform the following steps to Enable Jobs:

Step 1 – Press Select Job  from the Home screen.

Step 2 – Press Enable Jobs  from the next screen.

Step 3 – Select Job 1 and Job 2, The enabled Jobs are now highlighted in Green. Press the Return Key  to exit.

Step 4 – The two selected Jobs are now Enabled. Press the Home Key  to return to the main screen.

# OPERATION

## 5.3 Name Jobs

The GuideLine uses a built-in list of five (5) Jobs (JOB1 through JOB5). This procedure shows how to Name these Jobs to match each customer's naming convention.

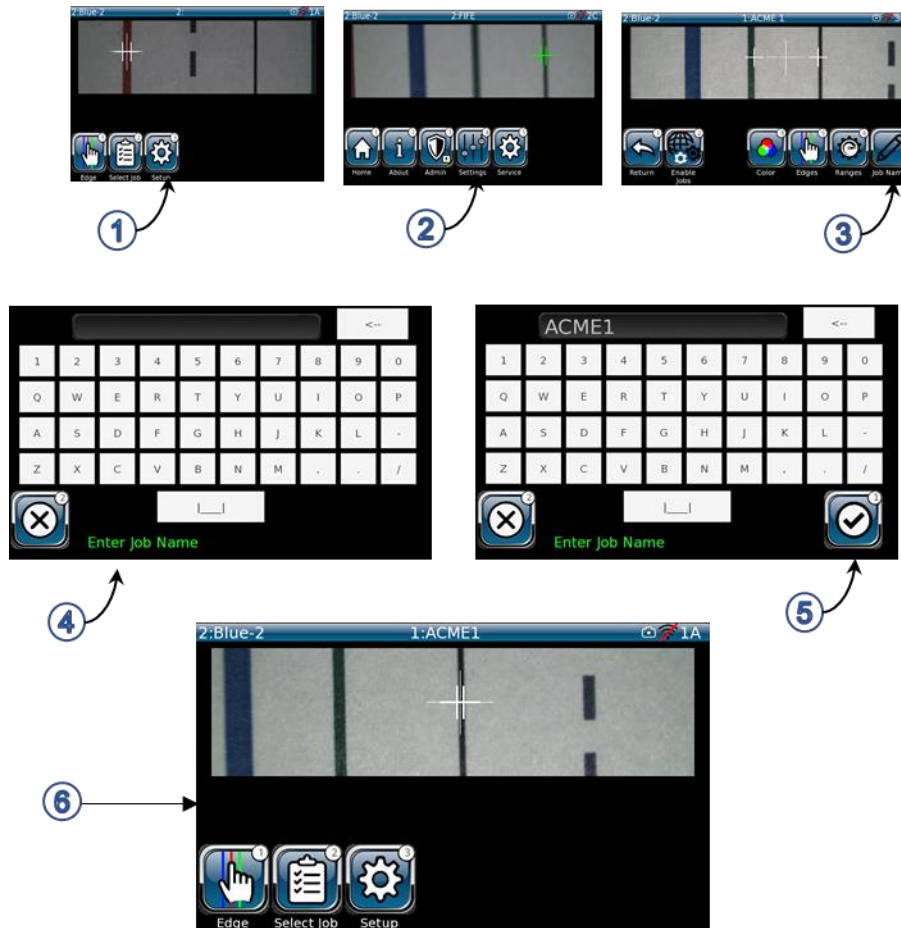


Figure 16 – Naming Jobs

Perform the following steps to Name Jobs:

Steps 1 thru 3 – Press Setup,  then Settings,  then Job  Name.

Steps 4 and 5 – After pressing Job Name, a Keyboard appears and shows only a Cancel button. Type in the new Job name. For example, Job name ACME1. Press Enter and then Home to return to the main screen.

Step 6 – Note that ACME1 is now shown as active at top of screen.

# OPERATION

## 5.4 Set-Up Jobs

The following procedures show how to enter all necessary parameters for each of your pre-existing or any new Jobs that you may run.



Figure 17 – Edges Menu Access

Steps 1 thru 3 – Press Setup,  then Settings,  then Edges. 

Step 4 shows the three (3) options for defining your job (s).

Line – Allows selection of Line Center or Line Edge for products with well-defined lines.

Pattern – The ‘Pattern’ mode is useful when the web has a poorly-defined line structure. In Pattern mode, the complete sensor field of view is used instead of tracking to a specific line feature. Note in Pattern mode, the guided “center” will be the middle of the learned web pattern. For best results, position the web at the preferred location before “learning” the pattern.

Edge Scan – Provides manual control over the edge selection process, with configuration options for scan direction and edge polarity.

# OPERATION

## 5.4.1 Line Guiding Option

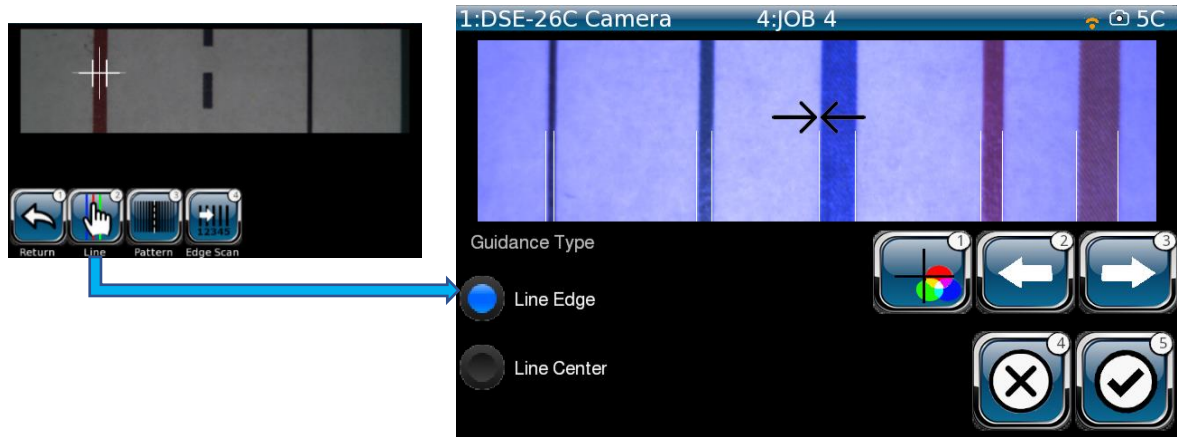


Figure 18 – Line Menu

Allows operator to select between Line Edge and Line Center, depending on the Job selected or by manual change by operator. Line Center option selects center tracking point between two lines chosen by operator. Line edge selects edge of line chosen by operator. Changes made by the operator are seen “live” on screen as changes are made.



Allows operator to toggle between 5 pre-selected edge markers (cursors).



Select the next valid edge to left for guiding. If line mode is active, this will move to the next complete line or lane (between lines). The button is ignored if no valid guiding candidates are available in this direction.



Select the next valid edge to right for guiding. If line mode is active, this will move to the next complete line or lane (space between lines). The button is ignored if no valid guiding candidates are available in this direction.



Allows the operator to exit the job without “saving” any changes made by the operator.



Allows the operator to exit the job and save changes made by the operator.

# OPERATION

## 5.4.2 Pattern Menu

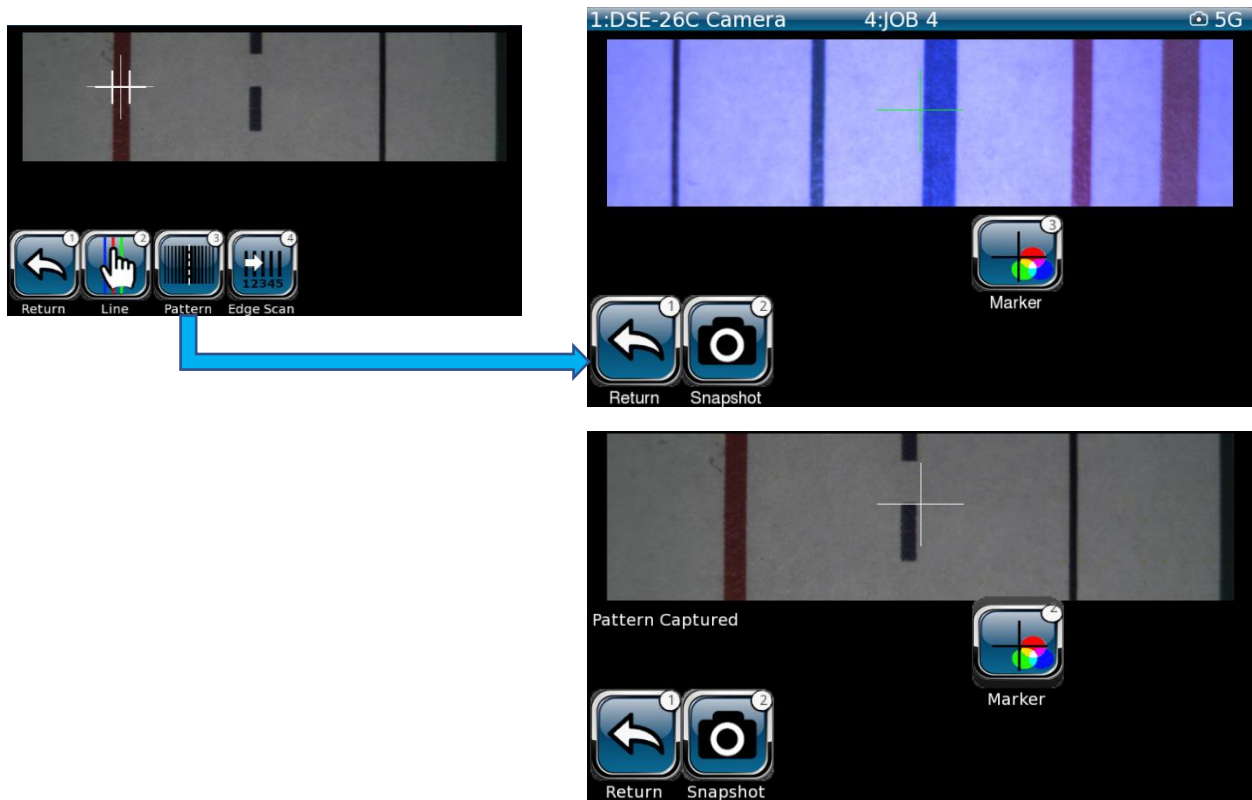


Figure 19 – Pattern Menu

Pattern mode uses the complete sensor field of view to identify the horizontal location of the complete learned pattern, as opposed to tracking a single line. Changes made on this screen are seen live.



Snapshot – For best results, place the web at the desired guiding location before pressing the Snapshot button. The learned location will be the guided center setpoint. Press the Snapshot button and ensure “Pattern Captured” appears on screen (this signals sensor has self-adjusted and “captured” the pattern in the selected job.)



Allows operator to toggle between 5 pre-selected edge markers (cursors).



Allows operator to return to the previous menu.



## OPERATION

### 5.4.3 Edge Scan Menu

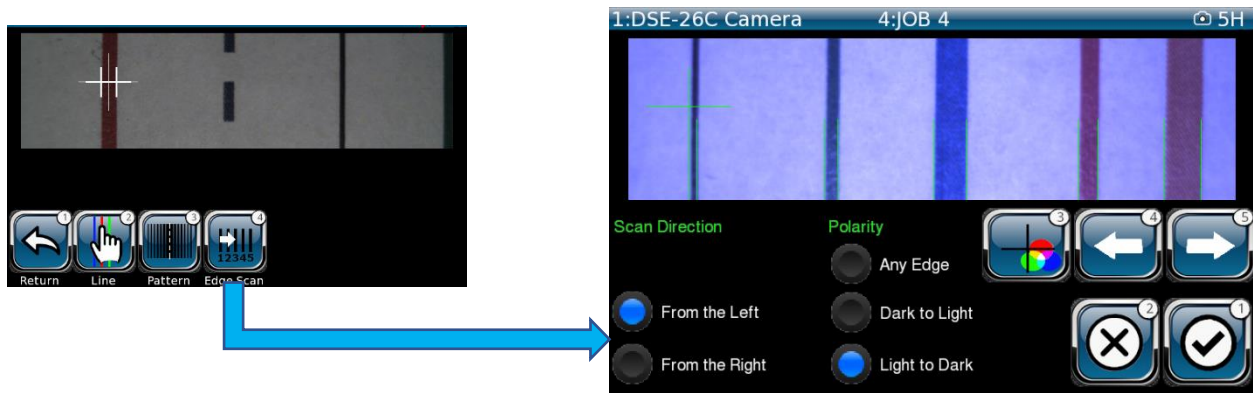


Figure 20 – Edge Scan Menu

The Edge Scan menu allows operator to choose tracking points from web material that has multiple edges and colors: The Scan Direction function enables cursor Left to Right or Right to Left. Operator selects Polarity (Transition from Dark to Light or Light to Dark) or Any Edge. This menu is “live”, so changes made are seen in real-time.



Allows operator to toggle between 5 pre-selected edge markers (cursors).



Select the next valid edge to left for guiding. If line mode is active, this will move to the next complete line or lane (between lines). The button is ignored if no valid guiding candidates are available in this direction.



Select the next valid edge to right for guiding. If line mode is active, this will move to the next complete line or lane (between lines). The button is ignored if no valid guiding candidates are available in this direction.



Allows the operator to exit the job without saving any changes made by the operator.



Allows the operator to exit the job and save changes made by the operator.

# OPERATION

## 5.5 Ranges Set Up

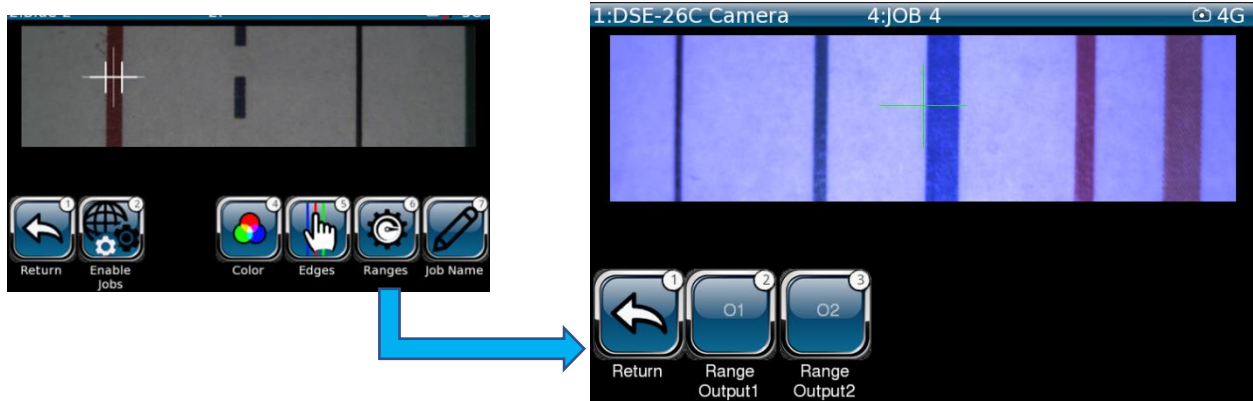
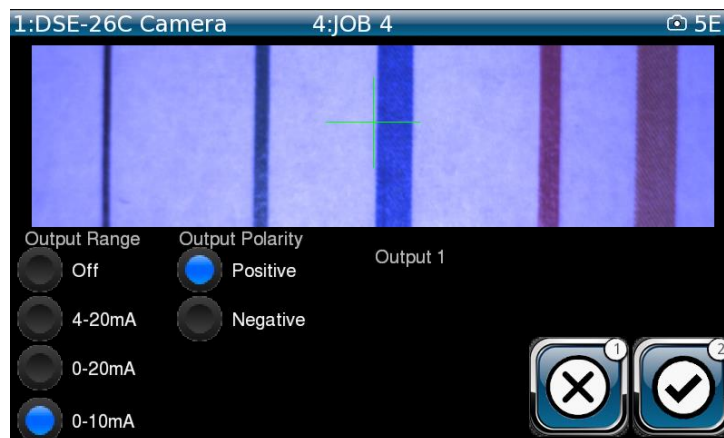


Figure 21 – Ranges Menu

These settings define the full-scale output range and polarity for each of the two independent analog outputs. Change these settings as needed to match input requirements of receiving devices. The default 10mA settings are typical for Maxcess controllers.

**Note:** While some settings are considered job-related and can be configured independently for each job, these settings are global for the sensor and apply to all jobs.



Allows the operator to exit the job without saving any changes made by the operator.

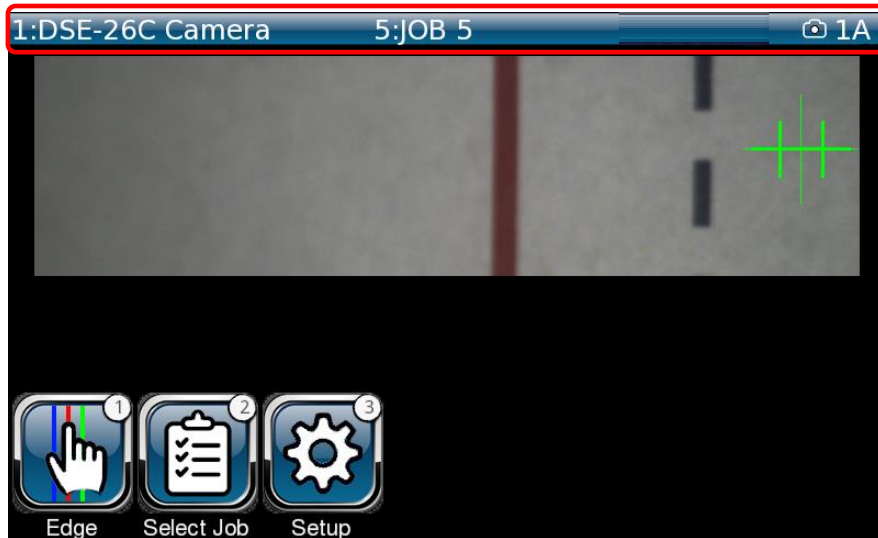


Allows the operator to exit the job and save changes made by the operator.

**i** - NOTE – Range Output 2 functions the same as Output 1, except Negative.

## 6.0 GuideLine Menus

### 6.1 Main Menu



**Figure 22 – Operator Interface Main Menu**

All dynamic menus (those that display an active screen, as shown above) have a header that displays:

- Connected sensor Maxnet Id and configured sensor name. (Top Left)
- Job Number (1–5) and Configured Name (Center)
- Upper Right Quadrant displays (Left to Right)
  - Wi-Fi connectivity (Not shown unless connected to Wi-Fi for Firmware updates only)
  - Sensor Present
  - Screen Identification Number

The middle of the menu displays real-time (Dynamic) output from selected sensor.

The buttons in the lower left quadrant are:



Edge – Allows user to select Line Edge or Line Center for each job.



Select Job – Allows user to select pre-defined jobs.



Setup – Used to perform initial setup and to display all menus required to perform device maintenance activities.

# OPERATION

## 6.1.1 Automatic Servo Control

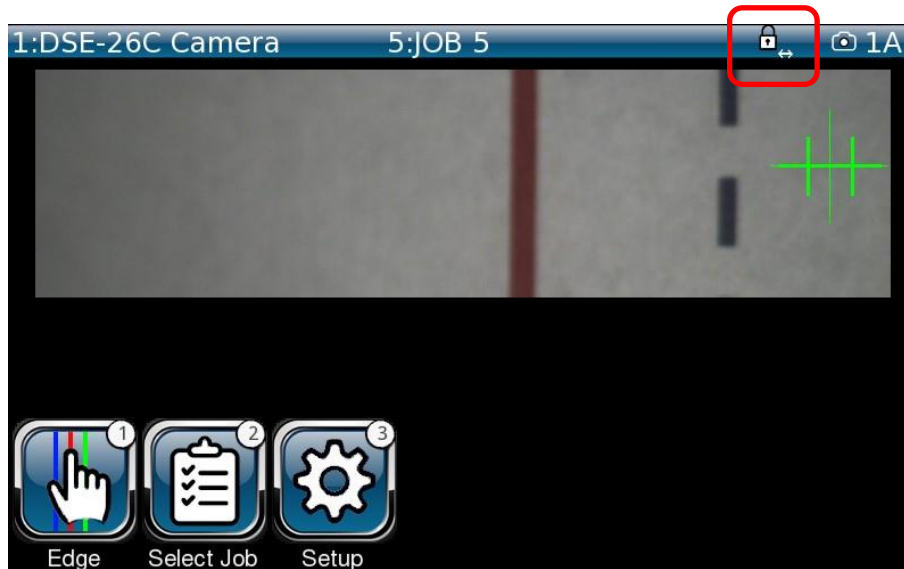


Figure 23 – Automatic Servo Control (ASC) Signal

When sensor is out of alignment (or a sensor malfunction occurs), the ASC icon will appear at the top of the OI main screen (as shown above). Sensor must be re-aligned or replaced (if malfunctioning). After alignment, the ASC icon will disappear.

# OPERATION

## 6.2 Edge Menu

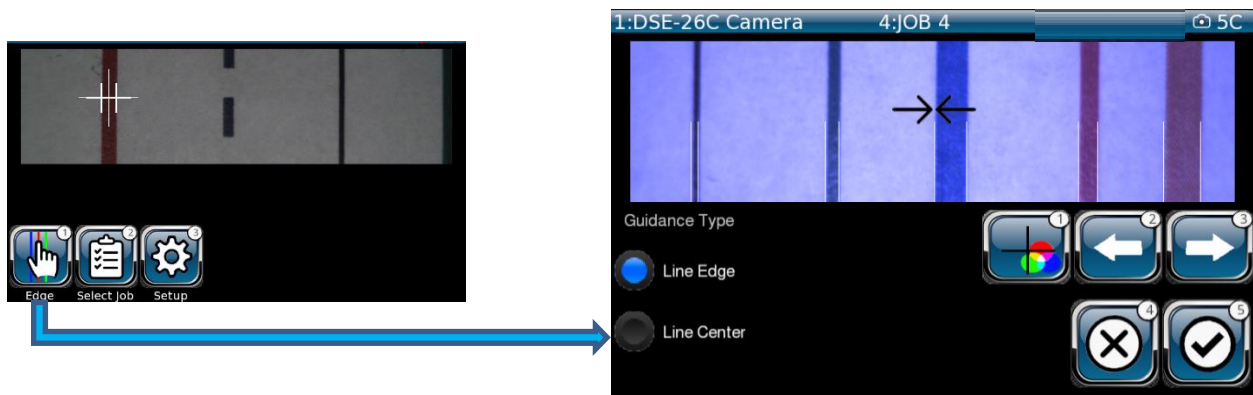


Figure 24 – Edge Menu

Allows operator to select between Line Edge and Line Center. The current settings of the selected Job are reflected here.

The buttons in the lower right quadrant are:



Allows operator to toggle between 5 pre-selected edge markers (cursors).



Select the next valid edge to left for guiding. If line mode is active, this will move to the next complete line or lane (between lines). The button is ignored if no valid guiding candidates are available in this direction.



Select the next valid edge to right for guiding. If line mode is active, this will move to the next complete line or lane (space between lines). The button is ignored if no valid guiding candidates are available in this direction.



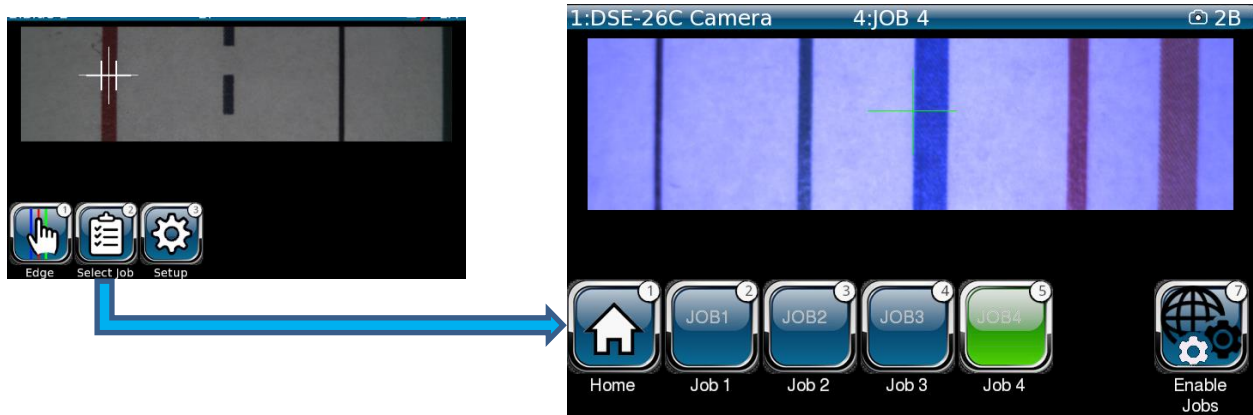
Allows the operator to exit the job without “saving” any changes made by the operator.



Allows the operator to exit the job and save changes made by the operator.

# OPERATION

## 6.3 Select Job



**Figure 25 – Select Job Menu**

Allows operator to choose from a list of up to 5 enabled jobs.



Home – Allows operator to return to the Home menu.



Jobs – Selects Jobs 1 thru 5 (job enabled).



Enable Jobs – Allows operator to enable/disable jobs.

# OPERATION

## 6.4 About Menu

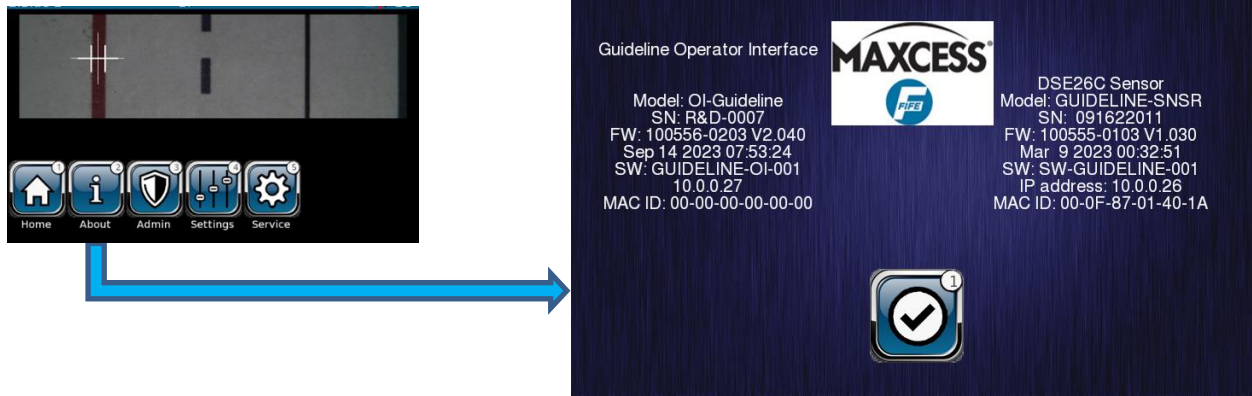


Figure 26 – About Menu

The About menu contains important information about the Guideline system. This information can be important to technical support personnel or for users/operators contacting Maxcess customer service. The menu contains:

- OI Model
- OI Serial Number (SN)
- OI Firmware (FW) version
- OI Software (SW) Part Number
- OI Internet Protocol (IP) address
- OI Media Access Control (MAC) address
- Sensor Model
- Sensor SN
- Sensor FW version
- Sensor SW Version
- Sensor IP Address
- Sensor MAC ID



Allows operator to return to the previous menu.

# OPERATION

## 6.5 Admin Menu

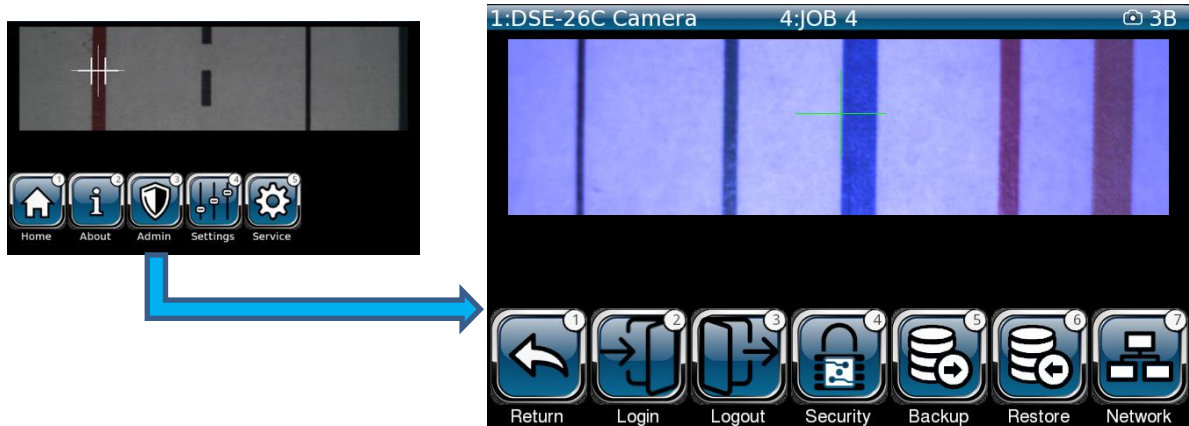


Figure 27 – Admin Menu

The Admin menu provides:



Return – Allows operator to return to the previous menu.



Login – Allows authorized users to login to Administration and Security menus.



Logout – Allows authorized users to logout of Administration and Security menus.



Security – Allows authorized users access to Security menus.



Backup – Allows authorized users to backup current jobs to a special folder.



Restore – Allows authorized users to restore backup jobs, as necessary.



Network – Allows authorized users to access Network menus.



# OPERATION

## 6.6 Admin Login Menu

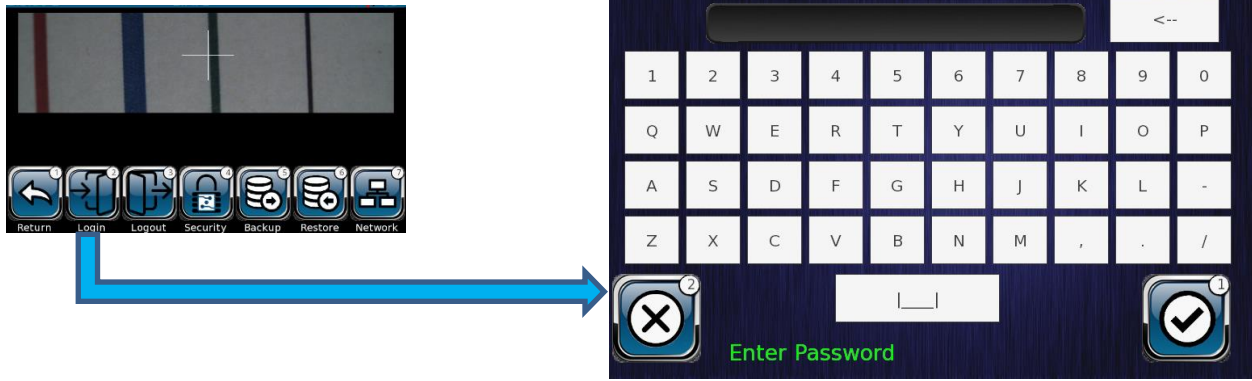


Figure 28 – Admin Login Menu

Enter valid password and press



Enter key.

### 6.6.1 Security Logout Menu



Figure 29 – Security Logout Menu

Press



Enter key to Logout.

# OPERATION

## 6.7 Security Menu

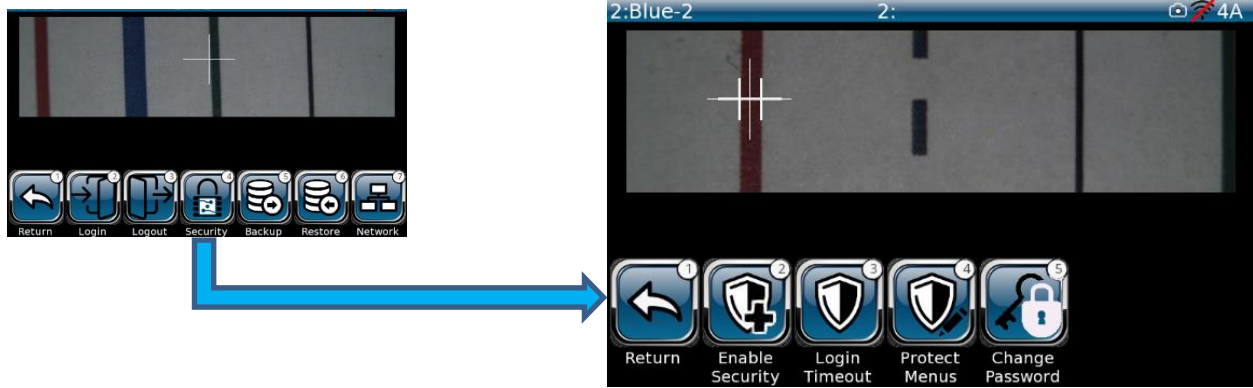


Figure 30 – Security Menu

The Security menus are to be used only by authorized personnel (Level 2 Access or higher). Authorized users must login at the Admin menu screen (shown above left), before accessing the Security menus.



Enable Security – This option requires a secondary password to enable security protocols.



Login Timeout – Sets a Timeout between 20 and 300 seconds to ensure security login does not stay open indefinitely.



Protect Menus – Authorized user can dis-able certain setup and administrative menu access.



Change Password – Allows authorized user ability to change password.



Return – Allows user to return to the previous menu.

# OPERATION

## 6.7.1 Enable Security Menu

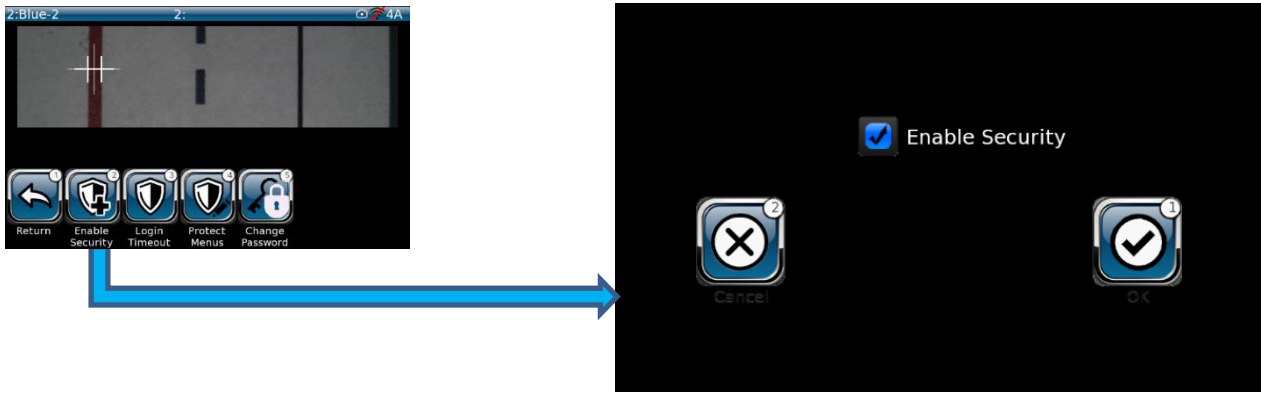



Figure 31 – Enable Security Menu

Ensure checkbox is checked and press Enter  key to Enable security protocols.

## 6.7.2 Login Timeout Menu

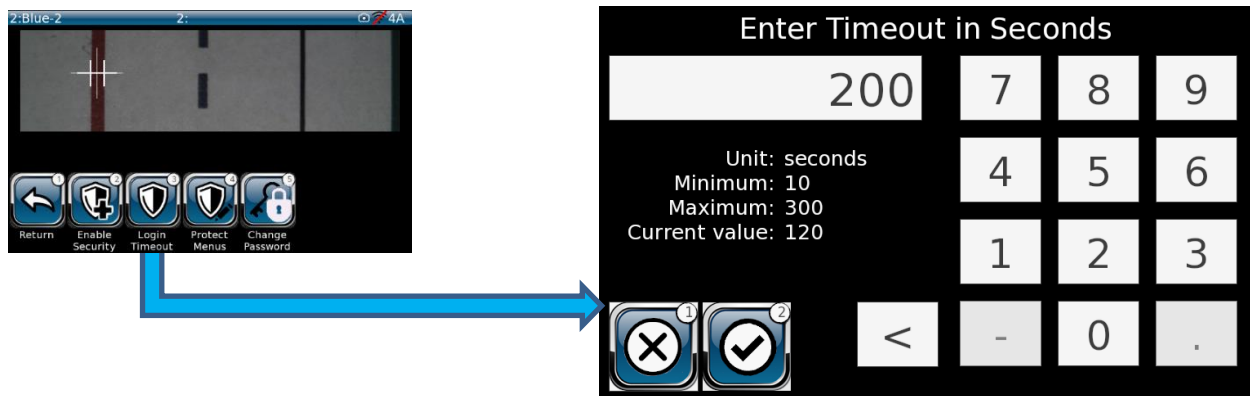


Figure 32 – Login Timeout Menu

Enter desired timeout duration. This feature ensures the Login for the authorized user will be disabled if authorized user neglects to logout of the security menu access.



Allows authorized user to exit without changing timeout value.



Allows authorized user to change timeout duration and save changes on exit.

# OPERATION

## 6.7.3 Protect Menus

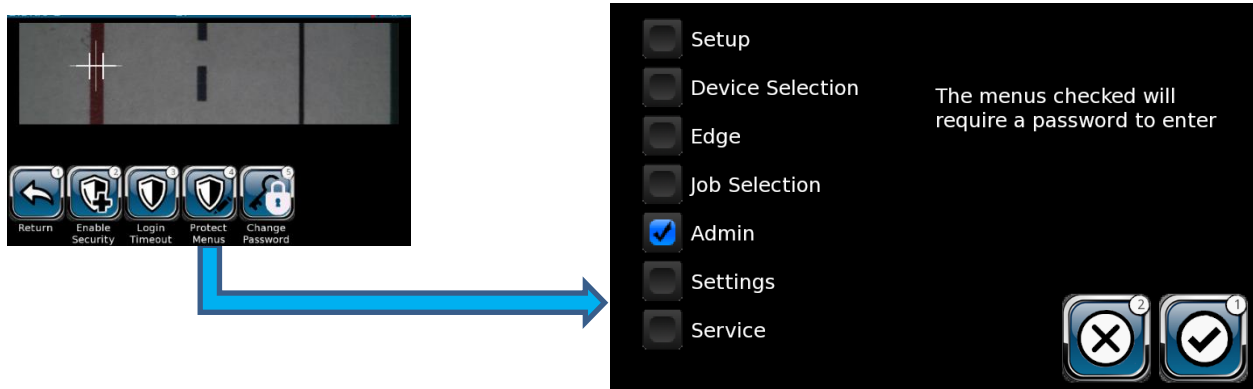
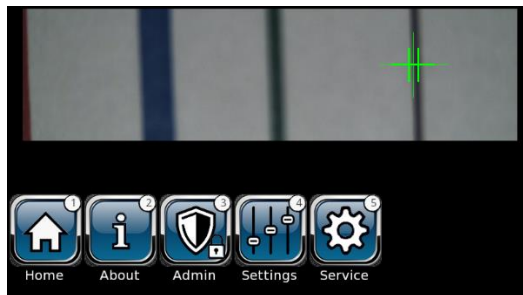


Figure 33 – Protect Menu

Allows authorized user to restrict access to certain administrative, setup, and security menus.

Note below that after selecting Admin menu for password protection, there is now a lock icon added to the Admin menu access button.



Allows authorized user to exit without changing selected menu(s)



Allows authorized user to change selection(s) and save changes on exit.

# OPERATION

## Change Password

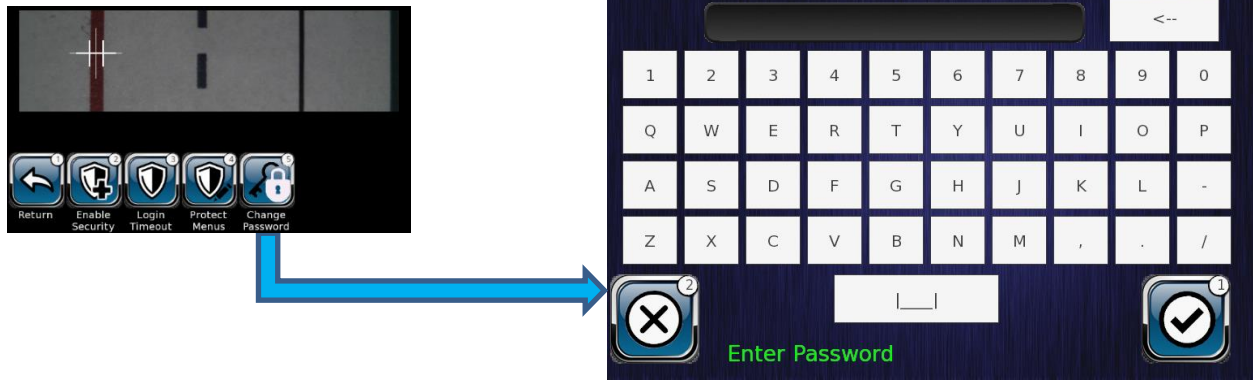


Figure 34 – Change Password Menu

Allows authorized user to change password.



Allows authorized user to exit without changing password.



Allows authorized user to change password and save changes on exit.

## 6.7.4 Backup Menu

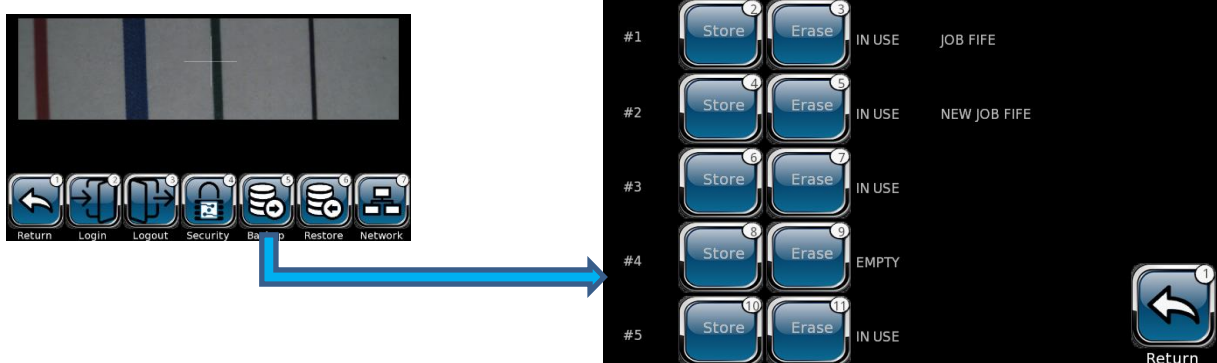


Figure 35 – Backup Menu

The Backup menu is used to save all sensor settings to a designated backup image. The sensor can store up to five separate backup images. A backup image contains ALL sensor settings, including job names, settings, network settings, analog output ranges, etc.

When combined with the five separate jobs that are available, 25 total jobs can be managed. The Store button will prompt for a backup name before creating the backup.

The Erase button will remove the respective backup image.



Return – Allows operator to return to the previous menu.

# OPERATION

## 6.7.5 Restore Menu

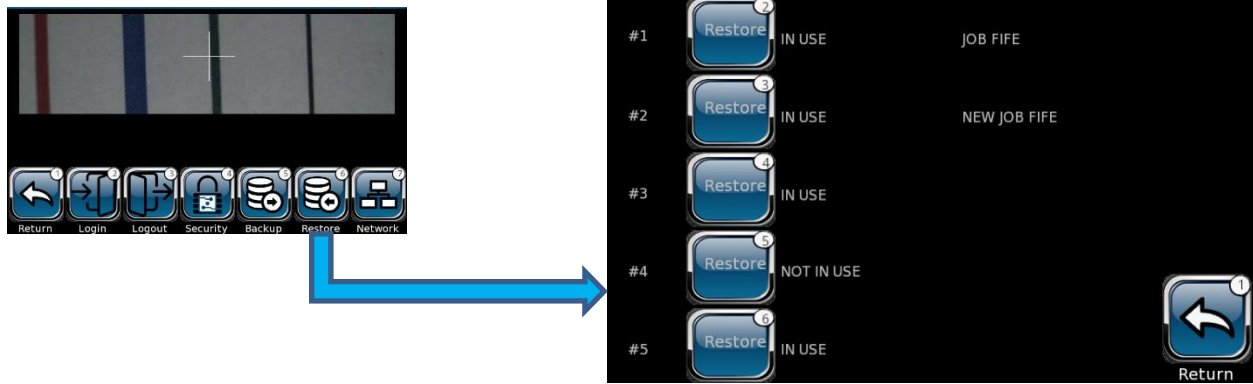


Figure 36 – Restore Menu

The Backup menu provides the complementary function for the Restore menu. A list of available backups is presented and may be recalled. A restore operation will recall ALL sensor settings that were in place when the backup was performed. This will include all five job configurations, network settings, analog output ranges, etc.

The Backup/Restore structure combined with the five jobs per backup can be used to manage up to 25 separate jobs.



Return - Allows operator to return to the previous menu.

# OPERATION

## 6.8 Network Menu

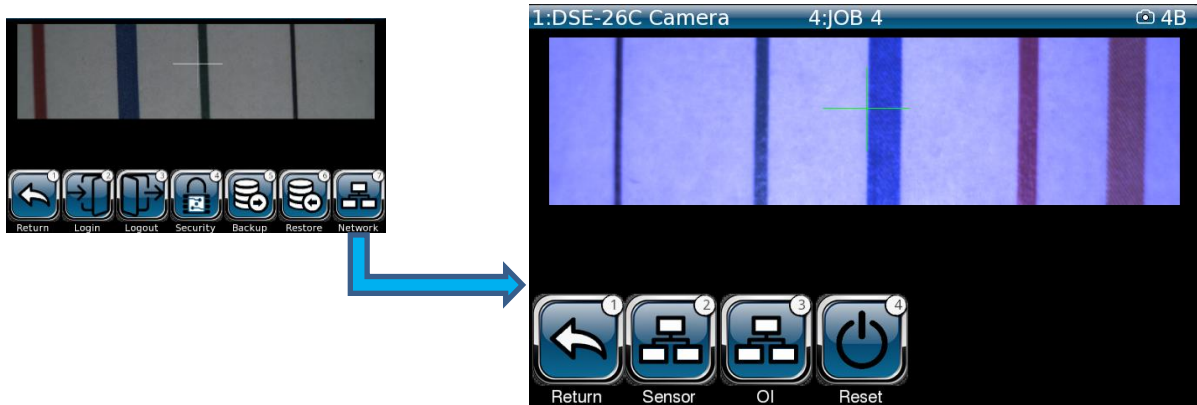


Figure 37 – Network Menu

The Network menu provides information for:



Sensor – This menu provides network information for the Sensor.



OI – This menu provides network information for the OI.



Reset – This menu provides a Reset function for the sensor and/or OI, as needed.



Return – Allows operator to return to the previous menu.

# OPERATION

## 6.8.1 Sensor Menu

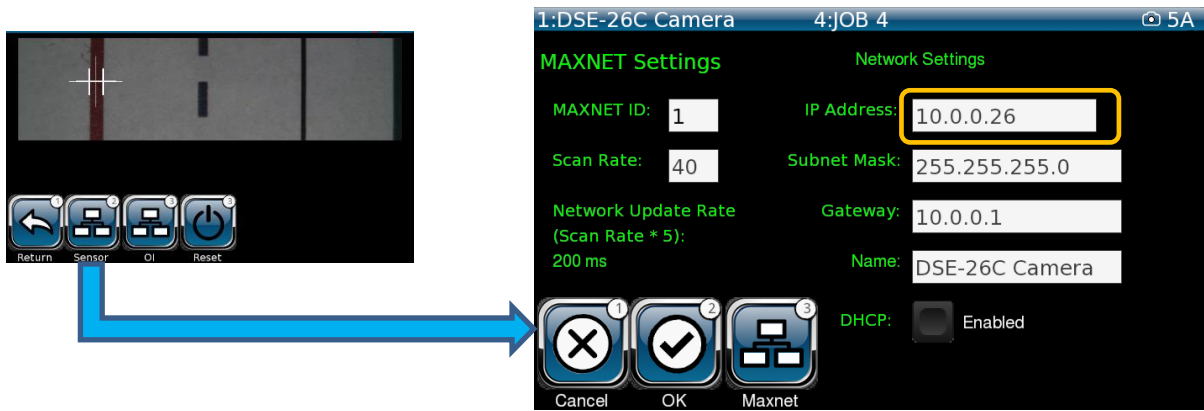
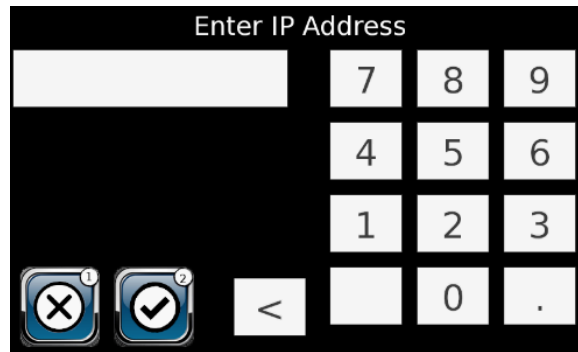


Figure 38 – Sensor Menu

The information on this menu should be treated with care to avoid loss of communication. To change settings, touch the white box for the setting (IP Address (shown above)). A new menu appears: Enter the appropriate data, check data, and press checkbox to save changes.



Allows authorized user to exit without changing IP address.

Allows authorized user to change IP address and save changes on exit.



# OPERATION

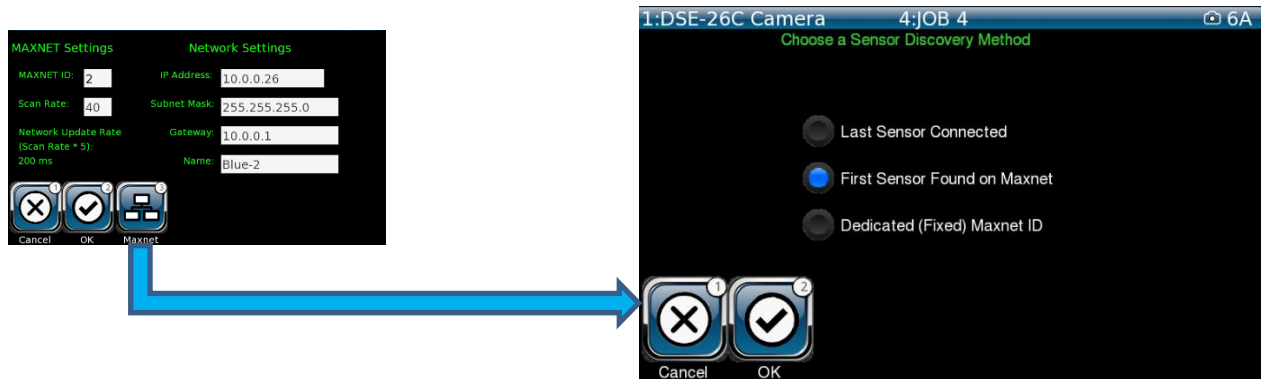


Figure 39 – Sensor Maxnet Menu



Press Maxnet to open Sensor Discovery Method menu and select desired Discovery method from the three choices. (First Sensor Found is recommended)



Allows authorized user to exit without changing discovery method.



Allows authorized user to change discovery method and save changes on exit.

# OPERATION

## 6.8.2 Operator Interface Menu

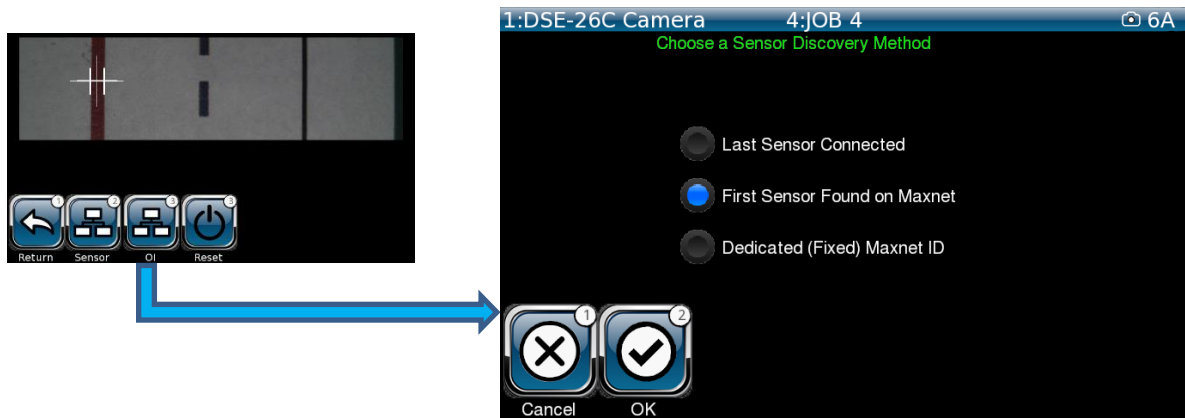
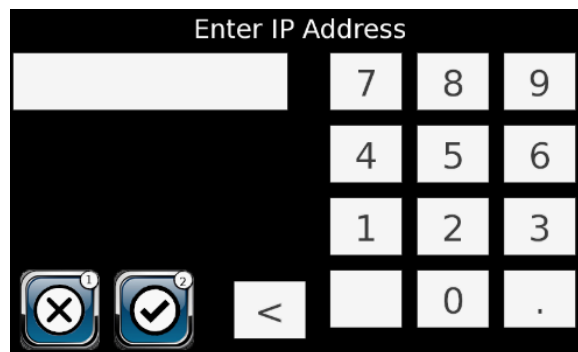


Figure 40 – OI Menu

User can select from one of three Default Sensor Connections (First Device Found is recommended). The Ethernet Settings on this menu should be treated with care to avoid loss of communication. To change Ethernet Settings, touch the white box for the desired setting (IP Address (shown as example below)). A new menu appears: Enter the appropriate data, check data, and press checkbox to allow changes made to be saved or reset to previous setting automatically after exiting the existing job.



Allows authorized user to exit without changing Ethernet Settings.



Allows authorized user to change Ethernet Settings and save changes on exit.



Allows authorized user to access available Wi-Fi networks.

## OPERATION

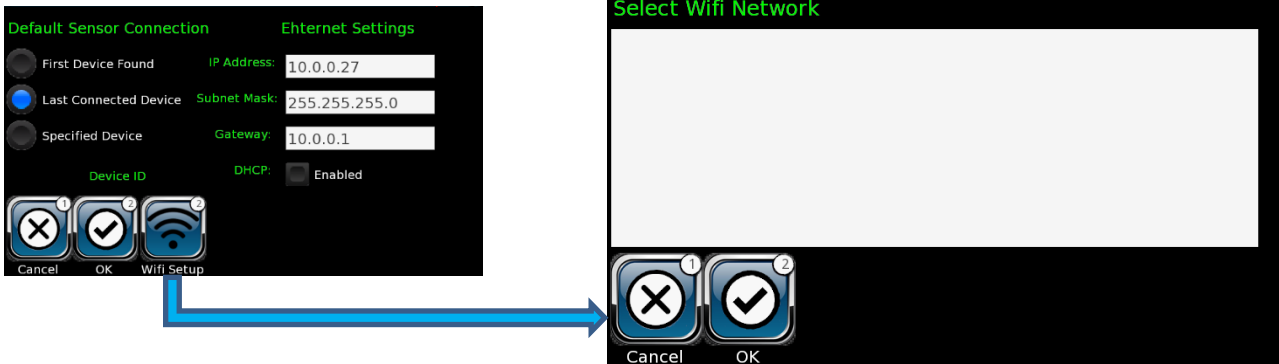


Figure 41 – OI Wi-Fi Setup Menu

Select desired Wi-Fi network and choose from the options below:



Allows authorized user to exit without changing Wi-Fi network.



Allows authorized user to change Wi-Fi network and save changes on exit.

### 6.8.3 Reset Menu

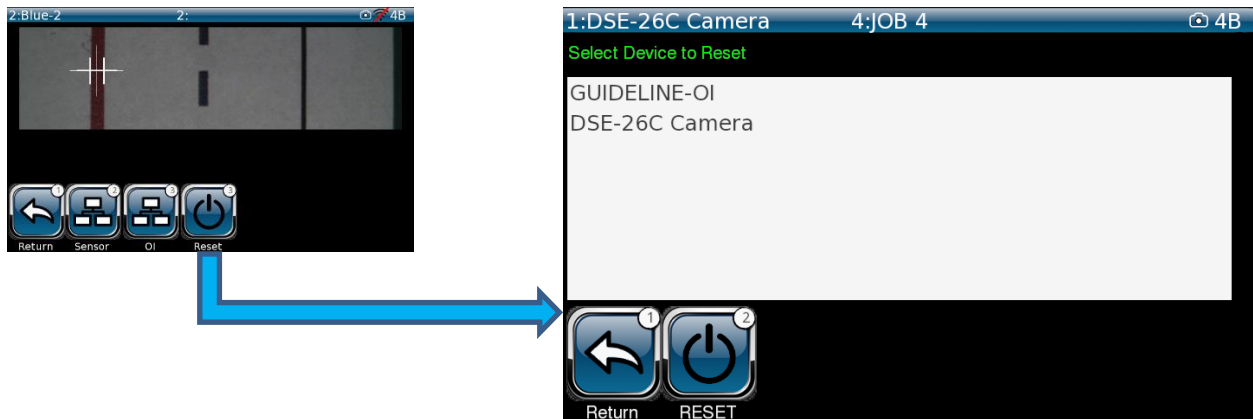


Figure 42 – Reset Menu

This function allows authorized user to perform a Reset of the Sensor or OI (or both), as a maintenance or troubleshooting process.



**CAUTION** – Do NOT perform a reset of the sensor or OI during a product run. All web tracking WILL be lost.



Starts a complete reset of the system. NOT to be used during product run.



Allows user to return to the previous menu.

# OPERATION

## 6.9 Service

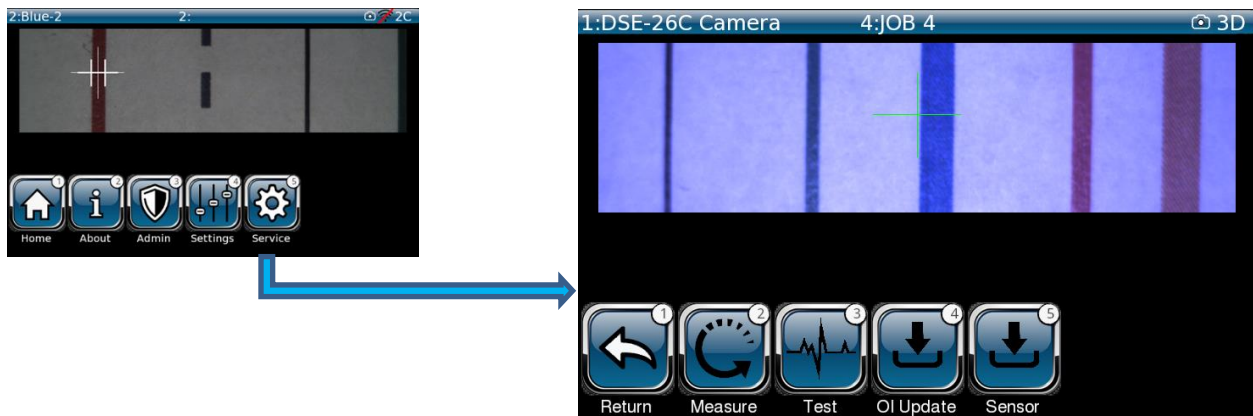


Figure 43 – Service Menu

Allows authorized users to access information to assist in the troubleshooting and repair of the system.



Displays live signal status. This is safe to do at any time.



This menu allows user-control of the analog outputs and should only be done when the machine is not running.



This menu allows update of software/firmware for the OI.



This menu allows update of software/firmware for the sensor.

**NOTE – When software or firmware need to be updated, Maxcess will send customer an electronic file. The customer will have to enable Wi-Fi to upload the new software/firmware.**

### 6.9.1 Software/Firmware Updates



After selecting and connecting to a Wi-Fi network the Wi-Fi icon above will be displayed on the OI. After SW or FW upload, check the About menu and ensure the SW or FW has been updated. If successful, dis-connect from the Wi-Fi network and resume normal operation. If problems arise, contact Maxcess Customer Support (contact information is found in the Service section of this manual.)

# OPERATION

## 6.9.2 Measure Menu

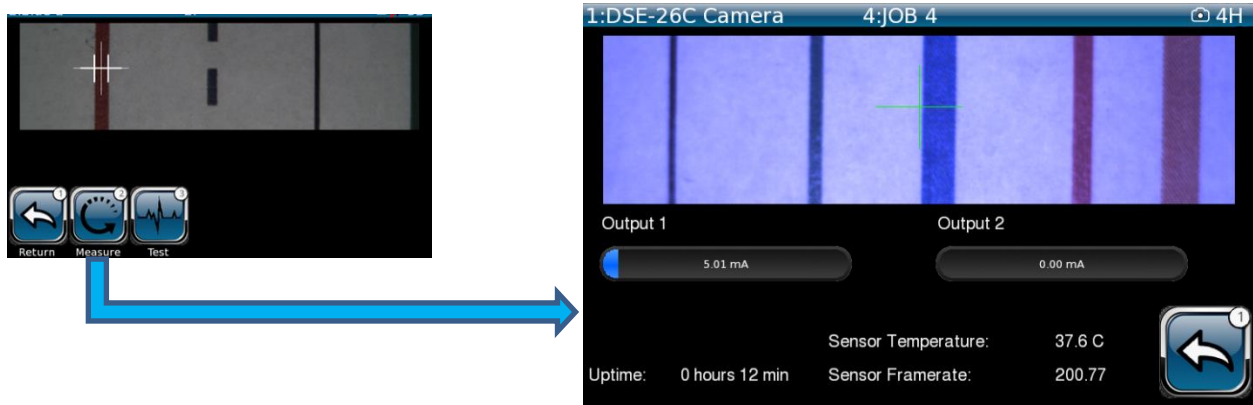


Figure 44 – Measure Menu

Allows viewing of “live” feedback of sensor outputs and statistics.



Allows authorized user to return to the previous menu.

## 6.9.3 Test Menu



NOTE – This function WILL override the Edge Guidance control if the machine is in motion. This diagnostic function should only be performed under machine-safe conditions.

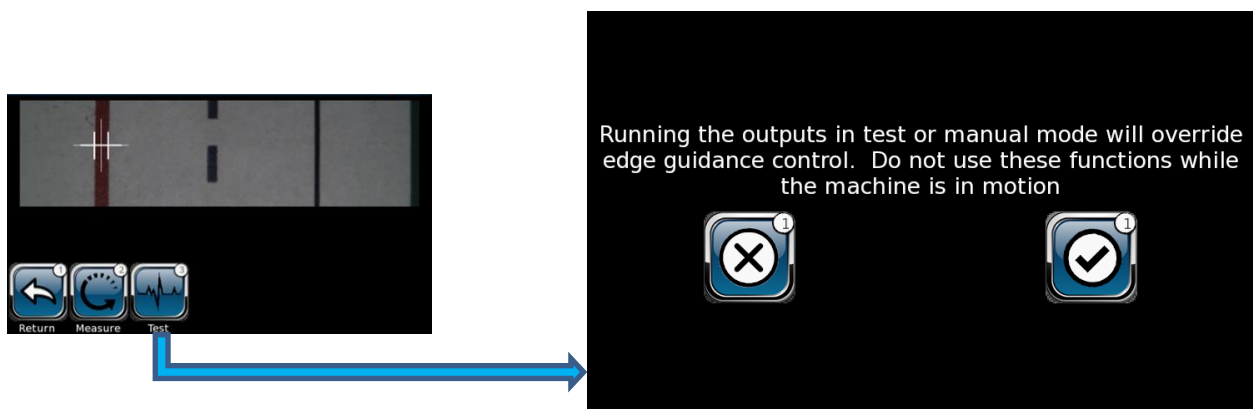


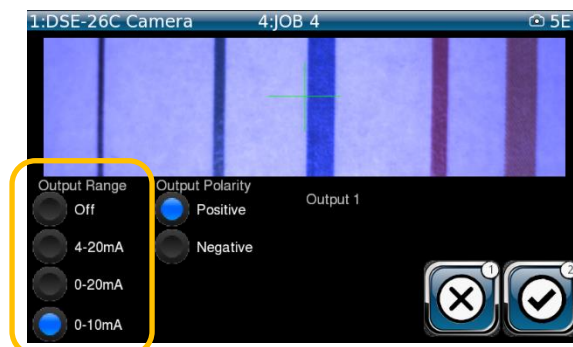
Figure 45 – Warning Screen

# OPERATION



Figure 46 – Test Menus

The user (in manual mode) adjusts the sensor analog outputs using the sliders. The range of the sliders depends upon the setup of the analog output (Highlighted below):



The progress bars show the current analog output values. Manual mode should NOT be used while the web is moving, as changing the analog outputs will change the web guidance hardware position and tracking will be lost.

## 7.0 Fife Sensor Serial Bus (FSBUS)

GuideLine edge information is always presented using two analog outputs that are independently configurable for OFF, 0 to 10 mA, 0 to 20 mA, or 4 to 20 mA scales. When connected to a Fife controller with FSBUS capability, the GuideLine also supports digital delivery of edge data. This feature is automatically detected and enabled when connected to a supporting controller. The controller may need additional configuration to use the digital data delivery.

# MAINTENANCE

## 8.0 Maintenance

### Operator Interface (OI)

#### Cleaning OI Display



NOTE – Do not use any solvents or aggressive cleaning agents to clean the display. Doing so could damage the display.

Depending on how dirty the environment is, carefully wipe off the operator interface display at regular intervals with a soft dry cloth.

If the display becomes very dirty, a moist cloth can be used to clean it.

### Sensor

#### Cleaning Sensor Window



NOTE – Do not apply excessive inward force to sensor outer window during cleaning. The outer window could become dislodged and render the sensor inoperative.

Depending on how dirty the environment is, carefully wipe off the sensor outer window at regular intervals with a soft dry cloth.

If the display becomes very dirty, a clean alcohol-soaked towelette (as supplied with the sensor) can be used for gentle cleaning of the polycarbonate window. Caution should be used to prevent scratching the window, by applying very low pressure (10–20 psi) clean and dry air to remove debris from sensor window before using cleaning cloth(s).



# TROUBLESHOOTING

## 9.0 Troubleshooting

### Fault diagnostics and rectification

An incorrect setting on the GuideLine OI is often the cause of incorrect or undesirable guiding characteristics. Faults and the procedures for remedy of the faults are described below.

Fault Description	Probable Cause	Remedy
OI does not display a web image	OI does not see the sensor	Perform power cycle
	Sensor connection is lost	Re-set the cable and perform sensor power cycle
		Replace the sensor
OI web image display is poor quality	Sensor lens is dirty	Clean the sensor lens.
	Wrong sensor backlight settings	Perform White Balance reset IAW Figure 6 of this manual.
OI security access is denied	Password mismatch	Contact Maxcess technical support to re-set password
OI display is dark	OI power connection	Check power/signal connection and re-connect
	OI internal failure	Replace OI unit
Wi-Fi Connectivity	OI not connecting to network	Ensure network is password protected and named. OI will not communicate with an un-protected or un-named network. See Wi-Fi Specifications Table 2 for more information.
Manual job setup procedure fails to find a web edge.	Distance to a web	Check web setup
	Sensor backlight settings	Check backlight settings.
	Incorrect edge function	Check edge detection function settings
	Incorrect Region of Interest(ROI)	Check and Select correct ROI
	Special case web material	Contact Maxcess technical support

# SPECIFICATIONS

## 10.0 Specifications

General specifications		
OI display type		Color, touchscreen, 800 x 480 pixel
OI connection type		PoE Internet 100 Mb
Sensor working spectrum		Color - Visible Light Spectrum
Operating temperature range	°C [°F]	0 to 50 [32 to 122]
Operating temperature range with Fins	°C [°F]	0 to 60 [32 to 140]
Storage temperature range	°C [°F]	-10 to 80 [14 to 176]
Physical specifications		
Sensor dimensions	mm	106 x 83 x 99 (L x W x H)
OI dimensions	mm	147 x 65 x 120 (L x W x H)
Sensor weight	g [oz.]	312 [11]
OI weight	g [lbs.]	885 [1.9]
Electrical		
Operating current requirement	VDC/A	24/1
Operating voltage input range	VDC	18 to 26
Analog output range	mA	0 to 20 (at nominal load 100 Ω)
Analog output temperature drift	mA/°C	10 <sup>-5</sup> (in range 0 to 50°C )
Digital communication interface	RS-485	Fife Sensor Serial Bus

## SPECIFICATIONS

Field of view	mm	32 X 8
Sensor Body to web surface	mm	~ 85
Working resolution	mm	0.002
Sensor update rate	Hz	200
OI screen update rate	Hz	10
Boot time to operation state	Seconds	~ 30
Certifications		
Product certifications		CE
Protection class		Designed to IP 54

**Table 1 - OI and Sensor Specifications**

# SERVICE

## 11.0 Service

If you have any questions about the products in this document or need to speak with a Customer Service representative, please use the contact information below.



**GLOBAL HEADQUARTERS  
AND AMERICAS**

Tel +1.844.MAXCESS  
Fax +1.360.834.5865  
sales@maxcessintl.com  
www.maxcessintl.com

**EUROPE, MIDDLE EAST  
AND AFRICA**

Tel +49.6195.7002.0  
Fax +49.6195.7002.933  
sales@maxcess.eu  
www.maxcess.eu

**CHINA**

Tel +86.756.881.9398  
Fax +86.756.881.9393  
info@maxcessintl.com.cn  
www.maxcessintl.com.cn

**INDIA**

Tel +91.22.27602633  
Fax +91.22.27602634  
india@maxcessintl.com  
www.maxcess.in

**JAPAN**

Tel +81.43.421.1622  
Fax +81.43.421.2895  
japan@maxcessintl.com  
www.maxcess.jp

**KOREA, TAIWAN,  
AND SE ASIA**

asia@maxcessintl.com  
www.maxcess.asia

© 2022 Maxcess



# MENU STRUCTURE

## 12.0 Menu Structure

The following graphic represents the overall layout of all menu screens displayed on the Guideline OI. This illustration is used by Maxcess technical staff to assist customers who are having issues with the Guideline OI functionality.

